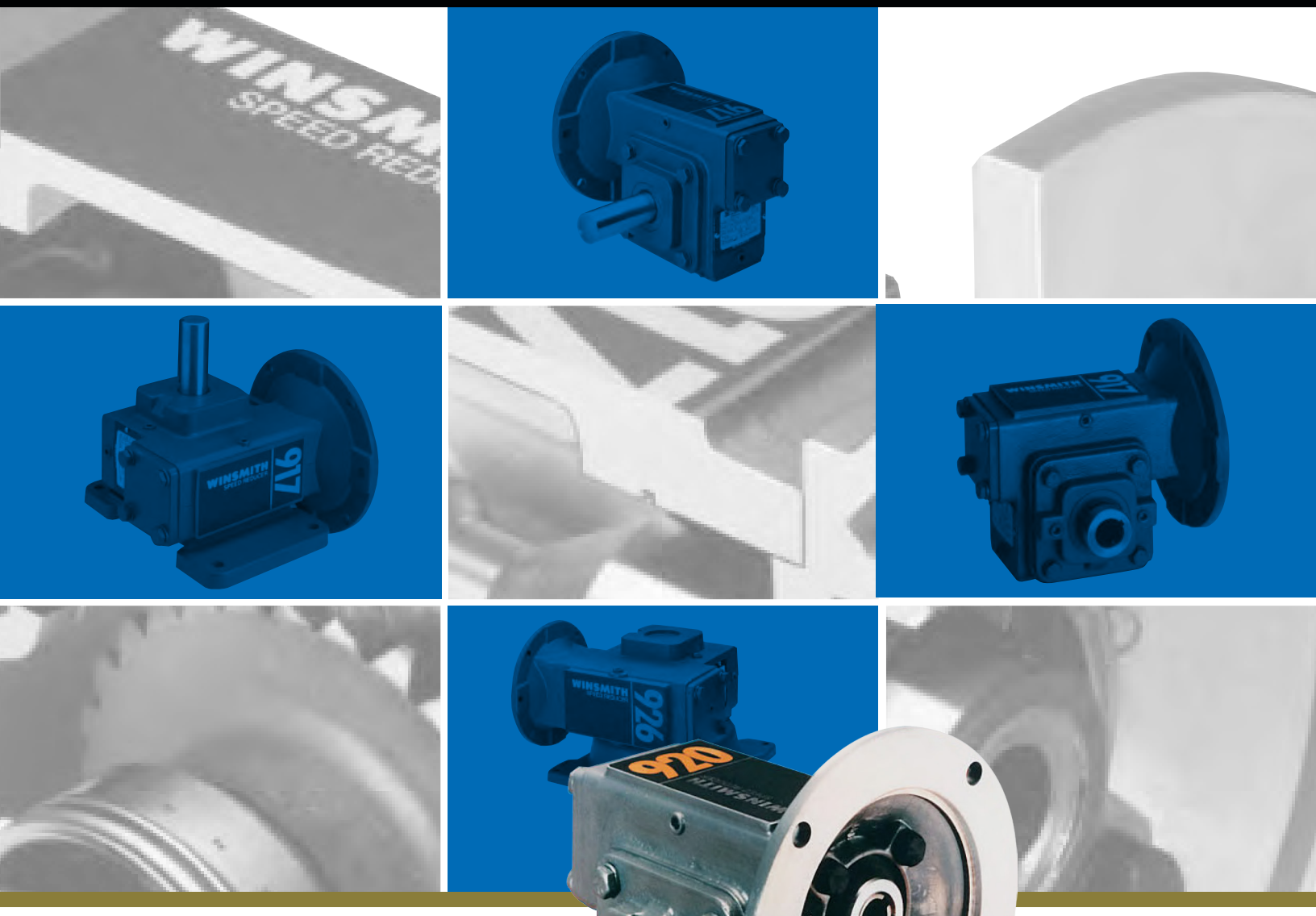
WINSMITH



D-90 Type SE
Worm Gear Speed Reducers

www.winsmith.com

WINSMITH®'S STATE-OF-THE-ART WORM GEAR SPEED REDUCER

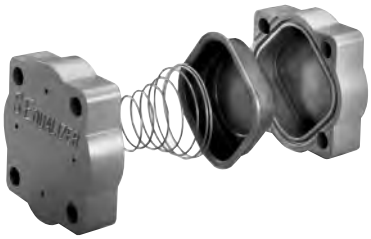
D-90® TYPE SE®

SINGLE ENVELOPING

Part of the dynamic WINSMITH® series of *WORM GEAR PRODUCTS*

VENT SHIELD
(NOT SHOWN) Prevents pumping

THE S EQUALIZER® OPTION
A ventless unit which contains an integral expansion chamber (See page 173.)



VERSATILE HOUSING
Symmetric high speed end provides for all assemblies

GEAR TOOTH GEOMETRY
High pressure angle and recess action gearing to achieve high efficiency

WORM ON SHAFT
Integral construction and case carburize hardness

GEAR
Chill cast or forged bronze

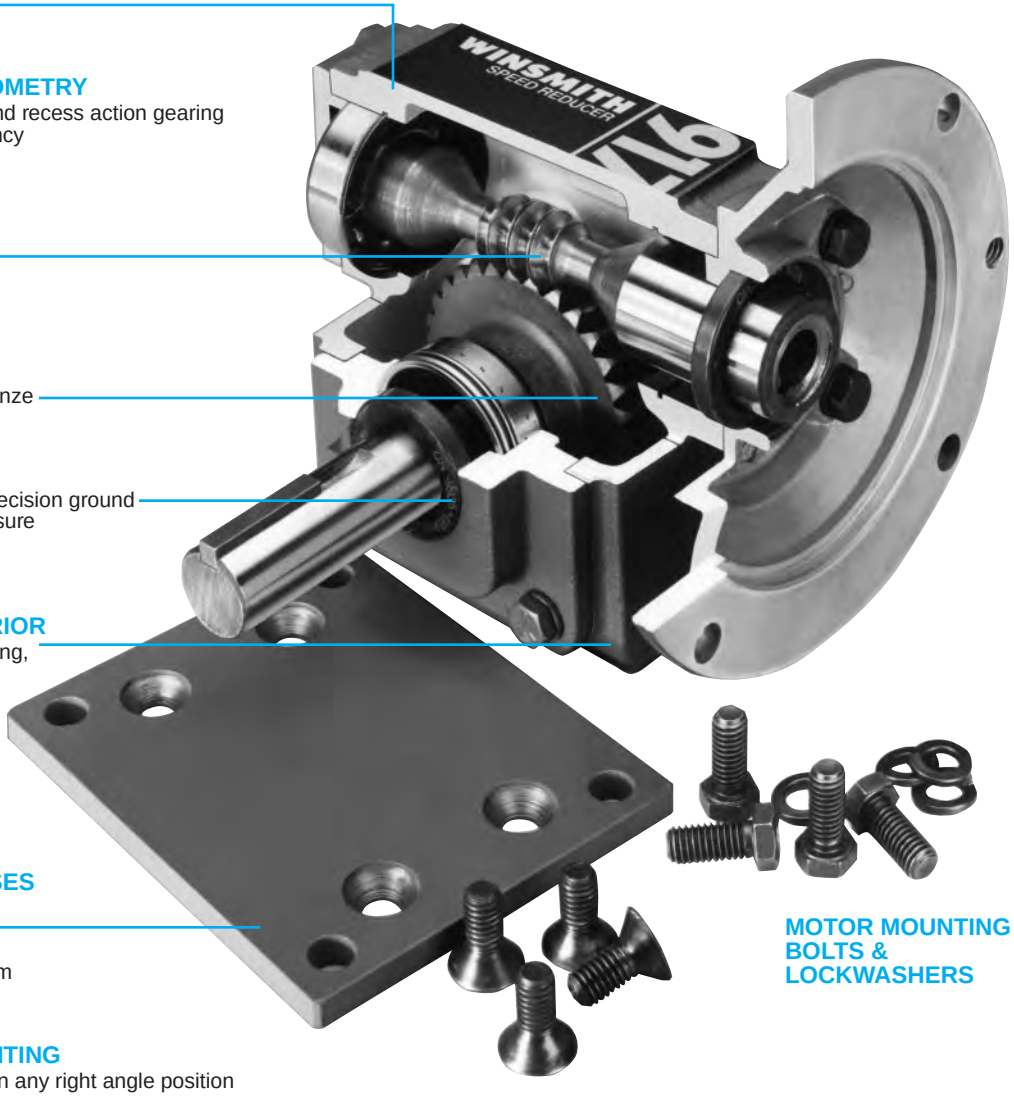
OIL SEALING
High quality seal on precision ground and tested shafts to insure leakproof operation

CAST IRON EXTERIOR
Rugged cast iron for long, trouble-free operation

NAMEPLATE
(NOT SHOWN)
Pinned on

ATTACHABLE BASES
Plate steel bases exceed the strength and shock resistance of cast iron or aluminum

UNIVERSAL MOUNTING
Suitable for mounting in any right angle position



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FOR THE REST OF THE STORY TURN TO PAGE 2.

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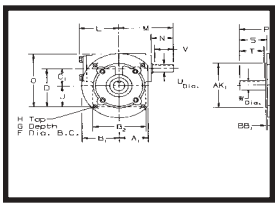

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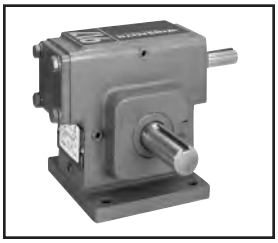

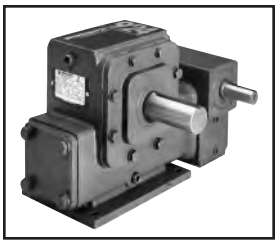

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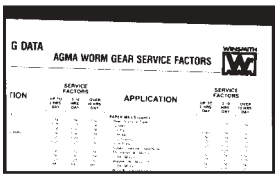

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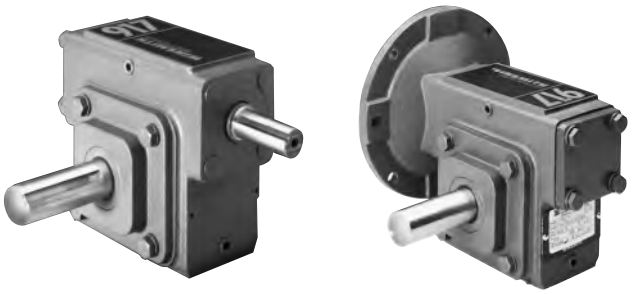
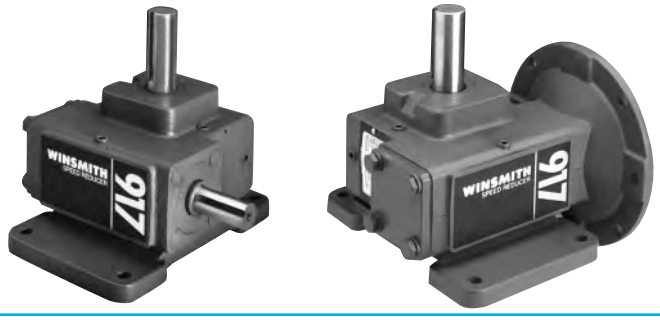
D-90® TYPE SE® WORM GEAR REDUCERS

Since our beginning, back in 1901, WINSMITH has had a long and proud heritage of producing high quality, precision speed reducers for the industrialized world. This fine tradition has culminated in our newest family members, the D-90® TYPE SE® Series. This logically engineered design features the highly efficient recess action gearing pioneered by WINSMITH in the D Line and Wingear Series. For new applications, we can now offer greater mounting arrangements than ever before.
Select from our adaptable steel bases, our "J" mount, universal flanges, or vertical brackets, or for large volume requirements, individualized angle brackets to meet your specific needs. If you require other modifications to your units, remember, WINSMITH offers and does more modifications, on a daily basis, than any other worm gear manufacturer.

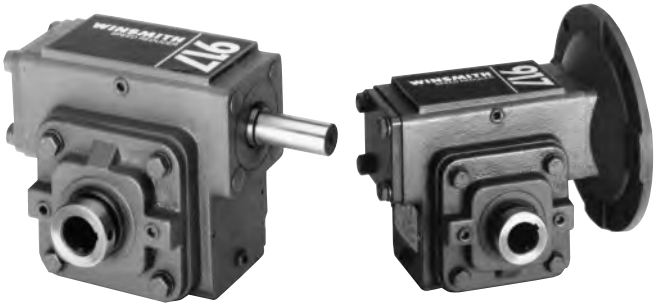
Take a few minutes to look over the range and scope of this new series. For the full story, refer to the detailed sections of the catalog, referenced below, or see the pictorial index on pages 4-11.



The basic DN and MDN units (footless) have predrilled and tapped holes in the top and bottom, ready to accept a variety of pre-engineered steel bases to match our previous D Line and Wingear models. Or you can have custom designed bases if that is what your situation requires. (See page 120)



The DV and MDV units are vertical shaft orientations. Individual designed angle brackets are possible in large quantities. Low or high brackets for motor flange clearance are available. (See page 126)



The DSN and MDSN units are hollow shaft versions with all the features listed above. (See page 130)

Hollow shaft units are also available with an output flange (See page 134) or torque arm. (See page 132)

The DL and MDL units have a drop bearing design for greater overhung load applications. These units are available in sizes 926, 930, 935 and 943. (See page 138)

All of these models are available in double reduction versions and with coupling style motor adapters. (See individual models starting on page 156)

Other variations such as "J" mounted brackets, vertical brackets, special bases, and numerous accessories are also available. (See page 188 for additional accessories)

UNITS FOR SPECIAL APPLICATIONS

THE S EQUALIZER®: The ventless unit contains an internal expansion chamber, allowing different mounting positions without the necessity of relocating vent plugs and drain holes. It is ideal for hostile environments, like high moisture areas, which can have serious detrimental effects on the internal components of the speed reducer. (See page 173)

S EQUALIZER®

MAXIMIZER® SERIES: Severe environment speed reducers for the most hostile environments in today's power transmission applications. The features of these reducers create an effective barrier between the outside atmosphere and lubricants inside the unit to insure long, contaminant-free operation. (See page 172).

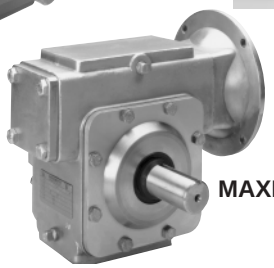
The BASIC ENVIRONMENT PROTECTION reducer includes features such as epoxy paint, synthetic lubrication, plunger pressure vent and flingers on the output shafts.

The MAXIMIZER® *PLUS* reducer provides increased protection from rust with stainless steel output shafts, stainless steel fasteners, and a unique triple clad corrosion resistant coating system.

The MAXIMIZER® STAINLESS, in addition to the MAXIMIZER® *PLUS* features has stainless steel housings, an easy wash contoured design, and optional food grade synthetic lubrication.

BASIC ENVIRONMENT PROTECTION

MAXIMIZER® *PLUS*



MAXIMIZER® STAINLESS

METRIC C-FACE: WINSMITH® D-90® TYPE SE® high efficiency, worm gear speed reducers are now available with metric input flanges to match up with IEC motor frames. These are factory standard models, modified with metric dimensioned flanges, worm and shafts, to meet IEC dimensions for mounting motors to WINSMITH C-Face speed reducers. (See page 175.)

METRIC C-FACE

S-ELIMINATOR™: WINSMITH's unique answer to a low backlash unit that does not have to be taken out of service for adjustments. Now you can control your backlash, as required, without the drastic production downtime of other designs. See page 174 and also MOTION CONTROL Catalog, 400.

S-ELIMINATOR™

DOUBLE DRIVER: The Double Driver was developed to provide a NEMA C-flange interface on the output of the D-90® TYPE SE® units. Additionally, the product is well suited to provide an output register for any piece of equipment. The Double Driver is made up of a DN, CDN or MDN unit with an output flange and optional output shaft to accommodate a NEMA C-flange interface. (See page 179)

DOUBLE DRIVER

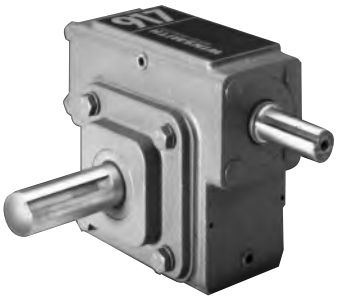
MODEL QUICK SELECTION GUIDE

HOW TO USE THIS CATALOG

Every effort has been made to provide and arrange all of the information you will need to easily select the proper speed reducer for your application. By starting at the beginning of the catalog, you may use the table of contents to find specific information or follow the pages in order as they logically lead you through a pictorial index of models and then into a quick select charts for the proper size unit. For those with more complex applications, continue on into the detailed rating tables and proceed on to the dimension pages for the individual models. Next you encounter various adaptations, mounting, and accessories that can complete the requirements of your application.

Should you require additional help or information, do not hesitate to contact your local authorized distributor, representative, or the WINSMITH factory.

SINGLE REDUCTION UNITS



DN
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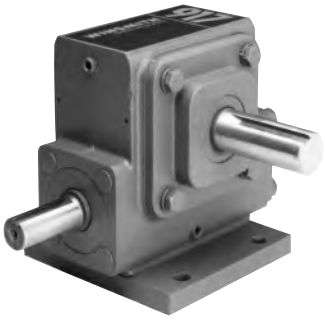
MDN
See Page 121

CDN
See Page 121

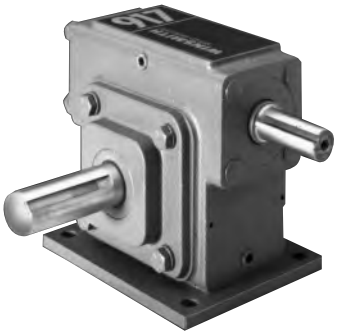


DB
See Page 122

MDB
See Page 123

Depending on size and base selection, the coupling style adapter may interfere with the mounting base. Consult the factory.

CDB
See Page 123



DT
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MDT
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CDT
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Models in blue letters are stock standard in all sizes.

SINGLE REDUCTION UNITS

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CDV
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DJ
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MDJ
See Page 129

CDJ
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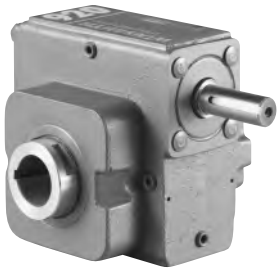
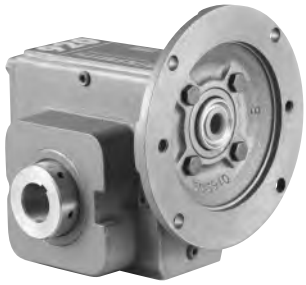


DSN
See Page 130



MDSN
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CDSN
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DSR
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DL
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S-ELIMINATOR™
(Adjustable Backlash)
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CWB
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WT
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MWT
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CWT
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WU
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MWU
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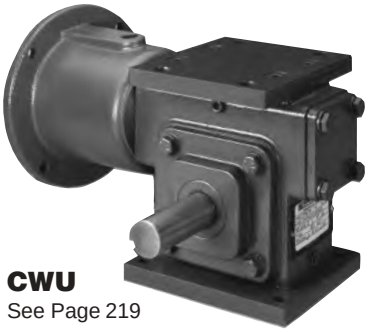


CWU
See Page 219

GEAR GRAPHICS™: Available on CD or diskettes, or from our web site, the GEAR GRAPHICS™ reducer selection program produces full scale dxf drawings of many of our complete line of D-90® TYPE SE® and TYPE DE® speed reducers. A user-friendly graphics menu produces choices of horsepower, torque, or model number selection options, as well as ratio, assembly, and unit size and models.

GEAR GRAPHICS™

SELECTED ACCESSORIES AND KITS

For a complete selection of accessories see pages 188-191.

FLEXIBLE COUPLINGS

COUPLING STYLE MOTOR ADAPTERS

TENSION ADJUSTMENT SPACES AND BASES

"U" FLANGE

HOLLOW SHAFT COVER

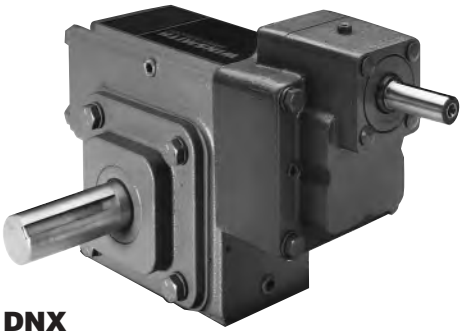
VERTICAL HIGH/LOW BRACKETS

BASE PLATES

"J" MOUNT BRACKETS

MODEL QUICK SELECTION GUIDE

HELICAL/WORM REDUCTION UNITS



DNX
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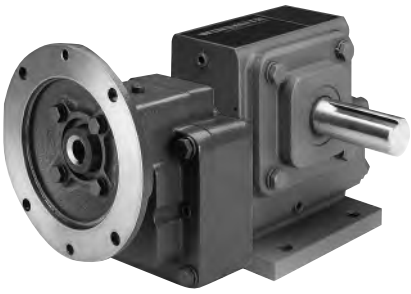
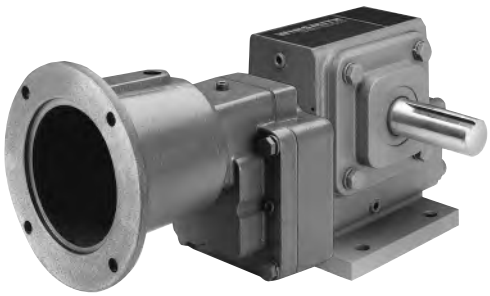
MDNX
See Page 141

CDNX
See Page 141

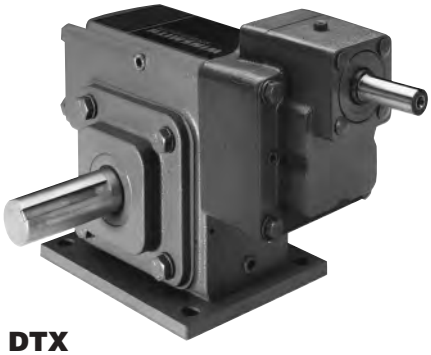
DBX
See Page 142



MDBX
See Page 143



CDBX
See Page 143



DTX
See Page 144

MDTX
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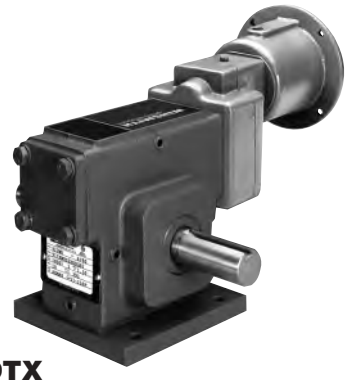

CDTX
See Page 145

DVX
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MDVX
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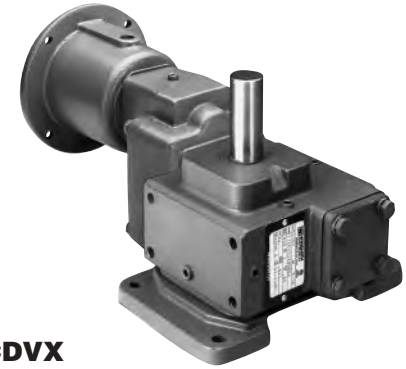

CDVX
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HELICAL/WORM REDUCTION UNITS

DSNX
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CDSNX
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DSRX
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MDSRX
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CDSRX
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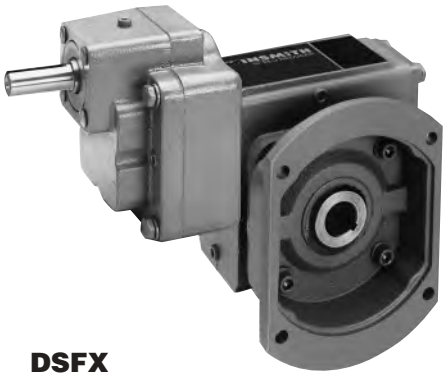

DSFX
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MDSFX
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CDSFX
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DLX
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MDLX
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DOUBLE REDUCTION UNITS

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MDND
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CDND
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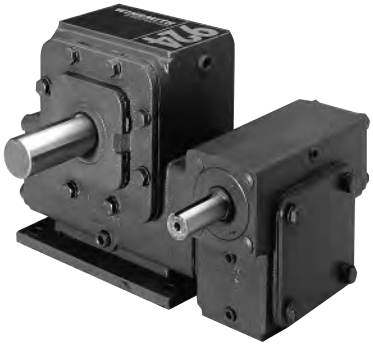
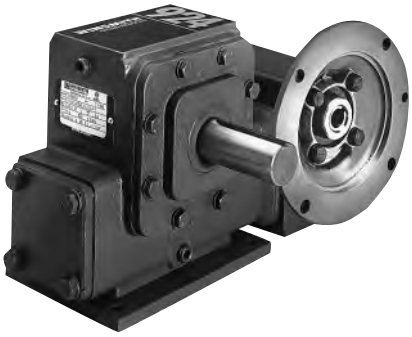
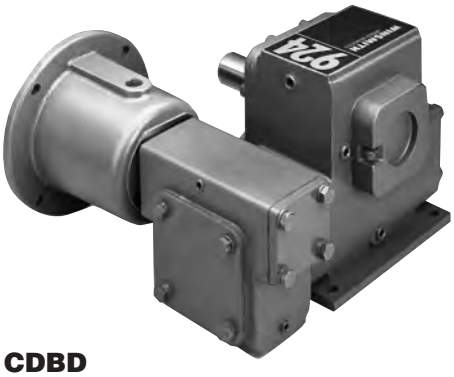


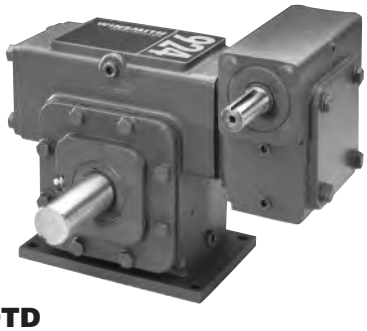
DBD
See Page 158



MDBD
See Page 159



CDBD
See Page 159



DTD
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MDTD
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CDTD
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CDSND
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DSRD
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MDSRD
See Page 167

CDSRD
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DSFD
See Page 168

MDSFD
See Page 169

CDSFD
See Page 169

DLD
See Page 170

MDLD
See Page 171

CDLD
See Page 171

QUICK SELECT CHARTS

For an in depth discussion on selection procedures see pages 17-18.

SINGLE REDUCTION MODELS: TORQUE OR HORSEPOWER — 1750 RPM INPUT

1. Multiply the Applied Horsepower (motor horsepower) or Output Torque by the required Service Factor to obtain the design load.
2. For the applicable Ratio or Output RPM read across until the Unit Rating meets or exceeds the Design Load (from Step 1.)
3. If the selection falls within a shaded area, check the table below and verify that the Applied Load does not exceed the Thermal Capacity. If so, choose the minimum size that is not thermally limited or consider using synthetic oil. See rating pages 22-119.
4. Refer to page 17 for additional unit selection considerations such as available models, shaft loading and dimensions.

NOMINAL OUTPUT RPM	NOMINAL RATIO*		910	913	917	920	924	926	930	935	943
438	4	Output Torque	N/A	149	269	411	653	852	1289	1838	2861
		Input Horsepower	N/A	1.14	2.04	3.08	4.85	6.34	9.51	13.50	20.80
350	5	Output Torque	82	170	330	457	726	959	1424	2007	3133
		Input Horsepower	0.51	1.05	2.01	2.76	4.38	5.75	8.47	11.88	18.35
233	7.5	Output Torque	N/A	190	375	530	834	1095	1595	2323	3580
		Input Horsepower	N/A	0.80	1.55	2.17	3.41	4.44	6.41	9.27	14.21
175	10	Output Torque	97	203	396	561	892	1179	1748	2511	3857
		Input Horsepower	0.33	0.67	1.25	1.75	2.77	3.63	5.33	7.64	11.69
117	15	Output Torque	104	217	427	606	971	1287	1910	2717	4157
		Input Horsepower	0.25	0.51	0.94	1.32	2.10	2.75	4.03	5.71	8.70
87.5	20	Output Torque	104	221	432	615	988	1312	1959	2730	4290
		Input Horsepower	0.20	0.41	0.75	1.04	1.66	2.17	3.19	4.42	6.92
70.0	25	Output Torque	103	222	431	613	988	1312	1768	2774	4272
		Input Horsepower	0.17	0.35	0.62	0.86	1.38	1.79	2.38	3.69	5.78
58.3	30	Output Torque	107	223	442	630	1007	1338	1989	2816	4295
		Input Horsepower	0.16	0.31	0.56	0.78	1.24	1.60	2.33	3.29	4.99
43.8	40	Output Torque	104	220	431	617	989	1316	1967	2741	4289
		Input Horsepower	0.13	0.25	0.44	0.61	0.97	1.25	1.83	2.53	3.93
35.0	50	Output Torque	99	213	415	591	949	1266	1902	2681	4180
		Input Horsepower	0.11	0.21	0.37	0.50	0.79	1.02	1.49	2.07	3.21
29.2	60	Output Torque	N/A	202	391	557	896	1193	1796	2552	3976
		Input Horsepower	N/A	0.18	0.31	0.42	0.66	0.85	1.23	1.72	2.67
21.9	80	Output Torque	N/A	N/A	311	437	735	979	1478	2115	3299
		Input Horsepower	N/A	N/A	0.21	0.27	0.46	0.58	0.84	1.18	1.82
17.5	100	Output Torque	N/A	N/A	236	355	576	767	1160	1665	2601
		Input Horsepower	N/A	N/A	0.14	0.20	0.33	0.41	0.59	0.82	1.26

THERMAL LIMITATIONS FOR SHADED AREAS ABOVE

1750 RPM		RATIO											
		4	5	7.5	10	15	20	25	30	40	50	60	80
913	Torque	89											
	Horsepower	.98											
917	Torque	209											
	Horsepower	1.59											
920	Torque	254	418										
	Horsepower	1.92	2.53										
924	Torque	506	616	784		960							
	Horsepower	3.77	3.72	3.20		2.08							
926	Torque	513	665	847	995	1054	1133	1195	1099	1166	1223		
	Horsepower	3.84	4.00	3.44	3.07	2.26	1.88	1.64	1.33	1.12	0.99		
930	Torque	703	902	1148	1339	1425	1535	1618	1490	1582	1654	1706	
	Horsepower	5.22	5.39	4.63	4.10	3.02	2.51	2.18	1.76	1.48	1.30	1.17	
935	Torque	1038	1221	1557	1696	1787	1946	2055	1848	1992	2091	2163	
	Horsepower	7.64	7.25	6.23	5.18	3.78	3.17	2.75	2.18	1.85	1.63	1.47	
943	Torque	1631	1812	2042	2155	2246	2426	2251	2304	2469	2579	2658	2764
	Horsepower	11.90	10.65	8.14	6.57	4.74	3.95	3.08	2.71	2.30	2.01	1.81	1.54

*For 4:1 ratio ratings, see selection pages 26-57.

SINGLE REDUCTION MODELS: TORQUE OR HORSEPOWER — 1160 RPM INPUT

(See previous page for instructions on the use of chart.)

NOMINAL OUTPUT RPM	NOMINAL RATIO*		910	913	917	920	924	926	930	935	943
290	4	Output Torque	N/A	179	337	515	840	1061	1585	2324	3618
		Input Horsepower	N/A	.92	1.72	2.59	4.17	5.29	7.83	11.40	17.60
232	5	Output Torque	90	197	402	572	911	1205	1776	2539	3963
		Input Horsepower	0.38	0.82	1.64	2.32	3.68	4.84	7.09	10.06	15.52
155	7.5	Output Torque	N/A	215	436	629	1022	1370	2061	2917	4392
		Input Horsepower	N/A	0.61	1.21	1.73	2.80	3.73	5.56	7.81	11.70
116	10	Output Torque	106	229	451	649	1057	1416	2163	3152	4761
		Input Horsepower	0.24	0.51	0.96	1.36	2.20	2.93	4.43	6.45	9.71
77.3	15	Output Torque	113	244	484	697	1147	1539	2346	3408	5151
		Input Horsepower	0.19	0.39	0.72	1.02	1.67	2.22	3.34	4.84	7.30
58.0	20	Output Torque	113	247	485	701	1151	1548	2367	3477	5365
		Input Horsepower	0.15	0.31	0.57	0.80	1.31	1.73	2.61	3.82	5.88
46.4	25	Output Torque	112	247	481	693	1143	1532	2349	3479	5287
		Input Horsepower	0.12	0.26	0.47	0.66	1.08	1.42	2.14	3.15	4.89
38.7	30	Output Torque	116	251	500	725	1184	1593	2429	3528	5334
		Input Horsepower	0.12	0.24	0.44	0.61	0.99	1.30	1.95	2.83	4.26
29.0	40	Output Torque	112	246	483	702	1149	1548	2367	3479	5368
		Input Horsepower	0.09	0.19	0.34	0.48	0.77	1.01	1.51	2.21	3.40
23.2	50	Output Torque	107	237	463	667	1093	1475	2264	3354	5246
		Input Horsepower	0.08	0.16	0.28	0.39	0.62	0.82	1.22	1.80	2.81
19.3	60	Output Torque	N/A	224	435	627	1027	1381	2124	3162	4994
		Input Horsepower	N/A	0.14	0.24	0.32	0.52	0.68	1.01	1.48	2.34
14.5	80	Output Torque	N/A	N/A	346	486	837	1125	1734	2588	4144
		Input Horsepower	N/A	N/A	0.16	0.21	0.36	0.46	0.69	1.01	1.61
11.6	100	Output Torque	N/A	N/A	257	394	654	879	1356	2022	3264
		Input Horsepower	N/A	N/A	0.11	0.15	0.26	0.33	0.48	0.69	1.12

THERMAL LIMITATIONS FOR SHADED AREAS ABOVE

1750 RPM		RATIO											
		4	5	7.5	10	15	20	25	30	40	50	60	80
917	Torque	278											
	Horsepower	1.42											
920	Torque	345											
	Horsepower	1.74											
924	Torque	700											
	Horsepower	3.48											
926	Torque	703	1149	1359	1439								
	Horsepower	3.51	3.13	2.81	2.08								
930	Torque	949	1529	1791	1907	2059	2175	1996	2124	2225			
	Horsepower	4.70	4.13	3.68	2.72	2.28	1.98	1.61	1.36	1.20			
935	Torque	1383	2052	2236	2357	2571	2718	2438	2632	2766	2865		
	Horsepower	6.80	5.51	4.59	3.36	2.84	2.47	1.97	1.68	1.49	1.35		
943	Torque	2153	2681	2829	2946	3180	2953	3022	3236	3380	3484	3624	
	Horsepower	10.50	7.16	5.79	4.20	3.51	2.76	2.44	2.07	1.83	1.65	1.42	

*For 4:1 ratio ratings, see selection pages 26-57.

QUICK SELECT CHARTS

For an in depth discussion on selection procedures see pages 17-18.

DOUBLE REDUCTION MODELS: TORQUE OR HORSEPOWER* 1750 RPM INPUT

(D) Double Reduction Worm Gear
(H) Double Reduction Helical/Worm Gear

See page 12 for instructions on the use of chart.

NOMINAL OUTPUT RPM	NOMINAL RATIO		917	920	924	926	930	935	943
70.0	25 (H)	Output Torque			1317	1812	2176	2191	6650
		Input Horsepower			1.70	2.32	2.77	2.77	8.24
58.3	30 (H)	Output Torque			1352	1865	2230	2244	6886
		Input Horsepower			1.46	2.00	2.38	2.38	7.33
46.1	38 (H)	Output Torque			1352	1867	2936	3238	7442
		Input Horsepower			1.18	1.62	2.53	2.77	6.33
35.0	50 (H)	Output Torque			1336	1825	2901	4208	7920
		Input Horsepower			.889	1.20	1.90	2.77	5.22
35.0	50 (D)	Output Torque	558	833	1423	1708	2896	3870	7899△
		Input Horsepower	.445	.650	1.07	1.25	2.06	2.76	5.08△
29.2	60 (H)	Output Torque			1358	1858	2962	4296	8174
		Input Horsepower			.759	1.03	1.63	2.38	4.64
23.3	75 (H)	Output Torque			1442	1971	3116	4932	8454
		Input Horsepower			.683	.922	1.44	2.30	3.96
23.3	75 (D)	Output Torque	574	845	1440	1968	3111	4922	8431△
		Input Horsepower	.321	.457	.761	1.02	1.57	2.49	3.76△
19.4	90 (H)	Output Torque			1466	2006	3179	5063	8717
		Input Horsepower			.585	.791	1.24	1.99	3.53
17.5	100 (H)	Output Torque			1422	1944	3071	4858	8450
		Input Horsepower			.530	.713	1.12	1.77	3.10
17.5	100 (D)	Output Torque	570	839	1420	1941	3067	4849	8429
		Input Horsepower	.256	.362	.596	.793	1.22	1.92	3.34
14.6	120 (H)	Output Torque			1443	1975	3128	4974	8691
		Input Horsepower			.453	.611	.958	1.53	2.76
11.7	150 (H)	Output Torque			1480	2028	3200	5065	8682
		Input Horsepower			.418	.562	.873	1.40	2.42
11.7	150 (D)	Output Torque	596	881	1513	2076	3307	5329	9378
		Input Horsepower	.189	.267	.439	.585	.902	1.46	2.56
9.72	180 (H)	Output Torque			1503	2063	3263	5196	8948
		Input Horsepower			.360	.484	.755	1.22	2.18
8.75	200 (H)	Output Torque			1414	1936	3057	4835	8411
		Input Horsepower			.325	.435	.674	1.08	1.90
8.75	200 (D)	Output Torque	590	873	1486	2038	3243	5210	9294
		Input Horsepower	.153	.214	.346	.458	.702	1.13	2.01

*There is no thermal rating limitation on double reduction sizes listed.
△Synthetic oil is required to eliminate thermal rating limitation. Ratings shown reflect the use of synthetic oil.

DOUBLE REDUCTION MODELS: TORQUE OR HORSEPOWER* 1750 RPM INPUT

(D) Double Reduction Worm Gear
(H) Double Reduction Helical/Worm Gear

See page 12 for instructions on the use of chart.

NOMINAL OUTPUT RPM	NOMINAL RATIO		917	920	924	926	930	935	943
7.00	250 (H)	Output Torque			1327	1821	2882	4569	8029
		Input Horsepower			.261	.350	.543	.870	1.56
5.83	300 (H)	Output Torque			1345	1848	2931	4670	8244
		Input Horsepower			.225	.302	.470	.758	1.40
5.83	300 (D)	Output Torque	607	899	1551	2132	3409	5545	9891
		Input Horsepower	.118	.164	.262	.346	.528	.859	1.53
4.86	360 (H)	Output Torque			1256	1715	2721	4339	7717
		Input Horsepower			.188	.249	.388	.626	1.17
3.50	500 (D)	Output Torque	602	893	1527	2099	3354	5439	10214
		Input Horsepower	.085	.116	.180	.235	.351	.564	1.14
2.33	750 (D)	Output Torque	628	938	1596	2200	3513	5724	10239
		Input Horsepower	.074	.099	.153	.197	.292	.476	.861
1.75	1000 (D)	Output Torque	606	900	1541	2120	3392	5518	10041
		Input Horsepower	.062	.082	.123	.156	.225	.358	.649
1.17	1500 (D)	Output Torque	632	945	1611	2223	3555	5814	10455
		Input Horsepower	.055	.072	.106	.134	.191	.308	.558
0.88	2000 (D)	Output Torque	601	899	1530	2109	3369	5481	9919
		Input Horsepower	.048	.061	.089	.111	.156	.244	.449
0.58	3000 (D)	Output Torque	572	843	1431	1976	3164	5152	8906
		Input Horsepower	.041	.050	.072	.088	.121	.184	.328
0.49	3600 (D)	Output Torque	535	786	1333	1829	2798	4728	7993
		Input Horsepower	.038	.045	.065	.078	.102	.158	.277
0.42	4000 (D)	Output Torque	422	596	1433	1980	3172	5167	8906
		Input Horsepower	.033	.037	.065	.078	.104	.158	.282
0.35	4800 (D)	Output Torque	422	597					
		Input Horsepower	.032	.036					
0.35	5000 (D)	Output Torque			1435	1982	3175	5174	8906
		Input Horsepower			.059	.071	.097	.145	.259
0.29	6000 (D)	Output Torque	303	481	1337	1834	2798	4728	.222
		Input Horsepower	.027	.031	.054	.064	.082	.125	7993
0.22	8000 (D)	Output Torque	N/A	N/A	988	1935	2050	3826	6560
		Input Horsepower	N/A	N/A	.045	.051	.062	.095	.175
0.18	10000 (D)	Output Torque	N/A	N/A	818	1145	1696	2946	5534
		Input Horsepower	N/A	N/A	.041	.045	.054	.075	.148

*There is no thermal rating limitation on double reduction sizes listed.

QUICK SELECT CHARTS

For an in depth discussion on selection procedures see pages 17-18.

SINGLE REDUCTION MODELS: GEARMOTOR SELECTION* — 1750 RPM INPUT

NOMINAL OUTPUT RPM	NOMINAL RATIO*	SERVICE FACTOR	INPUT HORSEPOWER											
			¼	⅓	½	¾	1	1½	2	3	5	7½	10	15
438	4△	1.00	913	913	913	913	913	917	**917**	**920**	**926**	**930**	**935**	**943**
		1.25	913	913	913	913	917	917	**920**	924	**926**	**930**	**935**	**943**
		1.50	913	913	913	913	917	920	**920**	924	930	935	943	—
		1.75	913	913	913	917	917	920	924	926	930	935	943	—
350	5	1.00	910	910	910	913	913	917	917	924	**926**	**930**	**935**	**943**
		1.25	910	910	913	913	917	917	920	924	930	935	943	**943**
		1.50	910	910	913	917	917	920	924	924	930	935	943	—
		1.75	910	913	917	917	917	920	924	926	930	943	943	—
233	7½	1.00	913	913	913	913	917	917	920	924	**930**	935	**943**	—
		1.25	913	913	913	917	917	920	924	926	**930**	935	**943**	—
		1.50	913	913	913	917	917	920	924	926	935	943	**943**	—
		1.75	913	913	917	917	920	924	924	930	935	943	—	—
175	10	1.00	910	910	913	917	917	920	924	926	**930**	**935**	**943**	—
		1.25	910	913	913	917	917	924	924	930	935	**943**	—	—
		1.50	913	913	917	917	920	924	926	930	935	**943**	—	—
		1.75	913	913	917	917	920	924	926	930	943	—	—	—
117	15	1.00	910	913	913	917	920	924	924	930	**935**	**943**	—	—
		1.25	913	913	917	917	920	924	926	930	**943**	—	—	—
		1.50	913	913	917	920	924	926	930	935	**943**	—	—	—
		1.75	913	917	917	920	924	926	930	935	**943**	—	—	—
87.5	20	1.00	913	913	917	917	920	924	**926**	**930**	**943**	—	—	—
		1.25	913	913	917	920	924	926	930	935	**943**	—	—	—
		1.50	913	917	917	924	924	926	930	935	—	—	—	—
		1.75	917	917	920	924	926	930	935	943	—	—	—	—
70.0	25	1.00	913	913	917	920	924	**926**	**930**	**935**	**943**	—	—	—
		1.25	913	917	917	924	924	930	930	**935**	—	—	—	—
		1.50	917	917	920	924	926	930	935	943	—	—	—	—
		1.75	917	917	920	924	926	930	935	943	—	—	—	—
58.3	30	1.00	913	913	917	920	924	926	930	935	**943**	—	—	—
		1.25	913	917	920	924	924	930	935	**943**	—	—	—	—
		1.50	917	917	920	924	926	930	935	**943**	—	—	—	—
		1.75	917	917	924	926	930	935	943	**943**	—	—	—	—
43.8	40	1.00	913	917	920	924	924	930	935	**943**	—	—	—	—
		1.25	917	917	920	924	926	930	935	**943**	—	—	—	—
		1.50	917	920	924	926	930	935	943	—	—	—	—	—
		1.75	917	920	924	926	930	935	943	—	—	—	—	—
35.0	50	1.00	917	917	920	924	926	**930**	935	**943**	—	—	—	—
		1.25	917	920	924	926	930	935	943	—	—	—	—	—
		1.50	917	920	924	930	930	943	943	—	—	—	—	—
		1.75	920	924	924	930	935	943	—	—	—	—	—	—
29.2	60	1.00	920	920	924	926	930	935	**943**	—	—	—	—	—
		1.25	920	920	924	930	930	943	**943**	—	—	—	—	—
		1.50	920	924	926	930	935	943	—	—	—	—	—	—
		1.75	920	924	926	930	935	943	—	—	—	—	—	—
21.9	80	1.00	920	924	926	930	935	943	—	—	—	—	—	—
		1.25	924	924	926	935	935	943	—	—	—	—	—	—
		1.50	924	924	930	935	943	—	—	—	—	—	—	—
		1.75	924	926	930	943	943	—	—	—	—	—	—	—
17.5	100	1.00	924	924	930	935	943	—	—	—	—	—	—	—
		1.25	924	926	930	943	943	—	—	—	—	—	—	—
		1.50	924	930	935	943	—	—	—	—	—	—	—	—
		1.75	926	930	935	943	—	—	—	—	—	—	—	—

REFER TO C-LINE CATALOG

AVAILABLE IN D-90® TYPE DE®

*Selections in **bold type** require synthetic oil to accommodate thermal capacity.
△4:1 ratio not available in Size 910.
Refer to the C Line Catalog #100 for selections.
Refer to the D-90® TYPE DE® Catalog #190 for selections.

WINSMITH worm gear speed reducers can be selected in one of two ways:

1. When the INPUT HP and ratio or relative shaft speeds are known, select the unit based on the input HP capacity.

2. When the OUTPUT TORQUE and ratio or relative shaft speeds are known, select the unit based on the unit torque capacity.

The following selection procedure and two examples illustrate both conditions.

SELECTION PROCEDURE

1. Determine the SERVICE FACTOR from the table on pages 224-226 for the given application and daily operating service duration. Modify this value if necessary for other types of prime movers and frequency of starting and stopping based on the tables on page 226.

2. Determine the RATIO or RPM required.

$$\text{RATIO} = \frac{\text{INPUT RPM}}{\text{OUTPUT RPM}}$$

$$\text{INPUT RPM} = \text{RATIO} \times \text{OUTPUT RPM}$$

$$\text{OUTPUT RPM} = \frac{\text{INPUT RPM}}{\text{RATIO}}$$

For convenience, this catalog lists Mechanical Horsepower and Torque capacities based on service factors of 1.0, 1.25, 1.50 and 1.75. If the service factor based on step 1 (above) falls in this category, proceed using step 3. If your required service factor is other than one of these values, proceed to step 3A. The Quick Select Charts on pages 12-16 can also be used in lieu of step 3A if input speeds are compatible.

3. Determine the proper UNIT SIZE by referring to the rating charts on pages 22-119. For the proper RATIO, INPUT RPM and SERVICE FACTOR, select the unit size with a MECHANICAL CAPACITY that meets or exceeds the applied input HP or output torque. Proceed to step 4.

3A. Calculate the DESIGN HP or DESIGN TORQUE by multiplying the applied INPUT HP or OUTPUT TORQUE by the SERVICE FACTOR determined in step one or from customer specifications.

Determine the proper UNIT SIZE by referring to the rating charts on pages 22-119. For the proper RATIO and INPUT RPM, select the unit size with a MECHANICAL CAPACITY from the 1.00 Service Factor Column that meets or exceeds the DESIGN HP or TORQUE. Proceed to step 4.

4. If the application involves continuous operation (as opposed to intermittent operation), verify that the THERMAL CAPACITY is not exceeded by the applied load (HP or torque). If the thermal capacity is exceeded, consider the next larger unit size or consider using synthetic oil based on thermal capacities listed. When using synthetic oil, unit efficiencies are significantly improved so the input HP ratings will be less for a given output torque capacity. This should not be construed as a lower unit capacity but as superior operating performance.

5. Select the reducer model that best suits the application specifications as illustrated on pages 4-11 and check to see if the size determined in step 4 is available in this model.

6. Check OVERHUNG LOADS on all shafts and/or THRUST LOAD on the output shaft. Refer to the ratings on pages 23-119 and explanation in Engineering Section on pages 228 and 229.

7. Check dimensions, shaft arrangements, and available frame sizes for motorized units from the information on pages 120-171.

8. Refer to pages 18 and 19 for instructions on “HOW TO ORDER.”

HOW TO SELECT

For quick select charts see pages 12-16.

EXAMPLE A

(Ouput Torque Given)

A pure liquid agitator will operate 24 hours per day at approximately 40 RPM at a load of 750 inch pounds. The reducer will be driven by an 1160 RPM motor.

1. Service Factor (from page 224) = 1.25
2. Ratio = $\frac{1160}{40}$ = 29:1, use 30:1
3. Unit selection based on 750 inch pounds and 1.25 service factor — see chart below for selection at 1160 RPM input.

3A. Design torque = 750 x 1.25 = 938 inch pounds. Unit selection based on design torque and mechanical rating in 1.00 SF column — see chart below for selection at 1160 RPM input.

4. The thermal capacity is not exceeded so a 924 unit is suitable for this application.

EXAMPLE B

(Input HP Given)

A reducer is required to direct drive the headshaft of a non-uniformly loaded belt conveyor at a speed of 30 RPM. The conveyor will operate 24 hours per day and is driven by a ¾ HP motor at 1750 RPM.

1. Service factor (from page 224) = 1.50
2. Ratio = $\frac{1750}{30}$ = 58.33, use 60-1
3. Unit selection based on ¾ HP and 1.50 service factor — see chart below for selection at 1750 RPM input.

3A. Design HP = .75 x 1.50 = 1.125 HP. Unit selection based on design HP and mechanical rating in 1.00 SF column — see chart below for selection at 1750 RPM input.

4. The thermal capacity is not exceeded so a 930 unit is suitable for this application.

REDUCER SIZE 924

2.375 CENTER DISTANCE			MECHANICAL[3]						THERMAL[4]	
			1.00 SERVICE FACTOR				1.25 SF			
RATIO[1]	INPUT RPM[2]	OUTPUT RPM	INPUT HP	OUTPUT HP	OUTPUT TORQUE	EFF	INPUT HP	OUTPUT TORQUE	INPUT HP	OUTPUT TORQUE
30 (30)	2500	83	1.42	1.08	820	77	1.15	656	1.25	716
	1750	58	1.24	0.93	1007	76	1.00	806	1.23	1002
	1160	39	0.99	0.73	1184	73	0.80	947	0.99	1184
	870	29	0.82	0.59	1282	72	0.66	1026	0.82	1282
	600	20	0.63	0.44	1380	69	0.51	1104	0.63	1380
	300	10	0.37	0.24	1498	65	0.29	1199	0.37	1498
	100	3.3	0.14	0.08	1583	60	0.11	1266	0.14	1583

REDUCER SIZE 930

3.000 CENTER DISTANCE			MECHANICAL[3]						THERMAL[4]	
			1.00 SERVICE FACTOR				1.25 SF			
RATIO[1]	INPUT RPM[2]	OUTPUT RPM	INPUT HP	OUTPUT HP	OUTPUT TORQUE	EFF	INPUT HP	OUTPUT TORQUE	INPUT HP	OUTPUT TORQUE
60 (60)	2500	42	1.38	0.96	1452	69	1.13	1161	1.22	1267
	1750	29	1.23	0.83	1796	68	1.00	1437	1.17	1706
	1160	19	1.01	0.65	2124	65	0.81	1699	1.01	2124
	870	15	0.85	0.53	2306	63	0.68	1845	0.85	2306
	600	10	0.66	0.40	2490	60	0.53	1992	0.66	2490
	300	5.0	0.39	0.22	2712	55	0.32	2169	0.39	2712
	100	1.7	0.15	0.07	2798	49	0.12	2238	0.15	2798

HOW TO ORDER

When ordering a new WINSMITH® D-90® TYPE SE® worm gear speed reducer, you will need to provide the size (or center distance), the model designation (DT, MDN, MDTD, etc.), ratio, assembly, motor frame and output shaft bore, if applicable, plus any additional information relating to specific options. The chart on the next page is a guide for identifying this information and for constructing the end unit part number for standard units.

CAUTION: This chart is a general reference for most standard configurations and options.

For more information relating to models, options, or special features not listed, please consult the factory or your local sales office, listed in the back of this catalog.

When ordering a replacement unit, it is important that you provide the WINSMITH end unit part number, which completely describes the unit. This information, sometimes called “serial number”, is available from the nameplate pinned to every WINSMITH speed reducer. Having this information available expedites the order and helps to insure that the correct part number is ordered.

PART NUMBER NOMENCLATURE GUIDE

EXAMPLE: **Catalog Description:** D-90® Series, 3.50" Center Distance, Worm on Top, Single Reduction, Double Extended Slow Speed Shaft, 143TC Frame C-Face Input, 30:1 Ratio • **Catalog Code:** 935, MDT, LR, 143TC, 30:1 • **End Unit Part Number:** 935MDTS22000EK

When ordering a replacement unit, it is important that you provide the WINSMITH® end unit part number, which completely describes the unit. This information, sometimes called the "serial number", is available from the nameplate pinned to every WINSMITH speed reducer. Having this information available expedites the order and helps to insure that the correct part number is ordered.

9 35 m DT S 2 2 00 0 EK

SERIES

CODE	DESC	EUPN
9	D-90 SERIES	9

CENTER DISTANCE

CODE	DESC	EUPN
10	1.00"	10
13	1.33"	13
17	1.75"	17
20	2.00"	20
24	2.375"	24
26	2.625"	26
30	3.00"	30
35	3.50"	35
43	4.25"	43

INPUT STYLE

CODE	DESC	EUPN
C	C-Flange w/Coupling motor adapter	C
M	C-Flange w/Quill motor adapter	M
(blank)	Non-Motorized	X

BASIC MODEL

CODE	DESC	EUPN
	D-90 SERIES	
DB	Worm on bottom	DB
DT	Worm on top	DT
DV	Vertical output shaft	DV
DL	Drop bearing output	DL
DN	Footless solid output	DN
DJ	Vertical input shaft	DJ
DD	C-flange output (Double Driver)	DD
DSN	Footless hollow shaft output	DS
DSF	Flange mount hollow output	SF
DSR	Torque arm hollow output	SR
DSB	Foot mt.—wos bottom—hollow output	SB
DST	Foot mt.—wos top—hollow output	ST
DVY	Vertical output—drywell	DY
DSFY	Flange mt. hollow out—drywell	SY
DLY	Drop bearing—drywell	LY
	Wingear	
WB	Worm on the bottom	WB
WT	Worm on the top	WT
WU	Feet top & bottom	WU

REDUCTION STAGES

CODE	DESC	EUPN
S	Single	S
D	Double	D
T	Triple	T
X	Helical primary	X
	Single Reduction Only	
K	S-ELIMINATOR™	K
E	S EQUALIZER®	E
M	MAXIMIZER® *PLUS*	M
H	MAXIMIZER® *PLUS* & S EQUALIZER®	H
A	Stainless Steel	A
B	Basic Environmental	B

MOTOR FRAME SIZE

CODE/DESC	EUPN
42C	W
48C	V
56C	1
143-145TC/182-184C	2
182-184TC	3
213-215TC	4
254-256TC	5
213-215C	6
254-256UC	7
284-286TC	A
None (Input Shaft)	X

SHAFT ARRANGEMENT

Horizontal Units

CODE	DESC	EUPN
LR	Solid out—double ext	2
R	Solid out—right ext	3
L	Solid out—left ext	4

***Vertical Units**

CODE	DESC	EUPN
RU	S.S. right—S.S. up	2
RD	S.S. right—S.S. down	3
LU	S.S. left—S.S. up	4
LD	S.S. left—S.S. down	5
RUD	S.S. right—S.S. up & down	6
LUD	S.S. left—S.S. up & down	7

Hollow Output

CODE	DESC	EUPN
DR	Driven machine right	3
DL	Driven machine left	4
DLR	Symmetric shaft	5

Double & Triple Reduction

2-9 & A-V check with the factory

*Viewing Input (Motor end) of high speed shaft.

OUTPUT STYLE

CODE	EUPN
Solid Output Shaft	**00**

Hollow Output Shaft

CODE	DESC	EUPN
1/2	.50" Bore	08
9/16	.563" Bore	09
5/8	.625" Bore	10

(#—increase EUPN by one for each 1/16" increase in bore size)

6-3/16	6.1875"	99

Double Driver (basic model equals DD)

CODE/DESC	EUPN
Small Flange/Standard Shaft Diameter	10
Small Flange/Optional 5/8" Shaft Diameter	11
Small Flange/Optional 7/8" Shaft Diameter	12
Large Flange/Standard Shaft Diameter	20
Large Flange/Optional 1-1/8" Shaft Diameter	23
Large Flange/Optional 1-3/8" Shaft Diameter	24

RATIO

CODE	EUPN
4:1	AW
5:1	A8
7.5:1	BT
8:1	BX
10:1	B7
15:1	C1
20:1	DN
25:1	D4
30:1	EK
38:1	E2
40:1	FA
50:1	FT
60:1	GC
75:1	G7
80:1	HC
90:1	HR
100:1	HO
120:1	JM
150:1	J9
180:1	KZ
200:1	LC
250:1	L2
300:1	MM
360:1	M4
500:1	N4
750:1	P5
1000:1	QO
1500:1	R6
2000:1	S1
3000:1	TV
3600:1	T6
4000:1	U8
5000:1	UE
6000:1	UM
8000:1	3M
10000:1	U5
and others	

LUBRICANTS
WORM GEAR REDUCERS

D-90® TYPE SE®

WINSMITH®

For special applications that involve severe ambient temperature extremes or a seasonal oil requirement, WINSMITH, based on extensive testing and field experience, recommends the use of Mobil SHC synthetic lubricants.

Ambient Temperature	-30 to 15°F	16 to 50°F	51 to 95°F	51 to 95°F	96 to 131°F	96 to 131°F
Final Stage Worm Speed*	up to 2000 FPM	up to 2000 FPM	up to 450 FPM	above 450 FPM	up to 450 FPM	above 450 FPM
ISO Viscosity Grade	220	460	680	460	680	460*
AGMA Lubricant No.	5S**	#7 Compounded***	#8 Compounded***	#7 Compounded***	8 S**	7S**

Mobil	SHC 630	600W Super Cylinder	Extra Hecla Super	600W Super Cylinder	SHC 636	SHC 634
American Lubricants	SHC-90W	AGMA #7 Gear Oil	AGMA #8 Gear Oil	AGMA #7 Gear Oil	N/A	N/A
Castrol	Tribol 800/220	Tribol 1105-7C	Tribol 1105-8C	Tribol 1105-7C	Tribol 800/680	Tribol 800/460
Chevron	Tegra 220	Cylinder Oil W460	Cylinder Oil W680	Cylinder Oil W460	Tregra 680	Tegra 460
Conoco	Syncon R & O 220	Inca Oil 460	Inca Oil 680	Inca Oil 460	N/A	Syncon R & O 460
Exxon (Esso)	Teresstic SHP 220	Spartan EP 460	Spartan EP 680	Spartan EP 460	Teresstic SHP 680	Teresstic SHP 460
Fiske Brothers	SPO-MG	SPO-277	SPO-288	SPO-277	N/A	N/A
Shell	Omala RL 220	Valvata J 460	Valvata J 680	Valvata J 460	Omala RL 680	Omala RL 460
Texaco	Pinnacle 220	Vanguard 460	Vanguard 680	Vanguard 460	Pinnacle 680	Pinnacle 460

*The sliding velocity in feet per minute (FPM) for standard ratios is determined by multiplying the speed of the worm in RPM by the factor from the following table. For selecting the proper lubricant, use the speed of the worm in the final stage (input RPM divided by the first stage ratio).
**synthetic oil
***3% to 10% fatty or synthetic oils or mild EP additives

Lubricant selections are provided by the lubricant manufacturer based on AGMA recommended viscosity grades.
Viscosity grades are based on Lubrication Standard ANSI/AGMA 9005-D94.

	Nominal Ratio												
SIZE	4	5	7.5	10	15	20	25	30	40	50	60	80	100
910	—	0.153	—	0.137	0.133	0.122	0.116	0.132	0.121	0.115	—	—	—
913	0.282	0.231	0.189	0.183	0.179	0.171	0.165	0.178	0.169	0.164	0.161	—	—
917	0.402	0.303	0.229	0.201	0.193	0.180	0.172	0.189	0.176	0.170	0.166	0.161	0.133
920	0.311	0.347	0.263	0.225	0.216	0.202	0.191	0.215	0.200	0.188	0.182	0.164	0.161
924	0.388	0.412	0.312	0.261	0.256	0.236	0.223	0.249	0.231	0.216	0.210	0.201	0.196
926	0.529	0.455	0.345	0.283	0.276	0.254	0.238	0.269	0.249	0.234	0.225	0.215	0.210
930	0.582	0.520	0.395	0.327	0.317	0.291	0.273	0.307	0.285	0.269	0.258	0.246	0.241
935	0.656	0.607	0.461	0.427	0.412	0.373	0.349	0.403	0.367	0.345	0.330	0.311	0.299
943	0.710	0.633	0.588	0.568	0.553	0.507	0.558	0.544	0.501	0.475	0.457	0.435	0.422

STANDARD MOUNTING POSITIONS

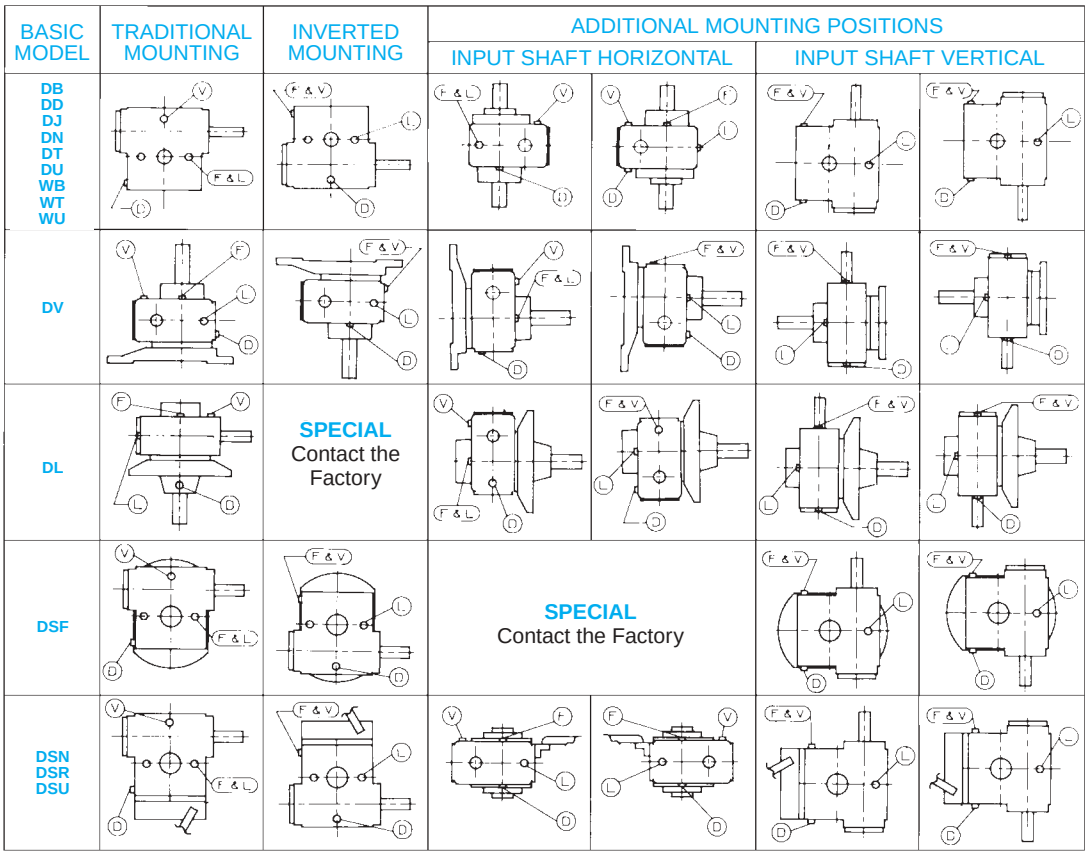


FIGURE 1. SINGLE REDUCTION MODELS

Note: Single Reduction 935 and 943 standard models are supplied with grease fittings on the input shaft to insure bearing lubrication for all mounting positions.

F = Fill Plug

V = Vent Plug

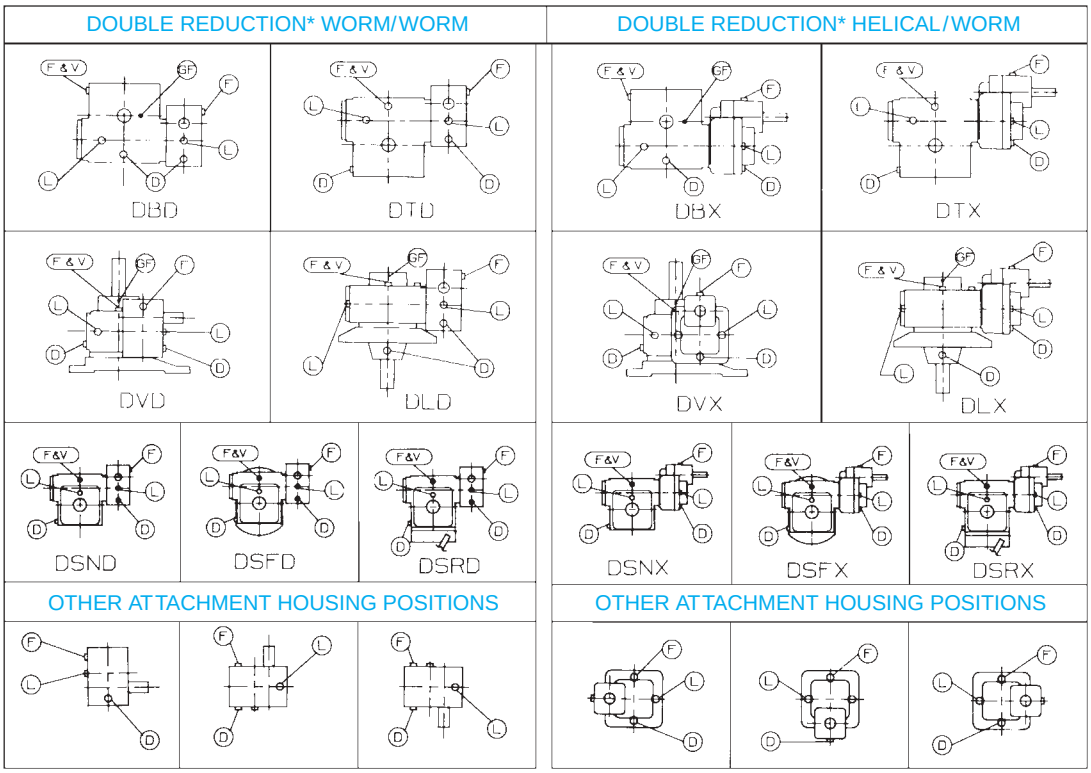
L = Level Plug

D = Drain Plug

GF = Grease Fitting

Plug locations apply to motorized units also.

Contact the factory when input speeds are less than 1160 RPM to insure proper lubrication.



*Double Reduction units are not universal mounting. Mountings other than standard require a special outline.

FIGURE 2. DOUBLE REDUCTION MODELS

REDUCER SIZE
910

SINGLE REDUCTION HORSEPOWER AND TORQUE RATINGS

WINSMITH®

1.000 CENTER DISTANCE

HORSEPOWER AND TORQUE RATINGS (INCH POUNDS)

RATIO[1]	INPUT RPM[2]	OUTPUT RPM	MECHANICAL[3] 1.00 SERVICE FACTOR INPUT HP	1.00 SF OUTPUT HP	1.00 SF OUTPUT TORQUE	1.00 SF EFF[6]	1.25 SF INPUT HP	1.25 SF OUTPUT TORQUE	1.50 SF INPUT HP	1.50 SF OUTPUT TORQUE	1.75 SF INPUT HP	1.75 SF OUTPUT TORQUE	THERMAL[4] INPUT HP	THERMAL[4] OUTPUT TORQUE	SYNTHETIC OIL MECHANICAL[5] INPUT HP	SYNTHETIC OIL MECHANICAL[5] OUTPUT TORQUE	SYNTHETIC OIL MECHANICAL[5] EFF[6]	SYNTHETIC OIL THERMAL INPUT HP	SYNTHETIC OIL THERMAL OUTPUT TORQUE
5 (5)	2500	500	0.65	0.57	72	89	0.52	58	0.44	48	0.38	41	0.65	72	0.63	72	91	0.63	72
	1750	350	0.51	0.45	82	88	0.41	65	0.35	55	0.30	47	0.51	82	0.50	82	92	0.50	82
	1160	232	0.38	0.33	90	88	0.30	72	0.26	60	0.22	52	0.38	90	0.36	90	92	0.36	90
	870	174	0.30	0.26	95	87	0.24	76	0.20	63	0.17	54	0.30	95	0.29	95	91	0.29	95
	600	120	0.22	0.19	99	86	0.18	79	0.15	66	0.13	57	0.22	99	0.21	99	91	0.21	99
	300	60	0.12	0.10	104	85	0.09	83	0.08	70	0.07	60	0.12	104	0.11	104	90	0.11	104
	100	20	0.04	0.03	108	82	0.03	86	0.03	72	0.02	62	0.04	108	0.04	108	89	0.04	108
10 (10)	2500	250	0.42	0.34	87	82	0.34	69	0.29	58	0.25	50	0.42	87	0.40	87	86	0.40	87
	1750	175	0.33	0.27	97	82	0.27	78	0.23	65	0.20	56	0.33	97	0.31	97	87	0.31	97
	1160	116	0.24	0.20	106	81	0.19	85	0.16	71	0.14	61	0.24	106	0.22	106	87	0.22	106
	870	87	0.19	0.15	111	80	0.15	89	0.13	74	0.11	63	0.19	111	0.18	111	87	0.18	111
	600	60	0.14	0.11	115	79	0.11	92	0.09	77	0.08	66	0.14	115	0.13	115	86	0.13	115
	300	30	0.07	0.06	121	77	0.06	97	0.05	81	0.04	69	0.07	121	0.07	121	85	0.07	121
	100	10	0.03	0.02	124	74	0.02	100	0.02	83	0.02	71	0.03	124	0.02	124	84	0.02	124
15 (15)	2500	167	0.32	0.25	93	76	0.26	74	0.22	62	0.20	53	0.32	93	0.30	93	82	0.30	93
	1750	117	0.25	0.19	104	76	0.21	83	0.17	69	0.15	59	0.25	104	0.23	104	82	0.23	104
	1160	77	0.19	0.14	113	75	0.15	90	0.13	75	0.11	65	0.19	113	0.17	113	82	0.17	113
	870	58	0.15	0.11	118	74	0.12	94	0.10	79	0.09	67	0.15	118	0.13	118	82	0.13	118
	600	40	0.11	0.08	123	72	0.09	98	0.07	82	0.06	70	0.11	123	0.10	123	82	0.10	123
	300	20	0.06	0.04	128	70	0.05	103	0.04	86	0.03	73	0.06	128	0.05	128	81	0.05	128
	100	6.7	0.02	0.01	132	67	0.02	106	0.01	88	0.01	76	0.02	132	0.02	132	79	0.02	132
20 (20)	2500	125	0.26	0.19	94	72	0.21	75	0.18	63	0.16	54	0.26	94	0.24	94	78	0.24	94
	1750	88	0.20	0.14	104	72	0.17	83	0.14	69	0.12	60	0.20	104	0.18	104	79	0.18	104
	1160	58	0.15	0.10	113	70	0.12	90	0.10	75	0.09	64	0.15	113	0.13	113	79	0.13	113
	870	44	0.12	0.08	117	69	0.09	94	0.08	78	0.07	67	0.12	117	0.10	117	79	0.10	117
	600	30	0.09	0.06	122	68	0.07	97	0.06	81	0.05	70	0.09	122	0.07	122	79	0.07	122
	300	15	0.05	0.03	127	66	0.04	101	0.03	84	0.03	72	0.05	127	0.04	127	78	0.04	127
	100	5	0.02	0.01	130	62	0.01	104	0.01	87	0.01	74	0.02	130	0.01	130	77	0.01	130
25 (25)	2500	100	0.22	0.15	94	68	0.18	75	0.16	63	0.14	54	0.22	94	0.20	94	75	0.20	94
	1750	70	0.17	0.11	103	68	0.14	83	0.12	69	0.10	59	0.17	103	0.15	103	76	0.15	103
	1160	46	0.12	0.08	112	67	0.10	89	0.09	74	0.07	64	0.12	112	0.11	112	76	0.11	112
	870	35	0.10	0.06	116	66	0.08	93	0.07	77	0.06	66	0.10	116	0.08	116	76	0.08	116
	600	24	0.07	0.05	120	64	0.06	96	0.05	80	0.04	68	0.07	120	0.06	120	76	0.06	120
	300	12	0.04	0.02	125	62	0.03	100	0.03	83	0.02	71	0.04	125	0.03	125	75	0.03	125
	100	4.0	0.01	0.01	128	58	0.01	102	0.01	85	0.01	73	0.01	128	0.01	128	74	0.01	128
30 (30)	2500	83	0.20	0.13	96	62	0.17	76	0.14	64	0.13	55	0.20	96	0.18	96	70	0.18	96
	1750	58	0.16	0.10	107	62	0.13	85	0.11	71	0.10	61	0.16	107	0.14	107	72	0.14	107
	1160	39	0.12	0.07	116	60	0.10	93	0.08	77	0.07	66	0.12	116	0.10	116	72	0.10	116
	870	29	0.09	0.06	121	59	0.08	97	0.06	81	0.06	69	0.09	121	0.08	121	72	0.08	121
	600	20	0.07	0.04	126	57	0.06	101	0.05	84	0.04	72	0.07	126	0.06	126	72	0.06	126
	300	10	0.04	0.02	131	54	0.03	105	0.03	88	0.02	75	0.04	131	0.03	131	71	0.03	131
	100	3.3	0.01	0.01	135	51	0.01	108	0.01	90	0.01	77	0.01	135	0.01	135	69	0.01	135

1. Numbers shown in ( ) are exact ratios.
2. If input speed is below 1160 RPM, please specify speed and mounting position to insure proper lubrication.
3. See engineering section, pages 224-226 for further discussion regarding service factors.
4. Actual input HP must not exceed the thermal input HP capacity on a continuous basis.
5. 1.00 Service Factor.
6. See engineering section, page 227, for further discussion regarding gear reducer efficiencies.

SINGLE REDUCTION
THRUST AND OVERHUNG LOAD RATINGS

REDUCER SIZE
910

OVERHUNG LOAD CAPACITIES[1]							THRUST CAPACITIES				1.000 CENTER DISTANCE	
INPUT SHAFT	OUTPUT SHAFT						OUTPUT SHAFT					
ALL MODELS	DB, DT						DB, DT				INPUT RPM	RATIO
130	195						255				2500	5 (5)
130	195						275				1750	
130	195						331				1160	
130	195						379				870	
130	195						400				600	
122	195						400				300	
115	195						400				100	
125	195						338				2500	10 (10)
125	195						379				1750	
125	195						400				1160	
125	195						400				870	
125	195						400				600	
125	195						400				300	
125	195						400				100	
100	195						400				2500	15 (15)
100	195						400				1750	
100	195						400				1160	
100	195						400				870	
100	195						400				600	
100	195						400				300	
100	195						400				100	
100	195						400				2500	20 (20)
100	195						400				1750	
100	195						400				1160	
100	195						400				870	
100	195						400				600	
100	195						400				300	
100	195						400				100	
100	195						400				2500	25 (25)
100	195						400				1750	
100	195						400				1160	
100	195						400				870	
100	195						400				600	
100	195						400				300	
100	195						400				100	
100	195						400				2500	30 (30)
100	195						400				1750	
100	195						400				1160	
100	195						400				870	
100	195						400				600	
100	195						400				300	
100	195						400				100	

1. Overhung load given at one shaft diameter from housing. All values given in pounds.

REDUCER SIZE
910

SINGLE REDUCTION HORSEPOWER AND TORQUE RATINGS

WINSMITH®

1.000 CENTER DISTANCE			HORSEPOWER AND TORQUE RATINGS (INCH POUNDS)																
			MECHANICAL[3]										THERMAL[4]		SYNTHETIC OIL				
			1.00 SERVICE FACTOR				1.25 SF		1.50 SF		1.75 SF				MECHANICAL[5]			THERMAL	
RATIO[1]	INPUT RPM[2]	OUTPUT RPM	INPUT HP	OUTPUT HP	OUTPUT TORQUE	EFF[6]	INPUT HP	OUTPUT TORQUE	INPUT HP	OUTPUT TORQUE	INPUT HP	OUTPUT TORQUE	INPUT HP	OUTPUT TORQUE	INPUT HP	OUTPUT TORQUE	EFF[6]	INPUT HP	OUTPUT TORQUE
40 (40)	2500	63	0.17	0.09	94	56	0.14	75	0.12	63	0.11	54	0.17	94	0.14	94	65	0.14	94
	1750	44	0.13	0.07	104	56	0.11	83	0.09	69	0.08	59	0.13	104	0.11	104	67	0.11	104
	1160	29	0.09	0.05	112	55	0.08	90	0.07	75	0.06	64	0.09	112	0.08	112	67	0.08	112
	870	22	0.08	0.04	117	54	0.06	93	0.05	78	0.05	67	0.08	117	0.06	117	67	0.06	117
	600	15	0.06	0.03	121	52	0.05	97	0.04	81	0.03	69	0.06	121	0.04	121	67	0.04	121
	300	7.5	0.03	0.01	126	50	0.02	101	0.02	84	0.02	72	0.03	126	0.02	126	67	0.02	126
	100	2.5	0.01	0.01	129	46	0.01	103	0.01	86	0.01	74	0.01	129	0.01	129	66	0.01	129
50 (50)	2500	50	0.14	0.07	90	51	0.12	72	0.10	60	0.09	52	0.14	90	0.12	90	60	0.12	90
	1750	35	0.11	0.06	99	51	0.09	80	0.08	66	0.07	57	0.11	99	0.09	99	62	0.09	99
	1160	23	0.08	0.04	107	50	0.07	86	0.06	71	0.05	61	0.08	107	0.06	107	63	0.06	107
	870	17	0.06	0.03	111	49	0.05	89	0.04	74	0.04	64	0.06	111	0.05	111	63	0.05	111
	600	12	0.05	0.02	115	47	0.04	92	0.03	77	0.03	66	0.05	115	0.03	115	64	0.03	115
	300	6.0	0.03	0.01	119	45	0.02	96	0.02	80	0.02	68	0.03	119	0.02	119	64	0.02	119
	100	2.0	0.01	0.004	123	42	0.01	98	0.01	82	0.01	70	0.01	123	0.01	123	63	0.01	123

1. Numbers shown in ( ) are exact ratios.
2. If input speed is below 1160 RPM, please specify speed and mounting position to insure proper lubrication.
3. See engineering section, pages 224-226, for further discussion regarding service factors.
4. Actual input HP must not exceed the thermal input HP capacity on a continuous basis.
5. 1.00 Service Factor.
6. See engineering section, page 227, for further discussion regarding gear reducer efficiencies.

SINGLE REDUCTION
THRUST AND OVERHUNG LOAD RATINGS

REDUCER SIZE
910

OVERHUNG LOAD CAPACITIES[1]							THRUST CAPACITIES				1.000 CENTER DISTANCE	
INPUT SHAFT	OUTPUT SHAFT						OUTPUT SHAFT					
ALL MODELS	DB, DT						DB, DT				INPUT RPM	RATIO
100	195						400				2500	**40** (40)
100	195						400				1750	
100	195						400				1160	
100	195						400				870	
100	195						400				600	
100	195						400				300	
100	195						400				100	
100	195						400				2500	**50** (50)
100	195						400				1750	
100	195						400				1160	
100	195						400				870	
100	195						400				600	
100	195						400				300	
100	195						400				100	

1. Overhung load given at one shaft diameter from housing. All values given in pounds.

REDUCER SIZE
913

SINGLE REDUCTION HORSEPOWER AND TORQUE RATINGS

WINSMITH

1.333 CENTER DISTANCE

HORSEPOWER AND TORQUE RATINGS (INCH POUNDS)

RATIO[1]	INPUT RPM[2]	OUTPUT RPM	MECHANICAL[3] 1.00 SERVICE FACTOR INPUT HP	1.00 SF OUTPUT HP	1.00 SF OUTPUT TORQUE	1.00 SF EFF[6]	1.25 SF INPUT HP	1.25 SF OUTPUT TORQUE	1.50 SF INPUT HP	1.50 SF OUTPUT TORQUE	1.75 SF INPUT HP	1.75 SF OUTPUT TORQUE	THERMAL[4] INPUT HP	THERMAL[4] OUTPUT TORQUE	SYNTHETIC OIL MECHANICAL[5] INPUT HP	SYNTHETIC OIL MECHANICAL[5] OUTPUT TORQUE	SYNTHETIC OIL MECHANICAL[5] EFF[6]	SYNTHETIC OIL THERMAL INPUT HP	SYNTHETIC OIL THERMAL OUTPUT TORQUE
4 (4)	2500	625	1.33	1.21	122	91	1.07	98	0.90	82	0.78	70	0.98	89	1.30	122	94	1.30	122
	1750	438	1.14	1.03	149	91	0.92	119	0.77	99	0.66	85	0.99	129	1.10	149	94	1.10	149
	1160	290	0.92	0.82	179	90	0.74	143	0.62	119	0.53	102	0.92	179	0.88	179	93	0.88	179
	870	218	0.76	0.67	196	89	0.61	156	0.51	130	0.44	112	0.76	196	0.73	196	93	0.73	196
	600	150	0.58	0.51	213	87	0.46	170	0.39	142	0.33	122	0.58	213	0.55	213	92	0.55	213
	300	75	0.33	0.28	233	85	0.26	187	0.22	156	0.19	133	0.33	233	0.31	233	91	0.31	233
	100	25	0.12	0.10	248	82	0.10	199	0.08	166	0.07	142	0.12	248	0.11	248	89	0.11	248
5 (5)	2500	500	1.23	1.11	140	90	0.99	112	0.83	94	0.72	80	1.09	124	1.20	140	93	1.20	140
	1750	350	1.05	0.94	170	90	0.85	136	0.71	113	0.61	97	1.05	170	1.01	170	93	1.01	170
	1160	232	0.82	0.73	197	89	0.66	158	0.55	132	0.47	113	0.82	197	0.78	197	93	0.78	197
	870	174	0.67	0.59	212	88	0.54	170	0.45	142	0.38	121	0.67	212	0.64	212	92	0.64	212
	600	120	0.50	0.43	228	87	0.40	182	0.34	152	0.29	130	0.50	228	0.47	228	92	0.47	228
	300	60	0.28	0.23	246	84	0.22	196	0.19	164	0.16	140	0.28	246	0.26	246	90	0.26	246
	100	20	0.10	0.08	258	81	0.08	207	0.07	172	0.06	148	0.10	258	0.09	258	89	0.09	258
7½ (7½)	2500	333	0.98	0.86	162	88	0.79	130	0.66	108	0.57	93	0.90	149	0.94	162	91	0.94	162
	1750	233	0.80	0.70	190	87	0.65	152	0.54	127	0.47	109	0.80	190	0.77	190	91	0.77	190
	1160	155	0.61	0.53	215	86	0.49	172	0.41	143	0.35	123	0.61	215	0.58	215	91	0.58	215
	870	116	0.49	0.42	228	85	0.39	183	0.33	152	0.28	130	0.49	228	0.46	228	91	0.46	228
	600	80	0.36	0.31	241	84	0.29	193	0.24	161	0.21	138	0.36	241	0.34	241	90	0.34	241
	300	40	0.20	0.16	257	82	0.16	206	0.13	171	0.11	147	0.20	257	0.18	257	89	0.18	257
	100	13	0.07	0.06	268	79	0.06	214	0.05	179	0.04	153	0.07	268	0.07	268	87	0.07	268
10 (10)	2500	250	0.81	0.69	174	85	0.65	139	0.55	116	0.48	100	0.73	157	0.77	174	89	0.77	174
	1750	175	0.67	0.56	203	85	0.54	162	0.45	135	0.39	116	0.67	203	0.63	203	90	0.63	203
	1160	116	0.51	0.42	229	83	0.41	183	0.34	152	0.29	131	0.51	229	0.47	229	89	0.47	229
	870	87	0.41	0.33	242	82	0.33	194	0.27	162	0.24	138	0.41	242	0.38	242	89	0.38	242
	600	60	0.30	0.24	256	81	0.24	205	0.20	171	0.17	146	0.30	256	0.28	256	88	0.28	256
	300	30	0.17	0.13	272	78	0.13	218	0.11	181	0.10	155	0.17	272	0.15	272	86	0.15	272
	100	10	0.06	0.04	283	75	0.05	227	0.04	189	0.03	162	0.06	283	0.05	283	84	0.05	283
15 (15)	2500	167	0.62	0.50	187	80	0.50	150	0.42	125	0.37	107	0.54	163	0.58	187	86	0.58	187
	1750	117	0.51	0.40	217	79	0.41	174	0.34	145	0.30	124	0.51	217	0.47	217	86	0.47	217
	1160	77	0.39	0.30	244	78	0.31	195	0.26	163	0.22	139	0.39	244	0.35	244	85	0.35	244
	870	58	0.31	0.24	258	76	0.25	207	0.21	172	0.18	148	0.31	258	0.28	258	85	0.28	258
	600	40	0.23	0.17	272	74	0.19	218	0.16	182	0.13	156	0.23	272	0.21	272	84	0.21	272
	300	20	0.13	0.09	289	71	0.10	231	0.09	193	0.07	165	0.13	289	0.11	289	82	0.11	289
	100	6.7	0.05	0.03	301	67	0.04	241	0.03	201	0.03	172	0.05	301	0.04	301	80	0.04	301
20 (20)	2500	125	0.50	0.38	192	76	0.41	154	0.34	128	0.30	110	0.45	171	0.46	192	83	0.46	192
	1750	88	0.41	0.31	221	75	0.33	177	0.28	147	0.24	126	0.41	221	0.37	221	83	0.37	221
	1160	58	0.31	0.23	247	73	0.25	197	0.21	165	0.18	141	0.31	247	0.28	247	82	0.28	247
	870	44	0.25	0.18	261	72	0.20	208	0.17	174	0.15	149	0.25	261	0.22	261	82	0.22	261
	600	30	0.19	0.13	274	70	0.15	219	0.13	183	0.11	157	0.19	274	0.16	274	81	0.16	274
	300	15	0.10	0.07	290	66	0.08	232	0.07	193	0.06	166	0.10	290	0.09	290	79	0.09	290
	100	5.0	0.04	0.02	301	62	0.03	241	0.03	201	0.02	172	0.04	301	0.03	301	77	0.03	301
25 (25)	2500	100	0.42	0.31	193	72	0.35	155	0.29	129	0.26	110	0.39	176	0.39	193	80	0.39	193
	1750	70	0.35	0.25	222	71	0.28	177	0.24	148	0.21	127	0.35	222	0.31	222	80	0.31	222
	1160	46	0.26	0.18	247	69	0.21	197	0.18	164	0.15	141	0.26	247	0.23	247	79	0.23	247
	870	35	0.21	0.14	260	68	0.17	208	0.14	173	0.12	149	0.21	260	0.18	260	79	0.18	260
	600	24	0.16	0.10	273	66	0.13	218	0.11	182	0.09	156	0.16	273	0.13	273	78	0.13	273
	300	12	0.08	0.05	274	62	0.08	219	0.06	183	0.05	157	0.08	274	0.07	274	76	0.07	274
	100	4.0	0.03	0.02	274	57	0.02	219	0.02	183	0.02	157	0.03	274	0.02	274	74	0.02	274

1. Numbers shown in ( ) are exact ratios.
2. If input speed is below 1160 RPM, please specify speed and mounting position to insure proper lubrication.
3. See engineering section, pages 224-226, for further discussion regarding service factors.
4. Actual input HP must not exceed the thermal input HP capacity on a continuous basis.
5. 1.00 Service Factor.
6. See engineering section, page 227, for further discussion regarding gear reducer efficiencies.

SINGLE REDUCTION
THRUST AND OVERHUNG LOAD RATINGS

REDUCER SIZE
913

OVERHUNG LOAD CAPACITIES[1]							THRUST CAPACITIES				1.333 CENTER DISTANCE	
INPUT SHAFT	OUTPUT SHAFT						OUTPUT SHAFT					
ALL MODELS	DB, DT	DV SHAFT UP	DV SHAFT DOWN				DB, DT, DV				INPUT RPM	RATIO
190	290	290	250				554				2500	**4** (4)
200	290	290	250				594				1750	
200	290	290	250				624				1160	
200	290	290	250				624				870	
200	290	290	250				624				600	
200	290	290	250				624				300	
200	290	290	250				624				100	
136	290	290	250				556				2500	**5** (5)
136	290	290	250				580				1750	
136	290	290	250				624				1160	
136	290	290	250				624				870	
136	290	290	250				624				600	
136	290	290	250				624				300	
136	290	290	250				624				100	
132	290	290	250				612				2500	**7½** (7½)
132	290	290	250				624				1750	
132	290	290	250				624				1160	
132	290	290	250				624				870	
132	290	290	250				624				600	
132	290	290	250				624				300	
132	290	290	250				624				100	
125	290	290	250				624				2500	**10** (10)
125	290	290	250				624				1750	
125	290	290	250				624				1160	
125	290	290	250				624				870	
125	290	290	250				624				600	
125	290	290	250				624				300	
125	290	290	250				624				100	
100	290	290	250				624				2500	**15** (15)
100	290	290	250				624				1750	
100	290	290	250				624				1160	
100	290	290	250				624				870	
100	290	290	250				624				600	
100	290	290	250				624				300	
100	290	290	250				624				100	
100	290	290	250				624				2500	**20** (20)
100	290	290	250				624				1750	
100	290	290	250				624				1160	
100	290	290	250				624				870	
100	290	290	250				624				600	
100	290	290	250				624				300	
100	290	290	250				624				100	
100	290	290	250				624				2500	**25** (25)
100	290	290	250				624				1750	
100	290	290	250				624				1160	
100	290	290	250				624				870	
100	290	290	250				624				600	
100	290	290	250				624				300	
100	290	290	250				624				100	

1. Overhung load given at one shaft diameter from housing or mounting flange. All values given in pounds.

REDUCER SIZE
913

SINGLE REDUCTION HORSEPOWER AND TORQUE RATINGS

WINSMITH®

1.333 CENTER DISTANCE			HORSEPOWER AND TORQUE RATINGS (INCH POUNDS)																
			MECHANICAL[3]										THERMAL[4]		SYNTHETIC OIL				
			1.00 SERVICE FACTOR				1.25 SF		1.50 SF		1.75 SF				MECHANICAL[5]			THERMAL	
RATIO[1]	INPUT RPM[2]	OUTPUT RPM	INPUT HP	OUTPUT HP	OUTPUT TORQUE	EFF[6]	INPUT HP	OUTPUT TORQUE	INPUT HP	OUTPUT TORQUE	INPUT HP	OUTPUT TORQUE	INPUT HP	OUTPUT TORQUE	INPUT HP	OUTPUT TORQUE	EFF[6]	INPUT HP	OUTPUT TORQUE
30 (30)	2500	83	0.38	0.26	193	67	0.31	154	0.26	129	0.23	110	0.33	165	0.33	193	76	0.33	193
	1750	58	0.31	0.21	223	66	0.25	179	0.22	149	0.19	128	0.31	223	0.27	223	76	0.27	223
	1160	39	0.24	0.15	251	64	0.20	201	0.16	167	0.14	143	0.24	251	0.20	251	76	0.20	251
	870	29	0.20	0.12	266	62	0.16	212	0.13	177	0.12	152	0.20	266	0.16	266	75	0.16	266
	600	20	0.15	0.09	280	60	0.12	224	0.10	187	0.09	160	0.15	280	0.12	280	74	0.12	280
	300	10	0.08	0.05	297	56	0.07	238	0.06	198	0.05	170	0.08	297	0.07	297	72	0.07	297
	100	3.3	0.03	0.02	309	51	0.03	247	0.02	206	0.02	177	0.03	309	0.02	309	70	0.02	309
40 (40)	2500	63	0.31	0.19	191	62	0.25	153	0.22	128	0.19	109	0.28	174	0.27	191	72	0.27	191
	1750	44	0.25	0.15	220	60	0.21	176	0.18	147	0.15	126	0.25	220	0.21	220	72	0.21	220
	1160	29	0.19	0.11	246	58	0.16	196	0.13	164	0.12	140	0.19	246	0.16	246	72	0.16	246
	870	22	0.16	0.09	259	56	0.13	207	0.11	173	0.09	148	0.16	259	0.13	259	71	0.13	259
	600	15	0.12	0.06	273	54	0.10	218	0.08	182	0.07	156	0.12	273	0.09	273	70	0.09	273
	300	7.5	0.07	0.03	288	50	0.06	231	0.05	192	0.04	165	0.07	288	0.05	288	69	0.05	288
	100	2.5	0.03	0.01	299	45	0.02	239	0.02	199	0.02	171	0.03	299	0.02	299	66	0.02	299
50 (50)	2500	50	0.26	0.15	186	56	0.22	149	0.18	124	0.16	106	0.25	178	0.22	186	67	0.22	186
	1750	35	0.21	0.12	213	55	0.18	170	0.15	142	0.13	122	0.21	213	0.17	213	68	0.17	213
	1160	23	0.16	0.09	237	53	0.13	189	0.11	158	0.10	135	0.16	237	0.13	237	68	0.13	237
	870	17	0.13	0.07	250	51	0.11	200	0.09	166	0.08	143	0.13	250	0.10	250	68	0.10	250
	600	12	0.10	0.05	262	49	0.08	210	0.07	175	0.06	150	0.10	262	0.07	262	67	0.07	262
	300	6.0	0.06	0.03	273	45	0.05	218	0.04	182	0.03	156	0.06	273	0.04	273	65	0.04	273
	100	2.0	0.02	0.01	273	41	0.02	218	0.01	182	0.01	156	0.02	273	0.01	273	63	0.01	273
60 (60)	2500	42	0.23	0.12	177	52	0.19	141	0.16	118	0.14	101	0.23	177	0.19	177	63	0.19	177
	1750	29	0.18	0.09	202	51	0.15	161	0.13	134	0.11	115	0.18	202	0.15	202	64	0.15	202
	1160	19	0.14	0.07	224	49	0.12	179	0.10	149	0.09	128	0.14	224	0.11	224	64	0.11	224
	870	15	0.12	0.05	236	47	0.09	189	0.08	157	0.07	135	0.12	236	0.08	236	64	0.08	236
	600	10	0.08	0.04	239	45	0.07	191	0.06	159	0.05	136	0.08	239	0.06	239	64	0.06	239
	300	5.0	0.05	0.02	239	41	0.04	191	0.03	159	0.03	136	0.05	239	0.03	239	62	0.03	239
	100	1.7	0.02	0.01	239	37	0.01	191	0.01	159	0.01	136	0.02	239	0.01	239	61	0.01	239

1. Numbers shown in ( ) are exact ratios.
2. If input speed is below 1160 RPM, please specify speed and mounting position to insure proper lubrication.
3. See engineering section, pages 224-226, for further discussion regarding service factors.
4. Actual input HP must not exceed the thermal input HP capacity on a continuous basis.
5. 1.00 Service Factor.
6. See engineering section, page 227, for further discussion regarding gear reducer efficiencies.

SINGLE REDUCTION
THRUST AND OVERHUNG LOAD RATINGS

REDUCER SIZE
913

OVERHUNG LOAD CAPACITIES[1]							THRUST CAPACITIES				1.333 CENTER DISTANCE	
INPUT SHAFT	OUTPUT SHAFT						OUTPUT SHAFT					
ALL MODELS	DB, DT	DV SHAFT UP	DV SHAFT DOWN				DB, DT, DV				INPUT RPM	RATIO
100	290	290	250				624				2500	**30** (30)
100	290	290	250				624				1750	
100	290	290	250				624				1160	
100	290	290	250				624				870	
100	290	290	250				624				600	
100	290	290	250				624				300	
100	290	290	250				624				100	
100	290	290	250				624				2500	**40** (40)
100	290	290	250				624				1750	
100	290	290	250				624				1160	
100	290	290	250				624				870	
100	290	290	250				624				600	
100	290	290	250				624				300	
100	290	290	250				624				100	
100	290	290	250				624				2500	**50** (50)
100	290	290	250				624				1750	
100	290	290	250				624				1160	
100	290	290	250				624				870	
100	290	290	250				624				600	
100	290	290	250				624				300	
100	290	290	250				624				100	
115	290	290	250				624				2500	**60** (60)
115	290	290	250				624				1750	
115	290	290	250				624				1160	
115	290	290	250				624				870	
115	290	290	250				624				600	
115	290	290	250				624				300	
115	290	290	250				624				100	

1. Overhung load given at one shaft diameter from housing or mounting flange. All values given in pounds.

REDUCER SIZE
917

SINGLE REDUCTION HORSEPOWER AND TORQUE RATINGS

WINSMITH

1.750 CENTER DISTANCE

HORSEPOWER AND TORQUE RATINGS (INCH POUNDS)

RATIO[1]	INPUT RPM[2]	OUTPUT RPM	MECHANICAL[3] 1.00 SERVICE FACTOR INPUT HP	1.00 SF OUTPUT HP	1.00 SF OUTPUT TORQUE	1.00 SF EFF[6]	1.25 SF INPUT HP	1.25 SF OUTPUT TORQUE	1.50 SF INPUT HP	1.50 SF OUTPUT TORQUE	1.75 SF INPUT HP	1.75 SF OUTPUT TORQUE	THERMAL[4] INPUT HP	THERMAL[4] OUTPUT TORQUE	SYNTHETIC OIL MECHANICAL[5] INPUT HP	SYNTHETIC OIL MECHANICAL[5] OUTPUT TORQUE	SYNTHETIC OIL MECHANICAL[5] EFF[6]	SYNTHETIC OIL THERMAL INPUT HP	SYNTHETIC OIL THERMAL OUTPUT TORQUE
4 (4)	2500	625	2.36	2.17	219	92	1.90	175	1.59	146	1.37	125	1.68	155	2.30	219	95	2.30	219
	1750	438	2.04	1.87	269	91	1.64	215	1.37	179	1.18	154	1.59	209	1.98	269	94	1.98	269
	1160	290	1.72	1.55	337	90	1.38	269	1.15	224	0.99	192	1.42	278	1.65	337	94	1.65	337
	870	218	1.48	1.32	383	89	1.19	306	0.99	255	0.85	219	1.30	336	1.42	383	93	1.42	383
	600	150	1.17	1.03	431	88	0.94	345	0.78	287	0.67	246	1.16	426	1.11	431	92	1.11	431
	300	75	0.69	0.59	492	85	0.55	394	0.46	328	0.40	281	0.69	492	0.65	492	91	0.65	492
	100	25	0.26	0.21	538	81	0.21	430	0.18	358	0.15	307	0.26	538	0.24	538	88	0.24	538
5 (5)	2500	500	2.35	2.15	271	92	1.89	217	1.58	181	1.36	155	2.34	270	2.28	271	95	2.28	271
	1750	350	2.01	1.83	330	91	1.61	264	1.35	220	1.16	188	2.01	330	1.95	330	94	1.95	330
	1160	232	1.64	1.48	402	90	1.32	321	1.10	268	0.95	230	1.64	402	1.58	402	94	1.58	402
	870	174	1.37	1.22	442	89	1.10	354	0.92	295	0.79	253	1.37	442	1.31	442	93	1.31	442
	600	120	1.05	0.92	484	88	0.84	387	0.70	323	0.60	277	1.05	484	1.00	484	92	1.00	484
	300	60	0.60	0.51	535	85	0.48	428	0.40	357	0.34	306	0.60	535	0.56	535	91	0.56	535
	100	20	0.22	0.18	572	82	0.18	458	0.15	381	0.13	327	0.22	572	0.20	572	89	0.20	572
7½ (7½)	2500	333	1.82	1.64	311	91	1.47	248	1.23	207	1.06	177	1.82	311	1.77	311	94	1.77	311
	1750	233	1.55	1.39	375	90	1.25	300	1.04	250	0.90	214	1.55	375	1.50	375	93	1.50	375
	1160	155	1.21	1.07	436	89	0.97	349	0.81	290	0.70	249	1.21	436	1.16	436	93	1.16	436
	870	116	0.99	0.86	469	88	0.79	375	0.66	313	0.57	268	0.99	469	0.94	469	92	0.94	469
	600	80	0.74	0.64	502	86	0.59	402	0.49	335	0.42	287	0.74	502	0.70	502	91	0.70	502
	300	40	0.41	0.34	542	84	0.33	433	0.27	361	0.24	309	0.41	542	0.38	542	90	0.38	542
	100	13	0.15	0.12	570	81	0.12	456	0.10	380	0.09	326	0.15	570	0.14	570	88	0.14	570
10 (10)	2500	250	1.51	1.33	336	89	1.21	268	1.02	224	0.88	192	1.51	336	1.45	336	92	1.45	336
	1750	175	1.25	1.10	396	88	1.01	317	0.84	264	0.73	226	1.25	396	1.20	396	92	1.20	396
	1160	116	0.96	0.83	451	87	0.77	361	0.64	301	0.55	258	0.96	451	0.91	451	91	0.91	451
	870	87	0.78	0.66	481	86	0.62	385	0.52	321	0.45	275	0.78	481	0.73	481	91	0.73	481
	600	60	0.58	0.49	511	84	0.46	409	0.39	340	0.33	292	0.58	511	0.54	511	90	0.54	511
	300	30	0.32	0.26	546	82	0.25	437	0.21	364	0.18	312	0.32	546	0.29	546	89	0.29	546
	100	10	0.12	0.09	570	79	0.09	456	0.08	380	0.07	326	0.12	570	0.10	570	87	0.10	570
15 (15)	2500	167	1.14	0.96	364	85	0.92	291	0.78	243	0.67	208	1.14	364	1.08	364	90	1.08	364
	1750	117	0.94	0.79	427	84	0.76	341	0.64	284	0.55	244	0.94	427	0.89	427	89	0.89	427
	1160	77	0.72	0.59	484	82	0.58	387	0.49	322	0.42	276	0.72	484	0.67	484	89	0.67	484
	870	58	0.58	0.47	514	81	0.47	411	0.39	343	0.34	294	0.58	514	0.54	514	88	0.54	514
	600	40	0.44	0.35	545	79	0.35	436	0.29	363	0.25	311	0.44	545	0.40	545	87	0.40	545
	300	20	0.24	0.18	580	76	0.19	464	0.16	387	0.14	332	0.24	580	0.22	580	85	0.22	580
	100	6.7	0.09	0.06	606	72	0.07	484	0.06	404	0.05	346	0.09	606	0.08	606	83	0.08	606
20 (20)	2500	125	0.91	0.74	372	82	0.74	298	0.62	248	0.54	213	0.91	372	0.85	372	87	0.85	372
	1750	88	0.75	0.60	432	81	0.60	345	0.51	288	0.44	247	0.75	432	0.69	432	87	0.69	432
	1160	58	0.57	0.45	485	79	0.46	388	0.38	323	0.33	277	0.57	485	0.52	485	86	0.52	485
	870	44	0.46	0.35	514	77	0.37	411	0.31	343	0.27	294	0.46	514	0.42	514	85	0.42	514
	600	30	0.34	0.26	542	75	0.27	434	0.23	361	0.20	310	0.34	542	0.31	542	84	0.31	542
	300	15	0.19	0.14	575	72	0.15	460	0.13	384	0.11	329	0.19	575	0.17	575	83	0.17	575
	100	5.0	0.07	0.05	599	68	0.06	479	0.05	399	0.04	342	0.07	599	0.06	599	80	0.06	599
25 (25)	2500	100	0.76	0.59	374	79	0.62	299	0.52	249	0.45	213	0.76	374	0.71	374	85	0.71	374
	1750	70	0.62	0.48	431	78	0.50	344	0.42	287	0.37	246	0.62	431	0.57	431	85	0.57	431
	1160	46	0.47	0.35	481	76	0.38	385	0.32	321	0.28	275	0.47	481	0.42	481	84	0.42	481
	870	35	0.38	0.28	509	74	0.31	407	0.26	339	0.22	291	0.38	509	0.34	509	83	0.34	509
	600	24	0.28	0.20	535	72	0.23	428	0.19	357	0.16	306	0.28	535	0.25	535	82	0.25	535
	300	12	0.16	0.11	566	69	0.13	453	0.11	378	0.09	324	0.16	566	0.13	566	80	0.13	566
	100	4.0	0.06	0.04	588	64	0.05	471	0.04	392	0.03	336	0.06	588	0.05	588	78	0.05	588

1. Numbers shown in ( ) are exact ratios.
2. If input speed is below 1160 RPM, please specify speed and mounting position to insure proper lubrication.
3. See engineering section, pages 224-226, for further discussion regarding service factors.
4. Actual input HP must not exceed the thermal input HP capacity on a continuous basis.
5. 1.00 Service Factor.
6. See engineering section, page 227, for further discussion regarding gear reducer efficiencies.

SINGLE REDUCTION
THRUST AND OVERHUNG LOAD RATINGS

REDUCER SIZE
917

OVERHUNG LOAD CAPACITIES[1]							THRUST CAPACITIES				1.750 CENTER DISTANCE	
INPUT SHAFT	OUTPUT SHAFT[4]						OUTPUT SHAFT					
ALL MODELS	DB, DT	DV SHAFT UP	DV SHAFT DOWN	DSF[2, 3] BASE SIDE	DSF[2, 3] COVER SIDE		DB, DT, DV	DSF TOWARD BASE	DSF AWAY FROM BASE		INPUT RPM	RATIO
200	534	534	527	510	510		585	1013	1013		2500	**4** (4)
200	576	576	568	540	540		621	1062	1062		1750	
200	650	650	624	624	624		709	1218	1218		1160	
200	650	650	624	688	688		776	1338	1338		870	
200	650	650	624	700	700		878	1440	1507		600	
200	650	650	624	700	700		894	1440	1600		300	
200	650	650	624	700	700		894	1440	1600		100	
183	551	551	544	520	520		586	1019	1019		2500	**5** (5)
183	594	594	586	555	555		619	1075	1075		1750	
183	650	650	624	646	646		711	1244	1244		1160	
183	650	650	624	700	700		785	1375	1375		870	
183	650	650	624	700	700		894	1440	1600		600	
183	650	650	624	700	700		894	1440	1600		300	
183	650	650	624	700	700		894	1440	1600		100	
205	614	614	605	570	570		663	1124	1124		2500	**7½** (7½)
205	650	650	624	618	618		703	1207	1207		1750	
205	650	650	624	700	700		823	1413	1413		1160	
205	650	650	624	700	700		894	1440	1569		870	
205	650	650	624	700	700		894	1440	1600		600	
205	650	650	624	700	700		894	1440	1600		300	
205	650	650	624	700	700		894	1440	1600		100	
194	650	650	624	617	617		732	1229	1229		2500	**10** (10)
194	650	650	624	671	671		786	1329	1329		1750	
194	650	650	624	700	700		894	1440	1561		1160	
194	650	650	624	700	700		894	1440	1600		870	
191	650	650	624	700	700		894	1440	1600		600	
159	650	650	624	700	700		894	1440	1600		300	
134	650	650	624	700	700		894	1440	1600		100	
152	650	650	624	690	690		853	1406	1406		2500	**15** (15)
152	650	650	624	700	700		894	1440	1526		1750	
152	650	650	624	700	700		894	1440	1600		1160	
152	650	650	624	700	700		894	1440	1600		870	
152	650	650	624	700	700		894	1440	1600		600	
152	650	650	624	700	700		894	1440	1600		300	
152	650	650	624	700	700		894	1440	1600		100	
149	650	650	624	700	700		894	1440	1535		2500	**20** (20)
149	650	650	624	700	700		894	1440	1600		1750	
149	650	650	624	700	700		894	1440	1600		1160	
149	650	650	624	700	700		894	1440	1600		870	
149	650	650	624	700	700		894	1440	1600		600	
149	650	650	624	700	700		894	1440	1600		300	
149	650	650	624	700	700		894	1440	1600		100	
153	650	650	624	700	700		894	1440	1600		2500	**25** (25)
153	650	650	624	700	700		894	1440	1600		1750	
153	650	650	624	700	700		894	1440	1600		1160	
153	650	650	624	700	700		894	1440	1600		870	
153	650	650	624	700	700		894	1440	1600		600	
153	650	650	624	700	700		894	1440	1600		300	
153	650	650	624	700	700		894	1440	1600		100	

1. Overhung load given at one shaft diameter from housing or mounting flange. All values given in pounds.
2. Overhung load based on maximum bore size. Use of smaller driven shaft diameter may limit OHL capacity.
3. Overhung load capacity given at a point located 4.500 inches from centerline of housing.
4. For DSN output shaft overhung load capacities, contact the factory.

REDUCER SIZE
917

SINGLE REDUCTION HORSEPOWER AND TORQUE RATINGS

WINSMITH®

1.750 CENTER DISTANCE			HORSEPOWER AND TORQUE RATINGS (INCH POUNDS)																
			MECHANICAL[3]										THERMAL[4]		SYNTHETIC OIL				
			1.00 SERVICE FACTOR				1.25 SF		1.50 SF		1.75 SF				MECHANICAL[5]			THERMAL	
RATIO[1]	INPUT RPM[2]	OUTPUT RPM	INPUT HP	OUTPUT HP	OUTPUT TORQUE	EFF[6]	INPUT HP	OUTPUT TORQUE	INPUT HP	OUTPUT TORQUE	INPUT HP	OUTPUT TORQUE	INPUT HP	OUTPUT TORQUE	INPUT HP	OUTPUT TORQUE	EFF[6]	INPUT HP	OUTPUT TORQUE
30 (30)	2500	83	0.68	0.50	378	75	0.55	302	0.47	252	0.41	216	0.68	378	0.62	378	82	0.62	378
	1750	58	0.56	0.41	442	73	0.46	353	0.39	295	0.33	252	0.56	442	0.50	442	82	0.50	442
	1160	39	0.44	0.31	500	71	0.35	400	0.30	333	0.26	286	0.44	500	0.38	500	81	0.38	500
	870	29	0.36	0.24	531	69	0.29	425	0.24	354	0.21	303	0.36	531	0.31	531	80	0.31	531
	600	20	0.27	0.18	562	66	0.22	450	0.18	375	0.16	321	0.27	562	0.23	562	79	0.23	562
	300	10	0.15	0.09	598	62	0.12	479	0.10	399	0.09	342	0.15	598	0.12	598	77	0.12	598
	100	3.3	0.06	0.03	624	58	0.05	499	0.04	416	0.03	356	0.06	624	0.04	624	74	0.04	624
40 (40)	2500	63	0.54	0.37	372	70	0.44	298	0.37	248	0.33	213	0.54	372	0.48	372	79	0.48	372
	1750	44	0.44	0.30	431	68	0.36	345	0.30	287	0.27	246	0.44	431	0.39	431	78	0.39	431
	1160	29	0.34	0.22	483	66	0.28	387	0.23	322	0.20	276	0.34	483	0.29	483	77	0.29	483
	870	22	0.28	0.18	511	64	0.22	409	0.19	341	0.16	292	0.28	511	0.23	511	76	0.23	511
	600	15	0.21	0.13	539	61	0.17	431	0.14	359	0.12	308	0.21	539	0.17	539	75	0.17	539
	300	7.5	0.12	0.07	571	57	0.10	457	0.08	381	0.07	326	0.12	571	0.09	571	73	0.09	571
	100	2.5	0.04	0.02	594	52	0.04	475	0.03	396	0.03	339	0.04	594	0.03	594	71	0.03	594
50 (50)	2500	50	0.45	0.29	360	65	0.37	288	0.31	240	0.28	206	0.45	360	0.39	360	75	0.39	360
	1750	35	0.37	0.23	415	64	0.30	332	0.25	276	0.22	237	0.37	415	0.31	415	75	0.31	415
	1160	23	0.28	0.17	463	61	0.23	370	0.19	309	0.17	265	0.28	463	0.23	463	74	0.23	463
	870	17	0.23	0.13	489	59	0.19	391	0.16	326	0.14	279	0.23	489	0.19	489	73	0.19	489
	600	12	0.17	0.10	514	57	0.14	411	0.12	343	0.10	294	0.17	514	0.14	514	72	0.14	514
	300	6.0	0.10	0.05	544	53	0.08	435	0.07	362	0.06	311	0.10	544	0.07	544	70	0.07	544
	100	2.0	0.04	0.02	564	48	0.03	452	0.02	376	0.02	323	0.04	564	0.03	564	68	0.03	564
60 (60)	2500	42	0.38	0.23	341	61	0.31	273	0.27	227	0.24	195	0.38	341	0.33	341	72	0.33	341
	1750	29	0.31	0.18	391	59	0.25	313	0.22	261	0.19	223	0.31	391	0.26	391	71	0.26	391
	1160	19	0.24	0.13	435	57	0.19	348	0.16	290	0.14	249	0.24	435	0.19	435	71	0.19	435
	870	15	0.19	0.11	459	55	0.16	367	0.13	306	0.11	262	0.19	459	0.15	459	70	0.15	459
	600	10	0.15	0.08	482	52	0.12	386	0.10	321	0.09	276	0.15	482	0.11	482	69	0.11	482
	300	5.0	0.08	0.04	509	49	0.07	407	0.06	339	0.05	291	0.08	509	0.06	509	67	0.06	509
	100	1.7	0.03	0.01	528	44	0.03	423	0.02	352	0.02	302	0.03	528	0.02	528	65	0.02	528
80 (83)	2500	30	0.26	0.13	273	50	0.22	218	0.19	182	0.17	156	0.26	273	0.22	273	60	0.22	273
	1750	21	0.21	0.10	311	50	0.17	249	0.15	208	0.13	178	0.21	311	0.17	311	62	0.17	311
	1160	14	0.16	0.08	346	48	0.13	277	0.11	230	0.10	198	0.16	346	0.12	346	63	0.12	346
	870	10	0.13	0.06	364	46	0.11	291	0.09	243	0.08	208	0.13	364	0.10	364	63	0.10	364
	600	7.2	0.10	0.04	382	45	0.08	305	0.07	255	0.06	218	0.10	382	0.07	382	63	0.07	382
	300	3.6	0.06	0.02	403	41	0.05	322	0.04	268	0.03	230	0.06	403	0.04	403	62	0.04	403
	100	1.2	0.02	0.01	417	37	0.02	334	0.01	278	0.01	238	0.02	417	0.01	417	61	0.01	417
100 (100)	2500	25	0.19	0.08	211	45	0.16	169	0.14	141	0.13	121	0.19	211	0.16	211	54	0.16	211
	1750	18	0.14	0.07	236	45	0.12	189	0.11	157	0.09	135	0.14	236	0.12	236	56	0.12	236
	1160	12	0.11	0.05	257	45	0.09	206	0.08	171	0.07	147	0.11	257	0.08	257	58	0.08	257
	870	8.7	0.08	0.04	268	44	0.07	214	0.06	179	0.05	153	0.08	268	0.06	268	59	0.06	268
	600	6.0	0.06	0.03	279	43	0.05	223	0.04	186	0.04	159	0.06	279	0.04	279	59	0.04	279
	300	3.0	0.03	0.01	291	40	0.03	233	0.02	194	0.02	167	0.03	291	0.02	291	60	0.02	291
	100	1.0	0.01	—	300	37	0.01	240	0.01	200	0.01	171	0.01	300	0.01	300	60	0.01	300

1. Numbers shown in ( ) are exact ratios.
2. If input speed is below 1160 RPM, please specify speed and mounting position to insure proper lubrication.
3. See engineering section, pages 224-226, for further discussion regarding service factors.
4. Actual input HP must not exceed the thermal input HP capacity on a continuous basis.
5. 1.00 Service Factor.
6. See engineering section, page 227, for further discussion regarding gear reducer efficiencies.

SINGLE REDUCTION
THRUST AND OVERHUNG LOAD RATINGS

REDUCER SIZE
917

OVERHUNG LOAD CAPACITIES[1]							THRUST CAPACITIES				1.750 CENTER DISTANCE	
INPUT SHAFT	OUTPUT SHAFT[4]						OUTPUT SHAFT					
ALL MODELS	DB, DT	DV SHAFT UP	DV SHAFT DOWN	DSF[2, 3] BASE SIDE	DSF[2, 3] COVER SIDE		DB, DT, DV	DSF TOWARD BASE	DSF AWAY FROM BASE		INPUT RPM	RATIO
129	650	650	624	700	700		894	1440	1600		2500	**30** (30)
129	650	650	624	700	700		894	1440	1600		1750	
129	650	650	624	700	700		894	1440	1600		1160	
129	650	650	624	700	700		894	1440	1600		870	
129	650	650	624	700	700		894	1440	1600		600	
129	650	650	624	700	700		894	1440	1600		300	
129	650	650	624	700	700		894	1440	1600		100	
149	650	650	624	700	700		894	1440	1600		2500	**40** (40)
149	650	650	624	700	700		894	1440	1600		1750	
149	650	650	624	700	700		894	1440	1600		1160	
149	650	650	624	700	700		894	1440	1600		870	
149	650	650	624	700	700		894	1440	1600		600	
149	650	650	624	700	700		894	1440	1600		300	
149	650	650	624	700	700		894	1440	1600		100	
171	650	650	624	700	700		894	1440	1600		2500	**50** (50)
171	650	650	624	700	700		894	1440	1600		1750	
171	650	650	624	700	700		894	1440	1600		1160	
171	650	650	624	700	700		894	1440	1600		870	
171	650	650	624	700	700		894	1440	1600		600	
171	650	650	624	700	700		894	1440	1600		300	
171	650	650	624	700	700		894	1440	1600		100	
202	650	650	624	700	700		894	1440	1600		2500	**60** (60)
202	650	650	624	700	700		894	1440	1600		1750	
202	650	650	624	700	700		894	1440	1600		1160	
202	650	650	624	700	700		894	1440	1600		870	
202	650	650	624	700	700		894	1440	1600		600	
202	650	650	624	700	700		894	1440	1600		300	
202	650	650	624	700	700		894	1440	1600		100	
200	650	650	624	700	700		894	1440	1600		2500	**80** (83)
200	650	650	624	700	700		894	1440	1600		1750	
200	650	650	624	700	700		894	1440	1600		1160	
200	650	650	624	700	700		894	1440	1600		870	
200	650	650	624	700	700		894	1440	1600		600	
200	650	650	624	700	700		894	1440	1600		300	
200	650	650	624	700	700		894	1440	1600		100	
142	650	650	624	700	700		894	1440	1600		2500	**100** (100)
136	650	650	624	700	700		894	1440	1600		1750	
130	650	650	624	700	700		894	1440	1600		1160	
125	650	650	624	700	700		894	1440	1600		870	
118	650	650	624	700	700		894	1440	1600		600	
111	650	650	624	700	700		894	1440	1600		300	
105	650	650	624	700	700		894	1440	1600		100	

1. Overhung load given at one shaft diameter from housing or mounting flange. All values given in pounds.
2. Overhung load based on maximum bore size. Use of smaller driven shaft diameter may limit OHL capacity.
3. Overhung load capacity given at a point located 4.500 inches from centerline of housing.
4. For DSN output shaft overhung load capacities, contact the factory.

REDUCER SIZE
920

SINGLE REDUCTION HORSEPOWER AND TORQUE RATINGS

WINSMITH

2.000 CENTER DISTANCE

HORSEPOWER AND TORQUE RATINGS (INCH POUNDS)

RATIO[1]	INPUT RPM[2]	OUTPUT RPM	MECHANICAL[3] 1.00 SERVICE FACTOR INPUT HP	1.00 SF OUTPUT HP	1.00 SF OUTPUT TORQUE	1.00 SF EFF[7]	1.25 SF INPUT HP	1.25 SF OUTPUT TORQUE	1.50 SF INPUT HP	1.50 SF OUTPUT TORQUE	1.75 SF INPUT HP	1.75 SF OUTPUT TORQUE	THERMAL[4] INPUT HP	THERMAL OUTPUT TORQUE	SYNTHETIC OIL MECHANICAL[6] INPUT HP	SYN MECH OUTPUT TORQUE	SYN MECH EFF[7]	SYN THERMAL INPUT HP	SYN THERMAL OUTPUT TORQUE
4 (4)	2500	625	3.57	3.33	335	93	2.87	268	2.40	224	2.06	192	1.93	180	3.49	335	95	3.19	307
	1750	438	3.08	2.85	411	93	2.47	329	2.06	274	1.77	235	1.92	254	3.00	411	95	3.00	411
	1160	290	2.59	2.37	515	92	2.07	412	1.73	343	1.49	294	1.74	345	2.50	515	95	2.50	515
	870	218	2.23	2.02	586	91	1.79	469	1.49	391	1.28	335	1.60	418	2.15	586	94	2.15	586
	600	150	1.76	1.57	660	89	1.41	528	1.17	440	1.01	377	1.42	532	1.68	660	94	1.68	660
	300	75	1.03	0.90	754	87	0.83	603	0.69	503	0.59	431	1.03	754	0.98	754	92	0.98	754
	100	25	0.39	0.33	824	83	0.31	659	0.26	550	0.22	471	0.39	824	0.36	824	90	0.36	824
5 (5)[5]	2500	500	3.24	3.00	378	93	2.60	302	2.18	252	1.87	216	2.68	312	3.16	378	95	3.16	378
	1750	350	2.76	2.54	457	92	2.21	365	1.85	304	1.59	261	2.53	418	2.68	457	95	2.68	457
	1160	232	2.32	2.10	572	91	1.86	457	1.55	381	1.33	327	2.25	554	2.24	572	94	2.24	572
	870	174	1.96	1.76	639	90	1.57	511	1.31	426	1.13	365	1.96	639	1.88	639	94	1.88	639
	600	120	1.52	1.35	708	89	1.22	566	1.02	472	0.87	405	1.52	708	1.45	708	93	1.45	708
	300	60	0.88	0.76	794	86	0.70	635	0.59	529	0.50	454	0.88	794	0.83	794	92	0.83	794
	100	20	0.33	0.27	857	82	0.26	685	0.22	571	0.19	490	0.33	857	0.30	857	89	0.30	857
7½ (7½)	2500	333	2.48	2.26	427	91	1.99	341	1.67	285	1.44	244	2.31	398	2.41	427	94	2.41	427
	1750	233	2.17	1.96	530	90	1.74	424	1.46	353	1.25	303	2.17	530	2.09	530	94	2.09	530
	1160	155	1.73	1.54	629	89	1.39	503	1.16	419	0.99	359	1.73	629	1.66	629	93	1.66	629
	870	116	1.43	1.26	684	88	1.14	547	0.95	456	0.82	391	1.43	684	1.36	684	93	1.36	684
	600	80	1.08	0.94	739	87	0.86	591	0.72	493	0.62	422	1.08	739	1.02	739	92	1.02	739
	300	40	0.61	0.51	806	85	0.48	645	0.40	537	0.35	461	0.61	806	0.57	806	91	0.57	806
	100	13	0.22	0.18	854	81	0.18	683	0.15	569	0.13	488	0.22	854	0.20	854	89	0.20	854
10 (10)	2500	250	2.06	1.85	466	90	1.66	373	1.39	311	1.20	266	2.02	455	1.99	466	93	1.99	466
	1750	175	1.75	1.56	561	89	1.41	449	1.18	374	1.01	321	1.75	561	1.68	561	93	1.68	561
	1160	116	1.36	1.19	649	88	1.09	519	0.91	433	0.78	371	1.36	649	1.30	649	92	1.30	649
	870	87	1.11	0.96	698	87	0.89	558	0.74	465	0.64	399	1.11	698	1.05	698	92	1.05	698
	600	60	0.83	0.71	746	85	0.67	597	0.56	497	0.48	426	0.83	746	0.78	746	91	0.78	746
	300	30	0.46	0.38	803	83	0.37	642	0.31	535	0.26	459	0.46	803	0.43	803	90	0.43	803
	100	10	0.17	0.13	844	79	0.13	675	0.11	563	0.10	482	0.17	844	0.15	844	88	0.15	844
15 (15)	2500	167	1.56	1.34	508	86	1.26	406	1.06	338	0.91	290	1.49	486	1.49	508	90	1.49	508
	1750	117	1.32	1.12	606	85	1.06	485	0.89	404	0.77	347	1.32	606	1.24	606	90	1.24	606
	1160	77	1.02	0.86	697	84	0.82	558	0.69	465	0.59	398	1.02	697	0.96	697	90	0.96	697
	870	58	0.83	0.69	747	82	0.67	598	0.56	498	0.48	427	0.84	747	0.77	747	89	0.77	747
	600	40	0.63	0.51	796	81	0.50	637	0.42	531	0.36	455	0.63	796	0.57	796	88	0.57	796
	300	20	0.35	0.27	855	78	0.28	684	0.23	570	0.20	489	0.35	855	0.31	855	86	0.31	855
	100	6.7	0.13	0.09	896	74	0.10	717	0.09	598	0.07	512	0.13	896	0.11	896	84	0.11	896
20 (20)	2500	125	1.23	1.03	521	83	1.01	417	0.85	347	0.73	298	1.23	516	1.17	521	88	1.17	521
	1750	88	1.04	0.85	615	82	0.84	492	0.70	410	0.61	352	1.04	615	0.97	615	88	0.97	615
	1160	58	0.80	0.65	701	80	0.65	561	0.54	468	0.47	401	0.80	701	0.74	701	87	0.74	701
	870	44	0.66	0.52	748	79	0.53	598	0.44	499	0.38	427	0.66	748	0.60	748	87	0.60	748
	600	30	0.49	0.38	794	77	0.39	635	0.33	529	0.28	454	0.49	794	0.44	794	86	0.44	794
	300	15	0.27	0.20	849	74	0.22	679	0.18	566	0.16	485	0.27	849	0.24	849	84	0.24	849
	100	5.0	0.10	0.07	887	69	0.08	710	0.07	592	0.06	507	0.10	887	0.09	887	81	0.09	887
25 (25)	2500	100	1.03	0.83	524	80	0.84	419	0.71	349	0.61	299	1.03	524	0.96	524	86	0.96	524
	1750	70	0.86	0.68	613	79	0.69	490	0.58	409	0.50	350	0.86	613	0.79	613	86	0.79	613
	1160	46	0.66	0.51	693	77	0.53	555	0.45	462	0.38	396	0.66	693	0.60	693	85	0.60	693
	870	35	0.54	0.41	737	76	0.43	589	0.36	491	0.31	421	0.54	737	0.48	737	85	0.48	737
	600	24	0.40	0.30	780	74	0.32	624	0.27	520	0.23	446	0.40	780	0.36	780	84	0.36	780
	300	12	0.22	0.16	830	70	0.18	664	0.15	553	0.13	474	0.22	830	0.19	830	82	0.19	830
	100	4.0	0.08	0.05	866	66	0.07	693	0.06	577	0.05	495	0.08	866	0.07	866	79	0.07	866

1. Numbers shown in ( ) are exact ratios.
2. If input speed is below 1160 RPM, please specify speed and mounting position to insure proper lubrication.
3. See engineering section, pages 224-226, for further discussion regarding service factors.
4. Actual input HP must not exceed the thermal input HP capacity on a continuous basis.
5. Exact ratio is 5⅛-1 on all hollow output shaft models (DS Series).
6. 1.00 Service Factor.
7. See engineering section, page 227, for further discussion regarding gear reducer efficiencies.

SINGLE REDUCTION
THRUST AND OVERHUNG LOAD RATINGS

REDUCER SIZE
920

OVERHUNG LOAD CAPACITIES[1]							THRUST CAPACITIES				2.000 CENTER DISTANCE	
INPUT SHAFT	OUTPUT SHAFT[5]						OUTPUT SHAFT					
ALL MODELS	DB[2], DT	DV SHAFT UP	DV SHAFT DOWN	DSF[3, 4] BASE SIDE	DSF[3, 4] COVER SIDE		DB, DT, DV	DSF TOWARD BASE	DSF AWAY FROM BASE		INPUT RPM	RATIO
258	482	482	476	1049	600		428	1440	1890		2500	**4** (4)
281	513	513	506	1113	600		431	1440	1890		1750	
300	592	592	584	1265	600		481	1440	1890		1160	
300	650	650	624	1399	600		529	1440	1890		870	
297	650	650	624	1470	600		613	1440	1890		600	
253	650	650	624	1470	600		865	1440	1890		300	
193	650	650	624	1470	600		894	1440	1890		100	
260	528	528	521	1107	600		543	1440	1890		2500	**5** (5)
284	566	566	559	1178	600		568	1440	1890		1750	
303	650	650	624	1358	600		638	1440	1890		1160	
303	650	650	624	1470	600		699	1440	1890		870	
303	650	650	624	1470	600		813	1440	1890		600	
303	650	650	624	1470	600		894	1440	1890		300	
303	650	650	624	1470	600		894	1440	1890		100	
266	592	592	584	1197	600		621	1440	1890		2500	**7½** (7½)
288	632	632	623	1294	600		645	1440	1890		1750	
303	650	650	624	1470	600		747	1440	1890		1160	
303	650	650	624	1470	600		852	1440	1890		870	
303	650	650	624	1470	600		894	1440	1890		600	
303	650	650	624	1470	600		894	1440	1890		300	
303	650	650	624	1470	600		894	1440	1890		100	
219	641	641	624	1282	600		687	1440	1890		2500	**10** (10)
219	650	650	624	1397	600		726	1440	1890		1750	
219	650	650	624	1470	600		873	1440	1890		1160	
219	650	650	624	1470	600		894	1440	1890		870	
219	650	650	624	1470	600		894	1440	1890		600	
188	650	650	624	1470	600		894	1440	1890		300	
152	650	650	624	1470	600		894	1440	1890		100	
252	650	650	624	1428	600		814	1440	1890		2500	**15** (15)
252	650	650	624	1470	600		891	1440	1890		1750	
252	650	650	624	1470	600		894	1440	1890		1160	
252	650	650	624	1470	600		894	1440	1890		870	
242	650	650	624	1470	600		894	1440	1890		600	
202	650	650	624	1470	600		894	1440	1890		300	
170	650	650	624	1470	600		894	1440	1890		100	
247	650	650	624	1470	600		894	1440	1890		2500	**20** (20)
247	650	650	624	1470	600		894	1440	1890		1750	
247	650	650	624	1470	600		894	1440	1890		1160	
247	650	650	624	1470	600		894	1440	1890		870	
236	650	650	624	1470	600		894	1440	1890		600	
200	650	650	624	1470	600		894	1440	1890		300	
172	650	650	624	1470	600		894	1440	1890		100	
220	650	650	624	1470	600		894	1440	1890		2500	**25** (25)
220	650	650	624	1470	600		894	1440	1890		1750	
220	650	650	624	1470	600		894	1440	1890		1160	
220	650	650	624	1470	600		894	1440	1890		870	
220	650	650	624	1470	600		894	1440	1890		600	
220	650	650	624	1470	600		894	1440	1890		300	
196	650	650	624	1470	600		894	1440	1890		100	

1. Overhung load given at one shaft diameter from housing or mounting flange. All values given in pounds.
2. Overhung load capacities are based on the direction and location of the load as shown in figure 1 on page 228. Consult factory for allowable OHL values if load is applied as shown in figure 2A on page 228.
3. Overhung load based on maximum bore size. Use of smaller driven shaft diameter may limit OHL capacity.
4. Overhung load capacity given at a point located 4.625 inches from centerline of housing.
5. For DSN output shaft overhung load capacities, contact the factory.

REDUCER SIZE
920

SINGLE REDUCTION HORSEPOWER AND TORQUE RATINGS

WINSMITH®

2.000 CENTER DISTANCE

HORSEPOWER AND TORQUE RATINGS (INCH POUNDS)

RATIO[1]	INPUT RPM[2]	OUTPUT RPM	MECHANICAL[3] 1.00 SERVICE FACTOR INPUT HP	1.00 SF OUTPUT HP	1.00 SF OUTPUT TORQUE	1.00 SF EFF[6]	1.25 SF INPUT HP	1.25 SF OUTPUT TORQUE	1.50 SF INPUT HP	1.50 SF OUTPUT TORQUE	1.75 SF INPUT HP	1.75 SF OUTPUT TORQUE	THERMAL[4] INPUT HP	THERMAL[4] OUTPUT TORQUE	SYNTHETIC OIL MECHANICAL[5] INPUT HP	SYNTHETIC OIL MECHANICAL[5] OUTPUT TORQUE	SYNTHETIC OIL MECHANICAL[5] EFF[6]	SYNTHETIC OIL THERMAL INPUT HP	SYNTHETIC OIL THERMAL OUTPUT TORQUE
30 (30)	2500	83	0.92	0.70	528	76	0.74	422	0.63	352	0.54	302	0.87	497	0.84	528	83	0.84	528
	1750	58	0.78	0.58	630	75	0.63	504	0.53	420	0.46	360	0.78	630	0.70	630	83	0.70	630
	1160	39	0.61	0.44	725	72	0.49	580	0.41	483	0.36	414	0.61	725	0.54	725	82	0.54	725
	870	29	0.51	0.36	776	70	0.41	621	0.34	517	0.29	443	0.51	776	0.44	776	81	0.44	776
	600	20	0.39	0.26	827	68	0.31	662	0.26	551	0.22	473	0.39	827	0.33	827	80	0.33	827
	300	10	0.22	0.14	888	64	0.18	710	0.15	592	0.13	507	0.22	888	0.18	888	78	0.18	888
	100	3.3	0.08	0.05	931	59	0.07	745	0.06	621	0.05	532	0.08	931	0.07	931	75	0.07	931
40 (40)	2500	63	0.73	0.52	523	71	0.59	418	0.50	349	0.44	299	0.73	523	0.65	523	80	0.65	523
	1750	44	0.61	0.43	617	70	0.50	493	0.42	411	0.36	352	0.61	617	0.54	617	80	0.54	617
	1160	29	0.48	0.32	702	67	0.39	562	0.32	468	0.28	401	0.48	702	0.41	702	79	0.41	702
	870	22	0.39	0.26	748	65	0.32	599	0.27	499	0.23	428	0.39	748	0.33	748	78	0.33	748
	600	15	0.30	0.19	794	63	0.24	635	0.20	529	0.17	454	0.30	794	0.25	794	77	0.25	794
	300	7.5	0.17	0.10	848	59	0.14	679	0.12	566	0.10	485	0.17	848	0.14	848	75	0.14	848
	100	2.5	0.07	0.04	887	54	0.05	709	0.04	591	0.04	507	0.07	887	0.05	887	72	0.05	887
50 (50)	2500	50	0.60	0.40	506	67	0.49	405	0.41	337	0.36	289	0.60	506	0.52	506	77	0.52	506
	1750	35	0.50	0.33	591	66	0.40	472	0.34	394	0.30	337	0.50	591	0.43	591	77	0.43	591
	1160	23	0.39	0.25	667	63	0.31	534	0.26	445	0.23	381	0.39	667	0.32	667	76	0.32	667
	870	17	0.32	0.20	708	61	0.26	567	0.22	472	0.19	405	0.32	708	0.26	708	75	0.26	708
	600	12	0.24	0.14	749	59	0.19	599	0.16	499	0.14	428	0.24	749	0.19	749	74	0.19	749
	300	6.0	0.14	0.08	797	55	0.11	637	0.09	531	0.08	455	0.14	797	0.11	797	72	0.11	797
	100	2.0	0.05	0.03	830	50	0.04	664	0.04	554	0.03	475	0.05	830	0.04	830	69	0.04	830
60 (60)	2500	42	0.50	0.32	479	63	0.41	383	0.35	319	0.31	274	0.50	479	0.43	479	73	0.43	479
	1750	29	0.42	0.26	557	62	0.34	445	0.29	371	0.25	318	0.42	557	0.35	557	74	0.35	557
	1160	19	0.32	0.19	627	59	0.26	501	0.22	418	0.19	358	0.32	627	0.26	627	73	0.26	627
	870	15	0.27	0.15	664	57	0.21	531	0.18	443	0.16	380	0.27	664	0.21	664	72	0.21	664
	600	10	0.20	0.11	701	55	0.16	561	0.14	467	0.12	401	0.20	701	0.16	701	71	0.16	701
	300	5.0	0.12	0.06	745	51	0.09	596	0.08	496	0.07	426	0.12	745	0.09	745	69	0.09	745
	100	1.7	0.04	0.02	775	46	0.04	620	0.03	517	0.03	443	0.04	775	0.03	775	67	0.03	775
80 (82)	2500	30	0.33	0.18	382	56	0.28	305	0.24	254	0.21	218	0.33	382	0.28	382	66	0.28	382
	1750	21	0.27	0.15	437	55	0.22	350	0.19	291	0.17	250	0.27	437	0.22	437	67	0.22	437
	1160	14	0.21	0.11	486	53	0.17	389	0.14	324	0.12	278	0.21	486	0.16	486	67	0.16	486
	870	11	0.17	0.09	512	51	0.14	410	0.12	342	0.10	293	0.17	512	0.13	512	67	0.13	512
	600	7.3	0.13	0.06	538	49	0.10	430	0.09	359	0.08	307	0.13	538	0.09	538	66	0.09	538
	300	3.7	0.07	0.03	568	45	0.06	454	0.05	379	0.04	325	0.07	568	0.05	568	65	0.05	568
	100	1.2	0.03	0.01	589	41	0.02	471	0.02	393	0.02	337	0.03	589	0.02	589	63	0.02	589
100 (99)	2500	25	0.25	0.12	310	49	0.21	248	0.18	207	0.16	177	0.25	310	0.21	310	60	0.21	310
	1750	18	0.20	0.10	355	49	0.17	284	0.14	236	0.13	203	0.20	355	0.16	355	62	0.16	355
	1160	12	0.15	0.07	394	47	0.13	315	0.11	262	0.09	225	0.15	394	0.12	394	62	0.12	394
	870	8.8	0.13	0.06	414	46	0.10	332	0.09	276	0.08	237	0.13	414	0.09	414	62	0.09	414
	600	6.1	0.09	0.04	435	44	0.08	348	0.07	290	0.06	248	0.10	435	0.07	435	62	0.07	435
	300	3.0	0.05	0.02	459	41	0.04	367	0.04	306	0.03	262	0.05	459	0.04	459	62	0.04	459
	100	1.0	0.02	0.01	475	37	0.02	380	0.01	317	0.01	271	0.02	475	0.01	475	60	0.01	475

1. Numbers shown in ( ) are exact ratios.
2. If input speed is below 1160 RPM, please specify speed and mounting position to insure proper lubrication.
3. See engineering section, pages 224-226, for further discussion regarding service factors.
4. Actual input HP must not exceed the thermal input HP capacity on a continuous basis.
5. 1.00 Service Factor.
6. See engineering section, page 227, for further discussion regarding gear reducer efficiencies.

SINGLE REDUCTION
THRUST AND OVERHUNG LOAD RATINGS

REDUCER SIZE
920

OVERHUNG LOAD CAPACITIES[1]							THRUST CAPACITIES				2.000 CENTER DISTANCE	
INPUT SHAFT	OUTPUT SHAFT[5]						OUTPUT SHAFT					
ALL MODELS	DB[2], DT	DV SHAFT UP	DV SHAFT DOWN	DSF[3, 4] BASE SIDE	DSF[3, 4] COVER SIDE		DB, DT, DV	DSF TOWARD BASE	DSF AWAY FROM BASE		INPUT RPM	RATIO
237	650	650	624	1470	600		894	1440	1890		2500	**30** (30)
237	650	650	624	1470	600		894	1440	1890		1750	
237	650	650	624	1470	600		894	1440	1890		1160	
237	650	650	624	1470	600		894	1440	1890		870	
237	650	650	624	1470	600		894	1440	1890		600	
213	650	650	624	1470	600		894	1440	1890		300	
184	650	650	624	1470	600		894	1440	1890		100	
246	650	650	624	1470	600		894	1440	1890		2500	**40** (40)
246	650	650	624	1470	600		894	1440	1890		1750	
246	650	650	624	1470	600		894	1440	1890		1160	
246	650	650	624	1470	600		894	1440	1890		870	
246	650	650	624	1470	600		894	1440	1890		600	
236	650	650	624	1470	600		894	1440	1890		300	
212	650	650	624	1470	600		894	1440	1890		100	
224	650	650	624	1470	600		894	1440	1890		2500	**50** (50)
224	650	650	624	1470	600		894	1440	1890		1750	
224	650	650	624	1470	600		894	1440	1890		1160	
224	650	650	624	1470	600		894	1440	1890		870	
224	650	650	624	1470	600		894	1440	1890		600	
224	650	650	624	1470	600		894	1440	1890		300	
224	650	650	624	1470	600		894	1440	1890		100	
224	650	650	624	1470	600		894	1440	1890		2500	**60** (60)
224	650	650	624	1470	600		894	1440	1890		1750	
224	650	650	624	1470	600		894	1440	1890		1160	
224	650	650	624	1470	600		894	1440	1890		870	
224	650	650	624	1470	600		894	1440	1890		600	
224	650	650	624	1470	600		894	1440	1890		300	
224	650	650	624	1470	600		894	1440	1890		100	
220	650	650	624	1470	600		894	1440	1890		2500	**80** (82)
220	650	650	624	1470	600		894	1440	1890		1750	
220	650	650	624	1470	600		894	1440	1890		1160	
220	650	650	624	1470	600		894	1440	1890		870	
220	650	650	624	1470	600		894	1440	1890		600	
219	650	650	624	1470	600		894	1440	1890		300	
206	650	650	624	1470	600		894	1440	1890		100	
220	650	650	624	1470	600		894	1440	1890		2500	**100** (99)
220	650	650	624	1470	600		894	1440	1890		1750	
220	650	650	624	1470	600		894	1440	1890		1160	
220	650	650	624	1470	600		894	1440	1890		870	
220	650	650	624	1470	600		894	1440	1890		600	
220	650	650	624	1470	600		894	1440	1890		300	
220	650	650	624	1470	600		894	1440	1890		100	

1. Overhung load given at one shaft diameter from housing or mounting flange. All values given in pounds.
2. Overhung load capacities are based on the direction and location of the load as shown in figure 1 on page 228. Consult factory for allowable OHL values if load is applied as shown in figure 2A on page 228.
3. Overhung load based on maximum bore size. Use of smaller driven shaft diameter may limit OHL capacity.
4. Overhung load capacity given at a point located 4.625 inches from centerline of housing.
5. For DSN output shaft overhung load capacities, contact the factory.

REDUCER SIZE
924

SINGLE REDUCTION HORSEPOWER AND TORQUE RATINGS

WINSMITH

2.375 CENTER DISTANCE

HORSEPOWER AND TORQUE RATINGS (INCH POUNDS)

RATIO[1]	INPUT RPM[2]	OUTPUT RPM	MECHANICAL[3] 1.00 SERVICE FACTOR INPUT HP	OUTPUT HP	OUTPUT TORQUE	EFF[6]	1.25 SF INPUT HP	OUTPUT TORQUE	1.50 SF INPUT HP	OUTPUT TORQUE	1.75 SF INPUT HP	OUTPUT TORQUE	THERMAL[4] INPUT HP	OUTPUT TORQUE	SYNTHETIC OIL MECHANICAL[5] INPUT HP	OUTPUT TORQUE	EFF[6]	THERMAL INPUT HP	OUTPUT TORQUE
4 (4)	2500	625	5.79	5.44	548	94	4.65	439	3.89	365	3.35	313	3.72	350	5.68	548	96	5.68	548
	1750	438	4.85	4.53	653	94	3.89	522	3.25	435	2.79	373	3.77	506	4.74	653	96	4.74	653
	1160	290	4.17	3.86	840	93	3.34	672	2.79	560	2.39	480	3.48	700	4.05	840	95	4.05	840
	870	218	3.56	3.28	950	92	2.85	760	2.38	633	2.05	543	3.21	856	3.45	950	95	3.45	950
	600	150	2.79	2.54	1066	91	2.23	853	1.86	711	1.60	609	2.79	1066	2.69	1066	94	2.69	1066
	300	75	1.62	1.44	1212	89	1.30	969	1.08	808	0.93	692	1.62	1212	1.55	1212	93	1.55	1212
	100	25	0.61	0.52	1320	86	0.49	1056	0.41	880	0.35	754	0.61	1320	0.57	1320	92	0.57	1320
5 (5)	2500	500	5.08	4.70	593	93	4.08	474	3.41	395	2.94	339	3.79	440	4.96	593	95	4.96	593
	1750	350	4.38	4.03	726	92	3.52	581	2.94	484	2.53	415	3.72	616	4.26	726	95	4.26	726
	1160	232	3.68	3.35	911	91	2.95	729	2.46	607	2.12	521	3.38	835	3.56	911	94	3.56	911
	870	174	3.18	2.87	1039	90	2.55	831	2.13	693	1.82	594	3.10	1012	3.06	1039	94	3.06	1039
	600	120	2.51	2.24	1174	89	2.01	939	1.68	783	1.44	671	2.51	1174	2.40	1174	93	2.40	1174
	300	60	1.48	1.28	1345	87	1.19	1076	0.99	897	0.85	768	1.48	1345	1.40	1345	92	1.40	1345
	100	20	0.57	0.47	1472	83	0.45	1178	0.38	982	0.32	841	0.56	1472	0.52	1472	90	0.52	1472
7½ (7½)	2500	333	3.98	3.63	686	91	3.20	549	2.68	457	2.31	392	3.27	562	3.87	686	94	3.87	686
	1750	233	3.41	3.09	834	91	2.74	668	2.29	556	1.97	477	3.20	784	3.30	834	94	3.30	834
	1160	155	2.80	2.51	1022	90	2.24	818	1.88	681	1.61	584	2.80	1022	2.69	1022	93	2.69	1022
	870	116	2.34	2.08	1129	89	1.88	903	1.57	753	1.35	645	2.34	1129	2.24	1129	93	2.24	1129
	600	80	1.80	1.57	1239	87	1.44	991	1.20	826	1.03	708	1.80	1239	1.71	1239	92	1.71	1239
	300	40	1.03	0.87	1373	85	0.82	1099	0.69	916	0.59	785	1.03	1373	0.96	1373	91	0.96	1373
	100	13	0.38	0.31	1471	82	0.31	1177	0.26	981	0.22	841	0.38	1471	0.35	1471	89	0.35	1471
10 (10)	2500	250	3.18	2.85	719	90	2.56	575	2.15	479	1.85	411	2.89	652	3.08	719	93	3.08	719
	1750	175	2.77	2.48	892	89	2.23	714	1.87	595	1.61	510	2.77	892	2.67	892	93	2.67	892
	1160	116	2.20	1.95	1057	88	1.77	845	1.48	705	1.27	604	2.20	1057	2.11	1057	92	2.11	1057
	870	87	1.82	1.59	1149	87	1.46	919	1.22	766	1.05	656	1.82	1149	1.73	1149	92	1.73	1149
	600	60	1.37	1.18	1241	86	1.10	993	0.92	828	0.79	709	1.37	1241	1.30	1241	91	1.30	1241
	300	30	0.77	0.64	1353	84	0.62	1083	0.52	902	0.44	773	0.77	1353	0.72	1353	90	0.72	1353
	100	10	0.28	0.23	1433	80	0.23	1147	0.19	956	0.16	819	0.28	1433	0.26	1433	88	0.26	1433
15 (15)	2500	167	2.41	2.08	786	86	1.95	629	1.64	524	1.42	449	2.12	687	2.31	786	90	2.31	786
	1750	117	2.10	1.80	971	86	1.69	777	1.42	647	1.23	555	2.08	960	1.99	971	90	1.99	971
	1160	77	1.67	1.41	1147	84	1.35	917	1.13	764	0.97	655	1.67	1147	1.57	1147	90	1.57	1147
	870	58	1.38	1.14	1244	83	1.11	995	0.93	829	0.80	711	1.38	1244	1.29	1244	89	1.29	1244
	600	40	1.05	0.85	1342	81	0.84	1074	0.70	895	0.61	767	1.05	1342	0.97	1342	88	0.97	1342
	300	20	0.59	0.46	1461	78	0.48	1169	0.40	974	0.34	835	0.59	1461	0.54	1461	86	0.54	1461
	100	6.7	0.22	0.16	1545	74	0.18	1236	0.15	1030	0.13	883	0.22	1545	0.19	1545	84	0.19	1545
20 (20)	2500	125	1.94	1.61	813	84	1.57	650	1.32	542	1.14	465	1.76	738	1.83	813	88	1.83	813
	1750	88	1.66	1.37	988	83	1.34	790	1.13	658	0.97	564	1.66	988	1.56	988	88	1.56	988
	1160	58	1.31	1.06	1151	81	1.05	921	0.88	767	0.76	658	1.31	1151	1.21	1151	87	1.21	1151
	870	44	1.08	0.86	1241	80	0.87	993	0.72	827	0.62	709	1.08	1241	0.99	1241	87	0.99	1241
	600	30	0.81	0.63	1331	78	0.65	1065	0.55	887	0.47	760	0.81	1331	0.74	1331	86	0.74	1331
	300	15	0.46	0.34	1438	74	0.37	1151	0.31	959	0.27	822	0.46	1438	0.41	1438	84	0.41	1438
	100	5.0	0.17	0.12	1515	70	0.14	1212	0.11	1010	0.10	866	0.17	1515	0.15	1515	82	0.15	1515
25 (25)	2500	100	1.62	1.30	822	81	1.31	657	1.11	548	0.96	470	1.53	771	1.52	822	86	1.52	822
	1750	70	1.38	1.10	988	80	1.11	791	0.94	659	0.81	565	1.38	988	1.28	988	86	1.28	988
	1160	46	1.08	0.84	1143	78	0.87	914	0.73	762	0.63	653	1.08	1143	0.99	1143	85	0.99	1143
	870	35	0.89	0.68	1227	77	0.71	982	0.60	818	0.52	701	0.89	1227	0.80	1227	85	0.80	1227
	600	24	0.67	0.50	1311	75	0.54	1049	0.45	874	0.39	749	0.67	1311	0.60	1311	84	0.60	1311
	300	12	0.38	0.27	1412	71	0.30	1129	0.25	941	0.22	807	0.38	1412	0.33	1412	82	0.33	1412
	100	4.0	0.14	0.09	1483	67	0.11	1186	0.09	989	0.08	847	0.14	1483	0.12	1483	79	0.12	1483

1. Numbers shown in ( ) are exact ratios.
2. If input speed is below 1160 RPM, please specify speed and mounting position to insure proper lubrication.
3. See engineering section, pages 224-226, for further discussion regarding service factors.
4. Actual input HP must not exceed the thermal input HP capacity on a continuous basis.
5. 1.00 Service Factor.
6. See engineering section, page 227, for further discussion regarding gear reducer efficiencies.

