

Product Selection Guide

● DIRECTIONAL CONTROL VALVES

● FLOW CONTROL VALVES

● MOTION CONTROL VALVES

● PRESSURE CONTROL VALVES

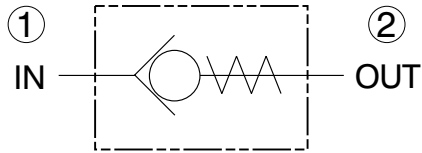
● PROPORTIONAL VALVES

● SOLENOID VALVES

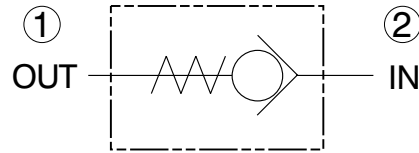


Directional Control Valves

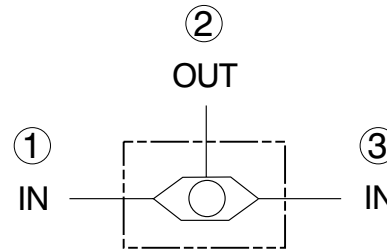
Check Valve



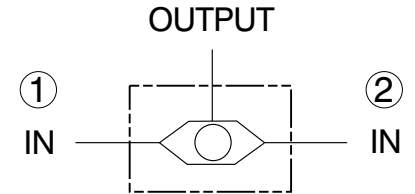
Check Valve Reverse Flow



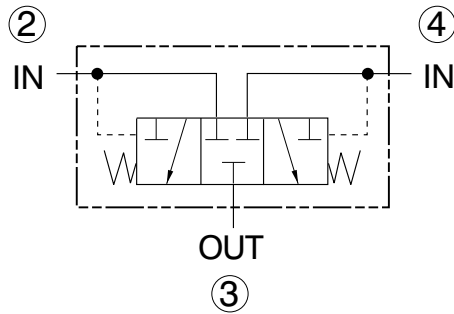
Shuttle Valve



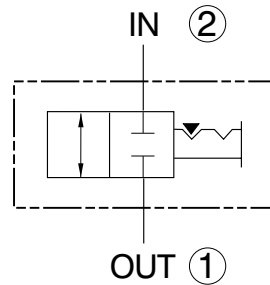
Shuttle Valve with Output Port



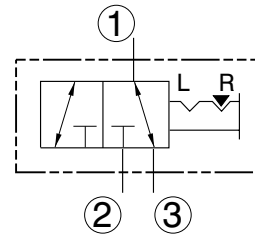
Shuttle Valve 3 Pos. 3 Way



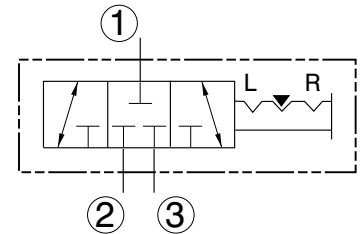
Rotary 2 Pos. 2 Way Spool type



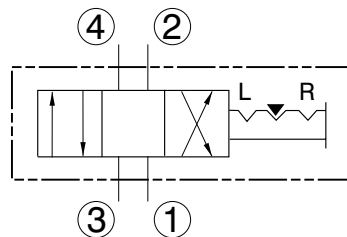
Rotary 2 Pos. 3 Way Spool Type



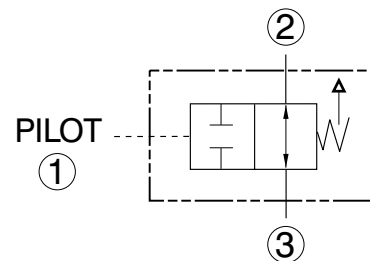
Rotary 3 Pos. 3 Way Spool Type



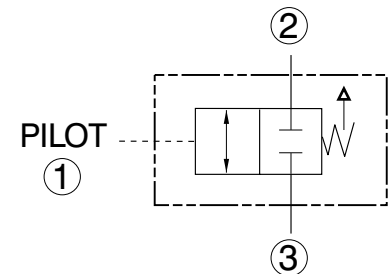
Rotary 2 Pos. 4 Way Spool Type



N/O - 2 Pos. 2 Way Pilot Operated Type

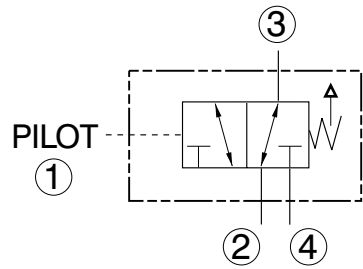


N/C - 2 Pos. 2 Way Pilot Operated Type

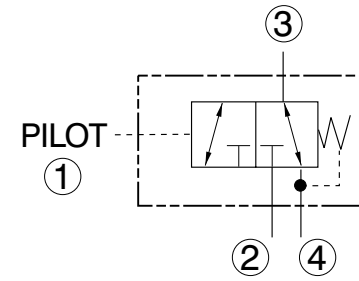


Directional Control Valves

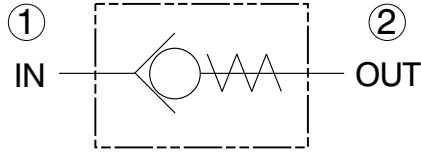
2 Pos. 3 Way Pilot Operated Type



2 Pos. 3 Way Pilot Operated Type

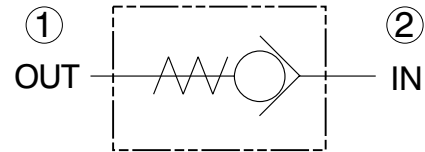


Check Valve

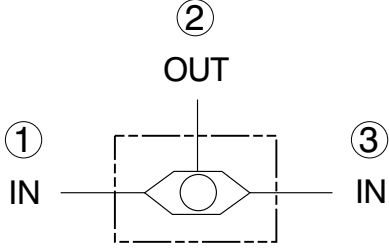
CAVITY	BASIC CARTRIDGE	FLOW gpm (l/m)	PRESSURE psi (bar)	
CP4-2	CP104-1	.9 (3)	3000 (207)	
CP8-2	CP108-1	8 (30)	3000 (207)	
CP10-2	CP100-1	22 (83)	3000 (207)	
CP10-2	CP100-3	30 (114)	3000 (207)	
CP12-2	CP101-1	26 (98)	3000 (207)	
CP16-2	CP102-1	55 (208)	3000 (207)	
CP20-2	CP103-1	100 (379)	3000 (207)	

Check Valve - Reverse Flow

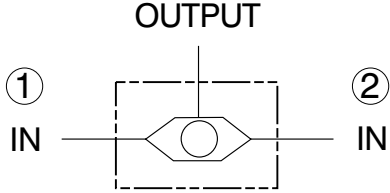
CAVITY	BASIC CARTRIDGE	FLOW gpm (l/m)	PRESSURE psi (bar)
CP4-2	CP104-2	.8 (3)	3000 (207)
CP8-2	CP108-2	5 (19)	5000 (345)
CP10-2	CP100-2	13 (49)	5000 (345)
CP12-2	CP101-2	20 (76)	5000 (345)
CP16-2	CP102-2	40 (151)	5000 (345)
CP20-2	CP103-2	70 (265)	5000 (345)



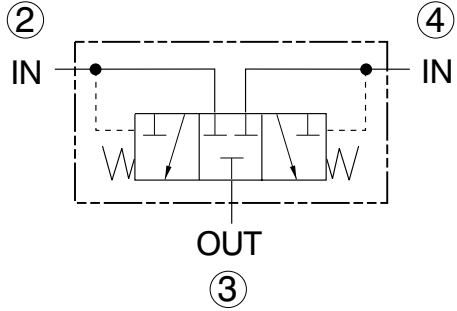
Shuttle Valve

CAVITY	BASIC CARTRIDGE	FLOW gpm (l/m)	PRESSURE psi (bar)	
CP4-3	CP124-1	1 (4)	3000 (207)	
CP8-3	CP128-1	3 (11)	3000 (207)	
CP10-3	CP120-1	5 (19)	3000 (207)	

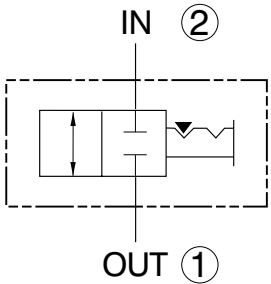
Shuttle Valve with Output Port

CAVITY	BASIC CARTRIDGE	FLOW gpm (l/m)	PRESSURE psi (bar)	
CP8-2 CP10-2	CP128-2 CP120-2	2 (8) 5 (19)	3000 (207) 3000 (207)	

Shuttle Valve - 3 Position 3 Way

CAVITY	BASIC CARTRIDGE	FLOW gpm (l/m)	PRESSURE psi (bar)	
CP10-4 CP12-3M	CP720-3 CP721-3	7 (26) 24 (91)	5000 (345) 5000 (345)	

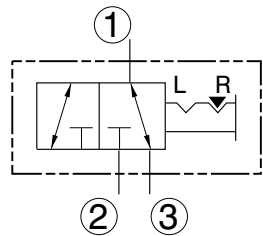
Rotary 2 Position 2 Way Spool Type

CAVITY	BASIC CARTRIDGE	FLOW gpm (l/m)	PRESSURE psi (bar)	
CP10-2	CP620-1	20 (76)	3000 (207)	

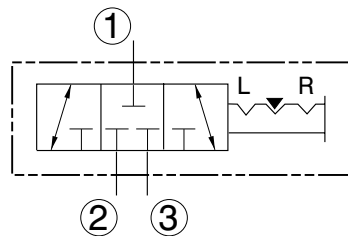
Rotary Spool Type

CAVITY	BASIC CARTRIDGE	FLOW gpm (l/m)	PRESSURE psi (bar)
CP10-3	CP630-1	8 (30)	3000 (207)

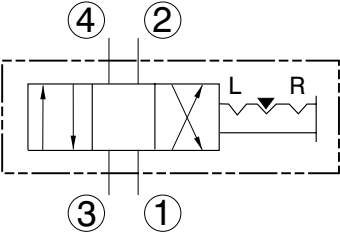
2 Position 3 Way



3 Position 3 Way



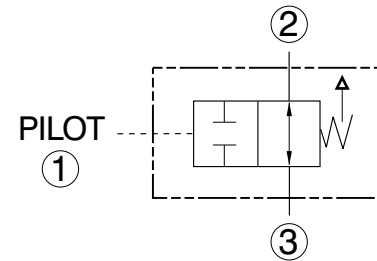
Rotary 2 Position 4 Way Spool Type

CAVITY	BASIC CARTRIDGE	FLOW gpm (l/m)	PRESSURE psi (bar)	
CP10-4	CP640-1	3 (11)	3000 (207)	

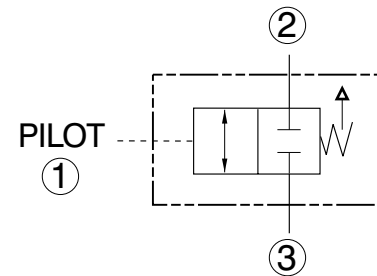
2 Position 2 Way Pilot Operated Type

CAVITY	BASIC CARTRIDGE	FLOW gpm (l/m)	PRESSURE psi (bar)
CP10-3	CP710-1	10 (38)	3000 (207)
CP16-3	CP712-1	35 (132)	3000 (207)
CP16-3	CP712-2	35 (132)	3000 (207)
CP20-3	CP713-1	70 (265)	3000 (207)
CP20-3	CP713-2	70 (265)	3000 (207)

N/O - 2 Position 2 Way Pilot Operated Type

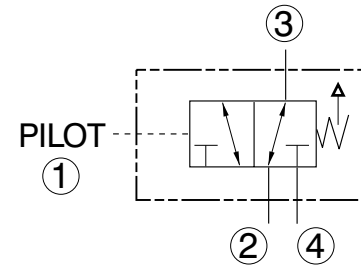


N/C - 2 Position 2 Way Pilot Operated Type



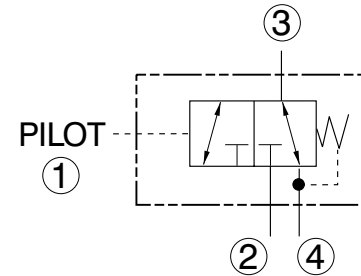
2 Position 3 Way Pilot Operated Type

CAVITY	BASIC CARTRIDGE	FLOW gpm (l/m)	PRESSURE psi (bar)
CP10-4	CP720-1	8 (30)	3000 (207)
CP16-4	CP722-1	35 (132)	3000 (207)
CP16-4	CP722-2	35 (132)	3000 (207)
CP20-4	CP723-1	70 (265)	3000 (207)
CP20-4	CP723-2	70 (265)	3000 (207)



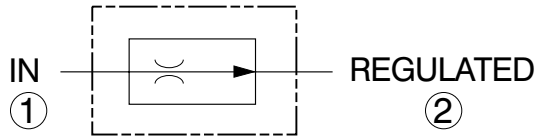
2 Position 3 Way Pilot Operated Type

CAVITY	BASIC CARTRIDGE	FLOW gpm (l/m)	PRESSURE psi (bar)
CP10-4	CP720-5	10 (38)	3000 (207)
CP16-4	CP722-5	35 (132)	3000 (207)
CP20-4	CP723-5	70 (265)	3000 (207)

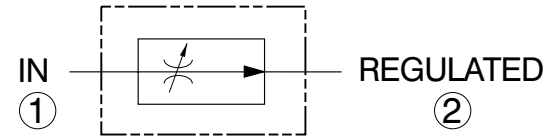


Flow Control Valves

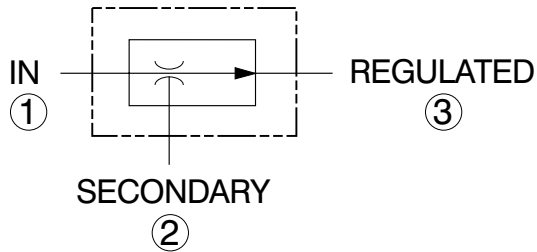
Restrictive Fixed Regulator Type



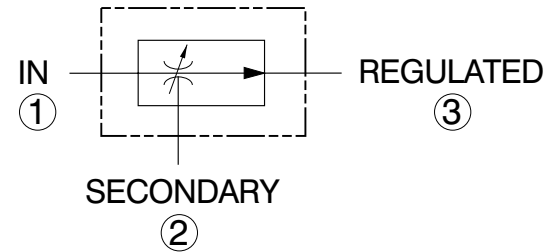
Restrictive Limited Adjustment Regulator Type



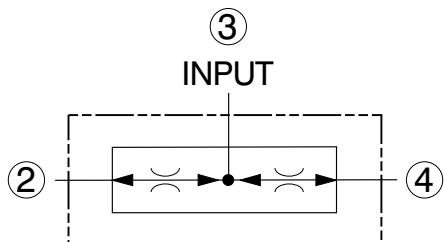
Priority Fixed Regulator Type



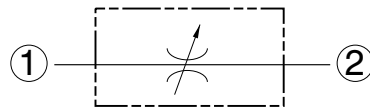
Priority Limited Adjustment Regulator Type



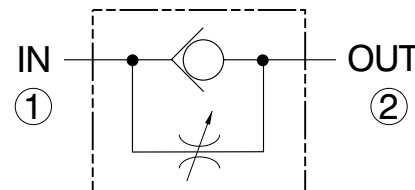
Flow Divider/Combiner Type



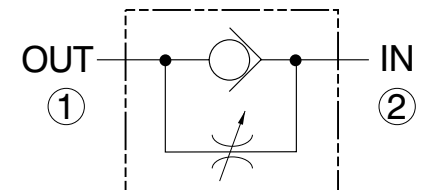
Needle Valve



Needle Valve Free Reverse Flow

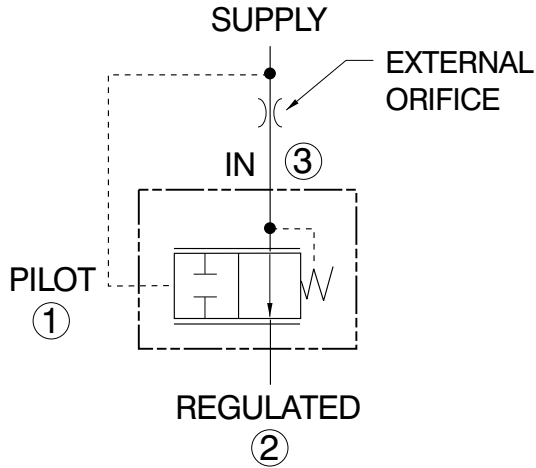


Needle Valve Free Reverse Flow

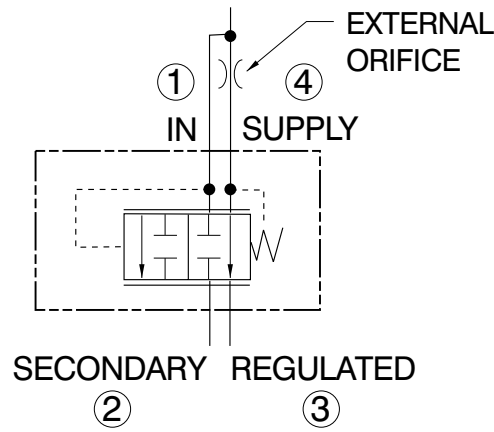


Flow Control Valves

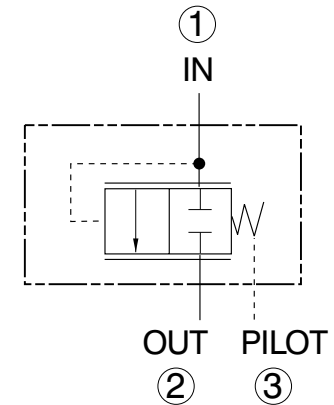
**Differential Sensing Valve
External Orifice
Restrictive Regulator Type**



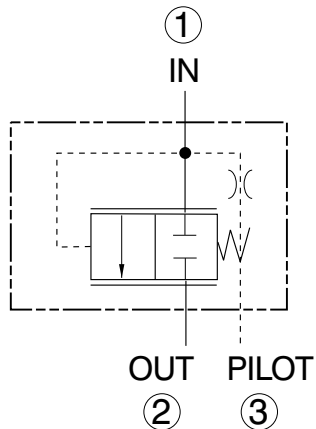
**Differential Sensing Valve
External Orifice
Priority Regulator Type**



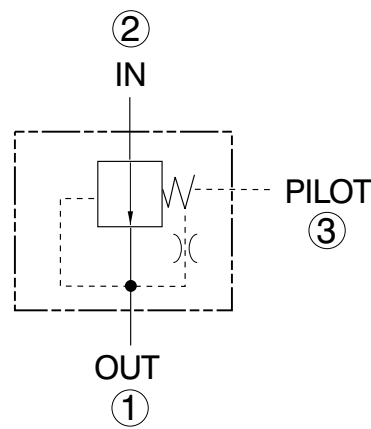
Differential Sensing Valve



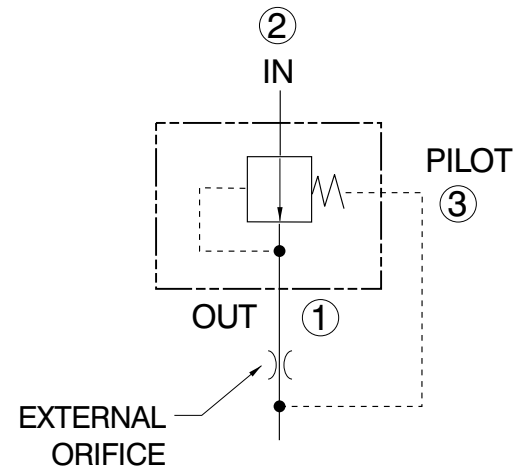
**Differential Sensing Valve
Internal Orifice**



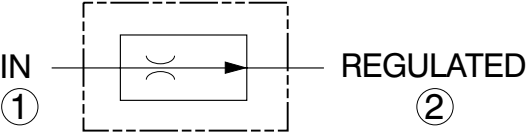
**Differential Sensing Valve
Internal Orifice**



**Differential Sensing Valve
External Orifice**

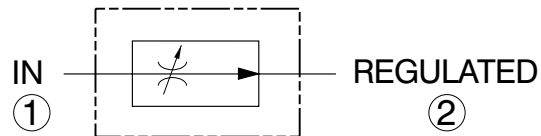


Restrictive Fixed Regulator Type

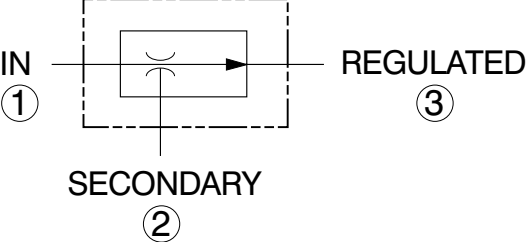
CAVITY	BASIC CARTRIDGE	FLOW gpm (l/m)	PRESSURE psi (bar)	
CP8-2	CP308-1	4 (15)	3000 (207)	
CP10-2	CP300-1	6 (23)	3000 (207)	
CP12-2	CP301-1	12 (45)	3000 (207)	

Restrictive Limited Adjustment Regulator Type

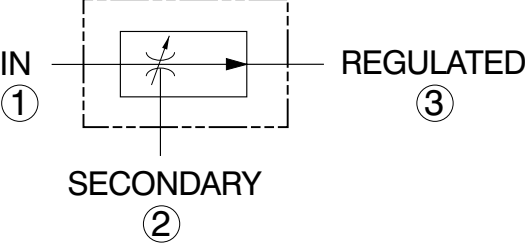
CAVITY	BASIC CARTRIDGE	FLOW gpm (l/m)	PRESSURE psi (bar)
CP8-2	CP308-2	4 (15)	3000 (207)
CP10-2	CP300-2	8 (30)	3000 (207)



Priority Fixed Regulator Type

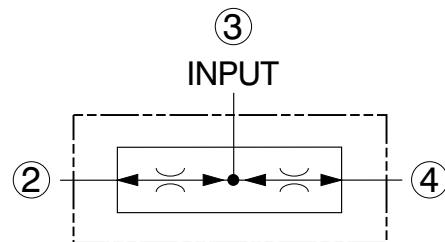
CAVITY	BASIC CARTRIDGE	FLOW gpm (l/m)	PRESSURE psi (bar)	
CP10-3	CP310-1	6 (23)	3000 (207)	
CP12-3	CP311-1	12 (45)	3000 (207)	
CP16-3	CP312-1	17 (64)	3000 (207)	

Priority Limited Adjustment Regulator Type

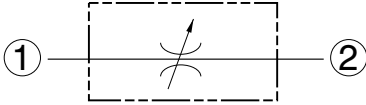
CAVITY	BASIC CARTRIDGE	FLOW gpm (l/m)	PRESSURE psi (bar)	
CP10-3	CP310-2	8 (30)	3000 (207)	

Flow Divider/Combiner Type

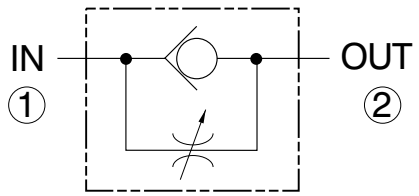
CAVITY	BASIC CARTRIDGE	FLOW gpm (l/m)	PRESSURE psi (bar)
CP10-4	CP340-1	12 (45)	3000 (207)
CP12-4	CP341-1	20 (76)	3000 (207)
CP16-4	CP342-1	40 (151)	3000 (207)



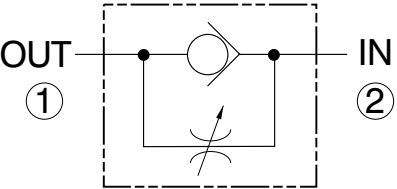
Needle Valve

CAVITY	BASIC CARTRIDGE	FLOW gpm (l/m)	PRESSURE psi (bar)	
CP8-2	CP618-1	7 (26)	3000 (207)	
CP8-2	CP618-2	12 (45)	3000 (207)	
CP8-2	CP618-6	3 (11)	3000 (207)	
CP10-2	CP610-1	14 (53)	3000 (207)	
CP10-2	CP610-2	14 (53)	3000 (207)	
CP12-2	CP611-2	30 (114)	3000 (207)	
CP16-2	CP612-1	50 (189)	3000 (207)	
CP16-2	CP612-2	50 (189)	3000 (207)	

Needle Valve - Free Reverse Flow

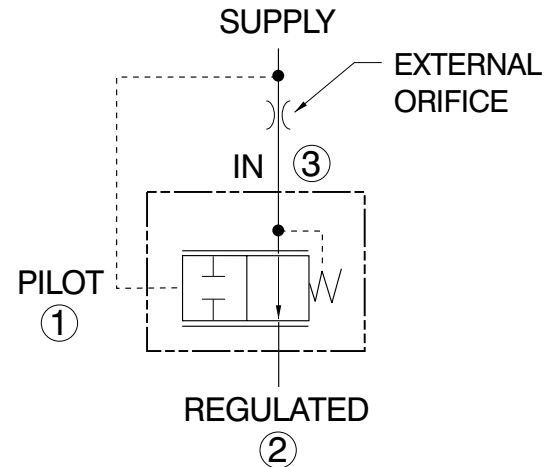
CAVITY	BASIC CARTRIDGE	FLOW gpm (l/m)	PRESSURE psi (bar)	
CP10-2	CP610-3	10 (38)	3000 (207)	

Needle Valve - Free Reverse Flow

CAVITY	BASIC CARTRIDGE	FLOW gpm (l/m)	PRESSURE psi (bar)	
CP10-2	CP610-4	14 (53)	3000 (207)	 <p>The diagram shows a needle valve symbol enclosed in a dashed rectangular box. The symbol consists of a circle with a triangle inside, representing the valve's internal structure. Two horizontal lines extend from the left and right sides of the circle, representing the flow paths. The left side is labeled 'OUT' with a circled '1' below it, and the right side is labeled 'IN' with a circled '2' below it. The symbol is designed to allow flow in both directions, as indicated by the 'Free Reverse Flow' title.</p>

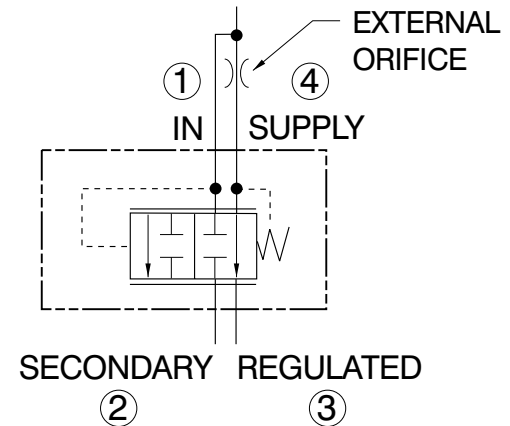
Differential Sensing Valve - External Orifice - Restrictive Regulator Type

CAVITY	BASIC CARTRIDGE	FLOW gpm (l/m)	PRESSURE psi (bar)
CP10-3	CP300-4	10 (38)	3000 (207)
CP12-3	CP301-4	15 (57)	3000 (207)
CP16-3	CP302-4	35 (132)	3000 (207)



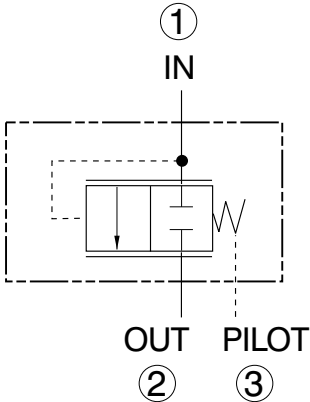
Differential Sensing Valve - External Orifice - Priority Regulator Type

CAVITY	BASIC CARTRIDGE	FLOW gpm (l/m)	PRESSURE psi (bar)
CP10-4	CP310-4	10 (38)	3000 (207)
CP12-4	CP311-4	15 (57)	3000 (207)
CP16-4	CP312-4	35 (132)	3000 (207)



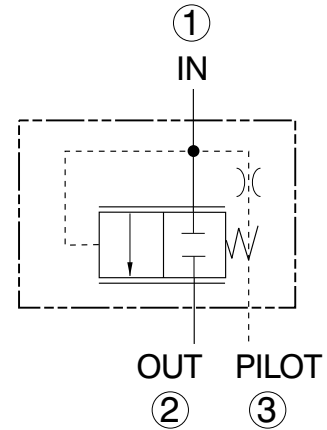
Differential Sensing Valve

CAVITY	BASIC CARTRIDGE	FLOW gpm (l/m)	PRESSURE psi (bar)
CP10-3	CP700-1	10 (38)	3000 (207)
CP10-3L	CP700-1L	15 (57)	3000 (207)
CP12-3S	CP701-1	40 (151)	3000 (207)
CP16-3S	CP702-1	50 (189)	3000 (207)



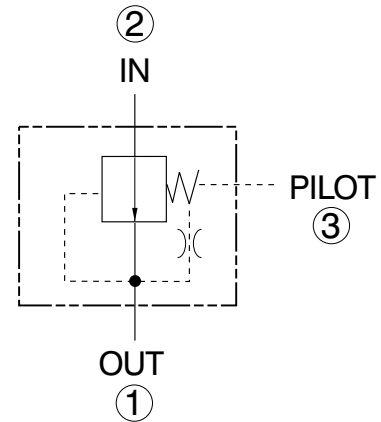
Differential Sensing Valve - Internal Orifice

CAVITY	BASIC CARTRIDGE	FLOW gpm (l/m)	PRESSURE psi (bar)
CP10-3	CP700-2	10 (38)	3000 (207)
CP10-3L	CP700-2L	15 (57)	3000 (207)
CP12-3S	CP701-2	40 (151)	3000 (207)
CP16-3S	CP702-2	50 (189)	3000 (207)



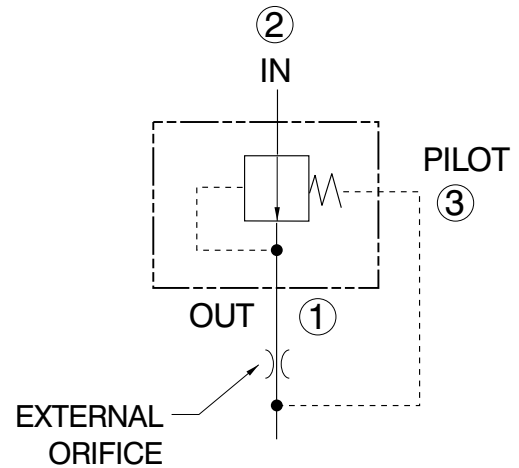
Differential Sensing Valve - Internal Orifice

CAVITY	BASIC CARTRIDGE	FLOW gpm (l/m)	PRESSURE psi (bar)
CP10-3	CP700-3	10 (38)	3000 (207)
CP123S	CP701-3	20 (76)	3000 (207)
CP16-3S	CP702-3	30 (114)	3000 (207)



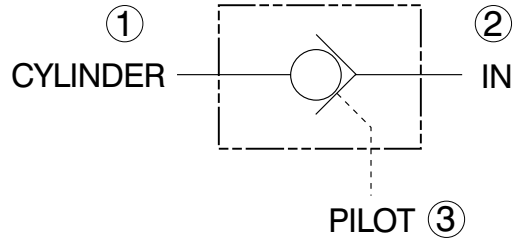
Differential Sensing Valve - External Orifice

CAVITY	BASIC CARTRIDGE	FLOW gpm (l/m)	PRESSURE psi (bar)
CP10-3	CP700-4	10 (38)	3000 (207)
CP12-3S	CP701-4	20 (76)	3000 (207)
CP16-3S	CP702-4	30 (114)	3000 (207)

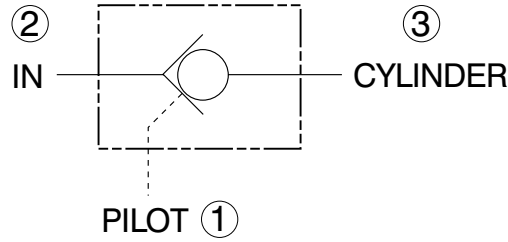


Motion Control Valves

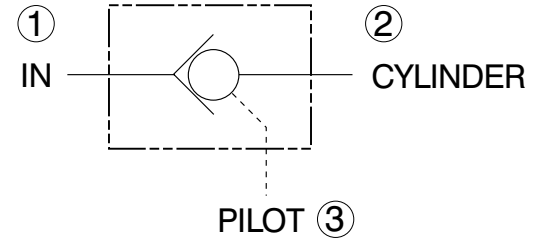
Pilot to Open Check



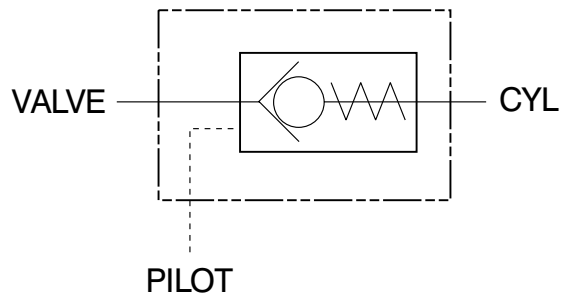
Pilot to Open Check



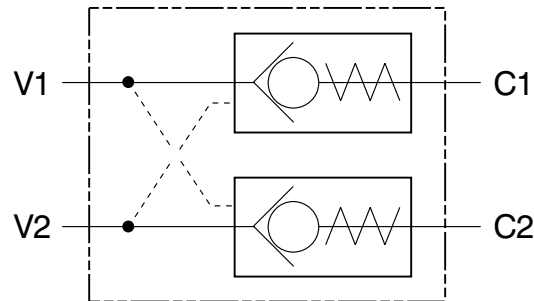
Pilot to Close Check



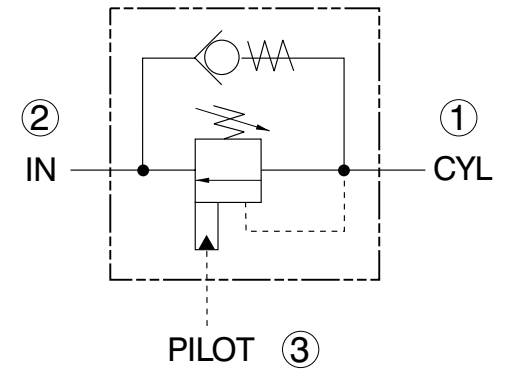
Single Pilot to Open Check



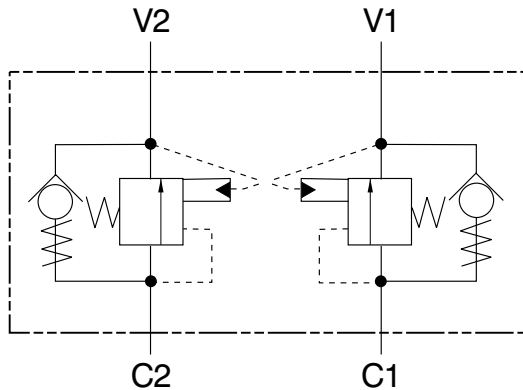
Dual Pilot to Open Check



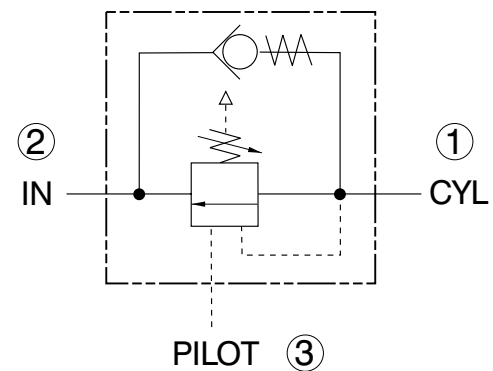
Counterbalance Valve



Dual Counterbalance Valve

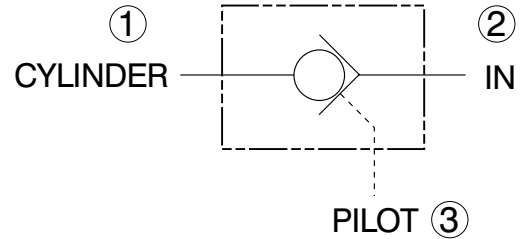


Vented Counterbalance Valve

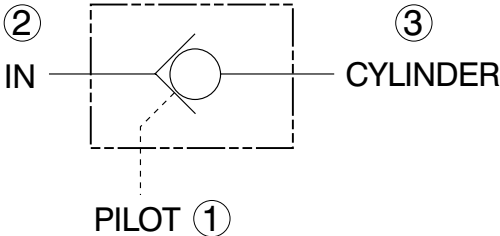


Pilot to Open Check

CAVITY	BASIC CARTRIDGE	FLOW gpm (l/m)	PRESSURE psi (bar)
CP8-3	CP458-2	5 (19)	3000 (207)
CP10-3	CP450-2	10 (38)	3000 (207)
CP10-3L	CP450-2L	15 (57)	3000 (207)
CP12-3S	CP451-2	25 (95)	3000 (207)
CP16-3S	CP452-2	35 (132)	3000 (207)
CP20-3S	CP453-2	60 (227)	3000 (207)

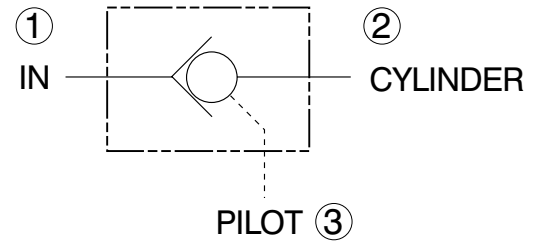


Pilot to Open Check

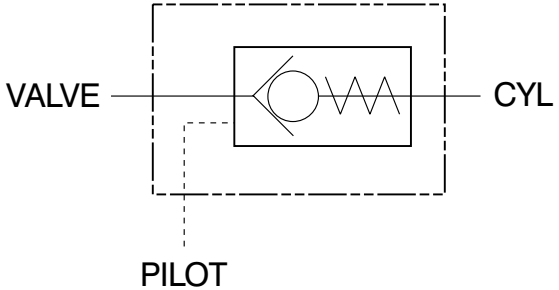
CAVITY	BASIC CARTRIDGE	FLOW gpm (l/m)	PRESSURE psi (bar)	
CP10-3	CP450-1	8 (30)	3000 (207)	

Pilot to Close Check

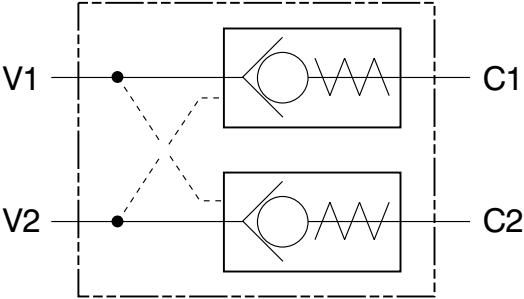
CAVITY	BASIC CARTRIDGE	FLOW gpm (l/m)	PRESSURE psi (bar)
CP8-3	CP468-1	10 (38)	3000 (207)
CP10-3	CP460-1	10 (38)	3000 (207)
CP12-3S	CP461-1	30 (114)	3000 (207)
CP16-3S	CP462-1	50 (189)	3000 (207)



Single Pilot to Open Check

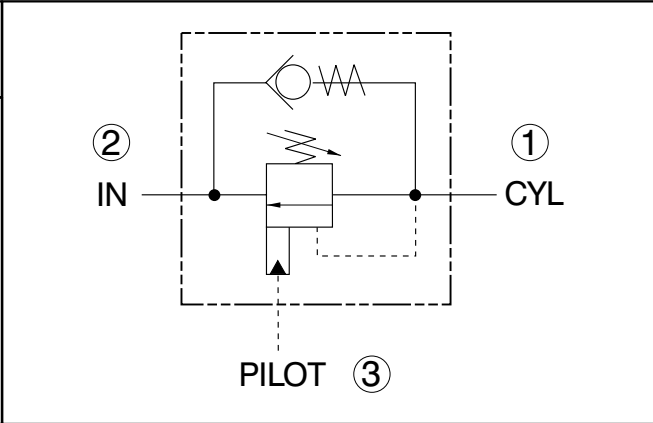
CAVITY	BASIC CARTRIDGE	FLOW gpm (l/m)	PRESSURE psi (bar)	
N/A	CP400-1	15 (57)	3000 (207)	

Dual Pilot to Open Check

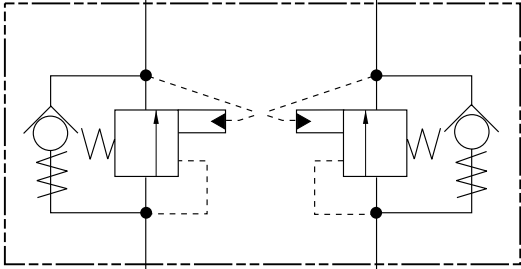
CAVITY	BASIC CARTRIDGE	FLOW gpm (l/m)	PRESSURE psi (bar)	
N/A	CP410-1	15 (57)	3000 (207)	

Counterbalance Valve

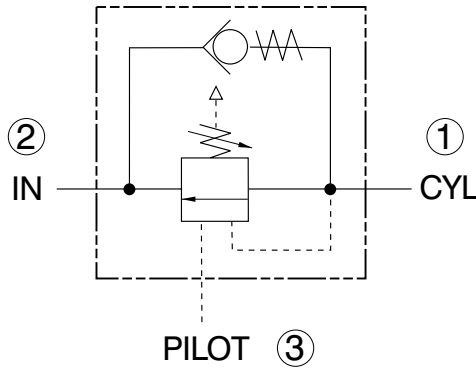
CAVITY	BASIC CARTRIDGE	FLOW gpm (l/m)	PRESSURE psi (bar)
CP8-3L	CP448-1	5 (19)	5000 (345)
CP10-3L	CP440-1	15 (57)	5000 (345)
CP12-3S	CP441-1	30 (114)	5000 (345)



Dual Counterbalance Valve

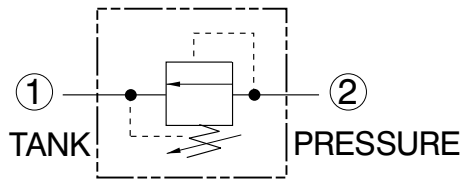
CAVITY	BASIC CARTRIDGE	FLOW gpm (l/m)	PRESSURE psi (bar)	
N/A N/A	CP440-2 CP441-2	15 (57) 30 (114)	5000 (345) 5000 (345)	

Vented Counterbalance Valve

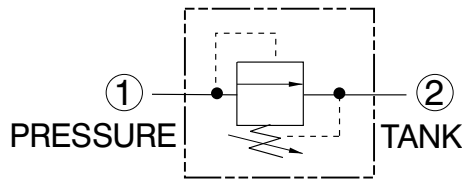
CAVITY	BASIC CARTRIDGE	FLOW gpm (l/m)	PRESSURE psi (bar)	
CP10-3L	CP440-4	15 (57)	5000 (345)	

Pressure Control Valves

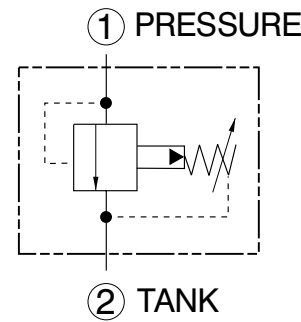
**Relief Valve
Differential Area Type**



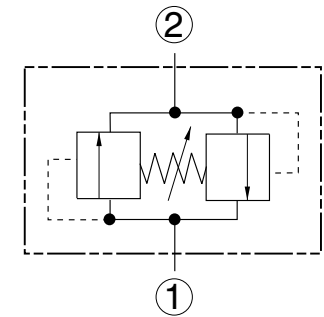
**Relief Valve
Direct Acting Type**



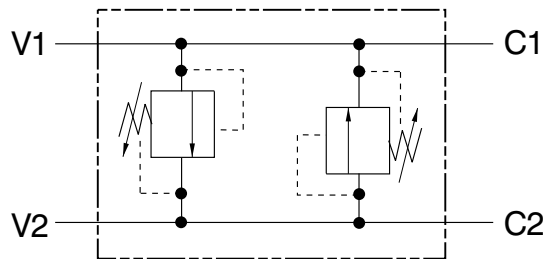
**Relief Valve
Pilot Operated Spool Type**



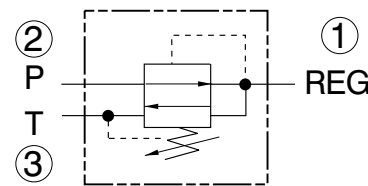
**Relief Valve
Bi-Directional Type**



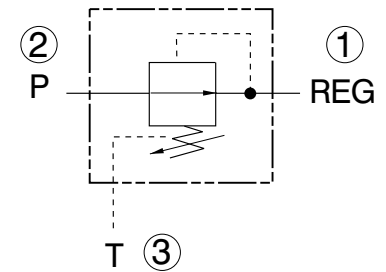
**Relief Valve
Inline Cross Relief Type**



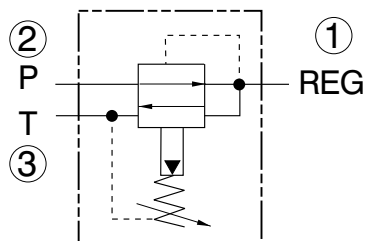
**Pressure Reducing Valve
Direct Acting
Reducing/Relieving Type**



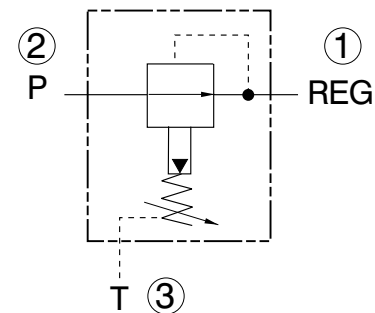
**Pressure Reducing Valve
Direct Acting
Non-Relieving Type**



**Pressure Reducing Valve
Pilot Operated Reducing/Relieving Type**

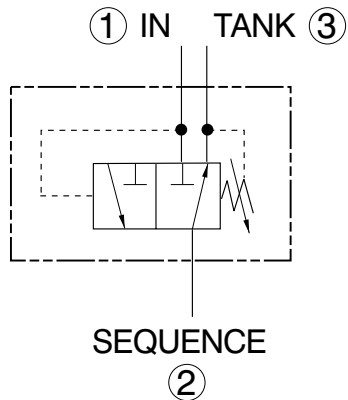


**Pressure Reducing Valve
Pilot Operated Non-Relieving Type**

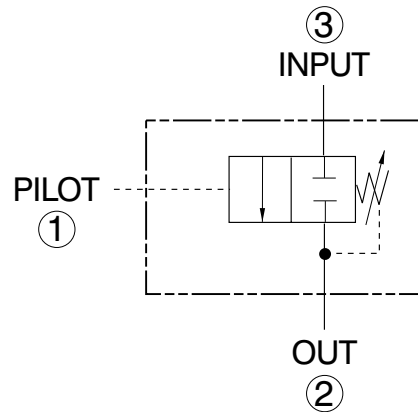


Pressure Control Valves

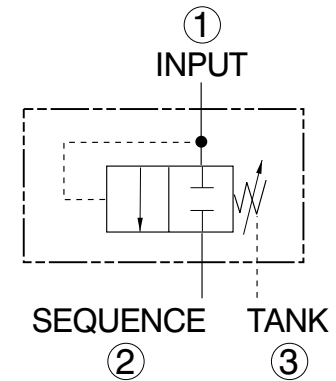
**Sequence Valve
Direct Acting Spool Type**



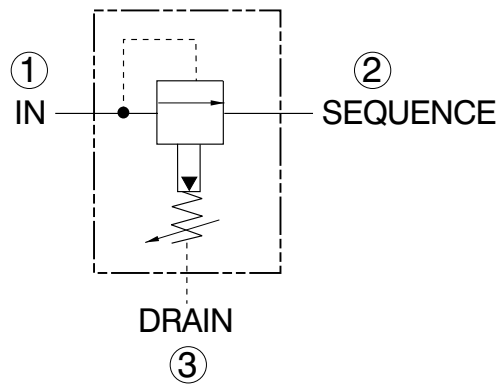
**Sequence Valve
Direct Acting Spool Type**



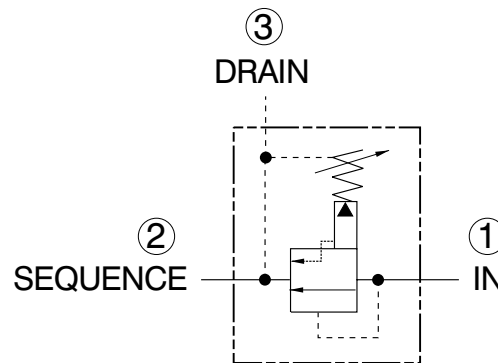
**Sequence Valve
Direct Acting Spool Type**



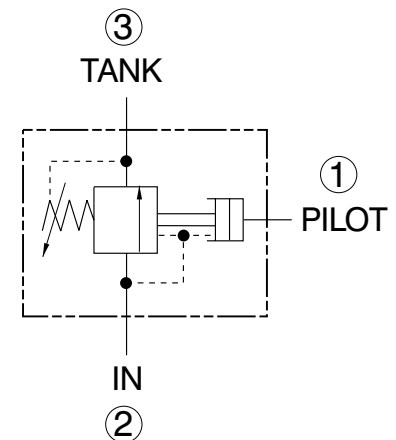
**Sequence Valve
Pilot Operated Type**



**Sequence Valve
Kick Down Type**

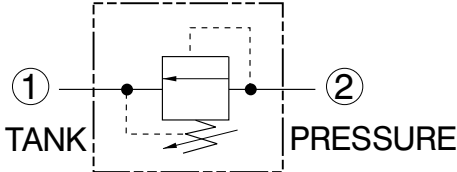


**Sequence Valve
Unloading Type**



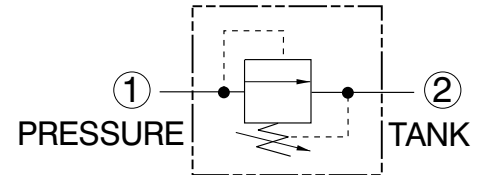
Relief Valve - Differential Area Type

CAVITY	BASIC CARTRIDGE	FLOW gpm (l/m)	PRESSURE psi (bar)
CP8-2	CP208-1	10 (38)	3000 (207)
CP10-2	CP200-1	20 (76)	3000 (207)
CP12-2	CP201-1	40 (151)	3000 (207)



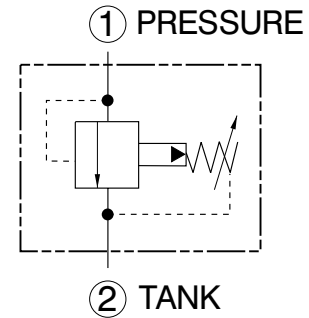
Relief Valve - Direct Acting Type

CAVITY	BASIC CARTRIDGE	FLOW gpm (l/m)	PRESSURE psi (bar)
CP8-2	CP208-3	8 (30)	3000 (207)
CP10-2	CP200-3	10 (38)	3000 (207)
CP10-2	CP210-1	12 (45)	3000 (207)

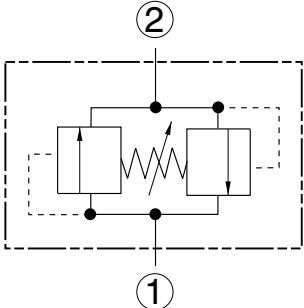


Relief Valve - Pilot Operated Spool Type

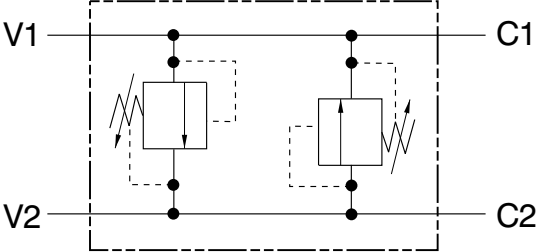
CAVITY	BASIC CARTRIDGE	FLOW gpm (l/m)	PRESSURE psi (bar)
CP10-2	CP210-2	30 (114)	5000 (345)
CP12-2	CP211-2	50 (189)	5000 (345)



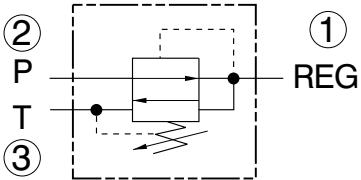
Relief Valve - Bi-Directional Type

CAVITY	BASIC CARTRIDGE	FLOW gpm (l/m)	PRESSURE psi (bar)	
CP10-2	CP200-7	10 (38)	3000 (207)	

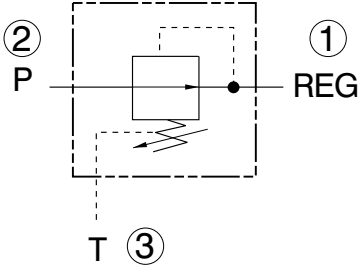
Relief Valve - Inline Cross Relief Type

CAVITY	BASIC CARTRIDGE	FLOW gpm (l/m)	PRESSURE psi (bar)	
N/A N/A	CP220-1 CP221-1	20 (76) 50 (189)	3000 (207) 3000 (207)	

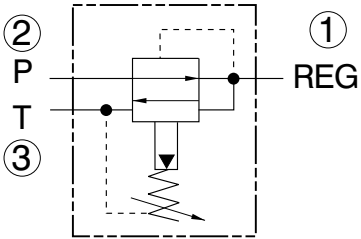
Pressure Reducing Valve - Direct Acting Reducing/Relieving Type

CAVITY	BASIC CARTRIDGE	FLOW gpm (l/m)	PRESSURE psi (bar)	
CP10-3	CP230-1	10 (38)	3000 (207)	

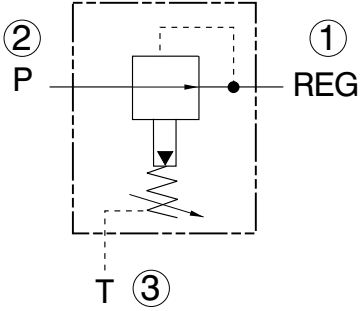
Pressure Reducing Valve - Direct Acting Non-Relieving Type

CAVITY	BASIC CARTRIDGE	FLOW gpm (l/m)	PRESSURE psi (bar)	
CP10-3	CP230-2	10 (38)	3000 (207)	

Pressure Reducing Valve - Pilot Operated Reducing/Relieving Type

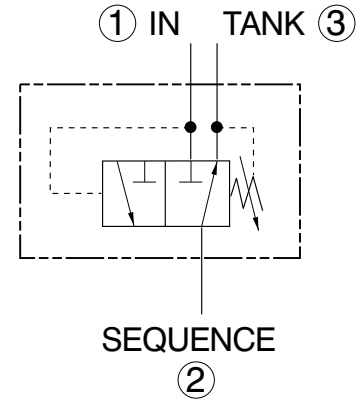
CAVITY	BASIC CARTRIDGE	FLOW gpm (l/m)	PRESSURE psi (bar)	
CP10-3	CP230-3	10 (38)	5000 (345)	

Pressure Reducing Valve - Pilot Operated Non-Relieving Type

CAVITY	BASIC CARTRIDGE	FLOW gpm (l/m)	PRESSURE psi (bar)	
CP10-3	CP230-4	10 (38)	5000 (345)	

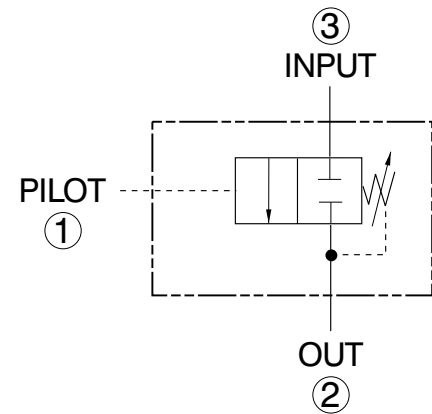
Sequence Valve - Direct Acting Spool Type

CAVITY	BASIC CARTRIDGE	FLOW gpm (l/m)	PRESSURE psi (bar)
CP10-3	CP240-1	6 (23)	3000 (207)



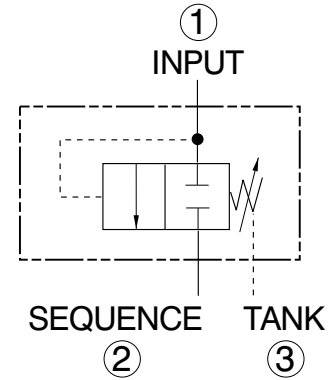
Sequence Valve - Direct Acting Spool Type

CAVITY	BASIC CARTRIDGE	FLOW gpm (l/m)	PRESSURE psi (bar)
CP10-3	CP240-2	9 (34)	3000 (207)

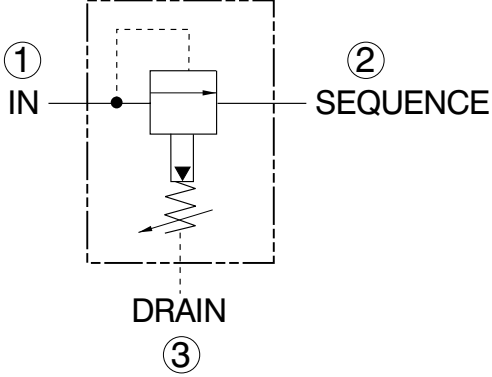


Sequence Valve - Direct Acting Spool Type

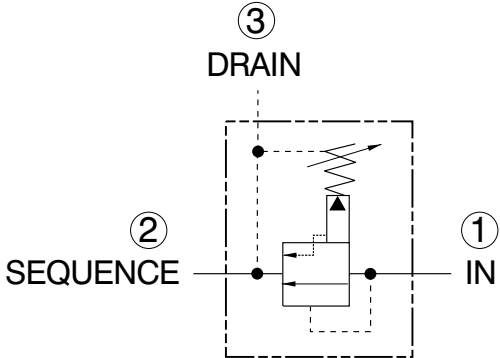
CAVITY	BASIC CARTRIDGE	FLOW gpm (l/m)	PRESSURE psi (bar)
CP10-3	CP240-8	14 (53)	3000 (207)



Sequence Valve - Pilot Operated Type

CAVITY	BASIC CARTRIDGE	FLOW gpm (l/m)	PRESSURE psi (bar)	
CP10-3	CP240-21	12 (45)	5000 (345)	

Sequence Valve - Kick Down Type

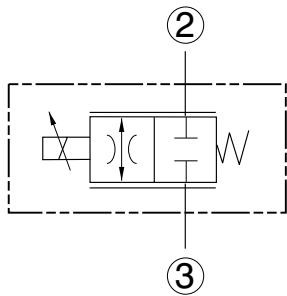
CAVITY	BASIC CARTRIDGE	FLOW gpm (l/m)	PRESSURE psi (bar)	
CP10-3	CP240-22	12 (45)	5000 (345)	

Sequence Valve - Unloading Type

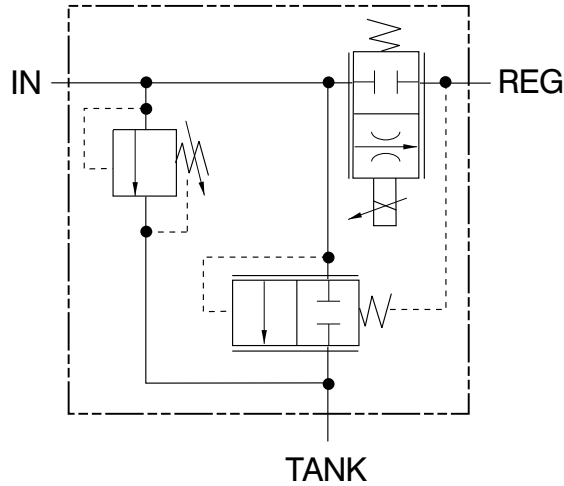
CAVITY	BASIC CARTRIDGE	FLOW gpm (l/m)	PRESSURE psi (bar)	
CP10-3	CP240-30	1 (4)	3000 (207)	

Proportional Valves

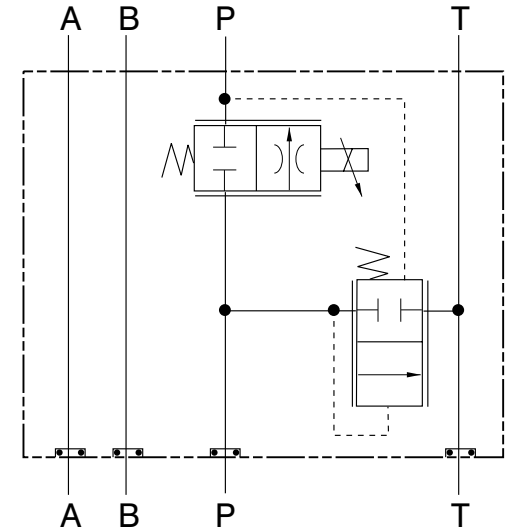
Proportional Flow Element



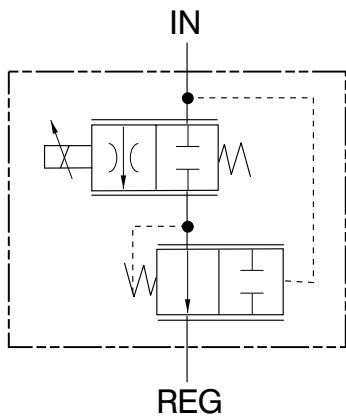
Proportional Bypass Valve



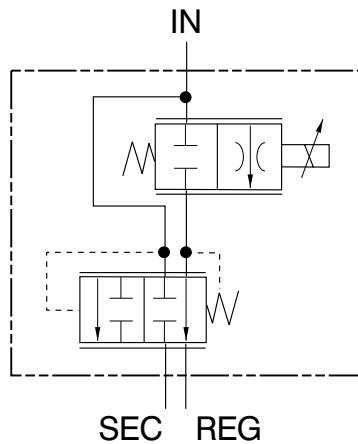
Proportional Bypass Valve Sandwich Type



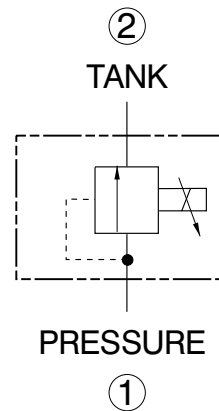
Proportional Restrictive Valve



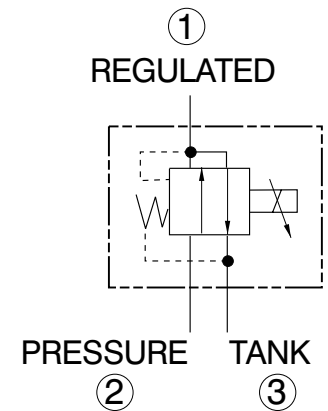
Proportional Combination Valve



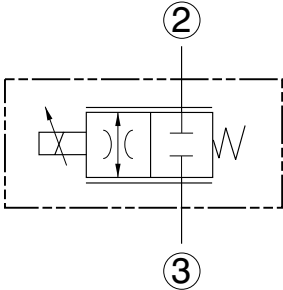
Proportional Relief Element



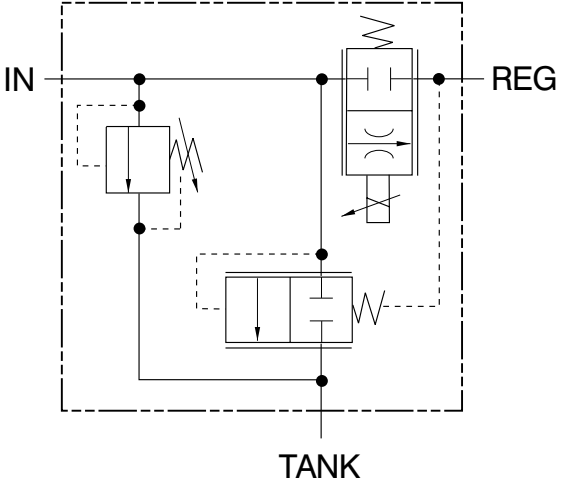
Proportional Pressure Reducing Element



Proportional Flow Element

CAVITY	BASIC CARTRIDGE	FLOW gpm (l/m)	PRESSURE psi (bar)	
CP10-3 CP12-3	CP550-30 CP551-30	10 (38) 20 (76)	3000 (207) 3000 (207)	

Proportional Bypass Valve

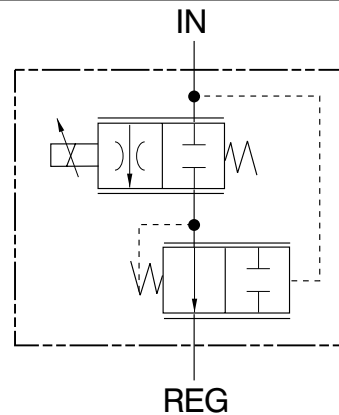
CAVITY	BASIC CARTRIDGE	FLOW gpm (l/m)	PRESSURE psi (bar)	
N/A	CP550-32	10 (38)	3000 (207)	
N/A	CP551-32	20 (76)	3000 (207)	

Proportional Bypass Valve - Sandwich Type

PATTERN	BASIC CARTRIDGE	FLOW gpm (l/m)	PRESSURE psi (bar)	
ISO 03	CP800-32	10 (38)	3000 (207)	
ISO 05	CP801-32	20 (76)	3000 (207)	

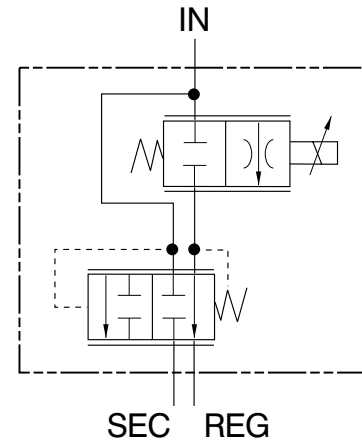
Proportional Restrictive Valve

CAVITY	BASIC CARTRIDGE	FLOW gpm (l/m)	PRESSURE psi (bar)
N/A	CP550-33	10 (38)	3000 (207)
N/A	CP551-33	20 (76)	3000 (207)

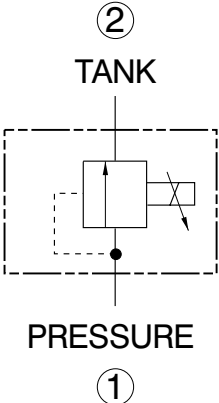


Proportional Combination Valve

CAVITY	BASIC CARTRIDGE	FLOW gpm (l/m)	PRESSURE psi (bar)
N/A	CP550-34	10 (38)	3000 (207)
N/A	CP551-34	20 (76)	3000 (207)

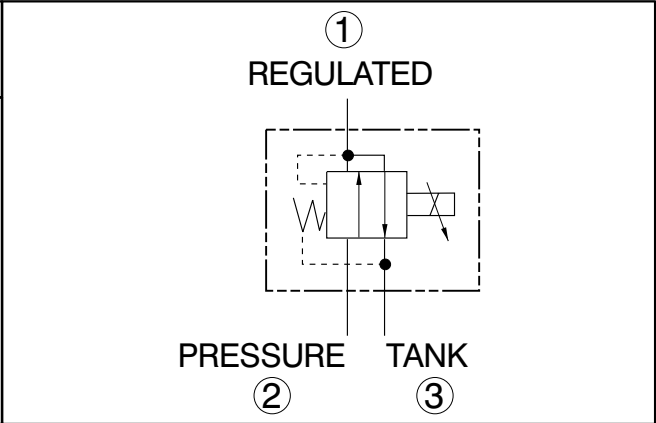


Proportional Relief Element

CAVITY	BASIC CARTRIDGE	FLOW gpm (l/m)	PRESSURE psi (bar)	
CP8-2	CP558-20		3000 (207)	

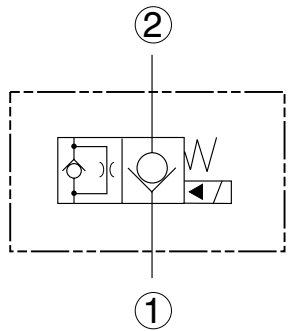
Proportional Pressure Reducing Element

CAVITY	BASIC CARTRIDGE	FLOW gpm (l/m)	PRESSURE psi (bar)
CP8-3	CP558-23		300 (21)

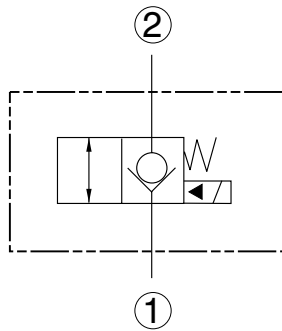


Solenoid Valves

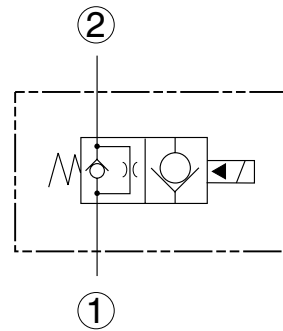
N/C Poppet Type



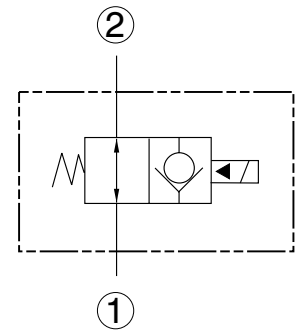
N/C Poppet Type



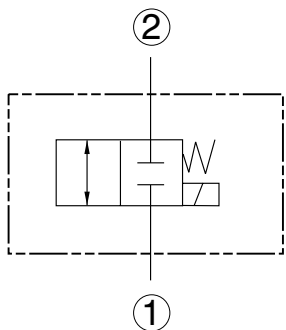
N/O Poppet Type



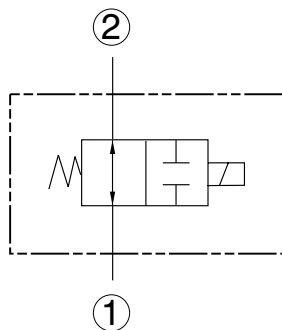
N/O Poppet Type



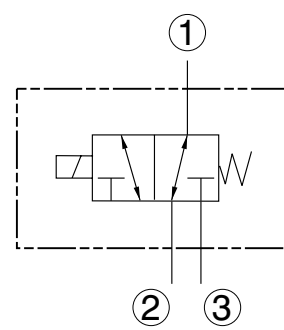
N/C Spool Type



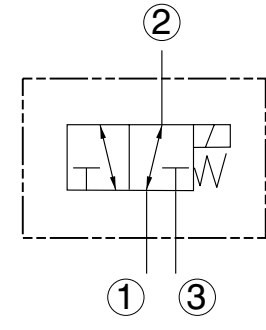
N/O Spool Type



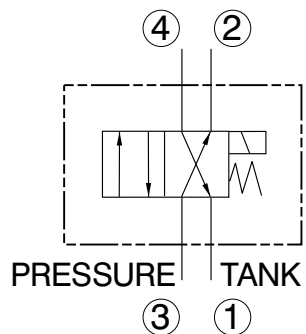
2 Pos. 3 Way Spool Type



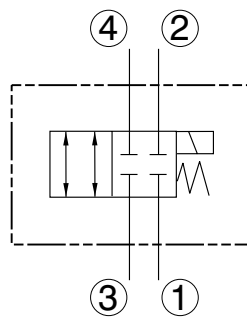
2 Pos. 3 Way Spool Type



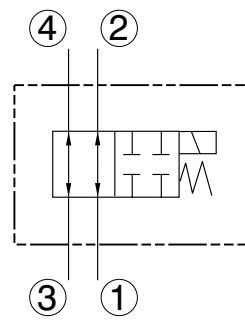
2 Pos. 4 Way Spool Type



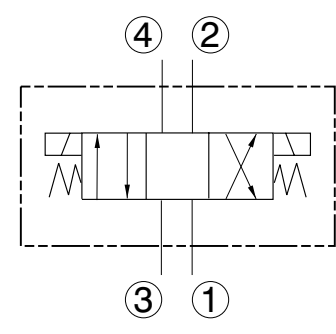
2 Pos. 4 Way Spool Type



2 Pos. 4 Way Spool Type



3 Pos. 4 Way Spool Type



SOLENOID VALVES - N/C Poppet Type

CAVITY	BASIC CARTRIDGE	FLOW gpm (l/m)	PRESSURE psi (bar)	
CP8-2	CP508-1	8 (30)	3000 (207)	
CP10-2	CP500-1	15 (57)	3000 (207)	
CP12-2	CP501-1	30 (114)	3000 (207)	

SOLENOID VALVES - N/C Poppet Type

CAVITY	BASIC CARTRIDGE	FLOW gpm (l/m)	PRESSURE psi (bar)	
CP8-2	CP508-3	8 (30)	3000 (207)	
CP10-2	CP500-3	15 (57)	3000 (207)	
CP12-2	CP501-3	30 (114)	3000 (207)	
CP16-2	CP502-3	35 (132)	3000 (207)	
CP20-2	CP503-3	60 (227)	3000 (207)	

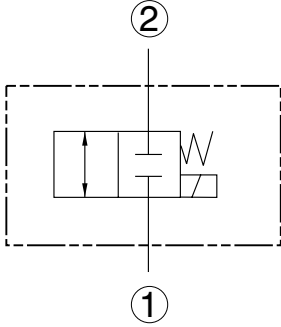
SOLENOID VALVES - N/O Poppet Type

CAVITY	BASIC CARTRIDGE	FLOW gpm (l/m)	PRESSURE psi (bar)	
CP8-2	CP508-2	8 (30)	3000 (207)	
CP10-2	CP500-2	15 (57)	3000 (207)	
CP12-2	CP501-2	30 (114)	3000 (207)	

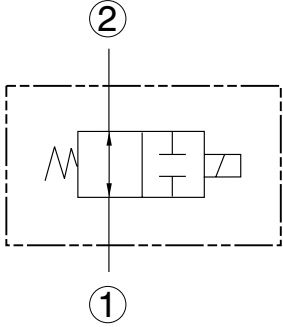
SOLENOID VALVES - N/O Poppet Type

CAVITY	BASIC CARTRIDGE	FLOW gpm (l/m)	PRESSURE psi (bar)	
CP8-2	CP508-4	8 (30)	3000 (207)	
CP10-2	CP500-4	15 (57)	3000 (207)	
CP12-2	CP501-4	30 (114)	3000 (207)	
CP16-2	CP502-4	35 (132)	3000 (207)	
CP20-2	CP503-4	60 (227)	3000 (207)	

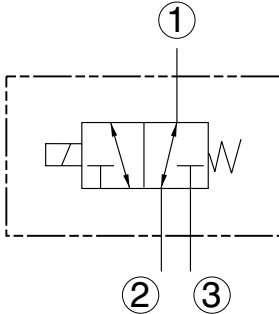
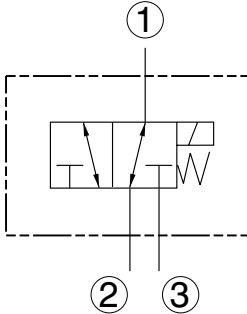
SOLENOID VALVES - N/C Spool Type

CAVITY	BASIC CARTRIDGE	FLOW gpm (l/m)	PRESSURE psi (bar)	
CP8-2 CP10-2	CP518-1 CP510-1	3 (11) 6 (23)	3000 (207) 3000 (207)	

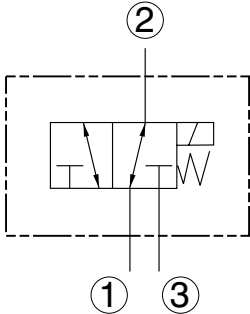
SOLENOID VALVES - N/O Spool Type

CAVITY	BASIC CARTRIDGE	FLOW gpm (l/m)	PRESSURE psi (bar)	
CP8-2 CP10-2	CP518-2 CP510-2	3 (11) 6 (23)	3000 (207) 3000 (207)	

SOLENOID VALVES - 2 Position 3 Way Spool Type

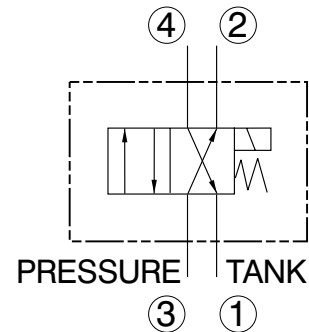
CAVITY	BASIC CARTRIDGE	FLOW gpm (l/m)	PRESSURE psi (bar)	
CP8-3 CP10-3 CP12-3	CP528-1 CP520-1 CP521-1	3 (11) 6 (23) 15 (57)	3000 (207) 3000 (207) 3000 (207)	
CAVITY	BASIC CARTRIDGE	FLOW gpm (l/m)	PRESSURE psi (bar)	
CP8-3	CP528-2	3 (11)	3000 (207)	

SOLENOID VALVES - 2 Position 3 Way Spool Type

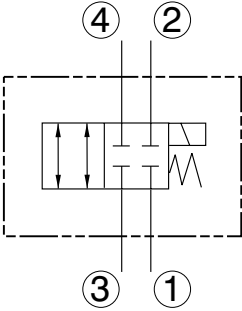
CAVITY	BASIC CARTRIDGE	FLOW gpm (l/m)	PRESSURE psi (bar)	
CP8-3	CP528-5	3 (11)	3000 (207)	

SOLENOID VALVES - 2 Position 4 Way Spool Type

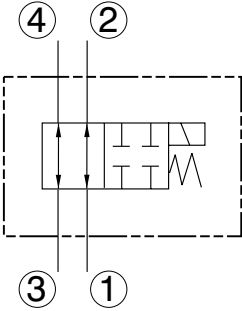
CAVITY	BASIC CARTRIDGE	FLOW gpm (l/m)	PRESSURE psi (bar)
CP8-4	CP538-1	3 (11)	3000 (207)
CP10-4	CP530-1	6 (23)	3000 (207)



SOLENOID VALVES - 2 Position 4 Way Spool Type

CAVITY	BASIC CARTRIDGE	FLOW gpm (l/m)	PRESSURE psi (bar)	
CP10-4	CP530-2	6 (23)	3000 (207)	

SOLENOID VALVES - 2 Position 4 Way Spool Type

CAVITY	BASIC CARTRIDGE	FLOW gpm (l/m)	PRESSURE psi (bar)	
CP10-4	CP530-3	6 (23)	3000 (207)	

SOLENOID VALVES - 3 Position 4 Way Spool Type

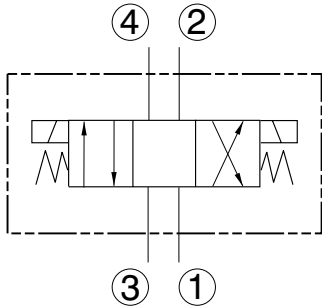
CAVITY	BASIC CARTRIDGE	FLOW gpm (l/m)	PRESSURE psi (bar)	
CP8-4 CP10-4	CP538-3P CP530-3P	3 (11) 5 (19)	3000 (207) 3000 (207)	

TABLE OF CONTENTS

INTRODUCTION	
- Limited Warranty and Limitation of Liability	
- Cartridge Valve Installation Procedure	
- Technical Information	
- General Part Numbering Systems	
- Cavity Port Identification	
CHECK VALVES	1
SHUTTLE VALVES	2
RELIEF VALVES	3
PRESSURE REDUCING VALVES	4
SEQUENCE VALVES	5
FLOW CONTROL VALVES	6
MOTION CONTROL VALVES	7
SOLENOID VALVES	8
PROPORTIONAL VALVES	9
NEEDLE VALVES	10
DIRECTIONAL CONTROL VALVES	11
DIFFERENTIAL SENSING VALVES	12
SANDWICH VALVES	13
MOTOR CONTROL VALVES	14
CAVITIES, CAVITY PLUGS AND FILTERS	15
MODEL NUMBER INDEX/PART NUMBER INDEX	

1. PERFORMANCE ASSURANCES

WHERE NOTED CCI CARTRIDGES HAVE BEEN TESTED AND PRESET TO SPECIFIC PRESSURE OR FLOW SETTINGS. DUE TO THE WIDE VARIATION IN INDIVIDUAL EQUIPMENT, OPERATING CONDITIONS AND APPLICATIONS, THE USER MUST TAKE SOLE RESPONSIBILITY FOR THE FINAL SELECTION OF PRODUCTS AND SYSTEMS. USER IS ALSO SOLELY RESPONSIBLE FOR ASSURING THAT ALL PERFORMANCE, SAFETY AND WARNING REQUIREMENTS OF THE APPLICATION ARE MET.

2. APPLICATION LIMITATIONS

A. CCI products are designed and manufactured specifically for commercial use in industrial and mobile hydraulic applications. **CCI's products are only designed and warranted for this type of use. CCI's distributors and agents are not authorized to approve the use of CCI products in any of the following applications:**

1. Consumer use.
 2. Any product that comes under the Federal Highway Safety Act, including, without limitation, steering and braking systems for passenger-carrying vehicles and on highway trucks.
 3. Aircraft or space vehicles.
 4. Ordnance equipment.
 5. Medical and health products, including life support equipment.
 6. Any end product that, when sold, comes under the U.S. Nuclear Regulatory Commission rules and regulations.
- Contact CCI for further information concerning use of CCI products in any of the above named applications or similar applications.

B. **CAUTION:** CCI manufactures a variety of cartridge valves with similar or identical physical appearance but very different functions and uses. Users should carefully check the part identification code of each valve to ensure correct identification for a particular use. Users are cautioned that identical physical appearance does not indicate identical function or use and that replacement with an incorrect valve may result in serious injury to persons or property. **When replacing any CCI cartridges Users should first check with the manufacturer's service literature. Users are solely responsible for the selection, installation, use, efficiency and suitability of the CCI product.** NOTE: To avoid serious injury, consult the manufacturer's service manual before working on any hydraulic system and follow all instructions, warnings, and cautions contained therein.

3. WARNING

ANY HYDRAULIC SYSTEM IS SUBJECT TO FAILURE AND USERS AND OPERATORS SHOULD OBSERVE EXTREME CAUTION IN THE USE OF HYDRAULIC EQUIPMENT TO PROTECT THEMSELVES AND OTHERS FROM INJURY OR DEATH FROM SUCH POTENTIAL FAILURE. IMPROPER SELECTION OR IMPROPER USE OF THE PRODUCTS AND/OR SYSTEMS DESCRIBED HEREIN CAN CAUSE DEATH, PERSONAL INJURY AND PROPERTY DAMAGE.

4. CCI SHALL HAVE NO LIABILITY TO USER FOR THE INFRINGEMENT OF PROPRIETARY RIGHTS BY ANY CCI PRODUCT OR ANY PORTION THEREOF.
5. IN NO EVENT SHALL CCI BE LIABLE TO USER FOR ANY INDIRECT, SPECIAL, OR CONSEQUENTIAL DAMAGES OR LOST PROFITS ARISING OUT OF OR RELATED TO ANY CCI PRODUCTS, EVEN IF CCI HAS BEEN ADVISED OF THE POSSIBILITY THEREOF. CCI'S LIABILITY HEREUNDER TO USER, IF ANY, SHALL IN NO EVENT EXCEED THE TOTAL OF THE COST PAID TO CCI BY USER FOR THE PRODUCT AT ISSUE.

6. MATERIAL AND WORKMANSHIP WARRANTY

CCI warrants to the original purchaser the products manufactured by us to be free from defects in material and workmanship under normal commercial use and service. **"O" rings and seals are specifically exempted from this warranty.** CCI's obligation under this warranty shall be limited to the repair or exchange of any parts which may thus prove defective under normal commercial use and service within 18 months from the date of installation by the original purchaser, so long as such installation is within one year of manufacture of the product, and which our examination shall disclose to our satisfaction to be a defective product. **THIS WARRANTY IS EXPRESSLY IN LIEU OF ALL OTHER WARRANTIES, EXPRESS OR IMPLIED, INCLUDING THE WARRANTIES OF MERCHANTABILITY, FITNESS OF USE, FITNESS FOR A PARTICULAR PURPOSE AND ALL OTHER OBLIGATIONS OR LIABILITIES OF CCI.** CCI NEITHER ASSUMES, NOR AUTHORIZES ANY OTHER PERSON TO ASSUME FOR CCI, ANY OTHER LIABILITY IN CONNECTION WITH THE SALE OF ANY CCI PRODUCTS. THIS WARRANTY SHALL NOT APPLY TO ANY CCI PRODUCT WHICH HAS BEEN SUBJECT TO IMPROPER APPLICATION, IMPROPER INSTALLATION, ACCIDENT, NEGLIGENCE, ALTERATION, IMPROPER REPAIRS, LACK OF PROPER MAINTENANCE, ABUSE OR MISUSE. WE MAKE NO WARRANTY WHATSOEVER IN RESPECT TO ACCESSORIES OR PARTS NOT SUPPLIED BY CCI. THE TERM "ORIGINAL PURCHASER" AS USED IN THIS WARRANTY, SHALL BE DEEMED TO MEAN THAT PERSON OR ENTITY FOR WHOM THE CCI PRODUCTS ARE ORIGINALLY INSTALLED.

LIMITED WARRANTY AND LIMITATION OF LIABILITY

Compact Controls, Inc. reserves the right to change specifications or designs without notice or obligation.
Information contained herein was as accurate as known at the time of printing.

CARTRIDGE VALVE INSTALLATION PROCEDURE

1. Visually inspect the valve block

- A. Refer to the catalog sheet to insure proper port identification for cartridge functions.
- B. Inspect the valve cavity to be sure it is free of burrs, chips or other contamination.

2. Prepare the cartridge for insertion into the block.

- A. Check the cartridge to insure it is free of external contamination.
- B. Check to be sure O'rings and back-up rings are intact.
- C. Dip cartridge into clean oil, to top of the threads, to lubricate the O'rings.

3. Assembly

- A. Insert and screw cartridge into its cavity by hand. It should turn easily up to the top O'ring. If it does not turn easily, the cavity has been machined improperly and the body should not be used.
- B. Final tightening (unless otherwise specified):

(a) Poppet type

	TORQUE	(Nm)
Series #8 cartridges	25-30 ft.lbs.	(34-41)
Series #10 cartridges	35-40 ft.lbs.	(47-54)
Series #12 cartridges	85-90 ft.lbs.	(115-122)
Series #16 cartridges	130-140 ft.lbs.	(176-190)
Series #20 cartridges	190-200 ft.lbs.	(258-271)

(b) Spool type cartridges

Series #8 cartridges	8-10 ft.lbs.	(11-14)
Series #10 cartridges	10-12 ft.lbs.	(14-16)
Series #12 cartridges	15-18 ft.lbs.	(20-24)
Series #16 cartridges	25-30 ft.lbs.	(34-41)
Series #20 cartridges	40-50 ft.lbs.	(54-68)

4. Test

- A. Test entire system to assure cartridges are performing correctly and check for leaks.

General Part Numbering Systems

BASIC VALVES

All valve models start with a five (5) digit code to identify the type and the size of the cartridge. The descriptions below indicate Compact Controls' prefixes and their meaning.

CPXXX

Basic Type Designator (1 through 7)

The basic types of cartridges are broken down as follows:

- | | |
|-----------------------------|---------------------------------|
| 1 = Check Valves | 5 = Solenoids |
| 2 = Pressure Control Valves | 6 = Manual Valves |
| 3 = Flow Control Valves | 7 = Differential Sensing Valves |
| 4 = Motion Control Valves | |

Example: CP100 is a Check Valve and CP200 a Relief Valve.

CPXXX

Basic Configuration Designator

This indicates within a specific type of cartridge family its basic function or construction.

Example: CP200 is a poppet-type relief valve
CP210 is a spool-type relief valve

For more information review the section under the specific cartridge types.

CPXXX

Basic Size Designator

This size designator describes the basic size of the cartridge as it relates to S.A.E. port sizes. As an example: The 10 series cartridges fit the S.A.E. port geometry for a 7/8-14UNF-2B thread. Compact Controls' sizes are as follows:

- | | |
|---------------------------------|---------------------------------|
| 8 = 8 Series (3/4-16UNF-2B) | 2 = 16 Series (1-5/16-12UNF-2B) |
| 0 = 10 Series (7/8-14UNF-2B) | 3 = 20 Series (1-5/8-12UNF-2B) |
| 1 = 12 Series (1-1/16-12UNF-2B) | |

Example: CP101 is a 12 Series Check Valve
CP702 is a 16 Series Differential Sensing Valve

CPXXX - X

Basic Type Designator

This code is used to further describe the type of cartridge function or flow direction. For more information review the section under the specific cartridge types.