SINGLE REDUCTION
THRUST AND OVERHUNG LOAD RATINGS

REDUCER SIZE
924

OVERHUNG LOAD CAPACITIES[1]							THRUST CAPACITIES				2.375 CENTER DISTANCE	
INPUT SHAFT	OUTPUT SHAFT[5]						OUTPUT SHAFT					
ALL MODELS	DB, DT[2]	DV SHAFT UP	DV SHAFT DOWN	DSF[3, 4] BASE SIDE	DSF[3, 4] COVER SIDE		DB, DT, DV	DSF TOWARD BASE	DSF AWAY FROM BASE		INPUT RPM	RATIO
350	683	683	728	921	921		677	1701	1701		2500	**4** (4)
350	721	721	772	975	975		687	1777	1777		1750	
350	821	821	884	1094	1094		748	1909	1909		1160	
350	901	901	960	1197	1197		808	1909	1909		870	
350	1017	1017	960	1350	1240		909	1909	1909		600	
350	1025	1025	960	1675	1240		1232	1909	1909		300	
350	1025	1025	960	2150	1240		1500	1909	1909		100	
350	725	725	770	979	979		788	1879	1879		2500	**5** (5)
350	774	774	827	1035	1035		821	1909	1909		1750	
350	890	890	954	1179	1179		924	1909	1909		1160	
350	976	976	960	1298	1240		1002	1909	1909		870	
350	1025	1025	960	1463	1240		1131	1909	1909		600	
350	1025	1025	960	1826	1240		1500	1909	1909		300	
350	1025	1025	960	2150	1240		1500	1909	1909		100	
320	808	808	857	1056	1056		892	1909	1909		2500	**7½** (7½)
320	867	867	923	1128	1128		937	1909	1909		1750	
320	1003	1003	960	1312	1312		1071	1909	1909		1160	
320	1025	1025	960	1451	1240		1191	1909	1909		870	
320	1025	1025	960	1641	1240		1395	1909	1909		600	
320	1025	1025	960	2103	1240		1500	1909	1909		300	
320	1025	1025	960	2150	1240		1500	1909	1909		100	
250	880	880	930	1125	1125		993	1909	1909		2500	**10** (10)
250	942	942	960	1218	1218		1041	1909	1909		1750	
250	1025	1025	960	1423	1240		1219	1909	1909		1160	
250	1025	1025	960	1576	1240		1383	1909	1909		870	
230	1025	1025	960	1801	1240		1500	1909	1909		600	
155	1025	1025	960	2150	1240		1500	1909	1909		300	
93	1025	1025	960	2150	1240		1500	1909	1909		100	
290	992	992	960	1262	1240		1172	1909	1909		2500	**15** (15)
290	1025	1025	960	1370	1240		1254	1909	1909		1750	
290	1025	1025	960	1602	1240		1500	1909	1909		1160	
290	1025	1025	960	1792	1240		1500	1909	1909		870	
234	1025	1025	960	2074	1240		1500	1909	1909		600	
163	1025	1025	960	2150	1240		1500	1909	1909		300	
107	1025	1025	960	2150	1240		1500	1909	1909		100	
270	1025	1025	960	1364	1240		1295	1909	1909		2500	**20** (20)
270	1025	1025	960	1485	1240		1429	1909	1909		1750	
270	1025	1025	960	1756	1240		1500	1909	1909		1160	
270	1025	1025	960	1977	1240		1510	1909	1909		870	
235	1025	1025	960	2150	1240		1500	1909	1909		600	
174	1025	1025	960	2150	1240		1500	1909	1909		300	
127	1025	1025	960	1240	1240		1500	1909	1909		100	
240	1025	1025	960	1449	1240		1420	1909	1909		2500	**25** (25)
240	1025	1025	960	1580	1240		1500	1909	1909		1750	
240	1025	1025	960	1893	1240		1500	1909	1909		1160	
240	1025	1025	960	2132	1240		1500	1909	1909		870	
238	1025	1025	960	2150	1240		1500	1909	1909		600	
184	1025	1025	960	2150	1240		1500	1909	1909		300	
142	1025	1025	960	2150	1240		1500	1909	1909		100	

1. Overhung load given at one shaft diameter from housing or mounting flange. All values given in pounds.
2. Overhung load capacities are based on the direction and location of the load as shown in figure 1 on page 228. Consult factory for allowable OHL values if load is applied as shown in figure 2A, B, C or D on page 228.
3. Overhung load based on maximum bore size. Use of smaller driven shaft diameter may limit OHL capacity.
4. Overhung load capacity given at a point located 5.000 inches from centerline of housing.
5. For DSN output shaft overhung load capacities, contact the factory.

REDUCER SIZE
924

SINGLE REDUCTION HORSEPOWER AND TORQUE RATINGS

WINSMITH®

2.375 CENTER DISTANCE

HORSEPOWER AND TORQUE RATINGS (INCH POUNDS)

RATIO[1]	INPUT RPM[2]	OUTPUT RPM	MECHANICAL[3] 1.00 SERVICE FACTOR INPUT HP	1.00 SF OUTPUT HP	1.00 SF OUTPUT TORQUE	1.00 SF EFF[6]	1.25 SF INPUT HP	1.25 SF OUTPUT TORQUE	1.50 SF INPUT HP	1.50 SF OUTPUT TORQUE	1.75 SF INPUT HP	1.75 SF OUTPUT TORQUE	THERMAL[4] INPUT HP	THERMAL[4] OUTPUT TORQUE	SYNTHETIC OIL MECHANICAL[5] INPUT HP	SYNTHETIC OIL MECHANICAL[5] OUTPUT TORQUE	SYNTHETIC OIL MECHANICAL[5] EFF[6]	SYNTHETIC OIL THERMAL INPUT HP	SYNTHETIC OIL THERMAL OUTPUT TORQUE
30 (30)	2500	83	1.42	1.08	820	77	1.15	656	0.97	547	0.85	469	1.25	716	1.31	820	83	1.31	820
	1750	58	1.24	0.93	1007	76	1.00	806	0.84	672	0.73	576	1.23	1002	1.12	1007	83	1.12	1007
	1160	39	0.99	0.73	1184	73	0.80	947	0.67	789	0.58	677	0.99	1184	0.88	1184	82	0.88	1184
	870	29	0.82	0.59	1282	72	0.66	1026	0.56	855	0.48	733	0.82	1282	0.72	1282	82	0.72	1282
	600	20	0.63	0.44	1380	69	0.51	1104	0.43	920	0.37	789	0.63	1380	0.54	1380	80	0.54	1380
	300	10	0.37	0.24	1498	65	0.29	1199	0.25	999	0.21	856	0.37	1498	0.30	1498	78	0.30	1498
	100	3.3	0.14	0.08	1583	60	0.11	1266	0.09	1055	0.08	904	0.14	1583	0.11	1583	75	0.11	1583
40 (40)	2500	63	1.13	0.81	817	72	0.92	654	0.78	545	0.68	467	1.05	759	1.02	817	79	1.02	817
	1750	44	0.97	0.69	989	71	0.79	791	0.67	659	0.58	565	0.97	989	0.86	989	80	0.86	989
	1160	29	0.77	0.53	1149	69	0.62	919	0.53	766	0.46	657	0.77	1149	0.67	1149	79	0.67	1149
	870	22	0.64	0.43	1237	67	0.52	990	0.43	825	0.38	707	0.64	1237	0.55	1237	78	0.55	1237
	600	15	0.49	0.32	1325	64	0.40	1060	0.33	884	0.29	757	0.49	1325	0.41	1325	77	0.41	1325
	300	7.5	0.28	0.17	1430	60	0.23	1144	0.07	954	0.16	817	0.28	1430	0.23	1430	75	0.23	1430
	100	2.5	0.11	0.06	1505	55	0.09	1204	0.08	1003	0.06	860	0.11	1505	0.08	1505	72	0.08	1505
50 (50)	2500	50	0.93	0.63	794	68	0.76	635	0.65	529	0.57	454	0.93	794	0.83	794	76	0.83	794
	1750	35	0.79	0.53	949	67	0.64	760	0.55	633	0.48	543	0.79	949	0.69	949	76	0.69	949
	1160	23	0.62	0.40	1093	64	0.51	874	0.43	728	0.37	624	0.62	1093	0.53	1093	76	0.53	1093
	870	17	0.52	0.32	1171	63	0.42	937	0.35	781	0.30	669	0.52	1171	0.43	1171	75	0.43	1171
	600	12	0.40	0.24	1249	60	0.32	999	0.27	832	0.23	714	0.40	1249	0.32	1249	74	0.32	1249
	300	6.0	0.23	0.13	1341	56	0.18	1073	0.15	894	0.13	766	0.23	1341	0.18	1341	72	0.18	1341
	100	2.0	0.09	0.04	1407	51	0.07	1125	0.06	938	0.05	804	0.09	1407	0.06	1407	70	0.06	1407
60 (60)	2500	42	0.78	0.50	753	64	0.64	603	0.55	502	0.49	430	0.78	753	0.69	753	72	0.69	753
	1750	29	0.66	0.41	896	63	0.54	717	0.46	597	0.40	512	0.66	896	0.57	896	73	0.57	896
	1160	19	0.52	0.31	1027	60	0.42	821	0.36	684	0.31	587	0.52	1027	0.43	1027	73	0.43	1027
	870	15	0.43	0.25	1098	59	0.35	878	0.29	732	0.26	627	0.43	1098	0.35	1098	72	0.35	1098
	600	10	0.33	0.19	1168	56	0.27	935	0.22	779	0.19	668	0.33	1168	0.26	1168	71	0.26	1168
	300	5.0	0.19	0.10	1252	52	0.15	1002	0.13	835	0.11	716	0.19	1252	0.14	1252	69	0.14	1252
	100	1.7	0.07	0.03	1312	47	0.06	1049	0.05	874	0.04	749	0.07	1312	0.05	1312	67	0.05	1312
80 (80)	2500	31	0.55	0.31	622	56	0.46	498	0.40	415	0.36	356	0.55	622	0.48	622	65	0.48	622
	1750	22	0.46	0.25	735	55	0.38	588	0.33	490	0.29	420	0.46	735	0.38	735	66	0.38	735
	1160	15	0.36	0.19	837	53	0.30	669	0.25	558	0.22	478	0.36	837	0.29	837	67	0.29	837
	870	11	0.30	0.15	892	52	0.24	714	0.21	595	0.18	510	0.30	892	0.23	892	66	0.23	892
	600	7.5	0.23	0.11	947	49	0.19	758	0.16	631	0.14	541	0.23	947	0.17	947	66	0.17	947
	300	3.8	0.13	0.06	988	46	0.10	790	0.09	659	0.08	565	0.13	988	0.09	988	64	0.09	988
	100	1.3	0.05	0.02	988	41	0.04	790	0.03	659	0.03	565	0.05	988	0.03	988	63	0.03	988
100 (100)	2500	25	0.40	0.19	489	48	0.34	392	0.30	326	0.27	280	0.40	489	0.34	489	57	0.34	489
	1750	18	0.33	0.16	576	48	0.28	460	0.24	384	0.21	329	0.33	576	0.27	576	59	0.27	576
	1160	12	0.26	0.12	654	47	0.21	523	0.18	436	0.16	374	0.26	654	0.20	654	60	0.20	654
	870	8.7	0.21	0.10	696	45	0.17	557	0.15	464	0.13	398	0.21	696	0.16	696	61	0.16	696
	600	6.0	0.16	0.07	738	44	0.13	590	0.11	492	0.10	422	0.16	738	0.12	738	61	0.12	738
	300	3.0	0.09	0.04	787	40	0.08	630	0.06	525	0.06	450	0.09	787	0.06	787	60	0.06	787
	100	1.0	0.04	0.01	818	36	0.03	654	0.02	545	0.02	467	0.04	818	0.02	818	59	0.02	818

1. Numbers shown in ( ) are exact ratios.
2. If input speed is below 1160 RPM, please specify speed and mounting position to insure proper lubrication.
3. See engineering section, pages 224-226, for further discussion regarding service factors.
4. Actual input HP must not exceed the thermal input HP capacity on a continuous basis.
5. 1.00 Service Factor.
6. See engineering section, page 227, for further discussion regarding gear reducer efficiencies.

SINGLE REDUCTION
THRUST AND OVERHUNG LOAD RATINGS

REDUCER SIZE
924

OVERHUNG LOAD CAPACITIES[1]							THRUST CAPACITIES				2.375 CENTER DISTANCE	
INPUT SHAFT	OUTPUT SHAFT[5]						OUTPUT SHAFT					
ALL MODELS	DB, DT[2]	DV SHAFT UP	DV SHAFT DOWN	DSF[3, 4] BASE SIDE	DSF[3, 4] COVER SIDE		DB, DT, DV	DSF TOWARD BASE	DSF AWAY FROM BASE		INPUT RPM	RATIO
250	1025	1025	960	1525	1240		1500	1909	1909		2500	**30** (30)
250	1025	1025	960	1677	1240		1500	1909	1909		1750	
250	1025	1025	960	2009	1240		1500	1909	1909		1160	
250	1025	1025	960	2150	1240		1500	1909	1909		870	
231	1025	1025	960	2150	1240		1500	1909	1909		600	
168	1025	1025	960	2150	1240		1500	1909	1909		300	
119	1025	1025	960	2150	1240		1500	1909	1909		100	
275	1025	1025	960	1655	1240		1500	1909	1909		2500	**40** (40)
275	1025	1025	960	1843	1240		1500	1909	1909		1750	
275	1025	1025	960	2150	1240		1500	1909	1909		1160	
275	1025	1025	960	2150	1240		1500	1909	1909		870	
220	1025	1025	960	2150	1240		1500	1909	1909		600	
166	1025	1025	960	2150	1240		1500	1909	1909		300	
125	1025	1025	960	2150	1240		1500	1909	1909		100	
250	1025	1025	960	1779	1240		1500	1909	1909		2500	**50** (50)
250	1025	1025	960	1983	1240		1500	1909	1909		1750	
250	1025	1025	960	2150	1240		1500	1909	1909		1160	
250	1025	1025	960	2150	1240		1500	1909	1909		870	
248	1025	1025	960	2150	1240		1500	1909	1909		600	
202	1025	1025	960	2150	1240		1500	1909	1909		300	
167	1025	1025	960	2150	1240		1500	1909	1909		100	
235	1025	1025	960	1889	1240		1500	1909	1909		2500	**60** (60)
235	1025	1025	960	2106	1240		1500	1909	1909		1750	
235	1025	1025	960	2150	1240		1500	1909	1909		1160	
235	1025	1025	960	2150	1240		1500	1909	1909		870	
235	1025	1025	960	2150	1240		1500	1909	1909		600	
229	1025	1025	960	2150	1240		1500	1909	1909		300	
198	1025	1025	960	2150	1240		1500	1909	1909		100	
235	1025	1025	960	2079	1240		1500	1909	1909		2500	**80** (80)
235	1025	1025	960	2150	1240		1500	1909	1909		1750	
235	1025	1025	960	2150	1240		1500	1909	1909		1160	
235	1025	1025	960	2150	1240		1500	1909	1909		870	
235	1025	1025	960	2150	1240		1500	1909	1909		600	
235	1025	1025	960	2150	1240		1500	1909	1909		300	
235	1025	1025	960	2150	1240		1500	1909	1909		100	
235	1025	1025	960	2150	1240		1500	1909	1909		2500	**100** (100)
235	1025	1025	960	2150	1240		1500	1909	1909		1750	
235	1025	1025	960	2150	1240		1500	1909	1909		1160	
235	1025	1025	960	2150	1240		1500	1909	1909		870	
235	1025	1025	960	2150	1240		1500	1909	1909		600	
235	1025	1025	960	2150	1240		1500	1909	1909		300	
235	1025	1025	960	2150	1240		1500	1909	1909		100	

1. Overhung load given at one shaft diameter from housing or mounting flange. All values given in pounds.
2. Overhung load capacities are based on the direction and location of the load as shown in figure 1 on page 228. Consult factory for allowable OHL values if load is applied as shown in figure 2A, B, C or D on page 228.
3. Overhung load based on maximum bore size. Use of smaller driven shaft diameter may limit OHL capacity.
4. Overhung load capacity given at a point located 5.000 inches from centerline of housing.
5. For DSN output shaft overhung load capacities, contact the factory.

REDUCER SIZE
926

SINGLE REDUCTION HORSEPOWER AND TORQUE RATINGS

WINSMITH

2.625 CENTER DISTANCE

HORSEPOWER AND TORQUE RATINGS (INCH POUNDS)

RATIO[1]	INPUT RPM[2]	OUTPUT RPM	MECHANICAL[3] 1.00 SERVICE FACTOR INPUT HP	OUTPUT HP	OUTPUT TORQUE	EFF[6]	1.25 SF INPUT HP	1.25 SF OUTPUT TORQUE	1.50 SF INPUT HP	1.50 SF OUTPUT TORQUE	1.75 SF INPUT HP	1.75 SF OUTPUT TORQUE	THERMAL[4] INPUT HP	THERMAL[4] OUTPUT TORQUE	SYNTHETIC OIL MECHANICAL[5] INPUT HP	SYNTHETIC OIL MECHANICAL[5] OUTPUT TORQUE	SYNTHETIC OIL MECHANICAL[5] EFF[6]	SYNTHETIC OIL THERMAL INPUT HP	SYNTHETIC OIL THERMAL OUTPUT TORQUE
4 (4)	2500	625	7.35	6.89	695	94	5.89	556	4.93	463	4.24	397	3.83	358	7.20	695	96	6.32	609
	1750	438	6.34	5.91	852	93	5.08	682	4.24	568	3.65	487	3.84	513	6.19	852	96	6.19	852
	1160	290	5.29	4.88	1061	92	4.24	849	3.53	708	3.03	607	3.51	703	5.13	1061	95	5.13	1061
	870	218	4.74	4.34	1257	92	3.79	1005	3.16	838	2.72	718	3.22	851	4.58	1257	95	4.58	1257
	600	150	3.87	3.50	1471	90	3.10	1176	2.59	980	2.22	840	2.84	1077	3.72	1471	94	3.72	1471
	300	75	2.37	2.08	1751	88	1.90	1401	1.58	1167	1.36	1001	2.28	1682	2.25	1751	93	2.25	1751
	100	25	0.93	0.78	1967	84	0.74	1574	0.62	1312	0.53	1124	0.93	1967	0.86	1967	90	0.86	1967
5 (5)	2500	500	6.66	6.21	783	93	5.34	626	4.47	522	3.84	447	4.09	477	6.51	783	95	6.51	783
	1750	350	5.75	5.33	959	93	4.61	768	3.85	640	3.31	548	4.00	665	5.60	959	95	5.60	959
	1160	232	4.84	4.44	1205	92	3.88	964	3.24	803	2.78	689	3.62	899	4.68	1205	95	4.68	1205
	870	174	4.24	3.85	1394	91	3.39	1115	2.83	929	2.43	796	3.31	1087	4.08	1394	94	4.08	1394
	600	120	3.39	3.04	1595	90	2.72	1276	2.27	1064	1.94	912	2.93	1377	3.25	1595	94	3.25	1595
	300	60	2.03	1.76	1854	87	1.62	1483	1.35	1236	1.16	1059	2.03	1854	1.92	1854	92	1.92	1854
	100	20	0.78	0.65	2049	83	0.63	1639	0.52	1366	0.45	1171	0.78	2049	0.72	2049	90	0.72	2049
7½ (7½)	2500	333	5.21	4.79	906	92	4.18	725	3.50	604	3.01	518	3.53	609	5.07	906	95	5.07	906
	1750	233	4.44	4.06	1095	91	3.56	876	2.98	730	2.56	626	3.44	847	4.30	1095	94	4.30	1095
	1160	155	3.73	3.36	1370	90	2.99	1096	2.49	914	2.14	783	3.13	1149	3.59	1370	94	3.59	1370
	870	116	3.15	2.82	1530	89	2.53	1224	2.11	1020	1.81	874	2.88	1397	3.02	1530	93	3.02	1530
	600	80	2.44	2.15	1695	88	1.96	1356	1.63	1130	1.40	969	2.44	1695	2.32	1695	93	2.32	1695
	300	40	1.41	1.21	1900	86	1.13	1520	0.94	1267	0.81	1086	1.41	1900	1.32	1900	91	1.32	1900
	100	13	0.53	0.43	2050	82	0.42	1640	0.35	1366	0.30	1171	0.53	2050	0.49	2050	89	0.49	2050
10 (10)	2500	250	4.23	3.84	969	91	3.40	775	2.85	646	2.45	553	3.15	716	4.10	969	94	4.10	969
	1750	175	3.63	3.27	1179	90	2.91	943	2.44	786	2.10	674	3.07	995	3.50	1179	94	3.50	1179
	1160	116	2.93	2.61	1416	89	2.35	1133	1.96	944	1.69	809	2.81	1359	2.80	1416	93	2.80	1416
	870	87	2.43	2.14	1550	88	1.95	1240	1.63	1033	1.40	886	2.43	1550	2.31	1550	92	2.31	1550
	600	60	1.85	1.60	1686	87	1.48	1349	1.24	1124	1.06	963	1.85	1686	1.75	1686	92	1.75	1686
	300	30	1.05	0.88	1851	84	0.84	1481	0.70	1234	0.60	1058	1.05	1851	0.98	1851	90	0.98	1851
	100	10	0.39	0.31	1970	81	0.31	1576	0.26	1313	0.22	1125	0.39	1970	0.35	1970	88	0.35	1970
15 (15)	2500	167	3.10	2.71	1025	88	2.49	820	2.09	683	1.81	585	2.31	758	2.97	1025	91	2.97	1025
	1750	117	2.75	2.38	1287	87	2.21	1029	1.85	858	1.59	735	2.26	1054	2.61	1287	91	2.61	1287
	1160	77	2.22	1.89	1539	85	1.78	1231	1.49	1026	1.28	880	2.08	1439	2.09	1539	91	2.09	1539
	870	58	1.84	1.55	1681	84	1.48	1345	1.24	1121	1.06	960	1.84	1681	1.72	1681	90	1.72	1681
	600	40	1.41	1.16	1824	82	1.13	1460	0.94	1216	0.81	1043	1.41	1824	1.30	1824	89	1.30	1824
	300	20	0.80	0.63	1999	79	0.64	1599	0.54	1332	0.46	1142	0.80	1999	0.73	1999	87	0.73	1999
	100	6.7	0.30	0.22	2124	75	0.24	1699	0.20	1416	0.17	1214	0.30	2124	0.27	2124	85	0.27	2124
20 (20)	2500	125	2.49	2.11	1064	85	2.01	851	1.69	709	1.46	608	1.92	814	2.36	1064	89	2.36	1064
	1750	88	2.17	1.82	1312	84	1.75	1050	1.47	875	1.26	750	1.88	1133	2.04	1312	89	2.04	1312
	1160	58	1.73	1.42	1548	82	1.39	1238	1.17	1032	1.00	884	1.73	1548	1.61	1548	89	1.61	1548
	870	44	1.43	1.16	1678	81	1.15	1343	0.96	1119	0.83	959	1.43	1678	1.32	1678	88	1.32	1678
	600	30	1.09	0.86	1810	79	0.88	1448	0.73	1207	0.63	1034	1.09	1810	0.99	1810	87	0.99	1810
	300	15	0.62	0.47	1968	76	0.50	1575	0.42	1312	0.36	1125	0.62	1968	0.55	1968	85	0.55	1968
	100	5.0	0.23	0.17	2082	71	0.19	1665	0.16	1388	0.13	1189	0.23	2082	0.20	2082	82	0.20	2082
25 (25)	2500	100	2.07	1.71	1078	82	1.68	862	1.41	718	1.22	616	1.67	858	1.95	1078	88	1.95	1078
	1750	70	1.79	1.46	1312	81	1.44	1050	1.21	875	1.05	750	1.64	1195	1.67	1312	87	1.67	1312
	1160	46	1.42	1.13	1532	80	1.14	1225	0.96	1021	0.82	875	1.42	1532	1.30	1532	87	1.30	1532
	870	35	1.17	0.91	1653	78	0.94	1322	0.79	1102	0.68	944	1.17	1653	1.06	1653	86	1.06	1653
	600	24	0.89	0.68	1774	76	0.71	1419	0.60	1183	0.51	1014	0.89	1774	0.80	1774	85	0.80	1774
	300	12	0.50	0.37	1920	72	0.40	1536	0.34	1280	0.29	1097	0.50	1920	0.44	1920	83	0.44	1920
	100	4.0	0.19	0.13	2023	68	0.15	1618	0.13	1349	0.11	1156	0.19	2023	0.16	2023	80	0.16	2023

1. Numbers shown in ( ) are exact ratios.
2. If input speed is below 1160 RPM, please specify speed and mounting position to insure proper lubrication.
3. See engineering section, pages 224-226, for further discussion regarding service factors.
4. Actual input HP must not exceed the thermal input HP capacity on a continuous basis.
5. 1.00 Service Factor.
6. See engineering section, page 227, for further discussion regarding gear reducer efficiencies.

SINGLE REDUCTION
THRUST AND OVERHUNG LOAD RATINGS

REDUCER SIZE
926

OVERHUNG LOAD CAPACITIES[1]							THRUST CAPACITIES				2.625 CENTER DISTANCE	
INPUT SHAFT	OUTPUT SHAFT[5]						OUTPUT SHAFT					
ALL MODELS	DB, DT[2]	DV SHAFT UP	DV SHAFT DOWN	DSF[3, 4] BASE SIDE	DSF[3, 4] COVER SIDE	DL	DB, DT, DV	DSF TOWARD BASE	DSF AWAY FROM BASE	DL AWAY FROM BASE	INPUT RPM	RATIO
473	674	674	736	1119	1119	1010	704	2160	2160	808	2500	**4** (4)
500	703	703	774	1184	1184	1010	707	2160	2160	821	1750	
500	807	807	893	1337	1337	1010	791	2160	2160	925	1160	
500	872	872	961	1445	1350	1010	829	2160	2160	977	870	
500	970	970	961	1621	1350	1010	901	2160	2160	1070	600	
500	1025	1025	961	1996	1350	1010	1178	2160	2160	1393	300	
500	1025	1025	961	2500	1350	1010	1500	2160	2160	2153	100	
500	691	691	757	1158	1158	1010	725	2160	2160	833	2500	**5** (5)
500	732	732	809	1223	1223	1010	742	2160	2160	862	1750	
500	836	836	929	1381	1350	1010	824	2160	2160	966	1160	
500	910	910	961	1517	1350	1010	877	2160	2160	1036	870	
500	1025	1025	961	1707	1350	1010	978	2160	2160	1158	600	
500	1025	1025	961	2113	1350	1010	1319	2160	2160	1549	300	
500	1025	1025	961	2500	1350	1010	1500	2160	2160	2160	100	
500	771	771	843	1250	1250	1010	826	2160	2160	948	2500	**7½** (7½)
500	823	823	906	1324	1324	1010	858	2160	2160	994	1750	
500	944	944	961	1536	1350	1010	961	2160	2160	1122	1160	
500	1025	1025	961	1696	1350	1010	1062	2160	2160	1241	870	
500	1025	1025	961	1917	1350	1010	1244	2160	2160	1451	600	
500	1025	1025	961	2440	1350	1010	1500	2160	2160	1949	300	
500	1025	1025	961	2500	1350	1010	1500	2160	2160	2160	100	
250	838	838	913	1322	1322	1010	915	2160	2160	1047	2500	**10** (10)
250	895	895	961	1428	1350	1010	954	2160	2160	1100	1750	
250	1025	1025	961	1666	1350	1010	1106	2160	2160	1278	1160	
250	1025	1025	961	1844	1350	1010	1254	2160	2160	1448	870	
250	1025	1025	961	2091	1350	1010	1478	2160	2160	1701	600	
250	1025	1025	961	2500	1350	1010	1500	2160	2160	2160	300	
173	1025	1025	961	2500	1350	1010	1500	2160	2160	2160	100	
290	960	960	961	1484	1350	1010	1119	2160	2160	1254	2500	**15** (15)
290	1016	1016	961	1608	1350	1010	1181	2160	2160	1331	1750	
290	1025	1025	961	1878	1350	1010	1409	2160	2160	1588	1160	
290	1025	1025	961	2086	1350	1010	1500	2160	2160	1796	870	
285	1025	1025	961	2414	1350	1010	1500	2160	2160	2098	600	
212	1025	1025	961	2500	1350	1010	1500	2160	2160	2160	300	
155	1025	1025	961	2500	1350	1010	1500	2160	2160	2160	100	
300	1025	1025	961	1605	1350	1010	1246	2160	2160	1388	2500	**20** (20)
300	1025	1025	961	1744	1350	1010	1357	2160	2160	1517	1750	
300	1025	1025	961	2046	1350	1010	1500	2160	2160	1818	1160	
300	1025	1025	961	2305	1350	1010	1500	2160	2160	2056	870	
300	1025	1025	961	2500	1350	1010	1500	2160	2160	2160	600	
238	1025	1025	961	2500	1350	1010	1500	2160	2160	2160	300	
189	1025	1025	961	2500	1350	1010	1500	2160	2160	2160	100	
275	1025	1025	961	1705	1350	1010	1372	2160	2160	1523	2500	**25** (25)
275	1025	1025	961	1856	1350	1010	1500	2160	2160	1671	1750	
275	1025	1025	961	2208	1350	1010	1500	2160	2160	2007	1160	
275	1025	1025	961	2487	1350	1010	1500	2160	2160	2160	870	
275	1025	1025	961	2500	1350	1010	1500	2160	2160	2160	600	
260	1025	1025	961	2500	1350	1010	1500	2160	2160	2160	300	
217	1025	1025	961	2500	1350	1010	1500	2160	2160	2160	100	

1. Overhung load given at one shaft diameter from housing or mounting flange. All values given in pounds.
2. Overhung load capacities are based on the direction and location of the load as shown in figure 1 on page 228. Consult factory for allowable OHL values if load is applied as shown in figure 2A, B, C or D on page 228.
3. Overhung load based on maximum bore size. Use of smaller driven shaft diameter may limit OHL capacity.
4. Overhung load capacity given at a point located 5.313 inches from centerline of housing.
5. For DSN output shaft overhung load capacities, contact the factory.

REDUCER SIZE
926

SINGLE REDUCTION HORSEPOWER AND TORQUE RATINGS

WINSMITH®

2.625 CENTER DISTANCE

HORSEPOWER AND TORQUE RATINGS (INCH POUNDS)

RATIO[1]	INPUT RPM[2]	OUTPUT RPM	MECHANICAL[3] 1.00 SERVICE FACTOR INPUT HP	1.00 SF OUTPUT HP	1.00 SF OUTPUT TORQUE	1.00 SF EFF[6]	1.25 SF INPUT HP	1.25 SF OUTPUT TORQUE	1.50 SF INPUT HP	1.50 SF OUTPUT TORQUE	1.75 SF INPUT HP	1.75 SF OUTPUT TORQUE	THERMAL[4] INPUT HP	THERMAL[4] OUTPUT TORQUE	SYNTHETIC OIL MECHANICAL[5] INPUT HP	SYNTHETIC OIL MECHANICAL[5] OUTPUT TORQUE	SYNTHETIC OIL MECHANICAL[5] EFF[6]	SYNTHETIC OIL THERMAL INPUT HP	SYNTHETIC OIL THERMAL OUTPUT TORQUE
30 (30)	2500	83	1.80	1.42	1071	79	1.46	857	1.23	714	1.07	612	1.35	790	1.67	1071	85	1.67	1071
	1750	58	1.60	1.24	1338	77	1.29	1070	1.09	892	0.94	764	1.33	1099	1.46	1338	85	1.46	1338
	1160	39	1.30	0.98	1593	75	1.05	1275	0.88	1062	0.76	910	1.23	1502	1.17	1593	84	1.17	1593
	870	29	1.09	0.80	1736	73	0.88	1389	0.73	1157	0.63	992	1.09	1736	0.96	1736	83	0.96	1736
	600	20	0.84	0.60	1881	71	0.68	1505	0.57	1254	0.49	1075	0.84	1881	0.73	1881	82	0.73	1881
	300	10	0.49	0.33	2055	66	0.39	1644	0.33	1370	0.28	1175	0.49	2055	0.41	2055	79	0.41	2055
	100	3.3	0.19	0.12	2181	61	0.15	1745	0.13	1454	0.11	1246	0.19	2181	0.15	2181	76	0.15	2181
40 (40)	2500	63	1.43	1.06	1071	74	1.16	857	0.98	714	0.86	612	1.14	838	1.30	1071	82	1.30	1071
	1750	44	1.25	0.91	1316	73	1.02	1053	0.86	877	0.74	752	1.12	1166	1.12	1316	81	1.12	1316
	1160	29	1.01	0.71	1548	70	0.82	1238	0.69	1032	0.59	884	1.01	1548	0.88	1548	81	0.88	1548
	870	22	0.85	0.58	1676	68	0.68	1341	0.57	1118	0.49	958	0.85	1676	0.73	1676	80	0.73	1676
	600	15	0.65	0.43	1805	66	0.52	1444	0.44	1204	0.38	1032	0.65	1805	0.55	1805	78	0.55	1805
	300	7.5	0.38	0.23	1961	61	0.30	1569	0.26	1307	0.22	1120	0.38	1961	0.31	1961	76	0.31	1961
	100	2.5	0.15	0.08	2071	56	0.12	1657	0.10	1381	0.08	1184	0.15	2071	0.11	2071	73	0.11	2071
50 (50)	2500	50	1.18	0.83	1043	70	0.96	835	0.82	696	0.71	596	1.00	877	1.06	1043	78	1.06	1043
	1750	35	1.02	0.70	1266	69	0.83	1013	0.70	844	0.61	724	0.99	1223	0.90	1266	79	0.90	1266
	1160	23	0.82	0.54	1475	66	0.66	1180	0.56	983	0.48	843	0.82	1475	0.70	1475	78	0.70	1475
	870	17	0.68	0.44	1590	64	0.55	1272	0.46	1060	0.40	908	0.68	1590	0.57	1590	77	0.57	1590
	600	12	0.52	0.32	1705	62	0.42	1364	0.35	1136	0.31	974	0.52	1705	0.43	1705	76	0.43	1705
	300	6.0	0.31	0.18	1842	57	0.25	1474	0.21	1228	0.18	1053	0.31	1842	0.24	1842	73	0.24	1842
	100	2.0	0.12	0.06	1940	52	0.10	1552	0.08	1293	0.07	1108	0.12	1940	0.09	1940	71	0.09	1940
60 (60)	2500	42	0.98	0.65	991	67	0.81	793	0.69	660	0.60	566	0.91	904	0.87	991	75	0.87	991
	1750	29	0.85	0.55	1193	65	0.69	955	0.58	796	0.51	682	0.85	1193	0.73	1193	76	0.73	1193
	1160	19	0.68	0.42	1381	63	0.55	1105	0.46	921	0.40	789	0.68	1381	0.57	1381	75	0.57	1381
	870	15	0.56	0.34	1484	61	0.45	1187	0.38	990	0.33	848	0.56	1484	0.46	1484	74	0.46	1484
	600	10	0.43	0.25	1587	58	0.35	1270	0.29	1058	0.25	907	0.43	1587	0.34	1587	73	0.34	1587
	300	5.0	0.25	0.14	1710	54	0.20	1368	0.17	1140	0.15	977	0.25	1710	0.19	1710	71	0.19	1710
	100	1.7	0.10	0.05	1797	48	0.08	1437	0.07	1198	0.06	1027	0.10	1797	0.07	1797	68	0.07	1797
80 (80)	2500	31	0.69	0.41	820	59	0.57	656	0.49	546	0.43	468	0.69	820	0.59	820	69	0.59	820
	1750	22	0.58	0.34	979	58	0.48	783	0.41	652	0.36	559	0.58	979	0.49	979	70	0.49	979
	1160	15	0.46	0.26	1125	56	0.38	900	0.32	750	0.28	643	0.46	1125	0.37	1125	69	0.37	1125
	870	11	0.39	0.21	1205	54	0.31	964	0.26	804	0.23	689	0.39	1205	0.30	1205	69	0.30	1205
	600	7.5	0.30	0.15	1285	52	0.24	1028	0.20	857	0.18	734	0.30	1285	0.22	1285	68	0.22	1285
	300	3.8	0.17	0.08	1380	47	0.14	1104	0.12	920	0.10	788	0.17	1380	0.12	1380	66	0.12	1380
	100	1.3	0.07	0.03	1395	42	0.05	1116	0.04	930	0.04	797	0.07	1395	0.04	1395	64	0.04	1395
100 (100)	2500	25	0.49	0.26	645	52	0.41	516	0.36	430	0.32	369	0.49	645	0.42	645	61	0.42	645
	1750	18	0.41	0.21	767	51	0.34	614	0.30	511	0.26	438	0.41	767	0.34	767	63	0.34	767
	1160	12	0.33	0.16	879	50	0.27	703	0.23	586	0.20	502	0.33	879	0.25	879	64	0.25	879
	870	8.7	0.27	0.13	940	48	0.22	752	0.19	627	0.16	537	0.27	940	0.20	940	64	0.20	940
	600	6.0	0.21	0.10	1001	46	0.17	800	0.14	667	0.12	572	0.21	1001	0.15	1001	63	0.15	1001
	300	3.0	0.12	0.05	1072	42	0.10	858	0.08	715	0.07	613	0.12	1072	0.08	1072	62	0.08	1072
	100	1.0	0.05	0.02	1123	37	0.04	898	0.03	749	0.03	642	0.05	1123	0.03	1123	60	0.03	1123

1. Numbers shown in ( ) are exact ratios.
2. If input speed is below 1160 RPM, please specify speed and mounting position to insure proper lubrication.
3. See engineering section, pages 224-226, for further discussion regarding service factors.
4. Actual input HP must not exceed the thermal input HP capacity on a continuous basis.
5. 1.00 Service Factor.
6. See engineering section, page 227, for further discussion regarding gear reducer efficiencies.

SINGLE REDUCTION
THRUST AND OVERHUNG LOAD RATINGS

REDUCER SIZE
926

OVERHUNG LOAD CAPACITIES[1]							THRUST CAPACITIES				2.625 CENTER DISTANCE	
INPUT SHAFT	OUTPUT SHAFT[5]						OUTPUT SHAFT					
ALL MODELS	DB, DT[2]	DV SHAFT UP	DV SHAFT DOWN	DSF[3, 4] BASE SIDE	DSF[3, 4] COVER SIDE	DL	DB, DT, DV	DSF TOWARD BASE	DSF AWAY FROM BASE	DL AWAY FROM BASE	INPUT RPM	RATIO
340	1025	1025	961	1796	1350	1010	1500	2160	2160	1652	2500	**30** (30)
340	1025	1025	961	1959	1350	1010	1500	2160	2160	1811	1750	
340	1025	1025	961	2344	1350	1010	1500	2160	2160	2160	1160	
335	1025	1025	961	2500	1350	1010	1500	2160	2160	2160	870	
282	1025	1025	961	2500	1350	1010	1500	2160	2160	2160	600	
217	1025	1025	961	2500	1350	1010	1500	2160	2160	2160	300	
166	1025	1025	961	2500	1350	1010	1500	2160	2160	2160	100	
325	1025	1025	961	1939	1350	1010	1500	2160	2160	1840	2500	**40** (40)
325	1025	1025	961	2154	1350	1010	1500	2160	2160	2028	1750	
325	1025	1025	961	2500	1350	1010	1500	2160	2160	2160	1160	
325	1025	1025	961	2500	1350	1010	1500	2160	2160	2160	870	
316	1025	1025	961	2500	1350	1010	1500	2160	2160	2160	600	
260	1025	1025	961	2500	1350	1010	1500	2160	2160	2160	300	
217	1025	1025	961	2500	1350	1010	1500	2160	2160	2160	100	
285	1025	1025	961	2083	1350	1010	1500	2160	2160	2001	2500	**50** (50)
285	1025	1025	961	2319	1350	1010	1500	2160	2160	2160	1750	
285	1025	1025	961	2500	1350	1010	1500	2160	2160	2160	1160	
285	1025	1025	961	2500	1350	1010	1500	2160	2160	2160	870	
285	1025	1025	961	2500	1350	1010	1500	2160	2160	2160	600	
246	1025	1025	961	2500	1350	1010	1500	2160	2160	2160	300	
210	1025	1025	961	2500	1350	1010	1500	2160	2160	2160	100	
270	1025	1025	961	2213	1350	1010	1500	2160	2160	2144	2500	**60** (60)
270	1025	1025	961	2465	1350	1010	1500	2160	2160	2160	1750	
270	1025	1025	961	2500	1350	1010	1500	2160	2160	2160	1160	
270	1025	1025	961	2500	1350	1010	1500	2160	2160	2160	870	
270	1025	1025	961	2500	1350	1010	1500	2160	2160	2160	600	
270	1025	1025	961	2500	1350	1010	1500	2160	2160	2160	300	
244	1025	1025	961	2500	1350	1010	1500	2160	2160	2160	100	
270	1025	1025	961	2438	1350	1010	1500	2160	2160	2160	2500	**80** (80)
270	1025	1025	961	2500	1350	1010	1500	2160	2160	2160	1750	
270	1025	1025	961	2500	1350	1010	1500	2160	2160	2160	1160	
270	1025	1025	961	2500	1350	1010	1500	2160	2160	2160	870	
270	1025	1025	961	2500	1350	1010	1500	2160	2160	2160	600	
270	1025	1025	961	2500	1350	1010	1500	2160	2160	2160	300	
270	1025	1025	961	2500	1350	1010	1500	2160	2160	2160	100	
270	1025	1025	961	2500	1350	1010	1500	2160	2160	2160	2500	**100** (100)
270	1025	1025	961	2500	1350	1010	1500	2160	2160	2160	1750	
270	1025	1025	961	2500	1350	1010	1500	2160	2160	2160	1160	
270	1025	1025	961	2500	1350	1010	1500	2160	2160	2160	870	
270	1025	1025	961	2500	1350	1010	1500	2160	2160	2160	600	
270	1025	1025	961	2500	1350	1010	1500	2160	2160	2160	300	
270	1025	1025	961	2500	1350	1010	1500	2160	2160	2160	100	

1. Overhung load given at one shaft diameter from housing or mounting flange. All values given in pounds.
2. Overhung load capacities are based on the direction and location of the load as shown in figure 1 on page 228 Consult factory for allowable OHL values if load is applied as shown in figure 2A, B, C or D on page 228.
3. Overhung load based on maximum bore size. Use of smaller driven shaft diameter may limit OHL capacity.
4. Overhung load capacity given at a point located 5.313 inches from centerline of housing.
5. For DSN output shaft overhung load capacities, contact the factory.

REDUCER SIZE
930

SINGLE REDUCTION HORSEPOWER AND TORQUE RATINGS

WINSMITH

3.000 CENTER DISTANCE

HORSEPOWER AND TORQUE RATINGS (INCH POUNDS)

RATIO[1]	INPUT RPM[2]	OUTPUT RPM	MECHANICAL[3] 1.00 SERVICE FACTOR INPUT HP	1.00 SF OUTPUT HP	1.00 SF OUTPUT TORQUE	1.00 SF EFF[6]	1.25 SF INPUT HP	1.25 SF OUTPUT TORQUE	1.50 SF INPUT HP	1.50 SF OUTPUT TORQUE	1.75 SF INPUT HP	1.75 SF OUTPUT TORQUE	THERMAL[4] INPUT HP	THERMAL[4] OUTPUT TORQUE	SYNTHETIC OIL MECHANICAL[5] INPUT HP	SYNTHETIC OIL MECHANICAL[5] OUTPUT TORQUE	SYNTHETIC OIL MECHANICAL[5] EFF[6]	SYNTHETIC OIL THERMAL INPUT HP	SYNTHETIC OIL THERMAL OUTPUT TORQUE
4 (4)	2500	625	11	10.4	1051	95	8.83	841	7.38	701	6.34	601	5.35	506	10.8	1051	96	8.85	859
	1750	438	9.51	8.95	1289	94	7.62	1031	6.36	859	5.46	737	5.22	703	9.30	1289	96	8.66	1199
	1160	290	7.83	7.29	1585	93	6.27	1268	5.23	1057	4.49	906	4.70	949	7.62	1585	96	7.62	1585
	870	218	7.13	6.58	1908	92	5.71	1526	4.76	1272	4.08	1090	4.27	1142	6.91	1908	95	6.91	1908
	600	150	5.92	5.40	2268	91	4.74	1814	3.95	1512	3.39	1296	3.75	1436	5.70	2268	95	5.70	2268
	300	75	3.68	3.27	2748	89	2.95	2198	2.46	1832	2.11	1570	2.98	2221	3.51	2748	93	3.51	2748
	100	25	1.46	1.24	3123	85	1.17	2498	0.97	2082	0.83	1784	1.46	3123	1.36	3123	91	1.36	3123
5 (5)	2500	500	9.81	9.21	1161	94	7.87	929	6.57	774	5.65	664	5.66	665	9.60	1161	96	9.37	1133
	1750	350	8.47	7.91	1424	93	6.79	1139	5.67	949	4.87	813	5.39	902	8.26	1424	96	8.26	1424
	1160	232	7.09	6.54	1776	92	5.68	1421	4.74	1184	4.07	1015	4.80	1200	6.87	1776	95	6.87	1776
	870	174	6.33	5.79	2097	91	5.07	1678	4.23	1398	3.63	1198	4.36	1439	6.12	2097	95	6.12	2097
	600	120	5.17	4.66	2447	90	4.14	1958	3.45	1632	2.96	1399	3.83	1809	4.96	2447	94	4.96	2447
	300	60	3.16	2.77	2906	88	2.53	2325	2.11	1937	1.81	1660	3.06	2813	2.99	2906	92	2.99	2906
	100	20	1.24	1.03	3258	84	0.99	2607	0.82	2172	0.71	1862	1.24	3258	1.15	3258	90	1.15	3258
7½ (7½)	2500	333	7.65	7.11	1344	93	6.14	1075	5.13	896	4.41	768	4.89	853	7.47	1344	95	7.47	1344
	1750	233	6.41	5.90	1595	92	5.14	1276	4.29	1063	3.69	911	4.63	1148	6.22	1595	95	6.22	1595
	1160	155	5.56	5.06	2061	91	4.45	1649	3.72	1374	3.19	1178	4.13	1529	5.36	2061	94	5.36	2061
	870	116	4.78	4.30	2337	90	3.83	1870	3.20	1558	2.74	1336	3.77	1843	4.59	2337	94	4.59	2337
	600	80	3.76	3.34	2628	89	3.01	2103	2.51	1752	2.16	1502	3.35	2339	3.59	2628	93	3.59	2628
	300	40	2.21	1.90	2995	86	1.77	2396	1.48	1996	1.27	1711	2.21	2995	2.08	2995	92	2.08	2995
	100	13	0.84	0.69	3266	82	0.67	2613	0.56	2178	0.48	1867	0.84	3266	0.77	3266	89	0.77	3266
10 (10)	2500	250	6.22	5.71	1440	92	5.00	1152	4.18	960	3.60	823	4.34	997	6.05	1440	94	6.05	1440
	1750	175	5.33	4.85	1748	91	4.28	1399	3.58	1166	3.07	999	4.10	1339	5.16	1748	94	5.16	1748
	1160	116	4.43	3.98	2163	90	3.55	1730	2.97	1442	2.55	1236	3.68	1791	4.26	2163	94	4.26	2163
	870	87	3.73	3.31	2401	89	2.99	1921	2.50	1601	2.15	1372	3.38	2168	3.57	2401	93	3.57	2401
	600	60	2.88	2.52	2647	87	2.31	2117	1.93	1764	1.66	1512	2.88	2647	2.73	2647	92	2.73	2647
	300	30	1.66	1.40	2949	85	1.33	2359	1.11	1966	0.95	1685	1.66	2949	1.55	2949	91	1.55	2949
	100	10	0.62	0.50	3170	81	0.90	2536	0.41	2113	0.36	1811	0.62	3170	0.57	3170	88	0.57	3170
15 (15)	2500	167	4.67	4.15	1570	89	3.76	1256	3.15	1047	2.71	897	3.19	1061	4.49	1570	92	4.49	1570
	1750	117	4.03	3.54	1910	88	3.23	1528	2.70	1273	2.33	1091	3.02	1425	3.84	1910	92	3.84	1910
	1160	77	3.34	2.88	2346	86	2.68	1877	2.24	1564	1.92	1341	2.72	1907	3.16	2346	91	3.16	2346
	870	58	2.81	2.39	2595	85	2.26	2076	1.88	1730	1.62	1483	2.51	2312	2.64	2595	91	2.64	2595
	600	40	2.18	1.81	2851	83	1.75	2281	1.46	1901	1.25	1629	2.18	2851	2.02	2851	90	2.02	2851
	300	20	1.26	1.00	3166	80	1.01	2532	0.84	2110	0.72	1809	1.26	3166	1.15	3166	88	1.15	3166
	100	6.7	0.48	0.36	3394	75	0.38	2715	0.32	2263	0.27	1939	0.48	3394	0.42	3394	85	0.42	3394
20 (20)	2500	125	3.69	3.19	1609	87	2.97	1287	2.49	1073	2.15	920	2.65	1142	3.52	1609	91	3.52	1609
	1750	88	3.19	2.72	1959	85	2.57	1568	2.15	1306	1.85	1120	2.51	1535	3.01	1959	90	3.01	1959
	1160	58	2.61	2.18	2367	83	2.10	1893	1.75	1578	1.51	1352	2.28	2059	2.44	2367	89	2.44	2367
	870	44	2.19	1.79	2597	82	1.76	2077	1.47	1731	1.26	1484	2.11	2503	2.02	2597	89	2.02	2597
	600	30	1.69	1.35	2831	80	1.35	2265	1.13	1887	0.97	1618	1.69	2831	1.54	2831	88	1.54	2831
	300	15	0.97	0.74	3116	76	0.78	2493	0.65	2077	0.56	1781	0.97	3116	0.87	3116	86	0.87	3116
	100	5.0	0.37	0.26	3322	72	0.29	2658	0.25	2215	0.21	1898	0.37	3322	0.32	3322	83	0.32	3322
25 (25)	2500	100	2.96	2.49	1571	84	2.39	1257	2.01	1047	1.73	898	2.29	1203	2.80	1571	89	2.80	1571
	1750	70	2.64	2.19	1968	83	2.12	1574	1.78	1312	1.53	1125	2.18	1618	2.47	1968	89	2.47	1968
	1160	46	2.14	1.73	2349	81	1.72	1880	1.44	1566	1.24	1343	1.98	2175	1.97	2349	88	1.97	2349
	870	35	1.79	1.42	2563	79	1.43	2051	1.20	1709	1.03	1465	1.79	2563	1.63	2563	87	1.63	2563
	600	24	1.37	1.06	2780	77	1.10	2224	0.92	1853	0.79	1588	1.37	2780	1.24	2780	86	1.24	2780
	300	12	0.79	0.58	3042	73	0.63	2433	0.53	2028	0.45	1738	0.79	3042	0.69	3042	84	0.69	3042
	100	4.0	0.30	0.21	3230	68	0.24	2584	0.20	2153	0.17	1846	0.30	3230	0.25	3230	81	0.25	3230

1. Numbers shown in ( ) are exact ratios.
2. If input speed is below 1160 RPM, please specify speed and mounting position to insure proper lubrication.
3. See engineering section, pages 224-226, for further discussion regarding service factors.
4. Actual input HP must not exceed the thermal input HP capacity on a continuous basis.
5. 1.00 Service Factor.
6. See engineering section, page 227, for further discussion regarding gear reducer efficiencies.

SINGLE REDUCTION
THRUST AND OVERHUNG LOAD RATINGS

REDUCER SIZE
930

OVERHUNG LOAD CAPACITIES[1]							THRUST CAPACITIES				3.000 CENTER DISTANCE	
INPUT SHAFT	OUTPUT SHAFT[5]						OUTPUT SHAFT					
ALL MODELS	DB, DT[2]	DV SHAFT UP	DV SHAFT DOWN	DSF[3, 4] BASE SIDE	DSF[3, 4] COVER SIDE	DL	DB, DT, DV	DSF TOWARD BASE	DSF AWAY FROM BASE	DL AWAY FROM BASE	INPUT RPM	RATIO
527	970	970	1016	1007	1007	1900	874	2105	2105	1261	2500	**4** (4)
560	1006	1006	1058	1060	1060	1900	864	2180	2180	1282	1750	
560	1160	1160	1224	1194	1194	1900	974	2431	2431	1453	1160	
560	1248	1248	1230	1281	1281	1900	1003	2565	2565	1534	870	
560	1350	1350	1230	1249	1429	1900	1071	2800	2800	1672	600	
560	1350	1350	1230	1755	1755	1900	1370	2800	2800	2110	300	
560	1350	1350	1230	2350	1800	1900	2187	2800	2800	3212	100	
520	1007	1007	1055	1047	1047	1900	926	2210	2210	1329	2500	**5** (5)
560	1062	1062	1118	1101	1101	1900	940	2291	2291	1370	1750	
560	1219	1219	1230	1240	1240	1900	1050	2548	2548	1554	1160	
560	1319	1319	1230	1353	1353	1900	1101	2754	2754	1660	870	
560	1350	1350	1230	1515	1515	1900	1199	2800	2800	1832	600	
560	1350	1350	1230	1872	1800	1900	1590	2800	2800	2377	300	
560	1350	1350	1230	2350	1800	1900	2400	2800	2800	3275	100	
531	1117	1117	1168	1132	1132	1900	1046	2402	2402	1480	2500	**7½** (7½)
586	1200	1200	1230	1198	1198	1900	1100	2517	2517	1577	1750	
600	1350	1350	1230	1378	1378	1900	1210	2800	2800	1771	1160	
600	1350	1350	1230	1516	1516	1900	1311	2800	2800	1932	870	
600	1350	1350	1230	1710	1710	1900	1523	2800	2800	2223	600	
600	1350	1350	1230	2181	1800	1900	2051	2800	2800	2943	300	
600	1350	1350	1230	2350	1800	1900	2400	2800	2800	3275	100	
400	1213	1213	1230	1200	1200	1900	1164	2567	2567	1629	2500	**10** (10)
400	1298	1298	1230	1291	1291	1900	1216	2738	2738	1727	1750	
400	1350	1350	1230	1498	1498	1900	1377	2800	2800	1978	1160	
400	1350	1350	1230	1654	1654	1900	1550	2800	2800	2211	870	
400	1350	1350	1230	1875	1800	1900	1816	2800	2800	2576	600	
361	1350	1350	1230	2350	1800	1900	2400	2800	2800	3275	300	
242	1350	1350	1230	2350	1800	1900	2400	2800	2800	3275	100	
450	1350	1350	1230	1348	1348	1900	1404	2800	2800	1908	2500	**15** (15)
450	1350	1350	1230	1460	1460	1900	1487	2800	2800	2040	1750	
450	1350	1350	1230	1697	1697	1900	1756	2800	2800	2404	1160	
450	1350	1350	1230	1883	1800	1900	1978	2800	2800	2705	870	
450	1350	1350	1230	2180	1800	1900	2305	2800	2800	3144	600	
373	1350	1350	1230	2350	1800	1900	2400	2800	2800	3275	300	
265	1350	1350	1230	2350	1800	1900	2400	2800	2800	3275	100	
500	1350	1350	1230	1463	1463	1900	1569	2800	2800	2107	2500	**20** (20)
500	1350	1350	1230	1586	1586	1900	1704	2800	2800	2289	1750	
500	1350	1350	1230	1856	1800	1900	2028	2800	2800	2729	1160	
500	1350	1350	1230	2089	1800	1900	2287	2800	2800	3076	870	
438	1350	1350	1230	2350	1800	1900	2400	2800	2800	3275	600	
322	1350	1350	1230	2350	1800	1900	2400	2800	2800	3275	300	
231	1350	1350	1230	2350	1800	1900	2400	2800	2800	3275	100	
500	1350	1350	1230	1562	1562	1900	1731	2800	2800	2289	2500	**25** (25)
500	1350	1350	1230	1691	1691	1900	1885	2800	2800	2509	1750	
500	1350	1350	1230	2009	1800	1900	2251	2800	2800	2998	1160	
500	1350	1350	1230	2262	1800	1900	2400	2800	2800	3275	870	
484	1350	1350	1230	2350	1800	1900	2400	2800	2800	3275	600	
382	1350	1350	1230	2350	1800	1900	2400	2800	2800	3275	300	
302	1350	1350	1230	2350	1800	1900	2400	2800	2800	3275	100	

1. Overhung load given at one shaft diameter from housing or mounting flange. All values given in pounds.
2. Overhung load capacities are based on the direction and location of the load as shown in figure 1 on page 228. Consult factory for allowable OHL values if load is applied as shown in figure 2A, B, C or D on page 228.
3. Overhung load based on maximum bore size. Use of smaller driven shaft diameter may limit OHL capacity.
4. Overhung load capacity given at a point located 6.875 inches from centerline of housing.
5. For DSN output shaft overhung load capacities, contact the factory.

REDUCER SIZE
930

SINGLE REDUCTION HORSEPOWER AND TORQUE RATINGS

WINSMITH®

3.000 CENTER DISTANCE

HORSEPOWER AND TORQUE RATINGS (INCH POUNDS)

RATIO[1]	INPUT RPM[2]	OUTPUT RPM	MECHANICAL[3] 1.00 SERVICE FACTOR INPUT HP	1.00 SF OUTPUT HP	1.00 SF OUTPUT TORQUE	1.00 SF EFF[6]	1.25 SF INPUT HP	1.25 SF OUTPUT TORQUE	1.50 SF INPUT HP	1.50 SF OUTPUT TORQUE	1.75 SF INPUT HP	1.75 SF OUTPUT TORQUE	THERMAL[4] INPUT HP	THERMAL[4] OUTPUT TORQUE	SYNTHETIC OIL MECHANICAL[5] INPUT HP	SYNTHETIC OIL MECHANICAL[5] OUTPUT TORQUE	SYNTHETIC OIL MECHANICAL[5] EFF[6]	SYNTHETIC OIL THERMAL INPUT HP	SYNTHETIC OIL THERMAL OUTPUT TORQUE
30 (30)	2500	83	2.68	2.16	1634	81	2.16	1307	1.82	1090	1.57	934	1.85	1109	2.49	1634	87	2.49	1634
	1750	58	2.33	1.84	1989	79	1.88	1592	1.57	1326	1.36	1137	1.76	1490	2.14	1989	86	2.14	1989
	1160	39	1.95	1.49	2429	77	1.57	1943	1.31	1619	1.13	1388	1.61	1996	1.75	2429	85	1.75	2429
	870	29	1.65	1.23	2680	75	1.33	2144	1.11	1786	0.96	1531	1.50	2421	1.47	2680	84	1.47	2680
	600	20	1.29	0.93	2936	72	1.04	2349	0.87	1957	0.75	1678	1.29	2936	1.13	2936	83	1.13	2936
	300	10	0.76	0.52	3250	67	0.61	2600	0.51	2167	0.44	1857	0.76	3250	0.64	3250	80	0.64	3250
	100	3.3	0.30	0.18	3478	62	0.24	2782	0.20	2318	0.17	1987	0.30	3478	0.24	3478	77	0.24	3478
40 (40)	2500	63	2.09	1.60	1616	77	1.69	1293	1.43	1078	1.24	924	1.55	1176	1.91	1616	84	1.91	1616
	1750	44	1.83	1.37	1967	75	1.47	1574	1.24	1312	1.07	1124	1.48	1582	1.64	1967	83	1.64	1967
	1160	29	1.51	1.09	2367	72	1.22	1894	1.02	1578	0.88	1353	1.36	2124	1.33	2367	82	1.33	2367
	870	22	1.28	0.89	2593	70	1.03	2074	0.86	1729	0.74	1482	1.27	2582	1.11	2593	81	1.11	2593
	600	15	1.00	0.67	2822	67	0.80	2258	0.67	1881	0.58	1613	1.00	2822	0.85	2822	80	0.85	2822
	300	7.5	0.59	0.37	3101	63	0.47	2481	0.40	2067	0.34	1772	0.59	3101	0.48	3101	77	0.48	3101
	100	2.5	0.23	0.13	3301	57	0.19	2641	0.15	2201	0.13	1887	0.23	3301	0.18	3301	74	0.18	3301
50 (50)	2500	50	1.66	1.21	1523	73	1.35	1218	1.14	1015	0.99	870	1.36	1229	1.49	1523	81	1.49	1523
	1750	35	1.49	1.06	1902	71	1.20	1521	1.01	1268	0.88	1087	1.30	1654	1.31	1902	81	1.31	1902
	1160	23	1.22	0.83	2264	68	0.98	1812	0.83	1510	0.71	1294	1.20	2225	1.05	2264	79	1.05	2264
	870	17	1.03	0.68	2467	66	0.83	1974	0.70	1645	0.60	1410	1.03	2467	0.87	2467	78	0.87	2467
	600	12	0.80	0.51	2673	63	0.65	2138	0.54	1782	0.47	1527	0.80	2673	0.66	2673	77	0.66	2673
	300	6.0	0.48	0.28	2921	58	0.38	2337	0.32	1947	0.27	1669	0.48	2921	0.37	2921	74	0.37	2921
	100	2.0	0.19	0.10	3099	53	0.15	2479	0.13	2066	0.11	1771	0.19	3099	0.14	3099	71	0.14	3099
60 (60)	2500	42	1.38	0.96	1452	69	1.13	1161	0.95	968	0.83	830	1.22	1267	1.23	1452	78	1.23	1452
	1750	29	1.23	0.83	1796	68	1.00	1437	0.84	1198	0.73	1027	1.17	1706	1.07	1796	78	1.07	1796
	1160	19	1.01	0.65	2124	65	0.81	1699	0.68	1416	0.59	1214	1.01	2124	0.85	2124	77	0.85	2124
	870	15	0.85	0.53	2306	63	0.68	1845	0.57	1538	0.50	1318	0.85	2306	0.70	2306	76	0.70	2306
	600	10	0.66	0.40	2490	60	0.53	1992	0.45	1660	0.39	1423	0.66	2490	0.53	2490	74	0.53	2490
	300	5.0	0.39	0.22	2712	55	0.32	2169	0.26	1808	0.23	1550	0.39	2712	0.30	2712	72	0.30	2712
	100	1.7	0.15	0.07	2798	49	0.12	2238	0.10	1865	0.09	1599	0.15	2798	0.11	2798	69	0.11	2798
80 (80)	2500	31	0.96	0.60	1206	63	0.78	965	0.67	804	0.59	689	0.96	1206	0.83	1206	72	0.83	1206
	1750	22	0.84	0.51	1478	61	0.69	1182	0.58	985	0.51	844	0.84	1478	0.71	1478	73	0.71	1478
	1160	15	0.69	0.40	1734	58	0.56	1387	0.47	1156	0.41	991	0.69	1734	0.56	1734	72	0.56	1734
	870	11	0.58	0.32	1876	56	0.47	1500	0.39	1250	0.34	1072	0.58	1876	0.46	1876	71	0.46	1876
	600	7.5	0.45	0.24	2018	53	0.36	1614	0.31	1345	0.27	1153	0.45	2018	0.34	2018	70	0.34	2018
	300	3.8	0.25	0.12	2050	48	0.20	1640	0.17	1367	0.15	1171	0.25	2050	0.18	2050	67	0.18	2050
	100	1.3	0.09	0.04	2050	43	0.08	1640	0.06	1367	0.05	1171	0.09	2050	0.06	2050	64	0.06	2050
100 (100)	2500	25	0.68	0.38	951	56	0.56	761	0.48	634	0.43	543	0.68	951	0.57	951	66	0.57	951
	1750	18	0.59	0.32	1160	55	0.48	928	0.41	773	0.36	663	0.59	1160	0.48	1160	67	0.48	1160
	1160	12	0.48	0.25	1356	52	0.39	1084	0.33	904	0.29	775	0.48	1356	0.37	1356	67	0.37	1356
	870	8.7	0.40	0.20	1464	50	0.33	1171	0.28	976	0.24	836	0.40	1464	0.31	1464	66	0.31	1464
	600	6.0	0.32	0.15	1572	48	0.26	1258	0.22	1048	0.19	898	0.32	1572	0.23	1572	65	0.23	1572
	300	3.0	0.19	0.08	1696	43	0.15	1357	0.13	1131	0.11	969	0.19	1696	0.13	1696	63	0.13	1696
	100	1.0	0.07	0.03	1696	38	0.06	1357	0.05	1131	0.04	969	0.07	1696	0.04	1696	61	0.04	1696

1. Numbers shown in ( ) are exact ratios.
2. If input speed is below 1160 RPM, please specify speed and mounting position to insure proper lubrication.
3. See engineering section, pages 224-226, for further discussion regarding service factors.
4. Actual input HP must not exceed the thermal input HP capacity on a continuous basis.
5. 1.00 Service Factor.
6. See engineering section, page 227, for further discussion regarding gear reducer efficiencies.

SINGLE REDUCTION
THRUST AND OVERHUNG LOAD RATINGS

REDUCER SIZE
930

OVERHUNG LOAD CAPACITIES[1]							THRUST CAPACITIES				3.000 CENTER DISTANCE	
INPUT SHAFT	OUTPUT SHAFT[5]						OUTPUT SHAFT					
ALL MODELS	DB, DT[2]	DV SHAFT UP	DV SHAFT DOWN	DSF[3, 4] BASE SIDE	DSF[3, 4] COVER SIDE	DL	DB, DT, DV	DSF TOWARD BASE	DSF AWAY FROM BASE	DL AWAY FROM BASE	INPUT RPM	RATIO
460	1350	1350	1230	1642	1642	1900	1871	2800	2800	2458	2500	**30** (30)
460	1350	1350	1230	1790	1790	1900	2056	2800	2800	2712	1750	
460	1350	1350	1230	2137	1800	1900	2400	2800	2800	3230	1160	
460	1350	1350	1230	2350	1800	1900	2400	2800	2800	3275	870	
460	1350	1350	1230	2350	1800	1900	2400	2800	2800	3275	600	
350	1350	1350	1230	2350	1800	1900	2400	2800	2800	3275	300	
256	1350	1350	1230	2350	1800	1900	2400	2800	2800	3275	100	
500	1350	1350	1230	1777	1777	1900	2093	2800	2800	2732	2500	**40** (40)
500	1350	1350	1230	1972	1800	1900	2307	2800	2800	3021	1750	
500	1350	1350	1230	2350	1800	1900	2400	2800	2800	3275	1160	
500	1350	1350	1230	2350	1800	1900	2400	2800	2800	3275	870	
500	1350	1350	1230	2350	1800	1900	2400	2800	2800	3275	600	
399	1350	1350	1230	2350	1800	1900	2400	2800	2800	3275	300	
318	1350	1350	1230	2350	1800	1900	2400	2800	2800	3275	100	
500	1350	1350	1230	1917	1800	1900	2400	2800	2800	2972	2500	**50** (50)
500	1350	1350	1230	2128	1800	1900	2400	2800	2800	3275	1750	
500	1350	1350	1230	2350	1800	1900	2400	2800	2800	3275	1160	
500	1350	1350	1230	2350	1800	1900	2400	2800	2800	3275	870	
483	1350	1350	1230	2350	1800	1900	2400	2800	2800	3275	600	
392	1350	1350	1230	2350	1800	1900	2400	2800	2800	3275	300	
323	1350	1350	1230	2350	1800	1900	2400	2800	2800	3275	100	
500	1350	1350	1230	2039	1800	1900	2400	2800	2800	3176	2500	**60** (60)
500	1350	1350	1230	2266	1800	1900	2400	2800	2800	3275	1750	
500	1350	1350	1230	2350	1800	1900	2400	2800	2800	3275	1160	
500	1350	1350	1230	2350	1800	1900	2400	2800	2800	3275	870	
500	1350	1350	1230	2350	1800	1900	2400	2800	2800	3275	600	
467	1350	1350	1230	2350	1800	1900	2400	2800	2800	3275	300	
431	1350	1350	1230	2350	1800	1900	2400	2800	2800	3275	100	
500	1350	1350	1230	2253	1800	1900	2400	2800	2800	3275	2500	**80** (80)
500	1350	1350	1230	2350	1800	1900	2400	2800	2800	3275	1750	
500	1350	1350	1230	2350	1800	1900	2400	2800	2800	3275	1160	
500	1350	1350	1230	2350	1800	1900	2400	2800	2800	3275	870	
500	1350	1350	1230	2350	1800	1900	2400	2800	2800	3275	600	
500	1350	1350	1230	2350	1800	1900	2400	2800	2800	3275	300	
500	1350	1350	1230	2350	1800	1900	2400	2800	2800	3275	100	
500	1350	1350	1230	2350	1800	1900	2400	2800	2800	3275	2500	**100** (100)
500	1350	1350	1230	2350	1800	1900	2400	2800	2800	3275	1750	
500	1350	1350	1230	2350	1800	1900	2400	2800	2800	3275	1160	
500	1350	1350	1230	2350	1800	1900	2400	2800	2800	3275	870	
500	1350	1350	1230	2350	1800	1900	2400	2800	2800	3275	600	
500	1350	1350	1230	2350	1800	1900	2400	2800	2800	3275	300	
500	1350	1350	1230	2350	1800	1900	2400	2800	2800	3275	100	

1. Overhung load given at one shaft diameter from housing or mounting flange. All values given in pounds.
2. Overhung load capacities are based on the direction and location of the load as shown in figure 1 on page 228. Consult factory for allowable OHL values if load is applied as shown in figure 2A, B, C or D on page 228.
3. Overhung load based on maximum bore size. Use of smaller driven shaft diameter may limit OHL capacity.
4. Overhung load capacity given at a point located 6.875 inches from centerline of housing.
5. For DSN output shaft overhung load capacities, contact the factory.

REDUCER SIZE
935

SINGLE REDUCTION HORSEPOWER AND TORQUE RATINGS

WINSMITH

3.500 CENTER DISTANCE

HORSEPOWER AND TORQUE RATINGS (INCH POUNDS)

RATIO[1]	INPUT RPM[2]	OUTPUT RPM	MECHANICAL[3] 1.00 SERVICE FACTOR INPUT HP	1.00 SF OUTPUT HP	1.00 SF OUTPUT TORQUE	1.00 SF EFF[6]	1.25 SF INPUT HP	1.25 SF OUTPUT TORQUE	1.50 SF INPUT HP	1.50 SF OUTPUT TORQUE	1.75 SF INPUT HP	1.75 SF OUTPUT TORQUE	THERMAL[4] INPUT HP	THERMAL[4] OUTPUT TORQUE	SYNTHETIC OIL MECHANICAL[5] INPUT HP	SYNTHETIC OIL MECHANICAL[5] OUTPUT TORQUE	SYNTHETIC OIL MECHANICAL[5] EFF[6]	SYNTHETIC OIL THERMAL INPUT HP	SYNTHETIC OIL THERMAL OUTPUT TORQUE
4 (4)	2500	625	15.6	14.9	1499	95	12.5	1199	10.5	999	8.97	857	7.98	761	15.4	1499	97	13.2	1290
	1750	438	13.5	12.8	1838	95	10.8	1470	9.01	1225	7.73	1050	7.64	1038	13.2	1838	97	12.7	1766
	1160	290	11.40	10.7	2324	94	9.13	1859	7.61	1549	6.53	1328	6.80	1383	11.1	2324	96	11.1	2324
	870	218	10.1	9.37	2714	93	8.05	2171	6.72	1809	5.76	1551	6.14	1653	9.78	2714	96	9.78	2714
	600	150	8.53	7.85	3298	92	6.83	2638	5.69	2198	4.88	1884	5.34	2061	8.25	3298	95	8.25	3298
	300	75	5.44	4.87	4095	90	4.35	3276	3.63	2730	3.11	2340	4.18	3144	5.20	4095	94	5.20	4095
	100	25	2.18	1.88	4730	86	1.75	3784	1.46	3154	1.25	2703	2.18	4730	2.05	4730	92	2.05	4730
5 (5)	2500	500	13.76	12.99	1637	94	11.03	1310	9.21	1092	7.90	936	7.67	907	13.48	1637	96	12.71	1543
	1750	350	11.88	11.15	2007	94	9.52	1606	7.94	1338	6.82	1147	7.25	1221	11.60	2007	96	11.60	2007
	1160	232	10.06	9.34	2539	93	8.06	2031	6.72	1692	5.77	1451	6.41	1613	9.78	2539	96	9.78	2539
	870	174	8.92	8.20	2972	92	7.14	2377	5.95	1981	5.11	1698	5.78	1923	8.63	2972	95	8.63	2972
	600	120	7.47	6.78	3559	91	5.98	2847	4.98	2373	4.27	2034	5.04	2399	7.18	3559	94	7.18	3559
	300	60	4.69	4.14	4348	88	3.76	3478	3.13	2899	2.69	2485	3.97	3673	4.46	4348	93	4.46	4348
	100	20	1.87	1.58	4969	84	1.50	3975	1.25	3313	1.07	2839	1.87	4969	1.74	4969	91	1.74	4969
7½ (7½)	2500	333	10.72	10.02	1895	94	8.60	1516	7.18	1263	6.17	1083	6.66	1170	10.47	1895	96	10.47	1895
	1750	233	9.27	8.60	2323	93	7.43	1858	6.20	1548	5.32	1327	6.23	1557	9.02	2323	95	9.02	2323
	1160	155	7.81	7.16	2917	92	6.26	2334	5.22	1945	4.48	1667	5.51	2052	7.55	2917	95	7.55	2917
	870	116	6.86	6.22	3379	91	5.49	2703	4.58	2253	3.93	1931	4.99	2455	6.60	3379	94	6.60	3379
	600	80	5.50	4.92	3875	89	4.41	3100	3.68	2583	3.15	2214	4.39	3088	5.26	3875	94	5.26	3875
	300	40	3.30	2.86	4512	87	2.64	3609	2.20	3008	1.89	2578	3.30	4512	3.12	4512	92	3.12	4512
	100	13	1.28	1.06	4993	83	1.02	3995	0.85	3329	0.73	2853	1.28	4993	1.18	4993	90	1.18	4993
10 (10)	2500	250	8.82	8.12	2048	92	7.07	1638	5.91	1365	5.08	1170	5.54	1277	8.57	2048	95	8.57	2048
	1750	175	7.64	6.97	2511	91	6.12	2008	5.11	1674	4.39	1435	5.18	1696	7.38	2511	94	7.38	2511
	1160	116	6.45	5.80	3152	90	5.17	2522	4.31	2101	3.70	1801	4.59	2236	6.19	3152	94	6.19	3152
	870	87	5.61	4.99	3612	89	4.49	2890	3.75	2408	3.22	2064	4.17	2680	5.36	3612	93	5.36	3612
	600	60	4.47	3.90	4101	87	3.58	3281	2.99	2734	2.56	2343	3.69	3380	4.23	4101	92	4.23	4101
	300	30	2.67	2.25	4722	84	2.13	3778	1.78	3148	1.53	2698	2.67	4722	2.48	4722	91	2.48	4722
	100	10	1.03	0.82	5187	80	0.82	4150	0.69	3458	0.59	2964	1.03	5187	0.94	5187	88	0.94	5187
15 (15)	2500	167	6.57	5.86	2217	89	5.28	1773	4.41	1478	3.80	1267	4.03	1347	6.31	2217	93	6.31	2217
	1750	117	5.71	5.03	2717	88	4.58	2174	3.83	1812	3.29	1553	3.78	1787	5.45	2717	92	5.45	2717
	1160	77	4.84	4.18	3408	86	3.88	2726	3.24	2272	2.78	1947	3.36	2357	4.57	3408	91	4.57	3408
	870	58	4.21	3.38	3887	85	3.38	3110	2.82	2591	2.42	2221	3.07	2827	3.95	3887	91	3.95	3887
	600	40	3.36	2.79	4394	83	2.69	3515	2.25	2929	1.93	2511	2.74	3570	3.12	4394	90	3.12	4394
	300	20	2.02	1.60	5035	79	1.62	4028	1.35	3357	1.16	2877	2.02	5035	1.83	5035	87	1.83	5035
	100	6.7	0.79	0.58	5514	74	0.63	4411	0.53	3676	0.45	3151	0.79	5514	0.69	5514	84	0.69	5514
20 (20)	2500	125	5.19	4.52	2278	87	4.17	1822	3.49	1519	3.01	1302	3.38	1468	4.95	2278	91	4.95	2278
	1750	88	4.42	3.79	2730	86	3.55	2184	2.97	1820	2.56	1560	3.17	1946	4.18	2730	91	4.18	2730
	1160	58	3.82	3.20	3477	84	3.07	2782	2.56	2318	2.20	1987	2.84	2571	3.57	3477	90	3.57	3477
	870	44	3.29	2.70	3917	82	2.64	3134	2.20	2611	1.89	2238	2.60	3090	3.04	3917	89	3.04	3917
	600	30	2.61	2.08	4376	80	2.09	3501	1.74	2917	1.50	2501	2.34	3918	2.38	4376	88	2.38	4376
	300	15	1.55	1.18	4949	76	1.24	3959	1.04	3300	0.89	2828	1.55	4949	1.38	4949	85	1.38	4949
	100	5.0	0.61	0.43	5373	70	0.48	4298	0.40	3582	0.35	3070	0.61	5373	0.52	5373	82	0.52	5373
25 (25)	2500	100	4.29	3.64	2296	85	3.45	1837	2.89	1531	2.50	1312	2.93	1551	4.05	2296	90	4.05	2296
	1750	70	3.69	3.08	2774	83	2.97	2219	2.48	1849	2.14	1585	2.75	2055	3.45	2774	89	3.45	2774
	1160	46	3.15	2.56	3479	81	2.53	2783	2.11	2320	1.82	1988	2.47	2718	2.91	3479	88	2.91	3479
	870	35	2.70	2.15	3889	80	2.17	3111	1.81	2593	1.55	2222	2.28	3273	2.46	3889	87	2.46	3889
	600	24	2.13	1.64	4314	77	1.71	3451	1.43	2876	1.22	2465	2.05	4161	1.91	4314	86	1.91	4314
	300	12	1.27	0.92	4841	73	1.01	3873	0.85	3227	0.73	2766	1.27	4841	1.10	4841	83	1.10	4841
	100	4.0	0.49	0.33	5227	67	0.40	4182	0.33	3485	0.28	2987	0.49	5227	0.41	5227	80	0.41	5227

1. Numbers shown in ( ) are exact ratios.
2. If input speed is below 1160 RPM, please specify speed and mounting position to insure proper lubrication.
3. See engineering section, pages 224-226, for further discussion regarding service factors.
4. Actual input HP must not exceed the thermal input HP capacity on a continuous basis.
5. 1.00 Service Factor.
6. See engineering section, page 227, for further discussion regarding gear reducer efficiencies.

SINGLE REDUCTION
THRUST AND OVERHUNG LOAD RATINGS

REDUCER SIZE
935

OVERHUNG LOAD CAPACITIES[1]							THRUST CAPACITIES				3.500 CENTER DISTANCE	
INPUT SHAFT	OUTPUT SHAFT[5]						OUTPUT SHAFT					
ALL MODELS	DB, DT[2]	DV SHAFT UP	DV SHAFT DOWN	DSF[3, 4] BASE SIDE	DSF[3, 4] COVER SIDE	DL	DB, DT, DV	DSF TOWARD BASE	DSF AWAY FROM BASE	DL AWAY FROM BASE	INPUT RPM	RATIO
750	1481	1481	1377	1314	1314	2474	1413	2831	2831	1433	2500	**4** (4)
750	1549	1549	1440	1380	1380	2636	1427	2931	2931	1452	1750	
750	1750	1750	1626	1545	1545	3022	1562	3237	3237	1594	1160	
750	1909	1900	1774	1653	1653	3025	1666	3425	3425	1705	870	
750	2109	1900	1850	1823	1823	3025	1777	3722	3722	1825	600	
750	2130	1900	1850	2226	1900	3025	2170	4000	4000	2234	300	
750	2130	1900	1850	3143	1900	3025	3340	4000	4000	3422	100	
750	1542	1542	1433	1370	1370	2578	1515	2996	2996	1528	2500	**5** (5)
750	1612	1612	1499	1438	1438	2746	1538	3110	3110	1555	1750	
750	1852	1852	1721	1610	1610	3025	1727	3444	3444	1750	1160	
750	2018	1900	1850	1742	1742	3025	1848	3696	3696	1875	870	
750	2130	1900	1850	1938	1900	3025	2003	4000	4000	2036	600	
750	2130	1900	1850	2376	1900	3025	2524	4000	4000	2568	300	
750	2130	1900	1850	3404	1900	3025	3500	4000	4000	3500	100	
750	1673	1673	1555	1481	1481	2789	1661	3255	3255	1681	2500	**7½** (7½)
750	1795	1795	1669	1555	1555	3025	1744	3383	3383	1768	1750	
750	2069	1900	1850	1778	1778	3025	1974	3839	3839	2005	1160	
750	2130	1900	1850	1947	1900	3025	2128	4000	4000	2165	870	
750	2130	1900	1850	2187	1900	3025	2393	4000	4000	2437	600	
750	2130	1900	1850	2759	1900	3025	3153	4000	4000	3209	300	
750	2130	1900	1850	3977	1900	3025	3500	4000	4000	3500	100	
750	1822	1822	1693	1580	1580	3006	1873	3524	3524	1884	2500	**10** (10)
750	1960	1900	1821	1680	1680	3025	1982	3721	3721	1996	1750	
750	2130	1900	1850	1943	1900	3025	2257	4000	4000	2276	1160	
750	2130	1900	1850	2134	1900	3025	2456	4000	4000	2478	870	
750	2130	1900	1850	2403	1900	3025	2838	4000	4000	2865	600	
750	2130	1900	1850	3087	1900	3025	3500	4000	4000	3500	300	
750	2130	1900	1850	4400	1900	3025	3500	4000	4000	3500	100	
750	2052	1900	1850	1754	1754	3025	2196	3983	3983	2197	2500	**15** (15)
750	2130	1900	1850	1896	1896	3025	2346	4000	4000	2347	1750	
750	2130	1900	1850	2197	1900	3025	2720	4000	4000	2722	1160	
750	2130	1900	1850	2417	1900	3025	3036	4000	4000	3039	870	
750	2130	1900	1850	2774	1900	3025	3500	4000	4000	3500	600	
750	2130	1900	1850	3583	1900	3025	3500	4000	4000	3500	300	
750	2130	1900	1850	4400	1900	3025	3500	4000	4000	3500	100	
750	2130	1900	1850	1902	1900	3025	2427	4000	4000	2419	2500	**20** (20)
750	2130	1900	1850	2065	1900	3025	2613	4000	4000	2606	1750	
750	2130	1900	1850	2390	1900	3025	3085	4000	4000	3078	1160	
750	2130	1900	1850	2669	1900	3025	3456	4000	4000	3449	870	
750	2130	1900	1850	3083	1900	3025	3500	4000	4000	3500	600	
750	2130	1900	1850	3980	1900	3025	3500	4000	4000	3500	300	
750	2130	1900	1850	4400	1900	3025	3500	4000	4000	3500	100	
750	2130	1900	1850	2026	1900	3025	2614	4000	4000	2604	2500	**25** (25)
750	2130	1900	1850	2199	1900	3025	2862	4000	4000	2852	1750	
750	2130	1900	1850	2574	1900	3025	3389	4000	4000	3379	1160	
750	2130	1900	1850	2892	1900	3025	3500	4000	4000	3500	870	
750	2130	1900	1850	3342	1900	3025	3500	4000	4000	3500	600	
750	2130	1900	1850	4312	1900	3025	3500	4000	4000	3500	300	
750	2130	1900	1850	4400	1900	3025	3500	4000	4000	3500	100	

1. Overhung load given at one shaft diameter from housing or mounting flange. All values given in pounds.
2. Overhung load capacities are based on the direction and location of the load as shown in figure 1 on page 228. Consult factory for allowable OHL values if load is applied as shown in figure 2A, B, C or D on page 228.
3. Overhung load based on maximum bore size. Use of smaller driven shaft diameter may limit OHL capacity.
4. Overhung load capacity given at a point located 6.688 inches from centerline of housing.
5. For DSN output shaft overhung load capacities, contact the factory.

REDUCER SIZE
935

SINGLE REDUCTION HORSEPOWER AND TORQUE RATINGS

WINSMITH®

3.500 CENTER DISTANCE

HORSEPOWER AND TORQUE RATINGS (INCH POUNDS)

RATIO[1]	INPUT RPM[2]	OUTPUT RPM	MECHANICAL[3] 1.00 SERVICE FACTOR INPUT HP	1.00 SF OUTPUT HP	1.00 SF OUTPUT TORQUE	1.00 SF EFF[6]	1.25 SF INPUT HP	1.25 SF OUTPUT TORQUE	1.50 SF INPUT HP	1.50 SF OUTPUT TORQUE	1.75 SF INPUT HP	1.75 SF OUTPUT TORQUE	THERMAL[4] INPUT HP	THERMAL[4] OUTPUT TORQUE	SYNTHETIC OIL MECHANICAL[5] INPUT HP	SYNTHETIC OIL MECHANICAL[5] OUTPUT TORQUE	SYNTHETIC OIL MECHANICAL[5] EFF[6]	SYNTHETIC OIL THERMAL INPUT HP	SYNTHETIC OIL THERMAL OUTPUT TORQUE
30 (30)	2500	83	3.75	3.04	2297	81	3.02	1838	2.53	1532	2.18	1313	2.31	1393	3.48	2297	87	3.48	2297
	1750	58	3.29	2.61	2816	79	2.64	2253	2.21	1877	1.91	1609	2.18	1848	3.01	2816	87	3.01	2816
	1160	39	2.83	2.16	3528	77	2.27	2822	1.90	2352	1.63	2016	1.97	2438	2.54	3528	85	2.54	3528
	870	29	2.48	1.85	4013	74	1.99	3210	1.66	2675	1.43	2293	1.82	2925	2.20	4013	84	2.20	4013
	600	20	2.01	1.44	4524	72	1.61	3619	1.34	3016	1.15	2585	1.64	3697	1.74	4524	83	1.74	4524
	300	10	1.24	0.82	5168	66	0.99	4135	0.83	3446	0.71	2953	1.24	5168	1.03	5168	80	1.03	5168
	100	3.3	0.50	0.30	5648	60	0.40	4519	0.33	3766	0.29	3228	0.50	5648	0.40	5648	76	0.40	5648
40 (40)	2500	63	2.92	2.26	2283	77	2.36	1826	1.98	1522	1.71	1304	1.96	1504	2.67	2283	85	2.67	2283
	1750	44	2.53	1.90	2741	75	2.03	2193	1.71	1827	1.47	1566	1.85	1992	2.27	2741	84	2.27	2741
	1160	29	2.21	1.60	3479	72	1.78	2783	1.49	2319	1.28	1988	1.68	2632	1.94	3479	83	1.94	3479
	870	22	1.92	1.35	3912	70	1.54	3129	1.29	2608	1.11	2235	1.56	3165	1.66	3912	81	1.66	3912
	600	15	1.55	1.04	4363	67	1.24	3490	1.04	2908	0.89	2493	1.43	4016	1.30	4363	80	1.30	4363
	300	7.5	0.95	0.59	4925	62	0.76	3940	0.64	3283	0.55	2814	0.95	4925	0.77	4925	77	0.77	4925
	100	2.5	0.39	0.21	5339	55	0.31	4271	0.26	3560	0.22	3051	0.39	5339	0.29	5339	73	0.29	5339
50 (50)	2500	50	2.38	1.76	2217	74	1.92	1773	1.62	1478	1.40	1267	1.72	1579	2.14	2217	82	2.14	2217
	1750	35	2.07	1.49	2681	72	1.67	2145	1.40	1787	1.21	1532	1.63	2091	1.83	2681	82	1.83	2681
	1160	23	1.80	1.23	3354	69	1.44	2683	1.21	2236	1.04	1917	1.49	2766	1.54	3354	80	1.54	3354
	870	17	1.56	1.03	3744	66	1.25	2995	1.05	2496	0.90	2140	1.39	3332	1.31	3744	79	1.31	3744
	600	12	1.25	0.79	4148	63	1.00	3319	0.84	2765	0.72	2370	1.25	4148	1.02	4148	77	1.02	4148
	300	6.0	0.77	0.44	4649	58	0.61	3719	0.51	3099	0.44	2656	0.77	4649	0.60	4649	74	0.60	4649
	100	2.0	0.31	0.16	5015	51	0.25	4012	0.21	3343	0.18	2866	0.31	5015	0.23	5015	70	0.23	5015
60 (60)	2500	42	1.97	1.39	2103	71	1.59	1682	1.34	1402	1.17	1202	1.55	1633	1.74	2103	80	1.74	2103
	1750	29	1.72	1.18	2552	69	1.39	2042	1.17	1701	1.01	1458	1.47	2163	1.49	2552	79	1.49	2552
	1160	19	1.48	0.97	3162	65	1.20	2529	1.00	2108	0.86	1807	1.35	2865	1.25	3162	78	1.25	3162
	870	15	1.29	0.81	3513	63	1.03	2810	0.87	2342	0.75	2007	1.26	3455	1.06	3513	77	1.06	3513
	600	10	1.03	0.61	3874	60	0.83	3099	0.69	2583	0.60	2214	1.03	3874	0.82	3874	75	0.82	3874
	300	5.0	0.63	0.34	4320	54	0.51	3456	0.42	2880	0.36	2469	0.63	4320	0.48	4320	72	0.48	4320
	100	1.7	0.26	0.12	4645	48	0.21	3716	0.17	3097	0.15	2655	0.26	4645	0.18	4645	68	0.18	4645
80 (80)	2500	31	1.34	0.86	1738	64	1.09	1391	0.93	1159	0.81	993	1.32	1707	1.16	1738	75	1.16	1738
	1750	22	1.18	0.73	2115	62	0.96	1692	0.81	1410	0.70	1209	1.18	2115	0.99	2115	74	0.99	2115
	1160	15	1.01	0.60	2588	59	0.81	2071	0.68	1726	0.59	1479	1.01	2588	0.81	2588	73	0.81	2588
	870	11	0.87	0.49	2858	57	0.70	2287	0.59	1906	0.51	1633	0.87	2858	0.68	2858	72	0.68	2858
	600	7.5	0.70	0.37	3135	54	0.56	2508	0.47	2090	0.41	1792	0.70	3135	0.53	3135	71	0.53	3135
	300	3.8	0.43	0.21	3474	48	0.34	2779	0.29	2316	0.25	1985	0.43	3474	0.30	3474	68	0.30	3474
	100	1.3	0.18	0.07	3720	42	0.14	2976	0.12	2480	0.10	2126	0.18	3720	0.11	3720	64	0.11	3720
100 (100)	2500	25	0.93	0.54	1367	58	0.77	1094	0.65	911	0.58	781	0.93	1367	0.79	1367	69	0.79	1367
	1750	18	0.82	0.46	1665	57	0.67	1332	0.57	1110	0.49	951	0.82	1665	0.67	1665	69	0.67	1665
	1160	12	0.69	0.37	2022	54	0.56	1617	0.48	1348	0.41	1155	0.69	2022	0.54	2022	69	0.54	2022
	870	8.7	0.60	0.31	2224	51	0.48	1780	0.41	1483	0.35	1271	0.60	2224	0.45	2224	68	0.45	2224
	600	6.0	0.48	0.23	2431	48	0.39	1945	0.32	1621	0.28	1389	0.48	2431	0.35	2431	67	0.35	2431
	300	3.0	0.30	0.13	2684	43	0.24	2147	0.20	1789	0.17	1534	0.30	2684	0.20	2684	64	0.20	2684
	100	1.0	0.12	0.05	2867	37	0.10	2293	0.08	1911	0.07	1638	0.12	2867	0.07	2867	61	0.07	2867

1. Numbers shown in ( ) are exact ratios.
2. If input speed is below 1160 RPM, please specify speed and mounting position to insure proper lubrication.
3. See engineering section, pages 224-226, for further discussion regarding service factors.
4. Actual input HP must not exceed the thermal input HP capacity on a continuous basis.
5. 1.00 Service Factor.
6. See engineering section, page 227, for further discussion regarding gear reducer efficiencies.

SINGLE REDUCTION
THRUST AND OVERHUNG LOAD RATINGS

REDUCER SIZE
935

OVERHUNG LOAD CAPACITIES[1]							THRUST CAPACITIES				3.500 CENTER DISTANCE	
INPUT SHAFT	OUTPUT SHAFT[5]						OUTPUT SHAFT					
ALL MODELS	DB, DT[2]	DV SHAFT UP	DV SHAFT DOWN	DSF[3, 4] BASE SIDE	DSF[3, 4] COVER SIDE	DL	DB, DT, DV	DSF TOWARD BASE	DSF AWAY FROM BASE	DL AWAY FROM BASE	INPUT RPM	RATIO
750	2130	1900	1850	2135	1900	3025	2805	4000	4000	2792	2500	**30** (30)
750	2130	1900	1850	2316	1900	3025	3092	4000	4000	3078	1750	
750	2130	1900	1850	2743	1900	3025	3500	4000	4000	3500	1160	
750	2130	1900	1850	3076	1900	3025	3500	4000	4000	3500	870	
750	2130	1900	1850	3548	1900	3025	3500	4000	4000	3500	600	
750	2130	1900	1850	4400	1900	3025	3500	4000	4000	3500	300	
750	2130	1900	1850	4400	1900	3025	3500	4000	4000	3500	100	
750	2130	1900	1850	2312	1900	3025	3114	4000	4000	3100	2500	**40** (40)
750	2130	1900	1850	2545	1900	3025	3449	4000	4000	3434	1750	
750	2130	1900	1850	3029	1900	3025	3500	4000	4000	3500	1160	
750	2130	1900	1850	3401	1900	3025	3500	4000	4000	3500	870	
750	2130	1900	1850	3926	1900	3025	3500	4000	4000	3500	600	
750	2130	1900	1850	4400	1900	3025	3500	4000	4000	3500	300	
750	2130	1900	1850	4400	1900	3025	3500	4000	4000	3500	100	
750	2130	1900	1850	2471	1900	3025	3377	4000	4000	3362	2500	**50** (50)
750	2130	1900	1850	2746	1900	3025	3500	4000	4000	3500	1750	
750	2130	1900	1850	3274	1900	3025	3500	4000	4000	3500	1160	
750	2130	1900	1850	3678	1900	3025	3500	4000	4000	3500	870	
750	2130	1900	1850	4246	1900	3025	3500	4000	4000	3500	600	
750	2130	1900	1850	4400	1900	3025	3500	4000	4000	3500	300	
750	2130	1900	1850	4400	1900	3025	3500	4000	4000	3500	100	
750	2130	1900	1850	2631	1900	3025	3500	4000	4000	3500	2500	**60** (60)
750	2130	1900	1850	2925	1900	3025	3500	4000	4000	3500	1750	
750	2130	1900	1850	3492	1900	3025	3500	4000	4000	3500	1160	
750	2130	1900	1850	3924	1900	3025	3500	4000	4000	3500	870	
750	2130	1900	1850	4400	1900	3025	3500	4000	4000	3500	600	
750	2130	1900	1850	4400	1900	3025	3500	4000	4000	3500	300	
750	2130	1900	1850	4400	1900	3025	3500	4000	4000	3500	100	
750	2130	1900	1850	2913	1900	3025	3500	4000	4000	3500	2500	**80** (80)
750	2130	1900	1850	3243	1900	3025	3500	4000	4000	3500	1750	
750	2130	1900	1850	3877	1900	3025	3500	4000	4000	3500	1160	
750	2130	1900	1850	4358	1900	3025	3500	4000	4000	3500	870	
750	2130	1900	1850	4400	1900	3025	3500	4000	4000	3500	600	
750	2130	1900	1850	4400	1900	3025	3500	4000	4000	3500	300	
750	2130	1900	1850	4400	1900	3025	3500	4000	4000	3500	100	
750	2130	1900	1850	3153	1900	3025	3500	4000	4000	3500	2500	**100** (100)
750	2130	1900	1850	3514	1900	3025	3500	4000	4000	3500	1750	
750	2130	1900	1850	4203	1900	3025	3500	4000	4000	3500	1160	
750	2130	1900	1850	4400	1900	3025	3500	4000	4000	3500	870	
750	2130	1900	1850	4400	1900	3025	3500	4000	4000	3500	600	
750	2130	1900	1850	4400	1900	3025	3500	4000	4000	3500	300	
750	2130	1900	1850	4400	1900	3025	3500	4000	4000	3500	100	

1. Overhung load given at one shaft diameter from housing or mounting flange. All values given in pounds.
2. Overhung load capacities are based on the direction and location of the load as shown in figure 1 on page 228. Consult factory for allowable OHL values if load is applied as shown in figure 2A on page 228.
3. Overhung load based on maximum bore size. Use of smaller driven shaft diameter may limit OHL capacity.
4. Overhung load capacity given at a point located 6.688 inches from centerline of housing.
5. For DSN output shaft overhung load capacities, contact the factory.

REDUCER SIZE
943

SINGLE REDUCTION HORSEPOWER AND TORQUE RATINGS

WINSMITH

4.250 CENTER DISTANCE

HORSEPOWER AND TORQUE RATINGS (INCH POUNDS)

RATIO[1]	INPUT RPM[2]	OUTPUT RPM	MECHANICAL[3] 1.00 SERVICE FACTOR INPUT HP	1.00 SF OUTPUT HP	1.00 SF OUTPUT TORQUE	1.00 SF EFF[6]	1.25 SF INPUT HP	1.25 SF OUTPUT TORQUE	1.50 SF INPUT HP	1.50 SF OUTPUT TORQUE	1.75 SF INPUT HP	1.75 SF OUTPUT TORQUE	THERMAL[4] INPUT HP	THERMAL[4] OUTPUT TORQUE	SYNTHETIC OIL MECHANICAL[5] INPUT HP	SYNTHETIC OIL MECHANICAL[5] OUTPUT TORQUE	SYNTHETIC OIL MECHANICAL[5] EFF[6]	SYNTHETIC OIL THERMAL INPUT HP	SYNTHETIC OIL THERMAL OUTPUT TORQUE
4 (4)	2500	625	24.2	23.1	2334	96	19.3	1867	16.1	1556	13.9	1334	12.7	1218	23.8	2334	97	21	2061
	1750	438	20.8	19.9	2861	95	16.7	2289	13.9	1907	11.9	1635	11.90	1631	20.5	2861	97	19.8	2766
	1160	290	17.6	16.6	3618	95	14.1	2895	11.8	2412	10.1	2068	10.5	2153	17.2	3618	97	17.2	3618
	870	218	15.4	14.5	4198	94	12.3	3358	10.3	2798	8.82	2399	9.43	2565	15.1	4198	96	15.1	4198
	600	150	13.3	12.3	5183	93	10.6	4146	8.85	3455	7.59	2961	8.17	3189	12.9	5183	96	12.9	5183
	300	75	8.58	7.80	6550	91	6.87	5240	5.72	4367	4.91	3743	6.34	4841	8.25	6550	95	8.25	6550
	100	25	3.47	3.04	7658	87	2.78	6126	2.32	5105	1.99	4376	3.47	7658	3.29	7658	92	3.29	7658
5 (5)	2500	500	21.26	20.28	2556	95	17.04	2045	14.22	1704	12.20	1461	11.40	1363	20.91	2556	97	18.92	2311
	1750	350	18.35	17.40	3133	95	14.69	2507	12.26	2089	10.52	1791	10.65	1812	17.99	3133	97	17.69	3081
	1160	232	15.52	14.59	3963	94	12.43	3170	10.36	2642	8.89	2264	9.36	2384	15.16	3963	96	15.16	3963
	870	174	13.72	12.80	4635	93	10.98	3708	9.16	3090	7.86	2648	8.42	2840	13.35	4635	96	13.35	4635
	600	120	11.56	10.65	5594	92	9.25	4475	7.71	3729	6.61	3196	7.32	3540	11.19	5594	95	11.19	5594
	300	60	7.30	6.56	6894	90	5.84	5515	4.87	4596	4.18	3939	5.74	5417	6.99	6894	94	6.99	6894
	100	20	2.91	2.51	7924	86	2.33	6339	1.94	5283	1.67	4528	2.91	7924	2.74	7924	92	2.74	7924
7½ (7½)	2500	333	16.44	15.44	2920	94	13.17	2336	11.00	1947	9.45	1669	8.74	1542	16.08	2920	96	14.48	2628
	1750	233	14.21	13.25	3580	93	11.39	2864	9.50	2386	8.16	2045	8.14	2042	13.85	3580	96	13.51	3493
	1160	155	11.70	10.78	4392	92	9.37	3514	7.82	2928	6.71	2510	7.16	2681	11.34	4392	95	11.34	4392
	870	116	10.70	9.75	5300	91	8.56	4240	7.14	3533	6.13	3028	6.46	3195	10.31	5300	95	10.31	5300
	600	80	8.92	8.01	6312	90	7.14	5050	5.95	4208	5.11	3607	5.65	3991	8.54	6312	94	8.54	6312
	300	40	5.59	4.86	7665	87	4.47	6132	3.73	5110	3.20	4380	4.48	6140	5.28	7665	92	5.28	7665
	100	13	2.23	1.85	8725	83	1.78	6980	1.49	5817	1.28	4986	2.23	8725	2.06	8725	90	2.06	8725
10 (10)	2500	250	13.49	12.48	3146	93	10.82	2517	9.04	2098	7.76	1798	7.05	1631	13.12	3146	95	11.67	2795
	1750	175	11.69	10.71	3857	92	9.37	3086	7.82	2571	6.71	2204	6.57	2155	11.31	3857	95	10.89	3712
	1160	116	9.71	8.76	4761	90	7.78	3809	6.49	3174	5.57	2721	5.79	2829	9.33	4761	94	9.33	4761
	870	87	8.84	7.88	5707	89	7.08	4566	5.90	3805	5.07	3261	5.24	3372	8.44	5707	93	8.44	5707
	600	60	7.35	6.43	6756	88	5.89	5405	4.91	4504	4.21	3861	4.60	4215	6.96	6756	92	6.96	6756
	300	30	4.61	3.88	8150	84	3.69	6520	3.07	5433	2.64	4657	3.68	6504	4.29	8150	90	4.29	8150
	100	10	1.85	1.47	9235	79	1.48	7388	1.23	6156	1.06	5277	1.85	9235	1.67	9235	88	1.67	9235
15 (15)	2500	167	10.01	8.97	3391	90	8.03	2713	6.71	2260	5.77	1938	5.08	1701	9.62	3391	93	8.39	2951
	1750	117	8.70	7.69	4157	88	6.98	3325	5.83	2771	5.01	2375	4.74	2246	8.31	4157	93	7.84	3923
	1160	77	7.30	6.32	5151	87	5.85	4120	4.88	3434	4.19	2943	4.20	2946	6.90	5151	92	6.90	5151
	870	58	6.64	5.65	6144	85	5.32	4916	4.44	4096	3.81	3511	3.82	3513	6.23	6144	91	6.23	6144
	600	40	5.54	4.60	7242	83	4.44	5793	3.70	4828	3.18	4138	3.37	4395	5.13	7242	90	5.13	7242
	300	20	3.50	2.76	8692	79	2.80	6953	2.34	5794	2.00	4967	2.74	6795	3.17	8692	87	3.17	8692
	100	6.7	1.43	1.04	9816	73	1.14	7853	0.95	6544	0.82	5609	1.43	9816	1.24	9816	84	1.24	9816
20 (20)	2500	125	7.94	6.94	3500	87	6.37	2800	5.33	2333	4.59	2000	4.24	1844	7.56	3500	92	6.99	3228
	1750	88	6.92	5.96	4290	86	5.56	3432	4.64	2860	3.99	2452	3.95	2426	6.54	4290	91	6.53	4283
	1160	58	5.88	4.94	5365	84	4.72	4292	3.94	3577	3.38	3066	3.51	3180	5.49	5365	90	5.49	5365
	870	44	5.30	4.35	6307	82	4.24	5046	3.54	4205	3.04	3604	3.20	3796	4.89	6307	89	4.89	6307
	600	30	4.37	3.49	7332	80	3.50	5866	2.92	4888	2.51	4190	2.85	4762	3.98	7332	88	3.98	7332
	300	15	2.74	2.06	8668	75	2.20	6934	1.83	5778	1.57	4953	2.35	7412	2.43	8668	85	2.43	8668
	100	5.0	1.12	0.77	9691	69	0.89	7753	0.75	6460	0.64	5538	1.12	9691	0.95	9691	81	0.95	9691
25 (25)	2500	100	6.59	5.53	3485	84	5.30	2788	4.44	2323	3.82	1991	3.29	1704	6.18	3485	90	5.40	3034
	1750	70	5.78	4.75	4272	82	4.64	3418	3.88	2848	3.34	2441	3.08	2251	5.35	4272	89	5.08	4052
	1160	46	4.89	3.89	5287	80	3.93	4230	3.28	3525	2.82	3021	2.76	2953	4.46	5287	87	4.46	5287
	870	35	4.50	3.49	6318	78	3.61	5054	3.01	4212	2.59	3610	2.53	3521	4.05	6318	86	4.05	6318
	600	24	3.81	2.84	7457	75	3.05	5965	2.55	4971	2.19	4261	2.26	4404	3.36	7457	84	3.36	7457
	300	12	2.47	1.71	8965	69	1.98	7172	1.65	5976	1.42	5123	1.88	6804	2.10	8965	81	2.10	8965
	100	4.0	1.04	0.64	10136	62	0.83	8109	0.70	6757	0.60	5792	1.04	10136	0.84	10136	77	0.84	10136

1. Numbers shown in ( ) are exact ratios.
2. If input speed is below 1160 RPM, please specify speed and mounting position to insure proper lubrication.
3. See engineering section, pages 224-226, for further discussion regarding service factors.
4. Actual input HP must not exceed the thermal input HP capacity on a continuous basis.
5. 1.00 Service Factor.
6. See engineering section, page 227, for further discussion regarding gear reducer efficiencies.

SINGLE REDUCTION
THRUST AND OVERHUNG LOAD RATINGS

REDUCER SIZE
943

OVERHUNG LOAD CAPACITIES[1]							THRUST CAPACITIES				4.250 CENTER DISTANCE	
INPUT SHAFT	OUTPUT SHAFT[5]						OUTPUT SHAFT					
ALL MODELS	DB, DT[2]	DV SHAFT UP	DV SHAFT DOWN	DSF[3, 4] BASE SIDE	DSF[3, 4] COVER SIDE	DL	DB, DT, DV	DSF TOWARD BASE	DSF AWAY FROM BASE	DL AWAY FROM BASE	INPUT RPM	RATIO
1000	1937	1937	1789	2034	2034	3400	1829	4500	4500	2018	2500	**4** (4)
1000	2019	2019	1865	2138	2138	3400	1827	4500	4500	2041	1750	
1000	2251	2251	2079	2396	2300	3400	1952	4500	4500	2256	1160	
1000	2455	2300	2267	2569	2300	3400	2076	4500	4500	2408	870	
1000	2691	2300	2400	2754	2300	3400	2156	4500	4500	2588	600	
1000	2800	2300	2400	3345	2300	3400	2538	4500	4500	3208	300	
1000	2800	2300	2400	4596	2300	3400	3995	4500	4500	4200	100	
1000	2018	2018	1864	2124	2124	3400	1967	4500	4500	2018	2500	**5** (5)
1000	2104	2104	1943	2233	2233	3400	1978	4500	4500	2041	1750	
1000	2385	2300	2203	2503	2300	3400	2175	4500	4500	2256	1160	
1000	2596	2300	2397	2680	2300	3400	2311	4500	4500	2408	870	
1000	2800	2300	2400	2937	2300	3400	2468	4500	4500	2588	600	
1000	2800	2300	2400	3591	2300	3400	3051	4500	4500	3208	300	
1000	2800	2300	2400	5014	2300	3400	4200	4500	4500	4200	100	
1000	2239	2239	2068	2355	2300	3400	2327	4500	4500	2351	2500	**7½** (7½)
1000	2388	2300	2206	2487	2300	3400	2435	4500	4500	2465	1750	
1000	2768	2300	2400	2811	2300	3400	2792	4500	4500	2830	1160	
1000	2800	2300	2400	3053	2300	3400	2970	4500	4500	3018	870	
1000	2800	2300	2400	3412	2300	3400	3253	4500	4500	3313	600	
1000	2800	2300	2400	4185	2300	3400	4191	4500	4500	4200	300	
1000	2800	2300	2400	5948	2300	3400	4200	4500	4500	4200	100	
1000	2422	2300	2237	2515	2300	3400	2600	4500	4500	2611	2500	**10** (10)
1000	2609	2300	2400	2662	2300	3400	2765	4500	4500	2779	1750	
1000	2800	2300	2400	3056	2300	3400	3177	4500	4500	3196	1160	
1000	2800	2300	2400	3343	2300	3400	3415	4500	4500	3438	870	
1000	2800	2300	2400	3744	2300	3400	3847	4500	4500	3876	600	
1000	2800	2300	2400	4662	2300	3400	4200	4500	4500	4200	300	
1000	2800	2300	2400	6500	2300	3400	4200	4500	4500	4200	100	
1000	2723	2300	2400	2749	2300	3400	3020	4500	4500	3019	2500	**15** (15)
1000	2800	2300	2400	2957	2300	3400	3236	4500	4500	3235	1750	
1000	2800	2300	2400	3441	2300	3400	3732	4500	4500	3731	1160	
1000	2800	2300	2400	3774	2300	3400	4127	4500	4500	4127	870	
815	2800	2300	2400	4234	2300	3400	4200	4500	4500	4200	600	
1000	2800	2300	2400	5402	2300	3400	4200	4500	4500	4200	300	
1000	2800	2300	2400	6500	2300	3400	4200	4500	4500	4200	100	
1000	2800	2300	2400	2946	2300	3400	3316	4500	4500	3312	2500	**20** (20)
1000	2800	2300	2400	3202	2300	3400	3565	4500	4500	3560	1750	
1000	2800	2300	2400	3725	2300	3400	4200	4500	4500	4187	1160	
993	2800	2300	2400	4094	2300	3400	4200	4500	4500	4200	870	
879	2800	2300	2400	4665	2300	3400	4200	4500	4500	4200	600	
1000	2800	2300	2400	5979	2300	3400	4200	4500	4500	4200	300	
1000	2800	2300	2400	6500	2300	3400	4200	4500	4500	4200	100	
1000	2800	2300	2400	3139	2300	3400	3588	4500	4500	3578	2500	**25** (25)
1000	2800	2300	2400	3415	2300	3400	3896	4500	4500	3885	1750	
1000	2800	2300	2400	3980	2300	3400	4200	4500	4500	4200	1160	
897	2800	2300	2400	4392	2300	3400	4200	4500	4500	4200	870	
697	2800	2300	2400	5043	2300	3400	4200	4500	4500	4200	600	
851	2800	2300	2400	6450	2300	3400	4200	4500	4500	4200	300	
1000	2800	2300	2400	6500	2300	3400	4200	4500	4500	4200	100	

1. Overhung load given at one shaft diameter from housing or mounting flange. All values given in pounds.
2. Overhung load capacities are based on the direction and location of the load as shown in figure 1 on page 228. Consult factory for allowable OHL values if load is applied as shown in figure 2A on page 228.
3. Overhung load based on maximum bore size. Use of smaller driven shaft diameter may limit OHL capacity.
4. Overhung load capacity given at a point located 7.125 inches from centerline of housing.
5. For DSN output shaft overhung load capacities, contact the factory.

REDUCER SIZE
943

SINGLE REDUCTION HORSEPOWER AND TORQUE RATINGS

WINSMITH®

4.250 CENTER DISTANCE

HORSEPOWER AND TORQUE RATINGS (INCH POUNDS)

RATIO[1]	INPUT RPM[2]	OUTPUT RPM	MECHANICAL[3] 1.00 SERVICE FACTOR				MECHANICAL[3] 1.25 SF		MECHANICAL[3] 1.50 SF		MECHANICAL[3] 1.75 SF		THERMAL[4]		SYNTHETIC OIL MECHANICAL[5]			SYNTHETIC OIL THERMAL	
			INPUT HP	OUTPUT HP	OUTPUT TORQUE	EFF[6]	INPUT HP	OUTPUT TORQUE	INPUT HP	OUTPUT TORQUE	INPUT HP	OUTPUT TORQUE	INPUT HP	OUTPUT TORQUE	INPUT HP	OUTPUT TORQUE	EFF[6]	INPUT HP	OUTPUT TORQUE
30 (30)	2500	83	5.68	4.63	3504	82	4.57	2803	3.83	2336	3.30	2002	2.89	1747	5.27	3504	88	4.74	3144
	1750	58	4.99	3.98	4295	80	4.01	3436	3.35	2863	2.89	2454	2.71	2304	4.57	4295	87	4.47	4201
	1160	39	4.26	3.27	5334	77	3.42	4267	2.86	3556	2.46	3048	2.44	3022	3.83	5334	86	3.83	5334
	870	29	3.92	2.92	6344	75	3.14	5075	2.62	4230	2.25	3625	2.24	3604	3.47	6344	84	3.47	6344
	600	20	3.31	2.37	7457	71	2.65	5965	2.22	4971	1.90	4261	2.01	4512	2.87	7457	83	2.87	7457
	300	10	2.16	1.42	8922	66	1.73	7138	1.44	5948	1.24	5099	1.69	6985	1.79	8922	79	1.79	8922
	100	3.3	0.92	0.53	10057	58	0.73	8045	0.61	6704	0.53	5747	0.92	10057	0.71	10057	75	0.71	10057
40 (40)	2500	63	4.45	3.47	3499	78	3.58	2799	3.01	2333	2.59	1999	2.44	1878	4.06	3499	86	3.99	3439
	1750	44	3.93	2.98	4289	76	3.16	3431	2.65	2860	2.28	2451	2.30	2469	3.53	4289	84	3.53	4289
	1160	29	3.40	2.47	5368	73	2.73	4295	2.29	3579	1.97	3068	2.07	3236	2.98	5368	83	2.98	5368
	870	22	3.10	2.17	6299	70	2.49	5039	2.08	4199	1.79	3599	1.92	3864	2.67	6299	81	2.67	6299
	600	15	2.60	1.74	7310	67	2.09	5848	1.74	4873	1.50	4177	1.74	4849	2.19	7310	80	2.19	7310
	300	7.5	1.69	1.03	8625	61	1.35	6900	1.13	5750	0.97	4929	1.48	7555	1.35	8625	76	1.35	8625
	100	2.5	0.72	0.38	9631	53	0.58	7704	0.48	6420	0.41	5503	0.72	9631	0.53	9631	72	0.53	9631
50 (50)	2500	50	3.63	2.71	3410	75	2.93	2728	2.46	2273	2.12	1949	2.14	1965	3.26	3410	83	3.26	3410
	1750	35	3.21	2.32	4180	72	2.59	3344	2.17	2787	1.87	2389	2.01	2579	2.83	4180	82	2.83	4180
	1160	23	2.81	1.93	5246	69	2.26	4197	1.89	3497	1.63	2998	1.83	3380	2.41	5246	80	2.41	5246
	870	17	2.55	1.69	6105	66	2.04	4884	1.71	4070	1.47	3488	1.70	4039	2.14	6105	79	2.14	6105
	600	12	2.13	1.34	7030	63	1.71	5624	1.43	4687	1.23	4017	1.55	5078	1.74	7030	77	1.74	7030
	300	6.0	1.39	0.78	8223	57	1.11	6578	0.93	5482	0.80	4699	1.34	7946	1.07	8223	73	1.07	8223
	100	2.0	0.58	0.28	8906	49	0.46	7125	0.39	5937	0.33	5089	0.58	8906	0.41	8906	69	0.41	8906
60 (60)	2500	42	3.00	2.14	3243	71	2.43	2595	2.04	2162	1.77	1853	1.92	2027	2.65	3243	81	2.65	3243
	1750	29	2.67	1.84	3976	69	2.15	3181	1.81	2651	1.56	2272	1.81	2658	2.31	3976	80	2.31	3976
	1160	19	2.34	1.53	4994	65	1.89	3995	1.58	3330	1.36	2854	1.65	3484	1.96	4994	78	1.96	4994
	870	15	2.12	1.33	5779	63	1.71	4623	1.43	3853	1.23	3302	1.54	4166	1.74	5779	77	1.74	5779
	600	10	1.78	1.05	6620	59	1.43	5296	1.19	4413	1.03	3783	1.41	5245	1.41	6620	75	1.41	6620
	300	5.0	1.16	0.61	7699	53	0.93	6159	0.77	5132	0.67	4399	1.16	7699	0.86	7699	71	0.86	7699
	100	1.7	0.47	0.21	7993	45	0.37	6394	0.31	5329	0.27	4567	0.47	7993	0.32	7993	67	0.32	7993
80 (80)	2500	31	2.04	1.33	2691	65	1.66	2153	1.40	1794	1.22	1538	1.63	2111	1.76	2691	76	1.76	2691
	1750	22	1.82	1.14	3299	63	1.48	2639	1.24	2199	1.08	1885	1.54	2764	1.52	3299	75	1.52	3299
	1160	15	1.61	0.95	4144	59	1.30	3315	1.09	2762	0.94	2368	1.42	3624	1.30	4144	74	1.30	4144
	870	11	1.46	0.82	4760	56	1.17	3808	0.98	3174	0.85	2720	1.33	4337	1.14	4760	72	1.14	4760
	600	7.5	1.22	0.64	5417	53	0.98	4334	0.82	3611	0.71	3096	1.22	5417	0.92	5417	70	0.92	5417
	300	3.8	0.80	0.37	6254	47	0.64	5003	0.54	4169	0.46	3573	0.80	6254	0.56	6254	67	0.56	6254
	100	1.3	0.33	0.13	6560	39	0.26	5248	0.22	4373	0.19	3749	0.33	6560	0.21	6560	63	0.21	6560
100 (100)	2500	25	1.41	0.84	2122	60	1.16	1697	0.98	1414	0.86	1212	1.41	2122	1.19	2122	71	1.19	2122
	1750	18	1.26	0.72	2601	57	1.03	2081	0.87	1734	0.76	1486	1.26	2601	1.02	2601	71	1.02	2601
	1160	12	1.12	0.60	3264	54	0.91	2611	0.76	2176	0.66	1865	1.12	3264	0.87	3264	69	0.87	3264
	870	8.7	1.01	0.52	3734	51	0.82	2987	0.69	2489	0.59	2134	1.01	3734	0.76	3734	68	0.76	3734
	600	6.0	0.85	0.40	4232	48	0.68	3386	0.57	2821	0.50	2418	0.85	4232	0.61	4232	67	0.61	4232
	300	3.0	0.56	0.23	4864	42	0.45	3891	0.37	3243	0.32	2779	0.56	4864	0.37	4864	63	0.37	4864
	100	1.0	0.24	0.08	5337	35	0.19	4269	0.16	3558	0.14	3049	0.24	5337	0.14	5337	60	0.14	5337

1. Numbers shown in ( ) are exact ratios.
2. If input speed is below 1160 RPM, please specify speed and mounting position to insure proper lubrication.
3. See engineering section, pages 224-226, for further discussion regarding service factors.
4. Actual input HP must not exceed the thermal input HP capacity on a continuous basis.
5. 1.00 Service Factor.
6. See engineering section, page 227, for further discussion regarding gear reducer efficiencies.

SINGLE REDUCTION
THRUST AND OVERHUNG LOAD RATINGS

REDUCER SIZE
943

OVERHUNG LOAD CAPACITIES[1]							THRUST CAPACITIES				4.250 CENTER DISTANCE	
INPUT SHAFT	OUTPUT SHAFT[5]						OUTPUT SHAFT					
ALL MODELS	DB, DT[2]	DV SHAFT UP	DV SHAFT DOWN	DSF[3, 4] BASE SIDE	DSF[3, 4] COVER SIDE	DL	DB, DT, DV	DSF TOWARD BASE	DSF AWAY FROM BASE	DL AWAY FROM BASE	INPUT RPM	RATIO
1000	2800	2300	2400	3296	2300	3400	3794	4500	4500	3783	2500	**30** (30)
1000	2800	2300	2400	3589	2300	3400	4172	4500	4500	4160	1750	
1000	2800	2300	2400	4182	2300	3400	4200	4500	4500	4200	1160	
870	2800	2300	2400	4669	2300	3400	4200	4500	4500	4200	870	
743	2800	2300	2400	5363	2300	3400	4200	4500	4500	4200	600	
941	2800	2300	2400	6500	2300	3400	4200	4500	4500	4200	300	
1000	2800	2300	2400	6500	2300	3400	4200	4500	4500	4200	100	
1000	2800	2300	2400	3560	2300	3400	4187	4500	4500	4176	2500	**40** (40)
1000	2800	2300	2400	3879	2300	3400	4200	4500	4500	4200	1750	
1000	2800	2300	2400	4588	2300	3400	4200	4500	4500	4200	1160	
987	2800	2300	2400	5137	2300	3400	4200	4500	4500	4200	870	
932	2800	2300	2400	5908	2300	3400	4200	4500	4500	4200	600	
1000	2800	2300	2400	6500	2300	3400	4200	4500	4500	4200	300	
1000	2800	2300	2400	6500	2300	3400	4200	4500	4500	4200	100	
1000	2800	2300	2400	3781	2300	3400	4200	4500	4500	4200	2500	**50** (50)
1000	2800	2300	2400	4139	2300	3400	4200	4500	4500	4200	1750	
1000	2800	2300	2400	4939	2300	3400	4200	4500	4500	4200	1160	
1000	2800	2300	2400	5535	2300	3400	4200	4500	4500	4200	870	
1000	2800	2300	2400	6370	2300	3400	4200	4500	4500	4200	600	
1000	2800	2300	2400	6500	2300	3400	4200	4500	4500	4200	300	
1000	2800	2300	2400	6500	2300	3400	4200	4500	4500	4200	100	
1000	2800	2300	2400	3974	2300	3400	4200	4500	4500	4200	2500	**60** (60)
1000	2800	2300	2400	4398	2300	3400	4200	4500	4500	4200	1750	
1000	2800	2300	2400	5250	2300	3400	4200	4500	4500	4200	1160	
1000	2800	2300	2400	5887	2300	3400	4200	4500	4500	4200	870	
1000	2800	2300	2400	6500	2300	3400	4200	4500	4500	4200	600	
1000	2800	2300	2400	6500	2300	3400	4200	4500	4500	4200	300	
1000	2800	2300	2400	6500	2300	3400	4200	4500	4500	4200	100	
1000	2800	2300	2400	4353	2300	3400	4200	4500	4500	4200	2500	**80** (80)
1000	2800	2300	2400	4851	2300	3400	4200	4500	4500	4200	1750	
1000	2800	2300	2400	5795	2300	3400	4200	4500	4500	4200	1160	
1000	2800	2300	2400	6500	2300	3400	4200	4500	4500	4200	870	
1000	2800	2300	2400	6500	2300	3400	4200	4500	4500	4200	600	
1000	2800	2300	2400	6500	2300	3400	4200	4500	4500	4200	300	
1000	2800	2300	2400	6500	2300	3400	4200	4500	4500	4200	100	
1000	2800	2300	2400	4693	2300	3400	4200	4500	4500	4200	2500	**100** (100)
1000	2800	2300	2400	5235	2300	3400	4200	4500	4500	4200	1750	
1000	2800	2300	2400	6257	2300	3400	4200	4500	4500	4200	1160	
1000	2800	2300	2400	6500	2300	3400	4200	4500	4500	4200	870	
1000	2800	2300	2400	6500	2300	3400	4200	4500	4500	4200	600	
1000	2800	2300	2400	6500	2300	3400	4200	4500	4500	4200	300	
1000	2800	2300	2400	6500	2300	3400	4200	4500	4500	4200	100	

1. Overhung load given at one shaft diameter from housing or mounting flange. All values given in pounds.
2. Overhung load capacities are based on the direction and location of the load as shown in figure 1 on page 228. Consult factory for allowable OHL values if load is applied as shown in figure 2A on page 228.
3. Overhung load based on maximum bore size. Use of smaller driven shaft diameter may limit OHL capacity.
4. Overhung load capacity given at a point located 7.125 inches from centerline of housing.
5. For DSN output shaft overhung load capacities, contact the factory.

REDUCER SIZE
917

HORSEPOWER AND TORQUE RATINGS

(D) Double Reduction Worm Gear
(H) Double Reduction Helical/Worm Gear

WINSMITH®

CENTER DISTANCE[1] 1.333/1.750 (D) CENTER DISTANCE[1] N/A (H)					HORSEPOWER AND TORQUE RATINGS (INCH POUNDS)													
					MECHANICAL RATINGS[4]										THERMAL[5]		SYNTHETIC OIL MECHANICAL[6]	
					1.00 SERVICE FACTOR			1.25 SF		1.50 SF		1.75 SF					
OVERALL RATIO[2]	PRIMARY RATIO[2]	SECOND-ARY RATIO[2]	INPUT RPM[3]	OUTPUT RPM	INPUT HP	OUTPUT HP	OUTPUT TORQUE	INPUT HP	OUTPUT TORQUE	INPUT HP	OUTPUT TORQUE	INPUT HP	OUTPUT TORQUE	INPUT HP	OUTPUT TORQUE	INPUT HP	OUTPUT TORQUE
50 (D) (50)	10 (10)	5 (5)	2500	50.0	.606	.432	544	.491	435	.415	363	.361	311	.606	544	.542	544
			1750	35.0	.445	.310	558	.360	446	.303	372	.263	319	.445	558	.392	558
			1160	23.2	.310	.209	569	.250	455	.210	379	.182	325	.310	569	.268	569
			870	17.4	.240	.159	575	.193	460	.162	383	.140	328	.240	575	.205	575
			600	12.0	.171	.110	580	.138	464	.116	387	.100	331	.171	580	.144	580
			100	2.00	.033	.019	590	.027	472	.022	393	.019	337	.033	590	.026	590
75 (D) (75)	5 (5)	15 (15)	2500	33.3	.437	.294	556	.357	445	.303	371	.265	318	.437	556	.388	556
			1750	23.3	.321	.213	574	.261	459	.221	383	.193	328	.321	574	.281	574
			1160	15.5	.224	.144	589	.182	471	.153	393	.133	336	.224	589	.192	589
			870	11.6	.173	.110	596	.140	477	.118	397	.102	341	.173	596	.147	596
			600	8.00	.124	.077	603	.100	482	.084	402	.073	345	.124	603	.103	603
			100	1.33	.024	.013	616	.019	493	.016	411	.014	352	.024	616	.019	616
100 (D) (100)	5 (5)	20 (20)	2500	25.0	.349	.219	553	.287	442	.245	369	.215	316	.349	553	.305	553
			1750	17.5	.256	.158	570	.209	456	.178	380	.156	325	.256	570	.220	570
			1160	11.6	.178	.107	583	.145	466	.123	389	.107	333	.178	583	.149	583
			870	8.70	.138	.081	590	.112	472	.095	393	.082	337	.138	590	.114	590
			600	6.00	.098	.057	596	.080	477	.067	397	.058	341	.098	596	.080	596
			100	1.00	.019	.010	608	.015	486	.013	405	.011	347	.019	608	.014	608
150 (D) (150)	10 (10)	15 (15)	2500	16.7	.263	.155	587	.217	469	.186	391	.165	335	.263	587	.228	587
			1750	11.7	.189	.110	596	.156	477	.133	397	.117	341	.189	596	.161	596
			1160	7.73	.130	.074	603	.106	483	.090	402	.079	345	.130	603	.108	603
			870	5.80	.100	.056	607	.081	486	.069	405	.060	347	.100	607	.082	607
			600	4.00	.071	.039	611	.057	489	.048	407	.042	349	.071	611	.057	611
			100	0.67	.014	.007	617	.011	494	.009	411	.008	353	.014	617	.010	617
200 (D) (200)	10 (10)	20 (20)	2500	12.5	.213	.115	581	.177	465	.153	387	.136	332	.213	581	.182	581
			1750	8.75	.153	.082	590	.126	472	.109	393	.096	337	.153	590	.128	590
			1160	5.80	.104	.055	597	.086	477	.073	398	.064	341	.104	597	.085	597
			870	4.35	.080	.041	600	.065	480	.056	400	.049	343	.080	600	.064	600
			600	3.00	.057	.029	603	.046	483	.039	402	.034	345	.057	603	.044	603
			100	0.50	.011	.005	609	.009	487	.007	406	.006	348	.011	609	.008	609
300 (D) (300)	20 (20)	15 (15)	2500	8.33	.166	.080	602	.139	482	.121	402	.109	344	.166	602	.139	602
			1750	5.83	.118	.056	607	.098	486	.085	405	.076	347	.118	607	.097	607
			1160	3.87	.080	.037	611	.066	489	.057	407	.050	349	.080	611	.064	611
			870	2.90	.062	.028	613	.051	490	.044	409	.038	350	.062	613	.048	613
			600	2.00	.044	.020	615	.036	492	.031	410	.027	351	.044	615	.033	615
			100	0.33	.008	.003	618	.007	494	.006	412	.005	353	.008	618	.006	618

1. Center Distance=Primary/Secondary.
2. Numbers shown in ( ) are actual ratios. Worm ratios are exact, helical ratios are rounded and are not exact.
3. If input speed is below 1160 RPM, please specify speed to insure proper lubrication.
4. See engineering section, pages 224-226, for further discussion regarding service factors.
5. Actual input HP must not exceed the thermal input HP capacity on a continuous basis.
6. When using synthetic oil, there is no thermal rating limitation. The Service Factor is 1.00.

THRUST AND OVERHUNG LOAD RATINGS

(D) Double Reduction Worm Gear
(H) Double Reduction Helical/Worm Gear

REDUCER SIZE
917

OVERHUNG LOAD CAPACITIES[1]							THRUST CAPACITIES				CENTER DISTANCE 1.333/1.750 (D) CENTER DISTANCE N/A (H)	
INPUT SHAFT	OUTPUT SHAFT[4]						OUTPUT SHAFT					
ALL MODELS	DB, DT	DV SHAFT UP	DV SHAFT DOWN	DSF[2, 3] BASE SIDE	DSF[2, 3] COVER SIDE		DB, DT, DV	DSF TOWARD BASE	DSF AWAY FROM BASE		INPUT RPM	RATIO
125	650	650	624	700	700		894	1440	1600		2500	50 (D) (50)
125	650	650	624	700	700		894	1440	1600		1750	
125	650	650	624	700	700		894	1440	1600		1160	
125	650	650	624	700	700		894	1440	1600		870	
125	650	650	624	700	700		894	1440	1600		600	
125	650	650	624	700	700		894	1440	1600		100	
290	650	650	624	700	700		894	1440	1600		2500	75 (D) (75)
290	650	650	624	700	700		894	1440	1600		1750	
290	650	650	624	700	700		894	1440	1600		1160	
290	650	650	624	700	700		894	1440	1600		870	
290	650	650	624	700	700		894	1440	1600		600	
290	650	650	624	700	700		894	1440	1600		100	
290	650	650	624	700	700		894	1440	1600		2500	100 (D) (100)
290	650	650	624	700	700		894	1440	1600		1750	
290	650	650	624	700	700		894	1440	1600		1160	
290	650	650	624	700	700		894	1440	1600		870	
290	650	650	624	700	700		894	1440	1600		600	
290	650	650	624	700	700		894	1440	1600		100	
125	650	650	624	700	700		894	1440	1600		2500	150 (D) (150)
125	650	650	624	700	700		894	1440	1600		1750	
125	650	650	624	700	700		894	1440	1600		1160	
125	650	650	624	700	700		894	1440	1600		870	
125	650	650	624	700	700		894	1440	1600		600	
125	650	650	624	700	700		894	1440	1600		100	
125	650	650	624	700	700		894	1440	1600		2500	200 (D) (200)
125	650	650	624	700	700		894	1440	1600		1750	
125	650	650	624	700	700		894	1440	1600		1160	
125	650	650	624	700	700		894	1440	1600		870	
125	650	650	624	700	700		894	1440	1600		600	
125	650	650	624	700	700		894	1440	1600		100	
100	650	650	624	700	700		894	1440	1600		2500	300 (D) (300)
100	650	650	624	700	700		894	1440	1600		1750	
100	650	650	624	700	700		894	1440	1600		1160	
100	650	650	624	700	700		894	1440	1600		870	
100	650	650	624	700	700		894	1440	1600		600	
100	650	650	624	700	700		894	1440	1600		100	

1. Overhung load given at one shaft diameter from housing or mounting flange. All values given in pounds.
2. Overhung load based on maximum bore size. Use of smaller driven shaft diameter may limit OHL capacity.
3. Overhung load capacity given at a point located 4.500 inches from centerline of housing.
4. For DSND output shaft overhung load capacities, contact the factory.

REDUCER SIZE
917

HORSEPOWER AND TORQUE RATINGS

(D) Double Reduction Worm Gear
(H) Double Reduction Helical/Worm Gear

WINSMITH®

CENTER DISTANCE[1] 1.333/1.750 (D) CENTER DISTANCE[1] N/A (H)					HORSEPOWER AND TORQUE RATINGS (INCH POUNDS)													
					MECHANICAL RATINGS[4]										THERMAL[5]		SYNTHETIC OIL MECHANICAL[6]	
					1.00 SERVICE FACTOR			1.25 SF		1.50 SF		1.75 SF					
OVERALL RATIO[2]	PRIMARY RATIO[2]	SECONDARY RATIO[2]	INPUT RPM[3]	OUTPUT RPM	INPUT HP	OUTPUT HP	OUTPUT TORQUE	INPUT HP	OUTPUT TORQUE	INPUT HP	OUTPUT TORQUE	INPUT HP	OUTPUT TORQUE	INPUT HP	OUTPUT TORQUE	INPUT HP	OUTPUT TORQUE
500 (D) (500)	25 (25)	20 (20)	2500	5.00	.121	.047	599	.103	479	.092	399	.083	342	.121	599	.100	599
			1750	3.50	.085	.033	602	.072	482	.063	401	.057	344	.085	602	.068	602
			1160	2.32	.058	.022	605	.048	484	.042	403	.038	346	.058	605	.044	605
			870	1.74	.044	.017	606	.037	485	.032	404	.028	346	.044	606	.033	606
			600	1.20	.031	.012	608	.026	486	.022	405	.020	347	.031	608	.023	608
			100	0.20	.006	.002	610	.005	488	.004	407	.003	349	.006	610	.004	610
750 (D) (750)	25 (25)	30 (30)	2500	3.33	.105	.033	624	.091	499	.081	416	.074	356	.105	624	.083	624
			1750	2.33	.074	.023	628	.063	502	.056	418	.050	359	.074	628	.056	628
			1160	1.55	.050	.015	631	.042	505	.037	421	.033	360	.050	631	.036	631
			870	1.16	.038	.012	632	.032	506	.028	422	.025	361	.038	632	.027	632
			600	0.80	.027	.008	634	.022	507	.019	422	.017	362	.027	634	.018	634
			100	0.13	.005	.001	636	.004	509	.003	424	.003	364	.005	636	.003	636
1000 (D) (1000)	50 (50)	20 (20)	2500	2.50	.089	.024	604	.077	484	.070	403	.065	345	.089	604	.071	604
			1750	1.75	.062	.017	606	.054	485	.048	404	.044	346	.062	606	.047	606
			1160	1.16	.042	.011	608	.036	486	.031	405	.028	347	.042	608	.030	608
			870	0.87	.032	.008	608	.027	487	.024	406	.021	348	.032	608	.022	608
			600	0.60	.023	.006	609	.019	487	.016	406	.015	348	.023	609	.015	609
			100	0.10	.004	.001	610	.003	488	.003	407	.003	349	.004	610	.002	610
1500 (D) (1500)	50 (50)	30 (30)	2500	1.67	.079	.017	630	.070	504	.063	420	.059	360	.079	630	.061	630
			1750	1.17	.055	.012	632	.048	506	.043	422	.040	361	.055	632	.040	632
			1160	0.77	.037	.008	634	.032	507	.028	423	.026	362	.037	634	.025	634
			870	0.58	.028	.006	635	.024	508	.021	423	.019	363	.028	635	.018	635
			600	0.40	.020	.004	635	.017	508	.015	424	.013	363	.020	635	.012	635
			100	0.07	.004	.001	637	.003	509	.003	424	.002	364	.004	637	.002	637
2000 (D) (2000)	50 (50)	40 (40)	2500	1.25	.069	.012	599	.062	479	.057	400	.053	342	.069	599	.054	599
			1750	0.88	.048	.008	601	.042	481	.038	401	.035	343	.048	601	.035	601
			1160	0.58	.031	.006	602	.027	482	.024	402	.022	344	.031	602	.022	602
			870	0.44	.024	.004	603	.020	483	.018	402	.016	345	.024	603	.015	603
			600	0.30	.016	.003	604	.014	483	.012	403	.011	345	.016	604	.010	604
			100	0.05	.003	.003	605	.002	484	.002	403	.002	346	.003	605	.001	605
3000 (D) (3000)	60 (60)	50 (50)	2500	0.83	.060	.008	571	.055	456	.051	380	.048	326	.060	571	.047	571
			1750	0.58	.041	.005	572	.036	458	.034	381	.032	327	.041	572	.030	572
			1160	0.39	.026	.004	573	.023	458	.021	382	.020	327	.026	573	.018	573
			870	0.29	.020	.003	573	.017	459	.015	382	.014	328	.020	573	.013	573
			600	0.20	.014	.002	574	.012	459	.010	383	.010	328	.014	574	.008	574
			100	0.03	.002	.002	575	.002	460	.002	383	.001	328	.002	575	.001	575

1. Center Distance=Primary/Secondary.
2. Numbers shown in ( ) are actual ratios. Worm ratios are exact, helical ratios are rounded and are not exact.
3. If input speed is below 1160 RPM, please specify speed to insure proper lubrication.
4. See engineering section, pages 224-226, for further discussion regarding service factors.
5. Actual input HP must not exceed the thermal input HP capacity on a continuous basis.
6. When using synthetic oil, there is no thermal rating limitation. The Service Factor is 1.00.

THRUST AND OVERHUNG LOAD RATINGS

(D) Double Reduction Worm Gear
(H) Double Reduction Helical/Worm Gear

REDUCER SIZE **917**

OVERHUNG LOAD CAPACITIES[1]							THRUST CAPACITIES				CENTER DISTANCE 1.333/1.750 (D) CENTER DISTANCE N/A (H)	
INPUT SHAFT	OUTPUT SHAFT[4]						OUTPUT SHAFT					
ALL MODELS	DB, DT	DV SHAFT UP	DV SHAFT DOWN	DSF[2, 3] BASE SIDE	DSF[2, 3] COVER SIDE		DB, DT, DV	DSF TOWARD BASE	DSF AWAY FROM BASE		INPUT RPM	RATIO
100	650	650	624	700	700		894	1440	1600		2500	500 (D) (500)
100	650	650	624	700	700		894	1440	1600		1750	
100	650	650	624	700	700		894	1440	1600		1160	
100	650	650	624	700	700		894	1440	1600		870	
100	650	650	624	700	700		894	1440	1600		600	
100	650	650	624	700	700		894	1440	1600		100	
100	650	650	624	700	700		894	1440	1600		2500	750 (D) (750)
100	650	650	624	700	700		894	1440	1600		1750	
100	650	650	624	700	700		894	1440	1600		1160	
100	650	650	624	700	700		894	1440	1600		870	
100	650	650	624	700	700		894	1440	1600		600	
100	650	650	624	700	700		894	1440	1600		100	
100	650	650	624	700	700		894	1440	1600		2500	1000 (D) (1000)
100	650	650	624	700	700		894	1440	1600		1750	
100	650	650	624	700	700		894	1440	1600		1160	
100	650	650	624	700	700		894	1440	1600		870	
100	650	650	624	700	700		894	1440	1600		600	
100	650	650	624	700	700		894	1440	1600		100	
100	650	650	624	700	700		894	1440	1600		2500	1500 (D) (1500)
100	650	650	624	700	700		894	1440	1600		1750	
100	650	650	624	700	700		894	1440	1600		1160	
100	650	650	624	700	700		894	1440	1600		870	
100	650	650	624	700	700		894	1440	1600		600	
100	650	650	624	700	700		894	1440	1600		100	
100	650	650	624	700	700		894	1440	1600		2500	2000 (D) (2000)
100	650	650	624	700	700		894	1440	1600		1750	
100	650	650	624	700	700		894	1440	1600		1160	
100	650	650	624	700	700		894	1440	1600		870	
100	650	650	624	700	700		894	1440	1600		600	
100	650	650	624	700	700		894	1440	1600		100	
115	650	650	624	700	700		894	1440	1600		2500	3000 (D) (3000)
115	650	650	624	700	700		894	1440	1600		1750	
115	650	650	624	700	700		894	1440	1600		1160	
115	650	650	624	700	700		894	1440	1600		870	
115	650	650	624	700	700		894	1440	1600		600	
115	650	650	624	700	700		894	1440	1600		100	

1. Overhung load given at one shaft diameter from housing or mounting flange. All values given in pounds.
2. Overhung load based on maximum bore size. Use of smaller driven shaft diameter may limit OHL capacity.
3. Overhung load capacity given at a point located 4.500 inches from centerline of housing.
4. For DSND output shaft overhung load capacities, contact the factory.

REDUCER SIZE
917

HORSEPOWER AND TORQUE RATINGS

(D) Double Reduction Worm Gear
(H) Double Reduction Helical/Worm Gear

WINSMITH®

CENTER DISTANCE[1] 1.333/1.750 (D)
CENTER DISTANCE[1] N/A (H)

HORSEPOWER AND TORQUE RATINGS (INCH POUNDS)

OVERALL RATIO[2]	PRIMARY RATIO[2]	SECONDARY RATIO[2]	INPUT RPM[3]	OUTPUT RPM	MECHANICAL RATINGS[4] 1.00 SERVICE FACTOR INPUT HP	1.00 SF OUTPUT HP	1.00 SF OUTPUT TORQUE	1.25 SF INPUT HP	1.25 SF OUTPUT TORQUE	1.50 SF INPUT HP	1.50 SF OUTPUT TORQUE	1.75 SF INPUT HP	1.75 SF OUTPUT TORQUE	THERMAL[5] INPUT HP	THERMAL[5] OUTPUT TORQUE	SYNTHETIC OIL MECHANICAL[6] INPUT HP	SYNTHETIC OIL MECHANICAL[6] OUTPUT TORQUE
3600 (D) (3600)	60 (60)	60 (60)	2500	0.69	.056	.006	534	.051	427	.048	356	.046	305	.056	534	.044	534
			1750	0.49	.038	.004	535	.034	428	.031	357	.030	306	.038	535	.028	535
			1160	0.32	.024	.003	536	.021	429	.020	357	.018	306	.024	536	.017	536
			870	0.24	.018	.002	536	.016	429	.014	358	.013	307	.018	536	.012	536
			600	0.17	.012	.001	537	.011	430	.009	358	.009	307	.012	537	.007	537
			100	0.03	.002	.001	538	.002	430	.001	358	.001	307	.002	538	.001	538
4000 (D) (4150)	50 (50)	80 (83)	2500	0.60	.050	.004	421	.047	337	.044	281	.043	241	.050	421	.041	421
			1750	0.42	.033	.003	422	.030	338	.029	281	.027	241	.033	422	.025	422
			1160	0.28	.021	.002	423	.019	338	.017	282	.016	242	.021	423	.015	423
			870	0.21	.015	.001	423	.014	339	.012	282	.012	242	.015	423	.010	423
			600	0.14	.010	.001	424	.009	339	.008	282	.008	242	.010	424	.006	424
			100	0.02	.002	.001	424	.001	340	.001	283	.001	243	.002	424	.001	424
4800 (D) (4980)	60 (60)	80 (83)	2500	0.50	.049	.003	421	.045	337	.043	281	.042	241	.049	421	.039	421
			1750	0.35	.032	.002	422	.029	338	.028	282	.026	241	.032	422	.025	422
			1160	0.23	.020	.002	423	.018	339	.017	282	.016	242	.020	423	.014	423
			870	0.17	.014	.001	424	.013	339	.012	282	.011	242	.014	424	.010	424
			600	0.12	.010	.001	424	.009	339	.008	283	.007	242	.010	424	.006	424
			100	0.02	.002	.001	424	.001	340	.001	283	.001	243	.002	424	.001	424
6000 (D) (6000)	60 (60)	100 (100)	2500	0.42	.042	.002	303	.040	242	.039	202	.038	173	.042	303	.036	303
			1750	0.29	.027	.001	303	.025	243	.024	202	.023	173	.027	303	.022	303
			1160	0.19	.016	.001	304	.015	243	.014	202	.014	174	.016	304	.013	304
			870	0.15	.011	.001	304	.010	243	.010	203	.009	174	.011	304	.009	304
			600	0.10	.007	.001	304	.007	243	.006	203	.006	174	.007	304	.005	304
			100	0.02	.001	.001	304	.001	244	.001	203	.001	174	.001	304	.001	304

1. Center Distance=Primary/Secondary.
2. Numbers shown in ( ) are actual ratios. Worm ratios are exact, helical ratios are rounded and are not exact.
3. If input speed is below 1160 RPM, please specify speed to insure proper lubrication.
4. See engineering section, pages 224-226, for further discussion regarding service factors.
5. Actual input HP must not exceed the thermal input HP capacity on a continuous basis.
6. When using synthetic oil, there is no thermal rating limitation. The Service Factor is 1.00.

THRUST AND OVERHUNG LOAD RATINGS

(D) Double Reduction Worm Gear
(H) Double Reduction Helical/Worm Gear

REDUCER SIZE **917**

OVERHUNG LOAD CAPACITIES[1]							THRUST CAPACITIES				CENTER DISTANCE 1.333/1.750 (D) CENTER DISTANCE N/A (H)	
INPUT SHAFT	OUTPUT SHAFT[4]						OUTPUT SHAFT					
ALL MODELS	DB, DT	DV SHAFT UP	DV SHAFT DOWN	DSF[2, 3] BASE SIDE	DSF[2, 3] COVER SIDE		DB, DT, DV	DSF TOWARD BASE	DSF AWAY FROM BASE		INPUT RPM	RATIO
115	650	650	624	700	700		894	1440	1600		2500	3600 (D) (3600)
115	650	650	624	700	700		894	1440	1600		1750	
115	650	650	624	700	700		894	1440	1600		1160	
115	650	650	624	700	700		894	1440	1600		870	
115	650	650	624	700	700		894	1440	1600		600	
115	650	650	624	700	700		894	1440	1600		100	
100	650	650	624	700	700		894	1440	1600		2500	4000 (D) (4150)
100	650	650	624	700	700		894	1440	1600		1750	
100	650	650	624	700	700		894	1440	1600		1160	
100	650	650	624	700	700		894	1440	1600		870	
100	650	650	624	700	700		894	1440	1600		600	
100	650	650	624	700	700		894	1440	1600		100	
115	650	650	624	700	700		894	1440	1600		2500	4800 (D) (4980)
115	650	650	624	700	700		894	1440	1600		1750	
115	650	650	624	700	700		894	1440	1600		1160	
115	650	650	624	700	700		894	1440	1600		870	
115	650	650	624	700	700		894	1440	1600		600	
115	650	650	624	700	700		894	1440	1600		100	
115	650	650	624	700	700		894	1440	1600		2500	6000 (D) (6000)
115	650	650	624	700	700		894	1440	1600		1750	
115	650	650	624	700	700		894	1440	1600		1160	
115	650	650	624	700	700		894	1440	1600		870	
115	650	650	624	700	700		894	1440	1600		600	
115	650	650	624	700	700		894	1440	1600		100	

1. Overhung load given at one shaft diameter from housing or mounting flange. All values given in pounds.
2. Overhung load based on maximum bore size. Use of smaller driven shaft diameter may limit OHL capacity.
3. Overhung load capacity given at a point located 4.500 inches from centerline of housing.
4. For DSND output shaft overhung load capacities, contact the factory.