CPXXX - X - X

Seal Material

This code is used to describe the seal material desired. The standard compound used is Buna-N (Nitrile) and will operate from -40° F to 250° F. Viton (Fluorocarbon) is also available and is good from -15° F to 400° F. Other special compounds are available upon request. The following codes are used for seal compounds:

B = Buna-N (Std.) V = Viton (Opt.)

CPXXX - X - X - X

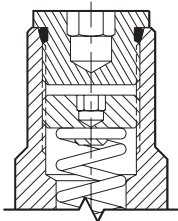
Body and Port Designator

The ports are described as follows:

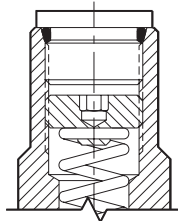
- | | | | |
|------------------------------|--------------------|------------------|------------------|
| 0 = No Body - Cartridge Only | | | |
| SAE
J475 | METRIC
ISO 6149 | BSPP
BS2779 | PIPE
NPTF |
| 4S = #4 SAE | M10 = M10 x 1 | 2B = 1/4 BSPP | 2P = 1/4 NPTF |
| 6S = #6 SAE | M14 = M14 x 1.5 | 3B = 3/8 BSPP | 3P = 3/8 NPTF |
| 8S = #8 SAE | M18 = M18 x 1.5 | 4B = 1/2 BSPP | 4P = 1/2 NPTF |
| 10S = #10 SAE | M22 = M22 x 1.5 | 6B = 3/4 BSPP | 6P = 3/4 NPTF |
| 12S = #12 SAE | M27 = M27 x 2.0 | 8B = 1" BSPP | 8P = 1" NPTF |
| 16S = #16 SAE | M33 = M33 x 2.0 | 10B = 1-1/4 BSPP | 10P = 1-1/4 NPTF |
| 20S = #20 SAE | M42 = M42 x 2.0 | | |

Anodized aluminum alloy bodies are standard.
To order a steel and/or ductile iron body, place an S in front of the port code.

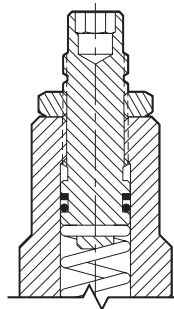
Example: CPXXX - X - X - S10S



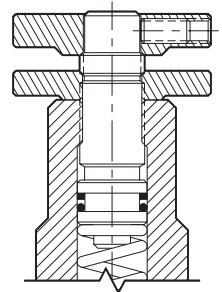
A - INTERNAL ADJUSTMENT



F - TAMPER RESISTANT



E - EXTERNAL ADJUSTMENT



K - KNOB ADJUSTMENT

SPECIFIC DESIGNATORS

Special designators are required for different valves such as: Adjustment Options, Flow Rates, Pressure Settings and Ranges, Voltage, etc. The following designators are currently being used:

1. Check Valves

CPXXX - X - X - X - XXX

- Cracking Pressure
005 = 5 psi
015 = 15 psi
065 = 65 psi

Consult factory for other cracking pressures.

2. Pressure Control Valves

CPXXX - X - X - X - X - X - XXX

- Adjustment Option
A = Internal Adjustment
E = External Adjustment
F = Tamper Resistant
K = Knob Adjustment

- Relief Setting
150 = 1500 psi (Std.)
225 = 2250 psi

- Pressure Range (Spring Option)
A = 100 - 600 psi
B = 250 - 2000 psi
C = 600 - 3600 psi

3. Flow Control Valves

CPXXX - X - X - X - X - X

- Regulated Flow
1.5 = 1.5 gpm
3.0 = 3.0 gpm
10.0 = 10.0 gpm

Some pressure compensated flow controls are adjustable through a limited flow range ±25 percent of specified flow. Adjustment options available would be the same as pressure control valves.

4. Motion Control Valves

CPXXX - X - X - X - XXX - X

- Cracking Pressure
015 = 15 psi
065 = 65 psi

- Seals on Pilot Piston
0 = No Seals (Std.)
S = Seals

Counterbalance cartridges involve more options therefore refer to the specific cartridge for more information. Some Pilot Operated (P/O) checks have pilot ratio options.

5. Solenoids

CPXXX - X - X - X - XXX - X

- Voltage
12D = 12 Volts D.C.
24D = 24 Volts D.C.
120A = 120 Volts A.C.
240A = 240 Volts A.C.

- Electrical Termination
S = 2 Spades (Std.)
I = Single Spade
L = Leads
C = Conduit
H = Din 43650
Other Options Available

Other voltages are available. All A.C. Coils are internally rectified.

6. Manual Valves

CPXXX - X - X - X - X - X

- Knob Options
K = Knob
E = External (Jam Nut)

- Knob Color
B = Black
R = Red

Manual rotary directional valves have additional options such as: spool configuration, detented positions, and lever and panel mount options. See specific valve for more information.

7. Differential Sensing Valves

CPXXX - X - X - X - XX

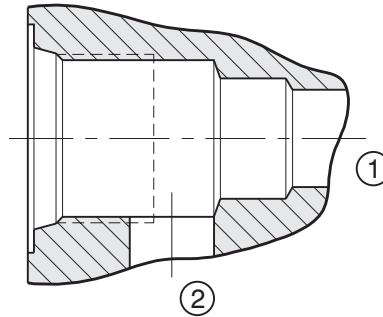
- Differential Control Pressure
40 = 40 psi
80 = 80 psi
110 = 110 psi
150 = 150 psi

Cavity Port Identification

ALL SERIES

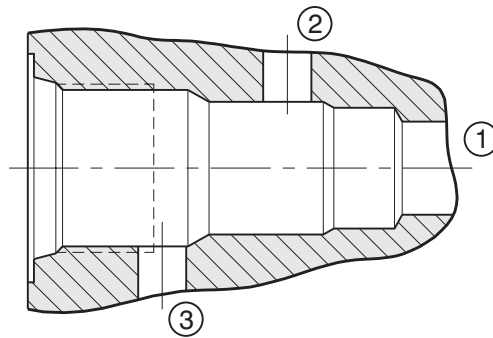
CAVITY 2 WAY

CP4-2	CP8-2	CP10-2
CP12-2	CP16-2	CP20-2



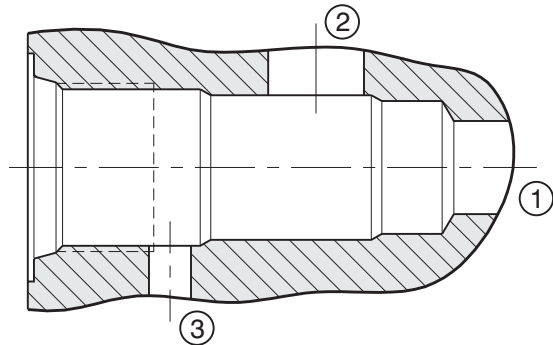
CAVITY 3 WAY

CP4-3	CP8-3	CP10-3
CP12-3	CP16-3	CP20-3



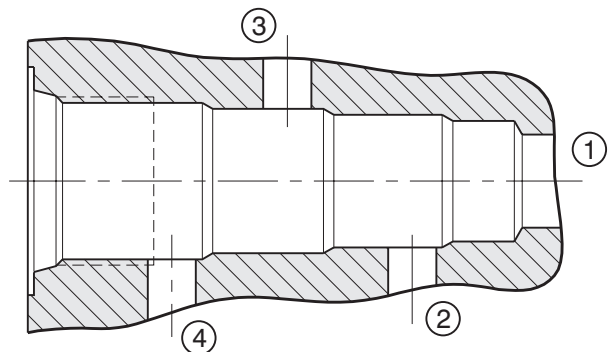
CAVITY 3 WAY SHORT / LONG

CP8-3L	CP10-3L	CP12-3S
CP16-3S	CP20-3S	



CAVITY 4 WAY

CP8-4	CP10-4	CP12-4
CP16-4	CP20-4	



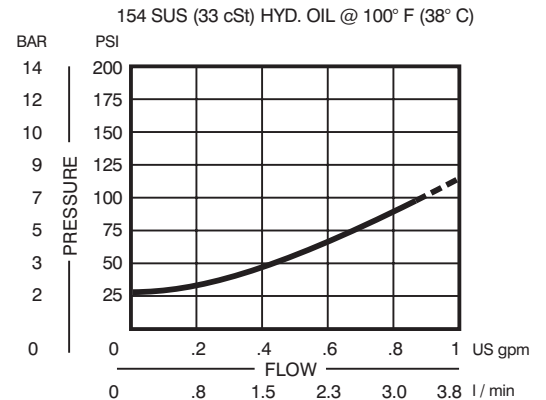
CHECK VALVES

SIZE	DESCRIPTION	FLOW gpm (l/m)	PRESSURE psi (bar)	PAGE
SERIES 4				
CP104-1	CHECK VALVE ball type	.9 (3)	3000 (207)	1.01
CP104-2	REVERSE FLOW ball type	.8 (3)	3000 (207)	1.02
SERIES 8				
CP108-1	CHECK VALVE	8 (30)	3000 (207)	1.03
CP108-2	REVERSE FLOW	5 (19)	5000 (345)	1.04
SERIES 10				
CP100-1	CHECK VALVE	22 (83)	3000 (207)	1.05
CP100-2	REVERSE FLOW	13 (49)	5000 (345)	1.06
CP100-3	CHECK VALVE	30 (114)	3000 (207)	1.07
SERIES 12				
CP101-1	CHECK VALVE	26 (98)	3000 (207)	1.08
CP101-2	REVERSE FLOW	20 (76)	5000 (345)	1.09
SERIES 16				
CP102-1	CHECK VALVE	55 (208)	3000 (207)	1.10
CP102-2	REVERSE FLOW	40 (151)	5000 (345)	1.11
SERIES 20				
CP103-1	CHECK VALVE	100 (379)	3000 (207)	1.12
CP103-2	REVERSE FLOW	70 (265)	5000 (345)	1.13

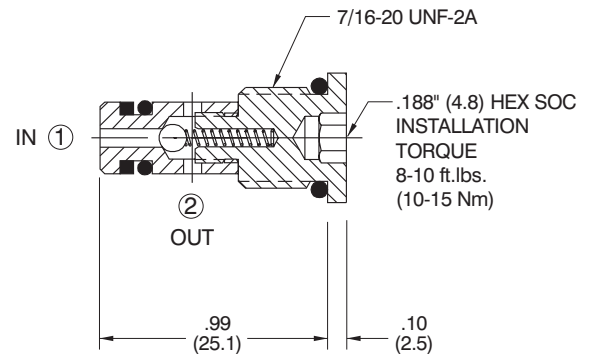
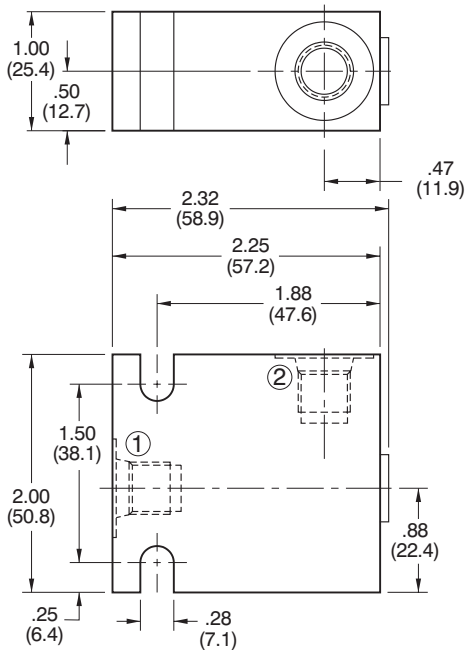
SPECIFICATIONS

- Valve allows free flow from **1** to **2** and blocks flow from **2** to **1**.
- Nominal flow at 100 psi ΔP : .9 gpm (3 l/m).
- Valve rated to 3000 psi (207 bar) working pressure.
- Valve leakage: 6 drops per min. max. at 3000 psi (207 bar).
- Valve cartridge is **all** steel construction with hardened components to assure positive sealing and extended service life.
- Hi-strength aluminum alloy body allows for maximum circuit design flexibility.
- Buna-N seals are standard. Viton is optional (consult factory for other seal compounds).
- Valve is designed for use with general purpose hydraulic fluids (MIL-H-5606, SAE #10, etc.).
- Cartridge weight .03 lbs (.01 kg).
- Valve cartridge fits Compact Controls [cavity CP4-2](#).

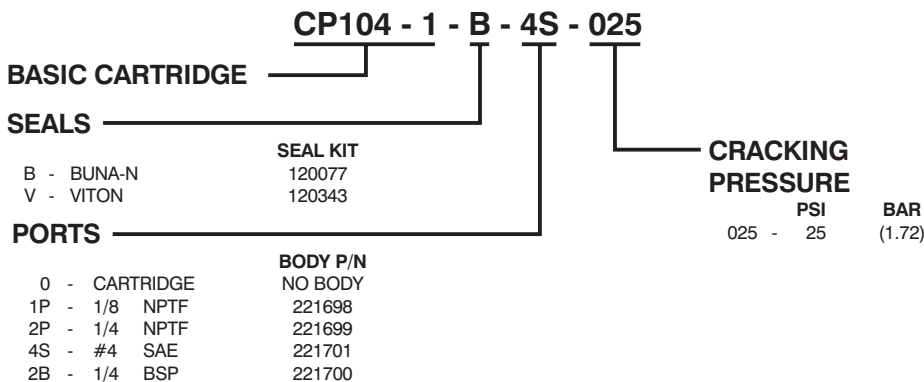
TYPICAL PERFORMANCE



All dimensions in inches (mm)



ORDERING INFORMATION



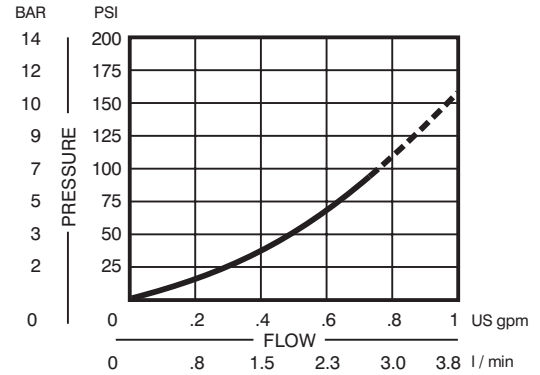
SERIES 4

SPECIFICATIONS

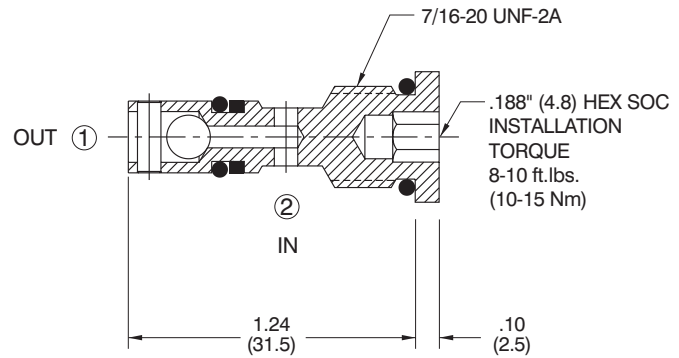
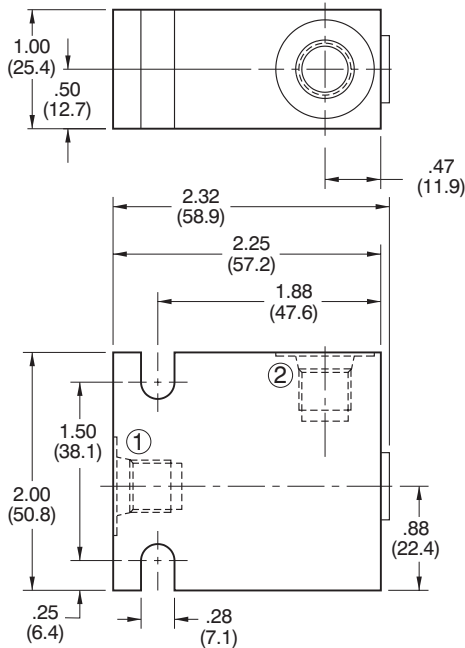
- Valve allows free flow from **2** to **1** and blocks flow from **1** to **2**.
- Nominal flow at 100 psi ΔP: .8 gpm (3 l/m).
- Valve rated to 3000 psi (207 bar) working pressure.
- Valve leakage: 6 drops per min. max. at 3000 psi (207 bar).
- Valve cartridge is **all** steel construction with hardened components to assure positive sealing and extended service life.
- Hi-strength aluminum alloy body allows for maximum circuit design flexibility.
- Buna-N seals are standard. Viton is optional (consult factory for other seal compounds).
- Valve is designed for use with general purpose hydraulic fluids (MIL-H-5606, SAE #10, etc.).
- Cartridge weight .03 lbs (.01 kg).
- Valve cartridge fits Compact Controls [cavity CP4-2](#).

TYPICAL PERFORMANCE

154 SUS (33 cSt) HYD. OIL @ 100° F (38° C)



All dimensions in inches (mm)



ORDERING INFORMATION

CP104 - 2 - B - 4S

BASIC CARTRIDGE

SEALS

- B - BUNA-N
- V - VITON

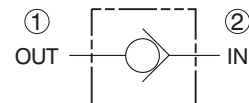
SEAL KIT

- 120077
- 120343

PORTS

BODY P/N

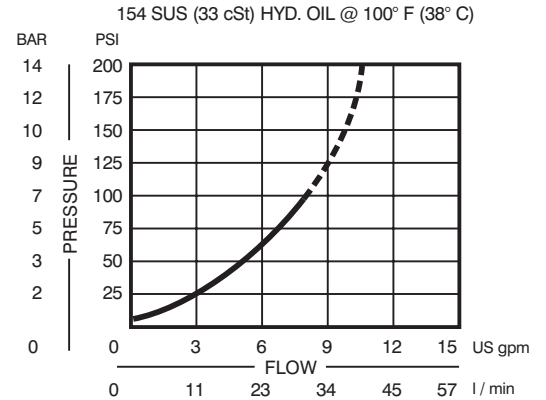
- | | |
|---------------|---------|
| 0 - CARTRIDGE | NO BODY |
| 1P - 1/8 NPTF | 221698 |
| 2P - 1/4 NPTF | 221699 |
| 4S - #4 SAE | 221701 |
| 2B - 1/4 BSP | 221700 |



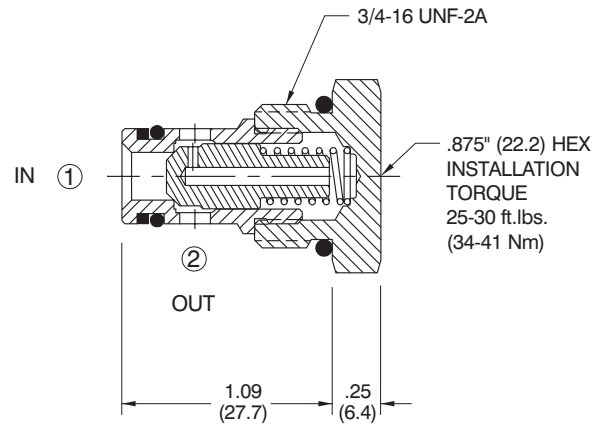
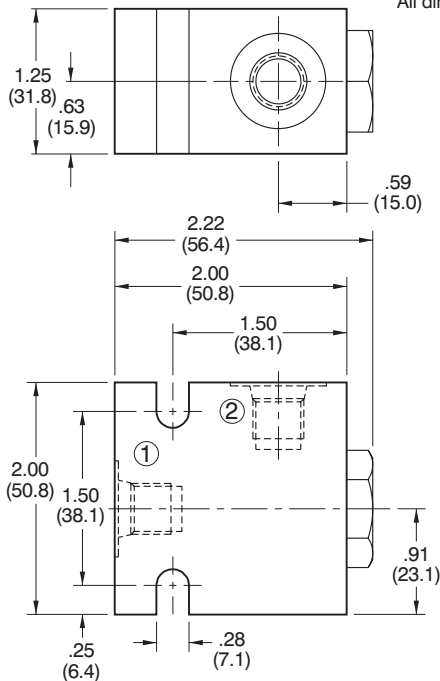
SPECIFICATIONS

- Valve allows free flow from **1** to **2** and blocks flow from **2** to **1**.
- Nominal flow at 100 psi ΔP: 8.0 gpm (30 l/m).
- Valve rated to 3000 psi (207 bar) working pressure.
- Valve leakage: 6 drops per min. max. at 3000 psi (207 bar).
- Valve cartridge is **all** steel construction with precision ground, hardened components to assure positive sealing and extended service life.
- Hi-strength aluminum alloy body allows for maximum circuit design flexibility.
- Buna-N seals are standard. Viton is optional (consult factory for other seal compounds).
- Valve is designed for use with general purpose hydraulic fluids (MIL-H-5606, SAE #10, etc.).
- Cartridge weight .11 lbs (.05 kg).
- Valve cartridge fits Compact Controls [cavity CP8-2](#).

TYPICAL PERFORMANCE



All dimensions in inches (mm)



ORDERING INFORMATION

Shaded area represents standard product

CP108 - 1 - B - 6S - 005

BASIC CARTRIDGE

SEALS

	SEAL KIT
B - BUNA-N	120221
V - VITON	120222

PORTS

	BODY P/N
0 - CARTRIDGE	NO BODY
2P - 1/4 NPTF	220814
3P - 3/8 NPTF	220815
4S - #4 SAE	220816
6S - #6 SAE	220817
2B - 1/4 BSP	221285
3B - 3/8 BSP	221286

CRACKING PRESSURE

	PSI	BAR
005	5	(.34)
015	15	(1.03)
065	65	(4.48)



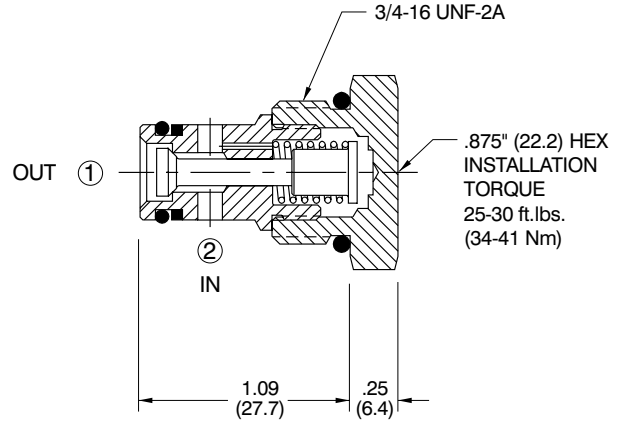
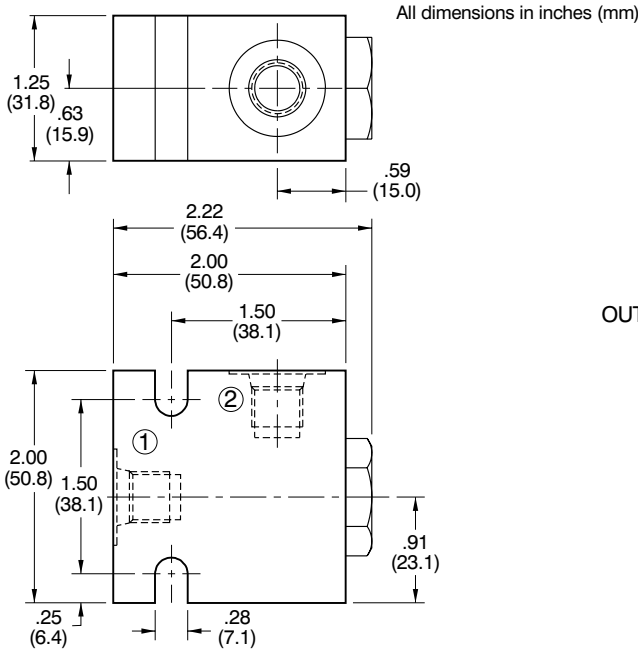
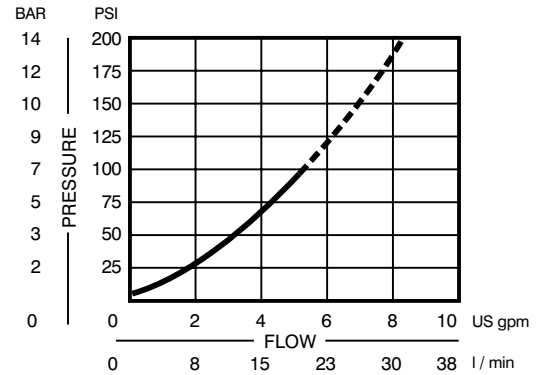
SERIES 8

SPECIFICATIONS

- Valve allows free flow from 2 to 1 and blocks flow from 1 to 2.
- Nominal flow at 100 psi P: 5.0 gpm (19 l/m).
- Valve rated to 5000 psi (345 bar) working pressure.
- Valve leakage: 6 drops per min. max. at 3000 psi (207 bar).
- Valve cartridge is *all* steel construction with precision ground, hardened components to assure positive sealing and extended service life.
- Hi-strength aluminum alloy body allows for maximum circuit design flexibility.
- For pressures above 3000 psi use steel bodies.
- Buna-N seals are standard. Viton is optional (consult factory for other seal compounds).
- Valve is designed for use with general purpose hydraulic fluids (MIL-H-5606, SAE #10, etc.).
- Cartridge weight .11 lbs (.05 kg).
- Valve cartridge fits Compact Controls [cavity CP8-2](#).

TYPICAL PERFORMANCE

154 SUS (33 cSt) HYD. OIL @ 100° F (38° C)



ORDERING INFORMATION

Shaded area represents standard product

CP108 - 2 - B - 6S - 005

BASIC CARTRIDGE

SEALS

B - BUNA-N
 V - VITON

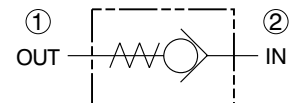
SEAL KIT
 120221
 120222

PORTS

PORTS	BODY P/N
0 - CARTRIDGE	NO BODY
2P - 1/4 NPTF	220814
3P - 3/8 NPTF	220815
4S - #4 SAE	220816
6S - #6 SAE	220817
2B - 1/4 BSP	221285
3B - 3/8 BSP	221286

CRACKING PRESSURE

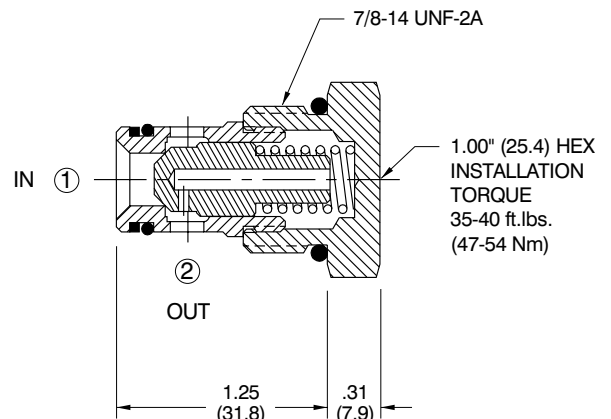
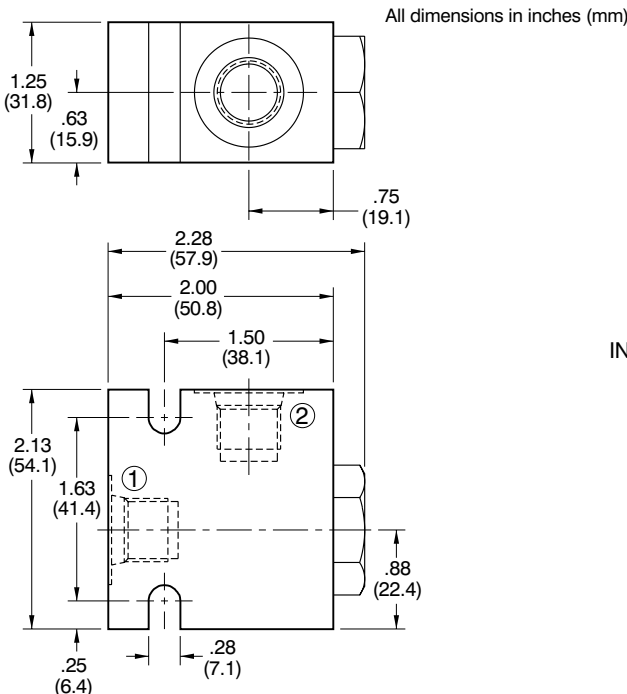
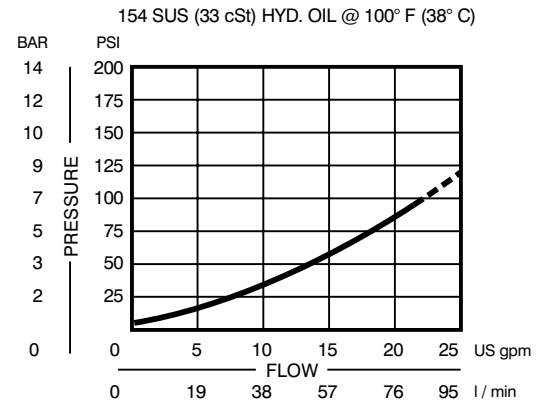
	PSI	BAR
005	5	(.34)
015	15	(1.03)
065	65	(4.48)



SPECIFICATIONS

- Valve allows free flow from 1 to 2 and blocks flow from 2 to 1.
- Nominal flow at 100 psi P: 22.0 gpm (83 l/m).
- Valve rated to 3000 psi (207 bar) working pressure.
- Valve leakage: 6 drops per min. max. at 3000 psi (207 bar).
- Valve cartridge is *all* steel construction with precision ground, hardened components to assure positive sealing and extended service life.
- Hi-strength aluminum alloy body allows for maximum circuit design flexibility.
- Buna-N seals are standard. Viton is optional (consult factory for other seal compounds).
- Valve is designed for use with general purpose hydraulic fluids (MIL-H-5606, SAE #10, etc.).
- Cartridge weight .17 lbs (.08 kg).
- Valve cartridge fits Compact Controls [cavity CP10-2](#).

TYPICAL PERFORMANCE



ORDERING INFORMATION

Shaded area represents standard product

CP100 - 1 - B - 8S - 005

BASIC CARTRIDGE

SEALS

	SEAL KIT
B - BUNA-N	120015
V - VITON	120016

PORTS

	BODY P/N
0 - CARTRIDGE	NO BODY
3P - 3/8 NPTF	220092
4P - 1/2 NPTF	220124
6S - #6 SAE	220125
8S - #8 SAE	220126
3B - 3/8 BSP	221214
4B - 1/2 BSP	221215

CRACKING PRESSURE

	PSI	BAR
005 - 5	(.34)	
015 - 15	(1.03)	
065 - 65	(4.48)	



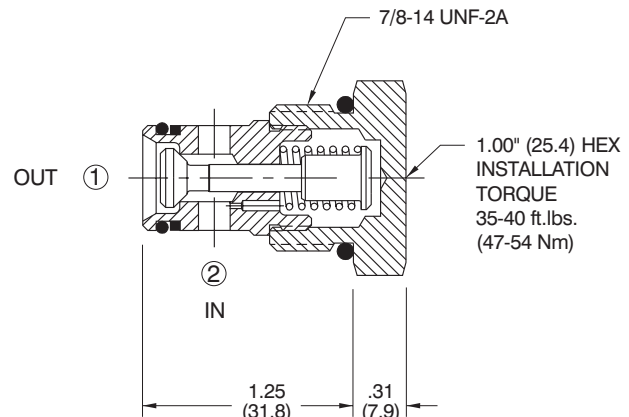
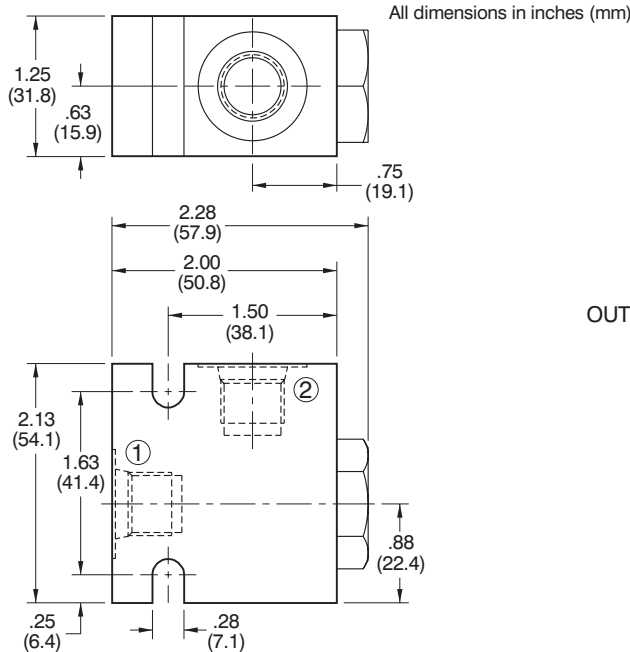
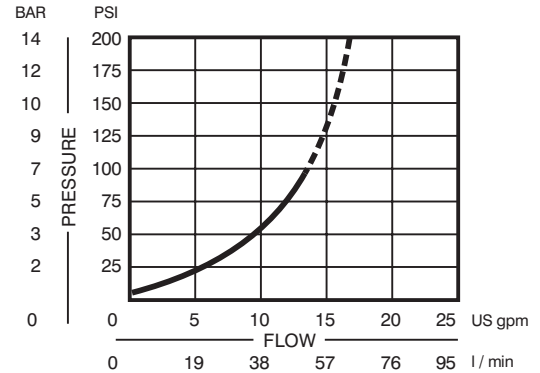
SERIES 10

SPECIFICATIONS

- Valve allows free flow from **2** to **1** and blocks flow from **1** to **2**.
- Nominal flow at 100 psi ΔP: 13.0 gpm (49 l/m).
- Valve rated to 5000 psi (345 bar) working pressure.
- Valve leakage: 6 drops per min. max. at 3000 psi (207 bar).
- Valve cartridge is **all** steel construction with precision ground, hardened components to assure positive sealing and extended service life.
- Hi-strength aluminum alloy body allows for maximum circuit design flexibility.
- For pressures above 3000 psi use steel bodies.
- Buna-N seals are standard. Viton is optional (consult factory for other seal compounds).
- Valve is designed for use with general purpose hydraulic fluids (MIL-H-5606, SAE #10, etc.).
- Cartridge weight .17 lbs (.08 kg).
- Valve cartridge fits Compact Controls [cavity CP10-2](#).

TYPICAL PERFORMANCE

154 SUS (33 cSt) HYD. OIL @ 100° F (38° C)



ORDERING INFORMATION

Shaded area represents standard product

CP100 - 2 - B - 8S - 005

BASIC CARTRIDGE

SEALS

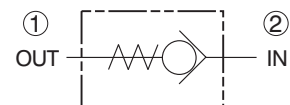
	SEAL KIT
B - BUNA-N	120015
V - VITON	120016

PORTS

	BODY P/N
0 - CARTRIDGE	NO BODY
3P - 3/8 NPTF	220092
4P - 1/2 NPTF	220124
6S - #6 SAE	220125
8S - #8 SAE	220126
3B - 3/8 BSP	221214
4B - 1/2 BSP	221215

CRACKING PRESSURE

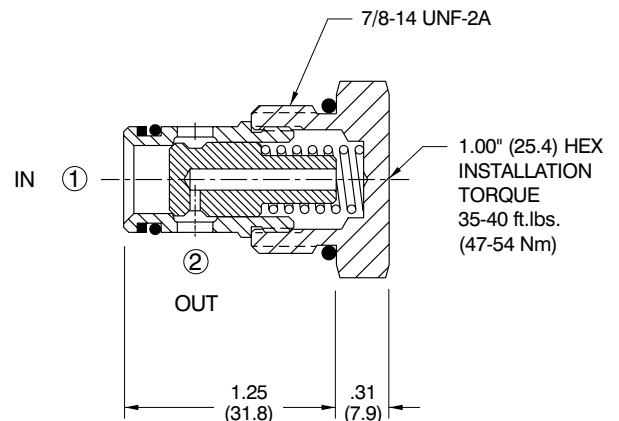
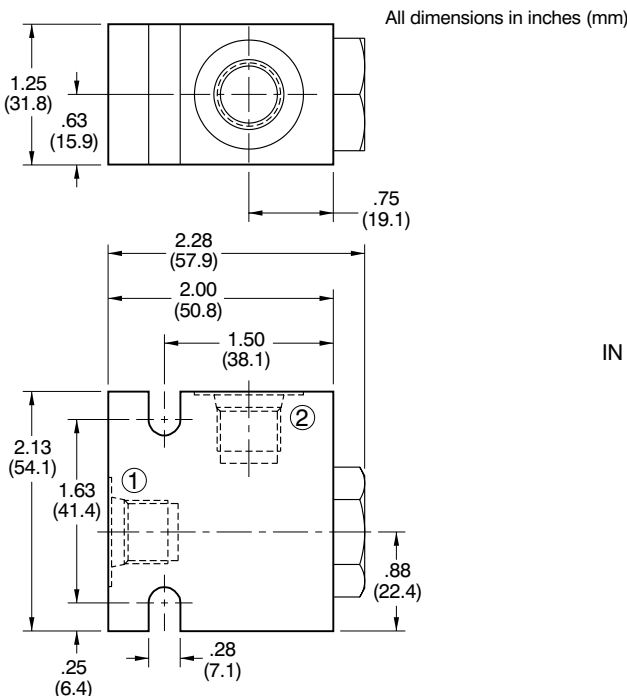
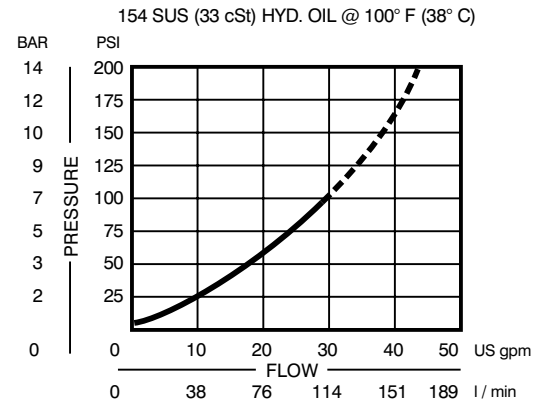
	PSI	BAR
005	5	(.34)
015	15	(1.03)
065	65	(4.48)



SPECIFICATIONS

- Valve allows free flow from 1 to 2 and blocks flow from 2 to 1.
- Nominal flow at 100 psi P: 30.0 gpm (114 l/m).
- Valve rated to 3000 psi (207 bar) working pressure.
- Valve leakage: 6 drops per min. max. at 3000 psi (207 bar).
- Valve cartridge is *all* steel construction with precision ground, hardened components to assure positive sealing and extended service life.
- Hi-strength aluminum alloy body allows for maximum circuit design flexibility.
- Buna-N seals are standard. Viton is optional (consult factory for other seal compounds).
- Valve is designed for use with general purpose hydraulic fluids (MIL-H-5606, SAE #10, etc.).
- Cartridge weight .17 lbs (.08 kg).
- Valve cartridge fits Compact Controls [cavity CP10-2](#).

TYPICAL PERFORMANCE



ORDERING INFORMATION

Shaded area represents standard product

CP100 - 3 - B - 8S - 005

BASIC CARTRIDGE

SEALS

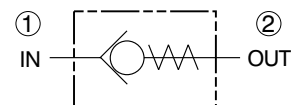
	SEAL KIT
B - BUNA-N	120015
V - VITON	120016

PORTS

	BODY P/N
0 - CARTRIDGE	NO BODY
3P - 3/8 NPTF	220092
4P - 1/2 NPTF	220124
6S - #6 SAE	220125
8S - #8 SAE	220126
3B - 3/8 BSP	221214
4B - 1/2 BSP	221215

CRACKING PRESSURE

	PSI	BAR
005	5	(.34)
015	15	(1.03)
065	65	(4.48)



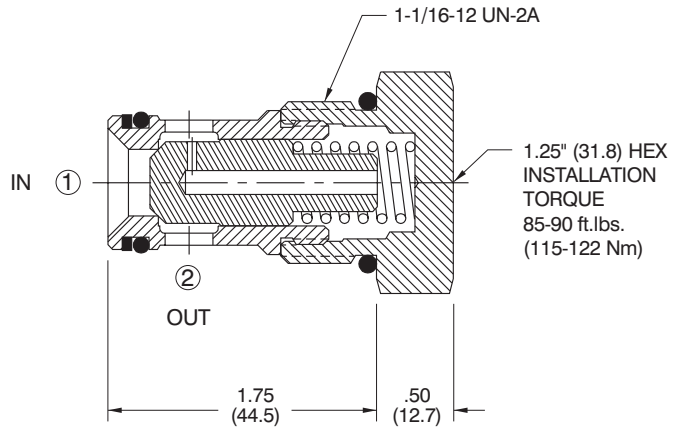
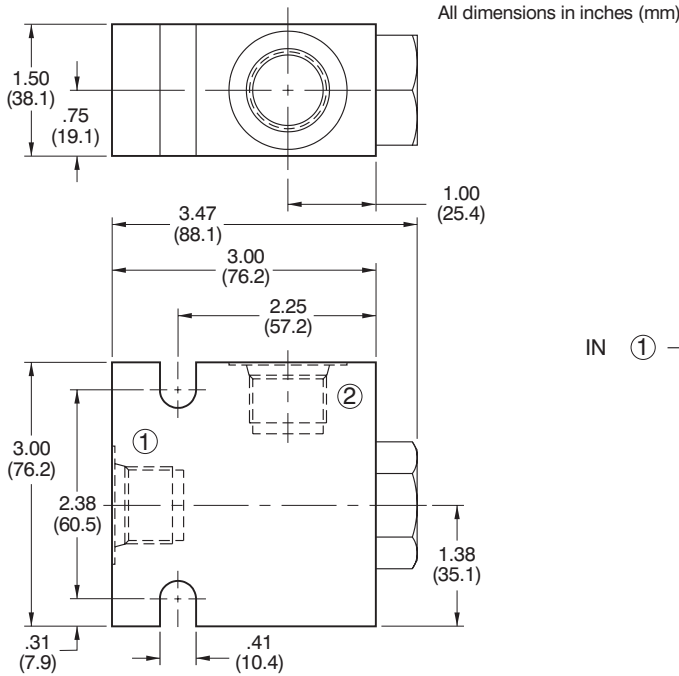
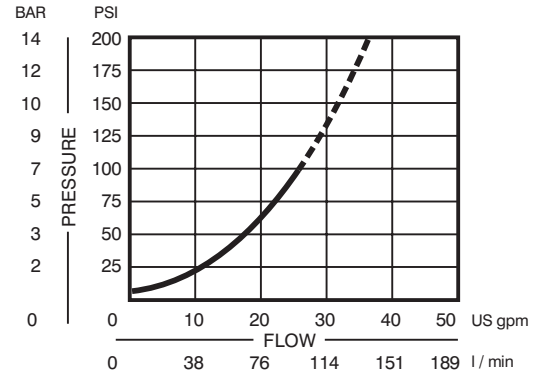
SERIES 12

SPECIFICATIONS

- Valve allows free flow from **1** to **2** and blocks flow from **2** to **1**.
- Nominal flow at 100 psi ΔP: 26.0 gpm (98 l/m).
- Valve rated to 3000 psi (207 bar) working pressure.
- Valve leakage: 6 drops per min. max. at 3000 psi (207 bar).
- Valve cartridge is **all** steel construction with precision ground, hardened components to assure positive sealing and extended service life.
- Hi-strength aluminum alloy body allows for maximum circuit design flexibility.
- Buna-N seals are standard. Viton is optional (consult factory for other seal compounds).
- Valve is designed for use with general purpose hydraulic fluids (MIL-H-5606, SAE #10, etc.).
- Cartridge weight .40 lbs (.18 kg).
- Valve cartridge fits Compact Controls [cavity CP12-2](#).

TYPICAL PERFORMANCE

154 SUS (33 cSt) HYD. OIL @ 100° F (38° C)



ORDERING INFORMATION

Shaded area represents standard product

CP101 - 1 - B - 12S - 005

BASIC CARTRIDGE

SEALS

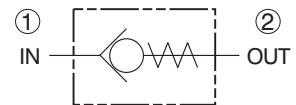
	SEAL KIT
B - BUNA-N	120017
V - VITON	120018

PORTS

	BODY P/N
0 - CARTRIDGE	NO BODY
4P - 1/2 NPTF	220130
6P - 3/4 NPTF	220131
10S - #10 SAE	220132
12S - #12 SAE	220133
4B - 1/2 BSP	221234
6B - 3/4 BSP	221235

CRACKING PRESSURE

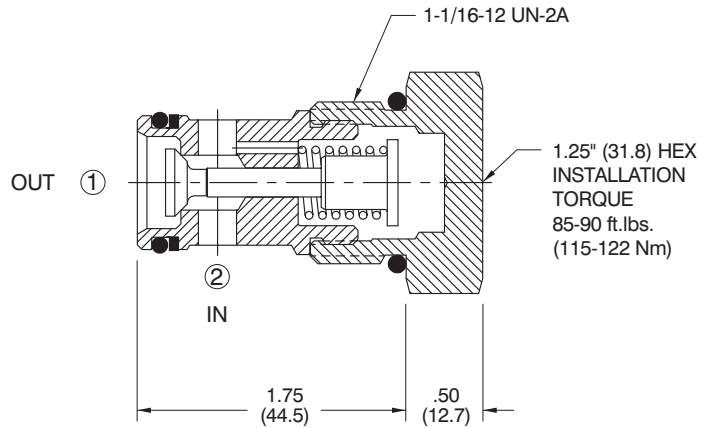
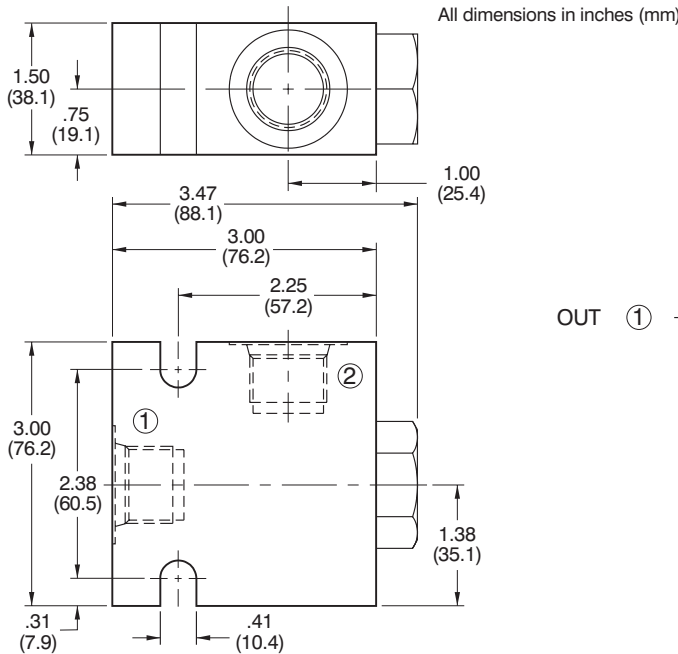
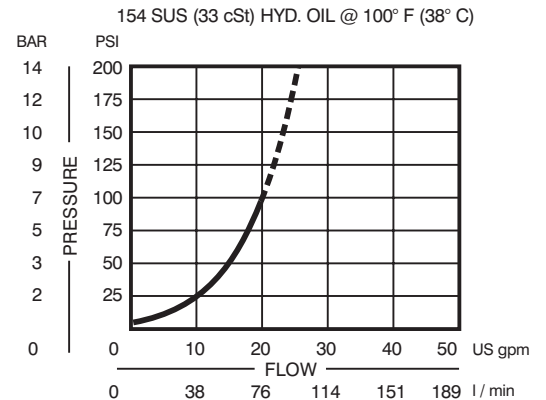
	PSI	BAR
005	5	(.34)
015	15	(1.03)
065	65	(4.48)



SPECIFICATIONS

- Valve allows free flow from **2** to **1** and blocks flow from **1** to **2**.
- Nominal flow at 100 psi ΔP: 20.0 gpm (76 l/m).
- Valve rated to 5000 psi (345 bar) working pressure.
- Valve leakage: 6 drops per min. max. at 3000 psi (207 bar).
- Valve cartridge is **all** steel construction with precision ground, hardened components to assure positive sealing and extended service life.
- Hi-strength aluminum alloy body allows for maximum circuit design flexibility.
- For pressures above 3000 psi use steel bodies.
- Buna-N seals are standard. Viton is optional (consult factory for other seal compounds).
- Valve is designed for use with general purpose hydraulic fluids (MIL-H-5606, SAE #10, etc.).
- Cartridge weight .40 lbs (.18 kg).
- Valve cartridge fits Compact Controls [cavity CP12-2](#).

TYPICAL PERFORMANCE



ORDERING INFORMATION

Shaded area represents standard product

CP101 - 2 - B - 12S - 005

BASIC CARTRIDGE

SEALS

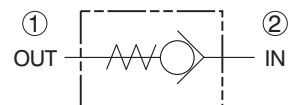
	SEAL KIT
B - BUNA-N	120017
V - VITON	120018

PORTS

	BODY P/N
0 - CARTRIDGE	NO BODY
4P - 1/2 NPTF	220130
6P - 3/4 NPTF	220131
10S - #10 SAE	220132
12S - #12 SAE	220133
4B - 1/2 BSP	221234
6B - 3/4 BSP	221235

CRACKING PRESSURE

	PSI	BAR
005	5	(.34)
015	15	(1.03)
065	65	(4.48)



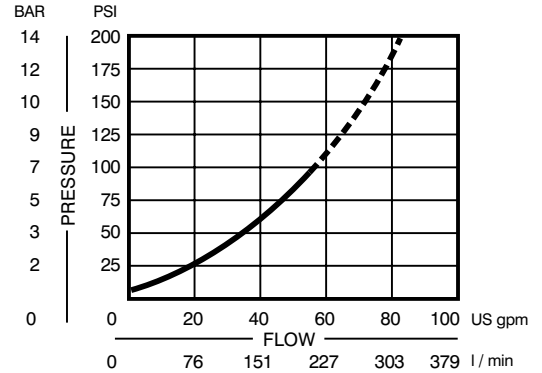
SERIES 16

SPECIFICATIONS

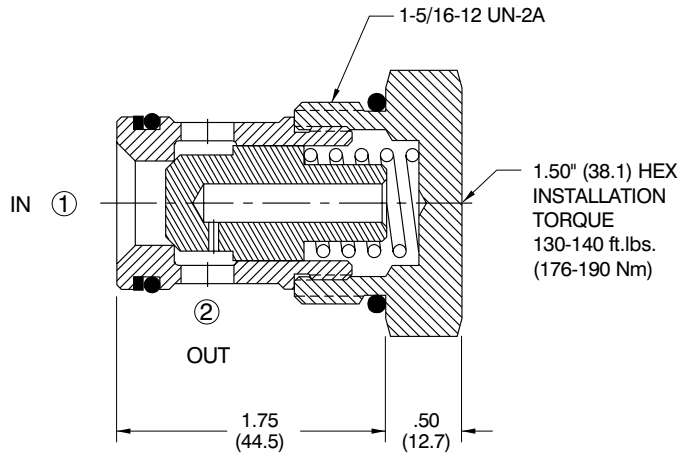
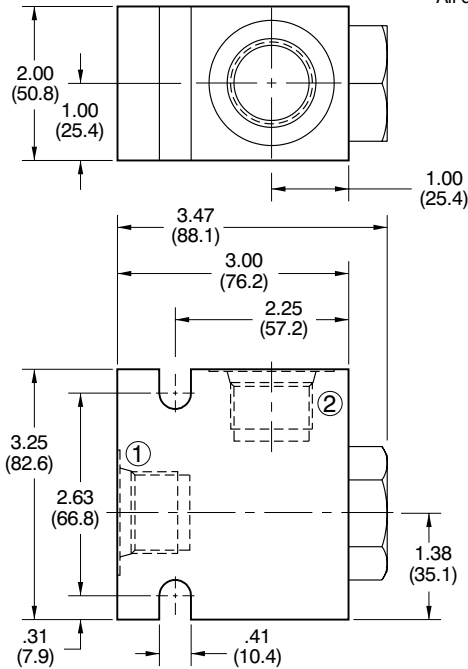
- Valve allows free flow from 1 to 2 and blocks flow from 2 to 1.
- Nominal flow at 100 psi P: 55.0 gpm (208 l/m).
- Valve rated to 3000 psi (207 bar) working pressure.
- Valve leakage: 6 drops per min. max. at 3000 psi (207 bar).
- Valve cartridge is *all* steel construction with precision ground, hardened components to assure positive sealing and extended service life.
- Hi-strength aluminum alloy body allows for maximum circuit design flexibility.
- Buna-N seals are standard. Viton is optional (consult factory for other seal compounds).
- Valve is designed for use with general purpose hydraulic fluids (MIL-H-5606, SAE #10, etc.).
- Cartridge weight .57 lbs (.26 kg).
- Valve cartridge fits Compact Controls cavity CP16-2.

TYPICAL PERFORMANCE

154 SUS (33 cSt) HYD. OIL @ 100° F (38° C)



All dimensions in inches (mm)



ORDERING INFORMATION

Shaded area represents standard product

CP102 - 1 - B - 16S - 005

BASIC CARTRIDGE

SEALS

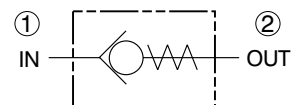
	SEAL KIT
B - BUNA-N	120019
V - VITON	120020

PORTS

	BODY P/N
0 - CARTRIDGE	NO BODY
6P - 3/4 NPTF	220136
8P - 1" NPTF	220137
12S - #12 SAE	220134
16S - #16 SAE	220135
6B - 3/4 BSP	221306
8B - 1" BSP	221238

CRACKING PRESSURE

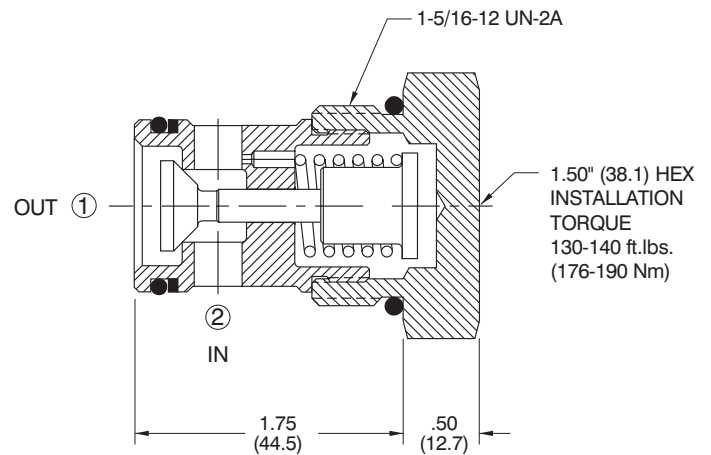
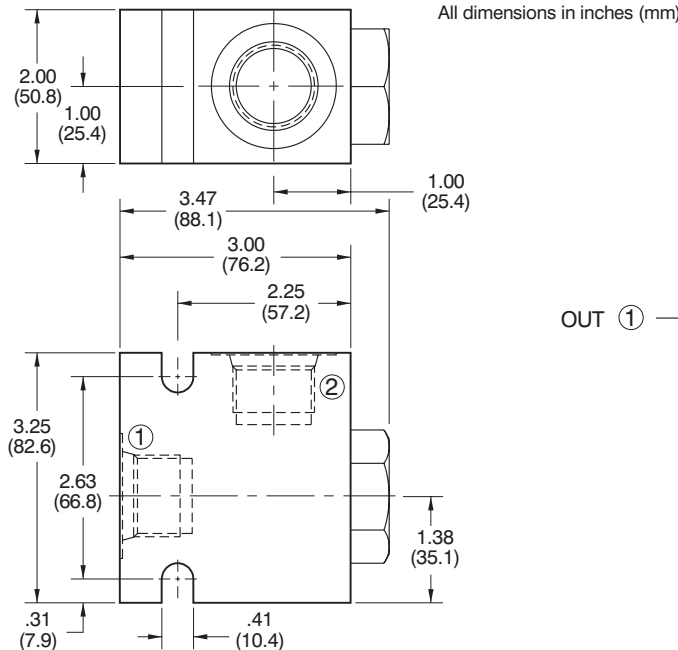
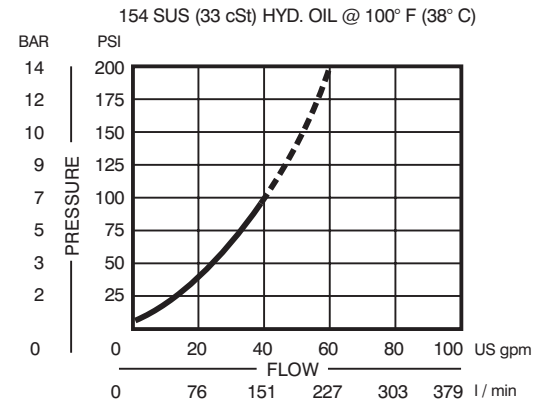
	PSI	BAR
005 - 5	(.34)	
015 - 15	(1.03)	
065 - 65	(4.48)	



SPECIFICATIONS

- Valve allows free flow from **2** to **1** and blocks flow from **1** to **2**.
- Nominal flow at 100 psi ΔP: 40.0 gpm (151 l/m).
- Valve rated to 5000 psi (345 bar) working pressure.
- Valve leakage: 6 drops per min. max. at 3000 psi (207 bar).
- Valve cartridge is **all** steel construction with precision ground, hardened components to assure positive sealing and extended service life.
- Hi-strength aluminum alloy body allows for maximum circuit design flexibility.
- For pressures above 3000 psi use steel bodies.
- Buna-N seals are standard. Viton is optional (consult factory for other seal compounds).
- Valve is designed for use with general purpose hydraulic fluids (MIL-H-5606, SAE #10, etc.).
- Cartridge weight .57 lbs (.26 kg).
- Valve cartridge fits Compact Controls [cavity CP16-2](#).

TYPICAL PERFORMANCE



ORDERING INFORMATION

Shaded area represents standard product

CP102 - 2 - B - 16S - 005

BASIC CARTRIDGE

SEALS

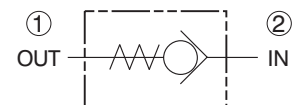
	SEAL KIT
B - BUNA-N	120019
V - VITON	120020

PORTS

	BODY P/N
0 - CARTRIDGE	NO BODY
6P - 3/4 NPTF	220136
8P - 1" NPTF	220137
12S - #12 SAE	220134
16S - #16 SAE	220135
6B - 3/4 BSP	221306
8B - 1" BSP	221238

CRACKING PRESSURE

	PSI	BAR
005	5	(.34)
015	15	(1.03)
065	65	(4.48)



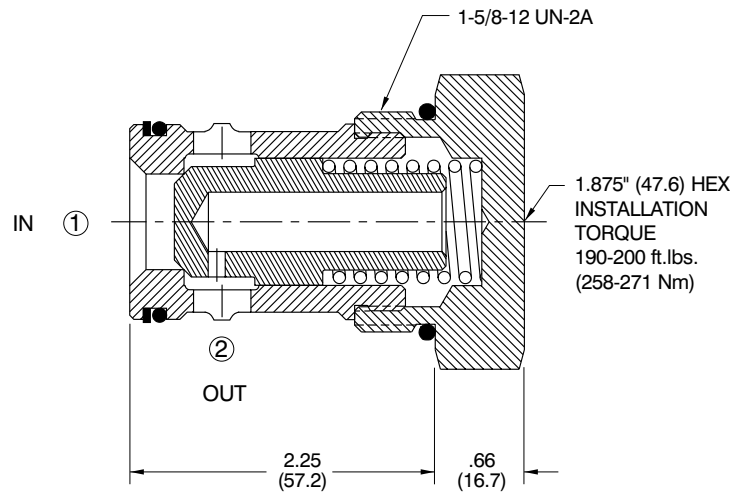
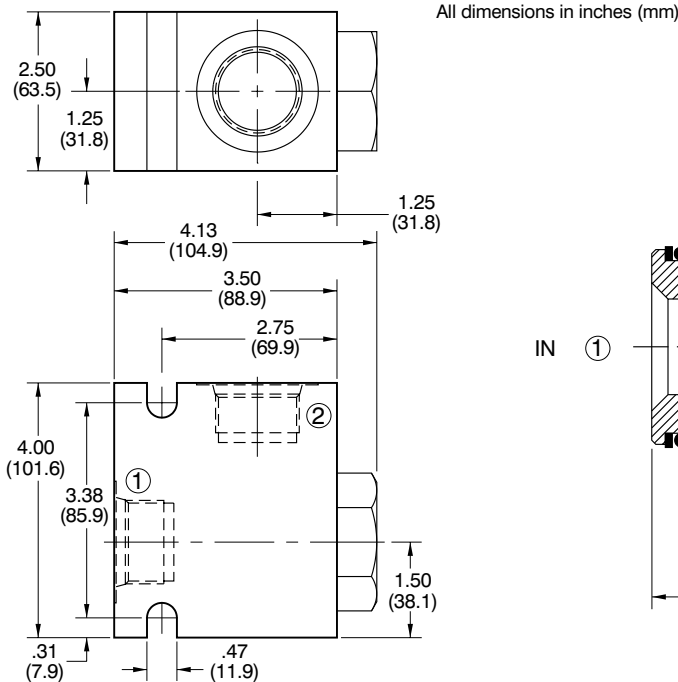
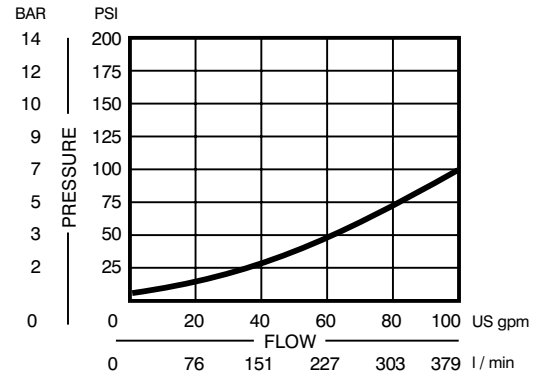
SERIES 20

SPECIFICATIONS

- Valve allows free flow from 1 to 2 and blocks flow from 2 to 1.
- Nominal flow at 100 psi P: 100.0 gpm (379 l/m).
- Valve rated to 3000 psi (207 bar) working pressure.
- Valve leakage: 6 drops per min. max. at 3000 psi (207 bar).
- Valve cartridge is *all* steel construction with precision ground, hardened components to assure positive sealing and extended service life.
- Hi-strength aluminum alloy body allows for maximum circuit design flexibility.
- Buna-N seals are standard. Viton is optional (consult factory for other seal compounds).
- Valve is designed for use with general purpose hydraulic fluids (MIL-H-5606, SAE #10, etc.).
- Cartridge weight 1.20 lbs (.54 kg).
- Valve cartridge fits Compact Controls [cavity CP20-2](#).

TYPICAL PERFORMANCE

154 SUS (33 cSt) HYD. OIL @ 100° F (38° C)



ORDERING INFORMATION

CP103 - 1 - B - 20S - 005

BASIC CARTRIDGE

SEALS

B - BUNA-N
V - VITON

SEAL KIT
120011
120012

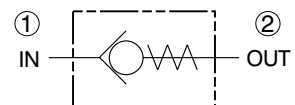
PORTS

0 - CARTRIDGE
8P - 1" NPTF
10P - 1-1/4 NPTF
16S - #16 SAE
20S - #20 SAE
8B - 1" BSP
10B - 1-1/4 BSP

BODY P/N
NO BODY
220139
220140
220141
220142
221240
221312

CRACKING PRESSURE

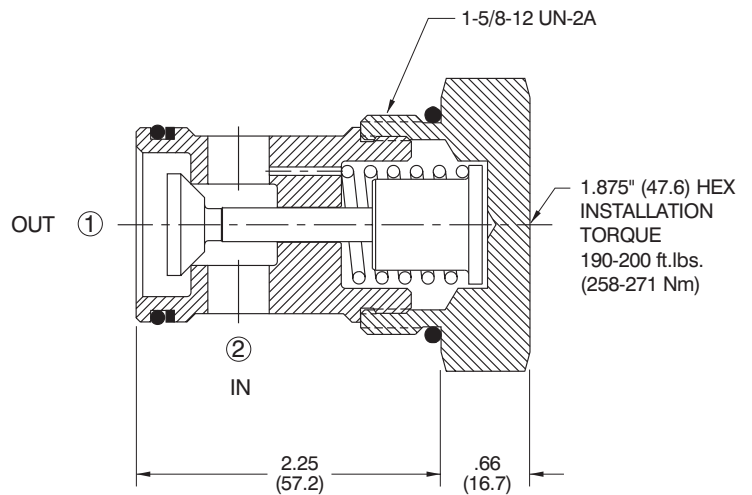
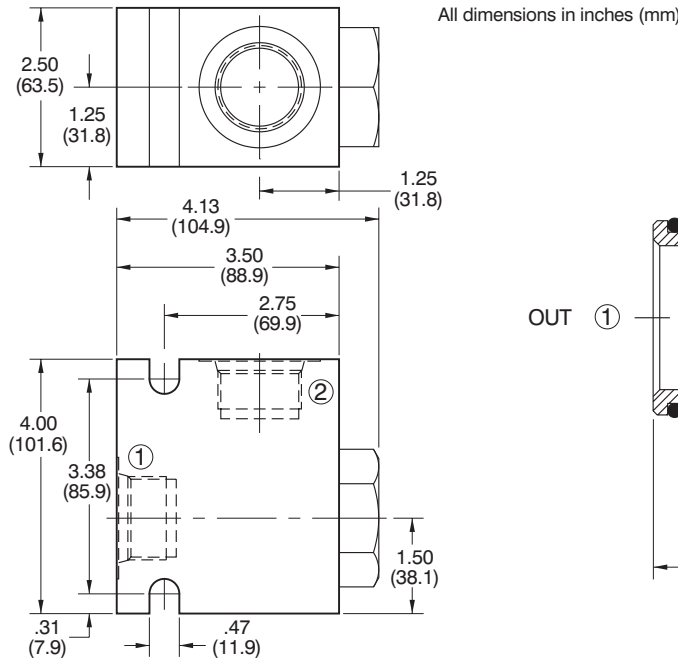
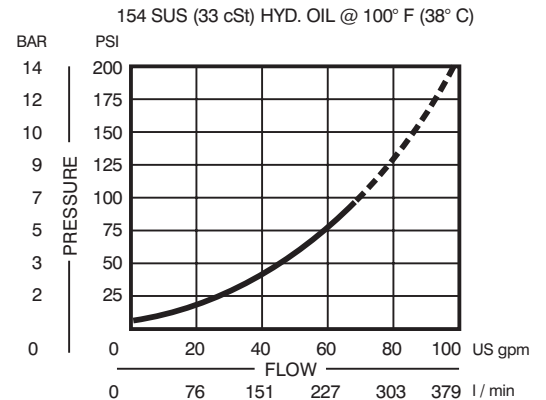
	PSI	BAR
005	5	(.34)
015	15	(1.03)
065	65	(4.48)



SPECIFICATIONS

- Valve allows free flow from **2** to **1** and blocks flow from **1** to **2**.
- Nominal flow at 100 psi ΔP: 70.0 gpm (265 l/m).
- Valve rated to 5000 psi (345 bar) working pressure.
- Valve leakage: 6 drops per min. max. at 3000 psi (207 bar).
- Valve cartridge is **all** steel construction with precision ground, hardened components to assure positive sealing and extended service life.
- Hi-strength aluminum alloy body allows for maximum circuit design flexibility.
- For pressures above 3000 psi use steel bodies.
- Buna-N seals are standard. Viton is optional (consult factory for other seal compounds).
- Valve is designed for use with general purpose hydraulic fluids (MIL-H-5606, SAE #10, etc.).
- Cartridge weight 1.20 lbs (.54 kg).
- Valve cartridge fits Compact Controls [cavity CP20-2](#).

TYPICAL PERFORMANCE



ORDERING INFORMATION

CP103 - 2 - B - 20S - 005

BASIC CARTRIDGE

SEALS

B - BUNA-N
 V - VITON

SEAL KIT
 120011
 120012

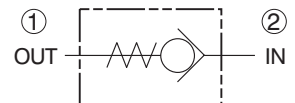
PORTS

0 - CARTRIDGE
 8P - 1" NPTF
 10P - 1-1/4 NPTF
 16S - #16 SAE
 20S - #20 SAE
 8B - 1" BSP
 10B - 1-1/4 BSP

BODY P/N
 NO BODY
 220139
 220140
 220141
 220142
 221240
 221312

CRACKING PRESSURE

	PSI	BAR
005	5	(.34)
015	15	(1.03)
065	65	(4.48)



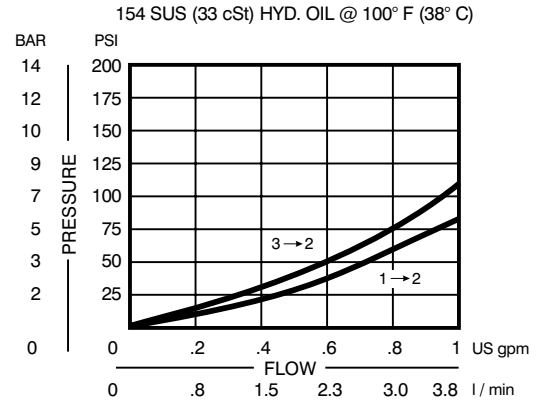
SHUTTLE VALVES

SIZE	DESCRIPTION	FLOW gpm (l/m)	PRESSURE psi (bar)	PAGE
SERIES 4 CP124-1	SHUTTLE VALVE	1 (4)	3000 (207)	2.01
SERIES 8 CP128-1	SHUTTLE VALVE	3 (11)	3000 (207)	2.02
CP128-2	SHUTTLE VALVE	2 (8)	3000 (207)	2.03
SERIES 10 CP120-1	SHUTTLE VALVE	5 (19)	3000 (207)	2.04
CP120-2	SHUTTLE VALVE	5 (19)	3000 (207)	2.05
CP720-3	3 POSITION 3 WAY	7 (26)	5000 (345)	2.06
SERIES 12 CP721-3	3 POSITION 3 WAY	24 (91)	5000 (345)	2.07

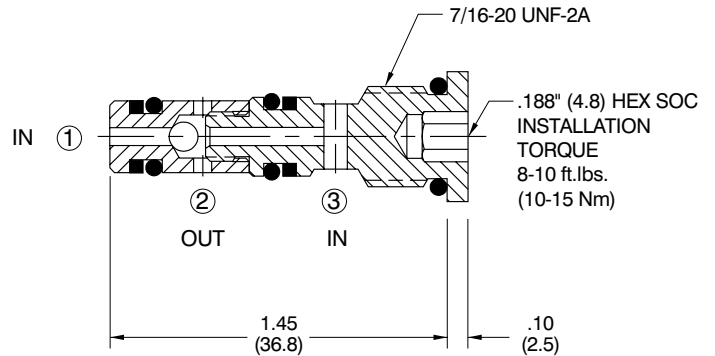
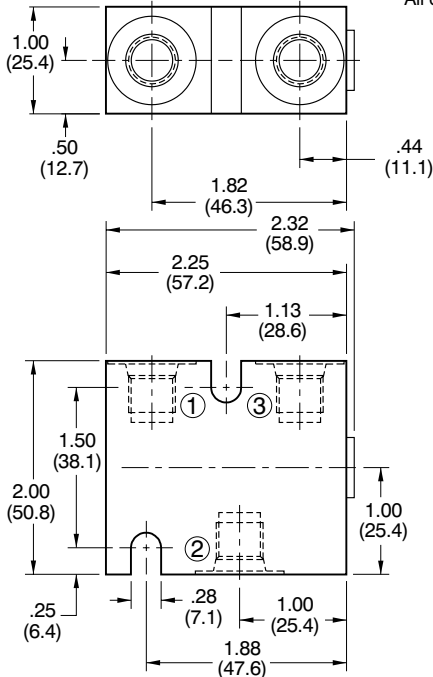
SPECIFICATIONS

- Valve senses the higher of the two input pressures 3 or 1 and routes it to the output port 2.
- Nominal flow: 1.0 gpm (4 l/m).
- Valve rated to 3000 psi (207 bar) working pressure.
- Valve cartridge is *all* steel construction with hardened components to assure good dirt tolerance and extended service life.
- Hi-strength aluminum alloy body allows for maximum circuit design flexibility.
- Buna-N seals are standard. Viton is optional (consult factory for other seal compounds).
- Valve is designed for use with general purpose hydraulic fluids (MIL-H-5606, SAE #10, etc.).
- Cartridge weight .04 lbs (.02 kg).
- Valve cartridge fits Compact Controls [cavity CP4-3](#).

TYPICAL PERFORMANCE



All dimensions in inches (mm)



ORDERING INFORMATION

CP124 - 1 - B - 4S

BASIC CARTRIDGE

SEALS

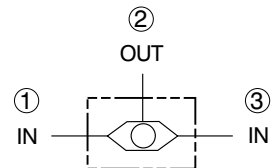
B - BUNA-N
V - VITON

SEAL KIT
120111
120282

PORTS

0 - CARTRIDGE
1P - 1/8 NPTF
2P - 1/4 NPTF
4S - #4 SAE
2B - 1/4 BSP

BODY P/N
NO BODY
220928
221704
220929
221703



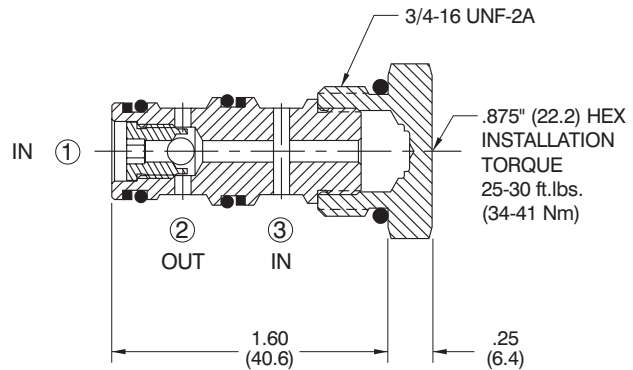
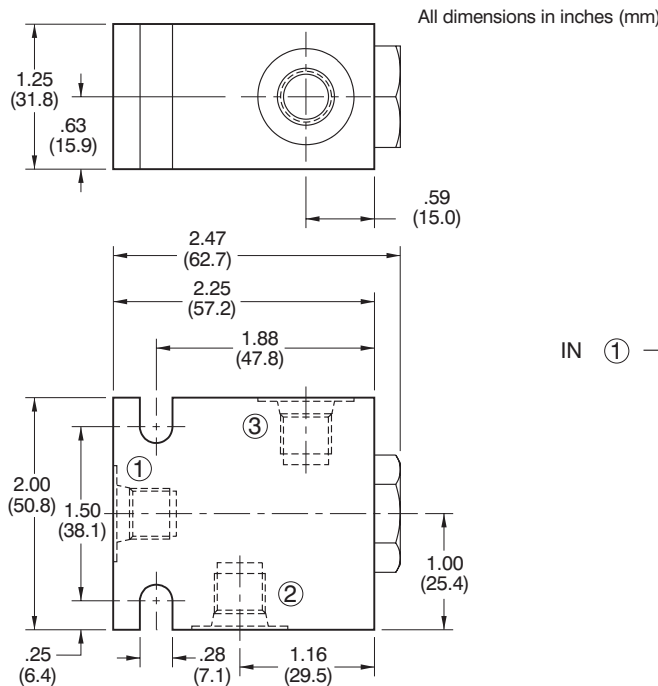
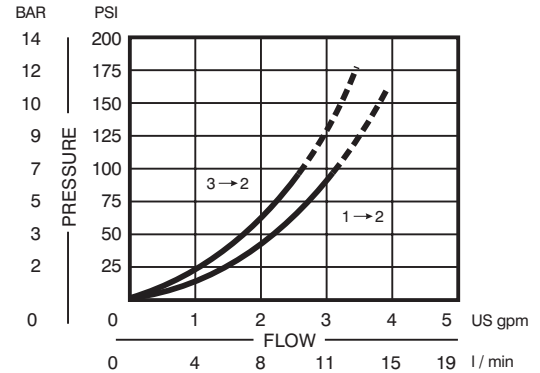
SERIES 8

SPECIFICATIONS

- Valve senses the higher of the two input pressures **3** or **1** and routes it to the output port **2**.
- Nominal flow: 3.0 gpm (11 l/m).
- Valve rated to 3000 psi (207 bar) working pressure.
- Valve cartridge is **all** steel construction with hardened components to assure good dirt tolerance and extended service life.
- Hi-strength aluminum alloy body allows for maximum circuit design flexibility.
- Buna-N seals are standard. Viton is optional (consult factory for other seal compounds).
- Valve is designed for use with general purpose hydraulic fluids (MIL-H-5606, SAE #10, etc.).
- Cartridge weight .14 lbs (.06 kg).
- Valve cartridge fits Compact Controls [cavity CP8-3](#).

TYPICAL PERFORMANCE

154 SUS (33 cSt) HYD. OIL @ 100° F (38° C)



ORDERING INFORMATION

Shaded area represents standard product

CP128 - 1 - B - 4S

BASIC CARTRIDGE

SEALS

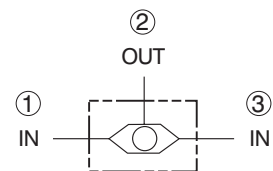
SEAL KIT

B - BUNA-N	120238
V - VITON	120239

PORTS

BODY P/N

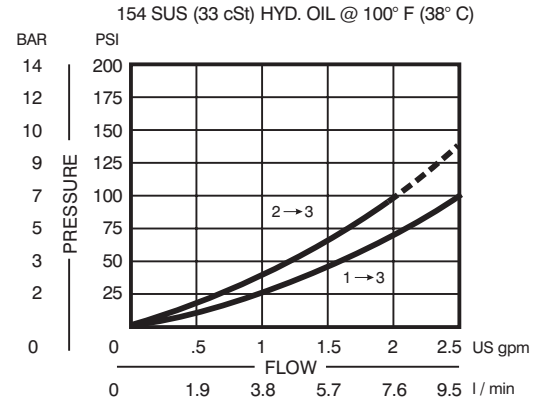
0 - CARTRIDGE	NO BODY
2P - 1/4 NPTF	220819
3P - 3/8 NPTF	220820
4S - #4 SAE	220821
6S - #6 SAE	220822
2B - 1/4 BSP	221288
3B - 3/8 BSP	221287



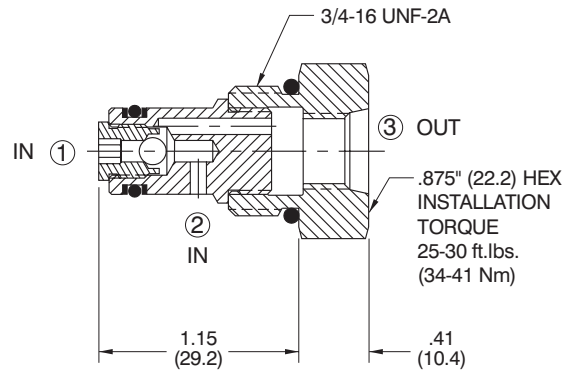
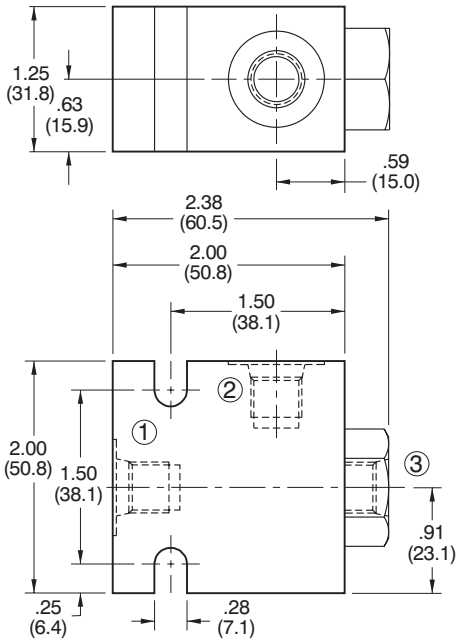
SPECIFICATIONS

- Valve senses the higher of the two input pressures **2** or **1** and routes it to the output port **3**.
- Nominal flow: 2.0 gpm (8 l/m).
- Valve rated to 3000 psi (207 bar) working pressure.
- Valve cartridge is **all** steel construction with hardened components to assure good dirt tolerance and extended service life.
- Hi-strength aluminum alloy body allows for maximum circuit design flexibility.
- Buna-N seals are standard. Viton is optional (consult factory for other seal compounds).
- Valve is designed for use with general purpose hydraulic fluids (MIL-H-5606, SAE #10, etc.).
- Cartridge weight .14 lbs (.06 kg).
- Valve cartridge fits Compact Controls [cavity CP8-2](#).

TYPICAL PERFORMANCE



All dimensions in inches (mm)



2

ORDERING INFORMATION

CP128 - 2 - B - 4S - 4S

BASIC CARTRIDGE

SEALS

- B - BUNA-N
- V - VITON

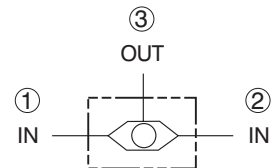
SEAL KIT
120227
120228

OUTPUT PORT

- 4S - #4 SAE
- 2B - 1/4 BSP

PORTS

- | | |
|---------------|-----------------|
| 0 - CARTRIDGE | BODY P/N |
| 2P - 1/4 NPTF | NO BODY |
| 3P - 3/8 NPTF | 220814 |
| 4S - #4 SAE | 220815 |
| 6S - #6 SAE | 220816 |
| 2B - 1/4 BSP | 220817 |
| 3B - 3/8 BSP | 221285 |
| | 221286 |



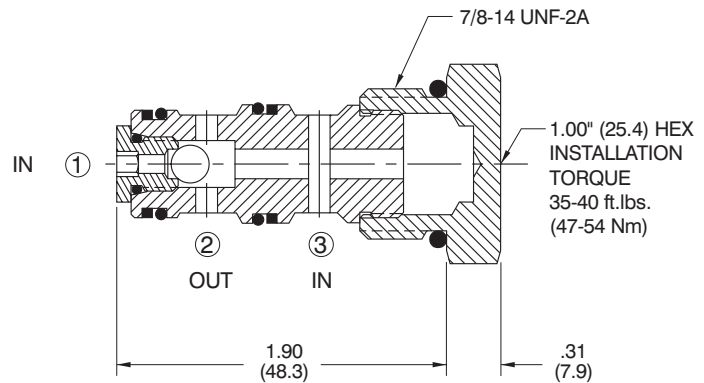
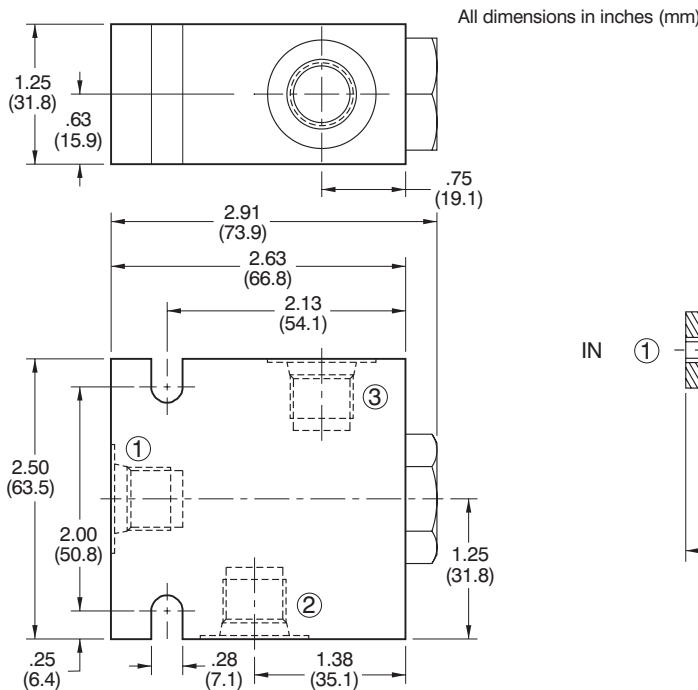
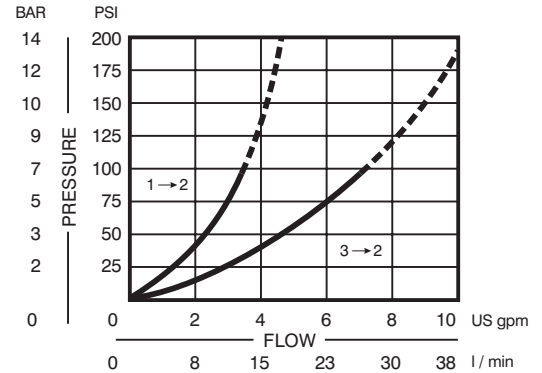
SERIES 10

SPECIFICATIONS

- Valve senses the higher of the two input pressures **3** or **1** and routes it to the output port **2**.
- Nominal flow: 5.0 gpm (19 l/m).
- Valve rated to 3000 psi (207 bar) working pressure.
- Valve cartridge is **all** steel construction with hardened components to assure good dirt tolerance and extended service life.
- Hi-strength aluminum alloy body allows for maximum circuit design flexibility.
- Buna-N seals are standard. Viton is optional (consult factory for other seal compounds).
- Valve is designed for use with general purpose hydraulic fluids (MIL-H-5606, SAE #10, etc.).
- Cartridge weight .17 lbs (.08 kg).
- Valve cartridge fits Compact Controls [cavity CP10-3](#).

TYPICAL PERFORMANCE

154 SUS (33 cSt) HYD. OIL @ 100° F (38° C)



ORDERING INFORMATION

Shaded area represents standard product

CP120 - 1 - B - 8S

BASIC CARTRIDGE

SEALS

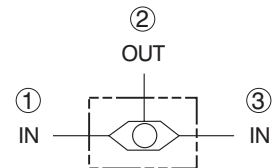
SEAL KIT

B - BUNA-N	120027
V - VITON	120028

PORTS

BODY P/N

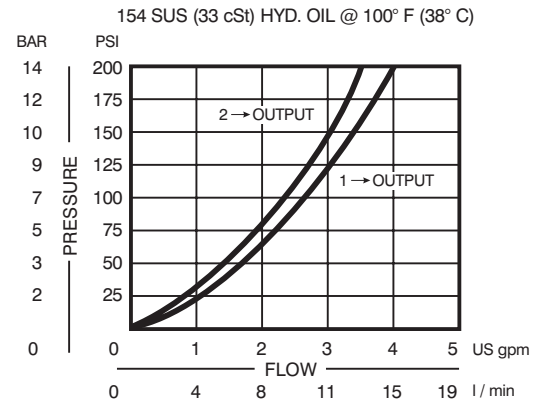
0 - CARTRIDGE	NO BODY
3P - 3/8 NPTF	220203
4P - 1/2 NPTF	220204
6S - #6 SAE	220205
8S - #8 SAE	220206
3B - 3/8 BSP	221297
4B - 1/2 BSP	221267



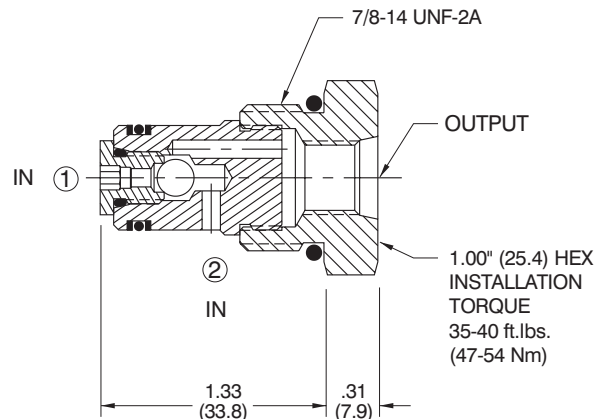
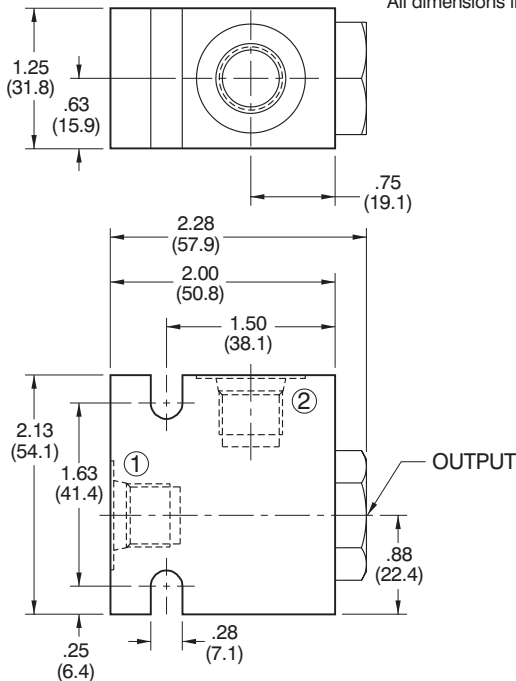
SPECIFICATIONS

- Valve senses the higher of the two input pressures **1** or **2** and routes it to the output port.
- Nominal flow: 5.0 gpm (19 l/m).
- Valve rated to 3000 psi (207 bar) working pressure.
- Valve cartridge is **all** steel construction with hardened components to assure good dirt tolerance and extended service life.
- Hi-strength aluminum alloy body allows for maximum circuit design flexibility.
- Buna-N seals are standard. Viton is optional (consult factory for other seal compounds).
- Valve is designed for use with general purpose hydraulic fluids (MIL-H-5606, SAE #10, etc.).
- Cartridge weight .17 lbs (.08 kg).
- Valve cartridge fits Compact Controls [cavity CP10-2](#).