REDUCER SIZE
920

HORSEPOWER AND TORQUE RATINGS

(D) Double Reduction Worm Gear
(H) Double Reduction Helical/Worm Gear

WINSMITH®

CENTER DISTANCE[1] 1.333/2.000 (D) CENTER DISTANCE[1] N/A (H)					HORSEPOWER AND TORQUE RATINGS (INCH POUNDS)													
					MECHANICAL RATINGS[4]										THERMAL[5]		SYNTHETIC OIL MECHANICAL[6]	
					1.00 SERVICE FACTOR			1.25 SF		1.50 SF		1.75 SF					
OVERALL RATIO[2]	PRIMARY RATIO[2]	SECONDARY RATIO[2]	INPUT RPM[3]	OUTPUT RPM	INPUT HP	OUTPUT HP	OUTPUT TORQUE	INPUT HP	OUTPUT TORQUE	INPUT HP	OUTPUT TORQUE	INPUT HP	OUTPUT TORQUE	INPUT HP	OUTPUT TORQUE	INPUT HP	OUTPUT TORQUE
50 (D) (50)	10 (10)	5 (5)	2500	50.0	.810	.598	754	.655	595	.551	496	.478	425	.810	794	.773	794
			1750	35.0	.650	.462	833	.524	666	.440	555	.380	476	.650	833	.574	833
			1160	23.2	.456	.313	852	.367	681	.307	568	.265	487	.456	852	.395	852
			870	17.4	.354	.238	861	.284	689	.238	574	.205	492	.354	861	.303	861
			600	12.0	.254	.166	870	.204	696	.171	580	.147	497	.254	870	.214	870
			100	2.00	.050	.028	887	.040	709	.033	591	.028	507	.050	887	.039	887
75 (D) (75)	5 (5)	15 (15)	2500	33.3	.616	.431	815	.500	652	.423	544	.368	466	.616	815	.548	815
			1750	23.3	.457	.313	845	.370	676	.312	563	.270	483	.457	845	.400	845
			1160	15.5	.321	.213	869	.259	695	.218	579	.188	496	.321	869	.276	869
			870	11.6	.249	.162	881	.201	705	.169	587	.146	503	.249	881	.211	881
			600	8.00	.179	.113	892	.144	714	.121	595	.104	510	.179	892	.150	892
			100	1.33	.035	.019	914	.028	731	.024	609	.020	522	.035	914	.027	914
100 (D) (100)	5 (5)	20 (20)	2500	25.0	.490	.322	812	.399	650	.339	541	.296	464	.490	812	.428	812
			1750	17.5	.362	.233	839	.294	672	.249	560	.217	480	.362	839	.311	839
			1160	11.6	.254	.159	862	.206	689	.174	575	.150	492	.254	862	.214	862
			870	8.70	.197	.120	873	.160	698	.134	582	.116	499	.197	873	.164	873
			600	6.00	.142	.084	883	.114	707	.096	589	.083	505	.142	883	.115	883
			100	1.00	.028	.014	903	.022	723	.019	602	.016	516	.028	903	.021	903
150 (D) (150)	10 (10)	15 (15)	2500	16.7	.367	.229	865	.301	692	.256	577	.224	494	.367	865	.318	865
			1750	11.7	.267	.163	881	.218	704	.185	587	.161	503	.267	881	.227	881
			1160	7.73	.185	.110	893	.150	714	.127	595	.110	510	.185	893	.153	893
			870	5.80	.142	.083	899	.115	719	.097	599	.084	514	.142	899	.117	899
			600	4.00	.101	.057	905	.082	724	.069	603	.060	517	.101	905	.082	905
			100	0.67	.020	.010	916	.016	733	.013	610	.011	523	.020	916	.015	916
200 (D) (200)	10 (10)	20 (20)	2500	12.5	.295	.170	858	.243	687	.208	572	.183	490	.295	858	.251	858
			1750	8.75	.214	.121	873	.175	698	.149	582	.131	499	.214	873	.178	873
			1160	5.80	.148	.081	884	.120	707	.102	589	.089	505	.148	884	.120	884
			870	4.35	.114	.061	890	.092	712	.078	593	.068	509	.114	890	.091	890
			600	3.00	.081	.043	895	.066	716	.055	597	.048	512	.081	895	.063	895
			100	0.50	.016	.007	905	.013	724	.011	604	.009	517	.016	905	.011	905
300 (D) (300)	20 (20)	15 (15)	2500	8.33	.227	.118	891	.188	713	.162	594	.144	509	.227	891	.189	891
			1750	5.83	.164	.083	899	.135	719	.116	599	.102	514	.164	899	.133	899
			1160	3.87	.112	.056	905	.092	724	.078	604	.069	517	.112	905	.089	905
			870	2.90	.087	.042	908	.071	727	.060	606	.053	519	.087	908	.067	908
			600	2.00	.063	.029	911	.051	729	.043	608	.038	521	.063	911	.047	911
			100	0.33	.012	.005	917	.010	733	.008	611	.007	524	.012	917	.008	917

1. Center Distance=Primary/Secondary.
2. Numbers shown in ( ) are actual ratios. Worm ratios are exact, helical ratios are rounded and are not exact.
3. If input speed is below 1160 RPM, please specify speed to insure proper lubrication.
4. See engineering section, pages 224-226, for further discussion regarding service factors.
5. Actual input HP must not exceed the thermal input HP capacity on a continuous basis.
6. When using synthetic oil, there is no thermal rating limitation. The Service Factor is 1.00.

THRUST AND OVERHUNG LOAD RATINGS

(D) Double Reduction Worm Gear
(H) Double Reduction Helical/Worm Gear

REDUCER SIZE
920

OVERHUNG LOAD CAPACITIES[1]							THRUST CAPACITIES				CENTER DISTANCE 1.333/2.000 (D) CENTER DISTANCE N/A (H)	
INPUT SHAFT	OUTPUT SHAFT[5]						OUTPUT SHAFT					
ALL MODELS	DB[2], DT	DV SHAFT UP	DV SHAFT DOWN	DSF[3, 4] BASE SIDE	DSF[3, 4] COVER SIDE		DB, DT, DV	DSF TOWARD BASE	DSF AWAY FROM BASE		INPUT RPM	RATIO
125	650	650	624	1470	600		894	1440	1890		2500	50 (D) (50)
125	650	650	624	1470	600		894	1440	1890		1750	
125	650	650	624	1470	600		894	1440	1890		1160	
125	650	650	624	1470	600		894	1440	1890		870	
125	650	650	624	1470	600		894	1440	1890		600	
125	650	650	624	1470	600		894	1440	1890		100	
290	650	650	624	1470	600		894	1440	1890		2500	75 (D) (75)
290	650	650	624	1470	600		894	1440	1890		1750	
290	650	650	624	1470	600		894	1440	1890		1160	
290	650	650	624	1470	600		894	1440	1890		870	
290	650	650	624	1470	600		894	1440	1890		600	
290	650	650	624	1470	600		894	1440	1890		100	
290	650	650	624	1470	600		894	1440	1890		2500	100 (D) (100)
290	650	650	624	1470	600		894	1440	1890		1750	
290	650	650	624	1470	600		894	1440	1890		1160	
290	650	650	624	1470	600		894	1440	1890		870	
290	650	650	624	1470	600		894	1440	1890		600	
290	650	650	624	1470	600		894	1440	1890		100	
125	650	650	624	1470	600		894	1440	1890		2500	150 (D) (150)
125	650	650	624	1470	600		894	1440	1890		1750	
125	650	650	624	1470	600		894	1440	1890		1160	
125	650	650	624	1470	600		894	1440	1890		870	
125	650	650	624	1470	600		894	1440	1890		600	
125	650	650	624	1470	600		894	1440	1890		100	
125	650	650	624	1470	600		894	1440	1890		2500	200 (D) (200)
125	650	650	624	1470	600		894	1440	1890		1750	
125	650	650	624	1470	600		894	1440	1890		1160	
125	650	650	624	1470	600		894	1440	1890		870	
125	650	650	624	1470	600		894	1440	1890		600	
125	650	650	624	1470	600		894	1440	1890		100	
100	650	650	624	1470	600		894	1440	1890		2500	300 (D) (300)
100	650	650	624	1470	600		894	1440	1890		1750	
100	650	650	624	1470	600		894	1440	1890		1160	
100	650	650	624	1470	600		894	1440	1890		870	
100	650	650	624	1470	600		894	1440	1890		600	
100	650	650	624	1470	600		894	1440	1890		100	

1. Overhung load given at one shaft diameter from housing or mounting flange. All values given in pounds.
2. Overhung load capacities are based on the direction and location of the load as shown in figure 1 on page 228. Consult factory for allowable OHL values if load is applied as shown in figure 2A on page 228.
3. Overhung load based on maximum bore size. Use of smaller driven shaft diameter may limit OHL capacity.
4. Overhung load capacity given at a point located 4.625 inches from centerline of housing.
5. For DSND output shaft overhung load capacities, contact the factory.

REDUCER SIZE
920

HORSEPOWER AND TORQUE RATINGS

(D) Double Reduction Worm Gear
(H) Double Reduction Helical/Worm Gear

WINSMITH®

CENTER DISTANCE[1] 1.333/2.000 (D)
CENTER DISTANCE[1] N/A (H)

HORSEPOWER AND TORQUE RATINGS (INCH POUNDS)

OVERALL RATIO[2]	PRIMARY RATIO[2]	SECONDARY RATIO[2]	INPUT RPM[3]	OUTPUT RPM	MECHANICAL RATINGS[4] 1.00 SERVICE FACTOR INPUT HP	1.00 SF OUTPUT HP	1.00 SF OUTPUT TORQUE	1.25 SF INPUT HP	1.25 SF OUTPUT TORQUE	1.50 SF INPUT HP	1.50 SF OUTPUT TORQUE	1.75 SF INPUT HP	1.75 SF OUTPUT TORQUE	THERMAL[5] INPUT HP	THERMAL[5] OUTPUT TORQUE	SYNTHETIC OIL MECHANICAL[6] INPUT HP	SYNTHETIC OIL MECHANICAL[6] OUTPUT TORQUE
500 (D) (500)	25 (25)	20 (20)	2500	5.00	.162	.070	887	.136	710	.119	592	.107	507	.162	887	.132	887
			1750	3.50	.116	.050	893	.096	715	.084	596	.074	510	.116	893	.091	893
			1160	2.32	.079	.033	898	.066	718	.057	599	.050	513	.079	898	.060	898
			870	1.74	.061	.025	900	.050	720	.043	600	.038	514	.061	900	.045	900
			600	1.20	.044	.017	902	.036	722	.031	602	.027	516	.044	902	.031	902
			100	0.20	.008	.003	906	.007	725	.006	604	.005	518	.008	906	.005	906
750 (D) (750)	25 (25)	30 (30)	2500	3.33	.139	.049	931	.118	745	.104	621	.094	532	.139	931	.108	931
			1750	2.33	.099	.035	938	.083	750	.073	625	.065	536	.099	938	.074	938
			1160	1.55	.068	.023	943	.057	754	.049	629	.044	539	.068	943	.049	943
			870	1.16	.053	.017	945	.044	756	.038	630	.033	540	.053	945	.036	945
			600	0.80	.038	.012	948	.031	758	.027	632	.023	542	.038	948	.025	948
			100	0.13	.007	.002	952	.006	762	.005	635	.004	544	.007	952	.004	952
1000 (D) (1000)	50 (50)	20 (20)	2500	2.50	.114	.036	897	.098	718	.087	598	.079	513	.114	897	.088	897
			1750	1.75	.082	.025	900	.070	720	.061	600	.055	514	.082	900	.060	900
			1160	1.16	.056	.017	903	.047	722	.041	602	.037	516	.056	903	.039	903
			870	0.87	.043	.012	904	.036	723	.031	603	.028	516	.043	904	.029	904
			600	0.60	.031	.009	905	.026	724	.022	603	.020	517	.031	905	.020	905
			100	0.10	.006	.001	907	.005	726	.004	605	.004	518	.006	907	.003	907
1500 (D) (1500)	50 (50)	30 (30)	2500	1.67	.101	.025	942	.087	754	.078	628	.071	538	.101	942	.075	942
			1750	1.17	.072	.017	945	.062	756	.055	630	.050	540	.072	945	.051	945
			1160	0.77	.049	.012	948	.042	758	.037	632	.033	542	.049	948	.033	948
			8700	0.58	.038	.009	949	.032	759	.028	633	.025	542	.038	949	.024	949
			600	0.40	.027	.006	951	.023	760	.020	634	.017	543	.027	951	.016	951
			100	0.07	.005	.001	953	.004	762	.004	635	.003	544	.005	953	.003	953
2000 (D) (2000)	50 (50)	40 (40)	2500	1.25	.086	.018	896	.075	717	.068	598	.063	512	.086	896	.064	896
			1750	0.88	.061	.012	899	.053	719	.047	600	.043	514	.061	899	.043	899
			1160	0.58	.041	.008	902	.035	721	.031	601	.028	515	.041	902	.027	902
			870	0.44	.032	.006	903	.027	722	.023	602	.021	516	.032	903	.020	903
			600	0.30	.022	.004	904	.019	723	.016	603	.015	517	.022	904	.013	904
			100	0.05	.004	.001	906	.003	725	.003	604	.003	518	.004	906	.002	906
3000 (D) (3000)	60 (60)	50 (50)	2500	0.83	.072	.011	841	.064	672	.059	560	.055	480	.072	841	.054	841
			1750	0.58	.050	.008	843	.044	674	.040	562	.037	482	.050	843	.035	843
			1160	0.39	.033	.005	844	.029	676	.026	563	.024	483	.033	844	.022	844
			870	0.29	.025	.004	845	.022	676	.019	564	.017	483	.025	845	.015	845
			600	0.20	.018	.003	846	.015	677	.013	564	.012	483	.018	846	.010	846
			100	0.03	.003	.001	847	.003	678	.002	565	.002	484	.003	847	.001	847

1. Center Distance=Primary/Secondary.
2. Numbers shown in ( ) are actual ratios. Worm ratios are exact, helical ratios are rounded and are not exact.
3. If input speed is below 1160 RPM, please specify speed to insure proper lubrication.
4. See engineering section, pages 224-226, for further discussion regarding service factors.
5. Actual input HP must not exceed the thermal input HP capacity on a continuous basis.
6. When using synthetic oil, there is no thermal rating limitation. The Service Factor is 1.00.

THRUST AND OVERHUNG LOAD RATINGS

(D) Double Reduction Worm Gear
(H) Double Reduction Helical/Worm Gear

REDUCER SIZE **920**

OVERHUNG LOAD CAPACITIES[1]							THRUST CAPACITIES				CENTER DISTANCE 1.333/2.000 (D) CENTER DISTANCE N/A (H)	
INPUT SHAFT	OUTPUT SHAFT[5]						OUTPUT SHAFT					
ALL MODELS	DB[2], DT	DV SHAFT UP	DV SHAFT DOWN	DSF[3, 4] BASE SIDE	DSF[3, 4] COVER SIDE		DB, DT, DV	DSF TOWARD BASE	DSF AWAY FROM BASE		INPUT RPM	RATIO
100	650	650	624	1470	600		894	1440	1890		2500	500 (D) (500)
100	650	650	624	1470	600		894	1440	1890		1750	
100	650	650	624	1470	600		894	1440	1890		1160	
100	650	650	624	1470	600		894	1440	1890		870	
100	650	650	624	1470	600		894	1440	1890		600	
100	650	650	624	1470	600		894	1440	1890		100	
100	650	650	624	1470	600		894	1440	1890		2500	750 (D) (750)
100	650	650	624	1470	600		894	1440	1890		1750	
100	650	650	624	1470	600		894	1440	1890		1160	
100	650	650	624	1470	600		894	1440	1890		870	
100	650	650	624	1470	600		894	1440	1890		600	
100	650	650	624	1470	600		894	1440	1890		100	
100	650	650	624	1470	600		894	1440	1890		2500	1000 (D) (1000)
100	650	650	624	1470	600		894	1440	1890		1750	
100	650	650	624	1470	600		894	1440	1890		1160	
100	650	650	624	1470	600		894	1440	1890		870	
100	650	650	624	1470	600		894	1440	1890		600	
100	650	650	624	1470	600		894	1440	1890		100	
100	650	650	624	1470	600		894	1440	1890		2500	1500 (D) (1500)
100	650	650	624	1470	600		894	1440	1890		1750	
100	650	650	624	1470	600		894	1440	1890		1160	
100	650	650	624	1470	600		894	1440	1890		870	
100	650	650	624	1470	600		894	1440	1890		600	
100	650	650	624	1470	600		894	1440	1890		100	
100	650	650	624	1470	600		894	1440	1890		2500	2000 (D) (2000)
100	650	650	624	1470	600		894	1440	1890		1750	
100	650	650	624	1470	600		894	1440	1890		1160	
100	650	650	624	1470	600		894	1440	1890		870	
100	650	650	624	1470	600		894	1440	1890		600	
100	650	650	624	1470	600		894	1440	1890		100	
115	650	650	624	1470	600		894	1440	1890		2500	3000 (D) (3000)
115	650	650	624	1470	600		894	1440	1890		1750	
115	650	650	624	1470	600		894	1440	1890		1160	
115	650	650	624	1470	600		894	1440	1890		870	
115	650	650	624	1470	600		894	1440	1890		600	
115	650	650	624	1470	600		894	1440	1890		100	

1. Overhung load given at one shaft diameter from housing or mounting flange. All values given in pounds.
2. Overhung load capacities are based on the direction and location of the load as shown in figure 1 on page 228. Consult factory for allowable OHL values if load is applied as shown in figure 2A on page 228.
3. Overhung load based on maximum bore size. Use of smaller driven shaft diameter may limit OHL capacity.
4. Overhung load capacity given at a point located 4.625 inches from centerline of housing.
5. For DSND output shaft overhung load capacities, contact the factory.

REDUCER SIZE
920

HORSEPOWER AND TORQUE RATINGS

(D) Double Reduction Worm Gear
(H) Double Reduction Helical/Worm Gear

WINSMITH®

CENTER DISTANCE[1] 1.333/2.000 (D)
CENTER DISTANCE[1] N/A (H)

OVERALL RATIO[2]	PRIMARY RATIO[2]	SECONDARY RATIO[2]	INPUT RPM[3]	OUTPUT RPM	HORSEPOWER AND TORQUE RATINGS (INCH POUNDS)													
					MECHANICAL RATINGS[4]										THERMAL[5]		SYNTHETIC OIL MECHANICAL[6]	
					1.00 SERVICE FACTOR			1.25 SF		1.50 SF		1.75 SF						
					INPUT HP	OUTPUT HP	OUTPUT TORQUE	INPUT HP	OUTPUT TORQUE	INPUT HP	OUTPUT TORQUE	INPUT HP	OUTPUT TORQUE	INPUT HP	OUTPUT TORQUE	INPUT HP	OUTPUT TORQUE	INPUT HP	OUTPUT TORQUE
3600 (D) (3600)	60 (60)	60 (60)	2500	0.69	.066	.009	784	.059	627	.055	523	.051	448	.066	784	.049	784		
			1750	0.49	.045	.006	786	.040	629	.037	524	.034	449	.045	786	.032	786		
			1160	0.32	.030	.004	788	.026	630	.023	525	.022	450	.030	788	.019	788		
			870	0.24	.022	.003	789	.019	631	.017	526	.016	451	.022	789	.014	789		
			600	0.17	.016	.002	789	.013	631	.012	526	.011	451	.016	789	.009	789		
			100	0.03	.003	.001	791	.002	633	.002	527	.002	452	.003	791	.001	791		
4000 (D) (4100)	50 (50)	80 (82)	2500	0.61	.056	.006	594	.051	475	.048	396	.046	340	.056	594	.044	594		
			1750	0.43	.037	.004	596	.034	477	.031	397	.030	341	.037	596	.028	596		
			1160	0.28	.024	.003	597	.021	478	.019	398	.018	341	.024	597	.016	597		
			870	0.21	.018	.002	598	.016	478	.014	399	.013	342	.018	598	.012	598		
			600	0.15	.012	.001	598	.010	479	.009	399	.009	342	.012	598	.007	598		
			100	0.02	.002	.001	599	.002	480	.001	400	.001	343	.002	599	.001	599		
4800 (D) (4920)	60 (60)	80 (82)	2500	0.51	.053	.005	595	.049	476	.046	397	.044	340	.053	595	.042	595		
			1750	0.36	.036	.003	597	.032	477	.030	398	.029	341	.036	597	.027	597		
			1160	0.24	.023	.002	598	.020	478	.019	398	.017	341	.023	598	.016	598		
			870	0.18	.017	.002	598	.015	478	.013	399	.013	342	.017	598	.011	598		
			600	0.12	.011	.001	599	.010	479	.009	399	.008	342	.011	599	.007	599		
			100	0.02	.002	.001	599	.002	480	.001	400	.001	343	.002	599	.001	599		
6000 (D) (5940)	60 (60)	100 (99)	2500	0.42	.048	.003	480	.045	384	.043	320	.041	274	.048	480	.039	480		
			1750	0.29	.031	.002	481	.029	385	.027	321	.026	275	.031	481	.024	481		
			1160	0.20	.020	.001	482	.018	386	.017	321	.016	275	.020	482	.014	482		
			870	0.15	.014	.001	482	.013	386	.012	322	.011	276	.014	482	.010	482		
			600	0.10	.010	.001	483	.008	386	.008	322	.007	276	.010	483	.006	483		
			100	0.02	.001	.001	483	.001	387	.001	322	.001	276	.001	483	.001	483		

1. Center Distance=Primary/Secondary.
2. Numbers shown in ( ) are actual ratios. Worm ratios are exact, helical ratios are rounded and are not exact.
3. If input speed is below 1160 RPM, please specify speed to insure proper lubrication.
4. See engineering section, pages 224-226, for further discussion regarding service factors.
5. Actual input HP must not exceed the thermal input HP capacity on a continuous basis.
6. When using synthetic oil, there is no thermal rating limitation. The Service Factor is 1.00.

THRUST AND OVERHUNG LOAD RATINGS

(D) Double Reduction Worm Gear
(H) Double Reduction Helical/Worm Gear

REDUCER SIZE **920**

OVERHUNG LOAD CAPACITIES[1]							THRUST CAPACITIES				CENTER DISTANCE 1.333/2.000 (D) CENTER DISTANCE N/A (H)	
INPUT SHAFT	OUTPUT SHAFT[5]						OUTPUT SHAFT					
ALL MODELS	DB[2], DT	DV SHAFT UP	DV SHAFT DOWN	DSF[3, 4] BASE SIDE	DSF[3, 4] COVER SIDE		DB, DT, DV	DSF TOWARD BASE	DSF AWAY FROM BASE		INPUT RPM	RATIO
115	650	650	624	1470	600		894	1440	1890		2500	3600 (D) (3600)
115	650	650	624	1470	600		894	1440	1890		1750	
115	650	650	624	1470	600		894	1440	1890		1160	
115	650	650	624	1470	600		894	1440	1890		870	
115	650	650	624	1470	600		894	1440	1890		600	
115	650	650	624	1470	600		894	1440	1890		100	
100	650	650	624	1470	600		894	1440	1890		2500	4000 (D) (4100)
100	650	650	624	1470	600		894	1440	1890		1750	
100	650	650	624	1470	600		894	1440	1890		1160	
100	650	650	624	1470	600		894	1440	1890		870	
100	650	650	624	1470	600		894	1440	1890		600	
100	650	650	624	1470	600		894	1440	1890		100	
115	650	650	624	1470	600		894	1440	1890		2500	4800 (D) (4920)
115	650	650	624	1470	600		894	1440	1890		1750	
115	650	650	624	1470	600		894	1440	1890		1160	
115	650	650	624	1470	600		894	1440	1890		870	
115	650	650	624	1470	600		894	1440	1890		600	
115	650	650	624	1470	600		894	1440	1890		100	
115	650	650	624	1470	600		894	1440	1890		2500	6000 (D) (5940)
115	650	650	624	1470	600		894	1440	1890		1750	
115	650	650	624	1470	600		894	1440	1890		1160	
115	650	650	624	1470	600		894	1440	1890		870	
115	650	650	624	1470	600		894	1440	1890		600	
115	650	650	624	1470	600		894	1440	1890		100	

1. Overhung load given at one shaft diameter from housing or mounting flange. All values given in pounds.
2. Overhung load capacities are based on the direction and location of the load as shown in figure 1 on page 228. Consult factory for allowable OHL values if load is applied as shown in figure 2A on page 228.
3. Overhung load based on maximum bore size. Use of smaller driven shaft diameter may limit OHL capacity.
4. Overhung load capacity given at a point located 4.625 inches from centerline of housing.
5. For DSND output shaft overhung load capacities, contact the factory.

REDUCER SIZE
924

HORSEPOWER AND TORQUE RATINGS

(D) Double Reduction Worm Gear
(H) Double Reduction Helical/Worm Gear

WINSMITH®

CENTER DISTANCE[1] 1.750/2.375 (D) CENTER DISTANCE[1] 2.060/2.375 (H)					HORSEPOWER AND TORQUE RATINGS (INCH POUNDS)													
					MECHANICAL RATINGS[4]										THERMAL[5]		SYNTHETIC OIL MECHANICAL[6]	
					1.00 SERVICE FACTOR			1.25 SF		1.50 SF		1.75 SF					
OVERALL RATIO[2]	PRIMARY RATIO[2]	SECONDARY RATIO[2]	INPUT RPM[3]	OUTPUT RPM	INPUT HP	OUTPUT HP	OUTPUT TORQUE	INPUT HP	OUTPUT TORQUE	INPUT HP	OUTPUT TORQUE	INPUT HP	OUTPUT TORQUE	INPUT HP	OUTPUT TORQUE	INPUT HP	OUTPUT TORQUE
25 (H) (25.3)	5 (5.07)	5 (5)	2500	98.8	2.23	1.93	1232	1.79	986	1.49	821	1.28	704	2.23	1232	2.15	1232
			1750	69.2	1.70	1.45	1317	1.36	1054	1.13	878	.97	753	1.70	1317	1.63	1317
			1160	45.9	1.21	1.01	1389	.97	1111	.81	926	.69	794	1.21	1389	1.15	1389
			870	34.4	.94	.78	1425	.75	1140	.63	950	.54	814	.94	1425	.89	1425
			600	23.7	.67	.55	1460	.54	1168	.45	973	.39	834	.67	1460	.64	1460
			100	3.45	.13	.10	1527	.10	1222	.08	1018	.07	873	.13	1527	.12	1527
30 (H) (30.4)	6 (6.08)	5 (5)	2500	82.2	1.94	1.67	1279	1.56	1023	1.30	852	1.11	731	1.94	1279	1.87	1279
			1750	57.6	1.46	1.24	1352	1.17	1082	.98	901	.84	773	1.46	1352	1.40	1352
			1160	38.2	1.03	.86	1413	.82	1130	.69	942	.59	807	1.03	1413	.98	1413
			870	28.6	.80	.66	1444	.64	1155	.53	963	.46	825	.80	1444	.76	1444
			600	19.7	.57	.46	1473	.46	1179	.38	982	.33	842	.57	1473	.54	1473
			100	3.29	.11	.08	1529	.08	1223	.07	1019	.06	874	.11	1529	.10	1529
38 (H) (38.0)	5 (5.07)	7.5 (7.5)	2500	65.8	1.58	1.34	1285	1.26	1028	1.06	857	.91	734	1.58	1285	1.51	1285
			1750	46.1	1.18	.99	1352	.95	1082	.79	901	.68	773	1.18	1352	1.13	1352
			1160	30.5	.83	.68	1407	.66	1126	.55	938	.48	804	.83	1407	.79	1407
			870	22.9	.64	.52	1435	.51	1148	.43	957	.37	820	.64	1435	.61	1435
			600	15.8	.46	.37	1462	.37	1169	.31	975	.26	835	.46	1462	.43	1462
			100	2.63	.08	.06	1512	.07	1210	.06	1008	.05	864	.08	1512	.08	1512
50 (D) (50)	10 (10)	5 (5)	2500	50.0	1.44	1.09	1376	1.16	1101	.977	917	.845	786	1.44	1376	1.31	1376
			1750	35.0	1.07	.790	1423	.861	1139	.722	949	.624	813	1.07	1423	.957	1423
			1160	23.2	.750	.538	1462	.603	1169	.505	974	.436	835	.750	1462	.660	1462
			870	17.4	.582	.409	1481	.468	1185	.392	987	.337	846	.582	1481	.507	1481
			600	12.0	.418	.285	1499	.335	1199	.281	1000	.241	857	.418	1499	.359	1499
			100	2.0	.081	.049	1534	.065	1227	.054	1022	.046	876	.081	1534	.065	1534
50 (H) (50.7)	5 (5.07)	10 (10)	2500	49.3	1.20	1.001	1280	.961	1024	.803	853	.690	731	1.200	1280	1.140	1280
			1750	34.5	.889	.731	1336	.712	1069	.595	890	.511	763	.889	1336	.843	1336
			1160	22.9	.620	.501	1381	.497	1105	.414	921	.356	789	.620	1381	.584	1381
			870	17.2	.478	.382	1404	.383	1123	.319	936	.274	802	.478	1404	.449	1404
			600	11.8	.339	.268	1426	.272	1141	.227	950	.195	815	.339	1426	.317	1426
			100	1.97	.062	.046	1467	.050	1173	.041	978	.036	838	.062	1467	.057	1467
60 (H) (60.8)	6 (6.08)	10 (10)	2500	41.1	1.03	.855	1311	.827	1048	.690	874	.593	749	1.031	1311	.981	1311
			1750	28.8	.759	.620	1358	.609	1086	.508	905	.436	776	.759	1358	.718	1358
			1160	19.1	.526	.423	1396	.422	1117	.352	931	.302	798	.526	1396	.495	1396
			870	14.3	.405	.321	1416	.324	1132	.270	944	.232	809	.405	1416	.379	1416
			600	9.87	.286	.225	1434	.229	1147	.191	956	.164	819	.286	1434	.267	1434
			100	1.64	.052	.038	1468	.042	1175	.035	979	.030	839	.052	1468	.047	1468
75 (D) (75)	5 (5)	15 (15)	2500	33.3	1.02	.730	1381	.826	1105	.698	920	.606	789	1.02	1381	.913	1381
			1750	23.3	.761	.533	1440	.615	1152	.519	960	.449	823	.761	1440	.671	1440
			1160	15.5	.537	.365	1489	.434	1191	.365	993	.315	851	.537	1489	.466	1489
			870	11.6	.419	.279	1514	.338	1211	.284	1009	.245	865	.419	1514	.358	1514
			600	8.00	.302	.195	1537	.243	1229	.204	1024	.176	878	.302	1537	.254	1537
			100	1.33	.060	.033	1581	.048	1264	.040	1054	.034	903	.060	1581	.047	1581

1. Center Distance=Primary/Secondary.
2. Numbers shown in ( ) are actual ratios. Worm ratios are exact, helical ratios are rounded and are not exact.
3. If input speed is below 1160 RPM, please specify speed to insure proper lubrication.
4. See engineering section, pages 224-226, for further discussion regarding service factors.
5. Actual input HP must not exceed the thermal input HP capacity on a continuous basis.
6. When using synthetic oil, there is no thermal rating limitation. The Service Factor is 1.00.

THRUST AND OVERHUNG LOAD RATINGS

(D) Double Reduction Worm Gear
(H) Double Reduction Helical/Worm Gear

REDUCER SIZE **924**

OVERHUNG LOAD CAPACITIES[1]							THRUST CAPACITIES				CENTER DISTANCE 1.750/2.375 (D) CENTER DISTANCE 2.060/2.375 (H)	
INPUT SHAFT	OUTPUT SHAFT[5]						OUTPUT SHAFT					
ALL MODELS	DB, DT[2]	DV SHAFT UP	DV SHAFT DOWN	DSF[3, 4] BASE SIDE	DSF[3, 4] COVER SIDE		DB, DT, DV	DSF TOWARD BASE	DSF AWAY FROM BASE		INPUT RPM	RATIO
233	1025	1025	960	1549	1240		1219	1909	1909		2500	25 (H) (25.3)
250	1025	1025	960	1728	1240		1416	1909	1909		1750	
250	1025	1025	960	1987	1240		1500	1909	1909		1160	
250	1025	1025	960	2150	1240		1500	1909	1909		870	
250	1025	1025	960	2150	1240		1500	1909	1909		600	
250	1025	1025	960	2150	1240		1500	1909	1909		100	
230	1025	1025	960	1641	1240		1318	1909	1909		2500	30 (H) (30.4)
250	1025	1025	960	1845	1240		1500	1909	1909		1750	
250	1025	1025	960	2096	1240		1500	1909	1909		1160	
250	1025	1025	960	2150	1240		1500	1909	1909		870	
250	1025	1025	960	2150	1240		1500	1909	1909		600	
250	1025	1025	960	2150	1240		1500	1909	1909		100	
250	1025	1025	960	1744	1240		1500	1909	1909		2500	38 (H) (38.0)
250	1025	1025	960	1989	1240		1500	1909	1909		1750	
250	1025	1025	960	2150	1240		1500	1909	1909		1160	
250	1025	1025	960	2150	1240		1500	1909	1909		870	
250	1025	1025	960	2150	1240		1500	1909	1909		600	
250	1025	1025	960	2150	1240		1500	1909	1909		100	
194	1025	1025	960	1930	1240		1500	1909	1909		2500	50 (D) (50)
194	1025	1025	960	2150	1240		1500	1909	1909		1750	
194	1025	1025	960	2150	1240		1500	1909	1909		1160	
194	1025	1025	960	2150	1240		1500	1909	1909		870	
194	1025	1025	960	2150	1240		1500	1909	1909		600	
194	1025	1025	960	2150	1240		1500	1909	1909		100	
250	1025	1025	960	2150	1240		1500	1909	1909		2500	50 (H) (50.7)
250	1025	1025	960	2150	1240		1500	1909	1909		1750	
250	1025	1025	960	2150	1240		1500	1909	1909		1160	
250	1025	1025	960	2150	1240		1500	1909	1909		870	
250	1025	1025	960	2150	1240		1500	1909	1909		600	
250	1025	1025	960	2150	1240		1500	1909	1909		100	
250	1025	1025	960	2150	1240		1500	1909	1909		2500	60 (H) (60.8)
250	1025	1025	960	2150	1240		1500	1909	1909		1750	
250	1025	1025	960	2150	1240		1500	1909	1909		1160	
250	1025	1025	960	2150	1240		1500	1909	1909		870	
250	1025	1025	960	2150	1240		1500	1909	1909		600	
250	1025	1025	960	2150	1240		1500	1909	1909		100	
183	1025	1025	960	2150	1240		1500	1909	1909		2500	75 (D) (75)
183	1025	1025	960	2150	1240		1500	1909	1909		1750	
183	1025	1025	960	2150	1240		1500	1909	1909		1160	
183	1025	1025	960	2150	1240		1500	1909	1909		870	
183	1025	1025	960	2150	1240		1500	1909	1909		600	
183	1025	1025	960	2150	1240		1500	1909	1909		100	

1. Overhung load given at one shaft diameter from housing or mounting flange. All values given in pounds.
2. Overhung load capacities are based on the direction and location of the load as shown in figure 1 on page 228. Consult factory for allowable OHL values if load is applied as shown in figure 2A, B, C or D on page 228.
3. Overhung load based on maximum bore size. Use of smaller driven shaft diameter may limit OHL capacity.
4. Overhung load capacity given at a point located 5.000 inches from centerline of housing.
5. For DSND output shaft overhung load capacities, contact the factory.

REDUCER SIZE
924

HORSEPOWER AND TORQUE RATINGS

(D) Double Reduction Worm Gear
(H) Double Reduction Helical/Worm Gear

WINSMITH®

CENTER DISTANCE[1] 1.750/2.375 (D) CENTER DISTANCE[1] 2.060/2.375 (H)					HORSEPOWER AND TORQUE RATINGS (INCH POUNDS)													
					MECHANICAL RATINGS[4]										THERMAL[5]		SYNTHETIC OIL MECHANICAL[6]	
					1.00 SERVICE FACTOR				1.25 SF		1.50 SF		1.75 SF					
OVERALL RATIO[2]	PRIMARY RATIO[2]	SECONDARY RATIO[2]	INPUT RPM[3]	OUTPUT RPM	INPUT HP	OUTPUT HP	OUTPUT TORQUE		INPUT HP	OUTPUT TORQUE	INPUT HP	OUTPUT TORQUE	INPUT HP	OUTPUT TORQUE	INPUT HP	OUTPUT TORQUE	INPUT HP	OUTPUT TORQUE
75 (H) (76.0)	5 (5.07)	15 (15)	2500	32.9	.918	.722	1383		.736	1107	.615	922	.529	790	.918	1383	.859	1383
			1750	23.0	.683	.527	1442		.548	1154	.458	961	.393	824	.683	1442	.635	1442
			1160	15.3	.479	.361	1490		.384	1192	.320	993	.275	852	.479	1490	.441	1490
			870	11.5	.370	.275	1514		.297	1212	.248	1010	.213	865	.370	1514	.339	1514
			600	7.89	.264	.193	1537		.211	1230	.176	1025	.151	878	.264	1537	.240	1537
			100	1.32	.049	.033	1581		.039	1265	.033	1054	.028	903	.049	1581	.043	1581
90 (H) (91.1)	6 (6.08)	15 (15)	2500	27.4	.791	.616	1416		.635	1132	.530	944	.456	809	.791	1416	.738	1416
			1750	19.2	.585	.447	1466		.469	1173	.392	977	.337	838	.585	1466	.541	1466
			1160	12.7	.407	.304	1506		.326	1205	.273	1004	.234	861	.407	1506	.374	1506
			870	9.55	.314	.231	1527		.252	1221	.210	1018	.180	872	.314	1527	.287	1527
			600	6.59	.223	.162	1546		.179	1237	.149	1031	.128	883	.223	1546	.202	1546
			100	1.10	.041	.028	1582		.033	1266	.028	1055	.024	904	.041	1582	.036	1582
100 (D) (100)	5 (5)	20 (20)	2500	25.0	.800	.542	1366		.652	1093	.552	910	.482	780	.800	1366	.706	1366
			1750	17.5	.596	.394	1420		.483	1136	.409	947	.355	811	.596	1420	.517	1420
			1160	11.6	.420	.269	1464		.340	1171	.286	976	.248	837	.420	1464	.357	1464
			870	8.70	.327	.205	1486		.264	1189	.222	991	.192	849	.327	1486	.274	1486
			600	6.00	.236	.143	1507		.190	1206	.160	1005	.138	861	.236	1507	.194	1507
			100	1.00	.047	.025	1547		.038	1237	.031	1031	.027	884	.047	1547	.036	1547
100 (H) (101.3)	5 (5.07)	20 (20)	2500	24.7	.712	.536	1368		.572	1094	.478	912	.411	782	.712	1368	.657	1368
			1750	17.3	.530	.390	1422		.425	1137	.355	948	.306	812	.530	1422	.484	1422
			1160	11.5	.371	.266	1465		.298	1172	.249	977	.214	837	.371	1465	.336	1465
			870	8.59	.287	.203	1487		.230	1190	.192	991	.165	850	.287	1487	.258	1487
			600	5.92	.205	.142	1508		.164	1206	.137	1005	.118	862	.205	1508	.183	1508
			100	0.99	.038	.024	1547		.031	1237	.026	1031	.022	884	.038	1547	.033	1547
120 (H) (121.5)	6 (6.08)	20 (20)	2500	20.6	.613	.456	1397		.492	1118	.412	932	.354	799	.613	1397	.563	1397
			1750	14.4	.453	.330	1443		.364	1154	.304	962	.261	824	.453	1443	.413	1443
			1160	9.55	.316	.224	1480		.253	1184	.211	986	.182	846	.316	1480	.285	1480
			870	7.16	.244	.170	1498		.195	1198	.163	999	.140	856	.244	1498	.218	1498
			600	4.94	.173	.119	1515		.139	1212	.116	1010	.099	866	.173	1515	.154	1515
			100	0.82	.032	.020	1548		.026	1239	.022	1032	.019	885	.032	1548	.028	1548
150 (D) (150)	10 (10)	15 (15)	2500	16.7	.602	.392	1481		.491	1185	.418	988	.365	847	.602	1481	.527	1481
			1750	11.7	.439	.280	1513		.357	1210	.302	1009	.264	865	.439	1513	.378	1513
			1160	7.73	.303	.189	1538		.246	1231	.208	1026	.181	879	.303	1538	.256	1538
			870	5.80	.234	.143	1551		.189	1241	.160	1034	.138	886	.234	1551	.195	1551
			600	4.00	.167	.099	1563		.135	1250	.113	1042	.098	893	.167	1563	.137	1563
			100	0.67	.032	.017	1585		.026	1268	.022	1057	.019	906	.032	1585	.024	1585
150 (H) (152.0)	5 (5.07)	30 (30)	2500	16.5	.556	.371	1421		.447	1137	.374	947	.322	812	.556	1421	.492	1421
			1750	11.5	.418	.270	1480		.336	1184	.281	987	.242	846	.418	1480	.365	1480
			1160	7.63	.297	.185	1528		.238	1222	.199	1019	.171	873	.297	1528	.255	1528
			870	5.72	.231	.141	1552		.185	1242	.155	1035	.133	887	.231	1552	.197	1552
			600	3.95	.166	.099	1575		.133	1260	.111	1050	.096	900	.166	1575	.140	1575
			100	0.66	.032	.017	1618		.026	1294	.022	1079	.019	925	.032	1618	.026	1618

1. Center Distance=Primary/Secondary.
2. Numbers shown in ( ) are actual ratios. Worm ratios are exact, helical ratios are rounded and are not exact.
3. If input speed is below 1160 RPM, please specify speed to insure proper lubrication.
4. See engineering section, pages 224-226, for further discussion regarding service factors.
5. Actual input HP must not exceed the thermal input HP capacity on a continuous basis.
6. When using synthetic oil, there is no thermal rating limitation. The Service Factor is 1.00.

THRUST AND OVERHUNG LOAD RATINGS

(D) Double Reduction Worm Gear
(H) Double Reduction Helical/Worm Gear

REDUCER SIZE **924**

OVERHUNG LOAD CAPACITIES[1]							THRUST CAPACITIES				CENTER DISTANCE 1.750/2.375 (D) CENTER DISTANCE 2.060/2.375 (H)	
INPUT SHAFT	OUTPUT SHAFT[5]						OUTPUT SHAFT					
ALL MODELS	DB, DT[2]	DV SHAFT UP	DV SHAFT DOWN	DSF[3, 4] BASE SIDE	DSF[3, 4] COVER SIDE		DB, DT, DV	DSF TOWARD BASE	DSF AWAY FROM BASE		INPUT RPM	RATIO
250	1025	1025	960	2150	1240		1500	1909	1909		2500	75 (H) (76.0)
250	1025	1025	960	2150	1240		1500	1909	1909		1750	
250	1025	1025	960	2150	1240		1500	1909	1909		1160	
250	1025	1025	960	2150	1240		1500	1909	1909		870	
250	1025	1025	960	2150	1240		1500	1909	1909		600	
250	1025	1025	960	2150	1240		1500	1909	1909		100	
250	1025	1025	960	2150	1240		1500	1909	1909		2500	90 (H) (91.1)
250	1025	1025	960	2150	1240		1500	1909	1909		1750	
250	1025	1025	960	2150	1240		1500	1909	1909		1160	
250	1025	1025	960	2150	1240		1500	1909	1909		870	
250	1025	1025	960	2150	1240		1500	1909	1909		600	
250	1025	1025	960	2150	1240		1500	1909	1909		100	
183	1025	1025	960	2150	1240		1500	1909	1909		2500	100 (D) (100)
183	1025	1025	960	2150	1240		1500	1909	1909		1750	
183	1025	1025	960	2150	1240		1500	1909	1909		1160	
183	1025	1025	960	2150	1240		1500	1909	1909		870	
183	1025	1025	960	2150	1240		1500	1909	1909		600	
183	1025	1025	960	2150	1240		1500	1909	1909		100	
250	1025	1025	960	2150	1240		1500	1909	1909		2500	100 (H) (101.3)
250	1025	1025	960	2150	1240		1500	1909	1909		1750	
250	1025	1025	960	2150	1240		1500	1909	1909		1160	
250	1025	1025	960	2150	1240		1500	1909	1909		870	
250	1025	1025	960	2150	1240		1500	1909	1909		600	
250	1025	1025	960	2150	1240		1500	1909	1909		100	
250	1025	1025	960	2150	1240		1500	1909	1909		2500	120 (H) (121.5)
250	1025	1025	960	2150	1240		1500	1909	1909		1750	
250	1025	1025	960	2150	1240		1500	1909	1909		1160	
250	1025	1025	960	2150	1240		1500	1909	1909		870	
250	1025	1025	960	2150	1240		1500	1909	1909		600	
250	1025	1025	960	2150	1240		1500	1909	1909		100	
194	1025	1025	960	2150	1240		1500	1909	1909		2500	150 (D) (150)
194	1025	1025	960	2150	1240		1500	1909	1909		1750	
194	1025	1025	960	2150	1240		1500	1909	1909		1160	
194	1025	1025	960	2150	1240		1500	1909	1909		870	
194	1025	1025	960	2150	1240		1500	1909	1909		600	
194	1025	1025	960	2150	1240		1500	1909	1909		100	
250	1025	1025	960	2150	1240		1500	1909	1909		2500	150 (H) (152.0)
250	1025	1025	960	2150	1240		1500	1909	1909		1750	
250	1025	1025	960	2150	1240		1500	1909	1909		1160	
250	1025	1025	960	2150	1240		1500	1909	1909		870	
250	1025	1025	960	2150	1240		1500	1909	1909		600	
250	1025	1025	960	2150	1240		1500	1909	1909		100	

1. Overhung load given at one shaft diameter from housing or mounting flange. All values given in pounds.
2. Overhung load capacities are based on the direction and location of the load as shown in figure 1 on page 228. Consult factory for allowable OHL values if load is applied as shown in figure 2A, B, C or D on page 228.
3. Overhung load based on maximum bore size. Use of smaller driven shaft diameter may limit OHL capacity.
4. Overhung load capacity given at a point located 5.000 inches from centerline of housing.
5. For DSND output shaft overhung load capacities, contact the factory.

REDUCER SIZE
924

HORSEPOWER AND TORQUE RATINGS

(D) Double Reduction Worm Gear
(H) Double Reduction Helical/Worm Gear

WINSMITH®

CENTER DISTANCE[1] 1.750/2.375 (D) CENTER DISTANCE[1] 2.060/2.375 (H)					HORSEPOWER AND TORQUE RATINGS (INCH POUNDS)													
					MECHANICAL RATINGS[4]										THERMAL[5]		SYNTHETIC OIL MECHANICAL[6]	
					1.00 SERVICE FACTOR			1.25 SF		1.50 SF		1.75 SF					
OVERALL RATIO[2]	PRIMARY RATIO[2]	SECOND-ARY RATIO[2]	INPUT RPM[3]	OUTPUT RPM	INPUT HP	OUTPUT HP	OUTPUT TORQUE	INPUT HP	OUTPUT TORQUE	INPUT HP	OUTPUT TORQUE	INPUT HP	OUTPUT TORQUE	INPUT HP	OUTPUT TORQUE	INPUT HP	OUTPUT TORQUE
180 (H) (182.3)	6 (6.08)	30 (30)	2500	13.7	.482	.316	1453	.387	1163	.324	969	.279	831	.482	1453	.424	1453
			1750	9.60	.360	.229	1503	.289	1203	.242	1002	.208	859	.360	1503	.312	1503
			1160	6.36	.254	.156	1544	.203	1235	.170	1029	.146	882	.254	1544	.217	1544
			870	4.77	.197	.118	1564	.158	1251	.132	1043	.113	894	.197	1564	.167	1564
			600	3.29	.141	.083	1583	.113	1267	.094	1056	.081	905	.141	1583	.118	1583
			100	0.55	.027	.014	1620	.022	1296	.018	1080	.016	925	.027	1620	.022	1620
200 (D) (200)	10 (10)	20 (20)	2500	12.5	.477	.289	1457	.391	1166	.335	971	.294	833	.477	1457	.411	1457
			1750	8.75	.346	.206	1486	.283	1189	.241	991	.211	849	.346	1486	.293	1486
			1160	5.80	.239	.139	1509	.194	1207	.165	1006	.144	862	.239	1509	.198	1509
			870	4.35	.184	.105	1520	.149	1216	.126	1013	.110	869	.184	1520	.150	1520
			600	3.00	.131	.073	1531	.106	1225	.089	1020	.078	875	.131	1531	.105	1531
			100	0.50	.025	.012	1551	.020	1241	.017	1034	.015	886	.025	1551	.019	1551
200 (H) (202.6)	5 (5.07)	40 (40)	2500	12.3	.432	.267	1362	.348	1089	.292	908	.251	778	.432	1362	.372	1362
			1750	8.64	.325	.194	1414	.261	1131	.219	943	.189	808	.325	1414	.276	1414
			1160	5.73	.231	.132	1457	.185	1165	.155	971	.133	832	.231	1457	.192	1457
			870	4.29	.180	.101	1478	.145	1182	.121	985	.104	845	.180	1478	.148	1478
			600	2.96	.130	.070	1498	.104	1198	.087	999	.075	856	.130	1498	.105	1498
			100	0.49	.025	.012	1536	.020	1229	.017	1024	.015	878	.025	1536	.019	1536
250 (H) (253.3)	5 (5.07)	50 (50)	2500	9.87	.347	.201	1281	.280	1025	.235	854	.203	732	.347	1281	.293	1281
			1750	6.91	.261	.145	1327	.211	1061	.177	885	.152	758	.261	1327	.216	1327
			1160	4.58	.186	.099	1364	.149	1091	.125	909	.108	780	.186	1364	.150	1364
			870	3.43	.145	.075	1383	.116	1106	.097	922	.084	790	.145	1383	.116	1383
			600	2.37	.104	.053	1401	.084	1120	.070	934	.060	800	.104	1401	.082	1401
			100	0.39	.021	.009	1434	.017	1147	.014	956	.012	819	.021	1434	.015	1434
300 (D) (300)	20 (20)	15 (15)	2500	8.33	.364	.203	1535	.301	1228	.259	1023	.228	877	.364	1535	.309	1535
			1750	5.83	.262	.144	1551	.215	1241	.184	1034	.162	886	.262	1551	.218	1551
			1160	3.87	.179	.096	1564	.147	1251	.125	1043	.109	894	.179	1564	.146	1564
			870	2.90	.138	.072	1570	.112	1256	.095	1047	.083	897	.138	1570	.110	1570
			600	2.00	.099	.050	1576	.080	1261	.068	1051	.059	901	.099	1576	.077	1576
			100	0.33	.019	.008	1587	.015	1270	.013	1058	.011	907	.019	1587	.013	1587
300 (H) (303.8)	6 (6.08)	50 (50)	2500	8.23	.301	.171	1306	.243	1045	.204	871	.176	746	.301	1306	.251	1306
			1750	5.76	.225	.123	1345	.181	1076	.152	897	.131	769	.225	1345	.185	1345
			1160	3.82	.159	.083	1377	.128	1101	.107	918	.092	787	.159	1377	.128	1377
			870	2.86	.123	.063	1392	.099	1114	.083	928	.071	796	.123	1392	.098	1392
			600	1.97	.089	.044	1407	.071	1126	.059	938	.051	804	.089	1407	.069	1407
			100	0.33	.017	.007	1435	.014	1148	.012	957	.010	820	.017	1435	.013	1435
360 (H) (364.6)	6 (6.08)	60 (60)	2500	6.86	.252	.133	1221	.203	976	.171	814	.147	697	.252	1221	.205	1221
			1750	4.80	.188	.096	1256	.152	1005	.127	837	.110	718	.188	1256	.150	1256
			1160	3.18	.133	.065	1284	.107	1027	.090	856	.077	734	.133	1284	.104	1284
			870	2.39	.104	.049	1299	.083	1039	.070	866	.060	742	.104	1299	.080	1299
			600	1.65	.074	.034	1312	.060	1050	.050	875	.043	750	.074	1312	.056	1312
			100	0.27	.015	.006	1337	.012	1070	.010	891	.008	764	.015	1337	.010	1337

1. Center Distance=Primary/Secondary.
2. Numbers shown in ( ) are actual ratios. Worm ratios are exact, helical ratios are rounded and are not exact.
3. If input speed is below 1160 RPM, please specify speed to insure proper lubrication.
4. See engineering section, pages 224-226, for further discussion regarding service factors.
5. Actual input HP must not exceed the thermal input HP capacity on a continuous basis.
6. When using synthetic oil, there is no thermal rating limitation. The Service Factor is 1.00.

THRUST AND OVERHUNG LOAD RATINGS

(D) Double Reduction Worm Gear
(H) Double Reduction Helical/Worm Gear

REDUCER SIZE **924**

OVERHUNG LOAD CAPACITIES[1]							THRUST CAPACITIES				CENTER DISTANCE 1.750/2.375 (D) CENTER DISTANCE 2.060/2.375 (H)	
INPUT SHAFT	OUTPUT SHAFT[5]						OUTPUT SHAFT					
ALL MODELS	DB, DT[2]	DV SHAFT UP	DV SHAFT DOWN	DSF[3, 4] BASE SIDE	DSF[3, 4] COVER SIDE		DB, DT, DV	DSF TOWARD BASE	DSF AWAY FROM BASE		INPUT RPM	RATIO
250	1025	1025	960	2150	1240		1500	1909	1909		2500	180 (H) (182.3)
250	1025	1025	960	2150	1240		1500	1909	1909		1750	
250	1025	1025	960	2150	1240		1500	1909	1909		1160	
250	1025	1025	960	2150	1240		1500	1909	1909		870	
250	1025	1025	960	2150	1240		1500	1909	1909		600	
250	1025	1025	960	2150	1240		1500	1909	1909		100	
194	1025	1025	960	2150	1240		1500	1909	1909		2500	200 (D) (200)
194	1025	1025	960	2150	1240		1500	1909	1909		1750	
194	1025	1025	960	2150	1240		1500	1909	1909		1160	
194	1025	1025	960	2150	1240		1500	1909	1909		870	
194	1025	1025	960	2150	1240		1500	1909	1909		600	
194	1025	1025	960	2150	1240		1500	1909	1909		100	
250	1025	1025	960	2150	1240		1500	1909	1909		2500	200 (H) (202.6)
250	1025	1025	960	2150	1240		1500	1909	1909		1750	
250	1025	1025	960	2150	1240		1500	1909	1909		1160	
250	1025	1025	960	2150	1240		1500	1909	1909		870	
250	1025	1025	960	2150	1240		1500	1909	1909		600	
250	1025	1025	960	2150	1240		1500	1909	1909		100	
250	1025	1025	960	2150	1240		1500	1909	1909		2500	250 (H) (253.3)
250	1025	1025	960	2150	1240		1500	1909	1909		1750	
250	1025	1025	960	2150	1240		1500	1909	1909		1160	
250	1025	1025	960	2150	1240		1500	1909	1909		870	
250	1025	1025	960	2150	1240		1500	1909	1909		600	
250	1025	1025	960	2150	1240		1500	1909	1909		100	
149	1025	1025	960	2150	1240		1500	1909	1909		2500	300 (D) (300)
149	1025	1025	960	2150	1240		1500	1909	1909		1750	
149	1025	1025	960	2150	1240		1500	1909	1909		1160	
149	1025	1025	960	2150	1240		1500	1909	1909		870	
149	1025	1025	960	2150	1240		1500	1909	1909		600	
149	1025	1025	960	2150	1240		1500	1909	1909		100	
250	1025	1025	960	2150	1240		1500	1909	1909		2500	300 (H) (303.8)
250	1025	1025	960	2150	1240		1500	1909	1909		1750	
250	1025	1025	960	2150	1240		1500	1909	1909		1160	
250	1025	1025	960	2150	1240		1500	1909	1909		870	
250	1025	1025	960	2150	1240		1500	1909	1909		600	
250	1025	1025	960	2150	1240		1500	1909	1909		100	
250	1025	1025	960	2150	1240		1500	1909	1909		2500	360 (H) (364.6)
250	1025	1025	960	2150	1240		1500	1909	1909		1750	
250	1025	1025	960	2150	1240		1500	1909	1909		1160	
250	1025	1025	960	2150	1240		1500	1909	1909		870	
250	1025	1025	960	2150	1240		1500	1909	1909		600	
250	1025	1025	960	2150	1240		1500	1909	1909		100	

1. Overhung load given at one shaft diameter from housing or mounting flange. All values given in pounds.
2. Overhung load capacities are based on the direction and location of the load as shown in figure 1 on page 228. Consult factory for allowable OHL values if load is applied as shown in figure 2A, B, C or D on page 228.
3. Overhung load based on maximum bore size. Use of smaller driven shaft diameter may limit OHL capacity.
4. Overhung load capacity given at a point located 5.000 inches from centerline of housing.
5. For DSND output shaft overhung load capacities, contact the factory.

REDUCER SIZE
924

HORSEPOWER AND TORQUE RATINGS

(D) Double Reduction Worm Gear
(H) Double Reduction Helical/Worm Gear

WINSMITH®

CENTER DISTANCE[1] 1.750/2.375 (D) CENTER DISTANCE[1] 2.060/2.375 (H)					HORSEPOWER AND TORQUE RATINGS (INCH POUNDS)													
					MECHANICAL RATINGS[4]										THERMAL[5]		SYNTHETIC OIL MECHANICAL[6]	
					1.00 SERVICE FACTOR			1.25 SF		1.50 SF		1.75 SF					
OVERALL RATIO[2]	PRIMARY RATIO[2]	SECONDARY RATIO[2]	INPUT RPM[3]	OUTPUT RPM	INPUT HP	OUTPUT HP	OUTPUT TORQUE	INPUT HP	OUTPUT TORQUE	INPUT HP	OUTPUT TORQUE	INPUT HP	OUTPUT TORQUE	INPUT HP	OUTPUT TORQUE	INPUT HP	OUTPUT TORQUE
500 (D) (500)	25 (25)	20 (20)	2500	5.00	.253	.120	1515	.212	1212	.184	1010	.165	866	.253	1515	.210	1515
			1750	3.50	.180	.085	1527	.150	1221	.129	1018	.115	872	.180	1527	.146	1527
			1160	2.32	.122	.057	1536	.101	1229	.087	1024	.077	878	.122	1536	.096	1536
			870	1.74	.095	.043	1541	.078	1233	.066	1027	.058	880	.095	1541	.073	1541
			600	1.20	.067	.029	1545	.055	1236	.047	1030	.041	883	.067	1545	.050	1545
			100	0.20	.013	.005	1553	.010	1243	.009	1035	.007	888	.013	1553	.009	1553
750 (D) (750)	25 (25)	30 (30)	2500	3.33	.214	.084	1583	.181	1266	.159	1055	.143	904	.214	1583	.169	1583
			1750	2.33	.153	.059	1596	.128	1277	.111	1064	.099	912	.153	1596	.117	1596
			1160	1.55	.104	.039	1606	.086	1285	.074	1071	.066	918	.104	1606	.077	1606
			870	1.16	.080	.030	1611	.066	1289	.057	1074	.050	921	.080	1611	.057	1611
			600	0.80	.057	.021	1616	.047	1293	.040	1077	.035	924	.057	1616	.040	1616
			100	0.13	.011	.003	1625	.009	1300	.007	1083	.006	929	.011	1625	.007	1625
1000 (D) (1000)	50 (50)	20 (20)	2500	2.50	.172	.061	1535	.147	1228	.130	1023	.118	877	.172	1535	.137	1535
			1750	1.75	.123	.043	1541	.104	1233	.091	1027	.082	880	.123	1541	.094	1541
			1160	1.16	.084	.028	1545	.070	1236	.061	1030	.054	883	.084	1545	.061	1545
			870	0.87	.064	.021	1548	.053	1238	.046	1032	.041	884	.064	1548	.045	1548
			600	0.60	.046	.015	1550	.038	1240	.032	1033	.029	886	.046	1550	.031	1550
			100	0.10	.009	.002	1554	.007	1243	.006	1036	.005	888	.009	1554	.005	1554
1500 (D) (1500)	50 (50)	30 (30)	2500	1.67	.150	.042	1605	.129	1284	.115	1070	.105	917	.150	1605	.115	1605
			1750	1.17	.106	.030	1611	.091	1289	.080	1074	.073	921	.106	1611	.078	1611
			1160	0.77	.072	.020	1617	.061	1293	.053	1078	.048	924	.072	1617	.050	1617
			870	0.58	.056	.015	1619	.046	1295	.040	1079	.036	925	.056	1619	.037	1619
			600	0.40	.040	.010	1621	.033	1297	.028	1081	.025	927	.040	1621	.025	1621
			100	0.07	.008	.002	1626	.006	1301	.005	1084	.005	929	.008	1626	.004	1626
2000 (D) (2000)	50 (50)	40 (40)	2500	1.25	.127	.030	1524	.111	1220	.100	1016	.092	871	.127	1524	.097	1524
			1750	0.88	.089	.021	1530	.077	1224	.069	1020	.063	874	.089	1530	.065	1530
			1160	0.58	.060	.014	1535	.051	1228	.045	1023	.041	877	.060	1535	.041	1535
			870	0.44	.046	.011	1537	.039	1230	.034	1025	.031	878	.046	1537	.030	1537
			600	0.30	.032	.007	1539	.027	1231	.024	1026	.021	880	.032	1539	.020	1539
			100	0.05	.006	.001	1543	.005	1235	.004	1029	.004	882	.006	1543	.003	1543
3000 (D) (3000)	60 (60)	50 (50)	2500	0.83	.105	.019	1426	.093	1141	.085	951	.080	815	.105	1426	.080	1426
			1750	0.58	.072	.013	1431	.063	1145	.057	954	.053	818	.072	1431	.052	1431
			1160	0.39	.048	.009	1434	.041	1147	.037	956	.034	819	.048	1434	.032	1434
			870	0.29	.036	.007	1436	.031	1149	.027	957	.025	820	.036	1436	.023	1436
			600	0.20	.025	.005	1437	.021	1150	.019	958	.017	821	.025	1437	.015	1437
			100	0.03	.005	.001	1440	.004	1152	.003	960	.003	823	.005	1440	.002	1440
3600 (D) (3600)	60 (60)	60 (60)	2500	0.69	.095	.015	1329	.086	1064	.079	886	.074	760	.095	1329	.074	1329
			1750	0.49	.065	.010	1333	.058	1067	.053	889	.049	762	.065	1333	.048	1333
			1160	0.32	.043	.007	1336	.037	1069	.034	891	.031	764	.043	1336	.029	1336
			870	0.24	.032	.005	1338	.028	1070	.025	892	.023	764	.032	1338	.021	1338
			600	0.17	.022	.004	1339	.019	1071	.017	893	.015	765	.022	1339	.013	1339
			100	0.03	.004	.001	1342	.003	1073	.003	894	.002	767	.004	1342	.002	1342

1. Center Distance=Primary/Secondary.
2. Numbers shown in ( ) are actual ratios. Worm ratios are exact, helical ratios are rounded and are not exact.
3. If input speed is below 1160 RPM, please specify speed to insure proper lubrication.
4. See engineering section, pages 224-226, for further discussion regarding service factors.
5. Actual input HP must not exceed the thermal input HP capacity on a continuous basis.
6. When using synthetic oil, there is no thermal rating limitation. The Service Factor is 1.00.

THRUST AND OVERHUNG LOAD RATINGS

(D) Double Reduction Worm Gear
(H) Double Reduction Helical/Worm Gear

REDUCER SIZE
924

OVERHUNG LOAD CAPACITIES[1]							THRUST CAPACITIES				CENTER DISTANCE 1.750/2.375 (D) CENTER DISTANCE 2.060/2.375 (H)	
INPUT SHAFT	OUTPUT SHAFT[5]						OUTPUT SHAFT					
ALL MODELS	DB, DT[2]	DV SHAFT UP	DV SHAFT DOWN	DSF[3, 4] BASE SIDE	DSF[3, 4] COVER SIDE		DB, DT, DV	DSF TOWARD BASE	DSF AWAY FROM BASE		INPUT RPM	RATIO
153	1025	1025	960	2150	1240		1500	1909	1909		2500	500 (D) (500)
153	1025	1025	960	2150	1240		1500	1909	1909		1750	
153	1025	1025	960	2150	1240		1500	1909	1909		1160	
153	1025	1025	960	2150	1240		1500	1909	1909		870	
153	1025	1025	960	2150	1240		1500	1909	1909		600	
153	1025	1025	960	2150	1240		1500	1909	1909		100	
153	1025	1025	960	2150	1240		1500	1909	1909		2500	750 (D) (750)
153	1025	1025	960	2150	1240		1500	1909	1909		1750	
153	1025	1025	960	2150	1240		1500	1909	1909		1160	
153	1025	1025	960	2150	1240		1500	1909	1909		870	
153	1025	1025	960	2150	1240		1500	1909	1909		600	
153	1025	1025	960	2150	1240		1500	1909	1909		100	
171	1025	1025	960	2150	1240		1500	1909	1909		2500	1000 (D) (1000)
171	1025	1025	960	2150	1240		1500	1909	1909		1750	
171	1025	1025	960	2150	1240		1500	1909	1909		1160	
171	1025	1025	960	2150	1240		1500	1909	1909		870	
171	1025	1025	960	2150	1240		1500	1909	1909		600	
171	1025	1025	960	2150	1240		1500	1909	1909		100	
171	1025	1025	960	2150	1240		1500	1909	1909		2500	1500 (D) (1500)
171	1025	1025	960	2150	1240		1500	1909	1909		1750	
171	1025	1025	960	2150	1240		1500	1909	1909		1160	
171	1025	1025	960	2150	1240		1500	1909	1909		870	
171	1025	1025	960	2150	1240		1500	1909	1909		600	
171	1025	1025	960	2150	1240		1500	1909	1909		100	
171	1025	1025	960	2150	1240		1500	1909	1909		2500	2000 (D) (2000)
171	1025	1025	960	2150	1240		1500	1909	1909		1750	
171	1025	1025	960	2150	1240		1500	1909	1909		1160	
171	1025	1025	960	2150	1240		1500	1909	1909		870	
171	1025	1025	960	2150	1240		1500	1909	1909		600	
171	1025	1025	960	2150	1240		1500	1909	1909		100	
202	1025	1025	960	2150	1240		1500	1909	1909		2500	3000 (D) (3000)
202	1025	1025	960	2150	1240		1500	1909	1909		1750	
202	1025	1025	960	2150	1240		1500	1909	1909		1160	
202	1025	1025	960	2150	1240		1500	1909	1909		870	
202	1025	1025	960	2150	1240		1500	1909	1909		600	
202	1025	1025	960	2150	1240		1500	1909	1909		100	
202	1025	1025	960	2150	1240		1500	1909	1909		2500	3600 (D) (3600)
202	1025	1025	960	2150	1240		1500	1909	1909		1750	
202	1025	1025	960	2150	1240		1500	1909	1909		1160	
202	1025	1025	960	2150	1240		1500	1909	1909		870	
202	1025	1025	960	2150	1240		1500	1909	1909		600	
202	1025	1025	960	2150	1240		1500	1909	1909		100	

1. Overhung load given at one shaft diameter from housing or mounting flange. All values given in pounds.
2. Overhung load capacities are based on the direction and location of the load as shown in figure 1 on page 228. Consult factory for allowable OHL values if load is applied as shown in figure 2A, B, C or D on page 228.
3. Overhung load based on maximum bore size. Use of smaller driven shaft diameter may limit OHL capacity.
4. Overhung load capacity given at a point located 5.000 inches from centerline of housing.
5. For DSND output shaft overhung load capacities, contact the factory.

REDUCER SIZE
924

HORSEPOWER AND TORQUE RATINGS

(D) Double Reduction Worm Gear
(H) Double Reduction Helical/Worm Gear

WINSMITH®

CENTER DISTANCE[1] 1.750/2.375 (D)
CENTER DISTANCE[1] 2.060/2.375 (H)

OVERALL RATIO[2]	PRIMARY RATIO[2]	SECONDARY RATIO[2]	INPUT RPM[3]	OUTPUT RPM	HORSEPOWER AND TORQUE RATINGS (INCH POUNDS)													
					MECHANICAL RATINGS[4]										THERMAL[5]		SYNTHETIC OIL MECHANICAL[6]	
					1.00 SERVICE FACTOR			1.25 SF		1.50 SF		1.75 SF						
					INPUT HP	OUTPUT HP	OUTPUT TORQUE	INPUT HP	OUTPUT TORQUE	INPUT HP	OUTPUT TORQUE	INPUT HP	OUTPUT TORQUE	INPUT HP	OUTPUT TORQUE	INPUT HP	OUTPUT TORQUE	INPUT HP	OUTPUT TORQUE
4000 (D) (4150)	80 (83)	50 (50)	2500	0.60	.095	.014	1430	.085	1144	.079	954	.074	817	.095	1430	.072	1430	
			1750	0.42	.065	.010	1433	.057	1147	.052	956	.049	819	.065	1433	.047	1433	
			1160	0.28	.043	.006	1436	.037	1149	.033	957	.031	820	.043	1436	.029	1436	
			870	0.21	.032	.005	1437	.028	1150	.025	958	.023	821	.032	1437	.020	1437	
			600	0.14	.022	.003	1438	.019	1151	.017	959	.015	822	.022	1438	.013	1438	
			100	0.02	.004	.001	1440	.003	1152	.003	960	.002	823	.004	1440	.002	1440	
5000 (D) (5000)	100 (100)	50 (50)	2500	0.50	.088	.011	1432	.079	1146	.074	955	.070	818	.088	1432	.068	1432	
			1750	0.35	.059	.008	1435	.053	1148	.049	956	.046	820	.059	1435	.044	1435	
			1160	0.23	.038	.005	1437	.034	1149	.031	958	.028	821	.038	1437	.026	1437	
			870	0.17	.029	.004	1438	.025	1150	.022	958	.021	822	.029	1438	.019	1438	
			600	0.12	.020	.003	1439	.017	1151	.015	959	.014	822	.020	1439	.012	1439	
			100	0.02	.003	.001	1440	.003	1152	.002	960	.002	823	.003	1440	.002	1440	
6000 (D) (6000)	100 (100)	60 (60)	2500	0.42	.081	.009	1335	.074	1068	.070	890	.066	763	.081	1335	.064	1335	
			1750	0.29	.054	.006	1337	.049	1069	.045	891	.043	764	.054	1337	.040	1337	
			1160	0.19	.035	.004	1339	.031	1071	.028	892	.026	765	.035	1339	.024	1339	
			870	0.15	.026	.003	1340	.023	1072	.020	893	.019	765	.026	1340	.017	1340	
			600	0.10	.018	.002	1340	.015	1072	.014	894	.013	766	.018	1340	.011	1340	
			100	0.02	.003	.001	1342	.002	1074	.002	895	.002	767	.003	1342	.001	1342	
8000 (D) (8000)	100 (100)	80 (80)	2500	0.31	.069	.005	988	.064	790	.061	659	.059	565	.069	988	.056	988	
			1750	0.22	.045	.003	988	.041	790	.039	659	.037	565	.045	988	.035	988	
			1160	0.15	.028	.002	988	.025	790	.024	659	.022	565	.028	988	.020	988	
			870	0.11	.020	.002	988	.018	790	.017	659	.016	565	.020	988	.014	988	
			600	0.08	.013	.001	988	.012	790	.011	659	.010	565	.013	988	.009	988	
			100	0.01	.002	.001	988	.002	790	.002	659	.001	565	.002	988	.001	988	
10000 (D) (10000)	100 (100)	100 (100)	2500	0.25	.063	.003	818	.060	654	.057	545	.056	467	.063	818	.053	818	
			1750	0.18	.041	.002	818	.038	654	.036	545	.035	467	.041	818	.033	818	
			1160	0.12	.025	.002	818	.023	654	.022	545	.021	467	.025	818	.019	818	
			870	0.09	.018	.001	818	.016	654	.015	545	.014	467	.018	818	.013	818	
			600	0.06	.012	.001	818	.010	654	.010	545	.009	467	.012	818	.008	818	
			100	0.01	.002	.001	818	.001	654	.001	545	.001	467	.002	818	.001	818	

1. Center Distance=Primary/Secondary.
2. Numbers shown in ( ) are actual ratios. Worm ratios are exact, helical ratios are rounded and are not exact.
3. If input speed is below 1160 RPM, please specify speed to insure proper lubrication.
4. See engineering section, pages 224-226, for further discussion regarding service factors.
5. Actual input HP must not exceed the thermal input HP capacity on a continuous basis.
6. When using synthetic oil, there is no thermal rating limitation. The Service Factor is 1.00.

THRUST AND OVERHUNG LOAD RATINGS

(D) Double Reduction Worm Gear
(H) Double Reduction Helical/Worm Gear

REDUCER SIZE **924**

OVERHUNG LOAD CAPACITIES[1]							THRUST CAPACITIES				CENTER DISTANCE 1.750/2.375 (D) CENTER DISTANCE 2.060/2.375 (H)	
INPUT SHAFT	OUTPUT SHAFT[5]						OUTPUT SHAFT					
ALL MODELS	DB, DT[2]	DV SHAFT UP	DV SHAFT DOWN	DSF[3, 4] BASE SIDE	DSF[3, 4] COVER SIDE		DB, DT, DV	DSF TOWARD BASE	DSF AWAY FROM BASE		INPUT RPM	RATIO
200	1025	1025	960	2150	1240		1500	1909	1909		2500	4000 (D) (4150)
200	1025	1025	960	2150	1240		1500	1909	1909		1750	
200	1025	1025	960	2150	1240		1500	1909	1909		1160	
200	1025	1025	960	2150	1240		1500	1909	1909		870	
200	1025	1025	960	2150	1240		1500	1909	1909		600	
200	1025	1025	960	2150	1240		1500	1909	1909		100	
142	1025	1025	960	2150	1240		1500	1909	1909		2500	5000 (D) (5000)
136	1025	1025	960	2150	1240		1500	1909	1909		1750	
130	1025	1025	960	2150	1240		1500	1909	1909		1160	
125	1025	1025	960	2150	1240		1500	1909	1909		870	
118	1025	1025	960	2150	1240		1500	1909	1909		600	
105	1025	1025	960	2150	1240		1500	1909	1909		100	
142	1025	1025	960	2150	1240		1500	1909	1909		2500	6000 (D) (6000)
136	1025	1025	960	2150	1240		1500	1909	1909		1750	
130	1025	1025	960	2150	1240		1500	1909	1909		1160	
125	1025	1025	960	2150	1240		1500	1909	1909		870	
118	1025	1025	960	2150	1240		1500	1909	1909		600	
105	1025	1025	960	2150	1240		1500	1909	1909		100	
142	1025	1025	960	2150	1240		1500	1909	1909		2500	8000 (D) (8000)
136	1025	1025	960	2150	1240		1500	1909	1909		1750	
130	1025	1025	960	2150	1240		1500	1909	1909		1160	
125	1025	1025	960	2150	1240		1500	1909	1909		870	
118	1025	1025	960	2150	1240		1500	1909	1909		600	
105	1025	1025	960	2150	1240		1500	1909	1909		100	
142	1025	1025	960	2150	1240		1500	1909	1909		2500	10000 (D) (10000)
136	1025	1025	960	2150	1240		1500	1909	1909		1750	
130	1025	1025	960	2150	1240		1500	1909	1909		1160	
125	1025	1025	960	2150	1240		1500	1909	1909		870	
118	1025	1025	960	2150	1240		1500	1909	1909		600	
105	1025	1025	960	2150	1240		1500	1909	1909		100	

1. Overhung load given at one shaft diameter from housing or mounting flange. All values given in pounds.
2. Overhung load capacities are based on the direction and location of the load as shown in figure 1 on page 228. Consult factory for allowable OHL values if load is applied as shown in figure 2A, B, C or D on page 228.
3. Overhung load based on maximum bore size. Use of smaller driven shaft diameter may limit OHL capacity.
4. Overhung load capacity given at a point located 5.000 inches from centerline of housing.
5. For DSND output shaft overhung load capacities, contact the factory.

REDUCER SIZE
926

HORSEPOWER AND TORQUE RATINGS

(D) Double Reduction Worm Gear
(H) Double Reduction Helical/Worm Gear

WINSMITH®

CENTER DISTANCE[1] 1.750/2.625 (D) CENTER DISTANCE[1] 2.060/2.625 (H)					HORSEPOWER AND TORQUE RATINGS (INCH POUNDS)													
					MECHANICAL RATINGS[4]										THERMAL[5]		SYNTHETIC OIL MECHANICAL[6]	
					1.00 SERVICE FACTOR			1.25 SF		1.50 SF		1.75 SF					
OVERALL RATIO[2]	PRIMARY RATIO[2]	SECONDARY RATIO[2]	INPUT RPM[3]	OUTPUT RPM	INPUT HP	OUTPUT HP	OUTPUT TORQUE	INPUT HP	OUTPUT TORQUE	INPUT HP	OUTPUT TORQUE	INPUT HP	OUTPUT TORQUE	INPUT HP	OUTPUT TORQUE	INPUT HP	OUTPUT TORQUE
25 (H) (25.3)	5 (5.07)	5 (5)	2500	98.8	3.03	2.64	1683	2.43	1346	2.02	1122	1.74	962	3.03	1683	2.92	1683
			1750	69.2	2.32	1.99	1812	1.86	1450	1.55	1208	1.33	1036	2.32	1812	2.23	1812
			1160	45.9	1.66	1.40	1921	1.33	1537	1.11	1281	.950	1098	1.66	1921	1.58	1921
			870	34.4	1.30	1.08	1977	1.04	1582	.865	1318	.741	1130	1.30	1977	1.23	1977
			600	23.7	.931	.764	2030	.745	1624	.621	1354	.533	1160	.931	2030	.881	2030
			100	3.95	.174	.134	2133	.139	1707	.116	1422	.099	1219	.174	2133	.161	2133
30 (H) (30.4)	6 (6.08)	5 (5)	2500	82.2	2.65	2.29	1753	2.12	1403	1.77	1169	1.52	1002	2.65	1753	2.55	1753
			1750	57.6	2.00	1.70	1865	1.60	1492	1.34	1243	1.15	1066	2.00	1865	1.92	1865
			1160	38.2	1.42	1.19	1958	1.13	1566	.946	1305	.811	1119	1.42	1958	1.35	1958
			870	28.6	1.10	.911	2005	.882	1604	.735	1337	.630	1146	1.10	2005	1.04	2005
			600	19.7	.788	.642	2050	.631	1640	.526	1367	.451	1172	.788	2050	.743	2050
			100	3.29	.146	.112	2137	.117	1709	.097	1424	.083	1221	.146	2137	.134	2137
38 (H) (38.0)	5 (5.07)	7.5 (7.5)	2500	65.8	2.15	1.84	1765	1.73	1412	1.44	1177	1.24	1009	2.15	1765	2.07	1765
			1750	46.1	1.62	1.36	1867	1.30	1494	1.08	1245	.928	1067	1.62	1867	1.55	1867
			1160	30.5	1.14	.945	1952	.914	1561	.762	1301	.654	1115	1.14	1952	1.08	1952
			870	22.9	.885	.725	1995	.709	1596	.591	1333	.507	1140	.885	1995	.837	1995
			600	15.8	.632	.510	2035	.506	1628	.422	1357	.362	1163	.632	2035	.594	2035
			100	2.63	.117	.088	2113	.093	1691	.078	1409	.067	1208	.117	2113	.107	2113
50 (D) (50)	10 (10)	5 (5)	2500	50.0	1.51	1.16	1467	1.22	1157	1.02	964	.882	827	1.51	1447	1.45	1537
			1750	35.0	1.25	.949	1708	1.01	1346	.845	1122	.729	962	1.25	1683	1.20	1800
			1160	23.2	.959	.706	1918	.771	1509	.645	1258	.555	1078	.959	1887	.910	2033
			870	17.4	.775	.559	2025	.623	1592	.521	1327	.448	1137	.775	1990	.701	2063
			600	12.0	.577	.398	2091	.463	1669	.387	1390	.332	1192	.577	2086	.497	2091
			100	2.00	.113	.068	2144	.090	1715	.075	1429	.065	1225	.113	2144	.091	2144
50 (H) (50.7)	5 (5.07)	10 (10)	2500	49.3	1.62	1.36	1743	1.30	1394	1.08	1162	.929	996	1.62	1743	1.55	1743
			1750	34.5	1.20	.999	1825	.964	1460	.805	1216	.691	1043	1.20	1825	1.14	1825
			1160	22.9	.842	.687	1892	.674	1514	.562	1261	.483	1081	.842	1892	.795	1892
			870	17.2	.650	.524	1926	.521	1541	.434	1284	.373	1101	.650	1926	.612	1926
			600	11.8	.462	.368	1958	.370	1567	.309	1306	.265	1119	.462	1958	.433	1958
			100	1.97	.085	.063	2019	.068	1615	.057	1346	.048	1154	.085	2019	.077	2019
60 (H) (60.8)	6 (6.08)	10 (10)	2500	41.1	1.39	1.17	1788	1.12	1430	.932	1192	.800	1022	1.39	1788	1.33	1788
			1750	28.8	1.03	.848	1858	.825	1486	.688	1238	.591	1062	1.03	1858	.976	1858
			1160	19.1	.715	.580	1915	.573	1532	.478	1276	.410	1094	.715	1915	.674	1915
			870	14.3	.551	.441	1943	.441	1555	.368	1296	.316	1110	.551	1943	.517	1943
			600	9.87	.390	.309	1970	.312	1576	.261	1314	.224	1126	.390	1970	.365	1970
			100	1.64	.071	.053	2021	.057	1617	.047	1348	.041	1155	.071	2021	.065	2021
75 (D) (75)	5 (5)	15 (15)	2500	33.3	1.35	.995	1881	1.09	1505	.921	1254	.798	1075	1.35	1881	1.22	1881
			1750	23.3	1.02	.729	1968	.820	1575	.689	1312	.596	1125	1.02	1968	.900	1968
			1160	15.5	.722	.501	2040	.581	1632	.488	1360	.421	1166	.722	2040	.627	2040
			870	11.6	.564	.382	2076	.454	1661	.380	1384	.328	1187	.564	2076	.484	2076
			600	8.00	.408	.268	2111	.328	1689	.274	1407	.236	1206	.408	2111	.345	2111
			100	1.33	.081	.046	2176	.065	1741	.054	1451	.047	1243	.081	2176	.064	2176

1. Center Distance=Primary/Secondary.
2. Numbers shown in ( ) are actual ratios. Worm ratios are exact, helical ratios are rounded and are not exact.
3. If input speed is below 1160 RPM, please specify speed to insure proper lubrication.
4. See engineering section, pages 224-226, for further discussion regarding service factors.
5. Actual input HP must not exceed the thermal input HP capacity on a continuous basis.
6. When using synthetic oil, there is no thermal rating limitation. The Service Factor is 1.00.

THRUST AND OVERHUNG LOAD RATINGS

(D) Double Reduction Worm Gear
(H) Double Reduction Helical/Worm Gear

REDUCER SIZE
926

OVERHUNG LOAD CAPACITIES[1]							THRUST CAPACITIES				CENTER DISTANCE 1.750/2.625 (D) CENTER DISTANCE 2.060/2.625 (H)	
INPUT SHAFT	OUTPUT SHAFT[5]						OUTPUT SHAFT					
ALL MODELS	DB, DT[2]	DV SHAFT UP	DV SHAFT DOWN	DSF[3, 4] BASE SIDE	DSF[3, 4] COVER SIDE	DL	DB, DT, DV	DSF TOWARD BASE	DSF AWAY FROM BASE	DL AWAY FROM BASE	INPUT RPM	RATIO
125	1025	1025	961	1806	1350	1010	1054	2160	2160	1247	2500	**25 (H)** (25.3)
163	1025	1025	961	2014	1350	1010	1231	2160	2160	1449	1750	
219	1025	1025	961	2301	1350	1010	1465	2160	2160	1714	1160	
250	1025	1025	961	2500	1350	1010	1500	2160	2160	1909	870	
250	1025	1025	961	2500	1350	1010	1500	2160	2160	2160	600	
250	1025	1025	961	2500	1350	1010	1500	2160	2160	2160	100	
109	1025	1025	961	1912	1350	1010	1142	2160	2160	1348	2500	**30 (H)** (30.4)
161	1025	1025	961	2136	1350	1010	1336	2160	2160	1568	1750	
222	1025	1025	961	2472	1350	1010	1500	2160	2160	1829	1160	
250	1025	1025	961	2500	1350	1010	1500	2160	2160	2058	870	
250	1025	1025	961	2500	1350	1010	1500	2160	2160	2160	600	
250	1025	1025	961	2500	1350	1010	1500	2160	2160	2160	100	
241	1025	1025	961	2031	1350	1010	1348	2160	2160	1569	2500	**38 (H)** (38.0)
250	1025	1025	961	2308	1350	1010	1500	2160	2160	1826	1750	
250	1025	1025	961	2500	1350	1010	1500	2160	2160	2152	1160	
250	1025	1025	961	2500	1350	1010	1500	2160	2160	2160	870	
250	1025	1025	961	2500	1350	1010	1500	2160	2160	2160	600	
250	1025	1025	961	2500	1350	1010	1500	2160	2160	2160	100	
194	1025	1025	961	2242	1350	1010	1500	2160	2160	1839	2500	**50 (D)** (50)
194	1025	1025	961	2500	1350	1010	1500	2160	2160	2137	1750	
194	1025	1025	961	2500	1350	1010	1500	2160	2160	2160	1160	
194	1025	1025	961	2500	1350	1010	1500	2160	2160	2160	870	
194	1025	1025	961	2500	1350	1010	1500	2160	2160	2160	600	
194	1025	1025	961	2500	1350	1010	1500	2160	2160	2160	100	
250	1025	1025	961	2500	1350	1010	1500	2160	2160	2160	2500	**50 (H)** (50.7)
250	1025	1025	961	2500	1350	1010	1500	2160	2160	2160	1750	
250	1025	1025	961	2500	1350	1010	1500	2160	2160	2160	1160	
250	1025	1025	961	2500	1350	1010	1500	2160	2160	2160	870	
250	1025	1025	961	2500	1350	1010	1500	2160	2160	2160	600	
250	1025	1025	961	2500	1350	1010	1500	2160	2160	2160	100	
250	1025	1025	961	2500	1350	1010	1500	2160	2160	2160	2500	**60 (H)** (60.8)
250	1025	1025	961	2500	1350	1010	1500	2160	2160	2160	1750	
250	1025	1025	961	2500	1350	1010	1500	2160	2160	2160	1160	
250	1025	1025	961	2500	1350	1010	1500	2160	2160	2160	870	
250	1025	1025	961	2500	1350	1010	1500	2160	2160	2160	600	
250	1025	1025	961	2500	1350	1010	1500	2160	2160	2160	100	
183	1025	1025	961	2500	1350	1010	1500	2160	2160	2160	2500	**75 (D)** (75)
183	1025	1025	961	2500	1350	1010	1500	2160	2160	2160	1750	
183	1025	1025	961	2500	1350	1010	1500	2160	2160	2160	1160	
183	1025	1025	961	2500	1350	1010	1500	2160	2160	2160	870	
183	1025	1025	961	2500	1350	1010	1500	2160	2160	2160	600	
183	1025	1025	961	2500	1350	1010	1500	2160	2160	2160	100	

1. Overhung load given at one shaft diameter from housing or mounting flange All values given in pounds.
2. Overhung load capacities are based on the direction and location of the load as shown in figure 1 on page 228. Consult factory for allowable OHL values if load is applied as shown in figure 2A, B, C or D on page 228.
3. Overhung load based on maximum bore size. Use of smaller driven shaft diameter may limit OHL capacity.
4. Overhung load capacity given at a point located 5.313 inches from centerline of housing.
5. For DSND output shaft overhung load capacities, contact the factory.

REDUCER SIZE
926

HORSEPOWER AND TORQUE RATINGS

(D) Double Reduction Worm Gear
(H) Double Reduction Helical/Worm Gear

WINSMITH

CENTER DISTANCE[1] 1.750/2.625 (D) CENTER DISTANCE[1] 2.060/2.625 (H)					HORSEPOWER AND TORQUE RATINGS (INCH POUNDS)													
					MECHANICAL RATINGS[4]										THERMAL[5]		SYNTHETIC OIL MECHANICAL[6]	
					1.00 SERVICE FACTOR			1.25 SF		1.50 SF		1.75 SF					
OVERALL RATIO[2]	PRIMARY RATIO[2]	SECONDARY RATIO[2]	INPUT RPM[3]	OUTPUT RPM	INPUT HP	OUTPUT HP	OUTPUT TORQUE	INPUT HP	OUTPUT TORQUE	INPUT HP	OUTPUT TORQUE	INPUT HP	OUTPUT TORQUE	INPUT HP	OUTPUT TORQUE	INPUT HP	OUTPUT TORQUE
75 (H) (76.0)	5 (5.07)	15 (15)	2500	32.9	1.23	.984	1884	.989	1508	.826	1256	.710	1077	1.23	1884	1.16	1884
			1750	23.0	.922	.720	1971	.739	1577	.617	1314	.530	1126	.922	1971	.859	1971
			1160	15.3	.647	.495	2042	.519	1634	.433	1361	.372	1167	.647	2042	.598	2042
			870	11.5	.502	.377	2078	.402	1662	.335	1385	.288	1187	.502	2078	.461	2078
			600	7.89	.358	.265	2112	.287	1689	.239	1408	.205	1207	.358	2112	.327	2112
			100	1.32	.067	.045	2176	.053	1741	.045	1451	.038	1243	.067	2176	.059	2176
90 (H) (91.1)	6 (6.08)	15 (15)	2500	27.4	1.07	.841	1932	.855	1546	.714	1288	.613	1104	1.07	1932	.997	1932
			1750	19.2	.791	.611	2006	.633	1605	.529	1337	.454	1146	.791	2006	.734	2006
			1160	12.7	.552	.417	2066	.442	1653	.369	1377	.317	1180	.552	2066	.508	2066
			870	9.55	.426	.318	2096	.341	1677	.285	1397	.244	1198	.426	2096	.390	2096
			600	6.59	.303	.222	2124	.243	1700	.202	1416	.174	1214	.303	2124	.276	2124
			100	1.10	.056	.038	2178	.045	1743	.037	1452	.032	1245	.056	2178	.050	2178
100 (D) (100)	5 (5)	20 (20)	2500	25.0	1.06	.738	1861	.858	1489	.725	1241	.629	1064	1.06	1861	.937	1861
			1750	17.5	.793	.539	1941	.641	1553	.540	1294	.468	1109	.793	1941	.690	1941
			1160	11.6	.562	.369	2006	.453	1605	.381	1337	.329	1146	.562	2006	.479	2006
			870	8.70	.439	.281	2039	.354	1631	.297	1359	.256	1165	.439	2039	.369	2039
			600	6.00	.317	.197	2070	.255	1656	.214	1380	.184	1183	.317	2070	.262	2070
			100	1.00	.063	.034	2129	.051	1703	.042	1419	.037	1216	.063	2129	.048	2129
100 (H) (101.3)	5 (5.07)	20 (20)	2500	24.7	.956	.730	1865	.767	1492	.641	1243	.551	1066	.956	1865	.885	1865
			1750	17.3	.713	.533	1944	.572	1555	.478	1296	.410	1111	.713	1944	.655	1944
			1160	11.5	.501	.365	2008	.402	1606	.335	1339	.288	1147	.501	2008	.456	2008
			870	8.59	.388	.278	2040	.311	1632	.260	1360	.223	1166	.388	2040	.351	2040
			600	5.92	.277	.195	2071	.222	1657	.185	1381	.159	1183	.277	2071	.248	2071
			100	0.99	.052	.033	2129	.042	1703	.035	1419	.030	1216	.052	2129	.045	2129
120 (H) (121.5)	6 (6.08)	20 (20)	2500	20.6	.825	.623	1908	.662	1526	.553	1272	.475	1090	.825	1908	.761	1908
			1750	14.4	.611	.451	1975	.490	1580	.409	1317	.351	1129	.611	1975	.559	1975
			1160	9.55	.427	.307	2029	.342	1623	.285	1353	.245	1160	.427	2029	.386	2029
			870	7.16	.330	.234	2057	.264	1645	.220	1371	.189	1175	.330	2057	.297	2057
			600	4.94	.235	.163	2082	.188	1666	.157	1388	.135	1190	.235	2082	.209	2082
			100	0.82	.044	.028	2131	.035	1705	.029	1421	.025	1218	.044	2131	.038	2131
150 (D) (150)	10 (10)	15 (15)	2500	16.7	.798	.537	2029	.648	1623	.549	1353	.477	1159	.798	2029	.700	2029
			1750	11.7	.585	.384	2076	.474	1661	.400	1384	.347	1186	.585	2076	.504	2076
			1160	7.73	.406	.259	2113	.328	1691	.276	1409	.239	1208	.406	2113	.344	2113
			870	5.80	.314	.196	2132	.253	1706	.213	1421	.184	1218	.314	2132	.262	2132
			600	4.00	.224	.136	2150	.181	1720	.152	1433	.131	1228	.224	2150	.185	2150
			100	0.67	.044	.023	2183	.035	1746	.029	1455	.025	1247	.044	2183	.033	2183
150 (H) (152.0)	5 (5.07)	30 (30)	2500	16.5	.744	.507	1941	.597	1553	.499	1294	.430	1109	.744	1941	.662	1941
			1750	11.5	.562	.370	2028	.451	1622	.377	1352	.324	1159	.562	2028	.493	2028
			1160	7.63	.399	.254	2099	.320	1679	.268	1399	.230	1199	.399	2099	.346	2099
			870	5.72	.312	.194	2135	.250	1708	.209	1423	.179	1220	.312	2135	.267	2135
			600	3.95	.225	.136	2169	.180	1735	.150	1446	.129	1239	.225	2169	.190	2169
			100	0.66	.044	.023	2233	.035	1787	.029	1489	.025	1276	.044	2233	.035	2233

1. Center Distance=Primary/Secondary.
2. Numbers shown in ( ) are actual ratios. Worm ratios are exact, helical ratios are rounded and are not exact.
3. If input speed is below 1160 RPM, please specify speed to insure proper lubrication.
4. See engineering section, pages 224-226, for further discussion regarding service factors.
5. Actual input HP must not exceed the thermal input HP capacity on a continuous basis.
6. When using synthetic oil, there is no thermal rating limitation. The Service Factor is 1.00.

THRUST AND OVERHUNG LOAD RATINGS

(D) Double Reduction Worm Gear
(H) Double Reduction Helical/Worm Gear

REDUCER SIZE
926

OVERHUNG LOAD CAPACITIES[1]							THRUST CAPACITIES				CENTER DISTANCE 1.750/2.625 (D) CENTER DISTANCE 2.060/2.625 (H)	
INPUT SHAFT	OUTPUT SHAFT[5]						OUTPUT SHAFT					
ALL MODELS	DB, DT[2]	DV SHAFT UP	DV SHAFT DOWN	DSF[3, 4] BASE SIDE	DSF[3, 4] COVER SIDE	DL	DB, DT, DV	DSF TOWARD BASE	DSF AWAY FROM BASE	DL AWAY FROM BASE	INPUT RPM	RATIO
250	1025	1025	961	2500	1350	1010	1500	2160	2160	2160	2500	**75 (H)** (76.0)
250	1025	1025	961	2500	1350	1010	1500	2160	2160	2160	1750	
250	1025	1025	961	2500	1350	1010	1500	2160	2160	2160	1160	
250	1025	1025	961	2500	1350	1010	1500	2160	2160	2160	870	
250	1025	1025	961	2500	1350	1010	1500	2160	2160	2160	600	
250	1025	1025	961	2500	1350	1010	1500	2160	2160	2160	100	
250	1025	1025	961	2500	1350	1010	1500	2160	2160	2160	2500	**90 (H)** (91.1)
250	1025	1025	961	2500	1350	1010	1500	2160	2160	2160	1750	
250	1025	1025	961	2500	1350	1010	1500	2160	2160	2160	1160	
250	1025	1025	961	2500	1350	1010	1500	2160	2160	2160	870	
250	1025	1025	961	2500	1350	1010	1500	2160	2160	2160	600	
250	1025	1025	961	2500	1350	1010	1500	2160	2160	2160	100	
183	1025	1025	961	2500	1350	1010	1500	2160	2160	2160	2500	**100 (D)** (100)
183	1025	1025	961	2500	1350	1010	1500	2160	2160	2160	1750	
183	1025	1025	961	2500	1350	1010	1500	2160	2160	2160	1160	
183	1025	1025	961	2500	1350	1010	1500	2160	2160	2160	870	
183	1025	1025	961	2500	1350	1010	1500	2160	2160	2160	600	
183	1025	1025	961	2500	1350	1010	1500	2160	2160	2160	100	
250	1025	1025	961	2500	1350	1010	1500	2160	2160	2160	2500	**100 (H)** (101.3)
250	1025	1025	961	2500	1350	1010	1500	2160	2160	2160	1750	
250	1025	1025	961	2500	1350	1010	1500	2160	2160	2160	1160	
250	1025	1025	961	2500	1350	1010	1500	2160	2160	2160	870	
250	1025	1025	961	2500	1350	1010	1500	2160	2160	2160	600	
250	1025	1025	961	2500	1350	1010	1500	2160	2160	2160	100	
250	1025	1025	961	2500	1350	1010	1500	2160	2160	2160	2500	**120 (H)** (121.5)
250	1025	1025	961	2500	1350	1010	1500	2160	2160	2160	1750	
250	1025	1025	961	2500	1350	1010	1500	2160	2160	2160	1160	
250	1025	1025	961	2500	1350	1010	1500	2160	2160	2160	870	
250	1025	1025	961	2500	1350	1010	1500	2160	2160	2160	600	
250	1025	1025	961	2500	1350	1010	1500	2160	2160	2160	100	
194	1025	1025	961	2500	1350	1010	1500	2160	2160	2160	2500	**150 (D)** (150)
194	1025	1025	961	2500	1350	1010	1500	2160	2160	2160	1750	
194	1025	1025	961	2500	1350	1010	1500	2160	2160	2160	1160	
194	1025	1025	961	2500	1350	1010	1500	2160	2160	2160	870	
194	1025	1025	961	2500	1350	1010	1500	2160	2160	2160	600	
194	1025	1025	961	2500	1350	1010	1500	2160	2160	2160	100	
250	1025	1025	961	2500	1350	1010	1500	2160	2160	2160	2500	**150 (H)** (152.0)
250	1025	1025	961	2500	1350	1010	1500	2160	2160	2160	1750	
250	1025	1025	961	2500	1350	1010	1500	2160	2160	2160	1160	
250	1025	1025	961	2500	1350	1010	1500	2160	2160	2160	870	
250	1025	1025	961	2500	1350	1010	1500	2160	2160	2160	600	
250	1025	1025	961	2500	1350	1010	1500	2160	2160	2160	100	

1. Overhung load given at one shaft diameter from housing or mounting flange. All values given in pounds.
2. Overhung load capacities are based on the direction and location of the load as shown in figure 1 on page 228. Consult factory for allowable OHL values if load is applied as shown in figure 2A, B, C or D on page 228.
3. Overhung load based on maximum bore size. Use of smaller driven shaft diameter may limit OHL capacity.
4. Overhung load capacity given at a point located 5.313 inches from centerline of housing.
5. For DSND output shaft overhung load capacities, contact the factory.

REDUCER SIZE
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HORSEPOWER AND TORQUE RATINGS

(D) Double Reduction Worm Gear
(H) Double Reduction Helical/Worm Gear

WINSMITH®

CENTER DISTANCE[1] 1.750/2.625 (D)
CENTER DISTANCE[1] 2.060/2.625 (H)

HORSEPOWER AND TORQUE RATINGS (INCH POUNDS)

OVERALL RATIO[2]	PRIMARY RATIO[2]	SECONDARY RATIO[2]	INPUT RPM[3]	OUTPUT RPM	MECHANICAL RATINGS[4] 1.00 SERVICE FACTOR INPUT HP	1.00 SF OUTPUT HP	1.00 SF OUTPUT TORQUE	1.25 SF INPUT HP	1.25 SF OUTPUT TORQUE	1.50 SF INPUT HP	1.50 SF OUTPUT TORQUE	1.75 SF INPUT HP	1.75 SF OUTPUT TORQUE	THERMAL[5] INPUT HP	THERMAL[5] OUTPUT TORQUE	SYNTHETIC OIL MECHANICAL[6] INPUT HP	SYNTHETIC OIL MECHANICAL[6] OUTPUT TORQUE
180 (H) (182.3)	6 (6.08)	30 (30)	2500	13.7	.646	.433	1989	.518	1591	.433	1326	.373	1136	.646	1989	.571	1989
			1750	9.60	.484	.314	2063	.388	1650	.325	1375	.279	1179	.484	2063	.422	2063
			1160	6.36	.342	.214	2123	.274	1698	.229	1415	.197	1213	.342	2123	.294	2123
			870	4.77	.266	.163	2153	.213	1722	.178	1435	.153	1230	.266	2153	.226	2153
			600	3.29	.191	.114	2182	.153	1745	.128	1454	.110	1247	.191	2182	.161	2182
			100	0.55	.037	.019	2235	.030	1788	.025	1490	.021	1277	.037	2235	.029	2235
200 (D) (200)	10 (10)	20 (20)	2500	12.5	.627	.396	1996	.512	1597	.435	1331	.380	1141	.627	1996	.541	1996
			1750	8.75	.458	.283	2038	.373	1631	.316	1359	.275	1165	.458	2038	.388	2038
			1160	5.80	.318	.191	2072	.258	1658	.218	1382	.189	1184	.318	2072	.264	2072
			870	4.35	.245	.144	2089	.199	1671	.167	1393	.145	1194	.245	2089	.201	2089
			600	3.00	.175	.100	2105	.142	1684	.119	1403	.103	1203	.175	2105	.141	2105
			100	0.50	.034	.017	2135	.027	1708	.023	1423	.020	1220	.034	2135	.025	2135
200 (H) (202.6)	5 (5.07)	40 (40)	2500	12.3	.575	.364	1859	.462	1487	.387	1239	.333	1062	.575	1859	.499	1859
			1750	8.64	.435	.265	1936	.349	1549	.292	1291	.251	1106	.435	1936	.371	1936
			1160	5.73	.310	.182	1999	.248	1599	.208	1333	.179	1142	.310	1999	.260	1999
			870	4.29	.242	.138	2031	.194	1625	.162	1354	.139	1161	.242	2031	.201	2031
			600	2.96	.175	.097	2061	.140	1649	.117	1374	.100	1178	.175	2061	.143	2061
			100	0.49	.034	.017	2118	.027	1694	.023	1412	.020	1210	.034	2118	.026	2118
250 (H) (253.3)	5 (5.07)	50 (50)	2500	9.87	.463	.274	1752	.372	1402	.312	1168	.269	1001	.463	1752	.392	1752
			1750	6.91	.350	.200	1821	.281	1456	.235	1214	.203	1040	.350	1821	.291	1821
			1160	4.58	.249	.136	1876	.200	1501	.167	1251	.144	1072	.249	1876	.203	1876
			870	3.43	.195	.104	1904	.156	1523	.131	1269	.112	1088	.195	1904	.157	1904
			600	2.37	.141	.073	1930	.113	1544	.094	1287	.081	1103	.141	1930	.112	1930
			100	0.39	.028	.012	1980	.022	1584	.019	1320	.016	1132	.028	1980	.021	1980
300 (D) (300)	20 (20)	15 (15)	2500	8.33	.478	.279	2108	.392	1686	.334	1405	.293	1204	.478	2108	.405	2108
			1750	5.83	.346	.197	2132	.282	1705	.240	1421	.210	1218	.346	2132	.287	2132
			1160	3.87	.239	.132	2151	.194	1721	.164	1434	.143	1229	.239	2151	.193	2151
			870	2.90	.184	.099	2160	.149	1728	.126	1440	.109	1235	.184	2160	.147	2160
			600	2.00	.132	.069	2169	.107	1735	.090	1446	.078	1240	.132	2169	.103	2169
			100	0.33	.026	.012	2186	.021	1749	.017	1457	.015	1249	.026	2186	.018	2186
300 (H) (303.8)	6 (6.08)	50 (50)	2500	8.23	.402	.234	1790	.323	1432	.271	1193	.233	1023	.402	1790	.338	1790
			1750	5.76	.302	.169	1848	.242	1478	.203	1232	.175	1056	.302	1848	.249	1848
			1160	3.82	.213	.115	1895	.171	1516	.143	1263	.123	1083	.213	1895	.173	1895
			870	2.86	.166	.087	1918	.133	1535	.112	1279	.096	1096	.166	1918	.133	1918
			600	1.97	.120	.061	1940	.096	1552	.080	1294	.069	1109	.120	1940	.094	1940
			100	0.33	.024	.010	1982	.019	1586	.016	1321	.013	1133	.024	1982	.017	1982
360 (H) (364.6)	6 (6.08)	60 (60)	2500	6.86	.332	.181	1663	.267	1331	.224	1109	.193	950	.332	1663	.292	1663
			1750	4.80	.249	.131	1715	.200	1372	.168	1143	.145	980	.249	1715	.201	1715
			1160	3.18	.177	.089	1757	.142	1405	.119	1171	.102	1004	.177	1757	.139	1757
			870	2.39	.138	.067	1778	.111	1422	.092	1185	.080	1016	.138	1778	.107	1778
			600	1.65	.099	.047	1797	.080	1438	.067	1198	.057	1027	.099	1797	.076	1797
			100	0.27	.020	.008	1834	.016	1468	.013	1223	.011	1048	.020	1834	.014	1834

1. Center Distance=Primary/Secondary.
2. Numbers shown in ( ) are actual ratios. Worm ratios are exact, helical ratios are rounded and are not exact.
3. If input speed is below 1160 RPM, please specify speed to insure proper lubrication.
4. See engineering section, pages 224-226, for further discussion regarding service factors.
5. Actual input HP must not exceed the thermal input HP capacity on a continuous basis.
6. When using synthetic oil, there is no thermal rating limitation. The Service Factor is 1.00.

THRUST AND OVERHUNG LOAD RATINGS

(D) Double Reduction Worm Gear
(H) Double Reduction Helical/Worm Gear

REDUCER SIZE
926

OVERHUNG LOAD CAPACITIES[1]							THRUST CAPACITIES				CENTER DISTANCE 1.750/2.625 (D) CENTER DISTANCE 2.060/2.625 (H)	
INPUT SHAFT	OUTPUT SHAFT[5]						OUTPUT SHAFT					
ALL MODELS	DB, DT[2]	DV SHAFT UP	DV SHAFT DOWN	DSF[3, 4] BASE SIDE	DSF[3, 4] COVER SIDE	DL	DB, DT, DV	DSF TOWARD BASE	DSF AWAY FROM BASE	DL AWAY FROM BASE	INPUT RPM	RATIO
250	1025	1025	961	2500	1350	1010	1500	2160	2160	2160	2500	180 (H) (182.3)
250	1025	1025	961	2500	1350	1010	1500	2160	2160	2160	1750	
250	1025	1025	961	2500	1350	1010	1500	2160	2160	2160	1160	
250	1025	1025	961	2500	1350	1010	1500	2160	2160	2160	870	
250	1025	1025	961	2500	1350	1010	1500	2160	2160	2160	600	
250	1025	1025	961	2500	1350	1010	1500	2160	2160	2160	100	
194	1025	1025	961	2500	1350	1010	1500	2160	2160	2160	2500	200 (D) (200)
194	1025	1025	961	2500	1350	1010	1500	2160	2160	2160	1750	
194	1025	1025	961	2500	1350	1010	1500	2160	2160	2160	1160	
194	1025	1025	961	2500	1350	1010	1500	2160	2160	2160	870	
194	1025	1025	961	2500	1350	1010	1500	2160	2160	2160	600	
194	1025	1025	961	2500	1350	1010	1500	2160	2160	2160	100	
250	1025	1025	961	2500	1350	1010	1500	2160	2160	2160	2500	200 (H) (202.6)
250	1025	1025	961	2500	1350	1010	1500	2160	2160	2160	1750	
250	1025	1025	961	2500	1350	1010	1500	2160	2160	2160	1160	
250	1025	1025	961	2500	1350	1010	1500	2160	2160	2160	870	
250	1025	1025	961	2500	1350	1010	1500	2160	2160	2160	600	
250	1025	1025	961	2500	1350	1010	1500	2160	2160	2160	100	
250	1025	1025	961	2500	1350	1010	1500	2160	2160	2160	2500	250 (H) (253.3)
250	1025	1025	961	2500	1350	1010	1500	2160	2160	2160	1750	
250	1025	1025	961	2500	1350	1010	1500	2160	2160	2160	1160	
250	1025	1025	961	2500	1350	1010	1500	2160	2160	2160	870	
250	1025	1025	961	2500	1350	1010	1500	2160	2160	2160	600	
250	1025	1025	961	2500	1350	1010	1500	2160	2160	2160	100	
149	1025	1025	961	2500	1350	1010	1500	2160	2160	2160	2500	300 (D) (300)
149	1025	1025	961	2500	1350	1010	1500	2160	2160	2160	1750	
149	1025	1025	961	2500	1350	1010	1500	2160	2160	2160	1160	
149	1025	1025	961	2500	1350	1010	1500	2160	2160	2160	870	
149	1025	1025	961	2500	1350	1010	1500	2160	2160	2160	600	
149	1025	1025	961	2500	1350	1010	1500	2160	2160	2160	100	
250	1025	1025	961	2500	1350	1010	1500	2160	2160	2160	2500	300 (H) (303.8)
250	1025	1025	961	2500	1350	1010	1500	2160	2160	2160	1750	
250	1025	1025	961	2500	1350	1010	1500	2160	2160	2160	1160	
250	1025	1025	961	2500	1350	1010	1500	2160	2160	2160	870	
250	1025	1025	961	2500	1350	1010	1500	2160	2160	2160	600	
250	1025	1025	961	2500	1350	1010	1500	2160	2160	2160	100	
250	1025	1025	961	2500	1350	1010	1500	2160	2160	2160	2500	360 (H) (364.6)
250	1025	1025	961	2500	1350	1010	1500	2160	2160	2160	1750	
250	1025	1025	961	2500	1350	1010	1500	2160	2160	2160	1160	
250	1025	1025	961	2500	1350	1010	1500	2160	2160	2160	870	
250	1025	1025	961	2500	1350	1010	1500	2160	2160	2160	600	
250	1025	1025	961	2500	1350	1010	1500	2160	2160	2160	100	

1. Overhung load given at one shaft diameter from housing or mounting flange. All values given in pounds.
2. Overhung load capacities are based on the direction and location of the load as shown in figure 1 on page 228. Consult factory for allowable OHL values if load is applied as shown in figure 2A, B, C or D on page 228.
3. Overhung load based on maximum bore size. Use of smaller driven shaft diameter may limit OHL capacity.
4. Overhung load capacity given at a point located 5.313 inches from centerline of housing.
5. For DSND output shaft overhung load capacities, contact the factory.

REDUCER SIZE
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HORSEPOWER AND TORQUE RATINGS

(D) Double Reduction Worm Gear
(H) Double Reduction Helical/Worm Gear

WINSMITH

CENTER DISTANCE[1] 1.750/2.625 (D)
CENTER DISTANCE[1] 2.060/2.625 (H)

HORSEPOWER AND TORQUE RATINGS (INCH POUNDS)

OVERALL RATIO[2]	PRIMARY RATIO[2]	SECONDARY RATIO[2]	INPUT RPM[3]	OUTPUT RPM	MECHANICAL RATINGS[4] 1.00 SERVICE FACTOR INPUT HP	1.00 SF OUTPUT HP	1.00 SF OUTPUT TORQUE	1.25 SF INPUT HP	1.25 SF OUTPUT TORQUE	1.50 SF INPUT HP	1.50 SF OUTPUT TORQUE	1.75 SF INPUT HP	1.75 SF OUTPUT TORQUE	THERMAL[5] INPUT HP	THERMAL[5] OUTPUT TORQUE	SYNTHETIC OIL MECHANICAL[6] INPUT HP	SYNTHETIC OIL MECHANICAL[6] OUTPUT TORQUE
500 (D) (500)	25 (25)	20 (20)	2500	5.00	.326	.165	2082	.270	1665	.233	1388	.207	1189	.326	2082	.269	2082
			1750	3.50	.235	.117	2099	.193	1679	.166	1399	.146	1200	.235	2099	.189	2099
			1160	2.32	.161	.078	2113	.132	1690	.112	1409	.099	1207	.161	2113	.126	2113
			8700	1.74	.125	.059	2120	.102	1696	.087	1413	.076	1211	.125	2120	.095	2120
			600	1.20	.089	.040	2126	.073	1701	.062	1418	.054	1215	.089	2126	.066	2126
			100	0.20	.017	.007	2138	.014	1711	.012	1426	.010	1222	.017	2138	.012	2138
750 (D) (750)	25 (25)	30 (30)	2500	3.33	.274	.115	2181	.229	1745	.198	1454	.177	1246	.274	2181	.214	2181
			1750	2.33	.197	.081	2200	.163	1760	.141	1467	.125	1257	.197	2200	.150	2200
			1160	1.55	.135	.054	2216	.111	1773	.095	1477	.084	1266	.135	2216	.099	2216
			870	1.16	.105	.041	2223	.086	1779	.073	1482	.064	1270	.105	2223	.075	2223
			600	0.80	.076	.028	2230	.062	1784	.052	1487	.046	1275	.076	2230	.052	2230
			100	0.13	.015	.005	2244	.012	1795	.010	1496	.009	1282	.015	2244	.009	2244
1000 (D) (1000)	50 (50)	20 (20)	2500	2.50	.216	.084	2111	.182	1689	.160	1407	.144	1206	.216	2111	.171	2111
			1750	1.75	.156	.059	2120	.131	1696	.113	1413	.101	1211	.156	2120	.118	2120
			1160	1.16	.108	.039	2127	.089	1701	.077	1418	.068	1215	.108	2127	.078	2127
			870	0.87	.084	.029	2130	.069	1704	.059	1420	.052	1217	.084	2130	.058	2130
			600	0.60	.060	.020	2133	.049	1707	.042	1422	.037	1219	.060	2133	.040	2133
			100	0.10	.012	.003	2139	.009	1712	.008	1426	.007	1223	.012	2139	.007	2139
1500 (D) (1500)	50 (50)	30 (30)	2500	1.67	.186	.059	2213	.158	1771	.140	1476	.126	1265	.186	2213	.140	2213
			1750	1.17	.134	.041	2223	.113	1779	.099	1482	.089	1270	.134	2223	.096	2223
			1160	0.77	.093	.027	2231	.077	1785	.067	1487	.060	1275	.093	2231	.063	2231
			870	0.58	.072	.021	2235	.059	1788	.051	1490	.045	1277	.072	2235	.047	2235
			600	0.40	.052	.014	2238	.042	1791	.036	1492	.032	1279	.052	2238	.032	2238
			100	0.07	.010	.002	2245	.008	1796	.007	1497	.006	1283	.010	2245	.005	2245
2000 (D) (2000)	50 (50)	40 (40)	2500	1.25	.155	.042	2100	.134	1680	.119	1400	.109	1200	.155	2100	.116	2100
			1750	0.88	.111	.029	2109	.094	1687	.083	1406	.075	1205	.111	2109	.079	2109
			1160	0.58	.076	.019	2116	.064	1693	.056	1410	.050	1209	.076	2116	.051	2116
			870	0.44	.059	.015	2119	.049	1695	.042	1413	.038	1211	.059	2119	.037	2119
			600	0.30	.042	.010	2122	.035	1698	.030	1415	.026	1213	.042	2122	.025	2122
			100	0.05	.008	.002	2128	.007	1702	.006	1419	.005	1216	.008	2128	.004	2128
3000 (D) (3000)	60 (60)	50 (50)	2500	0.83	.125	.026	1969	.109	1575	.099	1313	.091	1125	.125	1969	.093	1969
			1750	0.58	.088	.018	1976	.076	1580	.068	1317	.062	1129	.088	1976	.062	1976
			1160	0.39	.060	.012	1981	.051	1584	.045	1320	.041	1132	.060	1981	.039	1981
			870	0.29	.045	.009	1983	.038	1586	.034	1322	.030	1133	.045	1983	.028	1983
			600	0.20	.032	.006	1985	.027	1588	.023	1324	.021	1134	.032	1985	.019	1985
			100	0.03	.006	.001	1990	.005	1592	.004	1326	.004	1137	.006	1990	.003	1990
3600 (D) (3600)	60 (60)	60 (60)	2500	0.69	.112	.020	1823	.099	1458	.090	1215	.084	1042	.112	1823	.083	1823
			1750	0.49	.078	.014	1829	.068	1463	.061	1219	.056	1045	.078	1829	.055	1829
			1160	0.32	.052	.009	1833	.045	1466	.040	1222	.036	1047	.052	1833	.034	1833
			870	0.24	.040	.007	1835	.034	1468	.030	1224	.027	1049	.040	1835	.025	1835
			600	0.17	.028	.005	1837	.023	1470	.020	1225	.018	1050	.028	1837	.016	1837
			100	0.03	.005	.001	1841	.004	1473	.004	1227	.003	1052	.005	1841	.002	1841

1. Center Distance=Primary/Secondary.
2. Numbers shown in ( ) are actual ratios. Worm ratios are exact, helical ratios are rounded and are not exact.
3. If input speed is below 1160 RPM, please specify speed to insure proper lubrication.
4. See engineering section, pages 224-226, for further discussion regarding service factors.
5. Actual input HP must not exceed the thermal input HP capacity on a continuous basis.
6. When using synthetic oil, there is no thermal rating limitation. The Service Factor is 1.00.

THRUST AND OVERHUNG LOAD RATINGS

(D) Double Reduction Worm Gear
(H) Double Reduction Helical/Worm Gear

REDUCER SIZE
926

OVERHUNG LOAD CAPACITIES[1]							THRUST CAPACITIES				CENTER DISTANCE 1.750/2.625 (D) CENTER DISTANCE 2.060/2.625 (H)	
INPUT SHAFT	OUTPUT SHAFT[5]						OUTPUT SHAFT					
ALL MODELS	DB, DT[2]	DV SHAFT UP	DV SHAFT DOWN	DSF[3, 4] BASE SIDE	DSF[3, 4] COVER SIDE	DL	DB, DT, DV	DSF TOWARD BASE	DSF AWAY FROM BASE	DL AWAY FROM BASE	INPUT RPM	RATIO
153	1025	1025	961	2500	1350	1010	1500	2160	2160	2160	2500	500 (D) (500)
153	1025	1025	961	2500	1350	1010	1500	2160	2160	2160	1750	
153	1025	1025	961	2500	1350	1010	1500	2160	2160	2160	1160	
153	1025	1025	961	2500	1350	1010	1500	2160	2160	2160	870	
153	1025	1025	961	2500	1350	1010	1500	2160	2160	2160	600	
153	1025	1025	961	2500	1350	1010	1500	2160	2160	2160	100	
153	1025	1025	961	2500	1350	1010	1500	2160	2160	2160	2500	750 (D) (750)
153	1025	1025	961	2500	1350	1010	1500	2160	2160	2160	1750	
153	1025	1025	961	2500	1350	1010	1500	2160	2160	2160	1160	
153	1025	1025	961	2500	1350	1010	1500	2160	2160	2160	870	
153	1025	1025	961	2500	1350	1010	1500	2160	2160	2160	600	
153	1025	1025	961	2500	1350	1010	1500	2160	2160	2160	100	
171	1025	1025	961	2500	1350	1010	1500	2160	2160	2160	2500	1000 (D) (1000)
171	1025	1025	961	2500	1350	1010	1500	2160	2160	2160	1750	
171	1025	1025	961	2500	1350	1010	1500	2160	2160	2160	1160	
171	1025	1025	961	2500	1350	1010	1500	2160	2160	2160	870	
171	1025	1025	961	2500	1350	1010	1500	2160	2160	2160	600	
171	1025	1025	961	2500	1350	1010	1500	2160	2160	2160	100	
171	1025	1025	961	2500	1350	1010	1500	2160	2160	2160	2500	1500 (D) (1500)
171	1025	1025	961	2500	1350	1010	1500	2160	2160	2160	1750	
171	1025	1025	961	2500	1350	1010	1500	2160	2160	2160	1160	
171	1025	1025	961	2500	1350	1010	1500	2160	2160	2160	870	
171	1025	1025	961	2500	1350	1010	1500	2160	2160	2160	600	
171	1025	1025	961	2500	1350	1010	1500	2160	2160	2160	100	
171	1025	1025	961	2500	1350	1010	1500	2160	2160	2160	2500	2000 (D) (2000)
171	1025	1025	961	2500	1350	1010	1500	2160	2160	2160	1750	
171	1025	1025	961	2500	1350	1010	1500	2160	2160	2160	1160	
171	1025	1025	961	2500	1350	1010	1500	2160	2160	2160	870	
171	1025	1025	961	2500	1350	1010	1500	2160	2160	2160	600	
171	1025	1025	961	2500	1350	1010	1500	2160	2160	2160	100	
202	1025	1025	961	2500	1350	1010	1500	2160	2160	2160	2500	3000 (D) (3000)
202	1025	1025	961	2500	1350	1010	1500	2160	2160	2160	1750	
202	1025	1025	961	2500	1350	1010	1500	2160	2160	2160	1160	
202	1025	1025	961	2500	1350	1010	1500	2160	2160	2160	870	
202	1025	1025	961	2500	1350	1010	1500	2160	2160	2160	600	
202	1025	1025	961	2500	1350	1010	1500	2160	2160	2160	100	
202	1025	1025	961	2500	1350	1010	1500	2160	2160	2160	2500	3600 (D) (3600)
202	1025	1025	961	2500	1350	1010	1500	2160	2160	2160	1750	
202	1025	1025	961	2500	1350	1010	1500	2160	2160	2160	1160	
202	1025	1025	961	2500	1350	1010	1500	2160	2160	2160	870	
202	1025	1025	961	2500	1350	1010	1500	2160	2160	2160	600	
202	1025	1025	961	2500	1350	1010	1500	2160	2160	2160	100	

1. Overhung load given at one shaft diameter from housing or mounting flange. All values given in pounds.
2. Overhung load capacities are based on the direction and location of the load as shown in figure 1 on page 228. Consult factory for allowable OHL values if load is applied as shown in figure 2A, B, C or D on page 228.
3. Overhung load based on maximum bore size. Use of smaller driven shaft diameter may limit OHL capacity.
4. Overhung load capacity given at a point located 5.313 inches from centerline of housing.
5. For DSND output shaft overhung load capacities, contact the factory.

REDUCER SIZE
926

HORSEPOWER AND TORQUE RATINGS

(D) Double Reduction Worm Gear
(H) Double Reduction Helical/Worm Gear

WINSMITH®

CENTER DISTANCE[1] 1.750/2.625 (D)
CENTER DISTANCE[1] 2.060/2.625 (H)

HORSEPOWER AND TORQUE RATINGS (INCH POUNDS)

OVERALL RATIO[2]	PRIMARY RATIO[2]	SECONDARY RATIO[2]	INPUT RPM[3]	OUTPUT RPM	MECHANICAL RATINGS[4] 1.00 SERVICE FACTOR INPUT HP	1.00 SF OUTPUT HP	1.00 SF OUTPUT TORQUE	1.25 SF INPUT HP	1.25 SF OUTPUT TORQUE	1.50 SF INPUT HP	1.50 SF OUTPUT TORQUE	1.75 SF INPUT HP	1.75 SF OUTPUT TORQUE	THERMAL[5] INPUT HP	THERMAL[5] OUTPUT TORQUE	SYNTHETIC OIL MECHANICAL[6] INPUT HP	SYNTHETIC OIL MECHANICAL[6] OUTPUT TORQUE
4000 (D) (4150)	80 (83)	50 (50)	2500	0.60	.112	.019	1975	.099	1580	.090	1317	.084	1129	.112	1975	.082	1975
			1750	0.42	.078	.013	1980	.068	1584	.061	1320	.057	1131	.078	1980	.054	1980
			1160	0.28	.052	.009	1983	.045	1587	.040	1322	.036	1133	.052	1983	.034	1983
			870	0.21	.040	.007	1985	.034	1588	.030	1323	.027	1134	.040	1985	.024	1985
			600	0.14	.028	.005	1987	.024	1589	.021	1325	.019	1135	.028	1987	.016	1987
			100	0.02	.005	.001	1990	.004	1592	.004	1327	.003	1137	.005	1990	.002	1990
5000 (D) (5000)	100 (100)	50 (50)	2500	0.50	.103	.016	1978	.091	1582	.084	1318	.078	1130	.103	1978	.076	1978
			1750	0.35	.071	.011	1982	.062	1585	.056	1321	.052	1132	.071	1982	.050	1982
			1160	0.23	.047	.007	1985	.040	1588	.036	1323	.033	1134	.047	1985	.031	1985
			870	0.17	.035	.005	1986	.030	1589	.027	1324	.024	1135	.035	1986	.022	1986
			600	0.12	.025	.004	1987	.021	1590	.018	1325	.017	1136	.025	1987	.014	1987
			100	0.02	.004	.001	1990	.004	1592	.003	1327	.003	1137	.004	1990	.002	1990
6000 (D) (6000)	100 (100)	60 (60)	2500	0.42	.093	.012	1831	.084	1464	.077	1220	.073	1046	.093	1831	.070	1831
			1750	0.29	.064	.008	1834	.056	1467	.052	1223	.048	1048	.064	1834	.045	1834
			1160	0.19	.042	.006	1837	.036	1469	.033	1224	.030	1049	.042	1837	.027	1837
			870	0.15	.031	.004	1838	.027	1470	.024	1225	.022	1050	.031	1838	.019	1838
			600	0.10	.021	.003	1839	.018	1471	.016	1226	.015	1051	.021	1839	.013	1839
			100	0.02	.004	.001	1841	.003	1473	.003	1228	.002	1052	.004	1841	.002	1841
8000 (D) (8000)	100 (100)	80 (80)	2500	0.31	.077	.007	1395	.071	1116	.067	930	.064	797	.077	1395	.061	1395
			1750	0.22	.051	.005	1395	.047	1116	.043	930	.041	797	.051	1395	.038	1395
			1160	0.15	.033	.003	1395	.029	1116	.027	930	.025	797	.033	1395	.022	1395
			870	0.11	.024	.002	1395	.021	1116	.019	930	.018	797	.024	1395	.016	1395
			600	0.08	.016	.002	1395	.014	1116	.013	930	.012	797	.016	1395	.010	1395
			100	0.01	.003	.001	1395	.002	1116	.002	930	.002	797	.003	1395	.001	1395
10000 (D) (10000)	100 (100)	100 (100)	2500	0.25	.069	.005	1143	.065	914	.061	762	.059	653	.069	1143	.056	1143
			1750	0.18	.045	.003	1145	.042	916	.039	763	.038	654	.045	1145	.035	1145
			1160	0.12	.028	.002	1146	.026	917	.024	764	.023	655	.028	1146	.020	1146
			870	0.09	.020	.002	1147	.018	918	.017	765	.016	655	.020	1147	.014	1147
			600	0.06	.014	.001	1148	.012	918	.011	765	.010	656	.014	1148	.009	1148
			100	0.01	.002	.001	1149	.002	919	.002	766	.001	657	.002	1149	.001	1149

1. Center Distance=Primary/Secondary.
2. Numbers shown in ( ) are actual ratios. Worm ratios are exact, helical ratios are rounded and are not exact.
3. If input speed is below 1160 RPM, please specify speed to insure proper lubrication.
4. See engineering section, pages 224-226, for further discussion regarding service factors.
5. Actual input HP must not exceed the thermal input HP capacity on a continuous basis.
6. When using synthetic oil, there is no thermal rating limitation. The Service Factor is 1.00.

THRUST AND OVERHUNG LOAD RATINGS

(D) Double Reduction Worm Gear
(H) Double Reduction Helical/Worm Gear

REDUCER SIZE **926**

OVERHUNG LOAD CAPACITIES[1]							THRUST CAPACITIES				CENTER DISTANCE 1.750/2.625 (D) CENTER DISTANCE 2.060/2.625 (H)	
INPUT SHAFT	OUTPUT SHAFT[5]						OUTPUT SHAFT					
ALL MODELS	DB, DT[2]	DV SHAFT UP	DV SHAFT DOWN	DSF[3, 4] BASE SIDE	DSF[3, 4] COVER SIDE	DL	DB, DT, DV	DSF TOWARD BASE	DSF AWAY FROM BASE	DL AWAY FROM BASE	INPUT RPM	RATIO
200	1025	1025	961	2500	1350	1010	1500	2160	2160	2160	2500	4000 (D) (4150)
200	1025	1025	961	2500	1350	1010	1500	2160	2160	2160	1750	
200	1025	1025	961	2500	1350	1010	1500	2160	2160	2160	1160	
200	1025	1025	961	2500	1350	1010	1500	2160	2160	2160	870	
200	1025	1025	961	2500	1350	1010	1500	2160	2160	2160	600	
200	1025	1025	961	2500	1350	1010	1500	2160	2160	2160	100	
142	1025	1025	961	2500	1350	1010	1500	2160	2160	2160	2500	5000 (D) (5000)
136	1025	1025	961	2500	1350	1010	1500	2160	2160	2160	1750	
130	1025	1025	961	2500	1350	1010	1500	2160	2160	2160	1160	
125	1025	1025	961	2500	1350	1010	1500	2160	2160	2160	870	
118	1025	1025	961	2500	1350	1010	1500	2160	2160	2160	600	
105	1025	1025	961	2500	1350	1010	1500	2160	2160	2160	100	
142	1025	1025	961	2500	1350	1010	1500	2160	2160	2160	2500	6000 (D) (6000)
136	1025	1025	961	2500	1350	1010	1500	2160	2160	2160	1750	
130	1025	1025	961	2500	1350	1010	1500	2160	2160	2160	1160	
125	1025	1025	961	2500	1350	1010	1500	2160	2160	2160	870	
118	1025	1025	961	2500	1350	1010	1500	2160	2160	2160	600	
105	1025	1025	961	2500	1350	1010	1500	2160	2160	2160	100	
142	1025	1025	961	2500	1350	1010	1500	2160	2160	2160	2500	8000 (D) (8000)
136	1025	1025	961	2500	1350	1010	1500	2160	2160	2160	1750	
130	1025	1025	961	2500	1350	1010	1500	2160	2160	2160	1160	
125	1025	1025	961	2500	1350	1010	1500	2160	2160	2160	870	
118	1025	1025	961	2500	1350	1010	1500	2160	2160	2160	600	
105	1025	1025	961	2500	1350	1010	1500	2160	2160	2160	100	
142	1025	1025	961	2500	1350	1010	1500	2160	2160	2160	2500	10000 (D) (10000)
136	1025	1025	961	2500	1350	1010	1500	2160	2160	2160	1750	
130	1025	1025	961	2500	1350	1010	1500	2160	2160	2160	1160	
125	1025	1025	961	2500	1350	1010	1500	2160	2160	2160	870	
118	1025	1025	961	2500	1350	1010	1500	2160	2160	2160	600	
105	1025	1025	961	2500	1350	1010	1500	2160	2160	2160	100	

1. Overhung load given at one shaft diameter from housing or mounting flange. All values given in pounds.
2. Overhung load capacities are based on the direction and location of the load as shown in figure 1 on page 228. Consult factory for allowable OHL values if load is applied as shown in figure 2A, B, C or D on page 228.
3. Overhung load based on maximum bore size. Use of smaller driven shaft diameter may limit OHL capacity.
4. Overhung load capacity given at a point located 5.313 inches from centerline of housing.
5. For DSND output shaft overhung load capacities, contact the factory.

REDUCER SIZE
930

HORSEPOWER AND TORQUE RATINGS

(D) Double Reduction Worm Gear
(H) Double Reduction Helical/Worm Gear

WINSMITH®

CENTER DISTANCE[1] 2.000/3.000 (D) CENTER DISTANCE[1] 2.060/3.000 (H)					HORSEPOWER AND TORQUE RATINGS (INCH POUNDS)													
					MECHANICAL RATINGS[4]										THERMAL[5]		SYNTHETIC OIL MECHANICAL[6]	
					1.00 SERVICE FACTOR			1.25 SF		1.50 SF		1.75 SF					
OVERALL RATIO[2]	PRIMARY RATIO[2]	SECONDARY RATIO[2]	INPUT RPM[3]	OUTPUT RPM	INPUT HP	OUTPUT HP	OUTPUT TORQUE	INPUT HP	OUTPUT TORQUE	INPUT HP	OUTPUT TORQUE	INPUT HP	OUTPUT TORQUE	INPUT HP	OUTPUT TORQUE	INPUT HP	OUTPUT TORQUE
25 (H) (25.3)	5 (5.07)	5 (5)	2500	98.8	3.46	3.03	1932	2.77	1545	2.31	1288	1.98	1104	3.46	1932	3.46	1999
			1750	69.2	2.77	2.39	2176	2.22	1741	1.85	1451	1.59	1244	2.77	2176	2.77	2263
			1160	45.8	2.14	1.81	2493	1.71	1994	1.43	1662	1.22	1424	2.14	2493	2.14	2608
			870	34.4	1.76	1.47	2701	1.41	2161	1.17	1801	1.01	1543	1.76	2701	1.76	2837
			600	23.7	1.25	1.03	2740	1.00	2192	.834	1826	.715	1565	1.25	2740	1.25	2893
			100	3.95	.240	.187	2978	.192	2383	.160	1986	.137	1702	.240	2978	.240	3209
30 (H) (30.4)	6 (6.08)	5 (5)	2500	82.2	2.97	2.58	1977	2.38	1582	1.98	1318	1.70	1130	2.97	1977	2.97	2051
			1750	57.6	2.38	2.04	2230	1.91	1784	1.59	1486	1.36	1274	2.38	2230	2.38	2325
			1160	38.2	1.83	1.54	2542	1.46	2033	1.22	1694	1.05	1452	1.83	2542	1.83	2666
			870	28.6	1.41	1.17	2580	1.13	2064	.941	1720	.807	1474	1.41	2580	1.41	2717
			600	19.7	1.00	.819	2615	.800	2092	.667	1743	.572	1494	1.00	2615	1.00	2767
			100	3.29	.190	.146	2800	.152	2240	.127	1867	.109	1600	.190	2800	.190	3029
38 (H) (38.0)	5 (5.07)	7.5 (7.5)	2500	65.8	3.34	2.87	2753	2.67	2202	2.23	1835	1.91	1573	3.34	2753	3.21	2753
			1750	46.1	2.53	2.15	2936	2.03	2349	1.69	1957	1.45	1678	2.53	2936	2.42	2936
			1160	30.5	1.80	1.50	3088	1.44	2471	1.20	2059	1.03	1765	1.80	3088	1.71	3088
			870	22.9	1.40	1.15	3166	1.12	2533	.933	2111	.800	1809	1.40	3166	1.32	3166
			600	15.8	1.00	.812	3240	.801	2592	.668	2160	.573	1852	1.00	3240	.943	3240
			100	2.63	.186	.141	3382	.149	2706	.124	2255	.106	1933	.186	3382	.171	3382
50 (D) (50)	5 (5)	10 (10)	2500	50.0	2.72	2.18	2744	2.19	2195	1.84	1829	1.58	1568	2.72	2744	2.51	2744
			1750	35.0	2.06	1.61	2896	1.66	2317	1.39	1931	1.19	1655	2.06	2896	1.88	2896
			1160	23.2	1.47	1.11	3022	1.18	2418	.987	2015	.849	1727	1.47	3022	1.32	3022
			870	17.4	1.15	.852	3086	.924	2469	.772	2057	.664	1763	1.51	3086	1.02	3086
			600	12.0	.833	.599	3147	.668	2517	.558	2098	.480	1798	.833	3147	.729	3147
			100	2.00	.165	.104	3262	.132	2610	.110	2175	.095	1864	.165	3262	.135	3262
50 (H) (50.7)	5 (5.07)	10 (10)	2500	49.3	2.54	2.15	2750	2.03	2200	1.69	1834	1.45	1572	2.54	2750	2.43	2750
			1750	34.5	1.90	1.59	2901	1.52	2321	1.27	1934	1.09	1658	1.90	2901	1.81	2901
			1160	22.9	1.34	1.10	3026	1.07	2420	.894	2017	.767	1729	1.34	3026	1.27	3026
			870	17.2	1.04	.841	3089	.831	2471	.693	2059	.595	1765	1.04	3089	.978	3089
			600	11.8	.740	.591	3149	.593	2519	.494	2099	.424	1799	.740	3149	.694	3149
			100	1.97	.137	.102	3263	.109	2610	.091	2175	.078	1864	.137	3263	.125	3263
60 (H) (60.8)	6 (6.08)	10 (10)	2500	41.1	2.20	1.85	2833	1.76	2266	1.47	1889	1.26	1619	2.20	2833	2.10	2833
			1750	28.8	1.63	1.35	2962	1.31	2369	1.09	1975	.936	1692	1.63	2962	1.55	2962
			1160	19.1	1.14	.929	3067	.914	2454	.762	2045	.654	1753	1.14	3067	1.08	3067
			870	14.3	.881	.708	3121	.705	2496	.588	2080	.504	1783	.881	3121	.828	3121
			600	9.87	.626	.497	3171	.501	2537	.418	2114	.358	1812	.626	3171	.585	3171
			100	1.64	.115	.085	3266	.092	2613	.077	2178	.066	1867	.115	3266	.105	3266
75 (D) (75)	5 (5)	15 (15)	2500	33.3	2.07	1.56	2953	1.67	2362	1.40	1968	1.21	1687	2.07	2953	1.87	2953
			1750	23.3	1.57	1.15	3111	1.26	2489	1.06	2074	.913	1778	1.57	3111	1.40	3111
			1160	15.5	1.12	.795	3242	.902	2593	.755	2161	.650	1852	1.12	3242	.980	3242
			870	11.6	.881	.609	3308	.708	2646	.592	2205	.509	1890	.881	3308	.760	3308
			600	8.00	.640	.428	3371	.514	2696	.429	2247	.369	1926	.640	3371	.543	3371
			100	1.33	.129	.074	3490	.103	2792	.086	2327	.074	1994	.129	3490	.101	3490

1. Center Distance=Primary/Secondary.
2. Numbers shown in ( ) are actual ratios. Worm ratios are exact, helical ratios are rounded and are not exact.
3. If input speed is below 1160 RPM, please specify speed to insure proper lubrication.
4. See engineering section, pages 224-226, for further discussion regarding service factors.
5. Actual input HP must not exceed the thermal input HP capacity on a continuous basis.
6. When using synthetic oil, there is no thermal rating limitation. The Service Factor is 1.00.

THRUST AND OVERHUNG LOAD RATINGS

(D) Double Reduction Worm Gear
(H) Double Reduction Helical/Worm Gear

REDUCER SIZE **930**

OVERHUNG LOAD CAPACITIES[1]							THRUST CAPACITIES				CENTER DISTANCE 2.000/3.000 (D) CENTER DISTANCE 2.060/3.000 (H)	
INPUT SHAFT	OUTPUT SHAFT[5]						OUTPUT SHAFT					
ALL MODELS	DB, DT[2]	DV SHAFT UP	DV SHAFT DOWN	DSF[3,4] BASE SIDE	DSF[3,4] COVER SIDE	DL	DB, DT, DV	DSF TOWARD BASE	DSF AWAY FROM BASE	DL AWAY FROM BASE	INPUT RPM	RATIO
86	1350	1350	1230	1601	1601	1900	1281	2800	2800	1941	2500	**25 (H)** (25.3)
97	1350	1350	1230	1784	1784	1900	1486	2800	2800	2234	1750	
113	1350	1350	1230	2042	1800	1900	1764	2800	2800	2617	1160	
133	1350	1350	1230	2235	1800	1900	1974	2800	2800	2899	870	
235	1350	1350	1230	2350	1800	1900	2315	2800	2800	3275	600	
250	1350	1350	1230	2350	1800	1900	2400	2800	2800	3275	100	
86	1350	1350	1230	1694	1694	1900	1382	2800	2800	2088	2500	**30 (H)** (30.4)
96	1350	1350	1230	1893	1800	1900	1610	2800	2800	2407	1750	
119	1350	1350	1230	2156	1800	1900	1887	2800	2800	2783	1160	
191	1350	1350	1230	2350	1800	1900	2137	2800	2800	3115	870	
250	1350	1350	1230	2350	1800	1900	2400	2800	2800	3275	600	
250	1350	1350	1230	2350	1800	1900	2400	2800	2800	3275	100	
74	1350	1350	1230	1812	1800	1900	1645	2800	2800	2393	2500	**38 (H)** (38.0)
144	1350	1350	1230	2061	1800	1900	1919	2800	2800	2765	1750	
203	1350	1350	1230	2350	1800	1900	2272	2800	2800	3237	1160	
250	1350	1350	1230	2350	1800	1900	2400	2800	2800	3275	870	
250	1350	1350	1230	2350	1800	1900	2400	2800	2800	3275	600	
250	1350	1350	1230	2350	1800	1900	2400	2800	2800	3275	100	
260	1350	1350	1230	2011	1800	1900	1964	2800	2800	2776	2500	**50 (D)** (50)
284	1350	1350	1230	2300	1800	1900	2287	2800	2800	3206	1750	
303	1350	1350	1230	2350	1800	1900	2400	2800	2800	3275	1160	
303	1350	1350	1230	2350	1800	1900	2400	2800	2800	3275	870	
303	1350	1350	1230	2350	1800	1900	2400	2800	2800	3275	600	
303	1350	1350	1230	2350	1800	1900	2400	2800	2800	3275	100	
198	1350	1350	1230	2337	1800	1900	2400	2800	2800	3275	2500	**50 (H)** (50.7)
239	1350	1350	1230	2350	1800	1900	2400	2800	2800	3275	1750	
250	1350	1350	1230	2350	1800	1900	2400	2800	2800	3275	1160	
250	1350	1350	1230	2350	1800	1900	2400	2800	2800	3275	870	
250	1350	1350	1230	2350	1800	1900	2400	2800	2800	3275	600	
250	1350	1350	1230	2350	1800	1900	2400	2800	2800	3275	100	
197	1350	1350	1230	2350	1800	1900	2400	2800	2800	3275	2500	**60 (H)** (60.8)
240	1350	1350	1230	2350	1800	1900	2400	2800	2800	3275	1750	
250	1350	1350	1230	2350	1800	1900	2400	2800	2800	3275	1160	
250	1350	1350	1230	2350	1800	1900	2400	2800	2800	3275	870	
250	1350	1350	1230	2350	1800	1900	2400	2800	2800	3275	600	
250	1350	1350	1230	2350	1800	1900	2400	2800	2800	3275	100	
260	1350	1350	1230	2337	1800	1900	2400	2800	2800	3275	2500	**75 (D)** (75)
284	1350	1350	1230	2350	1800	1900	2400	2800	2800	3275	1750	
303	1350	1350	1230	2350	1800	1900	2400	2800	2800	3275	1160	
303	1350	1350	1230	2350	1800	1900	2400	2800	2800	3275	870	
303	1350	1350	1230	2350	1800	1900	2400	2800	2800	3275	600	
303	1350	1350	1230	2350	1800	1900	2400	2800	2800	3275	100	

1. Overhung load given at one shaft diameter from housing or mounting flange. All values given in pounds.
2. Overhung load capacities are based on the direction and location of the load as shown in figure 1 on page 228. Consult factory for allowable OHL values if load is applied as shown in figure 2A, B, C or D on page 228.
3. Overhung load based on maximum bore size. Use of smaller driven shaft diameter may limit OHL capacity.
4. Overhung load capacity given at a point located 6.875 inches from centerline of housing.
5. For DSND output shaft overhung load capacities, contact the factory.

REDUCER SIZE
930

HORSEPOWER AND TORQUE RATINGS

(D) Double Reduction Worm Gear
(H) Double Reduction Helical/Worm Gear

WINSMITH®

CENTER DISTANCE[1] 2.000/3.000 (D) CENTER DISTANCE[1] 2.060/3.000 (H)					HORSEPOWER AND TORQUE RATINGS (INCH POUNDS)													
					MECHANICAL RATINGS[4]										THERMAL[5]		SYNTHETIC OIL MECHANICAL[6]	
					1.00 SERVICE FACTOR			1.25 SF		1.50 SF		1.75 SF					
OVERALL RATIO[2]	PRIMARY RATIO[2]	SECONDARY RATIO[2]	INPUT RPM[3]	OUTPUT RPM	INPUT HP	OUTPUT HP	OUTPUT TORQUE	INPUT HP	OUTPUT TORQUE	INPUT HP	OUTPUT TORQUE	INPUT HP	OUTPUT TORQUE	INPUT HP	OUTPUT TORQUE	INPUT HP	OUTPUT TORQUE
75 (H) (76.0)	5 (5.07)	15 (15)	2500	32.9	1.92	1.55	2959	1.54	2367	1.28	1973	1.10	1691	1.92	2959	1.81	2959
			1750	23.0	1.44	1.14	3116	1.16	2493	.966	2077	.829	1781	1.44	3116	1.35	3116
			1160	15.3	1.02	.786	3245	.818	2596	.682	2163	.585	1854	1.02	3245	.945	3245
			870	11.5	.793	.601	3310	.635	2648	.530	2207	.455	1892	.793	3310	.731	3310
			600	7.89	.568	.422	3372	.455	2698	.379	2248	.325	1927	.568	3372	.519	3372
			100	1.32	.107	.073	3490	.085	2792	.071	2327	.061	1994	.107	3490	.094	3490
90 (H) (91.1)	6 (6.08)	15 (15)	2500	27.4	1.66	1.33	3045	1.33	2436	1.11	2030	.956	1740	1.66	3045	1.56	3045
			1750	19.2	1.24	.969	3179	.995	2543	.830	2119	.713	1816	1.24	3179	1.16	3179
			1160	12.3	.872	.664	3288	.698	2631	.582	2192	.500	1879	.872	3288	.804	3288
			870	9.55	.675	.507	3343	.540	2675	.451	2229	.387	1911	.675	3343	.619	3343
			600	6.59	.481	.355	3396	.385	2716	.321	2264	.276	1940	.481	3396	.439	3396
			100	1.10	.090	.061	3490	.072	2792	.060	2327	.051	1994	.090	3490	.079	3490
100 (D) (100)	5 (5)	20 (20)	2500	25.0	1.61	1.16	2923	1.30	2338	1.09	1949	.946	1670	1.61	2923	1.43	2923
			1750	17.5	1.22	.852	3067	.981	2453	.824	2044	.711	1752	1.22	3067	1.06	3067
			1160	11.6	.870	.586	3185	.700	2548	.586	2123	.506	1820	.870	3185	.745	3185
			870	8.70	.682	.448	3244	.549	2596	.459	2163	.396	1854	.682	3244	.576	3244
			600	6.00	.495	.314	3301	.398	2641	.333	2201	.287	1886	.495	3301	.411	3301
			100	1.00	.100	.054	3408	.080	2727	.067	2272	.058	1948	.100	3408	.077	3408
100 (H) (101.3)	5 (5.07)	20 (20)	2500	24.7	1.48	1.15	2929	1.19	2343	.993	1953	.853	1674	1.48	2929	1.38	2929
			1750	17.3	1.12	.842	3071	.894	2457	.746	2047	.641	1755	1.12	3071	1.03	3071
			1160	11.5	.788	.579	3188	.631	2550	.527	2125	.452	1822	.788	3188	.718	3188
			870	8.59	.612	.442	3247	.490	2597	.409	2164	.351	1855	.612	3247	.555	3247
			600	5.92	.439	.310	3303	.351	2642	.293	2202	.252	1887	.439	3303	.394	3303
			100	0.99	.083	.053	3409	.066	2727	.055	2272	.047	1948	.083	3409	.072	3409
120 (H) (121.5)	6 (6.08)	20 (20)	2500	20.6	1.29	.982	3007	1.03	2406	.860	2005	.739	1718	1.29	3007	1.19	3007
			1750	14.4	.958	.715	3128	.768	2503	.641	2085	.550	1788	.958	3128	.878	3128
			1160	9.55	.672	.489	3227	.539	2581	.449	2151	.386	1844	.672	3227	.610	3227
			870	7.16	.521	.372	3277	.417	2621	.348	2184	.299	1872	.521	3277	.470	3277
			600	4.94	.372	.260	3323	.298	2659	.248	2216	.213	1899	.372	3323	.333	3323
			100	0.82	.070	.045	3412	.056	2730	.047	2275	.040	1950	.070	3412	.060	3412
150 (D) (150)	10 (10)	15 (15)	2500	16.7	1.22	.852	3221	.988	2577	.832	2148	.720	1841	1.22	3221	1.07	3221
			1750	11.7	.902	.612	3307	.728	2645	.612	2204	.529	1889	.902	3307	.781	3307
			1160	7.73	.631	.414	3375	.508	2700	.426	2250	.368	1929	.631	3375	.536	3375
			870	5.80	.489	.314	3410	.394	2728	.330	2273	.285	1948	.489	3410	.410	3410
			600	4.00	.351	.218	3442	.282	2753	.236	2294	.204	1967	.351	3442	.290	3442
			100	0.67	.069	.037	3490	.055	2792	.046	2327	.039	1994	.069	3490	.053	3490
150 (H) (152.0)	5 (5.07)	30 (30)	2500	16.5	1.15	.794	3044	.920	2435	.769	2029	.661	1739	1.15	3044	1.03	3044
			1750	11.5	.873	.585	3200	.700	2560	.585	2134	.502	1829	.873	3200	.770	3200
			1160	7.63	.625	.403	3329	.501	2663	.418	2219	.359	1902	.625	3329	.543	3329
			870	5.72	.490	.308	3394	.392	2715	.328	2263	.281	1940	.490	3394	.421	3394
			600	3.95	.354	.216	3456	.284	2765	.237	2304	.203	1975	.354	3456	.301	3456
			100	0.66	.069	.037	3573	.056	2859	.046	2382	.040	2042	.069	3573	.056	3573

1. Center Distance=Primary/Secondary.
2. Numbers shown in ( ) are actual ratios. Worm ratios are exact, helical ratios are rounded and are not exact.
3. If input speed is below 1160 RPM, please specify speed to insure proper lubrication.
4. See engineering section, pages 224-226, for further discussion regarding service factors.
5. Actual input HP must not exceed the thermal input HP capacity on a continuous basis.
6. When using synthetic oil, there is no thermal rating limitation. The Service Factor is 1.00.