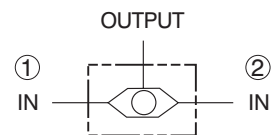
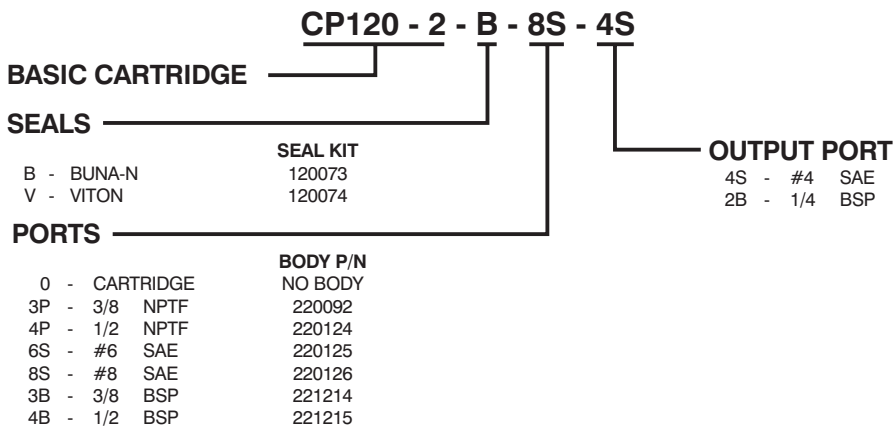
TYPICAL PERFORMANCE



All dimensions in inches (mm)



ORDERING INFORMATION



CP720-3 SHUTTLE VALVE (3 Position 3 Way)



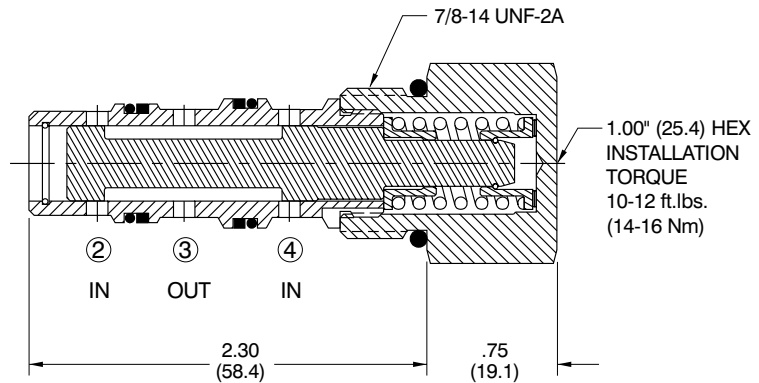
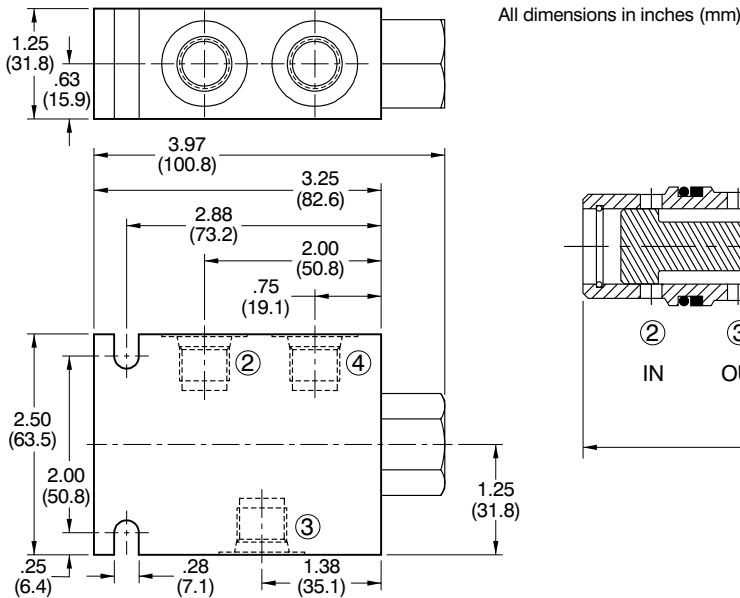
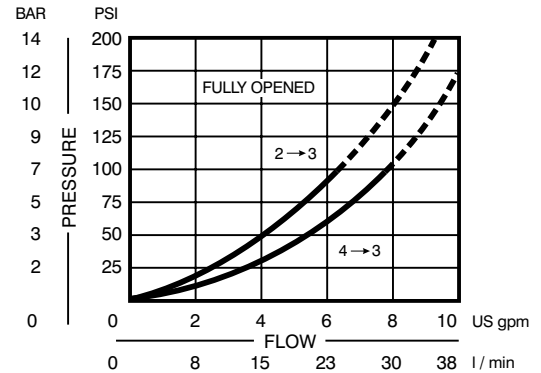
SERIES 10

SPECIFICATIONS

- Valve is typically used to divert fluid from either side of a closed-loop hydrostatic transmission for cooling or filtering. When high pressure is applied to 2, then low pressure is directed from 4 to 3. If high pressure is applied to 4, the low pressure is directed from 2 to 3.
- Nominal flow: 7.0 gpm (26 l/m).
- Valve rated to 5000 psi (345 bar) working pressure.
- Valve leakage: 5 cubic in (82 cc) per min. max. at 3000 psi (207 bar).
- Valve cartridge is *all* steel construction with precision ground, hardened spool and selectively honed, hardened sleeve for extended service life.
- Hi-strength aluminum alloy body allows for maximum circuit design flexibility.
- For pressures above 3000 psi use steel bodies.
- Buna-N seals are standard. Viton is optional (consult factory for other seal compounds).
- Valve is designed for use with general purpose hydraulic fluids (MIL-H-5606, SAE #10, etc.).
- Cartridge weight .34 lbs (.15 kg).
- Valve cartridge fits Compact Controls cavity CP10-4.

TYPICAL PERFORMANCE

154 SUS (33 cSt) HYD. OIL @ 100° F (38° C)



ORDERING INFORMATION

CP720 - 3 - B - 8S - 080 - C

BASIC CARTRIDGE

SEALS

B - BUNA-N
V - VITON

SEAL KIT

120080
120082

SPOOL OVERLAP

O - OPEN
C - CLOSED

PORTS

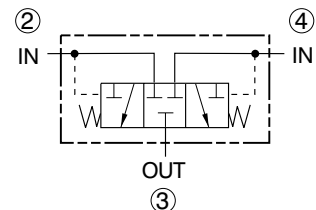
0 - CARTRIDGE
3P - 3/8 NPTF
4P - 1/2 NPTF
6S - #6 SAE
8S - #8 SAE
3B - 3/8 BSP
4B - 1/2 BSP

BODY P/N
NO BODY

220334
220335
220336
220337
221440
221441

SHIFT PRESSURE

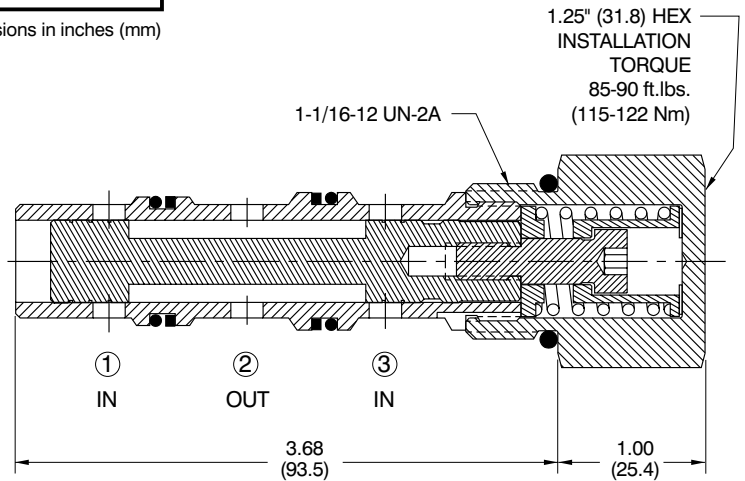
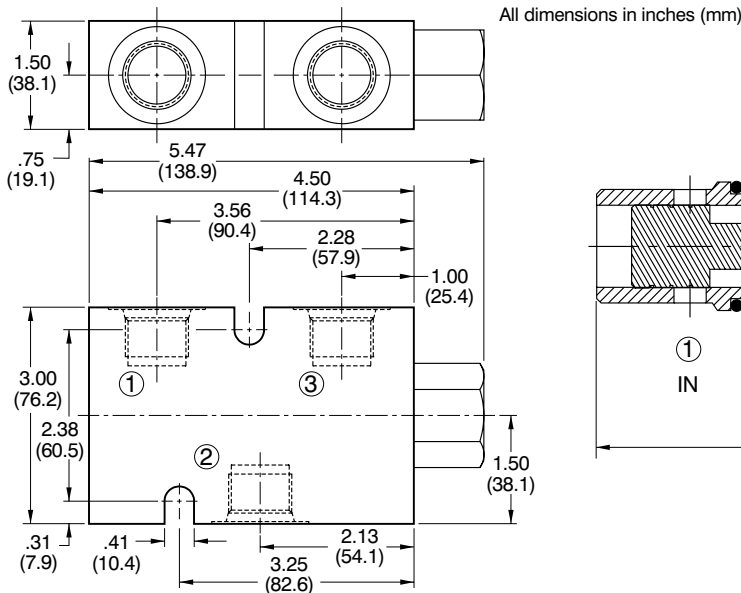
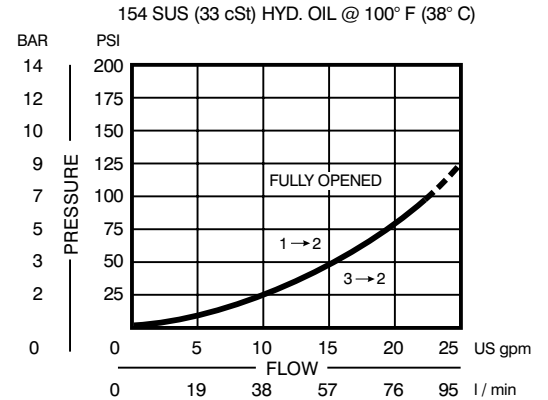
PSI BAR
050 - 50 (3)
080 - 80 (6)



SPECIFICATIONS

- Valve is typically used to divert fluid from either side of a closed-loop hydrostatic transmission for cooling or filtering. When high pressure is applied to 1, then low pressure is directed from 3 to 2. If high pressure is applied to 3, the low pressure is directed from 1 to 2.
- Nominal flow: 20.0 gpm (76 l/m).
- Valve rated to 5000 psi (345 bar) working pressure.
- Valve leakage: 5 cubic in (82 cc) per min. max. at 3000 psi (207 bar).
- Valve cartridge is *all* steel construction with precision ground, hardened spool and selectively honed, hardened sleeve for extended service life.
- Hi-strength aluminum alloy body allows for maximum circuit design flexibility.
- For pressures above 3000 psi use steel bodies.
- Buna-N seals are standard. Viton is optional (consult factory for other seal compounds).
- Valve is designed for use with general purpose hydraulic fluids (MIL-H-5606, SAE #10, etc.).
- Cartridge weight .75 lbs (.34 kg).
- Valve cartridge fits Compact Controls [cavity CP12-3M](#).

TYPICAL PERFORMANCE



ORDERING INFORMATION

Shaded area represents standard product

CP721 - 3 - B - 12S - 100 - C

BASIC CARTRIDGE

SEALS

B - BUNA-N	SEAL KIT 120098
V - VITON	120099

PORTS

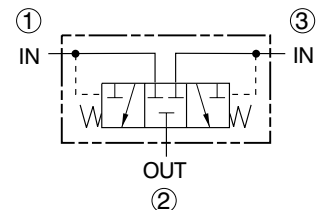
0 - CARTRIDGE	BODY P/N NO BODY
4P - 1/2 NPTF	220762
6P - 3/4 NPTF	220763
10S - #10 SAE	220764
12S - #12 SAE	220765
4B - 1/2 BSP	221344
6B - 3/4 BSP	221345

SPOOL OVERLAP

O - OPEN
C - CLOSED

SHIFT PRESSURE

PSI	BAR
050 - 50	(3)
100 - 100	(7)



RELIEF VALVES

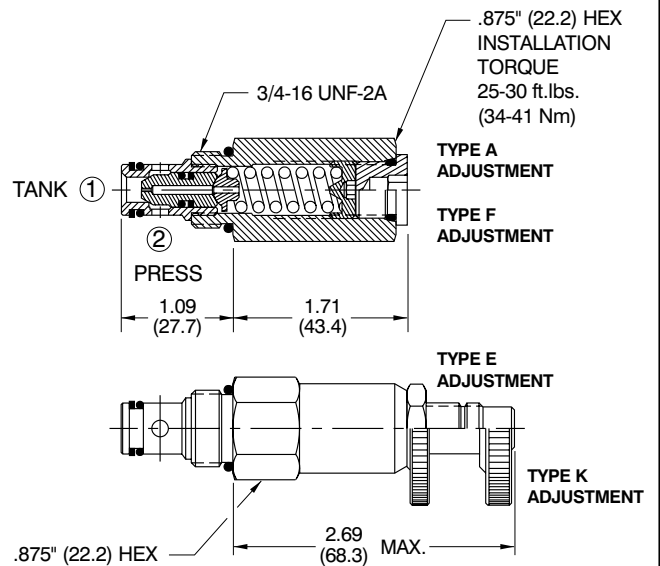
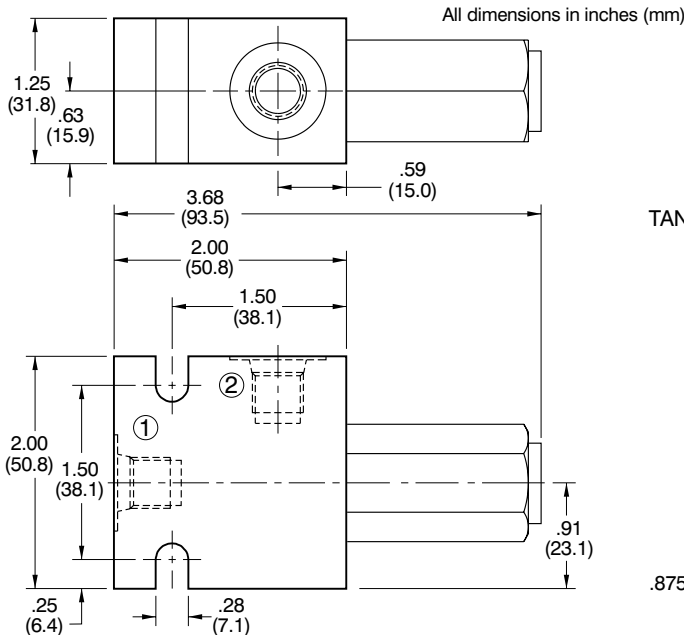
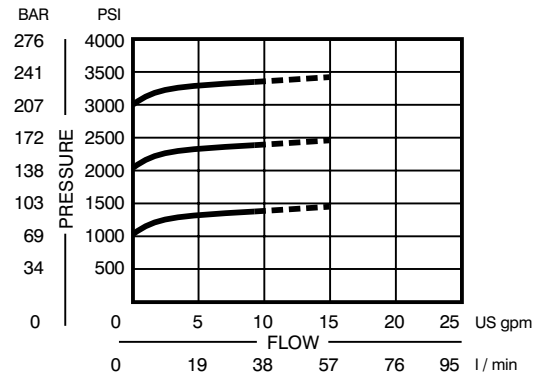
SIZE	DESCRIPTION	FLOW gpm (l/m)	PRESSURE psi (bar)	PAGE
SERIES 8				
CP208-1	DIFFERENTIAL AREA	10 (38)	3000 (207)	3.01
CP208-3	DIRECT ACTING	8 (30)	3000 (207)	3.02
SERIES 10				
CP200-1	DIFFERENTIAL AREA	20 (76)	3000 (207)	3.03
CP200-3	DIRECT ACTING	10 (38)	3000 (207)	3.04
CP200-7	BI-DIRECTIONAL RELIEF	10 (38)	3000 (207)	3.05
CP210-1	DIRECT ACTING SPOOL	12 (45)	3000 (207)	3.06
CP210-2	PILOT OPERATED SPOOL	30 (114)	5000 (345)	3.07
SERIES 12				
CP201-1	DIFFERENTIAL AREA	40 (151)	3000 (207)	3.08
CP211-2	PILOT OPERATED SPOOL	50 (189)	5000 (345)	3.09
INLINE CROSS RELIEF VALVES				
CP220-1	INLINE CROSS RELIEF	20 (76)	3000 (207)	3.10
CP221-1	INLINE CROSS RELIEF	50 (189)	3000 (207)	3.11

SPECIFICATIONS

- This valve relieves from 2 to 1 and is a direct acting differential area poppet type relief. It provides fast response, is rugged, dirt tolerant and has good pressure vs. flow characteristics.
- Nominal flow: 10.0 gpm (38 l/m).
- Valve rated to 3000 psi (207 bar) working pressure.
- Valve leakage: 10 drops per min. max. at 80% of pressure setting.
- Valve cartridge is *all* steel construction with precision ground and hardened components to assure smooth operation and extended service life.
- Hi-strength aluminum alloy body allows for maximum circuit design flexibility.
- Buna-N seals are standard. Viton is optional (consult factory for other seal compounds).
- Valve is designed for use with general purpose hydraulic fluids (MIL-H-5606, SAE #10, etc.).
- Cartridge weight .32 lbs (.15 kg).
- Valve cartridge fits Compact Controls [cavity CP8-2](#).

TYPICAL PERFORMANCE

154 SUS (33 cSt) HYD. OIL @ 100° F (38° C)



ORDERING INFORMATION

Shaded area represents standard product

CP208 - 1 - B - 6S - A - C

BASIC CARTRIDGE

SEALS

	SEAL KIT
B - BUNA-N	120221
V - VITON	120222

PORTS

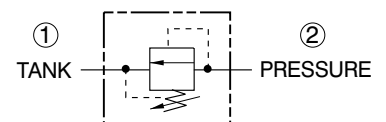
	BODY P/N
0 - CARTRIDGE	NO BODY
2P - 1/4 NPTF	220814
3P - 3/8 NPTF	220815
4S - #4 SAE	220816
6S - #6 SAE	220817
2B - 1/4 BSP	221285
3B - 3/8 BSP	221286

PRESSURE RANGE

	PSI	BAR
A - 100-1000	(7-69)	
Std. Setting	400	(28)
B - 250-2000	(17-138)	
Std. Setting	1000	(69)
C - 600-3600	(41-248)	
Std. Setting	1500	(103)

ADJUSTMENT OPTION

A - INTERNAL ADJUSTMENT
E - EXTERNAL ADJUSTMENT
F - TAMPER RESISTANT
K - KNOB ADJUSTMENT



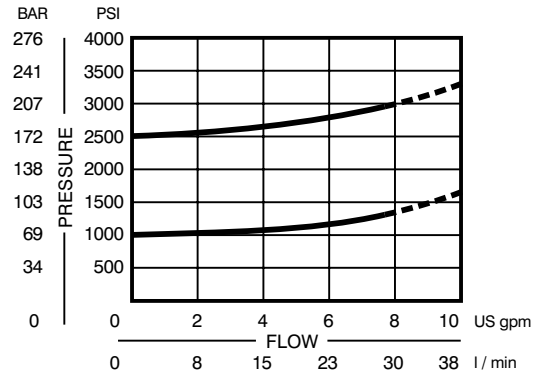
SERIES 8

SPECIFICATIONS

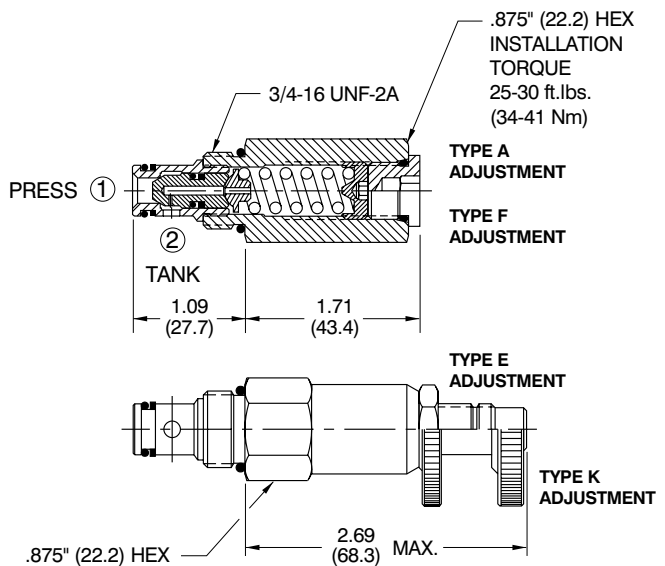
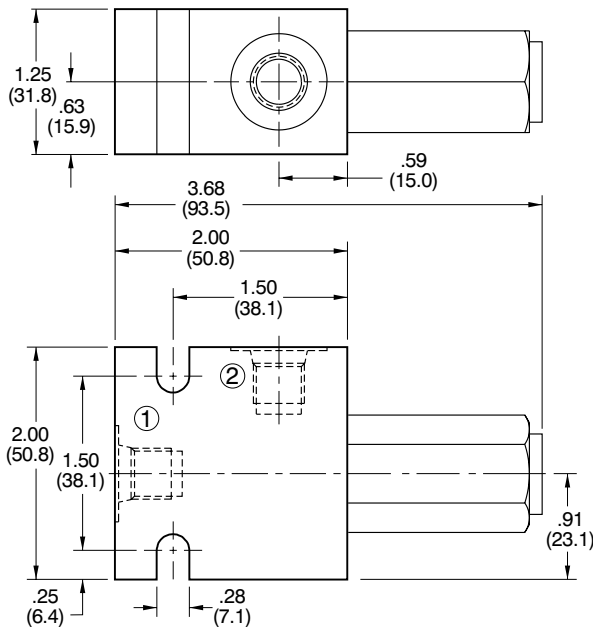
- This valve relieves from 1 to 2 and is a direct acting poppet type relief. It provides fast response, is rugged and dirt tolerant.
- Nominal flow: 8.0 gpm (30 l/m).
- Valve rated to 3000 psi (207 bar) working pressure.
- Valve leakage: 10 drops per min. max. at 80% of pressure setting.
- Valve cartridge is *all* steel construction with precision ground and hardened components to assure smooth operation and extended service life.
- Hi-strength aluminum alloy body allows for maximum circuit design flexibility.
- Buna-N seals are standard. Viton is optional (consult factory for other seal compounds).
- Valve is designed for use with general purpose hydraulic fluids (MIL-H-5606, SAE #10, etc.).
- Cartridge weight .32 lbs (.15 kg).
- Valve cartridge fits Compact Controls [cavity CP8-2](#).

TYPICAL PERFORMANCE

154 SUS (33 cSt) HYD. OIL @ 100° F (38° C)



All dimensions in inches (mm)



ORDERING INFORMATION

Shaded area represents standard product

CP208 - 3 - B - 6S - A - C

BASIC CARTRIDGE

SEALS

	SEAL KIT
B - BUNA-N	120221
V - VITON	120222

PORTS

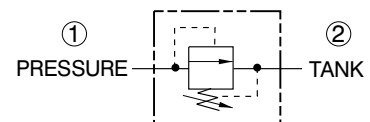
	BODY P/N
0 - CARTRIDGE	NO BODY
2P - 1/4 NPTF	220814
3P - 3/8 NPTF	220815
4S - #4 SAE	220816
6S - #6 SAE	220817
2B - 1/4 BSP	221285
3B - 3/8 BSP	221286

PRESSURE RANGE

	PSI	BAR
A - 100-1000	(7-69)	
Std. Setting	400	(28)
B - 200-2000	(14-138)	
Std. Setting	1000	(69)
C - 600-3000	(41-207)	
Std. Setting	1500	(103)

ADJUSTMENT OPTION

- A - INTERNAL ADJUSTMENT
- E - EXTERNAL ADJUSTMENT
- F - TAMPER RESISTANT
- K - KNOB ADJUSTMENT

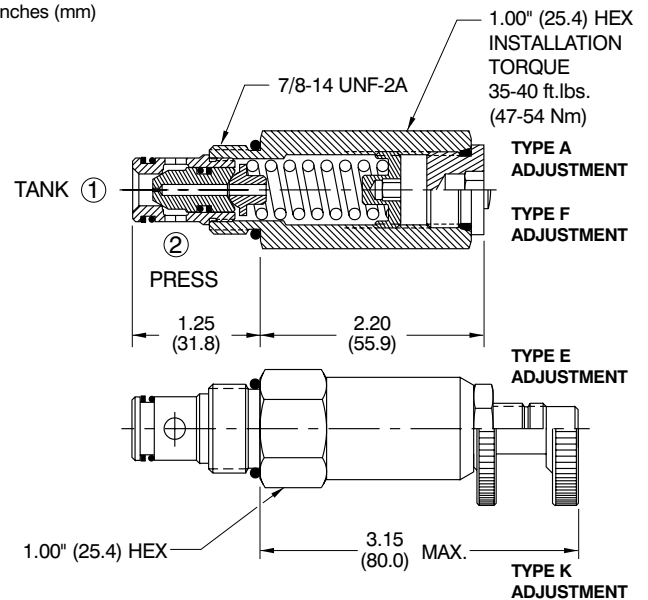
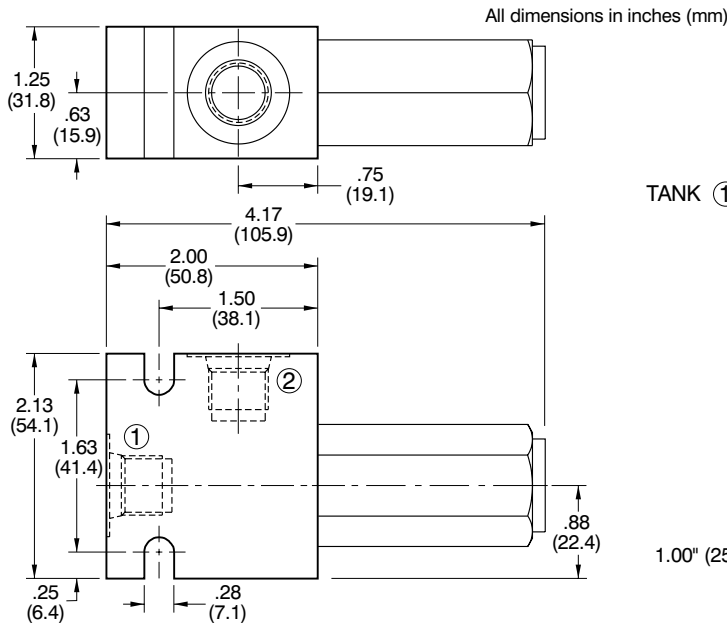
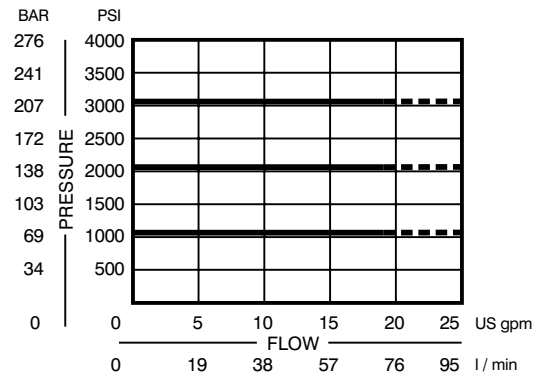


SPECIFICATIONS

- This valve relieves from 2 to 1 and is a direct acting differential area poppet type relief. It provides fast response, is rugged, dirt tolerant and has excellent pressure vs. flow characteristics.
- Nominal flow: 20.0 gpm (76 l/m).
- Valve rated to 3000 psi (207 bar) working pressure.
- Valve leakage: 10 drops per min. max. at 80% of pressure setting.
- Valve cartridge is *all* steel construction with precision ground and hardened components to assure smooth operation and extended service life.
- Hi-strength aluminum alloy body allows for maximum circuit design flexibility.
- Buna-N seals are standard. Viton is optional (consult factory for other seal compounds).
- Valve is designed for use with general purpose hydraulic fluids (MIL-H-5606, SAE #10, etc.).
- Cartridge weight .47 lbs (.21 kg).
- Valve cartridge fits Compact Controls cavity CP10-2.

TYPICAL PERFORMANCE

154 SUS (33 cSt) HYD. OIL @ 100° F (38° C)



ORDERING INFORMATION

Shaded area represents standard product

CP200 - 1 - B - 8S - A - C

BASIC CARTRIDGE

SEALS

	SEAL KIT
B - BUNA-N	120015
V - VITON	120016

PORTS

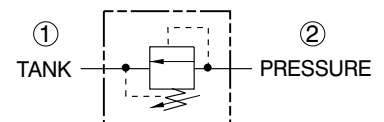
	BODY P/N
0 - CARTRIDGE	NO BODY
3P - 3/8 NPTF	220092
4P - 1/2 NPTF	220124
6S - #6 SAE	220125
8S - #8 SAE	220126
3B - 3/8 BSP	221214
4B - 1/2 BSP	221215

PRESSURE RANGE

	PSI	BAR
A - 100-800	(7-55)	
Std. Setting	400	(28)
B - 250-2000	(17-138)	
Std. Setting	1000	(69)
C - 600-3600	(41-248)	
Std. Setting	1500	(103)

ADJUSTMENT OPTION

A - INTERNAL ADJUSTMENT
E - EXTERNAL ADJUSTMENT
F - TAMPER RESISTANT
K - KNOB ADJUSTMENT



CP200-3 RELIEF VALVE (Direct Acting Type)



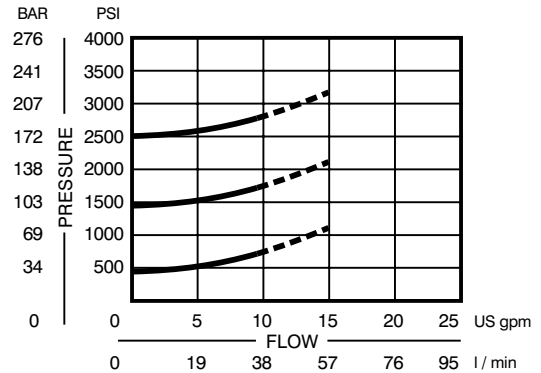
SERIES 10

SPECIFICATIONS

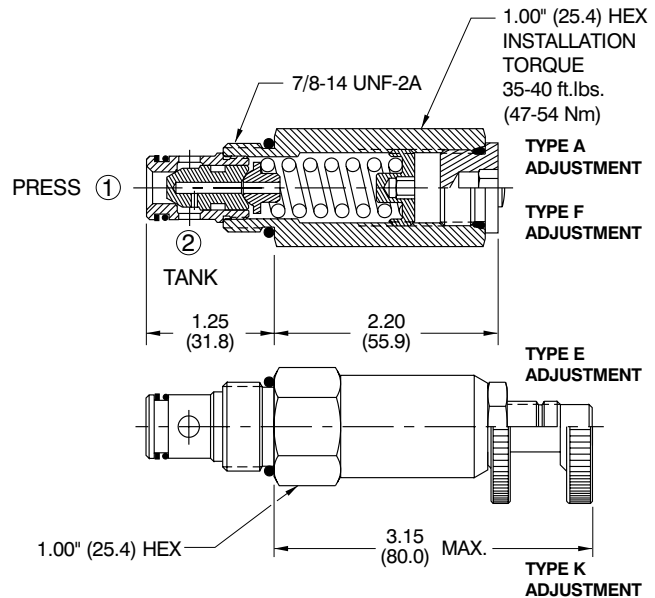
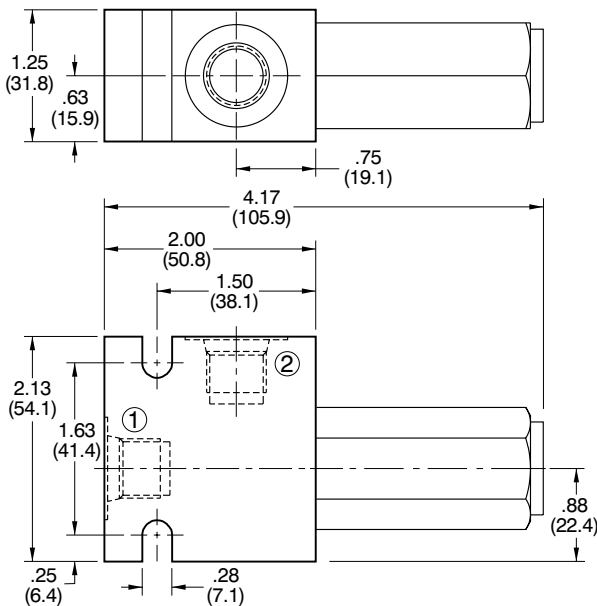
- This valve relieves from 1 to 2 and is a direct acting poppet type relief. It provides fast response, is rugged and dirt tolerant.
- Nominal flow: 10.0 gpm (38 l/m).
- Valve rated to 3000 psi (207 bar) working pressure.
- Valve leakage: 10 drops per min. max. at 80% of pressure setting.
- Valve cartridge is *all* steel construction with precision ground and hardened components to assure smooth operation and extended service life.
- Hi-strength aluminum alloy body allows for maximum circuit design flexibility.
- Buna-N seals are standard. Viton is optional (consult factory for other seal compounds).
- Valve is designed for use with general purpose hydraulic fluids (MIL-H-5606, SAE #10, etc.).
- Cartridge weight .52 lbs (.24 kg).
- Valve cartridge fits Compact Controls [cavity CP10-2](#).

TYPICAL PERFORMANCE

154 SUS (33 cSt) HYD. OIL @ 100° F (38° C)



All dimensions in inches (mm)



ORDERING INFORMATION

Shaded area represents standard product

CP200 - 3 - B - 8S - A - C

BASIC CARTRIDGE

SEALS

	SEAL KIT
B - BUNA-N	120015
V - VITON	120016

PORTS

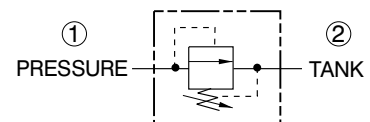
	BODY P/N
0 - CARTRIDGE	NO BODY
3P - 3/8 NPTF	220092
4P - 1/2 NPTF	220124
6S - #6 SAE	220125
8S - #8 SAE	220126
3B - 3/8 BSP	221214
4B - 1/2 BSP	221215

PRESSURE RANGE

	PSI	BAR
A - 100-800	(7-55)	
Std. Setting	400	(28)
B - 250-2000	(17-138)	
Std. Setting	1000	(69)
C - 600-3600	(41-248)	
Std. Setting	1500	(103)

ADJUSTMENT OPTION

A - INTERNAL ADJUSTMENT
E - EXTERNAL ADJUSTMENT
F - TAMPER RESISTANT
K - KNOB ADJUSTMENT

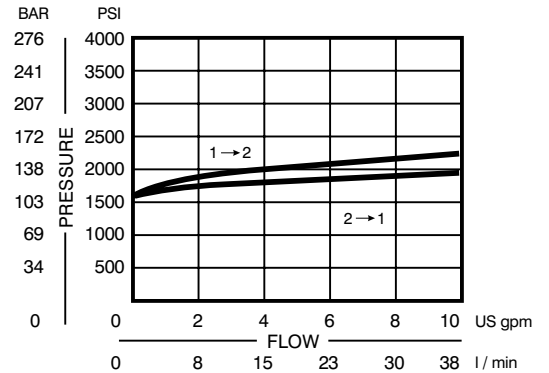


SPECIFICATIONS

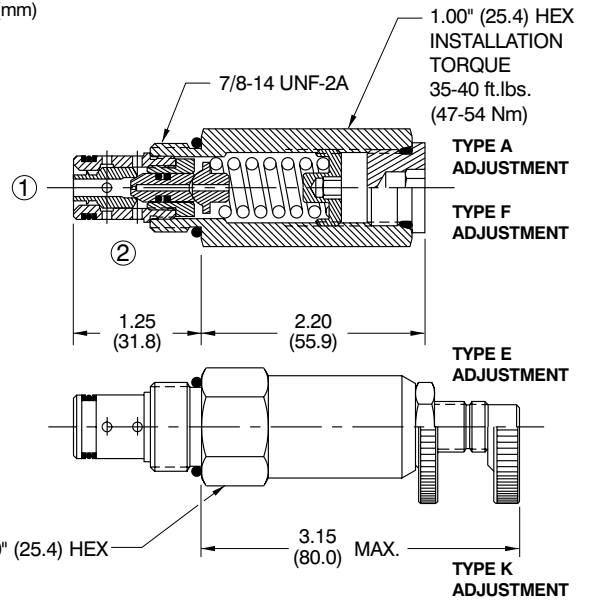
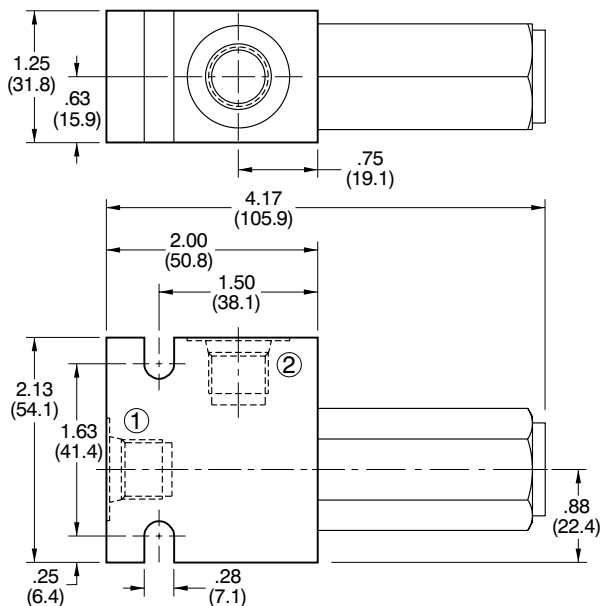
- This valve relieves from 1 to 2 and 2 to 1 and is a bi-directional poppet type relief. It provides fast response, is rugged, dirt tolerant and has good pressure vs. flow characteristics.
- Nominal flow: 10.0 gpm (38 l/m).
- Valve rated to 3000 psi (207 bar) working pressure.
- Valve leakage: .3 cubic in. (6.0 cc) per min. max. at 80% of pressure setting.
- Valve cartridge is *all* steel construction with precision ground and hardened components to assure smooth operation and extended service life.
- Hi-strength aluminum alloy body allows for maximum circuit design flexibility.
- Buna-N seals are standard. Viton is optional (consult factory for other seal compounds).
- Valve is designed for use with general purpose hydraulic fluids (MIL-H-5606, SAE #10, etc.).
- Cartridge weight .43 lbs (.20 kg).
- Valve cartridge fits Compact Controls cavity CP10-2.

TYPICAL PERFORMANCE

154 SUS (33 cSt) HYD. OIL @ 100° F (38° C)



All dimensions in inches (mm)



ORDERING INFORMATION

Shaded area represents standard product

CP200 - 7 - B - 8S - A - C

BASIC CARTRIDGE

SEALS

	SEAL KIT
B - BUNA-N	120073
V - VITON	120074

PORTS

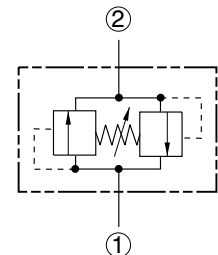
	BODY P/N
0 - CARTRIDGE	NO BODY
3P - 3/8 NPTF	220092
4P - 1/2 NPTF	220124
6S - #6 SAE	220125
8S - #8 SAE	220126
3B - 3/8 BSP	221214
4B - 1/2 BSP	221215

PRESSURE RANGE

	PSI	BAR
A - 100-600	(7-41)	
Std. Setting	400	(28)
B - 250-2000	(17-138)	
Std. Setting	1000	(69)
C - 600-3600	(41-248)	
Std. Setting	1500	(103)

ADJUSTMENT OPTION

- A - INTERNAL ADJUSTMENT
- E - EXTERNAL ADJUSTMENT
- F - TAMPER RESISTANT
- K - KNOB ADJUSTMENT



CP210-1

RELIEF VALVE

(Direct Acting Spool Type)



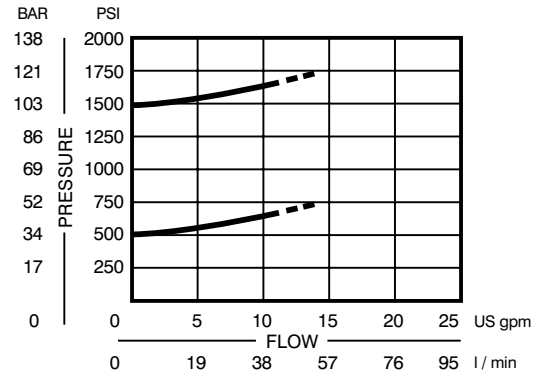
SERIES 10

SPECIFICATIONS

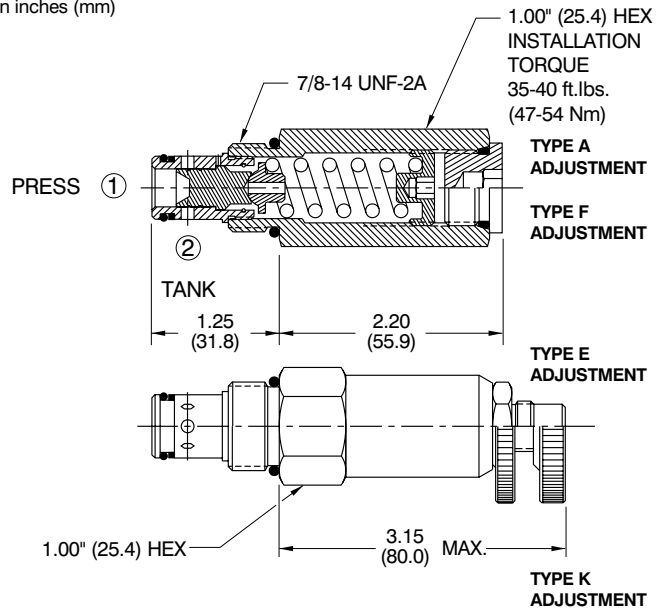
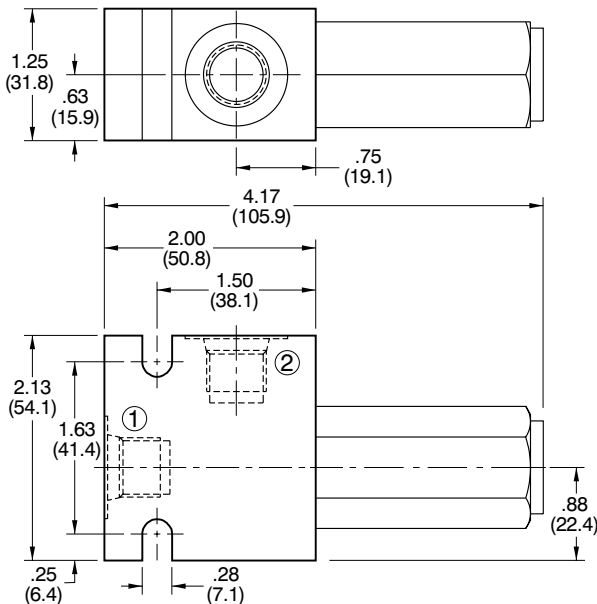
- This valve relieves from 1 to 2 and is a direct acting spool type relief. It provides good response, is rugged and dirt tolerant.
- Nominal flow: 12.0 gpm (45 l/m).
- Valve rated to 3000 psi (207 bar) working pressure.
- Valve leakage: 5 cubic in. (82 cc) per min. max. at 2400 psi (166 bar).
- Valve cartridge is *all* steel construction with precision ground, hardened spool and selectively honed, hardened sleeve to assure low leakage and extended service life.
- Hi-strength aluminum alloy body allows for maximum circuit design flexibility.
- Buna-N seals are standard. Viton is optional (consult factory for other seal compounds).
- Valve is designed for use with general purpose hydraulic fluids (MIL-H-5606, SAE #10, etc.).
- Cartridge weight .48 lbs (.22 kg).
- Valve cartridge fits Compact Controls *cavity* CP10-2.

TYPICAL PERFORMANCE

154 SUS (33 cSt) HYD. OIL @ 100° F (38° C)



All dimensions in inches (mm)



ORDERING INFORMATION

Shaded area represents standard product

CP210 - 1 - B - 8S - A - C

BASIC CARTRIDGE

SEALS

SEAL KIT
B - BUNA-N 120015
V - VITON 120016

PORTS

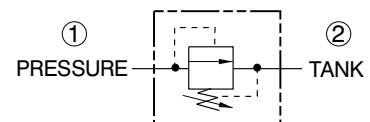
PORTS	BODY P/N
0 - CARTRIDGE	NO BODY
3P - 3/8 NPTF	220092
4P - 1/2 NPTF	220124
6S - #6 SAE	220125
8S - #8 SAE	220126
3B - 3/8 BSP	221214
4B - 1/2 BSP	221215

PRESSURE RANGE

PSI	BAR
A - 50-400	(3-28)
Std. Setting 250	(17)
B - 75-800	(5-55)
Std. Setting 400	(28)
C - 100-1400	(7-97)
Std. Setting 750	(52)
D - 500-2400	(34-166)
Std. Setting 1500	(103)

ADJUSTMENT OPTION

A - INTERNAL ADJUSTMENT
E - EXTERNAL ADJUSTMENT
F - TAMPER RESISTANT
K - KNOB ADJUSTMENT

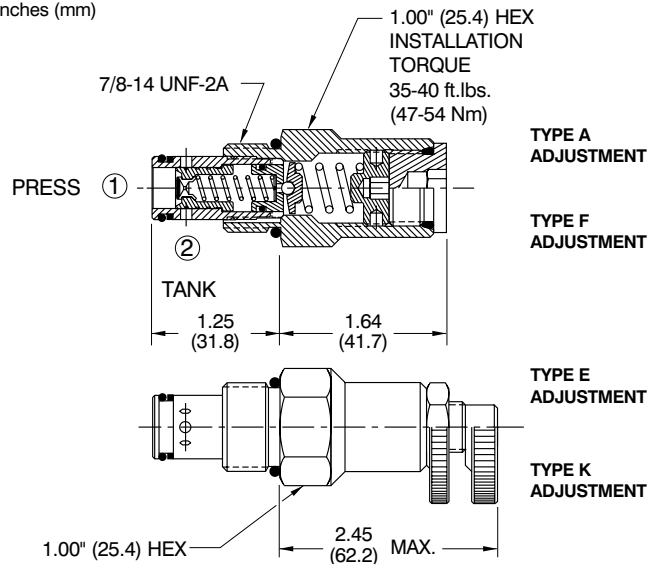
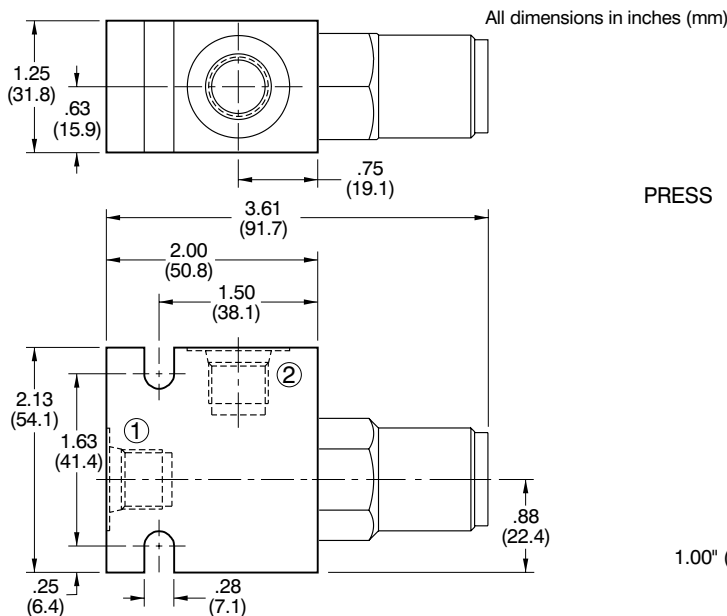
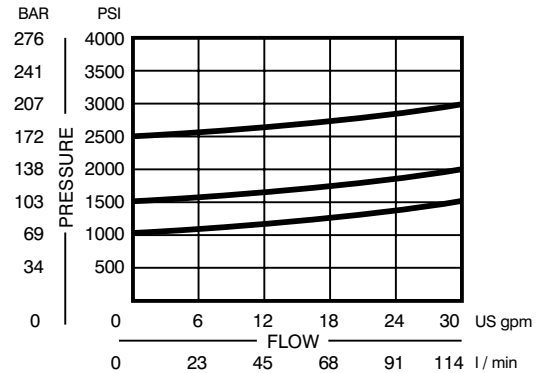


SPECIFICATIONS

- This valve relieves from 1 to 2 and is a pilot operated spool type relief.
- Nominal flow: 30.0 gpm (114 l/m).
- Valve rated to 5000 psi (345 bar) working pressure.
- Valve leakage: 5 cubic in. (82 cc) per min. max. at 3000 psi (207 bar).
- Valve cartridge is *all* steel construction with precision ground, hardened spool and selectively honed, hardened sleeve to assure low leakage and extended service life.
- Hi-strength aluminum alloy body allows for maximum circuit design flexibility.
- For pressures above 3000 psi use steel bodies.
- Buna-N seals are standard. Viton is optional (consult factory for other seal compounds).
- Valve is designed for use with general purpose hydraulic fluids (MIL-H-5606, SAE #10, etc.).
- Cartridge weight .40 lbs (.18 kg).
- Valve cartridge fits Compact Controls cavity CP10-2.

TYPICAL PERFORMANCE

154 SUS (33 cSt) HYD. OIL @ 100° F (38° C)



ORDERING INFORMATION

Shaded area represents standard product

CP210 - 2 - B - 8S - A - C

BASIC CARTRIDGE

SEALS

B - BUNA-N
V - VITON

SEAL KIT

120015
120016

PORTS

0 - CARTRIDGE
3P - 3/8 NPTF
4P - 1/2 NPTF
6S - #6 SAE
8S - #8 SAE
3B - 3/8 BSP
4B - 1/2 BSP

BODY P/N

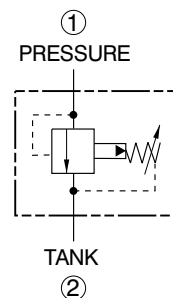
NO BODY
220092
220124
220125
220126
221214
221215

PRESSURE RANGE

	PSI	BAR
A -	50-800	(3-55)
Std. Setting	400	(28)
B -	50-1500	(3-103)
Std. Setting	1000	(69)
C -	150-3000	(10-207)
Std. Setting	1500	(103)
D -	150-5000	(10-345)
Std. Setting	1500	(103)

ADJUSTMENT OPTION

A - INTERNAL ADJUSTMENT
E - EXTERNAL ADJUSTMENT
F - TAMPER RESISTANT
K - KNOB ADJUSTMENT



CP201-1

RELIEF VALVE

(Differential Area Type)



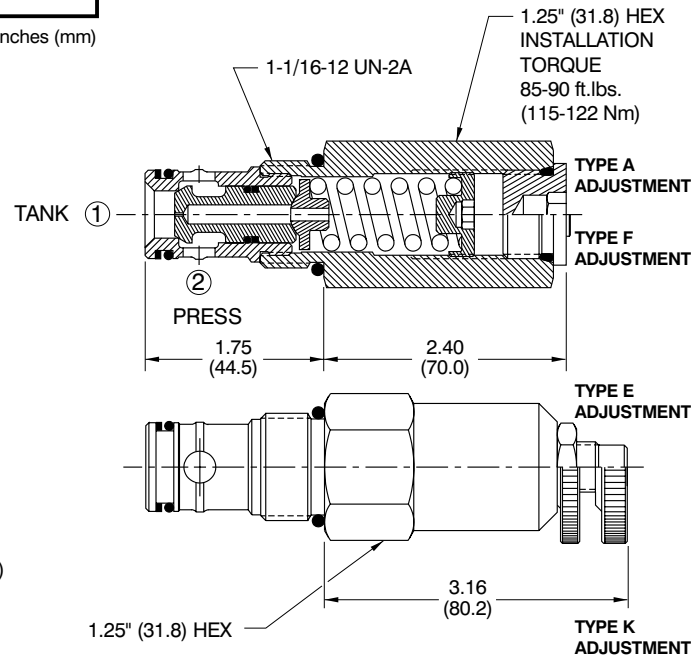
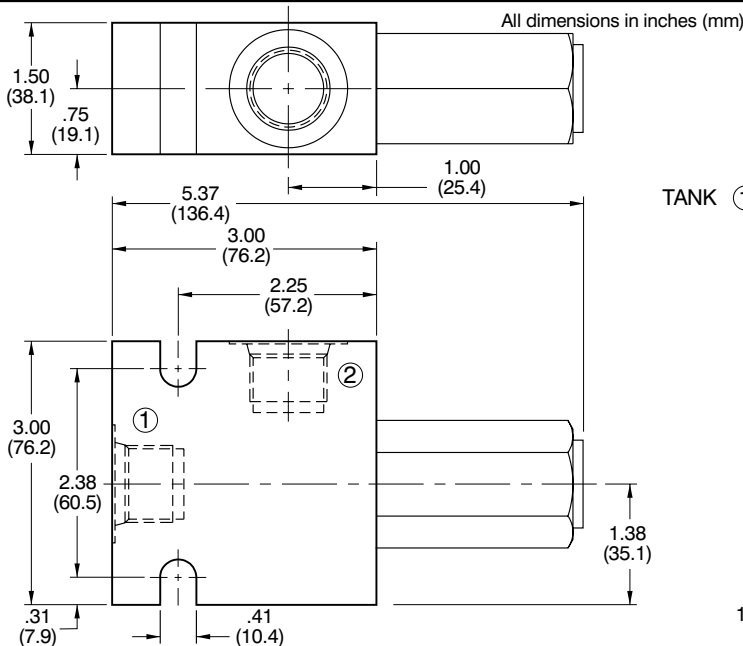
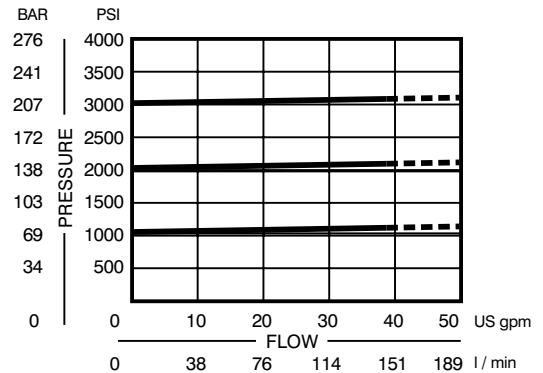
SERIES 12

SPECIFICATIONS

- This valve relieves from 2 to 1 and is a direct acting differential area poppet type relief. It provides fast response, is rugged, dirt tolerant and has excellent pressure vs. flow characteristics.
- Nominal flow: 40.0 gpm (151 l/m).
- Valve rated to 3000 psi (207 bar) working pressure.
- Valve leakage: 10 drops per min. max. at 80% of pressure setting.
- Valve cartridge is *all* steel construction with precision ground and hardened components to assure smooth operation and extended service life.
- Hi-strength aluminum alloy body allows for maximum circuit design flexibility.
- Buna-N seals are standard. Viton is optional (consult factory for other seal compounds).
- Valve is designed for use with general purpose hydraulic fluids (MIL-H-5606, SAE #10, etc.).
- Cartridge weight .92 lbs (.42 kg).
- Valve cartridge fits Compact Controls [cavity CP12-2](#).

TYPICAL PERFORMANCE

154 SUS (33 cSt) HYD. OIL @ 100° F (38° C)



ORDERING INFORMATION

Shaded area represents standard product

CP201 - 1 - B - 12S - A - C

BASIC CARTRIDGE CP201 - 1

SEALS B - BUNA-N
V - VITON

SEAL KIT
120017
120018

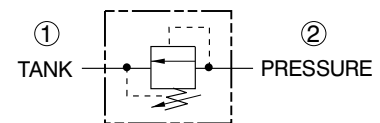
PORTS 10S - #10 SAE
12S - #12 SAE

BODY P/N
NO BODY 220130
1/2 NPTF 220131
3/4 NPTF 220132
#10 SAE 220133
#12 SAE 221234
1/2 BSP 221235
3/4 BSP 221235

PRESSURE RANGE

PSI	BAR
A - 100-1000	(7-69)
Std. Setting 400	(28)
B - 250-2500	(17-172)
Std. Setting 1000	(69)
C - 600-3000	(41-207)
Std. Setting 1500	(103)

ADJUSTMENT OPTION
A - INTERNAL ADJUSTMENT
E - EXTERNAL ADJUSTMENT
F - TAMPER RESISTANT
K - KNOB ADJUSTMENT

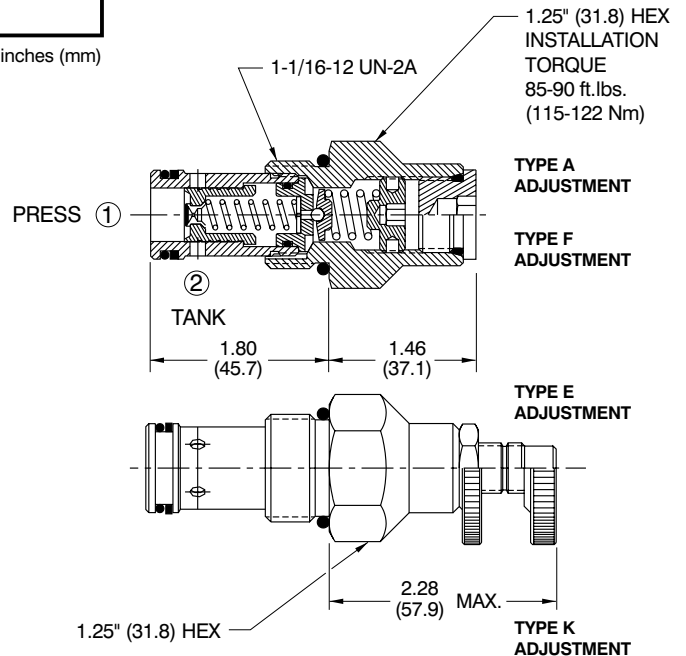
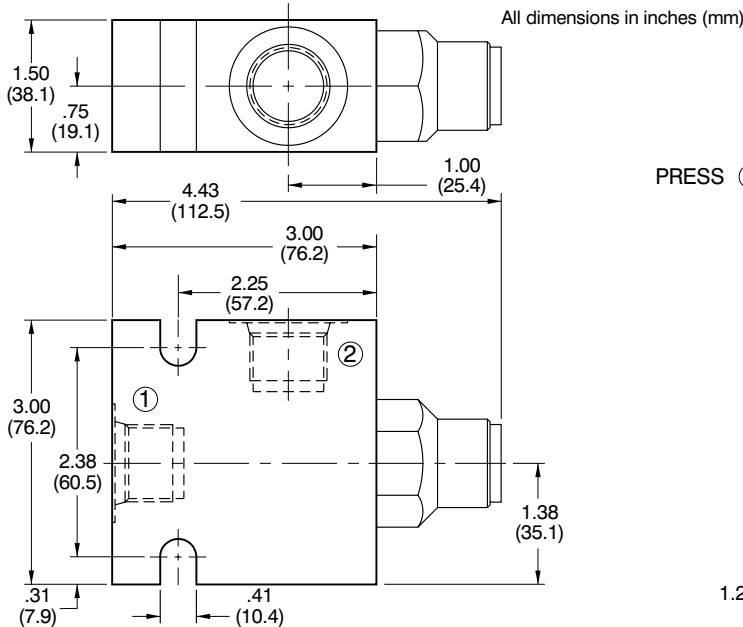
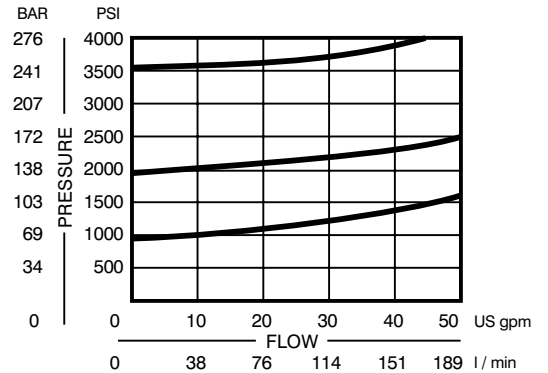


SPECIFICATIONS

- This valve relieves from 1 to 2 and is a pilot operated spool type relief.
- Nominal flow: 50.0 gpm (189 l/m).
- Valve rated to 5000 psi (345 bar) working pressure.
- Valve leakage: 5 cubic in. (82.0 cc) per min. at 3000 psi (207 bar).
- Valve cartridge is *all* steel construction with precision ground, hardened spool and selectively honed, hardened sleeve to assure low leakage and extended service life.
- Hi-strength aluminum alloy body allows for maximum circuit design flexibility.
- For pressures above 3000 psi use steel bodies.
- Buna-N seals are standard. Viton is optional (consult factory for other seal compounds).
- Valve is designed for use with general purpose hydraulic fluids (MIL-H-5606, SAE #10, etc.).
- Cartridge weight .37 lbs (.17 kg).
- Valve cartridge fits Compact Controls [cavity CP12-2](#).

TYPICAL PERFORMANCE

154 SUS (33 cSt) HYD. OIL @ 100° F (38° C)



ORDERING INFORMATION

Shaded area represents standard product

CP211 - 2 - B - 12S - A - C

BASIC CARTRIDGE

SEALS

	SEAL KIT
B - BUNA-N	120017
V - VITON	120018

PORTS

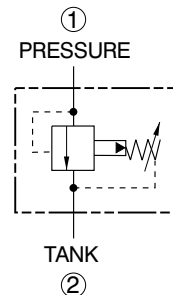
	BODY P/N
0 - CARTRIDGE	NO BODY
4P - 1/2 NPTF	220130
6P - 3/4 NPTF	220131
10S - #10 SAE	220132
12S - #12 SAE	220133
4B - 1/2 BSP	221234
6B - 3/4 BSP	221235

PRESSURE RANGE

	PSI	BAR
A - 50-800	(3-55)	
Std. Setting	400	(28)
B - 50-1500	(3-103)	
Std. Setting	1000	(69)
C - 150-3000	(10-207)	
Std. Setting	1500	(103)
D - 150-5000	(10-345)	
Std. Setting	1500	(103)

ADJUSTMENT OPTION

A - INTERNAL ADJUSTMENT
E - EXTERNAL ADJUSTMENT
F - TAMPER RESISTANT
K - KNOB ADJUSTMENT



CP220-1 RELIEF VALVE (Inline Cross Relief Type)



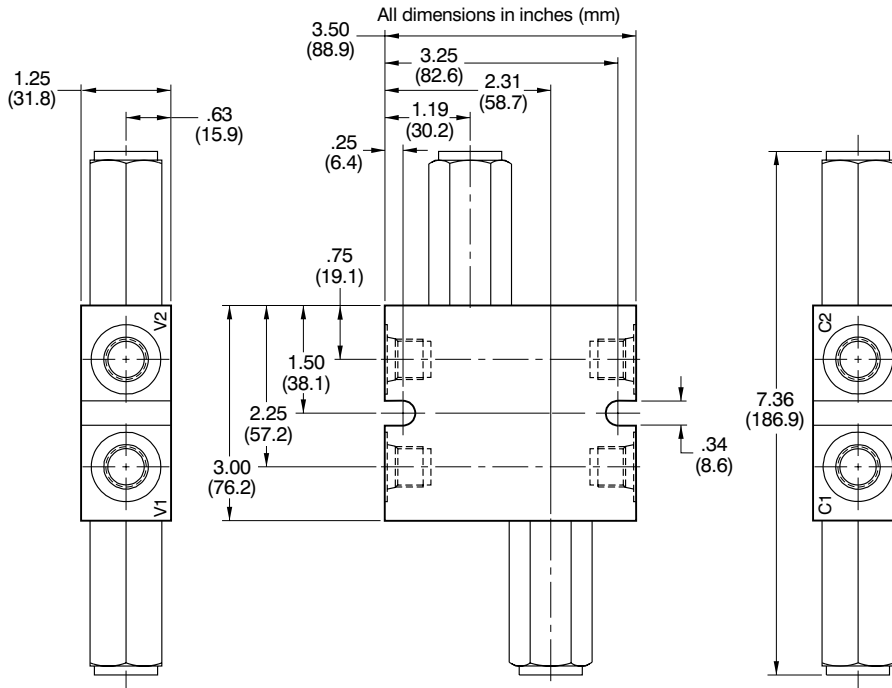
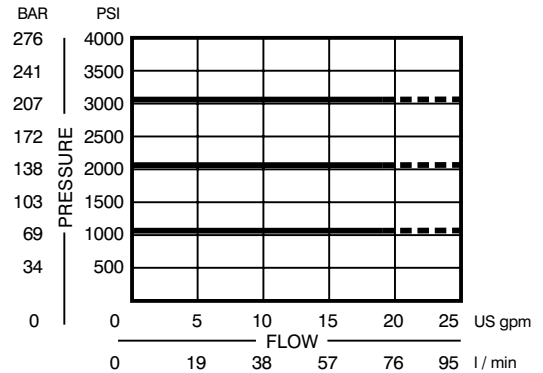
SERIES 10

SPECIFICATIONS

- This valve is an inline cross relief. It utilizes two cartridge type differential area relief valves.
- Nominal flow: 20.0 gpm (76 l/m).
- Valve rated to 3000 psi (207 bar) working pressure.
- Valve cartridge is *all* steel construction with precision ground and hardened components to assure smooth operation and extended service life.
- Hi-strength aluminum alloy body allows for maximum circuit design flexibility.
- Buna-N seals are standard. Viton is optional (consult factory for other seal compounds).
- Valve is designed for use with general purpose hydraulic fluids (MIL-H-5606, SAE #10, etc.).
- Valve weight 1.80 lbs (.82 kg).
- Valve uses two CP200-1 differential area relief valve cartridges.

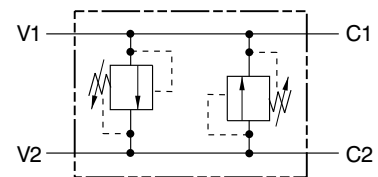
TYPICAL PERFORMANCE

154 SUS (33 cSt) HYD. OIL @ 100° F (38° C)



ORDERING INFORMATION

CP220 - 1 - 8S - B 0 A C		PRESSURE RANGE	
BASIC VALVE		PSI	BAR
PORTS		A - 100-800	(7-55)
BODY P/N		Std. Setting 400	(28)
3P - 3/8 NPTF	220218	B - 250-2000	(17-138)
4P - 1/2 NPTF	220219	Std. Setting 1000	(69)
6S - #6 SAE	220216	C - 600-3600	(41-248)
8S - #8 SAE	220217	Std. Setting 1500	(103)
3B - 3/8 BSP	221743	ADJUSTMENT OPTION	
4B - 1/2 BSP	221744	A - INTERNAL ADJUSTMENT	
SEALS		E - EXTERNAL ADJUSTMENT	
SEAL KIT		F - TAMPER RESISTANT	
B - BUNA-N	120072	K - KNOB ADJUSTMENT	
V - VITON	120161		

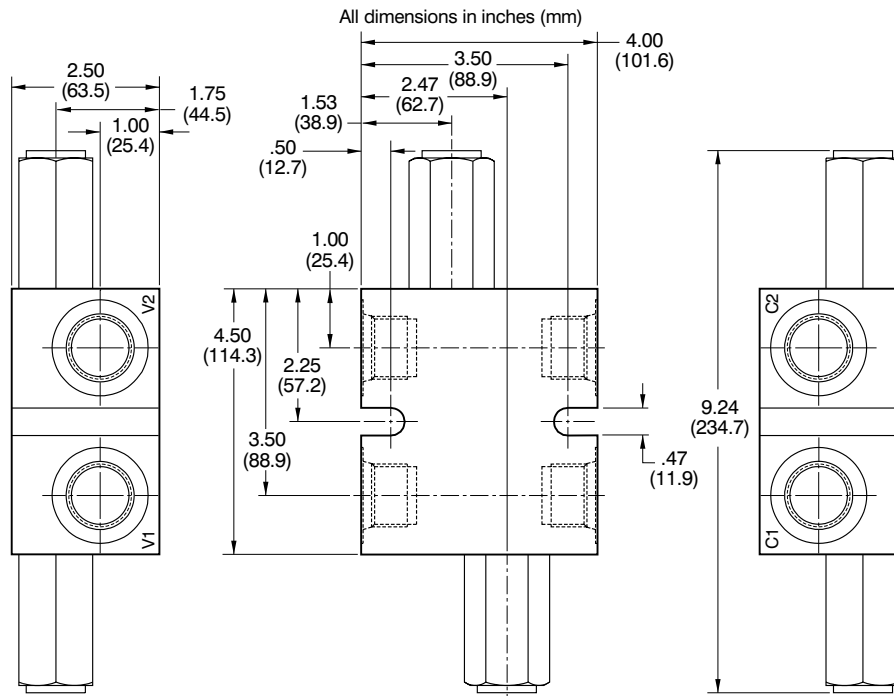
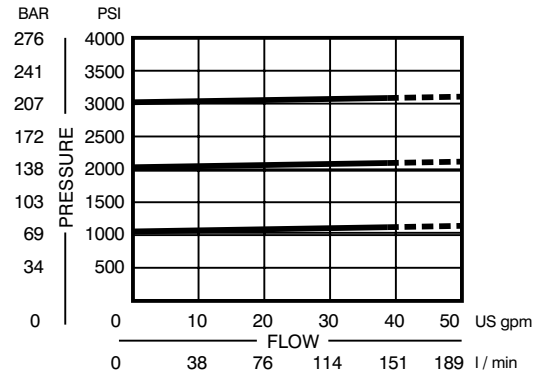


SPECIFICATIONS

- This valve is an inline cross relief. It utilizes two cartridge type differential area relief valves.
- Nominal flow: 50.0 gpm (189 l/m).
- Valve rated to 3000 psi (207 bar) working pressure.
- Valve cartridge is *all* steel construction with precision ground and hardened components to assure smooth operation and extended service life.
- Hi-strength aluminum alloy body allows for maximum circuit design flexibility.
- Buna-N seals are standard. Viton is optional (consult factory for other seal compounds).
- Valve is designed for use with general purpose hydraulic fluids (MIL-H-5606, SAE #10, etc.).
- Valve weight 4.95 lbs (2.2 kg).
- Valve uses two CP201-1 differential area relief valve cartridges.

TYPICAL PERFORMANCE

154 SUS (33 cSt) HYD. OIL @ 100° F (38° C)



ORDERING INFORMATION

CP221 - 1 - 16S - B 0 A C

BASIC VALVE

PORTS

6P	-	3/4	NPTF
8P	-	1"	NPTF
12S	-	#12	SAE
16S	-	#16	SAE
6B	-	3/4	BSP
8B	-	1"	BSP

BODY P/N

220225
220273
220223
220222
221742
221690

SEALS

B	-	BUNA-N
V	-	VITON

SEAL KIT

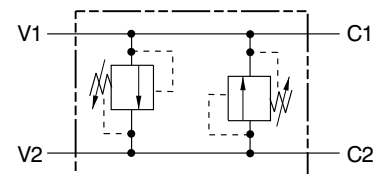
120162
120163

PRESSURE RANGE

	PSI	BAR
A	100-1000	(7-69)
Std. Setting	400	(28)
B	250-2500	(17-172)
Std. Setting	1000	(69)
C	600-3000	(41-207)
Std. Setting	1500	(103)

ADJUSTMENT OPTION

A	-	INTERNAL ADJUSTMENT
E	-	EXTERNAL ADJUSTMENT
F	-	TAMPER RESISTANT
K	-	KNOB ADJUSTMENT



PRESSURE REDUCING VALVES

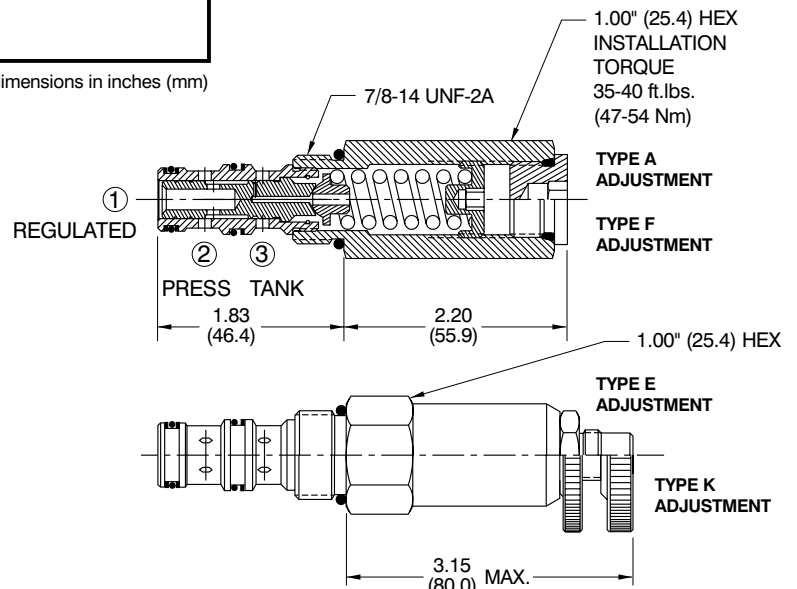
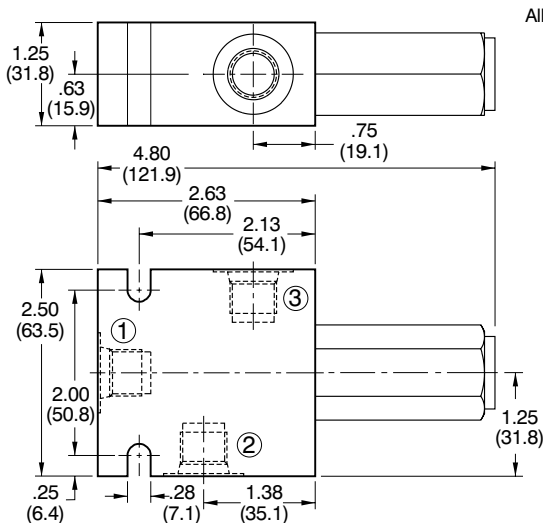
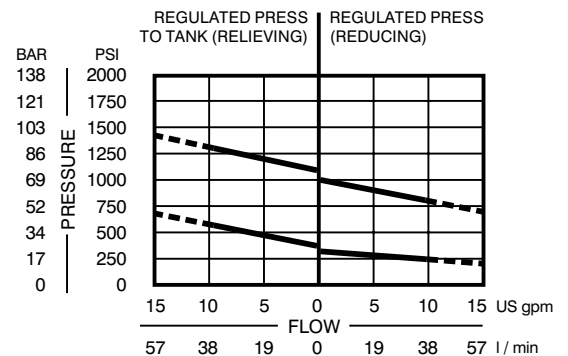
SIZE	DESCRIPTION	FLOW gpm (l/m)	PRESSURE psi (bar)	PAGE
SERIES 10				
CP230-1	DIRECT ACTING REDUCING/RELIEVING	10 (38)	3000 (207)	4.01
CP230-2	DIRECT ACTING NONRELIEVING	10 (38)	3000 (207)	4.02
CP230-3	PILOT OPERATED REDUCING/RELIEVING	10 (38)	5000 (345)	4.03
CP230-4	PILOT OPERATED NONRELIEVING	10 (38)	5000 (345)	4.04

SPECIFICATIONS

- This cartridge is a direct acting, spool type pressure reducing/relieving valve with internal pilot.
- If pressure at 1 exceeds the pressure setting then pressure at 2 is metered off to maintain the regulated setting. If pressure at 1 exceeds the setting then 2 is blocked and 1 is relieved to 3. The valve then performs as a direct acting spool type relief. 3 is vented to tank.
- Nominal flow: 10.0 gpm (38 l/m).
- Valve rated to 3000 psi (207 bar) working pressure.
- Valve is adjustable to 2400 psi (166 bar).
- Valve cartridge is *all* steel construction with precision ground, hardened spool and selectively honed, hardened sleeve to assure low leakage and extended service life.
- Hi-strength aluminum alloy body allows for maximum circuit design flexibility.
- Buna-N seals are standard. Viton is optional (consult factory for other seal compounds).
- Valve is designed for use with general purpose hydraulic fluids (MIL-H-5606, SAE #10, etc.).
- Cartridge weight .51 lbs (.23 kg).
- Valve cartridge fits Compact Controls cavity CP10-3.

TYPICAL PERFORMANCE

154 SUS (33 cSt) HYD. OIL @ 100° F (38° C)



ORDERING INFORMATION

Shaded area represents standard product

CP230 - 1 - B - 6S - A - C

BASIC CARTRIDGE

SEALS

SEAL KIT
B - BUNA-N 120570
V - VITON 120571

PORTS

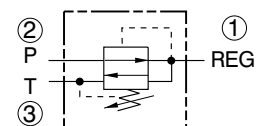
PORTS	BODY P/N
0 - CARTRIDGE	NO BODY
3P - 3/8 NPTF	220203
4P - 1/2 NPTF	220204
6S - #6 SAE	220205
8S - #8 SAE	220206
3B - 3/8 BSP	221297
4B - 1/2 BSP	221267

PRESSURE RANGE

PSI	BAR
A - 50-400	(4-28)
Std. Setting 250	(17)
B - 75-800	(5-55)
Std. Setting 400	(28)
C - 100-1400	(7-97)
Std. Setting 1000	(69)
D - 500-2400	(34-166)
Std. Setting 1500	(103)

ADJUSTMENT OPTION

A - INTERNAL ADJUSTMENT
E - EXTERNAL ADJUSTMENT
F - TAMPER RESISTANT
K - KNOB ADJUSTMENT



CP230-2

PRESSURE REDUCING VALVE (Direct Acting Non-Relieving Type)



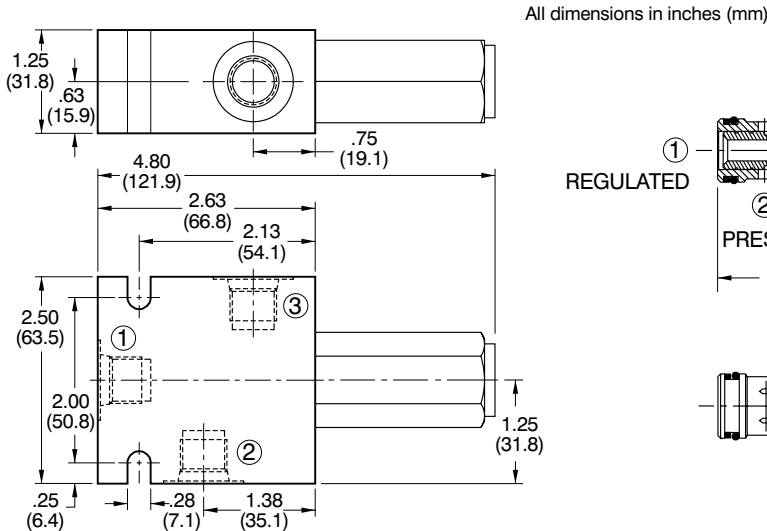
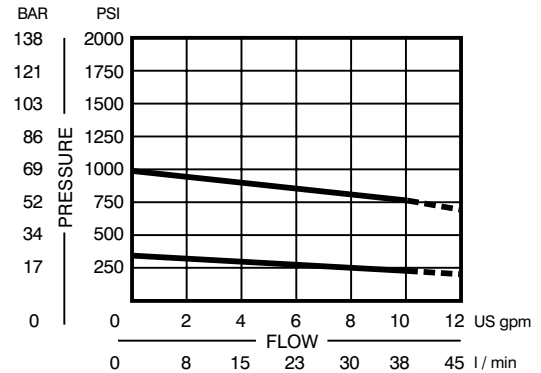
SERIES 10

SPECIFICATIONS

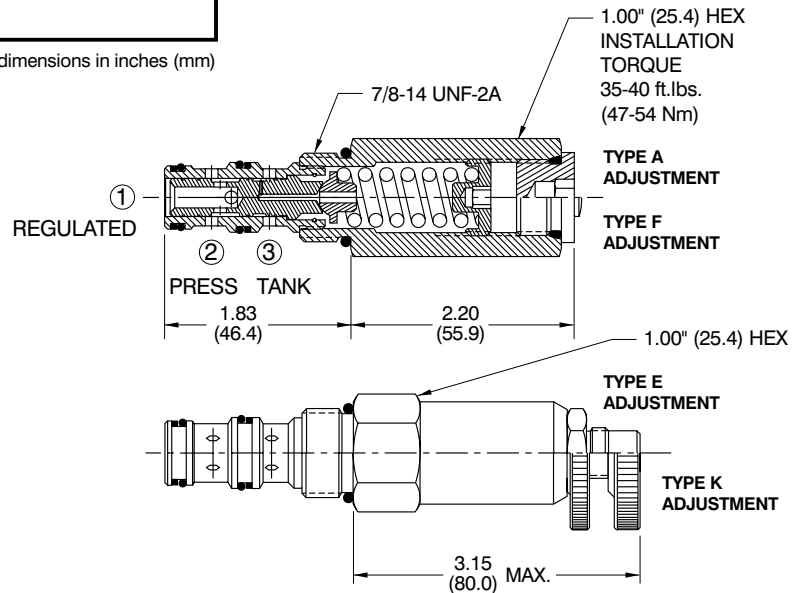
- This cartridge is a direct acting, spool type pressure reducing valve with internal pilot and spring chamber drain.
- If pressure at 1 exceeds the pressure setting then pressure at 2 is metered off to maintain the regulated setting. 3 is vented to tank and is the reference for the regulated pressure at 1.
- Nominal flow: 10.0 gpm (38 l/m).
- Valve rated to 3000 psi (207 bar) working pressure.
- Valve is adjustable to 2400 psi (166 bar).
- Valve cartridge is *all* steel construction with precision ground, hardened spool and selectively honed, hardened sleeve to assure low leakage and extended service life.
- Hi-strength aluminum alloy body allows for maximum circuit design flexibility.
- Buna-N seals are standard. Viton is optional (consult factory for other seal compounds).
- Valve is designed for use with general purpose hydraulic fluids (MIL-H-5606, SAE #10, etc.).
- Cartridge weight .56 lbs (.25 kg).
- Valve cartridge fits Compact Controls cavity CP10-3.

TYPICAL PERFORMANCE

154 SUS (33 cSt) HYD. OIL @ 100° F (38° C)

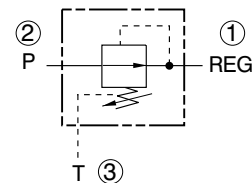


All dimensions in inches (mm)



ORDERING INFORMATION

CP230 - 2 - B - 6S - A - C																				
BASIC CARTRIDGE		PRESSURE RANGE																		
SEALS		<table border="0"> <tr> <td>PSI</td> <td>BAR</td> </tr> <tr> <td>A - 50-400</td> <td>(4-28)</td> </tr> <tr> <td>Std. Setting 250</td> <td>(17)</td> </tr> <tr> <td>B - 75-800</td> <td>(5-55)</td> </tr> <tr> <td>Std. Setting 400</td> <td>(28)</td> </tr> <tr> <td>C - 100-1400</td> <td>(7-97)</td> </tr> <tr> <td>Std. Setting 1000</td> <td>(69)</td> </tr> <tr> <td>D - 500-2400</td> <td>(34-166)</td> </tr> <tr> <td>Std. Setting 1500</td> <td>(103)</td> </tr> </table>	PSI	BAR	A - 50-400	(4-28)	Std. Setting 250	(17)	B - 75-800	(5-55)	Std. Setting 400	(28)	C - 100-1400	(7-97)	Std. Setting 1000	(69)	D - 500-2400	(34-166)	Std. Setting 1500	(103)
PSI	BAR																			
A - 50-400	(4-28)																			
Std. Setting 250	(17)																			
B - 75-800	(5-55)																			
Std. Setting 400	(28)																			
C - 100-1400	(7-97)																			
Std. Setting 1000	(69)																			
D - 500-2400	(34-166)																			
Std. Setting 1500	(103)																			
SEAL KIT		ADJUSTMENT OPTION																		
B - BUNA-N	120027	A - INTERNAL ADJUSTMENT																		
V - VITON	120028	E - EXTERNAL ADJUSTMENT																		
PORTS		F - TAMPER RESISTANT																		
0 - CARTRIDGE	BODY P/N	K - KNOB ADJUSTMENT																		
3P - 3/8 NPTF	NO BODY																			
4P - 1/2 NPTF	220203																			
6S - #6 SAE	220204																			
8S - #8 SAE	220205																			
3B - 3/8 BSP	220206																			
4B - 1/2 BSP	221297																			
	221267																			

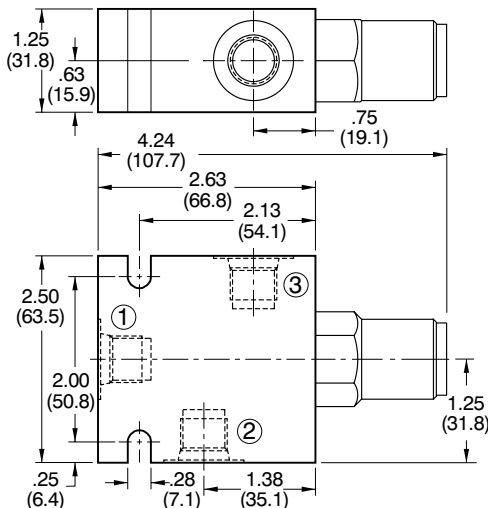
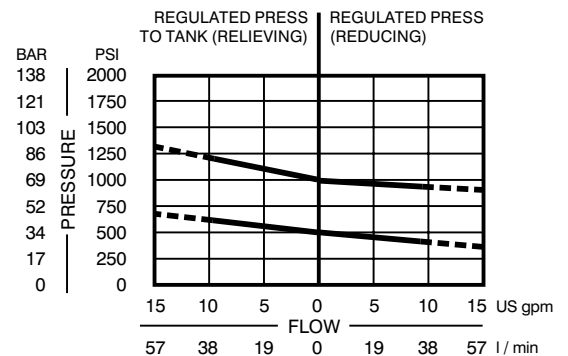


SPECIFICATIONS

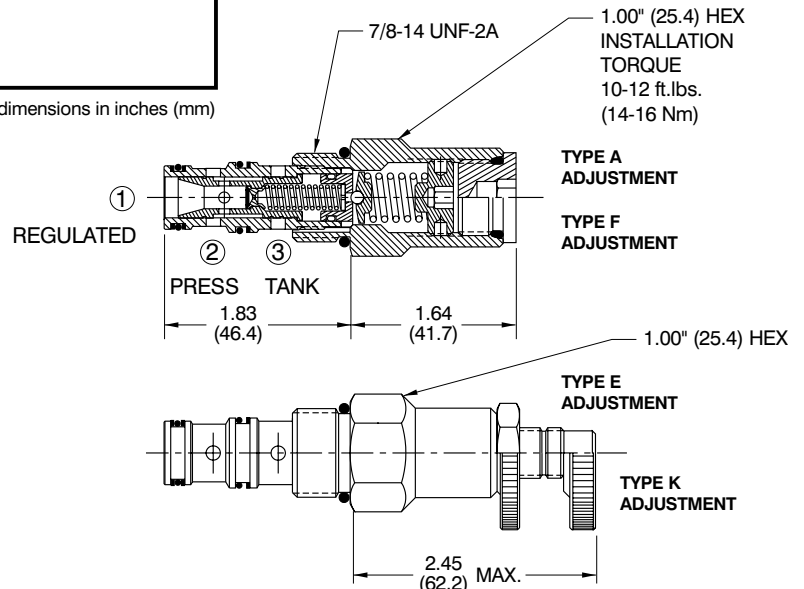
- This cartridge is a pilot operated, spool type pressure reducing/relieving valve.
- If pressure at 1 exceeds the pressure setting then pressure at 2 is metered off to maintain the regulated setting. If pressure at 1 exceeds the setting then 2 is blocked and 1 is relieved to 3. The valve then performs as a pilot operated spool type relief. 3 is vented to tank.
- Nominal flow: 10.0 gpm (38 l/m).
- Valve rated to 5000 psi (345 bar) working pressure.
- Valve is adjustable to 5000 psi (345 bar).
- Valve cartridge is *all* steel construction with precision ground, hardened spool and selectively honed, hardened sleeve to assure low leakage and extended service life.
- Hi-strength aluminum alloy body allows for maximum circuit design flexibility.
- For pressures above 3000 psi use steel bodies.
- Buna-N seals are standard. Viton is optional (consult factory for other seal compounds).
- Valve is designed for use with general purpose hydraulic fluids (MIL-H-5606, SAE #10, etc.).
- Cartridge weight .43 lbs (.20 kg).
- Valve cartridge fits Compact Controls cavity CP10-3.