THRUST AND OVERHUNG LOAD RATINGS

(D) Double Reduction Worm Gear
(H) Double Reduction Helical/Worm Gear

REDUCER SIZE **930**

OVERHUNG LOAD CAPACITIES[1]							THRUST CAPACITIES				CENTER DISTANCE 2.000/3.000 (D) CENTER DISTANCE 2.060/3.000 (H)	
INPUT SHAFT	OUTPUT SHAFT[5]						OUTPUT SHAFT					
ALL MODELS	DB, DT[2]	DV SHAFT UP	DV SHAFT DOWN	DSF[3, 4] BASE SIDE	DSF[3, 4] COVER SIDE	DL	DB, DT, DV	DSF TOWARD BASE	DSF AWAY FROM BASE	DL AWAY FROM BASE	INPUT RPM	RATIO
250	1350	1350	1230	2350	1800	1900	2400	2800	2800	3275	2500	75 (H) (76.0)
250	1350	1350	1230	2350	1800	1900	2400	2800	2800	3275	1750	
250	1350	1350	1230	2350	1800	1900	2400	2800	2800	3275	1160	
250	1350	1350	1230	2350	1800	1900	2400	2800	2800	3275	870	
250	1350	1350	1230	2350	1800	1900	2400	2800	2800	3275	600	
250	1350	1350	1230	2350	1800	1900	2400	2800	2800	3275	100	
250	1350	1350	1230	2350	1800	1900	2400	2800	2800	3275	2500	90 (H) (91.1)
250	1350	1350	1230	2350	1800	1900	2400	2800	2800	3275	1750	
250	1350	1350	1230	2350	1800	1900	2400	2800	2800	3275	1160	
250	1350	1350	1230	2350	1800	1900	2400	2800	2800	3275	870	
250	1350	1350	1230	2350	1800	1900	2400	2800	2800	3275	600	
250	1350	1350	1230	2350	1800	1900	2400	2800	2800	3275	100	
260	1350	1350	1230	2350	1800	1900	2400	2800	2800	3275	2500	100 (D) (100)
284	1350	1350	1230	2350	1800	1900	2400	2800	2800	3275	1750	
303	1350	1350	1230	2350	1800	1900	2400	2800	2800	3275	1160	
303	1350	1350	1230	2350	1800	1900	2400	2800	2800	3275	870	
303	1350	1350	1230	2350	1800	1900	2400	2800	2800	3275	600	
303	1350	1350	1230	2350	1800	1900	2400	2800	2800	3275	100	
250	1350	1350	1230	2350	1800	1900	2400	2800	2800	3275	2500	100 (H) (101.3)
250	1350	1350	1230	2350	1800	1900	2400	2800	2800	3275	1750	
250	1350	1350	1230	2350	1800	1900	2400	2800	2800	3275	1160	
250	1350	1350	1230	2350	1800	1900	2400	2800	2800	3275	870	
250	1350	1350	1230	2350	1800	1900	2400	2800	2800	3275	600	
250	1350	1350	1230	2350	1800	1900	2400	2800	2800	3275	100	
250	1350	1350	1230	2350	1800	1900	2400	2800	2800	3275	2500	120 (H) (121.5)
250	1350	1350	1230	2350	1800	1900	2400	2800	2800	3275	1750	
250	1350	1350	1230	2350	1800	1900	2400	2800	2800	3275	1160	
250	1350	1350	1230	2350	1800	1900	2400	2800	2800	3275	870	
250	1350	1350	1230	2350	1800	1900	2400	2800	2800	3275	600	
250	1350	1350	1230	2350	1800	1900	2400	2800	2800	3275	100	
219	1350	1350	1230	2350	1800	1900	2400	2800	2800	3275	2500	150 (D) (150)
219	1350	1350	1230	2350	1800	1900	2400	2800	2800	3275	1750	
219	1350	1350	1230	2350	1800	1900	2400	2800	2800	3275	1160	
219	1350	1350	1230	2350	1800	1900	2400	2800	2800	3275	870	
219	1350	1350	1230	2350	1800	1900	2400	2800	2800	3275	600	
152	1350	1350	1230	2350	1800	1900	2400	2800	2800	3275	100	
250	1350	1350	1230	2350	1800	1900	2400	2800	2800	3275	2500	150 (H) (152.0)
250	1350	1350	1230	2350	1800	1900	2400	2800	2800	3275	1750	
250	1350	1350	1230	2350	1800	1900	2400	2800	2800	3275	1160	
250	1350	1350	1230	2350	1800	1900	2400	2800	2800	3275	870	
250	1350	1350	1230	2350	1800	1900	2400	2800	2800	3275	600	
250	1350	1350	1230	2350	1800	1900	2400	2800	2800	3275	100	

1. Overhung load given at one shaft diameter from housing or mounting flange. All values given in pounds.
2. Overhung load capacities are based on the direction and location of the load as shown in figure 1 on page 228. Consult factory for allowable OHL values if load is applied as shown in figure 2A, B, C or D on page 228.
3. Overhung load based on maximum bore size. Use of smaller driven shaft diameter may limit OHL capacity.
4. Overhung load capacity given at a point located 6.875 inches from centerline of housing.
5. For DSND output shaft overhung load capacities, contact the factory.

REDUCER SIZE
930

HORSEPOWER AND TORQUE RATINGS

(D) Double Reduction Worm Gear
(H) Double Reduction Helical/Worm Gear

WINSMITH

CENTER DISTANCE[1] 2.000/3.000 (D) CENTER DISTANCE[1] 2.060/3.000 (H)					HORSEPOWER AND TORQUE RATINGS (INCH POUNDS)													
					MECHANICAL RATINGS[4]										THERMAL[5]		SYNTHETIC OIL MECHANICAL[6]	
					1.00 SERVICE FACTOR			1.25 SF		1.50 SF		1.75 SF						
OVERALL RATIO[2]	PRIMARY RATIO[2]	SECONDARY RATIO[2]	INPUT RPM[3]	OUTPUT RPM	INPUT HP	OUTPUT HP	OUTPUT TORQUE	INPUT HP	OUTPUT TORQUE	INPUT HP	OUTPUT TORQUE	INPUT HP	OUTPUT TORQUE	INPUT HP	OUTPUT TORQUE	INPUT HP	OUTPUT TORQUE
180 (H) (182.3)	6 (6.08)	30 (30)	2500	13.7	1.00	.681	3130	.802	2504	.670	2086	.576	1788	1.00	3130	.888	3130
			1750	9.60	.755	.497	3263	.605	2611	.505	2175	.434	1865	.755	3263	.661	3263
			1160	6.36	.536	.340	3372	.430	2698	.359	2248	.308	1927	.536	3372	.463	3372
			870	4.77	.418	.260	3427	.335	2742	.280	2285	.240	1958	.418	3427	.358	3427
			600	3.29	.301	.182	3479	.241	2783	.201	2319	.173	1988	.301	3479	.254	3479
			100	0.55	.059	.031	3577	.047	2862	.039	2385	.034	2044	.059	3577	.047	3577
200 (D) (200)	10 (10)	20 (20)	2500	12.5	.953	.628	3166	.773	2533	.653	2111	.567	1809	.953	3166	.824	3166
			1750	8.75	.702	.450	3243	.568	2595	.478	2162	.415	1853	.702	3243	.596	3243
			1160	5.80	.491	.304	3305	.396	2644	.333	2203	.288	1889	.491	3305	.408	3305
			870	4.35	.380	.230	3336	.307	2669	.257	2224	.222	1906	.380	3336	.312	3336
			600	3.00	.273	.160	3365	.220	2692	.184	2243	.159	1923	.273	3365	.220	3365
			100	0.50	.054	.027	3419	.043	2735	.036	2279	.031	1954	.054	3419	.040	3419
200 (H) (202.6)	5 (5.07)	40 (40)	2500	12.3	.885	.571	2918	.711	2334	.594	1945	.511	1667	.885	2918	.772	2918
			1750	8.64	.674	.419	3057	.541	2445	.452	2038	.389	1747	.674	3057	.579	3057
			1160	5.73	.483	.288	3171	.387	2536	.324	2114	.278	1812	.483	3171	.407	3171
			870	4.29	.379	.220	3228	.304	2582	.254	2152	.218	1845	.379	3228	.316	3228
			600	2.96	.274	.154	3282	.220	2626	.184	2188	.158	1876	.274	3282	.225	3282
			100	0.49	.054	.027	3386	.044	2708	.036	2257	.031	1935	.054	3386	.042	3386
250 (H) (253.3)	5 (5.07)	50 (50)	2500	9.87	.713	.432	2758	.573	2207	.480	1839	.413	1576	.713	2758	.608	2758
			1750	6.91	.543	.316	2882	.436	2305	.365	1921	.314	1647	.543	2882	.455	2882
			1160	4.58	.390	.217	2983	.313	2386	.261	1989	.225	1704	.390	2983	.320	2983
			870	3.43	.306	.165	3034	.245	2427	.205	2023	.176	1734	.306	3034	.248	3034
			600	2.37	.222	.116	3082	.178	2466	.149	2055	.128	1761	.222	3082	.177	3082
			100	0.39	.044	.020	3173	.035	2539	.030	2116	.025	1813	.044	3173	.033	3173
300 (D) (300)	20 (20)	15 (15)	2500	8.33	.723	.445	3365	.588	2692	.498	2243	.434	1923	.723	3365	.613	3365
			1750	5.83	.528	.316	3409	.428	2727	.362	2273	.314	1948	.528	3409	.439	3409
			1160	3.87	.367	.211	3444	.297	2755	.250	2296	.216	1968	.367	3444	.298	3444
			870	2.90	.284	.159	3462	.229	2769	.193	2308	.167	1978	.284	3462	.227	3462
			600	2.00	.205	.110	3478	.165	2782	.139	2319	.120	1987	.205	3478	.160	3478
			100	0.33	.040	.018	3490	.032	2792	.027	2327	.023	1994	.040	3490	.029	3490
300 (H) (303.8)	6 (6.08)	50 (50)	2500	8.23	.622	.369	2826	.500	2261	.418	1884	.360	1615	.622	2826	.525	2826
			1750	5.76	.470	.268	2931	.377	2345	.316	1954	.271	1675	.470	2931	.390	2931
			1160	3.82	.335	.183	3017	.269	2413	.224	2011	.193	1724	.335	3017	.272	3017
			870	2.86	.262	.139	3059	.210	2448	.175	2040	.151	1748	.262	3059	.210	3059
			600	1.97	.189	.097	3100	.151	2480	.127	2067	.109	1771	.189	3100	.150	3100
			100	0.33	.037	.017	3176	.030	2541	.025	2118	.021	1815	.037	3176	.028	3176
360 (H) (364.6)	6 (6.08)	60 (60)	2500	6.86	.513	.286	2627	.412	2102	.345	1752	.297	1501	.513	2627	.423	2627
			1750	4.80	.388	.207	2721	.312	2177	.261	1814	.224	1555	.388	2721	.314	2721
			1160	3.18	.276	.141	2797	.222	2238	.186	1865	.160	1598	.276	2797	.219	2797
			870	2.39	.214	.106	2798	.171	2238	.143	1865	.123	1599	.214	2798	.167	2798
			600	1.65	.152	.073	2798	.122	2238	.102	1865	.088	1599	.152	2798	.117	2798
			100	0.27	.030	.012	2798	.024	2238	.020	1865	.017	1599	.030	2798	.021	2798

1. Center Distance=Primary/Secondary.
2. Numbers shown in ( ) are actual ratios. Worm ratios are exact, helical ratios are rounded and are not exact.
3. If input speed is below 1160 RPM, please specify speed to insure proper lubrication.
4. See engineering section, pages 224-226, for further discussion regarding service factors.
5. Actual input HP must not exceed the thermal input HP capacity on a continuous basis.
6. When using synthetic oil, there is no thermal rating limitation. The Service Factor is 1.00.

THRUST AND OVERHUNG LOAD RATINGS

(D) Double Reduction Worm Gear
(H) Double Reduction Helical/Worm Gear

REDUCER SIZE **930**

OVERHUNG LOAD CAPACITIES[1]							THRUST CAPACITIES				CENTER DISTANCE 2.000/3.000 (D) CENTER DISTANCE 2.060/3.000 (H)	
INPUT SHAFT	OUTPUT SHAFT[5]						OUTPUT SHAFT					
ALL MODELS	DB, DT[2]	DV SHAFT UP	DV SHAFT DOWN	DSF[3,4] BASE SIDE	DSF[3,4] COVER SIDE	DL	DB, DT, DV	DSF TOWARD BASE	DSF AWAY FROM BASE	DL AWAY FROM BASE	INPUT RPM	RATIO
250	1350	1350	1230	2350	1800	1900	2400	2800	2800	3275	2500	180 (H) (182.3)
250	1350	1350	1230	2350	1800	1900	2400	2800	2800	3275	1750	
250	1350	1350	1230	2350	1800	1900	2400	2800	2800	3275	1160	
250	1350	1350	1230	2350	1800	1900	2400	2800	2800	3275	870	
250	1350	1350	1230	2350	1800	1900	2400	2800	2800	3275	600	
250	1350	1350	1230	2350	1800	1900	2400	2800	2800	3275	100	
219	1350	1350	1230	2350	1800	1900	2400	2800	2800	3275	2500	200 (D) (200)
219	1350	1350	1230	2350	1800	1900	2400	2800	2800	3275	1750	
219	1350	1350	1230	2350	1800	1900	2400	2800	2800	3275	1160	
219	1350	1350	1230	2350	1800	1900	2400	2800	2800	3275	870	
219	1350	1350	1230	2350	1800	1900	2400	2800	2800	3275	600	
152	1350	1350	1230	2350	1800	1900	2400	2800	2800	3275	100	
250	1350	1350	1230	2350	1800	1900	2400	2800	2800	3275	2500	200 (H) (202.6)
250	1350	1350	1230	2350	1800	1900	2400	2800	2800	3275	1750	
250	1350	1350	1230	2350	1800	1900	2400	2800	2800	3275	1160	
250	1350	1350	1230	2350	1800	1900	2400	2800	2800	3275	870	
250	1350	1350	1230	2350	1800	1900	2400	2800	2800	3275	600	
250	1350	1350	1230	2350	1800	1900	2400	2800	2800	3275	100	
250	1350	1350	1230	2350	1800	1900	2400	2800	2800	3275	2500	250 (H) (253.3)
250	1350	1350	1230	2350	1800	1900	2400	2800	2800	3275	1750	
250	1350	1350	1230	2350	1800	1900	2400	2800	2800	3275	1160	
250	1350	1350	1230	2350	1800	1900	2400	2800	2800	3275	870	
250	1350	1350	1230	2350	1800	1900	2400	2800	2800	3275	600	
250	1350	1350	1230	2350	1800	1900	2400	2800	2800	3275	100	
247	1350	1350	1230	2350	1800	1900	2400	2800	2800	3275	2500	300 (D) (300)
247	1350	1350	1230	2350	1800	1900	2400	2800	2800	3275	1750	
247	1350	1350	1230	2350	1800	1900	2400	2800	2800	3275	1160	
247	1350	1350	1230	2350	1800	1900	2400	2800	2800	3275	870	
236	1350	1350	1230	2350	1800	1900	2400	2800	2800	3275	600	
172	1350	1350	1230	2350	1800	1900	2400	2800	2800	3275	100	
250	1350	1350	1230	2350	1800	1900	2400	2800	2800	3275	2500	300 (H) (303.8)
250	1350	1350	1230	2350	1800	1900	2400	2800	2800	3275	1750	
250	1350	1350	1230	2350	1800	1900	2400	2800	2800	3275	1160	
250	1350	1350	1230	2350	1800	1900	2400	2800	2800	3275	870	
250	1350	1350	1230	2350	1800	1900	2400	2800	2800	3275	600	
250	1350	1350	1230	2350	1800	1900	2400	2800	2800	3275	100	
250	1350	1350	1230	2350	1800	1900	2400	2800	2800	3275	2500	360 (H) (364.6)
250	1350	1350	1230	2350	1800	1900	2400	2800	2800	3275	1750	
250	1350	1350	1230	2350	1800	1900	2400	2800	2800	3275	1160	
250	1350	1350	1230	2350	1800	1900	2400	2800	2800	3275	870	
250	1350	1350	1230	2350	1800	1900	2400	2800	2800	3275	600	
250	1350	1350	1230	2350	1800	1900	2400	2800	2800	3275	100	

1. Overhung load given at one shaft diameter from housing or mounting flange. All values given in pounds.
2. Overhung load capacities are based on the direction and location of the load as shown in figure 1 on page 228. Consult factory for allowable OHL values if load is applied as shown in figure 2A, B, C or D on page 228.
3. Overhung load based on maximum bore size. Use of smaller driven shaft diameter may limit OHL capacity.
4. Overhung load capacity given at a point located 6.875 inches from centerline of housing.
5. For DSND output shaft overhung load capacities, contact the factory.

REDUCER SIZE
930

HORSEPOWER AND TORQUE RATINGS

(D) Double Reduction Worm Gear
(H) Double Reduction Helical/Worm Gear

WINSMITH®

CENTER DISTANCE[1] 2.000/3.000 (D) CENTER DISTANCE[1] 2.060/3.000 (H)					HORSEPOWER AND TORQUE RATINGS (INCH POUNDS)													
					MECHANICAL RATINGS[4]										THERMAL[5]		SYNTHETIC OIL MECHANICAL[6]	
					1.00 SERVICE FACTOR			1.25 SF		1.50 SF		1.75 SF						
OVERALL RATIO[2]	PRIMARY RATIO[2]	SECOND-ARY RATIO[2]	INPUT RPM[3]	OUTPUT RPM	INPUT HP	OUTPUT HP	OUTPUT TORQUE	INPUT HP	OUTPUT TORQUE	INPUT HP	OUTPUT TORQUE	INPUT HP	OUTPUT TORQUE	INPUT HP	OUTPUT TORQUE	INPUT HP	OUTPUT TORQUE
500 (D) (500)	25 (25)	20 (20)	2500	5.00	.484	.264	3322	.396	2658	.338	2215	.297	1898	.484	3322	.398	3322
			1750	3.50	.351	.186	3354	.287	2683	.244	2236	.213	1917	.351	3354	.282	3354
			1160	2.32	.243	.124	3380	.197	2704	.167	2253	.146	1931	.243	3380	.190	3380
			870	1.74	.188	.094	3392	.152	2714	.129	2261	.112	1938	.188	3392	.144	3392
			600	1.20	.136	.065	3404	.110	2723	.093	2269	.081	1945	.136	3404	.102	3404
			100	0.20	.027	.011	3426	.021	2741	.018	2284	.015	1958	.027	3426	.018	3426
750 (D) (750)	25 (25)	30 (30)	2500	3.33	.401	.184	3478	.330	2782	.283	2318	.249	1987	.401	3478	.311	3478
			1750	2.33	.292	.130	3513	.239	2810	.204	2342	.179	2007	.292	3513	.220	3513
			1160	1.55	.202	.087	3541	.165	2833	.140	2361	.122	2024	.202	3541	.148	3541
			870	1.16	.157	.065	3555	.127	2844	.108	2370	.094	2032	.157	3555	.112	3555
			600	0.80	.115	.045	3568	.093	2855	.078	2379	.068	2039	.115	3568	.079	3568
			100	0.13	.023	.008	3592	.018	2874	.015	2395	.013	2053	.023	3592	.014	3592
1000 (D) (1000)	50 (50)	20 (20)	2500	2.50	.311	.134	3376	.258	2701	.223	2250	.198	1929	.311	3376	.242	3376
			1750	1.75	.225	.094	3392	.186	2714	.160	2261	.141	1938	.225	3392	.170	3392
			1160	1.16	.159	.063	3405	.130	2724	.111	2270	.097	1946	.159	3405	.114	3405
			870	0.87	.124	.047	3411	.101	2729	.086	2274	.075	1949	.124	3411	.086	3411
			600	0.60	.090	.033	3417	.073	2734	.062	2278	.054	1953	.090	3417	.060	3417
			100	0.10	.018	.005	3428	.015	2742	.012	2285	.010	1959	.018	3428	.011	3428
1500 (D) (1500)	50 (50)	30 (30)	2500	1.67	.263	.094	3537	.220	2830	.191	2358	.171	2021	.263	3537	.194	3537
			1750	1.17	.191	.066	3555	.158	2844	.137	2370	.121	2031	.191	3555	.135	3555
			1160	0.77	.135	.044	3569	.111	2855	.095	2379	.084	2040	.135	3569	.090	3569
			870	0.58	.105	.033	3576	.086	2861	.074	2384	.065	2044	.105	3576	.068	3576
			600	0.40	.077	.023	3583	.062	2866	.053	2388	.046	2047	.077	3583	.047	3583
			100	0.07	.015	.004	3595	.012	2876	.010	2397	.009	2054	.015	3595	.008	3595
2000 (D) (2000)	50 (50)	40 (40)	2500	1.25	.215	.067	3354	.181	2683	.159	2236	.143	1916	.215	3354	.156	3354
			1750	0.88	.156	.047	3369	.130	2696	.113	2246	.101	1925	.156	3369	.108	3369
			1160	0.58	.109	.031	3382	.090	2706	.078	2255	.069	1933	.109	3382	.071	3382
			870	0.44	.085	.023	3388	.070	2710	.060	2259	.053	1936	.085	3388	.053	3388
			600	0.30	.061	.016	3394	.050	2715	.043	2263	.038	1939	.061	3394	.037	3394
			100	0.05	.012	.003	3405	.010	2724	.008	2270	.007	1945	.012	3405	.006	3405
3000 (D) (3000)	60 (60)	50 (50)	2500	0.83	.167	.042	3153	.143	2522	.127	2102	.115	1802	.167	3153	.119	3153
			1750	0.58	.121	.029	3164	.102	2532	.090	2110	.081	1808	.121	3164	.081	3164
			1160	0.39	.083	.019	3174	.070	2539	.061	2116	.054	1814	.083	3174	.053	3174
			870	0.29	.065	.015	3178	.054	2543	.046	2119	.041	1816	.065	3178	.039	3178
			600	0.20	.046	.010	3182	.038	2546	.033	2122	.029	1819	.046	3182	.026	3182
			100	0.03	.009	.002	3190	.007	2552	.006	2127	.005	1823	.009	3190	.004	3190
3600 (D) (3600)	60 (60)	60 (60)	2500	0.69	.142	.031	2798	.123	2238	.110	1865	.101	1599	.142	2798	.102	2798
			1750	0.49	.102	.022	2798	.087	2238	.077	1865	.070	1599	.102	2798	.068	2798
			1160	0.32	.069	.014	2798	.059	2238	.051	1865	.046	1599	.069	2798	.044	2798
			870	0.24	.053	.011	2798	.045	2238	.039	1865	.035	1599	.053	2798	.032	2798
			600	0.17	.038	.007	2798	.032	2238	.027	1865	.024	1599	.038	2798	.021	2798
			100	0.03	.007	.001	2798	.006	2238	.005	1865	.004	1599	.007	2798	.003	2798

1. Center Distance=Primary/Secondary.
2. Numbers shown in ( ) are actual ratios. Worm ratios are exact, helical ratios are rounded and are not exact.
3. If input speed is below 1160 RPM, please specify speed to insure proper lubrication.
4. See engineering section, pages 224-226, for further discussion regarding service factors.
5. Actual input HP must not exceed the thermal input HP capacity on a continuous basis.
6. When using synthetic oil, there is no thermal rating limitation. The Service Factor is 1.00.

THRUST AND OVERHUNG LOAD RATINGS

(D) Double Reduction Worm Gear
(H) Double Reduction Helical/Worm Gear

REDUCER SIZE **930**

OVERHUNG LOAD CAPACITIES[1]							THRUST CAPACITIES				CENTER DISTANCE 2.000/3.000 (D) CENTER DISTANCE 2.060/3.000 (H)	
INPUT SHAFT	OUTPUT SHAFT[5]						OUTPUT SHAFT					
ALL MODELS	DB, DT[2]	DV SHAFT UP	DV SHAFT DOWN	DSF[3, 4] BASE SIDE	DSF[3, 4] COVER SIDE	DL	DB, DT, DV	DSF TOWARD BASE	DSF AWAY FROM BASE	DL AWAY FROM BASE	INPUT RPM	RATIO
220	1350	1350	1230	2350	1800	1900	2400	2800	2800	3275	2500	500 (D) (500)
220	1350	1350	1230	2350	1800	1900	2400	2800	2800	3275	1750	
220	1350	1350	1230	2350	1800	1900	2400	2800	2800	3275	1160	
220	1350	1350	1230	2350	1800	1900	2400	2800	2800	3275	870	
220	1350	1350	1230	2350	1800	1900	2400	2800	2800	3275	600	
196	1350	1350	1230	2350	1800	1900	2400	2800	2800	3275	100	
220	1350	1350	1230	2350	1800	1900	2400	2800	2800	3275	2500	750 (D) (750)
220	1350	1350	1230	2350	1800	1900	2400	2800	2800	3275	1750	
220	1350	1350	1230	2350	1800	1900	2400	2800	2800	3275	1160	
220	1350	1350	1230	2350	1800	1900	2400	2800	2800	3275	870	
220	1350	1350	1230	2350	1800	1900	2400	2800	2800	3275	600	
196	1350	1350	1230	2350	1800	1900	2400	2800	2800	3275	100	
224	1350	1350	1230	2350	1800	1900	2400	2800	2800	3275	2500	1000 (D) (1000)
224	1350	1350	1230	2350	1800	1900	2400	2800	2800	3275	1750	
224	1350	1350	1230	2350	1800	1900	2400	2800	2800	3275	1160	
224	1350	1350	1230	2350	1800	1900	2400	2800	2800	3275	870	
224	1350	1350	1230	2350	1800	1900	2400	2800	2800	3275	600	
224	1350	1350	1230	2350	1800	1900	2400	2800	2800	3275	100	
224	1350	1350	1230	2350	1800	1900	2400	2800	2800	3275	2500	1500 (D) (1500)
224	1350	1350	1230	2350	1800	1900	2400	2800	2800	3275	1750	
224	1350	1350	1230	2350	1800	1900	2400	2800	2800	3275	1160	
224	1350	1350	1230	2350	1800	1900	2400	2800	2800	3275	870	
224	1350	1350	1230	2350	1800	1900	2400	2800	2800	3275	600	
224	1350	1350	1230	2350	1800	1900	2400	2800	2800	3275	100	
224	1350	1350	1230	2350	1800	1900	2400	2800	2800	3275	2500	2000 (D) (2000)
224	1350	1350	1230	2350	1800	1900	2400	2800	2800	3275	1750	
224	1350	1350	1230	2350	1800	1900	2400	2800	2800	3275	1160	
224	1350	1350	1230	2350	1800	1900	2400	2800	2800	3275	870	
224	1350	1350	1230	2350	1800	1900	2400	2800	2800	3275	600	
224	1350	1350	1230	2350	1800	1900	2400	2800	2800	3275	100	
224	1350	1350	1230	2350	1800	1900	2400	2800	2800	3275	2500	3000 (D) (3000)
224	1350	1350	1230	2350	1800	1900	2400	2800	2800	3275	1750	
224	1350	1350	1230	2350	1800	1900	2400	2800	2800	3275	1160	
224	1350	1350	1230	2350	1800	1900	2400	2800	2800	3275	870	
224	1350	1350	1230	2350	1800	1900	2400	2800	2800	3275	600	
224	1350	1350	1230	2350	1800	1900	2400	2800	2800	3275	100	
224	1350	1350	1230	2350	1800	1900	2400	2800	2800	3275	2500	3600 (D) (3600)
224	1350	1350	1230	2350	1800	1900	2400	2800	2800	3275	1750	
224	1350	1350	1230	2350	1800	1900	2400	2800	2800	3275	1160	
224	1350	1350	1230	2350	1800	1900	2400	2800	2800	3275	870	
224	1350	1350	1230	2350	1800	1900	2400	2800	2800	3275	600	
224	1350	1350	1230	2350	1800	1900	2400	2800	2800	3275	100	

1. Overhung load given at one shaft diameter from housing or mounting flange. All values given in pounds.
2. Overhung load capacities are based on the direction and location of the load as shown in figure 1 on page 228. Consult factory for allowable OHL values if load is applied as shown in figure 2A, B, C or D on page 228.
3. Overhung load based on maximum bore size. Use of smaller driven shaft diameter may limit OHL capacity.
4. Overhung load capacity given at a point located 6.875 inches from centerline of housing.
5. For DSND output shaft overhung load capacities, contact the factory.

REDUCER SIZE
930

HORSEPOWER AND TORQUE RATINGS

(D) Double Reduction Worm Gear
(H) Double Reduction Helical/Worm Gear

WINSMITH®

CENTER DISTANCE[1] 2.000/3.000 (D)
CENTER DISTANCE[1] 2.060/3.000 (H)

HORSEPOWER AND TORQUE RATINGS (INCH POUNDS)

OVERALL RATIO[2]	PRIMARY RATIO[2]	SECONDARY RATIO[2]	INPUT RPM[3]	OUTPUT RPM	MECHANICAL RATINGS[4] 1.00 SERVICE FACTOR INPUT HP	1.00 SF OUTPUT HP	1.00 SF OUTPUT TORQUE	1.25 SF INPUT HP	1.25 SF OUTPUT TORQUE	1.50 SF INPUT HP	1.50 SF OUTPUT TORQUE	1.75 SF INPUT HP	1.75 SF OUTPUT TORQUE	THERMAL[5] INPUT HP	THERMAL[5] OUTPUT TORQUE	SYNTHETIC OIL MECHANICAL[6] INPUT HP	SYNTHETIC OIL MECHANICAL[6] OUTPUT TORQUE
4000 (D) (4100)	80 (82)	50 (50)	2500	0.61	.146	.031	3163	.126	2531	.113	2109	.103	1808	.146	3163	.103	3163
			1750	0.43	.104	.021	3172	.089	2537	.079	2115	.071	1812	.104	3172	.069	3172
			1160	0.28	.071	.014	3179	.060	2543	.053	2119	.047	1816	.071	3179	.044	3179
			870	0.21	.055	.011	3182	.046	2546	.040	2121	.036	1818	.055	3182	.032	3182
			600	0.15	.039	.007	3185	.033	2548	.028	2123	.025	1820	.039	3185	.022	3185
			100	0.02	.008	.001	3191	.006	2553	.005	2127	.005	1823	.008	3191	.003	3191
5000 (D) (4950)	100 (99)	50 (50)	2500	0.51	.136	.025	3168	.118	2535	.106	2112	.097	1810	.136	3168	.095	3168
			1750	0.35	.097	.018	3175	.083	2540	.074	2117	.067	1814	.097	3175	.063	3175
			1160	0.23	.066	.012	3181	.056	2545	.049	2121	.044	1818	.066	3181	.040	3181
			870	0.18	.051	.009	3184	.043	2547	.037	2122	.033	1819	.051	3184	.029	3184
			600	0.12	.036	.006	3186	.030	2549	.026	2124	.023	1821	.036	3186	.020	3186
			100	0.02	.007	.001	3191	.006	2553	.005	2127	.004	1823	.007	3191	.003	3191
6000 (D) (5940)	100 (99)	60 (60)	2500	0.42	.117	.019	2798	.103	2238	.094	1865	.087	1599	.117	2798	.083	2798
			1750	0.29	.082	.013	2798	.071	2238	.064	1865	.059	1599	.082	2798	.055	2798
			1160	0.20	.055	.009	2798	.047	2238	.042	1865	.038	1599	.055	2798	.034	2798
			870	0.15	.042	.007	2798	.036	2238	.032	1865	.028	1599	.042	2798	.024	2798
			600	0.10	.030	.004	2798	.025	2238	.022	1865	.020	1599	.030	2798	.016	2798
			100	0.02	.006	.001	2798	.005	2238	.004	1865	.003	1599	.006	2798	.002	2798
8000 (D) (8792)	100 (99)	80 (80)	2500	0.32	.091	.010	2050	.082	1640	.076	1367	.072	1171	.091	2050	.068	2050
			1750	0.22	.062	.007	2050	.055	1640	.051	1367	.047	1171	.062	2050	.043	2050
			1160	0.15	.041	.005	2050	.036	1640	.032	1367	.030	1171	.041	2050	.026	2050
			870	0.11	.031	.004	2050	.026	1640	.024	1367	.022	1171	.031	2050	.018	2050
			600	0.08	.021	.002	2050	.018	1640	.016	1367	.015	1171	.021	2050	.012	2050
			100	0.01	.004	.001	2050	.003	1640	.003	1367	.002	1171	.004	2050	.002	2050
10000 (D) (9900)	100 (99)	100 (100)	2500	0.25	.080	.007	1696	.073	1357	.069	1131	.066	969	.080	1696	.061	1696
			1750	0.18	.054	.005	1696	.049	1357	.045	1131	.043	969	.054	1696	.038	1696
			1160	0.12	.034	.003	1696	.031	1357	.028	1131	.026	969	.034	1696	.023	1696
			870	0.09	.026	.002	1696	.022	1357	.020	1131	.019	969	.026	1696	.016	1696
			600	0.06	.017	.002	1696	.015	1357	.014	1131	.012	969	.017	1696	.010	1696
			100	0.01	.003	.001	1696	.002	1357	.002	1131	.002	969	.003	1696	.001	1696

1. Center Distance=Primary/Secondary.
2. Numbers shown in ( ) are actual ratios. Worm ratios are exact, helical ratios are rounded and are not exact.
3. If input speed is below 1160 RPM, please specify speed to insure proper lubrication.
4. See engineering section, pages 224-226, for further discussion regarding service factors.
5. Actual input HP must not exceed the thermal input HP capacity on a continuous basis.
6. When using synthetic oil, there is no thermal rating limitation. The Service Factor is 1.00.

THRUST AND OVERHUNG LOAD RATINGS

(D) Double Reduction Worm Gear
(H) Double Reduction Helical/Worm Gear

REDUCER SIZE **930**

OVERHUNG LOAD CAPACITIES[1]							THRUST CAPACITIES				CENTER DISTANCE 2.000/3.000 (D) CENTER DISTANCE 2.060/3.000 (H)	
INPUT SHAFT	OUTPUT SHAFT[5]						OUTPUT SHAFT					
ALL MODELS	DB, DT[2]	DV SHAFT UP	DV SHAFT DOWN	DSF[3, 4] BASE SIDE	DSF[3, 4] COVER SIDE	DL	DB, DT, DV	DSF TOWARD BASE	DSF AWAY FROM BASE	DL AWAY FROM BASE	INPUT RPM	RATIO
220	1350	1350	1230	2350	1800	1900	2400	2800	2800	3275	2500	4000 (D) (4100)
220	1350	1350	1230	2350	1800	1900	2400	2800	2800	3275	1750	
220	1350	1350	1230	2350	1800	1900	2400	2800	2800	3275	1160	
220	1350	1350	1230	2350	1800	1900	2400	2800	2800	3275	870	
220	1350	1350	1230	2350	1800	1900	2400	2800	2800	3275	600	
206	1350	1350	1230	2350	1800	1900	2400	2800	2800	3275	100	
220	1350	1350	1230	2350	1800	1900	2400	2800	2800	3275	2500	5000 (D) (4950)
220	1350	1350	1230	2350	1800	1900	2400	2800	2800	3275	1750	
220	1350	1350	1230	2350	1800	1900	2400	2800	2800	3275	1160	
220	1350	1350	1230	2350	1800	1900	2400	2800	2800	3275	870	
220	1350	1350	1230	2350	1800	1900	2400	2800	2800	3275	600	
220	1350	1350	1230	2350	1800	1900	2400	2800	2800	3275	100	
220	1350	1350	1230	2350	1800	1900	2400	2800	2800	3275	2500	6000 (D) (5940)
220	1350	1350	1230	2350	1800	1900	2400	2800	2800	3275	1750	
220	1350	1350	1230	2350	1800	1900	2400	2800	2800	3275	1160	
220	1350	1350	1230	2350	1800	1900	2400	2800	2800	3275	870	
220	1350	1350	1230	2350	1800	1900	2400	2800	2800	3275	600	
220	1350	1350	1230	2350	1800	1900	2400	2800	2800	3275	100	
220	1350	1350	1230	2350	1800	1900	2400	2800	2800	3275	2500	8000 (D) (7920)
220	1350	1350	1230	2350	1800	1900	2400	2800	2800	3275	1750	
220	1350	1350	1230	2350	1800	1900	2400	2800	2800	3275	1160	
220	1350	1350	1230	2350	1800	1900	2400	2800	2800	3275	870	
220	1350	1350	1230	2350	1800	1900	2400	2800	2800	3275	600	
220	1350	1350	1230	2350	1800	1900	2400	2800	2800	3275	100	
220	1350	1350	1230	2350	1800	1900	2400	2800	2800	3275	2500	10000 (D) (9900)
220	1350	1350	1230	2350	1800	1900	2400	2800	2800	3275	1750	
220	1350	1350	1230	2350	1800	1900	2400	2800	2800	3275	1160	
220	1350	1350	1230	2350	1800	1900	2400	2800	2800	3275	870	
220	1350	1350	1230	2350	1800	1900	2400	2800	2800	3275	600	
220	1350	1350	1230	2350	1800	1900	2400	2800	2800	3275	100	

1. Overhung load given at one shaft diameter from housing or mounting flange. All values given in pounds.
2. Overhung load capacities are based on the direction and location of the load as shown in figure 1 on page 228. Consult factory for allowable OHL values if load is applied as shown in figure 2A, B, C or D on page 228.
3. Overhung load based on maximum bore size. Use of smaller driven shaft diameter may limit OHL capacity.
4. Overhung load capacity given at a point located 6.875 inches from centerline of housing.
5. For DSND output shaft overhung load capacities, contact the factory.

REDUCER SIZE
935

HORSEPOWER AND TORQUE RATINGS

(D) Double Reduction Worm Gear
(H) Double Reduction Helical/Worm Gear

WINSMITH

CENTER DISTANCE[1] 2.000/3.500 (D) CENTER DISTANCE[1] 2.060/3.500 (H)					HORSEPOWER AND TORQUE RATINGS (INCH POUNDS)													
					MECHANICAL RATINGS[4]										THERMAL[5]		SYNTHETIC OIL MECHANICAL[6]	
					1.00 SERVICE FACTOR			1.25 SF		1.50 SF		1.75 SF					
OVERALL RATIO[2]	PRIMARY RATIO[2]	SECONDARY RATIO[2]	INPUT RPM[3]	OUTPUT RPM	INPUT HP	OUTPUT HP	OUTPUT TORQUE	INPUT HP	OUTPUT TORQUE	INPUT HP	OUTPUT TORQUE	INPUT HP	OUTPUT TORQUE	INPUT HP	OUTPUT TORQUE	INPUT HP	OUTPUT TORQUE
25 (H) (25.3)	5 (5.07)	5 (5)	2500	98.8	3.46	3.05	1944	2.77	1555	2.31	1296	1.98	1111	3.46	1944	3.46	2007
			1750	69.2	2.77	2.41	2191	2.22	1753	1.85	1461	1.59	1252	2.77	2191	2.77	2273
			1160	45.9	2.14	1.83	2510	1.71	2008	1.43	1673	1.23	1434	2.14	2510	2.14	2619
			870	34.4	1.76	1.48	2719	1.41	2175	1.17	1812	1.01	1553	1.76	2719	1.76	2849
			600	23.7	1.25	1.04	2757	1.00	2205	.834	1838	.715	1575	1.25	2757	1.25	2905
			100	3.95	.240	.188	2990	.192	2392	.160	1993	.137	1709	.240	2990	.240	3217
30 (H) (30.4)	6 (6.08)	5 (5)	2500	82.2	2.97	2.60	1990	2.38	1592	1.98	1327	1.70	1137	2.97	1990	2.97	2060
			1750	57.6	2.38	2.05	2244	1.91	1796	1.59	1496	1.36	1283	2.38	2244	2.38	2335
			1160	38.2	1.83	1.55	2559	1.46	2047	1.22	1706	1.05	1462	1.83	2559	1.83	2678
			870	28.6	1.41	1.18	2597	1.13	2077	.941	1731	.807	1484	1.41	2597	1.41	2729
			600	19.7	1.00	.824	2630	.800	2104	.667	1754	.572	1503	1.00	2630	1.00	2779
			100	3.29	.190	.147	2819	.152	2255	.127	1879	.109	1611	.190	2819	.190	3042
38 (H) (38.0)	5 (5.07)	7.5 (7.5)	2500	65.8	3.46	3.01	2875	2.77	2300	2.31	1917	1.98	1643	3.46	2875	3.46	2983
			1750	46.1	2.77	2.37	3238	2.22	2591	1.85	2159	1.59	1850	2.77	3238	2.77	3378
			1160	30.5	2.14	1.80	3708	1.71	2966	1.43	2472	1.23	2119	2.14	3708	2.14	3891
			870	22.9	1.76	1.46	4016	1.41	3213	1.17	2677	1.01	2295	1.76	4016	1.76	4233
			600	15.8	1.25	1.02	4073	1.00	3259	.834	2716	.715	2328	1.25	4073	1.25	4316
			100	2.63	.240	.184	4402	.192	3522	.160	2935	.137	2515	.240	4402	.240	4770
50 (D) (50)	5 (5)	10 (10)	2500	50.0	3.24	2.58	3256	2.60	2605	2.18	2171	1.88	1861	2.88	2889	3.16	3454
			1750	35.0	2.76	2.15	3870	2.22	3096	1.85	2580	1.60	2211	2.70	3779	2.68	4138
			1160	23.2	2.32	1.75	4752	1.86	3801	1.55	3168	1.34	2715	2.32	4752	2.13	4875
			870	17.4	1.88	1.38	5010	1.51	4008	1.26	3340	1.08	2863	1.88	5010	1.66	5010
			600	12.0	1.37	.978	5139	1.10	4111	.919	3426	.789	2936	1.37	5139	1.20	5139
			100	2.00	.277	.171	5386	.222	4309	.185	3591	.159	3078	.277	5386	.226	5386
50 (H) (50.7)	5 (5.07)	10 (10)	2500	49.3	3.46	2.93	3746	2.77	2997	2.31	2497	1.98	2141	3.46	3746	3.46	3917
			1750	34.5	2.77	2.31	4208	2.22	3367	1.85	2805	1.59	2405	2.77	4208	2.77	4428
			1160	22.9	2.14	1.74	4805	1.71	3844	1.43	3203	1.23	2746	2.14	4805	2.05	4882
			870	17.2	1.70	1.37	5015	1.36	4012	1.13	3344	.972	2866	1.70	5015	1.60	5015
			600	11.8	1.22	.966	5142	.978	4114	.816	3428	.699	2939	1.22	5142	1.14	5142
			100	1.97	.230	.169	5387	.184	4309	.153	3591	.131	3078	.230	5387	.209	5387
60 (H) (60.8)	6 (6.08)	10 (10)	2500	41.1	2.97	2.49	3821	2.38	3056	1.98	2547	1.70	2183	2.97	3821	2.97	4008
			1750	28.8	2.38	1.96	4296	1.91	3437	1.59	2864	1.36	2455	2.38	4296	2.38	4535
			1160	19.1	1.83	1.48	4884	1.46	3907	1.22	3256	1.05	2791	1.83	4884	1.75	4970
			870	14.3	1.41	1.12	4949	1.13	3959	.941	3299	.807	2828	1.41	4949	1.36	5083
			600	9.87	1.00	.784	5005	.800	4004	.667	3337	.572	2860	1.00	5005	.965	5190
			100	1.64	.190	.138	5303	.152	4242	.127	3535	.109	3030	.190	5303	.175	5395
75 (D) (75)	5 (5)	15 (15)	2500	33.3	3.22	2.43	4598	2.59	3679	2.17	3065	1.87	2628	2.88	4107	2.89	4598
			1750	23.3	2.49	1.82	4922	2.00	3938	1.67	3281	1.44	2813	2.49	4922	2.20	4922
			1160	15.5	1.81	1.27	5193	1.45	4154	1.22	3462	1.05	2967	1.81	5193	1.57	5193
			870	11.6	1.44	.981	5332	1.15	4265	.962	3554	.827	3047	1.44	5332	1.23	5332
			600	8.00	1.05	.694	5464	.844	4371	.705	3643	.606	3122	1.05	5464	.885	5464
			100	1.33	.216	.121	5718	.173	4574	.145	3812	.124	3267	.216	5718	.168	5718

1. Center Distance=Primary/Secondary.
2. Numbers shown in ( ) are actual ratios. Worm ratios are exact, helical ratios are rounded and are not exact.
3. If input speed is below 1160 RPM, please specify speed to insure proper lubrication.
4. See engineering section, pages 224-226, for further discussion regarding service factors.
5. Actual input HP must not exceed the thermal input HP capacity on a continuous basis.
6. When using synthetic oil, there is no thermal rating limitation. The Service Factor is 1.00.

THRUST AND OVERHUNG LOAD RATINGS

(D) Double Reduction Worm Gear
(H) Double Reduction Helical/Worm Gear

REDUCER SIZE
935

OVERHUNG LOAD CAPACITIES[1]							THRUST CAPACITIES				CENTER DISTANCE 2.000/3.500 (D) CENTER DISTANCE 2.060/3.500 (H)	
INPUT SHAFT	OUTPUT SHAFT[5]						OUTPUT SHAFT					
ALL MODELS	DB, DT[2]	DV SHAFT UP	DV SHAFT DOWN	DSF[3, 4] BASE SIDE	DSF[3, 4] COVER SIDE	DL	DB, DT, DV	DSF TOWARD BASE	DSF AWAY FROM BASE	DL AWAY FROM BASE	INPUT RPM	RATIO
86	2130	2130	1850	2043	1900	3025	2099	4000	4000	2135	2500	**25 (H)** (25.3)
97	2130	2130	1850	2269	1900	3025	2375	4000	4000	2418	1750	
113	2130	2130	1850	2570	1900	3025	2775	4000	4000	2824	1160	
133	2130	2130	1850	2815	1900	3025	3076	4000	4000	3128	870	
235	2130	2130	1850	3199	1900	3025	3500	4000	4000	3500	600	
250	2130	2130	1850	4405	1900	3025	3500	4000	4000	3500	100	
86	2130	2130	1850	2158	1900	3025	2226	4000	4000	2265	2500	**30 (H)** (30.4)
96	2130	2130	1850	2396	1900	3025	2554	4000	4000	2600	1750	
119	2130	2130	1850	2714	1900	3025	2952	4000	4000	3002	1160	
191	2130	2130	1850	3000	1900	3025	3309	4000	4000	3364	870	
250	2130	2130	1850	3405	1900	3025	3500	4000	4000	3500	600	
250	2130	2130	1850	4400	1900	3025	3500	4000	4000	3500	100	
86	2130	2130	1850	2315	1900	3025	2570	4000	4000	2618	2500	**38 (H)** (38.0
97	2130	2130	1850	2607	1900	3025	2964	4000	4000	3017	1750	
113	2130	2130	1850	3011	1900	3025	3471	4000	4000	3500	1160	
133	2130	2130	1850	3297	1900	3025	3500	4000	4000	3500	870	
235	2130	2130	1850	3741	1900	3025	3500	4000	4000	3500	600	
250	2130	2130	1850	4400	1900	3025	3500	4000	4000	3500	100	
260	2130	1900	1850	2555	1900	3025	3047	4000	4000	3500	2500	**50 (D)** (50)
284	2130	1900	1850	2918	1900	3025	3500	4000	4000	3500	1750	
303	2130	1900	1850	3556	1900	3025	3500	4000	4000	3500	1160	
303	2130	1900	1850	3689	1900	3025	3500	4000	4000	3500	870	
303	2130	1900	1850	4171	1900	3025	3500	4000	4000	3500	600	
303	2130	1900	1850	4400	1900	3025	3500	4000	4000	3500	100	
86	2130	2130	1850	2555	1900	3025	3049	4000	4000	3077	2500	**50 (H)** (50.7)
97	2130	2130	1850	2918	1900	3025	3500	4000	4000	3500	1750	
113	2130	2130	1850	3366	1900	3025	3500	4000	4000	3500	1160	
163	2130	2130	1850	3683	1900	3025	3500	4000	4000	3500	870	
250	2130	2130	1850	4171	1900	3025	3500	4000	4000	3500	600	
250	2130	2130	1850	4400	1900	3025	3500	4000	4000	3500	100	
86	2130	2130	1850	2740	1900	3025	3280	4000	4000	3310	2500	**60 (H)** (60.8)
96	2130	2130	1850	3122	1900	3025	3500	4000	4000	3500	1750	
119	2130	2130	1850	3554	1900	3025	3500	4000	4000	3500	1160	
191	2130	2130	1850	3918	1900	3025	3500	4000	4000	3500	870	
250	2130	2130	1850	4400	1900	3025	3500	4000	4000	3500	600	
250	2130	2130	1850	4400	1900	3025	3500	4000	4000	3500	100	
260	2130	1900	1850	2971	1900	3025	3500	4000	4000	3500	2500	**75 (D)** (75)
284	2130	1900	1850	3388	1900	3025	3500	4000	4000	3500	1750	
303	2130	1900	1850	3891	1900	3025	3500	4000	4000	3500	1160	
303	2130	1900	1850	4271	1900	3025	3500	4000	4000	3500	870	
303	2130	1900	1850	4400	1900	3025	3500	4000	4000	3500	600	
303	2130	1900	1850	4400	1900	3025	3500	4000	4000	3500	100	

1. Overhung load given at one shaft diameter from housing or mounting flange. All values given in pounds.
2. Overhung load capacities are based on the direction and location of the load as shown in figure 1 on page 228. Consult factory for allowable OHL values if load is applied as shown in figure 2A, B, C or D on page 228.
3. Overhung load based on maximum bore size. Use of smaller driven shaft diameter may limit OHL capacity.
4. Overhung load capacity given at a point located 6.688 inches from centerline of housing.
5. For DSND output shaft overhung load capacities, contact the factory.

REDUCER SIZE
935

HORSEPOWER AND TORQUE RATINGS

(D) Double Reduction Worm Gear
(H) Double Reduction Helical/Worm Gear

WINSMITH®

CENTER DISTANCE[1] 2.000/3.500 (D) CENTER DISTANCE[1] 2.060/3.500 (H)					HORSEPOWER AND TORQUE RATINGS (INCH POUNDS)													
					MECHANICAL RATINGS[4]										THERMAL[5]		SYNTHETIC OIL MECHANICAL[6]	
					1.00 SERVICE FACTOR			1.25 SF		1.50 SF		1.75 SF					
OVERALL RATIO[2]	PRIMARY RATIO[2]	SECOND-ARY RATIO[2]	INPUT RPM[3]	OUTPUT RPM	INPUT HP	OUTPUT HP	OUTPUT TORQUE	INPUT HP	OUTPUT TORQUE	INPUT HP	OUTPUT TORQUE	INPUT HP	OUTPUT TORQUE	INPUT HP	OUTPUT TORQUE	INPUT HP	OUTPUT TORQUE
75 (H) (76.0)	5 (5.07)	15 (15)	2500	32.9	3.00	2.41	4612	2.40	3689	2.01	3074	1.72	2635	3.00	4612	2.82	4612
			1750	23.0	2.30	1.80	4932	1.84	3946	1.54	3288	1.32	2818	2.30	4932	2.14	4932
			1160	15.3	1.65	1.26	5200	1.32	4160	1.10	3467	.946	2972	1.65	5200	1.52	5200
			870	11.5	1.30	.969	5337	1.04	4270	.865	3558	.742	3050	1.30	5337	1.19	5337
			600	7.89	.936	.685	5468	.749	4374	.625	3645	.536	3124	.936	5468	.850	5468
			100	1.32	.179	.119	5718	.143	4575	.120	3812	.103	3268	.179	5718	.157	5718
90 (H) (91.1)	6 (6.08)	15 (15)	2500	27.4	2.63	2.08	4787	2.11	3829	1.76	3191	1.51	2735	2.63	4787	2.46	4787
			1750	19.2	1.99	1.54	5063	1.60	4050	1.33	3375	1.14	2893	1.99	5063	1.85	5063
			1160	12.7	1.42	1.07	5291	1.14	4233	.947	3527	.813	3023	1.42	5291	1.30	5291
			870	9.55	1.11	.819	5407	.886	4325	.739	3604	.634	3090	1.11	5407	1.01	5407
			600	6.59	.796	.577	5517	.637	4413	.531	3678	.456	3152	.796	5517	.721	5517
			100	1.10	.151	.100	5727	.121	4581	.101	3818	.087	3272	.151	5727	.132	5727
100 (D) (100)	5 (5)	20 (20)	2500	25.0	2.50	1.81	4559	2.01	3647	1.69	3040	1.46	2605	2.50	4559	2.21	4559
			1750	17.5	1.92	1.35	4849	1.55	3879	1.30	3233	1.12	2771	1.92	4849	1.67	4849
			1160	11.6	1.40	.937	5089	1.12	4072	.939	3393	.808	2908	1.40	5089	1.19	5089
			870	8.70	1.11	.719	5212	.887	4170	.742	3475	.639	2978	1.11	5212	.927	5212
			600	6.00	.810	.507	5329	.650	4263	.543	3553	.467	3045	.810	5329	.666	5329
			100	1.00	.167	.088	5552	.134	4442	.112	3701	.096	3173	.167	5552	.126	5552
100 (H) (101.3)	5 (5.07)	20 (20)	2500	24.7	2.32	1.79	4572	1.86	3657	1.55	3048	1.33	2612	2.32	4572	2.15	4572
			1750	17.3	1.77	1.33	4858	1.42	3886	1.18	3239	1.02	2776	1.77	4858	1.63	4858
			1160	11.5	1.27	.926	5096	1.02	4077	.848	3397	.728	2912	1.27	5096	1.15	5096
			870	8.59	.995	.711	5217	.797	4173	.664	3478	.570	2981	.995	5217	.897	5217
			600	5.92	.719	.501	5332	.575	4266	.480	3555	.412	3047	.719	5332	.642	5332
			100	0.99	.138	.087	5553	.111	4442	.092	3702	.079	3173	.138	5553	.119	5553
120 (H) (121.5)	6 (6.08)	20 (20)	2500	20.6	2.03	1.54	4728	1.62	3782	1.36	3152	1.16	2702	2.03	4728	1.87	4728
			1750	14.4	1.53	1.14	4974	1.23	3979	1.02	3316	.879	2842	1.53	4974	1.40	4974
			1160	9.55	1.09	.784	5176	.872	4141	.728	3451	.624	2958	1.09	5176	.985	5176
			870	7.16	.850	.600	5278	.680	4223	.567	3519	.487	3016	.850	5278	.762	5278
			600	4.94	.611	.421	5375	.489	4300	.408	3584	.350	3072	.611	5375	.543	5375
			100	0.82	.117	.073	5560	.094	4448	.078	3707	.067	3177	.117	5560	.100	5560
150 (D) (150)	10 (10)	15 (15)	2500	16.7	1.95	1.36	5151	1.57	4121	1.32	3434	1.14	2943	1.95	5151	1.70	5151
			1750	11.7	1.46	.986	5329	1.17	4263	.983	3553	.848	3045	1.46	5329	1.25	5329
			1160	7.73	1.03	.672	5474	.830	4379	.695	3649	.598	3128	1.03	5474	.868	5474
			870	5.80	.806	.510	5546	.648	4437	.542	3698	.466	3169	.806	5546	.669	5546
			600	4.00	.583	.356	5615	.468	4492	.391	3743	.366	3208	.583	5615	.475	5615
			100	0.67	.117	.061	5744	.093	4595	.078	3829	.067	3282	.117	5744	.088	5744
150 (H) (152.0)	5 (5.07)	30 (30)	2500	16.5	1.80	1.24	4743	1.45	3794	1.21	3162	1.04	2710	1.80	4743	1.60	4743
			1750	11.5	1.40	.925	5065	1.12	4052	.938	3377	.805	2894	1.40	5065	1.23	5065
			1160	7.63	1.02	.646	5334	.819	4267	.683	3556	.586	3048	1.02	5334	.880	5334
			870	5.72	.810	.497	5471	.648	4377	.541	3648	.464	3127	.810	5471	.688	5471
			600	3.95	.592	.351	5602	.474	4482	.395	3735	.339	3201	.592	5602	.496	5602
			100	0.66	.119	.061	5853	.095	4683	.079	3902	.068	3345	.119	5853	.094	5853

1. Center Distance=Primary/Secondary.
2. Numbers shown in ( ) are actual ratios. Worm ratios are exact, helical ratios are rounded and are not exact.
3. If input speed is below 1160 RPM, please specify speed to insure proper lubrication.
4. See engineering section, pages 224-226, for further discussion regarding service factors.
5. Actual input HP must not exceed the thermal input HP capacity on a continuous basis.
6. When using synthetic oil, there is no thermal rating limitation. The Service Factor is 1.00.

THRUST AND OVERHUNG LOAD RATINGS

(D) Double Reduction Worm Gear
(H) Double Reduction Helical/Worm Gear

REDUCER SIZE **935**

OVERHUNG LOAD CAPACITIES[1]							THRUST CAPACITIES				CENTER DISTANCE 2.000/3.500 (D) CENTER DISTANCE 2.060/3.500 (H)	
INPUT SHAFT	OUTPUT SHAFT[5]						OUTPUT SHAFT					
ALL MODELS	DB, DT[2]	DV SHAFT UP	DV SHAFT DOWN	DSF[3, 4] BASE SIDE	DSF[3, 4] COVER SIDE	DL	DB, DT, DV	DSF TOWARD BASE	DSF AWAY FROM BASE	DL AWAY FROM BASE	INPUT RPM	RATIO
132	2130	1900	1850	2971	1900	3025	3500	4000	4000	3500	2500	**75 (H)** (76.0)
167	2130	1900	1850	3388	1900	3025	3500	4000	4000	3500	1750	
220	2130	1900	1850	3891	1900	3025	3500	4000	4000	3500	1160	
250	2130	1900	1850	4271	1900	3025	3500	4000	4000	3500	870	
250	2130	1900	1850	4400	1900	3025	3500	4000	4000	3500	600	
250	2130	1900	1850	4400	1900	3025	3500	4000	4000	3500	100	
116	2130	1900	1850	2971	1900	3025	3500	4000	4000	3500	2500	**90 (H)** (91.1)
164	2130	1900	1850	3388	1900	3025	3500	4000	4000	3500	1750	
222	2130	1900	1850	3891	1900	3025	3500	4000	4000	3500	1160	
250	2130	1900	1850	4271	1900	3025	3500	4000	4000	3500	870	
250	2130	1900	1850	4400	1900	3025	3500	4000	4000	3500	600	
250	2130	1900	1850	4400	1900	3025	3500	4000	4000	3500	100	
260	2130	1900	1850	3302	1900	3025	3500	4000	4000	3500	2500	**100 (D)** (100)
284	2130	1900	1850	3765	1900	3025	3500	4000	4000	3500	1750	
303	2130	1900	1850	4321	1900	3025	3500	4000	4000	3500	1160	
303	2130	1900	1850	4400	1900	3025	3500	4000	4000	3500	870	
303	2130	1900	1850	4400	1900	3025	3500	4000	4000	3500	600	
303	2130	1900	1850	4400	1900	3025	3500	4000	4000	3500	100	
223	2130	1900	1850	3302	1900	3025	3500	4000	4000	3500	2500	**100 (H)** (101.3)
250	2130	1900	1850	3765	1900	3025	3500	4000	4000	3500	1750	
250	2130	1900	1850	4321	1900	3025	3500	4000	4000	3500	1160	
250	2130	1900	1850	4400	1900	3025	3500	4000	4000	3500	870	
250	2130	1900	1850	4400	1900	3025	3500	4000	4000	3500	600	
250	2130	1900	1850	4400	1900	3025	3500	4000	4000	3500	100	
219	2130	1900	1850	3302	1900	3025	3500	4000	4000	3500	2500	**120 (H)** (121.5)
250	2130	1900	1850	3765	1900	3025	3500	4000	4000	3500	1750	
250	2130	1900	1850	4321	1900	3025	3500	4000	4000	3500	1160	
250	2130	1900	1850	4400	1900	3025	3500	4000	4000	3500	870	
250	2130	1900	1850	4400	1900	3025	3500	4000	4000	3500	600	
250	2130	1900	1850	4400	1900	3025	3500	4000	4000	3500	100	
219	2130	1900	1850	3799	1900	3025	3500	4000	4000	3500	2500	**150 (D)** (150)
219	2130	1900	1850	4263	1900	3025	3500	4000	4000	3500	1750	
219	2130	1900	1850	4400	1900	3025	3500	4000	4000	3500	1160	
219	2130	1900	1850	4400	1900	3025	3500	4000	4000	3500	870	
219	2130	1900	1850	4400	1900	3025	3500	4000	4000	3500	600	
219	2130	1900	1850	4400	1900	3025	3500	4000	4000	3500	100	
250	2130	1900	1850	3799	1900	3025	3500	4000	4000	3500	2500	**150 (H)** (152.0)
250	2130	1900	1850	4263	1900	3025	3500	4000	4000	3500	1750	
250	2130	1900	1850	4400	1900	3025	3500	4000	4000	3500	1160	
250	2130	1900	1850	4400	1900	3025	3500	4000	4000	3500	870	
250	2130	1900	1850	4400	1900	3025	3500	4000	4000	3500	600	
250	2130	1900	1850	4400	1900	3025	3500	4000	4000	3500	100	

1. Overhung load given at one shaft diameter from housing or mounting flange. All values given in pounds.
2. Overhung load capacities are based on the direction and location of the load as shown in figure 1 on page 228. Consult factory for allowable OHL values if load is applied as shown in figure 2A, B, C or D on page 228.
3. Overhung load based on maximum bore size. Use of smaller driven shaft diameter may limit OHL capacity.
4. Overhung load capacity given at a point located 6.688 inches from centerline of housing.
5. For DSND output shaft overhung load capacities, contact the factory.

REDUCER SIZE
935

HORSEPOWER AND TORQUE RATINGS

(D) Double Reduction Worm Gear
(H) Double Reduction Helical/Worm Gear

WINSMITH®

CENTER DISTANCE[1] 2.000/3.500 (D)
CENTER DISTANCE[1] 2.060/3.500 (H)

OVERALL RATIO[2]	PRIMARY RATIO[2]	SECONDARY RATIO[2]	INPUT RPM[3]	OUTPUT RPM	HORSEPOWER AND TORQUE RATINGS (INCH POUNDS)													
					MECHANICAL RATINGS[4]										THERMAL[5]		SYNTHETIC OIL MECHANICAL[6]	
					1.00 SERVICE FACTOR			1.25 SF		1.50 SF		1.75 SF						
					INPUT HP	OUTPUT HP	OUTPUT TORQUE	INPUT HP	OUTPUT TORQUE	INPUT HP	OUTPUT TORQUE	INPUT HP	OUTPUT TORQUE	INPUT HP	OUTPUT TORQUE	INPUT HP	OUTPUT TORQUE	INPUT HP	OUTPUT TORQUE
180 (H) (182.3)	6 (6.08)	30 (30)	2500	13.7	1.59	1.07	4919	1.28	3935	1.06	3279	.914	2811	1.59	4919	1.40	4919
			1750	9.60	1.22	.791	5196	.980	4157	.818	3464	.702	2969	1.22	5196	1.06	5196
			1160	6.36	.883	.548	5425	.707	4340	.590	3617	.506	3100	.883	5425	.754	5425
			870	4.77	.696	.420	5541	.557	4433	.465	3694	.399	3166	.696	5541	.587	5541
			600	3.29	.506	.295	5652	.405	4521	.338	3768	.290	3230	.506	5652	.421	5652
			100	0.55	.101	.051	5862	.081	4690	.067	3908	.058	3350	.101	5862	.079	5862
200 (D) (200)	10 (10)	20 (20)	2500	12.5	1.51	1.00	5052	1.22	4042	1.02	3368	.886	2887	1.51	5052	1.29	5052
			1750	8.75	1.13	.723	5210	.908	4168	.762	3473	.658	2977	1.13	5210	.948	5210
			1160	5.80	.796	.491	5338	.641	4270	.537	3558	.463	3050	.796	5338	.656	5338
			870	4.35	.622	.373	5401	.500	4321	.419	3601	.361	3087	.622	5401	.504	5401
			600	3.00	.449	.260	5462	.361	4369	.302	3641	.260	3121	.449	5462	.358	5462
			100	0.50	.090	.044	5575	.072	4460	.060	3717	.052	3186	.090	5575	.066	5575
200 (H) (202.6)	5 (5.07)	40 (40)	2500	12.3	1.39	.892	4554	1.11	3644	.930	3036	.799	2603	1.39	4554	1.21	4554
			1750	8.64	1.08	.663	4835	.864	3868	.721	3223	.619	2763	1.08	4835	.919	4835
			1160	5.73	.785	.460	5068	.629	4055	.525	3379	.451	2896	.785	5068	.656	5068
			870	4.29	.622	.353	5187	.498	4149	.416	3458	.357	2964	.622	5187	.513	5187
			600	2.96	.455	.249	5300	.364	4240	.304	3533	.261	3028	.455	5300	.369	5300
			100	0.49	.092	.043	5515	.074	4412	.061	3677	.053	3152	.092	5515	.070	5515
250 (H) (253.3)	5 (5.07)	50 (50)	2500	9.87	1.12	.676	4319	.900	3456	.752	2880	.646	2468	1.12	4319	.951	4319
			1750	6.91	.870	.501	4569	.698	3655	.583	3046	.501	2611	.870	4569	.723	4569
			1160	4.58	.634	.347	4776	.508	3820	.424	3184	.364	2729	.634	4776	.515	4776
			870	3.43	.502	.266	4880	.403	3904	.336	3254	.289	2789	.502	4880	.402	4880
			600	2.37	.368	.187	4980	.295	3984	.246	3320	.211	2846	.368	4980	.289	4980
			100	0.39	.075	.032	5170	.060	4136	.050	3447	.043	2954	.075	5170	.054	5170
300 (D) (300)	20 (20)	15 (15)	2500	8.33	1.16	.721	5451	.940	4361	.792	3634	.686	3115	1.16	5451	.974	5451
			1750	5.83	.859	.513	5545	.693	4436	.583	3697	.504	3169	.859	5545	.704	5545
			1160	3.87	.603	.345	5620	.486	4496	.408	3747	.352	3211	.603	5620	.482	5620
			870	2.90	.469	.260	5657	.378	4526	.317	3771	.273	3233	.469	5657	.369	5657
			600	2.00	.338	.181	5692	.272	4553	.228	3794	.196	3252	.338	5692	.261	5692
			100	0.33	.069	.030	5757	.055	4605	.046	3838	.039	3290	.069	5757	.048	5757
300 (H) (303.8)	6 (6.08)	50 (50)	2500	8.23	.988	.582	4456	.792	3565	.662	2971	.569	2546	.988	4456	.829	4456
			1750	5.76	.758	.427	4670	.608	3736	.508	3113	.436	2668	.758	4670	.624	4670
			1160	3.82	.548	.294	4845	.439	3876	.367	3230	.315	2769	.548	4845	.441	4845
			870	2.86	.432	.224	4934	.346	3947	.289	3289	.248	2819	.432	4934	.343	4934
			600	1.97	.315	.157	5018	.252	4014	.210	3345	.181	2867	.315	5018	.245	5018
			100	0.33	.064	.027	5177	.051	4141	.043	3451	.036	2958	.064	5177	.046	5177
360 (H) (364.6)	6 (6.08)	60 (60)	2500	6.86	.814	.451	4149	.653	3319	.546	2766	.470	2371	.814	4149	.667	4149
			1750	4.80	.626	.330	4339	.502	3471	.419	2893	.360	2479	.626	4339	.502	4339
			1160	3.18	.453	.227	4495	.363	3596	.303	2996	.260	2568	.453	4495	.354	4495
			870	2.39	.357	.173	4573	.286	3659	.239	3049	.205	2613	.357	4573	.275	4573
			600	1.65	.260	.121	4648	.209	3718	.174	3098	.150	2656	.260	4648	.197	4648
			100	0.27	.052	.021	4728	.042	3782	.035	3152	.030	2702	.052	4728	.036	4728

1. Center Distance=Primary/Secondary.
2. Numbers shown in ( ) are actual ratios. Worm ratios are exact, helical ratios are rounded and are not exact.
3. If input speed is below 1160 RPM, please specify speed to insure proper lubrication.
4. See engineering section, pages 224-226, for further discussion regarding service factors.
5. Actual input HP must not exceed the thermal input HP capacity on a continuous basis.
6. When using synthetic oil, there is no thermal rating limitation. The Service Factor is 1.00.

THRUST AND OVERHUNG LOAD RATINGS

(D) Double Reduction Worm Gear
(H) Double Reduction Helical/Worm Gear

REDUCER SIZE **935**

OVERHUNG LOAD CAPACITIES[1]							THRUST CAPACITIES				CENTER DISTANCE 2.000/3.500 (D) CENTER DISTANCE 2.060/3.500 (H)	
INPUT SHAFT	OUTPUT SHAFT[5]						OUTPUT SHAFT					
ALL MODELS	DB, DT[2]	DV SHAFT UP	DV SHAFT DOWN	DSF[3, 4] BASE SIDE	DSF[3, 4] COVER SIDE	DL	DB, DT, DV	DSF TOWARD BASE	DSF AWAY FROM BASE	DL AWAY FROM BASE	INPUT RPM	RATIO
250	2130	1900	1850	3799	1900	3025	3500	4000	4000	3500	2500	**180 (H)** (182.3)
250	2130	1900	1850	4263	1900	3025	3500	4000	4000	3500	1750	
250	2130	1900	1850	4400	1900	3025	3500	4000	4000	3500	1160	
250	2130	1900	1850	4400	1900	3025	3500	4000	4000	3500	870	
250	2130	1900	1850	4400	1900	3025	3500	4000	4000	3500	600	
250	2130	1900	1850	4400	1900	3025	3500	4000	4000	3500	100	
219	2130	1900	1850	4219	1900	3025	3500	4000	4000	3500	2500	**200 (D)** (200)
219	2130	1900	1850	4400	1900	3025	3500	4000	4000	3500	1750	
219	2130	1900	1850	4400	1900	3025	3500	4000	4000	3500	1160	
219	2130	1900	1850	4400	1900	3025	3500	4000	4000	3500	870	
219	2130	1900	1850	4400	1900	3025	3500	4000	4000	3500	600	
219	2130	1900	1850	4400	1900	3025	3500	4000	4000	3500	100	
250	2130	1900	1850	4219	1900	3025	3500	4000	4000	3500	2500	**200 (H)** (202.6)
250	2130	1900	1850	4400	1900	3025	3500	4000	4000	3500	1750	
250	2130	1900	1850	4400	1900	3025	3500	4000	4000	3500	1160	
250	2130	1900	1850	4400	1900	3025	3500	4000	4000	3500	870	
250	2130	1900	1850	4400	1900	3025	3500	4000	4000	3500	600	
250	2130	1900	1850	4400	1900	3025	3500	4000	4000	3500	100	
250	2130	1900	1850	4219	1900	3025	3500	4000	4000	3500	2500	**250 (H)** (253.3)
250	2130	1900	1850	4400	1900	3025	3500	4000	4000	3500	1750	
250	2130	1900	1850	4400	1900	3025	3500	4000	4000	3500	1160	
250	2130	1900	1850	4400	1900	3025	3500	4000	4000	3500	870	
250	2130	1900	1850	4400	1900	3025	3500	4000	4000	3500	600	
250	2130	1900	1850	4400	1900	3025	3500	4000	4000	3500	100	
247	2130	1900	1850	4400	1900	3025	3500	4000	4000	3500	2500	**300 (D)** (300)
247	2130	1900	1850	4400	1900	3025	3500	4000	4000	3500	1750	
247	2130	1900	1850	4400	1900	3025	3500	4000	4000	3500	1160	
247	2130	1900	1850	4400	1900	3025	3500	4000	4000	3500	870	
247	2130	1900	1850	4400	1900	3025	3500	4000	4000	3500	600	
247	2130	1900	1850	4400	1900	3025	3500	4000	4000	3500	100	
250	2130	1900	1850	4400	1900	3025	3500	4000	4000	3500	2500	**300 (H)** (303.8)
250	2130	1900	1850	4400	1900	3025	3500	4000	4000	3500	1750	
250	2130	1900	1850	4400	1900	3025	3500	4000	4000	3500	1160	
250	2130	1900	1850	4400	1900	3025	3500	4000	4000	3500	870	
250	2130	1900	1850	4400	1900	3025	3500	4000	4000	3500	600	
250	2130	1900	1850	4400	1900	3025	3500	4000	4000	3500	100	
250	2130	1900	1850	4400	1900	3025	3500	4000	4000	3500	2500	**360 (H)** (364.6)
250	2130	1900	1850	4400	1900	3025	3500	4000	4000	3500	1750	
250	2130	1900	1850	4400	1900	3025	3500	4000	4000	3500	1160	
250	2130	1900	1850	4400	1900	3025	3500	4000	4000	3500	870	
250	2130	1900	1850	4400	1900	3025	3500	4000	4000	3500	600	
250	2130	1900	1850	4400	1900	3025	3500	4000	4000	3500	100	

1. Overhung load given at one shaft diameter from housing or mounting flange. All values given in pounds.
2. Overhung load capacities are based on the direction and location of the load as shown in figure 1 on page 228. Consult factory for allowable OHL values if load is applied as shown in figure 2A, B, C or D on page 228.
3. Overhung load based on maximum bore size. Use of smaller driven shaft diameter may limit OHL capacity.
4. Overhung load capacity given at a point located 6.688 inches from centerline of housing.
5. For DSND output shaft overhung load capacities, contact the factory.

REDUCER SIZE
935

HORSEPOWER AND TORQUE RATINGS

(D) Double Reduction Worm Gear
(H) Double Reduction Helical/Worm Gear

WINSMITH

CENTER DISTANCE[1] 2.000/3.500 (D) CENTER DISTANCE[1] 2.060/3.500 (H)					HORSEPOWER AND TORQUE RATINGS (INCH POUNDS)													
					MECHANICAL RATINGS[4]										THERMAL[5]		SYNTHETIC OIL MECHANICAL[6]	
					1.00 SERVICE FACTOR			1.25 SF		1.50 SF		1.75 SF						
OVERALL RATIO[2]	PRIMARY RATIO[2]	SECOND-ARY RATIO[2]	INPUT RPM[3]	OUTPUT RPM	INPUT HP	OUTPUT HP	OUTPUT TORQUE	INPUT HP	OUTPUT TORQUE	INPUT HP	OUTPUT TORQUE	INPUT HP	OUTPUT TORQUE	INPUT HP	OUTPUT TORQUE	INPUT HP	OUTPUT TORQUE	
500 (D) (500)	25 (25)	20 (20)	2500	5.00	.767	.426	5373	.624	4298	.528	3582	.460	3070	.767	5373	.621	5373	
			1750	3.50	.564	.302	5439	.457	4351	.386	3626	.335	3108	.564	5439	.446	5439	
			1160	2.32	.395	.202	5492	.319	4394	.269	3661	.233	3138	.395	5492	.303	5492	
			870	1.74	.307	.152	5518	.248	4415	.208	3679	.180	3153	.307	5518	.231	5518	
			600	1.20	.223	.106	5543	.180	4434	.151	3695	.130	3167	.223	5543	.164	5543	
			100	.20	.045	.018	5589	.036	4471	.030	3726	.026	3194	.045	5589	.030	5589	
750 (D) (750)	25 (25)	30 (30)	2500	3.33	.643	.299	5648	.525	4519	.445	3766	.389	3228	.643	5648	.484	5648	
			1750	2.33	.476	.212	5724	.387	4579	.327	3816	.285	3271	.476	5724	.347	5724	
			1160	1.55	.335	.142	5785	.272	4628	.229	3856	.199	3305	.335	5785	.236	5785	
			870	1.16	.262	.107	5814	.212	4652	.178	3876	.154	3323	.262	5814	.180	5814	
			600	.80	.192	.074	5842	.155	4674	.130	3895	.112	3339	.192	5842	.128	5842	
			100	.13	.040	.012	5895	.032	4716	.027	3930	.023	3368	.040	5895	.023	5895	
1000 (D) (1000)	50 (50)	20 (20)	2500	2.50	.487	.218	5484	.399	4387	.340	3656	.298	3134	.487	5484	.369	5484	
			1750	1.75	.358	.153	5518	.292	4414	.248	3679	.217	3153	.358	5518	.262	5518	
			1160	1.16	.255	.102	5545	.207	4436	.175	3697	.152	3168	.255	5545	.178	5545	
			870	.87	.201	.077	5558	.163	4446	.137	3705	.119	3176	.201	5558	.136	5558	
			600	.60	.147	.053	5570	.119	4456	.100	3714	.087	3183	.147	5570	.096	5570	
			100	.10	.030	.009	5593	.024	4475	.020	3729	.018	3196	.030	5593	.017	5593	
1500 (D) (1500)	50 (50)	30 (30)	2500	1.67	.417	.153	5775	.343	4620	.294	3850	.259	3300	.417	5775	.294	5775	
			1750	1.17	.308	.108	5814	.252	4651	.215	3876	.188	3322	.308	5814	.208	5814	
			1160	.77	.220	.072	5844	.179	4676	.152	3896	.133	3340	.220	5844	.141	5844	
			870	.58	.174	.054	5860	.141	4688	.120	3906	.104	3348	.174	5860	.107	5860	
			600	.40	.128	.037	5874	.104	4699	.088	3916	.076	3356	.128	5874	.076	5874	
			100	.07	.027	.006	5900	.022	4720	.018	3933	.016	3371	.027	5900	.014	5900	
2000 (D) (2000)	50 (50)	40 (40)	2500	1.25	.332	.108	5448	.275	4359	.237	3632	.210	3113	.332	5448	.228	5448	
			1750	.88	.244	.076	5481	.201	4385	.172	3654	.151	3132	.244	5481	.160	5481	
			1160	.58	.174	.051	5508	.142	4406	.121	3672	.106	3147	.174	5508	.108	5508	
			870	.44	.137	.038	5521	.112	4416	.095	3680	.083	3155	.137	5521	.082	5521	
			600	.30	.101	.026	5533	.082	4426	.069	3688	.060	3161	.101	5533	.057	5533	
			100	.05	.021	.004	5555	.017	4444	.014	3703	.012	3174	.021	5555	.010	5555	
3000 (D) (3000)	60 (60)	50 (50)	2500	.83	.252	.068	5127	.211	4102	.184	3418	.164	2930	.252	5127	.168	5127	
			1750	.58	.184	.048	5152	.152	4121	.132	3435	.117	2944	.184	5152	.116	5152	
			1160	.39	.132	.032	5171	.108	4137	.093	3447	.082	2955	.132	5171	.077	5171	
			870	.29	.103	.024	5181	.085	4144	.072	3454	.064	2960	.103	5181	.058	5181	
			600	.20	.076	.016	5189	.062	4152	.052	3460	.046	2965	.076	5189	.040	5189	
			100	.03	.016	.003	5206	.013	4165	.011	3471	.009	2975	.016	5206	.007	5206	
3600 (D) (3600)	60 (60)	60 (60)	2500	.69	.216	.052	4728	.182	3782	.160	3152	.144	2702	.216	4728	.143	4728	
			1750	.49	.158	.036	4728	.132	3782	.115	3152	.102	2702	.158	4728	.098	4728	
			1160	.32	.111	.024	4728	.092	3782	.079	3152	.070	2702	.111	4728	.064	4728	
			870	.24	.087	.018	4728	.072	3782	.061	3152	.054	2702	.087	4728	.048	4728	
			600	.17	.063	.013	4728	.052	3782	.044	3152	.039	2702	.063	4728	.033	4728	
			100	.03	.013	.002	4728	.010	3782	.009	3152	.008	2702	.013	4728	.005	4728	

1. Center Distance=Primary/Secondary.
2. Numbers shown in ( ) are actual ratios. Worm ratios are exact, helical ratios are rounded and are not exact.
3. If input speed is below 1160 RPM, please specify speed to insure proper lubrication.
4. See engineering section, pages 224-226, for further discussion regarding service factors.
5. Actual input HP must not exceed the thermal input HP capacity on a continuous basis.
6. When using synthetic oil, there is no thermal rating limitation. The Service Factor is 1.00.

THRUST AND OVERHUNG LOAD RATINGS

(D) Double Reduction Worm Gear
(H) Double Reduction Helical/Worm Gear

REDUCER SIZE **935**

OVERHUNG LOAD CAPACITIES[1]							THRUST CAPACITIES				CENTER DISTANCE 2.000/3.500 (D) CENTER DISTANCE 2.060/3.500 (H)	
INPUT SHAFT	OUTPUT SHAFT[5]						OUTPUT SHAFT					
ALL MODELS	DB, DT[2]	DV SHAFT UP	DV SHAFT DOWN	DSF[3, 4] BASE SIDE	DSF[3, 4] COVER SIDE	DL	DB, DT, DV	DSF TOWARD BASE	DSF AWAY FROM BASE	DL AWAY FROM BASE	INPUT RPM	RATIO
220	2130	1900	1850	4400	1900	3025	3500	4000	4000	3500	2500	500 (D) (500)
220	2130	1900	1850	4400	1900	3025	3500	4000	4000	3500	1750	
220	2130	1900	1850	4400	1900	3025	3500	4000	4000	3500	1160	
220	2130	1900	1850	4400	1900	3025	3500	4000	4000	3500	870	
220	2130	1900	1850	4400	1900	3025	3500	4000	4000	3500	600	
220	2130	1900	1850	4400	1900	3025	3500	4000	4000	3500	100	
220	2130	1900	1850	4400	1900	3025	3500	4000	4000	3500	2500	750 (D) (750)
220	2130	1900	1850	4400	1900	3025	3500	4000	4000	3500	1750	
220	2130	1900	1850	4400	1900	3025	3500	4000	4000	3500	1160	
220	2130	1900	1850	4400	1900	3025	3500	4000	4000	3500	870	
220	2130	1900	1850	4400	1900	3025	3500	4000	4000	3500	600	
220	2130	1900	1850	4400	1900	3025	3500	4000	4000	3500	100	
224	2130	1900	1850	4400	1900	3025	3500	4000	4000	3500	2500	1000 (D) (1000)
224	2130	1900	1850	4400	1900	3025	3500	4000	4000	3500	1750	
224	2130	1900	1850	4400	1900	3025	3500	4000	4000	3500	1160	
224	2130	1900	1850	4400	1900	3025	3500	4000	4000	3500	870	
224	2130	1900	1850	4400	1900	3025	3500	4000	4000	3500	600	
224	2130	1900	1850	4400	1900	3025	3500	4000	4000	3500	100	
224	2130	1900	1850	4400	1900	3025	3500	4000	4000	3500	2500	1500 (D) (1500)
224	2130	1900	1850	4400	1900	3025	3500	4000	4000	3500	1750	
224	2130	1900	1850	4400	1900	3025	3500	4000	4000	3500	1160	
224	2130	1900	1850	4400	1900	3025	3500	4000	4000	3500	870	
224	2130	1900	1850	4400	1900	3025	3500	4000	4000	3500	600	
224	2130	1900	1850	4400	1900	3025	3500	4000	4000	3500	100	
224	2130	1900	1850	4400	1900	3025	3500	4000	4000	3500	2500	2000 (D) (2000)
224	2130	1900	1850	4400	1900	3025	3500	4000	4000	3500	1750	
224	2130	1900	1850	4400	1900	3025	3500	4000	4000	3500	1160	
224	2130	1900	1850	4400	1900	3025	3500	4000	4000	3500	870	
224	2130	1900	1850	4400	1900	3025	3500	4000	4000	3500	600	
224	2130	1900	1850	4400	1900	3025	3500	4000	4000	3500	100	
224	2130	1900	1850	4400	1900	3025	3500	4000	4000	3500	2500	3000 (D) (3000)
224	2130	1900	1850	4400	1900	3025	3500	4000	4000	3500	1750	
224	2130	1900	1850	4400	1900	3025	3500	4000	4000	3500	1160	
224	2130	1900	1850	4400	1900	3025	3500	4000	4000	3500	870	
224	2130	1900	1850	4400	1900	3025	3500	4000	4000	3500	600	
224	2130	1900	1850	4400	1900	3025	3500	4000	4000	3500	100	
224	2130	1900	1850	4400	1900	3025	3500	4000	4000	3500	2500	3600 (D) (3600)
224	2130	1900	1850	4400	1900	3025	3500	4000	4000	3500	1750	
224	2130	1900	1850	4400	1900	3025	3500	4000	4000	3500	1160	
224	2130	1900	1850	4400	1900	3025	3500	4000	4000	3500	870	
224	2130	1900	1850	4400	1900	3025	3500	4000	4000	3500	600	
224	2130	1900	1850	4400	1900	3025	3500	4000	4000	3500	100	

1. Overhung load given at one shaft diameter from housing or mounting flange. All values given in pounds.
2. Overhung load capacities are based on the direction and location of the load as shown in figure 1 on page 228. Consult factory for allowable OHL values if load is applied as shown in figure 2A, B, C or D on page 228.
3. Overhung load based on maximum bore size. Use of smaller driven shaft diameter may limit OHL capacity.
4. Overhung load capacity given at a point located 6.688 inches from centerline of housing.
5. For DSND output shaft overhung load capacities, contact the factory.

REDUCER SIZE
935

HORSEPOWER AND TORQUE RATINGS

(D) Double Reduction Worm Gear
(H) Double Reduction Helical/Worm Gear

WINSMITH®

CENTER DISTANCE[1] 2.000/3.500 (D)
CENTER DISTANCE[1] 2.060/3.500 (H)

HORSEPOWER AND TORQUE RATINGS (INCH POUNDS)

OVERALL RATIO[2]	PRIMARY RATIO[2]	SECONDARY RATIO[2]	INPUT RPM[3]	OUTPUT RPM	MECHANICAL RATINGS[4] 1.00 SERVICE FACTOR INPUT HP	1.00 SF OUTPUT HP	1.00 SF OUTPUT TORQUE	1.25 SF INPUT HP	1.25 SF OUTPUT TORQUE	1.50 SF INPUT HP	1.50 SF OUTPUT TORQUE	1.75 SF INPUT HP	1.75 SF OUTPUT TORQUE	THERMAL[5] INPUT HP	THERMAL[5] OUTPUT TORQUE	SYNTHETIC OIL MECHANICAL[6] INPUT HP	SYNTHETIC OIL MECHANICAL[6] OUTPUT TORQUE
4000 (D) (4100)	80 (82)	50 (50)	2500	.61	.213	.050	5149	.179	4119	.157	3433	.142	2942	.213	5149	.140	5149
			1750	.43	.158	.035	5167	.132	4134	.114	3445	.102	2953	.158	5167	.097	5167
			1160	.28	.111	.023	5181	.092	4145	.079	3454	.070	2961	.111	5181	.063	5181
			870	.21	.087	.017	5188	.072	4151	.061	3459	.054	2965	.087	5188	.047	5188
			600	.15	.063	.012	5195	.052	4156	.044	3463	.039	2968	.063	5195	.032	5195
			100	.02	.013	.002	5207	.010	4165	.009	3471	.008	2975	.013	5207	.005	5207
5000 (D) (4950)	100 (99)	50 (50)	2500	.51	.198	.041	5160	.168	4128	.148	3440	.133	2948	.198	5160	.127	5160
			1750	.35	.145	.029	5174	.122	4139	.106	3450	.095	2957	.145	5174	.087	5174
			1160	.23	.102	.019	5186	.085	4149	.073	3457	.065	2963	.102	5186	.057	5186
			870	.18	.080	.014	5192	.066	4153	.057	3461	.050	2967	.080	5192	.042	5192
			600	.12	.058	.010	5197	.048	4158	.041	3465	.036	2970	.058	5197	.029	5197
			100	.02	.012	.002	5207	.010	4166	.008	3471	.007	2976	.012	5207	.005	5207
6000 (D) (5940)	100 (99)	60 (60)	2500	.42	.171	.032	4728	.147	3782	.130	3152	.118	2702	.171	4728	.110	4728
			1750	.29	.125	.022	4728	.105	3782	.092	3152	.083	2702	.125	4728	.074	4728
			1160	.20	.087	.015	4728	.073	3782	.063	3152	.056	2702	.087	4728	.048	4728
			870	.15	.068	.011	4728	.056	3782	.048	3152	.043	2702	.068	4728	.035	4728
			600	.10	.049	.008	4728	.040	3782	.035	3152	.031	2702	.049	4728	.024	4728
			100	.02	.010	.001	4728	.008	3782	.007	3152	.006	2702	.010	4728	.004	4728
8000 (D) (7920)	100 (99)	80 (80)	2500	.32	.133	.019	3816	.116	3053	.104	2544	.096	2181	.133	3816	.087	3816
			1750	.22	.095	.013	3826	.082	3061	.073	2551	.066	2186	.095	3826	.057	3826
			1160	.15	.065	.009	3834	.055	3067	.049	2556	.044	2191	.065	3834	.036	3834
			870	.11	.050	.007	3838	.042	3070	.037	2559	.033	2193	.050	3838	.026	3838
			600	.08	.036	.005	3842	.030	3073	.026	2561	.023	2195	.036	3842	.017	3842
			100	.01	.007	.001	3848	.006	3079	.005	2565	.004	2199	.007	3848	.003	3848
10000 (D) (9900)	99 (100)	100 (100)	2500	.25	.107	.012	2938	.095	2351	.087	1959	.081	1679	.107	2938	.073	2938
			1750	.18	.075	.008	2946	.065	2356	.059	1964	.055	1683	.075	2946	.047	2946
			1160	.12	.050	.005	2951	.043	2361	.039	1968	.035	1686	.050	2951	.029	2951
			870	.09	.038	.004	2954	.033	2363	.029	1969	.026	1688	.038	2954	.020	2954
			600	.06	.027	.003	2957	.023	2365	.020	1971	.018	1690	.027	2957	.013	2957
			100	.01	.005	.001	2962	.004	2369	.004	1975	.003	1692	.005	2962	.002	2962

1. Center Distance=Primary/Secondary.
2. Numbers shown in ( ) are actual ratios. Worm ratios are exact, helical ratios are rounded and are not exact.
3. If input speed is below 1160 RPM, please specify speed to insure proper lubrication.
4. See engineering section, pages 224-226, for further discussion regarding service factors.
5. Actual input HP must not exceed the thermal input HP capacity on a continuous basis.
6. When using synthetic oil, there is no thermal rating limitation. The Service Factor is 1.00.

THRUST AND OVERHUNG LOAD RATINGS

(D) Double Reduction Worm Gear
(H) Double Reduction Helical/Worm Gear

REDUCER SIZE
935

OVERHUNG LOAD CAPACITIES[1]							THRUST CAPACITIES				CENTER DISTANCE 2.000/3.500 (D) CENTER DISTANCE 2.060/3.500 (H)	
INPUT SHAFT	OUTPUT SHAFT[5]						OUTPUT SHAFT					
ALL MODELS	DB, DT[2]	DV SHAFT UP	DV SHAFT DOWN	DSF[3, 4] BASE SIDE	DSF[3, 4] COVER SIDE	DL	DB, DT, DV	DSF TOWARD BASE	DSF AWAY FROM BASE	DL AWAY FROM BASE	INPUT RPM	RATIO
220	2130	1900	1850	4400	1900	3025	3500	4000	4000	3500	2500	4000 (D) (4100)
220	2130	1900	1850	4400	1900	3025	3500	4000	4000	3500	1750	
220	2130	1900	1850	4400	1900	3025	3500	4000	4000	3500	1160	
220	2130	1900	1850	4400	1900	3025	3500	4000	4000	3500	870	
220	2130	1900	1850	4400	1900	3025	3500	4000	4000	3500	600	
220	2130	1900	1850	4400	1900	3025	3500	4000	4000	3500	100	
220	2130	1900	1850	4400	1900	3025	3500	4000	4000	3500	2500	5000 (D) (4950)
220	2130	1900	1850	4400	1900	3025	3500	4000	4000	3500	1750	
220	2130	1900	1850	4400	1900	3025	3500	4000	4000	3500	1160	
220	2130	1900	1850	4400	1900	3025	3500	4000	4000	3500	870	
220	2130	1900	1850	4400	1900	3025	3500	4000	4000	3500	600	
220	2130	1900	1850	4400	1900	3025	3500	4000	4000	3500	100	
220	2130	1900	1850	4400	1900	3025	3500	4000	4000	3500	2500	6000 (D) (5940)
220	2130	1900	1850	4400	1900	3025	3500	4000	4000	3500	1750	
220	2130	1900	1850	4400	1900	3025	3500	4000	4000	3500	1160	
220	2130	1900	1850	4400	1900	3025	3500	4000	4000	3500	870	
220	2130	1900	1850	4400	1900	3025	3500	4000	4000	3500	600	
220	2130	1900	1850	4400	1900	3025	3500	4000	4000	3500	100	
220	2130	1900	1850	4400	1900	3025	3500	4000	4000	3500	2500	8000 (D) (7920)
220	2130	1900	1850	4400	1900	3025	3500	4000	4000	3500	1750	
220	2130	1900	1850	4400	1900	3025	3500	4000	4000	3500	1160	
220	2130	1900	1850	4400	1900	3025	3500	4000	4000	3500	870	
220	2130	1900	1850	4400	1900	3025	3500	4000	4000	3500	600	
220	2130	1900	1850	4400	1900	3025	3500	4000	4000	3500	100	
220	2130	1900	1850	4400	1900	3025	3500	4000	4000	3500	2500	10000 (D) (9900)
220	2130	1900	1850	4400	1900	3025	3500	4000	4000	3500	1750	
220	2130	1900	1850	4400	1900	3025	3500	4000	4000	3500	1160	
220	2130	1900	1850	4400	1900	3025	3500	4000	4000	3500	870	
220	2130	1900	1850	4400	1900	3025	3500	4000	4000	3500	600	
220	2130	1900	1850	4400	1900	3025	3500	4000	4000	3500	100	

1. Overhung load given at one shaft diameter from housing or mounting flange. All values given in pounds.
2. Overhung load capacities are based on the direction and location of the load as shown in figure 1 on page 228. Consult factory for allowable OHL values if load is applied as shown in figure 2A, B, C or D on page 228.
3. Overhung load based on maximum bore size. Use of smaller driven shaft diameter may limit OHL capacity.
4. Overhung load capacity given at a point located 6.688 inches from centerline of housing.
5. For DSND output shaft overhung load capacities, contact the factory.

REDUCER SIZE
943

HORSEPOWER AND TORQUE RATINGS

(D) Double Reduction Worm Gear
(H) Double Reduction Helical/Worm Gear

WINSMITH

CENTER DISTANCE[1] 2.625/4.250 (D) CENTER DISTANCE[1] 3.200/4.250 (H)					HORSEPOWER AND TORQUE RATINGS (INCH POUNDS)													
					MECHANICAL RATINGS[4]										THERMAL[5]		SYNTHETIC OIL MECHANICAL[6]	
					1.00 SERVICE FACTOR			1.25 SF		1.50 SF		1.75 SF					
OVERALL RATIO[2]	PRIMARY RATIO[2]	SECONDARY RATIO[2]	INPUT RPM[3]	OUTPUT RPM	INPUT HP	OUTPUT HP	OUTPUT TORQUE	INPUT HP	OUTPUT TORQUE	INPUT HP	OUTPUT TORQUE	INPUT HP	OUTPUT TORQUE	INPUT HP	OUTPUT TORQUE	INPUT HP	OUTPUT TORQUE
25 (H) (25.3)	5 (5.06)	5 (5)	2500	98.8	10.49	9.41	6004	8.39	4803	7.00	4002	6.00	3431	10.49	6004	10.21	6004
			1750	69.2	8.24	7.30	6650	6.59	5320	5.50	4433	4.71	3800	8.24	6650	7.99	6650
			1160	45.9	6.01	5.24	7207	4.81	5766	4.01	4805	3.44	4118	6.01	7207	5.80	7207
			870	34.4	4.74	4.09	7498	3.79	5998	3.16	4999	2.71	4285	4.74	7498	4.56	7498
			600	23.7	3.44	2.93	7779	2.75	6223	2.29	5186	1.97	4445	3.44	7779	3.29	7779
			100	4.00	.647	.522	8328	.517	6662	.431	5552	.370	4759	.647	8328	.608	8328
30 (H) (29.6)	6 (5.93)	5 (5)	2500	84.5	9.48	8.46	6310	7.58	5048	6.32	4207	5.42	3606	9.48	6310	9.21	6310
			1750	59.1	7.33	6.46	6886	5.87	5509	4.89	4591	4.20	3935	7.33	6886	7.10	6886
			1160	39.2	5.23	4.54	7296	4.19	5836	3.49	4864	2.99	4169	5.23	7296	5.09	7376
			870	29.4	4.03	3.46	7416	3.23	5933	2.69	4944	2.31	4238	4.03	7416	3.98	7629
			600	20.3	2.87	2.43	7558	2.30	6046	1.91	5038	1.64	4319	2.87	7558	2.86	7873
			100	3.38	.540	.435	8108	.432	6487	.360	5406	.309	4633	.540	8108	.522	8344
38 (H) (38.0)	5 (5.06)	7.5 (7.5)	2500	65.8	8.09	7.06	6761	6.47	5409	5.40	4508	4.63	3864	8.09	6761	7.81	6761
			1750	46.1	6.33	5.44	7442	5.07	5954	4.23	4961	3.62	4253	6.33	7442	6.08	7442
			1160	30.5	4.61	3.89	8025	3.69	6420	3.08	5350	2.64	4586	4.61	8025	4.40	8025
			870	22.9	3.64	3.03	8328	2.91	6663	2.43	5552	2.08	4759	3.64	8328	3.46	8328
			600	15.8	2.64	2.16	8621	2.11	6897	1.76	5747	1.51	4926	2.64	8621	2.50	8621
			100	2.63	.501	.384	9190	.401	7352	.334	6127	.286	5252	.501	9190	.462	9190
50 (D) (50)	5 (5)	10 (10)	2500	50.0	6.66	5.38	6781	5.35	5425	4.48	4521	3.85	3875	4.09	4122	6.51	7189
			1750	35.0	5.57	4.39	7899	4.47	6319	3.74	5266	3.21	4514	4.00	5644	5.08	7899
			1160	23.2	4.12	3.13	8503	3.30	6803	2.76	5669	2.37	4859	3.62	7463	3.69	8503
			870	17.4	3.29	2.43	8817	2.64	7054	2.20	5878	1.89	5038	3.29	8817	2.91	8817
			600	12.0	2.43	1.74	9120	1.94	7296	1.62	6080	1.39	5211	2.43	9120	2.12	9120
			100	2.00	.500	.308	9708	.400	7766	.334	6472	.286	5547	.500	9708	.407	9708
50 (H) (50.6)	5 (5.06)	10 (10)	2500	49.4	6.67	5.66	7220	5.34	5776	4.45	4813	3.82	4126	6.67	7220	6.38	7220
			1750	34.6	5.22	4.35	7920	4.18	6336	3.49	5280	2.99	4526	5.22	7920	4.96	7920
			1160	22.9	3.81	3.10	8519	3.05	6815	2.54	5679	2.18	4868	3.81	8519	3.59	8519
			870	17.2	3.01	2.41	8829	2.41	7063	2.01	5886	1.72	5045	3.01	8829	2.82	8829
			600	11.9	2.19	1.72	9128	1.75	7303	1.46	6086	1.25	5216	2.19	9128	2.04	9128
			100	1.98	.419	.304	9710	.335	7768	.279	6473	.240	5548	.419	9710	.380	9710
60 (H) (59.3)	6 (5.93)	10 (10)	2500	42.2	6.01	5.05	7553	4.81	6042	4.01	5035	3.44	4316	6.01	7553	5.73	7553
			1750	29.5	4.64	3.83	8174	3.72	6539	3.10	5449	2.66	4671	4.64	8174	4.40	8174
			1160	19.6	3.35	2.70	8699	2.68	6959	2.24	5799	1.92	4971	3.35	8699	3.15	8699
			870	14.7	2.63	2.09	8969	2.11	7175	1.76	5979	1.51	5125	2.63	8969	2.46	8969
			600	10.1	1.90	1.48	9228	1.52	7382	1.27	6152	1.09	5273	1.90	9228	1.77	9228
			100	1.69	.362	.260	9727	.290	7782	.242	6485	.207	5558	.362	9727	.327	9727
75 (D) (75)	5 (5)	15 (15)	2500	33.3	5.35	4.07	7696	4.30	6157	3.60	5131	3.10	4398	4.09	5848	4.82	7696
			1750	23.3	4.24	3.12	8431	3.41	6745	2.85	5621	2.45	4818	4.00	7952	3.76	8431
			1160	15.5	3.15	2.22	9059	2.53	7247	2.11	6039	1.82	5176	3.15	9059	2.74	9059
			870	11.6	2.52	1.73	9384	2.02	7507	1.69	6256	1.45	5362	2.52	9384	2.16	9384
			600	8.00	1.87	1.23	9698	1.50	7758	1.25	6465	1.08	5541	1.87	9698	1.57	9698
			100	1.33	.393	.218	10306	.315	8245	.263	6871	.225	5889	.393	10306	.304	10306

1. Center Distance=Primary/Secondary.
2. Numbers shown in ( ) are actual ratios. Worm ratios are exact, helical ratios are rounded and are not exact.
3. If input speed is below 1160 RPM, please specify speed to insure proper lubrication.
4. See engineering section, pages 224-226, for further discussion regarding service factors.
5. Actual input HP must not exceed the thermal input HP capacity on a continuous basis.
6. When using synthetic oil, there is no thermal rating limitation. The Service Factor is 1.00.

THRUST AND OVERHUNG LOAD RATINGS

(D) Double Reduction Worm Gear
(H) Double Reduction Helical/Worm Gear

REDUCER SIZE **943**

OVERHUNG LOAD CAPACITIES[1]							THRUST CAPACITIES				CENTER DISTANCE[1] 2.625/4.250 (D) CENTER DISTANCE[1] 3.200/4.250 (H)	
INPUT SHAFT	OUTPUT SHAFT[5]						OUTPUT SHAFT					
ALL MODELS	DB, DT[2]	DV SHAFT UP	DV SHAFT DOWN	DSF[3, 4] BASE SIDE	DSF[3, 4] COVER SIDE	DL	DB, DT, DV	DSF TOWARD BASE	DSF AWAY FROM BASE	DL AWAY FROM BASE	INPUT RPM	RATIO
156	2800	2800	2400	3105	2300	3400	2563	4500	4500	2699	2500	**25 (H)** (25.3)
220	2800	2800	2400	3444	2300	3400	2862	4500	4500	3018	1750	
378	2800	2800	2400	3847	2300	3400	3350	4500	4500	3525	1160	
500	2800	2800	2400	4174	2300	3400	3754	4500	4500	3939	870	
500	2800	2800	2400	4726	2300	3400	4200	4500	4500	4200	600	
500	2800	2800	2400	6500	2300	3400	4200	4500	4500	4200	100	
98	2800	2800	2400	3250	2300	3400	2670	4500	4500	2816	2500	**30 (H)** (29.6)
192	2800	2800	2400	3606	2300	3400	3051	4500	4500	3214	1750	
393	2800	2800	2400	4007	2300	3400	3561	4500	4500	3741	1160	
500	2800	2800	2400	4400	2300	3400	4004	4500	4500	4195	870	
500	2800	2800	2400	4997	2300	3400	4200	4500	4500	4200	600	
500	2800	2800	2400	6500	2300	3400	4200	4500	4500	4200	100	
463	2800	2800	2400	3614	2300	3400	3477	4500	4500	3542	2500	**38 (H)** (38.0)
500	2800	2800	2400	4014	2300	3400	3968	4500	4500	4042	1750	
500	2800	2800	2400	4541	2300	3400	4200	4500	4500	4200	1160	
500	2800	2800	2400	4980	2300	3400	4200	4500	4500	4200	870	
500	2800	2800	2400	5617	2300	3400	4200	4500	4500	4200	600	
500	2800	2800	2400	6500	2300	3400	4200	4500	4500	4200	100	
500	2800	2800	2400	3955	2300	3400	4106	4500	4500	4200	2500	**50 (D)** (50)
500	2800	2800	2400	4414	2300	3400	4200	4500	4500	4200	1750	
500	2800	2800	2400	5054	2300	3400	4200	4500	4500	4200	1160	
500	2800	2800	2400	5540	2300	3400	4200	4500	4500	4200	870	
500	2800	2800	2400	6245	2300	3400	4200	4500	4500	4200	600	
500	2800	2800	2400	6500	2300	3400	4200	4500	4500	4200	100	
500	2800	2800	2400	3969	2300	3400	4124	4500	4500	4156	2500	**50 (H)** (50.6)
500	2800	2800	2400	4432	2300	3400	4200	4500	4500	4200	1750	
500	2800	2800	2400	5075	2300	3400	4200	4500	4500	4200	1160	
500	2800	2800	2400	5561	2300	3400	4200	4500	4500	4200	870	
500	2800	2800	2400	6262	2300	3400	4200	4500	4500	4200	600	
500	2800	2800	2400	6500	2300	3400	4200	4500	4500	4200	100	
500	2800	2800	2400	4159	2300	3400	4200	4500	4500	4200	2500	**60 (H)** (59.3)
500	2800	2800	2400	4686	2300	3400	4200	4500	4500	4200	1750	
500	2800	2800	2400	5333	2300	3400	4200	4500	4500	4200	1160	
500	2800	2800	2400	5849	2300	3400	4200	4500	4500	4200	870	
500	2800	2800	2400	6500	2300	3400	4200	4500	4500	4200	600	
500	2800	2800	2400	6500	2300	3400	4200	4500	4500	4200	100	
500	2800	2800	2400	4507	2300	3400	4200	4500	4500	4200	2500	**75 (D)** (75)
500	2800	2800	2400	5118	2300	3400	4200	4500	4500	4200	1750	
500	2800	2800	2400	5853	2300	3400	4200	4500	4500	4200	1160	
500	2800	2800	2400	6409	2300	3400	4200	4500	4500	4200	870	
500	2800	2800	2400	6500	2300	3400	4200	4500	4500	4200	600	
500	2800	2800	2400	6500	2300	3400	4200	4500	4500	4200	100	

1. Overhung load given at one shaft diameter from housing or mounting flange. All values given in pounds.
2. Overhung load capacities are based on the direction and location of the load as shown in figure 1 on page 228. Consult factory for allowable OHL values if load is applied as shown in figure 2A, B, C or D on page 228.
3. Overhung load based on maximum bore size. Use of smaller driven shaft diameter may limit OHL capacity.
4. Overhung load capacity given at a point located 7.125 inches from centerline of housing.
5. For DSND output shaft overhung load capacities, contact the factory.

REDUCER SIZE
943

HORSEPOWER AND TORQUE RATINGS

(D) Double Reduction Worm Gear
(H) Double Reduction Helical/Worm Gear

WINSMITH

CENTER DISTANCE[1] 2.625/4.250 (D) CENTER DISTANCE[1] 3.200/4.250 (H)					HORSEPOWER AND TORQUE RATINGS (INCH POUNDS)													
					MECHANICAL RATINGS[4]										THERMAL[5]		SYNTHETIC OIL MECHANICAL[6]	
					1.00 SERVICE FACTOR			1.25 SF		1.50 SF		1.75 SF						
OVERALL RATIO[2]	PRIMARY RATIO[2]	SECOND-ARY RATIO[2]	INPUT RPM[3]	OUTPUT RPM	INPUT HP	OUTPUT HP	OUTPUT TORQUE	INPUT HP	OUTPUT TORQUE	INPUT HP	OUTPUT TORQUE	INPUT HP	OUTPUT TORQUE	INPUT HP	OUTPUT TORQUE	INPUT HP	OUTPUT TORQUE
75 (H) (75.9)	5 (5.06)	15 (15)	2500	32.9	5.04	4.04	7725	4.03	6180	3.36	5150	2.89	4414	5.04	7725	4.73	7725
			1750	23.1	3.96	3.09	8454	3.17	6763	2.65	5636	2.27	4831	3.96	8454	3.69	8454
			1160	15.3	2.91	2.20	9075	2.33	7260	1.94	6050	1.67	5186	2.91	9075	2.67	9075
			870	11.5	2.31	1.71	9397	1.85	7517	1.54	6264	1.32	5369	2.31	9397	2.11	9397
			600	7.91	1.69	1.22	9706	1.35	7765	1.13	6471	.965	5547	1.69	9706	1.52	9706
			100	1.32	.329	.215	10307	.263	8246	.220	6872	.188	5890	.329	10307	.287	10307
90 (H) (88.9)	6 (5.93)	15 (15)	2500	28.1	4.55	3.60	8072	3.64	6457	3.04	5381	2.60	4612	4.55	8072	4.25	8072
			1750	19.7	3.53	2.72	8717	2.83	6974	2.36	5812	2.02	4981	3.53	8717	3.27	8717
			1160	13.1	2.56	1.92	9261	2.05	7409	1.71	6174	1.47	5292	2.56	9261	2.35	9261
			870	9.79	2.02	1.48	9541	1.62	7633	1.35	6361	1.16	5452	2.02	9541	1.84	9541
			600	6.75	1.47	1.05	9809	1.18	7847	.981	6539	.842	5605	1.47	9809	1.32	9809
			100	1.12	.286	.184	10326	.229	8260	.191	6884	.164	5900	.286	10326	.248	10326
100 (D) (100)	5 (5)	20 (20)	2500	25.0	4.23	3.08	7753	3.41	6202	2.86	5169	2.46	4430	4.09	7492	3.75	7753
			1750	17.5	3.34	2.34	8429	2.68	6743	2.25	5620	1.94	4817	3.34	8429	2.90	8429
			1160	11.6	2.47	1.66	9003	1.99	7202	1.66	6002	1.43	5144	2.47	9003	2.10	9003
			870	8.70	1.98	1.28	9299	1.59	7439	1.33	6199	1.14	5314	1.98	9299	1.66	9299
			600	6.00	1.47	.912	9583	1.18	7667	.984	6389	.846	5476	1.47	9583	1.20	9583
			100	1.00	.306	.159	10041	.245	8033	.205	6694	.176	5738	.306	10041	.230	10041
100 (H) (101.3)	5 (5.06)	20 (20)	2500	24.7	3.96	3.05	7780	3.17	6224	2.65	5186	2.27	4446	3.96	7780	3.67	7780
			1750	17.3	3.10	2.32	8450	2.49	6760	2.07	5633	1.78	4828	3.10	8450	2.84	8450
			1160	11.5	2.27	1.64	9017	1.82	7214	1.52	6012	1.30	5153	2.27	9017	2.06	9017
			870	8.59	1.80	1.27	9310	1.44	7448	1.20	6207	1.03	5320	1.80	9310	1.62	9310
			600	5.92	1.32	.901	9591	1.06	7673	.880	6394	.755	5481	1.32	9591	1.17	9591
			100	0.99	.256	.157	10041	.205	8033	.171	6694	.147	5738	.256	10041	.218	10041
120 (H) (118.6)	6 (5.93)	20 (20)	2500	21.1	3.57	2.71	8099	2.86	6479	2.38	5399	2.05	4628	3.57	8099	3.29	8099
			1750	14.8	2.76	2.04	8691	2.21	6953	1.85	5794	1.58	4966	2.76	8691	2.52	8691
			1160	9.78	2.00	1.43	9187	1.60	7350	1.34	6125	1.15	5250	2.00	9187	1.80	9187
			870	7.34	1.58	1.10	9441	1.27	7553	1.06	6294	.906	5395	1.58	9441	1.41	9441
			600	5.06	1.15	.777	9684	.921	7747	.768	6456	.659	5534	1.15	9684	1.02	9684
			100	0.84	.223	.134	10041	.179	8033	.149	6694	.128	5738	.223	10041	.118	10041
150 (D) (150)	10 (10)	15 (15)	2500	16.7	3.37	2.37	8960	2.72	7168	2.28	5973	1.97	5120	3.15	8348	2.95	8960
			1750	11.7	2.56	1.74	9378	2.06	7503	1.73	6252	1.49	5359	2.56	9378	2.20	9378
			1160	7.73	1.83	1.19	9721	1.47	7777	1.23	6481	1.06	5555	1.83	9721	1.54	9721
			870	5.80	1.44	.911	9894	1.16	7915	.969	6596	.834	5654	1.44	9894	1.20	9894
			600	4.00	1.05	.638	10058	.842	8047	.704	6705	.606	5748	1.05	10058	.853	10058
			100	0.67	.214	.110	10369	.171	8295	.143	6913	.123	5925	.214	10369	.160	10369
150 (H) (151.9)	5 (5.06)	30 (30)	2500	16.5	3.03	2.08	7946	2.43	6357	2.03	5297	1.74	4540	3.03	7946	2.69	7946
			1750	11.5	2.42	1.59	8682	1.94	6946	1.62	5788	1.39	4961	2.42	8682	2.12	8682
			1160	7.64	1.81	1.13	9309	1.45	7447	1.21	6206	1.04	5319	1.81	9309	1.55	9309
			870	5.73	1.45	.875	9634	1.16	7707	.971	6422	.833	5505	1.45	9634	1.23	9634
			600	3.95	1.08	.623	9946	.863	7957	.720	6631	.618	5683	1.08	9946	.894	9946
			100	0.66	.221	.110	10551	.177	8441	.147	7034	.126	6029	.221	10551	.172	10551

1. Center Distance=Primary/Secondary.
2. Numbers shown in ( ) are actual ratios. Worm ratios are exact, helical ratios are rounded and are not exact.
3. If input speed is below 1160 RPM, please specify speed to insure proper lubrication.
4. See engineering section, pages 224-226, for further discussion regarding service factors.
5. Actual input HP must not exceed the thermal input HP capacity on a continuous basis.
6. When using synthetic oil, there is no thermal rating limitation. The Service Factor is 1.00.

THRUST AND OVERHUNG LOAD RATINGS

(D) Double Reduction Worm Gear
(H) Double Reduction Helical/Worm Gear

REDUCER SIZE
943

OVERHUNG LOAD CAPACITIES[1]							THRUST CAPACITIES				CENTER DISTANCE[1] 2.625/4.250 (D) CENTER DISTANCE[1] 3.200/4.250 (H)	
INPUT SHAFT	OUTPUT SHAFT[5]						OUTPUT SHAFT					
ALL MODELS	DB, DT[2]	DV SHAFT UP	DV SHAFT DOWN	DSF[3, 4] BASE SIDE	DSF[3, 4] COVER SIDE	DL	DB, DT, DV	DSF TOWARD BASE	DSF AWAY FROM BASE	DL AWAY FROM BASE	INPUT RPM	RATIO
500	2800	2800	2400	4527	2300	3400	4200	4500	4500	4200	2500	75 (H) (75)
500	2800	2800	2400	5139	2300	3400	4200	4500	4500	4200	1750	
500	2800	2800	2400	5877	2300	3400	4200	4500	4500	4200	1160	
500	2800	2800	2400	6432	2300	3400	4200	4500	4500	4200	870	
500	2800	2800	2400	6500	2300	3400	4200	4500	4500	4200	600	
500	2800	2800	2400	6500	2300	3400	4200	4500	4500	4200	100	
500	2800	2800	2400	4789	2300	3400	4200	4500	4500	4200	2500	90 (H) (88.9)
500	2800	2800	2400	5431	2300	3400	4200	4500	4500	4200	1750	
500	2800	2800	2400	6172	2300	3400	4200	4500	4500	4200	1160	
500	2800	2800	2400	6500	2300	3400	4200	4500	4500	4200	870	
500	2800	2800	2400	6500	2300	3400	4200	4500	4500	4200	600	
500	2800	2800	2400	6500	2300	3400	4200	4500	4500	4200	100	
500	2800	2800	2400	4986	2300	3400	4200	4500	4500	4200	2500	100 (D) (100)
500	2800	2800	2400	5664	2300	3400	4200	4500	4500	4200	1750	
500	2800	2800	2400	6477	2300	3400	4200	4500	4500	4200	1160	
500	2800	2800	2400	6500	2300	3400	4200	4500	4500	4200	870	
500	2800	2800	2400	6500	2300	3400	4200	4500	4500	4200	600	
500	2800	2800	2400	6500	2300	3400	4200	4500	4500	4200	100	
500	2800	2800	2400	5008	2300	3400	4200	4500	4500	4200	2500	100 (H) (101.3)
500	2800	2800	2400	5687	2300	3400	4200	4500	4500	4200	1750	
500	2800	2800	2400	6500	2300	3400	4200	4500	4500	4200	1160	
500	2800	2800	2400	6500	2300	3400	4200	4500	4500	4200	870	
500	2800	2800	2400	6500	2300	3400	4200	4500	4500	4200	600	
500	2800	2800	2400	6500	2300	3400	4200	4500	4500	4200	100	
500	2800	2800	2400	5300	2300	3400	4200	4500	4500	4200	2500	120 (H) (118.6)
500	2800	2800	2400	6010	2300	3400	4200	4500	4500	4200	1750	
500	2800	2800	2400	6500	2300	3400	4200	4500	4500	4200	1160	
500	2800	2800	2400	6500	2300	3400	4200	4500	4500	4200	870	
500	2800	2800	2400	6500	2300	3400	4200	4500	4500	4200	600	
500	2800	2800	2400	6500	2300	3400	4200	4500	4500	4200	100	
250	2800	2800	2400	5718	2300	3400	4200	4500	4500	4200	2500	150 (D) (150)
250	2800	2800	2400	6397	2300	3400	4200	4500	4500	4200	1750	
250	2800	2800	2400	6500	2300	3400	4200	4500	4500	4200	1160	
250	2800	2800	2400	6500	2300	3400	4200	4500	4500	4200	870	
250	2800	2800	2400	6500	2300	3400	4200	4500	4500	4200	600	
250	2800	2800	2400	6500	2300	3400	4200	4500	4500	4200	100	
500	2800	2800	2400	5755	2300	3400	4200	4500	4500	4200	2500	150 (H) (151.9)
500	2800	2800	2400	6500	2300	3400	4200	4500	4500	4200	1750	
500	2800	2800	2400	6500	2300	3400	4200	4500	4500	4200	1160	
500	2800	2800	2400	6500	2300	3400	4200	4500	4500	4200	870	
500	2800	2800	2400	6500	2300	3400	4200	4500	4500	4200	600	
500	2800	2800	2400	6500	2300	3400	4200	4500	4500	4200	100	

1. Overhung load given at one shaft diameter from housing or mounting flange. All values given in pounds.
2. Overhung load capacities are based on the direction and location of the load as shown in figure 1 on page 228. Consult factory for allowable OHL values if load is applied as shown in figure 2A, B, C or D on page 228.
3. Overhung load based on maximum bore size. Use of smaller driven shaft diameter may limit OHL capacity.
4. Overhung load capacity given at a point located 7.125 inches from centerline of housing.
5. For DSND output shaft overhung load capacities, contact the factory.

REDUCER SIZE
943

HORSEPOWER AND TORQUE RATINGS

(D) Double Reduction Worm Gear
(H) Double Reduction Helical/Worm Gear

WINSMITH

CENTER DISTANCE[1] 2.625/4.250 (D) CENTER DISTANCE[1] 3.200/4.250 (H)					HORSEPOWER AND TORQUE RATINGS (INCH POUNDS)													
					MECHANICAL RATINGS[4]										THERMAL[5]		SYNTHETIC OIL MECHANICAL[6]	
					1.00 SERVICE FACTOR			1.25 SF		1.50 SF		1.75 SF						
OVERALL RATIO[2]	PRIMARY RATIO[2]	SECONDARY RATIO[2]	INPUT RPM[3]	OUTPUT RPM	INPUT HP	OUTPUT HP	OUTPUT TORQUE	INPUT HP	OUTPUT TORQUE	INPUT HP	OUTPUT TORQUE	INPUT HP	OUTPUT TORQUE	INPUT HP	OUTPUT TORQUE	INPUT HP	OUTPUT TORQUE
180 (H) (177.9)	6 (5.93)	30 (30)	2500	14.1	2.76	1.85	8296	2.21	6637	1.84	5531	1.58	4741	2.76	8296	2.43	8296
			1750	9.84	2.18	1.40	8948	1.74	7159	1.45	5966	1.25	5113	2.18	8948	1.88	8948
			1160	6.52	1.61	.983	9497	1.29	7598	1.07	6332	.921	5427	1.61	9497	1.37	9497
			870	4.89	1.28	.759	9779	1.03	7823	.856	6520	.735	5588	1.28	9779	1.07	9779
			600	3.37	.945	.538	10049	.757	8040	.631	6700	.541	5743	.945	10049	.779	10049
			100	0.56	.193	.094	10569	.155	8456	.129	7046	.111	6040	.193	10569	.149	10569
200 (D) (200)	10 (10)	20 (20)	2500	12.5	2.66	1.77	8913	2.15	7130	1.81	5942	1.56	5093	2.66	8913	2.28	8913
			1750	8.75	2.01	1.29	9294	1.62	7435	1.36	6196	1.18	5311	2.01	9294	1.69	9294
			1160	5.80	1.44	.884	9605	1.16	7684	.973	6403	.840	5488	1.44	9605	1.18	9605
			870	4.35	1.13	.674	9761	.912	7809	.764	6507	.658	5578	1.13	9761	.916	9761
			600	3.00	.825	.472	9909	.663	7927	.555	6606	.478	5662	.825	9099	.653	9909
			100	0.50	.167	.080	10041	.134	8033	.112	6694	.096	5738	.167	10041	.120	10041
200 (H) (202.5)	5 (5.06)	40 (40)	2500	12.4	2.38	1.52	7751	1.91	6201	1.60	5167	1.37	4429	2.38	7751	2.06	7751
			1750	8.64	1.90	1.15	8411	1.52	6728	1.27	5607	1.09	4806	1.90	8411	1.61	8411
			1160	5.73	1.42	.815	8969	1.14	7175	.949	5979	.815	5125	1.42	8969	1.18	8969
			870	4.30	1.14	.631	9257	.913	7405	.762	6171	.654	5289	1.14	9257	.929	9257
			600	2.96	.846	.448	9533	.677	7626	.565	6355	.485	5447	.846	9533	.676	9533
			100	0.49	.174	.078	9919	.139	7935	.116	6613	.100	5668	.174	9919	.128	9919
250 (H) (253.2)	5 (5.06)	50 (50)	2500	9.87	1.95	1.16	7431	1.57	5945	1.31	4954	1.12	4246	1.95	7431	1.65	7431
			1750	6.91	1.56	.881	8029	1.25	6423	1.04	5353	.896	4588	1.56	8029	1.28	8029
			1160	4.58	1.16	.620	8533	.933	6827	.779	5689	.669	4876	1.16	8533	.935	8533
			870	3.44	.936	.479	8793	.750	7034	.626	5862	.537	5024	.936	8793	.738	8793
			600	2.37	.685	.335	8906	.549	7125	.458	5937	.393	5089	.685	8906	.529	8906
			100	0.39	.137	.056	8906	.110	7125	.092	5937	.079	5089	.137	8906	.097	8906
300 (D) (300)	20 (20)	15 (15)	2500	8.33	2.05	1.28	9668	1.66	7734	1.40	6445	1.21	5255	1.92	9030	1.72	9668
			1750	5.83	1.53	.915	9891	1.23	7913	1.04	6594	.898	5652	1.53	9891	1.26	9891
			1160	3.87	1.08	.618	10070	.870	8056	.731	6714	.632	5755	1.08	10070	.866	10070
			870	2.90	.843	.467	10160	.679	8128	.570	6773	.492	5805	.843	10160	.665	10160
			600	2.00	.611	.325	10243	.492	8195	.412	6829	.355	5853	.611	10243	.471	10243
			100	0.33	.126	.055	10400	.101	8320	.084	6934	.072	5943	.126	10400	.087	10400
300 (H) (296.4)	6 (5.93)	50 (50)	2500	8.43	1.77	1.03	7717	1.42	6173	1.19	5144	1.02	4409	1.77	7717	1.48	7717
			1750	5.90	1.40	.772	8244	1.12	6595	.936	5496	.804	4711	1.40	8244	1.14	8244
			1160	3.91	1.03	.539	8684	.829	6947	.692	5789	.594	4962	1.03	8684	.823	8684
			870	2.94	.826	.415	8906	.662	7125	.553	5937	.475	5089	.826	8906	.646	8906
			600	2.02	.597	.286	8906	.478	7125	.399	5937	.342	5089	.597	8906	.456	8906
			100	0.34	.119	.048	8906	.095	7125	.080	5937	.068	5089	.119	8906	.083	8906
360 (H) (355.7)	6 (5.96)	60 (60)	2500	7.03	1.48	.808	7242	1.19	5793	.991	4828	.852	4138	1.48	7242	1.20	7242
			1750	4.92	1.17	.602	7717	.936	6174	.782	5145	.672	4410	1.17	7717	.926	7717
			1160	3.26	.852	.414	7993	.683	6394	.571	5329	.490	4567	.852	7993	.657	7993
			870	2.45	.666	.310	7993	.534	6394	.445	5329	.383	4567	.666	7993	.503	7993
			600	1.69	.482	.214	7993	.386	6394	.322	5329	.277	4567	.482	7993	.356	7993
			100	0.28	.097	.036	7993	.078	6394	.065	5329	.056	4567	.097	7993	.065	7993

1. Center Distance=Primary/Secondary.
2. Numbers shown in ( ) are actual ratios. Worm ratios are exact, helical ratios are rounded and are not exact.
3. If input speed is below 1160 RPM, please specify speed to insure proper lubrication.
4. See engineering section, pages 224-226, for further discussion regarding service factors.
5. Actual input HP must not exceed the thermal input HP capacity on a continuous basis.
6. When using synthetic oil, there is no thermal rating limitation. The Service Factor is 1.00.

THRUST AND OVERHUNG LOAD RATINGS

(D) Double Reduction Worm Gear
(H) Double Reduction Helical/Worm Gear

REDUCER SIZE **943**

OVERHUNG LOAD CAPACITIES[1]							THRUST CAPACITIES				CENTER DISTANCE[1] 2.625/4.250 (D) CENTER DISTANCE[1] 3.200/4.250 (H)	
INPUT SHAFT	OUTPUT SHAFT[5]						OUTPUT SHAFT					
ALL MODELS	DB, DT[2]	DV SHAFT UP	DV SHAFT DOWN	DSF[3, 4] BASE SIDE	DSF[3, 4] COVER SIDE	DL	DB, DT, DV	DSF TOWARD BASE	DSF AWAY FROM BASE	DL AWAY FROM BASE	INPUT RPM	RATIO
500	2800	2800	2400	6088	2300	3400	4200	4500	4500	4200	2500	**180 (H)** (177.9)
500	2800	2800	2400	6500	2300	3400	4200	4500	4500	4200	1750	
500	2800	2800	2400	6500	2300	3400	4200	4500	4500	4200	1160	
500	2800	2800	2400	6500	2300	3400	4200	4500	4500	4200	870	
500	2800	2800	2400	6500	2300	3400	4200	4500	4500	4200	600	
500	2800	2800	2400	6500	2300	3400	4200	4500	4500	4200	100	
250	2800	2800	2400	6327	2300	3400	4200	4500	4500	4200	2500	**200 (D)** (200)
250	2800	2800	2400	6500	2300	3400	4200	4500	4500	4200	1750	
250	2800	2800	2400	6500	2300	3400	4200	4500	4500	4200	1160	
250	2800	2800	2400	6500	2300	3400	4200	4500	4500	4200	870	
250	2800	2800	2400	6500	2300	3400	4200	4500	4500	4200	600	
250	2800	2800	2400	6500	2300	3400	4200	4500	4500	4200	100	
500	2800	2800	2400	6342	2300	3400	4200	4500	4500	4200	2500	**200 (H)** (202.5)
500	2800	2800	2400	6500	2300	3400	4200	4500	4500	4200	1750	
500	2800	2800	2400	6500	2300	3400	4200	4500	4500	4200	1160	
500	2800	2800	2400	6500	2300	3400	4200	4500	4500	4200	870	
500	2800	2800	2400	6500	2300	3400	4200	4500	4500	4200	600	
500	2800	2800	2400	6500	2300	3400	4200	4500	4500	4200	100	
500	2800	2800	2400	6500	2300	3400	4200	4500	4500	4200	2500	**250 (H)** (253.2)
500	2800	2800	2400	6500	2300	3400	4200	4500	4500	4200	1750	
500	2800	2800	2400	6500	2300	3400	4200	4500	4500	4200	1160	
500	2800	2800	2400	6500	2300	3400	4200	4500	4500	4200	870	
500	2800	2800	2400	6500	2300	3400	4200	4500	4500	4200	600	
500	2800	2800	2400	6500	2300	3400	4200	4500	4500	4200	100	
300	2800	2800	2400	6500	2300	3400	4200	4500	4500	4200	2500	**300 (D)** (300)
300	2800	2800	2400	6500	2300	3400	4200	4500	4500	4200	1750	
300	2800	2800	2400	6500	2300	3400	4200	4500	4500	4200	1160	
300	2800	2800	2400	6500	2300	3400	4200	4500	4500	4200	870	
300	2800	2800	2400	6500	2300	3400	4200	4500	4500	4200	600	
300	2800	2800	2400	6500	2300	3400	4200	4500	4500	4200	100	
500	2800	2800	2400	6500	2300	3400	4200	4500	4500	4200	2500	**300 (H)** (296.4)
500	2800	2800	2400	6500	2300	3400	4200	4500	4500	4200	1750	
500	2800	2800	2400	6500	2300	3400	4200	4500	4500	4200	1160	
500	2800	2800	2400	6500	2300	3400	4200	4500	4500	4200	870	
500	2800	2800	2400	6500	2300	3400	4200	4500	4500	4200	600	
500	2800	2800	2400	6500	2300	3400	4200	4500	4500	4200	100	
500	2800	2800	2400	6500	2300	3400	4200	4500	4500	4200	2500	**360 (H)** (355.7)
500	2800	2800	2400	6500	2300	3400	4200	4500	4500	4200	1750	
500	2800	2800	2400	6500	2300	3400	4200	4500	4500	4200	1160	
500	2800	2800	2400	6500	2300	3400	4200	4500	4500	4200	870	
500	2800	2800	2400	6500	2300	3400	4200	4500	4500	4200	600	
500	2800	2800	2400	6500	2300	3400	4200	4500	4500	4200	100	

1. Overhung load given at one shaft diameter from housing or mounting flange. All values given in pounds.
2. Overhung load capacities are based on the direction and location of the load as shown in figure 1 on page 228. Consult factory for allowable OHL values if load is applied as shown in figure 2A, B, C or D on page 228.
3. Overhung load based on maximum bore size. Use of smaller driven shaft diameter may limit OHL capacity.
4. Overhung load capacity given at a point located 7.125 inches from centerline of housing.
5. For DSND output shaft overhung load capacities, contact the factory.

REDUCER SIZE
943

HORSEPOWER AND TORQUE RATINGS

(D) Double Reduction Worm Gear
(H) Double Reduction Helical/Worm Gear

WINSMITH®

CENTER DISTANCE[1] 2.625/4.250 (D) CENTER DISTANCE[1] 3.200/4.250 (H)					HORSEPOWER AND TORQUE RATINGS (INCH POUNDS)													
					MECHANICAL RATINGS[4]										THERMAL[5]		SYNTHETIC OIL MECHANICAL[6]	
					1.00 SERVICE FACTOR			1.25 SF		1.50 SF		1.75 SF					
OVERALL RATIO[2]	PRIMARY RATIO[2]	SECONDARY RATIO[2]	INPUT RPM[3]	OUTPUT RPM	INPUT HP	OUTPUT HP	OUTPUT TORQUE	INPUT HP	OUTPUT TORQUE	INPUT HP	OUTPUT TORQUE	INPUT HP	OUTPUT TORQUE	INPUT HP	OUTPUT TORQUE	INPUT HP	OUTPUT TORQUE
500 (D) (500)	20 (20)	25 (25)	2500	5.00	1.52	.792	9981	1.23	7985	1.04	6654	.907	5704	1.52	9981	1.19	9981
			1750	3.50	1.14	.567	10214	.921	8171	.777	6809	.675	5836	1.14	10214	.866	10214
			1160	2.32	.809	.383	10400	.654	8320	.551	6934	.477	5943	.809	10400	.597	10400
			870	1.74	.635	.290	10493	.513	8395	.431	6996	.373	5996	.635	10493	.459	10493
			600	1.20	.463	.201	10581	.373	8465	.313	7054	.271	6046	.463	10581	.325	10581
			100	0.20	.098	.034	10744	.079	8595	.066	7163	.057	6140	.098	10744	.060	10744
750 (D) (750)	25 (25)	30 (30)	2500	3.33	1.15	.532	10057	.942	8045	.801	6704	.700	5747	1.15	10057	.868	10057
			1750	2.33	.861	.379	10239	.701	8191	.594	6826	.517	5851	.861	10239	.627	10239
			1160	1.55	.611	.255	10384	.496	8307	.419	6923	.364	5934	.611	10384	.429	10384
			870	1.16	.479	.192	10457	.388	8365	.327	6971	.284	5975	.479	10457	.329	10457
			600	0.80	.349	.134	10524	.282	8420	.237	7016	.206	6014	.349	10524	.232	10524
			100	0.13	.074	.023	10651	.060	8521	.050	7101	.043	6086	.074	10651	.043	10651
1000 (D) (1000)	50 (50)	20 (20)	2500	2.50	.880	.395	9965	.722	7972	.617	6643	.542	5694	.880	9965	.672	9965
			1750	1.75	.649	.279	10041	.531	8033	.452	6694	.396	5738	.649	10041	.480	10041
			1160	1.16	.456	.185	10041	.371	8033	.315	6694	.275	5738	.456	10041	.324	10041
			870	0.87	.360	.139	10041	.293	8033	.248	6694	.216	5738	.360	10041	.248	10041
			600	0.60	.264	.096	10041	.214	8033	.181	6694	.157	5738	.264	10041	.175	10041
			100	0.10	.055	.016	10041	.045	8033	.037	6694	.032	5738	.055	10041	.032	10041
1500 (D) (1500)	50 (50)	30 (30)	2500	1.67	.752	.274	10362	.620	8290	.532	6908	.469	5921	.752	10362	.531	10362
			1750	1.17	.558	.194	10455	.458	8364	.391	6970	.343	5975	.558	10455	.379	10455
			1160	0.77	.396	.129	10529	.323	8424	.275	7020	.240	6017	.396	10529	.257	10529
			870	0.58	.315	.097	10566	.256	8453	.217	7044	.190	6038	.315	10566	.196	10566
			600	0.40	.233	.067	10600	.189	8480	.160	7067	.139	6057	.233	10600	.139	10600
			100	0.07	.050	.011	10664	.040	8531	.034	7109	.029	6094	.050	10664	.025	10664
2000 (D) (2000)	50 (50)	40 (40)	2500	1.25	.611	.196	9900	.507	7920	.438	6600	.388	5657	.611	9900	.420	9900
			1750	0.88	.449	.138	9919	.371	7935	.318	6613	.281	5668	.449	9919	.296	9919
			1160	0.58	.315	.091	9919	.259	7935	.221	6613	.194	5668	.315	9919	.198	9919
			870	0.44	.251	.068	9919	.205	7935	.175	6613	.153	5668	.251	9919	.150	9919
			600	0.30	.185	.047	9919	.151	7935	.128	6613	.112	5668	.185	9919	.105	9919
			100	0.05	.039	.008	9919	.032	7935	.027	6613	.023	5668	.039	9919	.019	9919
3000 (D) (3000)	60 (60)	50 (50)	2500	0.83	.450	.118	8906	.378	7125	.330	5937	.296	5089	.450	8906	.301	8906
			1750	0.58	.328	.082	8906	.274	7125	.238	5937	.212	5089	.328	8906	.209	8906
			1160	0.39	.233	.055	8906	.193	7125	.166	5937	.147	5089	.233	8906	.139	8906
			870	0.29	.183	.041	8906	.151	7125	.130	5937	.115	5089	.183	8906	.105	8906
			600	0.20	.135	.028	8906	.110	7125	.094	5937	.083	5089	.135	8906	.072	8906
			100	0.03	.028	.005	8906	.023	7125	.019	5937	.017	5089	.028	8906	.012	8906

1. Center Distance=Primary/Secondary.
2. Numbers shown in ( ) are actual ratios. Worm ratios are exact, helical ratios are rounded and are not exact.
3. If input speed is below 1160 RPM, please specify speed to insure proper lubrication.
4. See engineering section, pages 224-226, for further discussion regarding service factors.
5. Actual input HP must not exceed the thermal input HP capacity on a continuous basis.
6. When using synthetic oil, there is no thermal rating limitation. The Service Factor is 1.00.

THRUST AND OVERHUNG LOAD RATINGS

(D) Double Reduction Worm Gear
(H) Double Reduction Helical/Worm Gear

REDUCER SIZE
943

OVERHUNG LOAD CAPACITIES[1]							THRUST CAPACITIES				CENTER DISTANCE[1] 2.625/4.250 (D) CENTER DISTANCE[1] 3.200/4.250 (H)	
INPUT SHAFT	OUTPUT SHAFT[5]						OUTPUT SHAFT					
ALL MODELS	DB, DT[2]	DV SHAFT UP	DV SHAFT DOWN	DSF[3, 4] BASE SIDE	DSF[3, 4] COVER SIDE	DL	DB, DT, DV	DSF TOWARD BASE	DSF AWAY FROM BASE	DL AWAY FROM BASE	INPUT RPM	RATIO
300	2800	2800	2400	6500	2300	3400	4200	4500	4500	4200	2500	500 (D) (500)
300	2800	2800	2400	6500	2300	3400	4200	4500	4500	4200	1750	
300	2800	2800	2400	6500	2300	3400	4200	4500	4500	4200	1160	
300	2800	2800	2400	6500	2300	3400	4200	4500	4500	4200	870	
300	2800	2800	2400	6500	2300	3400	4200	4500	4500	4200	600	
300	2800	2800	2400	6500	2300	3400	4200	4500	4500	4200	100	
275	2800	2800	2400	6500	2300	3400	4200	4500	4500	4200	2500	750 (D) (750)
275	2800	2800	2400	6500	2300	3400	4200	4500	4500	4200	1750	
275	2800	2800	2400	6500	2300	3400	4200	4500	4500	4200	1160	
275	2800	2800	2400	6500	2300	3400	4200	4500	4500	4200	870	
275	2800	2800	2400	6500	2300	3400	4200	4500	4500	4200	600	
275	2800	2800	2400	6500	2300	3400	4200	4500	4500	4200	100	
285	2800	2800	2400	6500	2300	3400	4200	4500	4500	4200	2500	1000 (D) (1000)
285	2800	2800	2400	6500	2300	3400	4200	4500	4500	4200	1750	
285	2800	2800	2400	6500	2300	3400	4200	4500	4500	4200	1160	
285	2800	2800	2400	6500	2300	3400	4200	4500	4500	4200	870	
285	2800	2800	2400	6500	2300	3400	4200	4500	4500	4200	600	
285	2800	2800	2400	6500	2300	3400	4200	4500	4500	4200	100	
285	2800	2800	2400	6500	2300	3400	4200	4500	4500	4200	2500	1500 (D) (1500)
285	2800	2800	2400	6500	2300	3400	4200	4500	4500	4200	1750	
285	2800	2800	2400	6500	2300	3400	4200	4500	4500	4200	1160	
285	2800	2800	2400	6500	2300	3400	4200	4500	4500	4200	870	
285	2800	2800	2400	6500	2300	3400	4200	4500	4500	4200	600	
285	2800	2800	2400	6500	2300	3400	4200	4500	4500	4200	100	
285	2800	2800	2400	6500	2300	3400	4200	4500	4500	4200	2500	2000 (D) (2000)
285	2800	2800	2400	6500	2300	3400	4200	4500	4500	4200	1750	
285	2800	2800	2400	6500	2300	3400	4200	4500	4500	4200	1160	
285	2800	2800	2400	6500	2300	3400	4200	4500	4500	4200	870	
285	2800	2800	2400	6500	2300	3400	4200	4500	4500	4200	600	
285	2800	2800	2400	6500	2300	3400	4200	4500	4500	4200	100	
270	2800	2800	2400	6500	2300	3400	4200	4500	4500	4200	2500	3000 (D) (3000)
270	2800	2800	2400	6500	2300	3400	4200	4500	4500	4200	1750	
270	2800	2800	2400	6500	2300	3400	4200	4500	4500	4200	1160	
270	2800	2800	2400	6500	2300	3400	4200	4500	4500	4200	870	
270	2800	2800	2400	6500	2300	3400	4200	4500	4500	4200	600	
270	2800	2800	2400	6500	2300	3400	4200	4500	4500	4200	100	

1. Overhung load given at one shaft diameter from housing or mounting flange. All values given in pounds.
2. Overhung load capacities are based on the direction and location of the load as shown in figure 1 on page 228. Consult factory for allowable OHL values if load is applied as shown in figure 2A, B, C or D on page 228.
3. Overhung load based on maximum bore size. Use of smaller driven shaft diameter may limit OHL capacity.
4. Overhung load capacity given at a point located 7.125 inches from centerline of housing.
5. For DSND output shaft overhung load capacities, contact the factory.

REDUCER SIZE
943

HORSEPOWER AND TORQUE RATINGS

(D) Double Reduction Worm Gear
(H) Double Reduction Helical/Worm Gear

WINSMITH®

CENTER DISTANCE[1] 2.625/4.250 (D) CENTER DISTANCE[1] 3.200/4.250 (H)					HORSEPOWER AND TORQUE RATINGS (INCH POUNDS)													
					MECHANICAL RATINGS[4]										THERMAL[5]		SYNTHETIC OIL MECHANICAL[6]	
					1.00 SERVICE FACTOR			1.25 SF		1.50 SF		1.75 SF						
OVERALL RATIO[2]	PRIMARY RATIO[2]	SECONDARY RATIO[2]	INPUT RPM[3]	OUTPUT RPM	INPUT HP	OUTPUT HP	OUTPUT TORQUE	INPUT HP	OUTPUT TORQUE	INPUT HP	OUTPUT TORQUE	INPUT HP	OUTPUT TORQUE	INPUT HP	OUTPUT TORQUE	INPUT HP	OUTPUT TORQUE	
3600 (D) (3600)	60 (60)	60 (60)	2500	0.69	.382	.088	7993	.324	6394	.285	5329	.257	4567	.382	7993	.253	7993	
			1750	0.49	.277	.062	7993	.233	6394	.204	5329	.183	4567	.277	7993	.174	7993	
			1160	0.32	.196	.041	7993	.163	6394	.141	5329	.126	4567	.196	7993	.115	7993	
			870	0.24	.154	.031	7993	.127	6394	.110	5329	.098	4567	.154	7993	.086	7993	
			600	0.17	.112	.021	7993	.093	6394	.080	5329	.070	4567	.112	7993	.059	7993	
			100	0.03	.023	.004	7993	.019	6394	.016	5329	.014	4567	.023	7993	.010	7993	
4000 (D) (4000)	80 (80)	50 (50)	2500	0.63	.388	.088	8906	.328	7125	.289	5937	.261	5089	.388	8906	.256	8906	
			1750	0.44	.282	.062	8906	.237	7125	.207	5937	.186	5089	.282	8906	.177	8906	
			1160	0.29	.202	.041	8906	.168	7125	.146	5937	.130	5089	.202	8906	.117	8906	
			870	0.22	.159	.031	8906	.132	7125	.114	5937	.101	5089	.159	8906	.088	8906	
			600	0.15	.117	.021	8906	.096	7125	.082	5937	.073	5089	.117	8906	.060	8906	
			100	0.03	.024	.004	8906	.020	7125	.017	5937	.014	5089	.024	8906	.010	8906	
5000 (D) (5000)	100 (100)	50 (50)	2500	0.50	.350	.071	8906	.298	7125	.264	5937	.239	5089	.350	8906	.228	8906	
			1750	0.35	.259	.049	8906	.219	7125	.192	5937	.172	5089	.259	8906	.158	8906	
			1160	0.23	.184	.033	8906	.154	7125	.133	5937	.119	5089	.184	8906	.103	8906	
			870	0.17	.144	.025	8906	.120	7125	.104	5937	.092	5089	.144	8906	.077	8906	
			600	0.12	.106	.017	8906	.087	7125	.075	5937	.066	5089	.106	8906	.053	8906	
			100	0.02	.022	.003	8906	.018	7125	.015	5937	.013	5089	.022	8906	.009	8906	
6000 (D) (6000)	100 (100)	60 (60)	2500	0.42	.301	.053	7993	.259	6394	.231	5329	.211	4567	.301	7993	.197	7993	
			1750	0.29	.222	.037	7993	.189	6394	.167	5329	.151	4567	.222	7993	.135	7993	
			1160	0.19	.156	.025	7993	.131	6394	.115	5329	.103	4567	.156	7993	.087	7993	
			870	0.15	.122	.018	7993	.102	6394	.089	5329	.079	4567	.122	7993	.065	7993	
			600	0.10	.089	.013	7993	.074	6394	.064	5329	.057	4567	.089	7993	.044	7993	
			100	0.02	.018	.002	7993	.015	6394	.013	5329	.011	4567	.018	7993	.007	7993	
8000 (D) (8000)	100 (100)	80 (80)	2500	0.31	.241	.033	6560	.211	5248	.191	4373	.177	3749	.241	6560	.160	6560	
			1750	0.22	.175	.023	6560	.151	5248	.136	4373	.124	3749	.175	6560	.107	6560	
			1160	0.15	.121	.015	6560	.104	5248	.092	4373	.083	3749	.121	6560	.068	6560	
			870	0.11	.094	.011	6560	.080	5248	.070	4373	.063	3749	.094	6560	.050	6560	
			600	0.08	.068	.008	6560	.057	5248	.050	4373	.045	3749	.068	6560	.033	6560	
			100	0.01	.014	.001	6560	.011	5248	.009	4373	.008	3749	.014	6560	.005	6560	
10000 (D) (10000)	100 (100)	100 (100)	2500	0.25	.205	.022	5525	.183	4420	.167	3684	.156	3157	.205	5525	.139	5525	
			1750	0.18	.148	.015	5534	.130	4427	.117	3689	.109	3162	.148	5534	.092	5534	
			1160	0.12	.101	.010	5534	.087	4427	.078	3689	.072	3162	.101	5534	.058	5534	
			870	0.09	.078	.008	5534	.067	4427	.059	3689	.054	3162	.078	5534	.042	5534	
			600	0.06	.055	.005	5534	.047	4427	.042	3689	.038	3162	.055	5534	.027	5534	
			100	0.01	.011	.001	5534	.009	4427	.008	3689	.007	3162	.011	5534	.004	5534	

1. Center Distance=Primary/Secondary.
2. Numbers shown in ( ) are actual ratios. Worm ratios are exact, helical ratios are rounded and are not exact.
3. If input speed is below 1160 RPM, please specify speed to insure proper lubrication.
4. See engineering section, pages 224-226, for further discussion regarding service factors.
5. Actual input HP must not exceed the thermal input HP capacity on a continuous basis.
6. When using synthetic oil, there is no thermal rating limitation. The Service Factor is 1.00.

THRUST AND OVERHUNG LOAD RATINGS

(D) Double Reduction Worm Gear
(H) Double Reduction Helical/Worm Gear

REDUCER SIZE **943**

OVERHUNG LOAD CAPACITIES[1]							THRUST CAPACITIES				CENTER DISTANCE[1] 2.625/4.250 (D) CENTER DISTANCE[1] 3.200/4.250 (H)	
INPUT SHAFT	OUTPUT SHAFT[5]						OUTPUT SHAFT					
ALL MODELS	DB, DT[2]	DV SHAFT UP	DV SHAFT DOWN	DSF[3, 4] BASE SIDE	DSF[3, 4] COVER SIDE	DL	DB, DT, DV	DSF TOWARD BASE	DSF AWAY FROM BASE	DL AWAY FROM BASE	INPUT RPM	RATIO
270	2800	2800	2400	6500	2300	3400	4200	4500	4500	4200	2500	3600 (D) (3600)
270	2800	2800	2400	6500	2300	3400	4200	4500	4500	4200	1750	
270	2800	2800	2400	6500	2300	3400	4200	4500	4500	4200	1160	
270	2800	2800	2400	6500	2300	3400	4200	4500	4500	4200	870	
270	2800	2800	2400	6500	2300	3400	4200	4500	4500	4200	600	
270	2800	2800	2400	6500	2300	3400	4200	4500	4500	4200	100	
270	2800	2800	2400	6500	2300	3400	4200	4500	4500	4200	2500	4000 (D) (4000)
270	2800	2800	2400	6500	2300	3400	4200	4500	4500	4200	1750	
270	2800	2800	2400	6500	2300	3400	4200	4500	4500	4200	1160	
270	2800	2800	2400	6500	2300	3400	4200	4500	4500	4200	870	
270	2800	2800	2400	6500	2300	3400	4200	4500	4500	4200	600	
270	2800	2800	2400	6500	2300	3400	4200	4500	4500	4200	100	
270	2800	2800	2400	6500	2300	3400	4200	4500	4500	4200	2500	5000 (D) (5000)
270	2800	2800	2400	6500	2300	3400	4200	4500	4500	4200	1750	
270	2800	2800	2400	6500	2300	3400	4200	4500	4500	4200	1160	
270	2800	2800	2400	6500	2300	3400	4200	4500	4500	4200	870	
270	2800	2800	2400	6500	2300	3400	4200	4500	4500	4200	600	
270	2800	2800	2400	6500	2300	3400	4200	4500	4500	4200	100	
270	2800	2800	2400	6500	2300	3400	4200	4500	4500	4200	2500	6000 (D) (6000)
270	2800	2800	2400	6500	2300	3400	4200	4500	4500	4200	1750	
270	2800	2800	2400	6500	2300	3400	4200	4500	4500	4200	1160	
270	2800	2800	2400	6500	2300	3400	4200	4500	4500	4200	870	
270	2800	2800	2400	6500	2300	3400	4200	4500	4500	4200	600	
270	2800	2800	2400	6500	2300	3400	4200	4500	4500	4200	100	
270	2800	2800	2400	6500	2300	3400	4200	4500	4500	4200	2500	8000 (D) (8000)
270	2800	2800	2400	6500	2300	3400	4200	4500	4500	4200	1750	
270	2800	2800	2400	6500	2300	3400	4200	4500	4500	4200	1160	
270	2800	2800	2400	6500	2300	3400	4200	4500	4500	4200	870	
270	2800	2800	2400	6500	2300	3400	4200	4500	4500	4200	600	
270	2800	2800	2400	6500	2300	3400	4200	4500	4500	4200	100	
270	2800	2800	2400	6500	2300	3400	4200	4500	4500	4200	2500	10000 (D) (10000)
270	2800	2800	2400	6500	2300	3400	4200	4500	4500	4200	1750	
270	2800	2800	2400	6500	2300	3400	4200	4500	4500	4200	1160	
270	2800	2800	2400	6500	2300	3400	4200	4500	4500	4200	870	
270	2800	2800	2400	6500	2300	3400	4200	4500	4500	4200	600	
270	2800	2800	2400	6500	2300	3400	4200	4500	4500	4200	100	

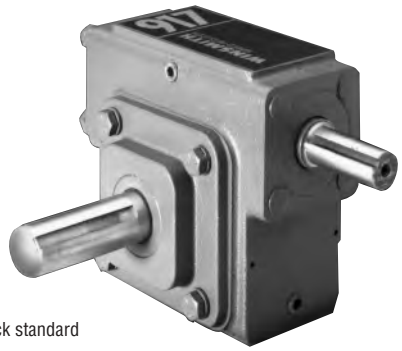
1. Overhung load given at one shaft diameter from housing or mounting flange. All values given in pounds.
2. Overhung load capacities are based on the direction and location of the load as shown in figure 1 on page 228. Consult factory for allowable OHL values if load is applied as shown in figure 2A, B, C or D on page 228.
3. Overhung load based on maximum bore size. Use of smaller driven shaft diameter may limit OHL capacity.
4. Overhung load capacity given at a point located 7.125 inches from centerline of housing.
5. For DSND output shaft overhung load capacities, contact the factory.