TYPICAL PERFORMANCE

154 SUS (33 cSt) HYD. OIL @ 100° F (38° C)



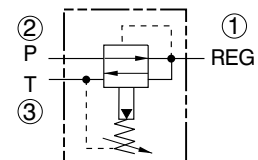
All dimensions in inches (mm)



ORDERING INFORMATION

CP230 - 3 - B - 6S - A - C

BASIC CARTRIDGE	SEAL KIT	SEALS	PORTS	BODY P/N	PRESSURE RANGE
B - BUNA-N	120570		0 - CARTRIDGE	NO BODY	PSI BAR
V - VITON	120571		3P - 3/8 NPTF	220203	A - 50-800 (3-55)
			4P - 1/2 NPTF	220204	Std. Setting 400 (28)
			6S - #6 SAE	220205	B - 50-1500 (3-103)
			8S - #8 SAE	220206	Std. Setting 1000 (69)
			3B - 3/8 BSP	221297	C - 150-3000 (10-207)
			4B - 1/2 BSP	221267	Std. Setting 1500 (103)
					D - 150-5000 (10-345)
					Std. Setting 1500 (103)
					ADJUSTMENT OPTION
					A - INTERNAL ADJUSTMENT
					E - EXTERNAL ADJUSTMENT
					F - TAMPER RESISTANT
					K - KNOB ADJUSTMENT



CP230-4

PRESSURE REDUCING VALVE (Pilot Operated Non-Relieving Type)



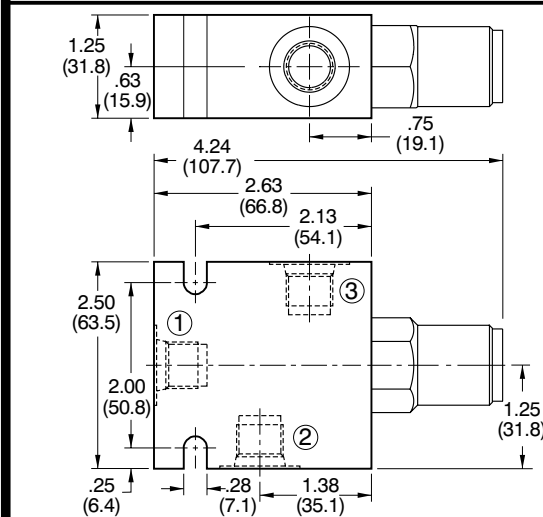
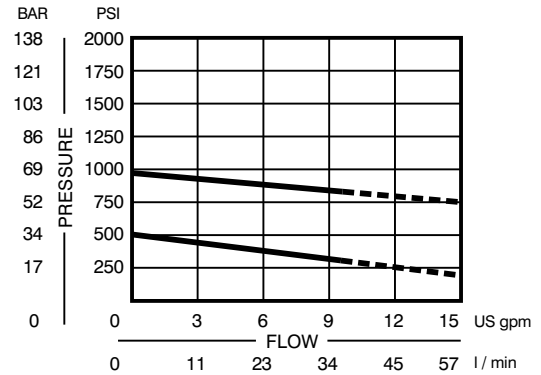
SERIES 10

SPECIFICATIONS

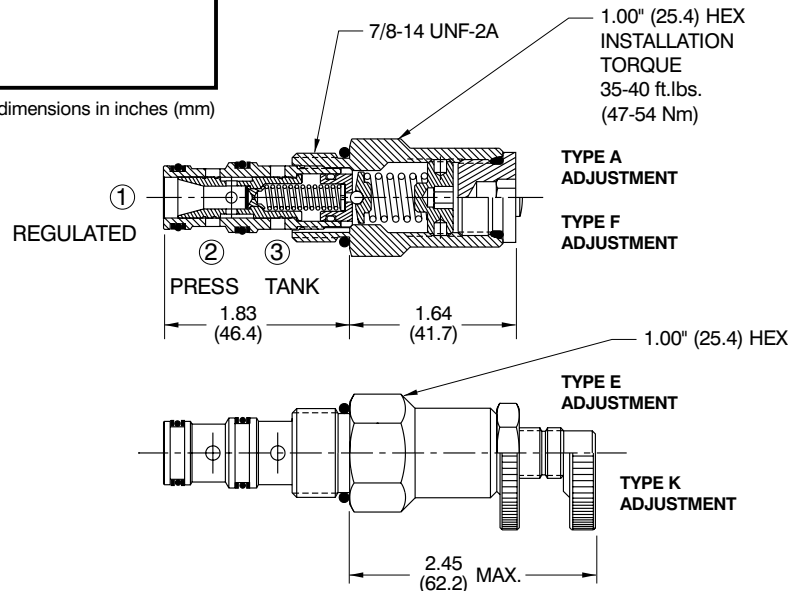
- This cartridge is a pilot operated, spool type pressure reducing valve with internal pilot and spring chamber drain.
- If pressure at 1 exceeds the pressure setting then pressure at 2 is metered off to maintain the regulated setting. 3 is vented to tank and is the reference for the regulated pressure at 1.
- Nominal flow: 10.0 gpm (38 l/m).
- Valve rated to 5000 psi (345 bar) working pressure.
- Valve is adjustable to 5000 psi (345 bar).
- Valve cartridge is *all* steel construction with precision ground, hardened spool and selectively honed, hardened sleeve to assure low leakage and extended service life.
- Hi-strength aluminum alloy body allows for maximum circuit design flexibility.
- For pressures above 3000 psi use steel bodies.
- Buna-N seals are standard. Viton is optional (consult factory for other seal compounds).
- Valve is designed for use with general purpose hydraulic fluids (MIL-H-5606, SAE #10, etc.).
- Cartridge weight .43 lbs (.20 kg).
- Valve cartridge fits Compact Controls cavity CP10-3.

TYPICAL PERFORMANCE

154 SUS (33 cSt) HYD. OIL @ 100° F (38° C)



All dimensions in inches (mm)



ORDERING INFORMATION

CP230 - 4 - B - 6S - A - C

BASIC CARTRIDGE ——— **SEALS** ——— **PORTS** ——— **BODY P/N**

SEAL KIT

B - BUNA-N	120027
V - VITON	120028

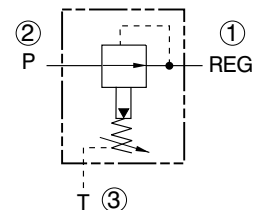
0 - CARTRIDGE	NO BODY
3P - 3/8 NPTF	220203
4P - 1/2 NPTF	220204
6S - #6 SAE	220205
8S - #8 SAE	220206
3B - 3/8 BSP	221297
4B - 1/2 BSP	221267

PRESSURE RANGE

	PSI	BAR
A -	50-800	(3-55)
Std. Setting	400	(28)
B -	50-1500	(3-103)
Std. Setting	1000	(69)
C -	150-3000	(10-207)
Std. Setting	1500	(103)
D -	150-5000	(10-345)
Std. Setting	1500	(103)

ADJUSTMENT OPTION

A -	INTERNAL ADJUSTMENT
E -	EXTERNAL ADJUSTMENT
F -	TAMPER RESISTANT
K -	KNOB ADJUSTMENT



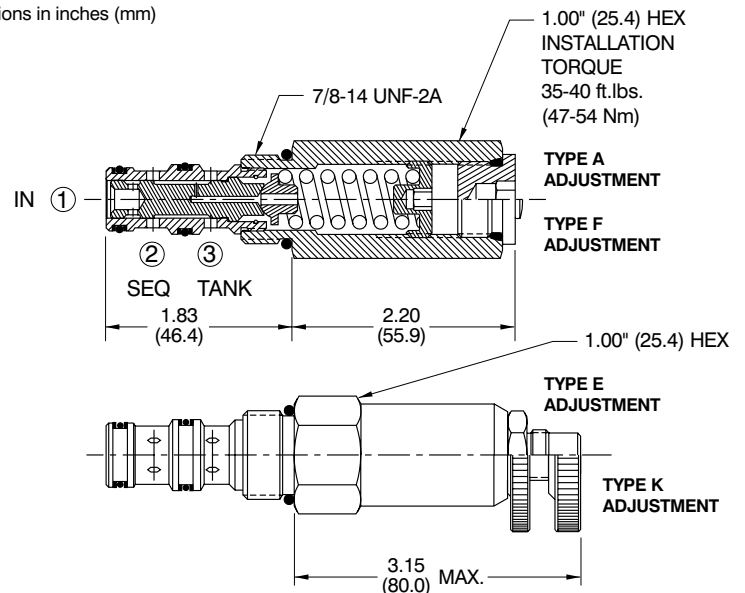
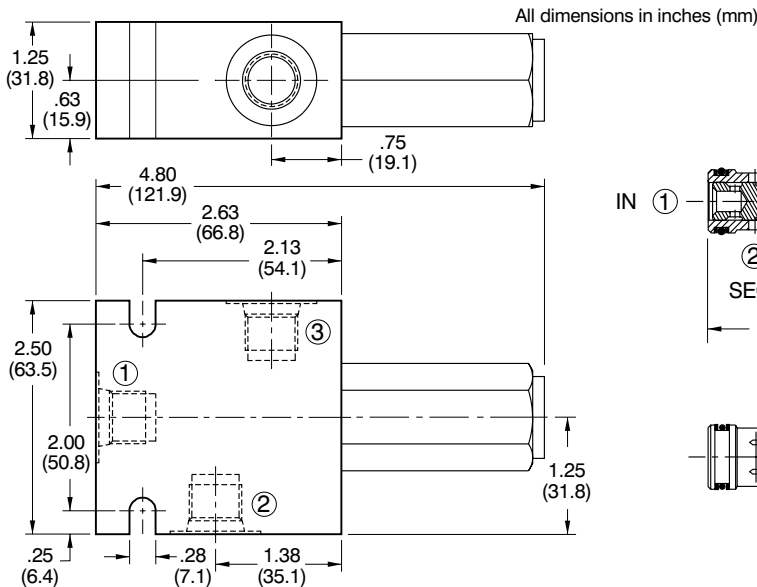
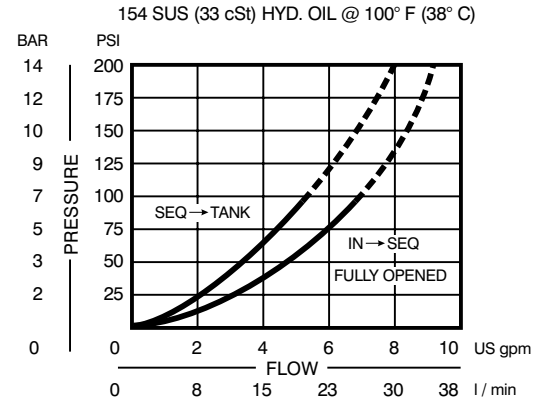
SEQUENCE VALVES

SIZE	DESCRIPTION	FLOW gpm (l/m)	PRESSURE psi (bar)	PAGE
SERIES 10				
CP240-1	DIRECT ACTING SPOOL	6 (23)	3000 (207)	5.01
CP240-2	DIRECT ACTING SPOOL	9 (34)	3000 (207)	5.02
CP240-8	DIRECT ACTING SPOOL	14 (53)	3000 (207)	5.03
CP240-21	PILOT OPERATED SEQUENCE	12 (45)	5000 (345)	5.04
CP240-22	KICK DOWN SEQUENCE	12 (45)	5000 (345)	5.05
CP240-30	UNLOADING VALVE	1 (4)	3000 (207)	5.06

SPECIFICATIONS

- This cartridge is a direct acting, spool type sequence valve with internal pilot.
- This valve allows flow from 2 to 3 and blocks 1. At reaching the sequence pressure 1 is opened to 2.
- Nominal flow: 6.0 gpm (23 l/m).
- Valve rated to 3000 psi (207 bar) working pressure.
- Valve is adjustable to 2400 psi (166 bar).
- Valve cartridge is *all* steel construction with precision ground, hardened spool and selectively honed, hardened sleeve to assure low leakage and extended service life.
- Hi-strength aluminum alloy body allows for maximum circuit design flexibility.
- Buna-N seals are standard. Viton is optional (consult factory for other seal compounds).
- Valve is designed for use with general purpose hydraulic fluids (MIL-H-5606, SAE #10, etc.).
- Cartridge weight .57 lbs (.26 kg).
- Valve cartridge fits Compact Controls cavity CP10-3.

TYPICAL PERFORMANCE



ORDERING INFORMATION

Shaded area represents standard product

CP240 - 1 - B - 6S - A - C

BASIC CARTRIDGE

SEALS

SEAL KIT	SEAL KIT
B - BUNA-N	120009
V - VITON	120010

PORTS

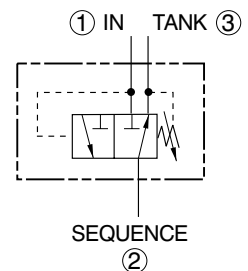
PORTS	BODY P/N	BODY P/N
0 - CARTRIDGE	NO BODY	
3P - 3/8 NPTF	220203	
4P - 1/2 NPTF	220204	
6S - #6 SAE	220205	
8S - #8 SAE	220206	
3B - 3/8 BSP	221297	
4B - 1/2 BSP	221267	

PRESSURE RANGE

PSI	BAR
A - 50-400	(4-28)
Std. Setting 250	(17)
B - 75-800	(5-55)
Std. Setting 400	(28)
C - 100-1400	(7-97)
Std. Setting 1000	(69)
D - 500-2400	(34-166)
Std. Setting 1500	(103)

ADJUSTMENT OPTION

A - INTERNAL ADJUSTMENT
E - EXTERNAL ADJUSTMENT
F - TAMPER RESISTANT
K - KNOB ADJUSTMENT



CP240-2

SEQUENCE VALVE

(Direct Acting Spool Type)



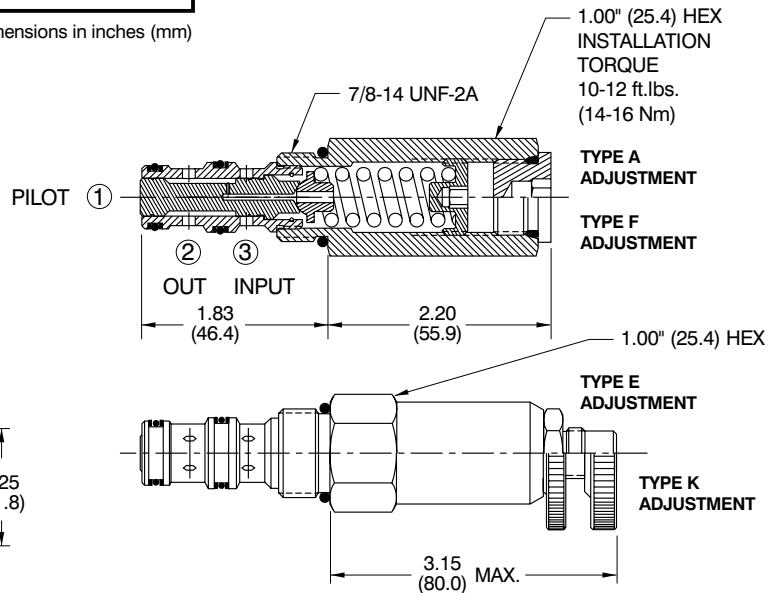
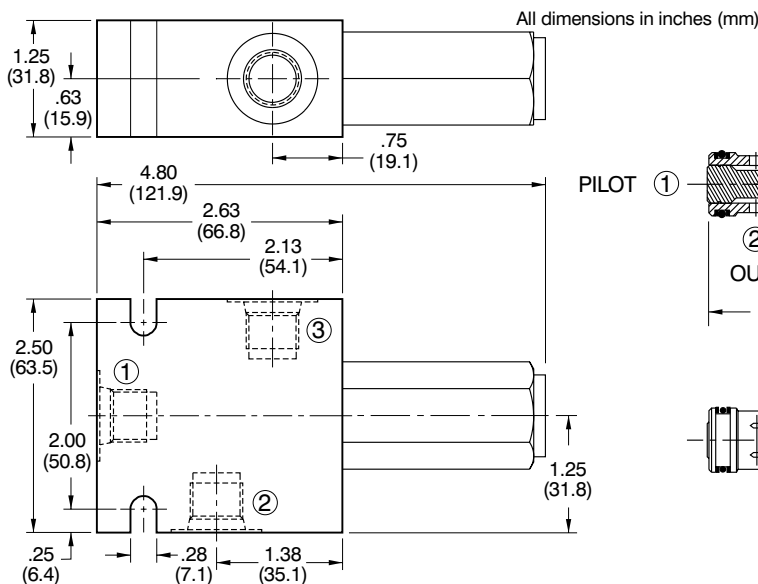
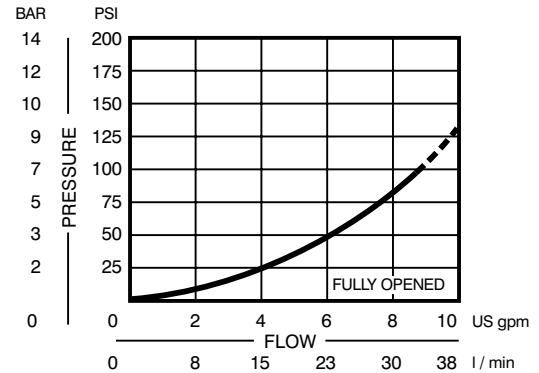
SERIES 10

SPECIFICATIONS

- This cartridge is a direct acting, spool type sequence valve with external pilot.
- This valve blocks flow from 3 to 2. At reaching the external sequence pressure at 1, 3 is opened to 2.
- Nominal flow: 9.0 gpm (34 l/m).
- Valve rated to 3000 psi (207 bar) working pressure.
- Valve is adjustable to 2400 psi (166 bar).
- Valve cartridge is *all* steel construction with precision ground, hardened spool and selectively honed, hardened sleeve to assure low leakage and extended service life.
- Hi-strength aluminum alloy body allows for maximum circuit design flexibility.
- Buna-N seals are standard. Viton is optional (consult factory for other seal compounds).
- Valve is designed for use with general purpose hydraulic fluids (MIL-H-5606, SAE #10, etc.).
- Cartridge weight .52 lbs (.24 kg).
- Valve cartridge fits Compact Controls cavity CP10-3.

TYPICAL PERFORMANCE

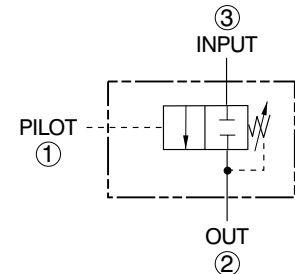
154 SUS (33 cSt) HYD. OIL @ 100° F (38° C)



ORDERING INFORMATION

CP240 - 2 - B - 6S - A - C

BASIC CARTRIDGE	SEALS	SEAL KIT	PORTS	BODY P/N	PRESSURE RANGE																
B - BUNA-N		120009	0 - CARTRIDGE	NO BODY	<table border="0"> <tr> <td>A - 50-400</td> <td>(4-28)</td> </tr> <tr> <td>Std. Setting</td> <td>250 (17)</td> </tr> <tr> <td>B - 75-800</td> <td>(5-55)</td> </tr> <tr> <td>Std. Setting</td> <td>400 (28)</td> </tr> <tr> <td>C - 100-1400</td> <td>(7-97)</td> </tr> <tr> <td>Std. Setting</td> <td>1000 (69)</td> </tr> <tr> <td>D - 500-2400</td> <td>(34-166)</td> </tr> <tr> <td>Std. Setting</td> <td>1500 (103)</td> </tr> </table>	A - 50-400	(4-28)	Std. Setting	250 (17)	B - 75-800	(5-55)	Std. Setting	400 (28)	C - 100-1400	(7-97)	Std. Setting	1000 (69)	D - 500-2400	(34-166)	Std. Setting	1500 (103)
A - 50-400	(4-28)																				
Std. Setting	250 (17)																				
B - 75-800	(5-55)																				
Std. Setting	400 (28)																				
C - 100-1400	(7-97)																				
Std. Setting	1000 (69)																				
D - 500-2400	(34-166)																				
Std. Setting	1500 (103)																				
V - VITON		120010	3P - 3/8 NPTF	220203	ADJUSTMENT OPTION																
			4P - 1/2 NPTF	220204	A - INTERNAL ADJUSTMENT																
			6S - #6 SAE	220205	E - EXTERNAL ADJUSTMENT																
			8S - #8 SAE	220206	F - TAMPER RESISTANT																
			3B - 3/8 BSP	221297	K - KNOB ADJUSTMENT																
			4B - 1/2 BSP	221267																	

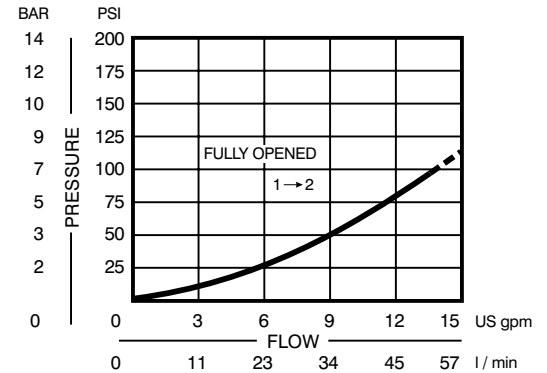


SPECIFICATIONS

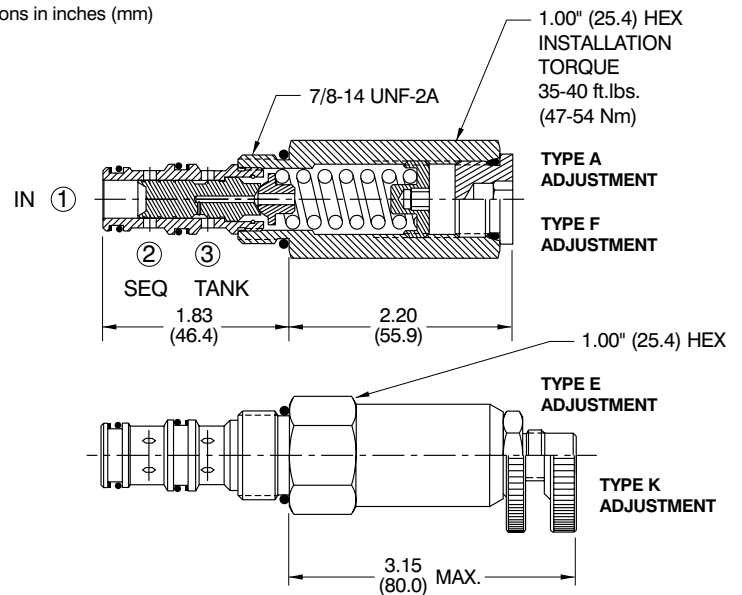
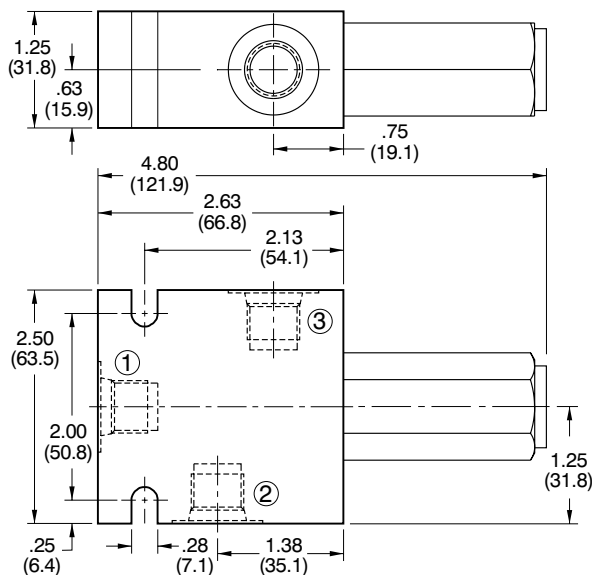
- This cartridge is a direct acting, spool type sequence valve with internal pilot.
- This valve allows flow from 1 to 2 when pressure at 1 exceeds the spring bias pressure. The spring chamber 3 is vented to tank.
- Nominal flow: 14.0 gpm (53 l/m).
- Valve rated to 3000 psi (207 bar) working pressure.
- Valve is adjustable to 2400 psi (166 bar).
- Valve cartridge is *all* steel construction with precision ground, hardened spool and selectively honed, hardened sleeve to assure low leakage and extended service life.
- Hi-strength aluminum alloy body allows for maximum circuit design flexibility.
- Buna-N seals are standard. Viton is optional (consult factory for other seal compounds).
- Valve is designed for use with general purpose hydraulic fluids (MIL-H-5606, SAE #10, etc.).
- Cartridge weight .57 lbs (.26 kg).
- Valve cartridge fits Compact Controls cavity CP10-3.

TYPICAL PERFORMANCE

154 SUS (33 cSt) HYD. OIL @ 100° F (38° C)



All dimensions in inches (mm)



ORDERING INFORMATION

CP240 - 8 - B - 6S - A - C

BASIC CARTRIDGE CP240 - 8 - B - 6S - A - C

SEALS

B - BUNA-N
V - VITON

SEAL KIT

120027
120028

PORTS

0 - CARTRIDGE
3P - 3/8 NPTF
4P - 1/2 NPTF
6S - #6 SAE
8S - #8 SAE
3B - 3/8 BSP
4B - 1/2 BSP

BODY P/N

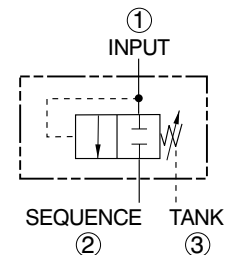
NO BODY
220203
220204
220205
220206
221297
221267

PRESSURE RANGE

	PSI	BAR
A	50-400	(4-28)
Std. Setting	250	(17)
B	75-800	(5-55)
Std. Setting	400	(28)
C	100-1400	(7-97)
Std. Setting	1000	(69)
D	500-2400	(34-166)
Std. Setting	1500	(103)

ADJUSTMENT OPTION

A - INTERNAL ADJUSTMENT
E - EXTERNAL ADJUSTMENT
F - TAMPER RESISTANT
K - KNOB ADJUSTMENT



CP240-21

SEQUENCE VALVE

(Pilot Operated Type)



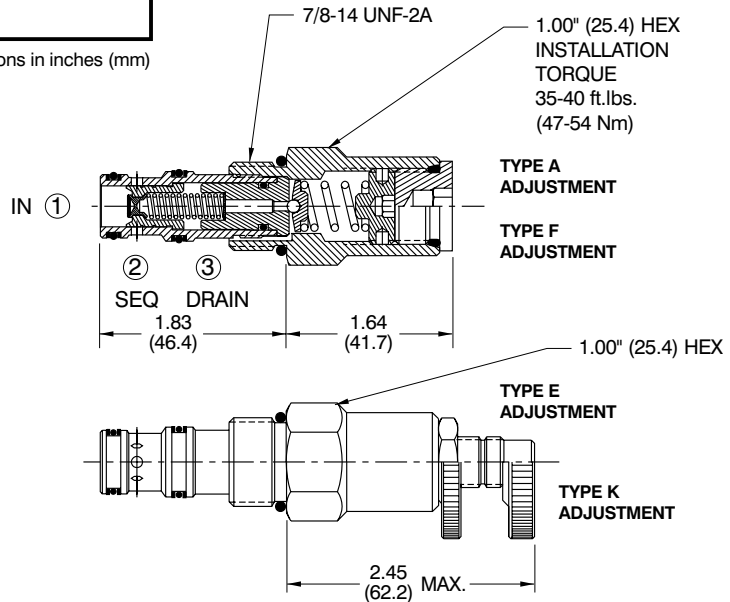
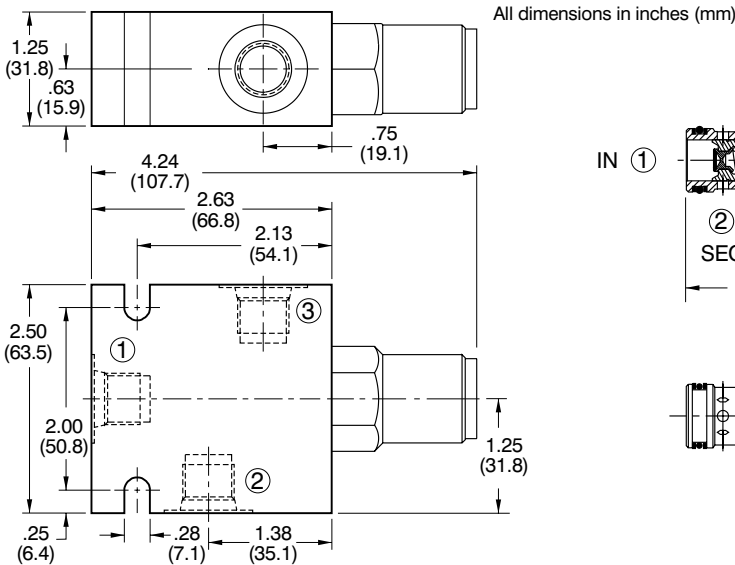
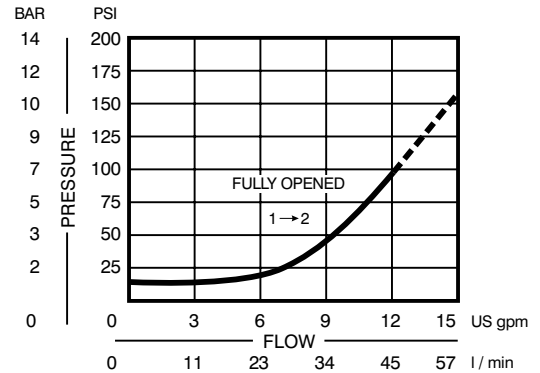
SERIES 10

SPECIFICATIONS

- This cartridge is a pilot operated, spool type sequence valve.
- This valve blocks flow from 1 to 2. Flow is routed from 1 to 2 when the sequence pressure is reached. The pilot spring chamber is vented to 3 and any back pressure at 3 adds to the sequence setting.
- Nominal flow: 12.0 gpm (45 l/m).
- Valve rated to 5000 psi (345 bar) working pressure.
- Valve is adjustable to 5000 psi (345 bar).
- Valve cartridge is *all* steel construction with precision ground, hardened spool and selectively honed, hardened sleeve to assure low leakage and extended service life.
- Hi-strength aluminum alloy body allows for maximum circuit design flexibility.
- For pressures above 3000 psi use steel bodies.
- Buna-N seals are standard. Viton is optional (consult factory for other seal compounds).
- Valve is designed for use with general purpose hydraulic fluids (MIL-H-5606, SAE #10, etc.).
- Cartridge weight .51 lbs (.23 kg).
- Valve cartridge fits Compact Controls [cavity CP10-3](#).

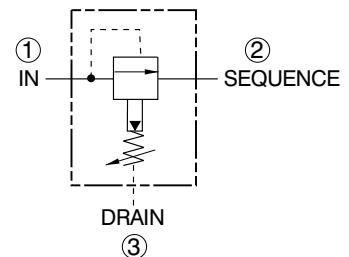
TYPICAL PERFORMANCE

154 SUS (33 cSt) HYD. OIL @ 100° F (38° C)



ORDERING INFORMATION

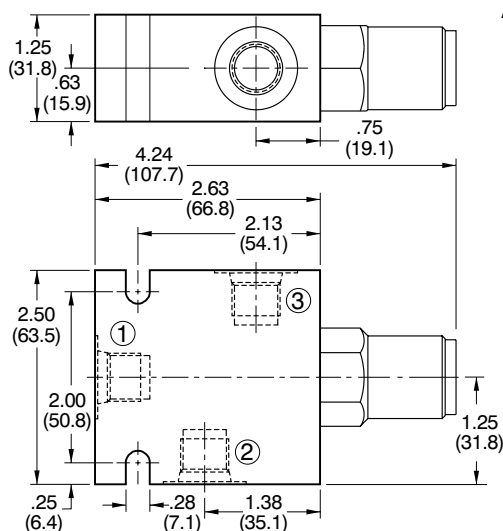
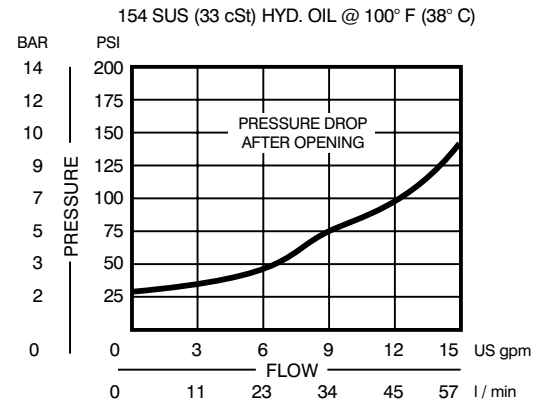
CP240 - 21 - B - 6S - A - C																				
BASIC CARTRIDGE		PRESSURE RANGE																		
SEALS		<table border="0"> <tr> <td>PSI</td> <td>BAR</td> </tr> <tr> <td>A - 25-800</td> <td>(2-55)</td> </tr> <tr> <td>Std. Setting 400</td> <td>(28)</td> </tr> <tr> <td>B - 50-1500</td> <td>(3-103)</td> </tr> <tr> <td>Std. Setting 1000</td> <td>(69)</td> </tr> <tr> <td>C - 150-3000</td> <td>(10-207)</td> </tr> <tr> <td>Std. Setting 1500</td> <td>(103)</td> </tr> <tr> <td>D - 150-5000</td> <td>(10-345)</td> </tr> <tr> <td>Std. Setting 1500</td> <td>(103)</td> </tr> </table>	PSI	BAR	A - 25-800	(2-55)	Std. Setting 400	(28)	B - 50-1500	(3-103)	Std. Setting 1000	(69)	C - 150-3000	(10-207)	Std. Setting 1500	(103)	D - 150-5000	(10-345)	Std. Setting 1500	(103)
PSI	BAR																			
A - 25-800	(2-55)																			
Std. Setting 400	(28)																			
B - 50-1500	(3-103)																			
Std. Setting 1000	(69)																			
C - 150-3000	(10-207)																			
Std. Setting 1500	(103)																			
D - 150-5000	(10-345)																			
Std. Setting 1500	(103)																			
B - BUNA-N	SEAL KIT																			
V - VITON	120009																			
	120010																			
PORTS		ADJUSTMENT OPTION																		
0 - CARTRIDGE	BODY P/N	A - INTERNAL ADJUSTMENT																		
3P - 3/8 NPTF	NO BODY	E - EXTERNAL ADJUSTMENT																		
4P - 1/2 NPTF	220203	F - TAMPER RESISTANT																		
6S - #6 SAE	220204	K - KNOB ADJUSTMENT																		
8S - #8 SAE	220205																			
3B - 3/8 BSP	220206																			
4B - 1/2 BSP	221297																			
	221267																			



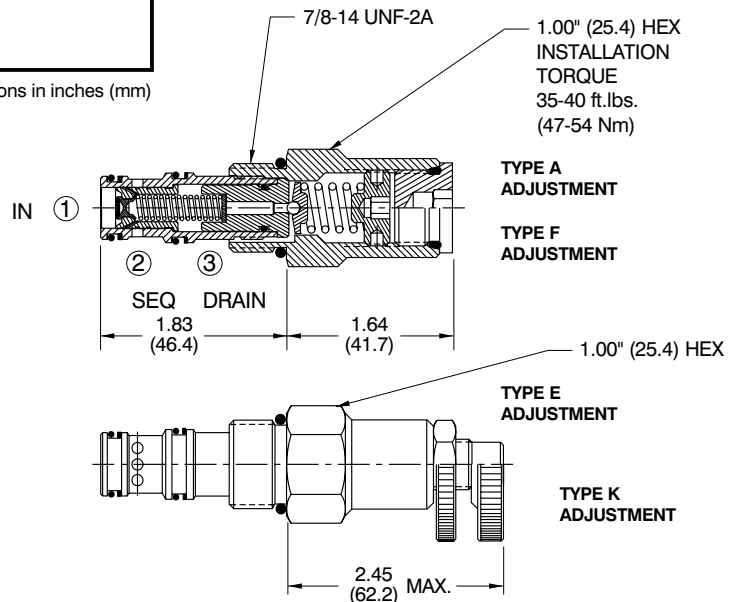
SPECIFICATIONS

- This cartridge is a kick down, spool type sequence valve.
- This valve opens completely from 1 to 2 once the sequence pressure is reached. The valve remains open even if the sequence pressure drops below the sequence setting. Flow through the valve must be stopped in order to reset the valve.
- Nominal flow: 12.0 gpm (45 l/m).
- Valve rated to 5000 psi (345 bar) working pressure.
- Valve is adjustable to 5000 psi (345 bar).
- Valve cartridge is *all* steel construction with precision ground, hardened spool and selectively honed, hardened sleeve to assure low leakage and extended service life.
- Hi-strength aluminum alloy body allows for maximum circuit design flexibility.
- For pressures above 3000 psi use steel bodies.
- Buna-N seals are standard. Viton is optional (consult factory for other seal compounds).
- Valve is designed for use with general purpose hydraulic fluids (MIL-H-5606, SAE #10, etc.).
- Cartridge weight .42 lbs (.19 kg).
- Valve cartridge fits Compact Controls [cavity CP10-3](#).

TYPICAL PERFORMANCE



All dimensions in inches (mm)



ORDERING INFORMATION

CP240 - 22 - B - 6S - A - C

BASIC CARTRIDGE

SEALS

B - BUNA-N
V - VITON

SEAL KIT

120027
120028

PORTS

0 - CARTRIDGE
3P - 3/8 NPTF
4P - 1/2 NPTF
6S - #6 SAE
8S - #8 SAE
3B - 3/8 BSP
4B - 1/2 BSP

BODY P/N

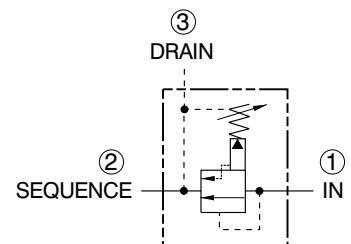
NO BODY
220203
220204
220205
220206
221297
221267

PRESSURE RANGE

	PSI	BAR
A	25-800	(2-55)
Std. Setting	400	(28)
B	50-1500	(3-103)
Std. Setting	1000	(69)
C	150-3000	(10-207)
Std. Setting	1500	(103)
D	150-5000	(10-345)
Std. Setting	1500	(103)

ADJUSTMENT OPTION

A - INTERNAL ADJUSTMENT
E - EXTERNAL ADJUSTMENT
F - TAMPER RESISTANT
K - KNOB ADJUSTMENT



CP240-30

SEQUENCE VALVE

(Unloading Type)



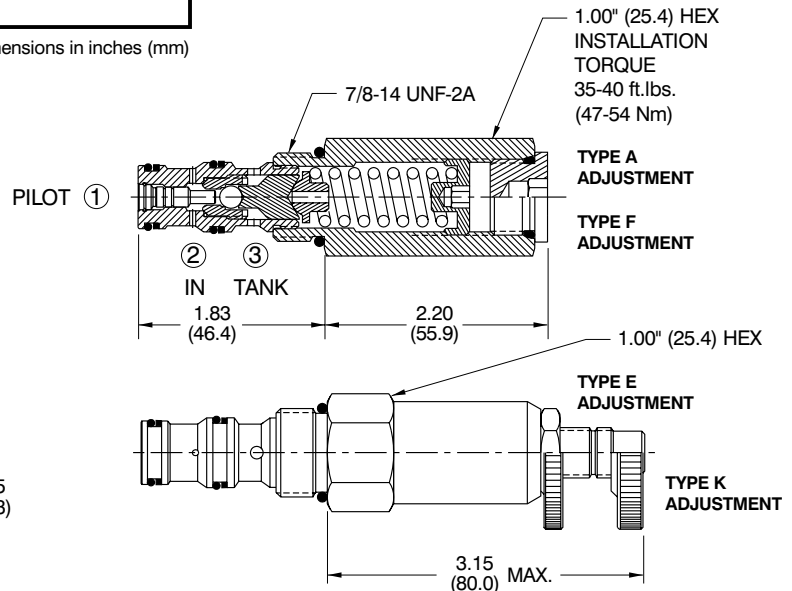
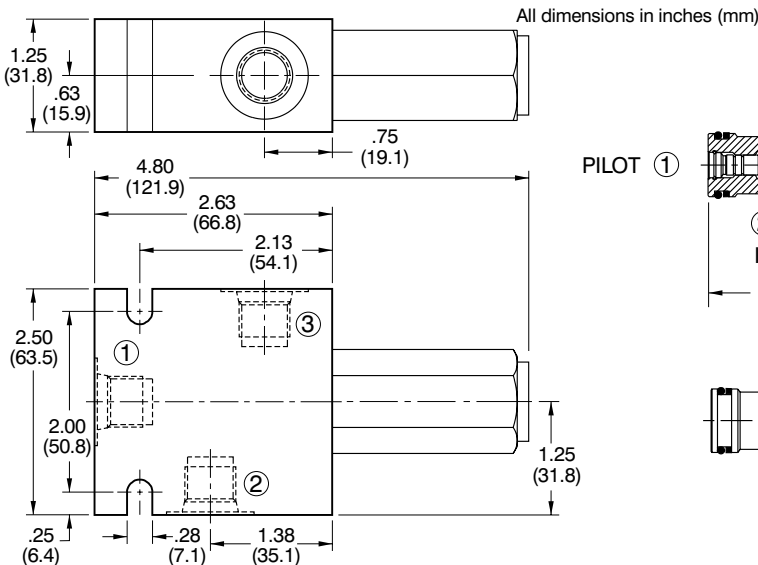
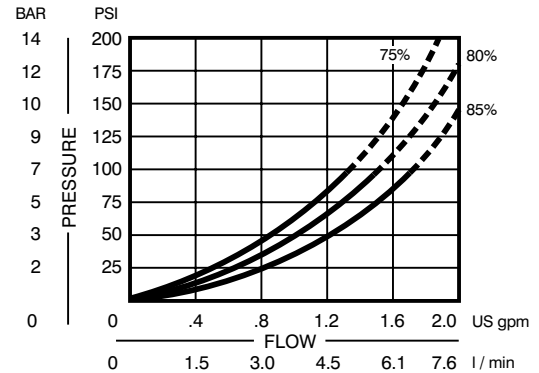
SERIES 10

SPECIFICATIONS

- This cartridge is a unloading, spool type sequence valve with external pilot.
- This valve has a pilot unloading cartridge for use with accumulator type systems which have pre-selected differential pressures between loading and unloading. This valve is typically used with a CP700-2 or larger differential sensing valve.
- Nominal flow: 1.0 gpm (4 l/m).
- Valve rated to 3000 psi (207 bar) working pressure.
- Valve is adjustable to 3000 psi (207 bar).
- Valve cartridge is *all* steel construction with precision ground, hardened spool and selectively honed, hardened sleeve to assure low leakage and extended service life.
- Hi-strength aluminum alloy body allows for maximum circuit design flexibility.
- Buna-N seals are standard. Viton is optional (consult factory for other seal compounds).
- Valve is designed for use with general purpose hydraulic fluids (MIL-H-5606, SAE #10, etc.).
- Cartridge weight .53 lbs (.24 kg).
- Valve cartridge fits Compact Controls [cavity CP10-3](#).

TYPICAL PERFORMANCE

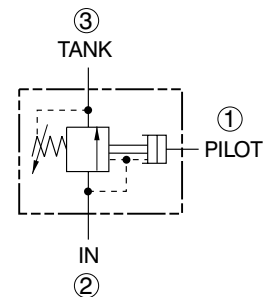
154 SUS (33 cSt) HYD. OIL @ 100° F (38° C)



ORDERING INFORMATION

CP240 - 30 - B - 6S - A - B - 75

BASIC CARTRIDGE	SEAL KIT	PILOT RATIO
B - BUNA-N	120027	75 - 75%
V - VITON	120028	80 - 80%
		85 - 85%
PORTS	BODY P/N	PRESSURE RANGE
0 - CARTRIDGE	NO BODY	PSI BAR
3P - 3/8 NPTF	220203	A - 500-2000 (34-138)
4P - 1/2 NPTF	220204	Std. Setting 1000 (69)
6S - #6 SAE	220205	B - 900-3000 (62-207)
8S - #8 SAE	220206	Std. Setting 1500 (103)
3B - 3/8 BSP	221297	ADJUSTMENT OPTION
4B - 1/2 BSP	221267	A - INTERNAL ADJUSTMENT
		E - EXTERNAL ADJUSTMENT
		F - TAMPER RESISTANT
		K - KNOB ADJUSTMENT



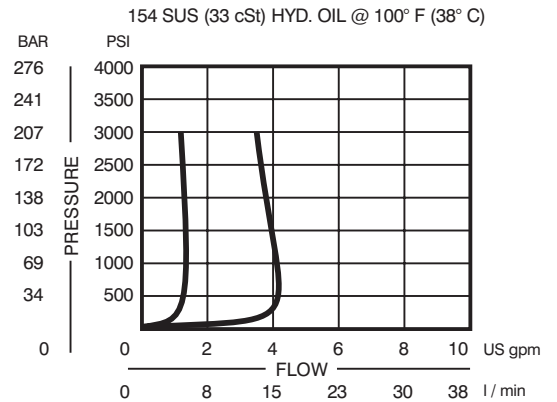
FLOW CONTROL VALVES

SIZE	DESCRIPTION	FLOW gpm (l/m)	PRESSURE psi (bar)	PAGE
SERIES 8				
CP308-1	RESTRICTIVE FIXED REGULATOR	4 (15)	3000 (207)	6.01
CP308-2	RESTRICTIVE LIMITED ADJ REGULATOR	4 (15)	3000 (207)	6.02
SERIES 10				
CP300-1	RESTRICTIVE FIXED REGULATOR	6 (23)	3000 (207)	6.03
CP300-2	RESTRICTIVE LIMITED ADJ REGULATOR	8 (30)	3000 (207)	6.04
CP310-1	PRIORITY FIXED REGULATOR	6 (23)	3000 (207)	6.05
CP310-2	PRIORITY LIMITED ADJ REGULATOR	8 (30)	3000 (207)	6.06
CP340-1	FLOW DIVIDER/COMBINER	12 (45)	3000 (207)	6.07
SERIES 12				
CP301-1	RESTRICTIVE FIXED REGULATOR	12 (45)	3000 (207)	6.08
CP311-1	PRIORITY FIXED REGULATOR	12 (45)	3000 (207)	6.09
CP341-1	FLOW DIVIDER/COMBINER	20 (76)	3000 (207)	6.10
SERIES 16				
CP312-1	PRIORITY FIXED REGULATOR	17 (64)	3000 (207)	6.11
CP342-1	FLOW DIVIDER/COMBINER	40 (151)	3000 (207)	6.12

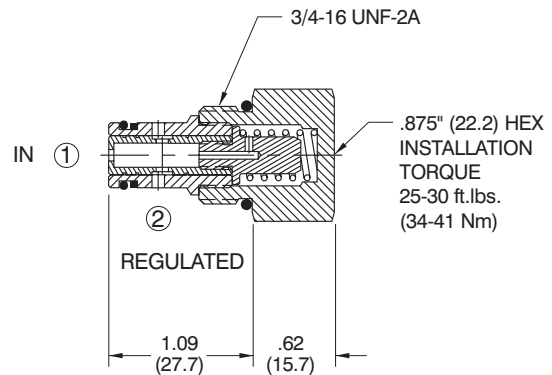
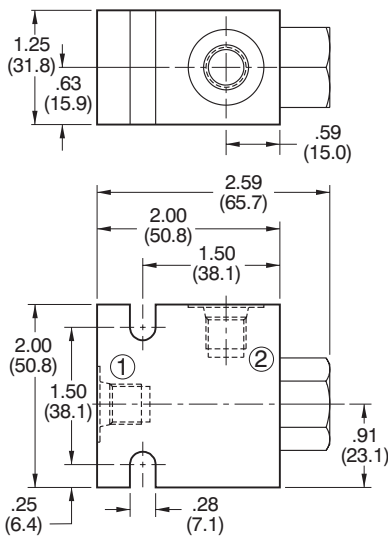
SPECIFICATIONS

- This cartridge is a fixed orifice, pressure compensated, restrictive flow regulator.
- Valve maintains constant flow out of **2** regardless of system pressure. Reverse flow from **2** to **1** is noncompensated and goes through the control orifice.
- Valve rated to 3000 psi (207 bar) working pressure.
- Flow accuracy: .1 to .49 ± 20%; .5 to 1.49 ± 15%; 1.5 to 4.0 ± 10%.
- Factory-set flow rate: .1 to 4.0 gpm (.4 to 15.1 l/m).
- Valve cartridge is **all** steel construction with precision ground spool, honed and hardened sleeve to assure good flow regulation and extended service life.
- Hi-strength aluminum alloy body allows for maximum circuit design flexibility.
- Buna-N seals are standard. Viton is optional (consult factory for other seal compounds).
- Valve is designed for use with general purpose hydraulic fluids (MIL-H-5606, SAE #10, etc.).
- Cartridge weight .17 lbs (.08 kg).
- Valve cartridge fits Compact Controls cavity CP8-2.

TYPICAL PERFORMANCE

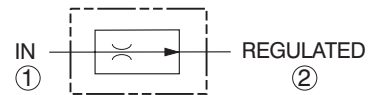
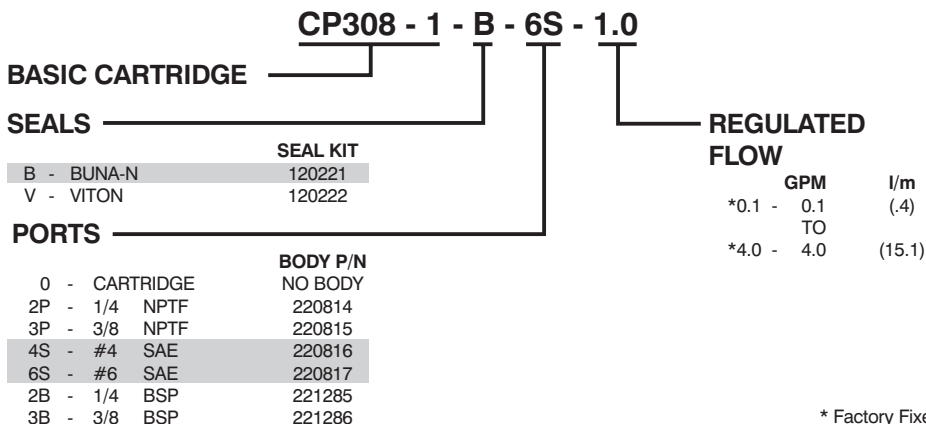


All dimensions in inches (mm)



ORDERING INFORMATION

Shaded area represents standard product



* Factory Fixed.

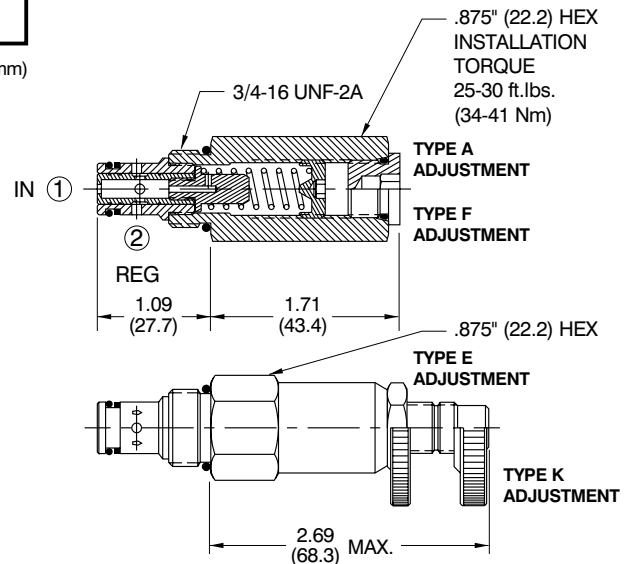
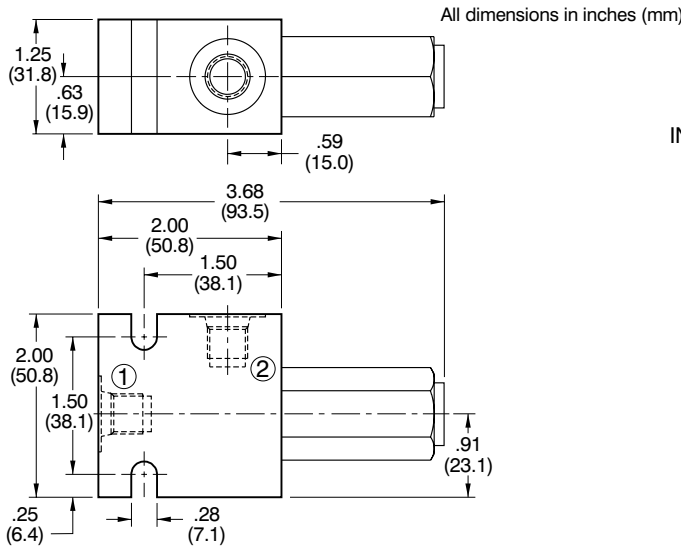
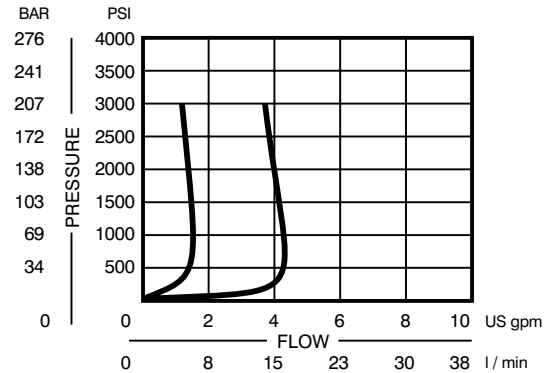
SERIES 8

SPECIFICATIONS

- This cartridge is a limited adjustment, pressure compensated, restrictive flow regulator.
- Valve maintains constant flow out of 2 regardless of system pressure. Reverse flow from 2 to 1 is noncompensated and goes through the control orifice.
- Valve rated to 3000 psi (207 bar) working pressure.
- Flow accuracy: .1 to .49 ± 20%; .5 to 1.49 ± 15%; 1.5 to 4.0 ± 10%.
- Flow adjustment range: ± 25% of normal setting.
- Valve cartridge is *all* steel construction with precision ground spool, honed and hardened sleeve to assure good flow regulation and extended service life.
- Hi-strength aluminum alloy body allows for maximum circuit design flexibility.
- Buna-N seals are standard. Viton is optional (consult factory for other seal compounds).
- Valve is designed for use with general purpose hydraulic fluids (MIL-H-5606, SAE #10, etc.).
- Cartridge weight .32 lbs (.15 kg).
- Valve cartridge fits Compact Controls cavity CP8-2.

TYPICAL PERFORMANCE

154 SUS (33 cSt) HYD. OIL @ 100° F (38° C)



ORDERING INFORMATION

CP308 - 2 - B - 6S - A - 1.0

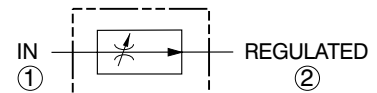
BASIC CARTRIDGE **REGULATED FLOW**

SEALS **SEAL KIT** **ADJUSTMENT OPTION**

B - BUNA-N	120221	A - INTERNAL ADJUSTMENT
V - VITON	120222	E - EXTERNAL ADJUSTMENT
		F - TAMPER RESISTANT
		K - KNOB ADJUSTMENT

PORTS	BODY P/N
0 - CARTRIDGE	NO BODY
2P - 1/4 NPTF	220814
3P - 3/8 NPTF	220815
4S - #4 SAE	220816
6S - #6 SAE	220817
2B - 1/4 BSP	221285
3B - 3/8 BSP	221286

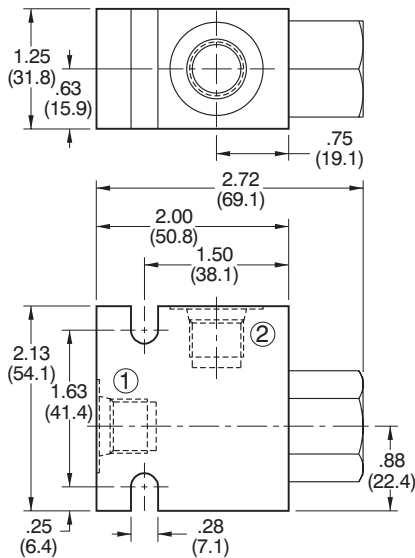
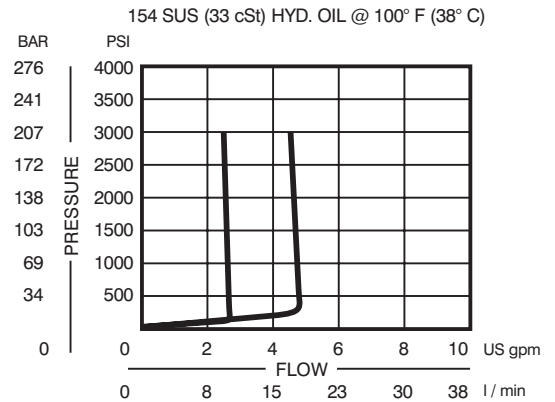
GPM	l/m
0.1 - 0.1	(.4)
TO	
4.0 - 4.0	(15.1)



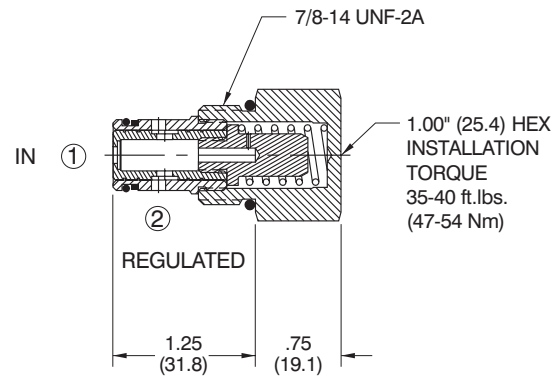
SPECIFICATIONS

- This cartridge is a fixed orifice, pressure compensated, restrictive flow regulator.
- Valve maintains constant flow out of **2** regardless of system pressure. Reverse flow from **2** to **1** is noncompensated and goes through the control orifice.
- Valve rated to 3000 psi (207 bar) working pressure.
- Flow accuracy: .1 to .49 ± 20%; .5 to 1.49 ± 15%; 1.5 to 6.0 ± 10%.
- Factory-set flow rate: .1 to 6.0 gpm (.4 to 22.7 l/m).
- Valve cartridge is **all** steel construction with precision ground spool, honed and hardened sleeve to assure good flow regulation and extended service life.
- Hi-strength aluminum alloy body allows for maximum circuit design flexibility.
- Buna-N seals are standard. Viton is optional (consult factory for other seal compounds).
- Valve is designed for use with general purpose hydraulic fluids (MIL-H-5606, SAE #10, etc.).
- Cartridge weight .26 lbs (.12 kg).
- Valve cartridge fits Compact Controls cavity CP10-2.

TYPICAL PERFORMANCE

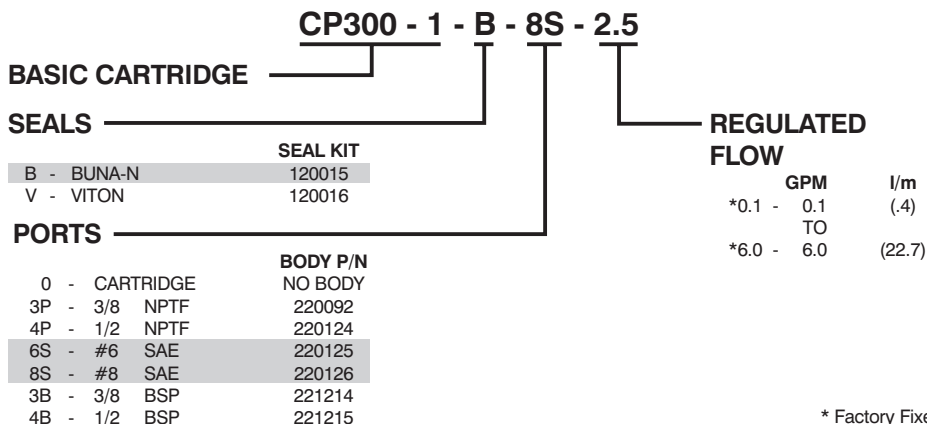


All dimensions in inches (mm)



ORDERING INFORMATION

Shaded area represents standard product



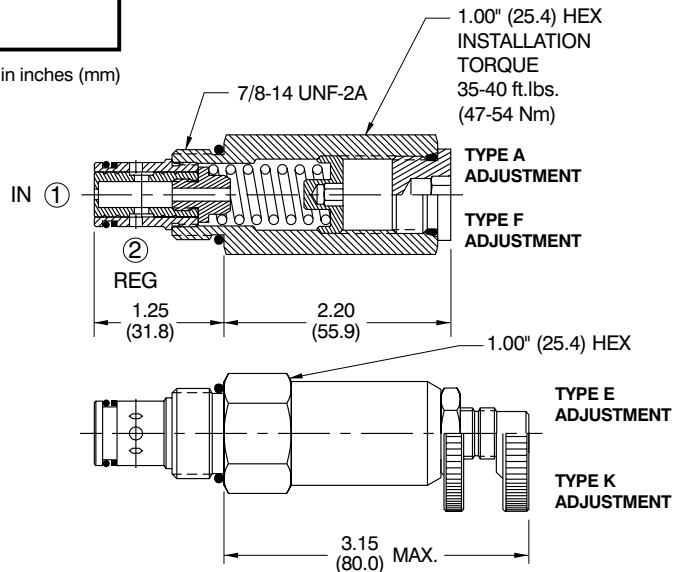
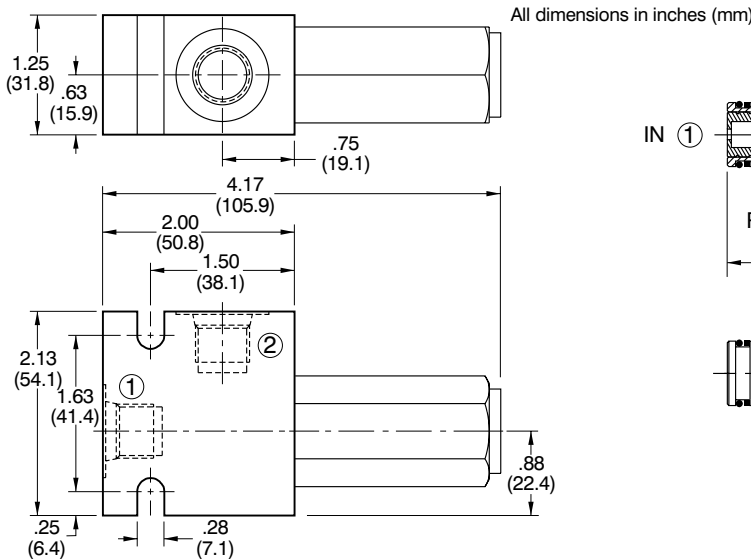
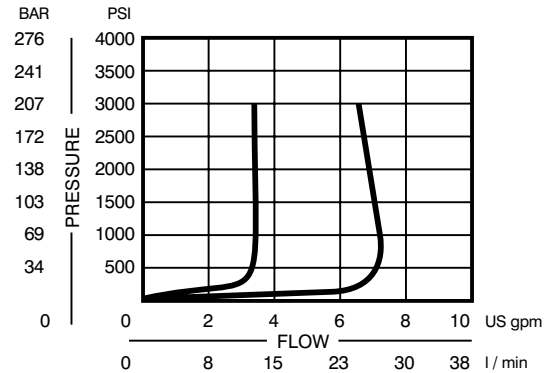
SERIES 10

SPECIFICATIONS

- This cartridge is a limited adjustment, pressure compensated, restrictive flow regulator.
- Valve maintains constant flow out of 2 regardless of system pressure. Reverse flow from 2 to 1 is noncompensated and goes through the control orifice.
- Valve rated to 3000 psi (207 bar) working pressure.
- Flow accuracy: .1 to .49 ± 20%; .5 to 1.49 ± 15%; 1.5 to 6.0 ± 10%.
- Flow adjustment range: ± 25% of normal setting.
- Valve cartridge is *all* steel construction with precision ground spool, honed and hardened sleeve to assure good flow regulation and extended service life.
- Hi-strength aluminum alloy body allows for maximum circuit design flexibility.
- Buna-N seals are standard. Viton is optional (consult factory for other seal compounds).
- Valve is designed for use with general purpose hydraulic fluids (MIL-H-5606, SAE #10, etc.).
- Cartridge weight .52 lbs (.24 kg).
- Valve cartridge fits Compact Controls cavity CP10-2.

TYPICAL PERFORMANCE

154 SUS (33 cSt) HYD. OIL @ 100° F (38° C)



ORDERING INFORMATION

Shaded area represents standard product

CP300 - 2 - B - 8S - A - 2.5

BASIC CARTRIDGE CP300 - 2

SEALS B - BUNA-N (shaded) 120015
 V - VITON 120016

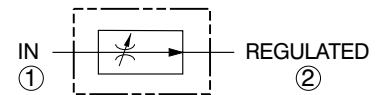
PORTS 0 - CARTRIDGE NO BODY
 3P - 3/8 NPTF 220092
 4P - 1/2 NPTF 220124
6S - #6 SAE 220125 (shaded)
8S - #8 SAE 220126 (shaded)
 3B - 3/8 BSP 221214
 4B - 1/2 BSP 221215

REGULATED FLOW

GPM	l/m
0.1 - 0.1	(.4)
TO	
6.0 - 6.0	(22.7)

ADJUSTMENT OPTION

A - INTERNAL ADJUSTMENT
 E - EXTERNAL ADJUSTMENT
 F - TAMPERS RESISTANT
 K - KNOB ADJUSTMENT

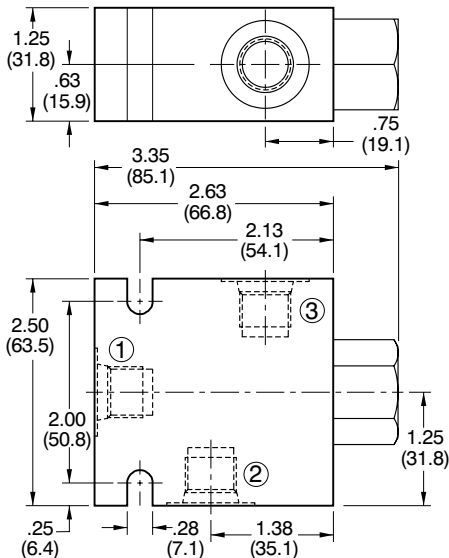
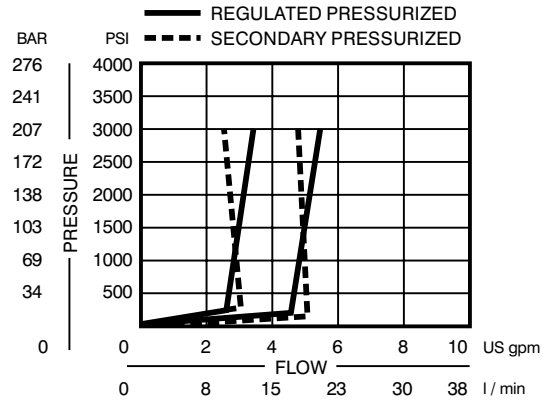


SPECIFICATIONS

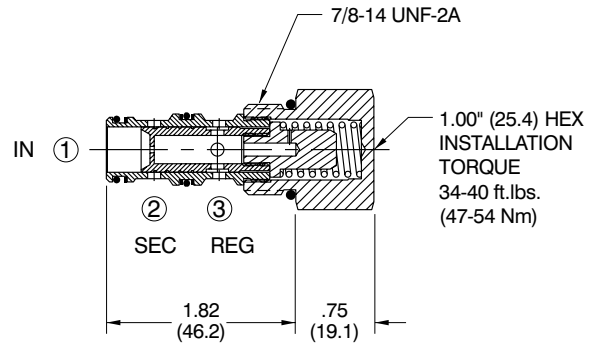
- This cartridge is a fixed orifice, pressure compensated, combination (priority) type flow regulator.
- Valve delivers input flow to 3 first, bypassing excess flow to 2. Constant flow is maintained at 3 regardless of pressure at 2 or 3.
- Valve rated to 3000 psi (207 bar) working pressure and 10 gpm (37.9 l/m) max input flow.
- Flow accuracy: .1 to .49 ± 20%; .5 to 1.49 ± 15%; 1.5 to 6.0 ± 10%.
- Factory-set flow rate: .1 to 6.0 gpm (.4 to 22.7 l/m).
- Valve cartridge is *all* steel construction with precision ground spool, honed and hardened sleeve to assure good flow regulation and extended service life.
- Hi-strength aluminum alloy body allows for maximum circuit design flexibility.
- Buna-N seals are standard. Viton is optional (consult factory for other seal compounds).
- Valve is designed for use with general purpose hydraulic fluids (MIL-H-5606, SAE #10, etc.).
- Cartridge weight .29 lbs (.13 kg).
- Valve cartridge fits Compact Controls cavity CP10-3.

TYPICAL PERFORMANCE

154 SUS (33 cSt) HYD. OIL @ 100° F (38° C)



All dimensions in inches (mm)



ORDERING INFORMATION

Shaded area represents standard product

CP310 - 1 - B - 8S - 2.5

BASIC CARTRIDGE

SEALS

B - BUNA-N
 V - VITON

SEAL KIT

120240
 120241

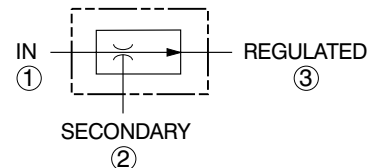
PORTS

0 - CARTRIDGE
 3P - 3/8 NPTF
 4P - 1/2 NPTF
 6S - #6 SAE
 8S - #8 SAE
 3B - 3/8 BSP
 4B - 1/2 BSP

BODY P/N
 NO BODY 220203
 220204
 220205
 220206
 221297
 221267

REGULATED FLOW

GPM	l/m
*0.1 - 0.1	(.4)
TO	
*6.0 - 6.0	(22.7)



* Factory Fixed.

CP310-2

FLOW CONTROL VALVE

(Priority Limited Adj Regulator Type)



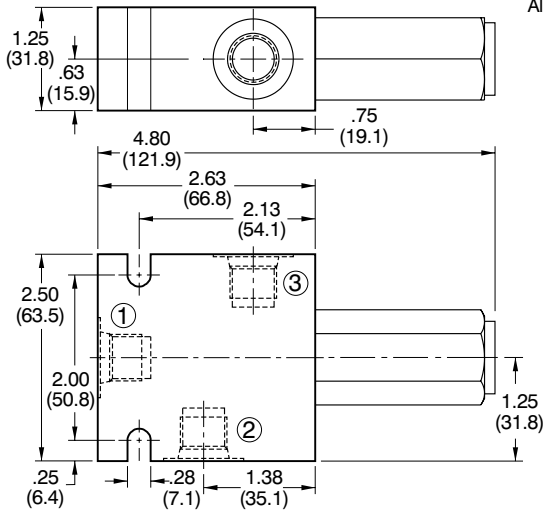
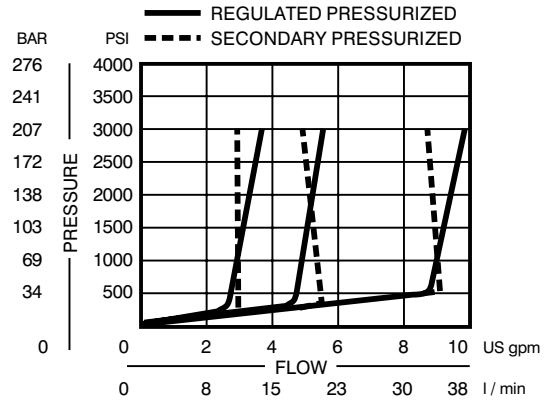
SERIES 10

SPECIFICATIONS

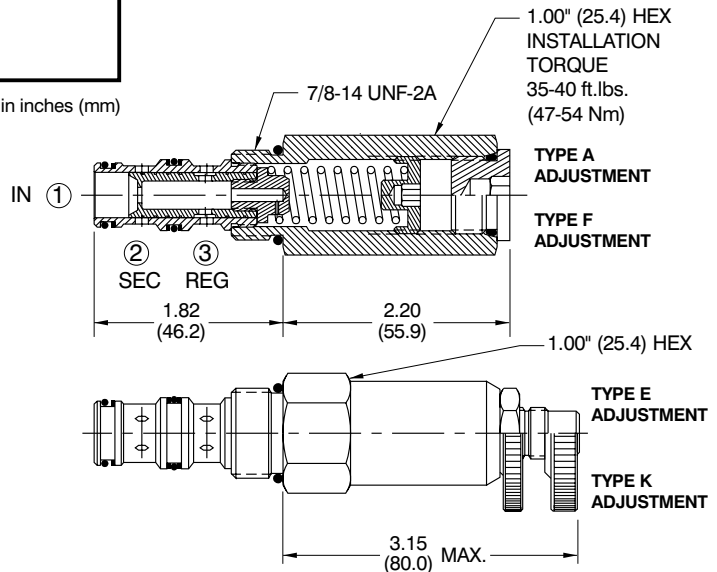
- This cartridge is a limited adjustment, pressure compensated, combination (priority) type flow regulator.
- Valve delivers input flow to 3 first, bypassing excess flow to 2. Constant flow is maintained at 3 regardless of pressure at 2 or 3.
- Valve rated to 3000 psi (207 bar) working pressure and 10 gpm (37.9 l/m) max input flow.
- Flow accuracy: .1 to .49 ± 20%; .5 to 1.49 ± 15%; 1.5 to 6.0 ± 10%.
- Factory-set flow rate: .1 to 6.0 gpm (.4 to 22.7 l/m).
- Flow adjustment range: ± 25% of normal setting.
- Valve cartridge is *all* steel construction with precision ground spool, honed and hardened sleeve to assure good flow regulation and extended service life.
- Hi-strength aluminum alloy body allows for maximum circuit design flexibility.
- Buna-N seals are standard. Viton is optional (consult factory for other seal compounds).
- Valve is designed for use with general purpose hydraulic fluids (MIL-H-5606, SAE #10, etc.).
- Cartridge weight .52 lbs (.24 kg).
- Valve cartridge fits Compact Controls [cavity CP10-3](#).

TYPICAL PERFORMANCE

154 SUS (33 cSt) HYD. OIL @ 100° F (38° C)



All dimensions in inches (mm)



ORDERING INFORMATION

Shaded area represents standard product

CP310 - 2 - B - 8S - A - 2.5

BASIC CARTRIDGE CP310 - 2

SEALS B - BUNA-N (shaded) / V - VITON

SEAL KIT 120240 (shaded) / 120241

PORTS 0 - CARTRIDGE / 3P - 3/8 NPTF / 4P - 1/2 NPTF / 6S - #6 SAE (shaded) / 8S - #8 SAE (shaded) / 3B - 3/8 BSP / 4B - 1/2 BSP

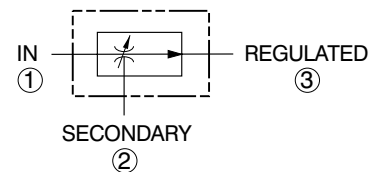
BODY P/N NO BODY / 220203 / 220204 / 220205 (shaded) / 220206 (shaded) / 221297 / 221267

REGULATED FLOW

GPM	l/m
0.1 - 0.1	(.4)
TO	
6.0 - 6.0	(22.7)

ADJUSTMENT OPTION

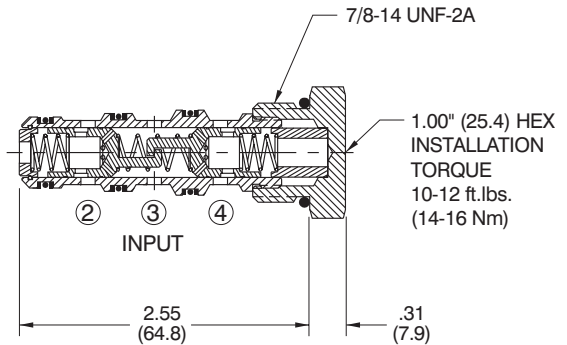
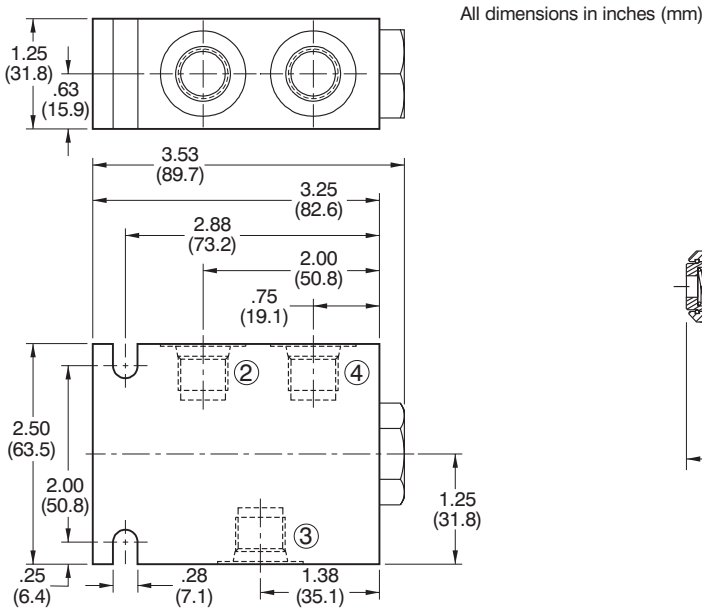
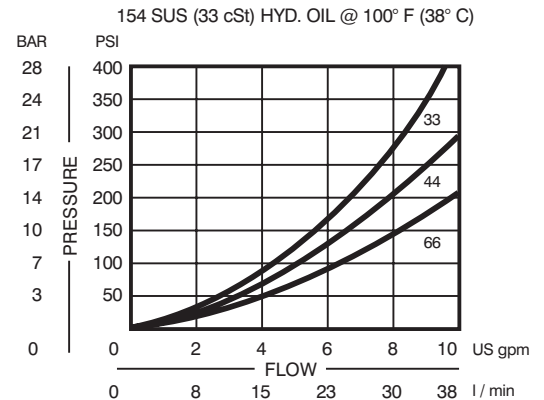
- A - INTERNAL ADJUSTMENT
- E - EXTERNAL ADJUSTMENT
- F - TAMPER RESISTANT
- K - KNOB ADJUSTMENT



SPECIFICATIONS

- This cartridge is a spool type flow divider/combiner. The flow dividing/combining ratios are maintained regardless of system pressure.
- Valve will split the input flow from **3** to **2** and **4** at the specified ratio regardless of pressure. The valve will also combine flow from **2** and **4** to **3**.
- Valve rated to 3000 psi (207 bar) working pressure.
- Maximum inlet flow is 12.0 gpm (45.4 l/m).
- Valve cartridge is **all** steel construction with precision ground spool, honed and hardened sleeve to assure smooth operation and extended service life.
- Hi-strength aluminum alloy body allows for maximum circuit design flexibility.
- Buna-N seals are standard. Viton is optional (consult factory for other seal compounds).
- Valve is designed for use with general purpose hydraulic fluids (MIL-H-5606, SAE #10, etc.).
- Cartridge weight .24 lbs (.11 kg).
- Valve cartridge fits Compact Controls cavity CP10-4.

TYPICAL PERFORMANCE



ORDERING INFORMATION

Shaded area represents standard product

CP340 - 1 - B - 8S - 44

BASIC CARTRIDGE

SEALS

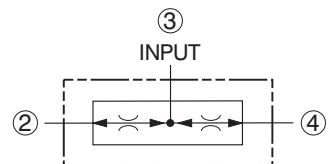
SEAL KIT	CODE
B - BUNA-N	120023
V - VITON	120024

PORTS

PORTS	BODY P/N
0 - CARTRIDGE	NO BODY
3P - 3/8 NPTF	220334
4P - 1/2 NPTF	220335
6S - #6 SAE	220336
8S - #8 SAE	220337
3B - 3/8 BSP	221440
4B - 1/2 BSP	221441

FLOW DIVISION

CODE	FLOW	% FLOW DIV
	gpm	l/m
33	6 (22.7)	50 50
44	8 (30.3)	50 50
66	12 (45.4)	50 50



CP301-1

FLOW CONTROL VALVE

(Restrictive Fixed Regulator Type)



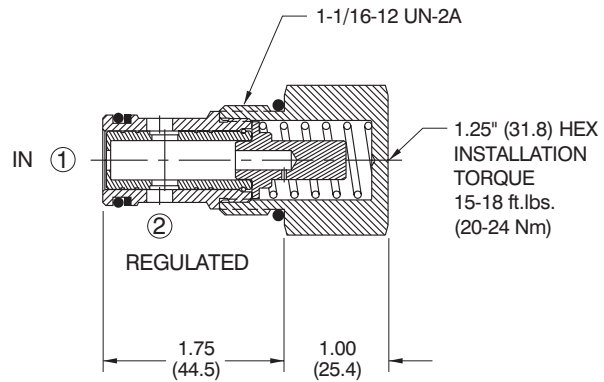
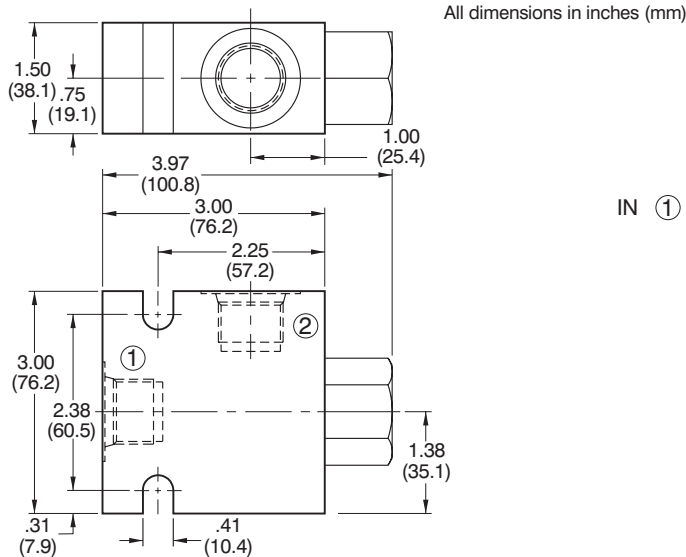
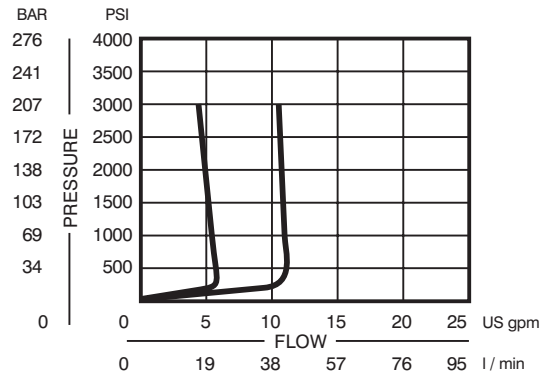
SERIES 12

SPECIFICATIONS

- This cartridge is a fixed orifice, pressure compensated, restrictive flow regulator.
- Valve maintains constant flow out of **2** regardless of system pressure. Reverse flow from **2** to **1** is noncompensated and goes through the control orifice.
- Valve rated to 3000 psi (207 bar) working pressure.
- Flow accuracy: .5 to 1.99 ± 15%; 2.0 to 15.0 ± 10%.
- Factory-set flow rate: .5 to 15.0 gpm (1.9 to 56.8 l/m).
- Valve cartridge is **all** steel construction with precision ground spool, honed and hardened sleeve to assure good flow regulation and extended service life.
- Hi-strength aluminum alloy body allows for maximum circuit design flexibility.
- Buna-N seals are standard. Viton is optional (consult factory for other seal compounds).
- Valve is designed for use with general purpose hydraulic fluids (MIL-H-5606, SAE #10, etc.).
- Cartridge weight .52 lbs (.24 kg).
- Valve cartridge fits Compact Controls [cavity CP12-2](#).

TYPICAL PERFORMANCE

154 SUS (33 cSt) HYD. OIL @ 100° F (38° C)



ORDERING INFORMATION

CP301 - 1 - B - 12S - 10.0

BASIC CARTRIDGE

SEALS

B - BUNA-N
V - VITON

SEAL KIT

120017
120018

PORTS

0 - CARTRIDGE
4P - 1/2 NPTF
6P - 3/4 NPTF
10S - #10 SAE
12S - #12 SAE
4B - 1/2 BSP
6B - 3/4 BSP

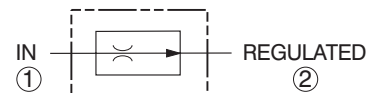
BODY P/N

NO BODY
220130
220131
220132
220133
221234
221235

REGULATED FLOW

GPM	l/m
*0.5 - 0.5	(1.9)
TO	
*15.0 - 15.0	(56.8)

* Factory Fixed.

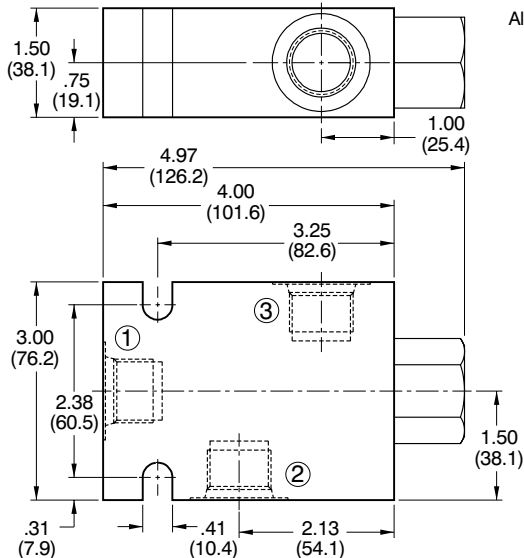
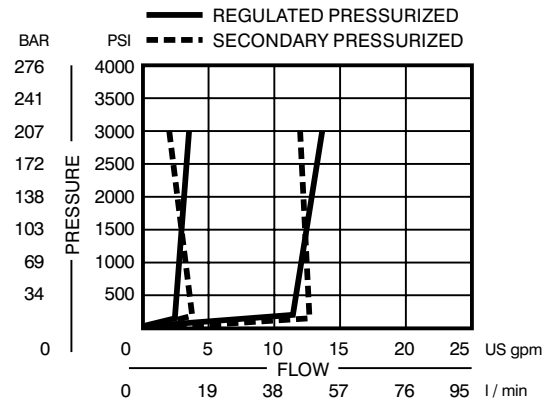


SPECIFICATIONS

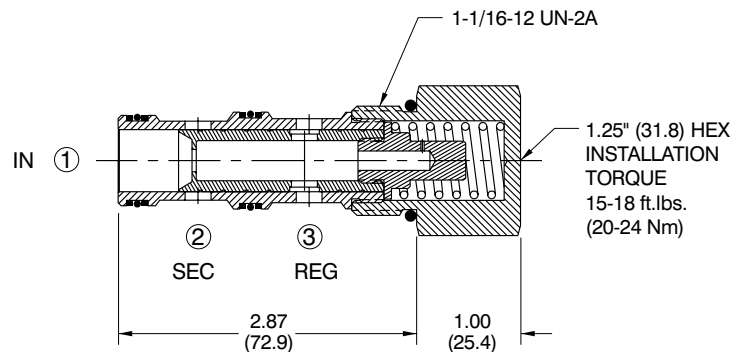
- This cartridge is a fixed orifice, pressure compensated, combination (priority) type flow regulator.
- Valve delivers input flow to 3 first, bypassing excess flow to 2. Constant flow is maintained at 3 regardless of pressure at 2 or 3.
- Valve rated to 3000 psi (207 bar) working pressure.
- Flow accuracy: .5 to 1.99 ± 15%; 2.0 to 12.0 ± 10%.
- Factory-set flow rate: .5 to 12.0 gpm (1.9 to 45.4 l/m).
- Maximum inlet flow: 25 gpm (94.6 l/m).
- Valve cartridge is *all* steel construction with precision ground spool, honed and hardened sleeve to assure good flow regulation and extended service life.
- Hi-strength aluminum alloy body allows for maximum circuit design flexibility.
- Buna-N seals are standard. Viton is optional (consult factory for other seal compounds).
- Valve is designed for use with general purpose hydraulic fluids (MIL-H-5606, SAE #10, etc.).
- Cartridge weight .61 lbs (.28 kg).
- Valve cartridge fits Compact Controls [cavity CP12-3](#).

TYPICAL PERFORMANCE

154 SUS (33 cSt) HYD. OIL @ 100° F (38° C)



All dimensions in inches (mm)



ORDERING INFORMATION

CP311 - 1 - B - 12S - 10.0

BASIC CARTRIDGE

SEALS

B - BUNA-N
V - VITON

SEAL KIT
120053
120052

PORTS

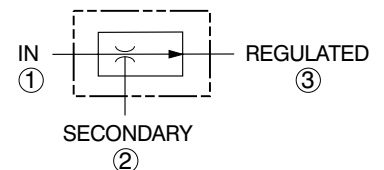
0 - CARTRIDGE
4P - 1/2 NPTF
6P - 3/4 NPTF
10S - #10 SAE
12S - #12 SAE
4B - 1/2 BSP
6B - 3/4 BSP

BODY P/N
NO BODY
220208
220209
220210
220211
221303
221237

REGULATED FLOW

GPM	l/m
*0.5 - 0.5	(1.9)
TO	
*12.0 - 12.0	(45.4)

* Factory Fixed.



CP341-1

FLOW CONTROL VALVE

(Flow Divider/Combiner Type)



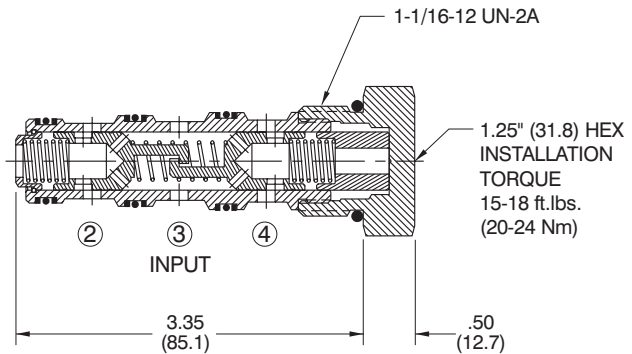
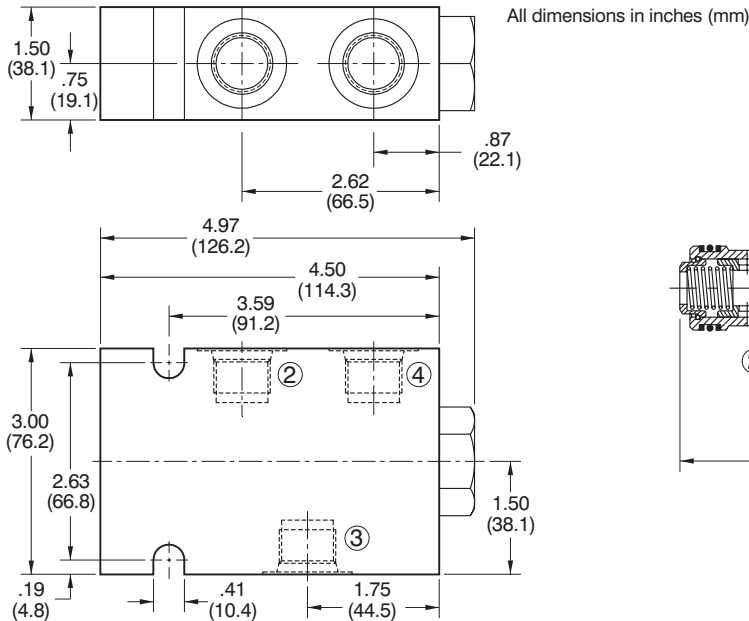
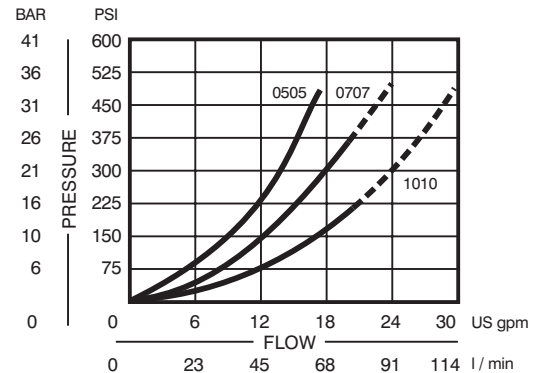
SERIES 12

SPECIFICATIONS

- This cartridge is a spool type flow divider/combiner. The flow dividing/combining ratios are maintained regardless of system pressure.
- Valve will split the input flow from **3** to **2** and **4** at the specified ratio regardless of pressure. The valve will also combine flow from **2** and **4** to **3**.
- Valve rated to 3000 psi (207 bar) working pressure.
- Maximum inlet flow is 20.0 gpm (75.7 l/m).
- Valve cartridge is **all** steel construction with precision ground spool, honed and hardened sleeve to assure smooth operation and extended service life.
- Hi-strength aluminum alloy body allows for maximum circuit design flexibility.
- Buna-N seals are standard. Viton is optional (consult factory for other seal compounds).
- Valve is designed for use with general purpose hydraulic fluids (MIL-H-5606, SAE #10, etc.).
- Cartridge weight .50 lbs (.23 kg).
- Valve cartridge fits Compact Controls cavity CP12-4.

TYPICAL PERFORMANCE

154 SUS (33 cSt) HYD. OIL @ 100° F (38° C)



ORDERING INFORMATION

Shaded area represents standard product

CP341 - 1 - B - 10S - 0707

BASIC CARTRIDGE

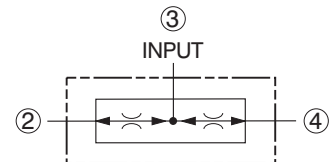
SEALS

SEAL KIT	
B - BUNA-N	120262
V - VITON	120263

PORTS

BODY P/N	
0 - CARTRIDGE	NO BODY
3P - 3/8 NPTF	220878
4P - 1/2 NPTF	220879
8S - #8 SAE	220880
10S - #10 SAE	220881
3B - 3/8 BSP	221438
4B - 1/2 BSP	221439

CODE	FLOW		% FLOW DIV	
	gpm	l/m	2	4
0505	10	(37.9)	50	50
0707	14	(53.0)	50	50
1010	20	(75.7)	50	50

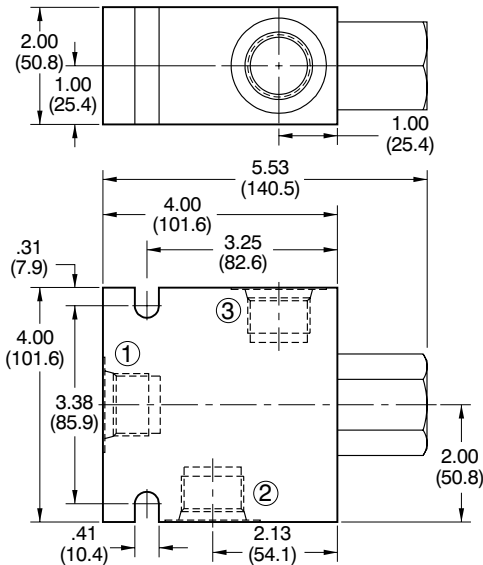
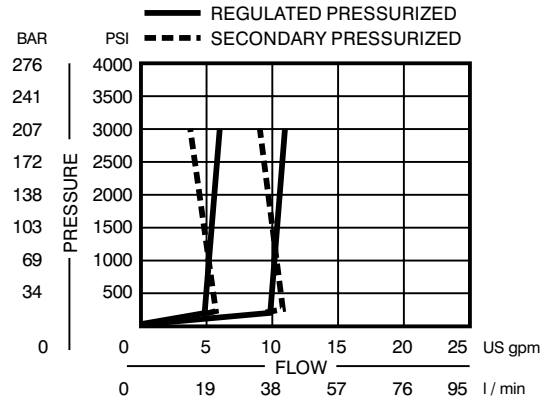


SPECIFICATIONS

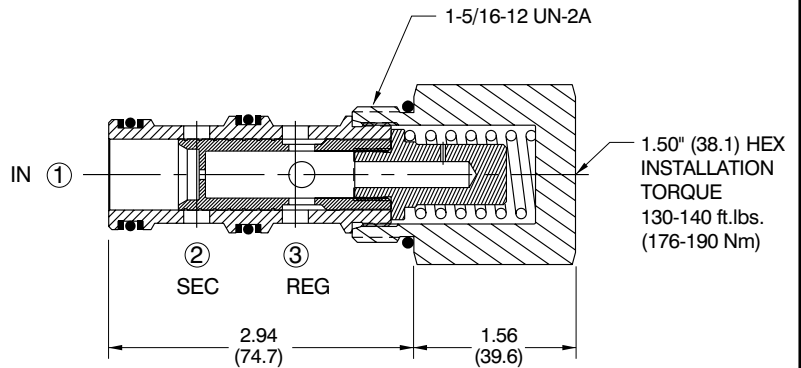
- This cartridge is a fixed orifice, pressure compensated, combination (priority) type flow regulator.
- Valve delivers input flow to 3 first, bypassing excess flow to 2. Constant flow is maintained at 3 regardless of pressure at 2 or 3.
- Valve rated to 3000 psi (207 bar) working pressure.
- Flow accuracy: .5 to 1.99 ± 15%; 2.0 to 17.0 ± 10%.
- Factory-set flow rate: .5 to 17.0 gpm (1.9 to 64.3 l/m).
- Maximum inlet flow: 35 gpm (132.5 l/m).
- Valve cartridge is *all* steel construction with precision ground spool, honed and hardened sleeve to assure good flow regulation and extended service life.
- Hi-strength aluminum alloy body allows for maximum circuit design flexibility.
- Buna-N seals are standard. Viton is optional (consult factory for other seal compounds).
- Valve is designed for use with general purpose hydraulic fluids (MIL-H-5606, SAE #10, etc.).
- Cartridge weight .1.17 lbs (.53 kg).
- Valve cartridge fits Compact Controls cavity CP16-3.

TYPICAL PERFORMANCE

154 SUS (33 cSt) HYD. OIL @ 100° F (38° C)



All dimensions in inches (mm)



ORDERING INFORMATION

CP312 - 1 - B - 16S - 10.0

BASIC CARTRIDGE

SEALS

B - BUNA-N
 V - VITON

SEAL KIT
 120202
 120203

PORTS

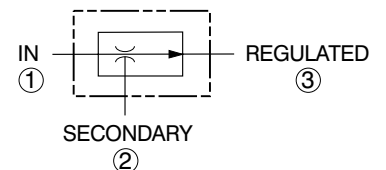
0 - CARTRIDGE
 6P - 3/4 NPTF
 8P - 1" NPTF
 12S - #12 SAE
 16S - #16 SAE
 6B - 3/4 BSP
 8B - 1" BSP

BODY P/N
 NO BODY
 220320
 220321
 220322
 220323
 221309
 221310

REGULATED FLOW

GPM	l/m
*0.5 - 0.5	(1.9)
TO	
*17.0 - 17.0	(64.3)

* Factory Fixed.



CP342-1

FLOW CONTROL VALVE

(Flow Divider/Combiner Type)



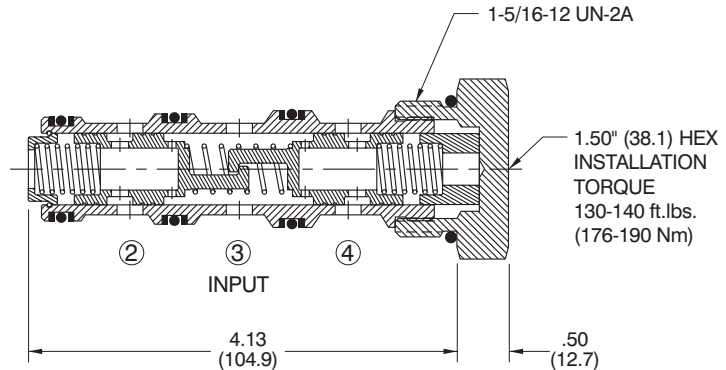
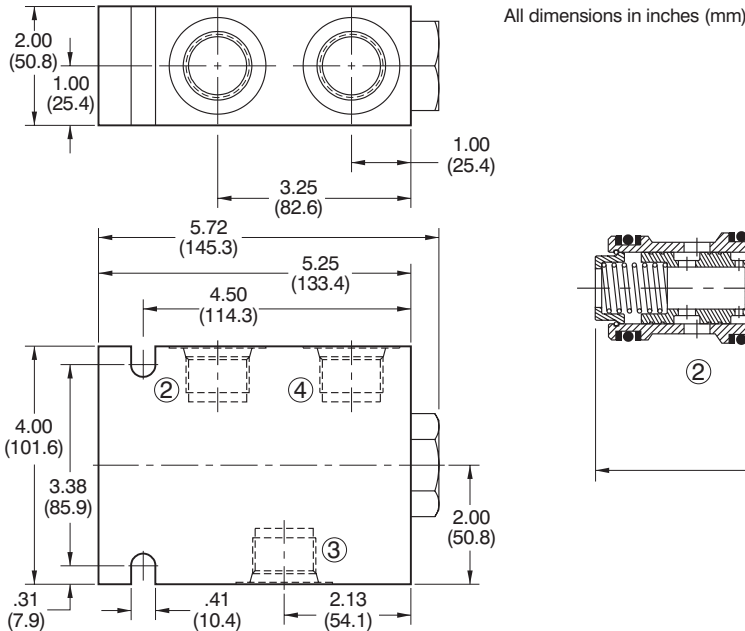
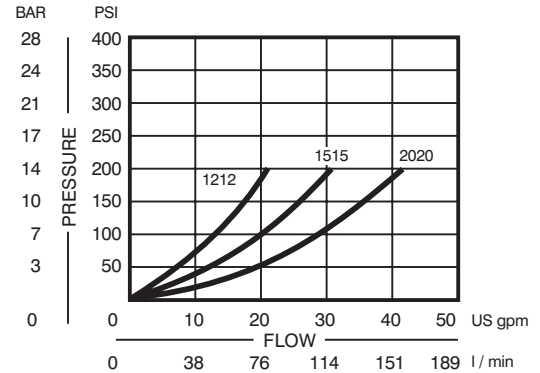
SERIES 16

SPECIFICATIONS

- This cartridge is a spool type flow divider/combiner. The flow dividing/combining ratios are maintained regardless of system pressure.
- Valve will split the input flow from **3** to **2** and **4** at the specified ratio regardless of pressure. The valve will also combine flow from **2** and **4** to **3**.
- Valve rated to 3000 psi (207 bar) working pressure.
- Maximum inlet flow is 40.0 gpm (151.4 l/m).
- Valve cartridge is **all** steel construction with precision ground spool, honed and hardened sleeve to assure smooth operation and extended service life.
- Hi-strength aluminum alloy body allows for maximum circuit design flexibility.
- Buna-N seals are standard. Viton is optional (consult factory for other seal compounds).
- Valve is designed for use with general purpose hydraulic fluids (MIL-H-5606, SAE #10, etc.).
- Cartridge weight .81 lbs (.37 kg).
- Valve cartridge fits Compact Controls cavity CP16-4.

TYPICAL PERFORMANCE

154 SUS (33 cSt) HYD. OIL @ 100° F (38° C)



ORDERING INFORMATION

Shaded area represents standard product

CP342 - 1 - B - 16S - 1515

BASIC CARTRIDGE

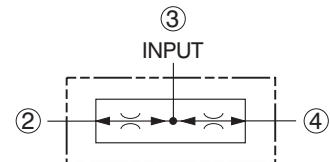
SEALS

SEAL KIT	CODE
B - BUNA-N	120025
V - VITON	120026

PORTS

BODY P/N	CODE
0 - CARTRIDGE	NO BODY
6P - 3/4 NPTF	220188
8P - 1" NPTF	220189
12S - #12 SAE	220190
16S - #16 SAE	220191
6B - 3/4 BSP	221433
8B - 1" BSP	221434

CODE	FLOW		% FLOW DIV	
	gpm	l/m	2	4
1212	24	(90.8)	50	50
1515	30	(113.6)	50	50
2020	40	(151.4)	50	50
1215	27	(94.6)	40	60
1220	32	(113.6)	33	67



MOTION CONTROL VALVES

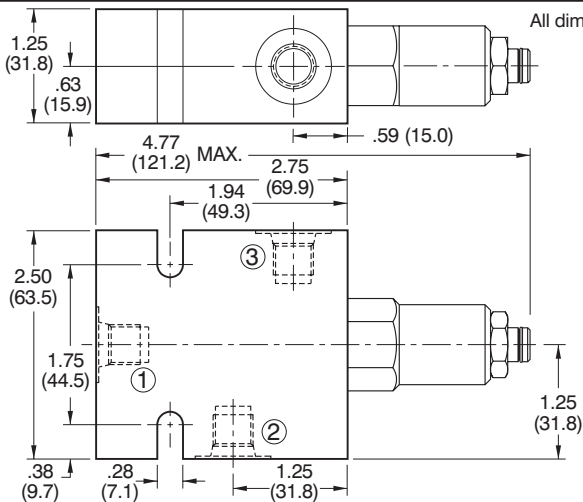
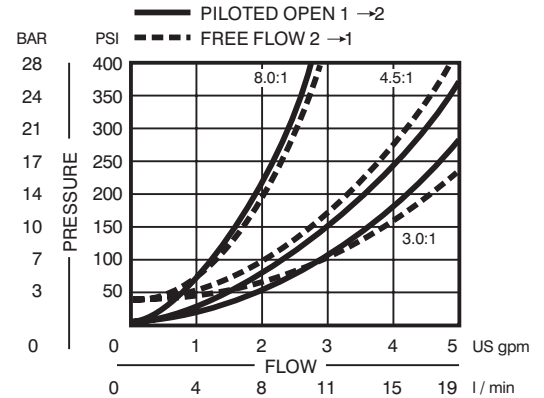
SIZE	DESCRIPTION	FLOW gpm (l/m)	PRESSURE psi (bar)	PAGE
SERIES 8				
CP448-1	COUNTERBALANCE VALVE	5 (19)	5000 (345)	7.01
CP458-2	PILOT TO OPEN CHECK	5 (19)	3000 (207)	7.02
CP468-1	PILOT TO CLOSE CHECK	10 (38)	3000 (207)	7.03
SERIES 10				
CP440-1	COUNTERBALANCE VALVE	15 (57)	5000 (345)	7.04
CP440-2	DUAL COUNTERBALANCE VALVE	15 (57)	5000 (345)	7.05
CP440-4	VENTED COUNTERBALANCE VALVE	15 (57)	5000 (345)	7.06
CP450-1	PILOT TO OPEN CHECK	8 (30)	3000 (207)	7.07
CP450-2	PILOT TO OPEN CHECK	10 (38)	3000 (207)	7.08
CP450-2L	PILOT TO OPEN CHECK	15 (57)	3000 (207)	7.09
CP460-1	PILOT TO CLOSE CHECK	10 (38)	3000 (207)	7.10
SERIES 12				
CP441-1	COUNTERBALANCE VALVE	30 (114)	5000 (345)	7.11
CP441-2	DUAL COUNTERBALANCE VALVE	30 (114)	5000 (345)	7.12
CP451-2	PILOT TO OPEN CHECK	25 (95)	3000 (207)	7.13
CP461-1	PILOT TO CLOSE CHECK	30 (114)	3000 (207)	7.14
SERIES 16				
CP452-2	PILOT TO OPEN CHECK	35 (132)	3000 (207)	7.15
CP462-1	PILOT TO CLOSE CHECK	50 (189)	3000 (207)	7.16
SERIES 20				
CP453-2	PILOT TO OPEN CHECK	60 (227)	3000 (207)	7.17
INLINE PILOT OPERATED CHECK VALVES				
CP400-1	SINGLE PILOT TO OPEN CHECK	15 (57)	3000 (207)	7.18
CP410-1	DUAL PILOT CHECK	15 (57)	3000 (207)	7.19

SPECIFICATIONS

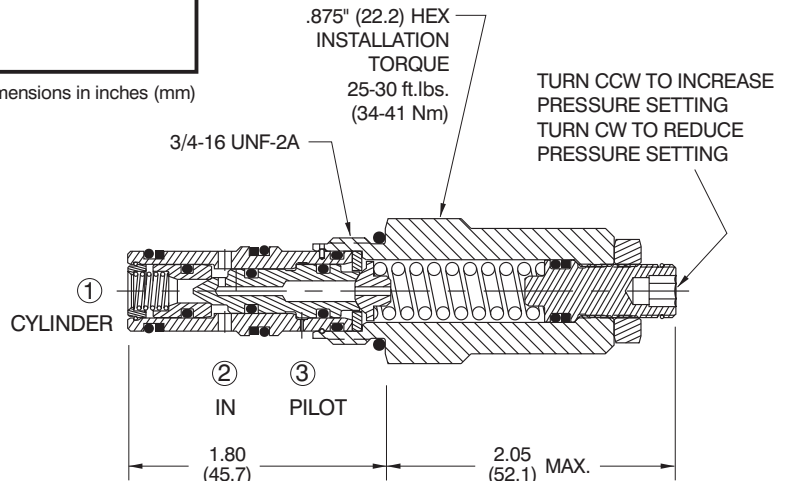
- Valve allows free flow from 2 to 1 and relieves from 1 to 2. The valve also has a pilot override or assist on the relief valve section at 3, thus making it a counterbalance valve. The load is moved by flow from 2 to 1. To reverse the load motion, pilot pressure is applied at 3 which effectively reduces the relief valve setting. If the load tries to run ahead of the pump (thus reducing pilot pressure at 3) the relief section will throttle or close to prevent runaway. Set relief 30% above normal operating pressure.
- Nominal flow: 5.0 gpm (19 l/m).
- Valve rated to 5000 psi (345 bar) working pressure.
- Valve leakage is 10 drops per min. max at 70% of relief setting.
- Valve cartridge is **all** steel construction with precision ground and hardened components to assure smooth operation and extended service life.
- Hi-strength aluminum alloy body allows for maximum circuit design flexibility.
- Use steel bodies for pressure above 3000 psi.
- Buna-N seals are standard. Viton is optional (consult factory for other seal compounds).
- Valve is designed for use with general purpose hydraulic fluids (MIL-H-5606, SAE #10, etc.).
- Cartridge weight .36 lbs (.16 kg).
- Valve cartridge fits Compact Controls cavity CP8-3L.

TYPICAL PERFORMANCE

154 SUS (33 cSt) HYD. OIL @ 100° F (38° C)



All dimensions in inches (mm)



ORDERING INFORMATION

Shaded area represents standard product

CP448 - 1 - B - 6S - E - B - * - 4.5 - 040**

BASIC CARTRIDGE

SEALS

SEAL KIT

B - BUNA-N	120238
V - VITON	120239

PORTS

BODY P/N

0 - CARTRIDGE	NO BODY
2P - 1/4 NPTF	221842
3P - 3/8 NPTF	221843
4S - #4 SAE	221844
6S - #6 SAE	221845
2B - 1/4 BSP	221846
3B - 3/8 BSP	221847

ADJUSTMENT OPTION

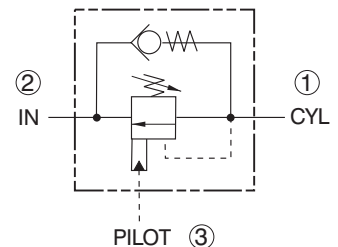
E - EXTERNAL ADJUSTMENT

FREE FLOW CHECK CRACKING PRESSURE

PSI	BAR
040 - 40	(2.76)

PRESSURE RANGE

PILOT RATIO 3.0		PILOT RATIO 4.5		PILOT RATIO 8.0	
PSI	BAR	PSI	BAR	PSI	BAR
A - 600-1500	(41-103)	A - 800-2500	(55-172)	A - 1500-5000	(103-345)
Std. Setting 1000	(69)	Std. Setting 1500	(103)	Std. Setting 2500	(172)
B - 1000-3000	(69-207)	B - 1500-5000	(103-345)	B - N/A	N/A
Std. Setting 1500	(103)	Std. Setting 2500	(172)	C - N/A	N/A
C - 1800-5000	(124-345)	C - N/A	N/A		
Std. Setting 2500	(172)				



CP458-2

MOTION CONTROL VALVE

(Pilot to Open Check; Pilot Ratio = 2.8)



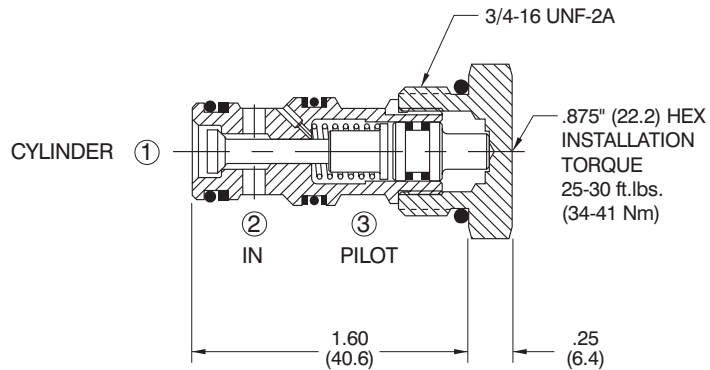
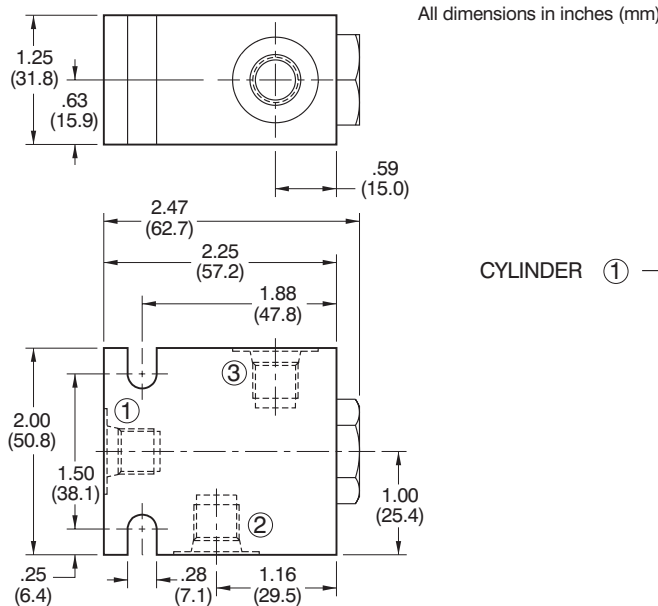
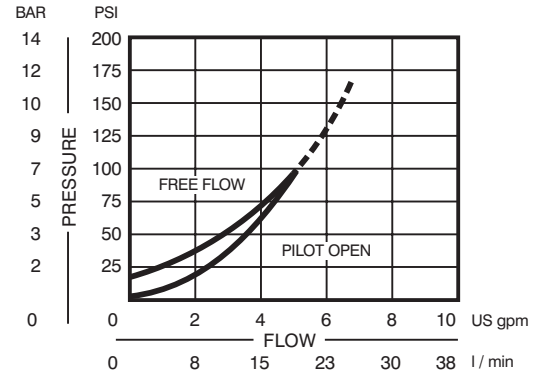
SERIES 8

SPECIFICATIONS

- Valve allows flow from 2 to 1 and blocks the flow from 1 to 2 until sufficient pressure at 3 is applied.
- Cartridge has a 2.8:1 pilot ratio, meaning that 1/3 of the load pressure at 1 is required at 3 to hold the valve open.
- Nominal flow: 5.0 gpm (19 l/m).
- Valve rated to 3000 psi (207 bar) working pressure.
- Valve leakage is 6 drops per min. max.
- Valve cartridge is **all** steel construction with precision ground and hardened components to assure smooth operation and extended service life.
- Hi-strength aluminum alloy body allows for maximum circuit design flexibility.
- Buna-N seals are standard. Viton is optional (consult factory for other seal compounds).
- Valve is designed for use with general purpose hydraulic fluids (MIL-H-5606, SAE #10, etc.).
- Cartridge weight .15 lbs (.07 kg).
- Valve cartridge fits Compact Controls cavity CP8-3.

TYPICAL PERFORMANCE

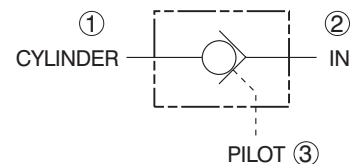
154 SUS (33 cSt) HYD. OIL @ 100° F (38° C)



ORDERING INFORMATION

CP458 - 2 - B - 6S - 015 - 0

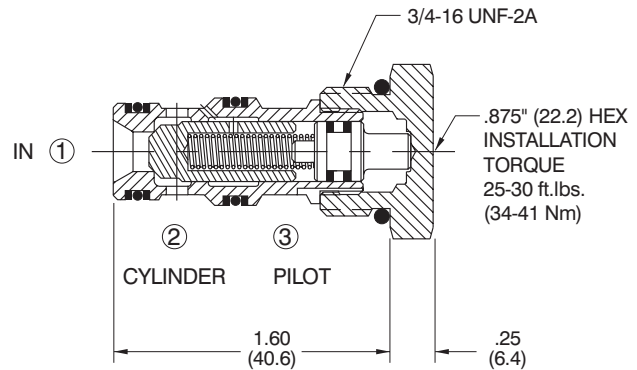
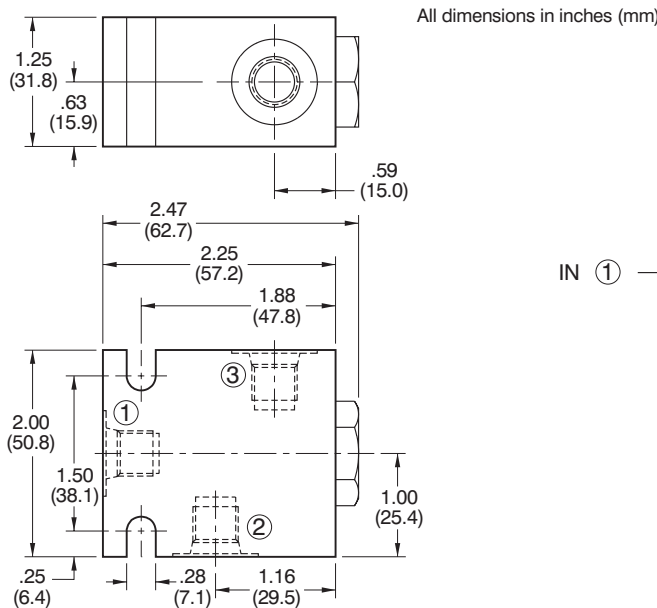
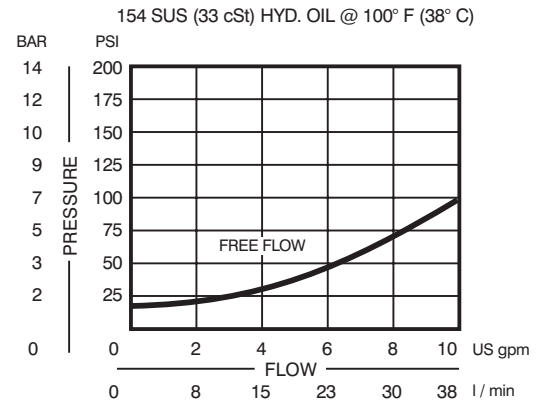
BASIC CARTRIDGE	SEALS	SEAL KIT	PISTON SEALS
B - BUNA-N		120250	0 - NO SEALS
V - VITON		120253	S - SEALS INCLUDED
PORTS	CRACKING PRESSURE		
0 - CARTRIDGE	PSI	BAR	
2P - 1/4 NPTF	015 - 15	(1.03)	
3P - 3/8 NPTF	065 - 65	(4.48)	
4S - #4 SAE			
6S - #6 SAE			
2B - 1/4 BSP			
3B - 3/8 BSP			
BODY P/N			
NO BODY			
220819			
220820			
220821			
220822			
221287			
221288			



SPECIFICATIONS

- Valve allows flow from **1** to **2** and blocks the flow from **2** to **1**. Flow from **1** to **2** is blocked when sufficient pressure is applied at **3**.
- Cartridge has a 2.2:1 pilot ratio, meaning that .45 times the load pressure at **2** is required at **3** to hold the valve closed.
- Nominal flow: 10.0 gpm (38 l/m).
- Valve rated to 3000 psi (207 bar) working pressure.
- Valve leakage is 6 drops per min. max.
- Valve cartridge is **all** steel construction with precision ground and hardened components to assure smooth operation and extended service life.
- Hi-strength aluminum alloy body allows for maximum circuit design flexibility.
- Buna-N seals are standard. Viton is optional (consult factory for other seal compounds).
- Valve is designed for use with general purpose hydraulic fluids (MIL-H-5606, SAE #10, etc.).
- Cartridge weight .14 lbs (.06 kg).
- Valve cartridge fits Compact Controls [cavity CP8-3](#).

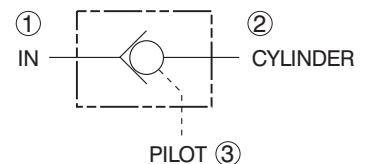
TYPICAL PERFORMANCE



ORDERING INFORMATION

CP468 - 1 - B - 6S - 015 - 0

BASIC CARTRIDGE	SEALS	SEAL KIT	PISTON SEALS
		120229	0 - NO SEALS
		120230	S - SEALS INCLUDED
B - BUNA-N			
V - VITON			
PORTS	BODY P/N	CRACKING PRESSURE	
0 - CARTRIDGE	NO BODY	PSI	BAR
2P - 1/4 NPTF	220819	015 - 15	(1.03)
3P - 3/8 NPTF	220820	065 - 65	(4.48)
4S - #4 SAE	220821		
6S - #6 SAE	220822		
2B - 1/4 BSP	221287		
3B - 3/8 BSP	221288		



CP440-1

MOTION CONTROL VALVE

(Counterbalance Valve; Pilot Ratio = 3.0, 4.5, 10.0)



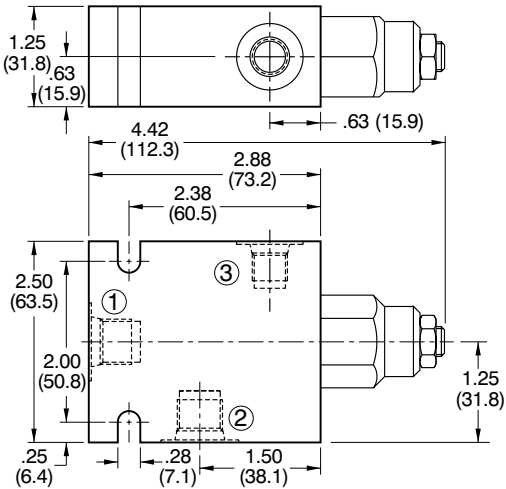
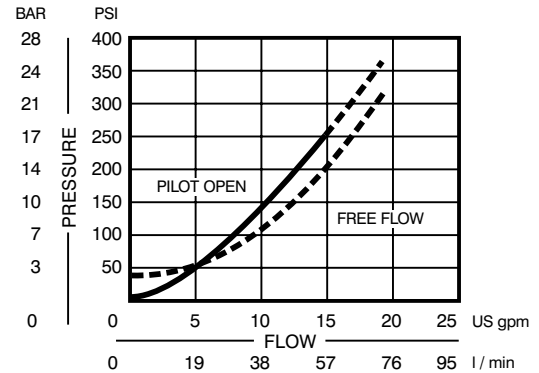
SERIES 10

SPECIFICATIONS

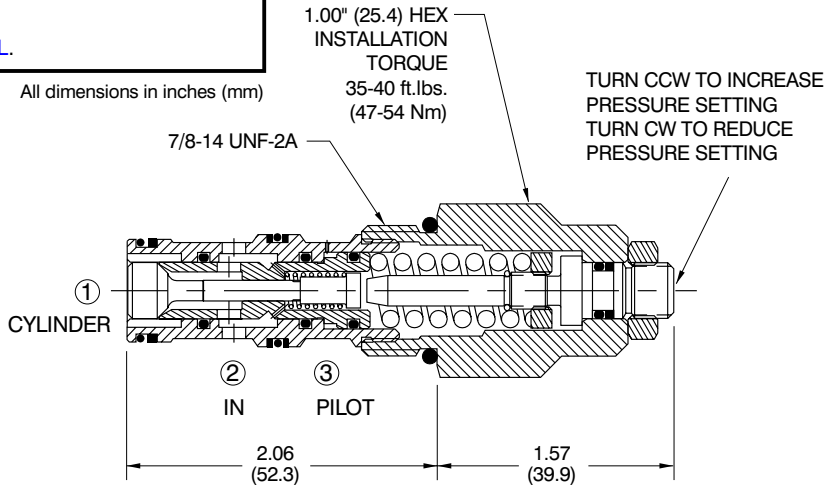
- Valve allows free flow from 2 to 1 and relieves from 1 to 2. The valve also has a pilot override or assist on the relief valve section at 3, thus making it a counterbalance valve. The load is moved by flow from 2 to 1. To reverse the load motion, pilot pressure is applied at 3 which effectively reduces the relief valve setting. If the load tries to run ahead of the pump (thus reducing pilot pressure at 3) the relief section will throttle or close to prevent runaway. Set relief 30% above normal operating pressure.
- Nominal flow: 15.0 gpm (57 l/m).
- Valve rated to 5000 psi (345 bar) working pressure.
- Valve leakage is 10 drops per min. max at 70% of relief setting.
- Valve cartridge is *all* steel construction with precision ground and hardened components to assure smooth operation and extended service life.
- Hi-strength aluminum alloy body allows for maximum circuit design flexibility.
- Use steel bodies for pressure above 3000 psi.
- Buna-N seals are standard. Viton is optional (consult factory for other seal compounds).
- Valve is designed for use with general purpose hydraulic fluids (MIL-H-5606, SAE #10, etc.).
- Cartridge weight .42 lbs (.19 kg).
- Valve cartridge fits Compact Controls cavity CP10-3L.

TYPICAL PERFORMANCE

154 SUS (33 cSt) HYD. OIL @ 100° F (38° C)



All dimensions in inches (mm)



ORDERING INFORMATION

CP440 - 1 - B - 8S - E - B - * - 4.5 - 015**

BASIC CARTRIDGE

SEALS

SEAL KIT

B - BUNA-N	120157
V - VITON	120156

PORTS

	BODY P/N	PILOT PORT
0 - CARTRIDGE	NO BODY	
3P - 3/8 NPTF	220656	2P - 1/4 NPTF
4P - 1/2 NPTF	220657	2P - 1/4 NPTF
6S - #6 SAE	220658	4S - #4 SAE
8S - #8 SAE	220659	4S - #4 SAE
3B - 3/8 BSP	221298	3B - 3/8 BSP
4B - 1/2 BSP	221299	4B - 1/2 BSP

ADJUSTMENT OPTION

- E - EXTERNAL ADJUSTMENT
- F - TAMPER RESISTANT

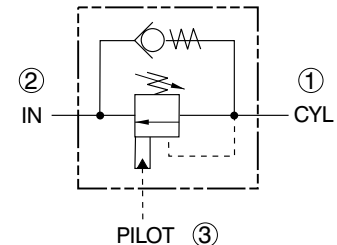
Shaded area represents standard product

FREE FLOW CHECK CRACKING PRESSURE

	PSI	BAR
005 -	5	(.34)
015 -	15	(1.03)

PRESSURE RANGE

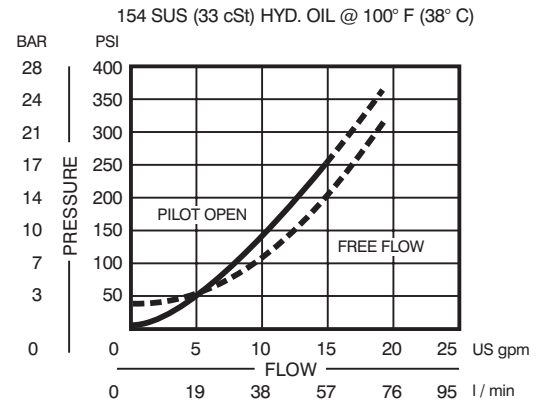
PILOT RATIO 3.0		PILOT RATIO 4.5		PILOT RATIO 10.0	
	PSI	BAR		PSI	BAR
A -	500-1500	(34-103)	A -	500-2500	(34-172)
Std. Setting	1000	(69)	Std. Setting	1500	(103)
B -	1000-2500	(69-172)	B -	1000-3500	(69-241)
Std. Setting	1500	(103)	Std. Setting	1500	(103)
C -	1500-3500	(103-241)	C -	1500-5000	(103-345)
Std. Setting	2500	(172)	Std. Setting	2500	(172)
			A -	1500-5000	(103-345)
			Std. Setting	2500	(172)
			B -	N/A	N/A
			C -	N/A	N/A



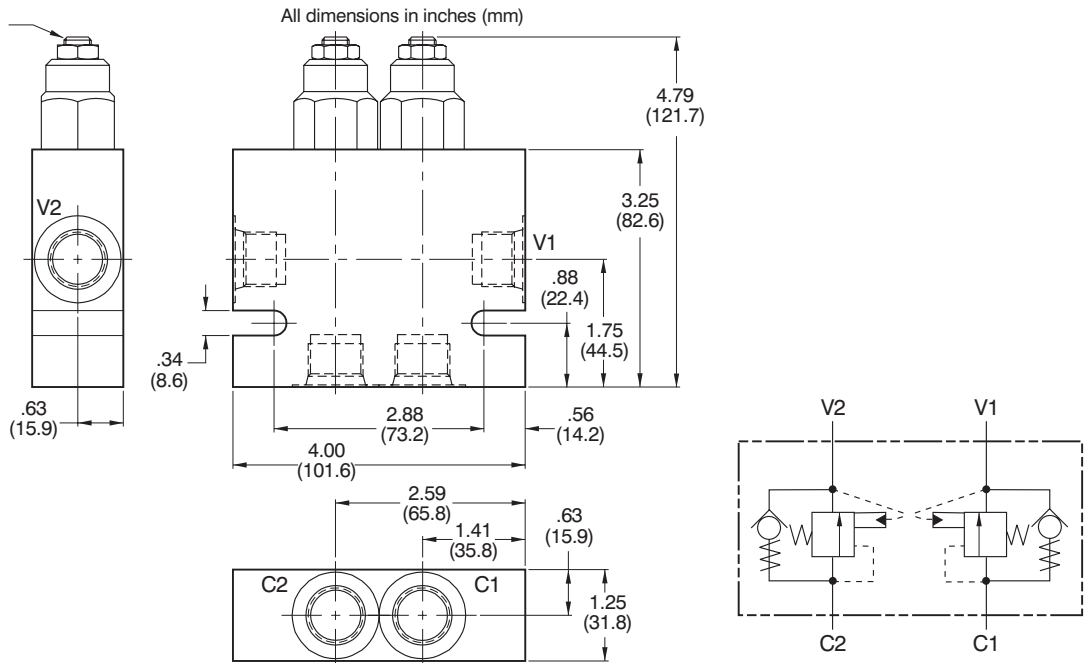
SPECIFICATIONS

- Valve is a dual counterbalance valve. It utilizes two cartridge type counterbalance valves.
- Nominal flow: 15.0 gpm (57 l/m).
- Valve rated to 5000 psi (345 bar) working pressure.
- Valve cartridge is *all* steel construction with precision ground and hardened components to assure smooth operation and extended service life.
- Hi-strength aluminum alloy body allows for maximum circuit design flexibility.
- Use steel bodies for pressure above 3000 psi.
- Buna-N seals are standard. Viton is optional (consult factory for other seal compounds).
- Valve is designed for use with general purpose hydraulic fluids (MIL-H-5606, SAE #10, etc.).
- Valve weight 2.05 lbs (.93 kg).
- Valve uses two CP440-1 counterbalance valve cartridges.

TYPICAL PERFORMANCE



TURN CCW TO INCREASE
 PRESSURE SETTING
 TURN CW TO REDUCE
 PRESSURE SETTING



ORDERING INFORMATION

Shaded area represents standard product

CP440 - 2 - 8S - B - E - B - * - 4.5 - 015**

BASIC VALVE PORTS

		BODY P/N
3P	3/8 NPTF	220755
4P	1/2 NPTF	220756
6S	#6 SAE	220757
8S	#8 SAE	220758
3B	3/8 BSP	221447
4B	1/2 BSP	221448

SEALS

	SEAL KIT
B	BUNA-N 120164
V	VITON 120165

ADJUSTMENT OPTION

E	EXTERNAL ADJUSTMENT
F	TAMPER RESISTANT

FREE FLOW CHECK CRACKING PRESSURE

	PSI	BAR
005	5	(.34)
015	15	(1.03)

PILOT RATIO 3.0

	PSI	BAR
A	500-1500	(34-103)
Std. Setting	1000	(69)
B	1000-2500	(69-172)
Std. Setting	1500	(103)
C	1500-3500	(103-241)
Std. Setting	2500	(172)

PILOT RATIO 4.5

	PSI	BAR
A	500-2500	(34-172)
Std. Setting	1500	(103)
B	1000-3500	(69-241)
Std. Setting	1500	(103)
C	1500-5000	(103-345)
Std. Setting	2500	(172)

PILOT RATIO 10.0

	PSI	BAR
A	1500-5000	(103-345)
Std. Setting	2500	(172)
B	N/A	N/A
C	N/A	N/A

CP440-4

MOTION CONTROL VALVE

(Vented Counterbalance Valve; Pilot Ratio = 5.0)



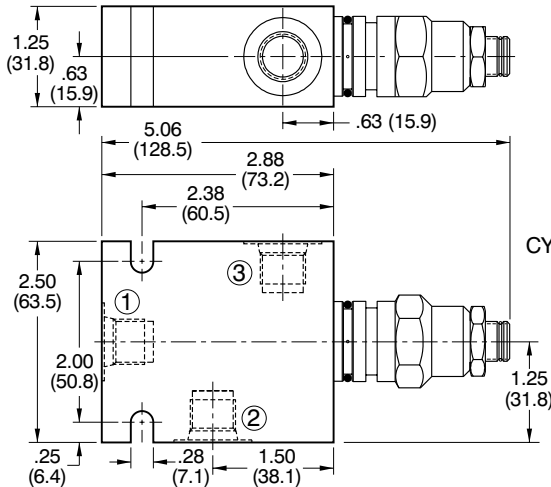
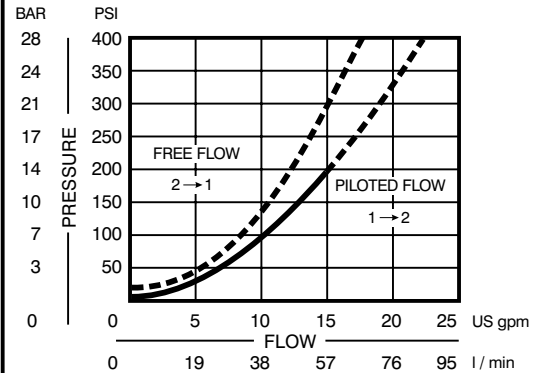
SERIES 10

SPECIFICATIONS

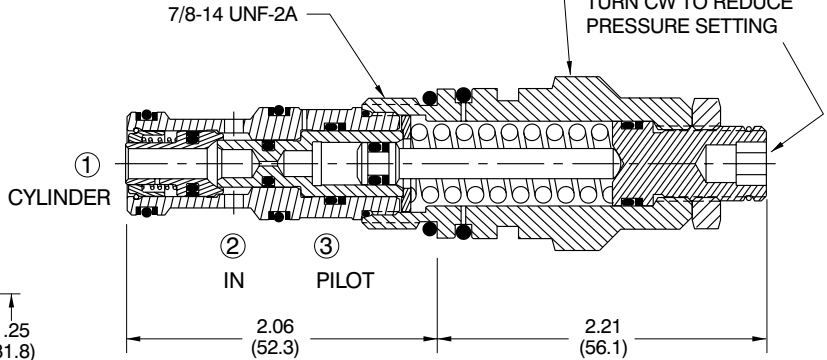
- Valve allows free flow from 2 to 1 and relieves from 1 to 2. The valve also has a pilot override or assist on the relief valve section at 3, thus making it a counterbalance valve. The load is moved by flow from 2 to 1. To reverse the load motion, pilot pressure is applied at 3 which effectively reduces the relief valve setting. If the load tries to run ahead of the pump (thus reducing pilot pressure at 3) the relief section will throttle or close to prevent runaway. This valve utilizes a vented design which makes it insensitive to back pressure at port 2, thus it can be used in meter-out circuits such as regenerative, proportional and servo type systems. The relief should be set 1.3 times the maximum load induced pressure.
- Nominal flow: 15.0 gpm (57 l/m).
- Valve rated to 5000 psi (345 bar) working pressure.
- Valve leakage is 10 drops per min. max at 70% of relief setting.
- Valve cartridge is *all* steel construction with precision ground and hardened components to assure smooth operation and extended service life.
- Hi-strength aluminum alloy body allows for maximum circuit design flexibility.
- Use steel bodies for pressure above 3000 psi.
- Buna-N seals are standard. Viton is optional (consult factory for other seal compounds).
- Valve is designed for use with general purpose hydraulic fluids (MIL-H-5606, SAE #10, etc.).
- Cartridge weight .48 lbs (.22 kg).
- Valve cartridge fits Compact Controls cavity CP10-3L.

TYPICAL PERFORMANCE

154 SUS (33 cSt) HYD. OIL @ 100° F (38° C)



All dimensions in inches (mm)



ORDERING INFORMATION

CP440 - 4 - B - 8S - E - A - * - 5.0 - 015**

BASIC CARTRIDGE

SEALS

B - BUNA-N
 V - VITON

SEAL KIT
 120140
 120141

PORTS

0 - CARTRIDGE
 3P - 3/8 NPTF
 4P - 1/2 NPTF
 6S - #6 SAE
 8S - #8 SAE
 3B - 3/8 BSP
 4B - 1/2 BSP

BODY P/N
 NO BODY 220727
 220728
 220729
 220730
 221298
 221299

ADJUSTMENT OPTION

E - EXTERNAL ADJUSTMENT

FREE FLOW CHECK CRACKING PRESSURE

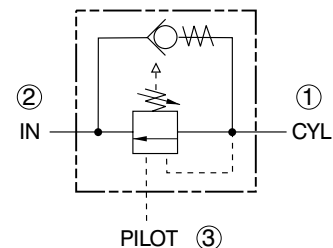
PSI BAR
 015 - 15 (1.03)

PILOT RATIO

PRESSURE RANGE

PILOT RATIO 5.0

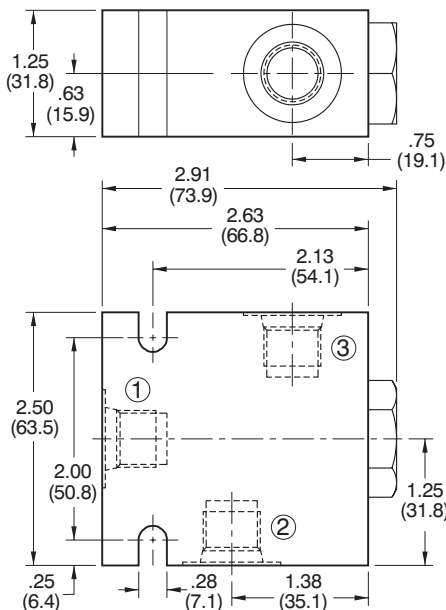
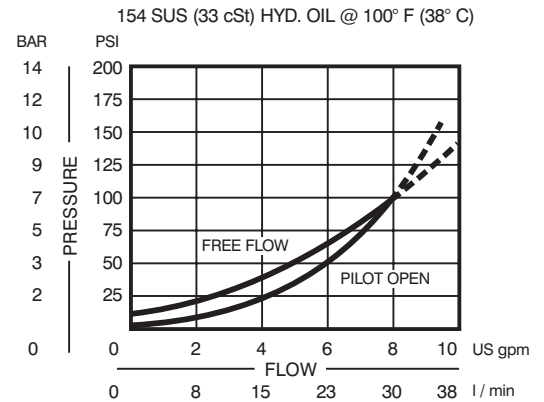
PSI BAR
 A - 500-3500 (34-241)
 Std. Setting 1500 (103)
 B - 3000-5000 (207-345)
 Std. Setting 3000 (207)



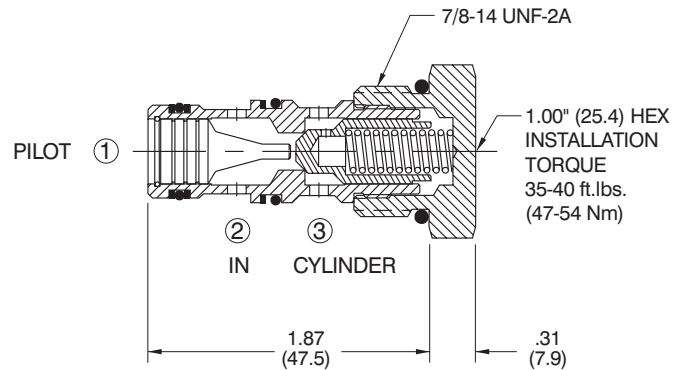
SPECIFICATIONS

- Valve allows flow from **2** to **3** and blocks the flow from **3** to **2** until sufficient pressure at **1** is applied.
- Cartridge has a 3.0:1 pilot ratio, meaning that 1/3 of the load pressure at **3** is required at **1** to hold the valve open.
- Nominal flow: 8.0 gpm (30 l/m).
- Valve rated to 3000 psi (207 bar) working pressure.
- Valve leakage is 6 drops per min. max.
- Valve cartridge is **all** steel construction with precision ground and hardened components to assure smooth operation and extended service life.
- Hi-strength aluminum alloy body allows for maximum circuit design flexibility.
- Buna-N seals are standard. Viton is optional (consult factory for other seal compounds).
- Valve is designed for use with general purpose hydraulic fluids (MIL-H-5606, SAE #10, etc.).
- Cartridge weight .20 lbs (.09 kg).
- Valve cartridge fits Compact Controls [cavity CP10-3](#).

TYPICAL PERFORMANCE



All dimensions in inches (mm)

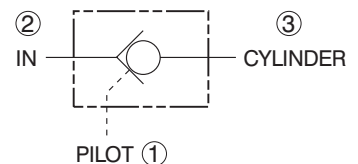


ORDERING INFORMATION

Shaded area represents standard product

CP450 - 1 - B - 8S - 015 - 0

BASIC CARTRIDGE	SEALS	PISTON SEALS
		0 - NO SEALS
		S - SEALS INCLUDED
SEALS	SEAL KIT	
B - BUNA-N	120570	
V - VITON	120571	
PORTS	BODY P/N	CRACKING PRESSURE
0 - CARTRIDGE	NO BODY	PSI BAR
3P - 3/8 NPTF	220203	015 - 15 (1.03)
4P - 1/2 NPTF	220204	065 - 65 (4.48)
6S - #6 SAE	220205	
8S - #8 SAE	220206	
3B - 3/8 BSP	221297	
4B - 1/2 BSP	221267	



CP450-2

MOTION CONTROL VALVE

(Pilot to Open Check; Pilot Ratio = 3.0)



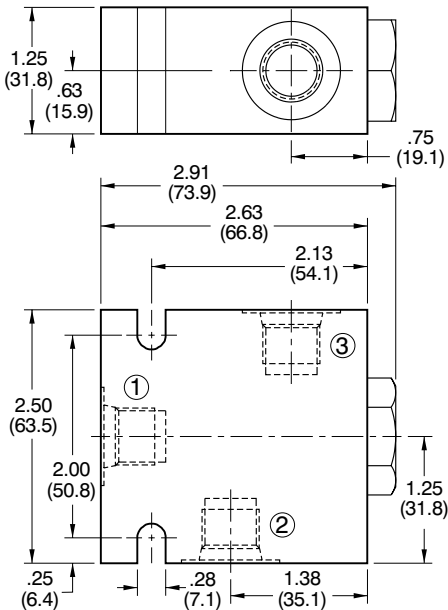
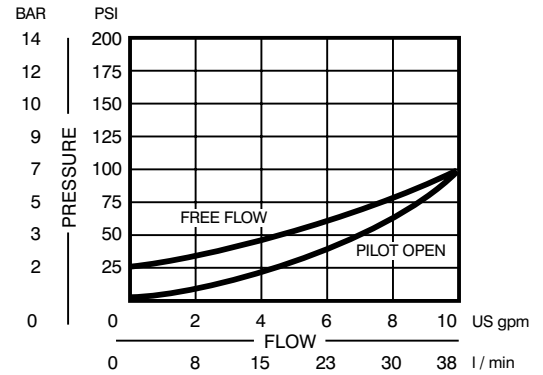
SERIES 10

SPECIFICATIONS

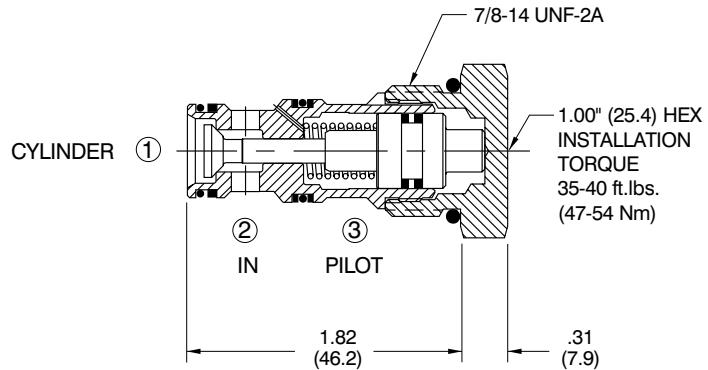
- Valve allows flow from 2 to 1 and blocks the flow from 1 to 2 until sufficient pressure at 3 is applied.
- Cartridge has a 3.0:1 pilot ratio, meaning that 1/3 of the load pressure at 1 is required at 3 to hold the valve open.
- Nominal flow: 10.0 gpm (38 l/m).
- Valve rated to 3000 psi (207 bar) working pressure.
- Valve leakage is 6 drops per min. max.
- Valve cartridge is *all* steel construction with precision ground and hardened components to assure smooth operation and extended service life.
- Hi-strength aluminum alloy body allows for maximum circuit design flexibility.
- Buna-N seals are standard. Viton is optional (consult factory for other seal compounds).
- Valve is designed for use with general purpose hydraulic fluids (MIL-H-5606, SAE #10, etc.).
- Cartridge weight .21 lbs (.10 kg).
- Valve cartridge fits Compact Controls cavity CP10-3.

TYPICAL PERFORMANCE

154 SUS (33 cSt) HYD. OIL @ 100° F (38° C)

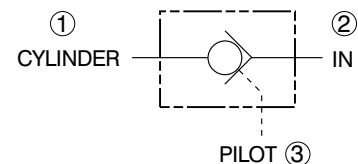


All dimensions in inches (mm)



ORDERING INFORMATION

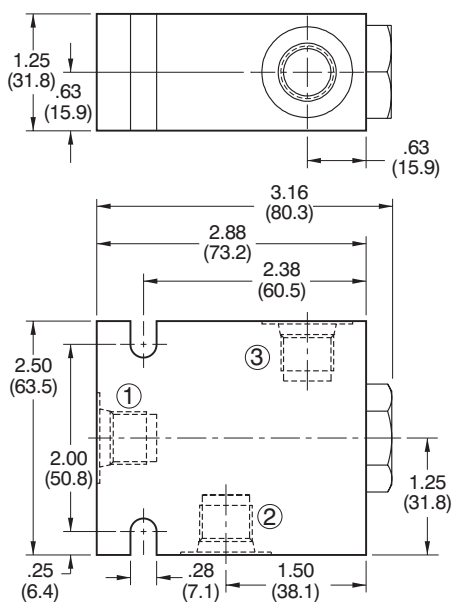
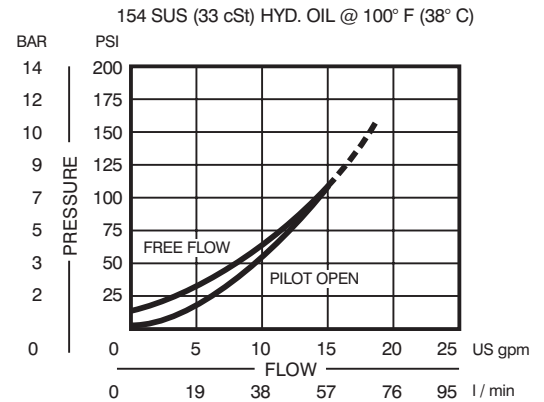
CP450 - 2 - B - 8S - 030 - 0			
BASIC CARTRIDGE		PISTON SEALS	
SEALS		0 - NO SEALS	
		S - SEALS INCLUDED	
	SEAL KIT		
B - BUNA-N	120240		
V - VITON	120241		
PORTS		CRACKING PRESSURE	
	BODY P/N	PSI	BAR
0 - CARTRIDGE	NO BODY		
3P - 3/8 NPTF	220203	030 - 30	(2.07)
4P - 1/2 NPTF	220204	100 - 100	(6.89)
6S - #6 SAE	220205		
8S - #8 SAE	220206		
3B - 3/8 BSP	221297		
4B - 1/2 BSP	221267		



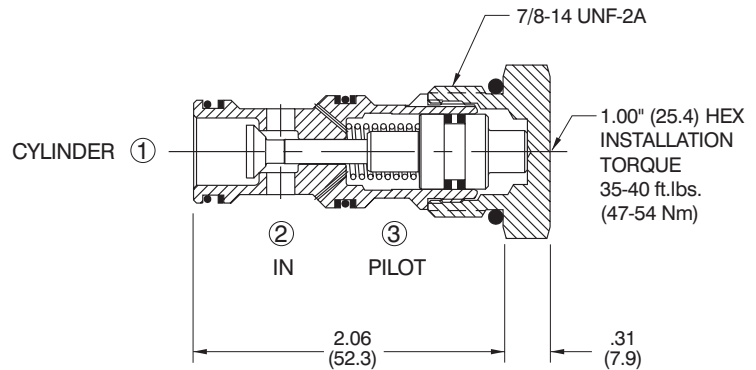
SPECIFICATIONS

- Valve allows flow from **2** to **1** and blocks the flow from **1** to **2** until sufficient pressure at **3** is applied.
- Cartridge has a 3.0:1 pilot ratio, meaning that 1/3 of the load pressure at **1** is required at **3** to hold the valve open.
- Nominal flow: 15.0 gpm (57 l/m).
- Valve rated to 3000 psi (207 bar) working pressure.
- Valve leakage is 6 drops per min. max.
- Valve cartridge is **all** steel construction with precision ground and hardened components to assure smooth operation and extended service life.
- Hi-strength aluminum alloy body allows for maximum circuit design flexibility.
- Buna-N seals are standard. Viton is optional (consult factory for other seal compounds).
- Valve is designed for use with general purpose hydraulic fluids (MIL-H-5606, SAE #10, etc.).
- Cartridge weight .22 lbs (.10 kg).
- Valve cartridge fits Compact Controls cavity CP10-3L.

TYPICAL PERFORMANCE



All dimensions in inches (mm)

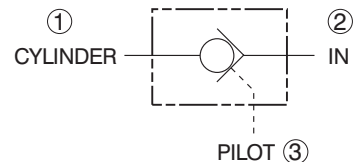


ORDERING INFORMATION

Shaded area represents standard product

CP450 - 2L - B - 8S - 030 - 0

BASIC CARTRIDGE	SEALS	SEAL KIT	PISTON SEALS
B - BUNA-N	V - VITON	120157 120156	0 - NO SEALS S - SEALS INCLUDED
PORTS	BODY P/N	CRACKING PRESSURE	
0 - CARTRIDGE	NO BODY	PSI BAR	
3P - 3/8 NPTF	220727	030 - 30 (2.07)	
4P - 1/2 NPTF	220728	100 - 100 (6.89)	
6S - #6 SAE	220729		
8S - #8 SAE	220730		
3B - 3/8 BSP	221298		
4B - 1/2 BSP	221299		



CP460-1

MOTION CONTROL VALVE

(Pilot to Close Check; Pilot Ratio = 2.0, 8.0)



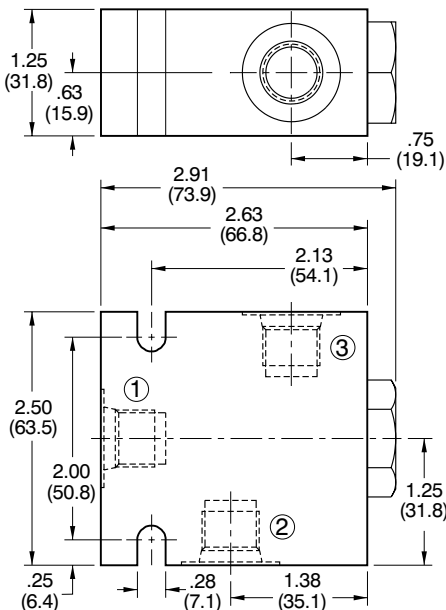
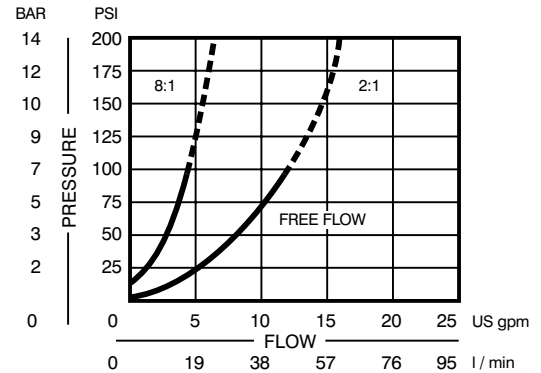
SERIES 10

SPECIFICATIONS

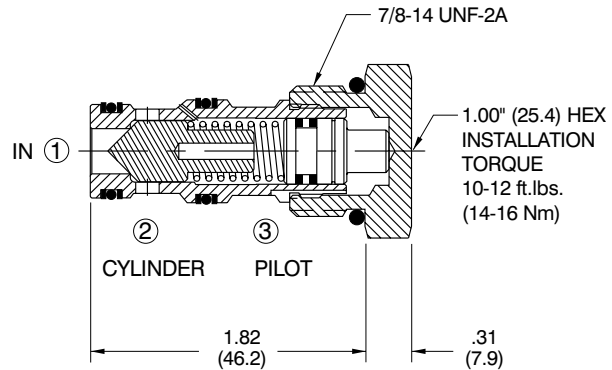
- Valve allows flow from 1 to 2 and blocks the flow from 2 to 1. Flow from 1 to 2 is blocked when sufficient pressure is applied at 3.
- Cartridge has both 2.0:1 and 8.0:1 pilot ratios, meaning that 1/2 or 1/8 of the load pressure at 1 is required at 3 to hold the valve closed respectively.
- Nominal flow to: 10.0 gpm (38 l/m).
- Valve rated to 3000 psi (207 bar) working pressure.
- Valve leakage is 6 drops per min. max.
- Valve cartridge is *all* steel construction with precision ground and hardened components to assure smooth operation and extended service life.
- Hi-strength aluminum alloy body allows for maximum circuit design flexibility.
- Buna-N seals are standard. Viton is optional (consult factory for other seal compounds).
- Valve is designed for use with general purpose hydraulic fluids (MIL-H-5606, SAE #10, etc.).
- Cartridge weight .21 lbs (.10 kg).
- Valve cartridge fits Compact Controls cavity CP10-3.

TYPICAL PERFORMANCE

154 SUS (33 cSt) HYD. OIL @ 100° F (38° C)



All dimensions in inches (mm)



ORDERING INFORMATION

CP460 - 1 - B - 8S - 2 - 030 - 0

BASIC CARTRIDGE

SEALS

B - BUNA-N
V - VITON

SEAL KIT
120009
120010

PORTS

0 - CARTRIDGE
3P - 3/8 NPTF
4P - 1/2 NPTF
6S - #6 SAE
8S - #8 SAE
3B - 3/8 BSP
4B - 1/2 BSP

BODY P/N
NO BODY
220203
220204
220205
220206
221297
221267

PISTON SEALS

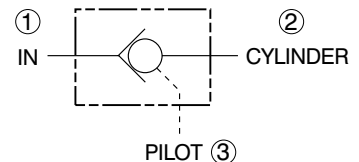
0 - NO SEALS
S - SEALS INCLUDED

CRACKING PRESSURE

PSI	BAR
030 - 30	(2.07)
065 - 65	(4.48)

PILOT RATIO

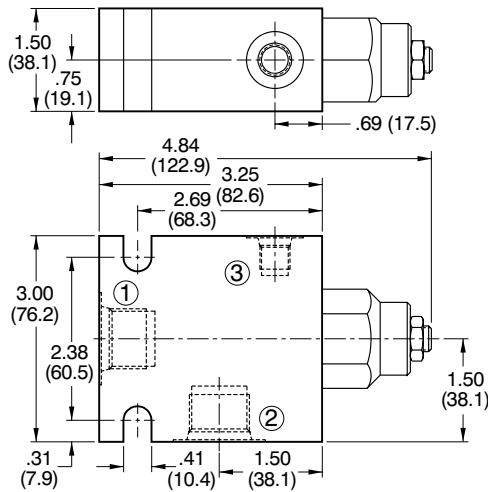
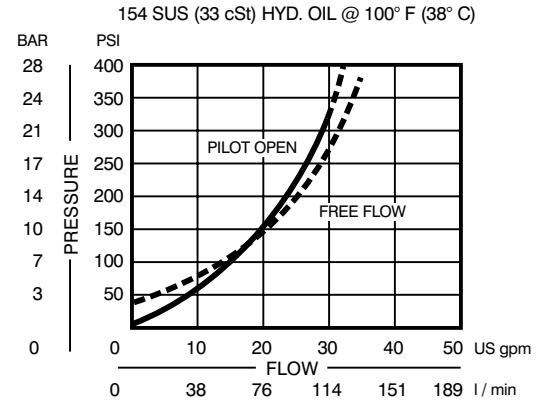
2 - 2:1
8 - 8:1



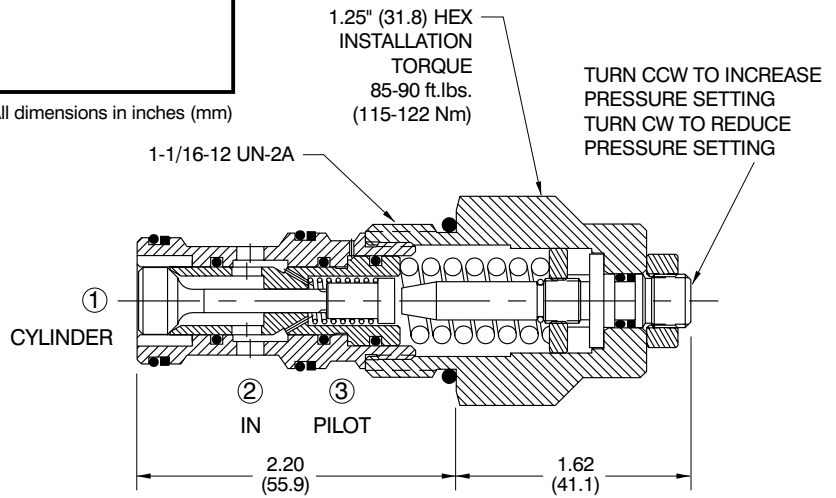
SPECIFICATIONS

- Valve allows free flow from 2 to 1 and relieves from 1 to 2. The valve also has a pilot override or assist on the relief valve section at 3, thus making it a counterbalance valve. The load is moved by flow from 2 to 1. To reverse the load motion, pilot pressure is applied at 3 which effectively reduces the relief valve setting. If the load tries to run ahead of the pump (thus reducing pilot pressure at 3) the relief section will throttle or close to prevent runaway. Set relief 30% above normal operating pressure.
- Nominal flow: 30.0 gpm (114 l/m).
- Valve rated to 5000 psi (345 bar) working pressure.
- Valve leakage is 10 drops per min. max at 70% of relief setting.
- Valve cartridge is *all* steel construction with precision ground and hardened components to assure smooth operation and extended service life.
- Hi-strength aluminum alloy body allows for maximum circuit design flexibility.
- Use steel bodies for pressures above 3000 psi.
- Buna-N seals are standard. Viton is optional (consult factory for other seal compounds).
- Valve is designed for use with general purpose hydraulic fluids (MIL-H-5606, SAE #10, etc.).
- Cartridge weight .48 lbs (.22 kg).
- Valve cartridge fits Compact Controls cavity CP12-3S.

TYPICAL PERFORMANCE



All dimensions in inches (mm)



ORDERING INFORMATION

CP441 - 1 - B - 12S - E - B - * - 4.5 - 015**

BASIC CARTRIDGE
SEALS

	SEAL KIT
B - BUNA-N	120335
V - VITON	120336

PORTS

	BODY P/N	PILOT PORT
0 - CARTRIDGE	NO BODY	
4P - 1/2 NPTF	220648	2P - 1/4 NPTF
6P - 3/4 NPTF	220649	2P - 1/4 NPTF
10S - #10 SAE	220650	4S - #4 SAE
12S - #12 SAE	220651	4S - #4 SAE
4B - 1/2 BSP	221301	2B - 1/4 BSP
6B - 3/4 BSP	221302	2B - 1/4 BSP

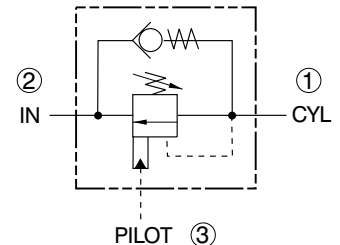
ADJUSTMENT OPTION

- E - EXTERNAL ADJUSTMENT
- F - TAMPER RESISTANT

Shaded area represents standard product

FREE FLOW CHECK
CRACKING PRESSURE

	PSI	BAR
005	5	(.34)
015	15	(1.03)



PILOT RATIO

PILOT RATIO 3.0		PILOT RATIO 4.5		PILOT RATIO 10.0				
	PSI	BAR	PSI	BAR	PSI	BAR		
A	500-1500	(34-103)	A	500-2000	(34-138)	A	1000-5000	(69-345)
Std. Setting	1000	(69)	Std. Setting	1500	(103)	Std. Setting	2500	(172)
B	1500-3000	(103-207)	B	1500-5000	(103-345)	B	N/A	N/A
Std. Setting	1500	(103)	Std. Setting	1500	(103)			

CP441-2

MOTION CONTROL VALVE

(Dual Counterbalance Valve; Pilot Ratio = 3.0, 4.5, 10.0)



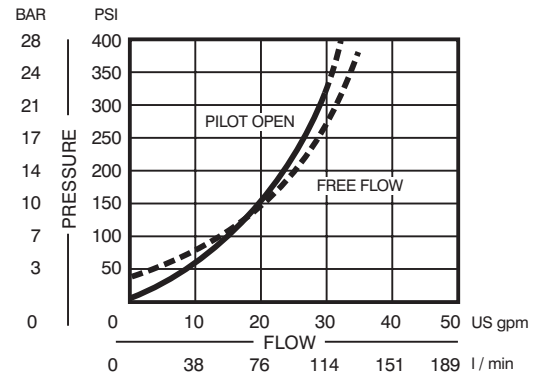
SERIES 12

SPECIFICATIONS

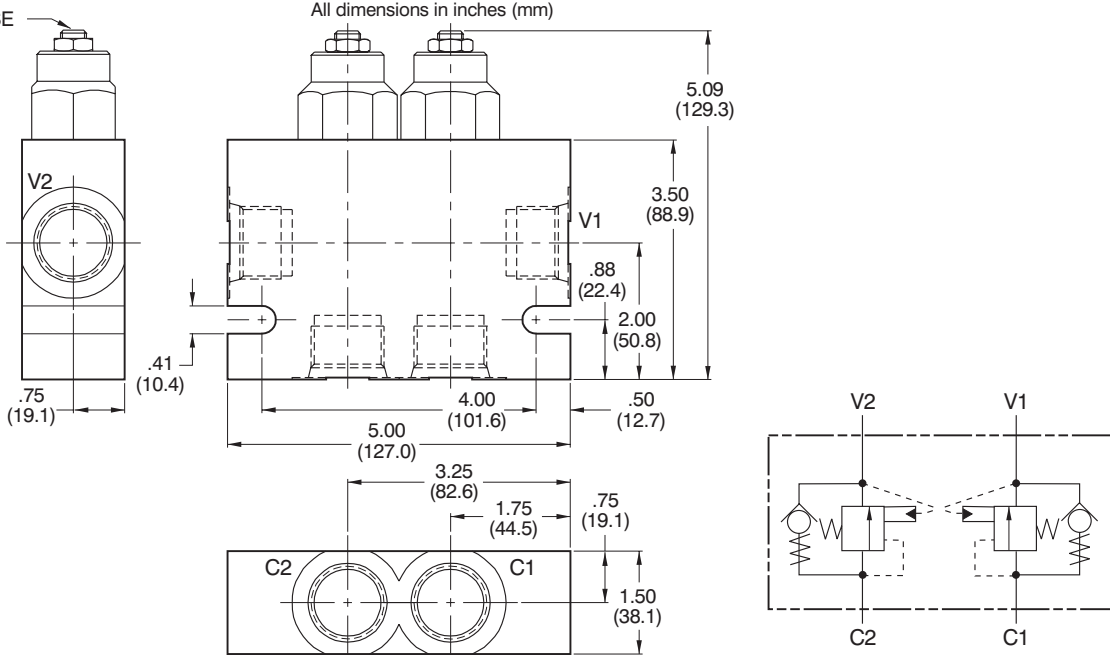
- Valve is a dual counterbalance valve. It utilizes two cartridge type counterbalance valves.
- Nominal flow: 30.0 gpm (114 l/m).
- Valve rated to 5000 psi (345 bar) working pressure.
- Valve cartridge is **all** steel construction with precision ground and hardened components to assure smooth operation and extended service life.
- Hi-strength aluminum alloy body allows for maximum circuit design flexibility.
- Use steel bodies for pressures above 3000 psi.
- Buna-N seals are standard. Viton is optional (consult factory for other seal compounds).
- Valve is designed for use with general purpose hydraulic fluids (MIL-H-5606, SAE #10, etc.).
- Valve weight 2.77 lbs (1.26 kg).
- Valve uses two CP441-1 counterbalance valve cartridges.

TYPICAL PERFORMANCE

154 SUS (33 cSt) HYD. OIL @ 100° F (38° C)



TURN CCW TO INCREASE
PRESSURE SETTING
TURN CW TO REDUCE
PRESSURE SETTING



ORDERING INFORMATION

CP441 - 2 - 12S - B - E - B - * - 4.5 - 015**

BASIC VALVE
PORTS

PORTS	BODY P/N
4P - 1/2 NPTF	220750
6P - 3/4 NPTF	220751
10S - #10 SAE	220752
12S - #12 SAE	220753
4B - 1/2 BSP	221445
6B - 3/4 BSP	221446

SEALS

SEALS	SEAL KIT
B - BUNA-N	120414
V - VITON	120415

ADJUSTMENT OPTION

- E - EXTERNAL ADJUSTMENT
- F - TAMPER RESISTANT

FREE FLOW CHECK
CRACKING PRESSURE

	PSI	BAR
005	5	(.34)
015	15	(1.03)

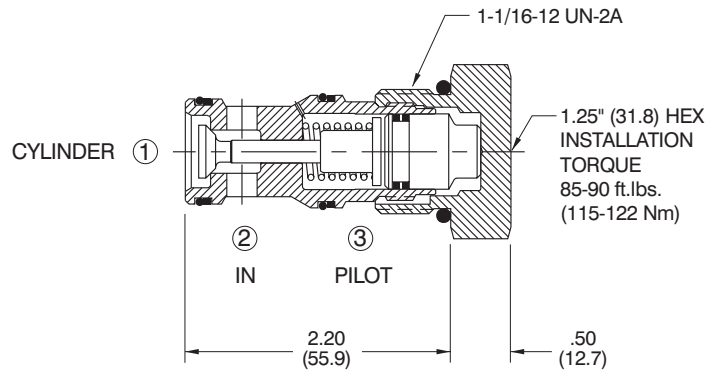
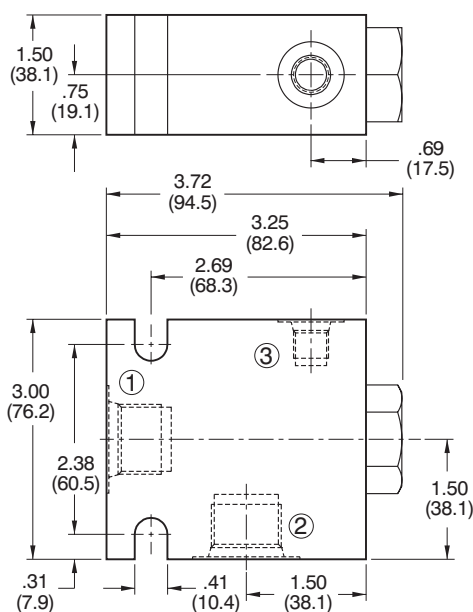
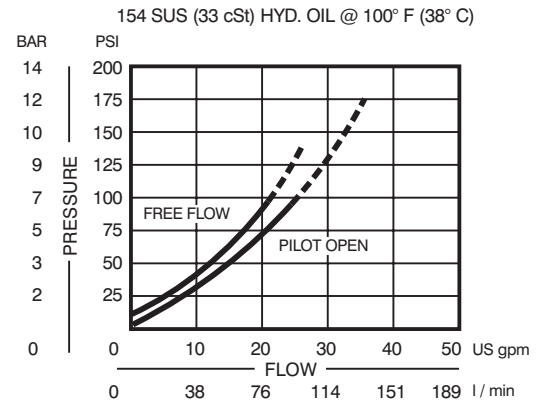
PRESSURE RANGE

PILOT RATIO 3.0		PILOT RATIO 4.5		PILOT RATIO 10.0	
PSI	BAR	PSI	BAR	PSI	BAR
A - 500-1500	(34-103)	A - 500-2000	(34-138)	A - 1000-5000	(69-345)
Std. Setting 1000	(69)	Std. Setting 1500	(103)	Std. Setting 2500	(172)
B - 1500-3000	(103-207)	B - 1500-5000	(103-345)	B - N/A	N/A
Std. Setting 1500	(103)	Std. Setting 1500	(103)		

SPECIFICATIONS

- Valve allows flow from 2 to 1 and blocks the flow from 1 to 2 until sufficient pressure at 3 is applied.
- Cartridge has a 3.0:1 pilot ratio, meaning that 1/3 of the load pressure at 1 is required at 3 to hold the valve open.
- Nominal flow: 25.0 gpm (95 l/m).
- Valve rated to 3000 psi (207 bar) working pressure.
- Valve leakage is 6 drops per min. max.
- Valve cartridge is *all* steel construction with precision ground and hardened components to assure smooth operation and extended service life.
- Hi-strength aluminum alloy body allows for maximum circuit design flexibility.
- Buna-N seals are standard. Viton is optional (consult factory for other seal compounds).
- Valve is designed for use with general purpose hydraulic fluids (MIL-H-5606, SAE #10, etc.).
- Cartridge weight .46 lbs (.21 kg).
- Valve cartridge fits Compact Controls cavity CP12-3S.