MODEL†	913	917	920	924	926	930	935	943
DN SHIPPING WEIGHT	12	15	19	36	38	50	70	108
MDN SHIPPING WEIGHT‡	14	18	22	40	42	54	74	113
CDN SHIPPING WEIGHT‡	17	22	26	45	47	60	80	118
APPROX. OIL CAPACITY (PINTS)	.2	.5	.5	1.0	1.2	1.7	2.3	3.1

GEAR RATIOS AVAILABLE 4:1 THRU 100:1**
TORQUE AND HP RATINGS/OVERHUNG LOAD RATINGS . . . . . PAGES 22-119
MOUNTING POSITIONS . . . . . PAGE 21
SERVICE FACTORS . . . . . PAGES 224-226
HYDRAULIC MOTOR ADAPTERS . . . . . PAGE 192
BASE AND BRACKET KITS . . . . . PAGES 188-191

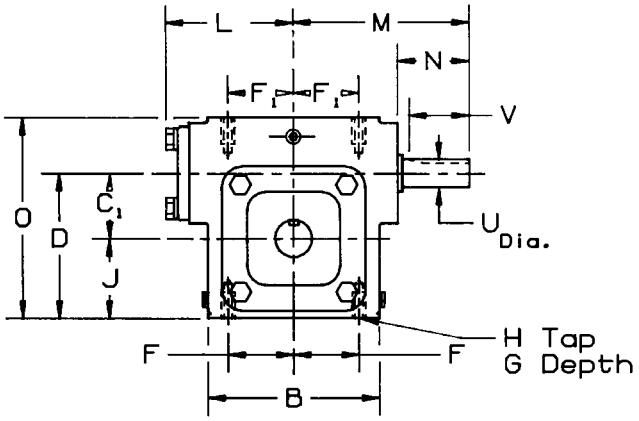
†Weights are approximate and include shipping carton.
‡Weight given for 48C thru 145TC. For 182/4TC and 213/5TC add 4 lbs.
**80:1 and 100:1 not available for Size 913.

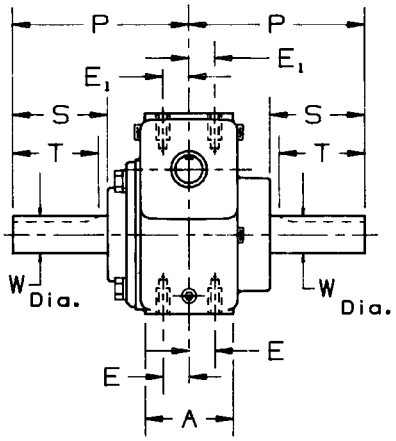
MODEL DN
Assembly L



This model is stock standard in all sizes.

DIMENSIONS





SPEED REDUCER DIMENSIONS (IN INCHES)

SIZE	A	B	C_1	D	E	E_1	F	F_1	G DEPTH	H TAP	J	L	M	O	P	HIGH SPEED SHAFT				SLOW SPEED SHAFT				SIZE
																U*	N	V	KEYWAY	W*	S	T	KEYWAY	
910	2.50	3.25	1.000	2.31	.84	.84	1.31	1.31	.50	¼-20	1.31	1.70	2.88	3.63	2.88	.375	1.18	.80	.09 x .05	.500	1.28	1.00	.13 x .06	910
913	2.00	3.88	1.333	3.08	.69	.69	1.56	1.19	.56	5/16-18	1.75	2.83	4.12	4.33	4.00	.625	1.81	1.63	.19 x .09	.750	2.06	1.88	.19 x .09	913
917	2.38	4.63	1.750	3.88	.88	.88	1.94	1.69	.56	⅜-16	2.13	3.44	4.75	5.38	4.75	.750	1.94	1.69	.19 x .09	1.000	2.56	2.31	.25 x .13	917
920	2.38	5.25	2.000	4.13	.88	.88	2.19	1.69	.56	⅜-16	2.13	3.44	5.00	5.63	4.75	.750	2.19	1.75	.19 x .09	1.000	2.56	2.31	.25 x .13	920
924	3.13	5.38	2.375	5.25	1.13	1.13	2.19	2.19	.63	½-13	2.88	4.50	6.50	7.25	5.50	1.000	2.75	2.38	.25 x .13	1.250	2.81	2.63	.25 x .13	924
926	3.13	5.88	2.625	5.75	1.13	1.13	2.44	2.44	.63	½-13	3.13	4.50	6.50	7.88	5.50	1.000	2.75	2.38	.25 x .13	1.250	2.81	2.63	.25 x .13	926
930	3.50	6.62	3.000	6.50	1.31	1.31	2.75	2.75	.75	½-13	3.50	4.63	7.00	9.00	5.88	1.000	3.06	2.38	.25 x .13	1.375	2.88	2.75	.31 x .16	930
935	3.75	7.69	3.500	7.50	1.31	1.31	3.25	3.25	1.00	⅝-11	4.00	5.06†	7.38	10.13	7.00	1.000	2.31	2.50	.25 x .13	1.750	3.75	3.63	.38 x .19	935
943	4.38	8.75	4.250	8.63	1.63	1.63	3.75	3.75	1.00	⅝-11	4.38	5.88‡	8.19	11.50	8.00	1.250	2.31	2.50	.25 x .13	2.000	4.38	4.19	.50 x .25	943

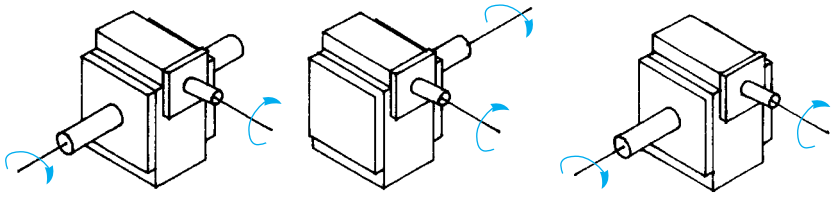
*Shaft diameter tolerance +.000 -.001. For construction purposes send for Certified Dimension Sheets.
**4:1, 7.5:1, 60:1, 80:1, and 100:1 not available for Size 910.

For larger sizes see C-Line Catalog 100 or D-90® TYPE DE® Catalog 190.

†L dimension equals 5.46 on MDN models.
‡L dimension equals 6.28 on MDN models.

SHAFT ARRANGEMENTS AND RELATIVE SHAFT ROTATIONS

AutoCAD® drawing for these models available in WINSMITH®'s Gear Graphics.



ASSEMBLY LR OPTIONAL

ASSEMBLY R STANDARD

ASSEMBLY L STANDARD

The input shaft may be driven in either direction.

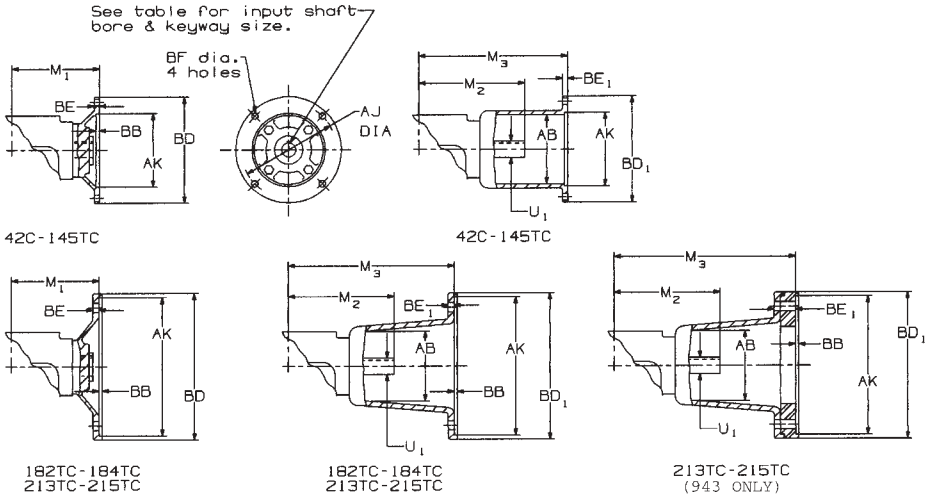
MODEL MDN
Assembly R

This model is stock standard in all sizes.

MODEL CDN
Assembly L

Couplings available, see page 189 for Selection Chart.

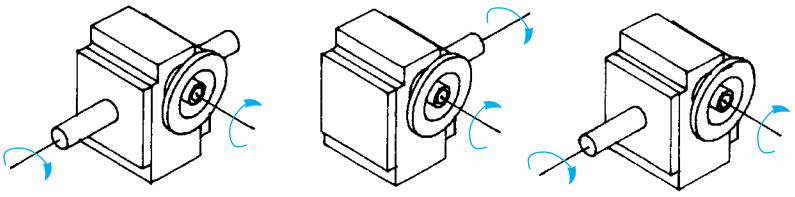
DIMENSIONS



SIZE	HOLLOW INPUT MOTOR ADAPTER				COUPLING STYLE MOTOR ADAPTER														
					42C-48C			56C-145TC			182TC-184TC			213TC-215TC					
	M_1 42C-48C	M_1 56C-145TC	M_1 182TC 184TC	M_1 213TC 215TC	AB	M_3	BE_1	AB	M_3	BE_1	AB	M_3	BE_1	AB	M_3	BE_1	M_2*	U_1*	KEYWAY
910	3.57	3.74△	NA	NA	2.63	4.44	.42	2.63	5.23	.42	NA			NA			2.88	.374	.09 x .05
913	3.56	3.63△	NA	NA	2.50	6.81	.38	3.00	6.75	.31	NA			NA			4.12	.500	.13 x .06
917	4.06	4.06	NA	NA	2.50	7.56	.38	3.75	7.50	.38	3.75	8.44	.50	NA			4.88	.625	.19 x .09
920	4.06	4.06	NA	NA	2.50	7.56	.38	3.75	7.50	.38	3.75	8.44	.50	NA			4.88	.625	.19 x .09
924	NA	5.38	5.38	NA	NA			4.13	9.13	.38	4.25	10.19	.50	NA			6.50	1.000	.25 x .13
926	NA	5.38	5.38	NA	NA			4.13	9.13	.38	4.25	10.19	.50	NA			6.50	1.000	.25 x .13
930	NA	5.56	5.56	NA	NA			4.13	9.75	.38	4.75	10.88	.50	4.75	10.88	.50	7.00	1.000	.25 x .13
935	NA	5.81	5.81	NA	NA			4.13	10.00	.38	4.75	11.13	.50	4.75	11.13	.50	7.38	1.000	.25 x .13
943	NA	6.63	6.63	6.63	NA			4.13	10.81	.38	4.75	11.94	.50	4.75	12.88	1.44	8.19	1.250	.25 x .13

*Input shaft diameter and length varies from non-motorized model on sizes 913 thru 920.
△56C frame only.

SHAFT ARRANGEMENTS AND RELATIVE SHAFT ROTATIONS



ASSEMBLY LR OPTIONAL

ASSEMBLY R STANDARD

ASSEMBLY L STANDARD

FRAME NO.	42C-48C	56C	143TC 145TC	182TC 184TC	213TC 215TC
AJ	3.75	5.88	5.88	7.25	7.25
AK	3.00	4.50	4.50	8.50	8.50
BB	.19	.19	.19	.19	.19
BD	4.50	6.50	6.50	9.00	9.00
BD_1	4.50•	6.63	6.63	9.00	9.00
BE	.34	.31	.31	.38	.38
BF	.281	.406	.406	.531	.531
KEYWAY	.13 x .06	.19 x .09		.25 x .13	.31 x .16
BORE $^{+.001}_{-.000}$	.5005□	.6255	.8755	1.1255	1.3755

□42C frame has .3755 bore, .094 x .047 keyway.
•BD_1=4.63 on size 910.

The input shaft may be driven in either direction.

MODEL†	910	913	917	920	924	926	930	935	943
DB SHIPPING WEIGHT	8	14	21	22	40	41	57	80	122
MDB SHIPPING WEIGHT‡	10	16	24	25	44	45	61	84	127
APPROX. OIL CAPACITY (PINTS)	.1	.3	.7	.8	1.8	2.1	2.7	3.5	4.4

GEAR RATIOS AVAILABLE 4:1 THRU 100:1**
TORQUE AND HP RATINGS/OVERHUNG LOAD RATINGS . . . . . PAGES 22-119
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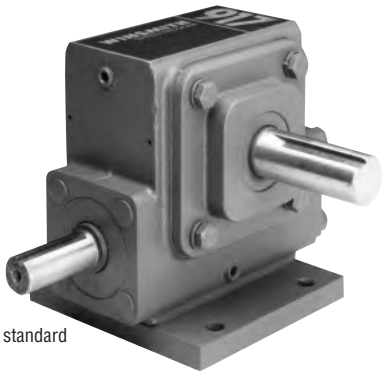
HYDRAULIC MOTOR ADAPTERS . . . . . PAGE 192

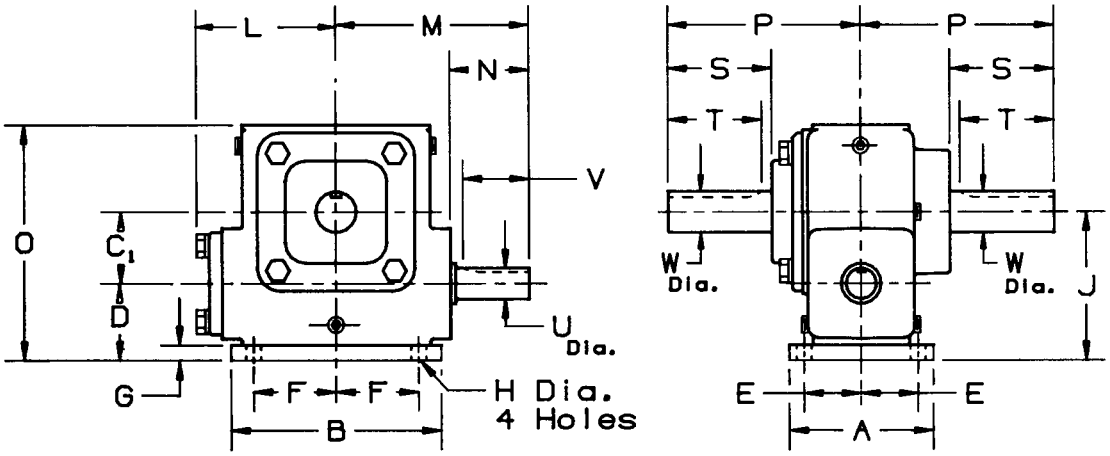
†Weights are approximate and include shipping carton.
‡Weight given for 48C thru 145TC. For 182/4TC and 213/5TC add 4 lbs.
**80:1 and 100:1 not available for Size 913.

MODEL DB
Assembly R



This model is stock standard in all sizes.

DIMENSIONS



SPEED REDUCER DIMENSIONS (IN INCHES)

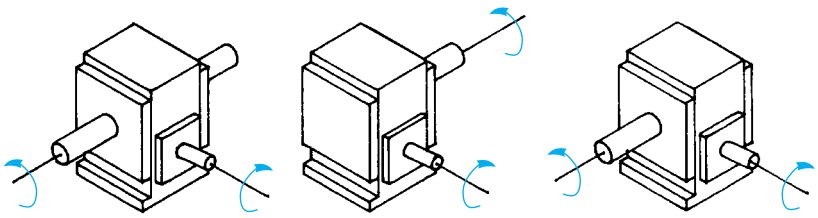
SIZE	A	B	C_1	D	E	F	G	H	J	L	M	O	P	HIGH SPEED SHAFT				SLOW SPEED SHAFT				SIZE
														U*	N	V	KEYWAY	W*	S	T	KEYWAY	
910	3.69	4.62	1.000	1.75	1.44	1.88	.44	.344	2.75	1.70	2.88	4.07	2.88	.375	1.18	.80	.09 x .05	.500	1.14	1.00	.13 x .06	910
913	3.50	5.00	1.333	1.63	1.38	2.13	.38	.281	2.96	2.83	4.12	4.71	4.00	.625	1.81	1.63	.19 x .09	.750	2.06	1.88	.19 x .09	913
917	5.00	4.63	1.750	2.00	2.06	1.44	.50	.406	3.75	3.44	4.75	5.88	4.75	.750	1.94	1.69	.19 x .09	1.000	2.56	2.31	.25 x .13	917
920	5.00	4.63	2.000	2.00	2.06	1.44	.50	.406	4.00	3.44	5.00	6.13	4.75	.750	2.19	1.75	.19 x .09	1.000	2.56	2.31	.25 x .13	920
924	5.00	7.00	2.375	2.38	2.00	3.00	.38	.406	4.75	4.50	6.50	7.63	5.50	1.000	2.75	2.38	.25 x .13	1.250	2.81	2.63	.25 x .13	924
926	4.75	7.00	2.625	2.50	2.00	3.00	.38	.406	5.13	4.50	6.50	8.25	5.50	1.000	2.75	2.38	.25 x .13	1.250	2.81	2.63	.25 x .13	926
930	6.00	8.00	3.000	3.00	2.38	3.50	.50	.563	6.00	4.63	7.00	9.50	5.88	1.000	3.06	2.38	.25 x .13	1.375	2.88	2.75	.31 x .16	930
935	6.50	10.00	3.500	3.13	2.63	4.13	.50	.563	6.63	5.06†	7.38	10.63	7.00	1.000	2.31	2.50	.25 x .13	1.750	3.75	3.63	.38 x .19	935
943	7.00	11.00	4.250	3.50	2.88	4.88	.63	.563	7.75	5.88‡	8.19	12.13	8.00	1.250	2.31	2.50	.25 x .13	2.000	4.38	4.19	.50 x .25	943

*Shaft diameter tolerance +.000 -.001. For construction purposes send for Certified Dimension Sheets.
**4:1, 7.5:1, 60:1, 80:1, and 100:1 not available for Size 910.

For larger sizes see C-Line Catalog 100 or D-90® TYPE DE® Catalog 190.
†L dimension equals 5.46 on MDB models.
‡L dimension equals 6.28 on MDB models.

SHAFT ARRANGEMENTS AND RELATIVE SHAFT ROTATIONS

AutoCAD® drawing for these models available in WINSMITH®'s Gear Graphics.



ASSEMBLY LR
OPTIONAL

ASSEMBLY R
STANDARD

ASSEMBLY L
STANDARD

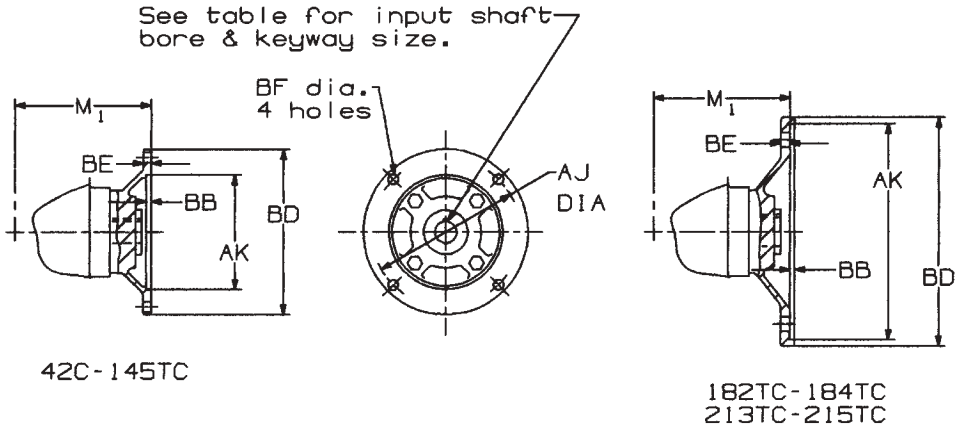
The input shaft may be driven in either direction.

MODEL MDB
Assembly L

This model is stock standard in all sizes.

Depending on size and base selection, the coupling style adapter may interfere with the mounting base. Consult the factory.

DIMENSIONS



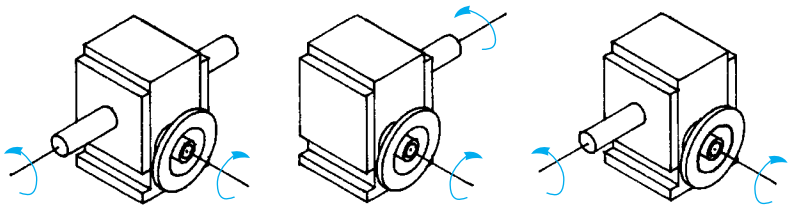
SIZE	HOLLOW INPUT MOTOR ADAPTER			
	M_1 42C-48C	M_1 56C-145TC	M_1 182TC 184TC	M_1 213TC 215TC
910	3.57	3.74△	NA	NA
913	3.56	3.63△	NA	NA
917	4.06	4.06	NA	NA
920	4.06	4.06	NA	NA
924	NA	5.38	5.38	NA
926	NA	5.38	5.38	NA
930	NA	5.56	5.56	NA
935	NA	5.81	5.81	NA
943	NA	6.63	6.63	6.63

△56C frame only.

FRAME NO.	42C-48C	56C	143TC 145TC	182TC 184TC	213TC 215TC
AJ	3.75	5.88	5.88	7.25	7.25
AK	3.00	4.50	4.50	8.50	8.50
BB	.19	.19	.19	.19	.19
BD	4.50•	6.50	6.50	9.00	9.00
BE	.34	.31	.31	.38	.38
BF	.281	.406	.406	.531	.531
KEYWAY	.13 x .06	.19 x .09		.25 x .13	.31 x .16
BORE +.001 -.000	.5005□	.6255	.8755	1.1255	1.3755

□42C frame has .3755 bore, .094 x .047 keyway.
•BD=4.63 on size 910.

SHAFT ARRANGEMENTS AND RELATIVE SHAFT ROTATIONS



ASSEMBLY LR OPTIONAL | ASSEMBLY R STANDARD | ASSEMBLY L STANDARD

The input shaft may be driven in either direction.

MODEL†	910	913	917	920	924	926	930	935	943
DT SHIPPING WEIGHT	8	13	20	22	39	41	57	80	122
MDT SHIPPING WEIGHT‡	10	16	23	25	43	45	61	84	127
CDT SHIPPING WEIGHT‡	13	19	27	29	48	50	67	90	132
APPROX. OIL CAPACITY (PINTS)	.2	.2	.5	.5	1.0	1.2	1.7	2.3	3.1

GEAR RATIOS AVAILABLE 4:1 THRU 100:1**
TORQUE AND HP RATINGS/OVERHUNG LOAD RATINGS . . . . . PAGES 22-119
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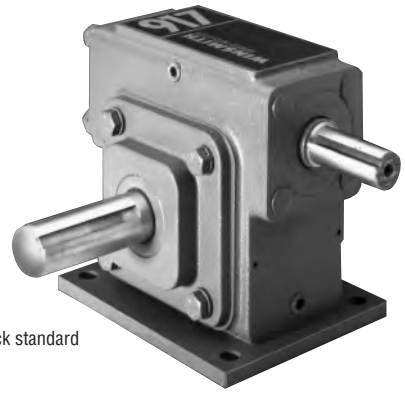
SERVICE FACTORS . . . . . PAGES 224-226
HYDRAULIC MOTOR ADAPTERS . . . . . PAGE 192

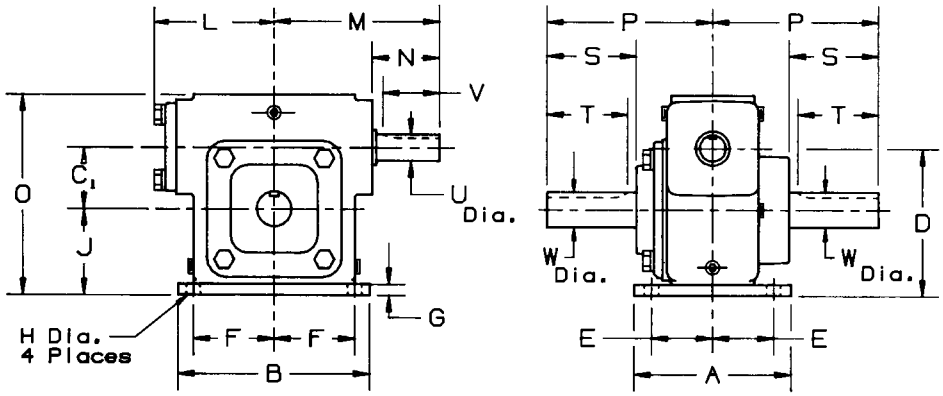
†Weights are approximate and include shipping carton.
‡Weight given for 48C thru 145TC. For 182/4TC and 213/5TC add 4 lbs.
**80:1 and 100:1 not available for Size 913.

MODEL DT
Assembly L



This model is stock standard in all sizes.

DIMENSIONS



SPEED REDUCER DIMENSIONS (IN INCHES)

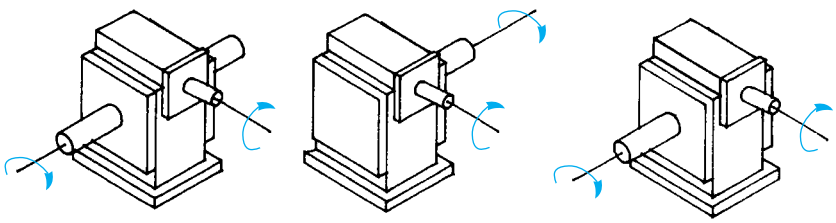
SIZE	A	B	C_1	D	E	F	G	H	J	L	M	O	P	HIGH SPEED SHAFT				SLOW SPEED SHAFT				SIZE
														U*	N	V	KEYWAY	W*	S	T	KEYWAY	
910	3.69	4.62	1.000	2.75	1.44	1.88	.44	.344	1.75	1.70	2.88	4.07	2.88	.375	.75	.80	.09 x .05	.500	1.28	1.00	.13 x .06	910
913	4.00	5.00	1.333	3.33	1.63	2.13	.25	.281	2.00	2.83	4.12	4.58	4.00	.625	1.81	1.63	.19 x .09	.750	2.06	1.88	.19 x .09	913
917	4.50	5.50	1.750	4.19	1.75	2.31	.31	.406	2.44	3.44	4.75	5.69	4.75	.750	1.94	1.69	.19 x .09	1.000	2.56	2.31	.25 x .13	917
920	4.50	5.88	2.000	4.63	1.88	2.50	.50	.406	2.63	3.44	5.00	6.13	4.75	.750	2.19	1.75	.19 x .09	1.000	2.56	2.31	.25 x .13	920
924	4.50	7.00	2.375	5.63	1.88	3.13	.38	.406	3.25	4.50	6.50	7.63	5.50	1.000	2.75	2.38	.25 x .13	1.250	2.81	2.63	.25 x .13	924
926	4.50	7.50	2.625	6.13	1.88	3.25	.38	.406	3.50	4.50	6.50	8.25	5.50	1.000	2.75	2.38	.25 x .13	1.250	2.81	2.63	.25 x .13	926
930	6.00	8.00	3.000	7.00	2.38	3.50	.50	.563	4.00	4.63	7.00	9.50	5.88	1.000	3.06	2.38	.25 x .13	1.375	2.88	2.75	.31 x .16	930
935	6.50	10.00	3.500	8.00	2.63	4.13	.50	.563	4.50	5.06†	7.38	10.63	7.00	1.000	2.31	2.50	.25 x .13	1.750	3.75	3.63	.38 x .19	935
943	7.00	11.00	4.250	9.25	2.88	4.88	.63	.563	5.00	5.88‡	8.19	12.13	8.00	1.250	2.31	2.50	.25 x .13	2.000	4.38	4.19	.50 x .25	943

*Slow speed shaft diameter +.000 -.001. For construction purposes send for Certified Dimension Sheets.
**4:1, 7.5:1, 60:1, 80:1, and 100:1 not available for Size 910.

For larger sizes see C-Line Catalog 100 or D-90® TYPE DE® Catalog 190.
†L dimension equals 5.46 on MDT models.
‡L dimension equals 6.28 on MDT models.

SHAFT ARRANGEMENTS AND RELATIVE SHAFT ROTATIONS

AutoCAD® drawing for these models available in WINSMITH®'s Gear Graphics.



ASSEMBLY LR
OPTIONAL

ASSEMBLY R
STANDARD

ASSEMBLY L
STANDARD

The input shaft may be driven in either direction.

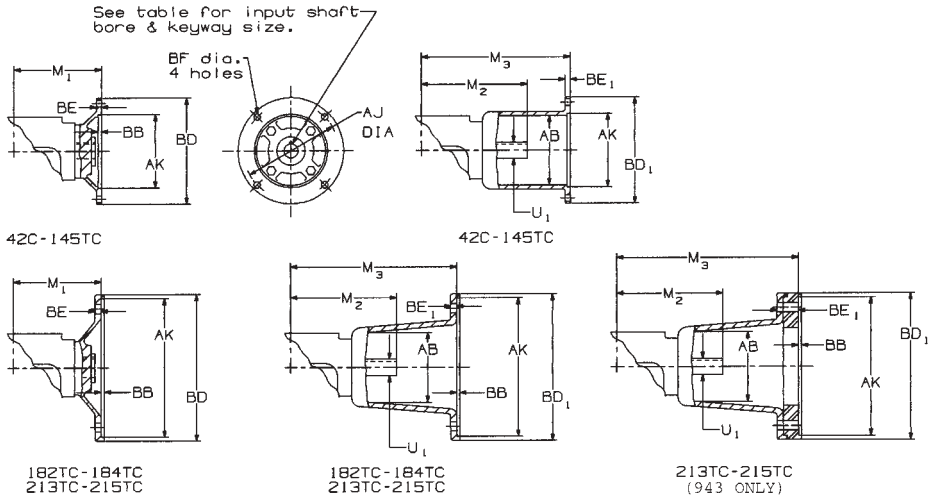
MODEL MDT
Assembly L

This model is stock standard in all sizes.

MODEL CDT
Assembly L

Couplings available, see page 189 for Selection Chart.

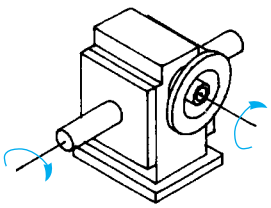
DIMENSIONS



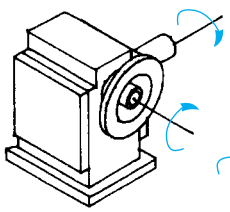
SIZE	HOLLOW INPUT MOTOR ADAPTER				COUPLING STYLE MOTOR ADAPTER														
					42C-48C			56C-145TC			182TC-184TC			213TC-215TC					
	M_1 42C-48C	M_1 56C-145TC	M_1 182TC 184TC	M_1 213TC 215TC	AB	M_3	BE_1	AB	M_3	BE_1	AB	M_3	BE_1	AB	M_3	BE_1	M_2*	U_1*	KEYWAY
910	3.57	3.74△	NA	NA	2.63	4.44	.42	2.63	5.23	.42	NA			NA			2.88	.374	.09 x .05
913	3.56	3.63△	NA	NA	2.50	6.81	.38	3.00	6.75	.31	NA			NA			4.12	.500	.13 x .06
917	4.06	4.06	NA	NA	2.50	7.56	.38	3.75	7.50	.38	3.75	8.44	.50	NA			4.88	.625	.19 x .09
920	4.06	4.06	NA	NA	2.50	7.56	.38	3.75	7.50	.38	3.75	8.44	.50	NA			4.88	.625	.19 x .09
924	NA	5.38	5.38	NA	NA			4.13	9.13	.38	4.25	10.19	.50	NA			6.50	1.000	.25 x .13
926	NA	5.38	5.38	NA	NA			4.13	9.13	.38	4.25	10.19	.50	NA			6.50	1.000	.25 x .13
930	NA	5.56	5.56	NA	NA			4.13	9.75	.38	4.75	10.88	.50	4.75	10.88	.50	7.00	1.000	.25 x .13
935	NA	5.81	5.81	NA	NA			4.13	10.00	.38	4.75	11.13	.50	4.75	11.13	.50	7.38	1.000	.25 x .13
943	NA	6.63	6.63	6.63	NA			4.13	10.81	.38	4.75	11.94	.50	4.75	12.88	1.44	8.19	1.250	.25 x .13

*Input shaft diameter and length varies from non-motorized model on sizes 913 thru 920.
△56C frame only.

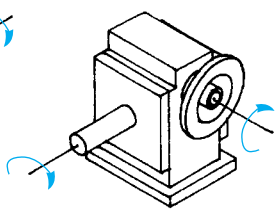
SHAFT ARRANGEMENTS AND RELATIVE SHAFT ROTATIONS



ASSEMBLY LR
OPTIONAL



ASSEMBLY R
STANDARD



ASSEMBLY L
STANDARD

FRAME NO.	42C-48C	56C	143TC 145TC	182TC 184TC	213TC 215TC
AJ	3.75	5.88	5.88	7.25	7.25
AK	3.00	4.50	4.50	8.50	8.50
BB	.19	.19	.19	.19	.19
BD	4.50	6.50	6.50	9.00	9.00
BD_1	4.50•	6.63	6.63	9.00	9.00
BE	.34	.31	.31	.38	.38
BF	.281	.406	.406	.531	.531
KEYWAY	.13 x .06	.19 x .09		.25 x .13	.31 x .16
BORE $^{+.001}_{-.000}$	.5005□	.6255	.8755	1.1255	1.3755

□42C frame has .3755 bore, .094 x .047 keyway.
•BD_1=4.63 on size 910.

The input shaft may be driven in either direction.

MODEL†	913	917	920	924	926	930	935	943
DV SHIPPING WEIGHT	14	22	23	42	47	60	86	123
MDV SHIPPING WEIGHT‡	17	24	26	46	51	64	90	128
CDV SHIPPING WEIGHT‡	20	28	30	51	56	70	96	133
APPROX. OIL CAPACITY (PINTS)	.3	.6	.7	1.4	1.7	2.3	2.9	3.6

GEAR RATIOS AVAILABLE 4:1 THRU 100:1**
TORQUE AND HP RATINGS/OVERHUNG LOAD RATINGS . . . . . PAGES 22-119
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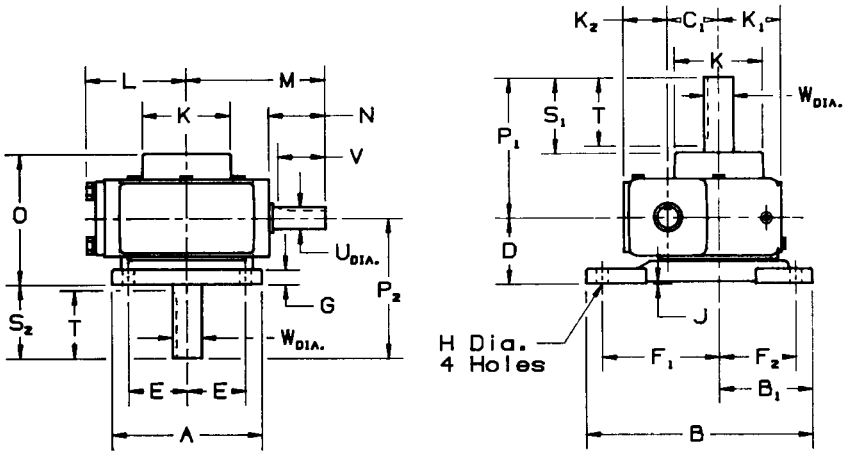
SERVICE FACTORS . . . . . PAGES 224-226
HYDRAULIC MOTOR ADAPTERS . . . . . PAGE 192

†Weights are approximate and include shipping carton.
‡Weight given for 48C thru 145TC. For 182/4TC and 213/5TC add 4 lbs.
**80:1 and 100:1 not available in Size 913.

MODEL DV
Assembly RU

DIMENSIONS



SPEED REDUCER DIMENSIONS (IN INCHES)

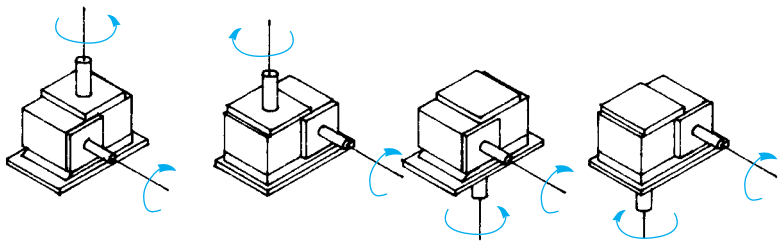
SIZE	A	B	B_1	C_1	D	E	F_1	F_2	G	H	J	K	K_1	K_2	L	M	O	P_1	P_2	HIGH SPEED SHAFT				SLOW SPEED SHAFT					SIZE
																				U*	N	V	KEYWAY	W*	S_1	S_2	T	KEYWAY	
913	4.25	6.60	2.69	1.333	2.25	1.75	3.53	2.31	.38	.281	.13	2.25	1.75	1.25	2.83	4.12	4.19	4.00	4.00	.625	1.81	1.63	.19 x .09	.750	2.06	1.75	1.88	.19 x .09	913
917	5.13	7.75	3.19	1.750	2.25	2.00	4.00	2.63	.50	.406	.06	2.50	2.13	1.50	3.44	4.75	4.44	4.75	4.75	.750	1.94	1.69	.19 x .09	1.000	2.56	2.50	2.31	.25 x .13	917
920	5.13	8.50	3.56	2.000	2.25	2.00	4.38	3.00	.50	.406	.06	2.50	2.13	1.50	3.44	5.00	4.44	4.75	4.75	.750	2.19	1.75	.19 x .09	1.000	2.56	2.50	2.31	.25 x .13	920
924	6.88	8.88	3.44	2.375	3.50	2.88	4.88	2.88	.50	.406	.13	3.25	2.88	2.00	4.50	6.50	6.13	5.75	6.38	1.000	2.75	2.38	.25 x .13	1.250	3.12	2.88	2.75	.25 x .13	924
926	6.88	9.44	3.63	2.625	3.63	2.88	5.25	2.88	.50	.406	.13	3.50	3.13	2.13	4.50	6.50	6.26	5.63	6.38	1.000	2.75	2.38	.25 x .13	1.250	3.00	2.75	2.75	.25 x .13	926
930	8.88	10.63	4.25	3.000	3.75	3.81	5.75	3.63	.63	.563	.13	3.50	3.50	2.50	4.63	7.00	6.75	6.19	6.75	1.000	3.06	2.38	.25 x .13	1.375	3.19	3.00	3.06	.31 x .16	930
935	9.75	11.50	5.00	3.500	3.75	4.25	5.88	4.38	.63	.563	.13	4.13	4.00	2.63	5.06†	7.38	7.00	7.00	7.00	1.000	2.31	2.50	.25 x .13	1.750	3.75	3.25	3.63	.38 x .19	935
943	9.63	11.00	4.81	4.250	4.75	4.13	5.50	4.13	.63	.563	.13	4.75	4.38	2.88	5.88‡	8.19	8.38	8.00	8.00	1.250	2.31	2.50	.25 x .13	2.000	4.38	3.25	4.19	.50 x .25	943

*Shaft diameter tolerance +.000 -.001. For construction purposes send for Certified Dimension Sheets.
†L dimension equals 5.46 on MDV models.
‡L dimension equals 6.28 on MDV models.

For larger sizes see C-Line Catalog 100 or D-90® TYPE DE® Catalog 190.

SHAFT ARRANGEMENTS AND RELATIVE SHAFT ROTATIONS

AutoCAD® drawing for these models available in WINSMITH®'s Gear Graphics.

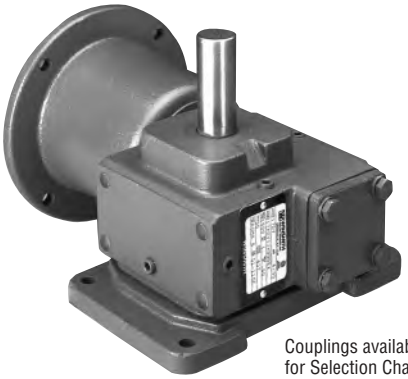


ASSEMBLY RU STANDARD | ASSEMBLY LU STANDARD | ASSEMBLY RD STANDARD | ASSEMBLY LD STANDARD

The input shaft may be driven in either direction.

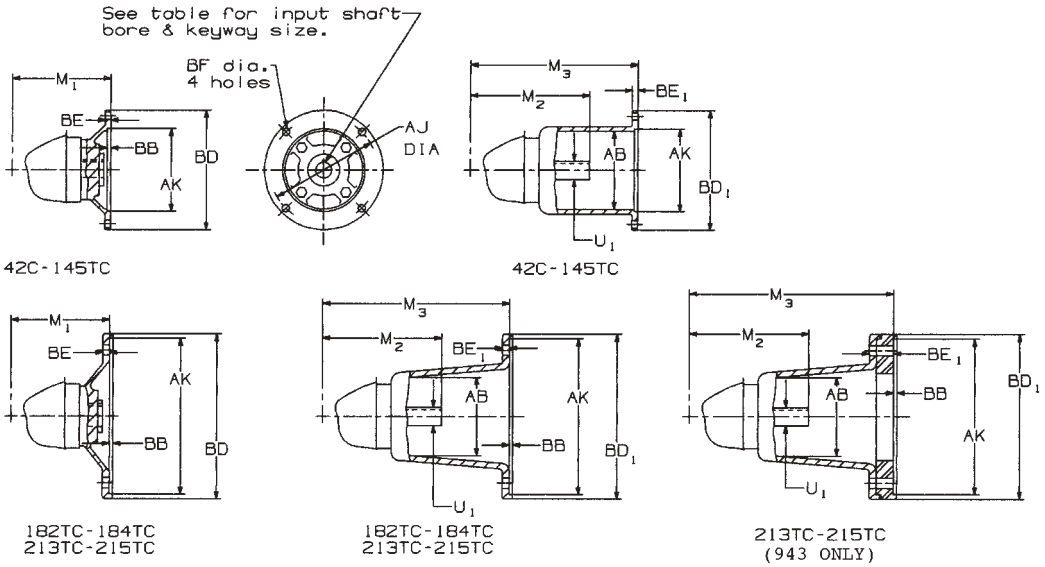
MODEL MDV
Assembly RU

MODEL CDV
Assembly RU



Couplings available, see page 189 for Selection Chart.

DIMENSIONS



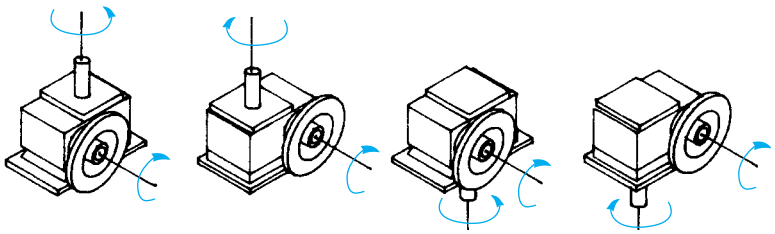
SIZE	HOLLOW INPUT MOTOR ADAPTER				COUPLING STYLE MOTOR ADAPTER												M_2*	U_1*	KEYWAY
	M_1 42C-48C	M_1 56C-145TC	M_1 182TC 184TC	M_1 213TC 215TC	42C-48C			56C-145TC			182TC-184TC			213TC-215TC					
					AB	M_3	BE_1	AB	M_3	BE_1	AB	M_3	BE_1	AB	M_3	BE_1			
913	3.56	3.63△	NA	NA	2.50	6.81	.38	3.00	6.75	.31	NA			NA			4.12	.500	.13 x .06
917	4.06	4.06	NA	NA	2.50	7.56	.38	3.75	7.50	.38	3.75	8.44	.50	NA			4.88	.625	.19 x .09
920	4.06	4.06	NA	NA	2.50	7.56	.38	3.75	7.50	.38	3.75	8.44	.50	NA			4.88	.625	.19 x .09
924	NA	5.38	5.38	NA	NA			4.13	9.13	.38	4.25	10.19	.50	NA			6.50	1.000	.25 x .13
926	NA	5.38	5.38	NA	NA			4.13	9.13	.38	4.25	10.19	.50	NA			6.50	1.000	.25 x .13
930	NA	5.56	5.56	NA	NA			4.13	9.75	.38	4.75	10.88	.50	4.75	10.88	.50	7.00	1.000	.25 x .13
935	NA	5.81	5.81	NA	NA			4.13	10.00	.38	4.75	11.13	.50	4.75	11.13	.50	7.38	1.000	.25 x .13
943	NA	6.63	6.63	6.63	NA			4.13	10.81	.38	4.75	11.94	.50	4.75	12.88	1.44	8.19	1.250	.25 x .13

*Input shaft diameter and length varies from non-motorized model on sizes 913 thru 920.
△56C frame only.

FRAME NO.	42C-48C	56C	143TC 145TC	182TC 184TC	213TC 215TC
AJ	3.75	5.88	5.88	7.25	7.25
AK	3.00	4.50	4.50	8.50	8.50
BB	.19	.19	.19	.19	.19
BD	4.50	6.50	6.50	9.00	9.00
BD_1	4.50	6.63	6.63	9.00	9.00
BE	.34	.31	.31	.38	.38
BF	.281	.406	.406	.531	.531
KEYWAY	.13 x .06	.19 x .09		.25 x .13	.31 x .16
BORE $^{+.001}_{-.000}$	.5005□	.6255	.8755	1.1255	1.3755

□42C frame has .3755 bore, .094 x .047 keyway.

SHAFT ARRANGEMENTS AND RELATIVE SHAFT ROTATIONS



ASSEMBLY RU STANDARD | ASSEMBLY LU STANDARD | ASSEMBLY RD STANDARD | ASSEMBLY LD STANDARD

The input shaft may be driven in either direction.

MODEL†	913	917	920	924	926	930	935	943
DJ SHIPPING WEIGHT	14	21	23	42	43	57	79	119
MDJ SHIPPING WEIGHT‡	16	23	26	46	47	61	83	124
CDJ SHIPPING WEIGHT‡	19	27	30	51	52	67	89	129
APPROX. OIL CAPACITY (PINTS)	.3	.6	.7	1.4	1.7	2.3	2.9	3.7

GEAR RATIOS AVAILABLE 4:1 THRU 100:1**
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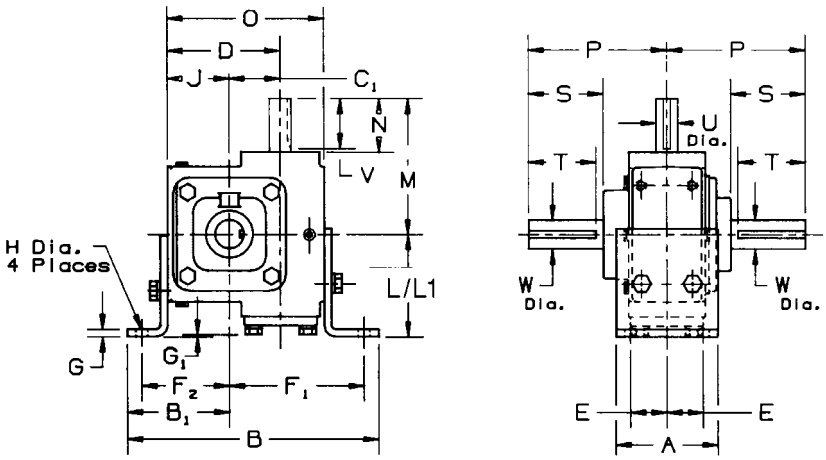
†Weights are approximate and include shipping carton.
‡Weight given for 48C thru 145TC. For 182/4TC and 213/5TC add 4 lbs.
**80:1 and 100:1 not available in Size 913.

MODEL DJ
Assembly L

DIMENSIONS



SPEED REDUCER DIMENSIONS (IN INCHES)

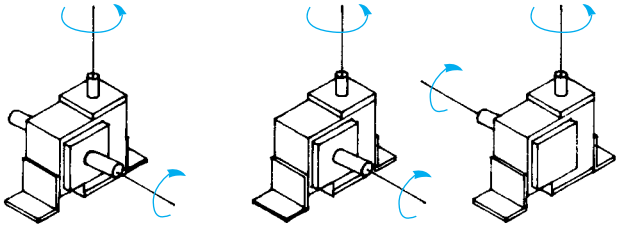
SIZE	A	B	B_1	C_1	D	E	F_1	F_2	G	G_1	H	J	L	L1△	M	O	P	HIGH SPEED SHAFT				SLOW SPEED SHAFT				SIZE
																		U*	N	V	KEYWAY	W*	S	T	KEYWAY	
913	3.00	7.43	3.10	1.333	3.08	1.00	3.82	2.60	.25	.11	.344	1.75	2.94	4.32	4.12	4.33	4.00	.625	1.81	1.63	.19 x .09	.750	2.06	1.88	.19 x .09	913
917	3.50	8.63	3.50	1.750	3.88	1.25	4.63	3.00	.25	.06	.406	2.13	3.50	4.79	4.75	5.38	4.75	.750	1.94	1.69	.19 x .09	1.000	2.56	2.31	.25 x .13	917
920	4.00	9.75	3.97	2.000	4.13	1.31	5.22	3.41	.38	.05	.469	2.13	3.94	5.32	5.00	5.63	4.75	.750	2.19	1.75	.19 x .09	1.000	2.56	2.31	.25 x .13	920
924	4.00	10.75	4.63	2.375	5.25	1.44	5.56	4.06	.38	.13	.469	2.88	4.63	6.50	6.50	7.25	5.50	1.000	2.75	2.38	.25 x .13	1.250	2.81	2.63	.25 x .13	924
926	4.50	11.63	4.75	2.625	5.75	1.56	6.25	4.13	.38	.25	.531	3.13	4.75	6.50	6.50	7.88	5.50	1.000	2.75	2.38	.25 x .13	1.250	2.81	2.63	.25 x .13	926
930	5.50	12.50	5.25	3.000	6.50	2.00	6.63	4.63	.38	.12	.531	3.50	4.75	7.00	7.00	9.00	5.88	1.000	3.06	2.38	.25 x .13	1.375	2.88	2.75	.31 x .16	930
935	5.50	14.50	6.19	3.500	7.50	2.00	7.56	5.19	.38	.75†	.531	4.00	5.69	8.13	7.38	10.13	7.00	1.000	2.31	2.50	.25 x .13	1.750	3.75	3.63	.38 x .19	935
943	6.50	15.88	6.56	4.250	8.63	2.50	8.56	5.81	.38	.63†	.656	4.38	6.50	8.88	8.19	11.50	8.00	1.250	2.31	2.50	.25 x .13	2.000	4.38	4.19	.38 x .19	943

*Shaft diameter tolerance +.000 -.001. For construction purposes send for Certified Dimension Sheets.
†G_1 dimension equals .23 on 935 MDJ models and .22 on 943 MDJ models.
△L1 is dimension when used with S EQUALIZER® option (see page 173).

For larger sizes see C-Line Catalog 100 or D-90® TYPE DE® Catalog 190.

SHAFT ARRANGEMENTS AND RELATIVE SHAFT ROTATIONS

AutoCAD® drawing for these models available in WINSMITH®'s Gear Graphics.



ASSEMBLY LR
OPTIONAL

ASSEMBLY R
STANDARD

ASSEMBLY L
STANDARD

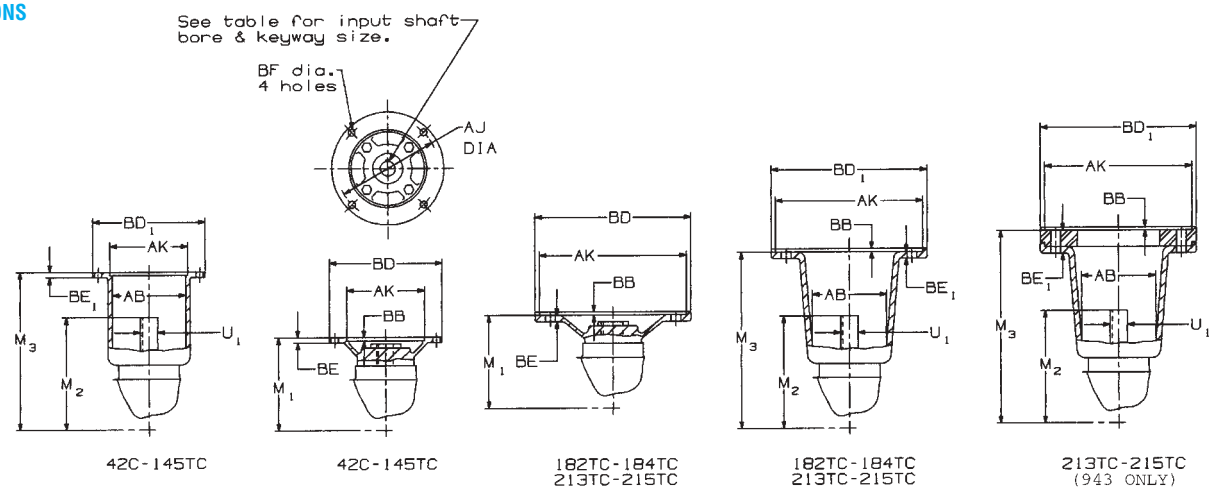
The input shaft may be driven in either direction.

MODEL MDJ
Assembly R

MODEL CDJ
Assembly L

Couplings available, see page 189 for Selection Chart.

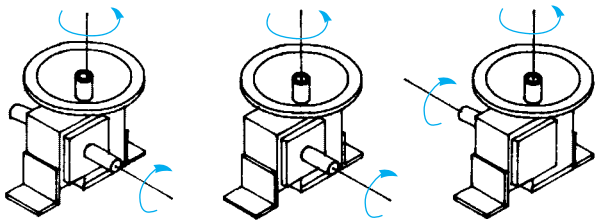
DIMENSIONS



SIZE	HOLLOW INPUT MOTOR ADAPTER				COUPLING STYLE MOTOR ADAPTER														
	M_1 42C-48C	M_1 56C-145TC	M_1 182TC 184TC	M_1 213TC 215TC	42C-48C			56C-145TC			182TC-184TC			213TC-215TC			M_2*	U_1*	KEYWAY
					AB	M_3	BE_1	AB	M_3	BE_1	AB	M_3	BE_1	AB	M_3	BE_1			
913	3.56	3.63△	NA	NA	2.50	6.81	.38	3.00	6.75	.31	NA			NA			4.12	.500	.13 x .06
917	4.06	4.06	NA	NA	2.50	7.56	.38	3.75	7.50	.38	3.75	8.44	.50	NA			4.88	.625	.19 x .09
920	4.06	4.06	NA	NA	2.50	7.56	.38	3.75	7.50	.38	3.75	8.44	.50	NA			4.88	.625	.19 x .09
924	NA	5.38	5.38	NA	NA			4.13	9.13	.38	4.25	10.19	.50	NA			6.50	1.000	.25 x .13
926	NA	5.38	5.38	NA	NA			4.13	9.13	.38	4.25	10.19	.50	NA			6.50	1.000	.25 x .13
930	NA	5.56	5.56	NA	NA			4.13	9.75	.38	4.75	10.88	.50	4.75	10.88	.50	7.00	1.000	.25 x .13
935	NA	5.81	5.81	NA	NA			4.13	10.00	.38	4.75	11.13	.50	4.75	11.13	.50	7.38	1.000	.25 x .13
943	NA	6.63	6.63	6.63	NA			4.13	10.81	.38	4.75	11.94	.50	4.75	12.88	1.44	8.19	1.250	.25 x .13

*Input shaft diameter and length varies from non-motorized model on sizes 913 thru 920.
△56C frame only.

SHAFT ARRANGEMENTS AND RELATIVE SHAFT ROTATIONS



ASSEMBLY LR OPTIONAL

ASSEMBLY R STANDARD

ASSEMBLY L STANDARD

FRAME NO.	42C-48C	56C	143TC 145TC	182TC 184TC	213TC 215TC
AJ	3.75	5.88	5.88	7.25	7.25
AK	3.00	4.50	4.50	8.50	8.50
BB	.19	.19	.19	.19	.19
BD	4.50	6.50	6.50	9.00	9.00
BD_1	4.50	6.63	6.63	9.00	9.00
BE	.34	.31	.31	.38	.38
BF	.281	.406	.406	.531	.531
KEYWAY	.13 x .06	.19 x .09		.25 x .13	.31 x .16
BORE $^{+.001}_{-.000}$	.5005□	.6255	.8755	1.1255	1.3755

□42C frame has .3755 bore, .094 x .047 keyway.

The input shaft may be driven in either direction.

MODEL†	917	920	924	926	930	935	943
DSN SHIPPING WEIGHT	15	19	36	38	50	78	126
MDSN SHIPPING WEIGHT‡	18	22	40	42	54	82	131
CDSN SHIPPING WEIGHT‡	22	26	45	47	60	88	136
APPROX. OIL CAPACITY (PINTS)	.5	.5	.9	1.2	1.6	2.1	2.8

GEAR RATIOS AVAILABLE 4:1 THRU 100:1
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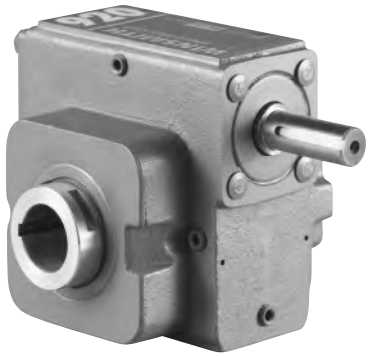
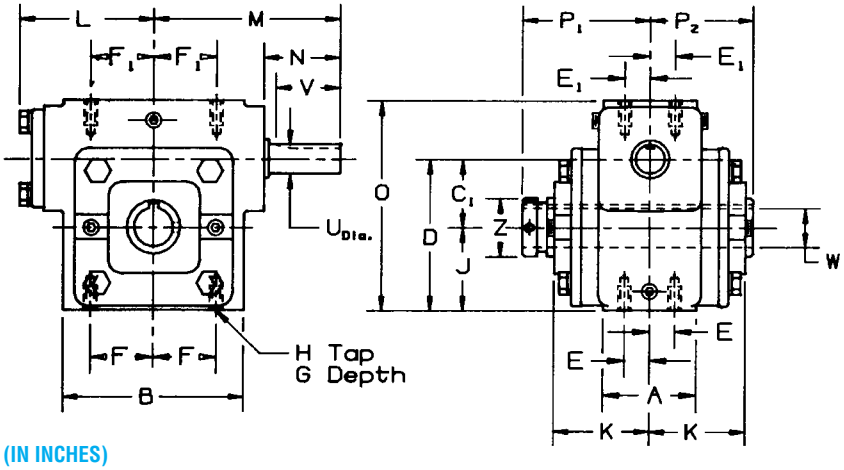
HYDRAULIC MOTOR ADAPTERS . . . . . PAGE 192
BASE AND BRACKET KITS . . . . . PAGES 188-191

†Weights are approximate and include shipping carton.
‡Weight given for 48C thru 145TC. For 182/4TC and 213/5TC add 4 lbs.

MODEL DSN
Assembly DR



DIMENSIONS



SPEED REDUCER DIMENSIONS (IN INCHES)

SIZE	A	B	C_1	D	E	E_1	F	F_1	G DEPTH	H TAP	J	K	L	M	O	P_1	P_2	Z	HIGH SPEED SHAFT U*	HIGH SPEED SHAFT N	HIGH SPEED SHAFT V	HIGH SPEED SHAFT KEYWAY	SIZE
917	2.38	4.63	1.750	3.88	.88	.88	1.94	1.69	.56	3/8-16	2.13	2.44	3.44	4.75	5.38	3.25	2.63	1.49	.750	1.94	1.69	.19 x .09	917
920	2.38	5.25	2.000	4.13	.88	.88	2.19	1.69	.56	3/8-16	2.13	2.63	3.44	5.00	5.63	3.38	2.88	2.00	.750	2.19	1.75	.19 x .09	920
924	3.13	5.38	2.375	5.25	1.13	1.13	2.19	2.19	.63	1/2-13	2.88	2.75	4.50	6.50	7.25	3.56	2.94	2.25	1.000	2.75	2.38	.25 x .13	924
926	3.13	5.88	2.625	5.75	1.13	1.13	2.44	2.44	.63	1/2-13	3.13	2.81	4.50	6.50	7.88	3.69	3.00	2.50	1.000	2.75	2.38	.25 x .13	926
930	3.50	6.62	3.000	6.50	1.31	1.31	2.75	2.75	.75	1/2-13	3.50	3.00	4.63	7.00	9.00	4.06	3.19	2.63	1.000	3.06	2.38	.25 x .13	930
935	3.75	7.69	3.500	7.50	1.31	1.31	3.25	3.25	1.00	5/8-11	4.00	3.38	5.06†	7.38	10.13	4.44	3.56	2.87	1.000	2.31	2.50	.25 x .13	935
943	4.38	8.75	4.250	8.63	1.63	1.63	3.75	3.75	1.00	5/8-11	4.38	3.63	5.88‡	8.19	11.50	4.38	4.38	3.88	1.250	2.31	2.50	.25 x .13	943

*Shaft diameter tolerance +.000 -.001. For construction purposes send for Certified Dimension Sheets.
†L dimension equals 5.46 on MDSN models.

For larger sizes see C-Line Catalog 100 or D-90® TYPE DE® Catalog 190.
‡L dimension equals 6.28 on MDSN models.

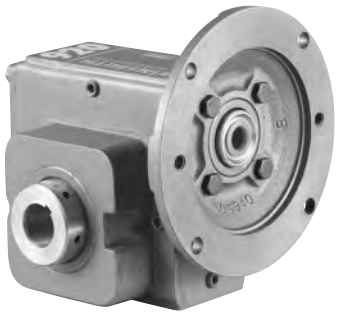
SLOW SPEED SHAFT BORES[1, 2, 3, 4]

917		920		924		926		930		935		943	
W**	KEYWAY	W**	KEYWAY	W**	KEYWAY	W**	KEYWAY	W**	KEYWAY	W**	KEYWAY	W**	KEYWAY
.625	.19 x .09	**.750**	**.19 x .09**	.875	.19 x .09	.938	.25 x .13	1.188	.25 x .13	1.188	.25 x .13	1.625	.38 x .19
.688	.19 x .09	.813	.19 x .09	.938	.25 x .13	1.000	.25 x .13	1.250	.25 x .13	1.250	.25 x .13	1.688	.38 x .19
.750	**.19 x .09**	**.875**	**.19 x .09**	1.000	.25 x .13	1.063	.25 x .13	**1.375**	**.31 x .16**	**1.375**	**.31 x .16**	1.750	.38 x .19
.813	.19 x .09	.938	.25 x .13	1.063	.25 x .13	1.125	.25 x .13	**1.438**	**.38 x .19**	1.438	.38 x .19	1.875	.50 x .25
.875	.19 x .09	**1.000**	**.25 x .13**	**1.125**	**.25 x .13**	1.188	.25 x .13	**1.500**	**.38 x .19**	**1.500**	**.38 x .19**	1.938	.50 x .25
.938	.25 x .13	1.063	.25 x .13	1.188	.25 x .13	**1.250**	**.25 x .13**	**1.625**	**.38 x .19**	1.625	.38 x .19	2.000	.50 x .25
1.000	**.25 x .13**	**1.125**	**.25 x .13**	**1.250**	**.25 x .13**	1.375	.31 x .16	1.688	.38 x .19	1.688	.38 x .19	2.188	.50 x .25
		1.188	.25 x .13	1.375	.31 x .16	**1.438**	**.38 x .19**	**1.750**	**.38 x .19**	1.750	.38 x .19	2.250	.50 x .25
		1.250	**.25 x .13**	**1.438**	**.38 x .19**	**1.500**	**.38 x .19**	**1.875**	**.50 x .25**	**1.875**	**.50 x .25**	2.438	.63 x .31
		1.375	.31 x .16	**1.500**	**.38 x .19**	1.625	.38 x .19	**1.938**	**.50 x .19**	**1.938**	**.50 x .25**	2.500	.63 x .31
		1.438	**.38 x .13**			**1.688**	**.38 x .19**			**2.000**	**.50 x .25**	2.688	.63 x .31
										2.188	**.50 x .13**	2.750	.63 x .31

**Bore tolerances +.000, +.002.
1. Contact factory for other bore sizes.
2. Hollow output shaft bored to size; no bushing kit required.
3. Puller groove on all hollow output shafts.
4. Bores in bold blue type are stock standard sizes.

D-90® TYPE SE® MDSN-CDSN

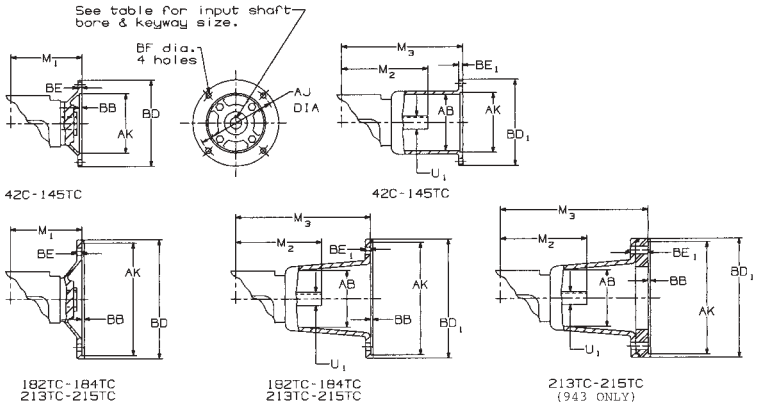
MODEL MDSN
Assembly DR



MODEL CDSN
Assembly DR

Couplings available, see page 189 for Selection Chart.

DIMENSIONS



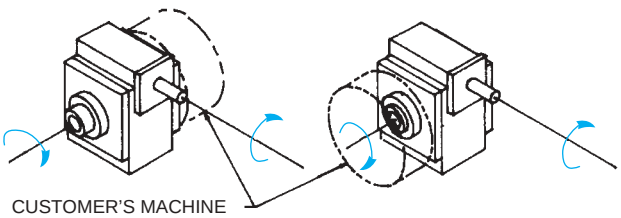
SIZE	HOLLOW INPUT MOTOR ADAPTER				COUPLING STYLE MOTOR ADAPTER												M_2*	U_1*	KEYWAY
					42C-48C			56C-145TC			182TC-184TC			213TC-215TC					
	M_1 42C-48C	M_1 56C-145TC	M_1 182TC 184TC	M_1 213TC 215TC	AB	M_3	BE_1	AB	M_3	BE_1	AB	M_3	BE_1	AB	M_3	BE_1			
917	4.06	4.06	NA	NA	2.50	7.56	.38	3.75	7.50	.38	3.75	8.44	.50	NA			4.88	.625	.19 x .09
920	4.06	4.06	NA	NA	2.50	7.56	.38	3.75	7.50	.38	3.75	8.44	.50	NA			4.88	.625	.19 x .09
924	NA	5.38	5.38	NA	NA			4.13	9.13	.38	4.25	10.19	.50	NA			6.50	1.000	.25 x .13
926	NA	5.38	5.38	NA	NA			4.13	9.13	.38	4.25	10.19	.50	NA			6.50	1.000	.25 x .13
930	NA	5.56	5.56	NA	NA			4.13	9.75	.38	4.75	10.88	.50	4.75	10.88	.50	7.00	1.000	.25 x .13
935	NA	5.81	5.81	NA	NA			4.13	10.00	.38	4.75	11.13	.50	4.75	11.13	.50	7.38	1.000	.25 x .13
943	NA	6.63	6.63	6.63	NA			4.13	10.81	.38	4.75	11.94	.50	4.75	12.88	1.44	8.19	1.250	.25 x .13

*Input shaft diameter and length varies from non-motorized model on sizes 913 thru 920.
□42C frame has .3755 bore, .094 x .047 keyway.

FRAME NO.	42C-48C	56C	143TC 145TC	182TC 184TC	213TC 215TC
AJ	3.75	5.88	5.88	7.25	7.25
AK	3.00	4.50	4.50	8.50	8.50
BB	.19	.19	.19	.19	.19
BD	4.50	6.50	6.50	9.00	9.00
BD_1	4.50	6.63	6.63	9.00	9.00
BE	.34	.31	.31	.38	.38
BF	.281	.406	.406	.531	.531
KEYWAY	.13 x .06	.19 x .09		.25 x .13	.31 x .16
BORE +.001 -.000	.5005□	.6255	.8755	1.1255	1.3755

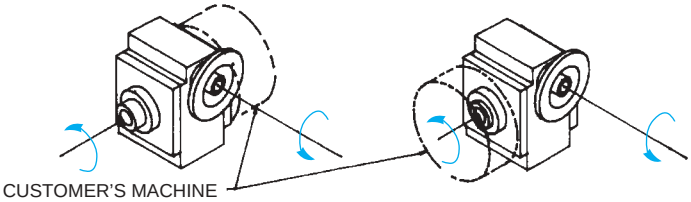
AutoCAD® drawing for these models available in WINSMITH®'s Gear Graphics.

SHAFT ARRANGEMENTS AND RELATIVE SHAFT ROTATIONS



ASSEMBLY DR STANDARD

ASSEMBLY DL STANDARD



ASSEMBLY DR STANDARD

ASSEMBLY DL STANDARD

The input shaft may be driven in either direction.

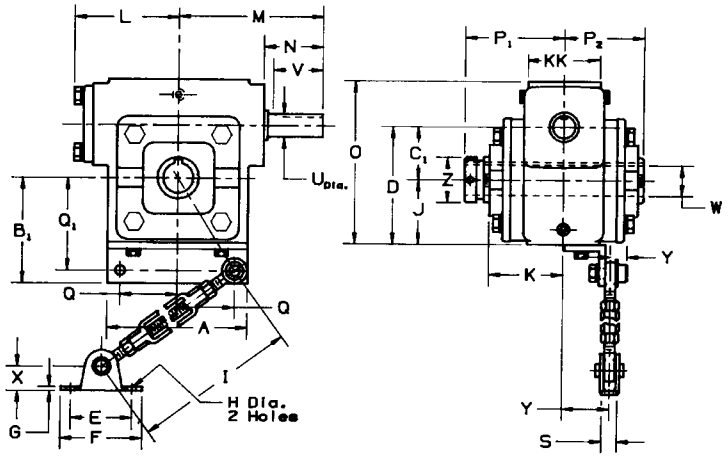
MODEL†	917	920	924	926	930	935	943
DSR SHIPPING WEIGHT	26	31	46	51	71	110	158
MDSR SHIPPING WEIGHT‡	29	34	50	55	75	114	163
CDSR SHIPPING WEIGHT‡	33	38	55	60	81	120	168
APPROX. OIL CAPACITY (PINTS)	.5	.5	.9	1.2	1.6	2.1	2.8

GEAR RATIOS AVAILABLE 4:1 THRU 100:1
TORQUE AND HP RATINGS/OVERHUNG LOAD RATINGS . . . . . PAGES 22-119
MOUNTING POSITIONS . . . . . PAGE 21
SERVICE FACTORS . . . . . PAGES 224-226
HYDRAULIC MOTOR ADAPTERS . . . . . PAGE 192

†Weights are approximate and include shipping carton.
‡Weight given for 48C thru 145TC. For 182/4TC and 213/5TC add 4 lbs.

MODEL DSR
Assembly DL

DIMENSIONS



The reaction arm must be mounted at an angle of 90° ±20° to an imaginary center line drawn between the center of the slow speed shaft bore and the center of the reaction arm eye bolt. "Reaction arm" must be in tension.

SPEED REDUCER DIMENSIONS (IN INCHES)

SIZE	A	B_1	C_1	D	E	F	G	H	I MIN	I MAX	J	K	KK	L	M	O	P_1	P_2	Q	Q_1	S	X	Y	Y_1	Z	HIGH SPEED SHAFT U*	N	V	KEYWAY	SIZE
917	4.63	4.13	1.750	3.88	3.00	4.00	.19	.44	15.00	24.00	2.13	2.44	2.38	3.44	4.75	5.38	3.25	2.63	1.69	3.50	.75	1.19	2.38	.81	1.49	.750	1.94	1.69	.19 x .09	917
920	5.25	4.13	2.000	4.13	3.00	4.00	.19	.44	15.00	24.00	2.13	2.63	2.38	3.44	5.00	5.63	3.38	2.88	1.69	3.50	.75	1.19	2.38	.81	2.00	.750	2.19	1.75	.19 x .09	920
924	5.38	4.88	2.375	5.25	3.00	4.00	.19	.44	15.00	24.00	2.88	2.75	3.13	4.50	6.50	7.25	3.56	2.94	2.13	4.25	.75	1.19	2.56	.81	2.25	1.000	2.75	2.38	.25 x .13	924
926	5.88	5.13	2.625	5.75	3.00	4.00	.19	.44	15.00	24.00	3.13	2.81	3.13	4.50	6.50	7.88	3.69	3.00	2.31	4.50	.75	1.19	2.69	.81	2.50	1.000	2.75	2.38	.25 x .13	926
930	6.50	5.50	3.000	6.50	3.00	4.00	.19	.44	15.00	24.00	3.50	3.00	3.50	4.63	7.00	9.00	4.06	3.19	2.56	4.88	.75	1.19	3.06	.81	2.63	1.000	3.06	2.38	.25 x .13	930
935	7.75	6.50	3.500	7.50	3.50	4.75	.56	.53	21.00	29.00	4.00	3.38	3.75	5.06†	7.38	10.13	4.44	3.56	3.00	5.63	2.13	1.63	3.50	1.09	2.87	1.000	2.31	2.50	.25 x .13	935
943	8.75	6.88	4.250	8.63	3.50	4.75	.56	.53	21.00	29.00	4.38	3.63	4.38	5.88‡	8.19	11.50	4.38	4.38	3.50	6.00	2.13	1.63	3.81	1.09	3.88	1.250	2.31	2.50	.25 x .13	943

*Shaft diameter tolerance +.000 -.001. For construction purposes send for Certified Dimension Sheets.
†L dimension equals 5.46 on MDSR models.

For larger sizes see C-Line Catalog 100 or D-90® TYPE DE® Catalog 190.
‡L dimension equals 6.28 on MDSR models.

SLOW SPEED SHAFT BORES[1, 2, 3, 4]

917		920		924		926		930		935		943	
W**	KEYWAY	W**	KEYWAY	W**	KEYWAY	W**	KEYWAY	W**	KEYWAY	W**	KEYWAY	W**	KEYWAY
.625	.19 x .09	**.750**	**.19 x .09**	.875	.19 x .09	.938	.25 x .13	1.188	.25 x .13	1.188	.25 x .13	1.625	.38 x .19
.688	.19 x .09	.813	.19 x .09	.938	.25 x .13	1.000	.25 x .13	1.250	.25 x .13	1.250	.25 x .13	1.688	.38 x .19
.750	**.19 x .09**	**.875**	**.19 x .09**	1.000	.25 x .13	1.063	.25 x .13	**1.375**	**.31 x .16**	**1.375**	**.31 x .16**	1.750	.38 x .19
.813	.19 x .09	.938	.25 x .13	1.063	.25 x .13	1.125	.25 x .13	**1.438**	**.38 x .19**	1.438	.38 x .19	1.875	.50 x .25
.875	.19 x .09	**1.000**	**.25 x .13**	**1.125**	**.25 x .13**	1.188	.25 x .13	**1.500**	**.38 x .19**	**1.500**	**.38 x .19**	1.938	.50 x .25
.938	.25 x .13	1.063	.25 x .13	1.188	.25 x .13	**1.250**	**.25 x .13**	**1.625**	**.38 x .19**	1.625	.38 x .19	2.000	.50 x .25
1.000	**.25 x .13**	**1.125**	**.25 x .13**	**1.250**	**.25 x .13**	1.375	.31 x .16	1.688	.38 x .19	1.688	.38 x .19	2.188	.50 x .25
		1.188	.25 x .13	1.375	.31 x .16	**1.438**	**.38 x .19**	**1.750**	**.38 x .19**	1.750	.38 x .19	2.250	.50 x .25
		1.250	**.25 x .13**	**1.438**	**.38 x .19**	**1.500**	**.38 x .19**	**1.875**	**.50 x .25**	**1.875**	**.50 x .25**	2.438	.63 x .31
		1.375	.31 x .16	**1.500**	**.38 x .19**	1.625	.38 x .19	**1.938**	**.50 x .19**	**1.938**	**.50 x .25**	2.500	.63 x .31
		1.438	**.38 x .13**			**1.688**	**.38 x .19**			**2.000**	**.50 x .25**	2.688	.63 x .31
										2.188	**.50 x .13**	2.750	.63 x .31

**Bore tolerances +.000, +.002.
1. Contact factory for other bore sizes.
2. Hollow output shaft bored to size; no bushing kit required.
3. Puller groove on all hollow output shafts.
4. Bores in bold blue type are stock standard sizes.

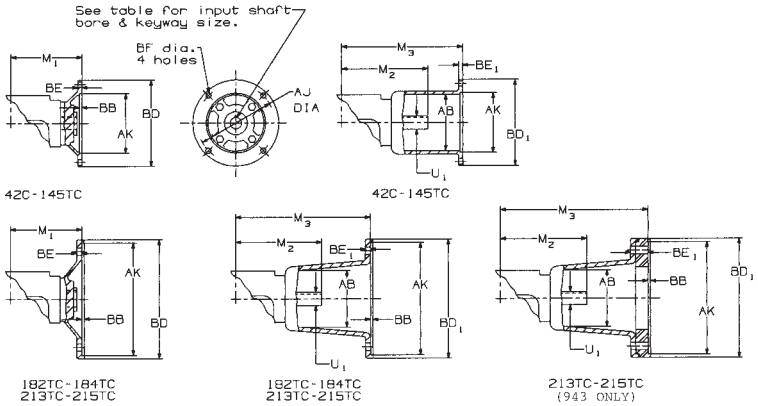
MDSR-CDSR

MODEL MDSR
Assembly DL

MODEL CDSR
Assembly DL

Couplings available, see page 189 for Selection Chart.

DIMENSIONS



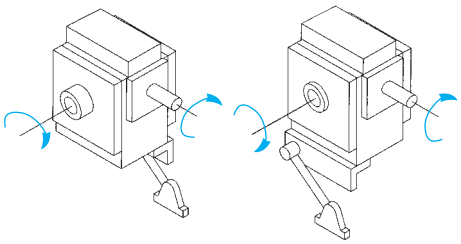
SIZE	HOLLOW INPUT MOTOR ADAPTER				COUPLING STYLE MOTOR ADAPTER														
					42C-48C			56C-145TC			182TC-184TC			213TC-215TC					
	M_1 42C-48C	M_1 56C-145TC	M_1 182TC 184TC	M_1 213TC 215TC	AB	M_3	BE_1	AB	M_3	BE_1	AB	M_3	BE_1	AB	M_3	BE_1	M_2*	U_1*	KEYWAY
917	4.06	4.06	NA	NA	2.50	7.56	.38	3.75	7.50	.38	3.75	8.44	.50	NA			4.88	.625	.19 x .09
920	4.06	4.06	NA	NA	2.50	7.56	.38	3.75	7.50	.38	3.75	8.44	.50	NA			4.88	.625	.19 x .09
924	NA	5.38	5.38	NA	NA			4.13	9.13	.38	4.25	10.19	.50	NA			6.50	1.000	.25 x .13
926	NA	5.38	5.38	NA	NA			4.13	9.13	.38	4.25	10.19	.50	NA			6.50	1.000	.25 x .13
930	NA	5.56	5.56	NA	NA			4.13	9.75	.38	4.75	10.88	.50	4.75	10.88	.50	7.00	1.000	.25 x .13
935	NA	5.81	5.81	NA	NA			4.13	10.00	.38	4.75	11.13	.50	4.75	11.13	.50	7.38	1.000	.25 x .13
943	NA	6.63	6.63	6.63	NA			4.13	10.81	.38	4.75	11.94	.50	4.75	12.88	1.44	8.19	1.250	.25 x .13

*Input shaft diameter and length varies from non-motorized model on sizes 913 thru 920.
□42C frame has .3755 bore, .094 x .047 keyway.

FRAME NO.	42C-48C	56C	143TC 145TC	182TC 184TC	213TC 215TC
AJ	3.75	5.88	5.88	7.25	7.25
AK	3.00	4.50	4.50	8.50	8.50
BB	.19	.19	.19	.19	.19
BD	4.50	6.50	6.50	9.00	9.00
BD_1	4.50	6.63	6.63	9.00	9.00
BE	.34	.31	.31	.38	.38
BF	.281	.406	.406	.531	.531
KEYWAY	.13 x .06	.19 x .09		.25 x .13	.31 x .16
BORE +.001 -.000	.5005□	.6255	.8755	1.1255	1.3755

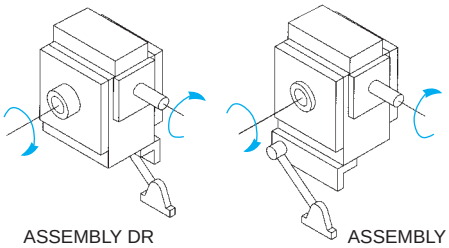
AutoCAD® drawing for these models available in WINSMITH®'s Gear Graphics.

SHAFT ARRANGEMENTS AND RELATIVE SHAFT ROTATIONS



ASSEMBLY DR STANDARD

ASSEMBLY DL STANDARD



ASSEMBLY DR STANDARD

ASSEMBLY DL STANDARD

The input shaft may be driven in either direction.

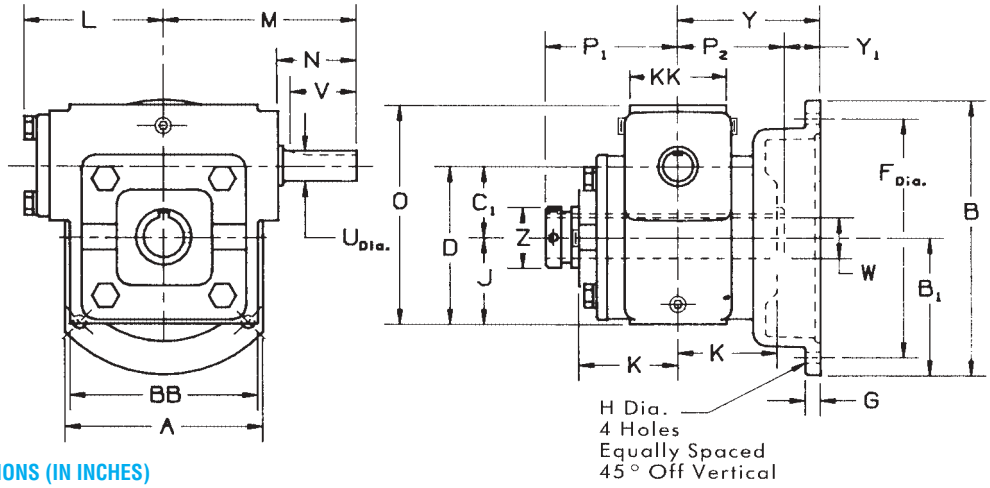
MODEL†	917	920	924	926	930	935	943
DSF SHIPPING WEIGHT	24	29	43	48	68	90	143
MDSF SHIPPING WEIGHT‡	27	32	47	52	72	94	148
CDSF SHIPPING WEIGHT‡	31	36	52	57	78	100	153
APPROX. OIL CAPACITY (PINTS)	.5	.5	.9	1.2	1.6	2.1	2.8

GEAR RATIOS AVAILABLE 4:1 THRU 100:1
TORQUE AND HP RATINGS/OVERHUNG LOAD RATINGS . . . . . PAGES 22-119
MOUNTING POSITIONS . . . . . PAGE 21
SERVICE FACTORS . . . . . PAGES 224-226
HYDRAULIC MOTOR ADAPTERS . . . . . PAGE 192

†Weights are approximate and include shipping carton.
‡Weight given for 48C thru 145TC. For 182/4TC and 213/5TC add 4 lbs.

MODEL DSF
Assembly DR

DIMENSIONS



SPEED REDUCER DIMENSIONS (IN INCHES)

SIZE	A	B	B_1	BB	C_1	D	F dia.	G	H	J	K	KK	L	M	O	P_1	P_2	Y	Y_1	Z	HIGH SPEED SHAFT				SIZE
																					U*	N	V	KEYWAY	
917	4.88	6.75	3.38	4.63	1.750	3.88	5.875	.38	.344	2.13	2.44	2.38	3.44	4.75	5.38	3.25	2.63	3.50	.87	1.49	.750	1.94	1.69	.19 x .09	917
920	6.00	7.63	3.81	5.25	2.000	4.13	6.500	.38	.406	2.13	2.63	2.38	3.44	5.00	5.63	3.38	2.88	3.38	.50	2.00	.750	2.19	1.75	.19 x .09	920
924	7.38	8.63	4.31	5.38	2.375	5.25	7.500	.38	.406	2.88	2.75	3.13	4.50	6.50	7.25	3.56	2.94	3.50	.56	2.25	1.000	2.75	2.38	.25 x .13	924
926	7.75	9.13	4.56	5.88	2.625	5.75	8.000	.38	.406	3.13	2.81	3.13	4.50	6.50	7.88	3.69	3.00	3.63	.63	2.50	1.000	2.75	2.38	.25 x .13	926
930	8.00	10.75	5.38	6.62	3.000	6.50	9.250	.50	.563	3.50	3.00	3.50	4.63	7.00	9.00	4.06	3.19	5.00	1.81	2.63	1.000	3.06	2.38	.25 x .13	930
935	9.00	11.00	5.50	7.69	3.500	7.50	10.000	.50	.563	4.00	3.38	3.75	5.06†	7.38	10.13	4.44	3.56	5.00	1.44	2.87	1.000	2.31	2.50	.25 x .13	935
943	10.50	13.00	6.50	8.75	4.250	8.63	11.500	.63	.688	4.38	3.63	4.38	5.88‡	8.19	11.50	4.38	4.38	5.75	1.38	3.88	1.250	2.31	2.50	.25 x .13	943

*High speed shaft diameter tolerance +.000 -.001. For construction purposes send for Certified Dimension Sheets. For larger sizes see C-Line Catalog 100 or D-90® TYPE DE® Catalog 190.
†L dimension equals 5.46 on MDSF models. ‡L dimension equals 6.28 on MDSF models.

SLOW SPEED SHAFT BORES[1, 2, 3, 4]

917		920		924		926		930		935		943	
W**	KEYWAY	W**	KEYWAY	W**	KEYWAY	W**	KEYWAY	W**	KEYWAY	W**	KEYWAY	W**	KEYWAY
.625	.19 x .09	**.750**	**.19 x .09**	.875	.19 x .09	.938	.25 x .13	1.188	.25 x .13	1.188	.25 x .13	1.625	.38 x .19
.688	.19 x .09	.813	.19 x .09	.938	.25 x .13	1.000	.25 x .13	1.250	.25 x .13	1.250	.25 x .13	1.688	.38 x .19
.750	**.19 x .09**	**.875**	**.19 x .09**	1.000	.25 x .13	1.063	.25 x .13	**1.375**	**.31 x .16**	**1.375**	**.31 x .16**	1.750	.38 x .19
.813	.19 x .09	.938	.25 x .13	1.063	.25 x .13	1.125	.25 x .13	**1.438**	**.38 x .19**	1.438	.38 x .19	1.875	.50 x .25
.875	.19 x .09	**1.000**	**.25 x .13**	**1.125**	**.25 x .13**	1.188	.25 x .13	**1.500**	**.38 x .19**	**1.500**	**.38 x .19**	1.938	.50 x .25
.938	.25 x .13	1.063	.25 x .13	1.188	.25 x .13	**1.250**	**.25 x .13**	**1.625**	**.38 x .19**	1.625	.38 x .19	2.000	.50 x .25
1.000	**.25 x .13**	**1.125**	**.25 x .13**	**1.250**	**.25 x .13**	1.375	.31 x .16	1.688	.38 x .19	1.688	.38 x .19	2.188	.50 x .25
		1.188	.25 x .13	1.375	.31 x .16	**1.438**	**.38 x .19**	**1.750**	**.38 x .19**	1.750	.38 x .19	2.250	.50 x .25
		1.250	**.25 x .13**	**1.438**	**.38 x .19**	**1.500**	**.38 x .19**	**1.875**	**.50 x .25**	**1.875**	**.50 x .25**	2.438	.63 x .31
		1.375	.31 x .16	**1.500**	**.38 x .19**	1.625	.38 x .19	**1.938**	**.50 x .19**	**1.938**	**.50 x .25**	2.500	.63 x .31
		1.438	**.38 x .13**			**1.688**	**.38 x .19**			**2.000**	**.50 x .25**	2.688	.63 x .31
										2.188	**.50 x .13**	2.750	.63 x .31

**Bore tolerances +.000, +.002.
1. Contact factory for other bore sizes.
2. Hollow output shaft bored to size; no bushing kit required.
3. Puller groove on all hollow output shafts.
4. Bores in bold blue type are stock standard sizes.

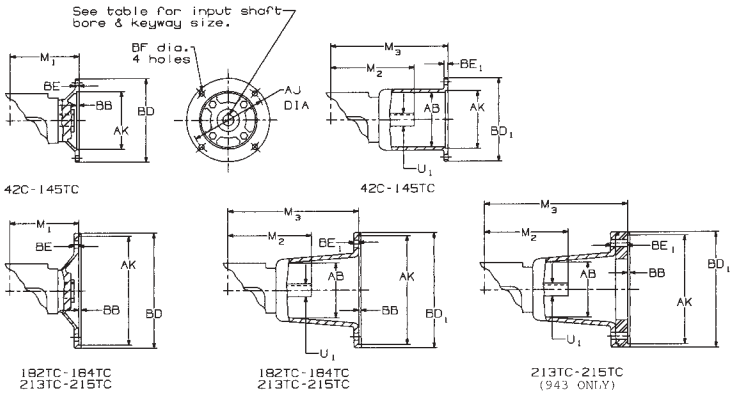
MDSF-CDSF

MODEL MDSF
Assembly DR

MODEL CDSF
Assembly DR

Couplings available, see page 189 for Selection Chart.

DIMENSIONS



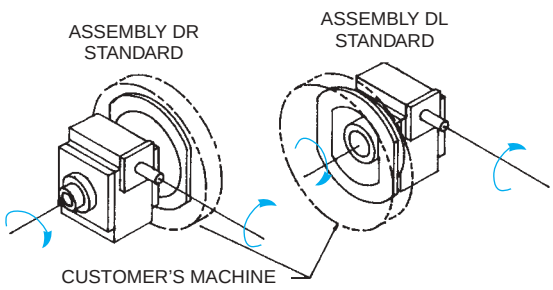
SIZE	HOLLOW INPUT MOTOR ADAPTER				COUPLING STYLE MOTOR ADAPTER														
	M_1 42C-48C	M_1 56C-145TC	M_1 182TC 184TC	M_1 213TC 215TC	42C-48C			56C-145TC			182TC-184TC			213TC-215TC			M_2*	U_1*	KEYWAY
					AB	M_3	BE_1	AB	M_3	BE_1	AB	M_3	BE_1	AB	M_3	BE_1			
917	4.06	4.06	NA	NA	2.50	7.56	.38	3.75	7.50	.38	3.75	8.44	.50	NA			4.88	.625	.19 x .09
920	4.06	4.06	NA	NA	2.50	7.56	.38	3.75	7.50	.38	3.75	8.44	.50	NA			4.88	.625	.19 x .09
924	NA	5.38	5.38	NA	NA			4.13	9.13	.38	4.25	10.19	.50	NA			6.50	1.000	.25 x .13
926	NA	5.38	5.38	NA	NA			4.13	9.13	.38	4.25	10.19	.50	NA			6.50	1.000	.25 x .13
930	NA	5.56	5.56	NA	NA			4.13	9.75	.38	4.75	10.88	.50	4.75	10.88	.50	7.00	1.000	.25 x .13
935	NA	5.81	5.81	NA	NA			4.13	10.00	.38	4.75	11.13	.50	4.75	11.13	.50	7.38	1.000	.25 x .13
943	NA	6.63	6.63	6.63	NA			4.13	10.81	.38	4.75	11.94	.50	4.75	12.88	1.44	8.19	1.250	.25 x .13

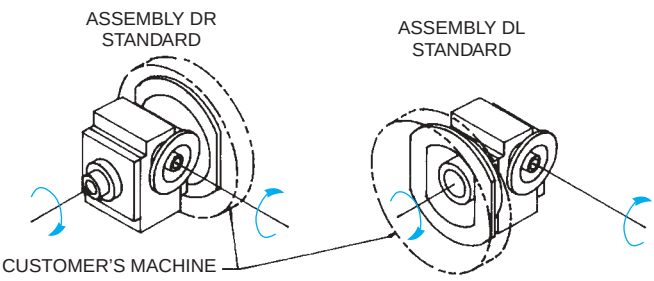
*Input shaft diameter and length varies from non-motorized model on sizes 913 thru 920.
□42C frame has .3755 bore, .094 x .047 keyway.

FRAME NO.	42C-48C	56C	143TC 145TC	182TC 184TC	213TC 215TC
AJ	3.75	5.88	5.88	7.25	7.25
AK	3.00	4.50	4.50	8.50	8.50
BB	.19	.19	.19	.19	.19
BD	4.50	6.50	6.50	9.00	9.00
BD_1	4.50	6.63	6.63	9.00	9.00
BE	.34	.31	.31	.38	.38
BF	.281	.406	.406	.531	.531
KEYWAY	.13 x .06	.19 x .09		.25 x .13	.31 x .16
BORE +.001 -.000	.5005□	.6255	.8755	1.1255	1.3755

AutoCAD® drawing for these models available in WINSMITH®'s Gear Graphics.

SHAFT ARRANGEMENTS AND RELATIVE SHAFT ROTATIONS





The input shaft may be driven in either direction.

DSFY

D-90® TYPE SE® DRYWELL

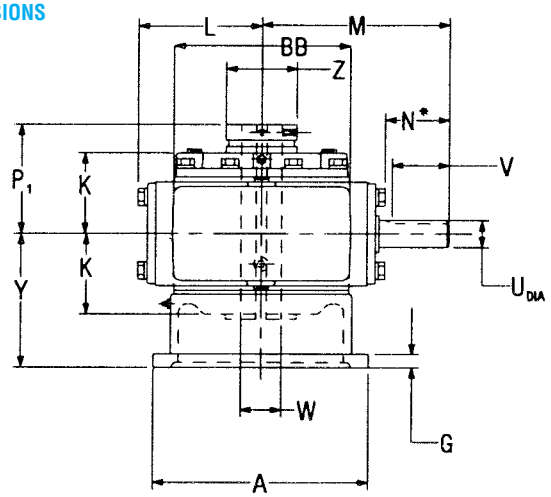
MODEL†	930	935	943
DSFY SHIPPING WEIGHT	68	90	143
MDSFY SHIPPING WEIGHT‡	72	94	148
CDSFY SHIPPING WEIGHT‡	78	100	153
APPROX. OIL CAPACITY (PINTS)	1.6	2.1	2.8

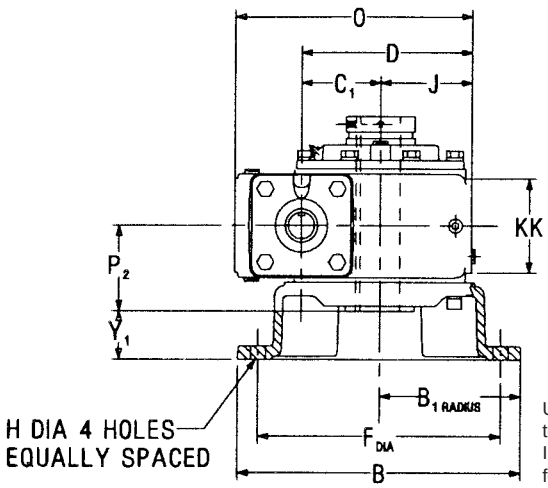
GEAR RATIOS AVAILABLE 5:1△ THRU 100:1
TORQUE AND HP RATINGS/OVERHUNG LOAD RATINGS . . . . . PAGES 22-119
SERVICE FACTORS . . . . . PAGES 224-226
HYDRAULIC MOTOR ADAPTERS . . . . . PAGE 192

†Weights are approximate and include shipping carton.
‡Weight given for 56C thru 145TC. For 182/4TC and 213/5TC add 4 lbs.
△Size 930 available ratios are 15:1 thru 100:1.

MODEL DSFY
Assembly DR

DIMENSIONS





Units may be tilted up to 10 degrees. See Installation Bulletin for more information.

SPEED REDUCER DIMENSIONS (IN INCHES)

SIZE	A	B	B_1	BB	C_1	D	F DIA	G	H	J	K	KK	L	M	O	P_1	P_2	Y	Y_1	Z	HIGH SPEED SHAFT				SIZE
																					U*	N	V	KEYWAY	
930	8.00	10.75	5.38	6.62	3.000	6.50	9.250	.50	.563	3.50	3.00	3.50	4.63	7.00	9.00	4.06	3.19	5.00	1.81	2.63	1.000	3.06	2.38	.25 x .13	930
935	9.00	11.00	5.50	7.69	3.500	7.50	10.000	.50	.563	4.00	3.38	3.75	5.06†	7.38	10.13	4.44	3.56	5.00	1.44	2.87	1.000	2.31	2.50	.25 x .13	935
943	10.50	13.00	6.50	8.75	4.250	8.63	11.500	.63	.688	4.38	4.25	4.38	5.88‡	8.19	11.50	5.00	4.75	5.75	1.00	3.63	1.250	2.31	2.50	.25 x .13	943

*Shaft diameter tolerances +.000 -.001. For construction purposes send for Certified Dimension Sheets.
†L dimension equals 5.46 on 935MDSFY models.
‡L dimension equals 6.28 on 943MDSFY models.

CAUTION: S EQUALIZER® option not available with Drywell Units.

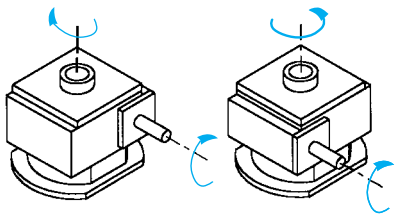
For larger sizes see C-Line Catalog 100 or D-90® TYPE DE® Catalog 190.

SLOW SPEED SHAFT BORES[1, 2, 3, 4]

930		935		943	
W**	KEYWAY	W**	KEYWAY	W**	KEYWAY
1.250	.25 x .13	1.250	.25 x .13	1.938	.50 x .25
1.438	.38 x .19	1.438	.38 x .19	2.000	.50 x .25
1.500	**.38 x .19**	1.500	.38 x .19	**2.500**	**.63 x .31**
1.750	.38 x .19	1.750	.38 x .19		
1.875	.50 x .25	1.875	.50 x .25		
1.938	.50 x .19	1.938	.50 x .25		
		2.000	**.50 x .25**		

**Bore tolerances +.000, +.002.
1. Hollow output shaft bored to size; no bushing kit required.
2. Puller groove on all hollow output shafts.
3. Bores in **bold blue type** are stock standard sizes. All other listed bore sizes are available with a special bore size price adder.
4. Contact factory for other bore sizes not shown.

SHAFT ARRANGEMENTS AND RELATIVE SHAFT ROTATIONS



ASSEMBLY DR STANDARD

ASSEMBLY DL STANDARD

The input shaft may be driven in either direction.

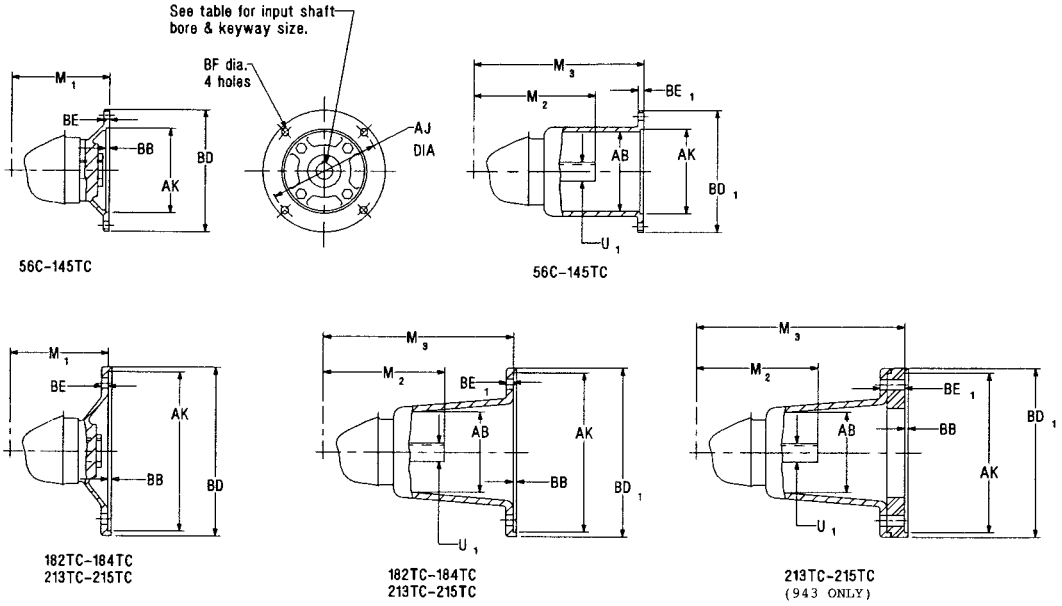
D-90® TYPE SE® DRYWELL MDSFY-CDSFY

MODEL MDSFY
Assembly DR

MODEL CDSFY
Assembly DR

Couplings available, see page 189 for Selection Chart.

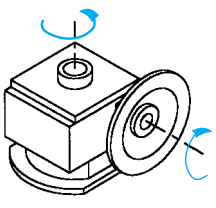
DIMENSIONS



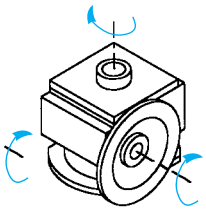
SIZE	HOLLOW INPUT MOTOR ADAPTER			COUPLING STYLE MOTOR ADAPTER											
	M_1 56C 145TC	M_1 182TC 184TC	M_1 213TC 215TC	56C-145TC			182TC-184TC			213TC-215TC*			M_2	U_1	KEYWAY
				AB	M_3	BE_1	AB	M_3	BE_1	AB	M_3	BE_1			
930	5.56	5.56	NA	4.13	9.75	.38	4.75	10.88	.50	4.75	10.88	.50	7.00	1.000	.25 x .13
935	5.81	5.81	NA	4.13	10.00	.38	4.75	11.13	.50	4.75	11.13	.50	7.38	1.000	.25 x .13
943	6.63	6.63	6.63	4.13	10.81	.38	4.75	11.94	.50	4.75	12.88	1.44	8.19	1.250	.25 x .13

*Adapter ring furnished with motor adapter on size 943.

SHAFT ARRANGEMENTS AND RELATIVE SHAFT ROTATIONS



ASSEMBLY DR
STANDARD



ASSEMBLY DL
STANDARD

FRAME NO.	56C	143TC 145TC	182TC 184TC	213TC 215TC
AJ	5.88	5.88	7.25	7.25
AK	4.50	4.50	8.50	8.50
BB	.19	.19	.19	.19
BD	6.50	6.50	9.00	9.00
BD_1	6.63	6.63	9.00	9.00
BE	.31	.31	.38	.38
BF	.406	.406	.531	.531
KEYWAY	.19 x .09		.25 x .13	.31 x .16
BORE $^{+.001}_{-.000}$	.6255	.8755	1.1255	1.3755

The input shaft may be driven in either direction.

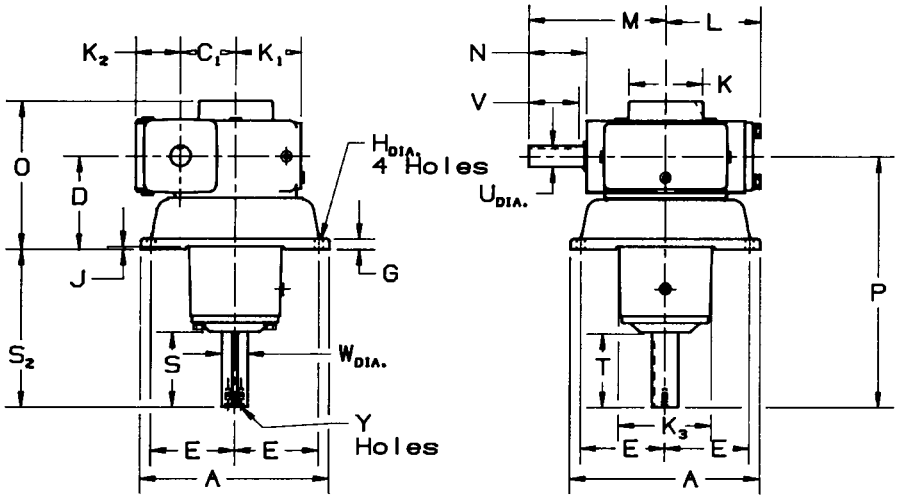
MODEL†	926	930	935	943
DL SHIPPING WEIGHT	50	90	121	174
MDL SHIPPING WEIGHT‡	54	94	125	179
CDL SHIPPING WEIGHT‡	59	100	131	184
APPROX. OIL CAPACITY (PINTS)	3.2	5.0	6.1	9.6

GEAR RATIOS AVAILABLE 4:1 THRU 100:1
TORQUE AND HP RATINGS/OVERHUNG LOAD RATINGS . . . . . PAGES 22-119
MOUNTING POSITIONS . . . . . PAGE 21
SERVICE FACTORS . . . . . PAGES 224-226
HYDRAULIC MOTOR ADAPTERS . . . . . PAGE 192

†Weights are approximate and include shipping carton.
‡Weight given for 48C thru 145TC. For 182/4TC and 213/5TC add 4 lbs.

MODEL DL
Assembly LD

DIMENSIONS



SPEED REDUCER DIMENSIONS (IN INCHES)

SIZE	A	C_1	D	E	G	H	J	K	K_1	K_2	K_3	L	M	O	P	Y DIMENSIONS			HIGH SPEED SHAFT				SLOW SPEED SHAFT					SIZE
																TAP	DEPTH	BOLT CIRCLE	U*	N	V	KEYWAY	W*	S	S_2	T	KEYWAY	
926	9.00	2.625	4.44	4.00	.50	.406	.13	3.50	3.13	2.13	4.44	4.50	6.50	7.06	11.94	.25-20	.44	.625	1.000	2.75	2.38	.25 x .13	1.250	3.68	7.50	3.50	.25 x .13	926
930	9.75	3.000	5.31	4.13	.63	.563	.13	3.50	3.50	2.50	5.19	4.63	7.00	8.31	14.81	.31-18	.50	.750	1.000	3.06	2.38	.25 x .13	1.438	4.63	9.50	4.56	.38 x .19	930
935	12.00	3.500	5.38	5.25	.75	.563	.13	4.13	4.00	2.63	5.38	5.06†	7.38	8.63	14.88	.31-18	.50	.750	1.000	2.31	2.50	.25 x .13	1.625	4.75	9.50	4.56	.38 x .19	935
943	14.00	4.250	6.00	6.00	.88	.688	.13	4.75	4.38	2.88	5.94	5.88‡	8.19	9.63	16.50	.38-16	1.00	1.000	1.250	2.31	2.50	.25 x .13	1.688	5.61	10.50	5.44	.38 x .19	943

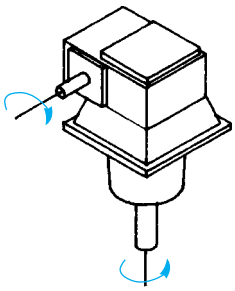
*Shaft diameter tolerance +.000 -.001. For construction purposes send for Certified Dimension Sheets.
†L dimension equals 5.46 on MDL models.
‡L dimension equals 6.28 on MDL models.

For larger sizes see C-Line Catalog 100 or D-90® TYPE DE® Catalog 190.

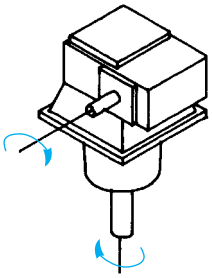
CAUTION: S EQUALIZER® option not available with DL Unit.

SHAFT ARRANGEMENTS AND RELATIVE SHAFT ROTATIONS

AutoCAD® drawing for these models available in WINSMITH®'s Gear Graphics.



ASSEMBLY RD
OPTIONAL



ASSEMBLY LD
STANDARD

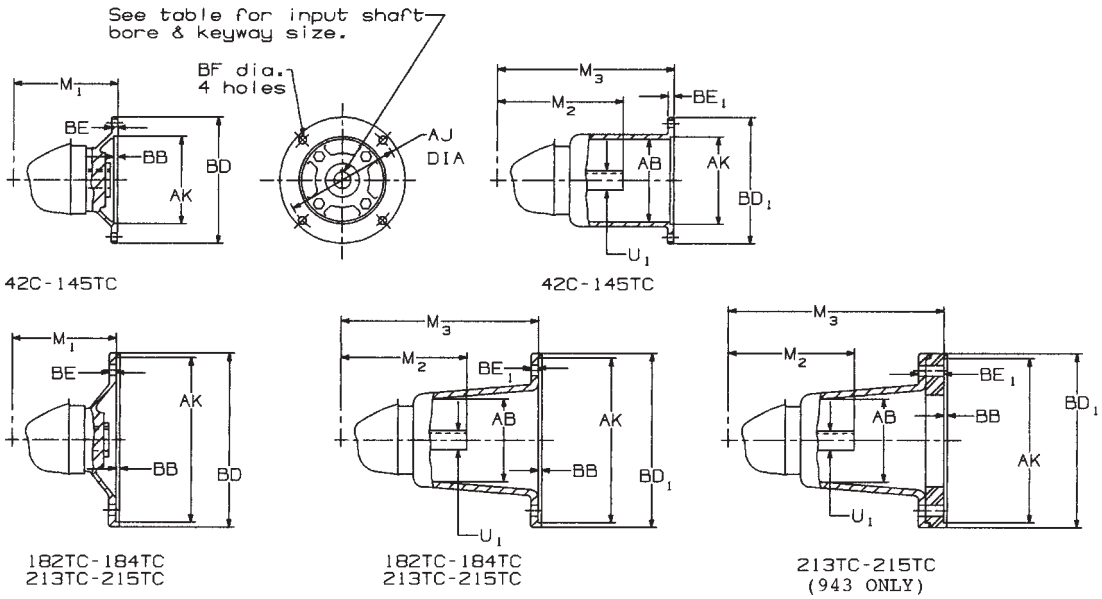
The input shaft may be driven in either direction.

MODEL MDL
Assembly LD

MODEL CDL
Assembly LD

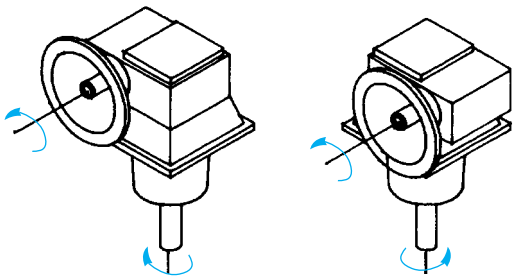
Couplings available, see page 189 for Selection Chart.

DIMENSIONS



SIZE	FRAME SIZE RANGE	HOLLOW INPUT MOTOR ADAPTER			COUPLING STYLE MOTOR ADAPTER									M_2	U_1	KEYWAY
					56C-145TC			182TC-184TC			213TC-215TC					
		M_1 56C-145TC	M_1 182TC 184TC	M_1 213TC 215TC	AB	M_3	BE_1	AB	M_3	BE_1	AB	M_3	BE_1			
926	56C-184TC	5.38	5.38	NA	4.13	9.13	.38	4.25	10.19	.50	NA			6.50	1.000	.25 x .13
930	56C-184TC	5.56	5.56	NA	4.13	9.75	.38	4.75	10.88	.50	4.75	10.88	.50	7.00	1.000	.25 x .13
935	56C-184TC	5.81	5.81	NA	4.13	10.00	.38	4.75	11.13	.50	4.75	11.13	.50	7.38	1.000	.25 x .13
943	56C-215TC	6.63	6.63	6.63	4.13	10.81	.38	4.75	11.94	.50	4.75	12.88	1.44	8.19	1.250	.25 x .13

SHAFT ARRANGEMENTS AND RELATIVE SHAFT ROTATIONS



ASSEMBLY RD
OPTIONAL

ASSEMBLY LD
STANDARD

AutoCAD® drawing for these models available in WINSMITH®'s Gear Graphics.

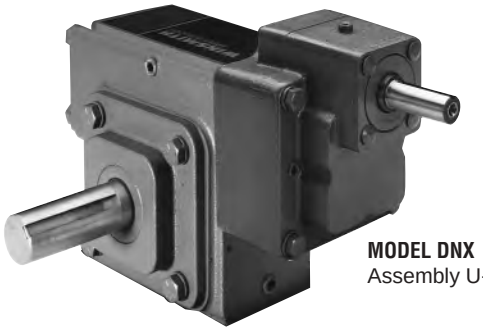
FRAME NO.	56C	143TC 145TC	182TC 184TC	213TC 215TC
AJ	5.88	5.88	7.25	7.25
AK	4.50	4.50	8.50	8.50
BB	.19	.19	.19	.19
BD	6.50	6.50	9.00	9.00
BD_1	6.63	6.63	9.00	9.00
BE	.31	.31	.38	.38
BF	.406	.406	.531	.531
KEYWAY	.19 x .09	.25 x .13		.31 x .16
BORE $^{+.001}_{-.000}$	.6255	.8755	1.1255	1.3755

The input shaft may be driven in either direction.

MODEL†	924	926	930	935	943
DNX SHIPPING WEIGHT	50	52	64	84	144
MDNX SHIPPING WEIGHT‡	53	55	67	87	148
CDNX SHIPPING WEIGHT‡	56	58	70	89	153
APPROX. OIL CAPACITY (PINTS)	2.6	3.1	3.6	5.3	7.7

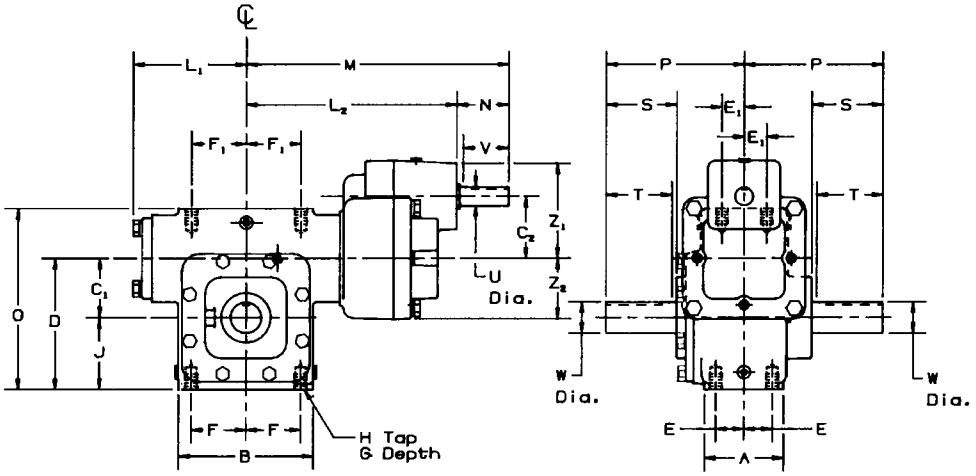
GEAR RATIOS AVAILABLE 25:1 THRU 360:1
TORQUE AND HP RATINGS/OVERHUNG LOAD RATINGS . . . . . PAGES 22-119
MOUNTING POSITIONS . . . . . PAGE 21
SERVICE FACTORS . . . . . PAGES 224-226
HYDRAULIC MOTOR ADAPTERS . . . . . PAGE 192
BASE AND BRACKET KITS . . . . . PAGES 188-191

†Weights are approximate and include shipping carton.
‡Weights are given for 48C thru 145TC. For 182/4TC add 4 lbs.



MODEL DNX
Assembly U-L

DIMENSIONS



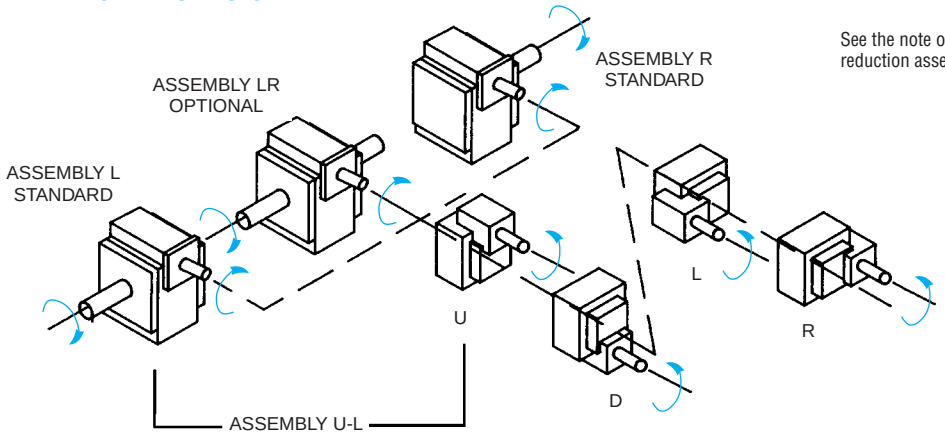
SPEED REDUCER DIMENSIONS (IN INCHES)

SIZE	A	B	C_1	C_2	D	E	E_1	F	F_1	G DEPTH	H TAP	J	L_1	L_2	M	O	P	Z_1	Z_2	HIGH SPEED SHAFT				SLOW SPEED SHAFT				SIZE
																				U*	N	V	KEYWAY	W*	S	T	KEYWAY	
924	3.13	5.38	2.375	2.060	5.25	1.13	1.13	2.19	2.19	.63	½-13	2.88	4.50	8.39	10.46	7.25	5.50	3.50	2.44	.750	2.06	1.81	.19 x .09	1.250	2.81	2.63	.25 x .13	924
926	3.13	5.88	2.625	2.060	5.75	1.13	1.13	2.44	2.44	.63	½-13	3.13	4.50	8.39	10.46	7.88	5.50	3.50	2.44	.750	2.06	1.81	.19 x .09	1.250	2.81	2.63	.25 x .13	926
930	3.50	6.62	3.000	2.060	6.50	1.31	1.31	2.75	2.75	.75	½-13	3.50	4.63	8.58	10.64	9.00	5.88	3.50	2.44	.750	2.06	1.81	.19 x .09	1.375	2.88	2.75	.31 x .16	930
935	3.75	7.69	3.500	2.060	7.50	1.31	1.31	3.25	3.25	1.00	⅝-11	4.00	5.06	8.83	10.89	10.13	7.00	3.50	2.44	.750	2.06	1.81	.19 x .09	1.750	3.75	3.63	.38 x .19	935
943	4.38	8.75	4.250	3.200	8.63	1.63	1.63	3.75	3.75	1.00	⅝-11	4.38	5.88	10.63	13.38	11.50	8.00	5.02	3.38	1.000	2.75	2.38	.25 x .13	2.000	4.38	4.19	.50 x .25	943

*Shaft diameter tolerance +.000 -.001. For construction purposes send for Certified Dimension Sheets.

For larger sizes see C-Line Catalog 100 or D-90® TYPE DE® Catalog 190.

SHAFT ARRANGEMENTS AND RELATIVE SHAFT ROTATIONS



See the note on page 156 for double reduction assembly explanation.

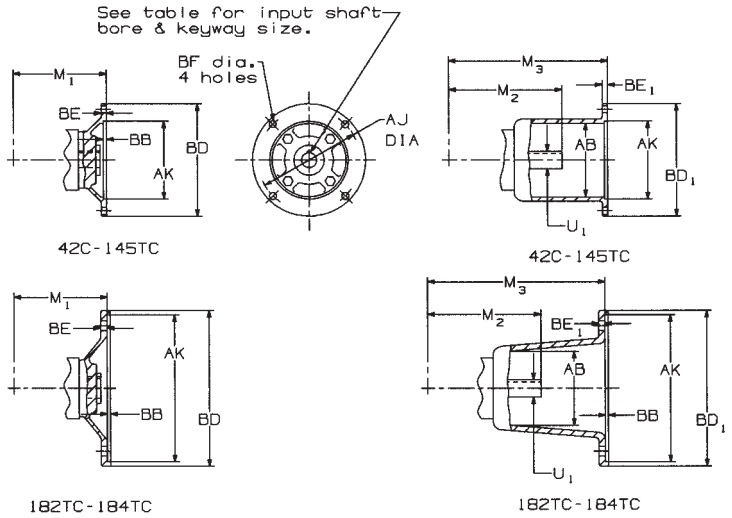
The input shaft may be driven in either direction.

MODEL MDNX
Assembly U-L

MODEL CDNX
Assembly U-L

Couplings available, see page 189 for Selection Chart.

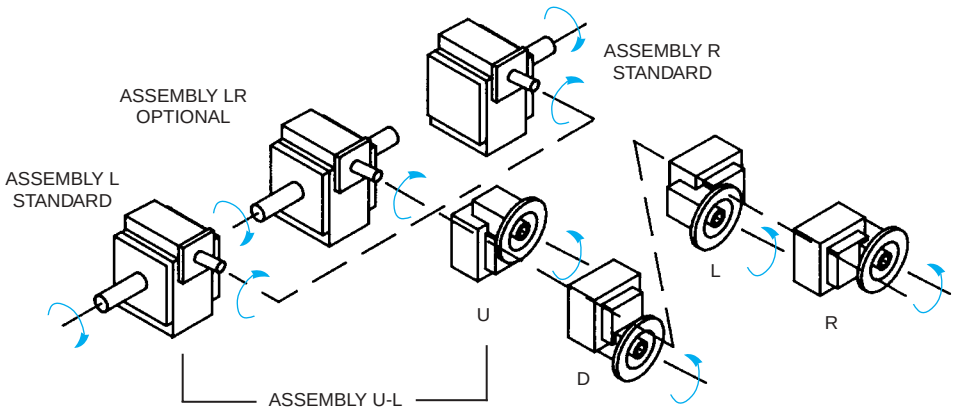
DIMENSIONS



SIZE	HOLLOW INPUT MOTOR ADAPTER			COUPLING STYLE MOTOR ADAPTER									M_2	U_1	KEYWAY
	M_1 42C-48C	M_1 56C-145TC	M_1 182TC 184TC	42C-48C			56C-145TC			182TC-184TC					
				AB*	M_3	BE_1	AB	M_3	BE_1	AB	M_3	BE_1			
924	9.65	9.65	NA	2.13	13.15	.38	3.75	13.09	.38	NA			10.46	.750	.19 x .09
926	9.65	9.65	NA	2.13	13.15	.38	3.75	13.09	.38	NA			10.46	.750	.19 x .09
930	9.84	9.84	NA	2.13	13.34	.38	3.75	13.28	.38	NA			10.64	.750	.19 x .09
935	10.09	10.09	NA	2.13	13.59	.38	3.75	13.53	.38	NA			10.89	.750	.19 x .09
943	NA	12.25	12.25	NA			4.13	16.00	.38	4.25	17.06	.50	13.38	1.000	.25 x .13

*Minimum clearance diameter for coupling.

SHAFT ARRANGEMENTS AND RELATIVE SHAFT ROTATIONS



FRAME NO.	48C	56C	143TC 145TC	182TC 184TC
AJ	3.75	5.88	5.88	7.25
AK	3.00	4.50	4.50	8.50
BB	.19	.19	.19	.19
BD	4.50	6.50	6.50	9.00
BD_1	4.50	6.63	6.63	9.00
BE	.34	.31	.31	.38
BF	.281	.406	.406	.531
KEYWAY	.13 x .06	.19 x .09		.25 x .13
BORE $^{+.001}_{-.000}$	.5005□	.6255	.8755	1.1255

□42C frame has .3755 bore, .094 x .047 keyway.

See the note on page 156 for double reduction assembly explanation.

The input shaft may be driven in either direction.

MODEL†	924	926	930	935	943
DBX SHIPPING WEIGHT	54	55	71	93	158
MDBX SHIPPING WEIGHT‡	57	58	74	95	162
CDBX SHIPPING WEIGHT‡	60	61	77	98	167
APPROX. OIL CAPACITY (PINTS)	1.5	1.7	1.8	1.9	2.7

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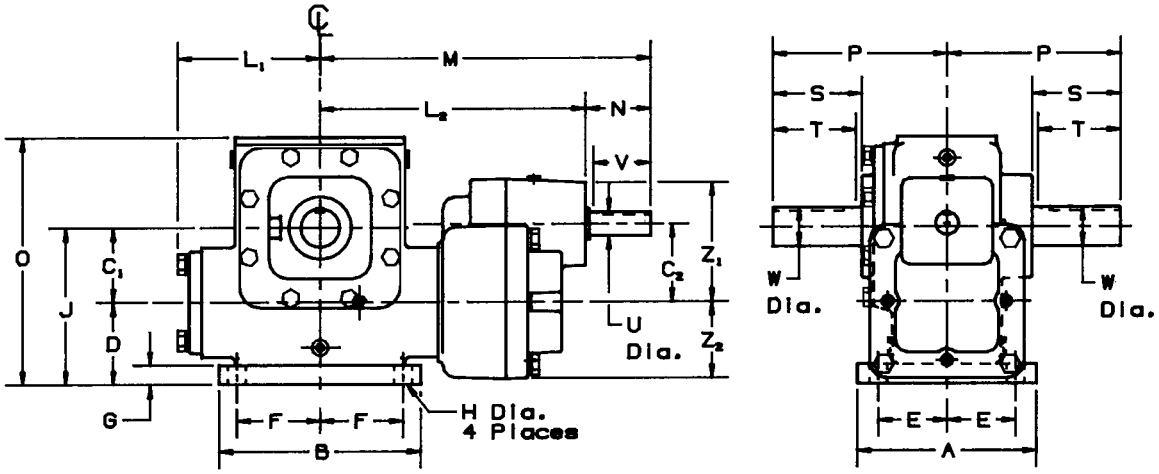
†Weights are approximate and include shipping carton.
‡Weights are given for 48C thru 145TC. For 182/4TC add 4 lbs.

MODEL DBX
Assembly U-R

DIMENSIONS



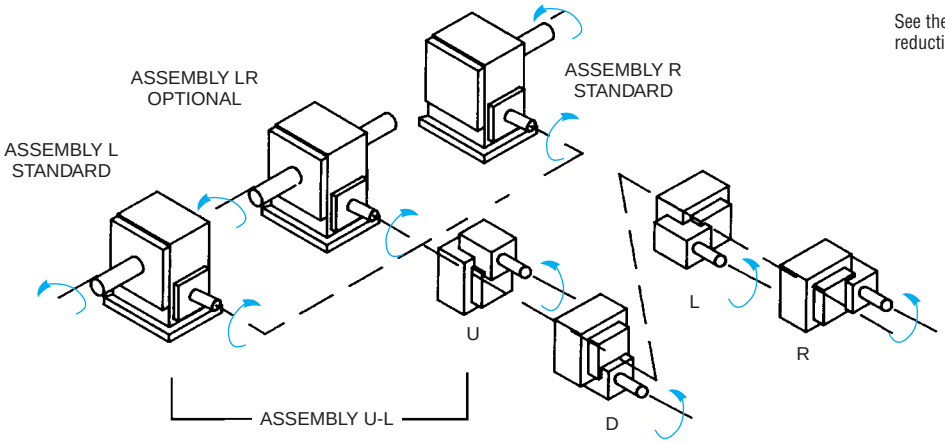
SPEED REDUCER DIMENSIONS (IN INCHES)

SIZE	A	B	C_1	C_2	D	E	F	G	H DIA.	J	L_1	L_2	M	O	P	Z_1	Z_2△	HIGH SPEED SHAFT				SLOW SPEED SHAFT				SIZE
																		U*	N	V	KEYWAY	W*	S	T	KEYWAY	
924	5.00	7.00	2.375	2.060	2.38	2.00	3.00	.38	.406	4.75	4.50	8.39	10.46	7.63	5.50	3.50	2.44	.750	2.06	1.81	.19 x .09	1.250	2.81	2.63	.25 x .13	924
926	4.75	7.00	2.625	2.060	2.50	2.00	3.00	.38	.406	5.13	4.50	8.39	10.46	8.25	5.50	3.50	2.44	.750	2.06	1.81	.19 x .09	1.250	2.81	2.63	.25 x .13	926
930	6.00	8.00	3.000	2.060	3.00	2.38	3.50	.50	.563	6.00	4.63	8.58	10.64	9.50	5.88	3.50	2.44	.750	2.06	1.81	.19 x .09	1.375	2.88	2.75	.31 x .16	930
935	6.50	10.00	3.500	2.060	3.13	2.63	4.13	.50	.563	6.63	5.06	8.83	10.89	10.63	7.00	3.50	2.44	.750	2.06	1.81	.19 x .09	1.750	3.75	3.63	.38 x .19	935
943	7.00	11.00	4.250	3.200	3.50	2.88	4.88	.63	.563	7.75	5.88	10.63	13.38	12.13	8.00	5.02	3.38	1.000	2.75	2.38	.25 x .13	2.000	4.38	4.19	.50 x .25	943

△Size 924 Z_2 dimension is greater than D dimension.
*Shaft diameter tolerance +.000 -.001. For construction purposes send for Certified Dimension Sheets.

For larger sizes see C-Line Catalog 100 or D-90® TYPE DE® Catalog 190.

SHAFT ARRANGEMENTS AND RELATIVE SHAFT ROTATIONS

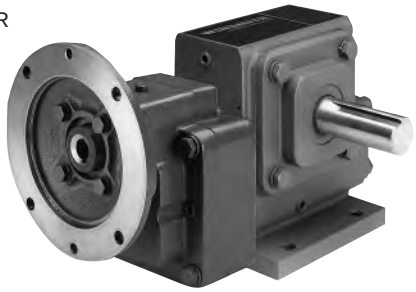


See the note on page 156 for double reduction assembly explanation.

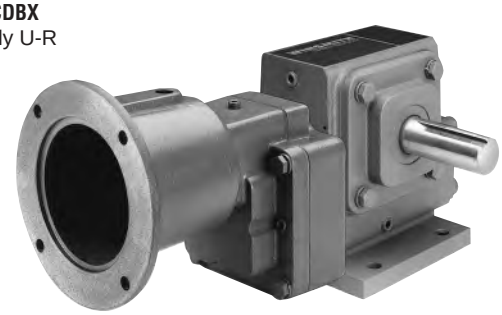
The input shaft may be driven in either direction.

MDBX-CDBX

MODEL MDBX
Assembly U-R

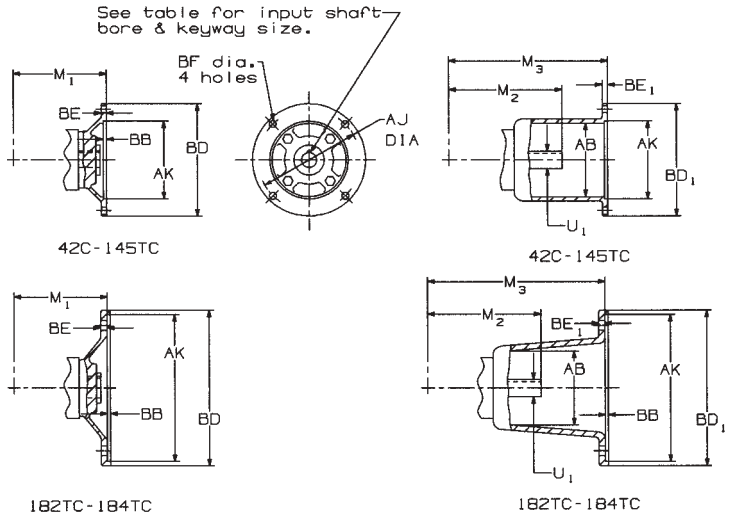


MODEL CDBX
Assembly U-R



Couplings available, see page 189 for Selection Chart.

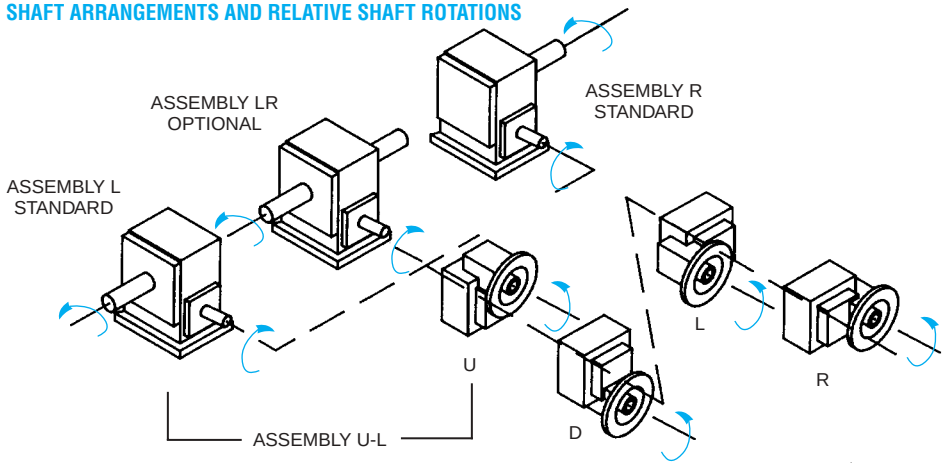
DIMENSIONS



SIZE	HOLLOW INPUT MOTOR ADAPTER			COUPLING STYLE MOTOR ADAPTER									M_2	U_1	KEYWAY
				42C-48C			56C-145TC			182TC-184TC					
	M_1 42C-48C	M_1 56C-145TC	M_1 182TC 184TC	AB*	M_3	BE_1	AB	M_3	BE_1	AB	M_3	BE_1			
924	9.65	9.65	NA	2.13	13.15	.38	3.75	13.09	.38	NA			10.46	.750	.19 x .09
926	9.65	9.65	NA	2.13	13.15	.38	3.75	13.09	.38	NA			10.46	.750	.19 x .09
930	9.84	9.84	NA	2.13	13.34	.38	3.75	13.28	.38	NA			10.64	.750	.19 x .09
935	10.09	10.09	NA	2.13	13.59	.38	3.75	13.53	.38	NA			10.89	.750	.19 x .09
943	NA	12.25	12.25	NA			4.13	16.00	.38	4.25	17.06	.50	13.38	1.000	.25 x .13

*Minimum clearance diameter for coupling.

SHAFT ARRANGEMENTS AND RELATIVE SHAFT ROTATIONS



FRAME NO.	48C	56C	143TC 145TC	182TC 184TC
AJ	3.75	5.88	5.88	7.25
AK	3.00	4.50	4.50	8.50
BB	.19	.19	.19	.19
BD	4.50	6.50	6.50	9.00
BD_1	4.50	6.63	6.63	9.00
BE	.34	.31	.31	.38
BF	.281	.406	.406	.531
KEYWAY	.13 x .06	.19 x .09		.25 x .13
BORE $^{+.001}_{-.000}$	.5005□	.6255	.8755	1.1255

□42C frame has .3755 bore, .094 x .047 keyway.

See the note on page 156 for double reduction assembly explanation.

The input shaft may be driven in either direction.

MODEL†	924	926	930	935	943
DTX SHIPPING WEIGHT	53	55	71	94	158
MDTX SHIPPING WEIGHT‡	56	58	74	96	162
CDTX SHIPPING WEIGHT‡	59	61	77	99	167
APPROX. OIL CAPACITY (PINTS)	2.8	3.3	4.0	5.3	7.7

GEAR RATIOS AVAILABLE 25:1 THRU 360:1
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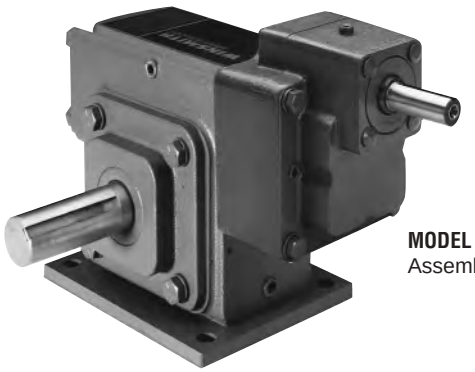
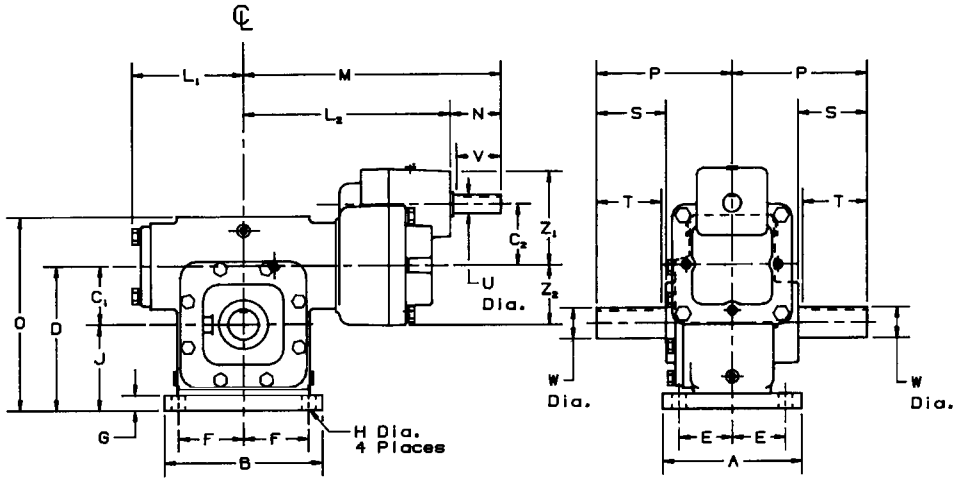
HYDRAULIC MOTOR ADAPTERS . . . . . CONTACT FACTORY

†Weights are approximate and include shipping carton.
‡Weights are given for 48C thru 145TC. For 182/4TC add 4 lbs.



MODEL DTX
Assembly U-L

DIMENSIONS



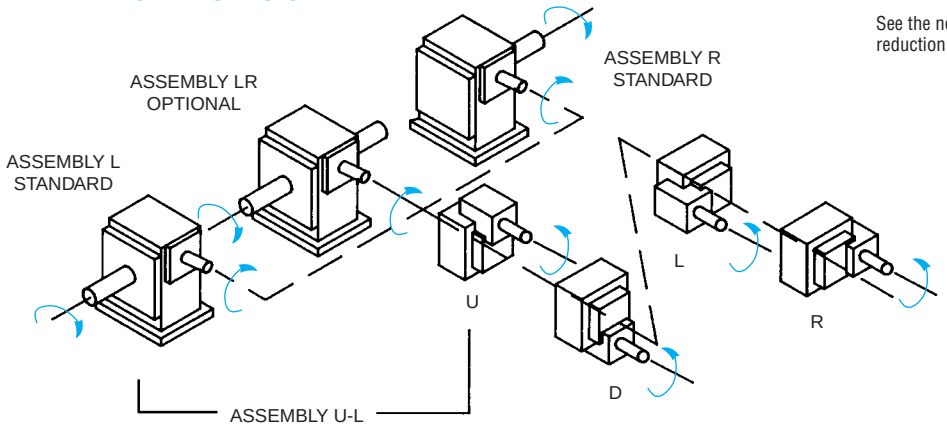
SPEED REDUCER DIMENSIONS (IN INCHES)

SIZE	A	B	C_1	C_2	D	E	F	G	H DIA.	J	L_1	L_2	M	O	P	Z_1	Z_2	HIGH SPEED SHAFT				SLOW SPEED SHAFT				SIZE
																		U*	N	V	KEYWAY	W*	S	T	KEYWAY	
924	4.50	7.00	2.375	2.060	5.63	1.88	3.13	.38	.406	3.25	4.50	8.39	10.46	7.63	5.50	3.50	2.44	.750	2.06	1.81	.19 x .09	1.250	2.81	2.63	.25 x .13	924
926	4.50	7.50	2.625	2.060	6.13	1.88	3.25	.38	.406	3.50	4.50	8.39	10.46	8.25	5.50	3.50	2.44	.750	2.06	1.81	.19 x .09	1.250	2.81	2.63	.25 x .13	926
930	6.00	8.00	3.000	2.060	7.00	2.38	3.50	.50	.563	4.00	4.63	8.58	10.64	9.50	5.88	3.50	2.44	.750	2.06	1.81	.19 x .09	1.375	2.88	2.75	.31 x .16	930
935	6.50	10.00	3.500	2.060	8.00	2.63	4.13	.50	.563	4.50	5.06	8.83	10.89	10.63	7.00	3.50	2.44	.750	2.06	1.81	.19 x .09	1.750	3.75	3.63	.38 x .19	935
943	7.00	11.00	4.250	3.200	9.25	2.88	4.88	.63	.563	5.00	5.88	10.63	13.38	12.13	8.00	5.02	3.38	1.000	2.75	2.38	.25 x .13	2.000	4.38	4.19	.50 x .25	943

*Shaft diameter tolerance +.000 -.001. For construction purposes send for Certified Dimension Sheets.

For larger sizes see C-Line Catalog 100 or D-90® TYPE DE® Catalog 190.

SHAFT ARRANGEMENTS AND RELATIVE SHAFT ROTATIONS



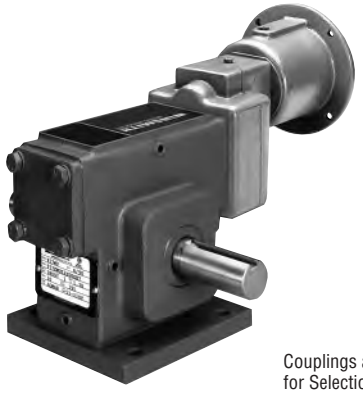
See the note on page 156 for double reduction assembly explanation.

The input shaft may be driven in either direction.

MDTX-CDTX

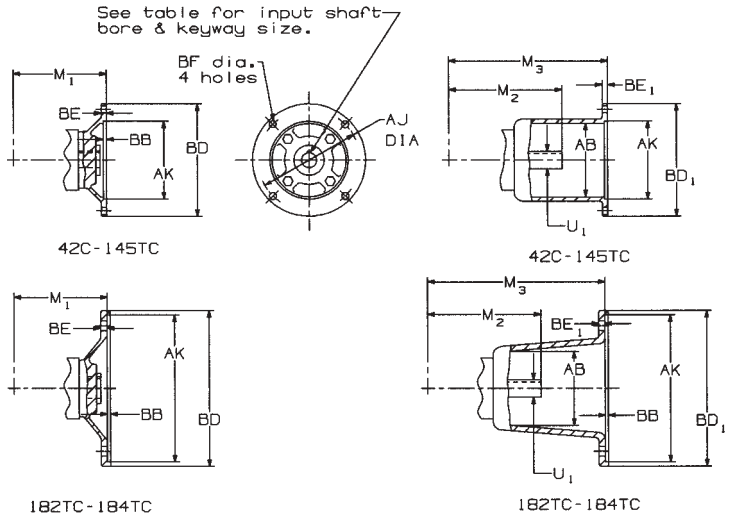
MODEL MDTX
Assembly U-L

MODEL CDTX
Assembly U-L



Couplings available, see page 189 for Selection Chart.

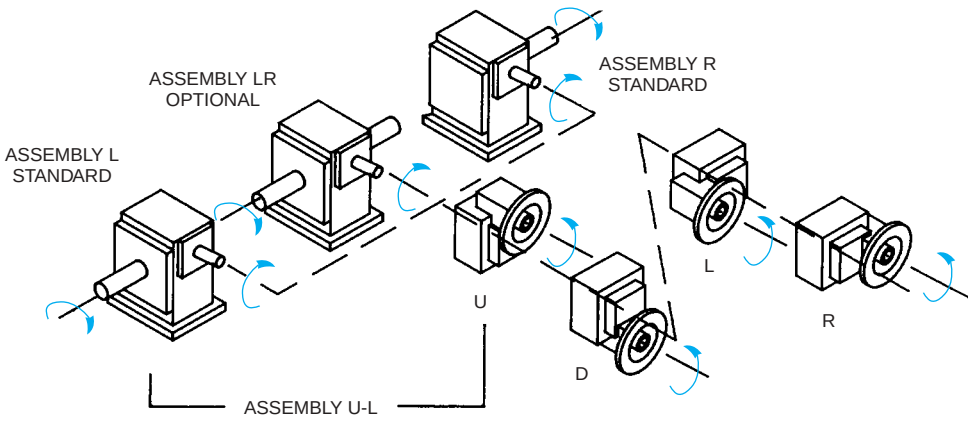
DIMENSIONS



SIZE	HOLLOW INPUT MOTOR ADAPTER			COUPLING STYLE MOTOR ADAPTER									M_2	U_1	KEYWAY
	M_1 42C-48C	M_1 56C-145TC	M_1 182TC 184TC	42C-48C			56C-145TC			182TC-184TC					
				AB*	M_3	BE_1	AB	M_3	BE_1	AB	M_3	BE_1			
924	9.65	9.65	NA	2.13	13.15	.38	3.75	13.09	.38	NA			10.46	.750	.19 x .09
926	9.65	9.65	NA	2.13	13.15	.38	3.75	13.09	.38	NA			10.46	.750	.19 x .09
930	9.84	9.84	NA	2.13	13.34	.38	3.75	13.28	.38	NA			10.64	.750	.19 x .09
935	10.09	10.09	NA	2.13	13.59	.38	3.75	13.53	.38	NA			10.89	.750	.19 x .09
943	NA	12.25	12.25	NA			4.13	16.00	.38	4.25	17.06	.50	13.38	1.000	.25 x .13

*Minimum clearance diameter for coupling.

SHAFT ARRANGEMENTS AND RELATIVE SHAFT ROTATIONS



FRAME NO.	48C	56C	143TC 145TC	182TC 184TC
AJ	3.75	5.88	5.88	7.25
AK	3.00	4.50	4.50	8.50
BB	.19	.19	.19	.19
BD	4.50	6.50	6.50	9.00
BD_1	4.50	6.63	6.63	9.00
BE	.34	.31	.31	.38
BF	.281	.406	.406	.531
KEYWAY	.13 x .06	.19 x .09		.25 x .13
BORE $^{+.001}_{-.000}$	.5005□	.6255	.8755	1.1255

□42C frame has .3755 bore, .094 x .047 keyway.

See the note on page 156 for double reduction assembly explanation.

The input shaft may be driven in either direction.

MODEL†	924	926	930	935	943
DVX SHIPPING WEIGHT	56	61	74	100	159
MDVX SHIPPING WEIGHT‡	59	64	77	103	163
CDVX SHIPPING WEIGHT‡	62	67	80	105	168
APPROX. OIL CAPACITY (PINTS)	2.1	2.5	2.9	3.5	5.1

GEAR RATIOS AVAILABLE 25:1 THRU 360:1
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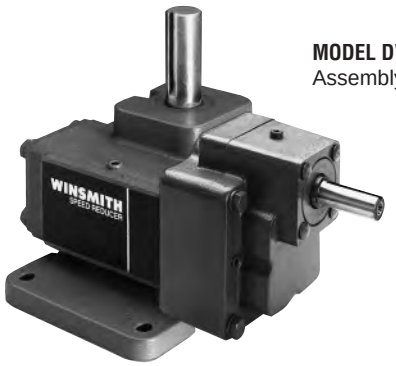
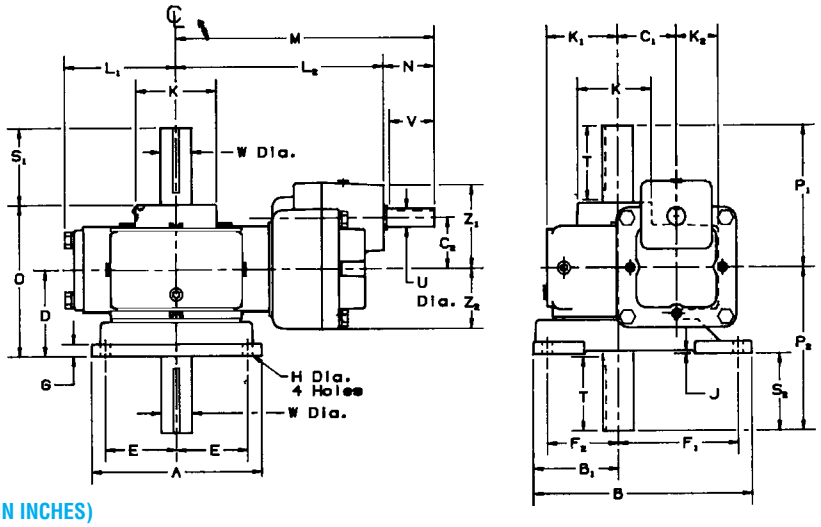
†Weights are approximate and include shipping carton.
‡Weights are given for 48C thru 145TC. For 182/4TC add 4 lbs.



MODEL DVX
Assembly U-RU

DIMENSIONS



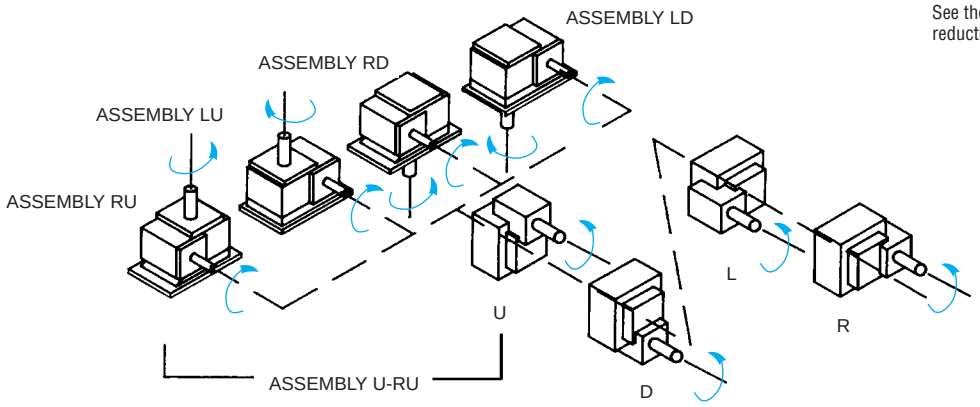
SPEED REDUCER DIMENSIONS (IN INCHES)

SIZE	A	B	B_1	C_1	C_2	D	E	F_1	F_2	G	H	J	K	K_1	K_2	L_1	L_2	M	O	P_1	P_2	Z_1	Z_2	HIGH SPEED SHAFT				SLOW SPEED SHAFT					SIZE
																								U*	N	V	KEYWAY	W*	S_1	S_2	T	KEYWAY	
924	6.88	8.88	3.44	2.375	2.060	3.50	2.88	4.88	2.88	.50	.406	.13	3.25	2.88	2.00	4.50	8.39	10.46	6.13	5.75	6.38	3.50	2.44	.750	2.06	1.81	.19 x .09	1.250	3.12	2.88	2.75	.25 x .13	924
926	6.88	9.44	3.63	2.625	2.060	3.63	2.88	5.25	2.88	.50	.406	.13	3.50	3.13	2.13	4.50	8.39	10.46	6.26	5.63	6.38	3.50	2.44	.750	2.06	1.81	.19 x .09	1.250	3.00	2.75	2.75	.25 x .13	926
930	8.88	10.63	4.25	3.000	2.060	3.75	3.81	5.75	3.63	.63	.563	.13	3.50	3.50	2.50	4.63	8.58	10.64	6.75	6.19	6.75	3.50	2.44	.750	2.06	1.81	.19 x .09	1.375	3.19	3.00	3.06	.31 x .16	930
935	9.75	11.50	5.00	3.500	2.060	3.75	4.25	5.88	4.38	.63	.563	.13	4.13	4.00	2.63	5.06	8.83	10.89	7.00	7.00	7.00	3.50	2.44	.750	2.06	1.81	.19 x .09	1.750	3.75	3.25	3.63	.38 x .19	935
943	9.63	11.00	4.81	4.25	3.200	4.75	4.13	5.50	4.13	.63	.563	.13	4.75	4.38	2.88	5.88	10.63	13.38	8.38	8.00	8.00	5.02	3.38	1.000	2.75	2.38	.25 x .13	2.000	4.38	3.25	4.19	.50 x .25	943

*Shaft diameter tolerance +.000 -.001. For construction purposes send for Certified Dimension Sheets.

For larger sizes see C-Line Catalog 100 or D-90® TYPE DE® Catalog 190.

SHAFT ARRANGEMENTS AND RELATIVE SHAFT ROTATIONS

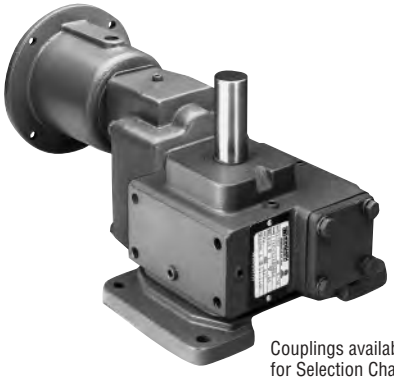


See the note on page 156 for double reduction assembly explanation.

The input shaft may be driven in either direction.

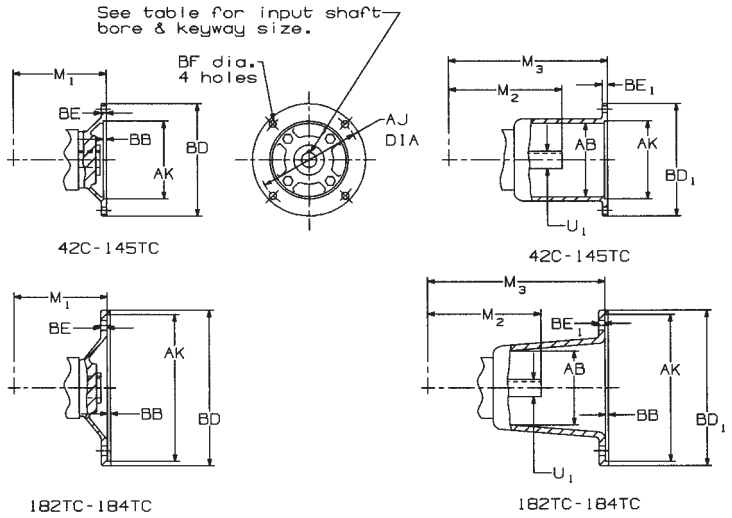
MODEL MDVX
Assembly U-RU

MODEL CDVX
Assembly U-RU



Couplings available, see page 189 for Selection Chart.

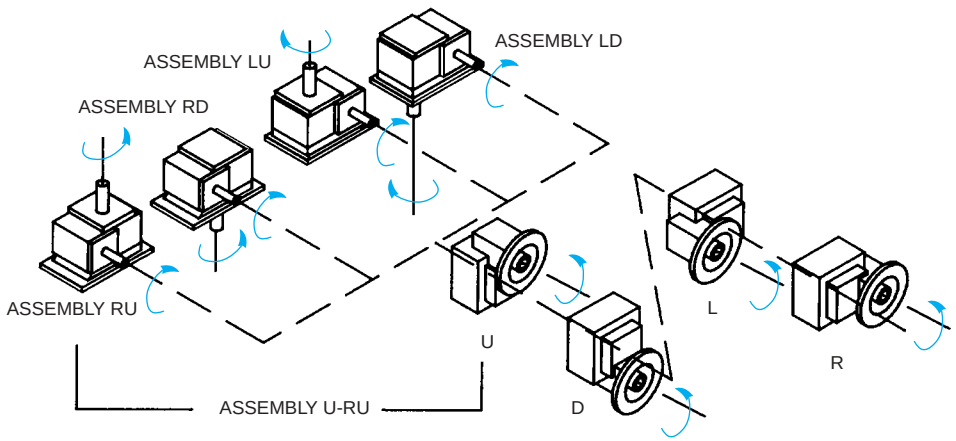
DIMENSIONS



SIZE	HOLLOW INPUT MOTOR ADAPTER			COUPLING STYLE MOTOR ADAPTER									M_2	U_1	KEYWAY
	M_1 42C-48C	M_1 56C-145TC	M_1 182TC 184TC	42C-48C			56C-145TC			182TC-184TC					
				AB*	M_3	BE_1	AB	M_3	BE_1	AB	M_3	BE_1			
924	9.65	9.65	NA	2.13	13.15	.38	3.75	13.09	.38	NA			10.46	.750	.19 x .09
926	9.65	9.65	NA	2.13	13.15	.38	3.75	13.09	.38	NA			10.46	.750	.19 x .09
930	9.84	9.84	NA	2.13	13.34	.38	3.75	13.28	.38	NA			10.64	.750	.19 x .09
935	10.09	10.09	NA	2.13	13.59	.38	3.75	13.53	.38	NA			10.89	.750	.19 x .09
943	NA	12.25	12.25	NA			4.13	16.00	.38	4.25	17.06	.50	13.38	1.000	.25 x .13

*Minimum clearance diameter for coupling.

SHAFT ARRANGEMENTS AND RELATIVE SHAFT ROTATIONS



FRAME NO.	48C	56C	143TC 145TC	182TC 184TC
AJ	3.75	5.88	5.88	7.25
AK	3.00	4.50	4.50	8.50
BB	.19	.19	.19	.19
BD	4.50	6.50	6.50	9.00
BD_1	4.50	6.63	6.63	9.00
BE	.34	.31	.31	.38
BF	.281	.406	.406	.531
KEYWAY	.13 x .06	.19 x .09		.25 x .13
BORE $^{+.001}_{-.000}$	.5005□	.6255	.8755	1.1255

□42C frame has .3755 bore, .094 x .047 keyway.

See the note on page 156 for double reduction assembly explanation.

The input shaft may be driven in either direction.

MODEL†	924	926	930	935	943
DSNX SHIPPING WEIGHT	50	52	64	92	162
MDSNX SHIPPING WEIGHT‡	53	55	67	95	166
CDSNX SHIPPING WEIGHT‡	55	57	69	97	171
APPROX. OIL CAPACITY (PINTS)	2.6	3.1	3.6	4.8	7.1

GEAR RATIOS AVAILABLE 25:1 THRU 360:1
TORQUE AND HP RATINGS/OVERHUNG LOAD RATINGS . . . PAGES 22-119
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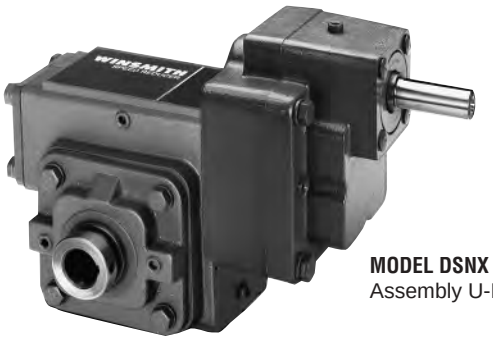
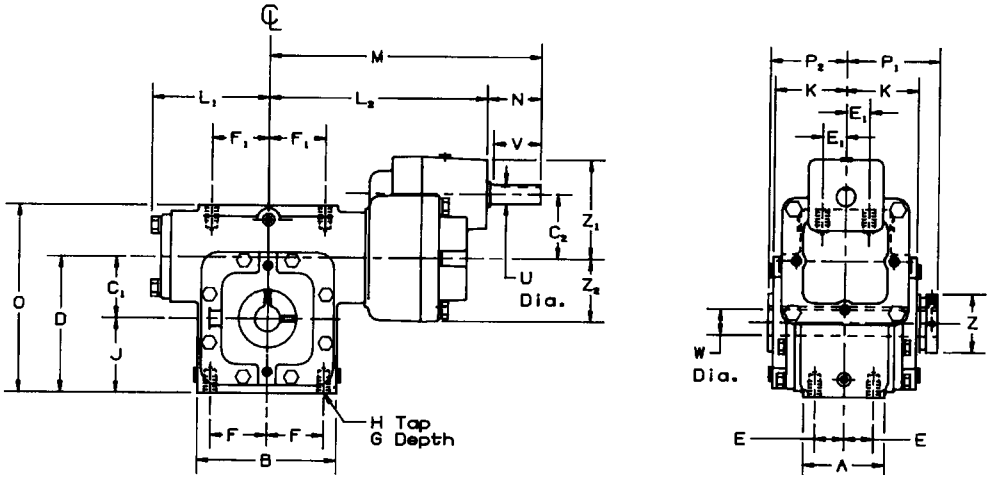
SERVICE FACTORS . . . . . PAGES 224-226
HYDRAULIC MOTOR ADAPTERS . . . . . CONTACT FACTORY
BASE AND BRACKET KITS . . . . . PAGES 188-191

†Weights are approximate and include shipping carton.
‡Weights are given for 48C thru 145TC. For 182/4TC add 4 lbs.



MODEL DSNX
Assembly U-DR

DIMENSIONS



SPEED REDUCER DIMENSIONS (IN INCHES)

SIZE	A	B	C_1	C_2	D	E	E_1	F	F_1	G DEPTH	H TAP	J	K	L_1	L_2	M	O	P_1	P_2	Z	Z_1	Z_2	HIGH SPEED SHAFT				SIZE
																							U*	N	V	KEYWAY	
924	3.13	5.38	2.375	2.060	5.25	1.13	1.13	2.19	2.19	.63	½-13	2.88	2.75	4.50	8.39	10.46	7.25	3.56	2.94	2.25	3.50	2.44	.750	2.06	1.81	.19 x .09	924
926	3.13	5.88	2.625	2.060	5.75	1.13	1.13	2.44	2.44	.63	½-13	3.13	2.81	4.50	8.39	10.46	7.88	3.69	3.00	2.50	3.50	2.44	.750	2.06	1.81	.19 x .09	926
930	3.50	6.62	3.000	2.060	6.50	1.31	1.31	2.75	2.75	.75	½-13	3.50	3.00	4.63	8.58	10.64	9.00	4.06	3.19	2.63	3.50	2.44	.750	2.06	1.81	.19 x .09	930
935	3.75	7.69	3.500	2.060	7.50	1.31	1.31	3.25	3.25	1.00	⅝-11	4.00	3.38	5.06	8.83	10.89	10.13	4.44	3.56	2.87	3.50	2.44	.750	2.06	1.81	.19 x .09	935
943	4.38	8.75	4.250	3.200	8.63	1.63	1.63	3.75	3.75	1.00	⅝-11	4.38	3.63	5.88	10.63	13.38	11.50	4.38	4.38	3.88	5.02	3.38	1.000	2.75	2.38	.25 x .13	943

*Shaft diameter tolerance +.000 -.001. For construction purposes send for Certified Dimension Sheets.

For larger sizes see C-Line Catalog 100 or D-90® TYPE DE® Catalog 190.

SLOW SPEED SHAFT BORES[1, 2, 3, 4]

924		926		930		935		943	
W**	KEYWAY	W**	KEYWAY	W**	KEYWAY	W**	KEYWAY	W**	KEYWAY
.875	.19 x .09	.938	.25 x .13	1.188	.25 x .13	1.188	.25 x .13	1.625	.38 x .19
.938	.25 x .13	1.000	.25 x .13	1.250	.25 x .13	1.250	.25 x .13	1.688	.38 x .19
1.000	.25 x .13	1.063	.25 x .13	**1.375**	**.31 x .16**	**1.375**	**.31 x .16**	1.750	.38 x .19
1.063	.25 x .13	1.125	.25 x .13	**1.438**	**.38 x .19**	1.438	.38 x .19	1.875	.50 x .25
1.125	**.25 x .13**	1.188	.25 x .13	**1.500**	**.38 x .19**	**1.500**	**.38 x .19**	1.938	.50 x .25
1.188	.25 x .13	**1.250**	**.25 x .13**	**1.625**	**.38 x .19**	1.625	.38 x .19	2.000	.50 x .25
1.250	**.25 x .13**	1.375	.31 x .16	1.688	.38 x .19	1.688	.38 x .19	2.188	.50 x .25
1.375	.31 x .16	**1.438**	**.38 x .19**	**1.750**	**.38 x .19**	1.750	.38 x .19	2.250	.50 x .25
1.438	**.38 x .19**	**1.500**	**.38 x .19**	**1.875**	**.50 x .25**	**1.875**	**.50 x .25**	2.438	.63 x .31
1.500	**.38 x .19**	1.625	.38 x .19	**1.938**	**.50 x .19**	**1.938**	**.50 x .25**	2.500	.63 x .31
		1.688	**.38 x .19**			**2.000**	**.50 x .25**	2.688	.63 x .31
						2.188	**.50 x .13**	2.750	.63 x .31

**Bore tolerances +.000, -.002.
1. Contact factory for other bore sizes.
2. Hollow output shaft bored to size; no bushing kit required.
3. Puller groove on all hollow output shafts.
4. Bores in bold blue type are stock standard sizes.

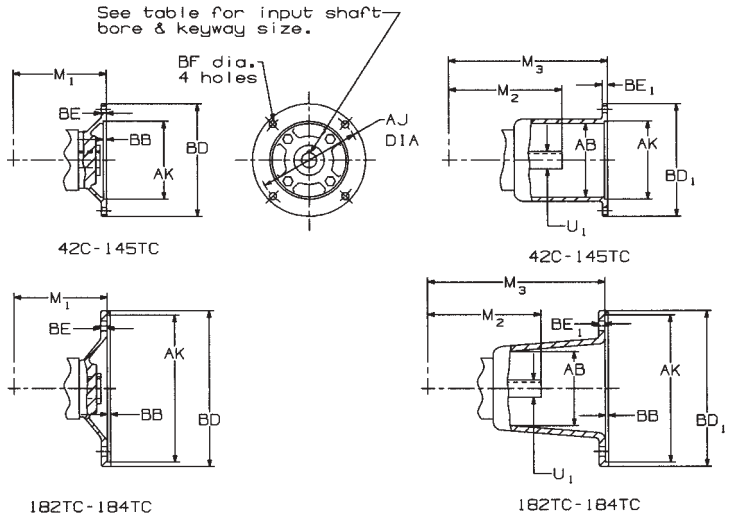
D-90® TYPE SE® MDSNX-CDSNX

MODEL MDSNX
Assembly U-DR

MODEL CDSNX
Assembly U-DR

Couplings available, see page 189 for Selection Chart.

DIMENSIONS



SIZE	HOLLOW INPUT MOTOR ADAPTER			COUPLING STYLE MOTOR ADAPTER											
	M_1 42C-48C	M_1 56C-145TC	M_1 182TC 184TC	42C-48C			56C-145TC			182TC-184TC			M_2	U_1	KEYWAY
				AB*	M_3	BE_1	AB	M_3	BE_1	AB	M_3	BE_1			
924	9.65	9.65	NA	2.13	13.15	.38	3.75	13.09	.38	NA			10.46	.750	.19 x .09
926	9.65	9.65	NA	2.13	13.15	.38	3.75	13.09	.38	NA			10.46	.750	.19 x .09
930	9.84	9.84	NA	2.13	13.34	.38	3.75	13.28	.38	NA			10.64	.750	.19 x .09
935	10.09	10.09	NA	2.13	13.59	.38	3.75	13.53	.38	NA			10.89	.750	.19 x .09
943	NA	12.25	12.25	NA			4.13	16.00	.38	4.25	17.06	.50	13.38	1.000	.25 x .13

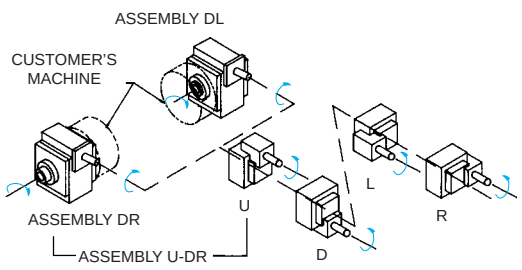
*Minimum clearance diameter for coupling.

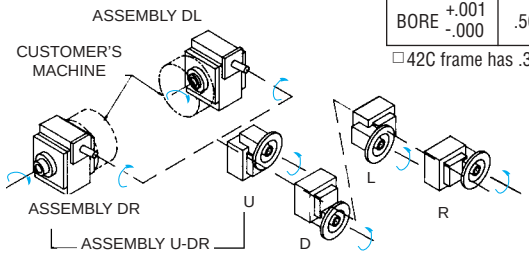
FRAME NO.	48C	56C	143TC 145TC	182TC 184TC
AJ	3.75	5.88	5.88	7.25
AK	3.00	4.50	4.50	8.50
BB	.19	.19	.19	.19
BD	4.50	6.50	6.50	9.00
BD_1	4.50	6.63	6.63	9.00
BE	.34	.31	.31	.38
BF	.281	.406	.406	.531
KEYWAY	.13 x .06	.19 x .09		.25 x .13
BORE $^{+.001}_{-.000}$	.5005□	.6255	.8755	1.1255

□42C frame has .3750 bore, .094 x .047 keyway.

SHAFT ARRANGEMENTS AND RELATIVE SHAFT ROTATIONS

See the note on page 156 for double reduction assembly explanation.





The input shaft may be driven in either direction.

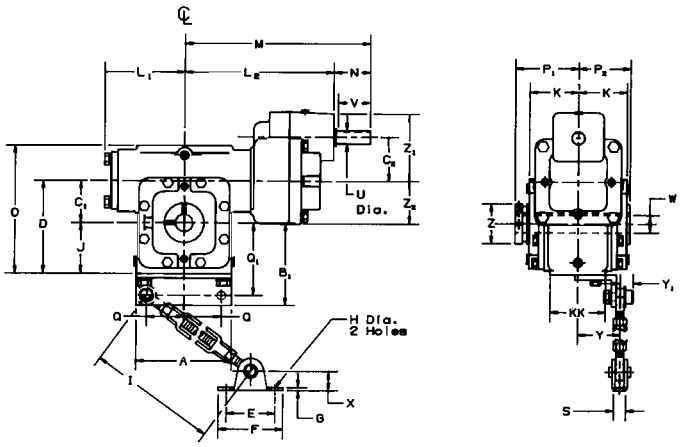
MODEL†	924	926	930	935	943
DSRX SHIPPING WEIGHT	60	65	85	124	194
MDSRX SHIPPING WEIGHT‡	63	68	88	127	198
CDSRX SHIPPING WEIGHT‡	66	71	91	130	203
APPROX. OIL CAPACITY (PINTS)	2.6	3.1	3.6	4.8	7.1

GEAR RATIOS AVAILABLE 25:1 THRU 360:1
TORQUE AND HP RATINGS/OVERHUNG LOAD RATINGS . . . . . PAGES 22-119
MOUNTING POSITIONS . . . . . PAGE 21
SERVICE FACTORS . . . . . PAGES 224-226
HYDRAULIC MOTOR ADAPTERS . . . . . CONTACT FACTORY

†Weights are approximate and include shipping carton.
‡Weights are given for 48C thru 145TC. For 182/4TC add 4 lbs.

MODEL DSRX
Assembly U-DL

DIMENSIONS



The reaction arm must be mounted at an angle of 90° ±20° to an imaginary center line drawn between the center of the slow speed shaft bore and the center of the reaction arm eye bolt. "Reaction arm" must be in tension.

SPEED REDUCER DIMENSIONS (IN INCHES)

SIZE	A	B_1	C_1	C_2	D	E	F	G	H DIA.	I MIN	I MAX	J	K	KK	L_1	L_2	M	O	P_1	P_2	Q	Q_1	S	X	Y	Y_1	Z	Z_1	Z_2	HIGH SPEED SHAFT U*	N	V	KEYWAY	SIZE
924	5.38	4.88	2.375	2.060	5.25	3.00	4.00	.19	.44	15.00	24.00	2.88	2.75	3.13	4.50	8.39	10.46	7.25	3.56	2.94	2.13	4.25	.75	1.19	2.56	.81	2.25	3.50	2.44	.750	2.06	1.81	.19 x .09	924
926	5.88	5.13	2.625	2.060	5.75	3.00	4.00	.19	.44	15.00	24.00	3.13	2.81	3.13	4.50	8.39	10.46	7.88	3.69	3.00	2.31	4.50	.75	1.19	2.69	.81	2.50	3.50	2.44	.750	2.06	1.81	.19 x .09	926
930	6.50	5.50	3.000	2.060	6.50	3.00	4.00	.19	.44	15.00	24.00	3.50	3.00	3.50	4.63	8.58	10.64	9.00	4.06	3.19	2.56	4.88	.75	1.19	3.06	.81	2.63	3.50	2.44	.750	2.06	1.81	.19 x .09	930
935	7.75	6.50	3.500	2.060	7.50	3.50	4.75	.56	.53	21.00	29.00	4.00	3.38	3.75	5.06	8.83	10.89	10.13	4.44	3.56	3.00	5.63	2.13	1.63	3.50	1.09	2.87	3.50	2.44	.750	2.06	1.81	.19 x .09	935
943	8.75	6.88	4.250	3.200	8.63	3.50	4.75	.56	.53	21.00	29.00	4.38	3.63	4.38	5.88	10.63	13.38	11.50	4.38	4.38	3.50	6.00	2.13	1.63	3.81	1.09	3.88	5.02	3.38	1.000	2.75	2.38	.25 x .13	943

*Shaft diameter tolerance +.000 -.001. For construction purposes send for Certified Dimension Sheets.

For larger sizes see C-Line Catalog 100 or D-90® TYPE DE® Catalog 190.

SLOW SPEED SHAFT BORES[1, 2, 3, 4]

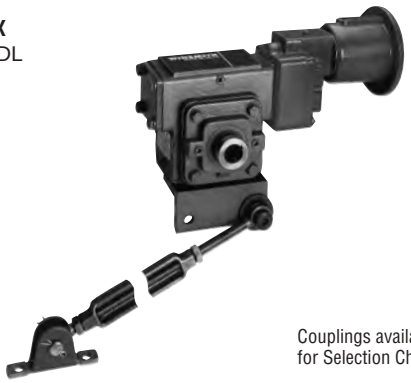
924		926		930		935		943	
W**	KEYWAY	W**	KEYWAY	W**	KEYWAY	W**	KEYWAY	W**	KEYWAY
.875	.19 x .09	.938	.25 x .13	1.188	.25 x .13	1.188	.25 x .13	1.625	.38 x .19
.938	.25 x .13	1.000	.25 x .13	1.250	.25 x .13	1.250	.25 x .13	1.688	.38 x .19
1.000	.25 x .13	1.063	.25 x .13	**1.375**	**.31 x .16**	**1.375**	**.31 x .16**	1.750	.38 x .19
1.063	.25 x .13	1.125	.25 x .13	**1.438**	**.38 x .19**	1.438	.38 x .19	1.875	.50 x .25
1.125	**.25 x .13**	1.188	.25 x .13	**1.500**	**.38 x .19**	**1.500**	**.38 x .19**	1.938	.50 x .25
1.188	.25 x .13	**1.250**	**.25 x .13**	**1.625**	**.38 x .19**	1.625	.38 x .19	2.000	.50 x .25
1.250	**.25 x .13**	1.375	.31 x .16	1.688	.38 x .19	1.688	.38 x .19	2.188	.50 x .25
1.375	.31 x .16	**1.438**	**.38 x .19**	**1.750**	**.38 x .19**	1.750	.38 x .19	2.250	.50 x .25
1.438	**.38 x .19**	**1.500**	**.38 x .19**	**1.875**	**.50 x .25**	**1.875**	**.50 x .25**	2.438	.63 x .31
1.500	**.38 x .19**	1.625	.38 x .19	**1.938**	**.50 x .19**	**1.938**	**.50 x .25**	2.500	.63 x .31
		1.688	**.38 x .19**			**2.000**	**.50 x .25**	2.688	.63 x .31
						2.188	**.50 x .13**	2.750	.63 x .31

**Bore tolerances +.000, -.002.
1. Contact factory for other bore sizes.
2. Hollow output shaft bored to size; no bushing kit required.
3. Puller groove on all hollow output shafts.
4. Bores in bold blue type are stock standard sizes.

D-90® TYPE SE® MDSRX-CDSRX

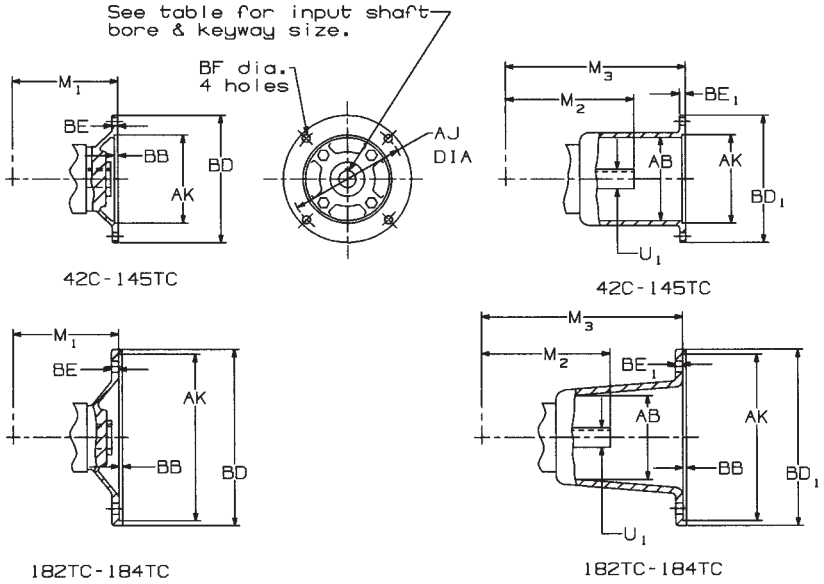
MODEL MDSRX
Assembly U-DL

MODEL CDSRX
Assembly U-DL



Couplings available, see page 189 for Selection Chart.

DIMENSIONS

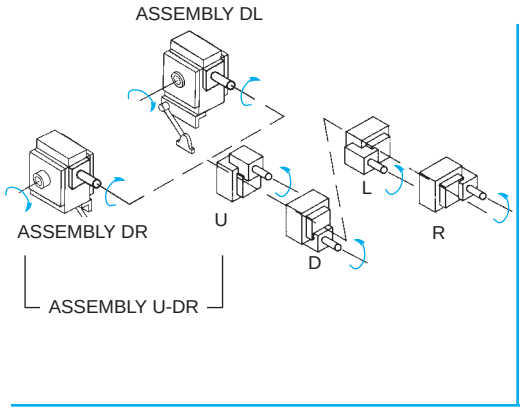


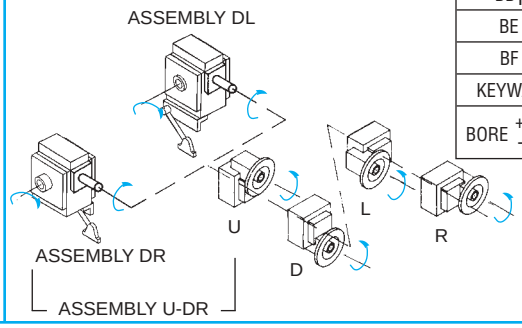
SIZE	HOLLOW INPUT MOTOR ADAPTER			COUPLING STYLE MOTOR ADAPTER											
				42C-48C			56C-145TC			182TC-184TC			M_2	U_1	KEYWAY
	M_1 42C-48C	M_1 56C-145TC	M_1 182TC 184TC	AB*	M_3	BE_1	AB	M_3	BE_1	AB	M_3	BE_1			
924	9.65	9.65	NA	2.13	13.15	.38	3.75	13.09	.38	NA			10.46	.750	.19 x .09
926	9.65	9.65	NA	2.13	13.15	.38	3.75	13.09	.38	NA			10.46	.750	.19 x .09
930	9.84	9.84	NA	2.13	13.34	.38	3.75	13.28	.38	NA			10.64	.750	.19 x .09
935	10.09	10.09	NA	2.13	13.59	.38	3.75	13.53	.38	NA			10.89	.750	.19 x .09
943	NA	12.25	12.25	NA			4.13	16.00	.38	4.25	17.06	.50	13.38	1.000	.25 x .13

*Minimum clearance diameter for coupling.

SHAFT ARRANGEMENTS AND RELATIVE SHAFT ROTATIONS

See the note on page 156 for double reduction assembly explanation.





FRAME NO.	48C	56C	143TC 145TC	182TC 184TC
AJ	3.75	5.88	5.88	7.25
AK	3.00	4.50	4.50	8.50
BB	.19	.19	.19	.19
BD	4.50	6.50	6.50	9.00
BD_1	4.50	6.63	6.63	9.00
BE	.34	.31	.31	.38
BF	.281	.406	.406	.531
KEYWAY	.13 x .06	.19 x .09		.25 x .13
BORE $^{+.001}_{-.000}$	.5005□	.6255	.8755	1.1255

□42C frame has .3750 bore, .094 x .047 keyway.

The input shaft may be driven in either direction.

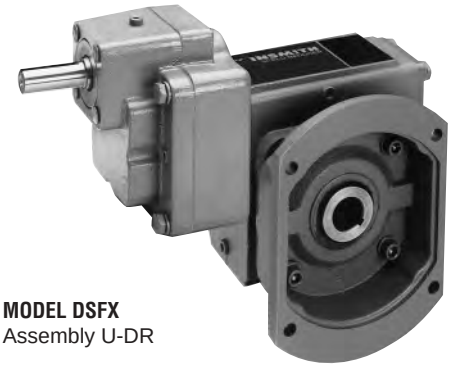
DSFX

D-90® TYPE SE®

MODEL†	924	926	930	935	943
DSFX SHIPPING WEIGHT	57	62	82	104	179
MDSFX SHIPPING WEIGHT‡	60	65	85	107	183
CDSFX SHIPPING WEIGHT‡	62	67	87	109	188
APPROX. OIL CAPACITY (PINTS)	2.6	3.1	3.6	4.8	7.1

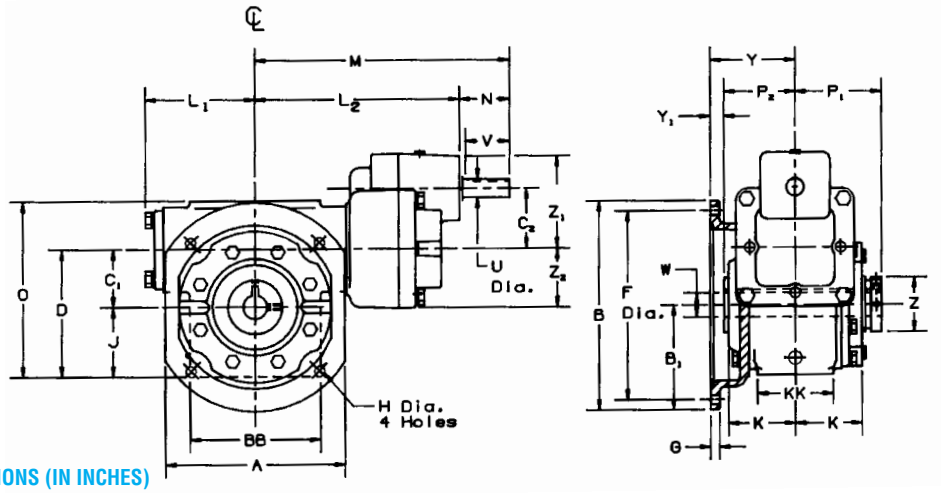
GEAR RATIOS AVAILABLE 25:1 THRU 360:1
TORQUE AND HP RATINGS/OVERHUNG LOAD RATINGS . . . . . PAGES 22-119
MOUNTING POSITIONS . . . . . PAGE 21
SERVICE FACTORS . . . . . PAGES 224-226
HYDRAULIC MOTOR ADAPTERS . . . . . CONTACT FACTORY

†Weights are approximate and include shipping carton.
‡Weights are given for 48C thru 145TC. For 182/4TC add 4 lbs.



MODEL DSFX
Assembly U-DR

DIMENSIONS



SPEED REDUCER DIMENSIONS (IN INCHES)

SIZE	A	B	B_1	BB	C_1	C_2	D	F DIA.	G	H DIA.	J	K	KK	L_1	L_2	M	O	P_1	P_2	Y	Y_1	Z	Z_1	Z_2	HIGH SPEED SHAFT				SIZE
																									U*	N	V	KEYWAY	
924	7.38	8.63	4.31	5.38	2.375	2.060	5.25	7.500	.38	.406	2.88	2.75	3.13	4.50	8.39	10.46	7.25	3.56	2.94	3.50	.56	2.25	3.50	2.44	.750	2.06	1.81	.19 x .09	924
926	7.75	9.13	4.56	5.88	2.625	2.060	5.75	8.000	.38	.406	3.13	2.81	3.13	4.50	8.39	10.46	7.88	3.69	3.00	3.63	.63	2.50	3.50	2.44	.750	2.06	1.81	.19 x .09	926
930	8.00	10.75	5.38	6.62	3.000	2.060	6.50	9.250	.50	.563	3.50	3.00	3.50	4.63	8.58	10.64	9.00	4.06	3.19	5.00	1.81	2.63	3.50	2.44	.750	2.06	1.81	.19 x .09	930
935	9.00	11.00	5.50	7.69	3.500	2.060	7.50	10.000	.50	.563	4.00	3.38	3.75	5.06	8.83	10.89	10.13	4.44	3.56	5.00	1.44	2.87	3.50	2.44	.750	2.06	1.81	.19 x .09	935
943	10.50	13.00	6.50	8.75	4.250	3.200	8.63	11.50	.63	.688	4.38	3.63	4.38	5.88	10.63	13.38	11.50	4.38	4.38	5.75	1.38	3.88	5.02	3.38	1.000	2.75	2.38	.25 x .13	943

*Shaft diameter tolerance +.000 -.001. For construction purposes send for Certified Dimension Sheets.

For larger sizes see C-Line Catalog 100 or D-90® TYPE DE® Catalog 190.

SLOW SPEED SHAFT BORES[1, 2, 3, 4]

924		926		930		935		943	
W**	KEYWAY	W**	KEYWAY	W**	KEYWAY	W**	KEYWAY	W**	KEYWAY
.875	.19 x .09	.938	.25 x .13	1.188	.25 x .13	1.188	.25 x .13	1.625	.38 x .19
.938	.25 x .13	1.000	.25 x .13	1.250	.25 x .13	1.250	.25 x .13	1.688	.38 x .19
1.000	.25 x .13	1.063	.25 x .13	**1.375**	**.31 x .16**	**1.375**	**.31 x .16**	1.750	.38 x .19
1.063	.25 x .13	1.125	.25 x .13	**1.438**	**.38 x .19**	1.438	.38 x .19	1.875	.50 x .25
1.125	**.25 x .13**	1.188	.25 x .13	**1.500**	**.38 x .19**	**1.500**	**.38 x .19**	1.938	.50 x .25
1.188	.25 x .13	**1.250**	**.25 x .13**	**1.625**	**.38 x .19**	1.625	.38 x .19	2.000	.50 x .25
1.250	**.25 x .13**	1.375	.31 x .16	1.688	.38 x .19	1.688	.38 x .19	2.188	.50 x .25
1.375	.31 x .16	**1.438**	**.38 x .19**	**1.750**	**.38 x .19**	1.750	.38 x .19	2.250	.50 x .25
1.438	**.38 x .19**	**1.500**	**.38 x .19**	**1.875**	**.50 x .25**	**1.875**	**.50 x .25**	2.438	.63 x .31
1.500	**.38 x .19**	1.625	.38 x .19	**1.938**	**.50 x .19**	**1.938**	**.50 x .25**	2.500	.63 x .31
		1.688	**.38 x .19**			**2.000**	**.50 x .25**	2.688	.63 x .31
						2.188	**.50 x .13**	2.750	.63 x .31

**Bore tolerances +.000, -.002.
1. Contact factory for other bore sizes.
2. Hollow output shaft bored to size; no bushing kit required.
3. Puller groove on all hollow output shafts.
4. Bores in bold blue type are stock standard sizes.

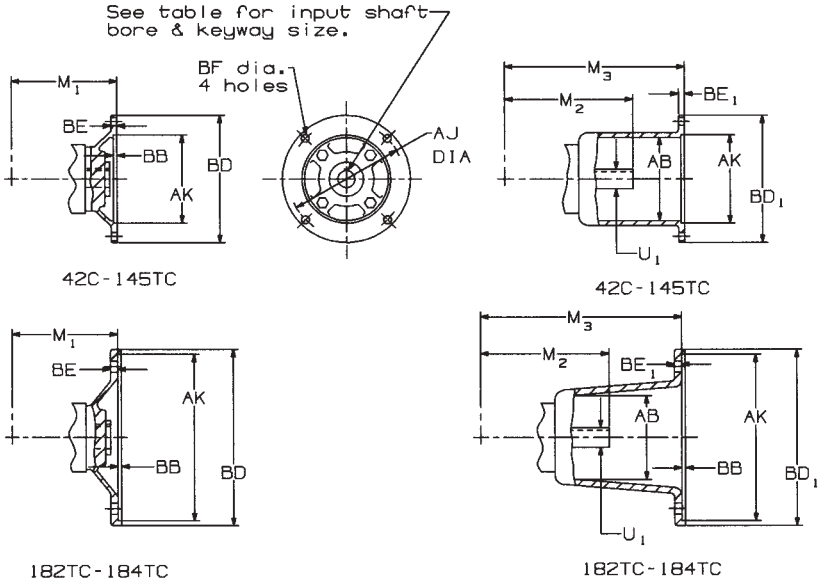
MDSFX-CDSFX

MODEL MDSFX
Assembly U-DR

MODEL CDSFX
Assembly U-DR

Couplings available, see page 189 for Selection Chart.

DIMENSIONS

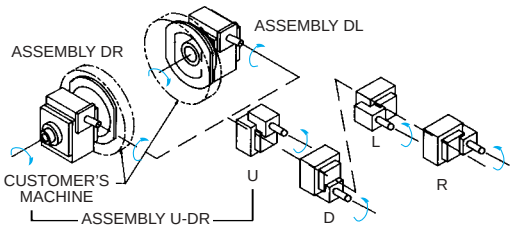


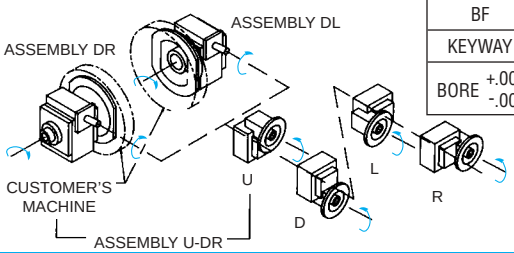
SIZE	HOLLOW INPUT MOTOR ADAPTER			COUPLING STYLE MOTOR ADAPTER											
				42C-48C			56C-145TC			182TC-184TC			M_2	U_1	KEYWAY
	M_1 42C-48C	M_1 56C-145TC	M_1 182TC 184TC	AB*	M_3	BE_1	AB	M_3	BE_1	AB	M_3	BE_1			
924	9.65	9.65	NA	2.13	13.15	.38	3.75	13.09	.38	NA			10.46	.750	.19 x .09
926	9.65	9.65	NA	2.13	13.15	.38	3.75	13.09	.38	NA			10.46	.750	.19 x .09
930	9.84	9.84	NA	2.13	13.34	.38	3.75	13.28	.38	NA			10.64	.750	.19 x .09
935	10.09	10.09	NA	2.13	13.59	.38	3.75	13.53	.38	NA			10.89	.750	.19 x .09
943	NA	12.25	12.25	NA			4.13	16.00	.38	4.25	17.06	.50	13.38	1.000	.25 x .13

*Minimum clearance diameter for coupling.

SHAFT ARRANGEMENTS AND RELATIVE SHAFT ROTATIONS

See the note on page 156 for double reduction assembly explanation.





FRAME NO.	48C	56C	143TC 145TC	182TC 184TC
AJ	3.75	5.88	5.88	7.25
AK	3.00	4.50	4.50	8.50
BB	.19	.19	.19	.19
BD	4.50	6.50	6.50	9.00
BD_1	4.50	6.63	6.63	9.00
BE	.34	.31	.31	.38
BF	.281	.406	.406	.531
KEYWAY	.13 x .06	.19 x .09		.25 x .13
BORE +.001 -.000	.5005□	.6255	.8755	1.1255

□42C frame has .3750 bore, .094 x .047 keyway.

The input shaft may be driven in either direction.

MODEL†	926	930	935	943
DLX SHIPPING WEIGHT	64	104	135	210
MDLX SHIPPING WEIGHT‡	67	107	138	214
CDLX SHIPPING WEIGHT‡	70	110	141	219
APPROX. OIL CAPACITY (PINTS)	4.0	5.6	6.8	11.1

GEAR RATIOS AVAILABLE 25:1 THRU 360:1
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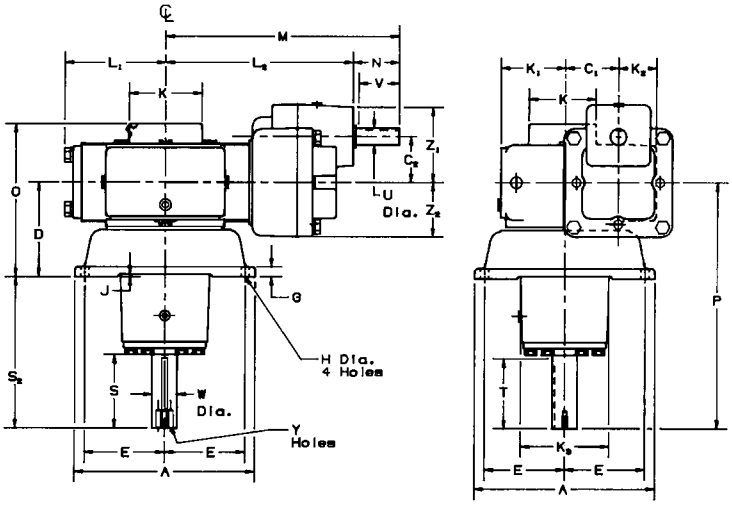
SERVICE FACTORS . . . . . PAGES 224-226
HYDRAULIC MOTOR ADAPTERS . . . . . CONTACT FACTORY

†Weights are approximate and include shipping carton.
‡Weights are given for 48C thru 145TC. For 182/4TC add 4 lbs.

MODEL DLX
Assembly U-LD

DIMENSIONS



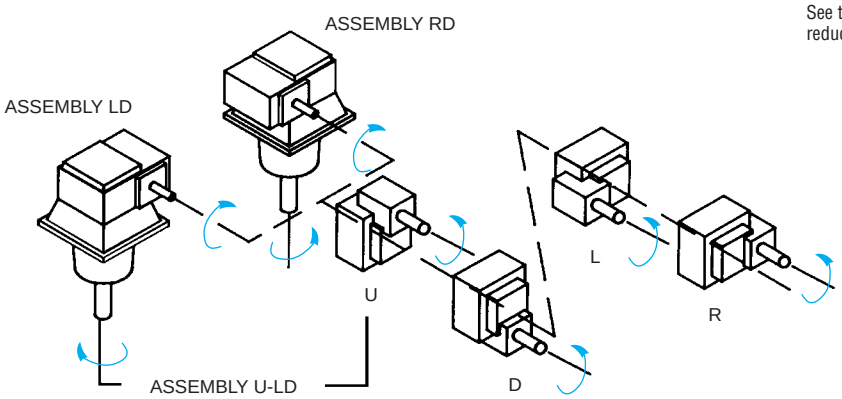
SPEED REDUCER DIMENSIONS (IN INCHES)

SIZE	A	C_1	C_2	D	E	G	H	J	K	K_1	K_2	K_3	L_1	L_2	M	O	P	Y DIMENSIONS			Z_1	Z_2	HIGH SPEED SHAFT				SLOW SPEED SHAFT					SIZE
																		TAP	DEPTH	BOLT CIRCLE			U*	N	V	KEYWAY	W*	S	S_2	T	KEYWAY	
926	9.00	2.625	2.060	4.44	4.00	.50	.406	.13	3.50	3.13	2.13	4.44	4.50	8.39	10.46	7.06	11.94	.25-.20	.44	.625	3.50	2.44	.750	2.06	1.81	.19 x .09	1.250	3.68	7.50	3.50	.25 x .13	926
930	9.75	3.000	2.060	5.31	4.13	.63	.563	.13	3.50	3.50	2.50	5.19	4.63	8.58	10.64	8.31	14.81	.31-.18	.50	.750	3.50	2.44	.750	2.06	1.81	.19 x .09	1.438	4.63	9.50	4.56	.38 x .19	930
935	12.00	3.500	2.060	5.38	5.25	.75	.563	.13	4.13	4.00	2.63	5.38	5.06	8.83	10.89	8.63	14.88	.31-.18	.50	.750	3.50	2.44	.750	2.06	1.81	.19 x .09	1.625	4.75	9.50	4.56	.38 x .19	935
943	14.00	4.250	3.200	6.00	6.00	.88	.688	.13	4.75	4.38	2.88	5.94	5.88	10.63	13.38	9.63	16.50	.38-.16	1.00	1.000	5.02	3.38	1.000	2.75	2.38	.25 x .13	1.688	5.61	10.50	5.44	.38 x .19	943

*Shaft diameter tolerance +.000 -.001. For construction purposes send for Certified Dimension Sheets.

For larger sizes see C-Line Catalog 100 or D-90® TYPE DE® Catalog 190.

SHAFT ARRANGEMENTS AND RELATIVE SHAFT ROTATIONS



See the note on page 156 for double reduction assembly explanation.

The input shaft may be driven in either direction.

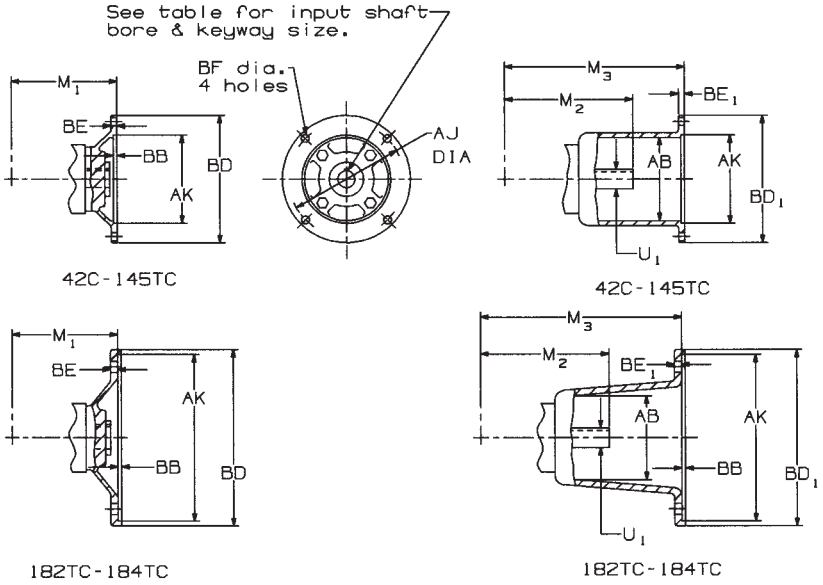
MDLX-CDLX

MODEL MDLX
Assembly U-LD

MODEL CDLX
Assembly U-LD

Couplings available, see page 189 for Selection Chart.

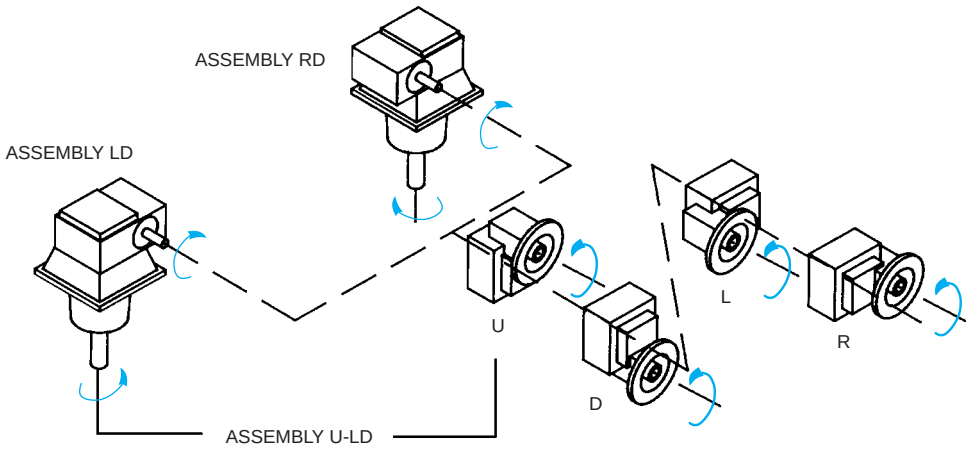
DIMENSIONS



SIZE	HOLLOW INPUT MOTOR ADAPTER			COUPLING STYLE MOTOR ADAPTER									M_2	U_1	KEYWAY
				42C-48C			56C-145TC			182TC-184TC					
	M_1 42C-48C	M_1 56C-145TC	M_1 182TC 184TC	AB*	M_3	BE_1	AB	M_3	BE_1	AB	M_3	BE_1			
924	9.65	9.65	NA	2.13	13.15	.38	3.75	13.09	.38	NA			10.46	.750	.19 x .09
926	9.65	9.65	NA	2.13	13.15	.38	3.75	13.09	.38	NA			10.46	.750	.19 x .09
930	9.84	9.84	NA	2.13	13.34	.38	3.75	13.28	.38	NA			10.64	.750	.19 x .09
935	10.09	10.09	NA	2.13	13.59	.38	3.75	13.53	.38	NA			10.89	.750	.19 x .09
943	NA	12.25	12.25	NA			4.13	16.00	.38	4.25	17.06	.50	13.38	1.000	.25 x .13

*Minimum clearance diameter for coupling.

SHAFT ARRANGEMENTS AND RELATIVE SHAFT ROTATIONS



FRAME NO.	48C	56C	143TC 145TC	182TC 184TC
AJ	3.75	5.88	5.88	7.25
AK	3.00	4.50	4.50	8.50
BB	.19	.19	.19	.19
BD	4.50	6.50	6.50	9.00
BD_1	4.50	6.63	6.63	9.00
BE	.34	.31	.31	.38
BF	.281	.406	.406	.531
KEYWAY	.13 x .06	.19 x .09		.25 x .13
BORE $^{+.001}_{-.000}$	.5005□	.6255	.8755	1.1255

□42C frame has .3755 bore, .094 x .047 keyway.

See the note on page 156 for double reduction assembly explanation.

The input shaft may be driven in either direction.

MODEL†	917	920	924	926	930	935	943
DND SHIPPING WEIGHT	26	27	45	47	66	84	135
MDND SHIPPING WEIGHT‡	29	29	48	49	69	87	139
CDND SHIPPING WEIGHT‡	32	32	52	53	73	90	144
APPROX. OIL CAPACITY (PINTS)	1.1	1.2	2.4	2.9	3.6	5.3	7.7

GEAR RATIOS AVAILABLE 50:1 THRU 10,000:1**
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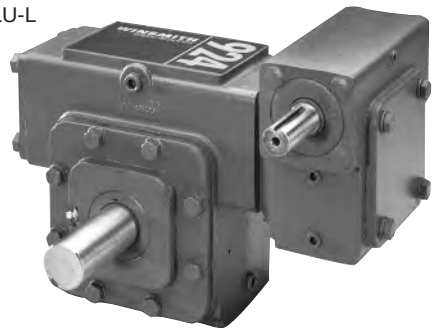
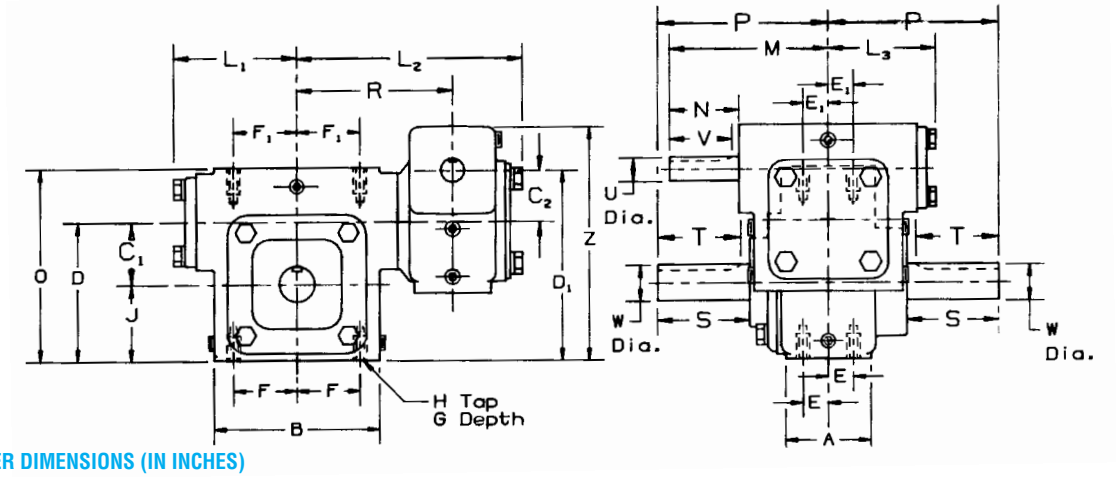
BASE AND BRACKET KITS . . . . . PAGES 188-191

†Weights are approximate and include shipping carton.
‡Weights are given for 48C thru 145TC. For 182/4TC add 4 lbs.
**8000:1 and higher not available in sizes 917 and 920.

MODEL DND
Assembly LU-L



DIMENSIONS

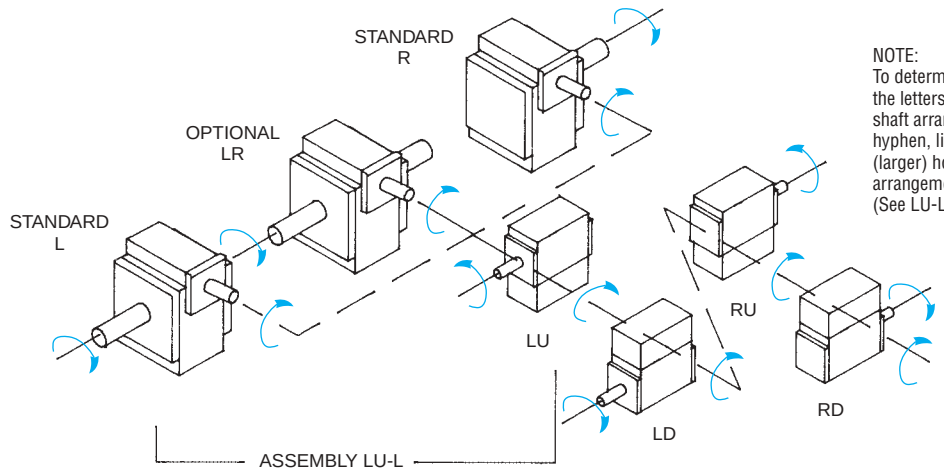


SPEED REDUCER DIMENSIONS (IN INCHES)

SIZE	A	B	C_1	C_2	D	D_1	E	E_1	F	F_1	G DEPTH	H TAP	J	L_1	L_2	L_3	M	O	P	R	Z	HIGH SPEED SHAFT				SLOW SPEED SHAFT				SIZE
																						U*	N	V	KEYWAY	W*	S	T	KEYWAY	
917	2.38	4.63	1.750	1.333	3.88	5.21	.88	.88	1.94	1.69	.56	3/8-16	2.13	3.44	6.09	2.83	4.12	5.38	4.75	4.25	6.36	.625	1.81	1.63	.19 x .09	1.000	2.56	2.31	.25 x .13	917
920	2.38	5.25	2.000	1.333	4.13	5.46	.88	.88	2.19	1.69	.56	3/8-16	2.13	3.44	6.09	2.83	4.12	5.63	4.75	4.25	6.61	.625	1.81	1.63	.19 x .09	1.000	2.56	2.31	.25 x .13	920
924	3.13	5.38	2.375	1.750	5.25	7.00	1.13	1.13	2.19	2.19	.63	1/2-13	2.88	4.50	7.65	3.44	4.75	7.25	5.50	5.75	8.35	.750	1.94	1.69	.19 x .09	1.250	2.81	2.63	.25 x .13	924
926	3.13	5.88	2.625	1.750	5.75	7.50	1.13	1.13	2.44	2.44	.63	1/2-13	3.13	4.50	7.65	3.44	4.75	7.88	5.50	5.75	8.85	.750	1.94	1.69	.19 x .09	1.250	2.81	2.63	.25 x .13	926
930	3.50	6.62	3.000	2.000	6.50	8.50	1.31	1.31	2.75	2.75	.75	1/2-13	3.50	4.63	8.15	3.44	5.00	9.00	5.88	6.25	9.85	.750	2.19	1.75	.19 x .09	1.375	2.88	2.75	.31 x .16	930
935	3.75	7.69	3.500	2.000	7.50	9.50	1.31	1.31	3.25	3.25	1.00	5/8-11	4.00	5.06	8.40	3.44	5.00	10.13	7.00	6.50	10.85	.750	2.19	1.75	.19 x .09	1.750	3.75	3.63	.38 x .19	935
943	4.38	8.75	4.250	2.625	8.63	11.25	1.63	1.63	3.75	3.75	1.00	5/8-11	4.38	5.88	10.02	4.50	6.50	11.50	8.00	7.56	13.40	1.000	2.75	2.63	.25 x .13	2.000	4.38	4.19	.50 x .25	943

*High speed shaft diameter tolerance +.000 -.001. For construction purposes send for Certified Dimension Sheets. For larger sizes see C-Line Catalog 100 or D-90® TYPE DE® Catalog 190.

SHAFT ARRANGEMENTS AND RELATIVE SHAFT ROTATIONS



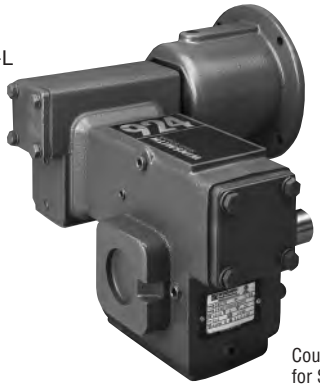
NOTE:
To determine double reduction unit assemblies, first list the letters designating the primary (smaller) housing shaft arrangements followed by a hyphen. After the hyphen, list the letter(s) designating the secondary (larger) housing shaft arrangements. These combined arrangements describe the double reduction assembly. (See LU-L example below)

The input shaft may be driven in either direction.

MDND-CDND

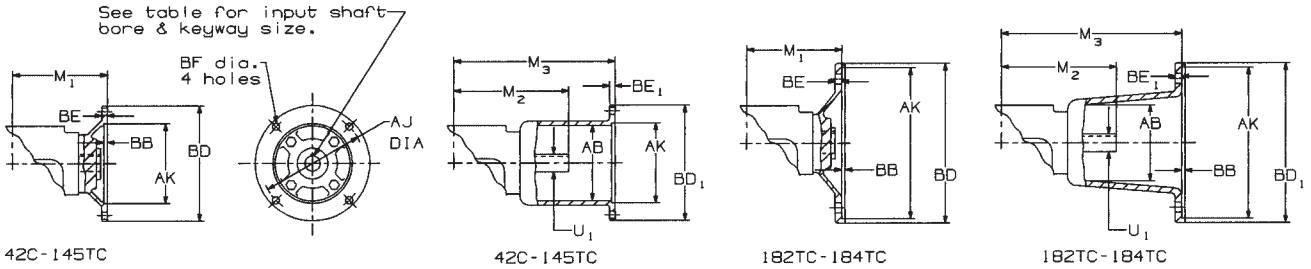
MODEL MDND
Assembly LU-R

MODEL CDND
Assembly LU-L



Couplings available, see page 189 for Selection Chart.

DIMENSIONS



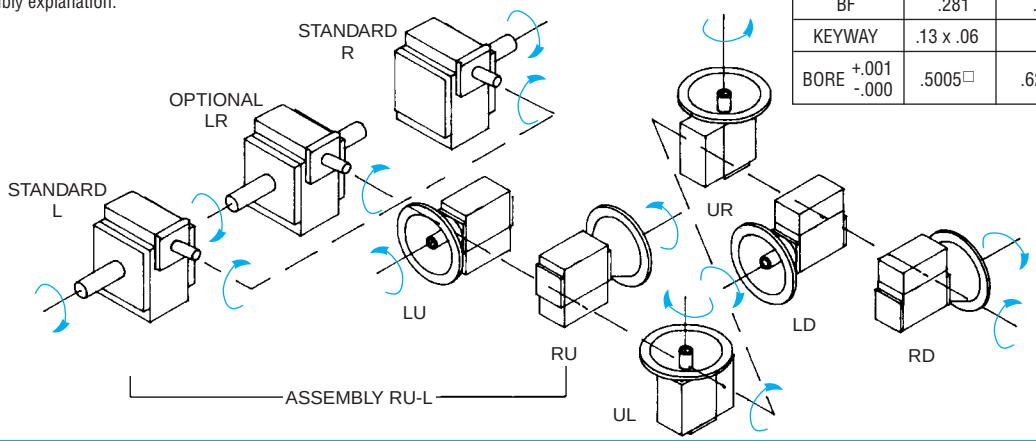
SIZE	HOLLOW INPUT MOTOR ADAPTER			COUPLING STYLE MOTOR ADAPTER									M_2*	U_1*	KEYWAY
	M_1 42C-48C	M_1 56C-145TC	M_1 182TC 184TC	42C-48C			56C-145TC			182TC-184TC					
				AB	M_3	BE_1	AB	M_3	BE_1	AB	M_3	BE_1			
917	3.56	3.63△	NA	2.50	6.81	.38	3.00	6.75	.31	NA			4.12	.500	.13 x .06
920	3.56	3.63△	NA	2.50	6.81	.38	3.00	6.75	.31	NA			4.12	.500	.13 x .06
924	4.06	4.06	NA	2.50	7.56	.38	3.75	7.50	.38	3.75	8.44	.50	4.88	.625	.19 x .09
926	4.06	4.06	NA	2.50	7.56	.38	3.75	7.50	.38	3.75	8.44	.50	4.88	.625	.19 x .09
930	4.06	4.06	NA	2.50	7.56	.38	3.75	7.50	.38	3.75	8.44	.50	4.88	.625	.19 x .09
935	4.06	4.06	NA	2.50	7.56	.38	3.75	7.50	.38	3.75	8.44	.50	4.88	.625	.19 x .09
943	NA	5.38	5.38	NA			4.13	9.13	.38	4.25	10.19	.50	6.50	1.000	.25 x .13

*Input shaft diameter and length varies from non-motorized model.
△56C frame only.
□42C frame has .3755 bore, .094 x .047 keyway.

FRAME NO.	42C-48C	56C	143TC 145TC	182TC 184TC
AJ	3.75	5.88	5.88	7.25
AK	3.00	4.50	4.50	8.50
BB	.19	.19	.19	.19
BD	4.50	6.50	6.50	9.00
BD_1	4.50	6.63	6.63	9.00
BE	.34	.31	.31	.38
BF	.281	.406	.406	.531
KEYWAY	.13 x .06	.19 x .09		.25 x .13
BORE +.001 -.000	.5005□	.6255	.8755	1.1255

SHAFT ARRANGEMENTS AND RELATIVE SHAFT ROTATIONS

See the note on page 156 for double reduction assembly explanation.



The input shaft may be driven in either direction.

MODEL†	917	920	924	926	930	935	943
DBD SHIPPING WEIGHT	29	30	49	50	73	93	149
MDBD SHIPPING WEIGHT‡	32	33	52	53	76	96	153
CDBD SHIPPING WEIGHT‡	35	35	55	57	80	98	158
APPROX. OIL CAPACITY (PINTS)	.6	.6	1.3	1.5	1.8	1.8	2.7

GEAR RATIOS AVAILABLE 50:1 THRU 10,000:1**
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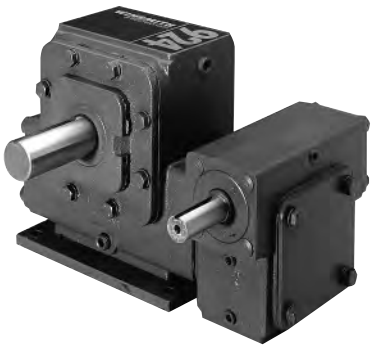
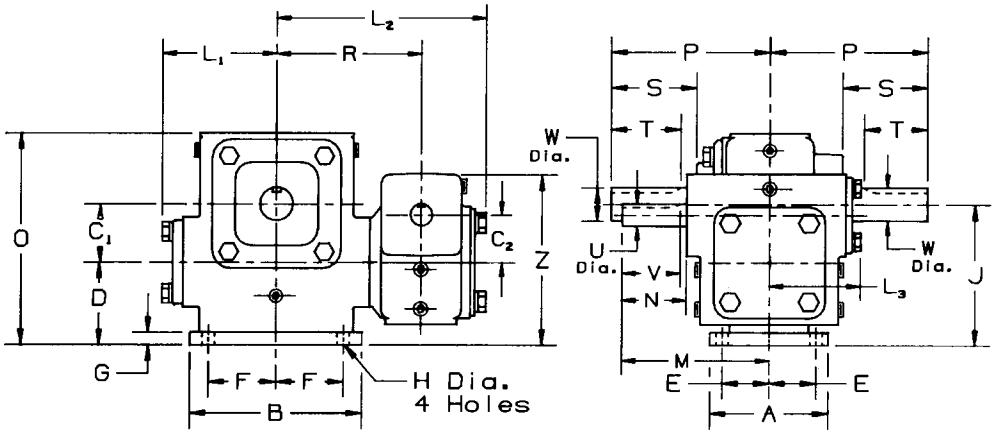
†Weights are approximate and include shipping carton.
‡Weights are given for 48C thru 145TC. For 182/4TC add 4 lbs.
**8000:1 and higher not available in sizes 917 and 920.

MODEL DBD
Assembly LU-L



DIMENSIONS

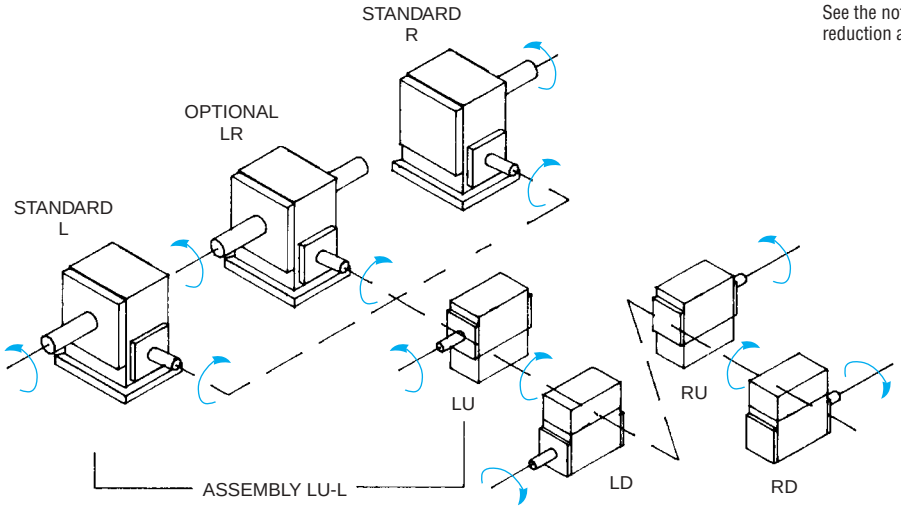


SPEED REDUCER DIMENSIONS (IN INCHES)

SIZE	A	B	C_1	C_2	D	E	F	G	H	J	L_1	L_2	L_3	M	O	P	R	Z	HIGH SPEED SHAFT				SLOW SPEED SHAFT				SIZE
																			U*	N	V	KEYWAY	W*	S	T	KEYWAY	
917	5.00	4.63	1.750	1.333	2.00	2.06	1.44	.50	.406	3.75	3.44	6.09	2.83	4.12	5.88	4.75	4.25	4.48	.625	1.81	1.63	.19 x .09	1.000	2.56	2.31	.25 x .13	917
920	5.00	4.63	2.000	1.333	2.00	2.06	1.44	.50	.406	4.00	3.44	6.09	2.83	4.12	6.13	4.75	4.25	4.48	.625	1.81	1.63	.19 x .09	1.000	2.56	2.31	.25 x .13	920
924	5.00	7.00	2.375	1.750	2.38	2.00	3.00	.38	.406	4.75	4.50	7.65	3.44	4.75	7.63	5.50	5.75	5.48	.750	1.94	1.69	.19 x .09	1.250	2.81	2.63	.25 x .13	924
926	4.75	7.00	2.625	1.750	2.50	2.00	3.00	.38	.406	5.13	4.50	7.65	3.44	4.75	8.25	5.50	5.75	5.60	.750	1.94	1.69	.19 x .09	1.250	2.81	2.63	.25 x .13	926
930	6.00	8.00	3.000	2.000	3.00	2.38	3.50	.50	.563	6.00	4.63	8.15	3.44	5.00	9.50	5.88	6.25	6.35	.750	2.19	1.75	.19 x .09	1.375	2.88	2.75	.31 x .16	930
935	6.50	10.00	3.500	2.000	3.13	2.63	4.13	.50	.563	6.63	5.06	8.40	3.44	5.00	10.63	7.00	6.50	6.48	.750	2.19	1.75	.19 x .09	1.750	3.75	3.63	.38 x .19	935
943	7.00	11.00	4.250	2.625	3.50	2.88	4.88	.63	.563	7.75	5.88	10.02	4.50	6.50	12.13	8.00	7.56	8.28	1.000	2.75	2.63	.25 x .13	2.000	4.38	4.19	.50 x .25	943

*High speed shaft diameter tolerance +.000 -.001. For construction purposes send for Certified Dimension Sheets. For larger sizes see C-Line Catalog 100 or D-90® TYPE DE® Catalog 190.

SHAFT ARRANGEMENTS AND RELATIVE SHAFT ROTATIONS

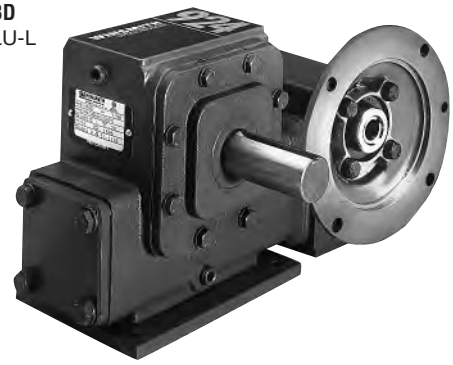


See the note on page 156 for double reduction assembly explanation.

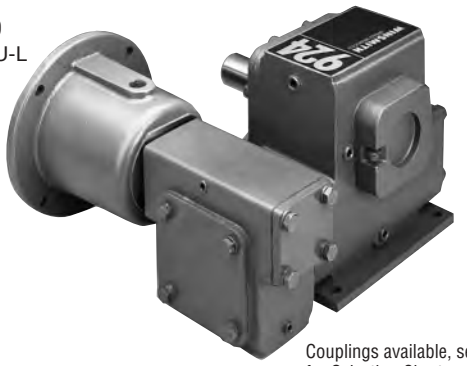
The input shaft may be driven in either direction.

MDBD-CDBD

MODEL MDBD
Assembly LU-L

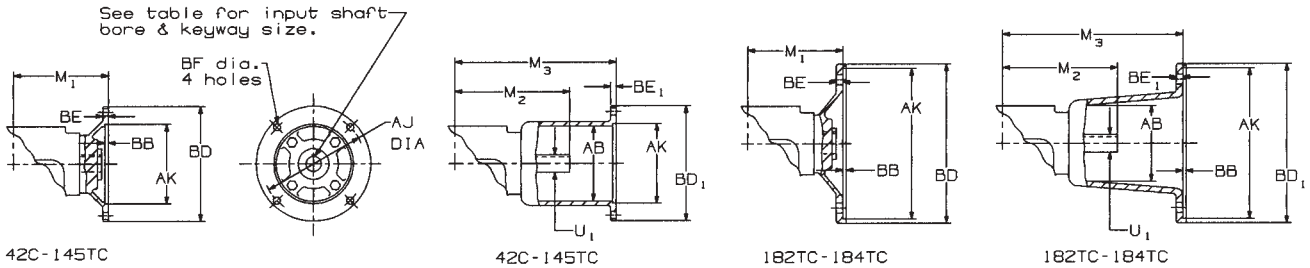


MODEL CDBD
Assembly LU-L



Couplings available, see page 189 for Selection Chart.

DIMENSIONS



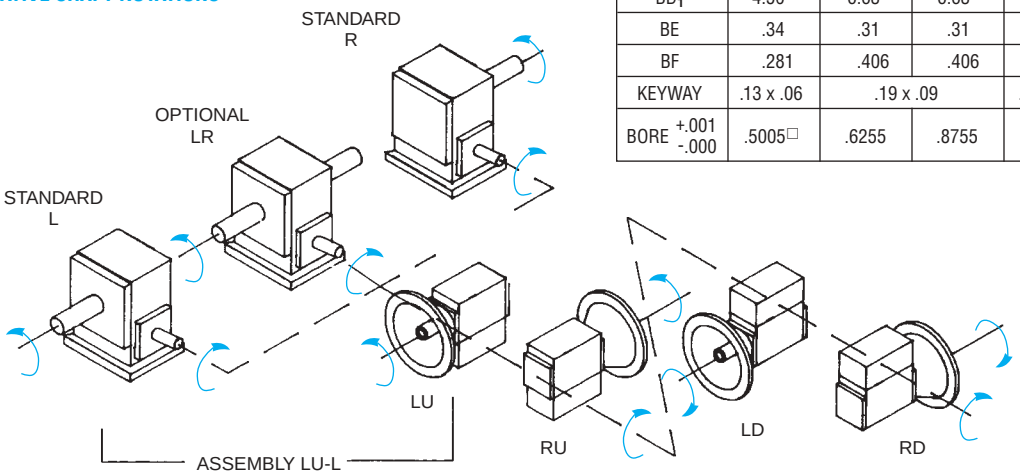
SIZE	HOLLOW INPUT MOTOR ADAPTER			COUPLING STYLE MOTOR ADAPTER											
				42C-48C			56C-145TC			182TC-184TC			M_2*	U_1*	KEYWAY
	M_1 42C-48C	M_1 56C-145TC	M_1 182TC 184TC	AB	M_3	BE_1	AB	M_3	BE_1	AB	M_3	BE_1			
917	3.56	3.63△	NA	2.50	6.81	.38	3.00	6.75	.31	NA			4.12	.500	.13 x .06
920	3.56	3.63△	NA	2.50	6.81	.38	3.00	6.75	.31	NA			4.12	.500	.13 x .06
924	4.06	4.06	NA	2.50	7.56	.38	3.75	7.50	.38	3.75	8.44	.50	4.88	.625	.19 x .09
926	4.06	4.06	NA	2.50	7.56	.38	3.75	7.50	.38	3.75	8.44	.50	4.88	.625	.19 x .09
930	4.06	4.06	NA	2.50	7.56	.38	3.75	7.50	.38	3.75	8.44	.50	4.88	.625	.19 x .09
935	4.06	4.06	NA	2.50	7.56	.38	3.75	7.50	.38	3.75	8.44	.50	4.88	.625	.19 x .09
943	NA	5.38	5.38	NA			4.13	9.13	.38	4.25	10.19	.50	6.50	1.000	.25 x .13

*Input shaft diameter and length varies from non-motorized model.
△56C frame only.
□42C frame has .3755 bore, .094 x .047 keyway.

FRAME NO.	42C-48C	56C	143TC 145TC	182TC 184TC
AJ	3.75	5.88	5.88	7.25
AK	3.00	4.50	4.50	8.50
BB	.19	.19	.19	.19
BD	4.50	6.50	6.50	9.00
BD_1	4.50	6.63	6.63	9.00
BE	.34	.31	.31	.38
BF	.281	.406	.406	.531
KEYWAY	.13 x .06	.19 x .09		.25 x .13
BORE +.001 -.000	.5005□	.6255	.8755	1.1255

SHAFT ARRANGEMENTS AND RELATIVE SHAFT ROTATIONS

See the note on page 156 for double reduction assembly explanation.



The input shaft may be driven in either direction.

MODEL†	917	920	924	926	930	935	943
DTD SHIPPING WEIGHT	28	30	48	50	73	94	149
MDTD SHIPPING WEIGHT‡	31	33	51	53	76	97	153
CDTD SHIPPING WEIGHT‡	34	36	55	57	80	99	158
APPROX. OIL CAPACITY (PINTS)	1.2	1.3	2.6	3.1	4.0	5.3	7.7

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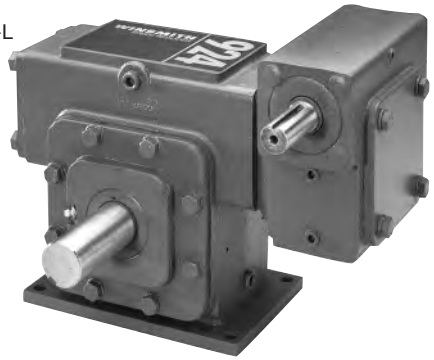
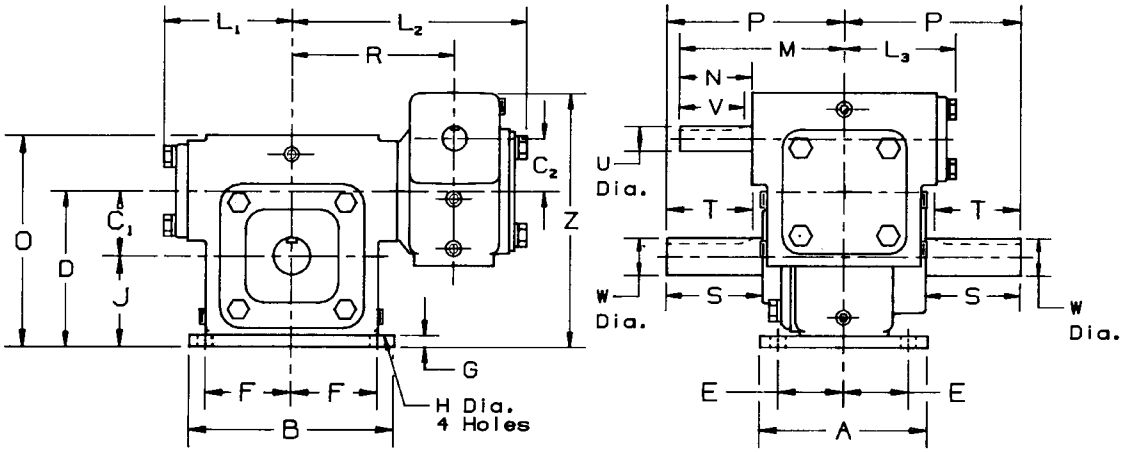
†Weights are approximate and include shipping carton.
‡Weights are given for 48C thru 145TC. For 182/4TC add 4 lbs.
**8000:1 and higher not available in sizes 917 and 920.

MODEL DTD
Assembly LU-L



DIMENSIONS



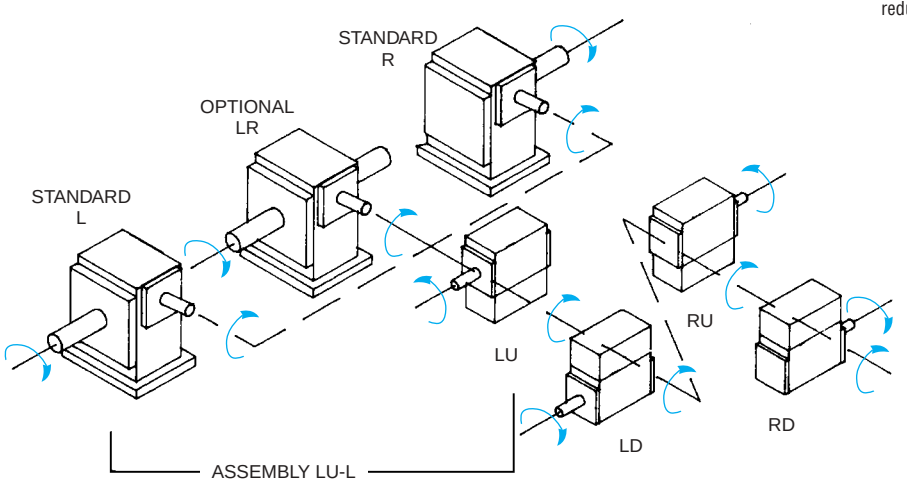
SPEED REDUCER DIMENSIONS (IN INCHES)

SIZE	A	B	C_1	C_2	D	E	F	G	H	J	L_1	L_2	L_3	M	O	P	R	Z	HIGH SPEED SHAFT				SLOW SPEED SHAFT				SIZE
																			U*	N	V	KEYWAY	W*	S	T	KEYWAY	
917	4.50	5.50	1.750	1.333	4.19	1.75	2.31	.31	.406	2.44	3.44	6.09	2.83	4.12	5.69	4.75	4.25	6.67	.625	1.81	1.63	.19 x .09	1.000	2.56	2.31	.25 x .13	917
920	4.50	5.88	2.000	1.333	4.63	1.88	2.50	.50	.406	2.63	3.44	6.09	2.83	4.12	6.13	4.75	4.25	7.11	.625	1.81	1.63	.19 x .09	1.000	2.56	2.31	.25 x .13	920
924	4.50	7.00	2.375	1.750	5.63	1.88	3.13	.38	.406	3.25	4.50	7.65	3.44	4.75	7.63	5.50	5.75	8.73	.750	1.94	1.69	.19 x .09	1.250	2.81	2.63	.25 x .13	924
926	4.50	7.50	2.625	1.750	6.13	1.88	3.25	.38	.406	3.50	4.50	7.65	3.44	4.75	8.25	5.50	5.75	9.23	.750	1.94	1.69	.19 x .09	1.250	2.81	2.63	.25 x .13	926
930	6.00	8.00	3.000	2.000	7.00	2.38	3.50	.50	.563	4.00	4.63	8.15	3.44	5.00	9.50	5.88	6.25	10.35	.750	2.19	1.75	.19 x .09	1.375	2.88	2.75	.31 x .16	930
935	6.50	10.00	3.500	2.000	8.00	2.63	4.13	.50	.563	4.50	5.06	8.40	3.44	5.00	10.63	7.00	6.50	10.85	.750	2.19	1.75	.19 x .09	1.750	3.75	3.63	.38 x .19	935
943	7.00	11.00	4.250	2.625	9.25	2.88	4.88	.63	.563	5.00	5.88	10.02	4.50	6.50	12.13	8.00	7.56	14.03	1.000	2.75	2.63	.25 x .13	2.000	4.38	4.19	.50 x .25	943

*High speed shaft diameter tolerance +.000 -.001. For construction purposes send for Certified Dimension Sheets. For larger sizes see C-Line Catalog 100 or D-90® TYPE DE® Catalog 190.

SHAFT ARRANGEMENTS AND RELATIVE SHAFT ROTATIONS

See the note on page 156 for double reduction assembly explanation.



The input shaft may be driven in either direction.

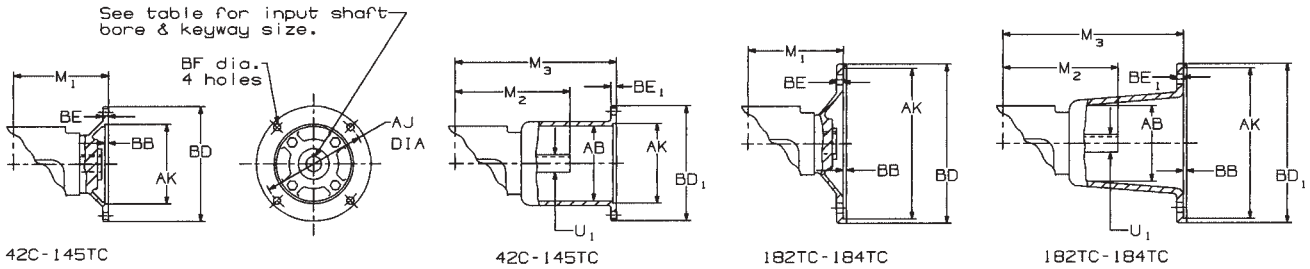
MDTD-CDTD

MODEL MDTD
Assembly LU-R

MODEL CDTD
Assembly LU-L

Couplings available, see page 189 for Selection Chart.

DIMENSIONS



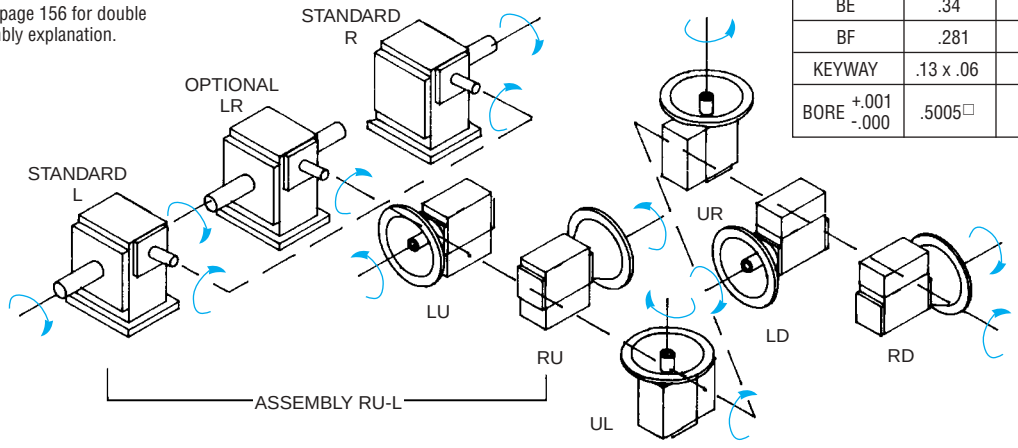
SIZE	HOLLOW INPUT MOTOR ADAPTER			COUPLING STYLE MOTOR ADAPTER									M_2*	U_1*	KEYWAY
	M_1 42C-48C	M_1 56C-145TC	M_1 182TC 184TC	42C-48C			56C-145TC			182TC-184TC					
				AB	M_3	BE_1	AB	M_3	BE_1	AB	M_3	BE_1			
917	3.56	3.63△	NA	2.50	6.81	.38	3.00	6.75	.31	NA			4.12	.500	.13 x .06
920	3.56	3.63△	NA	2.50	6.81	.38	3.00	6.75	.31	NA			4.12	.500	.13 x .06
924	4.06	4.06	NA	2.50	7.56	.38	3.75	7.50	.38	3.75	8.44	.50	4.88	.625	.19 x .09
926	4.06	4.06	NA	2.50	7.56	.38	3.75	7.50	.38	3.75	8.44	.50	4.88	.625	.19 x .09
930	4.06	4.06	NA	2.50	7.56	.38	3.75	7.50	.38	3.75	8.44	.50	4.88	.625	.19 x .09
935	4.06	4.06	NA	2.50	7.56	.38	3.75	7.50	.38	3.75	8.44	.50	4.88	.625	.19 x .09
943	NA	5.38	5.38	NA			4.13	9.13	.38	4.25	10.19	.50	6.50	1.000	.25 x .13

*Input shaft diameter and length varies from non-motorized model.
△56C frame only.
□42C frame has .3755 bore, .094 x .047 keyway.

FRAME NO.	42C-48C	56C	143TC 145TC	182TC 184TC
AJ	3.75	5.88	5.88	7.25
AK	3.00	4.50	4.50	8.50
BB	.19	.19	.19	.19
BD	4.50	6.50	6.50	9.00
BD_1	4.50	6.63	6.63	9.00
BE	.34	.31	.31	.38
BF	.281	.406	.406	.531
KEYWAY	.13 x .06	.19 x .09		.25 x .13
BORE $^{+.001}_{-.000}$	.5005□	.6255	.8755	1.1255

SHAFT ARRANGEMENTS AND RELATIVE SHAFT ROTATIONS

See the note on page 156 for double reduction assembly explanation.



The input shaft may be driven in either direction.

MODEL†	917	920	924	926	930	935	943
DVD SHIPPING WEIGHT	30	31	51	56	76	100	150
MDVD SHIPPING WEIGHT‡	32	33	54	59	79	103	153
CDVD SHIPPING WEIGHT‡	35	36	58	63	83	106	158
APPROX. OIL CAPACITY (PINTS)	.9	.9	1.9	2.3	2.9	3.5	5.1

GEAR RATIOS AVAILABLE 50:1 THRU 10,000:1**
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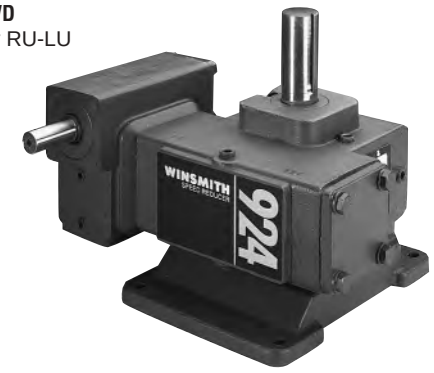
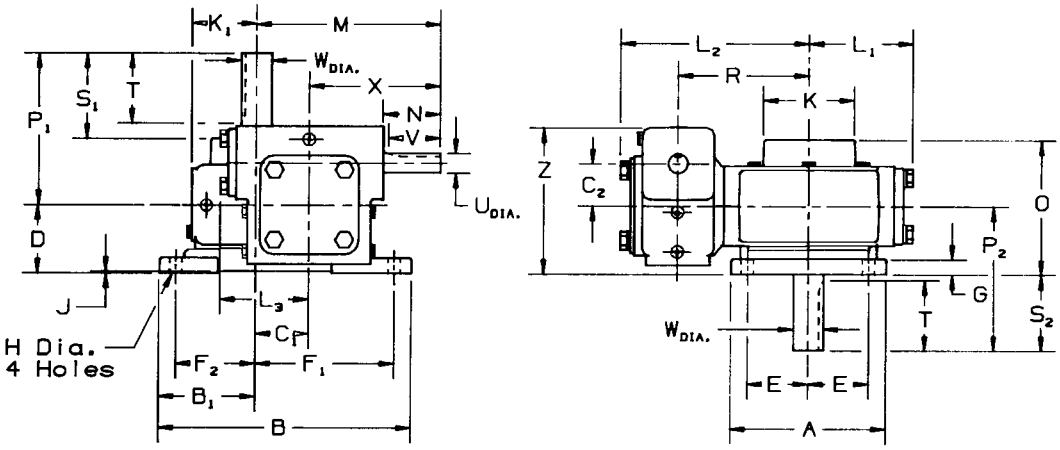
†Weights are approximate and include shipping carton.
‡Weights are given for 48C thru 145TC. For 182/4TC add 4 lbs.
**8000:1 and higher not available in sizes 917 and 920.

MODEL DVD
Assembly RU-LU



DIMENSIONS



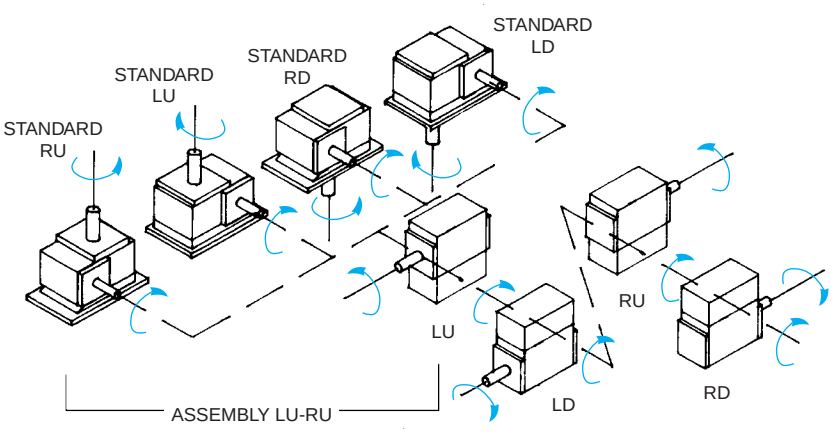
SPEED REDUCER DIMENSIONS (IN INCHES)

SIZE	A	B	B_1	C_1	C_2	D	E	F_1	F_2	G	H	J	K	K_1	L_1	L_2	L_3	M	O	P_1	P_2	R	X	Z	HIGH SPEED SHAFT U*	N	V	KEYWAY	SLOW SPEED SHAFT W*	S_1	S_2	T	KEYWAY	SIZE
917	5.13	7.75	3.19	1.750	1.333	2.25	2.00	4.00	2.63	.50	.406	.06	2.50	2.13	3.44	6.09	2.83	5.87	4.44	4.75	4.75	4.25	4.12	4.74	.625	1.81	1.63	.19 x .09	1.000	2.56	2.50	2.31	.25 x .13	917
920	5.13	8.50	3.56	2.000	1.333	2.25	2.00	4.38	3.00	.50	.406	.06	2.50	2.13	3.44	6.09	2.83	6.12	4.44	4.75	4.75	4.25	4.12	4.74	.625	1.81	1.63	.19 x .09	1.000	2.56	2.50	2.31	.25 x .13	920
924	6.88	8.88	3.44	2.375	1.750	3.50	2.88	4.88	2.88	.50	.406	.13	3.25	2.88	4.50	7.65	3.44	7.13	6.13	5.75	6.38	5.75	4.75	6.60	.750	1.94	1.69	.19 x .09	1.250	3.12	2.88	2.75	.25 x .13	924
926	6.88	9.44	3.63	2.625	1.750	3.63	2.88	5.25	2.88	.50	.406	.13	3.50	3.13	4.50	7.65	3.44	7.38	6.26	5.63	6.38	5.75	4.75	6.73	.750	1.94	1.69	.19 x .09	1.250	3.00	2.75	2.75	.25 x .13	926
930	8.88	10.63	4.25	3.000	2.000	3.75	3.81	5.75	3.63	.63	.563	.13	3.50	3.50	4.63	8.15	3.44	8.00	6.75	6.19	6.75	6.25	5.00	7.10	.750	2.19	1.75	.19 x .09	1.375	3.19	3.00	3.06	.31 x .16	930
935	9.75	11.50	5.00	3.500	2.000	3.75	4.25	5.88	4.38	.63	.563	.13	4.13	4.00	5.06	8.40	3.44	8.50	7.00	7.00	7.00	6.50	5.00	7.10	.750	2.19	1.75	.19 x .09	1.750	3.75	3.25	3.63	.38 x .19	935
943	9.63	11.00	4.81	4.250	2.625	4.75	4.13	5.50	4.13	.63	.563	.13	4.75	4.38	5.88	10.02	4.50	10.75	8.38	8.00	8.00	7.56	6.50	9.53	1.000	2.75	2.63	.25 x .13	2.000	4.38	3.25	4.19	.50 x .25	943

*High speed shaft diameter tolerance +.000 -.001. For construction purposes send for Certified Dimension Sheets. For larger sizes see C-Line Catalog 100 or D-90® TYPE DE® Catalog 190.

SHAFT ARRANGEMENTS AND RELATIVE SHAFT ROTATIONS

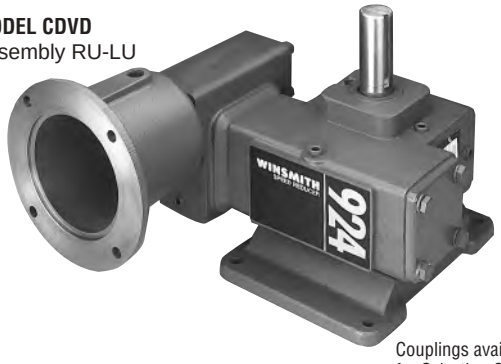
See the note on page 156 for double reduction assembly explanation.



The input shaft may be driven in either direction.

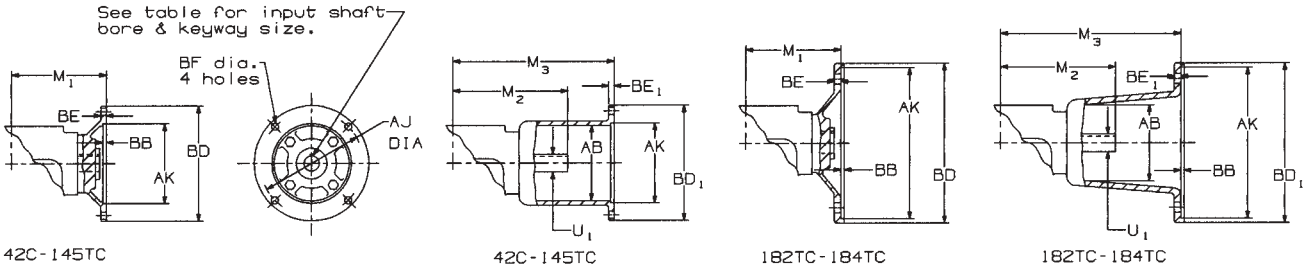
MODEL MDVD
Assembly LU-RU

MODEL CDVD
Assembly RU-LU



Couplings available, see page 189 for Selection Chart.

DIMENSIONS



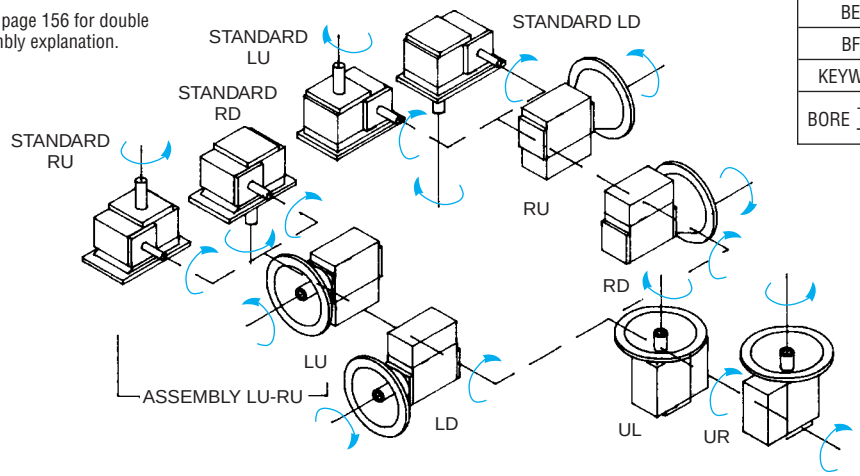
SIZE	HOLLOW INPUT MOTOR ADAPTER			COUPLING STYLE MOTOR ADAPTER									M_2*	U_1*	KEYWAY
	M_1 42C-48C	M_1 56C-145TC	M_1 182TC 184TC	42C-48C			56C-145TC			182TC-184TC					
				AB	M_3	BE_1	AB	M_3	BE_1	AB	M_3	BE_1			
917	3.56	3.63△	NA	2.50	6.81	.38	3.00	6.75	.31	NA			4.12	.500	.13 x .06
920	3.56	3.63△	NA	2.50	6.81	.38	3.00	6.75	.31	NA			4.12	.500	.13 x .06
924	4.06	4.06	NA	2.50	7.56	.38	3.75	7.50	.38	3.75	8.44	.50	4.88	.625	.19 x .09
926	4.06	4.06	NA	2.50	7.56	.38	3.75	7.50	.38	3.75	8.44	.50	4.88	.625	.19 x .09
930	4.06	4.06	NA	2.50	7.56	.38	3.75	7.50	.38	3.75	8.44	.50	4.88	.625	.19 x .09
935	4.06	4.06	NA	2.50	7.56	.38	3.75	7.50	.38	3.75	8.44	.50	4.88	.625	.19 x .09
943	NA	5.38	5.38	NA			4.13	9.13	.38	4.25	10.19	.50	6.50	1.000	.25 x .13

*Input shaft diameter and length varies from non-motorized model.
△56C frame only.
□42C frame has .3755 bore, .094 x .047 keyway.

FRAME NO.	42C-48C	56C	143TC 145TC	182TC 184TC
AJ	3.75	5.88	5.88	7.25
AK	3.00	4.50	4.50	8.50
BB	.19	.19	.19	.19
BD	4.50	6.50	6.50	9.00
BD_1	4.50	6.63	6.63	9.00
BE	.34	.31	.31	.38
BF	.281	.406	.406	.531
KEYWAY	.13 x .06	.19 x .09		.25 x .13
BORE $^{+.001}_{-.000}$	.5005□	.6255	.8755	1.1255

SHAFT ARRANGEMENTS AND RELATIVE SHAFT ROTATIONS

See the note on page 156 for double reduction assembly explanation.



The input shaft may be driven in either direction.

DSND

D-90® TYPE SE®

WINSMITH®

MODEL†	917	920	924	926	930	935	943
DSND SHIPPING WEIGHT	26	27	45	47	66	92	153
MDSND SHIPPING WEIGHT‡	29	29	48	49	69	95	157
CDSND SHIPPING WEIGHT‡	32	32	52	53	73	97	162
APPROX. OIL CAPACITY (PINTS)	1.1	1.2	2.4	2.9	3.6	4.8	7.1

GEAR RATIOS AVAILABLE 50:1 THRU 10,000:1**
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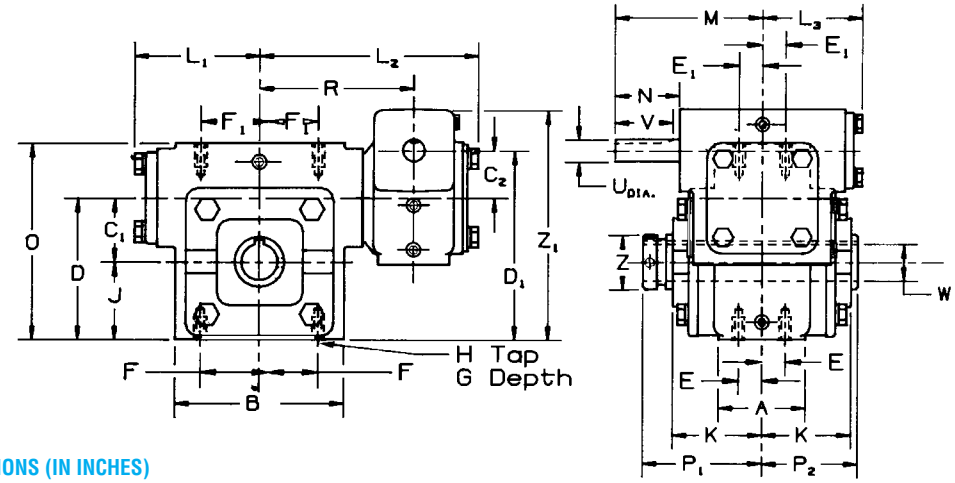
BASE AND BRACKET KITS . . . . . .PAGES 188-191

†Weights are approximate and include shipping carton.
‡Weights are given for 48C thru 145TC. For 182/4TC add 4 lbs.
**8000:1 and higher not available in 917 and 920.

MODEL DSND
Assembly LU-DR

DIMENSIONS



SPEED REDUCER DIMENSIONS (IN INCHES)

SIZE	A	B	C_1	C_2	D	D_1	E	E_1	F	F_1	G DEPTH	H TAP	J	K	L_1	L_2	L_3	M	O	P_1	P_2	R	Z	Z_1	HIGH SPEED SHAFT				SIZE
																									U*	N	V	KEYWAY	
917	2.38	4.63	1.750	1.333	3.88	5.21	.88	.88	1.94	1.69	.56	3/8-16	2.13	2.44	3.44	6.09	2.83	4.12	5.38	3.25	2.63	4.25	1.49	6.36	.625	1.81	1.63	.19 x .09	917
920	2.38	5.25	2.000	1.333	4.13	5.46	.88	.88	2.19	1.69	.56	3/8-16	2.13	2.63	3.44	6.09	2.83	4.12	5.63	3.38	2.88	4.25	2.00	6.61	.625	1.81	1.63	.19 x .09	920
924	3.13	5.38	2.375	1.750	5.25	7.00	1.13	1.13	2.19	2.19	.63	1/2-13	2.88	2.75	4.50	7.65	3.44	4.75	7.25	3.56	2.94	5.75	2.25	8.35	.750	1.94	1.69	.19 x .09	924
926	3.13	5.88	2.625	1.750	5.75	7.50	1.13	1.13	2.44	2.44	.63	1/2-13	3.13	2.81	4.50	7.65	3.44	4.75	7.88	3.69	3.00	5.75	2.50	8.85	.750	1.94	1.69	.19 x .09	926
930	3.50	6.62	3.000	2.000	6.50	8.50	1.31	1.31	2.75	2.75	.75	1/2-13	3.50	3.00	4.63	8.15	3.44	5.00	9.00	4.06	3.19	6.25	2.63	9.85	.750	2.19	1.75	.19 x .09	930
935	3.75	7.69	3.500	2.000	7.50	9.50	1.31	1.31	3.25	3.25	1.00	5/8-11	4.00	3.38	5.06	8.40	3.44	5.00	10.13	4.44	3.56	6.50	2.87	10.85	.750	2.19	1.75	.19 x .09	935
943	4.38	8.75	4.250	2.625	8.63	11.25	1.63	1.63	3.75	3.75	1.00	5/8-11	4.38	3.63	5.88	10.02	4.50	6.50	11.50	4.38	4.38	7.56	3.88	13.40	1.000	2.75	2.63	.25 x .13	943

*Shaft diameter tolerance +.000 -.001. For construction purposes send for Certified Dimension Sheets.

For larger sizes see C-Line Catalog 100 or D-90® TYPE DE® Catalog 190.

SLOW SPEED SHAFT BORES[1, 2, 3, 4]

917		920		924		926		930		935		943	
W**	KEYWAY	W**	KEYWAY	W**	KEYWAY	W**	KEYWAY	W**	KEYWAY	W**	KEYWAY	W**	KEYWAY
.625	.19 x .09	**.750**	**.19 x .09**	.875	.19 x .09	.938	.25 x .13	1.188	.25 x .13	1.188	.25 x .13	1.625	.38 x .19
.688	.19 x .09	.813	.19 x .09	.938	.25 x .13	1.000	.25 x .13	1.250	.25 x .13	1.250	.25 x .13	1.688	.38 x .19
.750	**.19 x .09**	**.875**	**.19 x .09**	1.000	.25 x .13	1.063	.25 x .13	**1.375**	**.31 x .16**	**1.375**	**.31 x .16**	1.750	.38 x .19
.813	.19 x .09	.938	.25 x .13	1.063	.25 x .13	1.125	.25 x .13	**1.438**	**.38 x .19**	1.438	.38 x .19	1.875	.50 x .25
.875	.19 x .09	**1.000**	**.25 x .13**	**1.125**	**.25 x .13**	1.188	.25 x .13	**1.500**	**.38 x .19**	**1.500**	**.38 x .19**	1.938	.50 x .25
.938	.25 x .13	1.063	.25 x .13	1.188	.25 x .13	**1.250**	**.25 x .13**	**1.625**	**.38 x .19**	1.625	.38 x .19	2.000	.50 x .25
1.000	**.25 x .13**	**1.125**	**.25 x .13**	**1.250**	**.25 x .13**	1.375	.31 x .16	1.688	.38 x .19	1.688	.38 x .19	2.188	.50 x .25
		1.188	.25 x .13	1.375	.31 x .16	**1.438**	**.38 x .19**	**1.750**	**.38 x .19**	1.750	.38 x .19	2.250	.50 x .25
		1.250	**.25 x .13**	**1.438**	**.38 x .19**	**1.500**	**.38 x .19**	**1.875**	**.50 x .25**	**1.875**	**.50 x .25**	2.438	.63 x .31
		1.375	.31 x .16	**1.500**	**.38 x .19**	1.625	.38 x .19	**1.938**	**.50 x .19**	**1.938**	**.50 x .25**	2.500	.63 x .31
		1.438	**.38 x .13**			**1.688**	**.38 x .19**			**2.000**	**.50 x .25**	2.688	.63 x .31
										2.188	**.50 x .13**	2.750	.63 x .31

**Bore tolerances +.000, +.002.
1. Contact factory for other bore sizes.
2. Hollow output shaft bored to size; no bushing kit required.
3. Puller groove on all hollow output shafts.
4. Bores in bold blue type are stock standard sizes.

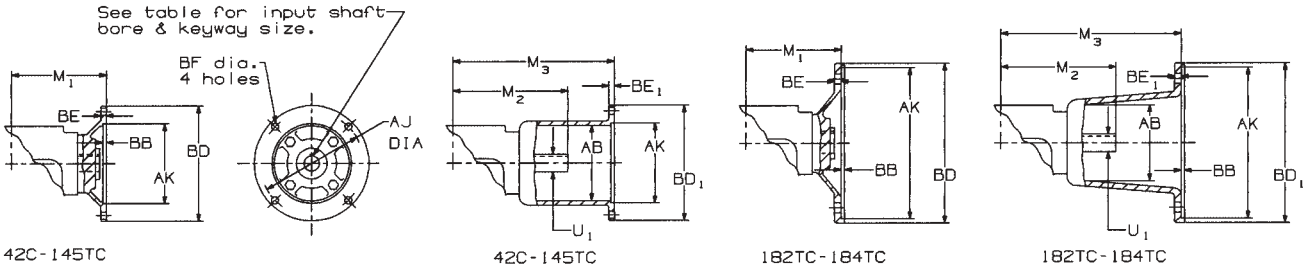
D-90® TYPE SE® MDSND-CDSND

MODEL MDSND
Assembly LU-DR

MODEL CDSND
Assembly LU-DR

Couplings available, see page 189 for Selection Chart.

DIMENSIONS



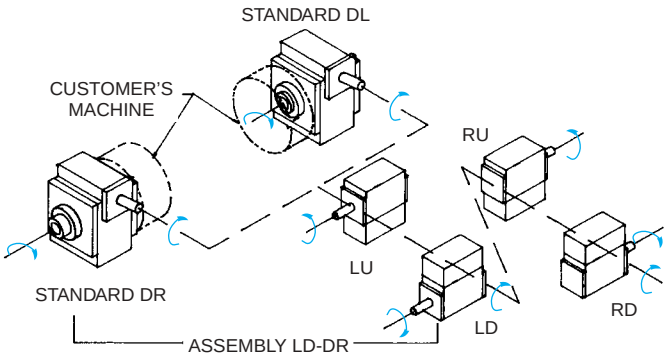
SIZE	HOLLOW INPUT MOTOR ADAPTER			COUPLING STYLE MOTOR ADAPTER									M_2*	U_1*	KEYWAY
	M_1 42C-48C	M_1 56C-145TC	M_1 182TC 184TC	42C-48C			56C-145TC			182TC-184TC					
				AB	M_3	BE_1	AB	M_3	BE_1	AB	M_3	BE_1			
917	3.56	3.63△	NA	2.50	6.81	.38	3.00	6.75	.31	NA			4.12	.500	.13 x .06
920	3.56	3.63△	NA	2.50	6.81	.38	3.00	6.75	.31	NA			4.12	.500	.13 x .06
924	4.06	4.06	NA	2.50	7.56	.38	3.75	7.50	.38	3.75	8.44	.50	4.88	.625	.19 x .09
926	4.06	4.06	NA	2.50	7.56	.38	3.75	7.50	.38	3.75	8.44	.50	4.88	.625	.19 x .09
930	4.06	4.06	NA	2.50	7.56	.38	3.75	7.50	.38	3.75	8.44	.50	4.88	.625	.19 x .09
935	4.06	4.06	NA	2.50	7.56	.38	3.75	7.50	.38	3.75	8.44	.50	4.88	.625	.19 x .09
943	NA	5.38	5.38	NA			4.13	9.13	.38	4.25	10.19	.50	6.50	1.000	.25 x .13

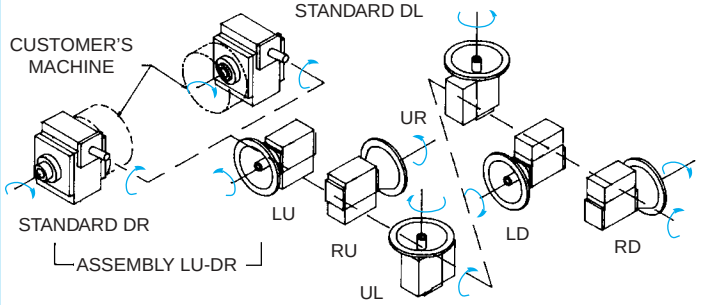
*Input shaft diameter and length varies from non-motorized model.
△56C frame only.
□42C frame has .3755 bore, .094 x .047 keyway.

FRAME NO.	42C-48C	56C	143TC 145TC	182TC 184TC
AJ	3.75	5.88	5.88	7.25
AK	3.00	4.50	4.50	8.50
BB	.19	.19	.19	.19
BD	4.50	6.50	6.50	9.00
BD_1	4.50	6.63	6.63	9.00
BE	.34	.31	.31	.38
BF	.281	.406	.406	.531
KEYWAY	.13 x .06	.19 x .09		.25 x .13
BORE $^{+.001}_{-.000}$	.5005□	.6255	.8755	1.1255

SHAFT ARRANGEMENTS AND RELATIVE SHAFT ROTATIONS

See the note on page 156 for double reduction assembly explanation.





The input shaft may be driven in either direction.

MODEL†	917	920	924	926	930	935	943
DSRD SHIPPING WEIGHT	34	39	55	60	87	124	185
MDSRD SHIPPING WEIGHT‡	37	42	58	63	90	127	189
CDSRD SHIPPING WEIGHT‡	40	45	62	67	94	130	194
APPROX. OIL CAPACITY (PINTS)	1.1	1.2	2.4	2.9	3.6	4.8	7.1

GEAR RATIOS AVAILABLE 50:1 THRU 10,000:1**
TORQUE AND HP RATINGS/OVERHUNG LOAD RATINGS . . . . . PAGES 22-119
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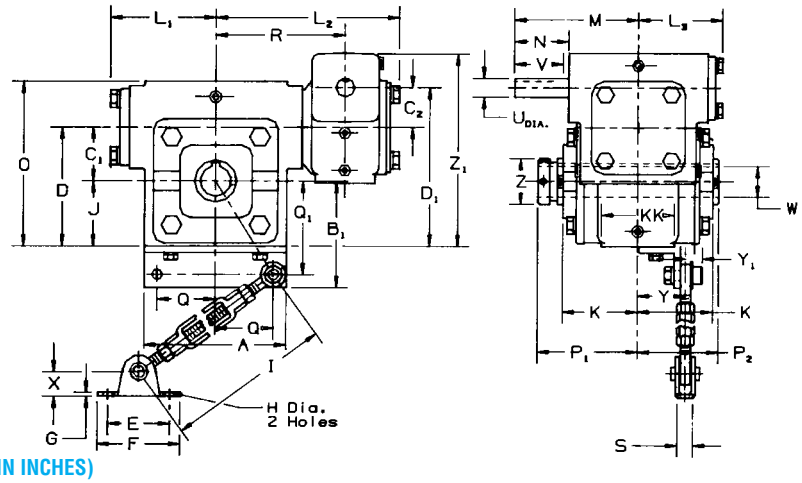
HYDRAULIC MOTOR ADAPTERS . . . . . PAGE 192

†Weights are approximate and include shipping carton.
‡Weights are given for 48C thru 145TC. For 182/4TC add 4 lbs.
**8000:1 and higher not available in 917 and 920.

MODEL DSRD
Assembly LU-DL

DIMENSIONS



The reaction arm must be mounted at an angle of 90° ±20° to an imaginary center line drawn between the center of the slow speed shaft bore and the center of the reaction arm eye bolt. "Reaction arm" must be in tension.

SPEED REDUCER DIMENSIONS (IN INCHES)

SIZE	A	B_1	C_1	C_2	D	D_1	E	F	G	H	I MIN	I MAX	J	K	KK	L_1	L_2	L_3	M	O	P_1	P_2	Q	Q_1	R	S	X	Y	Y_1	Z	Z_1	HIGH SPEED SHAFT U*	HIGH SPEED SHAFT N	HIGH SPEED SHAFT V	HIGH SPEED SHAFT KEYWAY	SIZE
917	4.63	4.13	1.750	1.333	3.88	5.21	3.00	4.00	.19	.44	15.00	24.00	2.13	2.44	2.38	3.44	6.09	2.83	4.12	5.38	3.25	2.63	1.69	3.50	4.25	.75	1.19	2.38	.81	1.49	6.36	.625	1.81	1.63	.19 x .09	917
920	5.25	4.13	2.000	1.333	4.13	5.46	3.00	4.00	.19	.44	15.00	24.00	2.13	2.63	2.38	3.44	6.09	2.83	4.12	5.63	3.38	2.88	1.69	3.50	4.25	.75	1.19	2.38	.81	2.00	6.61	.625	1.81	1.63	.19 x .09	920
924	5.38	4.88	2.375	1.750	5.25	7.00	3.00	4.00	.19	.44	15.00	24.00	2.88	2.75	3.13	4.50	7.65	3.44	4.75	7.25	3.56	2.94	2.13	4.25	5.75	.75	1.19	2.56	.81	2.25	8.35	.750	1.94	1.69	.19 x .09	924
926	5.88	5.13	2.625	1.750	5.75	7.50	3.00	4.00	.19	.44	15.00	24.00	3.13	2.81	3.13	4.50	7.65	3.44	4.75	7.88	3.69	3.00	2.31	4.50	5.75	.75	1.19	2.69	.81	2.50	8.85	.750	1.94	1.69	.19 x .09	926
930	6.50	5.50	3.000	2.000	6.50	8.50	3.00	4.00	.19	.44	15.00	24.00	3.50	3.00	3.50	4.63	8.15	3.44	5.00	9.00	4.06	3.19	2.56	4.88	6.25	.75	1.19	3.06	.81	2.63	9.85	.750	2.19	1.75	.19 x .09	930
935	7.75	6.50	3.500	2.000	7.50	9.50	3.50	4.75	.56	.53	21.00	29.00	4.00	3.38	3.75	5.06	8.40	3.44	5.00	10.13	4.44	3.56	3.00	5.63	6.50	2.13	1.63	3.50	1.09	2.87	10.85	.750	2.19	1.75	.19 x .09	935
943	8.75	6.88	4.250	2.625	8.63	11.25	3.50	4.75	.56	.53	21.00	29.00	4.38	3.63	4.38	5.88	10.02	4.50	6.50	11.50	4.38	4.38	3.50	6.00	7.56	2.13	1.63	3.81	1.09	3.88	13.40	1.000	2.75	2.63	.25 x .13	943

*Shaft diameter tolerance +.000 -.001. For construction purposes send for Certified Dimension Sheets.

For larger sizes see C-Line Catalog 100 or D-90® TYPE DE® Catalog 190.

SLOW SPEED SHAFT BORES[1, 2, 3, 4]

917		920		924		926		930		935		943	
W**	KEYWAY	W**	KEYWAY	W**	KEYWAY	W**	KEYWAY	W**	KEYWAY	W**	KEYWAY	W**	KEYWAY
.625	.19 x .09	**.750**	**.19 x .09**	.875	.19 x .09	.938	.25 x .13	1.188	.25 x .13	1.188	.25 x .13	1.625	.38 x .19
.688	.19 x .09	.813	.19 x .09	.938	.25 x .13	1.000	.25 x .13	1.250	.25 x .13	1.250	.25 x .13	1.688	.38 x .19
.750	**.19 x .09**	**.875**	**.19 x .09**	1.000	.25 x .13	1.063	.25 x .13	**1.375**	**.31 x .16**	**1.375**	**.31 x .16**	1.750	.38 x .19
.813	.19 x .09	.938	.25 x .13	1.063	.25 x .13	1.125	.25 x .13	**1.438**	**.38 x .19**	1.438	.38 x .19	1.875	.50 x .25
.875	.19 x .09	**1.000**	**.25 x .13**	**1.125**	**.25 x .13**	1.188	.25 x .13	**1.500**	**.38 x .19**	**1.500**	**.38 x .19**	1.938	.50 x .25
.938	.25 x .13	1.063	.25 x .13	1.188	.25 x .13	**1.250**	**.25 x .13**	**1.625**	**.38 x .19**	1.625	.38 x .19	2.000	.50 x .25
1.000	**.25 x .13**	**1.125**	**.25 x .13**	**1.250**	**.25 x .13**	1.375	.31 x .16	1.688	.38 x .19	1.688	.38 x .19	2.188	.50 x .25
		1.188	.25 x .13	1.375	.31 x .16	**1.438**	**.38 x .19**	**1.750**	**.38 x .19**	1.750	.38 x .19	2.250	.50 x .25
		1.250	**.25 x .13**	**1.438**	**.38 x .19**	**1.500**	**.38 x .19**	**1.875**	**.50 x .25**	**1.875**	**.50 x .25**	2.438	.63 x .31
		1.375	.31 x .16	**1.500**	**.38 x .19**	1.625	.38 x .19	**1.938**	**.50 x .19**	**1.938**	**.50 x .25**	2.500	.63 x .31
		1.438	**.38 x .13**			**1.688**	**.38 x .19**			**2.000**	**.50 x .25**	2.688	.63 x .31
										2.188	**.50 x .13**	2.750	.63 x .31

**Bore tolerances +.000, +.002.
1. Contact factory for other bore sizes.
2. Hollow output shaft bored to size; no bushing kit required.
3. Puller groove on all hollow output shafts.
4. Bores in bold blue type are stock standard sizes.

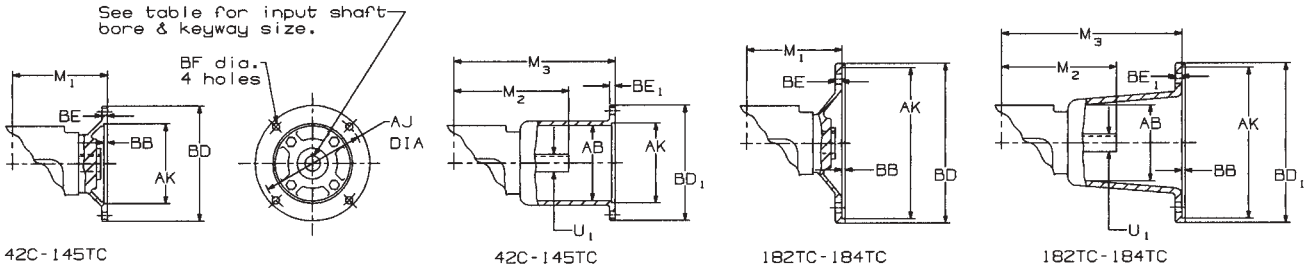
D-90® TYPE SE® MDSRD-CDSRD

MODEL MDSRD
Assembly LU-DR

MODEL CDSRD
Assembly LU-DR

Couplings available, see page 189 for Selection Chart.

DIMENSIONS



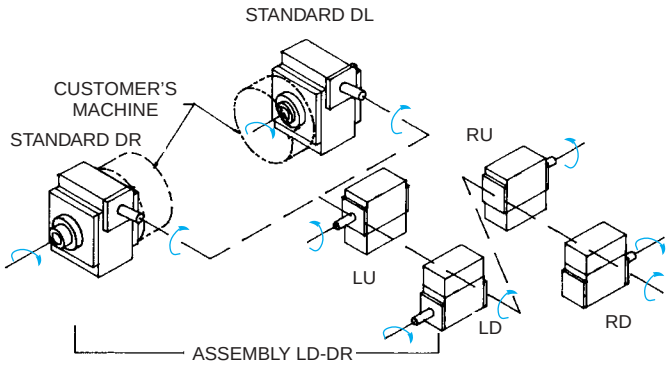
SIZE	HOLLOW INPUT MOTOR ADAPTER			COUPLING STYLE MOTOR ADAPTER									M_2*	U_1*	KEYWAY
	M_1 42C-48C	M_1 56C-145TC	M_2 182TC 184TC	42C-48C			56C-145TC			182TC-184TC					
				AB	M_3	BE_1	AB	M_3	BE_1	AB	M_3	BE_1			
917	3.56	3.63△	NA	2.50	6.81	.38	3.00	6.75	.31	NA			4.12	.500	.13 x .06
920	3.56	3.63△	NA	2.50	6.81	.38	3.00	6.75	.31	NA			4.12	.500	.13 x .06
924	4.06	4.06	NA	2.50	7.56	.38	3.75	7.50	.38	3.75	8.44	.50	4.88	.625	..19 x .09
926	4.06	4.06	NA	2.50	7.56	.38	3.75	7.50	.38	3.75	8.44	.50	4.88	.625	.19 x .09
930	4.06	4.06	NA	2.50	7.56	.38	3.75	7.50	.38	3.75	8.44	.50	4.88	.625	.19 x .09
935	4.06	4.06	NA	2.50	7.56	.38	3.75	7.50	.38	3.75	8.44	.50	4.88	.625	.19 x .09
943	NA	5.38	5.38	NA			4.13	9.13	.38	4.25	10.19	.50	6.50	1.000	.25 x .13

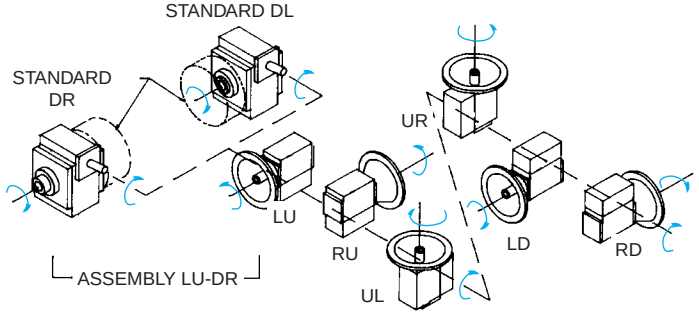
*Input shaft diameter and length varies from non-motorized model.
△56C frame only.
□42C frame has .3755 bore, .094 x .047 keyway.

FRAME NO.	42C-48C	56C	143TC 145TC	182TC 184TC
AJ	3.75	5.88	5.88	7.25
AK	3.00	4.50	4.50	8.50
BB	.19	.19	.19	.19
BD	4.50	6.50	6.50	9.00
BD_1	4.50	6.63	6.63	9.00
BE	.34	.31	.31	.38
BF	.281	.406	.406	.531
KEYWAY	.13 x .06	.19 x .09		.25 x .13
BORE $^{+.001}_{-.000}$	.5005□	.6255	.8755	1.1255

SHAFT ARRANGEMENTS AND RELATIVE SHAFT ROTATIONS

See the note on page 156 for double reduction assembly explanation.





The input shaft may be driven in either direction.

DSFD

D-90® TYPE SE®

WINSMITH®

MODEL†	917	920	924	926	930	935	943
DSFD SHIPPING WEIGHT	32	37	52	57	84	104	170
MDSFD SHIPPING WEIGHT‡	35	40	55	60	87	107	174
CDSFD SHIPPING WEIGHT‡	38	43	59	64	91	109	179
APPROX. OIL CAPACITY (PINTS)	1.1	1.2	2.4	2.9	3.6	4.8	7.1

GEAR RATIOS AVAILABLE 50:1 THRU 10,000:1**
TORQUE AND HP RATINGS/OVERHUNG LOAD RATINGS . . . . . PAGES 22-119
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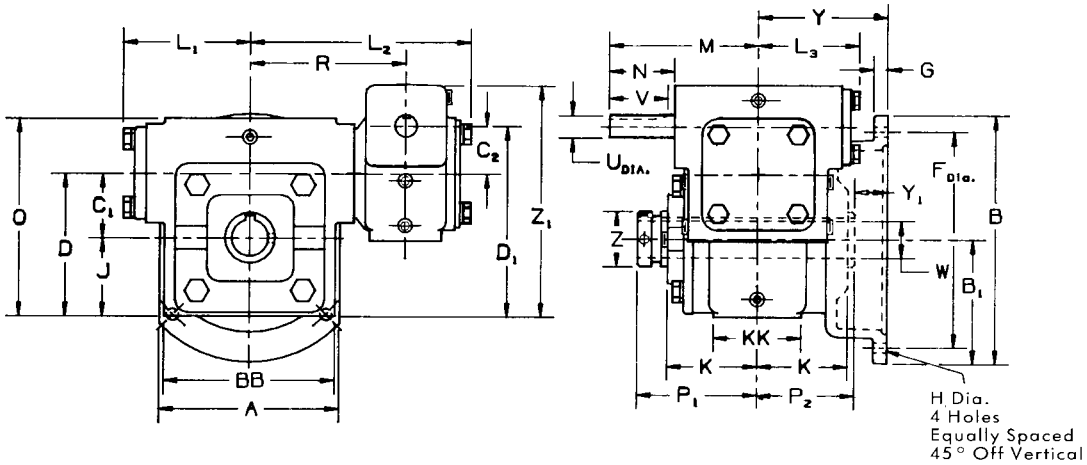
†Weights are approximate and include shipping carton.
‡Weights are given for 48C thru 145TC. For 182/4TC add 4 lbs.
**8000:1 and higher not available in 917 and 920.

MODEL DSFD
Assembly LU-DR

DIMENSIONS



SPEED REDUCER DIMENSIONS (IN INCHES)

SIZE	A	B	B_1	BB	C_1	C_2	D	D_1	F dia.	G	H	J	K	KK	L_1	L_2	L_3	M	O	P_1	P_2	R	Y	Y_1	Z	Z_1	HIGH SPEED SHAFT				SIZE
																											U*	N	V	KEYWAY	
917	4.88	6.75	3.38	4.63	1.750	1.333	3.88	5.21	5.875	.38	.344	2.13	2.44	2.38	3.44	6.09	2.83	4.12	5.38	3.25	2.63	4.25	3.50	.87	1.49	6.36	.625	1.81	1.63	.19 x .09	917
920	6.00	7.63	3.81	5.25	2.000	1.333	4.13	5.46	6.500	.38	.406	2.13	2.63	2.38	3.44	6.09	2.83	4.12	5.63	3.38	2.88	4.25	3.38	.50	2.00	6.61	.625	1.81	1.63	.19 x .09	920
924	7.38	8.63	4.31	5.38	2.375	1.750	5.25	7.00	7.500	.38	.406	2.88	2.75	3.13	4.50	7.65	3.44	4.75	7.25	3.56	2.94	5.75	3.50	.56	2.25	8.35	.750	1.94	1.69	.19 x .09	924
926	7.75	9.13	4.56	5.88	2.625	1.750	5.75	7.50	8.000	.38	.406	3.13	2.81	3.13	4.50	7.65	3.44	4.75	7.88	3.69	3.00	5.75	3.63	.63	2.50	8.85	.750	1.94	1.69	.19 x .09	926
930	8.00	10.75	5.38	6.62	3.000	2.000	6.50	8.50	9.250	.50	.563	3.50	3.00	3.50	4.63	8.15	3.44	5.00	9.00	4.06	3.19	6.25	5.00	1.81	2.63	9.85	.750	2.19	1.75	.19 x .09	930
935	9.00	11.00	5.50	7.69	3.500	2.000	7.50	9.50	10.000	.50	.563	4.00	3.38	3.75	5.06†	8.40	3.44	5.00	10.13	4.44	3.56	6.50	5.00	1.44	2.87	10.85	.750	2.19	1.75	.19 x .09	935
943	10.50	13.00	6.50	8.75	4.250	2.625	8.63	11.25	11.500	.63	.688	4.38	3.63	4.38	5.88	10.02	4.50	6.50	11.50	4.38	4.38	7.56	5.75	1.38	3.88	13.40	1.000	2.75	2.63	.25 x .13	943

*High speed shaft diameter tolerance +.000 -.001. For construction purposes send for Certified Dimension Sheets. For larger sizes see C-Line Catalog 100 or D-90® TYPE DE® Catalog 190.
†L_1 dimension equals 5.46 on MDSFD models.

SLOW SPEED SHAFT BORES[1, 2, 3, 4]

917		920		924		926		930		935		943	
W**	KEYWAY	W**	KEYWAY	W**	KEYWAY	W**	KEYWAY	W**	KEYWAY	W**	KEYWAY	W**	KEYWAY
.625	.19 x .09	**.750**	**.19 x .09**	.875	.19 x .09	.938	.25 x .13	1.188	.25 x .13	1.188	.25 x .13	1.625	.38 x .19
.688	.19 x .09	.813	.19 x .09	.938	.25 x .13	1.000	.25 x .13	1.250	.25 x .13	1.250	.25 x .13	1.688	.38 x .19
.750	**.19 x .09**	**.875**	**.19 x .09**	1.000	.25 x .13	1.063	.25 x .13	**1.375**	**.31 x .16**	**1.375**	**.31 x .16**	1.750	.38 x .19
.813	.19 x .09	.938	.25 x .13	1.063	.25 x .13	1.125	.25 x .13	**1.438**	**.38 x .19**	1.438	.38 x .19	1.875	.50 x .25
.875	.19 x .09	**1.000**	**.25 x .13**	**1.125**	**.25 x .13**	1.188	.25 x .13	**1.500**	**.38 x .19**	**1.500**	**.38 x .19**	1.938	.50 x .25
.938	.25 x .13	1.063	.25 x .13	1.188	.25 x .13	**1.250**	**.25 x .13**	**1.625**	**.38 x .19**	1.625	.38 x .19	2.000	.50 x .25
1.000	**.25 x .13**	**1.125**	**.25 x .13**	**1.250**	**.25 x .13**	1.375	.31 x .16	1.688	.38 x .19	1.688	.38 x .19	2.188	.50 x .25
		1.188	.25 x .13	1.375	.31 x .16	**1.438**	**.38 x .19**	**1.750**	**.38 x .19**	1.750	.38 x .19	2.250	.50 x .25
		1.250	**.25 x .13**	**1.438**	**.38 x .19**	**1.500**	**.38 x .19**	**1.875**	**.50 x .25**	**1.875**	**.50 x .25**	2.438	.63 x .31
		1.375	.31 x .16	**1.500**	**.38 x .19**	1.625	.38 x .19	**1.938**	**.50 x .19**	**1.938**	**.50 x .25**	2.500	.63 x .31
		1.438	**.38 x .13**			**1.688**	**.38 x .19**			**2.000**	**.50 x .25**	2.688	.63 x .31
										2.188	**.50 x .13**	2.750	.63 x .31

**Bore tolerances +.000, +.002.
1. Contact factory for other bore sizes.
2. Hollow output shaft bored to size; no bushing kit required.
3. Puller groove on all hollow output shafts.
4. Bores in bold blue type are stock standard sizes.

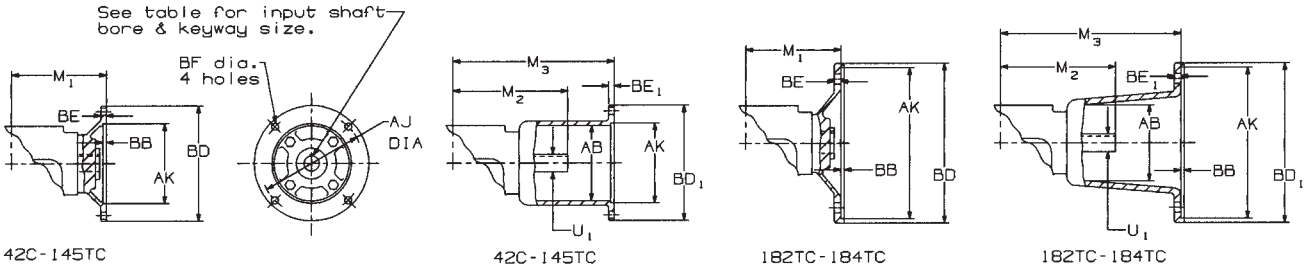
MDSFD-CDSFD

MODEL MDSFD
Assembly LU-DR

MODEL CDSFD
Assembly LU-DR

Couplings available, see page 189 for Selection Chart.

DIMENSIONS



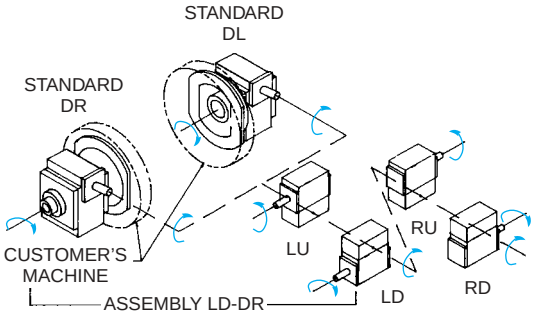
SIZE	HOLLOW INPUT MOTOR ADAPTER			COUPLING STYLE MOTOR ADAPTER									M_2*	U_1*	KEYWAY
	M_1 42C-48C	M_1 56C-145TC	M_1 182TC 184TC	42C-48C			56C-145TC			182TC-184TC					
				AB	M_3	BE_1	AB	M_3	BE_1	AB	M_3	BE_1			
917	3.56	3.63△	NA	2.50	6.81	.38	3.00	6.75	.31	NA			4.12	.500	.13 x .06
920	3.56	3.63△	NA	2.50	6.81	.38	3.00	6.75	.31	NA			4.12	.500	.13 x .06
924	4.06	4.06	NA	2.50	7.56	.38	3.75	7.50	.38	3.75	8.44	.50	4.88	.625	.19 x .09
926	4.06	4.06	NA	2.50	7.56	.38	3.75	7.50	.38	3.75	8.44	.50	4.88	.625	.19 x .09
930	4.06	4.06	NA	2.50	7.56	.38	3.75	7.50	.38	3.75	8.44	.50	4.88	.625	.19 x .09
935	4.06	4.06	NA	2.50	7.56	.38	3.75	7.50	.38	3.75	8.44	.50	4.88	.625	.19 x .09
943	NA	5.38	5.38	NA			4.13	9.13	.38	4.25	10.19	.50	6.50	1.000	.25 x .13

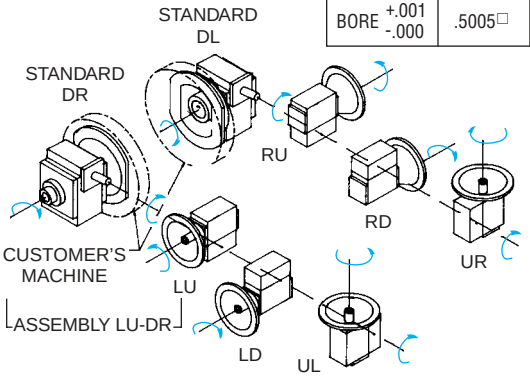
*Input shaft diameter and length varies from non-motorized model.
△56C frame only.
□42C frame has .3755 bore, .094 x .047 keyway.

FRAME NO.	42C-48C	56C	143TC 145TC	182TC 184TC
AJ	3.75	5.88	5.88	7.25
AK	3.00	4.50	4.50	8.50
BB	.19	.19	.19	.19
BD	4.50	6.50	6.50	9.00
BD_1	4.50	6.63	6.63	9.00
BE	.34	.31	.31	.38
BF	.281	.406	.406	.531
KEYWAY	.13 x .06	.19 x .09		.25 x .13
BORE $^{+.001}_{-.000}$	.5005□	.6255	.8755	1.1255

SHAFT ARRANGEMENTS AND RELATIVE SHAFT ROTATIONS

See the note on page 156 for double reduction assembly explanation.





The input shaft may be driven in either direction.

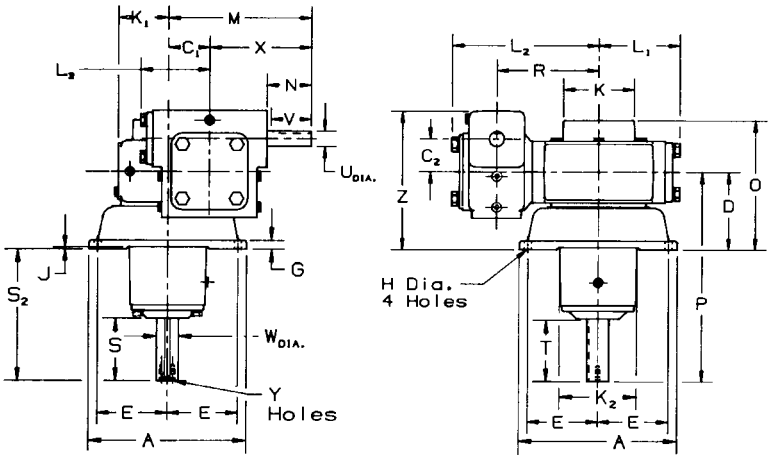
MODEL†	926	930	935	943
DLD SHIPPING WEIGHT	59	106	136	201
MDLD SHIPPING WEIGHT‡	62	109	139	205
CDLD SHIPPING WEIGHT‡	66	113	141	210
APPROX. OIL CAPACITY (PINTS)	3.8	5.6	6.8	11.1

GEAR RATIOS AVAILABLE 50:1 THRU 10,000:1
TORQUE AND HP RATINGS/OVERHUNG LOAD RATINGS . . . . . PAGES 22-119
MOUNTING POSITIONS . . . . . PAGE 21
SERVICE FACTORS . . . . . PAGES 224-226
HYDRAULIC MOTOR ADAPTERS . . . . . PAGE 192

†Weights are approximate and include shipping carton.
‡Weights are given for 48C thru 145TC. For 182/4TC add 4 lbs.

MODEL DLD
Assembly RU-LD

DIMENSIONS



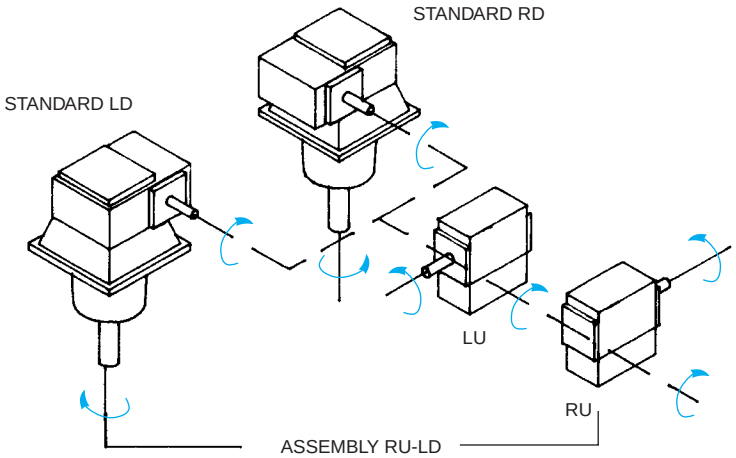
SPEED REDUCER DIMENSIONS (IN INCHES)

SIZE	A	C_1	C_2	D	E	G	H	J	K	K_1	K_2	L_1	L_2	L_3	M	O	P	R	X	Z	Y DIMENSIONS			HIGH SPEED SHAFT				SLOW SPEED SHAFT					SIZE
																					TOP	DEPTH	BOLT CIRCLE	U*	N	V	KEYWAY	W*	S	S_2	T	KEYWAY	
926	9.00	2.625	1.750	4.44	4.00	.50	.406	.13	3.50	3.13	4.44	4.50	7.65	3.44	7.38	7.06	11.94	5.75	4.75	7.54	.25-20	.44	.625	.750	1.94	1.69	.19 x .09	1.250	3.68	7.50	3.50	.25 x .13	926
930	9.75	3.000	2.000	5.31	4.13	.63	.563	.13	3.50	3.50	5.19	4.63	8.15	3.44	8.00	8.31	14.81	6.25	5.00	8.66	.31-18	.50	.750	.750	2.19	1.75	.19 x .09	1.438	4.63	9.50	4.56	.38 x .19	930
935	12.00	3.500	2.000	5.38	5.25	.75	.563	.13	4.13	4.00	5.38	5.06	8.40	3.44	8.50	8.63	14.88	6.50	5.00	8.73	.31-18	.50	.750	.750	2.19	1.75	.19 x .09	1.625	4.75	9.50	4.56	.38 x .19	935
943	14.00	4.250	2.625	6.00	6.00	.88	.688	.13	4.75	4.38	5.94	5.88	10.02	4.50	10.75	9.63	16.50	7.56	6.50	10.78	.38-16	1.00	1.000	1.000	2.75	2.63	.25 x .13	1.688	5.61	10.50	5.44	.38 x .19	943

*Shaft diameter tolerance +.000 -.001. For construction purposes send for Certified Dimension Sheets.

For larger sizes see C-Line Catalog 100 or D-90® TYPE DE® Catalog 190.

SHAFT ARRANGEMENTS AND RELATIVE SHAFT ROTATIONS

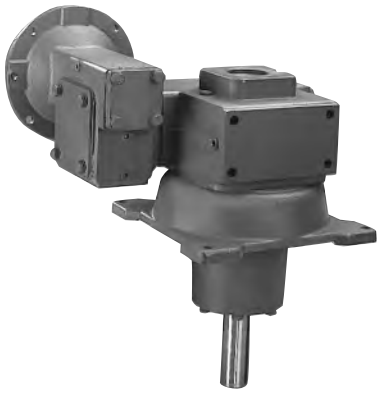


See the note on page 156 for double reduction assembly explanation.

The input shaft may be driven in either direction.

MDLD-CDLD

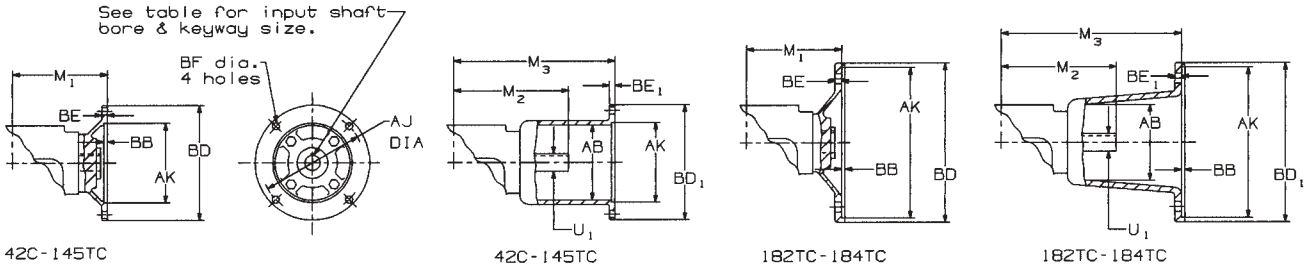
MODEL MDLD
Assembly LU-RD



MODEL CDLD
Assembly RU-LD

Couplings available, see page 189 for Selection Chart.