TYPICAL PERFORMANCE



ORDERING INFORMATION

CP451 - 2 - B - 12S - 015 - 0

BASIC CARTRIDGE

SEALS

B - BUNA-N
V - VITON

SEAL KIT
120204
120205

PISTON SEALS

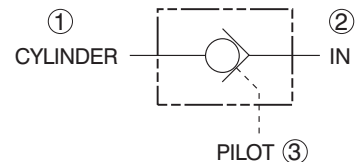
0 - NO SEALS
S - SEALS INCLUDED

PORTS

	BODY P/N	PILOT PORT
0 - CARTRIDGE	NO BODY	
4P - 1/2 NPTF	220648	2P - 1/4 NPTF
6P - 3/4 NPTF	220649	2P - 1/4 NPTF
10S - #10 SAE	220650	4S - #4 SAE
12S - #12 SAE	220651	4S - #4 SAE
4B - 1/2 BSP	221301	2B - 1/4 BSP
6B - 3/4 BSP	221302	2B - 1/4 BSP

CRACKING PRESSURE

PSI	BAR
015 - 15	(1.03)
065 - 65	(4.48)



CP461-1

MOTION CONTROL VALVE

(Pilot to Close Check; Pilot Ratio = 2.3)



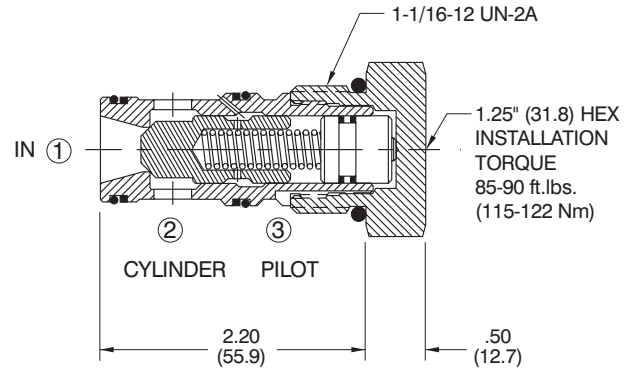
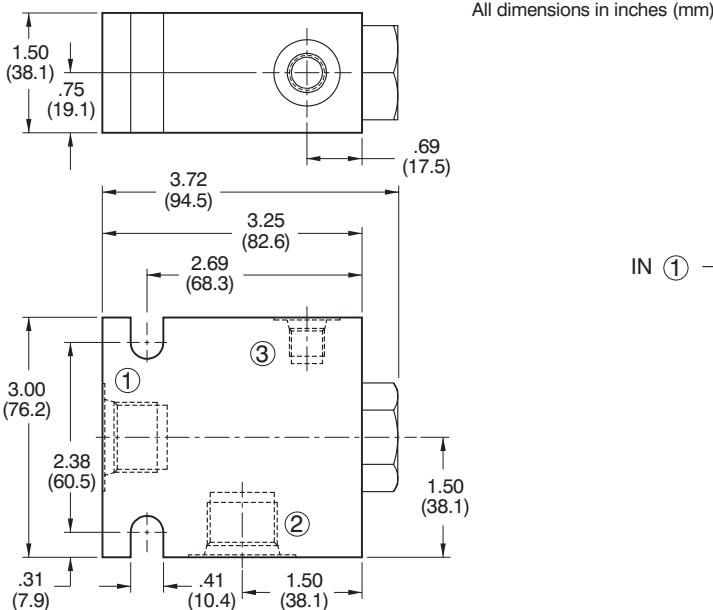
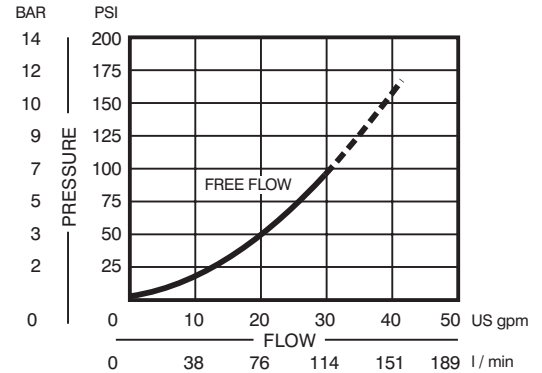
SERIES 12

SPECIFICATIONS

- Valve allows flow from 1 to 2 and blocks the flow from 2 to 1. Flow from 1 to 2 is blocked when sufficient pressure is applied at 3.
- Cartridge has a 2.3:1 pilot ratio, meaning that 1/2.3 of the load pressure at 1 is required at 3 to hold the valve closed.
- Nominal flow: 30.0 gpm (114 l/m).
- Valve rated to 3000 psi (207 bar) working pressure.
- Valve leakage is 6 drops per min. max.
- Valve cartridge is **all** steel construction with precision ground and hardened components to assure smooth operation and extended service life.
- Hi-strength aluminum alloy body allows for maximum circuit design flexibility.
- Buna-N seals are standard. Viton is optional (consult factory for other seal compounds).
- Valve is designed for use with general purpose hydraulic fluids (MIL-H-5606, SAE #10, etc.).
- Cartridge weight .47 lbs (.21 kg).
- Valve cartridge fits Compact Controls cavity CP12-3S.

TYPICAL PERFORMANCE

154 SUS (33 cSt) HYD. OIL @ 100° F (38° C)



ORDERING INFORMATION

CP461 - 1 - B - 12S - 015 - 0

BASIC CARTRIDGE

SEALS

B - BUNA-N
V - VITON

SEAL KIT
120335
120336

PORTS

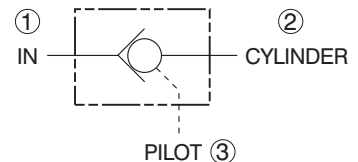
	BODY P/N	PILOT PORT
0 - CARTRIDGE	NO BODY	
4P - 1/2 NPTF	220648	2P - 1/4 NPTF
6P - 3/4 NPTF	220649	2P - 1/4 NPTF
10S - #10 SAE	220650	4S - #4 SAE
12S - #12 SAE	220651	4S - #4 SAE
4B - 1/2 BSP	221301	2B - 1/4 BSP
6B - 3/4 BSP	221302	2B - 1/4 BSP

PISTON SEALS

0 - NO SEALS
S - SEALS INCLUDED

CRACKING PRESSURE

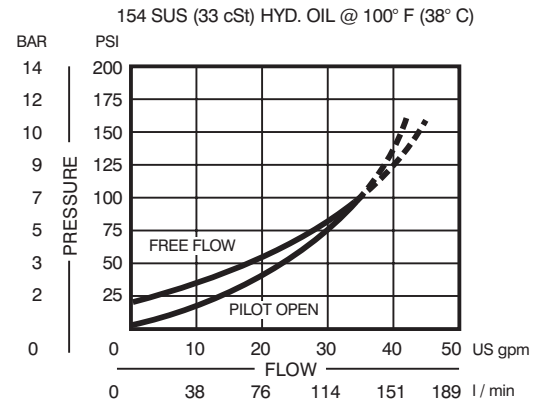
PSI	BAR
015 - 15	(1.03)
065 - 65	(4.48)



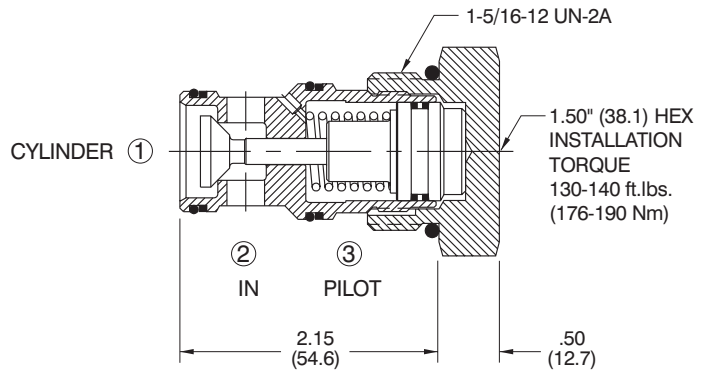
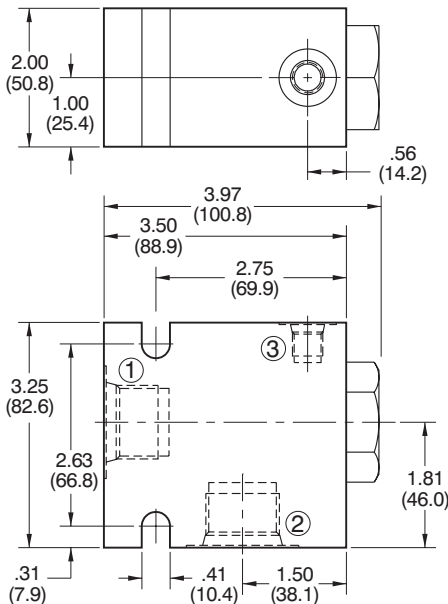
SPECIFICATIONS

- Valve allows flow from **2** to **1** and blocks the flow from **1** to **2** until sufficient pressure at **3** is applied.
- Cartridge has a 3.0:1 pilot ratio, meaning that 1/3 of the load pressure at **1** is required at **3** to hold the valve open.
- Nominal flow: 35.0 gpm (132 l/m).
- Valve rated to 3000 psi (207 bar) working pressure.
- Valve leakage is 6 drops per min. max.
- Valve cartridge is **all** steel construction with precision ground and hardened components to assure smooth operation and extended service life.
- Hi-strength aluminum alloy body allows for maximum circuit design flexibility.
- Buna-N seals are standard. Viton is optional (consult factory for other seal compounds).
- Valve is designed for use with general purpose hydraulic fluids (MIL-H-5606, SAE #10, etc.).
- Cartridge weight .64 lbs (.29 kg).
- Valve cartridge fits Compact Controls cavity **CP16-3S**.

TYPICAL PERFORMANCE



All dimensions in inches (mm)



ORDERING INFORMATION

CP452 - 2 - B - 16S - 015 - 0

BASIC CARTRIDGE

SEALS

B - BUNA-N
V - VITON

SEAL KIT
120033
120034

PISTON SEALS

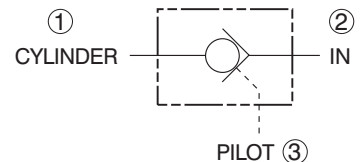
0 - NO SEALS
S - SEALS INCLUDED

PORTS

	BODY P/N	PILOT PORT
0 - CARTRIDGE	NO BODY	
6P - 3/4 NPTF	220618	2P - 1/4 NPTF
8P - 1" NPTF	220619	2P - 1/4 NPTF
12S - #12 SAE	220616	4S - #4 SAE
16S - #16 SAE	220617	4S - #4 SAE
6B - 3/4 BSP	221307	2B - 1/4 BSP
8B - 1" BSP	221308	2B - 1/4 BSP

CRACKING PRESSURE

PSI	BAR
015 - 15	(1.03)
065 - 65	(4.48)



CP462-1

MOTION CONTROL VALVE

(Pilot to Close Check; Pilot Ratio = 2.2)



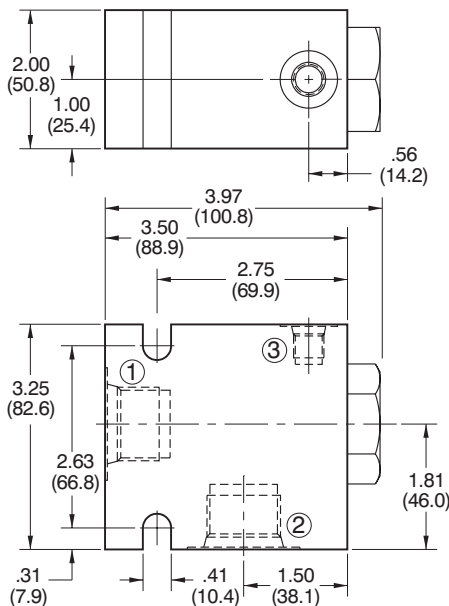
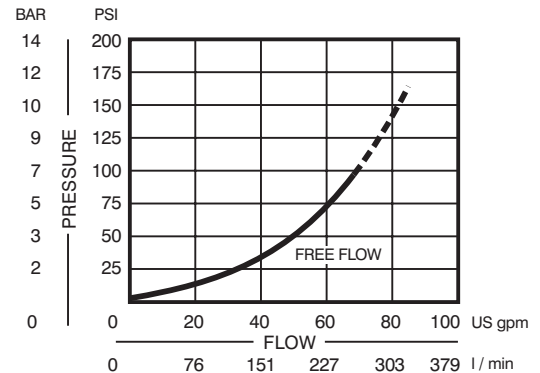
SERIES 16

SPECIFICATIONS

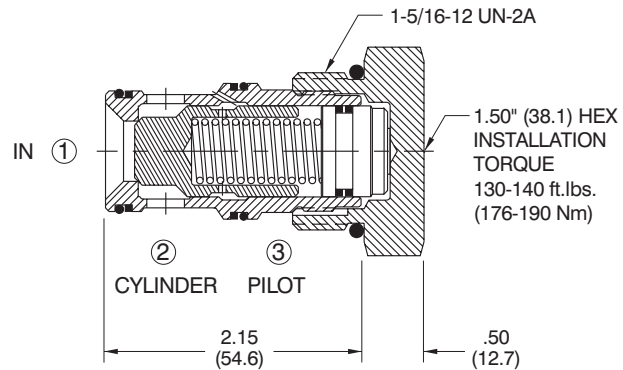
- Valve allows flow from 1 to 2 and blocks the flow from 2 to 1. Flow from 1 to 2 is blocked when sufficient pressure is applied at 3.
- Cartridge has a 2.2:1 pilot ratio, meaning that 1/2.2 of the load pressure at 1 is required at 3 to hold the valve closed.
- Nominal flow: 50.0 gpm (189 l/m).
- Valve rated to 3000 psi (207 bar) working pressure.
- Valve leakage is 6 drops per min. max.
- Valve cartridge is **all** steel construction with precision ground and hardened components to assure smooth operation and extended service life.
- Hi-strength aluminum alloy body allows for maximum circuit design flexibility.
- Buna-N seals are standard. Viton is optional (consult factory for other seal compounds).
- Valve is designed for use with general purpose hydraulic fluids (MIL-H-5606, SAE #10, etc.).
- Cartridge weight .64 lbs (.29 kg).
- Valve cartridge fits Compact Controls cavity CP16-3S.

TYPICAL PERFORMANCE

154 SUS (33 cSt) HYD. OIL @ 100° F (38° C)



All dimensions in inches (mm)



ORDERING INFORMATION

CP462 - 1 - B - 16S - 015 - 0

BASIC CARTRIDGE

SEALS

B - BUNA-N
V - VITON

SEAL KIT
120033
120034

PISTON SEALS

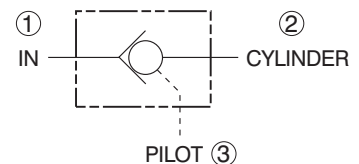
0 - NO SEALS
S - SEALS INCLUDED

PORTS

	BODY P/N	PILOT PORT
0 - CARTRIDGE	NO BODY	
6P - 3/4 NPTF	220618	2P - 1/4 NPTF
8P - 1" NPTF	220619	2P - 1/4 NPTF
12S - #12 SAE	220616	4S - #4 SAE
16S - #16 SAE	220617	4S - #4 SAE
6B - 3/4 BSP	221307	2B - 1/4 BSP
8B - 1" BSP	221308	2B - 1/4 BSP

CRACKING PRESSURE

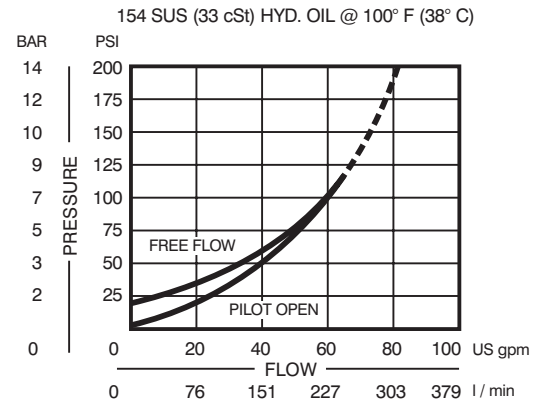
PSI	BAR
015 - 15	(1.03)
065 - 65	(4.48)



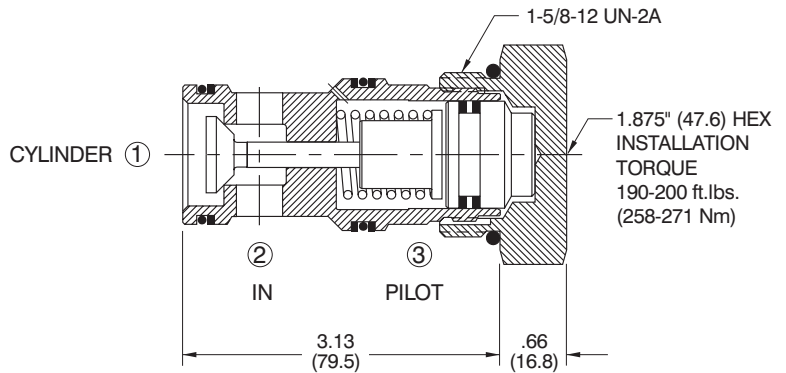
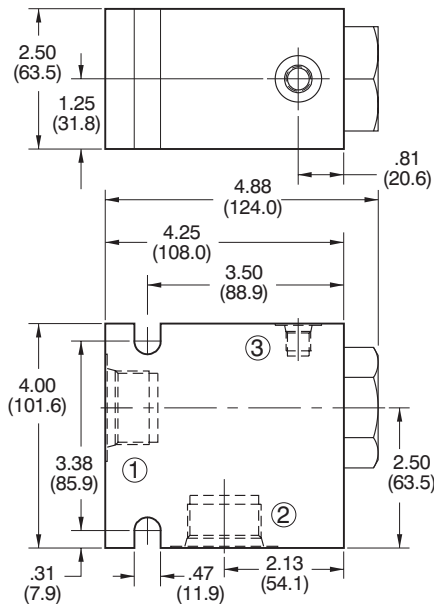
SPECIFICATIONS

- Valve allows flow from **2** to **1** and blocks the flow from **1** to **2** until sufficient pressure at **3** is applied.
- Cartridge has a 3.0:1 pilot ratio, meaning that 1/3 of the load pressure at **1** is required at **3** to hold the valve open.
- Nominal flow: 60.0 gpm (227 l/m).
- Valve rated to 3000 psi (207 bar) working pressure.
- Valve leakage is 6 drops per min. max.
- Valve cartridge is **all** steel construction with precision ground and hardened components to assure smooth operation and extended service life.
- Hi-strength aluminum alloy body allows for maximum circuit design flexibility.
- Buna-N seals are standard. Viton is optional (consult factory for other seal compounds).
- Valve is designed for use with general purpose hydraulic fluids (MIL-H-5606, SAE #10, etc.).
- Cartridge weight 1.46 lbs (.66 kg).
- Valve cartridge fits Compact Controls cavity CP20-3S.

TYPICAL PERFORMANCE



All dimensions in inches (mm)



ORDERING INFORMATION

CP453 - 2 - B - 20S - 015 - 0

BASIC CARTRIDGE

SEALS

B - BUNA-N
V - VITON

SEAL KIT
120380
120381

PORTS

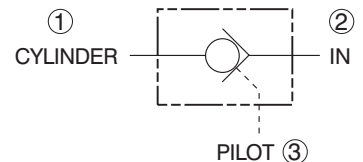
	BODY P/N	PILOT PORT
0 - CARTRIDGE	NO BODY	
8P - 1" NPTF	220685	2P - 1/4 NPTF
10P - 1-1/4 NPTF	220686	2P - 1/4 NPTF
16S - #16 SAE	220687	4S - #4 SAE
20S - #20 SAE	220688	4S - #4 SAE
8B - 1" BSP	221313	2B - 1/4 BSP
10B - 1-1/4 BSP	221314	2B - 1/4 BSP

PISTON SEALS

0 - NO SEALS
S - SEALS INCLUDED

CRACKING PRESSURE

PSI	BAR
015 - 15	(1.03)
065 - 65	(4.48)



CP400-1

MOTION CONTROL VALVE

(Single Pilot to Open Check; Pilot Ratio = 4.0)



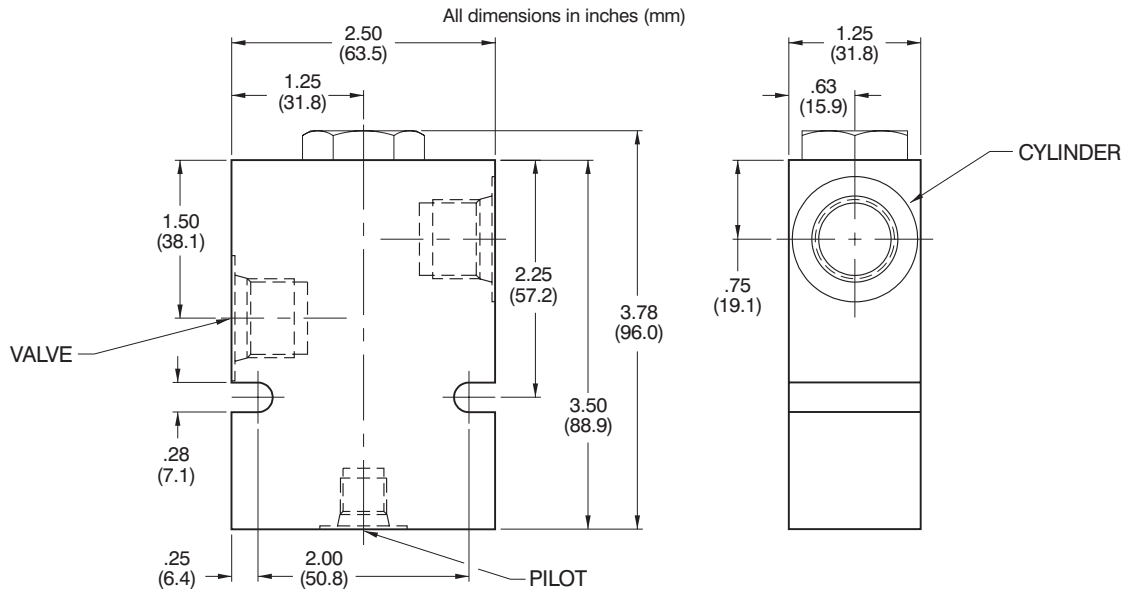
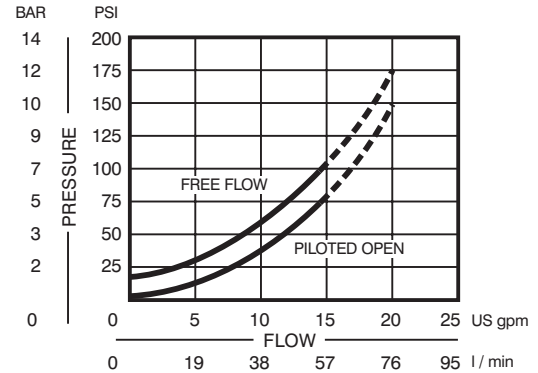
SERIES 10

SPECIFICATIONS

- Valve is a single pilot operated hydraulic check valve. It utilizes a cartridge type check valve. Valve has a 4.0:1 pilot ratio.
- Valve allows free flow through valve port and out cylinder port. When control valve is centered, load is locked. Poppet is opened allowing return flow when pressure is applied at pilot.
- Nominal flow: 15.0 gpm (57 l/m).
- Valve rated to 3000 psi (207 bar) working pressure.
- Valve leakage is 6 drops per min. max.
- Valve cartridge is *all* steel construction with precision ground and hardened components to assure smooth operation and extended service life.
- Hi-strength aluminum alloy body allows for maximum circuit design flexibility.
- Buna-N seals are standard. Viton is optional (consult factory for other seal compounds).
- Valve is designed for use with general purpose hydraulic fluids (MIL-H-5606, SAE #10, etc.).
- Valve weight 1.10 lbs (.50 kg).
- Valve uses a [CP100-1](#) check valve cartridge.

TYPICAL PERFORMANCE

154 SUS (33 cSt) HYD. OIL @ 100° F (38° C)



ORDERING INFORMATION

CP400 - 1 - B - 8S - 0 - 065

BASIC VALVE

SEALS

B - BUNA-N
V - VITON

SEAL KIT
120428
120429

PORTS

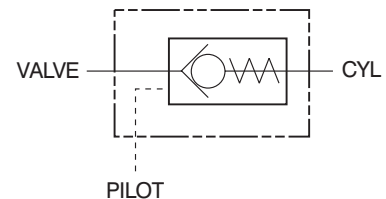
BODY P/N		PILOT PORT	
3P - 3/8 NPTF	220234	2P - 1/4 NPTF	
4P - 1/2 NPTF	220235	2P - 1/4 NPTF	
6S - #6 SAE	220236	4S - #4 SAE	
8S - #8 SAE	220237	4S - #4 SAE	
3B - 3/8 BSP	221662	2B - 1/4 BSP	
4B - 1/2 BSP	221663	2B - 1/4 BSP	

CRACKING PRESSURE

	PSI	BAR
OMIT	15	(1.03)
065	65	(4.48)

PISTON SEALS

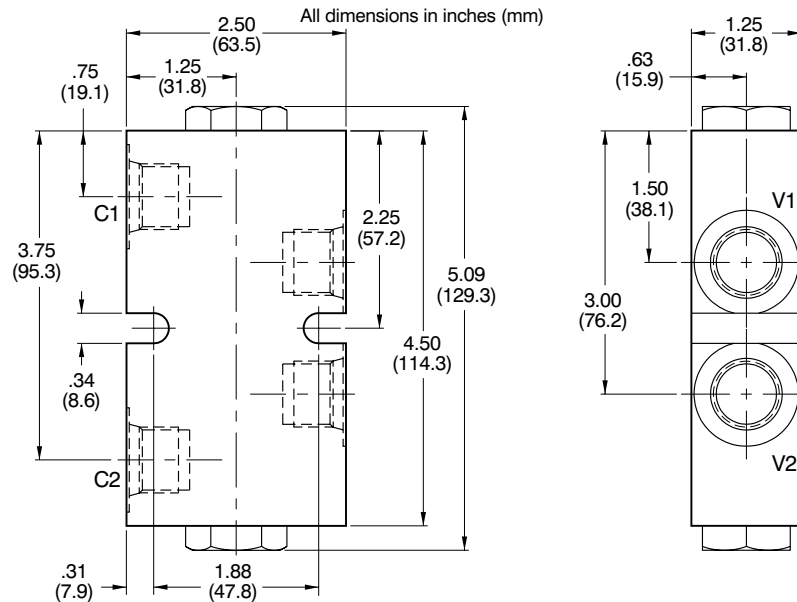
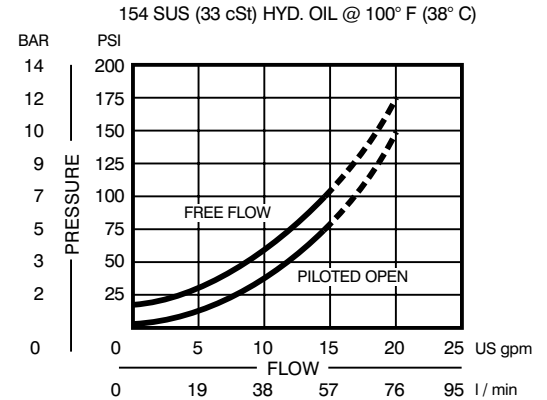
0 - NO SEALS
S - SEALS INCLUDED



SPECIFICATIONS

- Valve is a dual pilot operated hydraulic check valve. It utilizes two cartridge type check valves. Valve has a 4.0:1 pilot ratio.
- Valve allows free flow through valve ports and out cylinder ports. When control valve is centered, load is locked. Poppet is opened allowing return flow when pressure is applied at opposite valve port.
- Nominal flow: 15.0 gpm (57 l/m).
- Valve rated to 3000 psi (207 bar) working pressure.
- Valve leakage is 6 drops per min. max.
- Valve cartridge is *all* steel construction with precision ground and hardened components to assure smooth operation and extended service life.
- Hi-strength aluminum alloy body allows for maximum circuit design flexibility.
- Buna-N seals are standard. Viton is optional (consult factory for other seal compounds).
- Valve is designed for use with general purpose hydraulic fluids (MIL-H-5606, SAE #10, etc.).
- Valve weight 1.48 lbs (.67 kg).
- Valve uses two CP100-1 check valve cartridges.

TYPICAL PERFORMANCE



ORDERING INFORMATION

CP410 - 1 - B - 8S - 0 - 065

BASIC VALVE

SEALS

	SEAL KIT	W/ PISTON SEALS
B - BUNA-N	120072	120176
V - VITON	120161	120177

PORTS

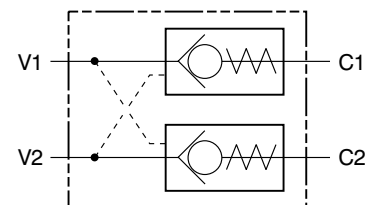
	BODY P/N	
3P - 3/8 NPTF	220097	
4P - 1/2 NPTF	220098	
6S - #6 SAE	220099	
8S - #8 SAE	220100	
3B - 3/8 BSP	221794	
4B - 1/2 BSP	221652	

CRACKING PRESSURE

	PSI	BAR
OMIT	15	(1.03)
065	65	(4.48)

PISTON SEALS

- 0 - NO SEALS
- S - SEALS INCLUDED



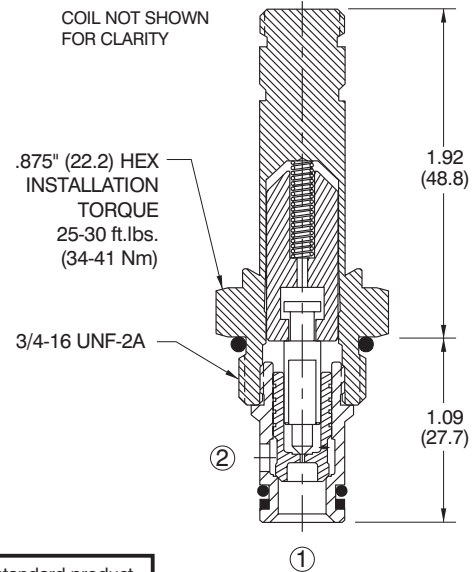
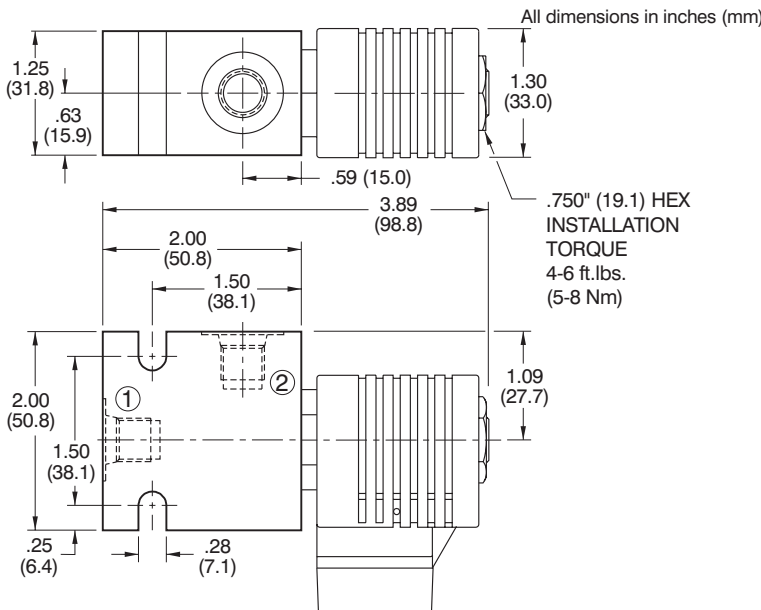
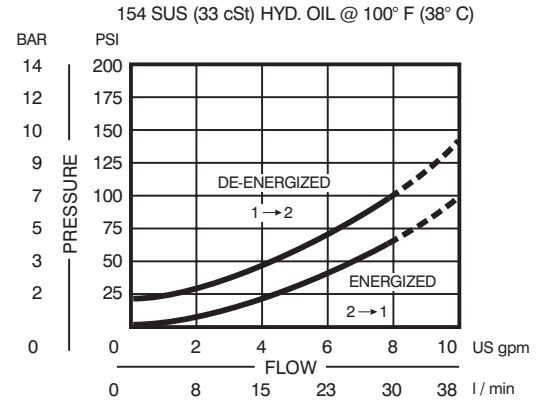
SOLENOID VALVES

SIZE	DESCRIPTION	FLOW gpm (l/m)	PRESSURE psi (bar)	PAGE
SERIES 8				
CP508-1	N/C POPPET	8 (30)	3000 (207)	8.01
CP508-2	N/O POPPET	8 (30)	3000 (207)	8.02
CP508-3	N/C POPPET with free reverse flow	8 (30)	3000 (207)	8.03
CP508-4	N/O POPPET with free reverse flow	8 (30)	3000 (207)	8.04
CP518-1	N/C SPOOL	3 (11)	3000 (207)	8.05
CP518-2	N/O SPOOL	3 (11)	3000 (207)	8.06
CP528-1	2 POS 3 WAY SPOOL TYPE	3 (11)	3000 (207)	8.07
CP528-2	2 POS 3 WAY SPOOL TYPE	3 (11)	3000 (207)	8.08
CP528-5	2 POS 3 WAY SPOOL TYPE	3 (11)	3000 (207)	8.09
CP538-1	2 POS 4 WAY SPOOL TYPE	3 (11)	3000 (207)	8.10
CP538-3P	3 POS 4 WAY SPOOL TYPE	3 (11)	3000 (207)	8.11
SERIES 10				
CP500-1	N/C POPPET	15 (57)	3000 (207)	8.13
CP500-2	N/O POPPET	15 (57)	3000 (207)	8.14
CP500-3	N/C POPPET with free reverse flow	15 (57)	3000 (207)	8.15
CP500-4	N/O POPPET with free reverse flow	15 (57)	3000 (207)	8.16
CP510-1	N/C SPOOL	6 (23)	3000 (207)	8.17
CP510-2	N/O SPOOL	6 (23)	3000 (207)	8.18
CP520-1	2 POS 3 WAY SPOOL TYPE	6 (23)	3000 (207)	8.19
CP530-1	2 POS 4 WAY SPOOL TYPE	6 (23)	3000 (207)	8.20
CP530-2	2 POS 4 WAY SPOOL TYPE	6 (23)	3000 (207)	8.21
CP530-3	2 POS 4 WAY SPOOL TYPE	6 (23)	3000 (207)	8.22
CP530-3P	3 POS 4 WAY SPOOL TYPE	5 (19)	3000 (207)	8.23
SERIES 12				
CP501-1	N/C POPPET	30 (114)	3000 (207)	8.24
CP501-2	N/O POPPET	30 (114)	3000 (207)	8.25
CP501-3	N/C POPPET with free reverse flow	30 (114)	3000 (207)	8.26
CP501-4	N/O POPPET with free reverse flow	30 (114)	3000 (207)	8.27
CP521-1	2 POS 3 WAY SPOOL TYPE	15 (57)	3000 (207)	8.28
SERIES 16				
CP502-3	N/C POPPET with free reverse flow	35 (132)	3000 (207)	8.29
CP502-4	N/O POPPET with free reverse flow	35 (132)	3000 (207)	8.30
SERIES 20				
CP503-3	N/C POPPET with free reverse flow	60 (227)	3000 (207)	8.31
CP503-4	N/O POPPET with free reverse flow	60 (227)	3000 (207)	8.32
COIL OPTIONS				
D08	16 WATT			8.51
D08	20 WATT			8.53
D10	16 WATT			8.55
D12	30 WATT			8.57
MANUAL OVERRIDES				8.59

SPECIFICATIONS

- Valve is a normally closed, pilot operated, poppet type solenoid. In the de-energized mode, the valve acts as a check allowing the flow from **1** to **2** and blocking flow from **2** to **1**. When energized, the valve allows flow from **2** to **1** and severely restricts from **1** to **2**.
- Nominal flow: 8.0 gpm (30 l/m).
- Valve rated to 3000 psi (207 bar) working pressure.
- Valve leakage: 6 drops per min. max. at 3000 psi (207 bar).
- Valve cartridge is **all** steel construction with precision ground, hardened components to assure smooth operation and extended service life.
- Hi-strength aluminum alloy body allows for maximum circuit design flexibility.
- Buna-N seals are standard. Viton is optional (consult factory for other seal compounds).
- Valve is designed for use with general purpose hydraulic fluids (MIL-H-5606, SAE #10, etc.).
- Cartridge weight .48 lbs (.22 kg).
- Valve cartridge fits Compact Controls [cavity CP8-2](#).

TYPICAL PERFORMANCE



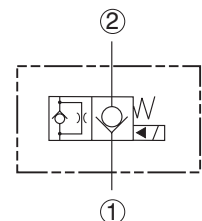
ORDERING INFORMATION

Shaded area represents standard product

CP508 - 1 - B - 6S - 24D - S

BASIC CARTRIDGE	SEALS	SEAL KIT	TERMINATION *	VOLTAGE *
	B - BUNA-N	120221	S - SPADE	12D - 12 VDC
	V - VITON	120222	L - LEAD	24D - 24 VDC
			C - CONDUIT	120A - 120 VAC
			H - DIN 43650	240A - 240 VAC
PORTS	BODY P/N			
0 - CARTRIDGE	NO BODY			
2P - 1/4 NPTF	220814			
3P - 3/8 NPTF	220815			
4S - #4 SAE	220816			
6S - #6 SAE	220817			
2B - 1/4 BSP	221285			
3B - 3/8 BSP	221286			

* For coil options and additional voltages see [page 8.51](#).



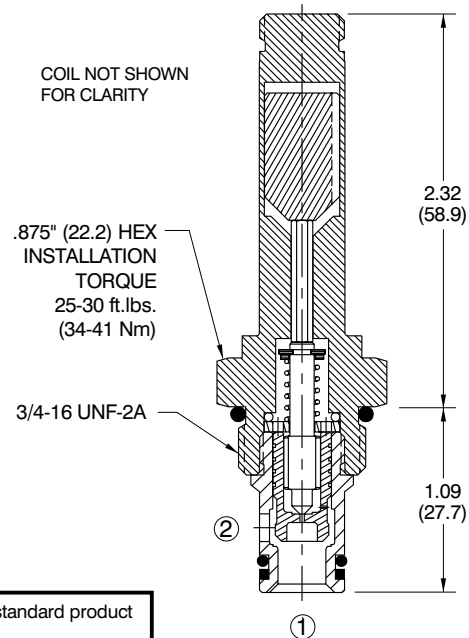
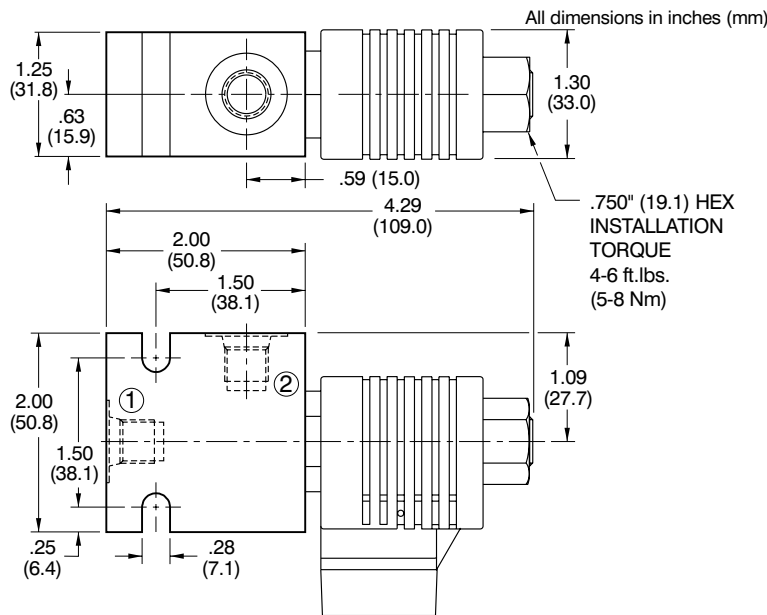
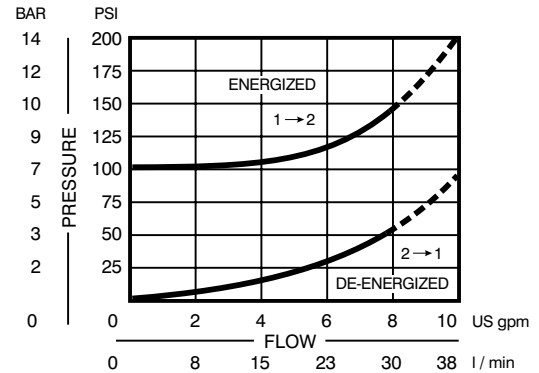
SERIES 8

SPECIFICATIONS

- Valve is a normally open, pilot operated, poppet type solenoid. In the de-energized mode, the valve allows flow from **2** to **1** and severely restricts flow from **1** to **2**. When energized, the valve blocks flow from **2** to **1** and allows flow from **1** to **2** after it overcomes the solenoid forces.
- Nominal flow: 8.0 gpm (30 l/m).
- Valve rated to 3000 psi (207 bar) working pressure.
- Valve leakage: 6 drops per min. max. at 3000 psi (207 bar).
- Valve cartridge is **all** steel construction with precision ground, hardened components to assure smooth operation and extended service life.
- Hi-strength aluminum alloy body allows for maximum circuit design flexibility.
- Buna-N seals are standard. Viton is optional (consult factory for other seal compounds).
- Valve is designed for use with general purpose hydraulic fluids (MIL-H-5606, SAE #10, etc.).
- Cartridge weight .49 lbs (.22 kg).
- Valve cartridge fits Compact Controls [cavity CP8-2](#).

TYPICAL PERFORMANCE

154 SUS (33 cSt) HYD. OIL @ 100° F (38° C)



ORDERING INFORMATION

Shaded area represents standard product

CP508 - 2 - B - 6S - 24D - S -

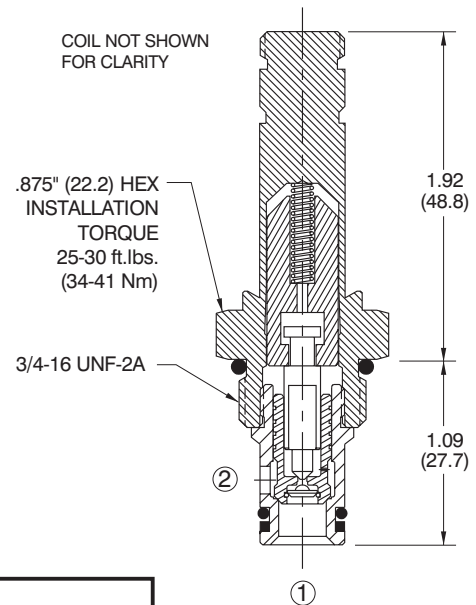
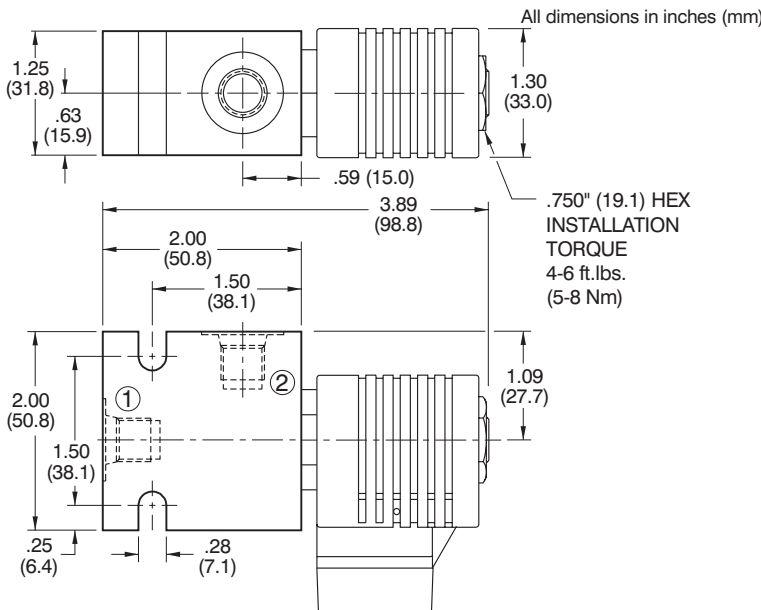
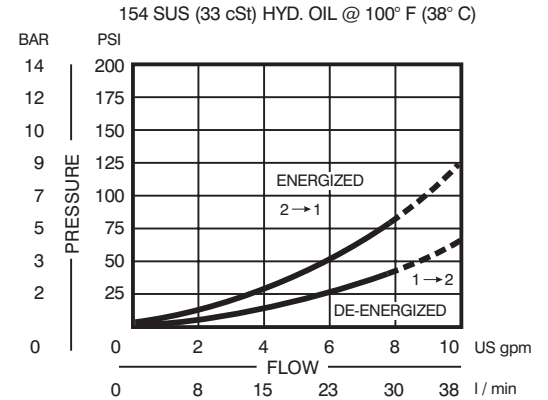
BASIC CARTRIDGE	SEAL KIT	MANUAL OVERRIDE *
SEALS		OMIT - NO OVERRIDE
B - BUNA-N	120221	M - MANUAL OVERRIDE
V - VITON	120222	
PORTS	BODY P/N	TERMINATION **
0 - CARTRIDGE	NO BODY	S - SPADE
2P - 1/4 NPTF	220814	L - LEAD
3P - 3/8 NPTF	220815	C - CONDUIT
4S - #4 SAE	220816	H - DIN 43650
6S - #6 SAE	220817	
2B - 1/4 BSP	221285	
3B - 3/8 BSP	221286	
	VOLTAGE **	
	12D - 12 VDC	
	24D - 24 VDC	
	120A - 120 VAC	
	240A - 240 VAC	

* For manual override information see [page 8.59](#).
 ** For coil options and additional voltages see [page 8.51](#).

SPECIFICATIONS

- Valve is a normally closed, pilot operated, poppet type solenoid. In the de-energized mode, the valve acts as a check allowing the flow from **1** to **2** and blocking flow from **2** to **1**. When energized, the valve allows flow from **1** to **2** and from **2** to **1**.
- Nominal flow: 8.0 gpm (30 l/m).
- Valve rated to 3000 psi (207 bar) working pressure.
- Valve leakage: 6 drops per min. max. at 3000 psi (207 bar).
- Valve cartridge is **all** steel construction with precision ground, hardened components to assure smooth operation and extended service life.
- Hi-strength aluminum alloy body allows for maximum circuit design flexibility.
- Buna-N seals are standard. Viton is optional (consult factory for other seal compounds).
- Valve is designed for use with general purpose hydraulic fluids (MIL-H-5606, SAE #10, etc.).
- Cartridge weight .48 lbs (.22 kg).
- Valve cartridge fits Compact Controls [cavity CP8-2](#).

TYPICAL PERFORMANCE

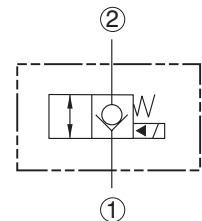


ORDERING INFORMATION

CP508 - 3 - B - 6S - 24D - S

BASIC CARTRIDGE	SEALS	SEAL KIT	TERMINATION *
B - BUNA-N		120221	S - SPADE
V - VITON		120222	L - LEAD
			C - CONDUIT
			H - DIN 43650
PORTS			VOLTAGE *
0 - CARTRIDGE	BODY P/N		12D - 12 VDC
2P - 1/4 NPTF	NO BODY	220814	24D - 24 VDC
3P - 3/8 NPTF		220815	120A - 120 VAC
4S - #4 SAE		220816	240A - 240 VAC
6S - #6 SAE		220817	
2B - 1/4 BSP		221285	
3B - 3/8 BSP		221286	

* For coil options and additional voltages see [page 8.51](#).



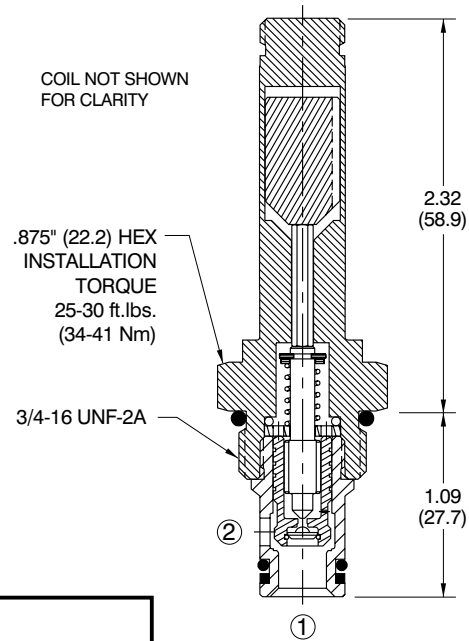
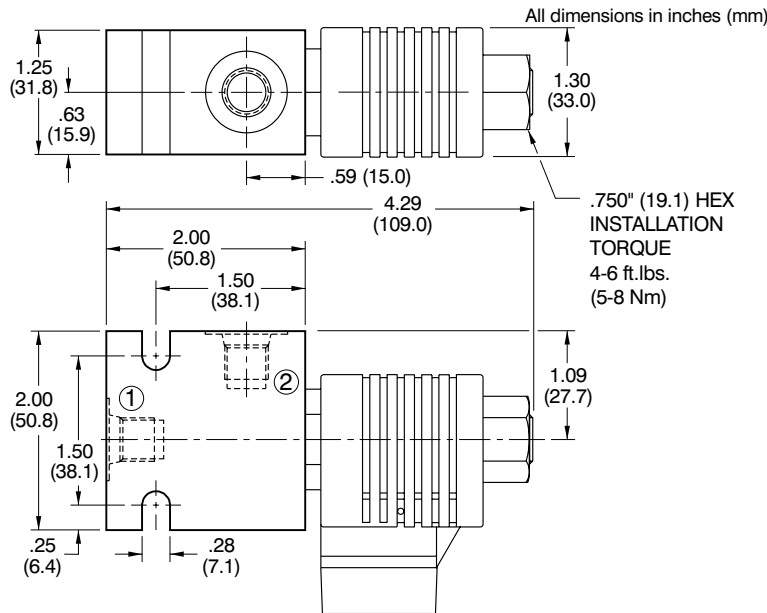
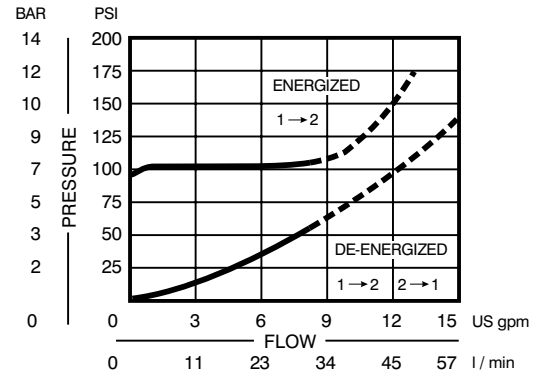
SERIES 8

SPECIFICATIONS

- Valve is a normally open, pilot operated, poppet type solenoid. In the de-energized mode, the valve allows flow from **2** to **1** and **1** to **2**. When energized, the valve blocks flow from **2** to **1** and allows flow from **1** to **2** after it overcomes the solenoid forces.
- Nominal flow: 8.0 gpm (30 l/m).
- Valve rated to 3000 psi (207 bar) working pressure.
- Valve leakage: 6 drops per min. max. at 3000 psi (207 bar).
- Valve cartridge is **all** steel construction with precision ground, hardened components to assure smooth operation and extended service life.
- Hi-strength aluminum alloy body allows for maximum circuit design flexibility.
- Buna-N seals are standard. Viton is optional (consult factory for other seal compounds).
- Valve is designed for use with general purpose hydraulic fluids (MIL-H-5606, SAE #10, etc.).
- Cartridge weight .49 lbs (.22 kg).
- Valve cartridge fits Compact Controls [cavity CP8-2](#).

TYPICAL PERFORMANCE

154 SUS (33 cSt) HYD. OIL @ 100° F (38° C)

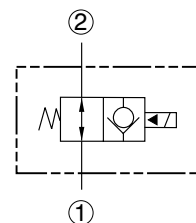


ORDERING INFORMATION

CP508 - 4 - B - 6S - 24D - S -

BASIC CARTRIDGE	SEAL KIT	MANUAL OVERRIDE *
B - BUNA-N	120221	OMIT - NO OVERRIDE
V - VITON	120222	M - MANUAL OVERRIDE
PORTS	BODY P/N	TERMINATION **
0 - CARTRIDGE	NO BODY	S - SPADE
2P - 1/4 NPTF	220814	L - LEAD
3P - 3/8 NPTF	220815	C - CONDUIT
4S - #4 SAE	220816	H - DIN 43650
6S - #6 SAE	220817	
2B - 1/4 BSP	221285	
3B - 3/8 BSP	221286	
	VOLTAGE **	
	12D - 12 VDC	
	24D - 24 VDC	
	120A - 120 VAC	
	240A - 240 VAC	

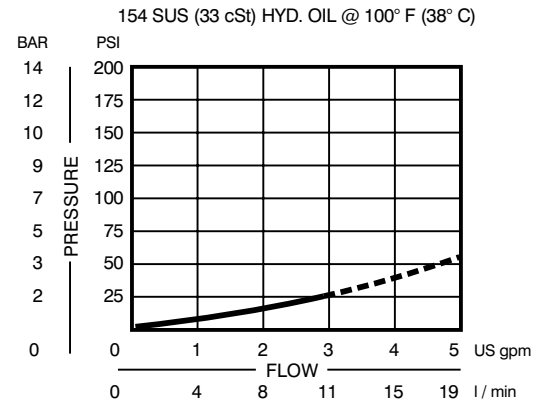
* For manual override information see [page 8.59](#).
 ** For coil options and additional voltages see [page 8.51](#).



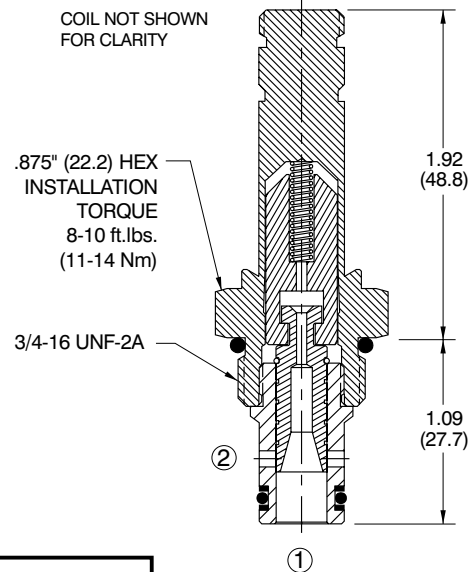
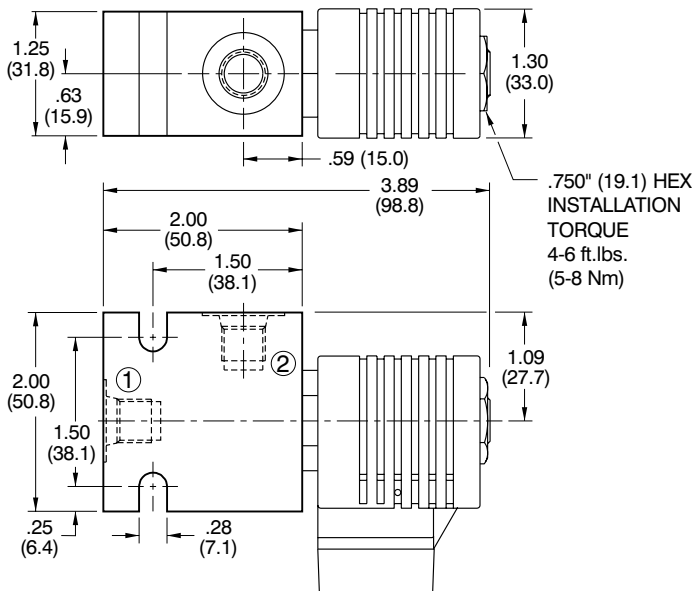
SPECIFICATIONS

- Valve is a normally closed, direct acting, 2 position, 2 way spool type solenoid. In the de-energized mode, the valve blocks the flow from 1 to 2 or 2 to 1. When energized, the valve allows flow from 1 to 2 or 2 to 1.
- Nominal flow: 3.0 gpm (11 l/m).
- Valve rated to 3000 psi (207 bar) working pressure.
- Valve leakage: 5 cu. in. (82 cc) per min. max. at 3000 psi (207 bar).
- Valve cartridge is **all** steel construction with precision ground, hardened components to assure smooth operation and extended service life.
- Hi-strength aluminum alloy body allows for maximum circuit design flexibility.
- Buna-N seals are standard. Viton is optional (consult factory for other seal compounds).
- Valve is designed for use with general purpose hydraulic fluids (MIL-H-5606, SAE #10, etc.).
- Cartridge weight .50 lbs (.23 kg).
- Valve cartridge fits Compact Controls **cavity CP8-2**.

TYPICAL PERFORMANCE



All dimensions in inches (mm)



ORDERING INFORMATION

CP518 - 1 - B - 6S - 24D - S

BASIC CARTRIDGE

SEALS

B - BUNA-N
V - VITON

SEAL KIT
120227
120228

PORTS

0 - CARTRIDGE
2P - 1/4 NPTF
3P - 3/8 NPTF
4S - #4 SAE
6S - #6 SAE
2B - 1/4 BSP
3B - 3/8 BSP

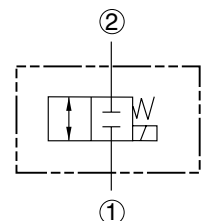
BODY P/N
NO BODY 220814
220815
220816
220817
221285
221286

TERMINATION *

S - SPADE
L - LEAD
H - DIN 43650

VOLTAGE *

12D - 12 VDC
24D - 24 VDC
120A - 120 VAC
240A - 240 VAC



* For coil options and additional voltages see [page 8.51](#).

CP518-2

SOLENOID VALVE

(N/O Spool Type)



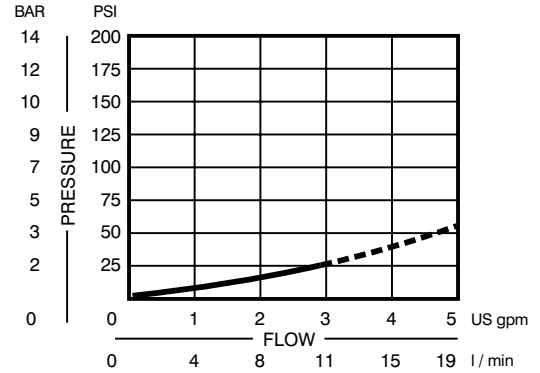
SERIES 8

SPECIFICATIONS

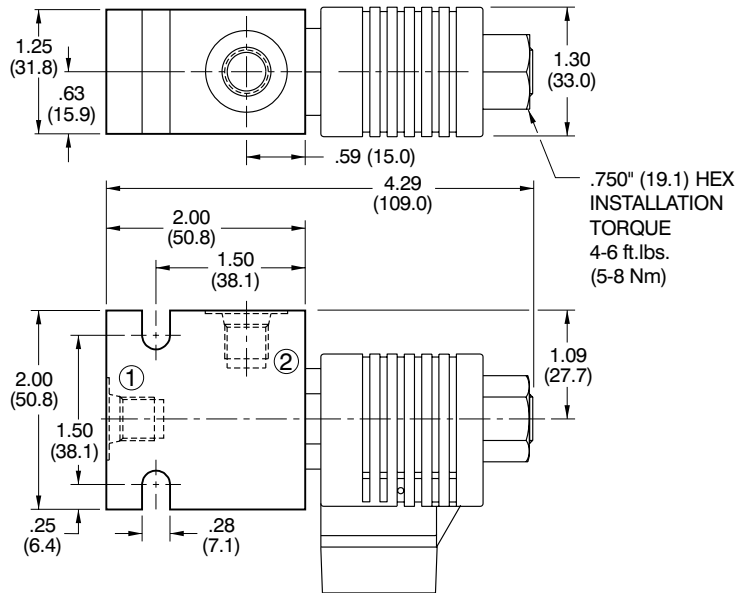
- Valve is a normally open, direct acting, 2 position, 2 way spool type solenoid. In the de-energized mode, the valve allows flow from 1 to 2 or 2 to 1. When energized, the valve blocks flow from 1 to 2 or 2 to 1.
- Nominal flow: 3.0 gpm (11 l/m).
- Valve rated to 3000 psi (207 bar) working pressure.
- Valve leakage: 5 cu. in. (82 cc) per min. max. at 3000 psi (207 bar).
- Valve cartridge is **all** steel construction with precision ground, hardened components to assure smooth operation and extended service life.
- Hi-strength aluminum alloy body allows for maximum circuit design flexibility.
- Buna-N seals are standard. Viton is optional (consult factory for other seal compounds).
- Valve is designed for use with general purpose hydraulic fluids (MIL-H-5606, SAE #10, etc.).
- Cartridge weight .52 lbs (.24 kg).
- Valve cartridge fits Compact Controls **cavity CP8-2**.

TYPICAL PERFORMANCE

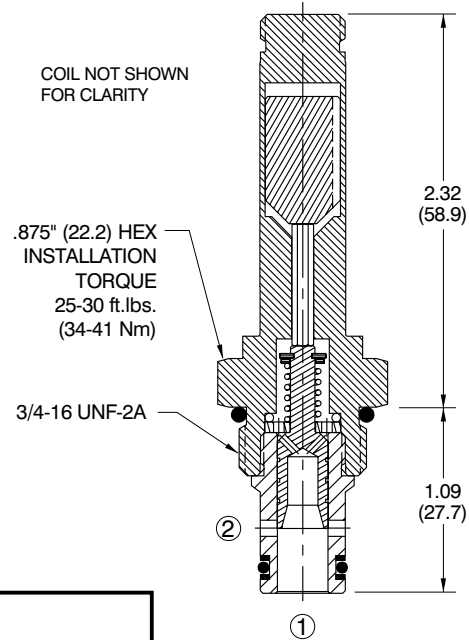
154 SUS (33 cSt) HYD. OIL @ 100° F (38° C)



All dimensions in inches (mm)



COIL NOT SHOWN FOR CLARITY

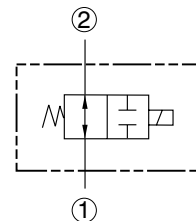


ORDERING INFORMATION

CP518 - 2 - B - 6S - 24D - S -

BASIC CARTRIDGE	SEAL KIT	MANUAL OVERRIDE *
B - BUNA-N	120227	OMIT - NO OVERRIDE
V - VITON	120228	M - MANUAL OVERRIDE
PORTS	BODY P/N	TERMINATION **
0 - CARTRIDGE	NO BODY	S - SPADE
2P - 1/4 NPTF	220814	L - LEAD
3P - 3/8 NPTF	220815	C - CONDUIT
4S - #4 SAE	220816	H - DIN 43650
6S - #6 SAE	220817	
2B - 1/4 BSP	221285	
3B - 3/8 BSP	221286	
	VOLTAGE **	
	12D - 12 VDC	
	24D - 24 VDC	
	120A - 120 VAC	
	240A - 240 VAC	

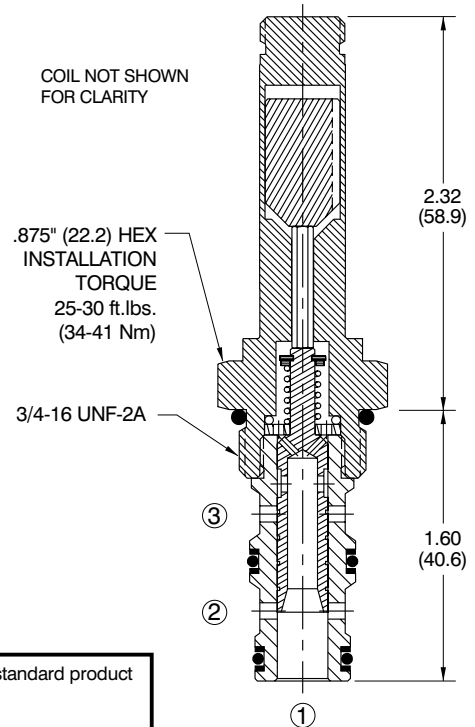
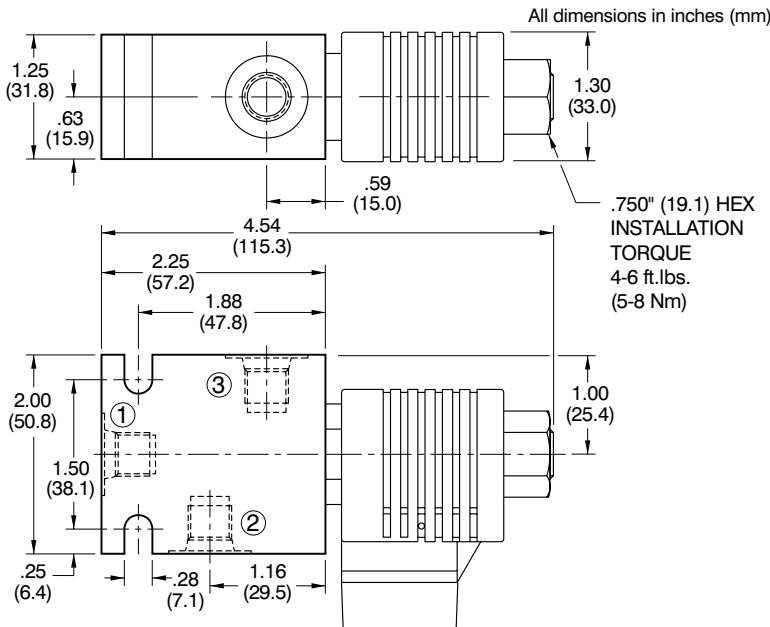
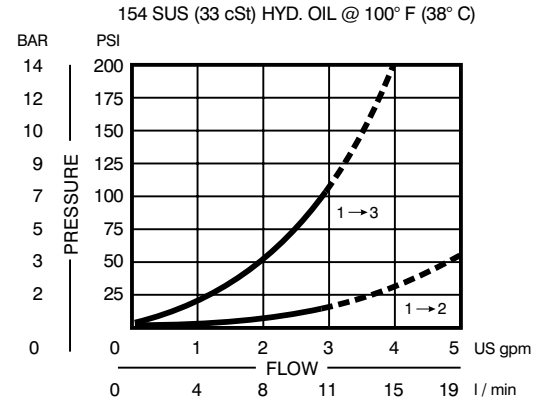
* For manual override information see [page 8.59](#).
 ** For coil options and additional voltages see [page 8.51](#).



SPECIFICATIONS

- Valve is a direct acting, 2 position, 3 way spool type solenoid. In the de-energized mode, the valve allows flow from **1** to **2** or **2** to **1** while blocking **3**. When energized, the valve allows flow from **1** to **3** or **3** to **1** and blocks **2**.
- Nominal flow: 3.0 gpm (11 l/m).
- Valve rated to 3000 psi (207 bar) working pressure.
- Valve leakage: 5 cu. in. (82 cc) per min. max. at 3000 psi (207 bar).
- Valve cartridge is **all** steel construction with precision ground, hardened components to assure smooth operation and extended service life.
- Hi-strength aluminum alloy body allows for maximum circuit design flexibility.
- Buna-N seals are standard. Viton is optional (consult factory for other seal compounds).
- Valve is designed for use with general purpose hydraulic fluids (MIL-H-5606, SAE #10, etc.).
- Cartridge weight .52 lbs (.24 kg).
- Valve cartridge fits Compact Controls [cavity CP8-3](#).

TYPICAL PERFORMANCE



8

ORDERING INFORMATION

Shaded area represents standard product

CP528 - 1 - B - 6S - 24D - S -

BASIC CARTRIDGE

SEALS

B - BUNA-N
 V - VITON

SEAL KIT

120229
 120230

PORTS

0 - CARTRIDGE
 2P - 1/4 NPTF
 3P - 3/8 NPTF
 4S - #4 SAE
 6S - #6 SAE
 2B - 1/4 BSP
 3B - 3/8 BSP

BODY P/N

NO BODY
 220819
 220820
 220821
 220822
 221288
 221287

VOLTAGE **

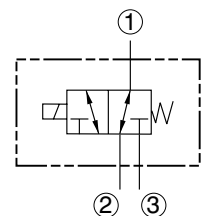
12D - 12 VDC
 24D - 24 VDC
 120A - 120 VAC
 240A - 240 VAC

MANUAL OVERRIDE *

OMIT - NO OVERRIDE
 M - MANUAL OVERRIDE

TERMINATION **

S - SPADE
 L - LEAD
 C - CONDUIT
 H - DIN 43650



* For manual override information see [page 8.59](#).

** For coil options and additional voltages see [page 8.51](#).

CP528-2

SOLENOID VALVE

(2 Pos. 3 Way Spool Type)



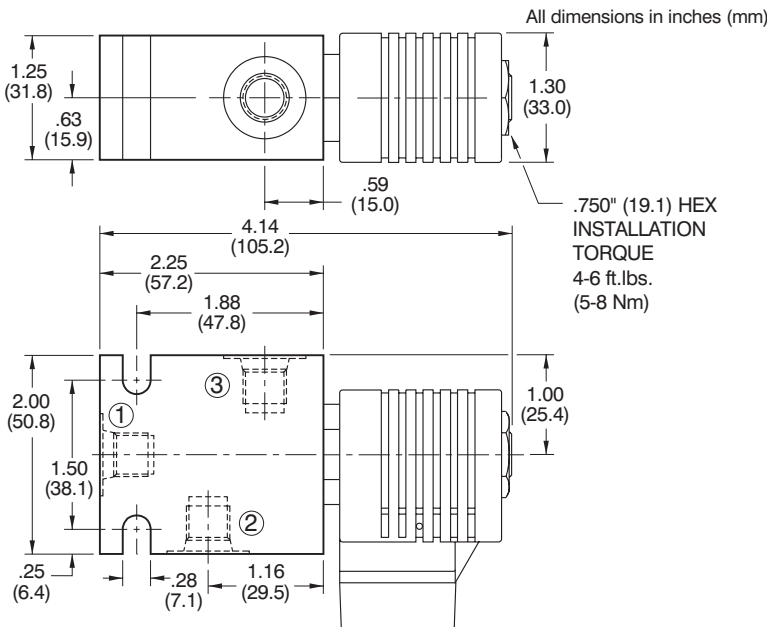
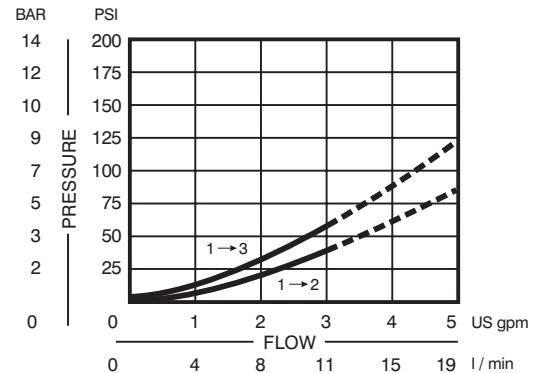
SERIES 8

SPECIFICATIONS

- Valve is a direct acting, 2 position, 3 way spool type solenoid. In the de-energized mode, the valve allows flow from 1 to 2 or 2 to 1 while blocking 3. When energized, the valve allows flow from 1 to 3 or 3 to 1 and blocks 2.
- Nominal flow: 3.0 gpm (11 l/m).
- Valve rated to 3000 psi (207 bar) working pressure.
- Valve leakage: 5 cu. in. (82 cc) per min. max. at 3000 psi (207 bar).
- Valve cartridge is **all** steel construction with precision ground, hardened components to assure smooth operation and extended service life.
- Hi-strength aluminum alloy body allows for maximum circuit design flexibility.
- Buna-N seals are standard. Viton is optional (consult factory for other seal compounds).
- Valve is designed for use with general purpose hydraulic fluids (MIL-H-5606, SAE #10, etc.).
- Cartridge weight .60 lbs (.27 kg).
- Valve cartridge fits Compact Controls cavity CP8-3.

TYPICAL PERFORMANCE

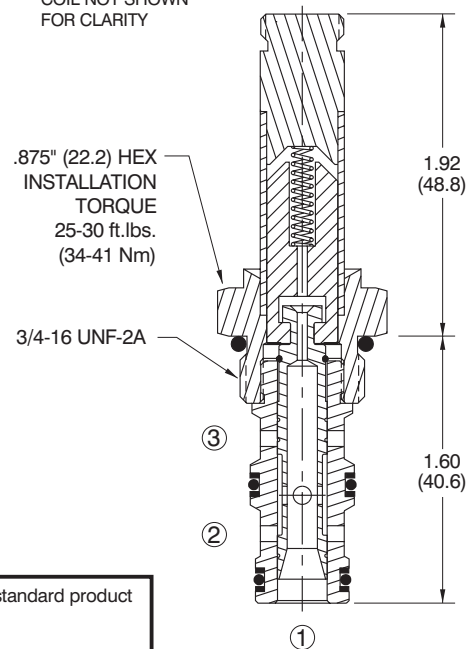
154 SUS (33 cSt) HYD. OIL @ 100° F (38° C)



COIL NOT SHOWN FOR CLARITY

.875" (22.2) HEX INSTALLATION TORQUE 25-30 ft.lbs. (34-41 Nm)

3/4-16 UNF-2A



ORDERING INFORMATION

Shaded area represents standard product

CP528 - 2 - B - 6S - 24D - S

BASIC CARTRIDGE

SEALS

SEAL KIT	
B - BUNA-N	120229
V - VITON	120230

PORTS

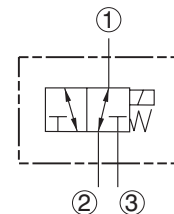
CARTRIDGE	PORTS	SAE	BODY P/N
0 - CARTRIDGE			NO BODY
2P - 1/4 NPTF			220819
3P - 3/8 NPTF			220820
4S - #4 SAE			220821
6S - #6 SAE			220822
2B - 1/4 BSP			221288
3B - 3/8 BSP			221287

TERMINATION *

S - SPADE
L - LEAD
C - CONDUIT
H - DIN 43650

VOLTAGE *

12D - 12 VDC
24D - 24 VDC
120A - 120 VAC
240A - 240 VAC

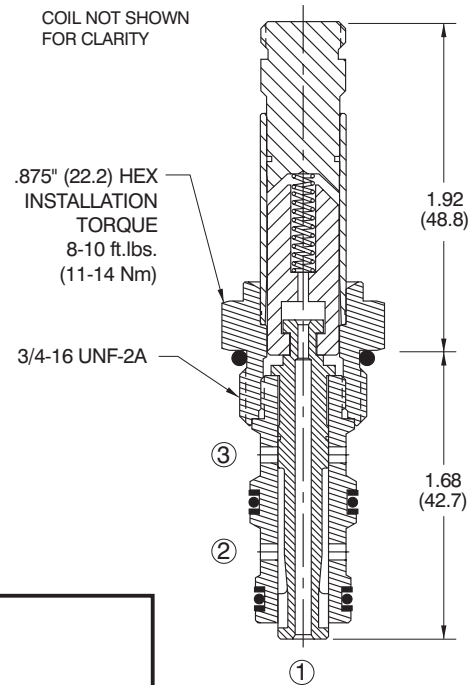
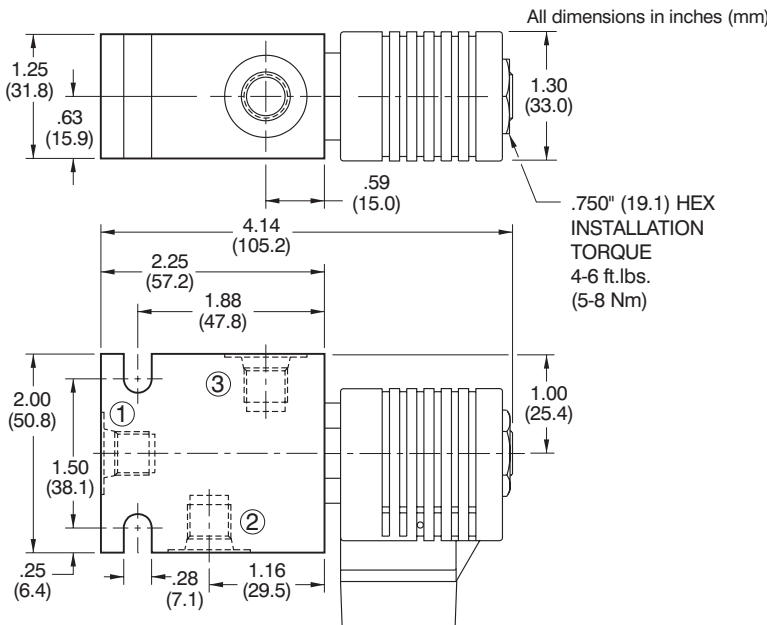
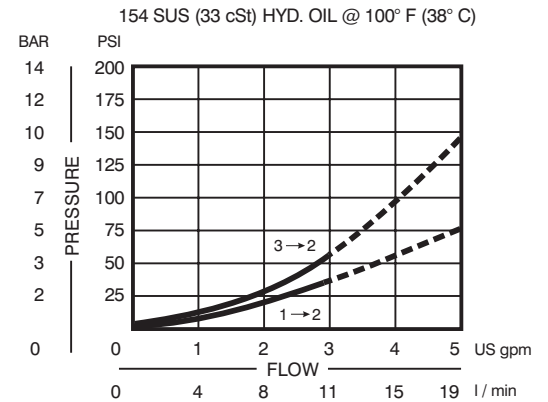


* For coil options and additional voltages see [page 8.51](#).

SPECIFICATIONS

- Valve is a direct acting, 2 position, 3 way spool type solenoid. In the de-energized mode, the valve allows flow from 1 to 2 or 2 to 1 while blocking 3. When energized, the valve allows flow from 2 to 3 or 3 to 2 and blocks 1.
- Nominal flow: 3.0 gpm (11 l/m).
- Valve rated to 3000 psi (207 bar) working pressure.
- Valve leakage: 5 cu. in (82 cc) per min. max. at 3000 psi (207 bar).
- Valve cartridge is **all** steel construction with precision ground, hardened components to assure smooth operation and extended service life.
- Hi-strength aluminum alloy body allows for maximum circuit design flexibility.
- Buna-N seals are standard. Viton is optional (consult factory for other seal compounds).
- Valve is designed for use with general purpose hydraulic fluids (MIL-H-5606, SAE #10, etc.).
- Cartridge weight .52 lbs (.24 kg).
- Valve cartridge fits Compact Controls cavity CP8-3.

TYPICAL PERFORMANCE



ORDERING INFORMATION

CP528 - 5 - B - 6S - 24D - S

BASIC CARTRIDGE	SEAL KIT	TERMINATION *
SEALS		
B - BUNA-N	120229	S - SPADE
V - VITON	120230	L - LEAD
PORTS		C - CONDUIT
		H - DIN 43650
BODY P/N	VOLTAGE *	
NO BODY	12D - 12 VDC	
220819	24D - 24 VDC	
220820	120A - 120 VAC	
220821	240A - 240 VAC	
220822		
221288		
221287		

* For coil options and additional voltages see page 8.51.

CP538-1

SOLENOID VALVE

(2 Pos. 4 Way Spool Type)



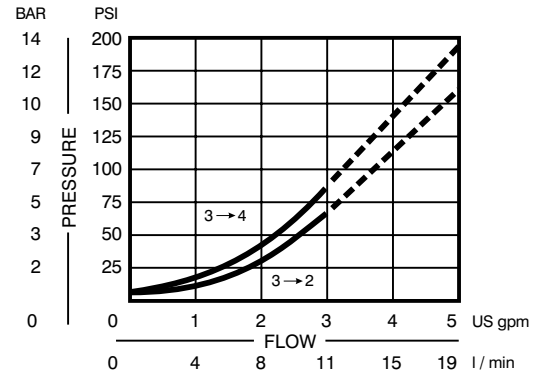
SERIES 8

SPECIFICATIONS

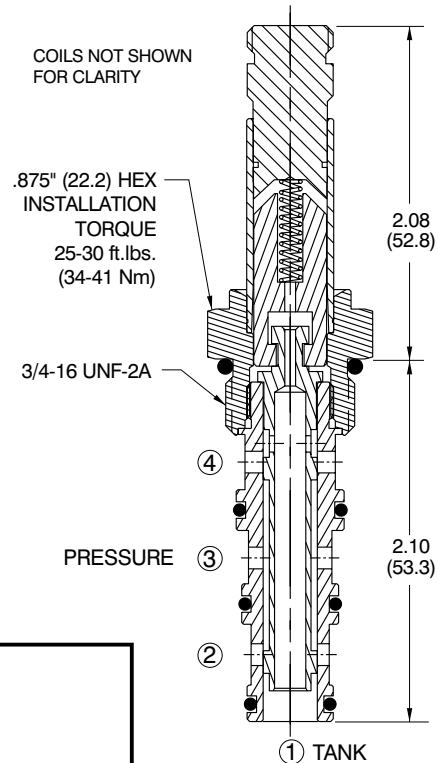
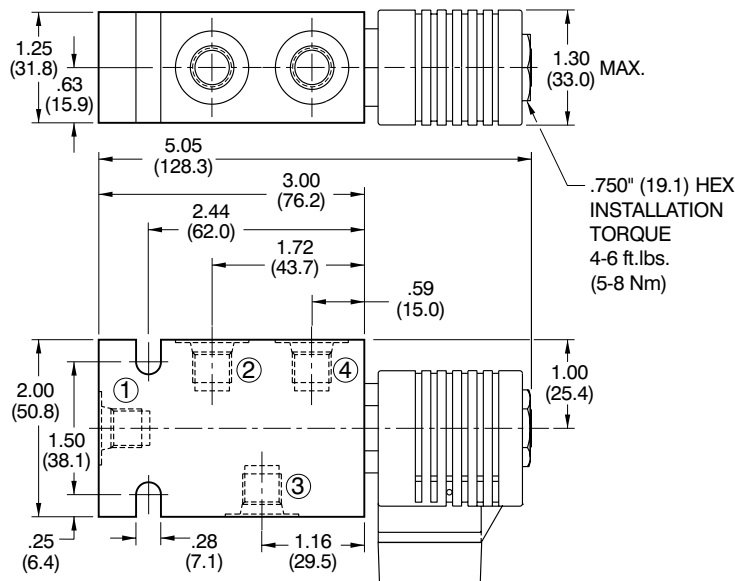
- Valve is a direct acting, 2 position, 4 way spool type solenoid. In the de-energized mode, the valve allows flow from **3 to 2** and **4 to 1**. When energized, the valve allows flow from **3 to 4** and **2 to 1**.
- Nominal flow: 3.0 gpm (11 l/m).
- Valve rated to 3000 psi (207 bar) working pressure.
- Valve leakage: 5 cu. in. (82 cc) per min. max. at 3000 psi (207 bar).
- Valve cartridge is **all** steel construction with precision ground, hardened components to assure smooth operation and extended service life.
- Hi-strength aluminum alloy body allows for maximum circuit design flexibility.
- Buna-N seals are standard. Viton is optional (consult factory for other seal compounds).
- Valve is designed for use with general purpose hydraulic fluids (MIL-H-5606, SAE #10, etc.).
- Cartridge weight .62 lbs (.28 kg).
- Valve cartridge fits Compact Controls **cavity CP8-4**.

TYPICAL PERFORMANCE

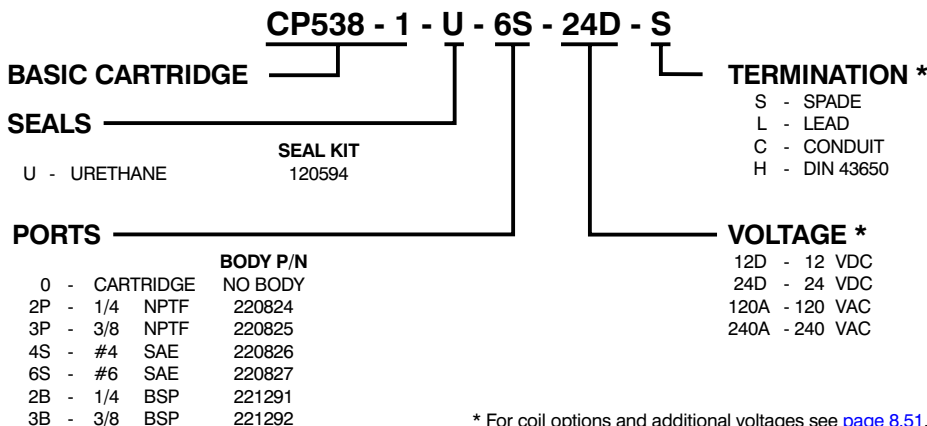
154 SUS (33 cSt) HYD. OIL @ 100° F (38° C)



All dimensions in inches (mm)



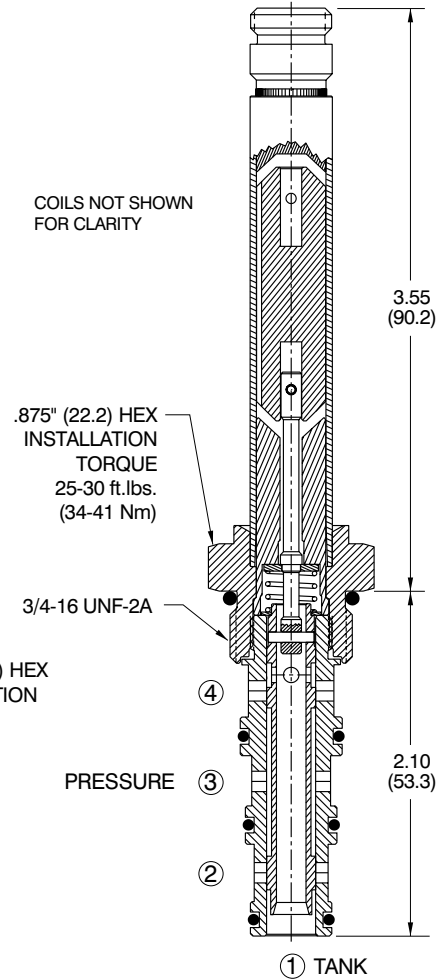
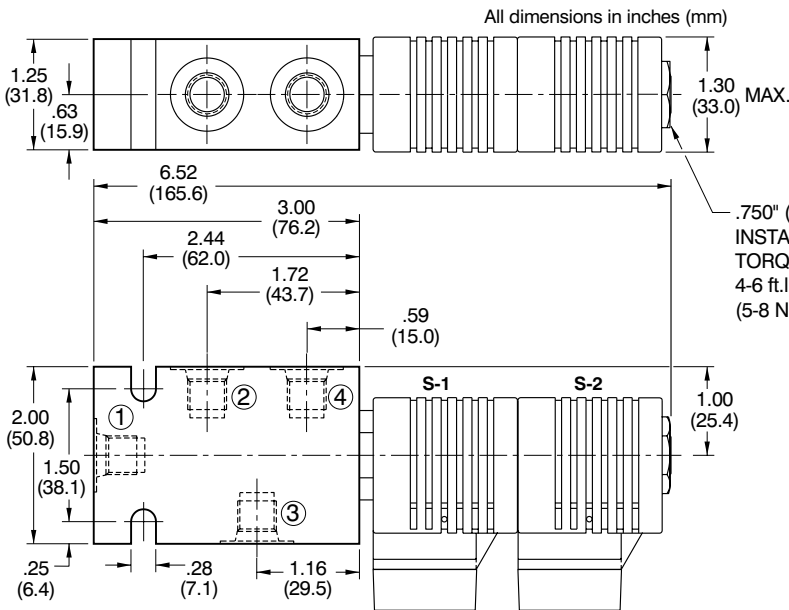
ORDERING INFORMATION



* For coil options and additional voltages see [page 8.51](#).

SPECIFICATIONS

- Valve is a direct acting, 3 position, 4 way spool type solenoid. See schematics below for flow paths when **S-1** or **S-2** are energized. While **1** can be pressurized, it is not intended to be an inlet.
- Nominal flow: 3.0 gpm (11 l/m), Spool 1 = 1.5 gpm (6 l/m).
- Valve rated to 3000 psi (207 bar) working pressure.
- Valve leakage: 10 cu. in. (164 cc) per min. max. at 3000 psi (207 bar).
- Valve cartridge is **all** steel construction with precision ground, hardened components to assure smooth operation and extended service life.
- Hi-strength aluminum alloy body allows for maximum circuit design flexibility.
- Buna-N seals are standard. Viton is optional (consult factory for other seal compounds).
- Valve is designed for use with general purpose hydraulic fluids (MIL-H-5606, SAE #10, etc.).
- Cartridge weight 1.10 lbs (.50 kg).
- Valve cartridge fits Compact Controls cavity CP8-4.



ORDERING INFORMATION

Shaded area represents standard product

CP538 - 3P - U - 6S - 1 - 24D - S -

BASIC CARTRIDGE **MANUAL OVERRIDE**
 OMIT - NO OVERRIDE
 M - MANUAL OVERRIDE

SEALS **SEAL KIT**
 U - URETHANE 120594

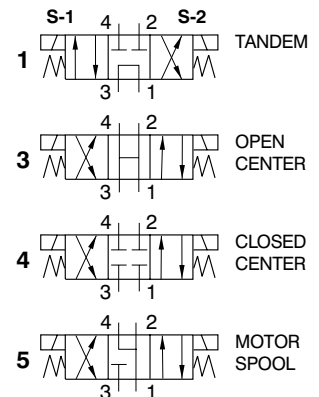
PORTS

BODY P/N
 NO BODY 220824
 2P - 1/4 NPTF 220825
 3P - 3/8 NPTF 220826
 4S - #4 SAE 220827
 6S - #6 SAE 221291
 2B - 1/4 BSP 221292
 3B - 3/8 BSP

SPOOL CODE
 (See Schematic)
 1 - TANDEM
 3 - OPEN CENTER
 4 - CLOSED CENTER
 5 - MOTOR SPOOL

VOLTAGE *
 12D - 12 VDC
 24D - 24 VDC
 120A - 120 VAC
 240A - 240 VAC

TERMINATION *
 S - SPADE
 L - LEAD
 C - CONDUIT
 H - DIN 43650



* For coil options and additional voltages see page 8.51.

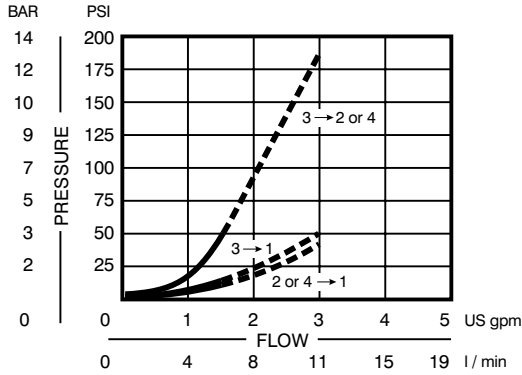
SERIES 8

PERFORMANCE DATA

TYPICAL PERFORMANCE

SPOOL 1

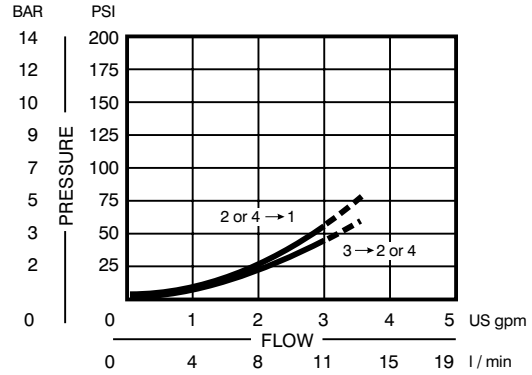
154 SUS (33 cSt) HYD. OIL @ 100° F (38° C)



TYPICAL PERFORMANCE

SPOOL 3

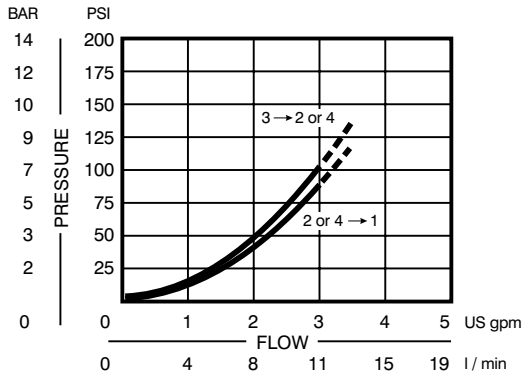
154 SUS (33 cSt) HYD. OIL @ 100° F (38° C)



TYPICAL PERFORMANCE

SPOOL 4

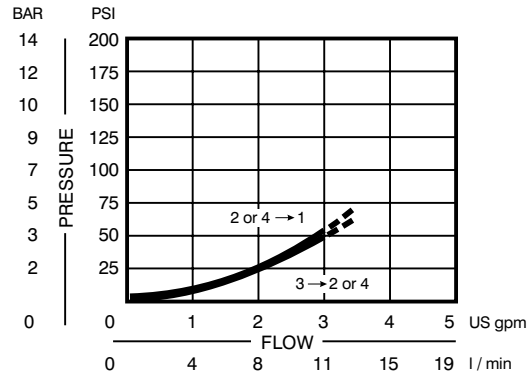
154 SUS (33 cSt) HYD. OIL @ 100° F (38° C)



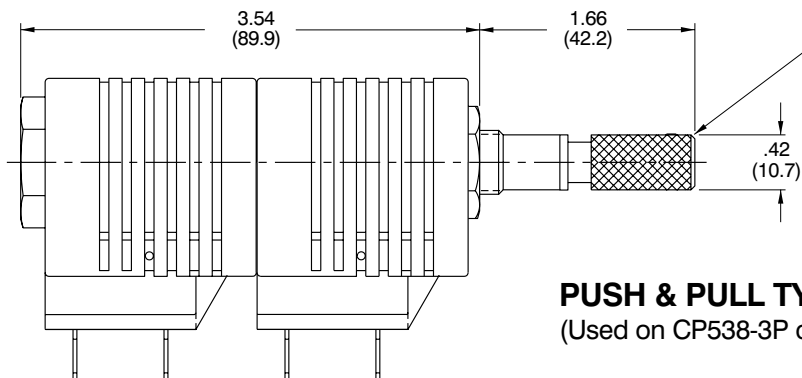
TYPICAL PERFORMANCE

SPOOL 5

154 SUS (33 cSt) HYD. OIL @ 100° F (38° C)



MANUAL OVERRIDE



Push or Pull knob and hold to override the solenoid. Release knob to return valve to normal operation.

PUSH & PULL TYPE OVERRIDE

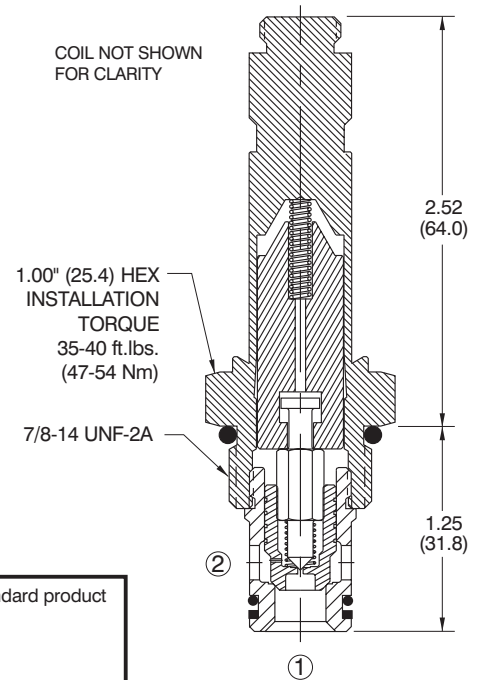
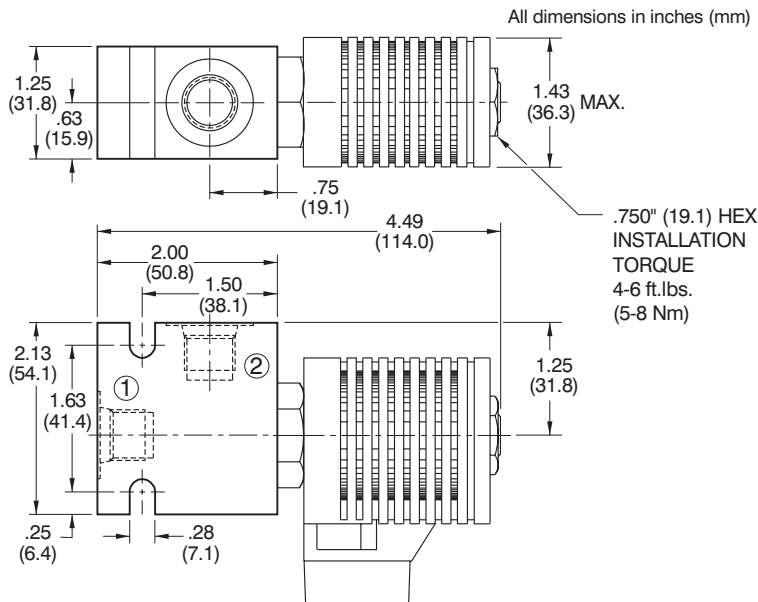
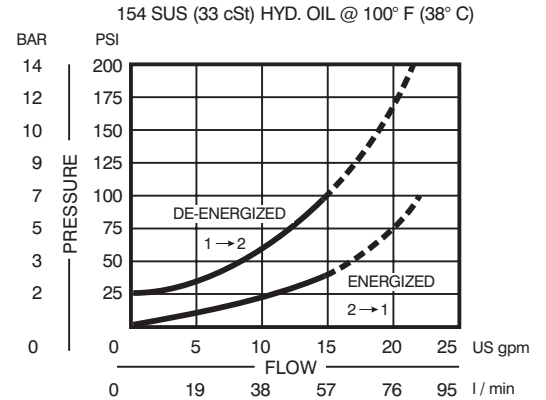
(Used on CP538-3P only)

All dimensions in inches (mm)

SPECIFICATIONS

- Valve is a normally closed, pilot operated, poppet type solenoid. In the de-energized mode, the valve acts as a check allowing the flow from **1** to **2** and blocking flow from **2** to **1**. When energized, the valve allows flow from **2** to **1** and severely restricts from **1** to **2**.
- Nominal flow: 15.0 gpm (57 l/m).
- Valve rated to 3000 psi (207 bar) working pressure.
- Valve leakage: 6 drops per min. max. at 3000 psi (207 bar).
- Valve cartridge is **all** steel construction with precision ground, hardened components to assure smooth operation and extended service life.
- Hi-strength aluminum alloy body allows for maximum circuit design flexibility.
- Buna-N seals are standard. Viton is optional (consult factory for other seal compounds).
- Valve is designed for use with general purpose hydraulic fluids (MIL-H-5606, SAE #10, etc.).
- Cartridge weight .94 lbs (.43 kg).
- Valve cartridge fits Compact Controls [cavity CP10-2](#).

TYPICAL PERFORMANCE



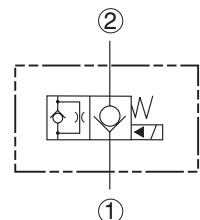
ORDERING INFORMATION

Shaded area represents standard product

CP500 - 1 - B - 8S - 24D - S

BASIC CARTRIDGE	SEALS	SEAL KIT	TERMINATION *	VOLTAGE *
B - BUNA-N	B - BUNA-N	120015	S - SPADE	12D - 12 VDC
V - VITON	V - VITON	120016	L - LEAD	24D - 24 VDC
			C - CONDUIT	120A - 120 VAC
			H - DIN 43650	240A - 240 VAC
PORTS	BODY P/N			
0 - CARTRIDGE	NO BODY			
3P - 3/8 NPTF	220092			
4P - 1/2 NPTF	220124			
6S - #6 SAE	220125			
8S - #8 SAE	220126			
3B - 3/8 BSP	221214			
4B - 1/2 BSP	221215			

* For coil options and additional voltages see [page 8.55](#).



CP500-2

SOLENOID VALVE

(N/O Poppet Type)



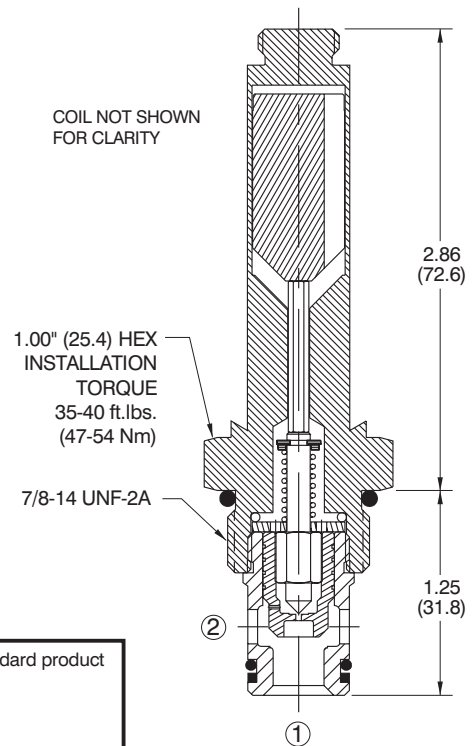
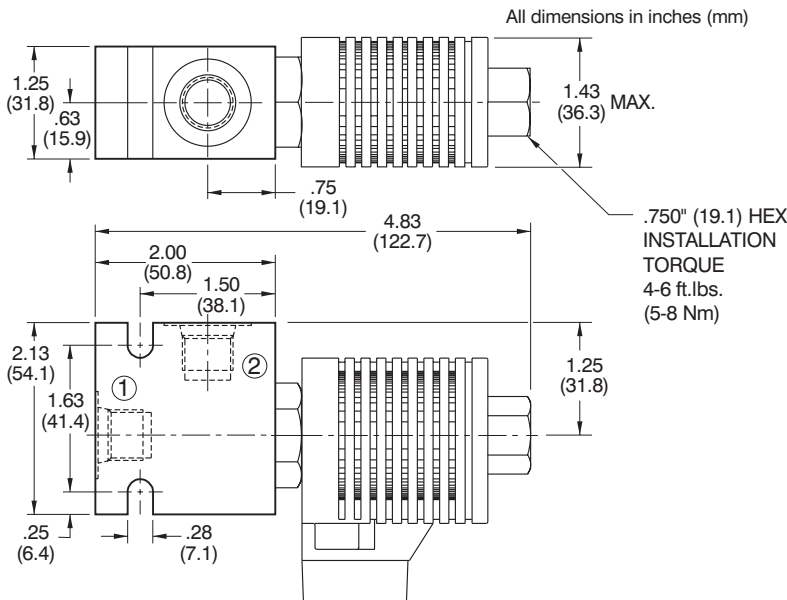
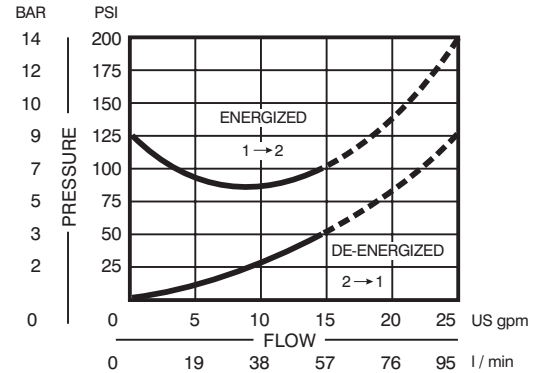
SERIES 10

SPECIFICATIONS

- Valve is a normally open, pilot operated, poppet type solenoid. In the de-energized mode, the valve allows flow from 2 to 1 and severely restricts flow from 1 to 2. When energized, the valve blocks flow from 2 to 1 and allows flow from 1 to 2 after it overcomes the solenoid forces.
- Nominal flow: 15.0 gpm (57 l/m).
- Valve rated to 3000 psi (207 bar) working pressure.
- Valve leakage: 6 drops per min. max. at 3000 psi (207 bar).
- Valve cartridge is **all** steel construction with precision ground, hardened components to assure smooth operation and extended service life.
- Hi-strength aluminum alloy body allows for maximum circuit design flexibility.
- Buna-N seals are standard. Viton is optional (consult factory for other seal compounds).
- Valve is designed for use with general purpose hydraulic fluids (MIL-H-5606, SAE #10, etc.).
- Cartridge weight .97 lbs (.44 kg).
- Valve cartridge fits Compact Controls [cavity CP10-2](#).

TYPICAL PERFORMANCE

154 SUS (33 cSt) HYD. OIL @ 100° F (38° C)



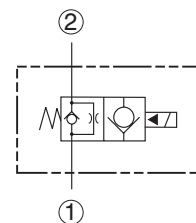
ORDERING INFORMATION

Shaded area represents standard product

CP500 - 2 - B - 8S - 24D - S -

BASIC CARTRIDGE	SEALS	SEAL KIT	MANUAL OVERRIDE *
B - BUNA-N	V - VITON	120015 120016	OMIT - NO OVERRIDE M - MANUAL OVERRIDE
PORTS	BODY P/N	VOLTAGE **	TERMINATION **
0 - CARTRIDGE	NO BODY	12D - 12 VDC	S - SPADE
3P - 3/8 NPTF	220092	24D - 24 VDC	L - LEAD
4P - 1/2 NPTF	220124	120A - 120 VAC	C - CONDUIT
6S - #6 SAE	220125	240A - 240 VAC	H - DIN 43650
8S - #8 SAE	220126		
3B - 3/8 BSP	221214		
4B - 1/2 BSP	221215		

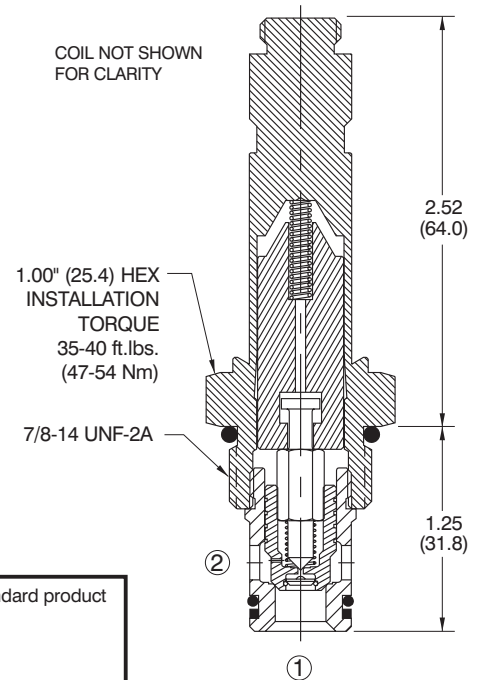
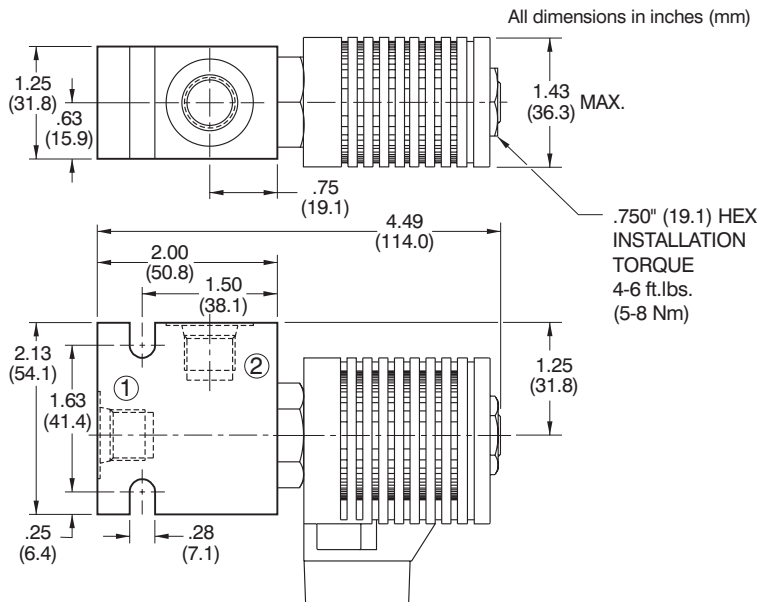
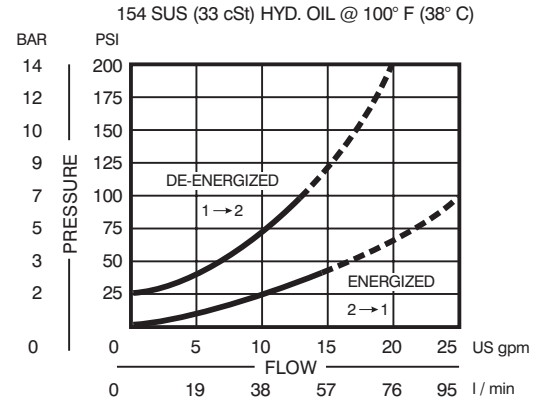
* For manual override information see [page 8.59](#).
** For coil options and additional voltages see [page 8.55](#).



SPECIFICATIONS

- Valve is a normally closed, pilot operated, poppet type solenoid. In the de-energized mode, the valve acts as a check allowing the flow from **1** to **2** and blocking flow from **2** to **1**. When energized, the valve allows flow from **1** to **2** and from **2** to **1**.
- Nominal flow: 15.0 gpm (57 l/m).
- Valve rated to 3000 psi (207 bar) working pressure.
- Valve leakage: 6 drops per min. max. at 3000 psi (207 bar).
- Valve cartridge is **all** steel construction with precision ground, hardened components to assure smooth operation and extended service life.
- Hi-strength aluminum alloy body allows for maximum circuit design flexibility.
- Buna-N seals are standard. Viton is optional (consult factory for other seal compounds).
- Valve is designed for use with general purpose hydraulic fluids (MIL-H-5606, SAE #10, etc.).
- Cartridge weight .95 lbs (.43 kg).
- Valve cartridge fits Compact Controls [cavity CP10-2](#).

TYPICAL PERFORMANCE



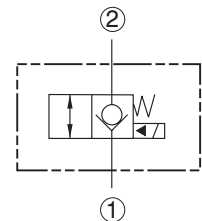
ORDERING INFORMATION

Shaded area represents standard product

CP500 - 3 - B - 8S - 24D - S

BASIC CARTRIDGE	SEALS	SEAL KIT	TERMINATION *	VOLTAGE *
B - BUNA-N	B - BUNA-N	120015	S - SPADE	12D - 12 VDC
V - VITON	V - VITON	120016	L - LEAD	24D - 24 VDC
			C - CONDUIT	120A - 120 VAC
			H - DIN 43650	240A - 240 VAC
PORTS	BODY P/N			
0 - CARTRIDGE	NO BODY			
3P - 3/8 NPTF	220092			
4P - 1/2 NPTF	220124			
6S - #6 SAE	220125			
8S - #8 SAE	220126			
3B - 3/8 BSP	221214			
4B - 1/2 BSP	221215			

* For coil options and additional voltages see [page 8.55](#).



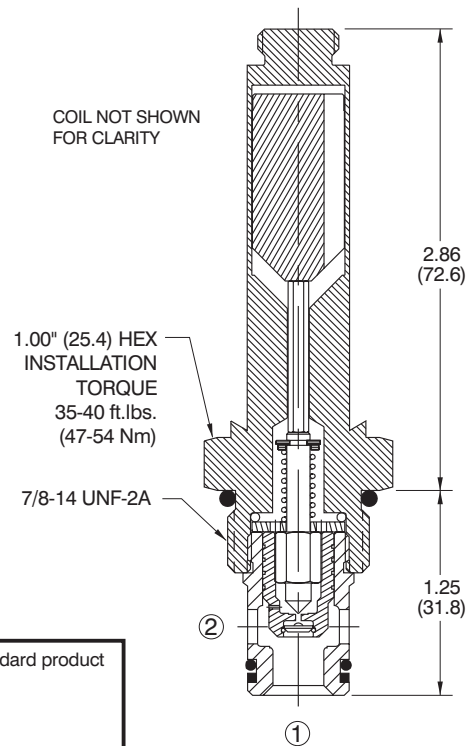
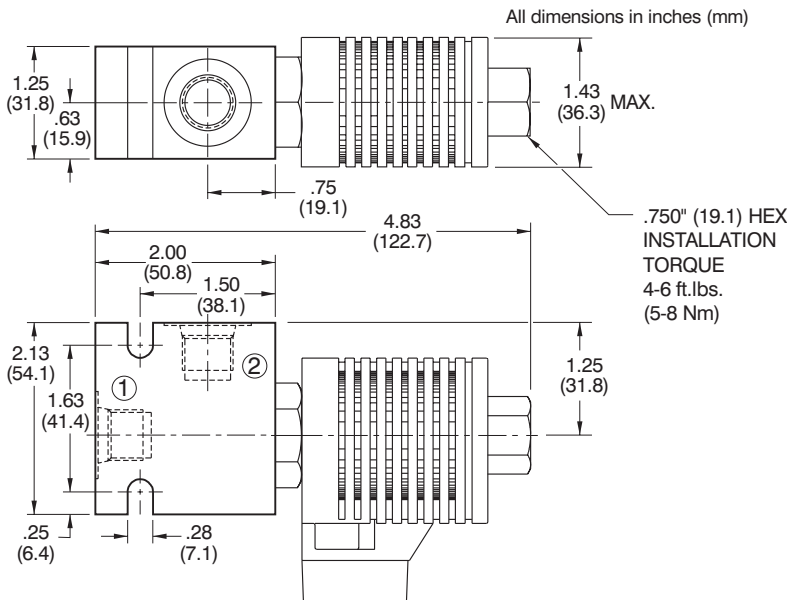
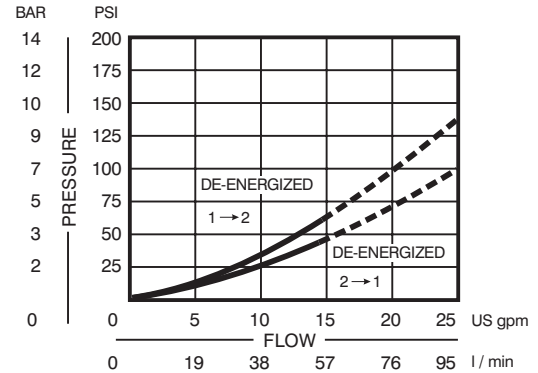
SERIES 10

SPECIFICATIONS

- Valve is a normally open, pilot operated, poppet type solenoid. In the de-energized mode, the valve allows flow from 2 to 1 and 1 to 2. When energized, the valve blocks flow from 2 to 1 and allows flow from 1 to 2 after it overcomes the solenoid forces.
- Nominal flow: 15.0 gpm (57 l/m).
- Valve rated to 3000 psi (207 bar) working pressure.
- Valve leakage: 6 drops per min. max. at 3000 psi (207 bar).
- Valve cartridge is **all** steel construction with precision ground, hardened components to assure smooth operation and extended service life.
- Hi-strength aluminum alloy body allows for maximum circuit design flexibility.
- Buna-N seals are standard. Viton is optional (consult factory for other seal compounds).
- Valve is designed for use with general purpose hydraulic fluids (MIL-H-5606, SAE #10, etc.).
- Cartridge weight .97 lbs (.44 kg).
- Valve cartridge fits Compact Controls [cavity CP10-2](#).

TYPICAL PERFORMANCE

154 SUS (33 cSt) HYD. OIL @ 100° F (38° C)



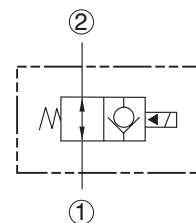
ORDERING INFORMATION

Shaded area represents standard product

CP500 - 4 - B - 8S - 24D - S -

BASIC CARTRIDGE	SEALS	SEAL KIT	MANUAL OVERRIDE *
B - BUNA-N	V - VITON	120015 120016	OMIT - NO OVERRIDE M - MANUAL OVERRIDE
PORTS	BODY P/N	VOLTAGE **	TERMINATION **
0 - CARTRIDGE	NO BODY	12D - 12 VDC	S - SPADE
3P - 3/8 NPTF	220092	24D - 24 VDC	L - LEAD
4P - 1/2 NPTF	220124	120A - 120 VAC	C - CONDUIT
6S - #6 SAE	220125	240A - 240 VAC	H - DIN 43650
8S - #8 SAE	220126		
3B - 3/8 BSP	221214		
4B - 1/2 BSP	221215		

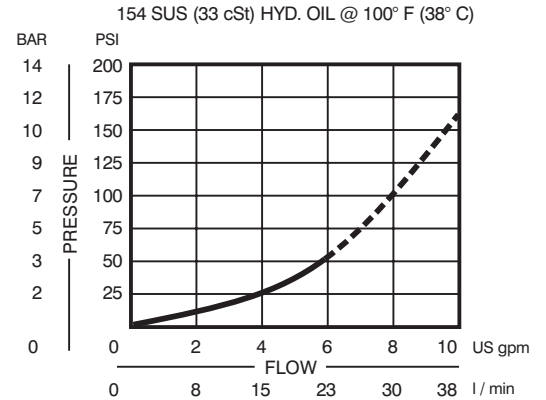
* For manual override information see [page 8.59](#).
 ** For coil options and additional voltages see [page 8.55](#).



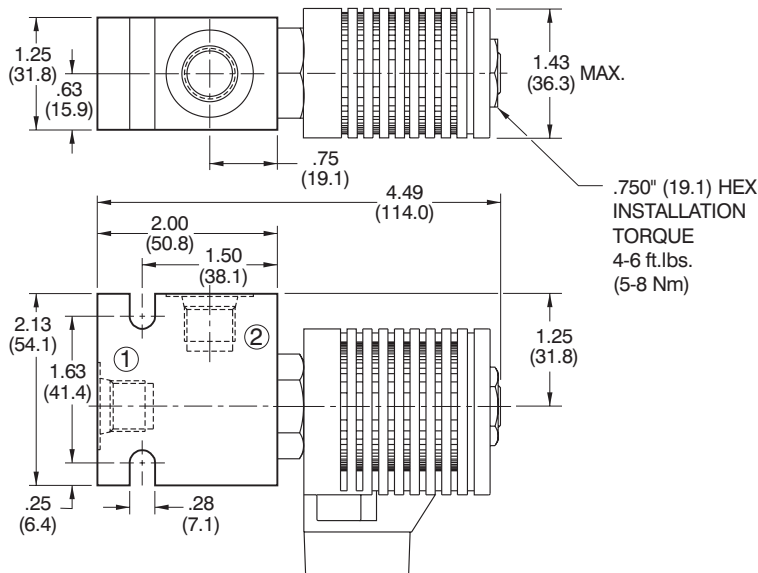
SPECIFICATIONS

- Valve is a normally closed, direct acting, 2 position, 2 way spool type solenoid. In the de-energized mode, the valve blocks the flow from 1 to 2 or 2 to 1. When energized, the valve allows flow from 1 to 2 or 2 to 1.
- Nominal flow: 6.0 gpm (23 l/m).
- Valve rated to 3000 psi (207 bar) working pressure.
- Valve leakage: 5 cu. in. (82 cc) per min. max. at 3000 psi (207 bar).
- Valve cartridge is **all** steel construction with precision ground, hardened components to assure smooth operation and extended service life.
- Hi-strength aluminum alloy body allows for maximum circuit design flexibility.
- Buna-N seals are standard. Viton is optional (consult factory for other seal compounds).
- Valve is designed for use with general purpose hydraulic fluids (MIL-H-5606, SAE #10, etc.).
- Cartridge weight .98 lbs (.44 kg).
- Valve cartridge fits Compact Controls [cavity CP10-2](#).

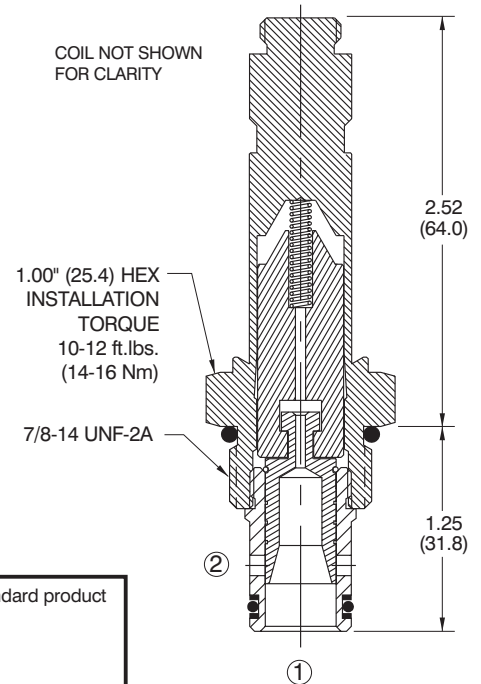
TYPICAL PERFORMANCE



All dimensions in inches (mm)



COIL NOT SHOWN FOR CLARITY



8

ORDERING INFORMATION

Shaded area represents standard product

CP510 - 1 - B - 8S - 24D - S

BASIC CARTRIDGE

SEALS

B - BUNA-N	120073
V - VITON	120074

PORTS

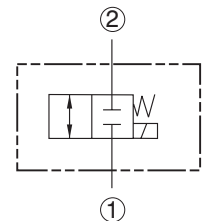
0 - CARTRIDGE	NO BODY
3P - 3/8 NPTF	220092
4P - 1/2 NPTF	220124
6S - #6 SAE	220125
8S - #8 SAE	220126
3B - 3/8 BSP	221214
4B - 1/2 BSP	221215

TERMINATION *

- S - SPADE
- L - LEAD
- C - CONDUIT
- H - DIN 43650

VOLTAGE *

- 12D - 12 VDC
- 24D - 24 VDC
- 120A - 120 VAC
- 240A - 240 VAC



* For coil options and additional voltages see [page 8.55](#).

CP510-2

SOLENOID VALVE

(N/O Spool Type)



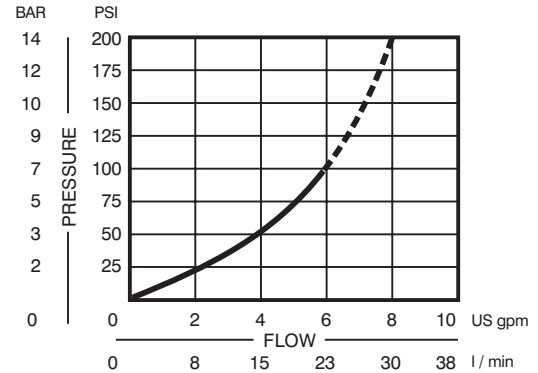
SERIES 10

SPECIFICATIONS

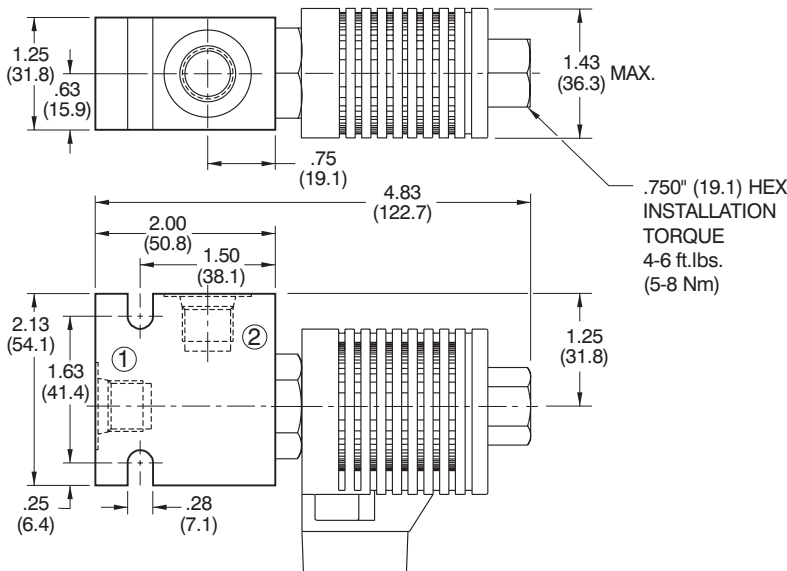
- Valve is a normally open, direct acting, 2 position, 2 way spool type solenoid. In the de-energized mode, the valve allows flow from 1 to 2 or 2 to 1. When energized, the valve blocks flow from 1 to 2 or 2 to 1.
- Nominal flow: 6.0 gpm (23 l/m).
- Valve rated to 3000 psi (207 bar) working pressure.
- Valve leakage: 5 cu. in. (82 cc) per min. max. at 3000 psi (207 bar).
- Valve cartridge is **all** steel construction with precision ground, hardened components to assure smooth operation and extended service life.
- Hi-strength aluminum alloy body allows for maximum circuit design flexibility.
- Buna-N seals are standard. Viton is optional (consult factory for other seal compounds).
- Valve is designed for use with general purpose hydraulic fluids (MIL-H-5606, SAE #10, etc.).
- Cartridge weight .97 lbs (.44 kg).
- Valve cartridge fits Compact Controls cavity CP10-2.

TYPICAL PERFORMANCE

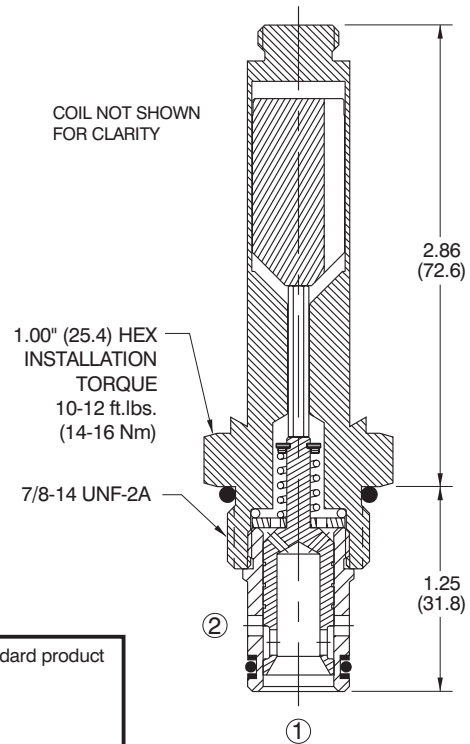
154 SUS (33 cSt) HYD. OIL @ 100° F (38° C)



All dimensions in inches (mm)



COIL NOT SHOWN FOR CLARITY



ORDERING INFORMATION

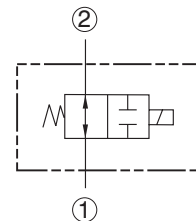
Shaded area represents standard product

CP510 - 2 - B - 8S - 24D - S -

BASIC CARTRIDGE	SEALS	SEAL KIT	MANUAL OVERRIDE *
B - BUNA-N	V - VITON	120073 120074	OMIT - NO OVERRIDE M - MANUAL OVERRIDE
PORTS	BODY P/N	VOLTAGE **	TERMINATION **
0 - CARTRIDGE	NO BODY	12D - 12 VDC	S - SPADE
3P - 3/8 NPTF	220092	24D - 24 VDC	L - LEAD
4P - 1/2 NPTF	220124	120A - 120 VAC	C - CONDUIT
6S - #6 SAE	220125	240A - 240 VAC	H - DIN 43650
8S - #8 SAE	220126		
3B - 3/8 BSP	221214		
4B - 1/2 BSP	221215		

* For manual override information see page 8.59.

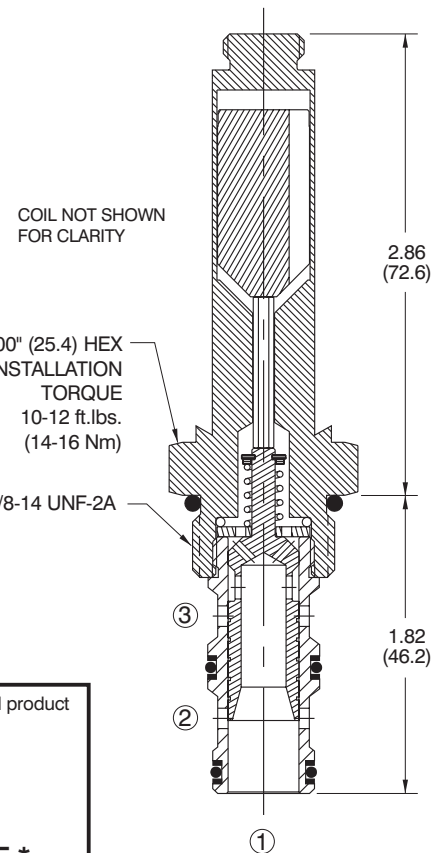
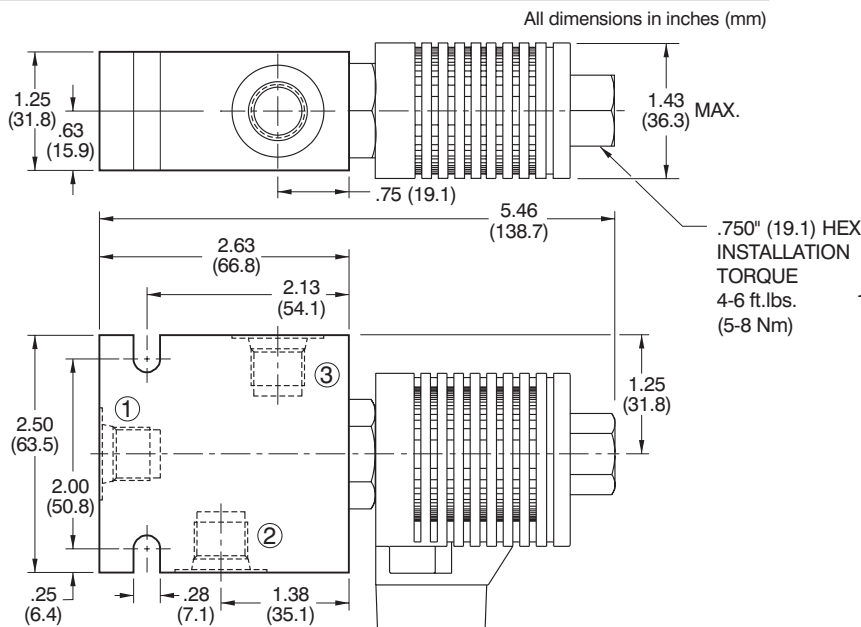
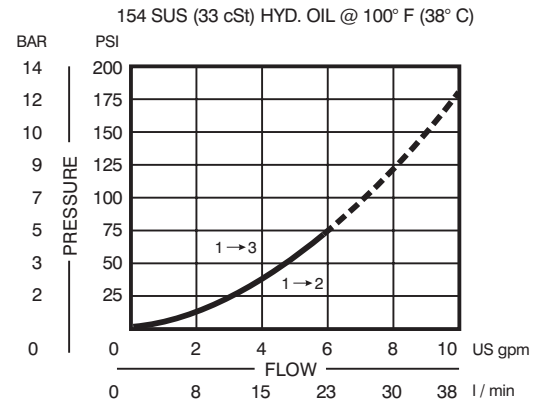
** For coil options and additional voltages see page 8.55.



SPECIFICATIONS

- Valve is a direct acting, 2 position, 3 way spool type solenoid. In the de-energized mode, the valve allows flow from 1 to 2 or 2 to 1 while blocking 3. When energized, the valve allows flow from 1 to 3 or 3 to 1 and blocks 2.
- Nominal flow: 6.0 gpm (23 l/m).
- Valve rated to 3000 psi (207 bar) working pressure.
- Valve leakage: 5 cu. in. (82 cc) per min. max. at 3000 psi (207 bar).
- Valve cartridge is **all** steel construction with precision ground, hardened components to assure smooth operation and extended service life.
- Hi-strength aluminum alloy body allows for maximum circuit design flexibility.
- Buna-N seals are standard. Viton is optional (consult factory for other seal compounds).
- Valve is designed for use with general purpose hydraulic fluids (MIL-H-5606, SAE #10, etc.).
- Cartridge weight 1.08 lbs (.49 kg).
- Valve cartridge fits Compact Controls [cavity CP10-3](#).

TYPICAL PERFORMANCE



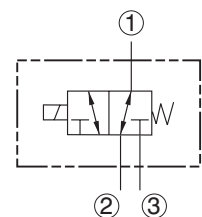
ORDERING INFORMATION

Shaded area represents standard product

CP520 - 1 - B - 8S - 24D - S -

BASIC CARTRIDGE		MANUAL OVERRIDE *
SEALS		OMIT - NO OVERRIDE
		M - MANUAL OVERRIDE
	SEAL KIT	TERMINATION **
B - BUNA-N	120009	S - SPADE
V - VITON	120010	L - LEAD
PORTS		C - CONDUIT
	BODY P/N	H - DIN 43650
0 - CARTRIDGE	NO BODY	
3P - 3/8 NPTF	220203	VOLTAGE **
4P - 1/2 NPTF	220204	12D - 12 VDC
6S - #6 SAE	220205	24D - 24 VDC
8S - #8 SAE	220206	120A - 120 VAC
3B - 3/8 BSP	221297	240A - 240 VAC
4B - 1/2 BSP	221267	

* For manual override information see [page 8.59](#).
 ** For coil options and additional voltages see [page 8.55](#).



CP530-1

SOLENOID VALVE

(2 Pos. 4 Way Spool Type)



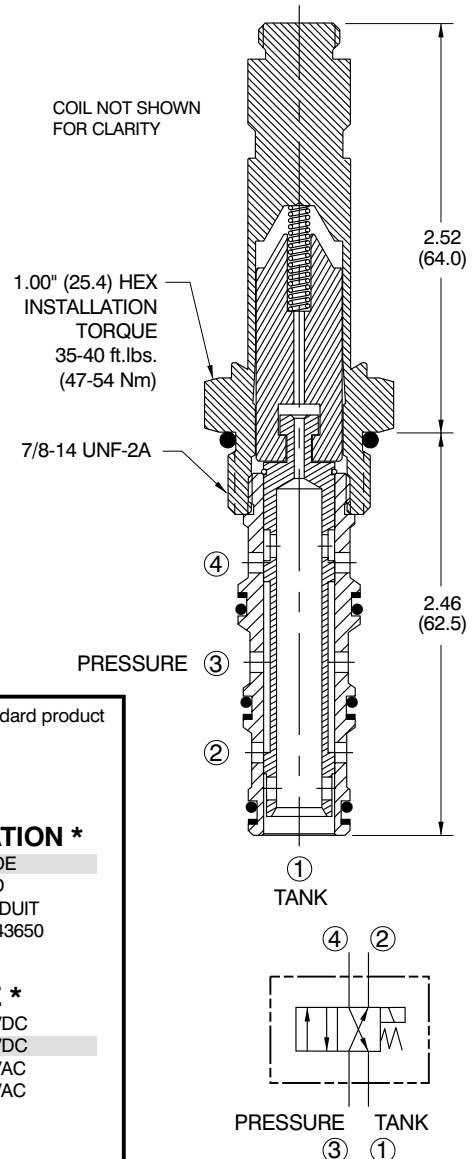
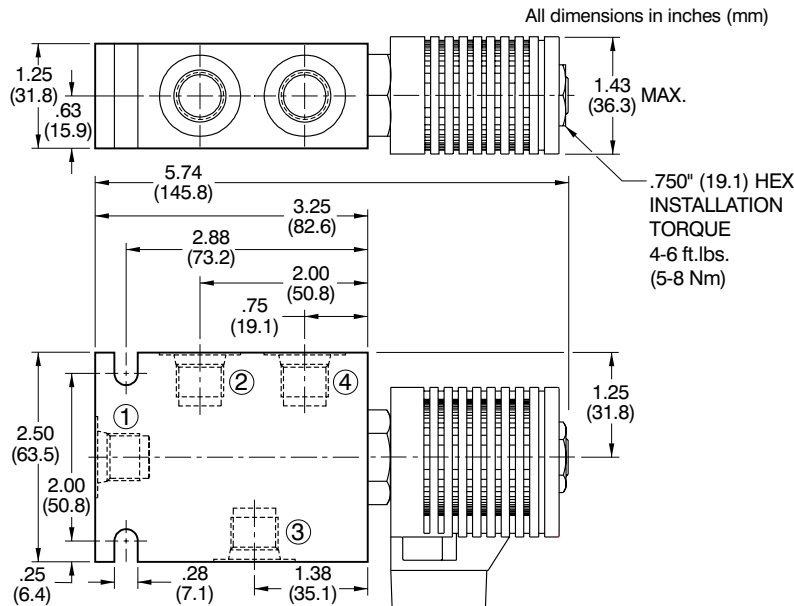
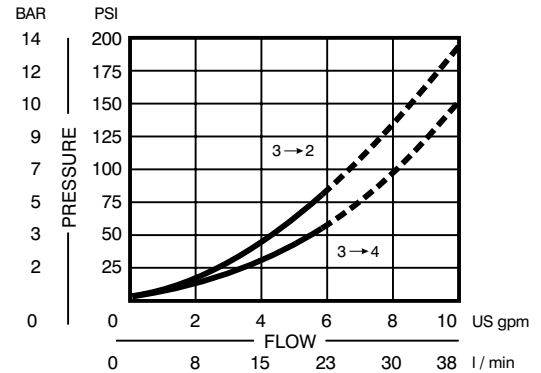
SERIES 10

SPECIFICATIONS

- Valve is a direct acting, 2 position, 4 way spool type solenoid. In the de-energized mode, the valve allows flow from **3** to **2** and **4** to **1**. When energized, the valve allows flow from **3** to **4** and **2** to **1**.
- Nominal flow: 6.0 gpm (23 l/m).
- Valve rated to 3000 psi (207 bar) working pressure.
- Valve leakage: 5 cu. in. (82 cc) per min. max. at 3000 psi (207 bar).
- Valve cartridge is **all** steel construction with precision ground, hardened components to assure smooth operation and extended service life.
- Hi-strength aluminum alloy body allows for maximum circuit design flexibility.
- Buna-N seals are standard. Viton is optional (consult factory for other seal compounds).
- Valve is designed for use with general purpose hydraulic fluids (MIL-H-5606, SAE #10, etc.).
- Cartridge weight 1.08 lbs (.49 kg).
- Valve cartridge fits Compact Controls [cavity CP10-4](#).

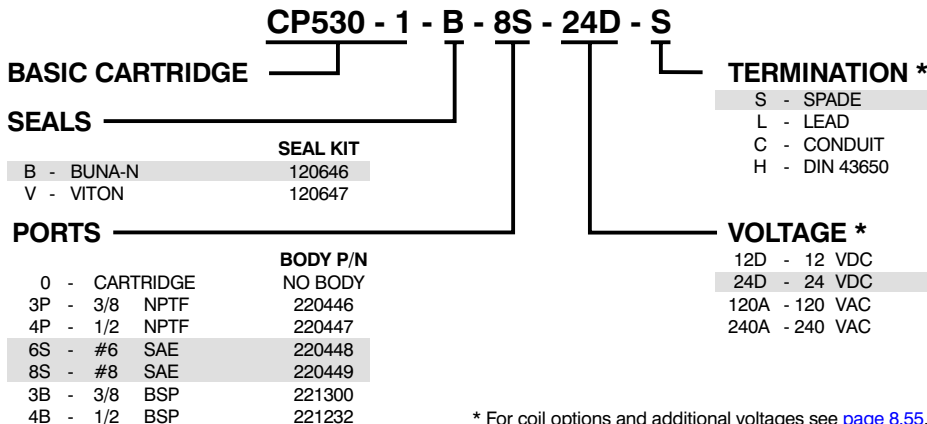
TYPICAL PERFORMANCE

154 SUS (33 cSt) HYD. OIL @ 100° F (38° C)



ORDERING INFORMATION

Shaded area represents standard product

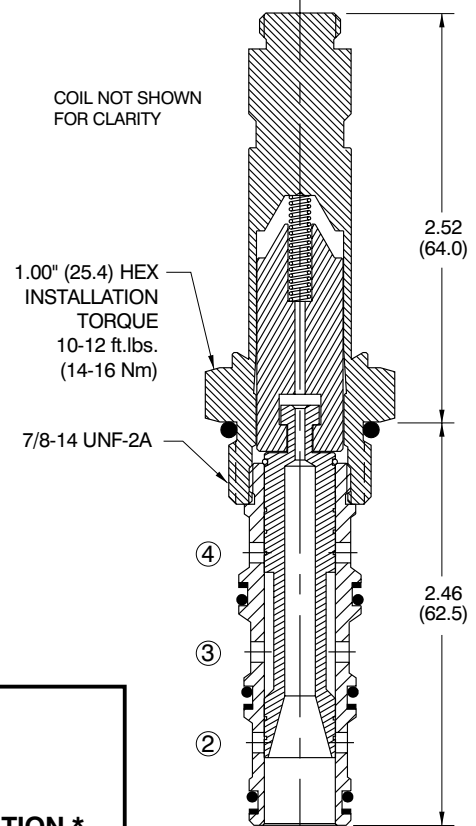
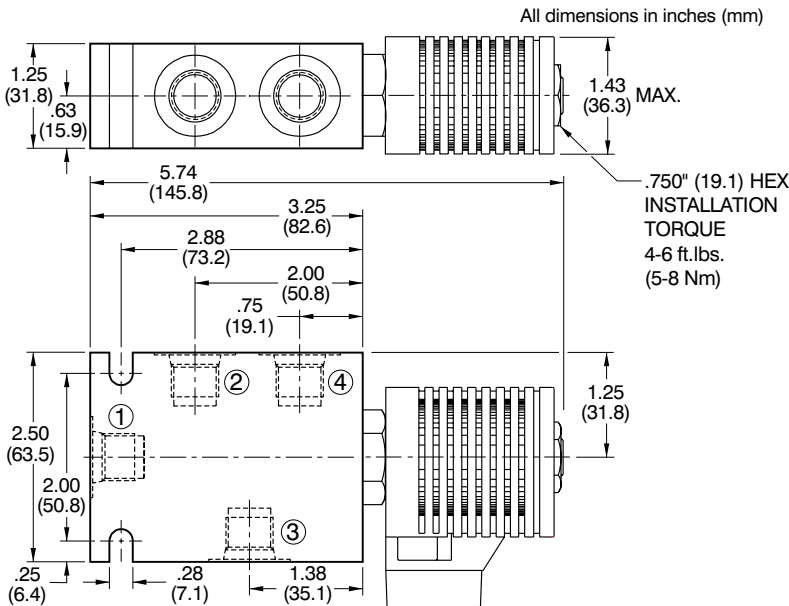
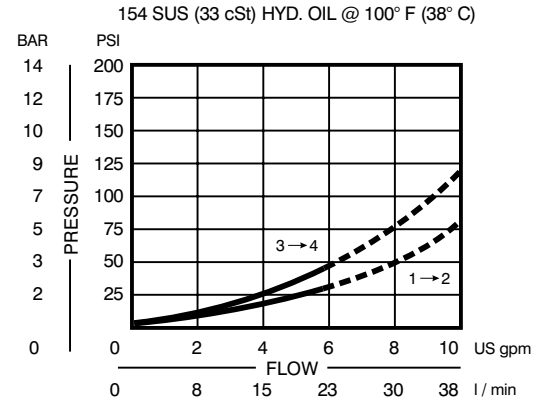


* For coil options and additional voltages see [page 8.55](#).

SPECIFICATIONS

- Valve is a direct acting, 2 position, 4 way spool type solenoid. In the de-energized mode, the valve blocks flow from **3** to **4** and **1** to **2**. When energized, the valve allows flow from **3** to **4** and **1** to **2**.
- Nominal flow: 6.0 gpm (23 l/m).
- Valve rated to 3000 psi (207 bar) working pressure.
- Valve leakage: 5 cu. in. (82 cc) per min. max. at 3000 psi (207 bar).
- Valve cartridge is **all** steel construction with precision ground, hardened components to assure smooth operation and extended service life.
- Hi-strength aluminum alloy body allows for maximum circuit design flexibility.
- Buna-N seals are standard. Viton is optional (consult factory for other seal compounds).
- Valve is designed for use with general purpose hydraulic fluids (MIL-H-5606, SAE #10, etc.).
- Cartridge weight 1.08 lbs (.49 kg).
- Valve cartridge fits Compact Controls cavity CP10-4.

TYPICAL PERFORMANCE



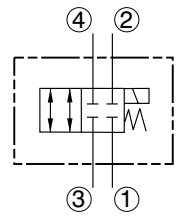
8

ORDERING INFORMATION

CP530 - 2 - B - 8S - 24D - S

BASIC CARTRIDGE	CP530 - 2	TERMINATION *	S - SPADE
SEALS	B - BUNA-N	L - LEAD	C - CONDUIT
	V - VITON	H - DIN 43650	
SEAL KIT	120646	VOLTAGE *	12D - 12 VDC
	120647		24D - 24 VDC
PORTS	0 - CARTRIDGE		120A - 120 VAC
	3P - 3/8 NPTF		240A - 240 VAC
	4P - 1/2 NPTF		
	6S - #6 SAE		
	8S - #8 SAE		
	3B - 3/8 BSP		
	4B - 1/2 BSP		
BODY P/N	NO BODY		
	220446		
	220447		
	220448		
	220449		
	221300		
	221232		

* For coil options and additional voltages see page 8.55.



CP530-3

SOLENOID VALVE

(2 Pos. 4 Way Spool Type)



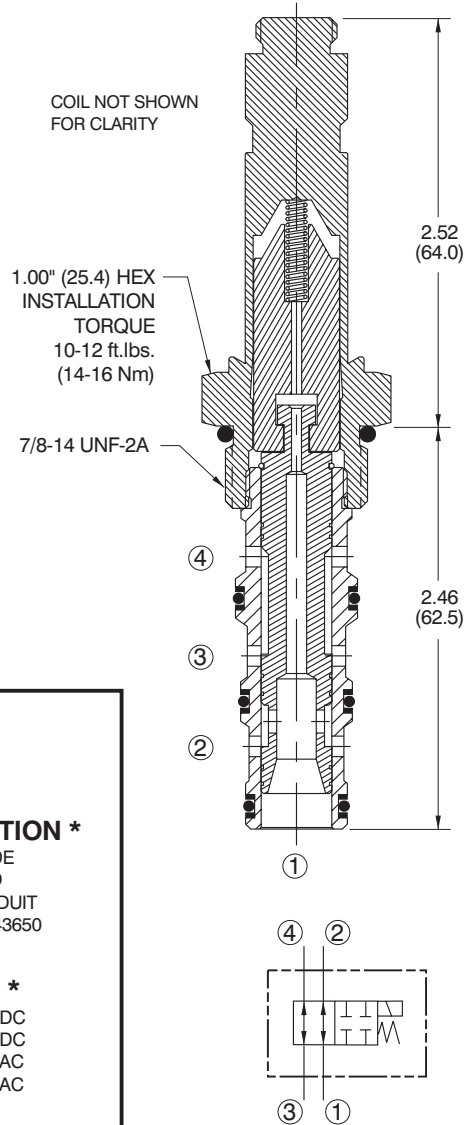
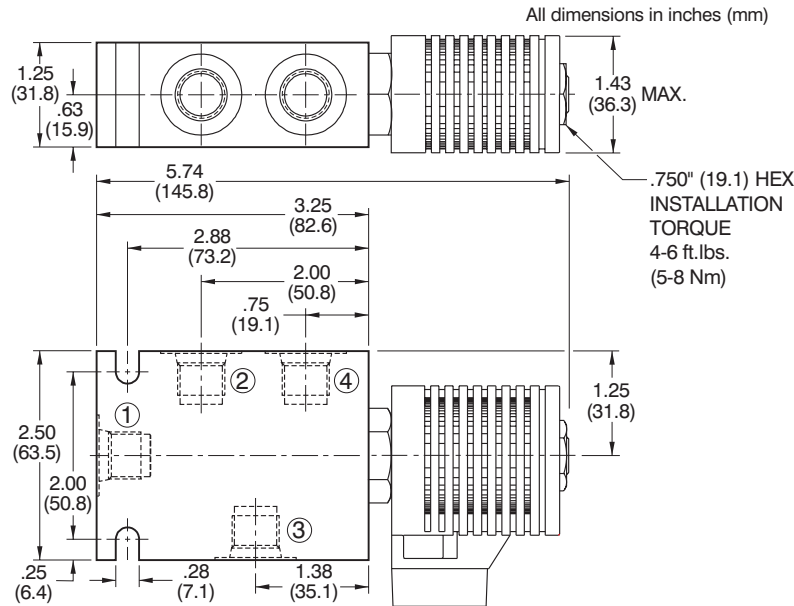
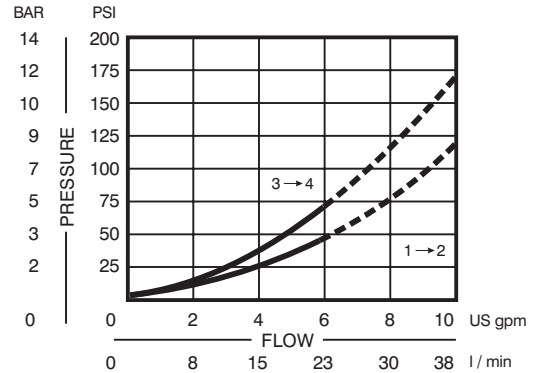
SERIES 10

SPECIFICATIONS

- Valve is a direct acting, 2 position, 4 way spool type solenoid. In the de-energized mode, the valve allows flow from **3** to **4** and **1** to **2**. When energized, the valve blocks flow from **3** to **4** and **1** to **2**.
- Nominal flow: 6.0 gpm (23 l/m).
- Valve rated to 3000 psi (207 bar) working pressure.
- Valve leakage: 5 cu. in. (82 cc) per min. max. at 3000 psi (207 bar).
- Valve cartridge is **all** steel construction with precision ground, hardened components to assure smooth operation and extended service life.
- Hi-strength aluminum alloy body allows for maximum circuit design flexibility.
- Buna-N seals are standard. Viton is optional (consult factory for other seal compounds).
- Valve is designed for use with general purpose hydraulic fluids (MIL-H-5606, SAE #10, etc.).
- Cartridge weight 1.08 lbs (.49 kg).
- Valve cartridge fits Compact Controls [cavity CP10-4](#).

TYPICAL PERFORMANCE

154 SUS (33 cSt) HYD. OIL @ 100° F (38° C)



ORDERING INFORMATION

CP530 - 3 - B - 8S - 24D - S

BASIC CARTRIDGE	SEALS	SEAL KIT	TERMINATION *
B - BUNA-N	V - VITON	120023 120024	S - SPADE L - LEAD C - CONDUIT H - DIN 43650
PORTS	BODY P/N		VOLTAGE *
0 - CARTRIDGE	NO BODY		12D - 12 VDC 24D - 24 VDC 120A - 120 VAC 240A - 240 VAC
3P - 3/8 NPTF	220446		
4P - 1/2 NPTF	220447		
6S - #6 SAE	220448		
8S - #8 SAE	220449		
3B - 3/8 BSP	221300		
4B - 1/2 BSP	221232		

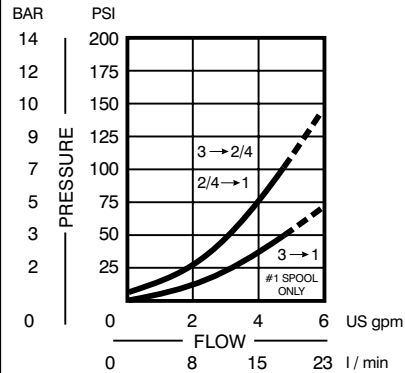
* For coil options and additional voltages see [page 8.55](#).

SPECIFICATIONS

- Valve is a direct acting, 3 position, 4 way spool type solenoid. See schematics below for flow paths when **S-1** or **S-2** are energized. While **1** can be pressurized, it is not intended to be an inlet.
- Nominal flow: 5.0 gpm (19 l/m).
- Valve rated to 3000 psi (207 bar) working pressure.
- Valve leakage: 5 cu. in. (82 cc) per min. max. at 3000 psi (207 bar).
- Valve cartridge is **all** steel construction with precision ground, hardened components to assure smooth operation and extended service life.
- Hi-strength aluminum alloy body allows for maximum circuit design flexibility.
- Buna-N seals are standard. Viton is optional (consult factory for other seal compounds).
- Valve is designed for use with general purpose hydraulic fluids (MIL-H-5606, SAE #10, etc.).
- Cartridge weight 1.95 lbs (.88 kg).
- Valve cartridge fits Compact Controls [cavity CP10-4](#).

TYPICAL PERFORMANCE

154 SUS (33 cSt) HYD. OIL @ 100° F (38° C)



COILS NOT SHOWN FOR CLARITY

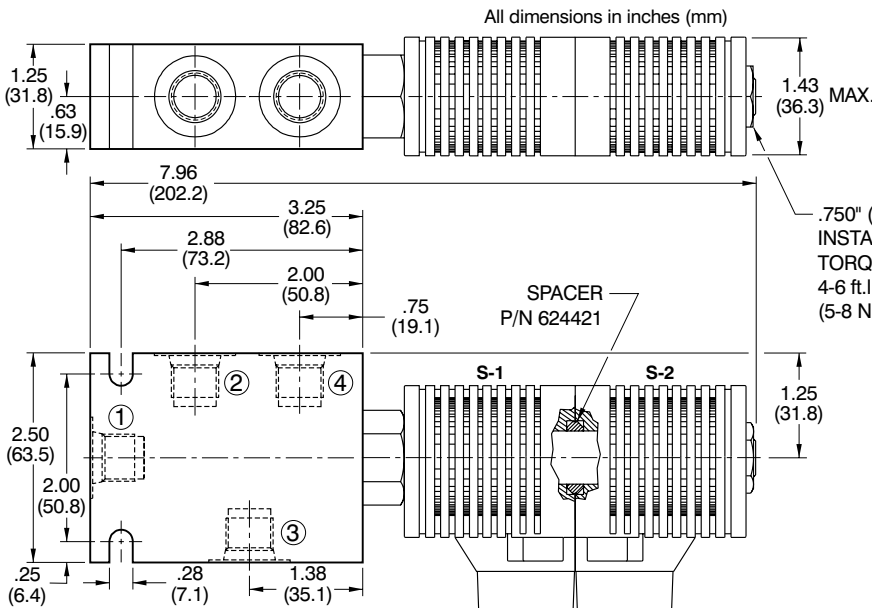
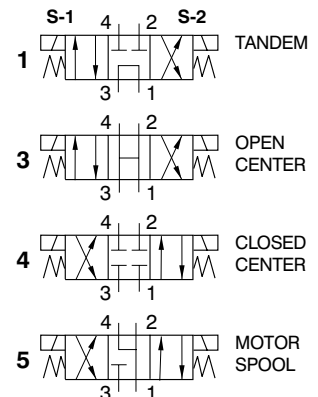
1.00" (25.4) HEX
INSTALLATION
TORQUE
10-12 ft.lbs.
(14-16 Nm)

.750" (19.1) HEX
INSTALLATION
TORQUE
4-6 ft.lbs.
(5-8 Nm)

7/8-14 UNF-2A

PRESSURE

① TANK



ORDERING INFORMATION

Shaded area represents standard product

CP530 - 3P - B - 8S - 1 - 24D - S

BASIC CARTRIDGE

SEALS

B - BUNA-N
V - VITON

SEAL KIT
120023
120024

PORTS

PORTS	BODY P/N
0 - CARTRIDGE	NO BODY
3P - 3/8 NPTF	220446
4P - 1/2 NPTF	220447
6S - #6 SAE	220448
8S - #8 SAE	220449
3B - 3/8 BSP	221300
4B - 1/2 BSP	221232

SPOOL CODE

1 - TANDEM
3 - OPEN CENTER
4 - CLOSED CENTER
5 - MOTOR SPOOL
(See Schematic)

VOLTAGE *

12D - 12 VDC
24D - 24 VDC
120A - 120 VAC
240A - 240 VAC

TERMINATION *

S - SPADE
L - LEAD
C - CONDUIT
H - DIN 43650

* For coil options and additional voltages see [page 8.55](#).

CP501-1

SOLENOID VALVE

(N/C Poppet Type)



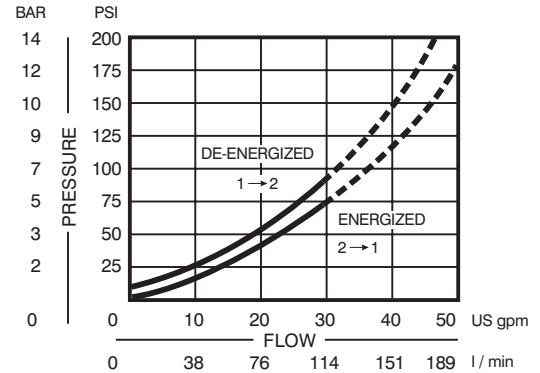
SERIES 12

SPECIFICATIONS

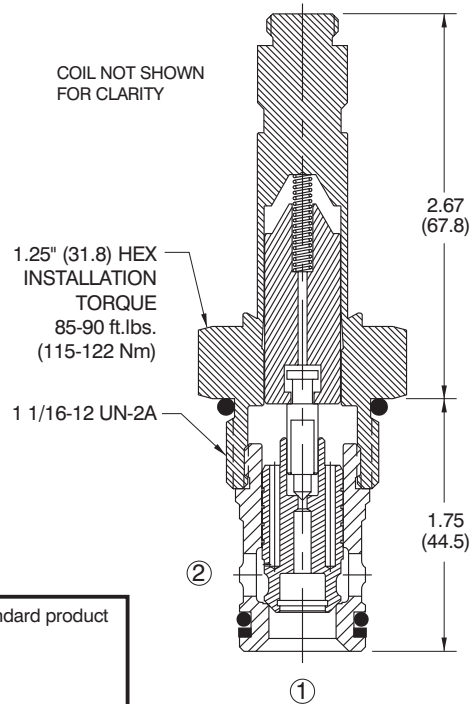
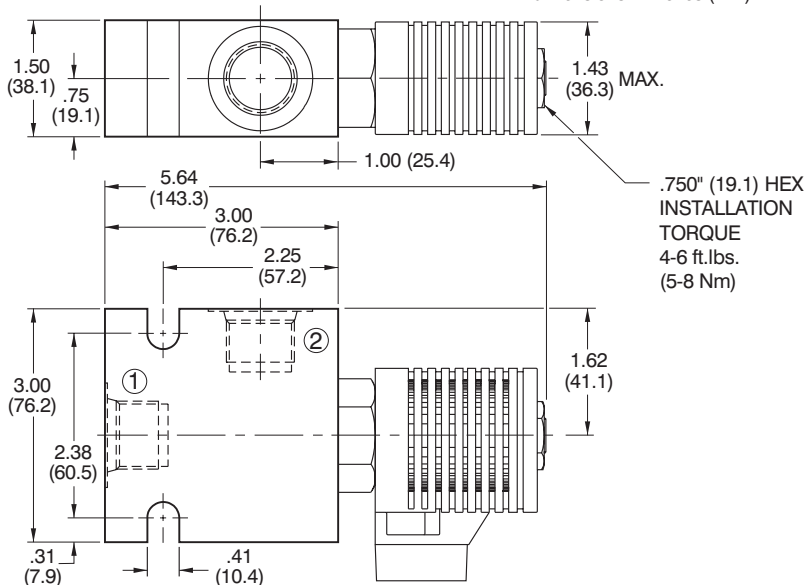
- Valve is a normally closed, pilot operated, poppet type solenoid. In the de-energized mode, the valve acts as a check allowing the flow from **1** to **2** and blocking flow from **2** to **1**. When energized, the valve allows flow from **2** to **1** and severely restricts from **1** to **2**.
- Nominal flow: 30.0 gpm (114 l/m).
- Valve rated to 3000 psi (207 bar) working pressure.
- Valve leakage: 6 drops per min. max. at 3000 psi (207 bar).
- Valve cartridge is **all** steel construction with precision ground, hardened components to assure smooth operation and extended service life.
- Hi-strength aluminum alloy body allows for maximum circuit design flexibility.
- Buna-N seals are standard. Viton is optional (consult factory for other seal compounds).
- Valve is designed for use with general purpose hydraulic fluids (MIL-H-5606, SAE #10, etc.).
- Cartridge weight 1.16 lbs (.53 kg).
- Valve cartridge fits Compact Controls [cavity CP12-2](#).

TYPICAL PERFORMANCE

154 SUS (33 cSt) HYD. OIL @ 100° F (38° C)



All dimensions in inches (mm)

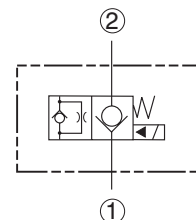


ORDERING INFORMATION

Shaded area represents standard product

CP501 - 1 - B - 12S - 24D - S		TERMINATION *
BASIC CARTRIDGE		S - SPADE
SEALS		L - LEAD
		C - CONDUIT
		H - DIN 43650
	SEAL KIT	VOLTAGE *
B - BUNA-N	120265	12D - 12 VDC
V - VITON	120264	24D - 24 VDC
PORTS	BODY P/N	120A - 120 VAC
0 - CARTRIDGE	NO BODY	240A - 240 VAC
4P - 1/2 NPTF	220130	
6P - 3/4 NPTF	220131	
10S - #10 SAE	220132	
12S - #12 SAE	220133	
4B - 1/2 BSP	221234	
6B - 3/4 BSP	221235	

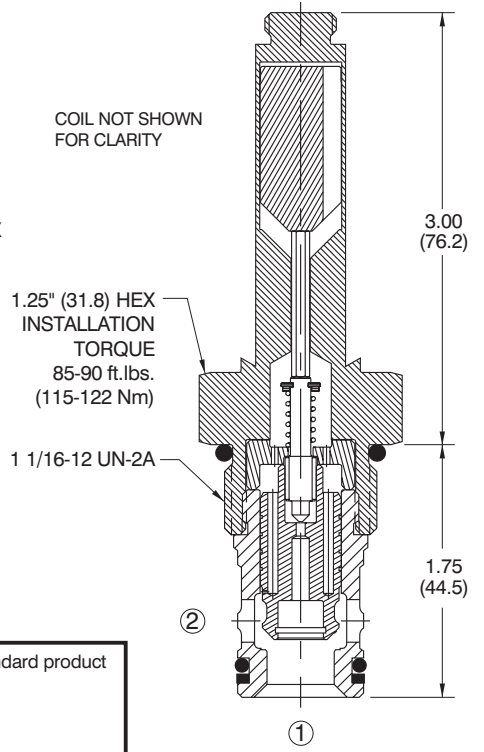
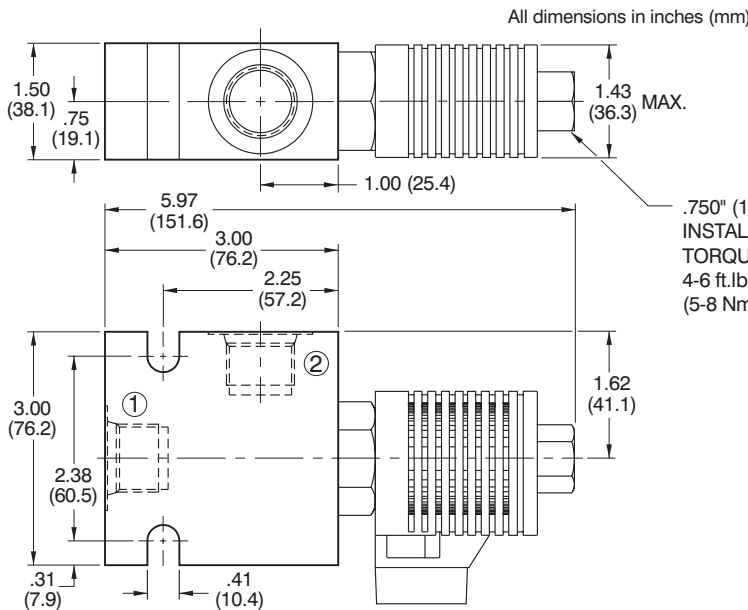
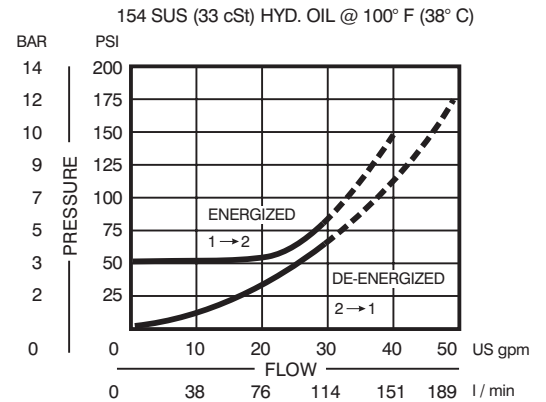
* For coil options and additional voltages see [page 8.55](#).



SPECIFICATIONS

- Valve is a normally open, pilot operated, poppet type solenoid. In the de-energized mode, the valve allows flow from **2** to **1** and severely restricts flow from **1** to **2**. When energized, the valve blocks flow from **2** to **1** and allows flow from **1** to **2** after it overcomes the solenoid forces.
- Nominal flow: 30.0 gpm (114 l/m).
- Valve rated to 3000 psi (207 bar) working pressure.
- Valve leakage: 6 drops per min. max. at 3000 psi (207 bar).
- Valve cartridge is **all** steel construction with precision ground, hardened components to assure smooth operation and extended service life.
- Hi-strength aluminum alloy body allows for maximum circuit design flexibility.
- Buna-N seals are standard. Viton is optional (consult factory for other seal compounds).
- Valve is designed for use with general purpose hydraulic fluids (MIL-H-5606, SAE #10, etc.).
- Cartridge weight 1.19 lbs (.54 kg).
- Valve cartridge fits Compact Controls [cavity CP12-2](#).

TYPICAL PERFORMANCE



ORDERING INFORMATION

Shaded area represents standard product

CP501 - 2 - B - 12S - 24D - S -

BASIC CARTRIDGE		MANUAL OVERRIDE *
SEALS		OMIT - NO OVERRIDE
	SEAL KIT	M - MANUAL OVERRIDE
B - BUNA-N	120265	
V - VITON	120264	
PORTS		TERMINATION **
	BODY P/N	S - SPADE
0 - CARTRIDGE	NO BODY	L - LEAD
4P - 1/2 NPTF	220130	C - CONDUIT
6P - 3/4 NPTF	220131	H - DIN 43650
10S - #10 SAE	220132	
12S - #12 SAE	220133	
4B - 1/2 BSP	221234	
6B - 3/4 BSP	221235	
	VOLTAGE **	
	12D - 12 VDC	
	24D - 24 VDC	
	120A - 120 VAC	
	240A - 240 VAC	

* For manual override information see [page 8.59](#).
 ** For coil options and additional voltages see [page 8.55](#).

CP501-3

SOLENOID VALVE

(N/C Poppet Type - Free Reverse Flow)



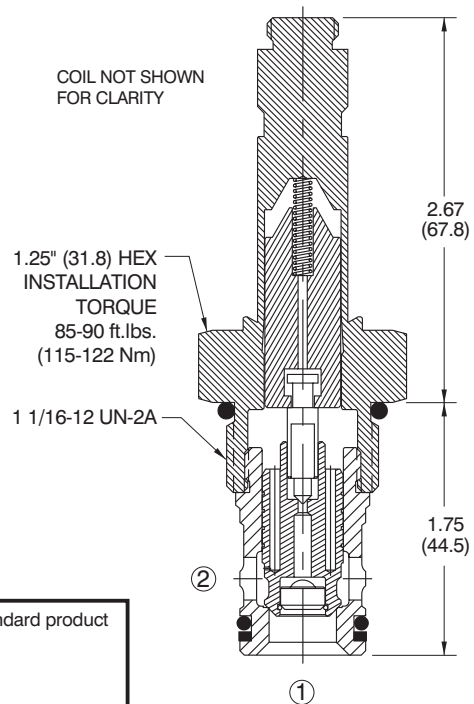
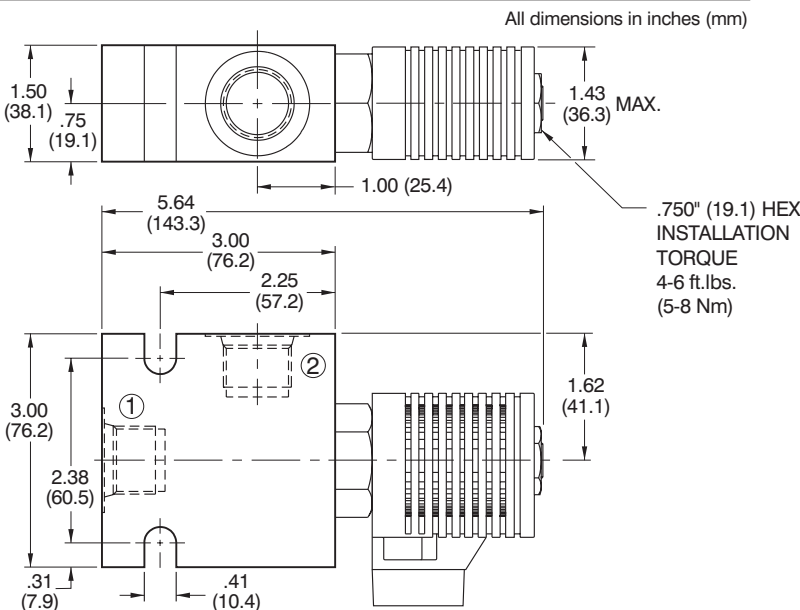
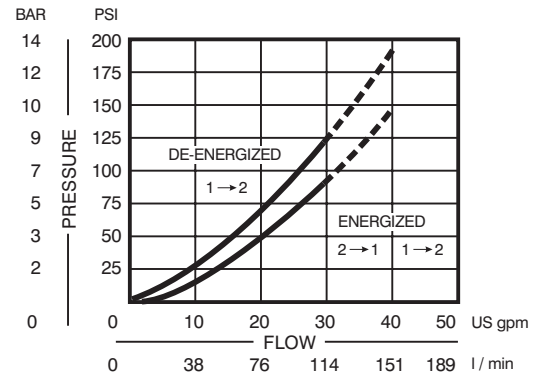
SERIES 12

SPECIFICATIONS

- Valve is a normally closed, pilot operated, poppet type solenoid. In the de-energized mode, the valve acts as a check allowing the flow from 1 to 2 and blocking flow from 2 to 1. When energized, the valve allows flow from 1 to 2 and from 2 to 1.
- Nominal flow: 30.0 gpm (114 l/m).
- Valve rated to 3000 psi (207 bar) working pressure.
- Valve leakage: 6 drops per min. max. at 3000 psi (207 bar).
- Valve cartridge is **all** steel construction with precision ground, hardened components to assure smooth operation and extended service life.
- Hi-strength aluminum alloy body allows for maximum circuit design flexibility.
- Buna-N seals are standard. Viton is optional (consult factory for other seal compounds).
- Valve is designed for use with general purpose hydraulic fluids (MIL-H-5606, SAE #10, etc.).
- Cartridge weight 1.16 lbs (.53 kg).
- Valve cartridge fits Compact Controls [cavity CP12-2](#).

TYPICAL PERFORMANCE

154 SUS (33 cSt) HYD. OIL @ 100° F (38° C)

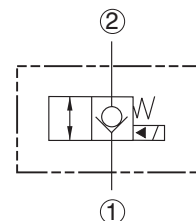


ORDERING INFORMATION

Shaded area represents standard product

CP501 - 3 - B - 12S - 24D - S		TERMINATION *
BASIC CARTRIDGE		S - SPADE
SEALS		L - LEAD
	SEAL KIT	C - CONDUIT
B - BUNA-N	120265	H - DIN 43650
V - VITON	120264	
PORTS		VOLTAGE *
0 - CARTRIDGE	BODY P/N	12D - 12 VDC
4P - 1/2 NPTF	NO BODY	24D - 24 VDC
6P - 3/4 NPTF	220130	120A - 120 VAC
10S - #10 SAE	220131	240A - 240 VAC
12S - #12 SAE	220132	
4B - 1/2 BSP	221234	
6B - 3/4 BSP	221235	

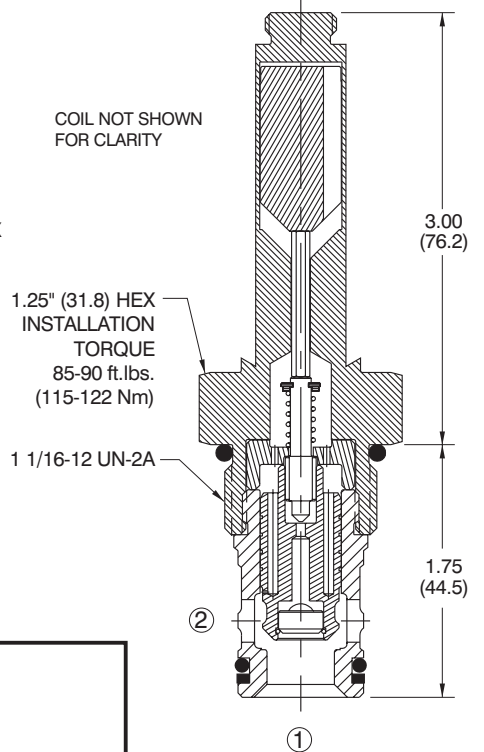
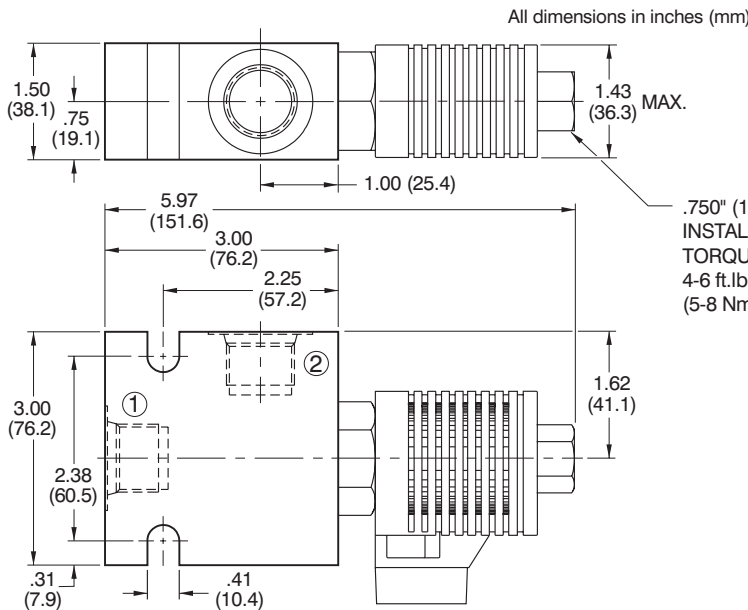
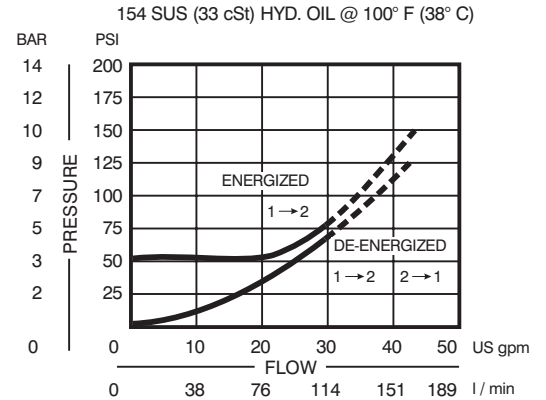
* For coil options and additional voltages see [page 8.55](#).



SPECIFICATIONS

- Valve is a normally open, pilot operated, poppet type solenoid. In the de-energized mode, the valve allows flow from **2** to **1** and **1** to **2**. When energized, the valve blocks flow from **2** to **1** and allows flow from **1** to **2** after it overcomes the solenoid forces.
- Nominal flow: 30.0 gpm (114 l/m).
- Valve rated to 3000 psi (207 bar) working pressure.
- Valve leakage: 6 drops per min. max. at 3000 psi (207 bar).
- Valve cartridge is **all** steel construction with precision ground, hardened components to assure smooth operation and extended service life.
- Hi-strength aluminum alloy body allows for maximum circuit design flexibility.
- Buna-N seals are standard. Viton is optional (consult factory for other seal compounds).
- Valve is designed for use with general purpose hydraulic fluids (MIL-H-5606, SAE #10, etc.).
- Cartridge weight 1.19 lbs (.54 kg).
- Valve cartridge fits Compact Controls [cavity CP12-2](#).

TYPICAL PERFORMANCE



ORDERING INFORMATION

CP501 - 4 - B - 12S - 24D - S -

BASIC CARTRIDGE		MANUAL OVERRIDE *
SEALS		OMIT - NO OVERRIDE
B - BUNA-N	SEAL KIT 120265	M - MANUAL OVERRIDE
V - VITON	120264	
PORTS		TERMINATION **
0 - CARTRIDGE	BODY P/N	S - SPADE
4P - 1/2 NPTF	NO BODY 220130	L - LEAD
6P - 3/4 NPTF	220131	C - CONDUIT
10S - #10 SAE	220132	H - DIN 43650
12S - #12 SAE	220133	
4B - 1/2 BSP	221234	
6B - 3/4 BSP	221235	
	VOLTAGE **	
	12D - 12 VDC	
	24D - 24 VDC	
	120A - 120 VAC	
	240A - 240 VAC	

* For manual override information see [page 8.59](#).
 ** For coil options and additional voltages see [page 8.55](#).