DIMENSIONS

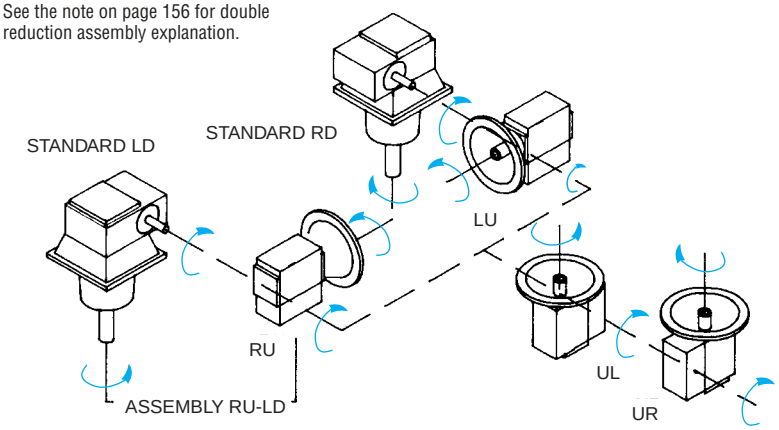


SIZE	HOLLOW INPUT MOTOR ADAPTER			COUPLING STYLE MOTOR ADAPTER											
				42C-48C			56C-145TC			182TC-184TC					
	M_1 42C-48C	M_1 56C-145TC	M_1 182TC 184TC	AB	M_3	BE_1	AB	M_3	BE_1	AB	M_3	BE_1	M_2*	U_1*	KEYWAY
926	4.06	4.06	NA	2.50	7.56	.38	3.75	7.50	.38	3.75	8.44	.50	4.88	.625	.19 x .09
930	4.06	4.06	NA	2.50	7.56	.38	3.75	7.50	.38	3.75	8.44	.50	4.88	.625	.19 x .09
935	4.06	4.06	NA	2.50	7.56	.38	3.75	7.50	.38	3.75	8.44	.50	4.88	.625	.19 x .09
943	NA	5.38	5.38	NA			4.13	9.13	.38	4.25	10.19	.50	6.50	1.000	.25 x .13

*Input shaft diameter and length varies from non-motorized model.
□42C frame has .3755 bore, .094 x .047 keyway.

SHAFT ARRANGEMENTS AND RELATIVE SHAFT ROTATIONS

See the note on page 156 for double reduction assembly explanation.



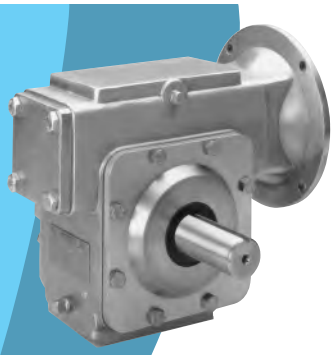
FRAME NO.	42C-48C	56C	143TC 145TC	182TC 184TC
AJ	3.75	5.88	5.88	7.25
AK	3.00	4.50	4.50	8.50
BB	.19	.19	.19	.19
BD	4.50	6.50	6.50	9.00
BD_1	4.50	6.63	6.63	9.00
BE	.34	.31	.31	.38
BF	.281	.406	.406	.531
KEYWAY	.13 x .06	.19 x .09		.25 x .13
BORE $^{+.001}_{-.000}$	.5005□	.6255	.8755	1.1255

The input shaft may be driven in either direction.

FOR SEVERE ENVIRONMENTAL PROTECTION

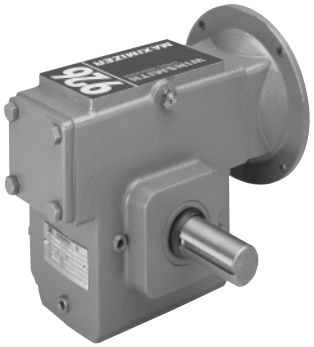
Level of Typical Environmental Protection

Best---*Hurricane!*



Better---*Thunderstorm!*

Good---*Slight Showers!*



MAXIMIZER® STAINLESS STEEL

The MAXIMIZER STAINLESS is the ultimate reducer for your toughest applications. In addition to the features which are included with the MAXIMIZER® *PLUS*, the MAXIMIZER STAINLESS has stainless steel housings, an easy wash contoured design, and synthetic lubricant. Optional food grade lubricant is also available. This product is intended for applications where the reducer must stand up to harsh chemicals and washdowns, and situations where sanitation and cleanliness are priorities. These applications are commonly found in meat processing facilities, saltwater environments, chemical processing plants, and pharmaceutical manufacturing.

MAXIMIZER® *PLUS*

The MAXIMIZER *PLUS* reducer provides increased protection from the BASIC ENVIRONMENTAL reducer. With this product you benefit from the features included in the BASIC ENVIRONMENTAL unit plus stainless steel output shafts, stainless steel fasteners, male square pipe plugs, and plastic button plugs. This product is intended for applications where the reducer is washed down from time to time.

BASIC ENVIRONMENTAL PROTECTION

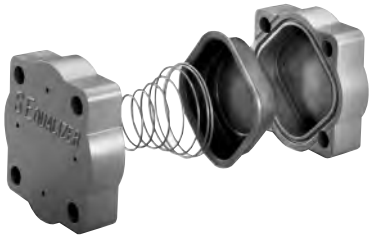
The BASIC ENVIRONMENTAL PROTECTION reducer is designed to provide an increased level of protection over standard products at a minimal cost. The product includes features such as epoxy paint, synthetic lubrication, plunger pressure vent and flingers on the output shafts. This product is best suited for areas where there is occasional exposure to harsh environments.

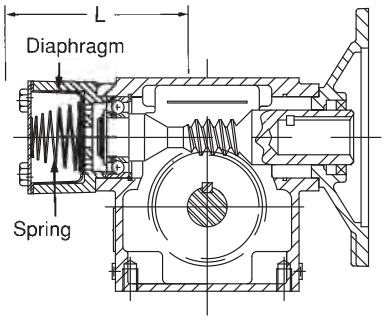
Minimizes All Internal Gearbox Pressure Build-Up

- Ventless Worm Gear Speed Reducers (Sealed Unit).
- Keeps the lubricant in and contamination out.
- Universal mounting flexibility.

The WINSMITH® S EQUALIZER® has been developed to offer all these features in one speed reducer. By extending the high speed cap and providing an internal diaphragm, the increased volume of air and oil is easily accommodated in this internal chamber. This completely eliminates the need for an external breather while insuring against any internal pressure build-up during operation. The S EQUALIZER completely seals the unit from outside air. A light spring resting against the diaphragm supports the weight of the oil for any mounting position.

By using the S EQUALIZER option you can be sure that your WINSMITH worm gear reducer will not fall early victim to water and other contamination from the outside and at the same time be assured you are not subjecting shaft seals to damaging internal pressures.





AutoCAD® drawing of this model available in WINSMITH®'s Gear Graphics.

DESCRIPTION AND OPERATION:

A pressure sensitive diaphragm is enclosed in a metal housing. The housing is mounted on the high speed end of the speed reducer opposite the input shaft. The outer lip of the diaphragm is captured between the housing halves and bolted in place. Internal pressure change resulting from temperature changes outside or inside the speed reducer is absorbed by the diaphragm. Air is pushed out of the diaphragm housing through four breathing holes. The unit can be mounted in any position without the use of a vent.

CONVENIENCE:

Since no product changes are necessary to change mounting position, inventory planning becomes easy. One unit can serve many applications.

APPLICATIONS:

- Food processing
- Wash down
- Bottling
- Meat packing
- Paper mills
- Clean rooms
- Ovens
- Coolers
- Any application where there is a large (25°+) change in ambient temperature.

PRODUCT:

- D-90® TYPE SE® 1.33"-4.25" center distance.

MODEL:

- All single and double reduction units except DL and DSFY (Drywell). Not available with the S-ELIMINATOR™ or double extended high speed shafts.

HIGH SPEED CAP EXTENSION "L" DIMENSION

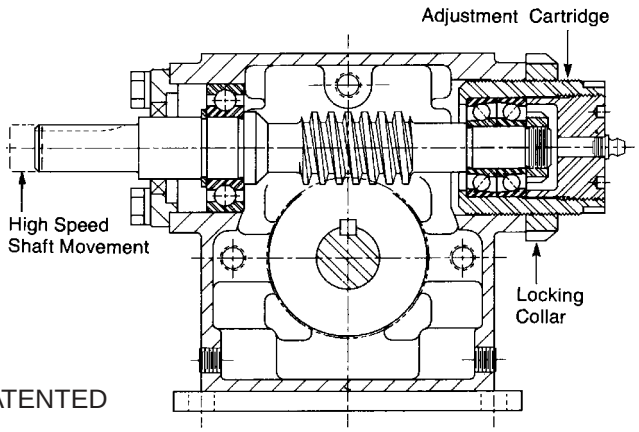
	913	917	920	924	926	930	935	943
MD	4.11	4.74	4.74	6.47	6.47	6.82	7.88	8.69
D	4.11	4.74	4.74	6.47	6.47	6.82	7.11	7.97

FEATURES:

- Minimal internal pressure build-up with operating temperature up to 200°F.
- All units filled to operating levels with synthetic lubricants.
- Oil levels are higher than those of standard models. Refer to the S EQUALIZER Installation Bulletin for actual volumes.
- Lubrication change needed only during regularly scheduled machine maintenance when using synthetic lubricants.
- Warranty—Two years.

WINSMITH SERVO MOTOR ADAPTERS MOUNT TO MOTORS FROM THE FOLLOWING COMPANIES:

AEROTECH
ALLEN-BRADLEY
BALDOR
BODINE
BAUMULLER
CMC (CLEVELAND)
COMPUMOTOR
EMERSON
ELECTRO-CRAFT
FENNER
GE FANUC
GETTYS
INDRAMAT
INERTIAL MOTORS
INDUSTRIAL DRIVES
INDUSTRIAL INDEXING
INFRANOR
LEESON
MAGNETEK
MOOG
MFM
MTS
ORMEC
ORIENTAL MOTOR
PACIFIC SCIENTIFIC
PMI
PEERLESS
SERVO DYNAMICS
SIEMENS
TOSHIBA
WHEDCO
VICKERS
YASKAWA



PATENTED

Very Low Backlash Worm Gear Speed Reducers With Easy Adjustment

WINSMITH has developed a worm gear speed reducer that can be adjusted to near zero backlash in a matter of minutes. There is no need to take the unit out of service to maintain low backlash over the life of the speed reducer.

The S-ELIMINATOR speed reducer is built with the high speed end modified to allow for axial movement of the high speed shaft. One end of the housing high speed section includes an adjustable cartridge. The cartridge is used to hold the high speed shaft in mesh with the slow speed gear at a specific location in the axial plane of the high speed shaft.

The worm position is adjusted by loosening the locking collar and rotating the cartridge to achieve a new gear mesh location. Position is held by tightening the locking collar.

APPLICATIONS:

- Machine tools
- Indexing operations
- Converting Equipment
- Robotic positioners
- Tension control
- Rotary tables
- Servo positioning

PRODUCTS:

1.33", 1.75", 2.00", 2.625", 3.00", and 3.50" Center Distance—D-90® TYPE SE®
4.00" to 9.00" Center Distance—C-Line.

MODELS:

Non-motorized single reduction units because of the need to have a two bearing system. NEMA C & servo style coupling motor adapters can be used to establish a motorized product.

RATIO RANGE:

Single Reduction—4:1-60:1.
Double Reduction—Up to 10,000:1.

BACKLASH:

- Units shipped with between 1-2 arc minutes of movement. Units field adjustable to 1-2 arc minutes after wear has developed.

AXIAL ADJUSTMENT MOVEMENT:

- 1/8" on smaller units up to 3/4" on larger sizes.

ADJUSTMENT PRECISION:

- Continuous movement as determined by setting.

HIGH-SPEED BEARING END PLAY:

- Virtually none due to the axial control method used to control backlash.

OUTPUT TORQUE:

120 - 64,000 inch pounds, depending on size and number of reductions.

Request MOTION CONTROL Catalog #400 for more information.

D-90® TYPE SE®
METRIC C-FACE REDUCERS

WINSMITH® D-90® TYPE SE® high efficiency, worm gear speed reducers are now available with metric input flanges to match up to IEC motor frames. These are factory standard models, modified with metric dimensioned flanges, worms and shafts, to meet IEC dimensions for mounting motors to WINSMITH C-Face speed reducers.

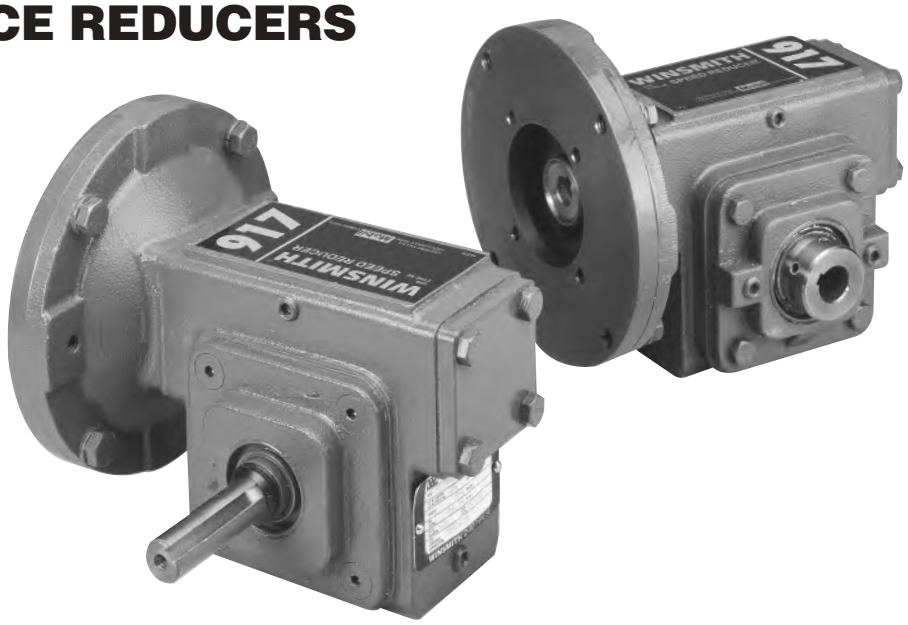
You can also specify metric dimensioned solid or hollow output shafts. The hollow shaft model is shipped with a standard keyed metric bore hollow output shaft (includes drive key and locking set screws). Of course they do come with our standard inch dimensional output shafts, too!

Ready now for quick delivery, all models can be built with additional options and accessories, including washdown duty options and stock add-on base and bracket kits for different mounting configurations.

With WINSMITH factory fast build-to-order capabilities, D-90 TYPE SE metric worm gear reducers can be built in a week or less from stock parts, with IEC B5 or B14 frame metric motor flanges and shafts.

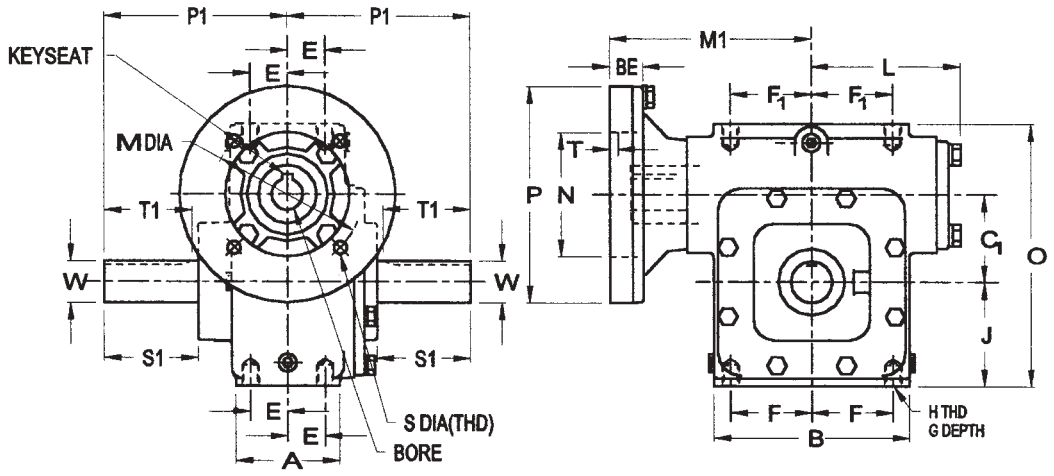
Our reducers are shipped with oil for fast, trouble free start up, with the WINSMITH WORRY-FREE 24 month standard warranty. WINSMITH metric speed reducers are available in limited sizes and ratios.

Check with your local authorized WINSMITH distributor or district sales office for pricing and lead times, or call the factory at 716/592-9310.



- ***PRE-ENGINEERED C-FACE ADAPTERS READY TO GO***
- ***EASILY CONNECT TO IEC B5 OR B14 MOTORS***
- ***ONE WEEK DELIVERY FROM STOCK PARTS***
- ***METRIC HOLLOW OR SOLID OUTPUT SHAFTS***
- ***STANDARD ACCESSORIES AND OPTIONS AVAILABLE***
- ***ADD-ON BASE AND BRACKET KITS IN STOCK***

SOLID SHAFT DIMENSIONS



	INPUT DIMENSIONS (mm)							
	B14 FLANGE						B5 FLANGE	
	63	71	80	90	100/112	132	100/112	132
M	75	85	100	115	130	165	215	265
N	60	70	80	95	110	130	180	230
T	6	6	6	6	6	6	6	6
P	165	165	165	165	165	230	250	300
BE	19	19	19	25	25	33	21	22
S	5.8	7	7	10	10	12	M12	M12
KEYSEAT	5x2.3	5x2.3	6x2.8	8x3.3	8x3.3	10x3.3	8x3.3	10x3.3
BORE[1]	14	14	19	24[2]	28	38	28	38

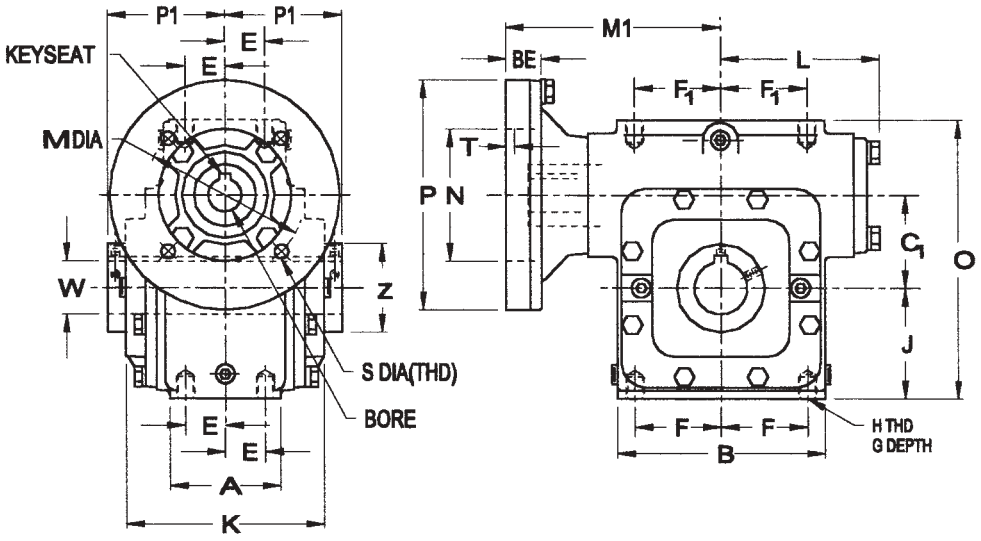
1) BORE TOLERANCE 14mm UP AND INCLUDING 28mm +.020 +.046 | 38mm | +.030 +.056
2) SIZE 917 & 920 LOWERED KEY, KEYSEAT 8x2.3

Winsmith Model	DIMENSION (in.)											
	A	B	C1 in./mm	E	F	F1	G DEPTH	H THD	J	L	O	P1
917	2.38	4.63	1.750/44.5	0.88	1.94	1.69	0.56	3/8-16	2.13	3.44	5.38	4.75
920	2.38	5.25	2.000/50.8	0.88	2.19	1.69	0.56	3/8-16	2.13	3.44	5.63	4.75
926	3.13	5.88	2.625/66.7	1.13	2.44	2.44	0.63	1/2-13	3.13	4.50	7.88	5.50
930	3.50	6.62	3.000/76.2	1.31	2.75	2.75	0.75	1/2-13	3.50	4.63	9.00	5.88
935	3.75	7.69	3.500/88.9	1.31	3.25	3.25	1.00	5/8-11	4.00	5.46	10.13	7.00
943	4.38	8.75	4.250/108.0	1.63	3.75	3.75	1.00	5/8-11	4.38	6.28	11.50	8.00

Winsmith Model	M1 DIMENSION (in.)								SLOW SPEED SHAFT DIMENSIONS (mm)			
	B14 FLANGE						B5 FLANGE		W*	S1	T1	Keyseat
	63	71	80	90	100/112	132	100/112	132				
917	4.50	4.50	4.50	4.75					18	65	56	6x3.5
920		4.50	4.50	4.75					25	65	56	8x4.0
926		5.81	5.81	6.06	6.06		6.19		25	71	62	8x4.0
930			6.00	6.25	6.25	6.50	6.38	6.69	28	73	64	8x4.0
935			6.25	6.50	6.50	6.75	6.63	6.94	35	95	86	10x5.0
943				7.31	7.31	7.56	7.44	7.75	42	111	102	12x5.0

(*) Shaft diameter tolerances +0.000-0.025mm

HOLLOW SHAFT DIMENSIONS



	INPUT DIMENSIONS (mm)							
	B14 FLANGE						B5 FLANGE	
	63	71	80	90	100/112	132	100/112	132
M	75	85	100	115	130	165	215	265
N	60	70	80	95	110	130	180	230
T	6	6	6	6	6	6	6	6
P	165	165	165	165	165	230	250	300
BE	19	19	19	25	25	33	21	22
S	5.8	7	7	10	10	12	M12	M12
KEYSEAT	5x2.3	5x2.3	6x2.8	8x3.3	8x3.3	10x3.3	8x3.3	10x3.3
BORE[1]	14	14	19	24[2]	28	38	28	38

1) BORE TOLERANCE 14mm UP AND INCLUDING 28mm +.020 +.046 | 38mm | +.030 +.056
2) SIZE 917 & 920 LOWERED KEY, KEYSEAT 8x2.3

Winsmith Model	DIMENSION (in.)													
	A	B	C1 in./mm	E	F	F1	G DEPTH	H THD	J	K	L	O	P1	Z
917	2.38	4.63	1.750/44.5	0.88	1.94	1.69	0.56	3/8-16	2.13	4.88	3.44	5.38	3.13	1.49
920	2.38	5.25	2.000/50.8	0.88	2.19	1.69	0.56	3/8-16	2.13	5.25	3.44	5.63	3.31	2.00
926	3.13	5.88	2.625/66.7	1.13	2.44	2.44	0.63	1/2-13	3.13	5.63	4.50	7.88	3.50	2.50
930	3.50	6.62	3.000/76.2	1.31	2.75	2.75	0.75	1/2-13	3.50	6.00	4.63	9.00	3.69	2.63
935	3.75	7.69	3.500/88.9	1.31	3.25	3.25	1.00	5/8-11	4.00	6.75	5.46	10.13	4.13	2.87
943	4.38	8.75	4.250/108.0	1.63	3.75	3.75	1.00	5/8-11	4.38	7.25	6.28	11.50	4.38	3.88

Winsmith Model	M1 DIMENSION (in.)								HOLLOW SHAFT OUTPUT BORE (mm)	
	B14 FLANGE						B5 FLANGE		W*	Keyseat
	63	71	80	90	100/112	132	100/112	132		
917	4.50	4.50	4.50	4.75					18	6x2.8
920		4.50	4.50	4.75					25	8x3.3
926		5.81	5.81	6.06	6.06		6.19		25	8x3.3
930			6.00	6.25	6.25	6.50	6.38	6.69	28	8x3.3
935			6.25	6.50	6.50	6.75	6.63	6.94	35	10x3.3
943				7.31	7.31	7.56	7.44	7.75	42	12x3.3

(*) Bore tolerances +0.000+0.050mm

QUICK SELECT REFERENCE CHARTS

Units are factory standard models, modified with metric dimensioned flanges, worms and shafts, to meet IEC dimensions for mounting motors to WINSMITH C-face speed reducers. The hollow shaft model is shipped with a standard keyed metric bore hollow output shaft (includes drive key and locking set screws).

The ratings table below is a quick reference for estimating reducer size capacity. You should also verify that the applied load does not exceed the thermal capacity, as shown on the ratings pages in the D-90® TYPE SE® reducer catalog. If so, choose the minimum size that is not thermally limited or consider using synthetic oil.

Single Reduction Models: Torque or Horsepower 1750 RPM Input

RPM	RATIO	SIZE	917		920		926		930		935		943	
350	5	KW/NM (HP/IN#)	1.50 (2.01)	37 (330)	2.06 (2.76)	52 (457)	4.29 (5.75)	108 (959)	6.32 (8.47)	161 (1424)	8.86 (11.88)	227 (2007)	13.69 (18.35)	354 (3133)
175	10	KW/NM (HP/IN#)	0.93 (1.25)	45 (396)	1.31 (1.75)	63 (561)	2.71 (3.63)	133 (1179)	3.98 (5.33)	198 (1748)	5.70 (7.64)	284 (2511)	8.72 (11.69)	436 (3857)
117	15	KW/NM (HP/IN#)	.070 (0.94)	48 (427)	0.98 (1.32)	69 (606)	2.05 (2.75)	146 (1287)	3.01 (4.03)	216 (1910)	4.26 (5.71)	307 (2717)	6.49 (8.70)	470 (4157)
88	20	KW/NM (HP/IN#)	0.56 (0.75)	49 (432)	0.78 (1.04)	70 (615)	1.62 (2.17)	148 (1312)	2.38 (3.19)	222 (1959)	3.30 (4.42)	309 (2730)	5.16 (6.92)	485 (4290)
58	30	KW/NM (HP/IN#)	0.42 (0.56)	50 (442)	0.58 (0.78)	71 (630)	0.18 (1.60)	151 (1338)	1.74 (2.33)	225 (1989)	2.45 (3.29)	318 (2816)	3.72 (4.99)	486 (4295)
44	40	KW/NM (HP/IN#)	0.33 (0.44)	49 (431)	0.46 (0.61)	70 (617)	0.93 (1.25)	149 (1316)	1.37 (1.83)	222 (1967)	1.89 (2.53)	310 (2741)	2.93 (3.93)	485 (4289)
35	50	KW/NM (HP/IN#)	0.28 (0.37)	47 (415)	0.37 (0.50)	67 (591)	0.76 (1.02)	143 (1266)	1.11 (1.49)	215 (1902)	1.54 (2.07)	303 (2681)	2.39 (3.21)	473 (4180)
29	60	KW/NM (HP/IN#)	0.23 (0.31)	44 (391)	0.31 (0.42)	63 (557)	0.63 (0.85)	135 (1193)	0.92 (1.23)	203 (1796)	1.28 (1.72)	289 (2552)	1.99 (2.67)	450 (3976)

NOTE: Ratios and sizes are readily available for this product as indicated in the chart above. For other sizes and ratios, consult the factory or your local District Sales Office.

DOUBLE DRIVER APPLICATIONS

For dimensions see pages 180-183.

DOUBLE DRIVER

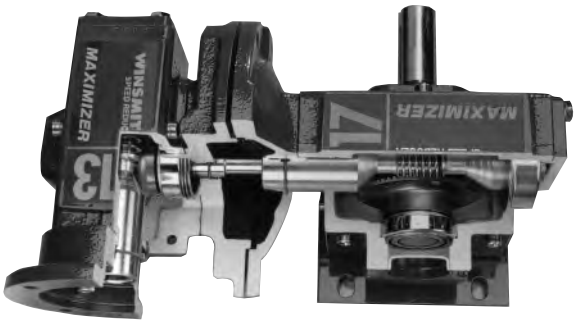
The Double Driver was developed to provide a NEMA C-flange interface on the output of D-90® TYPE SE® units. Additionally, the product is well suited to provide an output register for any piece of equipment. The Double Driver is made up of a DN, CDN or MDN unit with an output flange and optional output shaft to accommodate a NEMA C-flange interface.

OUTPUT FLANGE

The output flange simulates the dimensions of a NEMA motor for a specified frame size where the register allows for engagement with the NEMA flange interface found on a gearbox, brake or clutch. The flat section of the output flange allows for fastener clearances on quill type models. There will be no interference with mating components as long as the interface flange diameter does not exceed the output flange diameter on the Double Driver. The same output flange is used on non-motorized units.

OUTPUT SHAFT

The product is offered with a variety of output shafts. The basic product uses the output shaft of a standard D-90 TYPE SE unit. Optional output shafts that match NEMA frame size motor shafts (length, diameter and keyway) are also available. When supplying NEMA output shafts, there is always a need to reduce the shaft diameter. In some cases this can limit the output torque capacity of a Double Driver. See pages 180 and 182 for optional shaft sizes and output torque capacities based on unit size.



PRECISION INTERFACE

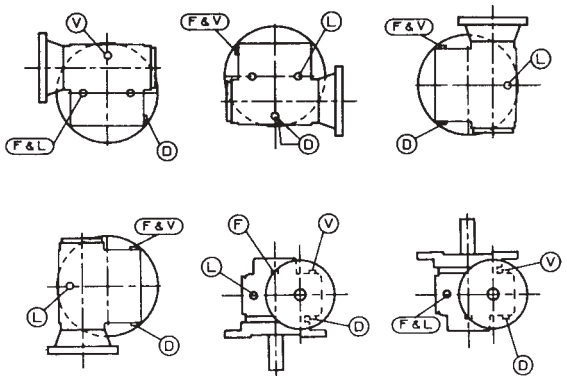
Double Drivers are manufactured with a register that is sized to the NEMA tolerance of .003 inches. This provides for a precision interface with the driven equipment, which can be very useful especially in motion control applications. The normal DV or DSF product does not offer a register for a precision interface.

MATING OTHER POWER TRANSMISSION EQUIPMENT

The Double Driver, with optional NEMA output shaft, can be used to allow the easy mounting of another piece of NEMA C-face equipment between the Double Driver and the driven equipment. A good example of this would be a clutch or brake.

DOUBLE REDUCTION FIELD RETROFIT

The Double Driver, with optional NEMA output shaft, can be used in the field to create a double reduction unit by attaching to the input of a NEMA C-flange reducer. The Double Driver can be positioned in any of four positions to create various assemblies. This feature is very helpful in making a distributor's finished goods inventory more versatile. This feature is also used at WINSMITH® to make the S-ELIMINATOR™ into a double reduction unit. The S-ELIMINATOR high speed shaft must be able to move axially for backlash adjustment. Using a coupling style input on the S-ELIMINATOR™ and a Double Driver as the primary stage, a coupling can be used between the units to allow movement of the S-ELIMINATOR high speed shaft.



PRODUCT SIZE

The Double Driver is available in sizes 913-935. The NEMA C-face output flange sizes are based on the dimension capabilities and unit ratings. Sizes 913-926 can have a flange to accommodate a 56C/145TC NEMA frame. Sizes 924-935 can have a flange to accommodate a 182TC/215TC NEMA flange.

NEMA OUTPUT SHAFT DIAMETER

When supplying NEMA output shafts, there is always a need to reduce the shaft diameter. In some cases this can limit the output torque capacity of a Double Driver. These limits are listed on pages 180 and 182 under the optional shaft tables.

ASSEMBLY

The unit is similar to the DN family of products which has two basic assemblies—right (R) and left (L). These describe the position of the output flange and shaft in relation to the input side of the Double Driver.

HOW TO ORDER

When ordering, information can be presented by developing an end unit part number as shown on page 19 or by supplying a general description of all particular features.

DD

DOUBLE DRIVER WITH SMALL OUTPUT FLANGE (4.5 inch diameter register)

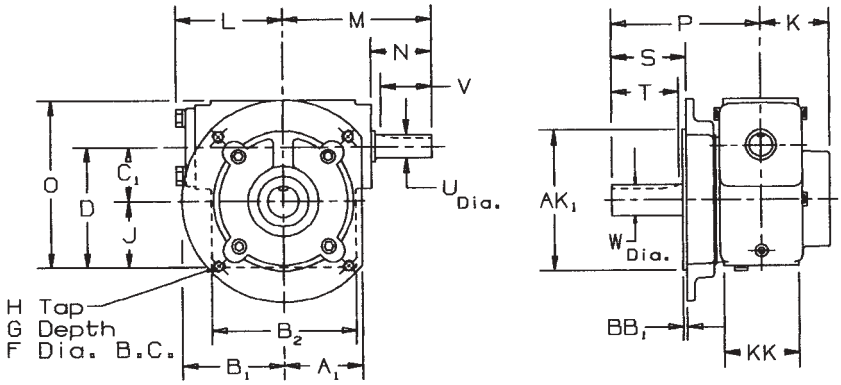
MODEL†	913	917	920	924	926
DD SHIPPING WEIGHT	15	18	22	37	39
MDD SHIPPING WEIGHT‡	17	21	25	41	43
CDD SHIPPING WEIGHT‡	20	25	29	46	48
APPROX. OIL CAPACITY (PINTS)	.2	.5	.5	1.0	1.2

GEAR RATIOS AVAILABLE 4:1 THRU 100:1**
TORQUE AND HP RATINGS/OVERHUNG LOAD RATINGS . . . . . PAGES 22-119
MOUNTING POSITIONS . . . . . PAGE 21
SERVICE FACTORS . . . . . PAGES 224-226
HYDRAULIC MOTOR ADAPTERS . . . . . PAGE 192

†Weights are approximate and include shipping carton.
‡Weight given for 48C thru 145TC. For 182/4TC add 4 lbs.
**80:1 & 100:1 not available for size 913.

MODEL DD
Assembly R

DIMENSIONS



SPEED REDUCER DIMENSIONS (IN INCHES)

SIZE	A_1	AK_1	B_1	B_2	BB_1	C_1	D	F DIA.	G DEPTH	H TAP	J	K	KK	L	M	O	P	HIGH SPEED SHAFT				SLOW SPEED SHAFT			
																		U*	N	V	KEYWAY	W*	S	T	KEYWAY
913	2.38	4.50	3.25	3.88	.13	1.333	3.08	5.88	.75	3/8-16	1.75	1.94	2.00	2.83	4.12	4.33	4.00	.625	1.81	1.63	.19 x .09	.750	1.50	1.88	.19 x .09
917	2.50	4.50	3.25	4.63	.13	1.750	3.88	5.88	.88	3/8-16	2.13	2.19	2.38	3.44	4.75	5.38	4.75	.750	1.94	1.69	.19 x .09	1.000	2.38	2.31	.25 x .13
920	2.50	4.50	3.25	5.25	.13	2.000	4.13	5.88	.88	3/8-16	2.13	2.19	2.38	3.44	5.00	5.63	4.75	.750	2.19	1.75	.19 x .09	1.000	2.38	2.31	.25 x .13
924†	3.25	4.50	3.25	5.38	.13	2.375	5.25	5.88	.75	3/8-16	2.88	2.69	3.13	4.50	6.50	7.25	5.50	1.000	2.75	2.38	.25 x .13	1.250	2.13	2.63	.25 x .13
926†	3.25	4.50	3.25	5.88	.13	2.625	5.75	5.88	.75	3/8-16	3.13	2.69	3.13	4.50	6.50	7.88	5.50	1.000	2.75	2.38	.25 x .13	1.250	2.13	2.63	.25 x .13

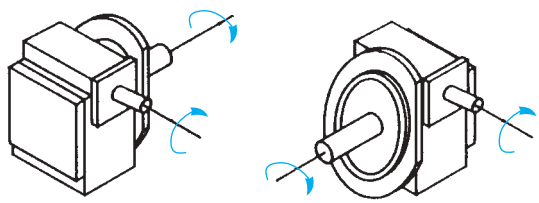
†This size is available in both small and large output flange. Specify flange size when ordering.
*Shaft diameter tolerances +.000 -.001. For construction purposes send for Certified Dimension Sheets.

OPTIONAL OUTPUT SHAFTS FOR MATCHING NEMA FRAME SIZES

SIZE	P	W*	S	T	KEYWAY
913	4.56	.625	2.06	1.81	.19 x .09
917	4.44	.625•	2.06	1.81	.19 x .09
917	4.50	.875	2.13	2.00	.19 x .09
920	4.50	.875	2.13	2.00	.19 x .09
924	5.50	.875••	2.13	2.25	.19 x .09

•Catalog output torque limited to 520 in. lb.
••Catalog output torque limited to 1420 in. lb.

SHAFT ARRANGEMENTS AND RELATIVE SHAFT ROTATIONS



ASSEMBLY R
STANDARD

ASSEMBLY L
STANDARD

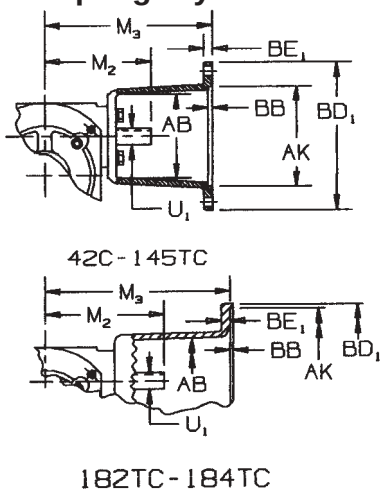
The input shaft may be driven in either direction.

MODEL MDD
Assembly R

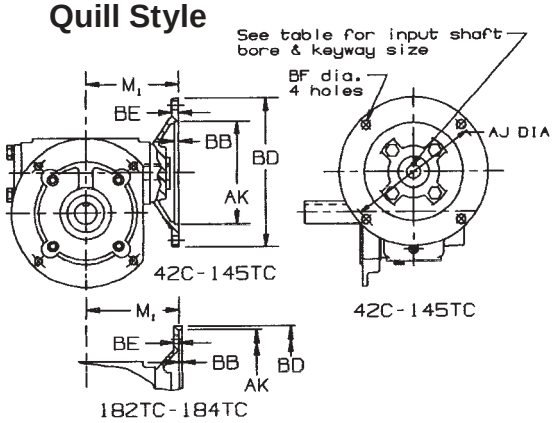
MODEL CDD
Assembly R

DIMENSIONS

Coupling Style



Quill Style



*3/8" motor shaft diameter—3/32" x 3/64" keyway.

DOUBLE DRIVER FRAME SIZES

DOUBLE DRIVER SIZE	MOTOR FRAME	OUTPUT FRAME
913	42CZ*/48C	56C
913	56C	56C
913	143/145TC	56C
917	42CZ*/48C	56C
917	56C	56C
917	143/145TC	56C
917	42CZ*/48C	143/145TC
917	56C	143/145TC
917	143/145TC	143/145TC
920	42CZ*/48C	143/145TC
920	56C	143/145TC
920	143/145TC	143/145TC
924	56C	143/145TC
924	143/145TC	143/145TC
924	182/184TC	143/145TC

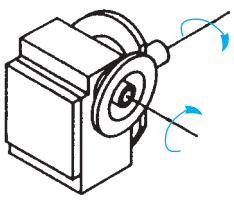
SIZE	QUILL STYLE HOLLOW INPUT MOTOR ADAPTER			COUPLING STYLE MOTOR ADAPTER											
				42C-48C			56C-145TC			182TC-184TC					
	M_1 42C 48C	M_1 56C 145TC	M_1 182TC 184TC	AB	M_2	BE_1	AB	M_2	BE_1	AB	M_2	BE_1	M_2*	U_1*	KEYWAY
913	3.56	3.63△	NA	2.50	6.81	.38	3.00	6.75	.31	NA	NA	NA	4.12	.500	.13 x .06
917	4.06	4.06	NA	2.50	7.56	.38	3.75	7.50	.38	3.75	8.44	.50	4.88	.625	.19 x .09
920	4.06	4.06	NA	2.50	7.56	.38	3.75	7.50	.38	3.75	8.44	.50	4.88	.625	.19 x .09
924†	NA	5.38	5.38	NA			4.13	9.13	.38	4.25	10.19	.50	6.50	1.000	.25 x .13
926†	NA	5.38	5.38	NA			4.13	9.13	.38	4.25	10.19	.50	6.50	1.000	.25 x .13

* Input shaft diameter and length varies from non-motorized model on sizes 913 thru 920.
△56C frame only.
†This size is available in both small and large output flange. Specify flange size when ordering.

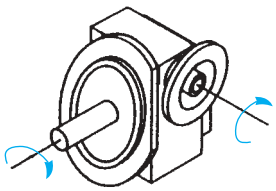
FRAME NO.	42C-48C	56C	143TC 145TC	182TC 184TC
AJ	3.75	5.88	5.88	7.25
AK	3.00	4.50	4.50	8.50
BB	.19	.19	.19	.19
BD	4.50	6.50	6.50	9.00
BD_1	4.50	6.63	6.63	9.00
BE	.34	.31	.31	.38
BF	.281	.406	.406	.531
KEYWAY	.13 x .06	.19 x .09		.25 x .13
Bore $^{+.001}_{-.000}$	.5000□	.6255	.8755	1.1255

□42C frame has .375 bore, .094 x .047 keyway.

SHAFT ARRANGEMENTS AND RELATIVE SHAFT ROTATIONS



ASSEMBLY R
STANDARD



ASSEMBLY L
STANDARD

The input shaft may be driven in either direction.

DD

DOUBLE DRIVER WITH LARGE OUTPUT FLANGE (8.5 inch diameter register)

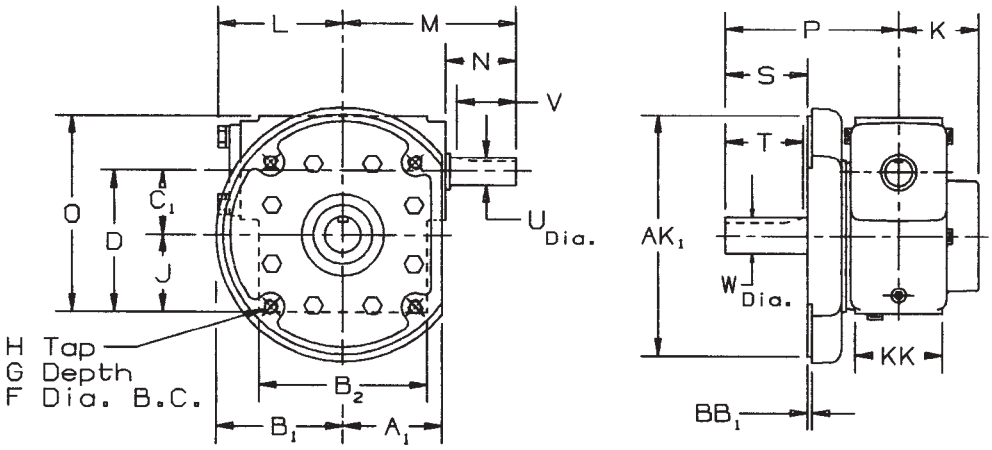
MODEL†	924	926	930	935
DD SHIPPING WEIGHT	37	39	50	67
MDD SHIPPING WEIGHT‡	41	43	54	71
CDD SHIPPING WEIGHT‡	46	48	60	77
APPROX. OIL CAPACITY (PINTS)	1.0	1.2	1.7	2.3

GEAR RATIOS AVAILABLE 4:1 THRU 100:1
TORQUE AND HP RATINGS/OVERHUNG LOAD RATINGS . . . . . PAGES 22-119
MOUNTING POSITIONS . . . . . PAGE 21
SERVICE FACTORS . . . . . PAGES 224-226
HYDRAULIC MOTOR ADAPTERS . . . . . PAGE 192

†Weights are approximate and include shipping carton.
‡Weight given for 48C thru 145TC. For 182/4TC add 4 lbs.

MODEL DL
Assembly R

DIMENSIONS



OPTIONAL OUTPUT SHAFTS FOR MATCHING NEMA FRAME SIZES

SIZE	P	W••	S	T	KEYWAY
924	6.13	1.125	2.63	3.00	.25 x .13
926	6.13	1.125	2.63	3.00	.25 x .13
930	5.88	1.125••	2.63	2.50	.25 x .13
935	7.00	1.375	3.13	3.38	.31 x .16

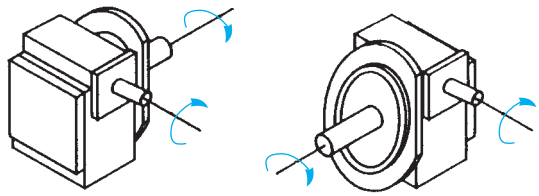
••Catalog output torque limited to 2025 in. lb.

SPEED REDUCER DIMENSIONS (IN INCHES)

SIZE	A_1	AK_1	B_1	B_2	BB_1	C_1	D	F DIA.	G DEPTH	H TAP	J	K	KK	L	M	O	P	HIGH SPEED SHAFT				SLOW SPEED SHAFT			
																		U*	N	V	KEYWAY	W*	S	T	KEYWAY
924†	3.50	8.50	4.50	5.38	.31	2.375	5.25	7.25	.75	½-13	2.88	2.69	3.13	4.50	6.50	7.25	5.50	1.000	2.75	2.38	.25 x .13	1.250	2.00	2.63	.25 x .13
926†	3.50	8.50	4.50	5.88	.31	2.625	5.75	7.25	.75	½-13	3.13	2.69	3.13	4.50	6.50	7.88	5.50	1.000	2.75	2.38	.25 x .13	1.250	2.00	2.63	.25 x .13
930	3.75	8.50	4.50	6.62	.31	3.000	6.50	7.25	.75	½-13	3.50	3.00	3.50	4.63	7.00	9.00	5.88	1.000	3.06	2.38	.25 x .13	1.375	2.63	2.75	.31 x .16
935	4.13	8.50	4.50	7.69	.31	3.500	7.50	7.25	.75	½-13	4.00	3.25	3.75	5.06•	7.38	10.13	7.00	1.000	2.31	2.50	.25 x .13	1.750	3.13	3.63	.38 x .19

†This size is available in both small and large output flange. Specify flange size when ordering.
*Shaft diameter tolerances +.000 -.001. For construction purposes send for Certified Dimension Sheets.
•L dimension equals 5.46 on MDD models.

SHAFT ARRANGEMENTS AND RELATIVE SHAFT ROTATIONS



ASSEMBLY R
STANDARD

ASSEMBLY L
STANDARD

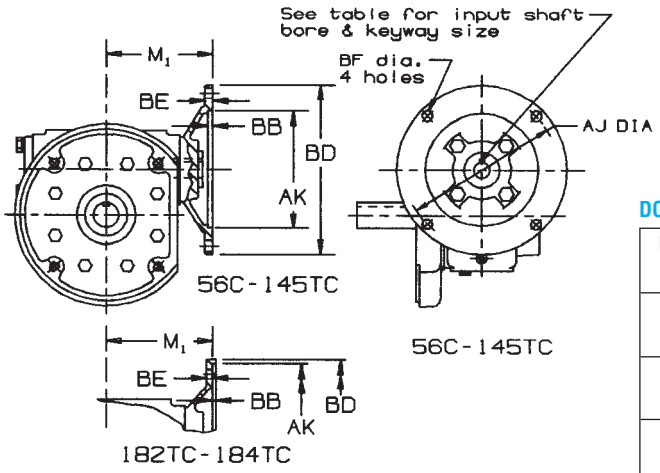
The input shaft may be driven in either direction.

MODEL MDD
Assembly R

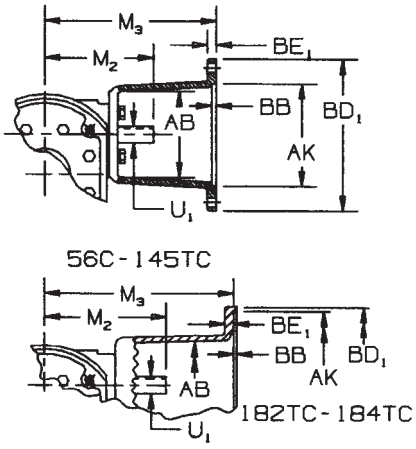
MODEL CDD
Assembly R

DIMENSIONS

Quill Style



Coupling Style



DOUBLE DRIVER FRAME SIZES

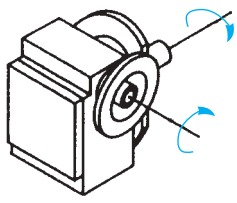
DOUBLE DRIVER SIZE	MOTOR FRAME	OUTPUT FRAME
924	56C	182/184TC
924	143/145TC	182/184TC
924	182/184TC	182/184TC
926	56C	182/184TC
926	143/145TC	182/184TC
926	182/184TC	182/184TC
930	56C	182/184TC
930	143/145TC	182/184TC
930	182/184TC	182/184TC
935	56C	213/215TC
935	143/145TC	213/215TC
935	182/184TC	213/215TC

SIZE	QUILL STYLE HOLLOW INPUT MOTOR ADAPTER		COUPLING STYLE MOTOR ADAPTER								
			56C-145TC			182TC-184TC					
	M_1 56C 145TC	M_1 182TC 184TC	AB	M_2	BE_1	AB	M_2	BE_1	M_2	U_1	KEYWAY
924†	5.38	5.38	4.13	9.13	.38	4.25	10.19	.50	6.50	1.000	.25 x .13
926†	5.38	5.38	4.13	9.13	.38	4.25	10.19	.50	6.50	1.000	.25 x .13
930	5.56	5.56	4.13	9.75	.38	4.75	10.88	.50	7.00	1.000	.25 x .13
935	5.81	5.81	4.13	10.00	.38	4.75	11.13	.50	7.38	1.000	.25 x .13

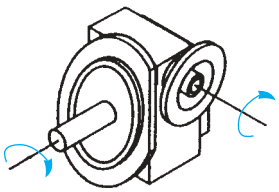
†This size is available in both small and large output flange. Specify flange size when ordering.

FRAME NO.	56C	143TC 145TC	182TC 184TC
AJ	5.88	5.88	7.25
AK	4.50	4.50	8.50
BB	.19	.19	.19
BD	6.50	6.50	9.00
BD_1	6.63	6.63	9.00
BE	.31	.31	.38
BF	.406	.406	.531
KEYWAY	.19 x .09		.25 x .13
Bore $^{+.001}_{-.000}$	.6255	.8755	1.1255

SHAFT ARRANGEMENTS AND RELATIVE SHAFT ROTATIONS



ASSEMBLY R
STANDARD



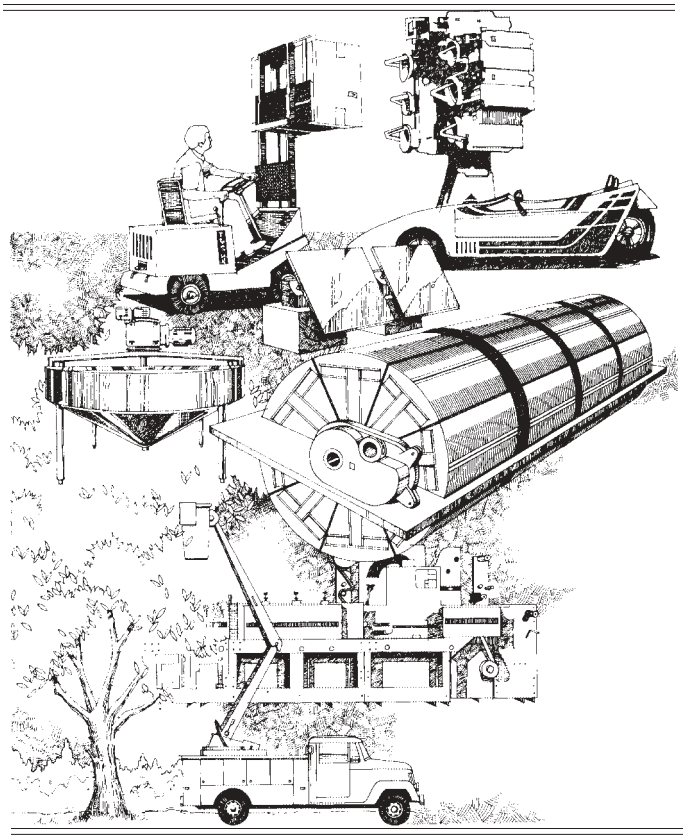
ASSEMBLY L
STANDARD

The input shaft may be driven in either direction.

WINSMITH® ENGINEERING EXCELLENCE

WINSMITH's custom design proficiency is founded on a solid background of gear design experience enhanced by state-of-the-art computer technology.

Recognized and respected throughout the industry, WINSMITH professionals lean heavily on their background in designing the world's finest standard lines of speed reducers. To this add creativity and support provided by the high speed imaging and drafting capabilities of an in-house CAD facility, and one quickly understands why a WINSMITH design is the best solution for the application.



THE ENGINEERED SOLUTION

The unit pictured above is an example of WINSMITH's commitment to find the right solution for the customer when standard product does not fit the job. This application required two speed reducers mounted tandem but a lack of space prevented the use of two standard units. WINSMITH put its Engineering Excellence to work on this problem and came up with the Wintwin product. The unit contains two separate units in one housing. This eliminated the structural interference between two standard units and allowed the new unit to fit properly and function properly.

The following pages contain other products developed for special application needs. These and many other innovative products can help solve the most demanding requirements.

When A Standard Product Can't Do The Job Right—
Look To WINSMITH For Custom Designed Engineering Solutions

SOLAR TRACKING DRIVES

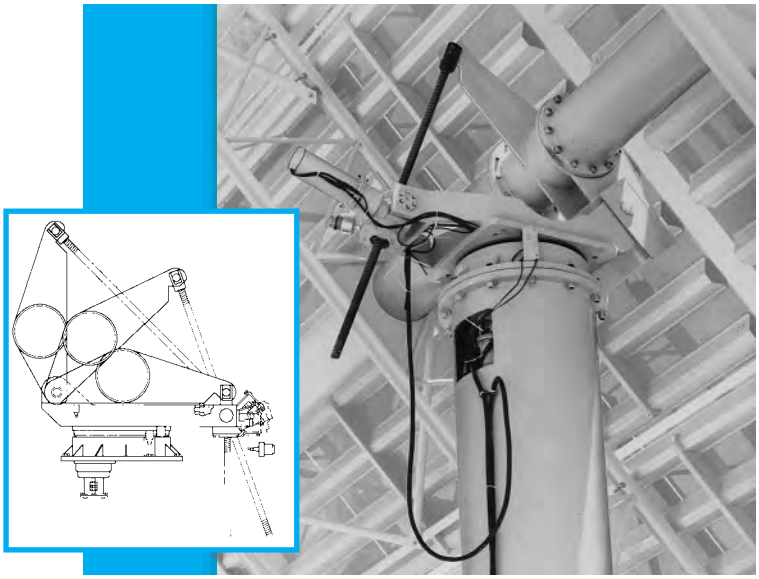
LOW COST TWO AXIS TRACKER

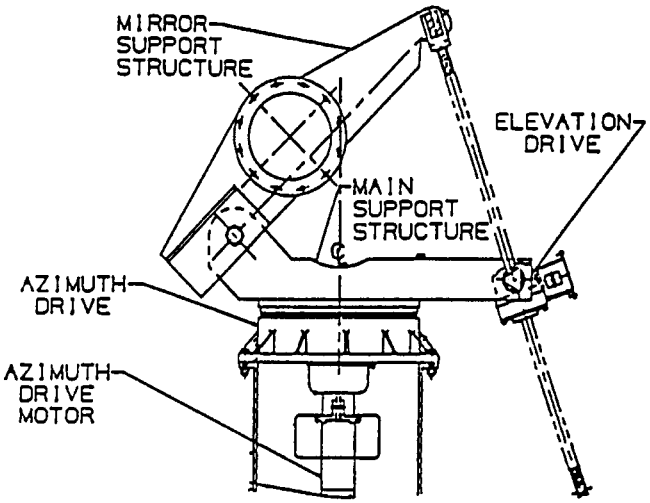
APPLICATION:

Two axis solar tracking in one integrated drive package—used for thermal or photovoltaics concentrators.

FEATURES:

- Integrates support structures with drives.
- Planocentric Azimuth Drive—very high static load capabilities. (360° movement)
- Worm/Ball screw elevation. (100° movement)
- No back driving under any conditions.
- Highly accurate tracking.





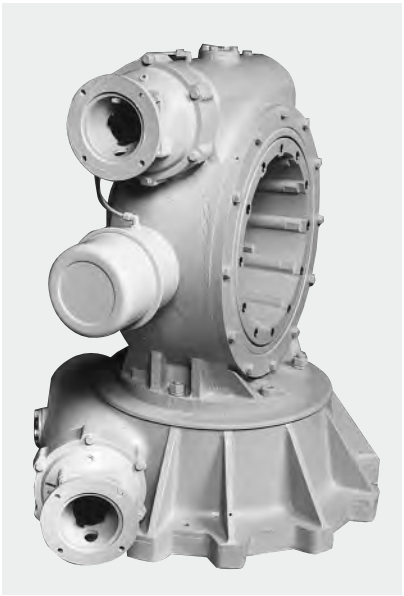
TWO AXIS TRACKER

APPLICATION:

Two axis solar tracking in one drive package for thermal or photovoltaics concentrators.

FEATURES:

- Both axis use same gear parts.
- Planetary gear primary.
- Worm gear secondary.
- Internal pressure equalization.
- High static load capabilities.
- 360° movement on both axis.



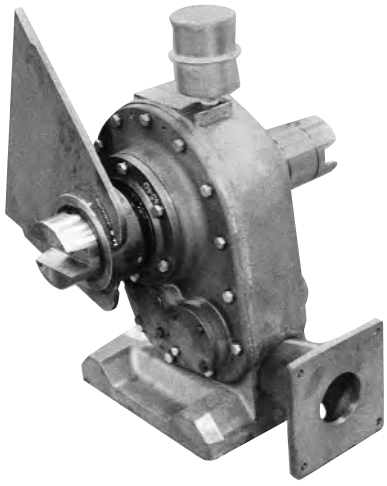
SINGLE AXIS TRACKER

APPLICATION:

Single axis tracking with overload slip clutch—for thermal drives. (Trough)

FEATURES:

- Worm gear primary.
- Two stages of helical gearing.
- Integral overload clutch.
- No internal pressure build-up in unit.



ANTENNA DRIVES

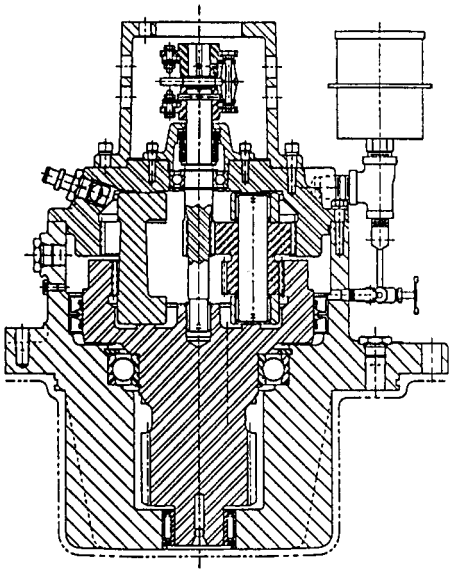
NEXRAD ANTENNA DRIVE

APPLICATION:

Radar tracking drive for weather detection.

FEATURES:

- High static stiffness for accurate tracking.
- Handles repeated changes in directions with no loss in tracking accuracy.
- Very low backlash.
- No pressure build-up in the unit.
- Output pinion and output planetary ring gear integral.
- Output snout designed for minimum deflection.
- Built to 45208 government spec.



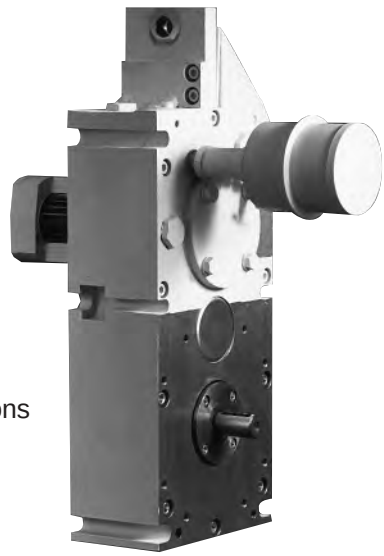
ASR-9 RADAR SEARCHING DRIVE

APPLICATION:

Search radar used to monitor aircraft at commercial airports.

FEATURES:

- Very low backlash.
- Planetary gearing.
- Electric clutch built into housing.
- No pressure build-up in unit.
- Built to government specification 45208.
- Operates in temperature range -40°C to +100°C.



AEL ANTENNA DRIVE

APPLICATION:

Tracking radar for weapons simulation systems.

FEATURES:

- High static stiffness.
- Very low backlash.
- High class helical gearing—very quiet.
- Built to 45208 government specs.

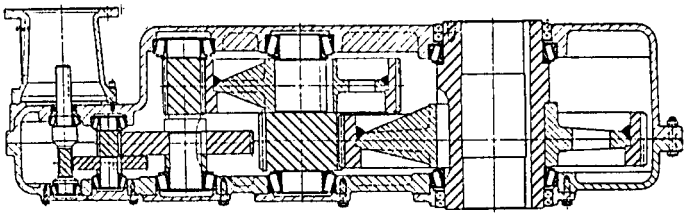
RBC (ROTATIONAL BIOLOGICAL CONTACTOR) DRIVE

APPLICATION:

Main drive for water treatment used 24 hours a day 365 days a year.

FEATURES:

- Made in Four Stage Helical as shown in schematic or as Three Stage with belt-drive input, as pictured.
- Hollow shaft output.
- Torque arm mounting.



PINCH ROLL REDUCER

APPLICATION:

Rolling and forming metal or plastic.

FEATURES:

- Counter rotating output shafts.
- Single worm design for equal output shaft.
- Combination worm/helical for unequal output shaft speeds.
- Through input shaft for series connection.
- Currently available in five sizes.
- New sizes easily developed.

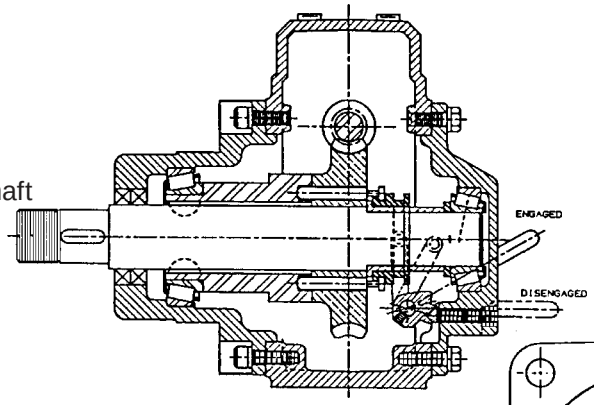
DISCONNECT DRIVE

APPLICATION:

Monarail Electrified Track with individually controlled stations.

FEATURES:

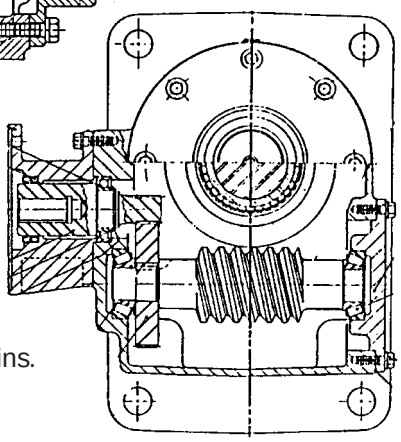
- Disengage and reengage gearing while in motion.
- Highly repeatable connecting action.
- Unique approach to connecting action.



CAPSTAN DRIVE

APPLICATION:

Pullers for ships or trains.

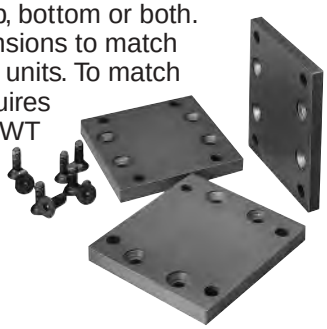


FEATURES:

- Helical primary integral to housing for clean design.
- High overhung load capacity.
- Special motor adapter.

The variety of accessories, shown below, is another example of the flexibility of the D-90® TYPE SE® units. If you do not see what you need, you can be sure that WINSMITH® will make every effort to satisfy your requirements.

ATTACHABLE BASES, top, bottom or both. Available in a variety of dimensions to match our former D-Line or Wingear units. To match the WU, MWU, and WUM requires one each of base kit WB and WT per size. Contact factory for custom bases. (See dimension pages for appropriate mounting dimensions.)

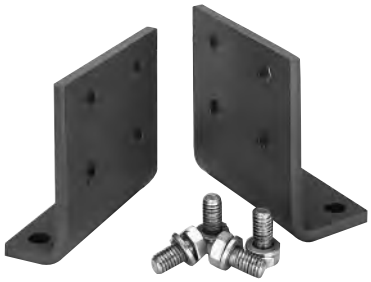


MODEL	BASE KIT NUMBER
913DB/MDB	BK9998004*
913DT/MDT	BK9998005
913WB/MWB	BK9998006
913WT/MWT	BK9998007
917DB/MDB	BK9998000
917DT/MDT	BK9998001
917WB/MWB	BK9998002
917WT/MWT	BK9998003
920DB/MDB	BK9998000
920DT/MDT	BK9998008
920WB/MWB	BK9998009
920WT/MWT	BK9998010
924DB/MDB	BK9998011

MODEL	BASE KIT NUMBER
924DT/MDT	BK9998012
924WB/MWB	BK9998014
924WT/MWT	BK9998013
926DB/MDB	BK9998015
926DT/MDT	BK9998016
926WB/MWB	BK9998017
926WT/MWT	BK9998017
930DB/MDB	BK9998018
930DT/MDT	BK9998018
930WB/MWB	BK9998019†
930WT/MWT	BK9998019
935 All Models	BK9998034
943 All Models	BK9998109

*Two mounting plates are required to match the shaft heights of the equivalent D-Line. Use base kit #9998026.
† The shaft heights to base are .75" greater than former Wingear models.

INDUSTRY INTERCHANGE BASES: with these bases you can have efficient WINSMITH products to replace the large older style less efficient gear products now used in many applications.



"J" BRACKETS for "J" mounting configurations. WINSMITH D-90 TYPE SE J-Mount brackets provide an economical method for converting a standard reducer to either a vertical input shaft mounting or a vertical motor mounting arrangement. Available in all size units. (See page 128 for dimensions.)

913 KIT	917 KIT	920 KIT	924 KIT
JK9998028	JK9998027	JK9998029	JK9998030

926 KIT	930 KIT	935 KIT	943 KIT
JK9998031	JK9998032	JK9998035	JK9998086

COMPETITIVE CENTER DISTANCE	WINSMITH BASE UNIT[1]	BASE KIT PART NUMBER	COMPETITIVE UNIT SIZE CROSSOVER						
			BOSTON	DODGE TIGEAR	GROVE	FALK	BROWNING RAIDER	MORSE INVADER	OHIO
1.00	910DN/MDN	BK9998050	710	N/A	1100	100	100	10	N/A
1.33	913DN/MDN	BK9998042	713	133	1133	133	133	13	133
1.50	917DN/MDN	BK9998043	715	150	1154	154	154	15	N/A
1.75	917DN/MDN	BK9998044	718	175	1175	175	175	18	175
2.00-2.0625	920DN/MDN	BK9998045	721	200	1206	206	206	21	206
2.375	924DN/MDN	BK9998046	724	N/A	1238	238	237	24	238
2.625	926DN/MDN	BK9998047	726	262	1262	262	262	26	262
3.25-3.50	930DN/MDN	BK9998048	732	350	1325	325	325	32	325
3.75	935DN/MDN	BK9998049	738	N/A	N/A	N/A	375	38	N/A

1. Since WINSMITH center distance is not always the same as competitive product, check load requirements to insure proper interchange.

COUPLING STYLE MOTOR ADAPTERS

Available in 42C, 48C, 56C, 143TC/145TC, 182TC/184TC, and 213TC/215TC depending on unit size. (See dimension pages for details)

SIZES			KIT NUMBER		
SINGLE REDUCTION	DOUBLE REDUCTION WORM/WORM	DOUBLE REDUCTION HELICAL/WORM	42C-48C	56C-145TC	182TC-184TC
913 917-920 924-926	917-920 924-935* 943	— 924-935* 943	CK9808429 CK9808430 N/A	CK9808128 CK9808410 CK9808131	N/A CK9808411 CK9808132
			56C-145TC	182TC-184TC	213TC-215TC
930 935 943	— — —	— — —	CK9808417 CK9808427 CK9808650	CK9808418 CK9808428 CK9808651	CK9808418 CK9808428 CK9808652

*Not available in 182TC-184TC frame.

FLEXIBLE COUPLINGS

Winsmith offers a selection of Lovejoy flexible couplings for use with our coupling style motor adapters, or for connecting the reducer drive shaft to a driven load.

SIZE	MIN. BORE	MAX. BORE	H.P. AT	
			1800 RPM	1200 RPM
L050	1/4"	5/8"	0.75	0.5
L070	1/4"	3/4"	1.2	0.84
L075	1/4"	7/8"	2.5	1.68
L090	1/4"	1"	4	2.76
L095	7/16"	1-1/8"	5.4	3.6
L099	7/16"	1-3/16"	9	6
L100	7/16"	1-3/8"	11.9	8
L110	5/8"	1-5/8"	22	15
L150	5/8"	1-7/8"	36	24
L190	3/4"	2-1/8"	48	32

COUPLING SELECTION CHART

Use the following chart to select the correct coupling for use with your WINSMITH® reducer and electric motor.

SINGLE REDUCTION	MOTOR SHAFT ∅	.375	.500	.625	.875	1.125	1.375
	FRAME SIZE	42C	48C	56C	143TC/145TC	182TC/184TC	213TC/215TC
910 HS SHAFT ∅ .375	COUPLING WINSMITH P.N.	L050 100001	31PG* 100773	31PG* 100774	N/A	N/A	N/A
913 HS SHAFT ∅ .500	COUPLING WINSMITH P.N.	L075 100059	L075 100058	L075 100045	L075 100044	N/A	N/A
917/920 HS SHAFT ∅ .625	COUPLING WINSMITH P.N.	L075 100056	L075 100045	L075 100049	L090 100067	L095 100094	N/A
924/926 HS SHAFT ∅ 1.000	COUPLING WINSMITH P.N.	N/A	N/A	L090 100066	L095 100090	L100 100129	N/A
930/935 HS SHAFT ∅ 1.000	COUPLING WINSMITH P.N.	N/A	N/A	L095 100085	L095 100090	L100 100129	L100 100137
943 HS SHAFT ∅ 1.25	COUPLING WINSMITH P.N.	N/A	N/A	L100 100133	L100 100127	L100 100135	L110 100151

DOUBLE REDUCTION HELICAL/ WORM	MOTOR SHAFT ∅	.375	.500	.625	.875	1.125	1.375
	FRAME SIZE	42C	48C	56C	143TC/145TC	182TC/184TC	213TC/215TC
924/935 HS SHAFT ∅ .750	COUPLING WINSMITH P.N.	L075 100057	L075 100052	L075 100046	L090 100065	**	N/A
943 HS SHAFT ∅ 1.000	COUPLING WINSMITH P.N.	N/A	N/A	L090 100066	L095 100090	L100 100129	N/A

DOUBLE REDUCTION DOUBLE/ WORM	MOTOR SHAFT ∅	.375	.500	.625	.875	1.125	1.375
	FRAME SIZE	42C	48C	56C	143TC/145TC	182TC/184TC	213TC/215TC
917/920 HS SHAFT ∅ .500	COUPLING WINSMITH P.N.	L075 100059	L075 100058	L075 100045	L075 100044	**	N/A
924/926 HS SHAFT ∅ .750	COUPLING WINSMITH P.N.	L075 100056	L075 100045	L075 100049	L075 100050	**	N/A
930/935 HS SHAFT ∅ .750	COUPLING WINSMITH P.N.	L075 100056	L075 100045	L075 100049	L090 100067	L095 100094	N/A
943 HS SHAFT ∅ 1.000	COUPLING WINSMITH P.N.	N/A	N/A	L090 100066	L095 100090	L100 100129	N/A

*The short distance between motor and reducer shafts requires a modified 31PG coupling.
**Contact factory.

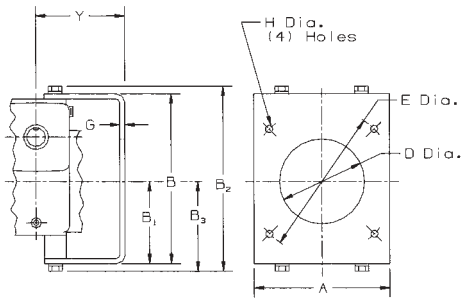
Lubricants are available in various types and quantities.

WORM GEAR	WORM GEAR	ALL GEARS	PLANETARY	HELICAL GEARS	WINKOPP
AGMA #8 COMPOUNDED	USDA/FDA APPROVED	SYNTHETIC OIL	AGMA #3 EP	AGMA #3	TRACTION FLUID
1 Pint 1 Quart 1 Gallon 5 Gallon	1 Pint 1 Quart 1 Gallon 5 Gallon	1 Pint 1 Quart 1 Gallon 5 Gallon	1 Pint 1 Quart 1 Gallon 5 Gallon	1 Pint 1 Quart 1 Gallon 5 Gallon	1 Pint 1 Quart 1 Gallon 5 Gallon

"U" FLANGE

The new DSU/DU flange is a "U" shaped all steel plate flange designed for easy field conversion of many hollow and solid output shaft units to a flange mounted unit. The flange is truly universal and can be mounted on either side of the unit without opening or changing the unit. The "U" flange kit, pictured at right, comes complete with the necessary spacer and bolts.

917 KIT	920 KIT	924 KIT	926 KIT	930 KIT	935 KIT	943 KIT
BK9998094	BK9998095	BK9998096	BK9998097	BK9998098	BK9998099	BK9998073

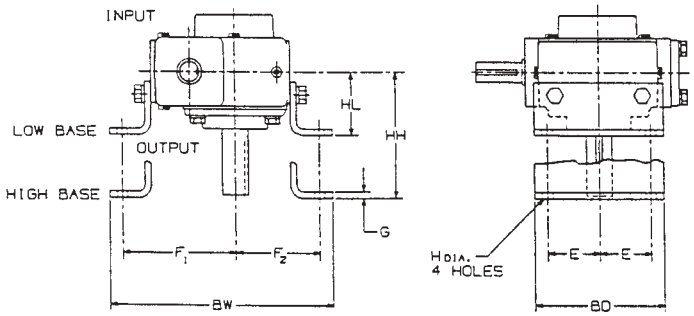


DIMENSIONS

Size	A	B	B_1	B_2	B_3	D	E	G	H	Y
917	4.81	6.25	2.81	7.02	3.20	4.06	5.875	.19	.344	3.50
920	5.75	6.94	3.25	7.71	3.64	4.50	6.500	.19	.406	3.50
924	6.13	8.00	3.44	9.03	3.96	5.00	7.500	.19	.406	3.69
926	7.19	8.63	3.63	9.66	4.14	6.00	8.000	.25	.406	3.82
930	8.50	10.19	4.44	11.22	4.95	7.00	9.250	.25	.563	5.00
935	8.50	11.00	4.63	12.27	5.26	7.00	10.000	.25	.563	5.06
943	10.00	13.00	5.50	14.27	6.13	8.00	11.500	.38	.688	5.75

VERTICAL HIGH/LOW BRACKETS

An economical alternative for DV type mountings. Designs can be offered in low or high mounting for motor adapter clearance.



DIMENSIONS

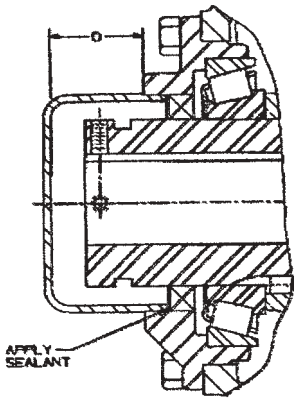
Size	BD	BW	E	F_1	F_2	G	$H_{DIA.}$	HH	HL
913	4.00	7.33	1.63	3.71	2.88	.25	.344	4.13	2.19
917	5.00	8.63	2.00	4.38	3.25	.25	.406	4.88	2.44
920	5.50	9.50	2.19	4.88	3.50	.38	.469	4.88	2.44
924	6.00	11.25	2.44	5.81	4.31	.38	.469	5.63	2.94
926	6.50	12.25	2.63	6.31	4.69	.38	.531	5.63	2.94
930	7.50	13.38	3.13	7.06	5.06	.38	.531	6.00	3.25
935	8.00	15.00	3.25	7.81	5.69	.38	.531	7.13	3.50
943	9.00	16.38	3.75	8.81	6.06	.38	.531	8.13	3.88

Parts included in kit

2—Mounting Brackets
4—Mounting Fasteners and Lockwashers
1—Tube Fastener Adhesive

Size	Kit Number
913	VK9998075
917	VK9998076
920	VK9998077
924	VK9998078
926	VK9998079
930	VK9998080
935	VK9998081
943	VK9998082

D-90® TYPE SE® HOLLOW SHAFT COVER



DIMENSIONS

Size	D
917	1.31
920	1.25
924	1.31
926	1.38
930	1.56
935	1.56
943	1.25

Parts Included in Cover Kit:
- Cover
- Installation Instructions

WINSMITH® D-90® TYPE SE® shaft covers provide an economical method for covering the exposed end of the output shaft on hollow shaft models. This serves two purposes: protection from the rotating shaft and isolating the seal from outside contaminants. All shaft covers are made from corrosion resistant stainless steel and fit over either shaft end while allowing at least one half inch of clearance for a driven shaft keeper plate.

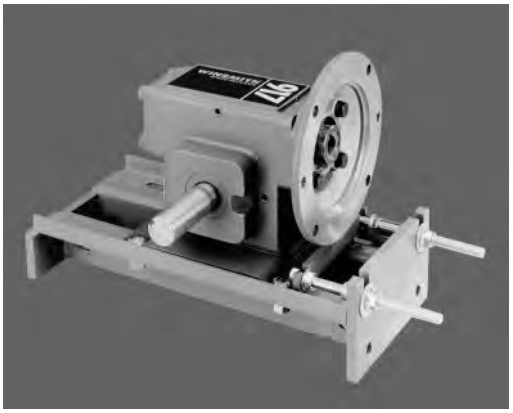
KIT PART NUMBERS

Size	Cover	Installation Tool*
917	CKIT917	CTKIT917
920	CKIT920	CTKIT920
924	CKIT924	CTKIT924
926	CKIT926	CTKIT926
930	CKIT930	CTKIT930
935	CKIT935	CTKIT935
943	CKIT943	CTKIT943

*Optional—purchased separately.

D-90® TYPE SE® BASES AND SPACERS FOR CHAIN TENSION ADJUSTMENT

WINSMITH D-90 TYPE SE chain tension adjustment Bases and Spacers provide a convenient and economical method for converting the basic MDN unit to a field adjustable chain tension device. Both the foot mounted Bases and the top mounted Spacers are designed to easily adapt to your equipment. Access holes or slots are provided to accommodate hardware for adjusting chain tension between the reducer and driven system. All Bases and Spacers are made of plate steel and are painted with our WINSMITH® standard gray paint.



BASEPLATE KITS

Size	Kit Number
917	BK917810011
920	BK920810010
924	BK92426810012
926	BK92426810012
930	BK930810018
935	BK935810013

SPACER BRACKET KITS

Size	Kit Number
917	HK917810014
920	HK920810015
924	HK92430810016
926	HK92430810016
930	HK92430810016
935	HK935810017

HDT

For assembly designations see page 125.

HDV

For assembly designations see page 127.

Two typical models that can be furnished with hydraulic motor adapters**

**All single reduction models in sizes 926, 930, and 935 are available with hydraulic motor adapters.

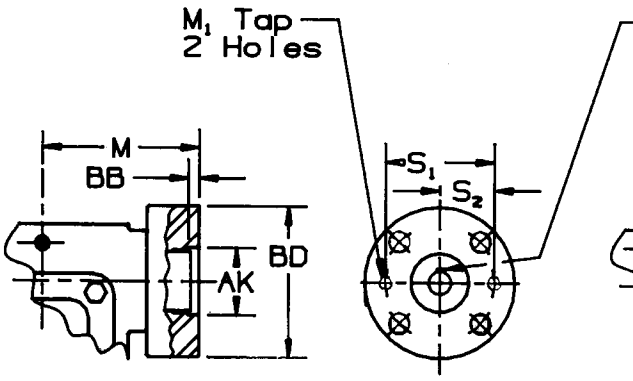


FIGURE 1
SAE AA, A & B Flange
2 Bolt

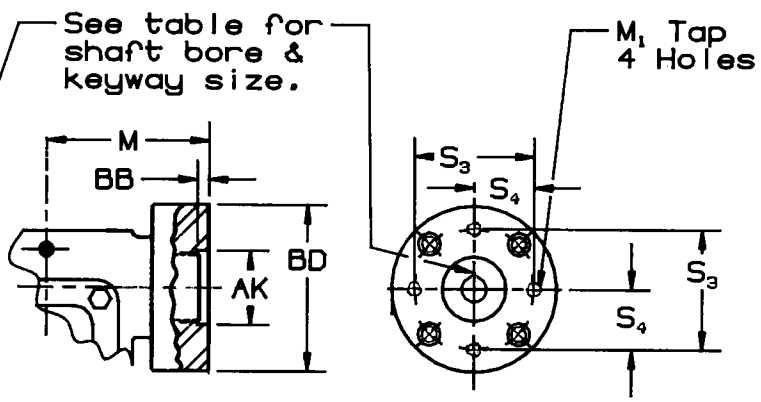


FIGURE 2
SAE B Flange
4 Bolt

SPEED REDUCER DIMENSIONS (IN INCHES)**

UNIT SIZE	SAE FLANGE	FIG.	AK	BB	BD	M	S_1	S_2	S_3	S_4	M_1 TAP & DEPTH	SHAFT BORE*	KEYWAY	UNIT SIZE
926	AA 2 Bolt (50-2)	1	2.00	.31	4.50	5.31	3.25	1.63	NA	NA	.375-16 x .75	.500	.13 x .06	926
926	A 2 Bolt (82-2)	1	3.25	.50	5.00	5.31	4.19	2.09	NA	NA	.375-16 x .75	.625□	.16 x .08	926
930	AA 2 Bolt (50-2)	1	2.00	.31	4.50	5.31	3.25	1.63	NA	NA	.375-16 x .75	.500	.13 x .06	930
930	A 2 Bolt (82-2)	1	3.25	.50	5.13	5.50	4.19	2.09	NA	NA	.375-16 x .75	.625□	.16 x .08	930
935	AA 2 Bolt (50-2)	1	2.00	.31	5.13	5.75	3.25	1.63	NA	NA	.375-16 x .75	.500	.13 x .06	935
935	A 2 Bolt (82-2)	1	3.25	.50	5.13	5.75	4.19	2.09	NA	NA	.375-16 x .75	.625□	.16 x .08	935

*+.001-.000.
**For additional unit dimensions see pages 120-171.
□.750 shaft bore also available. Use of the optional longer hydraulic shaft is recommended.

SERVO MOTOR FLANGE CAPABILITY

WINSMITH® D-90® TYPE SE® reducers can be supplied with motor interfaces to accommodate most motors sold by the following servo and stepper motor suppliers. Check with the factory to find the availability of specific motor interface information for your motor supplier. If your motor supplier does not appear in the below list we will create the interface information at your request.

MOTOR SUPPLIERS

AEROTECH
ALLEN-BRADLEY
BALDOR
BAUMULLER
CMC (CLEVELAND)
COMPUMOTOR
CUSTOM SERVO MOTOR
ELECTRO-CRAFT
EMERSON
FENNER
GE FANUC
GETTYS
GIDDINGS & LEWIS
INDRAMAT
INDUSTRIAL DRIVES
INDUSTRIAL INDEXING
INERTIAL MOTORS
INFRANOR
MODICON
MOOG
MFM
MTS
ORMEC
ORIENTAL MOTOR
PACIFIC SCIENTIFIC
PARVEX
PEERLESS
PMI
SERVO DYNAMICS
SIEMENS
SUPERIOR
TOSHIBA
WHEDCO
VICKERS
YASKAWA

SERVO MOTOR FLANGE CAPABILITY— SQUARE BODY

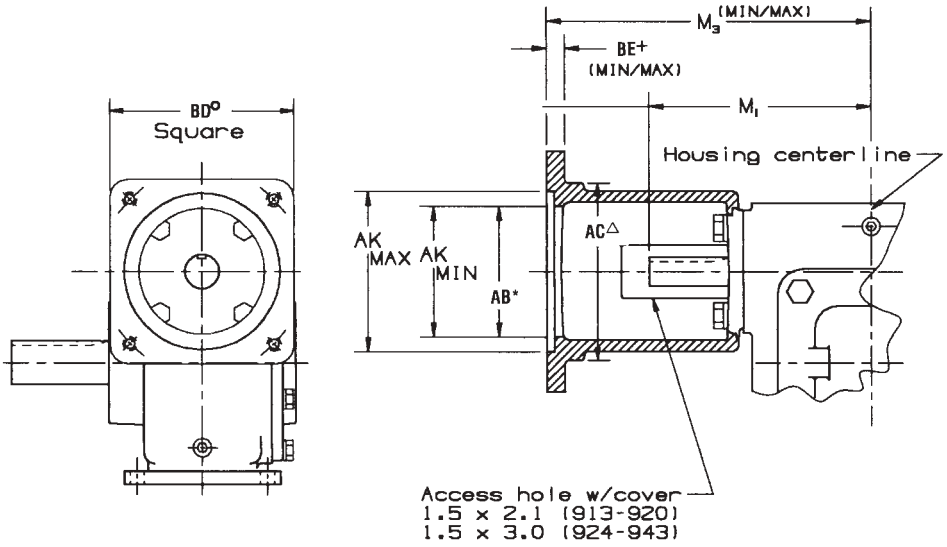
Flange dimensions range by size and model.

D-90® TYPE SE®

WINSMITH®

A family of motor adaptor castings has been developed to accommodate servo motors. This page provides the dimensional information for reviewing their interface capabilities with various square body servo motor flanges. The flange end of the casting is sufficiently large to accommodate the wide range of motor sizes where the minimum size motor is dictated by the inside diameter (AB). The flange perimeter (BD) and register (AK) will then be machined to the specific motor interface dimensions. The adaptor length can vary slightly, but in general, the gap between the motor and reducer shafts is taken up by the coupling. The bolt circle diameter limitations (AJ) are not specifically shown, but can be determined from the flange outside perimeter (BD) and the casting wall (AC) with due consideration for the motor fastener diameter. When ordering, the actual motor mounting dimensions must be furnished.

Flange requirements beyond this range may be accommodated with an adaptor spacer on a special order basis.



SQUARE BODY MOTOR ADAPTOR DIMENSION CAPABILITIES, INCHES (DIMENSIONS IN PARENTHESIS ARE MM). FOR ADDITIONAL DIMENSIONS SEE BASIC PRODUCT PAGES.□

SIZE	AB*	AC△	AK		BD°	BE+		M_1	M_3		SIZE
			MIN.	MAX.		MIN.	MAX.		MIN.	MAX.	
913	2.38	3.96	2.38 (60)	4.50 (115)	4.75 (120)	.38	.75	4.12	6.31	6.69	913
917	2.38	4.24	2.38 (60)	5.31 (135)	5.56 (140)	.38	.75	4.75	7.19	7.56	917
920	2.38	4.24	2.38 (60)	5.31 (135)	5.56 (140)	.38	.75	5.00	7.19	7.56	920
924	3.50	5.24	2.75 (70)	6.25 (160)	6.50 (165)	.38	.75	6.5	9.00	9.38	924
926	3.50	5.24	2.75 (70)	6.25 (160)	6.50 (165)	.38	.75	6.50	9.00	9.38	926
930	3.63	5.54	3.75 (95)	7.88 (200)	8.13 (205)	.38	.75	7.00	9.88	10.25	930
935	3.63	5.64	3.75 (95)	7.88 (200)	8.13 (205)	.38	.75	7.38	10.81	11.19	935
943	3.63	5.64	3.75 (95)	7.88 (200)	8.13 (205)	.38	.75	8.19	11.62	12.00	943

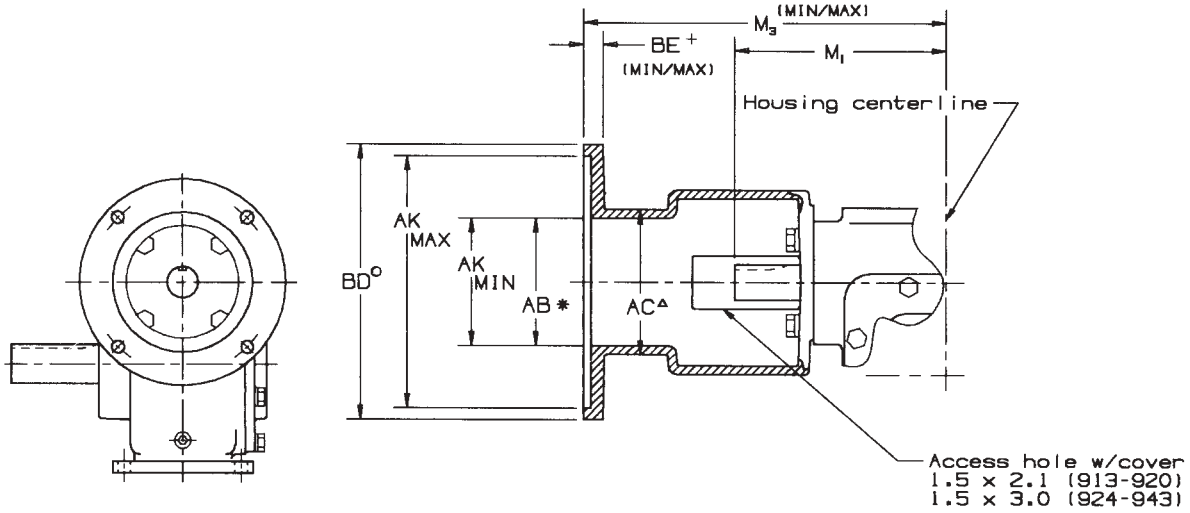
* Clearance diameter for coupling inside the adaptor. Coupling OD must also clear the register diameter (AK).
△ For thru holes in adaptor, motor fastener head must clear this diameter.
° Square flange can be reduced to match motor. To convert from bolt circle diameter to horizontal or vertical distance between mounting holes, divide by 1.41.
+ Allow adequate stock for register depth.
□ Adaptor rings can be considered for motors outside this framework. Contact the factory with your requirements.

SERVO MOTOR FLANGE CAPABILITY—ROUND BODY

Flange dimensions by size and model.

A family of motor adaptor castings has been developed to accommodate servo motors. This page provides the dimensional information for reviewing their interface capabilities with various round body servo motor flanges. The flange end of the casting is sufficiently large to accommodate the wide range of motor sizes where the minimum size motor is dictated by the inside diameter (AB). The flange diameter (BD) and register (AK) will then be machined to the specific motor interface dimensions. The adaptor length can vary slightly, but in general, the gap between the motor and reducer shafts is taken up by the coupling. The bolt circle diameter limitations (AJ) are not specifically shown, but can be determined from the flange outside diameter (BD) and the casting wall (AC) with due consideration for the motor fastener diameter. When ordering, the actual motor mounting dimensions must be furnished.

Flange requirements beyond this range may be accommodated with an adaptor ring on a special order basis.



ROUND BODY MOTOR ADAPTOR DIMENSION CAPABILITIES, INCHES (DIMENSIONS IN PARENTHESIS ARE MM). FOR ADDITIONAL DIMENSIONS SEE BASIC PRODUCT PAGES.□

SIZE	ADAPTOR	AB*	AC△	AK		BDo	BE+		M_1	M_3		SIZE
				MIN.	MAX.		MIN.	MAX.		MIN.	MAX.	
913	One adaptor available for each of these sizes	2.50	2.88	2.38 (60)	6.00 (150)	6.50 (165)	.38	.41	4.12	6.81	6.84	913
917		2.50	2.88	2.38 (60)	6.00 (150)	6.50 (165)	.38	.41	4.75	7.56	7.59	917
920		2.50	2.88	2.38 (60)	6.00 (150)	6.50 (165)	.38	.41	5.00	7.56	7.59	920
924		3.63	4.18	3.88 (100)	7.00 (175)	7.50 (190)	.38	.47	6.50	9.68	9.77	924
926		3.63	4.18	3.88 (100)	7.00 (175)	7.50 (190)	.38	.47	6.50	9.68	9.77	926
930	Small	3.63	4.18	3.88 (100)	6.00 (150)	6.50 (165)	.38	.41	7.00	10.38	10.41	930
	Large	4.25	4.87	4.50 (115)	10.50 (265)	11.00 (280)	.38	.66		10.81	10.88	
935	Small	3.63	4.13	3.88 (100)	6.00 (150)	6.50 (165)	.38	.54	7.38	11.31	11.34	935
	Large	4.25	4.87	4.50 (115)	10.50 (265)	11.00 (280)	.38	.66		11.75	11.81	
943	Small	3.63	4.13	3.88 (100)	6.00 (150)	6.50 (165)	.38	.54	8.19	12.12	12.15	943
	Large	4.25	4.87	4.50 (115)	10.50 (265)	11.00 (280)	.38	.66		12.56	12.62	

* Coupling OD must be less than this diameter.
△ Motor fastener head must clear this diameter.
o OD can be reduced to match motor.
+ Allow adequate stock for register depth.
□ Adaptor rings can be considered for motors outside this framework. Contact the factory with your requirements.

ADDITIONAL UNIT MODIFICATIONS

WINSMITH® offers a complete variety of models, assemblies, and configurations for almost every standard requirement. But many times you have specific situations that demand a modification made to your needs. WINSMITH has a long history of providing its customers with individual modifications from the simple to the exotic at reasonable prices and realistic deliveries. We have extended and enhanced this vital service to new dimensions in the D-90® TYPE SE® product line. We sincerely believe that with our engineering expertise and our custom designing experience, we can offer you the best of all worlds in non-standard worm gear products. Please take a minute to scan a small representative selection of possibilities.

We invite you to contact WINSMITH or your local WINSMITH representative or distributor to discuss your individual needs.

1. SPECIAL INPUT OR OUTPUT SHAFTS

A. Nonstandard lengths
B. Special machining
  (1) Snap ring grooves
  (2) Splines (internal and external)
  (3) Flats, special keyways, extra keyways
  (4) Turndowns or special diameters
  (5) Special shaft materials or platings
  (6) Drilled and tapped shafts
  (7) Tapered shafts

2. SPECIAL GEARING

A. Special ratios
B. Controlled backlash options*
  (1) Minimum backlash (.19° max.)
  (2) Adjustable center distance (.095° max.)
  (3) S-ELIMINATOR™ (.02° max.) (see page 174)

3. HOUSING COMPONENT MODIFICATIONS

A. Special machining of housings and covers
B. Special covers and flanges
C. Special mounting bases

4. SERVO MOTOR ADAPTERS

Servo motor adapters can be made to match almost any servo motor in the market today. The following are examples of some of the more popular bolt circle patterns and the size unit for which they would be appropriate. (See pages 193 and 194)

D-90 TYPE SE UNIT SIZE	MOTOR BOLT CIRCLE IN INCHES
913, 917, 920, 924, 926	3.937
917, 920, 924, 926, 930	4.527
930, 935, 943	7.875

5. WINSMITH PAINT SYSTEMS

Speed reducers are used in a wide variety of applications and conditions. For this reason, WINSMITH offers a series of paint systems to address the different needs that arise. A paint system is a series of preparation and coating steps used in establishing a protective barrier between the speed reducer and the operating environment. For your special needs, contact WINSMITH.

6. METRIC SHAFTS FOR WINSMITH REDUCERS

WINSMITH can provide a wide selection of metric input shafts, output shafts, and metric motorized input bores with corresponding metric keyways. The chart below lists the maximum shaft sizes per a given unit size.

MAXIMUM DIAMETER IN MILLIMETERS

UNIT SIZE	INPUT SHAFT MM	OUTPUT SHAFT MM	MOTOR BORE MM
913	17	19	15
917	25	25	22
920	25	25	22
924	35	31	28
926	35	31	28
930	35	34	28
935	33	44	28
943	34	50	35

7. MISCELLANEOUS OPTIONS

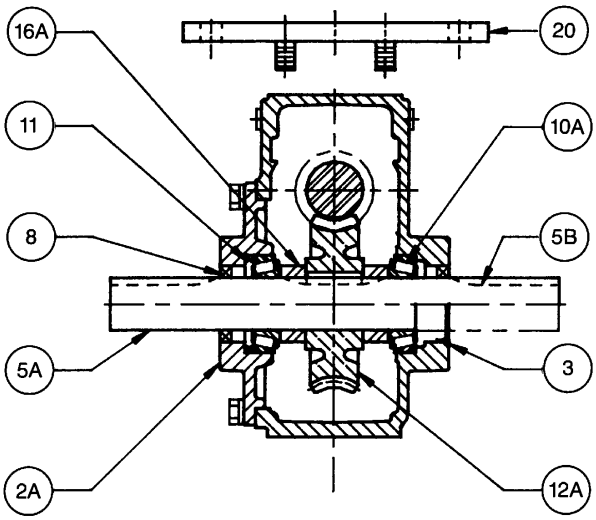
A. Special oil seals
B. Special lubricants
C. Special coatings and coating systems (see 5 above)
D. Mounting customer motors and/or couplings
E. Long term storage option
F. Corrosion proof option

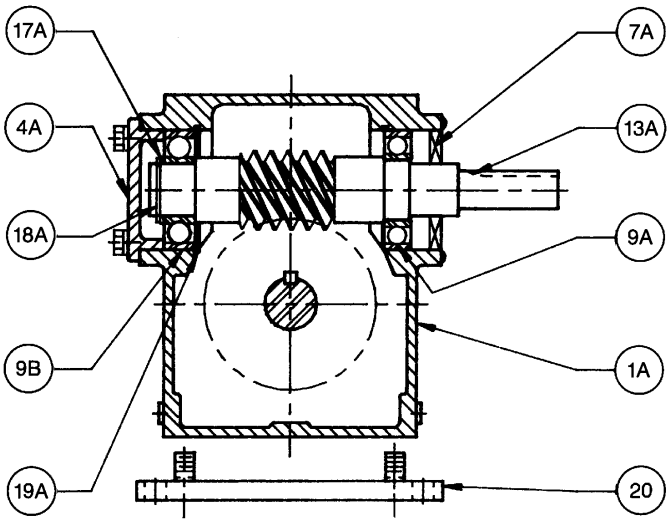
*See the engineering section for backlash discussion pages 233-234 and MOTION CONTROL Catalog #400.

When ordering replacement parts, it is very important that you have information concerning the size, model, ratio, and serial number. All this information is available from the name plate pinned to every WINSMITH® D-90® TYPE SE® Unit. This information not only insures that you receive the correct parts, but it will also greatly speed up the ordering process.

In addition to the above name plate information, you will need to advise which parts are required, making reference to the numbers below, described on page 203. Caution: the numbers referenced below may not exactly describe the parts you may need. These charts are meant to be only general reference items, to help identify the parts as you talk to our sales department.

Please be sure you give the sales department the complete serial number and model numbers, as many configurations with special or redesigned parts may have changed since the last printing of this catalog.

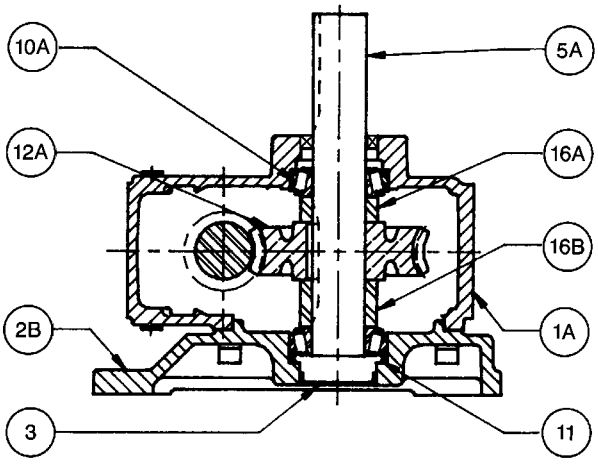


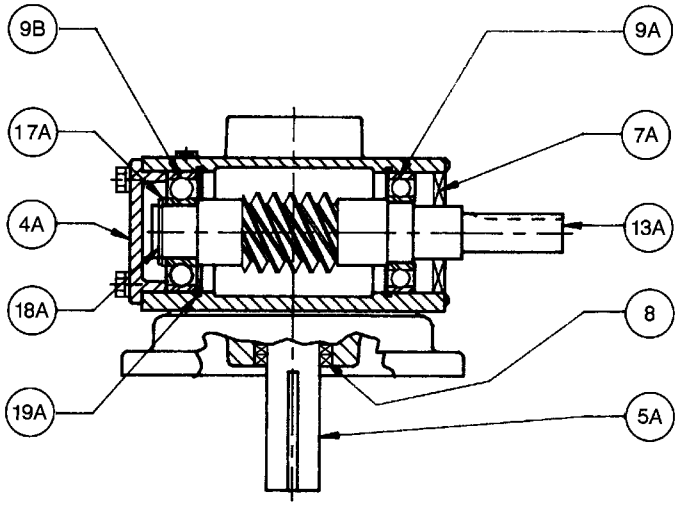


For high speed bearing/arrangement on Size 935-943 see Fig. 8.

Fig. 1

NON-MOTORIZED SINGLE REDUCTION UNIT (FOR MOTORIZED PORTION SEE FIG. 6 & 8)

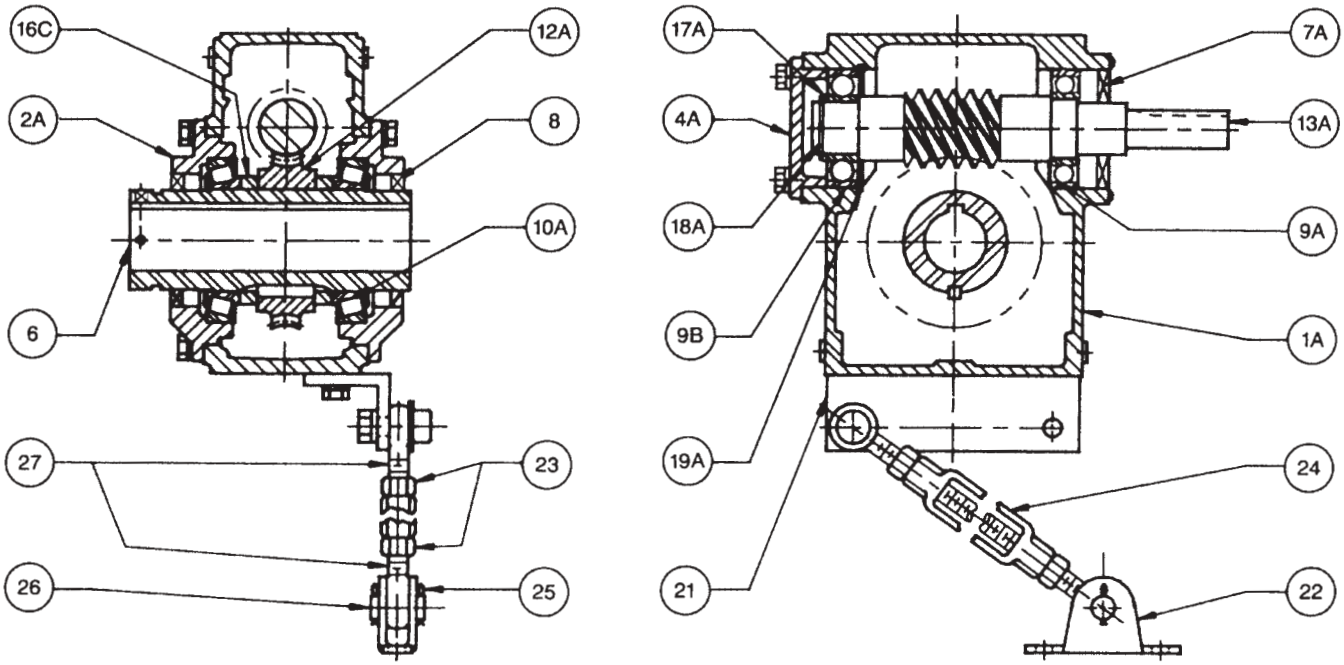




For high speed bearing/arrangement on Size 935-943 see Fig. 8.

Fig. 2

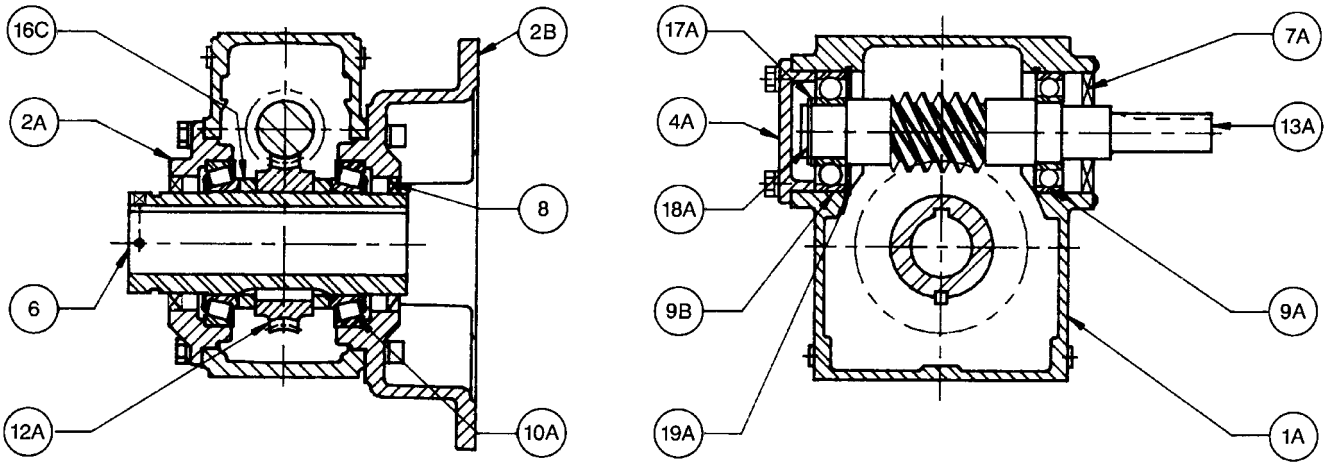
NON-MOTORIZED DV UNIT (FOR MOTORIZED PORTION SEE FIG. 6 & 8)



For high speed bearing/arrangement on Size 935-943 see Fig. 8.

Fig. 3

NON-MOTORIZED DSR HOLLOW SHAFT W/REDUCTION ARM UNIT (FOR MOTORIZED PORTION SEE FIG. 6 & 8)



For high speed bearing/arrangement on Size 935-943 see Fig. 8.

Fig. 4

NON-MOTORIZED DSF UNIT (FOR MOTORIZED PORTION SEE FIG. 6 & 8)

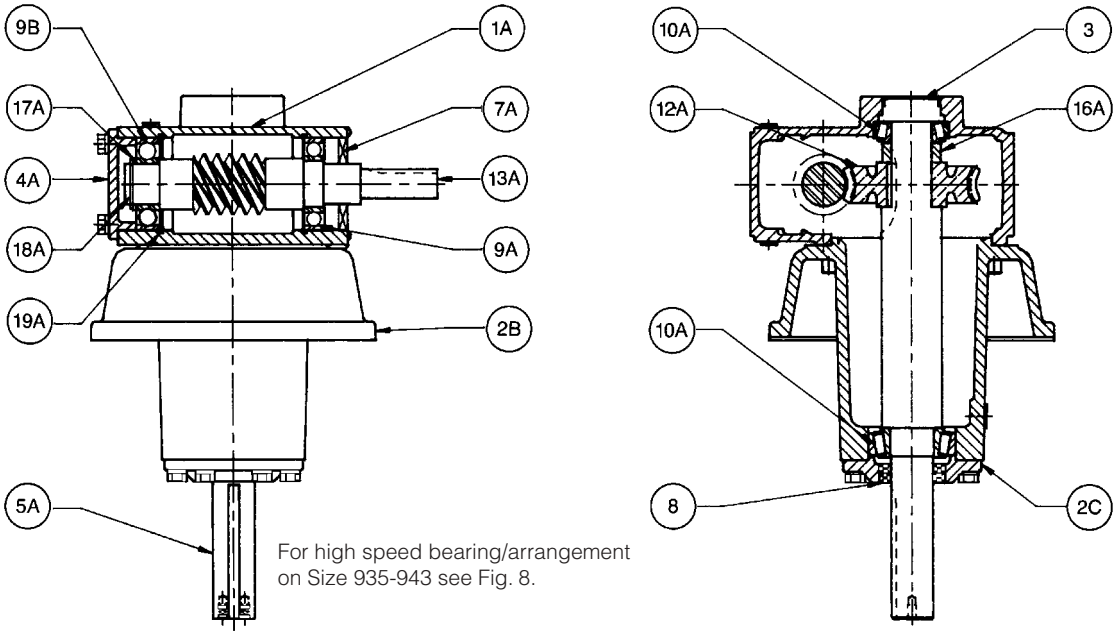


Fig. 5

NON-MOTORIZED DV UNIT (FOR MOTORIZED PORTION SEE FIG. 6 & 8)

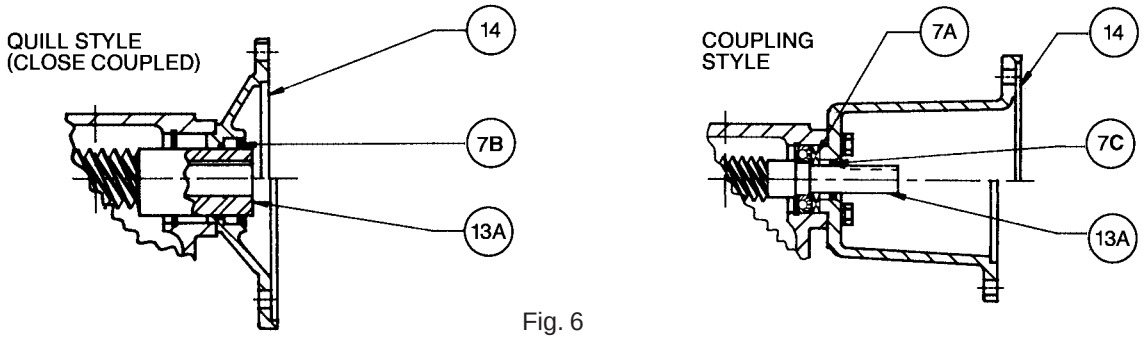


Fig. 6

MOTORIZED PORTION — ALL TYPES

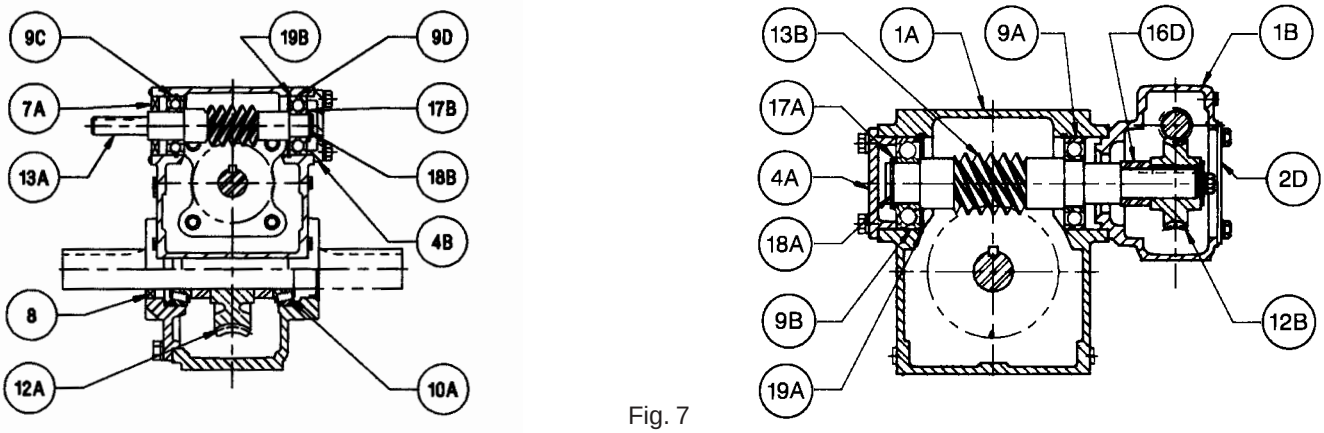
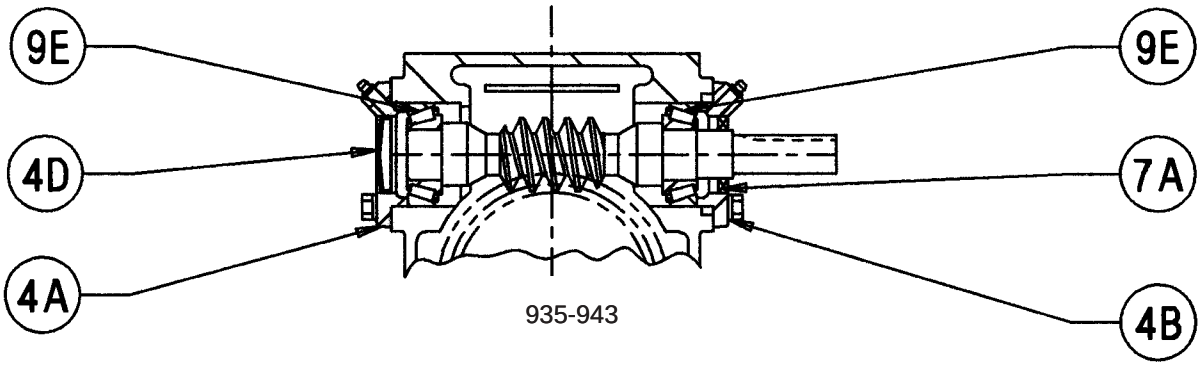


Fig. 7

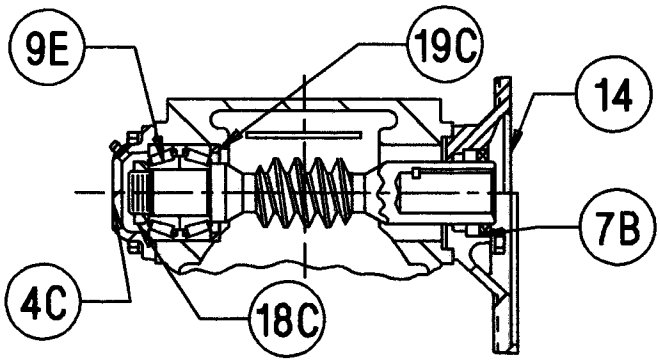
NON-MOTORIZED DOUBLE REDUCTION PORTION ALL TYPES (FOR MOTORIZED PORTION SEE FIG. 6 & 8)

NON-MOTORIZED



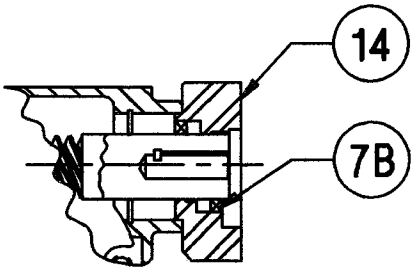
935-943

MOTORIZED QUILL
(C FACE)



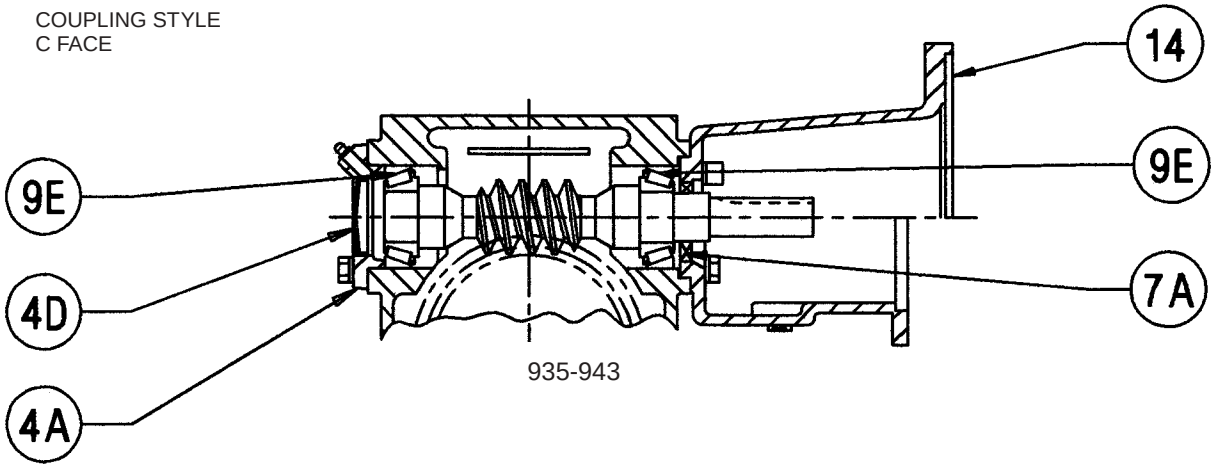
935-943

HYDRAULIC



HDSN 926-935

COUPLING STYLE
C FACE



935-943

Fig. 8

HIGH SPEED BEARING ARRANGEMENT

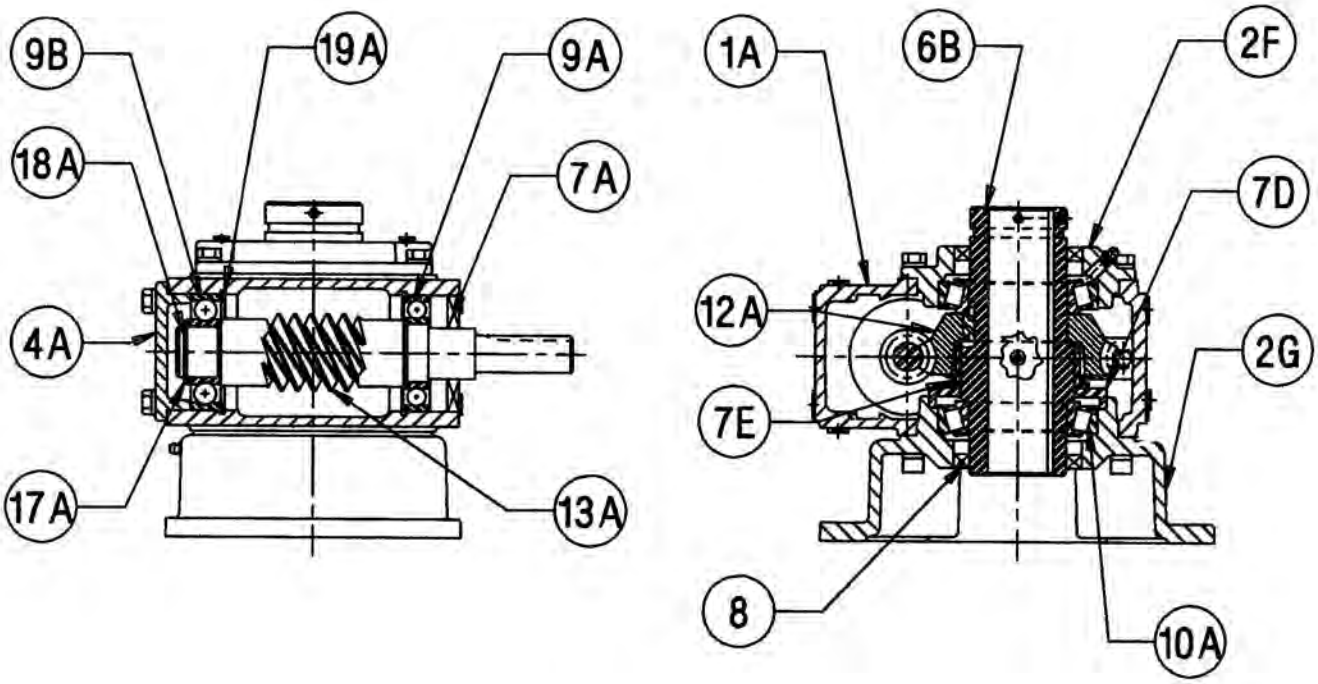
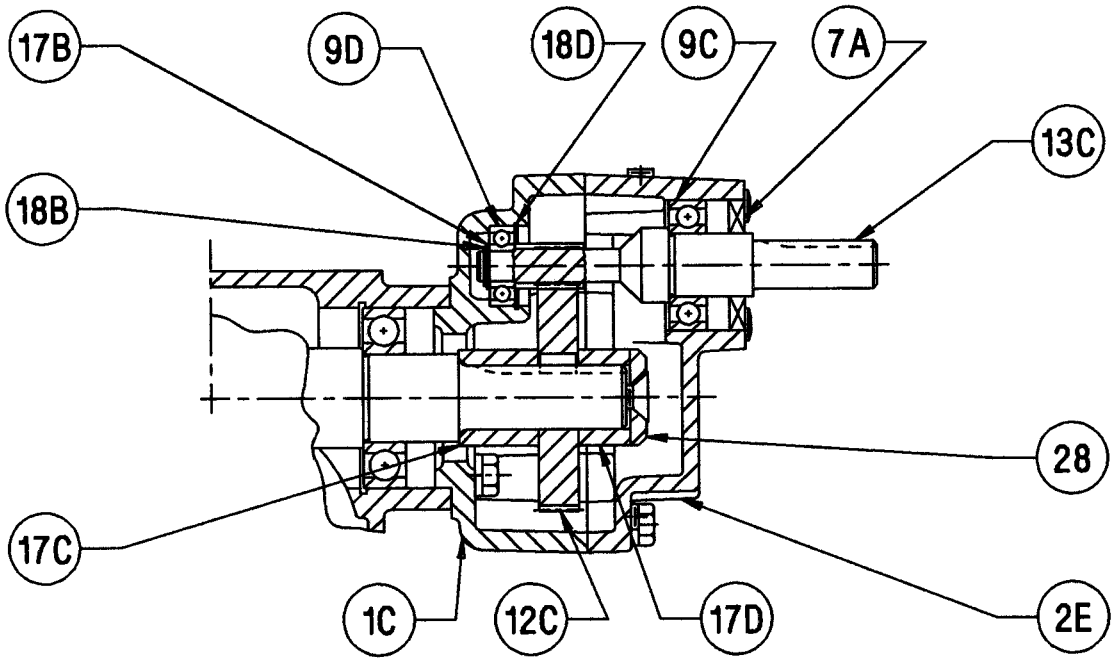


Fig. 9

NON-MOTORIZED DSY UNIT (FOR MOTORIZED PORTION SEE FIG. 6 & 8) FOR HIGH SPEED BEARING ARRANGEMENT ON 935-943 SEE FIG. 8



NON-MOTORIZED HELICAL PRIMARY STAGE

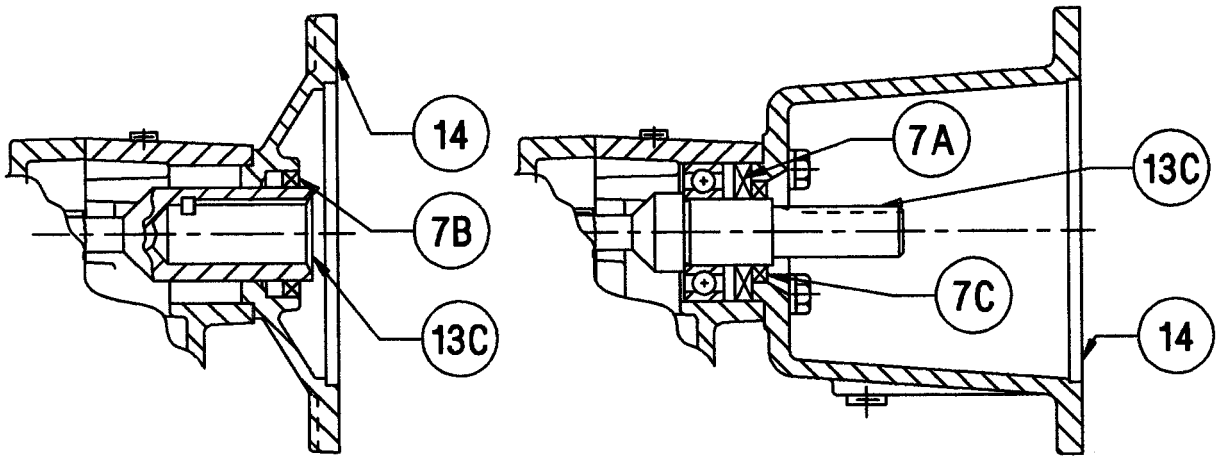
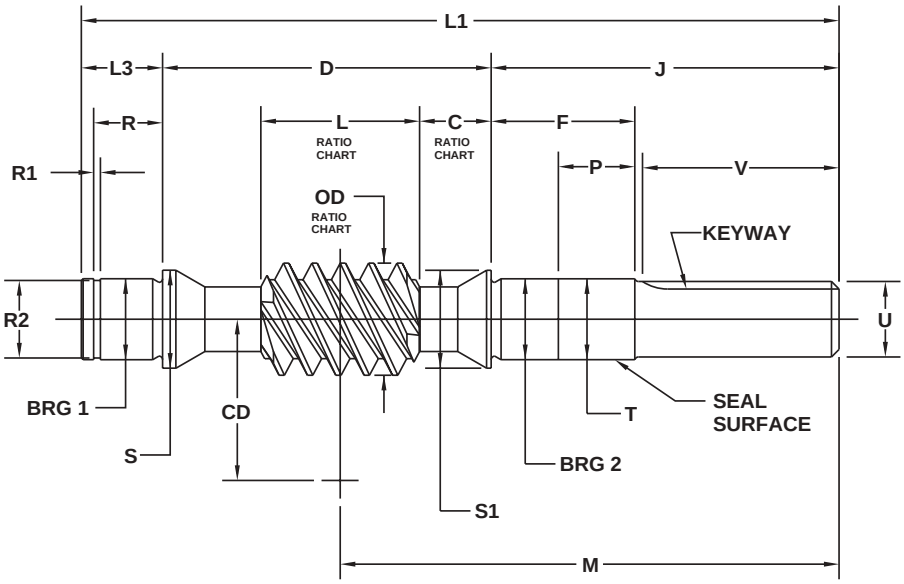


Fig. 10

MOTORIZED HELICAL PRIMARY STAGE

ITEM	PART DESCRIPTION	MODEL VARIATION
1A	Housing	DN, DB, DT, DJ, also Motorized H, C, M. WB, WT, WU Also Motorized M, C, Size 913-930 DV, Also Motorized H, C, M. Size 935 and 943 per Assembly DL, Also Motorized H, C, M. Size 935 and 943 per Assembly DSN, DSR, Also Motorized H, C, M DSF, DSY Also Motorized H, C, M. Size 935 and 943 per Assembly DBD DTD DSD, DSFD, DSRD DVD per Assembly on Size 935 and 943
1B	Attachment Housing	DND, DBD, DTD, DVD, DSND, DSFD, DSRD, DLD Also Motorized C, and M
1C	Helical Attach Housing	Helical Primary Stage
2A	SS Cover	DN, DB, DT, DJ, Also Motorized H, C, M. WB, WU Also Motorized M, C, Size 913-930 WT, CWT, MWT Size 913, 917, 920 w/C'Sink Fasteners. DV, Also Motorized H, C, M. Size 943 w/Pipe Plugs DL, Also Motorized H, C, M. DLD Size 943 w/Pipe Plugs and Grease Fitting DSN, DSR, Also Motorized H, C, M DSF, Also Motorized H, C, M DBD DTD DSD, DSFD, DSRD DVD per Assembly on Size 935 and 943
2B	SS Cover & Base	DV, DL, DSF, Also Motorized H, C, and M
2C	SS Cap	DL, DLD, Also Motorized C, H, and M
2D	ATT HSG Cover	DND, DBD, DTD, DVD, DSND, DSFD, DSRD, DLD, Also Motorized H, C, and M
2E	ATT HSG COVER	Helical Units
2F	DSY SS Cover	Drywell DSY Units Not on Size 935
2G	DSY SS Cover & Flange	Drywell DSY Units
3	Housing Plug, Not Req'd if LR Assy	All Single Ext Solid SS Shaft Units
4A	HS Cap–Rear	All Single Reduction Units and as Inter Cap on All Double Reduction Units
4B	HS Cap–Front	All 935 and 943 Single Reduction Non-Motorized Units
4C	HS Cap–Rear, Mtr'd	Same as Non-Motorized Front HS Cap Except on Size 935 and 943
4D	HS Cap Plug	Size 935 and 943 Non-Motorized Single Reduction Units
5A	SS Shaft–Sgl, L, R Ass'y	All Single Ext Solid Shaft Units. See DV and DL for Other PN's
5B	SS Shaft–Dbl, LR Ass'y	All Double Ext Solid Shaft Units
6A	SS Hollow Shaft	All Hollow Shaft Unit Size 913-943
6B	DSY Hollow Shaft	Drywell Units
7A	HS Oil Seal/Shaft	All Non-Motorized Units
7B	HS Oil Seal/Quill 56C-184TC 213TC-215TC	All Motorized Units. Size 943 Seal is per Frame Size
7C	HS Oil Seal/CPLG (Optional Second Seal)	Per Customer Request for Double Seals in Units w/Coupling Adapters
7D	Drywell Sleeve	All Drywell DSY Units
7E	Drywell V-Ring	All Drywell DSY Units
8	SS Oil Seal	All Units. Seal Size per SS Shaft Type & Assembly
9A	HS Bearing–Front	All Non-Motorized Single Reduction Units
9B	HS Bearing–Rear	All Single Reduction Units. 935-943 Motorized Uses Two Tapered Roller Bearings
9C	Front Ball Bearing	Attachment Housing Only
9D	Rear Ball Bearing	Attachment Housing Only
9E	HS Tapered Roller Bearing	Size 935 And 943 Only

ITEM	PART DESCRIPTION	MODEL VARIATION
10A	SS Bearing Cup/Cone 2 Req'd	All Units, Bearing Size per SS Shaft Type
11	SS Load Ring	See Model Type ANS Size For Requirement
12A	Slow Speed Gear	Part Numbers per Size, Ratio, and Model Type (Note Size 943 Has Two Standard Motorized Worms)
12B	High Speed Gear	
12C	High Speed Hel Gear	
13A	High Speed Worm	
13B	Inter Speed Worm	
13C	High Speed Pinion	
14	MTR ADPT/Quill 42C-48C	Available on Sizes 910-920
	MTR ADPT/Quill 56C-145TC	Available on Sizes 910 Thru 943
	MTR ADPT/Quill 182TC-184TC	Available on Sizes 924 Thru 943
	213TC-215TC	Available on Size 943
	MTR ADPT/CPLG 42C-48C	Available on Size 913-920
	MTR ADPT/CPLG 56C-145TC	Available on Sizes 910-943
	MTR ADPT/CPLG 182TC-184TC	Available on Sizes 924-943
	213TC-215TC Adapter Ring	Available on Size 943
	MTR ADPT/HYD SAE A-2 Bolt	Available on Size 926-935
	MTR ADPT/HYD SAE AA-2 Bolt	Available on Size 926-935
16A	SS Spacer	See Model Type and Size for Requirement
16B	SS Spacer–DV	
17A	HS Spacer	All Units Except Size 935 and 943 Non-Motorized
17B	Worm/Pinion Spacer	Attachment Housing Only
17C	Gear Spacer–Inside	Helical Units
17D	Gear Spacer–Ext Side	Helical Units
18A	HS Worm Ret Ring	All Units 910-930
18B	INT Worm Ret Ring	Attachment Housing Only
18C	Locknut	935-943 Motorized Only
18D	Pinion Ret Ring	Helical Units
19A	HS Bearing Ret Ring	All 913-930 Units
19B	Bearing Ret Ring	Attachment Housing
19C	Bearing Shoulder Spacer	935-943 Motorized
20	Base Kit or J-Brackets	Per Model (WU Models Use Both Upper and Lower Base Plate)
21	Torque Arm Bracket	All Size 917-943 DSR Units
22	Floor Support	All Size 917-943 DSR Units
23	Jam Nut	All Size 917-943 DSR Units–Right and Left Hand Threads
24	Turnbuckle Body	All Size 917-943 DSR Units
25	Cotter Pins	All Size 917-943 DSR Units
26	Pin	All Size 917-943 DSR Units–Floor Support
27	Rod End	All Size 917-943 DSR Units–Left and Right Hand Threads
28	INT Washer	Used With Intermediate Worm



SOLID WORM SHAFT DIMENSIONS

SIZE	BRG1 +.0000 -.0005	BRG2 +.0000 -.0005	CD	D +.000 -.004	F	J	L1	L3	M	P	SIZE
913	.6696	.6696	1.333	2.717	1.19	2.88	6.26	.67	4.12	.63	913
917	.9848	.9848	1.750	3.662	1.25	3.06	7.53	.81	4.75	.63	917
920	.7879	.9848	2.000	3.662	1.25	3.31	7.78	.81	5.00	.69	920
924	1.3785	1.3785	2.375	4.783	1.50	4.13	9.84	.94	6.50	.75	924
926	1.3785	1.3785	2.625	4.783	1.50	4.13	9.84	.94	6.50	.75	926
930	1.3785	1.5753	3.000	4.925	1.94	4.56	10.69	1.20	7.00	1.26	930
935	1.3140	1.3140	3.500	5.779	1.80	4.49	11.13	.86	7.38	.96	935
943	1.3765	1.3765	4.250	7.144	.98	4.62	12.75	.99	8.19	1.00	943

SIZE	R +.000 -.002	R1 +.000 -.008	R2 +.000 -.006	S	S1	T +.000 -.001	U +.000 -.001	V	KEYWAY	SIZE
913	.571	.056	.641	.81	.81	.668	.625	1.63	3/16 x 3/32	913
917	.716	.063	.943	1.19	1.19	.984	.750	1.69	3/16 x 3/32	917
920	.716	.063	.748	1.00	1.19	.984	.750	1.75	3/16 x 3/32	920
924	.823	.072	1.314	1.56	1.56	1.375	1.000	2.38	1/4 x 1/8	924
926	.823	.072	1.314	1.56	1.56	1.375	1.000	2.38	1/4 x 1/8	926
930	1.024	.108	1.293	1.72	1.76	1.375	1.000	2.38	1/4 x 1/8	930
935	NA	NA	NA	1.70	1.70	1.250	1.000	2.50	1/4 x 1/8	935
943	NA	NA	NA	1.92	1.92	1.250	1.250	2.50	1/4 x 1/8	943

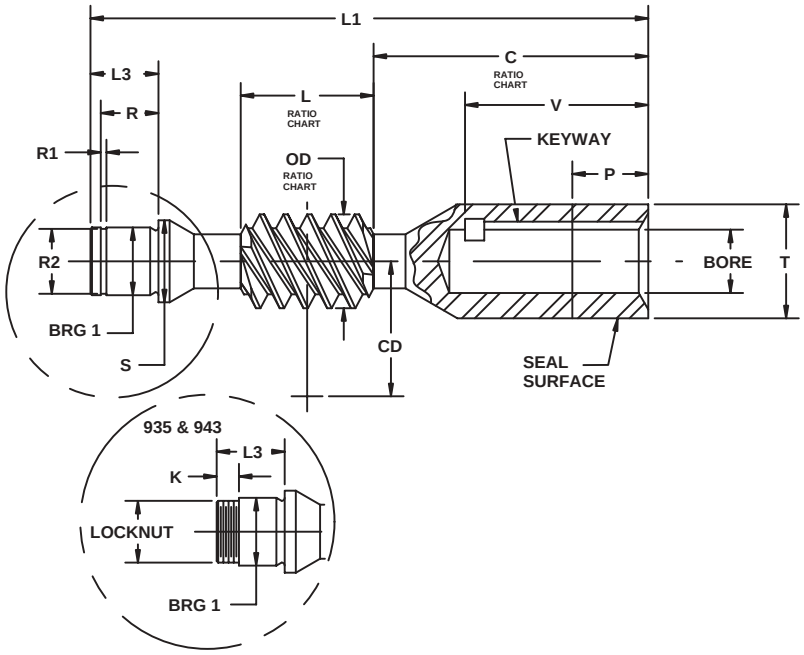
SOLID WORM SHAFT RATIO CHART

SIZE 913				SIZE 917				SIZE 920			
RATIO	WORM			RATIO	WORM			RATIO	WORM		
	OD	L	C		OD	L	C		OD	L	C
4	1.180	1.15	.66	4	1.617	1.17	1.10	4	1.158	1.79	1.79
5	.927	.98	.75	5	1.227	1.17	1.10	5	1.402	1.32	1.02
7.5	.788	.89	.79	7.5	.954	1.24	1.06	7.5	1.090	1.39	.98
10	.788	.89	.79	10	.874	1.25	1.06	10	.991	1.48	.94
15	.788	.89	.79	15	.874	1.25	1.06	15	.991	1.48	.94
20	.731	1.02	.73	20	.793	.95	1.21	20	.910	1.16	1.10
25	.697	1.02	.73	25	.745	.76	1.30	25	.835	.91	1.23
30	.801	1.02	.73	30	.891	1.28	1.04	30	1.034	1.56	.90
40	.731	1.02	.73	40	.793	1.02	1.17	40	.926	1.19	1.09
50	.697	1.02	.73	50	.745	1.02	1.17	50	.835	1.25	1.06
60	.674	1.02	.73	60	.714	1.02	1.17	60	.795	1.25	1.06
80	NA	NA	NA	80	.674	.50	1.43	80	.697	.53	1.41
100	NA	NA	NA	100	.558	.50	1.43	100	.674	.53	1.42

SIZE 924				SIZE 926				SIZE 930			
RATIO	WORM			RATIO	WORM			RATIO	WORM		
	OD	L	C		OD	L	C		OD	L	C
4	1.481	1.26	2.29	4	2.064	1.78	1.22	4	2.296	2.27	1.33
5	1.625	1.30	1.72	5	1.809	1.47	1.64	5	2.067	1.69	1.58
7.5	1.308	1.69	1.53	7.5	1.446	1.87	1.44	7.5	1.671	2.21	1.32
10	1.154	1.77	1.49	10	1.251	1.97	1.40	10	1.465	2.31	1.26
15	1.205	1.87	1.44	15	1.306	2.07	1.34	15	1.497	2.37	1.23
20	1.077	1.41	1.67	20	1.167	1.57	1.59	20	1.334	1.79	1.52
25	.999	1.14	1.80	25	1.062	1.75	1.49	25	1.216	1.40	1.72
30	1.205	1.87	1.44	30	1.306	2.07	1.34	30	1.497	2.37	1.23
40	1.077	1.50	1.50	40	1.167	1.75	1.49	40	1.334	1.79	1.52
50	.967	1.50	1.50	50	1.062	1.75	1.49	50	1.216	2.25	1.31
60	.920	1.50	1.50	60	.992	1.75	1.49	60	1.135	1.75	1.56
80	.851	.66	2.04	80	.915	.73	2.02	80	1.047	1.18	1.85
100	.817	.52	2.11	100	.878	.58	2.09	100	1.004	.67	1.96

SIZE 935				SIZE 943			
RATIO	WORM			RATIO	WORM		
	OD	L	C		OD	L	C
4	2.600	2.77	1.50	4	2.722	3.67	1.74
5	2.411	1.61	2.08	5	2.476	2.87	2.14
7.5	1.949	2.17	1.80	7.5	2.509	3.33	1.91
10	1.908	2.25	1.76	10	2.509	3.33	1.91
15	1.908	2.25	1.76	15	2.509	3.33	1.91
20	1.683	1.71	2.03	20	2.245	2.65	2.26
25	1.545	1.38	2.20	25	2.592	3.57	1.80
30	1.908	2.25	1.76	30	2.509	3.33	1.91
40	1.683	1.71	2.03	40	2.245	2.65	2.26
50	1.545	1.38	2.20	50	2.083	2.25	2.46
60	1.452	1.16	2.31	60	1.973	1.83	2.67
80	1.333	.88	2.44	80	1.833	1.63	2.77
100	1.261	.71	2.53	100	1.748	1.50	2.83

Material—8620 vacuum carburized and hardened.
Mechanical ratings are available in the unit rating section by size and ratio.
Check with factory for other dimensions.
WINSMITH® reserves the right to change dimensions without prior notice.



QUILL WORM DIMENSIONS

SIZE	BRG1 +.0000 -.0005	CD	K	LOCKNUT	L1	L3	P	R +.000 -.002	R1 +.000 -.008	R2 +.000 -.006	S	SIZE
913	.6696	1.333	NA	NA	5.26	.67	.75	.571	.056	.641	.81	913
917	.9848	1.750	NA	NA	6.47	.81	.75	.716	.063	.943	1.19	917
920	.7879	2.000	NA	NA	6.47	.81	.75	.716	.063	.748	1.00	920
924	1.3785	2.375	NA	NA	8.34	.94	1.00	.823	.072	1.314	1.56	924
926	1.3785	2.625	NA	NA	8.34	.94	1.00	.823	.072	1.314	1.56	926
930	1.3785	3.000	NA	NA	8.88	1.20	1.00	1.024	.108	1.293	1.72	930
935	1.3125	3.500	.69	N-06	10.31	2.31	1.00	NA	NA	NA	1.63	935
943	1.3750	4.250	.63	N-06	12.00	2.50	1.00	NA	NA	NA	1.69	943

SIZE	FRAME NO.	BORE +.001 -.000	KEYWAY	T +.000 -.001	V
913	48C	.5005	1/8 x 1/16	1.125	1.44
	56C	.6255	3/16 x 3/32		1.75
917	48C	.5005	1/8 x 1/16	1.375	1.44
	56C	.6255	3/16 x 3/32		1.88
	143TC 145TC	.8755			1.94
920	48C	.5005	1/8 x 1/16	1.375	1.44
	56C	.6255	3/16 x 3/32		1.88
	143TC 145TC	.8755			1.94
924 926 930	56C	.6255	3/16 x 3/32	1.750	1.88
	143TC 145TC	.8755			1.94
	182TC 184TC	1.1255	1/4 x 1/8		2.44

SIZE	FRAME NO.	BORE +.001 -.000	KEYWAY	T +.000 -.001	V
935	56C	.6255	3/16 x 3/32	1.750	1.63
	143TC 145TC	.8755			1.69
	182TC 184TC	1.1255	1/4 x 1/8		2.31
943	56C	.6255	3/16 x 3/32	1.750	1.88
	143TC 145TC	.8755			1.94
	182TC 184TC	1.1255	1/4 x 1/8		2.44
	213TC 215TC	1.3755	5/16 x 5/32	2.375	3.06

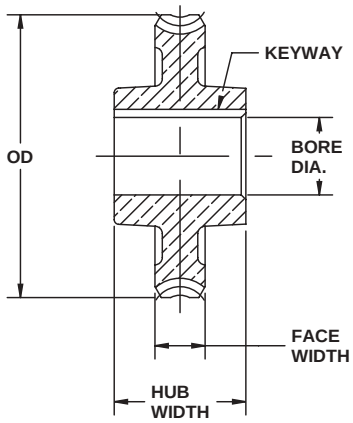
QUILL WORM RATIO CHART

SIZE 913				SIZE 917				SIZE 920			
RATIO	WORM			RATIO	WORM			RATIO	WORM		
	OD	L	C		OD	L	C		OD	L	C
4	1.180	1.15	2.54	4	1.617	1.17	3.11	4	1.158	1.79	2.96
5	.927	.98	2.63	5	1.227	1.17	3.10	5	1.402	1.32	3.02
7.5	.788	.89	2.67	7.5	.954	1.24	3.06	7.5	1.090	1.39	2.99
10	.788	.89	2.67	10	.874	1.25	3.06	10	.991	1.48	2.94
15	.788	.89	2.67	15	.874	1.25	3.06	15	.991	1.48	2.94
20	.731	1.02	2.61	20	.795	1.02	3.17	20	.910	1.16	3.11
25	.697	1.02	2.61	25	.745	1.02	3.17	25	.835	.91	3.23
30	.801	1.02	2.61	30	.891	1.28	3.04	30	1.034	1.56	2.90
40	.731	1.02	2.61	40	.793	1.02	3.17	40	.926	1.19	3.09
50	.697	1.02	2.61	50	.745	1.02	3.17	50	.835	1.25	3.06
60	.674	1.02	2.61	60	.714	1.02	3.17	60	.795	1.25	3.06
80	NA	NA	NA	80	.674	.50	3.43	80	.697	.53	3.42
100	NA	NA	NA	100	.558	.50	3.43	100	.674	.53	3.42

SIZE 924				SIZE 926				SIZE 930			
RATIO	WORM			RATIO	WORM			RATIO	WORM		
	OD	L	C		OD	L	C		OD	L	C
4	1.481	2.29	3.88	4	2.064	1.78	4.11	4	2.296	2.27	4.00
5	1.625	1.30	4.35	5	1.809	1.47	4.26	5	2.067	1.69	4.33
7.5	1.308	1.69	4.15	7.5	1.446	1.87	4.06	7.5	1.671	2.21	4.07
10	1.154	1.77	4.12	10	1.251	1.97	4.02	10	1.465	2.31	4.02
15	1.205	1.87	4.07	15	1.306	2.07	3.96	15	1.497	2.37	3.99
20	1.077	1.41	4.30	20	1.167	1.57	4.20	20	1.334	1.79	4.28
25	.999	1.14	4.43	25	1.063	1.75	4.11	25	1.216	1.40	4.47
30	1.205	1.87	4.07	30	1.306	2.07	3.96	30	1.497	2.37	3.99
40	1.077	1.50	4.24	40	1.167	1.75	4.11	40	1.334	1.79	4.28
50	.967	1.50	4.24	50	1.062	1.75	4.11	50	1.216	2.25	4.06
60	.920	1.50	4.24	60	.992	1.75	4.11	60	1.135	1.75	4.31
80	.851	.66	4.67	80	.915	.73	4.64	80	1.047	1.18	4.60
100	.817	.52	4.74	100	.878	.58	4.71	100	1.004	.92	4.72

SIZE 935				SIZE 943					
RATIO	WORM			RATIO	WORM OD	56C-184TC		213TC-215TC	
	OD	L	C			L	C	L	C
4	2.600	2.77	3.72	4	2.722	3.67	3.86	3.67	3.86
5	2.411	2.03	4.81	5	2.476	2.87	4.87	3.00	4.81
7.5	1.949	2.58	4.58	7.5	2.509	3.33	4.65	3.37	4.63
10	1.908	2.69	4.53	10	2.509	3.33	4.65	3.37	4.63
15	1.908	2.69	4.53	15	2.509	3.33	4.65	3.37	4.63
20	1.683	2.05	4.85	20	2.245	2.65	4.99	2.90	4.86
25	1.545	1.65	5.05	25	2.592	3.57	4.53	3.57	4.53
30	1.908	2.69	4.53	30	2.509	3.33	4.65	3.37	4.63
40	1.683	2.05	4.85	40	2.245	2.65	4.99	2.90	4.86
50	1.545	1.65	5.05	50	2.083	2.25	5.19	2.95	4.84
60	1.452	1.39	5.18	60	1.973	1.83	5.40	2.39	5.12
80	1.333	1.07	5.34	80	1.833	1.63	5.50	1.74	5.44
100	1.261	.85	5.45	100	1.748	1.50	5.56	1.50	5.56

SOLID SHAFT GEAR



SOLID SHAFT GEAR DIMENSIONS

SIZE	CD	BORE DIA.	KEYWAY	HUB WIDTH	SIZE	CD	BORE DIA.	KEYWAY	HUB WIDTH
913	1.333	.7506/.7511	3/16 x 3/32	1.127/1.123	926	2.625	1.2503/1.2510	1/4 x 1/8	1.377/1.373
917	1.750	1.0004/1.0011	1/4 x 1/8	1.707/1.703	930	3.000	1.3760/1.3753	5/16 x 5/32	1.501/1.499
920	2.000	1.0004/1.0011	1/4 x 1/8	1.707/1.703	935	3.500	1.7499/1.7508	3/8 x 3/16	1.562/1.558
924	2.375	1.2503/1.2510	1/4 x 1/8	1.377/1.373	943	4.250	1.9997/2.0008	1/2 x 1/4	2.002/1.998

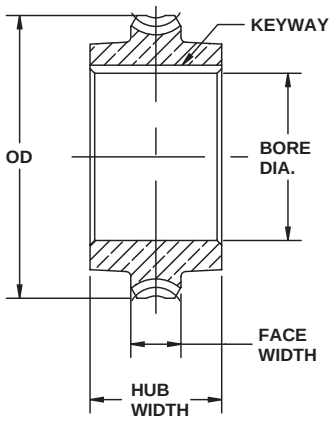
GEAR OD & FACE WIDTH

SIZE	RATIO														SIZE
	4		5		7.5		10		15		20		25		
	OD	FACE WIDTH SOLID SHAFT	OD	FACE WIDTH SOLID SHAFT	OD	FACE WIDTH SOLID SHAFT	OD	FACE WIDTH SOLID SHAFT	OD	FACE WIDTH SOLID SHAFT	OD	FACE WIDTH SOLID SHAFT	OD	FACE WIDTH SOLID SHAFT	
913	1.966	.56	2.070	.56	2.200	.50	2.200	.50	2.200	.50	2.200	.50	2.200	.50	913
917	2.300	.75	2.730	.75	2.941	.60	3.080	.60	3.080	.60	3.080	.60	3.080	.60	917
920	3.487	.65	3.120	.82	3.361	.65	3.560	.65	3.560	.65	3.560	.65	3.560	.65	920
924	4.009	.80	3.660	1.00	4.009	.80	4.240	.80	4.240	.80	4.240	.80	4.240	.80	924
926	3.766	1.00	4.060	1.06	4.431	.85	4.700	.85	4.700	.85	4.700	.85	4.700	.85	926
930	4.484	1.25	4.640	1.25	5.087	.94	5.390	.94	5.390	.94	5.390	.94	5.390	.94	930
935	5.400	1.40	5.364	1.40	6.035	1.05	6.035	1.05	6.035	1.05	6.035	1.05	6.035	1.05	935
943	7.100	1.38	7.100	1.38	7.100	1.38	7.100	1.38	7.100	1.38	7.100	1.38	7.100	1.38	943

SIZE	RATIO												SIZE
	30		40		50		60		80		100		
	OD	FACE WIDTH SOLID SHAFT	OD	FACE WIDTH SOLID SHAFT	OD	FACE WIDTH SOLID SHAFT	OD	FACE WIDTH SOLID SHAFT	OD	FACE WIDTH SOLID SHAFT	OD	FACE WIDTH SOLID SHAFT	
913	2.200	.50	2.200	.50	2.200	.50	2.200	.50	2.200	.50	2.200	.50	913
917	3.080	.60	3.080	.60	3.080	.60	3.080	.60	3.080	.60	3.080	.60	917
920	3.560	.65	3.560	.65	3.560	.65	3.560	.65	3.560	.65	3.560	.65	920
924	4.240	.80	4.240	.80	4.240	.80	4.240	.80	4.240	.80	4.240	.80	924
926	4.700	.85	4.700	.85	4.700	.85	4.700	.85	4.700	.85	4.700	.85	926
930	5.390	.94	5.390	.94	5.390	.94	5.390	.94	5.390	.94	5.390	.94	930
935	6.035	1.05	6.035	1.05	6.035	1.05	6.035	1.05	6.035	1.05	6.035	1.05	935
943	7.100	1.38	7.100	1.38	7.100	1.38	7.100	1.38	7.100	1.38	7.100	1.38	943

Material—Chill cast or forged bronze.
Mechanical ratings are available in the unit rating section by size and ratio.
Check with factory for other dimensions.
WINSMITH® reserves the right to change dimensions without prior notice.

HOLLOW SHAFT GEAR



HOLLOW SHAFT GEAR DIMENSIONS

SIZE	CD	BORE DIA.	KEYWAY	HUB WIDTH
917	1.750	1.4956/1.4964	1/4 x 1/8	1.922/1.918
920	2.000	2.0008/1.9997	1/4 x 1/8	1.896/1.892
924	2.375	2.2496/2.2507	1/4 x 1/8	1.377/1.373
926	2.625	2.4994/2.5005	1/4 x 1/8	2.020/2.016

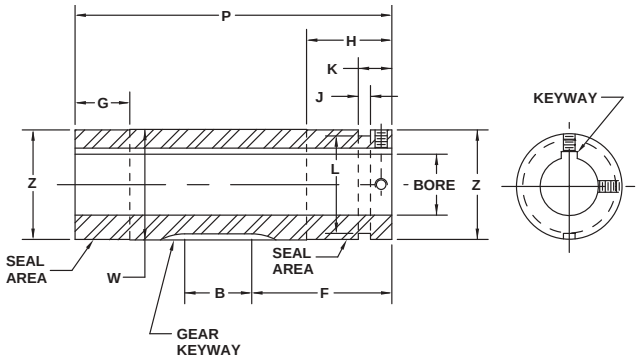
SIZE	CD	BORE DIA.	KEYWAY	HUB WIDTH
930	3.000	2.6885/2.6879	5/16 x 5/32	1.501/1.499
935	3.500	2.8760/2.8754	3/8 x 3/16	3.001/2.999
943	4.250	3.9995/4.0005	3/8 x 3/16	2.251/2.249

GEAR OD & FACE WIDTH

SIZE	RATIO														SIZE
	4		5		7.5		10		15		20		25		
	OD	FACE WIDTH HOLLOW SHAFT	OD	FACE WIDTH HOLLOW SHAFT	OD	FACE WIDTH HOLLOW SHAFT	OD	FACE WIDTH HOLLOW SHAFT	OD	FACE WIDTH HOLLOW SHAFT	OD	FACE WIDTH HOLLOW SHAFT	OD	FACE WIDTH HOLLOW SHAFT	
913	1.966	NA	2.070	NA	2.200	NA	2.200	NA	2.200	NA	2.200	NA	2.200	NA	913
917	2.300	.75	2.730	.75	2.941	.60	3.080	.60	3.080	.60	3.080	.60	3.080	.60	917
920	3.487	.65	3.120	1.00	3.361	.65	3.560	.65	3.560	.65	3.560	.65	3.560	.65	920
924	4.009	.91	3.660	.91	4.009	.91	4.240	.91	4.240	.91	4.240	.91	4.240	.91	924
926	3.766	1.00	4.060	1.00	4.431	.85	4.700	.85	4.700	.85	4.700	.85	4.700	.85	926
930	4.484	1.31	4.640	1.31	5.087	.75	5.390	.75	5.390	.75	5.390	.75	5.390	.75	930
935	5.400	1.40	5.364	1.50	6.035	1.50	6.035	1.50	6.035	1.50	6.035	1.50	6.035	1.50	935
943	7.100	1.38	7.100	1.38	7.100	1.38	7.100	1.38	7.100	1.38	7.100	1.38	7.100	1.38	943

SIZE	RATIO												SIZE
	30		40		50		60		80		100		
	OD	FACE WIDTH HOLLOW SHAFT	OD	FACE WIDTH HOLLOW SHAFT	OD	FACE WIDTH HOLLOW SHAFT	OD	FACE WIDTH HOLLOW SHAFT	OD	FACE WIDTH HOLLOW SHAFT	OD	FACE WIDTH HOLLOW SHAFT	
913	2.200	NA	2.200	NA	2.200	NA	2.200	NA	2.200	NA	2.200	NA	913
917	3.080	.60	3.080	.60	3.080	.60	3.080	.60	3.080	.60	3.080	.60	917
920	3.560	.65	3.560	.65	3.560	.65	3.560	.65	3.560	.65	3.560	.65	920
924	4.240	.91	4.240	.91	4.240	.91	4.240	.91	4.240	.91	4.240	.91	924
926	4.700	.85	4.700	.85	4.700	.85	4.700	.85	4.700	.85	4.700	.85	926
930	5.390	.75	5.390	.75	5.390	.75	5.390	.75	5.390	.75	5.390	.75	930
935	6.035	1.50	6.035	1.50	6.035	1.50	6.035	1.50	6.035	1.50	6.035	1.50	935
943	7.100	1.38	7.100	1.38	7.100	1.38	7.100	1.38	7.100	1.38	7.100	1.38	943

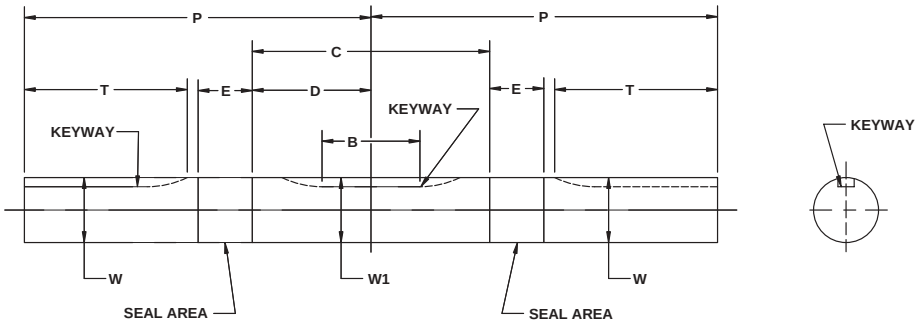
Material—Chill cast or forged bronze.
Mechanical ratings are available in the unit rating section by size and ratio.
Check with factory for other dimensions.
WINSMITH® reserves the right to change dimensions without prior notice.



HOLLOW SLOW SPEED SHAFT DIMENSIONS

SIZE	CD	GEAR KEYWAY	B FULL DEPTH	F	G	H	J	K	L	P	W	Z +.000 -.001	BORE +.002 -.000	KEYWAY	SIZE
917	1.750	1/4 x 1/8	1.75	2.38	1.00	1.63	.25	.63	1.25	5.88	1.4971/1.4965	1.492	1.000	1/4 x 1/8	917
920	2.000	1/4 x 1/8	1.88	2.44	1.00	1.50	.25	.63	1.75	6.25	2.0015/2.0010	1.997	1.438	3/8 x 1/8	920
924	2.375	1/4 x 1/8	1.38	2.88	1.13	1.75	.25	.68	2.00	6.50	2.2515/2.2510	2.247	1.500	3/8 x 3/16	924
926	2.625	1/4 x 1/8	2.00	2.69	1.13	1.81	.25	.68	2.25	6.69	2.5015/2.5010	2.497	1.688	3/8 x 3/16	926
930	3.000	5/16 x 5/32	1.50	3.31	1.19	2.06	.25	.81	2.44	7.25	2.690/2.689	2.625	1.938	1/2 x 3/16	930
935	3.500	3/8 x 3/16	1.75	3.56	1.00	1.88	.25	.94	2.50	8.00	2.8775/2.8765	2.873	2.188	1/2 x 1/8	935
943	4.250	3/8 x 3/16	2.25	3.25	1.69	1.69	.25	.56	3.38	8.75	4.0025/4.0015	3.875	2.750	5/8 x 5/16	943

Material—Low carbon, free machining steel.
Maximum available bore diameter is shown. Check with factory for smaller bore sizes.
Use this style shaft with hollow shaft gears.
Check with factory for other dimensions.
WINSMITH® reserves the right to change dimensions without prior notice.



SOLID SLOW SPEED SHAFT DIMENSIONS

SIZE	CD	KEYWAY	B FULL DEPTH	C	D	E	P	T	W +.000 -.001	W1 +.0000 -.0005	SIZE
913	1.333	3/16 x 3/32	1.13	2.76	1.38	.75	4.00	1.88	.750	.7515	913
917	1.750	1/4 x 1/8	1.72	3.12	1.56	.88	4.75	2.31	1.000	1.0015	917
920	2.000	1/4 x 1/8	1.72	3.12	1.56	.88	4.75	2.31	1.000	1.0015	920
924	2.375	1/4 x 1/8	1.38	4.00	2.00	.88	5.50	2.63	1.250	1.2515	924
926	2.625	1/4 x 1/8	1.38	4.00	2.00	.88	5.50	2.63	1.250	1.2515	926
930	3.000	5/16 x 5/32	1.50	4.25	2.13	1.00	5.88	2.75	1.375	1.3765	930
935	3.500	3/8 x 3/16	2.06	5.00	2.50	.88	7.00	3.63	1.750	1.7515	935
943	4.250	1/2 x 1/4	2.00	5.50	2.75	1.00	8.00	4.19	2.000	2.0015	943

Material—Low carbon, free machining steel.
Single or double extension shafts available.
Use this style shaft with solid shaft gears.
Check with factory for other dimensions.
WINSMITH® reserves the right to change dimensions without prior notice.

SEAL AND BEARING DATA

D-90® TYPE SE® BEARING AND OIL SEAL CHART

SIZE/ REDUCTION[1]	PART NUMBER REFERENCE	HIGH SPEED SEALS		SLOW SPEED SEALS			HS BEARING		INTERMEDIATE BEARINGS		SLOW SPEED BEARINGS (CUP/CONE)		
		SOLID[2] INPUT	HOLLOW MOTORIZED INPUT**	SOLID OUTPUT	HOLLOW OUTPUT	"L" SERIES (DROP-BEARING)	FRONT[3]	REAR	FRONT[3]	REAR	SOLID OUTPUT	HOLLOW OUTPUT	"L"[4] SERIES (EXTENSION END)
910 Single	WS Part No.	30530[5]	30418	3301	N/A	N/A	20269	20269	N/A	N/A	3333/3332	N/A	N/A
910 Single	Mfg. Part No.	CR5150	CR9837	CR5068	N/A	N/A	6003	6003	N/A	N/A	A4138/A4050	N/A	N/A
913 Single	WS Part No.	30057	4959	30040	N/A	N/A	20118	20118	N/A	N/A	2463/2462	N/A	N/A
913 Single	Mfg. Part No.	CR 6660	CR11124 CR547585	CR 7443	N/A	N/A	6203	6203	N/A	N/A	LM11910/LM11949	N/A	N/A
917 Single	WS Part No.	30118	30060	30088	30406	N/A	2959	2959	N/A	N/A	5887/5838	20482/20483	N/A
917 Single	Mfg. Part No.	CR 9760	CR13534 CR547586	CR 9935	CR 14705	N/A	6205	6205	N/A	N/A	L44610/L44643	JL69310/JL69349	N/A
917 Double	WS Part No.	30057	4959	30088	30406	N/A	20118	20118	2959	2959	5887/5838	20482/20483	N/A
917 Double	Mfg. Part No.	CR 6660	CR11124 CR547585	CR9935	CR 14705	N/A	6203	6203	6205	6205	L44610/L44643	JL69310/JL69349	N/A
920 Single	WS Part No.	30118	30060	30088	30127	N/A	2959	20194	N/A	N/A	5887/5838	20075/20204	N/A
920 Single	Mfg. Part No.	CR 9760	CR13534 CR547586	CR 9935	CR 19762	N/A	6205	6304	N/A	N/A	L44610/L44643	JLM104910/LM104949	N/A
920 Double	WS Part No.	30057	4959	30088	30127	N/A	20118	20118	2959	20194	5887/5838	20075/20204	N/A
920 Double	Mfg. Part No.	CR 6660	CR11124 CR547585	CR 9935	CR 19762	N/A	6203	6203	6205	6304	L44610/L44643	JLM104910/LM104949	N/A
924 Single	WS Part No.	30120	30047	30025	3313	N/A	20140	20140	N/A	N/A	20062/20061	5686/5685	N/A
924 Single	Mfg. Part No.	CR 13918	CR17285 CR547587	CR 12458	CR 22354	N/A	6207	6207	N/A	N/A	LM67010/LM67048	382A/387	N/A
924 Double (D)	WS Part No.	30118	30060	30025	3313	N/A	2959	2959	20140	20140	20062/20061	5696/5695	N/A
924 Double (D)	Mfg. Part No.	CR 9760	CR13534 CR547586	CR 12458	CR 22354	N/A	6205	6205	6207	6207	LM67010/LM67048	382A/387	N/A
924 Double (H)	WS Part No.	30118	30060	30025	3313	N/A	2959	20048	20140	20140	20062/20061	5696/5695	N/A
924 Double (H)	Mfg. Part No.	CR 9760	CR13534 CR547586	CR 12458	CR 22354	N/A	6205	6201	6207	6207	LM67010/LM67048	382A/387	N/A
926 Single	WS Part No.	30120	30047	30025	30044	30025	20140	20140	N/A	N/A	20062/20061	3628/20350	4650/776
926 Single	Mfg. Part No.	CR 13918	CR17285 CR547587	CR 12458	CR 24898	CR 12458	6207	6207	N/A	N/A	LM67010/LM67048	394A/390A	15245/15123
926 Double (D)	WS Part No.	30118	30066	30025	30044	30025	2959	2959	20140	20140	20062/20061	3628/20350	4650/776
926 Double (D)	Mfg. Part No.	CR 9760	CR13534 CR547586	CR 12458	CR 24898	CR 12458	6205	6205	6207	6207	LM67010/LM67048	394A/390A	15245/15123
926 Double (H)	WS Part No.	30118	30060	30025	30044	30025	2959	20048	20140	20140	20062/20061	3628/20350	4650/776
926 Double (H)	Mfg. Part No.	CR 9760	CR13534 CR547586	CR 12458	CR 24898	CR 12458	6205	6201	6207	6207	LM67010/LM67048	394A/390A	15245/15123
930 Single	WS Part No.	30464	30047	30078	30033	30032	20318	2958	N/A	N/A	20144/20143	3628/20577	2888/2889
930 Single	Mfg. Part No.	CR 13986	CR17285 CR547587	CR 13569	CR 26186	CR 14247	6208	6307	N/A	N/A	LM48510/LM48548	394A/399AS	2720/2788
930 Double (D)	WS Part No.	30118	30060	30078	30033	30032	2959	20194	20318	2958	20144/20143	3628/20577	2888/2889
930 Double (D)	Mfg. Part No.	CR 9760	CR13534 CR547586	CR 13569	CR 26186	CR 14247	6205	6304	6208	6307	LM48510/LM48548	394A/399AS	2720/2788
930 Double (H)	WS Part No.	30118	30060	30078	30033	30032	2959	20048	20318	2958	20144/20143	3628/20577	2888/2889
930 Double (H)	Mfg. Part No.	CR 9760	CR13534 CR547586	CR 13569	CR 26186	CR 14247	6205	6201	6208	6307	LM48510/LM48548	394A/399AS	2720/2788
935 Single	WS Part No.	30025	30047	30047	5649	5422	20212/20211		N/A	N/A	20219/20413	5648/5647	20219/20143
935 Single	Mfg. Part No.	CR 12458	CR17285 CR547587	CR17285 CR547587	CR 28746	CR 16085	M88010/M88048		N/A	N/A	25520/25580	29620/29685	25520/25580
935 Double (D)	WS Part No.	30018	30060	30047	5649	5422	2959	20194	20212/20211		20219/20413	5648/5647	20219/20143
935 Double (D)	Mfg. Part No.	CR 9760	CR13534 CR547586	CR17285 CR547587	CR 28746	CR 16085	6205	6304	M88010/M88048		25520/25580	29620/29685	25520/25580
935 Double (H)	WS Part No.	30018	30060	30047	5649	5422	2959	20048	20212/20211		20219/20413	5648/5647	20219/20143
935 Double (H)	Mfg. Part No.	CR 9760	CR13534 CR547586	CR17285 CR547587	CR 28746	CR 16085	6205	6201	M88010/M88048		25520/25580	29620/29685	25520/25580
943 Single	WS Part No.	30025	30047*	3309	30583	30090	20301/20302		N/A		20206/2936	20153/20152	20206/2936
943 Single	Mfg. Part No.	CR 12458	CR17285 CR547587	CR 19831	CR 38692	CR 16680	HM88610/HM88649		N/A		3720/3780	52618/52400	3720/3780
943 Double (D)	WS Part No.	30120	30047	3309	30583	30090	20140	20140	20301/20302		20206/2936	20153/20152	20206/2936
943 Double (D)	Mfg. Part No.	CR 13918	CR17285 CR547587	CR 19831	CR 38692	CR 16680	6207	6207	HM88616/HM88649		3720/3780	52618/52400	3720/3780
943 Double (H)	WS Part No.	30120	30047	3309	30583	30090	20140	20119	20301/20302		20206/2936	20153/20152	20206/2936
943 Double (H)	Mfg. Part No.	CR 13918	CR17285 CR547587	CR 19831	CR 38692	CR 16680	6207	6204	HM88616/HM88649		3720/3780	52618/52400	3720/3780

1. (D) = Double Worm combination, (H) = Helical/Worm combination.
2. Including coupling style motorized.
3. Not used on hollow input models.
4. For non extension end slow speed bearings see solid output column.
5. Coupling style motorized seal, W/S P/N 3301, CR 5068.

*High speed oil seal for 213TC-215TC WS part no. 30604, Mfg. part no. CR23656.
**For availability, contact factory.
CR = Chicago Rawhide
JM = Johns Manville

CONVERSION— WINGEAR TO D-90® TYPE SE®

The WINSMITH® Wingear product line was developed in the mid 1970's. The Wingear product line helped WINSMITH gain a valuable place in the stock standard market place.

The D-90 TYPE SE is an improved Wingear product. The D-90 TYPE SE design incorporates most of the features of the Wingear product as well as many new features. The "SE'' indicates single enveloping worm gear design is being used for the product gearing. WINSMITH's D-90 TYPE SE gearing is designed for efficiency to address the market's ever increasing demand for energy efficient products. The D-90 TYPE SE design was also developed to be more application friendly, meaning the design has greater flexibility to allow its use in a wider range of applications.

The D-90 TYPE SE product is interchangeable with almost all previous Wingear products. If any problems are incurred during conversion, contact your WINSMITH sales representative for a quick resolution.

The D-90 TYPE SE product is also easy to identify through its familiar product identification because it follows the Wingear nomenclature very closely. Where Wingear center distances are three digit numbers (i.e. 175=1.75") indicating the center distance in inches the D-90 TYPE SE only uses two digits for center distance and adds a "9'' to the beginning to indicate the D-90 TYPE SE product size (i.e. 917=1.75"). Previously a universal mount (WU, MWU) was used to accommodate the need to mount the unit on the input shaft end. Now the Wingear is available as a unit with feet on the input shaft end only (WB, MWB, CWB). This allows for the elimination of the redundant feet on the other end which results in a cleaner and more economic design. All other aspects of the product nomenclature have stayed the same. (See pages 214-219.)

WINGEAR SIZE	D-90 TYPE SE SIZE
133	913
175	917
200	920
237	924
263	926
300	930

UNIT CHARACTERISTIC	SYMBOL	EXAMPLE
Product Line	W	MWT
Worm on Bottom	B	WB
Worm on Top	T	WT
Universal—Feet Top & Bottom	U	WU
C Flange Input—Coupling Style	C	CWT
C Flange Input—Quill Style	M	MWU
Gearmotor—Mounted Motor	W (Suffix)	MWTW

MODEL	913	917	920	924	926	930
WB SHIPPING WEIGHT	13	21	22	45	42	58
MWB SHIPPING WEIGHT	16	24	25	49	46	62
CWB SHIPPING WEIGHT	19	28	29	54	51	68
APPROX. OIL CAPACITY (PINTS)	.3	.7	.8	1.0	2.1	2.7

GEAR RATIOS AVAILABLE 5:1 THRU 60:1
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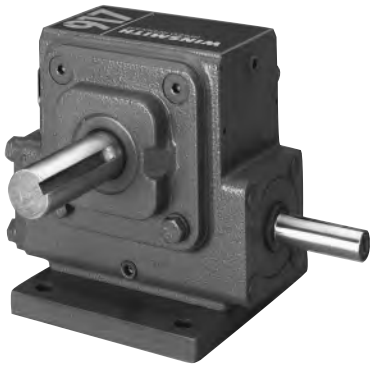
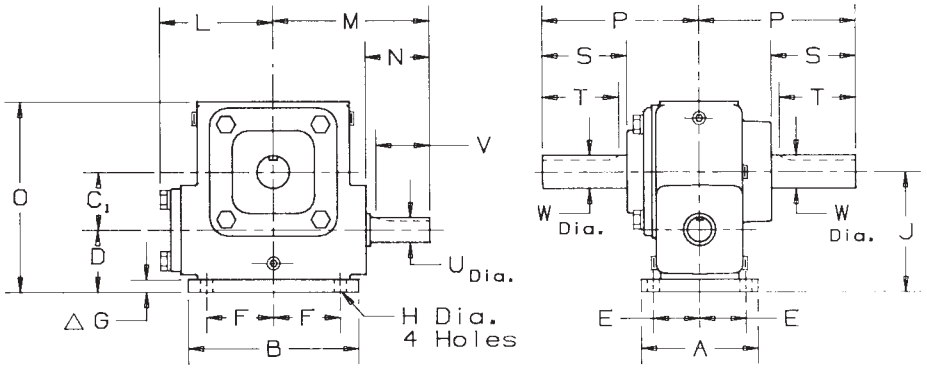
HYDRAULIC MOTOR ADAPTERS . . . . . PAGE 192

MODEL WB
Assembly L



DIMENSIONS

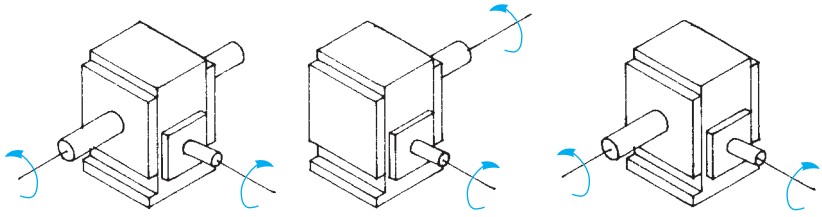


SPEED REDUCER DIMENSIONS (IN INCHES)

SIZE	A	B	C_1	D	E	F	G△	H	J	L	M	O	P	HIGH SPEED SHAFT				SLOW SPEED SHAFT				SIZE
														U*	N	V	KEYWAY	W*	S	T	KEYWAY	
913	5.00	3.88	1.333	1.50	2.00	1.25	.25	.406	2.83	2.83	4.12	4.58	4.00	.500	1.81	1.63	.13 x .06	.750	2.06	1.88	.19 x .09	913
917	5.00	4.63	1.750	2.00	2.00	1.75	.50	.406	3.75	3.44	4.88	5.88	4.75	.625	2.06	1.75	.19 x .09	1.000	2.56	2.31	.25 x .13	917
920	5.00	5.25	2.000	1.75	2.00	1.75	.25	.406	3.75	3.44	4.88	5.88	4.75	.625	2.06	1.75	.19 x .09	1.000	2.56	2.31	.25 x .13	920
924	7.00	5.75	2.375	2.75	2.88	2.25	.75	.563	5.13	4.50	6.50	8.00	5.50	1.000	2.75	2.38	.25 x .13	1.250	2.81	2.63	.25 x .13	924
926	7.00	6.00	2.625	2.50	2.88	2.25	.38	.563	5.13	4.50	6.50	8.25	5.50	1.000	2.75	2.38	.25 x .13	1.250	2.81	2.63	.25 x .13	926
930	8.00	6.75	3.000	3.00	3.25	2.63	.50	.563	6.00	4.63	7.00	9.50	5.88	1.000	3.06	2.38	.25 x .13	1.375	2.88	2.75	.31 x .16	930

*Shaft diameter tolerance +.000 -.001. For construction purposes send for Certified Dimension Sheets.
△Size 924 uses 2 bases to match previous Wingear shaft heights.

SHAFT ARRANGEMENTS AND RELATIVE SHAFT ROTATIONS



ASSEMBLY LR
OPTIONAL

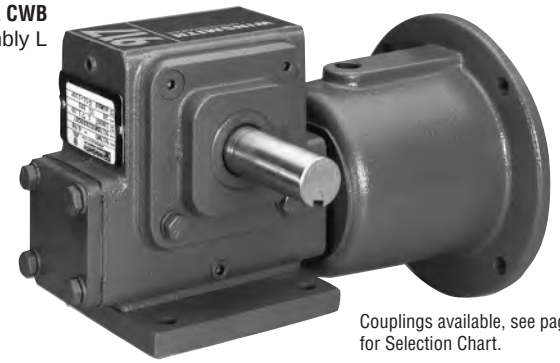
ASSEMBLY R
STANDARD

ASSEMBLY L
STANDARD

The input shaft may be driven in either direction.

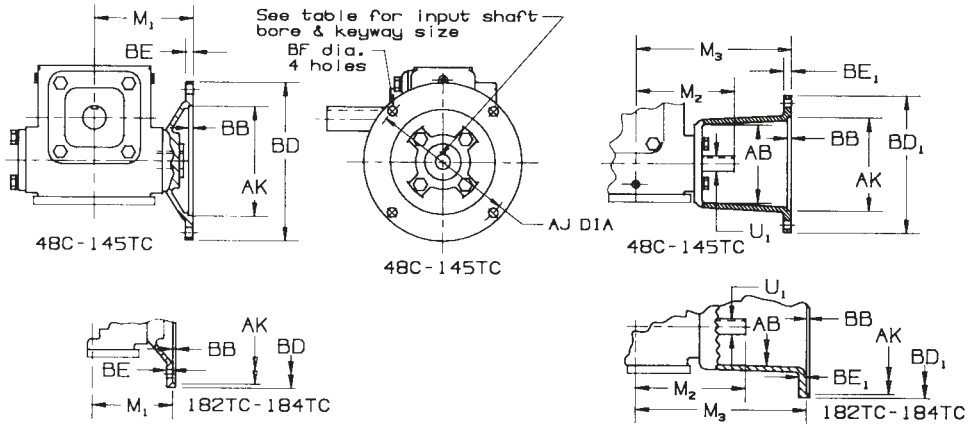
MODEL MWB
Assembly L

MODEL CWB
Assembly L



Couplings available, see page 189 for Selection Chart.

DIMENSIONS

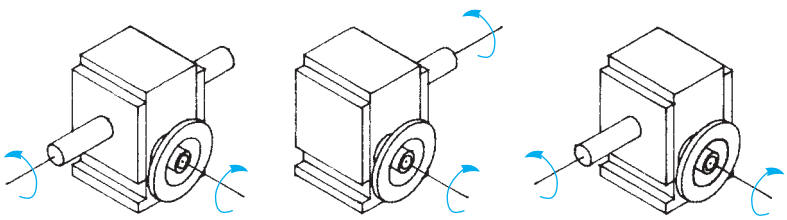


SIZE	FRAME SIZE RANGE	HOLLOW INPUT MOTOR ADAPTER**			COUPLING STYLE MOTOR ADAPTER									
					56C-145TC			182TC-184TC						
		M_1 48C	M_1 56C-145TC	M_1 182TC 184TC	AB	M_3	BE_1	AB	M_3	BE_1	M_2	U_1	KEYWAY
913	48C-56C	3.56	3.63△	NA	3.00	6.75	.31	NA	NA	NA	4.12	.500	.13 x .06
917	48C-184TC	4.06	4.06△	NA	3.75	7.50	.38	3.75	8.44	.50	4.88	.625	.19 x .09
920	56C-184TC	NA	4.06	NA	3.75	7.50	.38	3.75	8.44	.50	4.88	.625	.19 x .09
924	56C-184TC	NA	5.38	5.38	4.13	9.13	.38	4.25	10.19	.50	6.50	1.000	.25 x .13
926	56C-184TC	NA	5.38	5.38	4.13	9.13	.38	4.25	10.19	.50	6.50	1.000	.25 x .13
930	56C-184TC	NA	5.56	5.56	4.13	9.75	.38	4.75	10.88	.50	7.00	1.000	.25 x .13

**Tapped motor removal holes to aid separation of motor.
△56C frame only.

FRAME NO.	48C	56C	143TC 145TC	182TC 184TC
AJ	3.75	5.88	5.88	7.25
AK	3.00	4.50	4.50	8.50
BB	.19	.19	.19	.19
BD	4.50	6.50	6.50	9.00
BD_1	NA	6.63	6.63	9.00
BE	.34	.31	.31	.38
BF	.281	.406	.406	.531
KEYWAY	.13 X .06	.19 x .09		.25 x .13
BORE +.001 -.000	.5005	.6255	.8755	1.1255

SHAFT ARRANGEMENTS AND RELATIVE SHAFT ROTATIONS



ASSEMBLY LR
OPTIONAL

ASSEMBLY R
STANDARD

ASSEMBLY L
STANDARD

The input shaft may be driven in either direction.

MODEL	913	917	920	924	926	930
WT SHIPPING WEIGHT	14	22	22	43	42	58
MWT SHIPPING WEIGHT	17	24	25	47	46	62
CWT SHIPPING WEIGHT	19	28	29	52	51	68
APPROX. OIL CAPACITY (PINTS)	.2	.5	.5	1.0	1.2	1.7

GEAR RATIOS AVAILABLE 5:1 THRU 60:1
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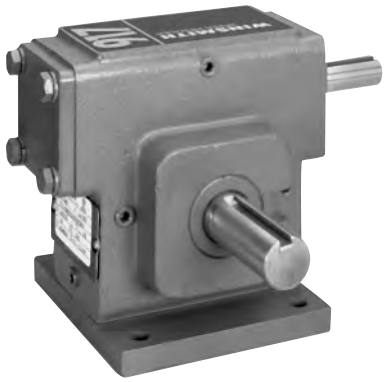
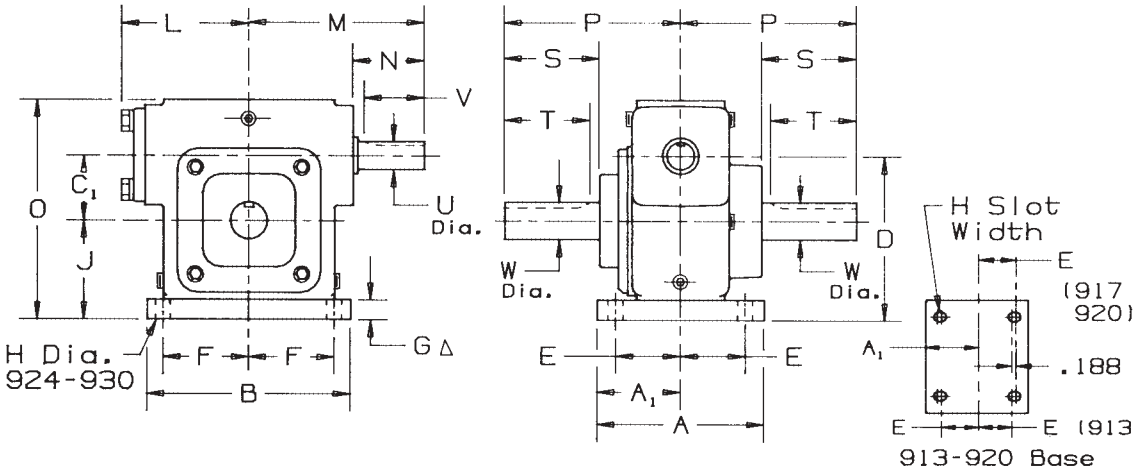
MODEL WT
Assembly L



DIMENSIONS

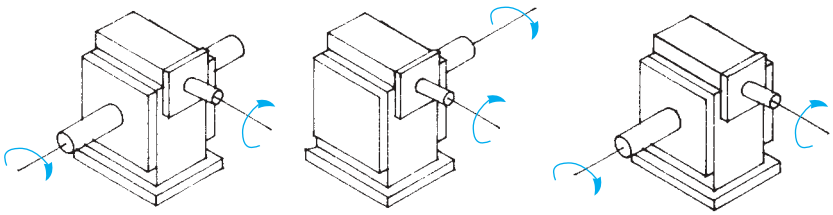


SPEED REDUCER DIMENSIONS (IN INCHES)

SIZE	A	A_1	B	C_1	D	E	F	G△	H	J	L	M	O	P	HIGH SPEED SHAFT				SLOW SPEED SHAFT				SIZE
															U*	N	V	KEYWAY	W*	S	T	KEYWAY	
913	5.00	2.50	3.88	1.333	3.46	2.00	1.25	.38	.406	2.13	2.83	4.12	4.71	4.00	.500	1.81	1.63	.13 x .06	.750	2.06	1.88	.19 x .09	913
917	5.00	2.59	5.00	1.750	4.38	2.00	1.75	.50	.406	2.63	3.44	4.88	5.88	4.75	.625	2.06	1.75	.19 x .09	1.000	2.56	2.31	.25 x .13	917
920	5.00	2.59	5.50	2.000	4.63	2.00	1.75	.50	.406	2.63	3.44	4.88	6.13	4.75	.625	2.06	1.75	.19 x .09	1.000	2.56	2.31	.25 x .13	920
924	7.00	3.50	5.75	2.375	5.88	2.88	2.25	.63	.563	3.50	4.50	6.50	7.88	5.50	1.000	2.75	2.38	.25 x .13	1.250	2.81	2.63	.25 x .13	924
926	7.00	3.50	6.00	2.625	6.13	2.88	2.25	.38	.563	3.50	4.50	6.50	8.25	5.50	1.000	2.75	2.38	.25 x .13	1.250	2.81	2.63	.25 x .13	926
930	8.00	4.00	6.75	3.000	7.00	3.25	2.63	.50	.563	4.00	4.63	7.00	9.50	5.88	1.000	3.06	2.38	.25 x .13	1.375	2.88	2.75	.31 x .16	930

*Shaft diameter tolerance +.000 -.001. For construction purposes send for Certified Dimension Sheets.
△Size 924 uses 2 bases to match previous Wingear shaft heights.

SHAFT ARRANGEMENTS AND RELATIVE SHAFT ROTATIONS



ASSEMBLY LR
OPTIONAL

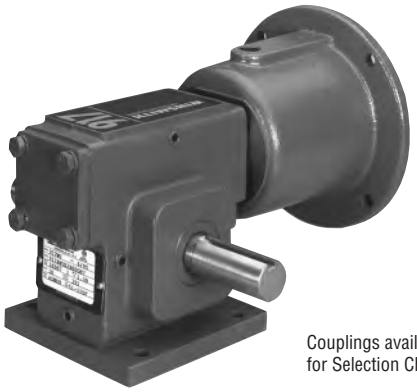
ASSEMBLY R
STANDARD

ASSEMBLY L
STANDARD

The input shaft may be driven in either direction.

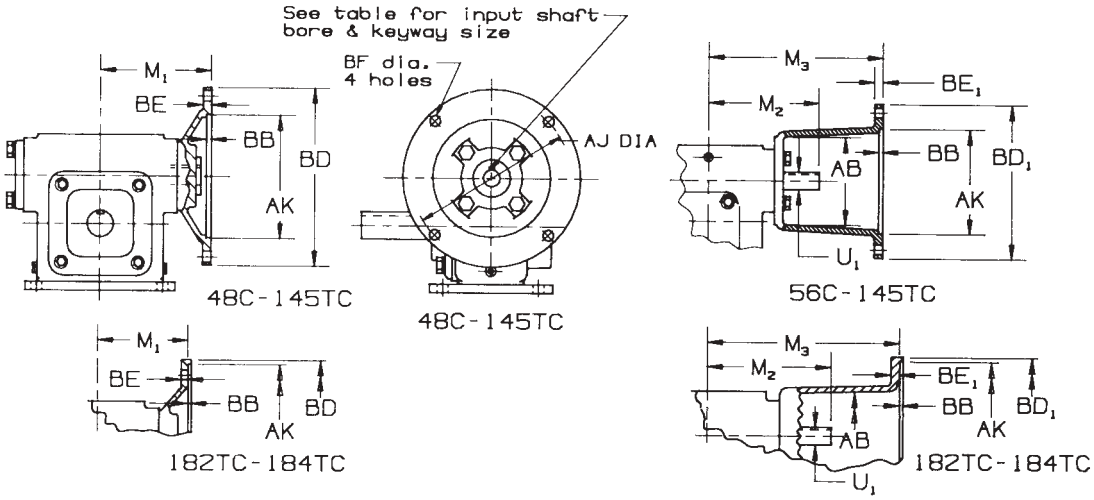
MODEL MWT
Assembly L

MODEL CWT
Assembly L



Couplings available, see page 189 for Selection Chart.

DIMENSIONS

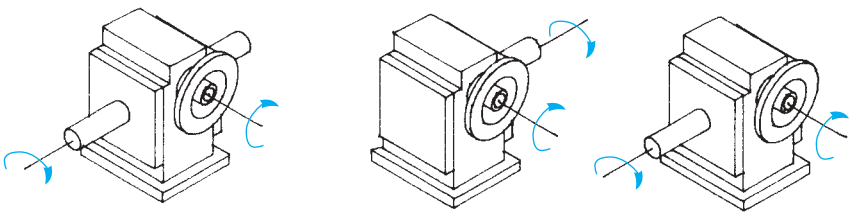


SIZE	FRAME SIZE RANGE	HOLLOW INPUT MOTOR ADAPTER**			COUPLING STYLE MOTOR ADAPTER									
		M_1 48C	M_1 56C-145TC	M_1 182TC 184TC	56C-145TC			182TC-184TC			M_2	U_1	KEYWAY
					AB	M_3	BE_1	AB	M_3	BE_1			
913	48C-56C	3.56	3.63△	NA	3.00	6.75	.31	NA	NA	NA	4.12	.500	.13 x .06
917	48C-184TC	4.06	4.06△	NA	3.75	7.50	.38	3.75	8.44	.50	4.88	.625	.19 x .09
920	56C-184TC	NA	4.06	NA	3.75	7.50	.38	3.75	8.44	.50	4.88	.625	.19 x .09
924	56C-184TC	NA	5.38	5.38	4.13	9.13	.38	4.25	10.19	.50	6.50	1.000	.25 x .13
926	56C-184TC	NA	5.38	5.38	4.13	9.13	.38	4.25	10.19	.50	6.50	1.000	.25 x .13
930	56C-184TC	NA	5.56	5.56	4.13	9.75	.38	4.75	10.88	.50	7.00	1.000	.25 x .13

**Tapped motor removal holes to aid separation of motor.
△56C frame only.

FRAME NO.	48C	56C	143TC 145TC	182TC 184TC
AJ	3.75	5.88	5.88	7.25
AK	3.00	4.50	4.50	8.50
BB	.19	.19	.19	.19
BD	4.50	6.50	6.50	9.00
BD_1	4.50	6.63	6.63	9.00
BE	.34	.31	.31	.38
BF	.281	.406	.406	.531
KEYWAY	.13 X .06	.19 x .09		.25 x .13
BORE $^{+.001}_{-.000}$	.5005	.6255	.8755	1.1255

SHAFT ARRANGEMENTS AND RELATIVE SHAFT ROTATIONS



ASSEMBLY LR
OPTIONAL

ASSEMBLY R
STANDARD

ASSEMBLY L
STANDARD

The input shaft may be driven in either direction.

MODEL	913	917	920	924	926	930
WU SHIPPING WEIGHT	15	25	25	47	47	65
MWU SHIPPING WEIGHT	17	28	28	51	51	69
CWU SHIPPING WEIGHT	21	31	31	56	56	75
APPROX. OIL CAPACITY (PINTS)	.2	.5	.5	1.0	1.2	1.7

GEAR RATIOS AVAILABLE 5:1 THRU 60:1
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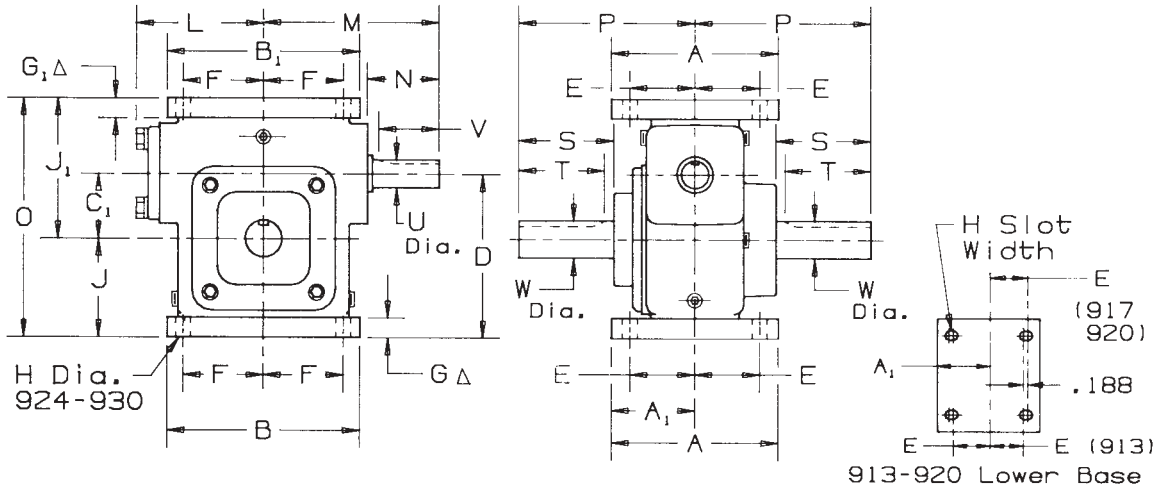
MODEL WU
Assembly L

DIMENSIONS

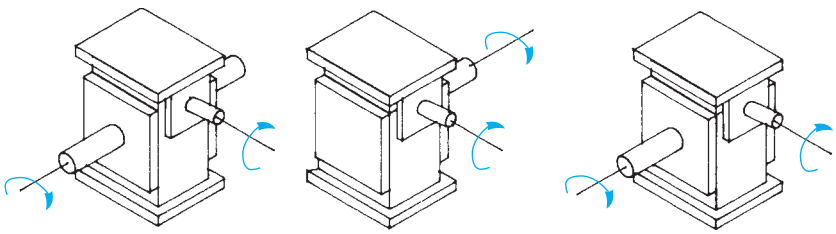


SPEED REDUCER DIMENSIONS (IN INCHES)

SIZE	A	A_1	B	B_1	C_1	D	E	F	G△	G_1△	H	J	J_1	L	M	O	P	HIGH SPEED SHAFT				SLOW SPEED SHAFT				SIZE
																		U*	N	V	KEYWAY	W*	S	T	KEYWAY	
913	5.00	2.50	3.88	3.88	1.333	3.46	2.00	1.25	.38	.25	.406	2.13	2.83	2.83	4.12	4.96	4.00	.500	1.81	1.63	.13 x .06	.750	2.06	1.88	.19 x .09	913
917	5.00	2.59	5.00	4.63	1.750	4.38	2.00	1.75	.50	.50	.406	2.63	3.75	3.44	4.88	6.38	4.75	.625	2.06	1.75	.19 x .09	1.000	2.56	2.31	.25 x .13	917
920	5.00	2.59	5.50	5.25	2.000	4.63	2.00	1.75	.50	.25	.406	2.63	3.75	3.44	4.88	6.38	4.75	.625	2.06	1.75	.19 x .09	1.000	2.56	2.31	.25 x .13	920
924	7.00	3.50	5.75	5.75	2.375	5.88	2.88	2.25	.63	.75	.563	3.50	5.13	4.50	6.50	8.63	5.50	1.000	2.75	2.38	.25 x .13	1.250	2.81	2.63	.25 x .13	924
926	7.00	3.50	6.00	6.00	2.625	6.13	2.88	2.25	.38	.38	.563	3.50	5.13	4.50	6.50	8.63	5.50	1.000	2.75	2.38	.25 x .13	1.250	2.81	2.63	.25 x .13	926
930	8.00	4.00	6.75	6.75	3.000	7.00	3.25	2.63	.50	.50	.563	4.00	6.00	4.63	7.00	10.00	5.88	1.000	3.06	2.38	.25 x .13	1.375	2.88	2.75	.31 x .16	930

*Shaft diameter tolerance +.000 -.001. For construction purposes send for Certified Dimension Sheets.
△Size 924 uses 2 bases on bottom and top to match previous Wingear shaft heights.

SHAFT ARRANGEMENTS AND RELATIVE SHAFT ROTATIONS



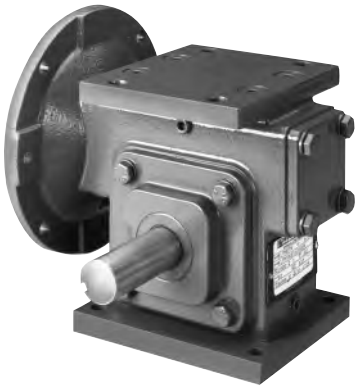
ASSEMBLY LR
OPTIONAL

ASSEMBLY R
STANDARD

ASSEMBLY L
STANDARD

The input shaft may be driven in either direction.

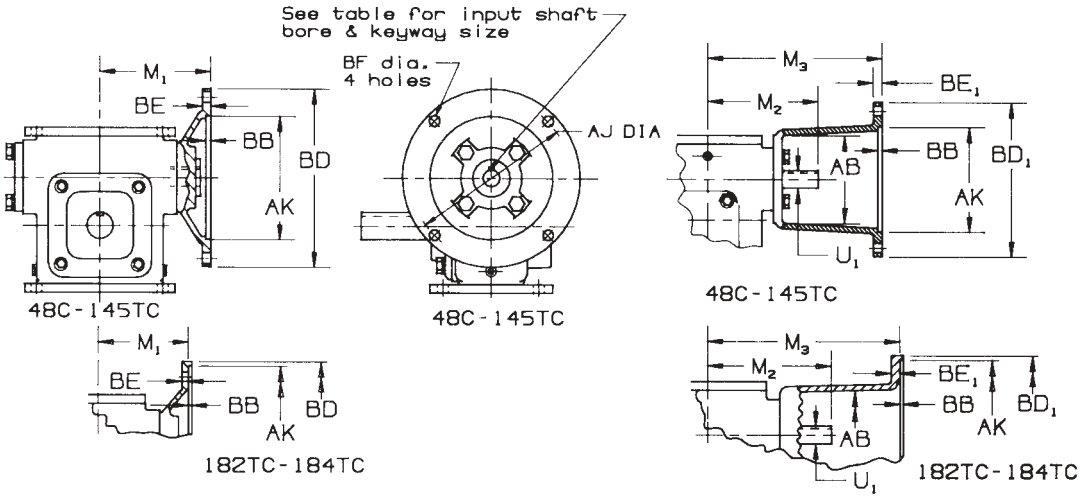
MODEL MWU
Assembly R



MODEL CWU
Assembly R

Couplings available, see page 189 for Selection Chart.

DIMENSIONS

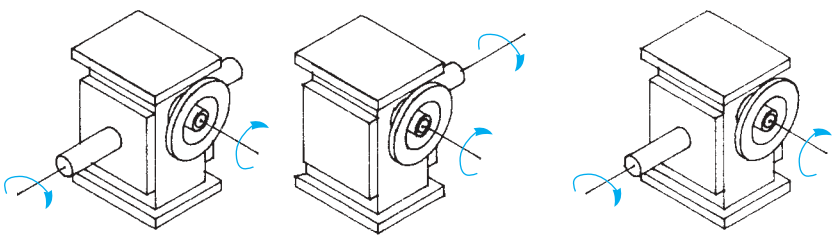


SIZE	FRAME SIZE RANGE	HOLLOW INPUT MOTOR ADAPTER**			COUPLING STYLE MOTOR ADAPTER									
					56C-145TC			182TC-184TC						
		M_1 48C	M_1 56C-145TC	M_1 182TC 184TC	AB	M_3	BE_1	AB	M_3	BE_1	M_2	U_1	KEYWAY
913	48C-56C	3.56	3.63△	NA	3.00	6.75	.31	NA	NA	NA	4.12	.500	.13 x .06
917	48C-184TC	4.06	4.06△	NA	3.75	7.50	.38	3.75	8.44	.50	4.88	.625	.19 x .09
920	56C-184TC	NA	4.06	NA	3.75	7.50	.38	3.75	8.44	.50	4.88	.625	.19 x .09
924	56C-184TC	NA	5.38	5.38	4.13	9.13	.38	4.25	10.19	.50	6.50	1.000	.25 x .13
926	56C-184TC	NA	5.38	5.38	4.13	9.13	.38	4.25	10.19	.50	6.50	1.000	.25 x .13
930	56C-184TC	NA	5.56	5.56	4.13	9.75	.38	4.75	10.88	.50	7.00	1.000	.25 x .13

**Tapped motor removal holes to aid separation of motor.
△56C frame only.

FRAME NO.	48C	56C	143TC 145TC	182TC 184TC
AJ	3.75	5.88	5.88	7.25
AK	3.00	4.50	4.50	8.50
BB	.19	.19	.19	.19
BD	4.50	6.50	6.50	9.00
BD_1	NA	6.63	6.63	9.00
BE	.34	.31	.31	.38
BF	.281	.406	.406	.531
KEYWAY	.13 X .06	.19 x .09		.25 x .13
BORE $^{+.001}_{-.000}$	.5005	.6255	.8755	1.1255

SHAFT ARRANGEMENTS AND RELATIVE SHAFT ROTATIONS



ASSEMBLY LR
OPTIONAL

ASSEMBLY R
STANDARD

ASSEMBLY L
STANDARD

The input shaft may be driven in either direction.

DISASSEMBLY AND REASSEMBLY INSTRUCTIONS

The following describes the procedures for disassembling and reassembling WINSMITH® D-90® Type SE® speed reducers. These instructions can also be used for specific tasks such as changing assemblies or gearing (ratio) by referring to the appropriate sections, however, it is recommended that all instructions be reviewed before proceeding. They are combined to cover all units and, in those situations where models differ, will differentiate between specific models. Although the sequence may be determined by the task, it will be necessary to remove the slow speed shaft and gear assembly before removing the input (worm) shaft. If seals are going to be reused, such as with new units, they must be protected by covering the shaft keyways with smooth tape before disassembly. Figure 1 illustrates the location of the various parts (1-32) referenced throughout the text.

Prior to Disassembly

1. Remove motor and coupling (if applicable).
2. Remove keys and set screws (hollow shaft models). Check shafts for damage and remove any protruding nicks that may impede seal or bearing removal.
3. Clean the outside of the housing. Remove foreign material that may contaminate any components or lubricant being reused.
4. Drain the oil. The plugs adjacent to the worm should be avoided as the internal vent shield will impede oil flow. Drain both housings in double reduction models.

Disassembly

5. Disassemble the slow speed cover(s) (16) or cover and base (DV model) from the housing. Disassemble both covers (16 & 22) on hollow shaft models (DSF or DSR). With DL models, first disassemble the slow speed bearing cap (32) and then disassemble the cover and base (31) from the housing.
6. Remove the slow speed shaft and gear assembly from the housing. With single cover designs, tilt the slow speed gear away from the high speed worm. It may be necessary to apply a small amount of pressure to the shaft extension, using the inner bearing as a pivot point, to separate the gear from the worm. When disassembling units with double slow speed shaft extensions, it may be necessary to remove the seal opposite the slow speed cover prior to removing the slow speed gear assembly from the housing.

Steps 7 through 11 apply to the primary stage of double reduction models. If single reduction, proceed to step 12.

7. Remove attachment housing cover (28).
8. Remove fastener and washer (26 & 27) at end of exposed shaft.
9. If the primary gear (24) is being reused, mark the outer face for reference so the gear may be reinstalled in the same position (reference face out). Remove gear (24) and spacer (29) from shaft. This will be a sliding fit. If the gear does not easily disengage from the worm, remove the intermediate cap (2) and slide the intermediate worm (6) out the rear side of the main housing until the shaft extension clears the primary gear. On 935 and 943 models, it will only be necessary to loosen the intermediate cap, allowing the primary gear to tip away from the worm due to the tapered intermediate bearings.
10. Disassemble the motor adapter (8) (if applicable). Disassemble the high speed cap (2) from the attachment housing (25). Remove the high speed worm by tapping it toward the high speed cap end. With single bearing designs (hollow input), the worm (9) may be completely removed at this time. With two bearing designs (solid input), the snap ring (4) must be removed before sliding the worm (6) and front bearing (5) through this bore.
11. Disassemble the attachment housing (25) by removing the four fasteners (30) located behind the primary gear (24). The housing will also be supported by two dowel pins partially engaged in the main housing.

If this is a double reduction unit, steps 12-15 relate to the main housing components.

12. Disassemble the motor adapter (8) (if applicable). Disassemble the high speed bearing cap(s) (2, 11 & 12 or 14): For the Size 910, remove the high speed cap plug (2) (press fit in the housing) and outer retaining ring. Remove the worm by tapping it toward the high speed cap end. With single bearing designs (hollow input), the worm (9) may be completely removed at this time. With two bearing designs in sizes 913-930, (solid input), the snap ring (4) must be removed before sliding the worm (6) and front bearing (5) through this bore.
13. If seals are to be replaced, remove the worn seals from the housing and covers. If two seals are used at a particular location, it is important that both be replaced exactly as removed (i.e. tandem or opposed). Tandem seals provide extra protection against leakage while opposed seals assist in preventing outside contaminants from working their way into the unit.
14. If bearings are to be replaced, remove them from their respective shafts using a press. Note the position of these bearings on the shafts, so the unit can be rebuilt accordingly. Care must be taken not to damage the seal areas of either shaft. Remove the bearing races from the housing and cover using a soft metal drift. When driving them out, exercise caution not to damage the housing or cover bearing seat. The compression ring (18) behind the bearing cup in the cover will be reused in this location as a spacer.
15. Thoroughly clean all parts in preparation for reassembly. Remove all gasket material and sealant from mating surfaces. Inspect all parts for damage or wear and replace as necessary.
    CAUTION: If a shaft seal area is cleaned with emery paper, the direction of the resulting finishing marks in the shaft must be perpendicular to the shaft axis. Any small lead inscribed in the shaft surface while cleaning, may create a path for oil seepage.

Reassembly—Single Reduction Models

16. Reassemble the high speed shaft bearings. Press the new high speed ball bearings (3 & 5) or tapered roller bearing cones (10) on the worm shaft until tight against the backing shoulders. To prevent damage to the bearing, press against the inner race only. Secure the rear bearing(s) with snap rings (1) or locknut (13) as dictated by the worm design.
17. Reassemble the slow speed shaft and bearing assembly. Press the slow speed gear (20) and key on the shaft

(17 or 21) to its original position making sure the key is not extending beyond the gear hub. Add spacers (if applicable) and press the bearing cones (19) tight against the adjacent spacer or gear hub. Press against the inner cone race only, avoiding contact with the roller cage. When pressing the bearings or gear, be extremely careful not to damage the shaft seal surface.

18. Install the output shaft bearing races.

a. For single cover models (see item 18c for DL models), install one race in the housing making sure it is properly seated. This should be a tight fit. Insert the compression ring (18) into the bearing seat of the slow speed cover (16) or DV cover and base followed by the bearing race. This should be a sliding fit.

b. For hollow shaft models, install bearing races in each of the slow speed covers (16) or cover and base (22) making sure they are properly seated. Each should be a tight fit.

c. For DL models, install one bearing race in the housing, making sure it is properly seated. This should be a tight fit.

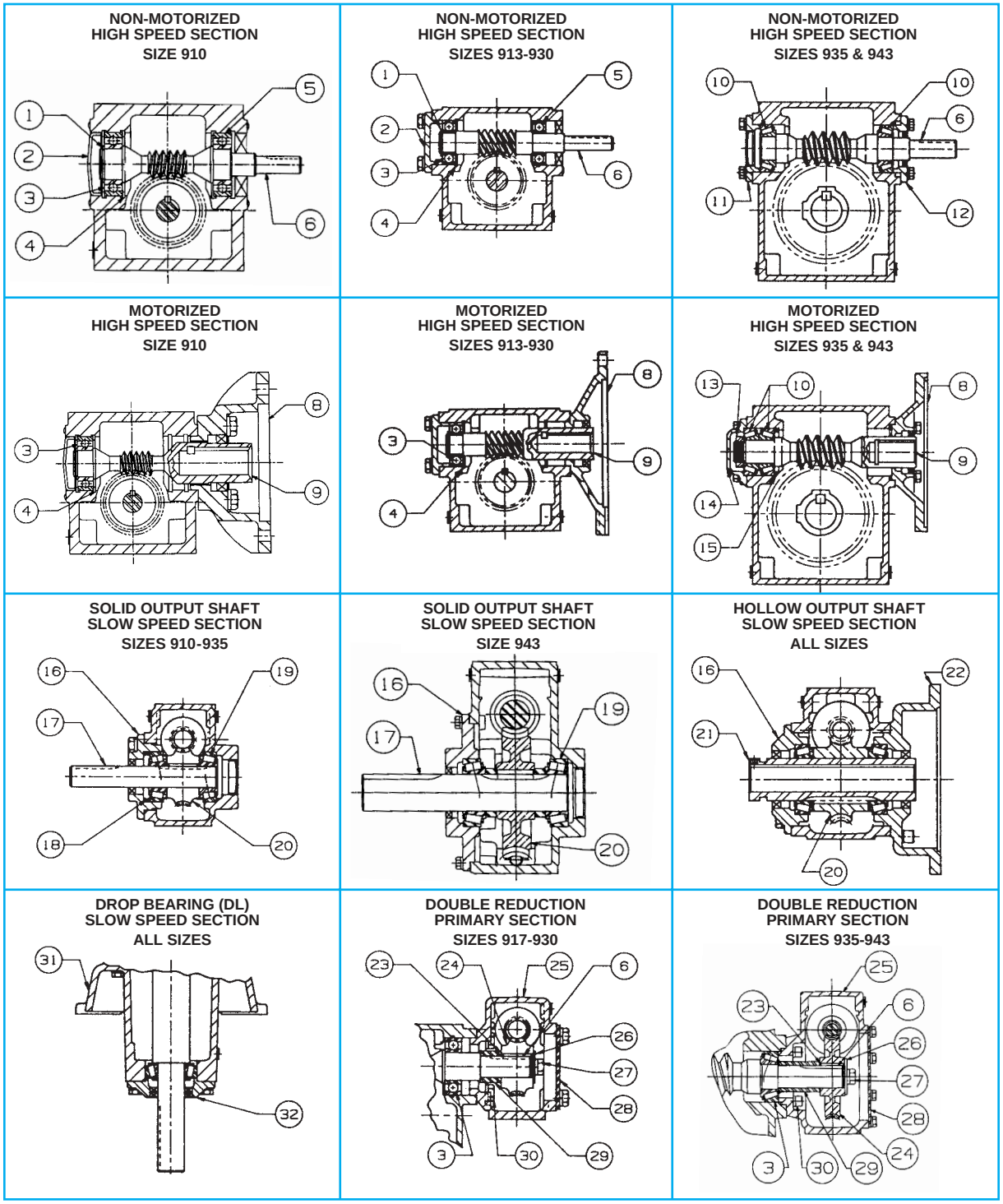


FIGURE 1

19. Assemble the high speed shaft (6) in the housing. For Sizes 935 and 943, see items 19b and 19c below.

    a. Sizes 913 through 930. For models using two high speed ball bearings, insert the high speed shaft assembly into the rear (high speed cap) side of the housing and slide through until the front bearing (5) clears the rear snap ring groove. Install the snap ring (4) in the rear housing groove, making sure it is completely seated. Continue inserting the worm in the housing until the rear bearing shoulders against the snap ring. For single bearing assemblies, the snap ring (4) may be installed first. Attach the high speed cap (2) using the required thickness of gaskets that will take up the clearance between the cap and housing while trapping the bearing between the cap and snap ring. This will prevent the bearing from moving axially during load reversals. For the Size 910, install the outer snap ring to retain the bearing. Lightly coat the housing bore with sealing compound and press the high speed cap plug (2) in the housing. Proceed to step 20.

    b. Sizes 935 and 943 with solid input shaft. Slide the front high speed bearing race into the housing for the proper assembly. Using one gasket (.010"), assemble the front high speed cap (12) or coupling style motor adapter. Insert the worm (6) from the opposite end of the housing and install second bearing race. Attach rear high speed cap (11) using the required thickness of gasket to provide .002-.004 inch endplay. Tap each end of the worm with a nonmetallic hammer to seat the bearings before checking endplay. Proceed to step 20.

    c. Sizes 935 and 943 with hollow input shaft (motorized). Insert high speed spacer (15) and inner bearing race (10) into rear high speed side of housing. Insert worm (9) from the rear housing side until it rests against the inner bearing race. Install the outer race. Attach rear high speed cap (14) using the required thickness of gasket to provide .002-.004 inch endplay. Tap the end of the worm and the rear high speed cap with a non-metallic hammer to seat the bearings before checking endplay.

20. Assemble the slow speed shaft assembly in the housing. When attaching covers, apply a small amount of liquid sealant to the thread area of all fasteners to prevent leakage in this area. See instruction 20b for Size 943 and hollow shaft models.

    a. With the output shaft (17) extension positioned for the proper assembly, rest the inside bearing cone in its mating cup (race) in the housing. Snap the gear into mesh by applying a small amount of pressure against the end of the slow speed shaft. At this point, the gear is automatically centered over the worm by means of component dimensional tolerances. If the unit is a DL Series, refer now to 20c. Attach the slow speed cover (16) (DV cover and base) using the proper thickness of gaskets that will provide up to .002 inches endplay while avoiding any bearing preload. Tap the end(s) of the shaft or opposite cover with a non-metallic hammer before checking endplay. If this cannot be achieved with at least one gasket, add about .010 inch shim stock in the slow speed cover bearing bore behind the compression ring (18) and reassemble per the above instructions. Proceed to step 21.

    b. Assemble one slow speed cover (16) or cover and flange (22) without gaskets and insert the shaft and gear assembly. It may be helpful to position the gear in mesh with the worm before securing the first cover. Assemble the opposite cover using the proper thickness of gaskets that will provide up to .002 inch endplay while avoiding any bearing preload. Tap each end of the shaft with a non-metallic hammer to seat the bearings before checking endplay. Once this is established, remove both covers, equally distribute the gaskets between the two covers and reassemble. Proceed to step 21.

    c. Attach the slow speed cover and base (31) to the housing using one .010 inch gasket. Insert the outer slow speed bearing race. Attach the slow speed bearing cap (32) using the proper thickness of gaskets that will provide up to .002 inch endplay while avoiding any bearing preload. Tap the end of the shaft and opposite cover with a non-metallic hammer before checking endplay.

21. If motorized, attach the motor adapter (8) using one .010 inch gasket. If the unit uses a coupling style motor adapter, install the high speed seal in the housing (refer to step 22 for seal mounting instructions).

22. Install all seals using the following instructions. Lubricate the shaft seal areas with a light coat of oil. Apply a thin layer of liquid sealant to the housing or cover bore area that supports the seal. Protect the seal lips by covering all shaft keyways or other sharp corners with smooth tape. Slide seal up to bore, being careful not to displace the seal spring or roll the seal lip over. Tap into place using a blunt surface that will not deform the seal casing. When installed, the seal should be flush with the casting surface and perpendicular to the shaft axis. If two seals are installed, fill the cavity between them with grease. Use the outer seal to drive in the inner seal, leaving it extended about 1/16 from the casting surface.

23. If the ratio, assembly, or any other feature was changed, a new nameplate reflecting these changes should be used. This will insure proper parts or unit replacement in the future. Contact the factory for help in this regard.

24. Recheck all fasteners. Tighten to the torques (inch pounds) listed in the following table.

	Attachment Housing		Main Housing	
Size	Cap	Cover	Cap	Cover
913	N/A	N/A	100	200
917/920	100	200	200	200
924/926	200	200	330	200
930/935	200	200	330	330
943	330	200	330	330

25. Fill unit with oil. Refer to page 21 of this catalog and note the plug locations for the appropriate model and mounting position. Using the fill and level plugs as shown, add oil (see page 20 for recommended oils) until it just begins to flow out the level plug location. For double reduction models, fill each housing individually. Install all plugs while making sure the vent is in its proper location and the vent opening is clear.

Reassembly—Double Reduction Models

26. Reassemble the main housing components per steps 16 through 19 but do not assemble the slow speed shaft into the housing yet.

27. Reassemble the attachment housing (25) using one .010 inch gasket, two dowel pins and four fasteners. If an intermediate seal is required (non-standard mountings), install at this time using the precautions outlined in step 22. See steps 44 and 45 if the primary housing is being repositioned for a change of assembly.

28. Reassemble the primary stage worm using steps 16 and 19.

29. Slide the spacer (29) on the intermediate shaft (6) extension up to the backing shoulder.

30. Slide the high speed gear (24) on the intermediate shaft and seat against the spacer. If the gear does not easily slide into mesh with the worm, proceed as follows:

    a. Sizes 917-930: Remove the intermediate cap (2) and slide the worm (6) out of the main housing. Position the high speed gear (24) in mesh with the worm and reintroduce the intermediate worm in the housing with the extension end passing through the gear bore. Reattach the intermediate cap. Secure the gear with a fastener (27) and washer (26).

    b. Sizes 935 and 943: Loosen the intermediate cap (11) enough to tip the intermediate worm allowing the primary gear to position itself in mesh with the primary worm. Retighten the intermediate cap and secure the gear with a fastener (27) and washer (26).

    At this point it is necessary to center the primary gear over the worm to insure proper operation. This is accomplished by adding shims (23) between the gear (24) and spacer (29) as required. The initial shim pack can be estimated by measuring the distance between the gear hub face and machined surface of the attachment housing and referring to the following chart. Any distance greater than the reference dimension is made up with shims. Distances less than this (which normally should not occur) can be accommodated by decreasing the spacer width. The correct position can then be verified by blueing the worm and checking the resulting contact on the gear teeth.

Unit Size	Reference Dimension	Shim Part Numbers (.002, .005, .010)
917-920	.812	815007, 815008, 815009
924-935	.585	815507, 815508, 815509
943	1.312	817005, 817006, 817007

Once properly shimmed, install the gear key and apply Loctite 242 (or equal) to the fastener before final assembly.

31. Reassemble the balance of the unit using steps 20 through 25.

Assembly Conversions

I. Reverse the output shaft of a solid output shaft model:

32. Refer to steps 2 through 6 and proceed where applicable. Be sure to protect the seal from the keyway before disassembly.

33. Remove the slow speed seal and slow speed plug, being careful not to damage either in the process. Coat the housing or cover bore diameter where the seal had been located and reinstall the plug in this location.

34. Reassemble the slow speed shaft assembly using the same compression ring, if applicable and the same total thickness of gaskets. Refer to step 20a or b for additional instructions. If either the gear or bearings are changed in the process, it may be necessary to readjust the bearing endplay per the instructions in step 20.

35. Complete the reassembly using steps 22 through 25.

II. Reverse the output shaft of a hollow output shaft model:

36. Refer to steps 2 through 6 and proceed where applicable. Be sure to protect the seals from the set screw holes and puller groove.

37. Reverse the position of the slow speed shaft assembly and reassemble using the same total thickness of gaskets on each cover. Refer to step 20b for additional instructions. If either the gear or bearings are changed in the process, it may be necessary to readjust the bearing endplay per the instructions in step 20.

38. Complete the reassembly using steps 22 through 25.

III. Reverse the assembly of the high speed shaft (all models):

39. It will be necessary to remove the slow speed gear for this conversion. Refer to steps 1 through 6 and step 12 and proceed where applicable. Be sure to protect all seals from keyways or other surface discontinuities before disassembly.

40. Reverse the position of the high speed shaft (6) and snap ring (4) and reassemble using step 19.

41. Reassemble the slow speed shaft assembly using step 20.

42. Complete the assembly using steps 21 and 23 through 25.

IV. Rotate the attachment housing:

43. Refer to steps 1 through 4 and steps 7 through 11 and proceed where applicable. Be sure to protect the high speed or intermediate shaft seal from any keyways before disassembly.

44. Remove the two roll pins and reassemble the attachment housing in the desired position, aligning it as square as possible with the main housing. Replace the gasket between the housings if necessary.

45. Using the two roll pin holes as pilots, drill into the main housing about 1/4 inch using a 1/8 diameter drill. Insert the two roll pins.

46. Reassemble the high speed worm using step 19.

47. Reassemble the high speed gear using steps 29 and 30 where applicable. If none of the components were changed, the centering operation will not be necessary.

48. Reassemble the balance of the unit using steps 21 through 25.

AGMA WORM GEAR SERVICE FACTORS

WINSMITH® is a member of the American Gear Manufacturer's Association and publishes ratings in accordance with AGMA Class I service (service factor of 1.00). When selecting a unit from this catalog, the service factor from the following table and type of prime mover must be applied to the input power or prime mover nameplate power rating. This design power rating should not exceed the unit Mechanical Rating for the proper input speed. Service Factors are not applied to Thermal Ratings. See page 17 for a more detailed explanation on unit selection.

The following service factor chart is based on an electric or hydraulic prime mover. See page 226 for service factors when using internal combustion engines and explanatory notes covering starting and momentary peak loads, applications involving frequent starting and stopping, high inertia, and reversing loads.

APPLICATION	SERVICE FACTORS		
	UP TO 3 HRS. DAY	3-10 HRS. DAY	OVER 10 HRS. DAY
AGITATORS (Mixers)			
Pure Liquids	—	1.00	1.25
Liquids and Solids	1.00	1.25	1.50
Liquids—Variable Density	1.00	1.25	1.50
BLOWERS			
Centrifugal	1.00	1.00	—
Lobe	1.00	1.25	1.50
Vane	—	1.00	1.25
BREWING AND DISTILLING			
Bottling Machinery	—	1.00	1.25
Brew Kettles, Continuous Duty	—	1.00	1.25
Cookers—Continuous Duty	—	1.00	1.25
Mash Tubs—Continuous Duty	—	1.00	1.25
Scale Hopper, Frequent Starts	1.00	1.25	1.50
CAN FILLING MACHINES	—	1.00	1.25
CAR DUMPERS	1.25	1.50	1.75
CAR PULLERS	1.00	1.25	1.50
CLARIFIERS	—	1.00	1.25
CLASSIFIERS	1.00	1.25	1.50
CLAY WORKING MACHINERY			
Brick Press	1.25	1.50	1.75
Briquette Machine	1.25	1.50	1.75
Pug Mill	1.00	1.25	1.50
COMPACTORS	1.50	1.75	2.00
COMPRESSORS			
Centrifugal	—	1.00	1.25
Lobe	1.00	1.25	1.50
Reciprocating, Multi-Cylinder	1.00	1.25	1.50
Reciprocating, Single-Cylinder	1.25	1.50	1.75
CONVEYORS—GENERAL PURPOSE			
Uniformly loaded or fed	—	1.00	1.25
Not uniformly fed	1.00	1.25	1.50
Reciprocating or shaker	1.25	1.50	1.75
CRANES			
Dry Dock			
Main Hoist	1.25	1.50	1.75
Auxiliary Hoist	1.25	1.50	1.75
Boom Hoist	1.25	1.50	1.75
Slewing Drive	1.25	1.50	1.75
Traction Drive	1.50	1.50	1.50
Container			
Main Hoist	RF	RF	RF
Boom Hoist	RF	RF	RF
Trolley Drive	RF	RF	RF
(Gantry or Traction Drive)	RF	RF	RF
Mill Duty			
Main Hoist	RF	RF	RF
Auxiliary	RF	RF	RF
Bridge and Trolley Travel	RF	RF	RF
Industrial Duty			
Main	1.00	1.25	1.50
Auxiliary	RF	RF	RF
Bridge and Trolley Travel	RF	RF	RF
CRUSHER			
Stone or Ore	1.50	1.75	2.00
DREDGES			
Cable Reels	1.00	1.25	1.50
Conveyors	1.00	1.25	1.50
Cutter Head Drives	1.25	1.50	1.75
Pumps	1.00	1.25	1.50
Screen Drives	1.25	1.50	1.75
Stackers	1.00	1.25	1.50
Winches	1.00	1.25	1.50

APPLICATION	SERVICE FACTORS		
	UP TO 3 HRS. DAY	3-10 HRS. DAY	OVER 10 HRS. DAY
ELEVATORS			
Bucket	1.00	1.25	1.50
Centrifugal Discharge	—	1.00	1.25
Escalators	RF	RF	RF
Freight	RF	RF	RF
Gravity Discharge	—	1.00	1.25
EXTRUDERS			
General	1.25	1.25	1.25
Plastics			
Variable Speed Drive	1.50	1.50	1.50
Fixed Speed Drive	1.75	1.75	1.75
Rubber			
Continuous Screw Operations	1.50	1.50	1.50
Intermittent Screw Operation	1.75	1.75	1.75
FANS			
Centrifugal	—	1.00	1.25
Cooling Towers	RF	RF	RF
Forced Draft	1.25	1.25	1.25
Induced Draft	1.00	1.25	1.50
Industrial & Mine	1.00	1.25	1.50
FEEDERS			
Apron	—	1.25	1.50
Belt	1.00	1.25	1.50
Disc	—	1.00	1.25
Reciprocating	1.25	1.50	1.75
Screw	1.00	1.25	1.50
FOOD INDUSTRY			
Cereal Cooker	—	1.00	1.25
Dough Mixer	1.00	1.25	1.50
Meat Grinders	1.00	1.25	1.50
Slicers	1.00	1.25	1.50
GENERATORS AND EXCITERS	—	1.00	1.25
HAMMER MILLS	1.50	1.50	1.75
HOISTS			
Heavy Duty	1.25	1.50	1.75
Medium Duty	1.00	1.25	1.50
Skip Hoist	1.00	1.25	1.50
LAUNDRY TUMBLERS	1.00	1.25	1.50
LAUNDRY WASHERS	1.25	1.25	1.50
LUMBER INDUSTRY			
Barkers			
Spindle Feet	1.25	1.25	1.50
Main Drive	1.50	1.50	1.50
Conveyors			
Burner	1.25	1.25	1.50
Main or Heavy Duty	1.50	1.50	1.50
Main Log	1.50	1.50	1.75
Re-Saw, Merry-Go-Round	1.25	1.25	1.50
Slab	1.50	1.50	1.75
Transfer	1.25	1.25	1.50
Chains			
Floor	1.50	1.50	1.50
Green	1.50	1.50	1.50
Cut-off Saws			
Chain	1.50	1.50	1.50
Drag	1.50	1.50	1.75
Debarking Drums	1.50	1.50	1.75
Feeds			
Edger	1.25	1.25	1.50
Gang	1.50	1.50	1.50
Trimmer	1.25	1.25	1.50
Log Deck	1.50	1.50	1.50
Log Hauls—Incline—Well Type	1.50	1.50	1.50

AGMA WORM GEAR SERVICE FACTORS

APPLICATION	SERVICE FACTORS		
	UP TO 3 HRS. DAY	3-10 HRS. DAY	OVER 10 HRS. DAY
LUMBER INDUSTRY (cont.)			
Log Turning Devices	1.50	1.50	1.50
Planer Feed	1.25	1.25	1.50
Planer Tilting Hoists	1.50	1.50	1.50
Rolls—Live-off brg.—Roll Cases	1.50	1.50	1.50
Sorting Table	1.25	1.25	1.50
Tipple Hoist	1.25	1.25	1.50
Transfers			
Chain	1.50	1.50	1.50
Craneway	1.50	1.50	1.50
Tray Drives	1.25	1.25	1.50
Veneer Lathe Drives	RF	RF	RF
METAL MILLS			
Draw Bench Carriage and Main Drive	1.00	1.25	1.50
Runout Tables, Non-reversing			
Group Drives	1.00	1.25	1.50
Individual Drives	1.50	1.50	1.75
Reversing	1.50	1.50	1.75
Slab Pushers	1.25	1.25	1.50
Shears	1.50	1.50	1.75
Wire Drawing	1.00	1.25	1.50
Wire Winding Machine	1.00	1.25	1.50
METAL STRIP PROCESSING MACHINERY			
Bridles	1.25	1.25	1.50
Coilers & Uncoilers	1.00	1.00	1.25
Edge Trimmers	1.00	1.25	1.50
Flatteners	1.00	1.25	1.50
Loopers (Accumulators)	1.00	1.00	1.00
Pinch Rolls	1.00	1.25	1.50
Scrap Choppers	1.00	1.25	1.50
Shears	1.50	1.50	1.75
Slitters	1.00	1.25	1.50
MILLS, ROTARY TYPE			
Ball & Rod			
Spur Ring Gear	1.50	1.50	1.75
Helical Ring Gear	1.50	1.50	1.50
Direct Connected	1.50	1.50	1.75
Cement Kilns	1.50	1.50	1.50
Dryers & Coolers	1.50	1.50	1.50
MIXERS, CONCRETE	1.00	1.25	1.50
PAPER MILLS			
Agitator (Mixer)	1.50	1.50	1.50
Agitator for Pure Liquors	1.25	1.25	1.25
Barking Drums	1.75	1.75	1.75
Barkers—Mechanical	1.75	1.75	1.75
Beater	1.50	1.50	1.50
Breaker Stack	1.25	1.25	1.25
Calender (anti-friction bearings only)	1.25	1.25	1.25
Chipper	1.75	1.75	1.75
Chip Feeder	1.50	1.50	1.50
Coating Rolls	1.25	1.25	1.25
Conveyors			
Chip, Bark, Chemical	1.25	1.25	1.25
Log (including Slab)	1.75	1.75	1.75
Couch Rolls	1.25	1.25	1.25
Cutter	1.75	1.75	1.75
Cylinder Molds	1.25	1.25	1.25
Dryers (anti-friction bearings only)			
Paper Machine	1.25	1.25	1.25
Conveyor Type	1.25	1.25	1.25
Embosser	1.25	1.25	1.25
Extruder	1.50	1.50	1.50
Fourdrinier Rolls (Includes Lumpbreaker, dandy roll, wire turning, and return rolls)	1.25	1.25	1.25
Jordan	1.25	1.25	1.25
Kiln Drive	1.50	1.50	1.50
Mt. Hope Rolls	1.25	1.25	1.25
Paper Rolls	1.25	1.25	1.25
Platter	1.50	1.50	1.50
Presses—Felt & Suction	1.25	1.25	1.25
Pulper	1.50	1.50	1.75
Pumps—Vacuum	1.50	1.50	1.50

APPLICATION	SERVICE FACTORS		
	UP TO 3 HRS. DAY	3-10 HRS. DAY	OVER 10 HRS. DAY
PAPER MILLS (cont.)			
Reel (Surface Type)	1.25	1.25	1.50
Screens			
Chip	1.50	1.50	1.50
Rotary	1.50	1.50	1.50
Vibrating	1.75	1.75	1.75
Size Press	1.25	1.25	1.25
Super Calender (See Note)	1.25	1.25	1.25
Thickener (AC Motor)	1.50	1.50	1.50
(DC Motor)	1.25	1.25	1.25
Washer (AC Motor)	1.50	1.50	1.50
(DC Motor)	1.25	1.25	1.25
Wind & Unwind Stand	1.00	1.00	1.00
Winders (Surface Type)	1.25	1.25	1.25
Yankee Dryers (anti-friction bearings only)	1.25	1.25	1.25
PLASTICS INDUSTRY—PRIMARY PROCESSING			
Intensive Internal Mixers			
Batch Mixers	1.75	1.75	1.75
Continuous Mixers	1.50	1.50	1.50
Batch Drop Mill—2 smooth rolls	1.25	1.25	1.25
Continuous Feed, Holding & Blend Mill	1.25	1.25	1.25
Compounding Mills	1.25	1.25	1.25
Calenders	1.50	1.50	1.50
PLASTICS INDUSTRY—SECONDARY PROCESSING			
Blow Molders	1.50	1.50	1.50
Coating	1.25	1.25	1.25
Film1.25	1.25	1.25	—
Pipe	1.25	1.25	1.25
Pre-plasticizers	1.50	1.50	1.50
Rods	1.25	1.25	1.25
Sheet	1.25	1.25	1.25
Tubing	1.25	1.25	1.50
PULLERS—BARGE HAUL	1.00	1.50	1.75
PUMPS			
Centrifugal	—	1.00	1.25
Proportioning	1.00	1.25	1.50
Recriprocating			
Single Acting, 3 or more cylinders	1.00	1.25	1.50
Double Acting, 2 or more cylinders	1.00	1.25	1.50
Rotary			
Gear Type	—	1.00	1.25
Lobe	—	1.00	1.25
Vane	—	1.00	1.25
RUBBER INDUSTRY			
Intensive Internal Mixers			
Batch Mixers	1.50	1.75	1.75
Continuous Mixers	1.25	1.50	1.50
Mixing Mill—2 smooth rolls—(If corrugated rolls are used, then use the same service factors that are used for a Cracker Warmer.)	1.50	1.50	1.50
Batch Drop Mill—2 smooth rolls	1.50	1.50	1.50
Cracker Warmer—2 roll; 1 corrugated roll	1.75	1.75	1.75
Cracker Warmer—2 corrugated rolls	1.75	1.75	1.75
Holding, Feed & Blend Mill—2 rolls	1.25	1.25	1.25
Refiner—2 rolls	1.50	1.50	1.50
Calenders	1.50	1.50	1.50
SAND MILLER	1.00	1.25	1.50
SEWAGE DISPOSAL EQUIPMENT			
Bar Screens	—	1.00	1.25
Chemical Feeders	—	1.00	1.25
Dewatering Screens	1.00	1.25	1.50
Scum Breakers	1.00	1.25	1.50
Slow or Rapid Mixers	1.00	1.25	1.50
Sludge Collectors	1.00	1.00	1.25
Thickeners	1.00	1.25	1.50
Vacuum Filters	1.00	1.25	1.50
SCREENS			
Air Washing	—	1.00	1.25
Rotary-Stone or Gravel	1.00	1.25	1.50
Traveling Water Intake	—	1.00	1.25

AGMA WORM GEAR SERVICE FACTORS

APPLICATION	SERVICE FACTORS UP TO 3 HRS. DAY	3-10 HRS. DAY	OVER 10 HRS. DAY	APPLICATION	SERVICE FACTORS UP TO 3 HRS. DAY	3-10 HRS. DAY	OVER 10 HRS. DAY
SUGAR INDUSTRY				**TEXTILE INDUSTRY (cont.)**			
Beet Slicer	1.50	1.50	1.75	Looms	1.00	1.25	1.50
Cane Knives	1.50	1.50	1.50	Mangles	1.00	1.25	1.50
Crushers	1.50	1.50	1.50	Nappers	1.00	1.25	1.50
Mills low speed end	1.50	1.50	1.50	Pads	1.00	1.25	1.50
TEXTILE INDUSTRY				Slashers	1.00	1.25	1.50
Batchers	1.00	1.25	1.50	Soapers	1.00	1.25	1.50
Calenders	1.00	1.25	1.50	Spinners	1.00	1.25	1.50
Cards	1.00	1.25	1.50	Tenter Frames	1.00	1.25	1.50
Dry Cans	1.00	1.25	1.50	Washers	1.00	1.25	1.50
Dryers	1.00	1.25	1.50	Winders	1.00	1.25	1.50
Dyeing Machinery	1.00	1.25	1.50				

RF=REFER TO FACTORY

NOTE: A service factor of 1.0 may be applied at the base speed of a super calender, operating over a speed range where part of the range is constant horsepower and part of the range is constant torque, provided that the constant horsepower part is greater than 1.5 to 1. A service factor of 1.25 is applicable to super calenders operating over the entire speed range at constant torque, or where the constant horsepower speed range is less than 1.5 to 1.

EXPLANATORY NOTES:

Time specified for intermittent and occasional service refers to total operating time per day.

Normal starting, or occasional momentary peak loads, two or three times per day, up to 300% of catalog rating at 1800 R.P.M. are permissible. If either of these values are exceeded, a service factor of 1.5 should be used.

Heavy starting loads may be encountered when the Slow Speed Shaft of the reducer is direct coupled to larger gears or heavy masses. A service factor of 2 should be used.

Reversing drives and those subjected to quickly repeated shock loads of unusual or unpredictable intensity; stalling loads, drives that are overrunning, or that “wind up” due to quick power stoppage and storage of energy are not covered by service factors above. A service factor of 3 is recommended. Each is a problem in itself and should be referred to our Engineering Department.

Term “Frequent starts and stops” refers to more than 10-20 starts per hour (see chart below).

CONVERSION TABLE to Find Equivalent Service Factor When Using Single or Multi-Cylinder Engines

For a Hydraulic or Electric Motor Service Factor of:	Use this Service Factor for Single Cylinder Engines	Use this Service Factor for Multi-Cylinder Engines
1.00	1.50	1.25
1.25	1.75	1.50
1.50	2.00	1.75
1.75	2.25	2.00
2.00	2.50	2.25

AGMA SERVICE FACTOR CHART BASED ON LOAD CLASSIFICATION

Prime Mover	Duration of Service Per Day	Driven Machine Load Classifications: Uniform	Moderate Shock	Heavy Shock	Extreme Shock
Electric and Hydraulic Motors (See above chart for internal combustion engines)	Occasional ½ hour	1.00	1.00	1.00	1.25
	Less than 3 hours	1.00	1.00	1.25	1.50
	3-10 hours	1.00	1.25	1.50	1.75
	Over 10 hours	1.25	1.50	1.75	2.00

FOLLOWING SERVICE FACTORS APPLY FOR APPLICATIONS INVOLVING FREQUENT STARTS AND STOPS

Electric and Hydraulic Motors	Occasional ½ hour	1.00	1.00	1.25	1.50
	Less than 3 hours	1.00	1.25	1.50	1.75
	3-10 hours	1.25	1.50	1.75	2.00
	Over 10 hours	1.50	1.75	2.00	2.25

HORSEPOWER AND TORQUE

One (1) Horsepower (HP)—33,000 foot pounds of work done in one (1) minute. Note that three (3) factors are involved:

Distance	—Feet
Force—(Push or Pull)	—Pounds
Time	—Minutes

Putting it another way, one (1) HP is equivalent to raising 33,000 pounds, one foot in one minute. Any amount of horsepower can be determined by the following formula:

$$HP = \frac{L \text{ (Load in pounds)} \times \text{Feet per minute}}{33{,}000}$$

To determine the relationship between horsepower and torque let

HP = Horsepower
T = Torque, in foot-pounds
t = Torque, in inch-pounds
N = R.P.M. (Revolutions per minute)

Then, one (1) HP = A Torque Load (Twisting force) of 63,025 inch pounds, turning 1 revolution in 1 minute.

therefore,

$$HP = \frac{t \times N}{63{,}025} \text{ or } \frac{T \times N}{5250}; \; t = \frac{63{,}025 \times HP}{N} \text{ or } T = \frac{5250 \times HP}{N}$$

EFFICIENCY OF SPEED REDUCERS

The efficiency of a worm gear speed reducer is dependent on the lead angle of the worm, input speed to the unit, operating load, and the type and temperature of lubricant.

The efficiencies in this catalog have been determined in accordance with AGMA Standard 6034-A87 (formerly AGMA 440.03) and are based on rated output torque, an operating temperature reflecting continuous operation, standard lubricants and after reducer is fully run-in. If the operating load is less than the rated torque or operating temperature is not reached (such as with intermittent service) the operating efficiency will be less than rated efficiency. The efficiencies listed in this catalog are to be used as a guide only, when determining the required input HP for a specific application. If power requirements are critical, a more detailed analysis is required.

When the rated efficiency is not listed in the catalog, it may be easily calculated in the following manner:

$$\text{Efficiency} = \frac{\text{Horsepower Output}}{\text{Horsepower Input}}$$

In order to establish the efficiencies of reducers where only the output torque and input horsepower are given, the output torque is converted to output horsepower by the following formula:

$$\text{Horsepower Output} = \frac{\text{Output Torque} \times \text{RPM Output}}{63{,}025}$$

To determine efficiency of the unit, the horsepower output is divided by horsepower input as previously shown. The above method should be used to establish the efficiency of the various reducers listed in this catalog.

SELF-LOCKING SPEED REDUCERS

A worm gear is said to be self-locking, or irreversible when the gear cannot drive the worm. This condition is obtained, if the lead angle of the worm is less than the friction angle, and as a consequence the efficiency for reversed driving is zero. The friction angle for static conditions will vary with such factors as surface finish and lubrication. Based upon the generally accepted value of static coefficient of friction equal to 0.15, the friction angle would be approximately 8°. However, the friction angle decreases rapidly with the start of motion, also, vibrations from nearby sources quite often upset the static condition of a locked set of gearing a sufficient amount to reduce the friction angle to a point where motion occurs. These unpredictable factors make it advisable to resort to a brake rather than to rely on the self-locking characteristics of the gearing. A worm gear set has the following SELF-Locking qualities “at rest”or “in motion”.

CASE 1—Self-locking of the worm and gear when the load is at rest may occur with the helix angle as great as 6°. However vibrations from an outside source, or the slightest start of the worm often upsets the static condition of a locked set of gearing a sufficient amount to start motion.

CASE 2—Self-locking of the worm and gear when the load is in motion downward requires that the load being lowered stops after the power is shut off. Worms with a helix angle of 2° or less may be required for this service.

OVERDRIVES

In the overdriving of a reducer, the slow speed shaft is the driver, and the high speed shaft is increased in speed. For this type of service there must not be the slightest tendency of the reducer to be self-locking. All applications regarding self-locking or overdrives should be referred to our engineering department for recommendations.

AGMA SUGGESTS the following with regard to “self-locking”.—For complete assurance of irreversibility, it is advisable to resort to the use of a brake rather than to rely on self-locking characteristics of the gearing.

OVERHUNG LOAD

MAXIMUM ALLOWABLE OVERHUNG LOADS BASED UPON CHAIN PULL

The values given in this catalog are the maximum allowable Overhung Load (or Chain Pull) capacity in pounds and are based upon the load being applied at a point one shaft diameter from the housing or mounting flange. These values are limited by the capacity of the bearings or by the size of the shaft, whichever is less. In either case the allowable overhung load will decrease as the center of the load gets farther from the Reducer. Overhung loads are subject to the same service factors that control the capacity of the Reducer as well as the overhung load factors.

OVERHUNG LOAD FACTORS (From Table I):
With a chain drive the overhung load is equal to the torque divided by the radius of the sprocket. This is because there is practically no pull on the loose side of the chain.

If an overhung gear is used, the load is along the line of action and is greater than that computed from the torque and pitch radius. In this case AGMA recommend that we increase the net overhung load derived from the torque and pitch radius of the gear by 1¼.

When an overhung "V" belt sheave is specified, there is a pull on the loose side of the belt. In this case the sum of the pull on the tight side and on the loose side is the overhung load. To allow for this loose side tension AGMA recommends that the net overhung load derived from the torque be multiplied by 1½.

A flat belt pulley requires a tension on the loose side to keep it tight. AGMA therefore recommends that the net overhung load derived from the torque be multiplied by 2½.

Variable speed drives with a flat faced pulley on the Reducer and used with a "V" belt derive their variability by changing the tension in the belt. In this case it is well to use a factor over 2½, possibly as much as 3½. These factors are expressed in table I.

TABLE I—OVERHUNG LOAD FACTORS

TYPE OF LOAD	MULTIPLY THE ACTUAL (CALCULATED) OHL BY
For Overhung Chain Sprocket	1
For Overhung Gear	1¼
For Overhung "V" Belt	1½
For Overhung Flat Belt	2½
For Overhung Variable Speed Drive	3½

OVERHUNG POSITION/DIRECTION LIMITATIONS

The overhung load capacities listed in this catalog may be used when the chain pull is directed toward the base or applied parallel to the base on the near side of the sprocket as shown in Figure 1. These illustrations demonstrate the ideal chain pull conditions and should be used whenever possible.

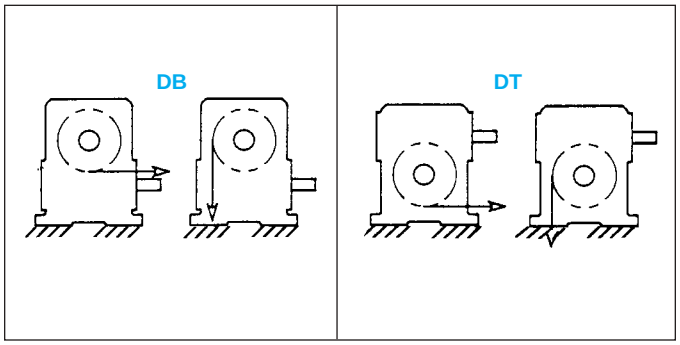


FIGURE 1

When the chain pull is directed away from the base or applied parallel to the base on the far side of the sprocket, as shown in Figure 2, it may be necessary to reduce the allowable overhung load capacity. Refer to the rating pages for each unit size, where a footnote will indicate the need for derating by size and model.

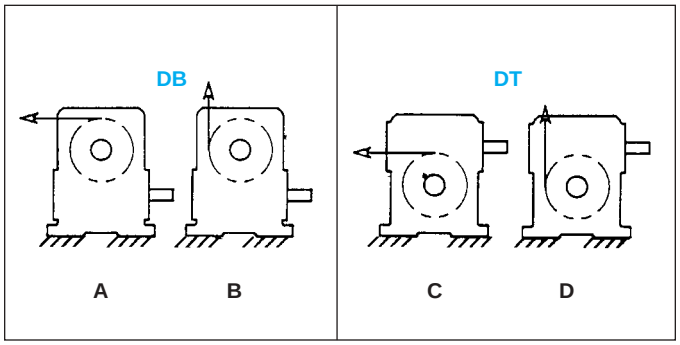


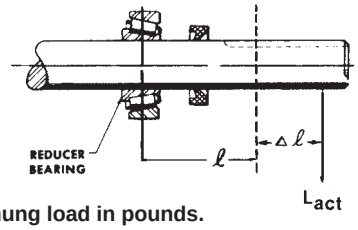
FIGURE 2

OVERHUNG LOAD

LOCATION OF OVERHUNG LOADS

In many cases, the center of the pulley, gear, or sprocket, which determines the location of the overhung load does not coincide with the position one shaft diameter from the housing or mounting flange. In this case, if the location of the overhung load is outside this position, then the allowable overhung load is determined by:

$$L_a = L_c \times \frac{\ell}{\ell + \triangle \ell}$$



Where

L_a = Allowable overhung load in pounds.
L_{act} = Actual overhung load.
L_c = Catalog rating of overhung load in pounds.
ℓ = A factor given in Table II (This is the actual distance from the center of the bearing to the reference location for the catalog OHL capacity).
$\triangle\ell$ = Distance from location of the actual overhung load to a point one shaft diameter from the housing or mounting flange.

TABLE II—VALUES OF "ℓ" FOR D-90® TYPE SE® SPEED REDUCERS

REDUCER SIZE	INPUT SHAFT			OUTPUT SHAFT			
	DB, DT, DV, DSF, DSR, DL, DJ, WB, WT, WU, DN, DSN	DBD, DTD, DVD, DSFD, DSRD, DLD, DND, DSND	DBX, DTX, DVX, DSFX, DSRX, DLX, DNX, DSNX	DB, DT, DN, DJ, WB, WT, WU, DBD, DTD, DND, DBX, DTX, DNX (Top Ext.) DV, DVD, DVX	Bottom Ext. for: DV, DVD, DVX	DSF, DSFD, DSFX	DL, DLD, DLX
910	1.195	—	—	1.221	—	—	—
913	1.451	—	—	1.905	2.217	—	—
917	1.580	1.451	—	2.047	2.107	3.380	—
920	1.580	1.451	—	2.047	2.107	3.588	—
924	2.03	1.580	1.760	2.380	2.672	4.129	—
926	2.380	1.580	1.760	2.380	2.672	4.283	2.544
930	2.08	1.580	1.760	2.600	2.850	5.649	2.992
935	2.980	1.580	1.760	3.312	3.820	5.228	3.312
943	2.875	2.380	2.04	3.768	4.388	6.010	3.555

EXAMPLE:

A 930DT reducer with a reduction of 25 to 1 is subjected to a torque of 1500 inch pounds on the slow speed shaft. The torque is transmitted through a chain sprocket of ¾ pitch 23 teeth. The centerline of the sprocket is 5.00 inches from the center of the reducer. The service is 24 hours per day, uniform loading.

DATA:

Service Factor	= 1.25
Chain Overhung Load Factor	= 1.0
Radius of 23 Tooth ¾" Pitch Chain	= 5.508"/2 = 2.754
Catalog Overhung Load	= 1350
Catalog OHL Location From Center of Housing	= P-S+W = 5.88 - 2.88 + 1.375 = 4.375
Actual OHL Location From Center of Housing	= 5.00
ℓ (from table II)	= 2.600
$\triangle\ell$ = 5.00 - 4.375	= .625

$$\text{Design Overhung Load} = \frac{\text{Torque}}{\text{Radius}} \times \text{Service Factor} \times \text{OHL Factor} = \frac{1500}{2.754} \times 1.25 \times 1.00 = 680 \text{ pounds}$$

$$\text{Allowable Overhung Load} = La = Lc\,\frac{\ell}{\ell + \triangle\ell} = 1350 \quad \frac{2.60}{2.60 + .625} = 1088 \text{ pounds}$$

Since the allowable OHL exceeds the design OHL, the unit can support the load.

RUN-IN

The running-in of single enveloping worm gearing immediately after start-up may not always be necessary, but doing so is certainly advantageous. No matter how well finished worm-gearing surfaces may be, they do require some time to run-in to conform and obtain a work hardened surface on the bronze and achieve rated efficiency. The gearing has a better chance of providing maximum performance if the initial working can be done gradually.

Experience indicates that the initial friction is 10 to 15 percent higher than that which will be obtained after run-in is completed. The first few hours of operation at gradually increasing loads reduces the friction and the efficiency settles down to a steady value after about 10-100 hours of operation, depending on the size and speed of the gearing and the operating load. A reasonable run-in procedure is to apply one-half load for a few hours and then increase to the operating load in at least two stages.

An immediate application of full load concentrates high contact pressures on small areas which may cause some temporary damage to the surfaces and may cause high local surface temperatures. The temporary damage to the bronze gear surfaces will often "heal" after continued running at full or less than full load. The run-in of worm gearing at gradually increasing loads can prevent the occurance of such surface damage.

SHAFT OIL SEAL LEAKAGE

One of the most annoying maintenance problems is a leaking oil seal. If unattended it can cause damage to your product, the machinery it operates not to mention the unit from which the oil is leaking. Repair of the unit and clean-up is messy and often involves costly down time. Once the seal has been replaced, it is not uncommon to find that the equipment is still leaking oil. Why? Because in most cases the seal is not the problem, it's the shaft.

C R Industries, an internationally respected oil seal manufacturer, has done extensive research on the causes of shaft leakage. They have found that the shaft surface on which the seal rides is critical to seal performance. If the shaft finish is too rough, or if the material used is incorrect for the operating environment, the seal cannot do its job: to retain lubricants and exclude contaminants.

C R has published some industry guidelines to assist manufacturers who incorporate oil seals in their products. Some of the major shaft problems are:*

SHAFT ECCENTRICITY

Shaft-to-bore misalignment
Dynamic run-out

SHAFT SPEED

Maximum speed for effective seal operation depend on shaft finish, pressure, temperature, eccentricity, lubricant or fluid being retained, seal type and other conditions.

RECOMMENDED SHAFT FINISH

Shaft finish should fall between 10 to 20 mircro inches AA. Shafts should be ground with mixed number RPM ratios. There should be no machine lead—spiral marks that can cause lip damage and augering out of the lubricant.

- Plunge Grinding—the best known method for meeting these requirements and obtaining optimum shaft finish.

Other methods of shaft finishing might produce the correct finish, but they do not remove machine lead. This includes all of the following methods.

- Surface honing
- Transverse grinding
- Paper polishing
- Glass bead blasting
- Rotopeening
- Tumbled stone finishing
- Roller burnishing
- Diamond burnishing

TESTING FOR THE PRESENCE OF MACHINE LEAD

The most effective method requires a 36 inch length of cotton quilting thread, a one ounce weight, and silicone oil. Suspend the weight on the thread over the oiled shaft. Rotate the shaft at approximately 60 rpm. If the thread moves along the shaft, machine lead is present.

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SHAFT QUALITY AT WINSMITH®

WINSMITH has a long standing reputation for quality in the speed reducer industry. And we continually strive to maintain that quality by keeping abreast of the newest advances in technology and methodology. That's why the D-90 TYPE SE shafts, that are centerless ground, are all plunge ground to provide the best possible seal surface to minimize the potential of costly down time.

In addition, we test every SE shaft for machine lead. Who else but WINSMITH would take these extraordinary measures to insure the quality of every unit and all its components.

This is just one more reason to specify WINSMITH quality speed reducers for all your gearing applications.

For harsh environments such as high humidity, dusty or chemical laden atmospheres, where a completely sealed unit is required, use the new S EQUALIZER®. This option, available on all D-90 TYPE SE Units provides an internal diaphragm, that adjusts to prevent internal pressures that can cause premature seal wear and thus oil leakage. (See page 173 for details.)

D-90® TYPE SE® STANDARD MODELS WK² (lb in²)[1]

(Ref. Input Shaft)

SIZE	RATIO	DB, DT DN	MDB, MDT, MDN 48C-56C
910	4	NOT AVAILABLE	
	5	.04	.07
	7.5	NOT AVAILABLE	
	10	.03	.06
	15	.03	.06
	20	.03	.06
	25	.03	.06
	30	.03	.06
	40	.03	.06
	50	.03	.06
	60	NOT AVAILABLE	
	80		
	100		

SIZE	RATIO	DB, DT DV, DN	MDB, MDT, MDV, MDN 48C-56C
913	4	.12	.20
	5	.07	.16
	7.5	.07	.14
	10	.06	.14
	15	.05	.14
	20	.05	.14
	25	.06	.14
	30	.05	.14
	40	.05	.14
	50	.05	.14
	60	.05	.14
	80	NOT AVAILABLE	
	100		

SIZE	RATIO	DB, DT DV, DN	DSF, DSR	MDB, MDT, MDV, MDN			MDSF, MDSR			MDL		
				48C-56C	143-145TC	182-184TC	48C-56C	143-145TC	182-184TC	56C	143-145TC	182-184TC
917	4	.51	.53	.67	.64		.69	.66				
	5	.37	.41	.51	.48		.55	.52				
	7.5	.29	.31	.44	.40		.46	.42				
	10	.27	.28	.40	.37		.41	.38				
	15	.26	.26	.39	.36		.40	.36				
	20	.25	.26	.39	.36		.39	.36				
	25	.25	.25	.38	.35		.39	.35				
	30	.25	.26	.39	.36		.39	.36				
	40	.25	.25	.38	.35		.38	.35				
	50	.25	.25	.38	.35		.38	.35				
	60	.25	.25	.38	.35		.38	.35				
	80	.27	.27	.43	.39		.43	.39				
	100	.27	.27	.42	.39		.42	.39				
920	4	.40	.63	.57	.54		.81	.78				
	5	.39	.55	.53	.50		.69	.66				
	7.5	.27	.35	.40	.37		.48	.45				
	10	.24	.28	.36	.33		.41	.37				
	15	.21	.23	.39	.36		.41	.38				
	20	.20	.21	.38	.35		.39	.36				
	25	.20	.20	.35	.32		.36	.33				
	30	.20	.21	.38	.34		.38	.35				
	40	.20	.20	.38	.35		.38	.35				
	50	.19	.20	.38	.34		.38	.35				
	60	.19	.19	.37	.34		.38	.34				
	80	.21	.21	.36	.32		.36	.33				
	100	.21	.21	.36	.33		.36	.33				
924	4	1.28	1.63	1.84	1.81	1.72	2.18	2.15	2.06			
	5	1.30	1.54	1.80	1.77	1.68	2.04	2.01	1.92			
	7.5	1.00	1.12	1.50	1.47	1.38	1.62	1.59	1.50			
	10	.84	.90	1.31	1.28	1.18	1.37	1.34	1.25			
	15	.81	.84	1.28	1.25	1.16	1.31	1.28	1.19			
	20	.80	.82	1.29	1.26	1.17	1.31	1.28	1.18			
	25	.89	.90	1.39	1.37	1.27	1.41	1.38	1.28			
	30	.79	.80	1.26	1.23	1.14	1.27	1.24	1.15			
	40	.79	.80	1.28	1.25	1.15	1.28	1.25	1.16			
	50	.82	.83	1.31	1.28	1.19	1.32	1.29	1.19			
	60	.84	.84	1.33	1.30	1.21	1.33	1.31	1.21			
	80	.83	.83	1.33	1.30	1.21	1.33	1.30	1.21			
	100	.83	.83	1.32	1.30	1.20	1.33	1.30	1.20			

1. To convert to lb-in-sec², divide by 386.1.

ENGINEERING DATA

D-90® TYPE SE® STANDARD MODELS WK² (lb in²)[1]

(Ref. Input Shaft)

SIZE	RATIO	DB, DT DV, DN	DSF, DSR	DL	MDB, MDT, MDV, MDN			MDSF, MDSR			MDL		
					48C-56C	143-145TC	182-184TC	48C-56C	143-145TC	182-184TC	56C	143-145TC	182-184TC
926	4	1.77	2.39	1.77	2.40	2.37	2.28	3.02	2.99	2.90	2.40	2.37	2.28
	5	1.41	1.85	1.48	2.01	1.98	1.88	2.43	2.40	2.31	2.07	2.04	1.95
	7.5	1.01	1.21	1.03	1.55	1.52	1.43	1.75	1.72	1.63	1.57	1.54	1.44
	10	.86	.96	.86	1.37	1.34	1.25	1.49	1.46	1.36	1.38	1.35	1.26
	15	.79	.83	.80	1.30	1.27	1.18	1.35	1.32	1.23	1.31	1.28	1.18
	20	.76	.78	.77	1.27	1.25	1.15	1.30	1.27	1.18	1.28	1.25	1.16
	25	.81	.76	.81	1.26	1.23	1.14	1.32	1.29	1.20	1.26	1.23	1.14
	30	.76	.77	.77	1.27	1.24	1.15	1.29	1.26	1.16	1.27	1.25	1.15
	40	.75	.75	.75	1.26	1.23	1.14	1.26	1.23	1.14	1.26	1.23	1.14
	50	.74	.73	.74	1.25	1.22	1.13	1.25	1.22	1.13	1.25	1.22	1.13
	60	.73	.73	.73	1.24	1.21	1.12	1.24	1.21	1.12	1.24	1.21	1.12
	80	.79	.80	.79	1.36	1.33	1.24	1.36	1.33	1.24	1.36	1.33	1.24
	100	.79	.79	.79	1.36	1.33	1.24	1.36	1.33	1.24	1.36	1.33	1.24
930	4	3.29	4.02	3.52	3.43	3.40	3.31	4.16	4.13	4.04	3.66	3.63	3.53
	5	2.75	3.21	2.89	2.87	2.84	2.75	3.34	3.31	3.22	3.01	2.98	2.89
	7.5	1.94	2.15	2.00	2.06	2.03	1.94	2.27	2.25	2.15	2.12	2.09	2.00
	10	1.59	1.70	1.62	1.78	1.75	1.66	1.89	1.86	1.77	1.81	1.79	1.69
	15	1.30	1.35	1.31	1.52	1.49	1.40	1.57	1.54	1.45	1.54	1.51	1.41
	20	1.23	1.25	1.24	1.45	1.42	1.33	1.48	1.45	1.36	1.46	1.43	1.34
	25	1.50	1.51	1.50	1.62	1.59	1.50	1.64	1.61	1.52	1.62	1.60	1.50
	30	1.24	1.26	1.25	1.46	1.44	1.34	1.48	1.45	1.36	1.47	1.44	1.35
	40	1.47	1.48	1.48	1.60	1.57	1.48	1.61	1.58	1.49	1.61	1.58	1.48
	50	1.47	1.48	1.47	1.60	1.57	1.48	1.60	1.57	1.48	1.60	1.57	1.48
	60	1.17	1.17	1.17	1.39	1.36	1.27	1.39	1.37	1.27	1.39	1.36	1.27
	80	1.50	1.50	1.50	1.63	1.60	1.51	1.63	1.60	1.51	1.63	1.60	1.51
	100	1.49	1.49	1.49	1.62	1.59	1.50	1.62	1.59	1.50	1.62	1.59	1.50
935	4	4.97	6.18	5.20	5.47	5.44	5.35	6.67	6.65	6.56	5.69	5.67	5.58
	5	3.65	4.43	3.79	4.08	4.05	3.96	4.86	4.83	4.74	4.22	4.20	4.11
	7.5	2.18	2.63	2.24	2.64	2.60	2.53	3.09	3.07	2.98	2.71	2.68	2.59
	10	1.90	2.15	1.93	2.37	2.34	2.25	2.62	2.59	2.50	2.40	2.37	2.28
	15	1.74	1.85	1.76	2.21	2.18	2.09	2.32	2.29	2.20	2.22	2.20	2.11
	20	1.65	1.71	1.66	2.12	2.09	2.00	2.18	2.15	2.06	2.12	2.10	2.01
	25	1.63	1.67	1.64	2.10	2.07	1.98	2.14	2.11	2.02	2.10	2.08	1.99
	30	1.65	1.67	1.65	2.11	2.09	2.00	2.14	2.11	2.02	2.12	2.09	2.00
	40	1.59	1.61	1.59	2.06	2.03	1.94	2.07	2.05	1.96	2.06	2.03	1.94
	50	1.59	1.60	1.56	2.06	2.03	1.94	2.07	2.04	1.95	2.06	2.03	1.94
	60	1.61	1.61	1.61	2.07	2.04	1.95	2.08	2.05	1.96	2.07	2.04	1.95
	80	1.63	1.63	1.63	2.09	2.07	1.98	2.10	2.07	1.98	2.09	2.07	1.98
	100	1.65	1.66	1.65	2.12	2.09	2.00	2.12	2.09	2.00	2.12	2.09	2.00
943[2]	4	9.42	12.56	9.91	10.16	10.15	10.12	13.51	13.49	13.46	10.02	10.01	9.99
	5	7.24	9.38	7.29	8.01	8.00	7.97	10.15	10.14	10.11	7.85	7.84	7.81
	7.5	5.35	6.29	5.31	6.11	6.10	6.07	7.06	7.05	7.02	5.92	5.91	5.88
	10	4.67	5.19	4.62	5.43	5.42	5.39	5.97	5.95	5.93	4.00	5.22	3.99
	15	4.18	4.41	4.13	4.94	4.93	4.90	5.18	5.17	5.14	4.74	4.73	4.70
	20	3.85	4.00	3.96	4.64	4.62	4.60	4.77	4.76	4.73	4.43	4.42	4.39
	25	3.99	4.06	3.88	4.75	4.73	4.71	4.83	4.82	4.79	4.54	4.53	4.50
	30	3.89	3.94	3.84	4.65	4.64	4.61	4.71	4.70	4.67	4.44	4.43	4.40
	40	3.68	3.73	3.79	4.47	4.46	4.43	4.51	4.49	4.46	4.26	4.25	4.22
	50	3.58	3.63	3.77	4.38	4.37	4.34	4.40	4.39	4.36	4.17	4.16	4.13
	60	3.51	3.57	3.76	4.33	4.32	4.29	4.35	4.33	4.30	4.12	4.11	4.08
	80	3.44	3.51	3.75	4.27	4.26	4.23	4.28	4.27	4.24	4.06	4.05	4.02
	100	3.41	3.48	3.75	4.24	4.23	4.20	4.25	4.24	4.21	4.03	4.02	3.99

1. To convert to lb-in-sec², divide by 386.1.
2. For 213TC/215TC frames, use 182TC/184TC values.

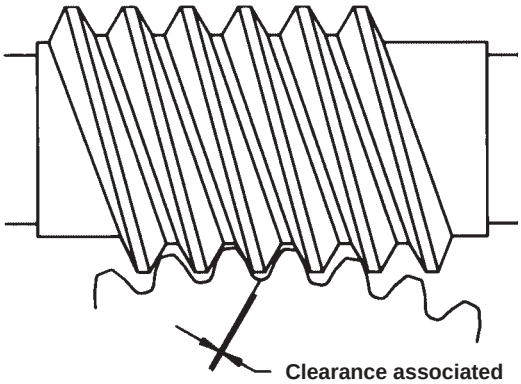
BACKLASH

Backlash is defined as the clearance between adjacent tooth flanks in a pair of mounted gears. In any gearset, some amount of backlash (clearance) is necessary to prevent damage brought about by gear tooth interference. Lack of backlash may cause noise, overloading, overheating of gears and bearings and even seizing and failure.

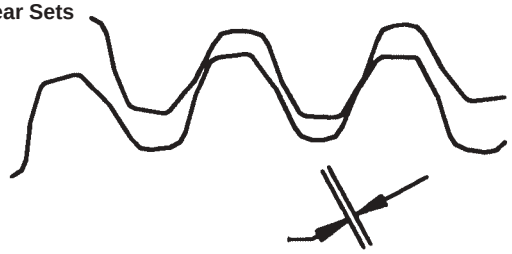
Backlash is measured by restricting the rotation of one member and measuring the rotational (arc) movement of the other component at some reference radius. WINSMITH® has historically used three inches as a reference radius, but any convenient distance is applicable, remembering that greater distances will result in more accurate measurements. Backlash is usually specified in arc degrees or arc minutes. Backlash measurement and conversion from arc movement to arc degrees/minutes/seconds is discussed in detail later in this article.

When measuring the backlash in spur or helical gears, the arc movement of either the pinion or gear can be measured. The result will be identical. When measuring the backlash in worm gear units, the arc movement of the slow speed shaft (gear) is measured while restricting the rotation of the input shaft (worm). It is not correct to measure the worm arc movement while restricting the gear rotation as this result will be much greater and is not indicative of tooth clearance (backlash). Axial clearances in the high speed worm bearings will add to the arc movement of the gear and "appear" to be backlash.

Worm Gear Sets



Helical Gear Sets



This clearance is minimal and for most applications, is of no consequence. However, when close blacklash is required, bearing endplay must be considered and reduced if necessary.

Backlash in a gearset can change during operation. Any wear that occurs will increase the space between the mating components and the resulting backlash. The majority of wear occurs during run-in when asparities are removed or in the case of wormgears, when the gear develops an operating surface consistent with the load. In spur and helical gearsets the wear is minimal especially if the components are hardened. With worm gearing this is more pronounced. As the precision level of the assembly increases, this change will be a greater percent of the initial backlash. For this reason, the S-ELIMINATOR™ and C-ELMININATOR products were developed to enable future readjustments as needed.

Tolerance variations in the related components will affect backlash. These include housing center distance variations, gear geometry tolerances and bearing runout. These and other issues must be considered when establishing a design specification for backlash. Closer tolerances in the housing and gear geometry along with higher precision bearings combine to provide closer backlash control, enabling tighter backlash when needed but at a greater cost. Therefore, the maximum allowable backlash for the application should be specified.

Standard backlash (no special requirements) is suitable when units operate continuously in a single direction in the absence of load reversals (ie. when the torque changes direction causing separation and re-engagement of the tooth flanks).

Closer backlash is recommended for applications involving frequent starting and stopping, reverse rotation or where load reversals (explained above) are present. WINSMITH reduced (minimum) backlash specifications (11 arc minutes) have traditionally accommodated these applications. Here, high speed bearing endplay (axial movement) should be kept to a minimum to reduce the impact during stopping or load reversing. WINSMITH S-MINIMIZER or C-MINIMIZER products are recommended for reduced backlash requirements.

For those applications requiring near zero backlash for precise positioning or some other unique situation, special designs which allow for backlash adjustment are necessary. WINSMITH has developed two different designs to accommodate near zero backlash. The C-ELIMINATOR is an adjustable unit that can provide a maximum of 6 arc minutes backlash. If closer backlash is required, the S-ELIMINATOR is adjustable down to 2 arc minutes maximum. These products are discussed in detail in other sections of this catalog.

BACKLASH

BACKLASH MEASUREMENT AND CONVERSION OF TERMS:

Backlash specifications are generally provided in one of three terms: inches of arc movement, degrees or arc minutes. The difference being the unit of measure. Any of these terms can accurately define the backlash, but the choice of term is usually associated with a specific purpose.

Backlash in inches of arc movement is generally associated with the actual backlash measurement. It refers to the arc movement about the center of the subject shaft at some reference radius. There is a quasi-industry standard of three inches for the reference radius. Because the arc movement will vary with the reference radius it is more convenient to convert this measurement to degrees which is independent of the reference radius. And finally, when the level of precision is high, the backlash will often be stated in arc minutes. Below are formulas that can be used to convert from one term to another.

1. Backlash in degrees as measured from some reference radius:

$$\text{Backlash in degrees} = \frac{\text{Backlash in inches} \times 57.296}{\text{Reference Radius (inches)}}$$

2. Backlash in inches at a defined reference radius:

$$\text{Backlash in inches} = \frac{\text{Backlash in degrees} \times \text{Radius (inches)}}{57.296}$$

3. Backlash in arc minutes:

$$\text{Backlash in arc minutes} = \text{Backlash in degrees} \times 60$$

The integer value is the arc minutes. The arc seconds are obtained by multiplying the decimal remainder again by 60.

EXAMPLE:

.18 degrees x 60 = 10.8 arc minutes
.8 remainder x 60 = 48 arc seconds
so .18 degrees = 10 arc minutes and 48 arc seconds

BACKLASH LEVEL FOR WINSMITH® PRODUCTS

IN ARC MINUTES	IN DEGREES*	IN INCHES@ REFERENCE RADIUS			BACKLASH LEVEL FOR WINSMITH PRODUCTS
		3"	12"	48"	
1	.017°	.0009"	.0035"	.0140"	
2	.033°	.0017"	.0070"	.0279"	S-ELIMINATOR™
3	.050°	.0026"	.0105"	.0419"	
4	.067°	.0035"	.0140"	.0558"	
5	.083°	.0044"	.0176"	.0704"	
6	.100°	.0052"	.0209"	.0837"	C-ELIMINATOR
7	.117°	.0061"	.0244"	.0977"	
8	.133°	.0070"	.0279"	.1117"	
9	.150°	.0079"	.0314"	.1256"	
10	.167°	.0087"	.0349"	.1396"	
11	.183°	.0096"	.0384"	.1535"	C-MINIMIZER
12	.200°	.0105"	.0419"	.1675"	S-MINIMIZER
13	.217°	.0113"	.0454"	.1814"	
14	.233°	.0122"	.0488"	.1954"	
15	.250°	.0131"	.0523"	.2094"	HELICAL PRIMARY
16	.267°	.0140"	.0558"	.2233"	D-90® TYPE SE®
17	.283°	.0148"	.0593"	.2373"	
18	.300°	.0157"	.0628"	.2512"	
19	.317°	.0166"	.0663"	.2652"	
20	.333°	.0174"	.0698"	.2791"	
21	.350°	.0183"	.0733"	.2931"	
22	.367°	.0192"	.0768"	.3070"	
23	.383°	.0200"	.0803"	.3210"	Std. C-Line
24	.400°	.0209"	.0837"	.3350"	
25	.417°	.0218"	.0872"	.3489"	
26	.433°	.0227"	.0907"	.3629"	
27	.450°	.0236"	.0942"	.3768"	
28	.467°	.0244"	.0977"	.3908"	
29	.483°	.0253"	.1012"	.4047"	Std. D-90®
30	.500°	.0262"	.1047"	.4187"	TYPE SE®

*To convert to radians, divide degrees by 57.3".

The Figures below illustrate how backlash should be measured.

Figure 1 shows a fixed input shaft while observing the backlash at the output shaft. Figure 2 shows the positioning of the equipment when measuring the arc movement for determining backlash.

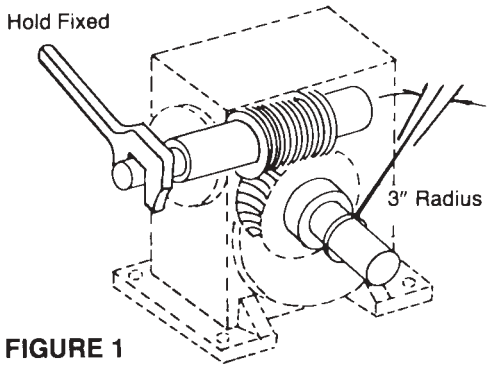


FIGURE 1

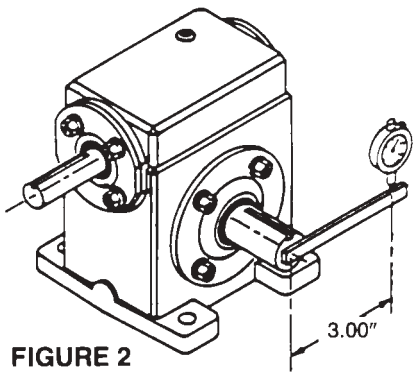


FIGURE 2

HIGH SPEED CAP AND SLOW SPEED COVER BOLT PATTERNS

There are occasions when it becomes necessary for our customers to attach auxiliary plates, flanges or other equipment to our units. Frequently the customer finds it convenient to make use of the cap or cover fastener bolts to secure these attachments. For your benefit, we have provided the following chart which lists the various bolt circle pattern for all the units in the D-90® TYPE SE® Series.

This information is supplied as a service to our customers.

However, before mounting or attaching any auxiliary items, be sure that normal acceptable engineering practices are maintained and that axial thrust loads and overhung load ratings shown in the catalog for the unit involved are not exceeded.

If you require special modifications for mounting or even special flanges or adapters, contact your local authorized WINSMITH distributor, representative, or the factory for individual assistance.

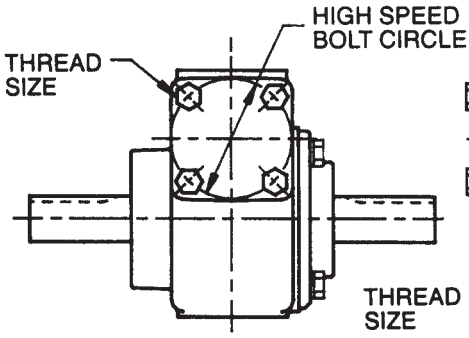


FIG. 1

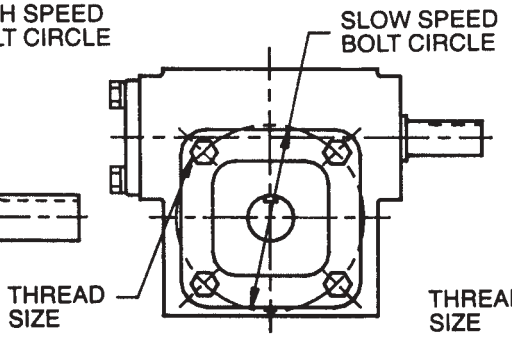


FIG. 2

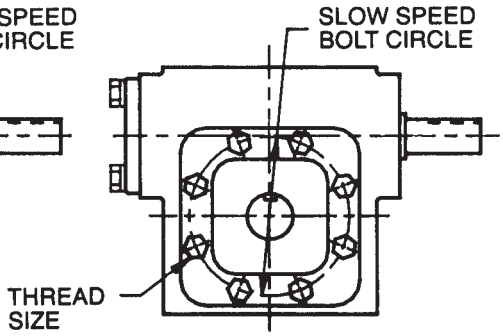


FIG. 3

SIZE	HIGH SPEED			SLOW SPEED			
	BOLT CIRCLE	THD SIZE	NO. OF HOLES	BOLT CIRCLE	THD SIZE	NO. OF HOLES	SPACING
910	1.875	¼-20	4 (Fig. 1)	2.750	¼-20	4 (FIG. 2)	90°
913	2.125	¼-20	4 (FIG. 1)	3.125	5/16-18	4 (FIG. 2)	90°
917	2.625	5/16-18	4 (FIG. 1)	4.063	5/16-18	4 (FIG. 2)	90°
920	2.625	5/16-18	4 (FIG. 1)	4.438	5/16-18	4 (FIG. 2)	90°
924	3.438	⅜-16	4 (FIG. 1)	4.875	5/16-18	8 (FIG. 3)	45°
926	3.438	⅜-16	4 (FIG. 1)	5.438	5/16-18	8 (FIG. 3)	45°
930	3.875	⅜-16	4 (FIG. 1)	6.125	⅜-16	8 (FIG. 3)	45°
935	3.875	⅜-16	4 (FIG. 1)	7.250	⅜-16	8 (FIG. 3)	45°
943	3.875	⅜-16	4 (FIG. 1)	8.250	⅜-16	8 (FIG. 3)	45°

USEFUL FORMULAS

REQUIRED	GIVEN	FORMULAS
Velocity or belt speed (V) in FPM	Pitch Diameter of pulley in inches & RPM of shaft	$V = .262 \times P.D. \times RPM$
RPM	Belt speed or Velocity (FPM) P.D. of pulley in inches	$RPM = \frac{V}{.262 \times P.D.}$
P.D. of pulley in inches	Belt speed or Velocity (V) in FPM RPM of shaft	$P.D = \frac{V}{.262 \times RPM}$
Horsepower (HP)	Force (F) in lbs. Belt speed or Velocity (V) in FPM	$HP = \frac{F \times V}{33{,}000}$
Horsepower (HP)	Torque (T) in inch-lbs. RPM of shaft	$HP = \frac{T \times RPM}{63{,}025}$
Torque (T) in inch-lbs.	Force (F) in lbs. Pulley radius (R) in inches	$T = F \times R$
Torque (T) in inch-lbs.	Horsepower (HP) RPM of shaft	$T = \frac{63{,}025 \times HP}{RPM}$
Torque (T) in ft.-lbs.	Horsepower (HP) RPM of shaft	$T = \frac{5{,}252 \times HP}{RPM}$
Force (F) in lbs.	Horsepower (HP) Belt speed or Velocity (V) in FPM	$F = \frac{33{,}000 \times HP}{V}$
RPM of shaft	Horsepower (HP) Torque (T) in inch-lbs.	$RPM = \frac{63{,}025 \times HP}{T}$
Effective Tension (Te) in lbs.	Torque (T) P.D. of pulley in inches	$Te = \frac{2 \times T}{P.D.}$
Torque (T) in foot-lbs. due to inertia	Inertia (WR^2) in lb.-ft.^{2} Initial RPM_1 Final RPM_2 Time in seconds (t)	$T = \frac{(WR^2) \times (RPM_2 - RPM_1)}{307.6 \times t}$
Inertia (J_S) System including Motor and Gear Drive	Motor Inertia (J_M) Ratio of Gear Drive (M_G) Load Inertia (J_L) Gear Drive Inertia (J_G) Related to Input Coupling Inertia (J_C)	$J_S = J_C + J_M + J_G + \frac{1}{M_G^2} J_L$
Inertia Matching	Above	$JM : J_C + J_G + \frac{1}{M_G^2} J_L$

CONVERSION TABLES

LENGTH/DISTANCE

(To convert from A to B, multiply by entry in table.)

A \ B	in	ft	mm	cm	m
in	1	0.0833	25.4	2.54	0.0254
ft	12	1	304.8	30.48	0.3048
mm	0.03937	0.00328	1	0.1	0.001
cm	0.3937	0.03281	10	1	0.01
m	39.37	3.281	1000	100	1

FORCE

(To convert from A to B, multiply by entry in table.)

A \ B	lb(f)	N	oz(f)	kg(f)	gm(f)
lb(f)	1	4.4482	16	.45359	453.6
N	.22481	1	3.5967	.10197	—
oz(f)	.0625	.27801	1	.02835	28.35
kg(f)	2.205	9.80665	35.274	1	1000
gm(f)	2.205×10^{-3}	—	.03527	.001	1

Note: lb(f) = 1 slug x 1 ft/s^2 N = 1 kg x 1 m/s^2

TEMPERATURE

F = (1.8 x C) + 32
C =. 555 (F - 32)

GRAVITY

(Acceleration Constant)

$$G = \frac{386.1\ in}{s^2} = \frac{32.17\ ft}{s^2} = \frac{9.806\ m}{s^2}$$

MASS

(To convert from A to B, multiply by entry in table.)

A \ B	gm	kg	slug	lb(m)	oz(m)
gm	1	.001	6.852×10^{-5}	2.205×10^{-3}	.03527
kg	1000	1	6.852×10^{-2}	2.205	35.274
slug	14590	14.59	1	32.2	514.72
lb(m)	453.6	.45359	.0311	1	16
oz(m)	28.35	.02835	1.94×10^{-3}	.0625	1

MATERIAL DENSITIES

A \ B	oz/in^3	in/lb^3	gm/cm^3
Aluminum	1.57	.098	2.72
Brass	4.96	.31	8.6
Bronze	4.72	.295	8.17
Copper	5.15	.322	8.91
Plastic	.64	.04	1.11
Steel	4.48	.28	7.75
Hard Wood	.46	.029	.8
Soft Wood	.28	.018	.48

ABBREVIATED TERMS

C = Celsius
cm = centimeter
F = Fahrenheit
ft = foot
gm = gram
gm(f) = gram force
in = inch
kg = kilogram
kg(f) = kilogram force
lb(f) = pound force
lb(m) = pound mass
mm = milimeter
m = meter
N = Newton
oz(f) = ounce force
oz(m) = ounce mass

TORQUE

(To convert from A to B, multiply by entry in table.)

A \ B	gm-cm	oz-in	kg-cm	lb-in	N-m	lb-ft	kg-m
gm-cm	1	1.388×10^{-2}	10^{-3}	8.679×10^{-4}	9.806×10^{-5}	7.233×10^{-5}	10^{-5}
oz-in	72.007	1	7.200×10^{-2}	6.25×10^{-2}	7.061×10^{-3}	5.208×10^{-3}	7.200×10^{-4}
kg-cm	1000	13.877	1	.8679	9.806×10^{-2}	7.233×10^{-2}	10^{-2}
lb-in	1.152×10^{3}	16	1.152	1	.113	8.333×10^{-2}	1.152×10^{-2}
N-m	1.019×10^{4}	141.612	10.197	8.850	1	.737	.102
lb-ft	1.382×10^{4}	182	13.825	12	1.356	1	.138
kg-m	10^{5}	1.388×10^{3}	100	86.796	9.806	7.233	1

INERTIA (ROTARY)

(To convert from A to B, multiply by entry in table.)

A \ B	gm-cm^2	oz-in^2	gm-cm-s^2	kg-cm^2	lb-in^2	oz-in-s^2	lb-ft^2	kg-cm-s^2	lb-in-s^2	lb-ft-s^2 or slug-ft-s^2
gm-cm^2	1	5.46×10^{-3}	1.02×10^{-3}	10^{-3}	3.417×10^{-4}	1.41×10^{-5}	2.37×10^{-6}	1.02×10^{-6}	8.85×10^{-7}	7.38×10^{-8}
oz-in^2	182.9	1	.187	.183	.0625	2.59×10^{-3}	4.34×10^{-4}	1.86×10^{-4}	1.61×10^{-4}	1.35×10^{-5}
gm-cm-s^2	980.6	5.361	1	.981	.335	1.39×10^{-2}	2.33×10^{-3}	10^{-3}	8.68×10^{-4}	7.23×10^{-5}
kg-cm^2	1000	5.467	1.019	1	.342	1.42×10^{-2}	2.37×10^{-3}	1.02×10^{-3}	8.85×10^{-4}	7.38×10^{-5}
lb-in^2	2.92×10^{3}	16	2.984	2.925	1	4.14×10^{-2}	6.94×10^{-3}	2.98×10^{-3}	2.59×10^{-3}	2.15×10^{-4}
oz-in-s^2	7.06×10^{4}	386.1	72.0	70.62	24.13	1	.168	7.20×10^{-2}	6.25×10^{-2}	5.21×10^{-3}
lb-ft^2	4.21×10^{5}	2304	429.4	421.3	144	5.963	1	.430	.373	3.10×10^{-2}
kg-cm-s^2	9.81×10^{5}	5.36×10^{3}	1000	980.6	335.1	13.887	2.327	1	.868	7.23×10^{-2}
lb-in-s^2	1.129×10^{6}	6.18×10^{3}	1.152×10^{3}	1.13×10^{3}	386.1	16	2.681	1.152	1	8.33×10^{-2}
lb-ft-s^2 or slug-ft^2	1.355×10^{7}	7.42×10^{4}	1.38×10^{4}	1.35×10^{4}	4.64×10^{3}	192	32.17	13.823	12	1

APPLICATION DATA CHECKLIST

WINSMITH APPLICATION DATA CHECKLIST FOR SELECTING SPEED REDUCERS AND GEARMOTORS

REP. _____ CUSTOMER _____ DATE _____

A. Reducer Particulars:

1. Size _____ 2. Model _____ 3. Ratio _____ 4. Assy. _____ 5. Exact Mounting (if not clear, send sketch)

_____

Critical dimensions _____

B. Drive Systems:

1. How is prime mover connected to unit? _____
2. How is the unit connected to the load? _____
3. List all pertinent data on pulleys, sprockets, drums, etc. _____

_____

4. List speed requirements (input, output, variation, conveyor velocities.) _____

C. Load on Reducer:

1. Output torque required _____ (or)
2. Reasonable estimate of torque _____ (or)
3. List data to calculate output torque _____

_____

4. If loads are in terms of weight, list materials rubbing, sliding or rolling against each other so coefficient of friction can be estimated. _____

_____

5. Are there any large inertia forces that must be overcome in starting system? If so, explain: _____

_____

6. Overhung loads subjected to unit _____
7. Thrust loads subjected to unit _____

D. Type of Service:

1. Uniform _____ x, Moderate _____, Shock _____, reversing _____, and/or impact _____ loading.
2. Extent of peak loads _____
3. Type of primer mover _____
4. Kind of machinery used on _____
5. Unusual dangers to persons that must be considered _____

_____

E. Duty:

1. Length of daily service _____
2. Cycle time _____
3. Does (2) reflect frequent starts & stops? _____

F. Environmental Conditions:

1. Ambient temperature range _____
2. Is unit for outdoor service? _____
3. Atmospheric condition of surroundings (dirty air, etc.) _____
4. List any unusual conditions that the unit is subjected to (heat, water splash, etc.) _____

_____

G. Prime Mover:

1. Capacity (speed & HP or torque) _____
2. Frame size _____ (Can the reducer accept this size?)
3. Obtain certified prints for non-nema mounting dimensions _____
4. Is it constant torque or HP for varying speeds? _____
5. For internal combustion: no. cylinders _____, cycles _____

H. Self-Locking:

1. Must the unit backdrive? _____
2. Must the unit be self-locking? _____ (If so, a brake is recommended.)

UNUSUAL CONDITIONS CONCERNING INSTALLATION OR APPLICATION

_____

_____

_____

TERMS AND CONDITIONS

GENERAL TERMS AND CONDITIONS OF SALES

THE RECIPIENT OF THIS OFFER IS HEREIN CALLED BUYER AND PEERLESS-WINSMITH, INC. IS HEREIN CALLED SELLER. THE TERM PRODUCT SHALL INCLUDE, WITHOUT LIMITATION, GOODS, SERVICES, WORK AND DATA, EXPRESSLY OR IMPLIEDLY DELIVERED HEREUNDER AND ANY PART THEREOF.

1. CONTROLLING TERMS

The parties agree that there are no understandings, agreements or representations, express or implied, not specified herein, respecting this offer or sale, and that this instrument contains the entire agreement between Seller and Buyer. No course of prior dealing and no usage of the trade shall be relevant to supplement or to explain terms used in this agreement. All sales are expressly limited to, and the rights and liabilities of the parties shall be governed exclusively by, the terms and conditions herein. In the event any purchase order or offer from Buyer states terms additional to or different from those set forth herein, this document shall be deemed a notice of objection to such additional or different terms and a rejection thereof. Any acknowledgement or shipment of product by Seller to Buyer subsequent to Seller's receipt of a purchase order or offer from Buyer shall not be deemed to be an acceptance by Seller of an offer to contract on the basis of any Buyer's terms and conditions. Issuance of a purchase order or acceptance by Buyer of products shall be conclusive evidence of Buyer's acceptance of terms and conditions set forth herein as the sole controlling terms and conditions of the contract between Seller and Buyer.

2. FORCE MAJEUR

This order is accepted subject to delays due to conditions or forces beyond Seller's control including, but not limited to strikes, work stoppages, break down, fires, accidents, contingencies of transportation, storage or delivery, civil disturbances, shortage of labor and acts of God.

3. CREDIT

Buyer agrees to comply with the credit terms and accept deliveries as indicated; upon violation or default by Buyer, or upon bankruptcy or insolvency of Buyer, or by reason of the insecurity of Seller as to the ultimate collectibility of the purchase price as determined by Seller in its sole and unfettered discretion, Seller may, without notice to Buyer, delay or postpone the delivery of the Products; and Seller, at its option, is authorized to change the terms of payment to payment in full in advance of shipment of the entire undelivered balance of said Products. In the event of default by Buyer in the payment of the purchase price or otherwise, Seller after demand, may sell any undelivered Products on hand for the account of Buyer and apply such proceeds as a credit against the contract purchase price, and Buyer agrees to pay balance then due to Seller on demand. Such balance shall bear interest at the highest legal contract rate from the date of demand. Buyer agrees to pay all expenses, including but not limited to, storage and shipment costs, court costs, attorney's fees and other expenses of litigation or preparation therefore, resulting from any default by Buyer in any of the terms thereof. Should Buyer default hereunder prior to the manufacture of all Products ordered hereunder, Buyer agrees to pay as liquidated damages the contract price for such unproduced or partially produced Products, less Seller's then unexpended standard costs for materials, direct labor and variable overhead with respect to the Products as in effect at the time of default. Certification of such standard costs by Seller's independent public accountants shall be conclusive on the parties hereto.

4. CHANGES

Orders arising hereunder may be amended by written Change Order signed by the parties, setting forth the particular changes to be made and the effect of such changes on the price and time of delivery. A charge will be made for changes in drawings and/or specifications after Buyer and Seller have previously agreed upon same. The total charge for such change will include order repossessing costs, additional material and labor costs. Seller will advise the total charge for such changes after receipt of written authorization or direction for such changes. In the event the changes are required as a result of an error on the part of the Seller, no charge will be made.

5. FAIR LABOR STANDARDS ACT

Seller hereby certifies that the Products covered by this order were produced in compliance with the Fair Labor Standards Act of 1938, as amended, and of regulations and orders issued thereunder.

6. TAXES

All applicable taxes of every kind or nature now or hereafter assessed which are or may become effective before this order is completed may be added to the invoice price.

7. BUYER'S REPRESENTATIONS AND INDEMNITY

Buyer represents and warrants that all trademarks, copyright materials, and patents submitted in connection with this order and that the use thereof in accordance with this order will not violate any federal, state or municipal law or regulation, and Buyer agrees to indemnify and hold harmless Seller, its agents, successors and assigns against any suits, loss, claim, demand, liabilities, costs and expenses (including attorneys' fees) arising out of any breach or alleged breach hereof.

8. TERMS

All Sales are made F.O.B. Seller's plant, unless otherwise specified on the face of the Seller's acknowledgement. Payment terms are net 30 days unless otherwise specified on the face of the Seller's acknowledgement. Delivery of all or any part of the Products to a carrier for shipment to Buyer or to a consignee designated by Buyer shall constitute delivery to Buyer and shall pass and vest title to and risk of loss of such goods to Buyer in the event of loss or damage to Products after delivery to a carrier. Seller will, upon request of Buyer, assist in filing claims against the carrier.

9. CANCELLATION-SUSPENSION

Orders for Products received by Seller are accepted subject to the understanding that orders may be cancelled by Seller because of Seller's inability to obtain all or part of the materials necessary to complete the order at prices in effect on the date hereof or by reason of other causes beyond its reasonable control. Cancellation or suspension of orders may be made only upon Sellers written approval. A charge will be made for cancellations and/or suspensions after Buyer and Seller have previously agreed upon same. Seller will advise the total charge for such cancellations and/or suspensions. Buyer agrees to pay such charges, including but not limited to, storage and shipment costs, costs of producing non-standard components, costs of purchasing non-returnable materials, cancellation costs imposed on the Seller by its suppliers, engineering costs and any other costs resulting from cancellation and/or suspension of orders by the Buyer. Certification of such costs by Seller's independent public accountants shall be conclusive on the parties hereto.

10. TOOLS, DIES AND MOLDS

Any and all equipment, including tools, jigs, dies, plates, molds, fixtures, materials, equipment, drawings, designs and other information, which Seller uses, constructs or acquires for Buyer for the purpose of filling this order shall be and remain Seller's property.

11. DELIVERY

Buyer agrees to accept delivery of all goods included in this order within the time specified on the face hereof. No extension of the delivery period shall relieve Buyer from the obligation to accept the goods included in this order. Partial shipment of goods will be made by Seller when ready and invoiced.

12. CLAIMS OR RETURNS

All claims must be made in writing and delivered to Seller within ten (10) days after receipt of the goods and must be accompanied by Seller's packing list and freight bill. Failure of Buyer to make such claims within ten (10) days will constitute a waiver by Buyer or such claims.

In the event of the receipt of notice of such claims, Seller agrees to forward definitive shipping instructions to Buyer or to send a representative of Seller to Buyer's facilities to review shipment and make any necessary adjustments. No return of the goods pursuant to this paragraph shall be made for any purpose without the prior written consent of Seller. Transportation charges on all goods returned after receipt of Seller's Authorization must be prepaid. Any goods returned by Buyer without Seller's consent shall be held for the account of Buyer.

13. CHARGES

Past due accounts are subject to late payment charges of 1½% per month or such lesser amounts are legally permissible.

14. SOLVENCY

Buyer, by these presents and the acceptance of the Products, represents and warrants that Buyer is solvent and able to pay for the Products in accordance with the terms of sale.

15. WARRANTIES

The Products manufactured by Seller are warranted by Seller as follows: (a) Seller has the right to sell the Products, (b) Buyer and its customers shall have the right to enjoy the Products free of claims of third persons against the Seller, and (c) the Products shall be free from manufacturing defects in material and workmanship under normal use and service for a period of twenty-four (24) months from date of shipment. This warranty does not apply to any Products which have been tampered with, improperly stored, exposed to heat or moisture or otherwise subject to misuse or abuse.

THE FOREGOING WARRANTIES ARE IN LIEU OF ALL OTHER WARRANTIES EXPRESS OR IMPLIED INCLUDING, WITHOUT LIMITATION, WARRANTIES OR MERCHANTABILITY AND FITNESS FOR ANY PARTICULAR PURPOSE.

Except as otherwise agreed in writing in each specific instance, the obligation of Seller is limited: (i) in the case of any material breach of the warranties set forth in subparagraphs (a) and (b) above, to the reimbursement of the price paid by Buyer or its customer for such Products: and (ii) in the case of any breach of the warranty set forth in subparagraph (c) above, to any of the following (at Seller's option): refund of the purchase price or repair or replacement of any such defective Product without charge other than for transportation.

SELLER SHALL NOT IN ANY EVENT BE LIABLE FOR INCIDENTAL, CONSEQUENTIAL OR SPECIAL DAMAGES resulting from any use or failure of the Products, including, without limitation, liability for loss of time to, profits or products of, Buyer or the user for any labor or any other expense, damage or loss occasioned by any such defect.

Simultaneously with the delivery by Dealer to its customer of any Products purchased by Buyer from Seller, Buyer shall deliver therewith such printed warranties and disclaimers of warranties in respect to said merchandise as shall be furnished by Seller to Buyer or packed with said merchandise for that purpose. Buyer further agrees that the obligations of Seller to Buyer with respect to all Products purchased by Buyer from Seller shall be as hereinabove set forth. In no event shall Seller's obligation for breach of warranty exceed the purchase price of product.

16. ARBITRATION

Any controversy arising under, or in any way related to this order or the subject matter hereof shall be settled by arbitration by three disinterested arbitrators in the City and State of New York, and under the laws of said State, in accordance with rules of the American Arbitration Association then obtaining. All costs of such arbitration, and any proceedings directly or indirectly related thereto, including reasonable attorney's fees, shall be paid by the party against whom the arbitrators shall render their award or as otherwise directed by the arbitrators.

17. LAW

The contract shall be governed and construed under the State where the products are manufactured.

REV. 12/99

WINSMITH DISTRICT OFFICES

ALABAMA
See Georgia

CALIFORNIA
Los Angeles (Buena Park)
■ **Service Center**
562/404-0304
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FAX 925/634-4314

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FAX 303/205-1477

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FAX 352/243-3518

GEORGIA
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FAX 770/772-7277

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FAX 816/524-2944

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See Rhode Island

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734/878-9050
FAX 734/878-9051

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FAX 763/559-6552

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FAX 716/592-9546

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FAX 440/585-2122
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FAX 513/791-4717

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See Texas

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Portland
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FAX 503/227-5413

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Harrisburg/Philadelphia
Sales Office
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Fax 315/684-3562
Western PA
Sales Office
716/751-0134
FAX 716/751-4051

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Warwick
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FAX 401/732-4583

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See Georgia

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Dallas/Houston
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FAX 877/867-5386

UTAH
See Colorado

VIRGINIA
Vinton
540/890-7756
FAX 540/890-7855

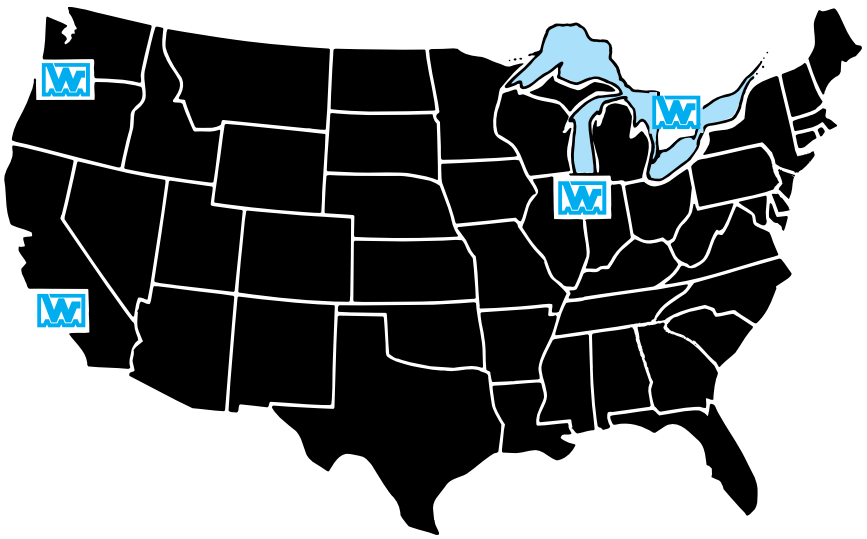
WISCONSIN
Cedarburg
414/375-4465
FAX 414/375-4175

BRITISH COLUMBIA
See Springville, NY

ONTARIO
Toronto (Mississauga)
■ **Service Center**
905/828-1222
FAX 905/828-1225

WINSMITH SERVICE CENTERS

WINSMITH®'s Regional Service Centers, shown on the map, can provide prompt solutions to your unique delivery requirements. Each Service Center is fully stocked with the necessary components and assemblies to provide a wide variety of finished units with the same high quality that you expect from WINSMITH's manufacturing plants.



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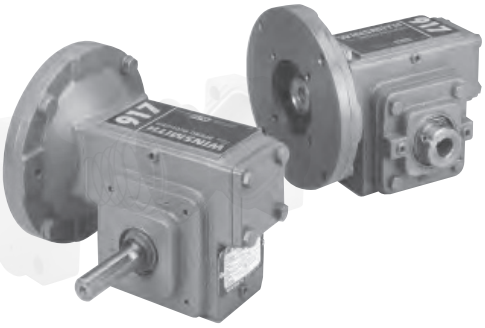

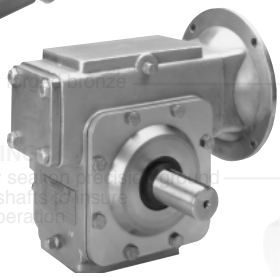

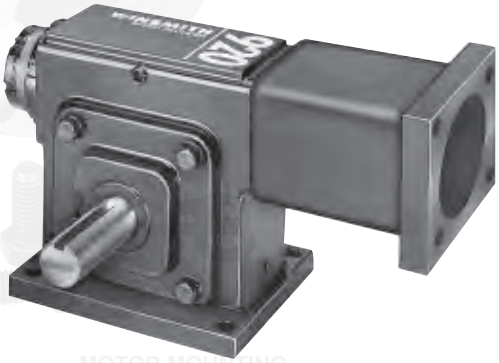

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