CP521-1

SOLENOID VALVE

(2 Pos. 3 Way Spool Type)



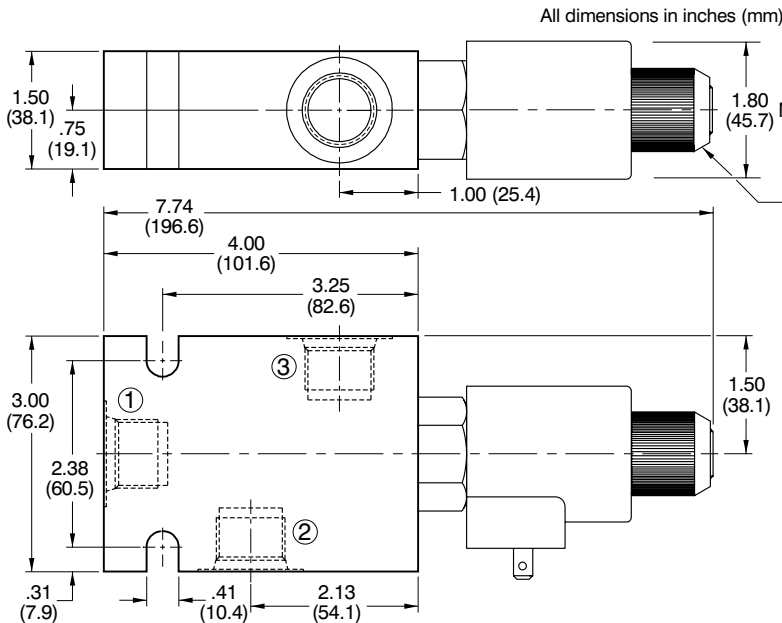
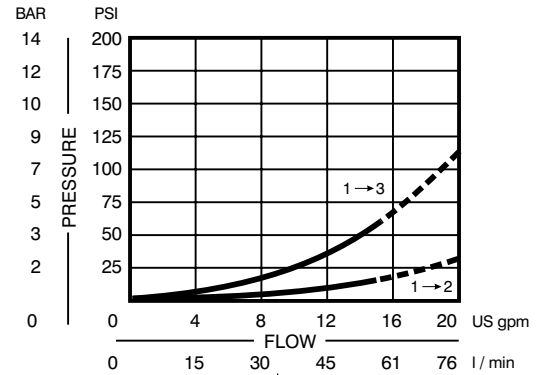
SERIES 12

SPECIFICATIONS

- Valve is a direct acting, 2 position, 3 way spool type solenoid. In the de-energized mode, the valve allows flow from **1** to **2** or **2** to **1** while blocking **3**. When energized, the valve allows flow from **1** to **3** or **3** to **1** and blocks **2**.
- Nominal flow: 15.0 gpm (57 l/m).
- Valve rated to 3000 psi (207 bar) working pressure.
- Valve leakage: 10 cu. in. (164 cc) per min. max. at 3000 psi (207 bar).
- Valve cartridge is **all** steel construction with precision ground, hardened components to assure smooth operation and extended service life.
- Hi-strength aluminum alloy body allows for maximum circuit design flexibility.
- Buna-N seals are standard. Viton is optional (consult factory for other seal compounds).
- Valve is designed for use with general purpose hydraulic fluids (MIL-H-5606, SAE #10, etc.).
- Cartridge weight 1.77 lbs (.80 kg).
- Valve cartridge fits Compact Controls [cavity CP12-3](#).

TYPICAL PERFORMANCE

154 SUS (33 cSt) HYD. OIL @ 100° F (38° C)



COIL NOT SHOWN FOR CLARITY

INSTALLATION TORQUE
4-6 ft.lbs.
(5-8 Nm)

1.25" (31.8) HEX
INSTALLATION TORQUE
15-18 ft.lbs.
(20-24 Nm)

1 1/16-12 UN-2A

ORDERING INFORMATION

Shaded area represents standard product

CP521 - 1 - B - 12S - 24D - S

BASIC CARTRIDGE

SEALS

SEAL KIT

B - BUNA-N
V - VITON

120053
120052

PORTS

BODY P/N

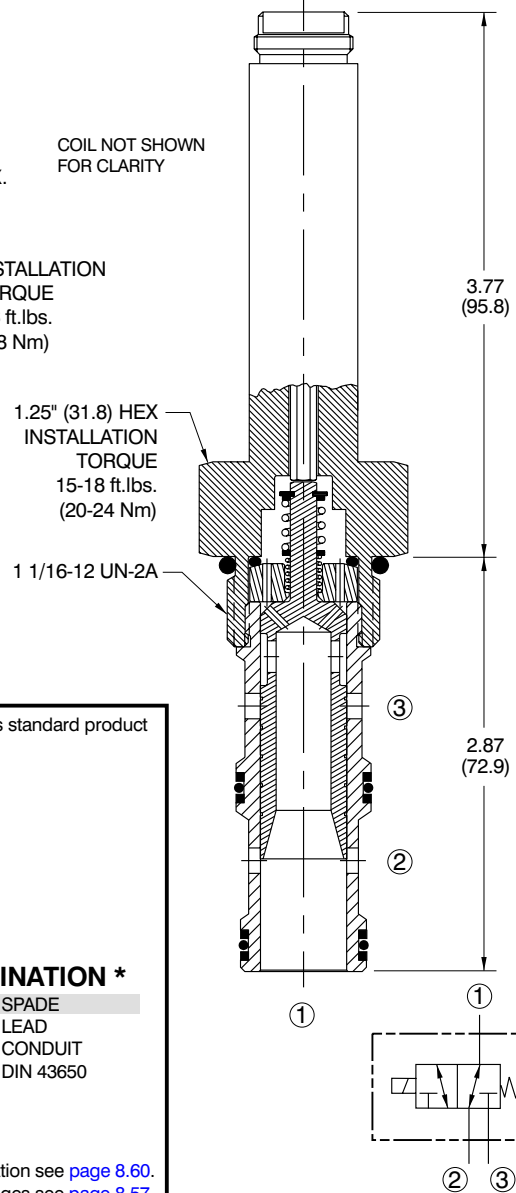
0 - CARTRIDGE	NO BODY
4P - 1/2 NPTF	220208
6P - 3/4 NPTF	220209
10S - #10 SAE	220210
12S - #12 SAE	220211
4B - 1/2 BSP	221303
6B - 3/4 BSP	221237

VOLTAGE *

12D - 12 VDC
24D - 24 VDC

TERMINATION *

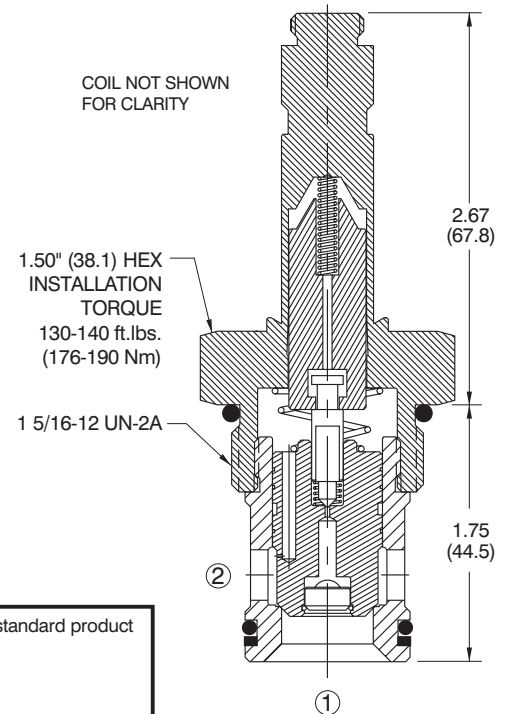
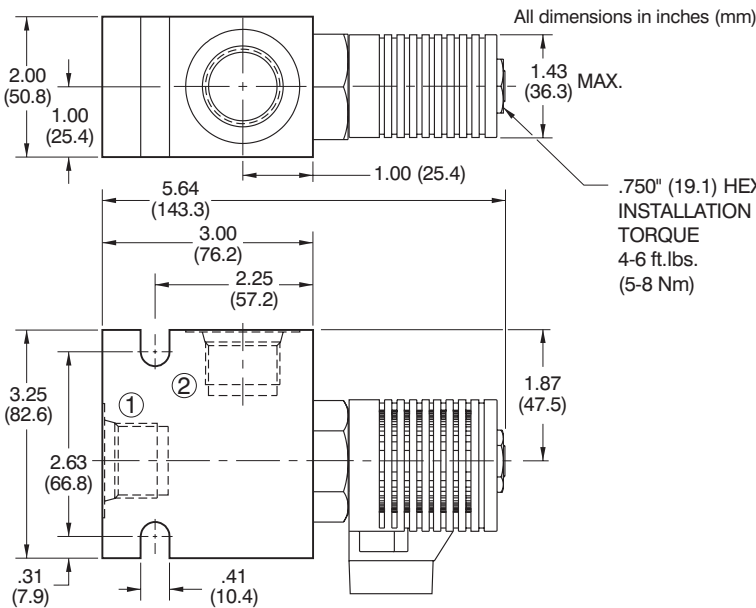
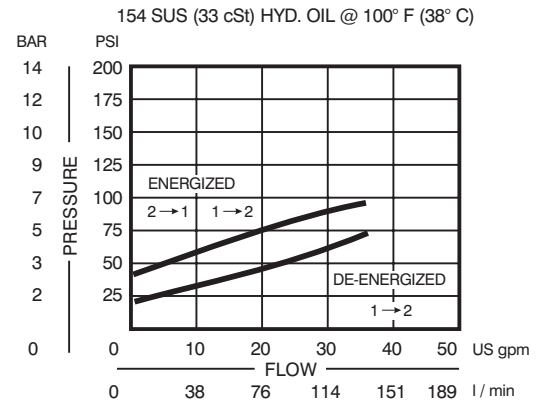
S - SPADE
L - LEAD
C - CONDUIT
H - DIN 43650



SPECIFICATIONS

- Valve is a normally closed, pilot operated, poppet type solenoid. In the de-energized mode, the valve acts as a check allowing the flow from **1** to **2** and blocking flow from **2** to **1**. When energized, the valve allows flow from **1** to **2** and from **2** to **1**.
- Nominal flow: 35.0 gpm (132 l/m).
- Valve rated to 3000 psi (207 bar) working pressure.
- Valve leakage: 6 drops per min. max. at 3000 psi (207 bar).
- Valve cartridge is **all** steel construction with precision ground, hardened components to assure smooth operation and extended service life.
- Hi-strength aluminum alloy body allows for maximum circuit design flexibility.
- Buna-N seals are standard. Viton is optional (consult factory for other seal compounds).
- Valve is designed for use with general purpose hydraulic fluids (MIL-H-5606, SAE #10, etc.).
- Cartridge weight 1.45 lbs (.66 kg).
- Valve cartridge fits Compact Controls [cavity CP16-2](#).

TYPICAL PERFORMANCE



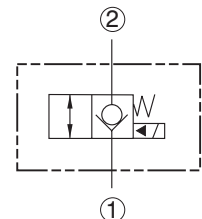
ORDERING INFORMATION

Shaded area represents standard product

CP502 - 3 - B - 16S - 24D - S

BASIC CARTRIDGE	SEALS	SEAL KIT	TERMINATION *
B - BUNA-N	B - BUNA-N	120019	S - SPADE
V - VITON	V - VITON	120020	L - LEAD
			C - CONDUIT
			H - DIN 43650
PORTS	BODY P/N	VOLTAGE *	
0 - CARTRIDGE	NO BODY	12D - 12 VDC	
6P - 3/4 NPTF	220136	24D - 24 VDC	
8P - 1" NPTF	220137	120A - 120 VAC	
12S - #12 SAE	220134	240A - 240 VAC	
16S - #16 SAE	220135		
6B - 3/4 BSP	221306		
8B - 1" BSP	221238		

* For coil options and additional voltages see [page 8.55](#).



CP502-4

SOLENOID VALVE

(N/O Poppet Type - Free Reverse Flow)



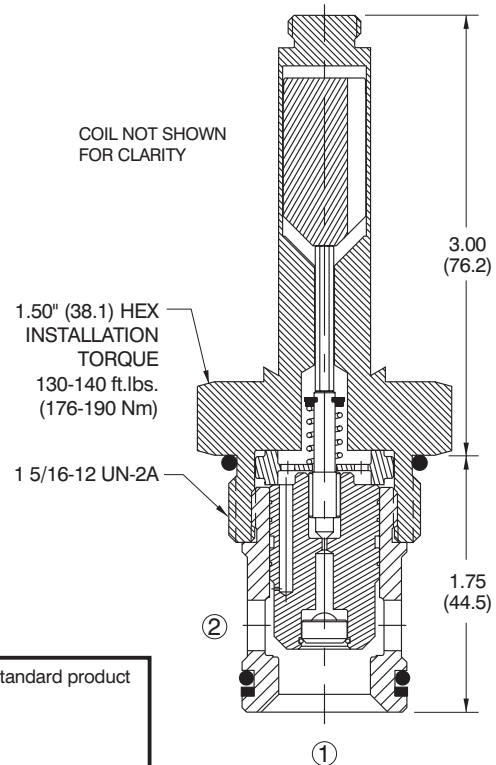
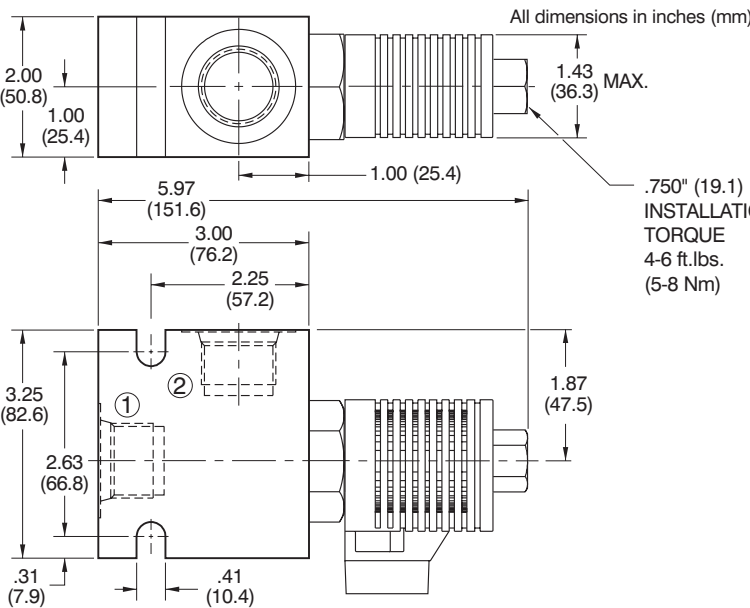
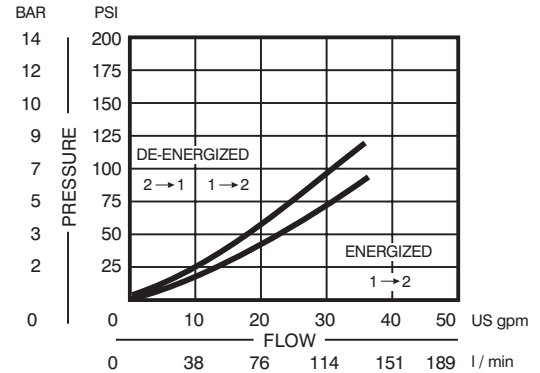
SERIES 16

SPECIFICATIONS

- Valve is a normally open, pilot operated, poppet type solenoid. In the de-energized mode, the valve allows flow from 2 to 1 and 1 to 2. When energized, the valve blocks flow from 2 to 1 and allows flow from 1 to 2 after it overcomes the solenoid forces.
- Nominal flow: 35.0 gpm (132 l/m).
- Valve rated to 3000 psi (207 bar) working pressure.
- Valve leakage: 6 drops per min. max. at 3000 psi (207 bar).
- Valve cartridge is **all** steel construction with precision ground, hardened components to assure smooth operation and extended service life.
- Hi-strength aluminum alloy body allows for maximum circuit design flexibility.
- Buna-N seals are standard. Viton is optional (consult factory for other seal compounds).
- Valve is designed for use with general purpose hydraulic fluids (MIL-H-5606, SAE #10, etc.).
- Cartridge weight 1.50 lbs (.68 kg).
- Valve cartridge fits Compact Controls [cavity CP16-2](#).

TYPICAL PERFORMANCE

154 SUS (33 cSt) HYD. OIL @ 100° F (38° C)



ORDERING INFORMATION

Shaded area represents standard product

CP502 - 4 - B - 16S - 24D - S -

BASIC CARTRIDGE

SEALS

	SEAL KIT
B - BUNA-N	120019
V - VITON	120020

PORTS

	BODY P/N
0 - CARTRIDGE	NO BODY
6P - 3/4 NPTF	220136
8P - 1" NPTF	220137
12S - #12 SAE	220134
16S - #16 SAE	220135
6B - 3/4 BSP	221306
8B - 1" BSP	221238

VOLTAGE **

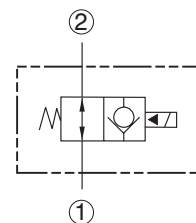
12D - 12 VDC
24D - 24 VDC
120A - 120 VAC
240A - 240 VAC

MANUAL OVERRIDE *

OMIT - NO OVERRIDE
M - MANUAL OVERRIDE

TERMINATION **

S - SPADE
L - LEAD
C - CONDUIT
H - DIN 43650



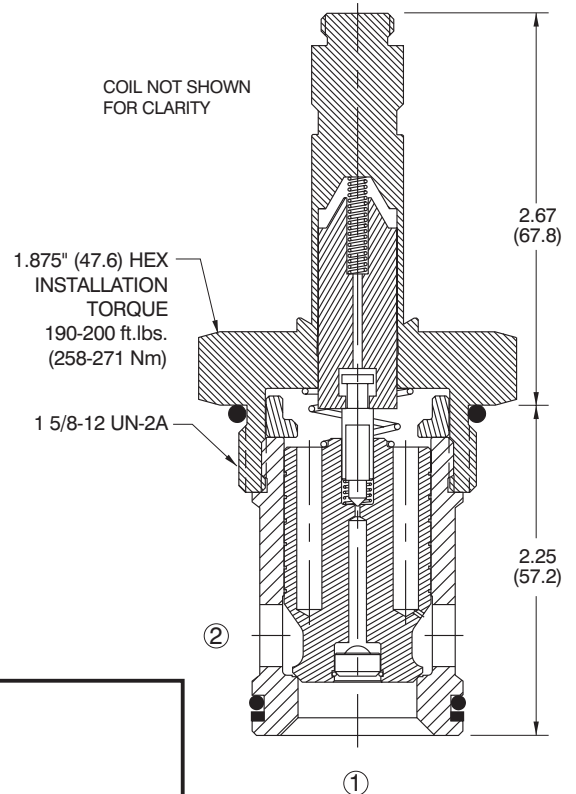
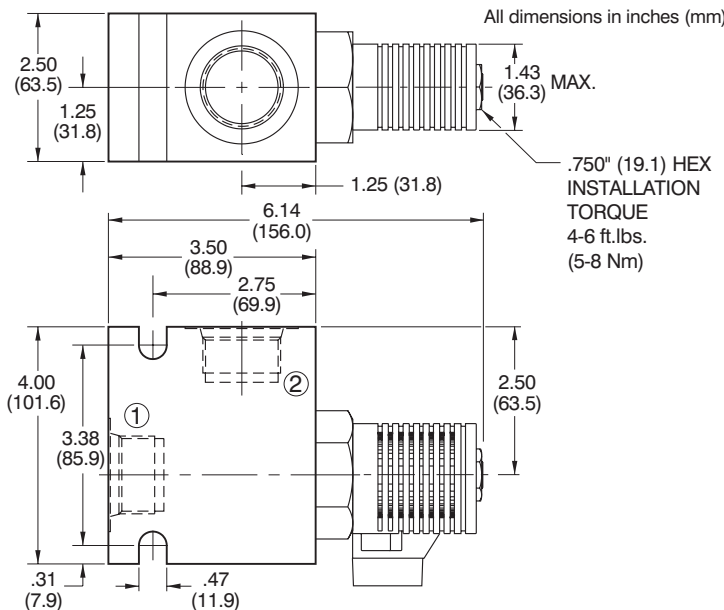
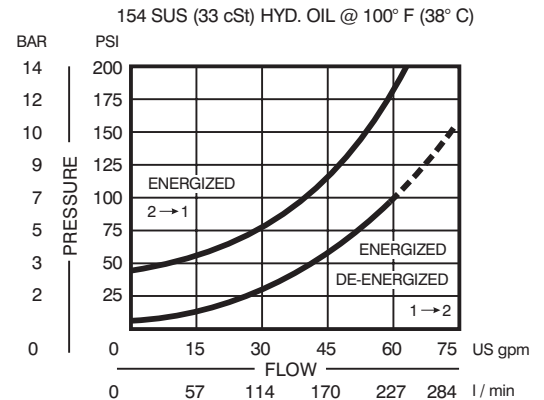
* For manual override information see [page 8.59](#).

** For coil options and additional voltages see [page 8.55](#).

SPECIFICATIONS

- Valve is a normally closed, pilot operated, poppet type solenoid. In the de-energized mode, the valve acts as a check allowing the flow from **1** to **2** and blocking flow from **2** to **1**. When energized, the valve allows flow from **1** to **2** and from **2** to **1**.
- Nominal flow: 60.0 gpm (227 l/m).
- Valve rated to 3000 psi (207 bar) working pressure.
- Valve leakage: 6 drops per min. max. at 3000 psi (207 bar).
- Valve cartridge is **all** steel construction with precision ground, hardened components to assure smooth operation and extended service life.
- Hi-strength aluminum alloy body allows for maximum circuit design flexibility.
- Buna-N seals are standard. Viton is optional (consult factory for other seal compounds).
- Valve is designed for use with general purpose hydraulic fluids (MIL-H-5606, SAE #10, etc.).
- Cartridge weight 2.00 lbs (.91 kg).
- Valve cartridge fits Compact Controls [cavity CP20-2](#).

TYPICAL PERFORMANCE

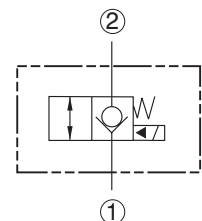


ORDERING INFORMATION

CP503 - 3 - B - 20S - 24D - S

BASIC CARTRIDGE	SEALS	SEAL KIT	TERMINATION *	VOLTAGE *
B - BUNA-N	B - BUNA-N	120011	S - SPADE	12D - 12 VDC
V - VITON	V - VITON	120012	L - LEAD	24D - 24 VDC
			C - CONDUIT	120A - 120 VAC
			H - DIN 43650	240A - 240 VAC
PORTS	BODY P/N			
0 - CARTRIDGE	NO BODY			
8P - 1" NPTF	220139			
10P - 1-1/4 NPTF	220140			
16S - #16 SAE	220141			
20S - #20 SAE	220142			
8B - 1" BSP	221240			
10B - 1-1/4 BSP	221312			

* For coil options and additional voltages see [page 8.55](#).



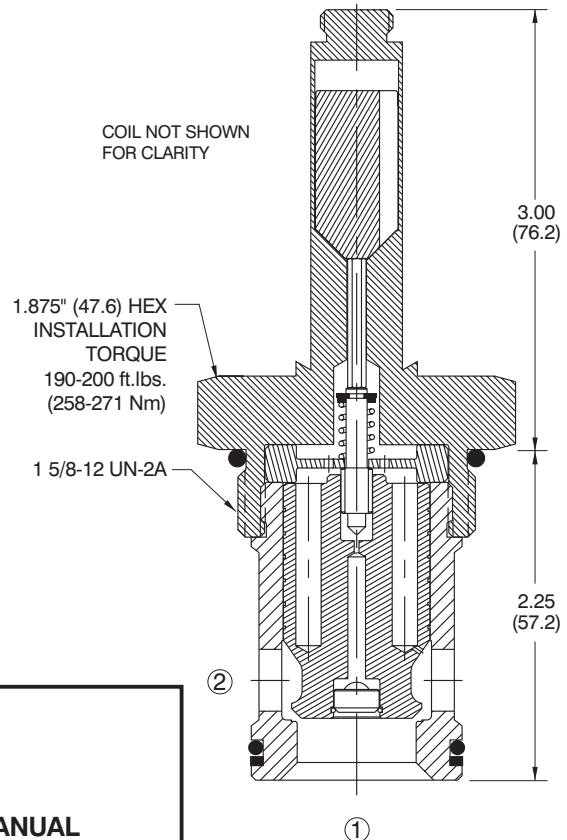
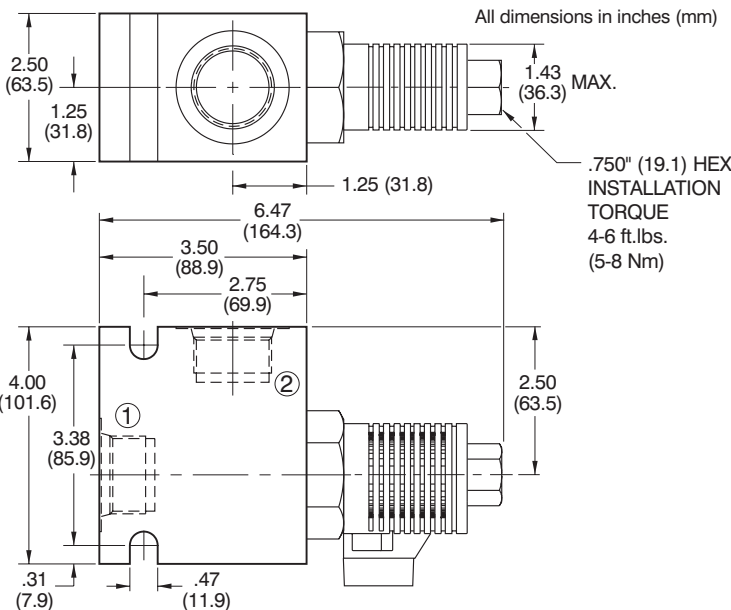
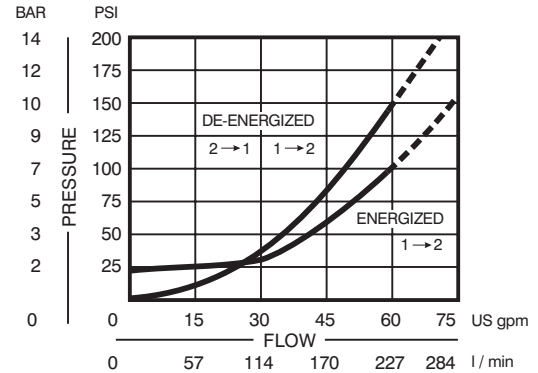
SERIES 20

SPECIFICATIONS

- Valve is a normally open, pilot operated, poppet type solenoid. In the de-energized mode, the valve allows flow from 2 to 1 and 1 to 2. When energized, the valve blocks flow from 2 to 1 and allows flow from 1 to 2 after it overcomes the solenoid forces.
- Nominal flow: 60.0 gpm (227 l/m).
- Valve rated to 3000 psi (207 bar) working pressure.
- Valve leakage: 6 drops per min. max. at 3000 psi (207 bar).
- Valve cartridge is **all** steel construction with precision ground, hardened components to assure smooth operation and extended service life.
- Hi-strength aluminum alloy body allows for maximum circuit design flexibility.
- Buna-N seals are standard. Viton is optional (consult factory for other seal compounds).
- Valve is designed for use with general purpose hydraulic fluids (MIL-H-5606, SAE #10, etc.).
- Cartridge weight 2.00 lbs (.91 kg).
- Valve cartridge fits Compact Controls [cavity CP20-2](#).

TYPICAL PERFORMANCE

154 SUS (33 cSt) HYD. OIL @ 100° F (38° C)

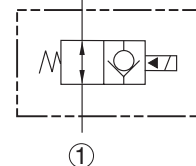


ORDERING INFORMATION

CP503 - 4 - B - 20S - 24D - S -

BASIC CARTRIDGE	SEALS	SEAL KIT	MANUAL OVERRIDE *
B - BUNA-N		120011	OMIT - NO OVERRIDE
V - VITON		120012	M - MANUAL OVERRIDE
PORTS	BODY P/N	VOLTAGE **	TERMINATION **
0 - CARTRIDGE	NO BODY	12D - 12 VDC	S - SPADE
8P - 1" NPTF	220139	24D - 24 VDC	L - LEAD
10P - 1-1/4 NPTF	220140	120A - 120 VAC	C - CONDUIT
16S - #16 SAE	220141	240A - 240 VAC	H - DIN 43650
20S - #20 SAE	220142		
8B - 1" BSP	221240		
10B - 1-1/4 BSP	221312		

* For manual override information see [page 8.59](#).
 ** For coil options and additional voltages see [page 8.55](#).



D08 16 WATT

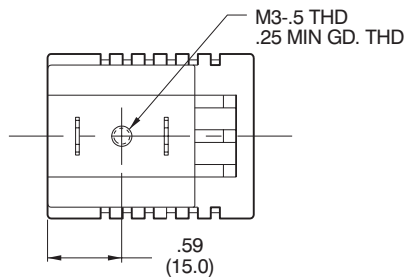
SPECIFICATIONS

- Duty rating: Continuous at 100% voltage.
- Ambient operating temperature range = -65° F to 140° F (-17° C to 60° C).
- A.C. coils are internally rectified with a full wave bridge (no inrush current).
- Lead wires: 18 gauge, 18" (457.2) long.
- Encapsulating material: Glass filled polyester.
- Termination options: See below and on the next page.

All dimensions in inches (mm)

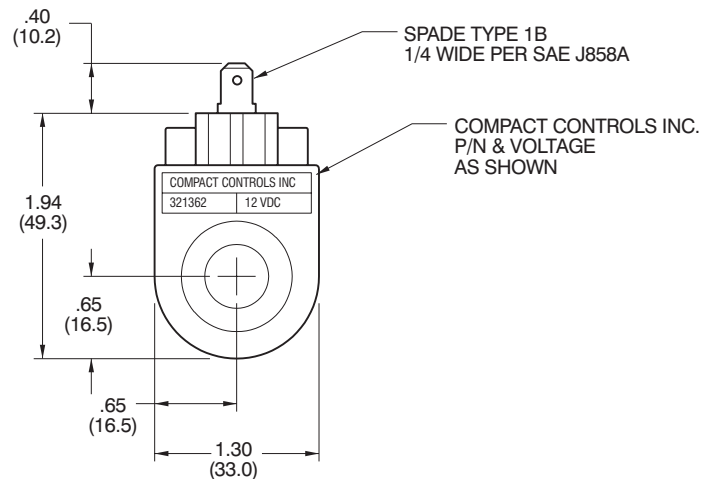
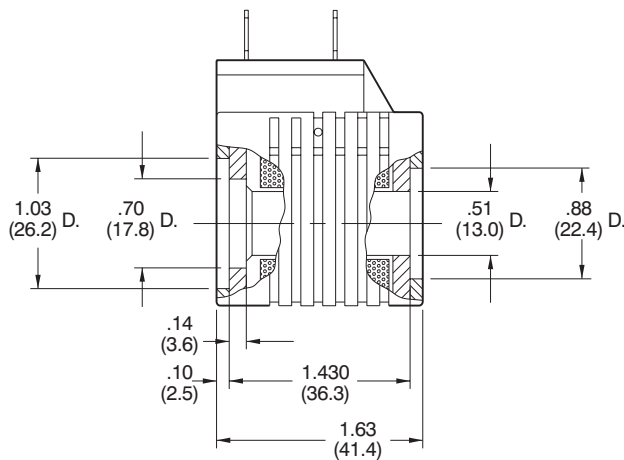
VOLTS	OHMS	CURRENT DRAW Amps draw @ 77° F
6	2.2	2.67
10	6.2	1.60
12	9.0	1.33
20	25.0	.80
24	35.8	.67
30	56.6	.53
36	81.8	.44
40	100.0	.40
48	145.5	.33
72	327.3	.22

AC SERVICES		
120	N/A	.13
240	N/A	.07



SPADE TYPE COIL CODE - S

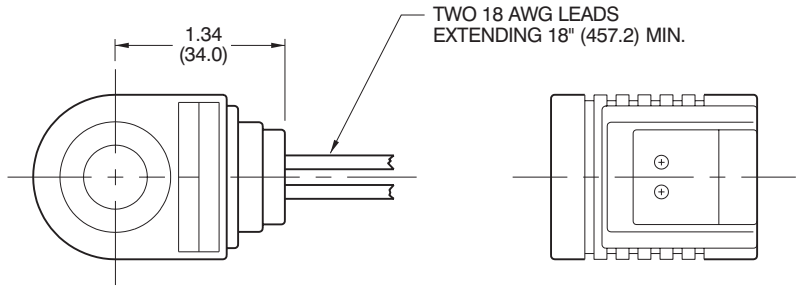
VOLTS	P/N	VOLTS	P/N
6VDC	- 321360	36VDC	- 321366
10VDC	- 321361	40VDC	- 321367
12VDC	- 321362	48VDC	- 321368
20VDC	- 321363	72VDC	- 321369
24VDC	- 321364	120VAC	- N/A
30VDC	- 321365	240VAC	- N/A



D08 16 WATT

LEAD TYPE COIL CODE - L

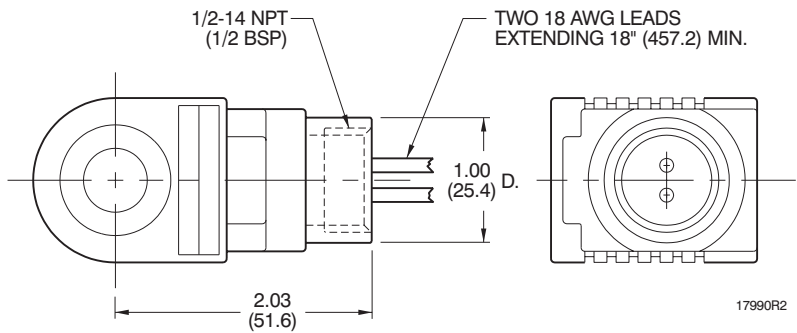
VOLTS	P/N	VOLTS	P/N
6VDC	- 321115	36VDC	- 321121
10VDC	- 321116	40VDC	- 321122
12VDC	- 321117	48VDC	- 321123
20VDC	- 321118	72VDC	- 321124
24VDC	- 321119	120VAC	- N/A
30VDC	- 321120	240VAC	- N/A



17990R2 6/98

CONDUIT TYPE COIL CODE - C

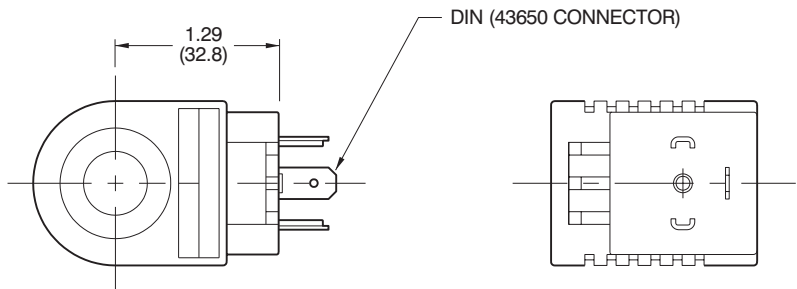
VOLTS	P/N	VOLTS	P/N
6VDC	- 321463	36VDC	- 321469
10VDC	- 321464	40VDC	- 321470
12VDC	- 321465	48VDC	- 321471
20VDC	- 321466	72VDC	- 321472
24VDC	- 321467	120VAC	- 321473
30VDC	- 321468	240VAC	- 321474



17990R2 6/98

DIN TYPE COIL CODE - H

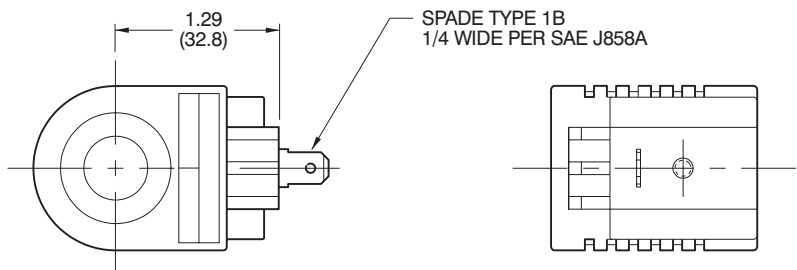
VOLTS	P/N	VOLTS	P/N
6VDC	- 321328	36VDC	- 321334
10VDC	- 321329	40VDC	- 321335
12VDC	- 321330	48VDC	- 321336
20VDC	- 321331	72VDC	- 321337
24VDC	- 321332	120VAC	- 321482
30VDC	- 321333	240VAC	- 321483



17990R2 6/98

SINGLE SPADE INTERNAL GROUND TYPE COIL CODE - S1

VOLTS	P/N	VOLTS	P/N
6VDC	- 321370	36VDC	- 321376
10VDC	- 321371	40VDC	- 321377
12VDC	- 321372	48VDC	- 321378
20VDC	- 321373	72VDC	- 321379
24VDC	- 321374	120VAC	- N/A
30VDC	- 321375	240VAC	- N/A



17990R2 6/98

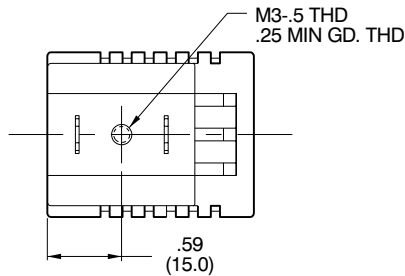
D08 20 WATT

SPECIFICATIONS

- Duty rating: Continuous at 100% voltage.
- Ambient operating temperature range = -65° F to 140° F (-17° C to 60° C).
- A.C. coils are internally rectified with a full wave bridge (no inrush current).
- Lead wires: 18 gauge, 18" (457.2) long.
- Encapsulating material: Glass filled polyester.
- Termination options: See below and on the next page.

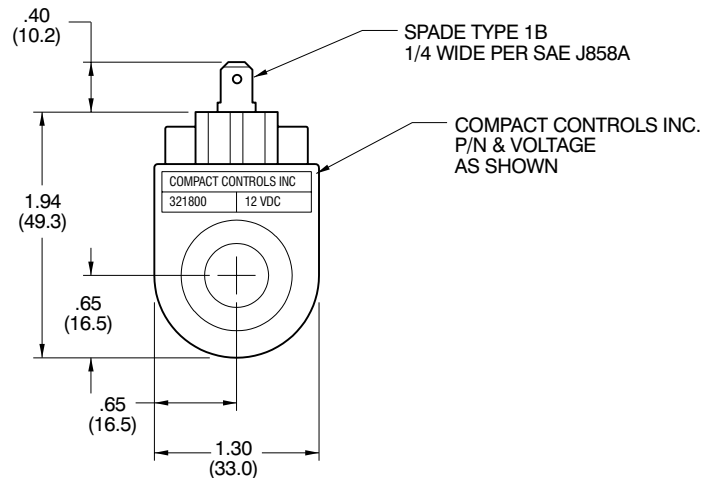
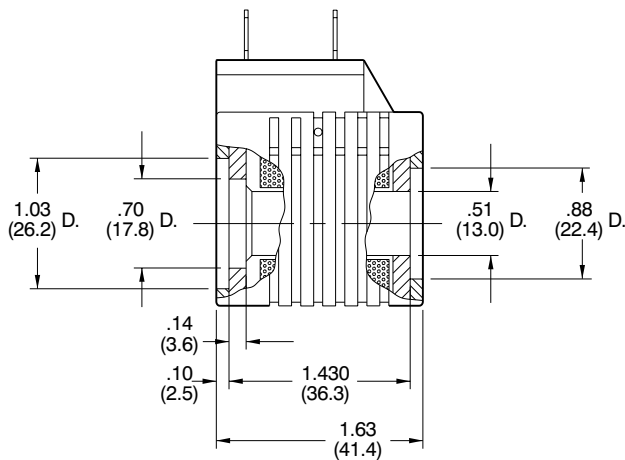
All dimensions in inches (mm)

VOLTS	OHMS	CURRENT DRAW Amps draw @ 77° F
6	1.8	3.33
10	5.0	2.00
12	7.2	1.67
20	20.0	1.00
24	28.8	.83
30	45.0	.67
36	64.8	.56
40	80.0	.50
48	115.2	.42
72	259.2	.28
AC SERVICES		
120	N/A	.17
240	N/A	.08



**SPADE TYPE COIL
CODE - S**

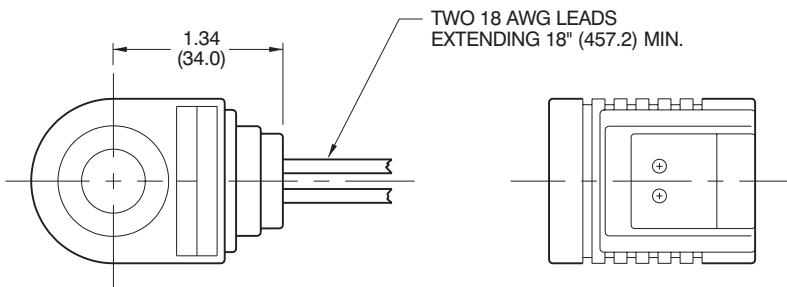
VOLTS	P/N	VOLTS	P/N
6VDC	- 321798	36VDC	- 321804
10VDC	- 321799	40VDC	- 321805
12VDC	- 321835	48VDC	- 321806
20VDC	- 321801	72VDC	- 321807
24VDC	- 321802	120VAC	- N/A
30VDC	- 321803	240VAC	- N/A



D08 20 WATT

LEAD TYPE COIL CODE - L

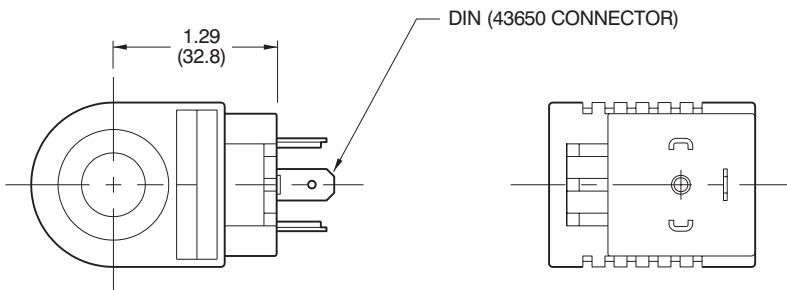
VOLTS	P/N	VOLTS	P/N
6VDC	- 321766	36VDC	- 321772
10VDC	- 321767	40VDC	- 321773
12VDC	- 321768	48VDC	- 321774
20VDC	- 321769	72VDC	- 321775
24VDC	- 321770	120VAC	- N/A
30VDC	- 321771	240VAC	- N/A



P 6/98

DIN TYPE COIL CODE - H

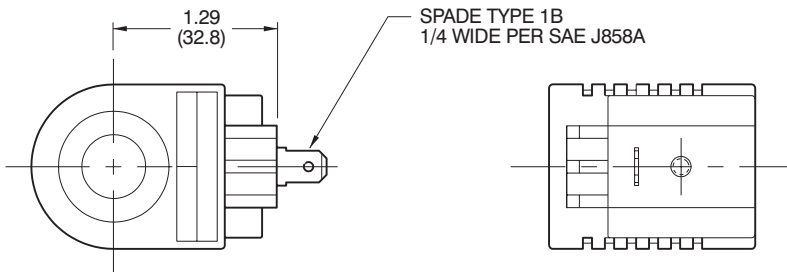
VOLTS	P/N	VOLTS	P/N
6VDC	- 321734	36VDC	- 321740
10VDC	- 321735	40VDC	- 321741
12VDC	- 321736	48VDC	- 321742
20VDC	- 321737	72VDC	- 321743
24VDC	- 321738	120VAC	- 321830
30VDC	- 321739	240VAC	- 321831



P1 9/98

SINGLE SPADE INTERNAL GROUND TYPE COIL CODE - S1

VOLTS	P/N	VOLTS	P/N
6VDC	- 321777	36VDC	- 321783
10VDC	- 321778	40VDC	- 321784
12VDC	- 321779	48VDC	- 321785
20VDC	- 321780	72VDC	- 321786
24VDC	- 321781	120VAC	- N/A
30VDC	- 321782	240VAC	- N/A



P 6/98

D10 16 WATT

SPECIFICATIONS

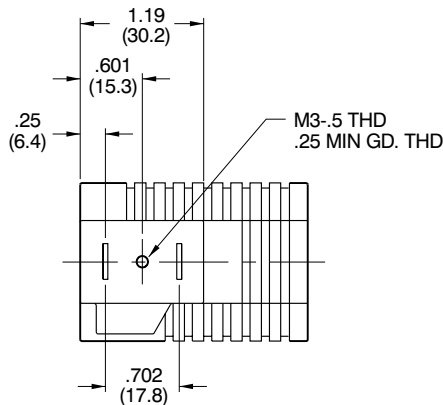
- Duty rating: Continuous at 100% voltage.
- Ambient operating temperature range = -65° F to 140° F (-17° C to 60° C).
- A.C. coils are internally rectified with a full wave bridge (no inrush current).
- Lead wires: 18 gauge, 18" (457.2) long.
- Encapsulating material: Glass filled polyester.
- Termination options: See below and on the next page.

All dimensions in inches (mm)

VOLTS	OHMS	CURRENT DRAW Amps draw @ 77° F
6	2.1	2.61
10	5.7	1.60
12	8.6	1.33
20	22.7	.80
24	35.8	.67
36	69.0	.44
48	130.0	.33
72	293.0	.22

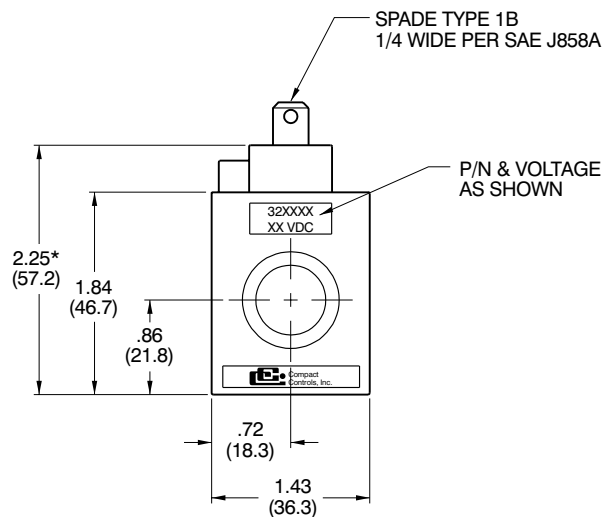
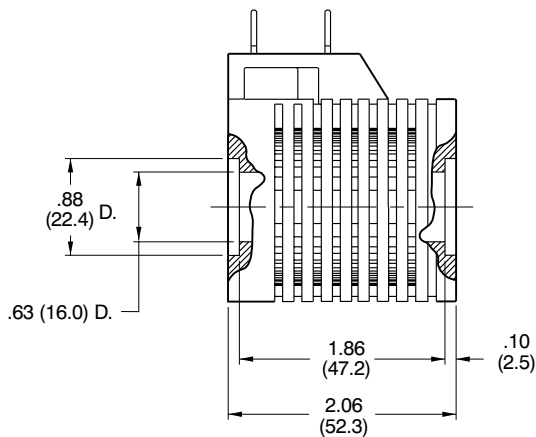
AC SERVICES

120	N/A	.13
240	N/A	.07



SPADE TYPE COIL CODE - S

VOLTS	P/N	VOLTS	P/N
6VDC	- 320575	36VDC	- 320571
10VDC	- 320508	48VDC	- 320573
12VDC	- 320509	72VDC	- 320574
20VDC	- 320510	120VAC	- N/A
24VDC	- 320511	240VAC	- N/A

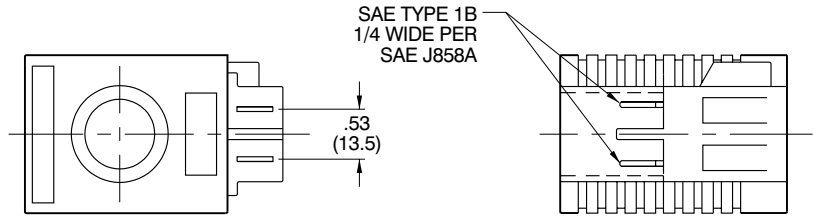


* Add .32 (8.1) for AC coils.

D10 16 WATT

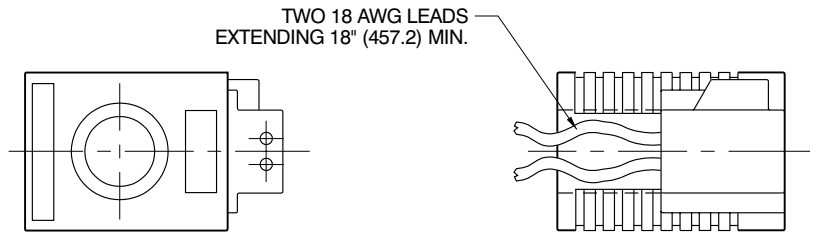
HORIZONTAL SPADE TYPE COIL CODE - HS

VOLTS	P/N	VOLTS	P/N
6VDC	- 320897	36VDC	- 320902
10VDC	- 320898	48VDC	- 320903
12VDC	- 320899	72VDC	- 320904
20VDC	- 320900	120VAC	- N/A
24VDC	- 320901	240VAC	- N/A



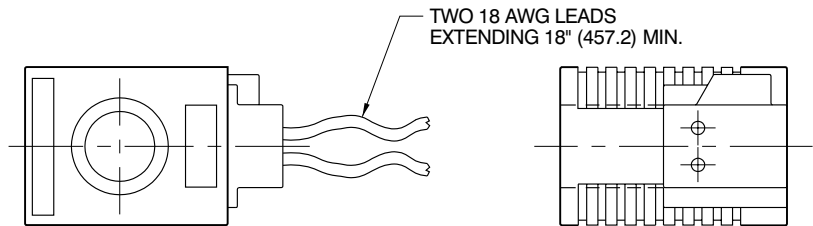
HORIZONTAL LEAD TYPE COIL CODE - HL

VOLTS	P/N	VOLTS	P/N
6VDC	- 320889	36VDC	- 320894
10VDC	- 320890	48VDC	- 320895
12VDC	- 320891	72VDC	- 320896
20VDC	- 320892	120VAC	- N/A
24VDC	- 320893	240VAC	- N/A



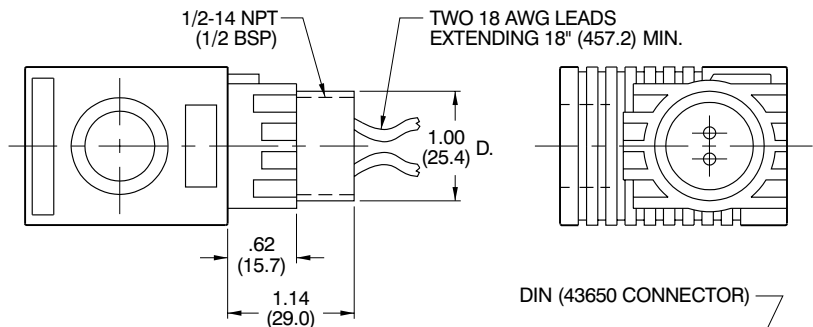
VERTICAL LEAD TYPE COIL CODE - L

VOLTS	P/N	VOLTS	P/N
6VDC	- 320578	36VDC	- 320567
10VDC	- 320512	48VDC	- 320576
12VDC	- 320513	72VDC	- 320577
20VDC	- 320514	120VAC	- 320579
24VDC	- 320515	240VAC	- N/A



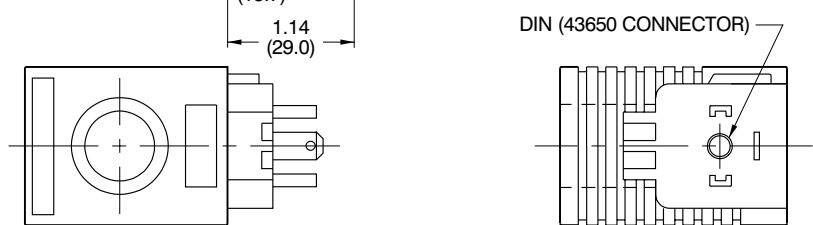
CONDUIT TYPE COIL* CODE - C

VOLTS	P/N	VOLTS	P/N
6VDC	- 320582	36VDC	- 320568
10VDC	- 320516	48VDC	- 320580
12VDC	- 320517	72VDC	- 320581
20VDC	- 320518	120VAC	- 320553
24VDC	- 320519	240VAC	- 320583



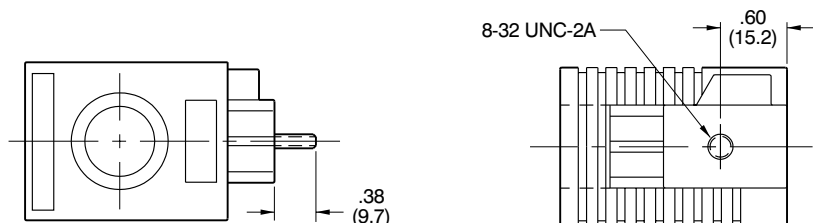
DIN TYPE COIL* CODE - H

VOLTS	P/N	VOLTS	P/N
6VDC	- 320586	36VDC	- 320569
10VDC	- 320520	48VDC	- 320584
12VDC	- 320521	72VDC	- 320585
20VDC	- 320522	120VAC	- 320587
24VDC	- 320523	240VAC	- 320588



SINGLE POST COIL CODE - P

VOLTS	P/N	VOLTS	P/N
6VDC	- 320728	36VDC	- 320733
10VDC	- 320729	48VDC	- 320734
12VDC	- 320730	72VDC	- 320735
20VDC	- 320731	120VAC	- N/A
24VDC	- 320732	240VAC	- N/A



* AC available standard - consult factory on other options.

D12 30 WATT

SPECIFICATIONS

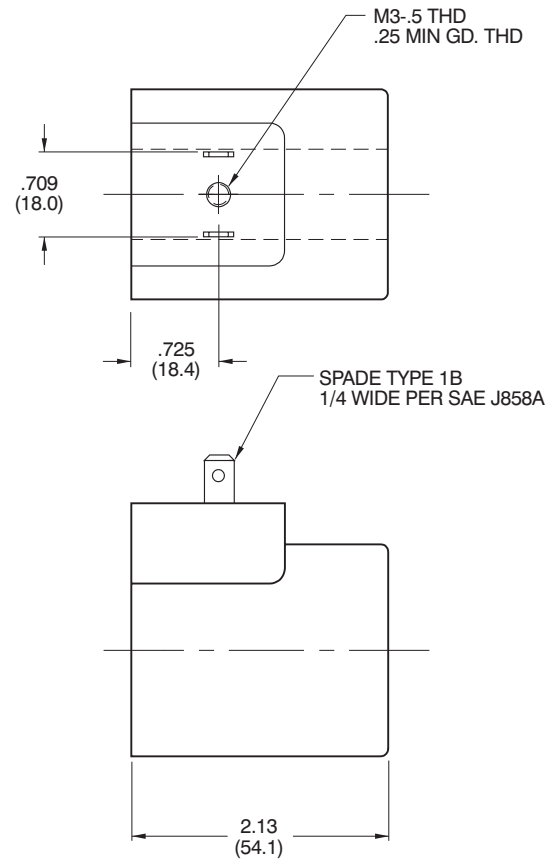
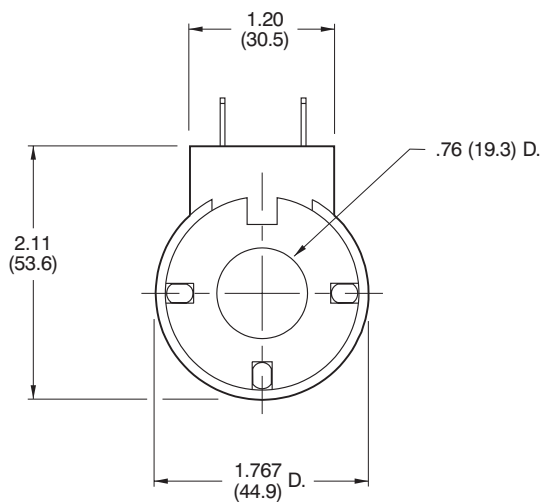
- Duty rating: Continuous at 100% voltage.
- Ambient operating temperature range = -65° F to 140° F (-17° C to 60° C).
- Lead wires: 18 gauge, 18" (457.2) long.
- Encapsulating material: Glass filled polyester.
- Termination options: See below and on the next page.

All dimensions in inches (mm)

VOLTS	OHMS	CURRENT DRAW
		Amps draw @ 77° F
10	3.3	3.00
12	4.7	2.50
20	13.3	1.50
24	18.8	1.25
30	30.0	1.00
36	43.2	.83
42	58.8	.71
48	76.8	.62

SPADE TYPE COIL CODE - S

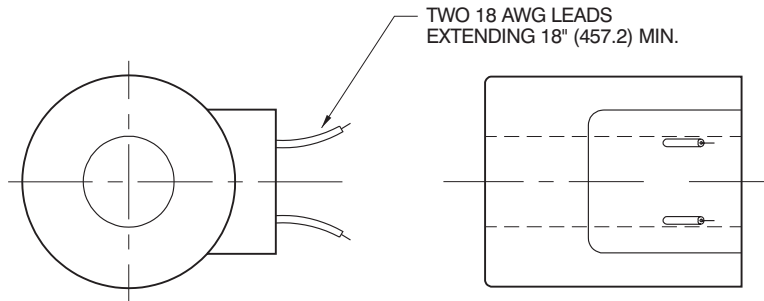
VOLTS	P/N	VOLTS	P/N
10VDC	- 321297	36VDC	- 321302
12VDC	- 321298	42VDC	- 321303
20VDC	- 321299	48VDC	- 321304
24VDC	- 321300	120VAC	- N/A
30VDC	- 321301	240VAC	- N/A



D12 30 WATT

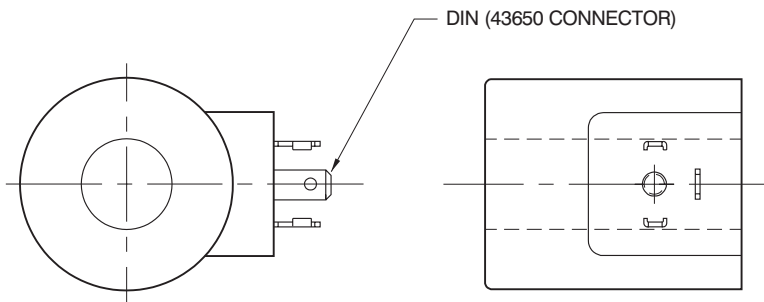
LEAD TYPE COIL CODE - L

VOLTS	P/N	VOLTS	P/N
10VDC	- 321305	36VDC	- 321310
12VDC	- 321306	42VDC	- 321311
20VDC	- 321307	48VDC	- 321312
24VDC	- 321308	120VAC	- N/A
30VDC	- 321309	240VAC	- N/A

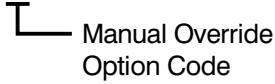


DIN TYPE COIL CODE - H

VOLTS	P/N	VOLTS	P/N
10VDC	- 321289	36VDC	- 321294
12VDC	- 321290	42VDC	- 321295
20VDC	- 321291	48VDC	- 321296
24VDC	- 321292	120VAC	- N/A
30VDC	- 321293	240VAC	- N/A

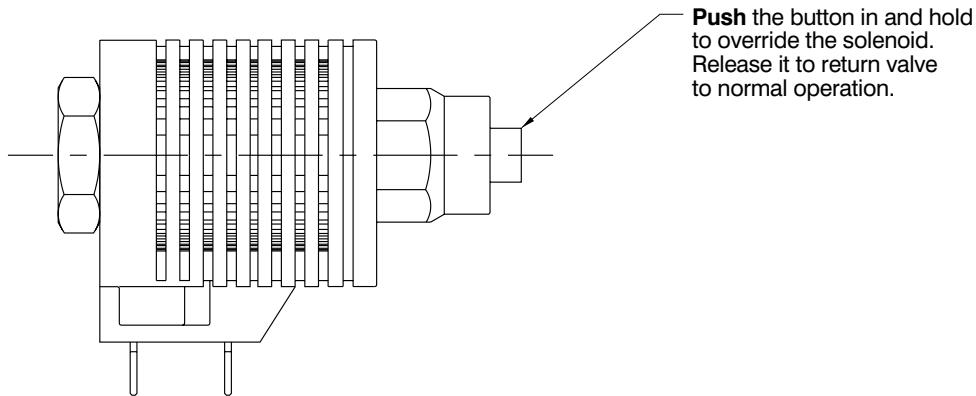


To order manual override on the solenoid simply add a **M** code after the coil termination option, i.e.:

CP508 - 2 - B - 0 - 24D - S - **M**

 Manual Override
 Option Code

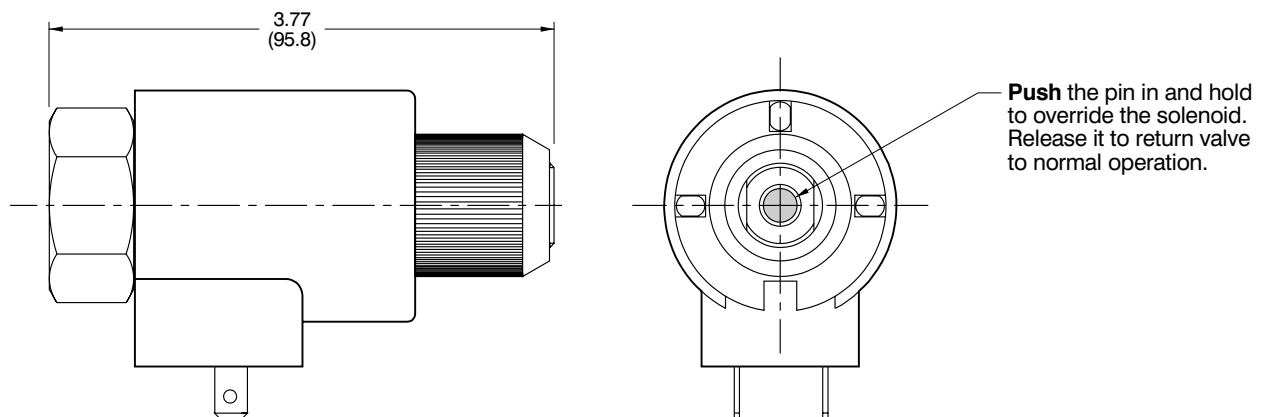
PUSH TYPE OVERRIDE

(Used with 8 and 10 series coils only)



PIN TYPE OVERRIDE

(Used with 12 series coils only - Standard on all valves using D12 coils)



Coils can be removed and installed the same as a non-manual override valve.

All dimensions in inches (mm)

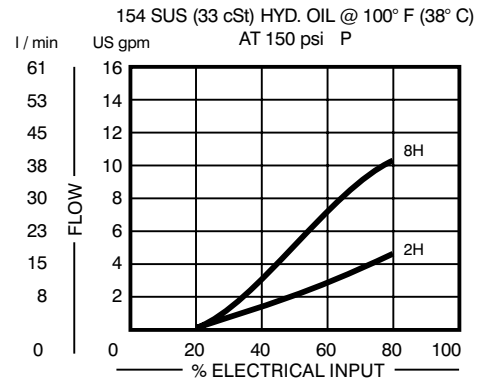
PROPORTIONAL VALVES

SIZE	DESCRIPTION	FLOW gpm (l/m)	PRESSURE psi (bar)	PAGE
PROPORTIONAL ELEMENTS				
CP550-30	PROPORTIONAL FLOW ELEMENT	10 (38)	3000 (207)	9.01
CP551-30	PROPORTIONAL FLOW ELEMENT	20 (76)	3000 (207)	9.02
BYPASS TYPE				
CP550-32	PROPORTIONAL BYPASS VALVE	10 (38)	3000 (207)	9.03
CP551-32	PROPORTIONAL BYPASS VALVE	20 (76)	3000 (207)	9.04
CP800-32	PROPORTIONAL BYPASS VALVE	10 (38)	3000 (207)	9.05
CP801-32	PROPORTIONAL BYPASS VALVE	20 (76)	3000 (207)	9.06
RESTRICTIVE TYPE				
CP550-33	PROPORTIONAL RESTRICTIVE VALVE	10 (38)	3000 (207)	9.07
CP551-33	PROPORTIONAL RESTRICTIVE VALVE	20 (76)	3000 (207)	9.08
COMBINATION TYPE				
CP550-34	PROPORTIONAL COMBINATION VALVE	10 (38)	3000 (207)	9.09
CP551-34	PROPORTIONAL COMBINATION VALVE	20 (76)	3000 (207)	9.10
PRESSURE CONTROL ELEMENTS				
CP558-20	PROPORTIONAL RELIEF ELEMENT		3000 (207)	9.11
CP558-23	PROPORTIONAL PRESSURE REDUCING ELEMENT		300 (21)	9.12
COIL				
	CP550-30/CP551-30 - COIL SPECIFICATIONS (D14 PROPORTIONAL)			9.13
	CP558-20/CP558-23 - COIL SPECIFICATIONS (D10 PROPORTIONAL)			9.15
PROPORTIONAL VALVE CONTROL ELEMENTS				
DVCR-100	PROPORTIONAL VALVE CONTROLLER - VOLTAGE DRIVEN			9.17
DV-103	PROPORTIONAL VALVE CONTROLLER - CONSTANT CURRENT			9.19
DVC-150	PROPORTIONAL VALVE CONTROLLER			9.21

SPECIFICATIONS

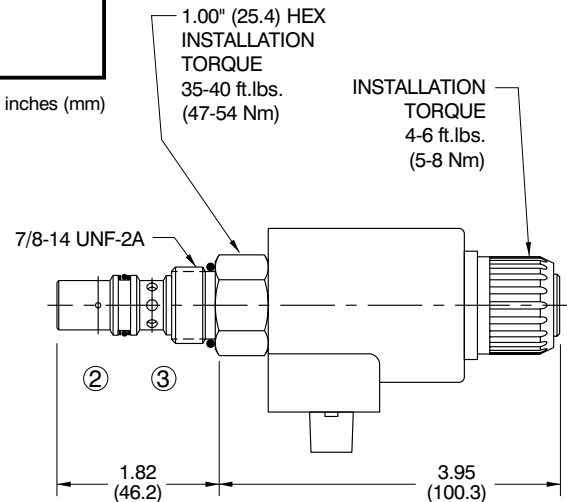
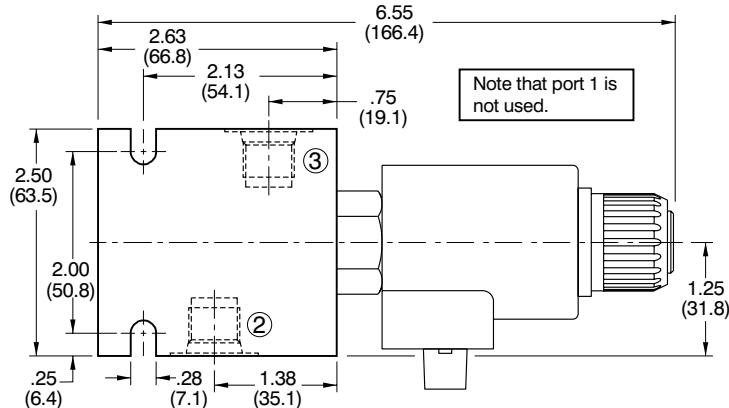
- Cartridge is a normally closed sliding spool type proportional valve. It uses a fixed air gap actuator to provide a controlled opening as a function of input.
- Valve is intended to be used with various pressure compensating elements to provide full pressure compensated proportional flow control circuits. Some of the cartridges the CP550-30 can be used with are: CP300-4, CP310-4, CP700-1, CP700-2, and CP700-4. The valve can also be used as the differential control for load sensing pressure compensated pumps.
- Valve is normally closed and as electrical current is applied to the coil the spool will progressively meter open thus providing controlled flow from 3 to 2 or 2 to 3. The valve will operate up to a 300 psi differential.
- Nominal flow: 10.0 gpm (38 l/m).
- Valve rated to 3000 psi (207 bar) working pressure.
- For electrical requirements see CP550-30/CP551-30 coil specifications [page 9.13](#).
- Valve cartridge is *all* steel construction with precision ground spool and case hardened and honed sleeve to assure smooth operation and extended service life.
- Hi-strength aluminum alloy body allows for maximum circuit design flexibility.
- Buna-N seals are standard. Viton is optional (consult factory for other seal compounds).
- Valve is designed for use with general purpose hydraulic fluids (MIL-H-5606, SAE #10, etc.).
- Cartridge weight 1.72 lbs (.78 kg).
- Valve cartridge fits Compact Controls [cavity CP10-3](#).

TYPICAL PERFORMANCE



Body Size: 1.25 (31.8) x 2.50 (63.5) x 2.63 (66.8)

All dimensions in inches (mm)



ORDERING INFORMATION

Shaded area represents standard product

CP550 - 30 - B - 8S - 8H - 24D - S

BASIC CARTRIDGE

SEALS

B - BUNA-N
V - VITON

SEAL KIT

120009
120010

PORTS

0 - CARTRIDGE
3P - 3/8 NPTF
4P - 1/2 NPTF
6S - #6 SAE
8S - #8 SAE
3B - 3/8 BSP
4B - 1/2 BSP

BODY P/N

NO BODY
220896
220897
220898
220899
222138
222139

TERMINATION

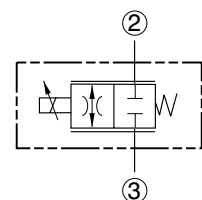
S - SPADE
H - DIN 43650

VOLTAGE

12D - 12 VOLT DC
24D - 24 VOLT DC
VALVE SOLD WITH COIL ONLY

FLOW CODE

2H - 0 to 5 gpm (19 l/m)
8H - 0 to 10 gpm (38 l/m)



CP551-30

PROPORTIONAL VALVE

(Proportional Flow Element)



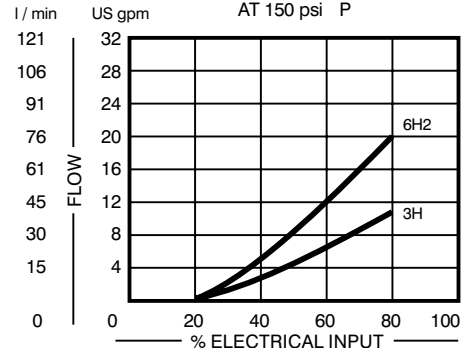
SERIES 12

SPECIFICATIONS

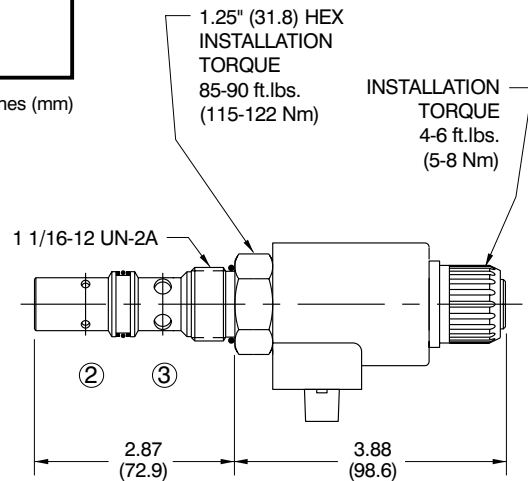
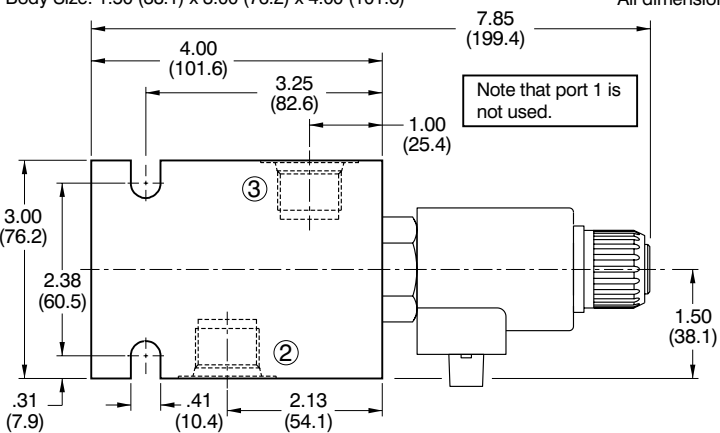
- Cartridge is a normally closed sliding spool type proportional valve. It uses a fixed air gap actuator to provide a controlled opening as a function of input.
- Valve is intended to be used with various pressure compensating elements to provide full pressure compensated proportional flow control circuits. Some of the cartridges the CP551-30 can be used with are: CP301-4, CP311-4, CP701-1, CP701-2, and CP701-4. The valve can also be used as the differential control for load sensing pressure compensated pumps.
- Valve is normally closed and as electrical current is applied to the coil the spool will progressively meter open thus providing controlled flow from 3 to 2 or 2 to 3. The valve will operate up to a 300 psi differential.
- Nominal flow: 20.0 gpm (76 l/m).
- Valve rated to 3000 psi (207 bar) working pressure.
- For electrical requirements see CP550-30/CP551-30 coil specifications [page 9.13](#).
- Valve cartridge is *all* steel construction with precision ground spool and case hardened and honed sleeve to assure smooth operation and extended service life.
- Hi-strength aluminum alloy body allows for maximum circuit design flexibility.
- Buna-N seals are standard. Viton is optional (consult factory for other seal compounds).
- Valve is designed for use with general purpose hydraulic fluids (MIL-H-5606, SAE #10, etc.).
- Cartridge weight 1.96 lbs (.89 kg).
- Valve cartridge fits Compact Controls [cavity CP12-3](#).

TYPICAL PERFORMANCE

154 SUS (33 cSt) HYD. OIL @ 100° F (38° C)
AT 150 psi P



Body Size: 1.50 (38.1) x 3.00 (76.2) x 4.00 (101.6) All dimensions in inches (mm)



ORDERING INFORMATION

Shaded area represents standard product

CP551 - 30 - B - 12S - 6H2 - 24D - S

BASIC CARTRIDGE

SEALS

SEAL KIT	
B - BUNA-N	120053
V - VITON	120052

PORTS

PORTS	BODY P/N
0 - CARTRIDGE	NO BODY
4P - 1/2 NPTF	220900
6P - 3/4 NPTF	220901
10S - #10 SAE	220902
12S - #12 SAE	220903
4B - 1/2 BSP	221494
6B - 3/4 BSP	221493

TERMINATION

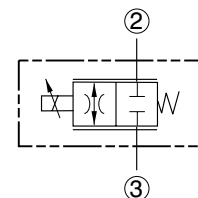
S - SPADE
H - DIN 43650

VOLTAGE

12D - 12 VOLT DC
24D - 24 VOLT DC
VALVE SOLD WITH COIL ONLY

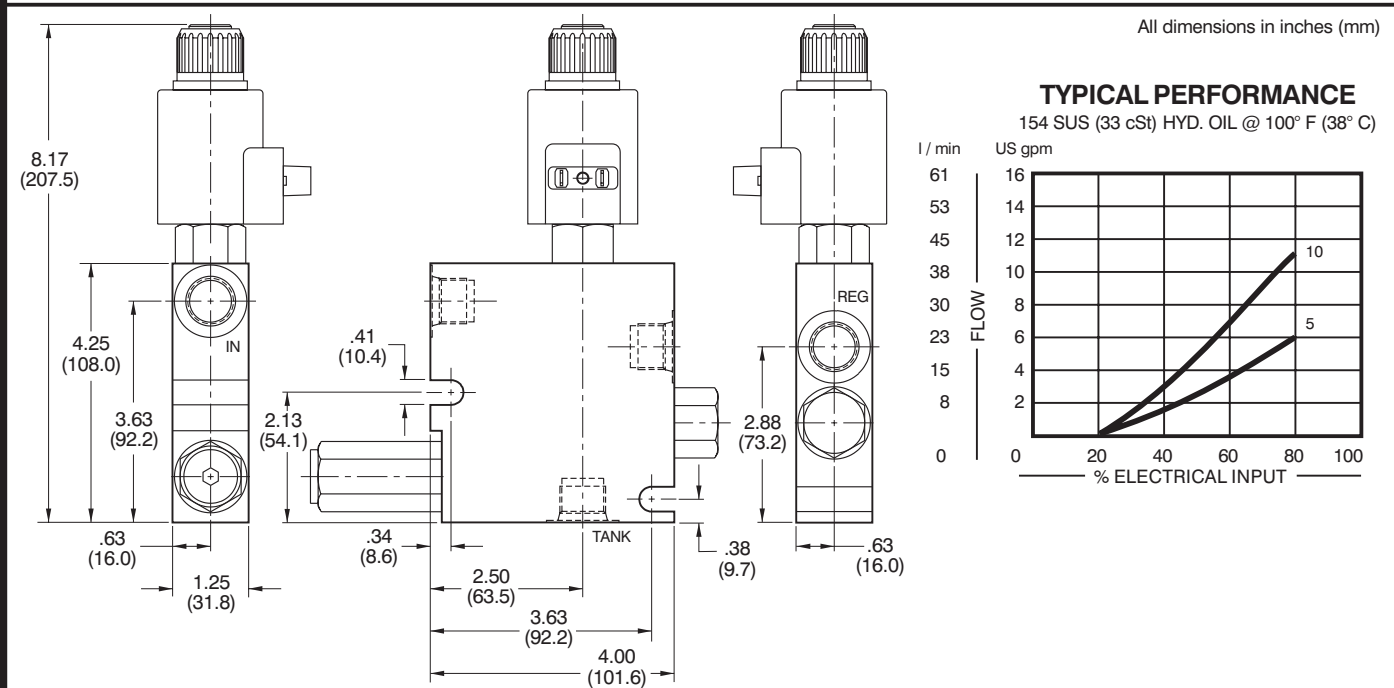
FLOW CODE

3H - 0 to 10 gpm (38 l/m)
6H2 - 0 to 20 gpm (76 l/m)



SPECIFICATIONS

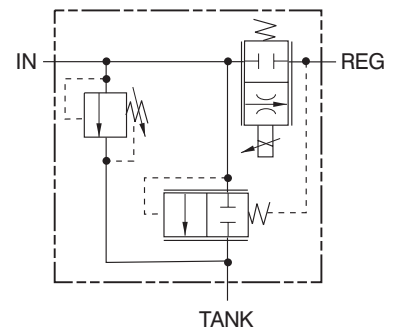
- Valve is a proportional bypass type pressure compensated flow control with built in relief function. It utilizes CP200-1, CP550-30 and CP700-1L elements.
- Valve is normally closed with the input flow directed to tank. As electrical power is applied to the CP550-30 coil the proportional element opening is controlled. For a given opening the regulated flow is determined by the CP700-1L which will maintain a fixed pressure drop across the CP550-30 that is equal to the bias spring in the CP700-1L (usually 80 psid for low flows and 150 psid for higher flows). By maintaining a fixed pressure drop across the proportional element a regulated (pressure compensated) flow is maintained at the regulated port with any excess flow going to tank. By varying the electrical power to the proportional element the regulated flow will be proportional to the input electrical power.
- Nominal flow: 10.0 gpm (38 l/m).
- Valve rated to 3000 psi (207 bar) working pressure.
- For electrical requirements see CP550-30/CP551-30 coil specifications [page 9.13](#).
- Hi-strength aluminum alloy body allows for maximum circuit design flexibility.
- Buna-N seals are standard. Viton is optional (consult factory for other seal compounds).
- Valve is designed for use with general purpose hydraulic fluids (MIL-H-5606, SAE #10, etc.).
- Valve weight 3.75 lbs (1.70 kg).



ORDERING INFORMATION

CP550 - 32 - B - 8S - A - C - 10 - 24D - S

BASIC VALVE	CP550 - 32	TERMINATION	S - SPADE H - DIN 43650
SEALS	B - BUNA-N V - VITON	VOLTAGE	12D - 12 VOLT DC 24D - 24 VOLT DC VALVE SOLD WITH COIL ONLY
PORTS	3P - 3/8 NPTF 4P - 1/2 NPTF 6S - #6 SAE 8S - #8 SAE 3B - 3/8 BSP 4B - 1/2 BSP	FLOW CODE	5 - 0 to 5 gpm (19 l/m) 10 - 0 to 10 gpm (38 l/m)
RELIEF ADJUSTMENT OPTION	A - INTERNAL ADJUSTMENT E - EXTERNAL ADJUSTMENT	RELIEF SPRING PRESSURE RANGE	PSI BAR A - 250-600 (17-41) B - 250-2000 (17-138) C - 600-3000 (41-207)
SEAL KIT	120296 120369	BODY P/N	220988 220987 220986 220985 221526 221527



CP551-32

PROPORTIONAL VALVE

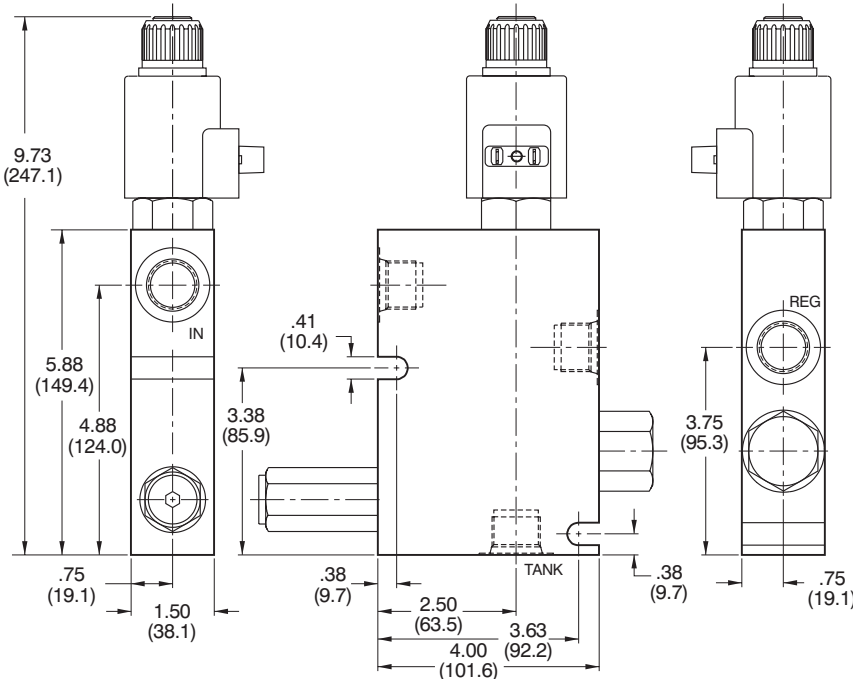
(Proportional Bypass Valve)



SERIES 12

SPECIFICATIONS

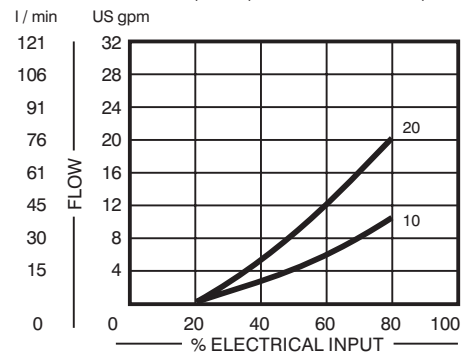
- Valve is a proportional bypass type pressure compensated flow control with built in relief function. It utilizes CP200-1, CP551-30 and CP701-1 elements.
- Valve is normally closed with the input flow directed to tank. As electrical power is applied to the CP551-30 coil the proportional element opening is controlled. For a given opening the regulated flow is determined by the CP701-1 which will maintain a fixed pressure drop across the CP551-30 that is equal to the bias spring in the CP701-1 (usually 80 psid for low flows and 150 psid for higher flows). By maintaining a fixed pressure drop across the proportional element a regulated (pressure compensated) flow is maintained at the regulated port with any excess flow going to tank. By varying the electrical power to the proportional element the regulated flow will be proportional to the input electrical power.
- Nominal flow: 20.0 gpm (76 l/m).
- Valve rated to 3000 psi (207 bar) working pressure.
- For electrical requirements see CP550-30/CP551-30 coil specifications [page 9.13](#).
- Hi-strength aluminum alloy body allows for maximum circuit design flexibility.
- Buna-N seals are standard. Viton is optional (consult factory for other seal compounds).
- Valve is designed for use with general purpose hydraulic fluids (MIL-H-5606, SAE #10, etc.).
- Valve weight 5.70 lbs (2.59 kg).



All dimensions in inches (mm)

TYPICAL PERFORMANCE

154 SUS (33 cSt) HYD. OIL @ 100° F (38° C)



ORDERING INFORMATION

CP551 - 32 - B - 10S - A - C - 20 - 24D - S

BASIC VALVE

SEALS

B - BUNA-N
V - VITON

SEAL KIT
120374
120375

PORTS

4P - 1/2 NPTF
6P - 3/4 NPTF
8S - #8 SAE
10S - #10 SAE
4B - 1/2 BSP
6B - 3/4 BSP

BODY P/N
220992
221860
220990
220991
221538
221537

RELIEF ADJUSTMENT OPTION

A - INTERNAL ADJUSTMENT
E - EXTERNAL ADJUSTMENT

TERMINATION

S - SPADE
H - DIN 43650

VOLTAGE

12D - 12 VOLT DC
24D - 24 VOLT DC
VALVE SOLD WITH COIL ONLY

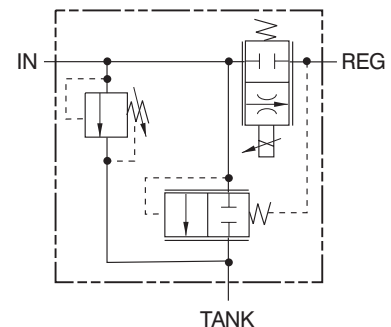
FLOW CODE

10 - 0 to 10 gpm (38 l/m)
20 - 0 to 20 gpm (76 l/m)

RELIEF SPRING

PRESSURE RANGE

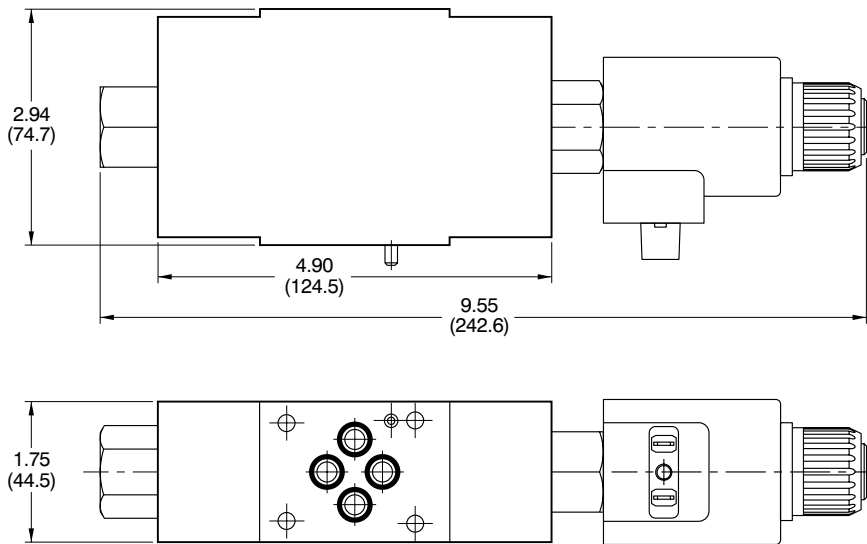
PSI	BAR
A - 250-600	(17-41)
B - 250-2000	(17-138)
C - 600-3000	(41-207)



SPECIFICATIONS

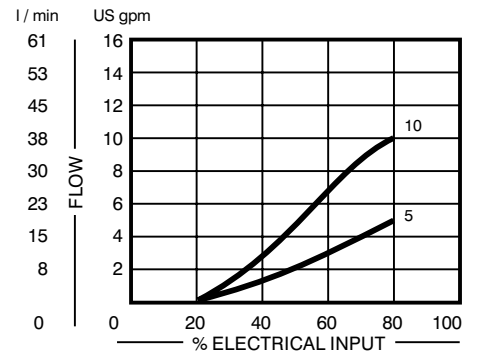
- Sandwich valve (fits CETOP03 (NG6) / D03 pattern) is a proportional bypass type pressure compensated flow control. It utilizes CP550-30 and CP700-1L elements.
- Valve is normally closed with the input flow directed to tank. As electrical power is applied to the CP550-30 coil the proportional element opening is controlled. For a given opening the regulated flow is determined by the CP700-1L which will maintain a fixed pressure drop across the CP550-30 that is equal to the bias spring in the CP700-1L (usually 80 psid for low flows and 150 psid for higher flows). By maintaining a fixed pressure drop across the proportional element a regulated (pressure compensated) flow is maintained at the regulated port with any excess flow going to tank. By varying the electrical power to the proportional element the regulated flow will be proportional to the input electrical power.
- Nominal flow: 10.0 gpm (38 l/m).
- Valve rated to 3000 psi (207 bar) working pressure.
- For electrical requirements see CP550-30/CP551-30 coil specifications [page 9.13](#).
- Hi-strength aluminum alloy body allows for maximum circuit design flexibility.
- Buna-N seals are standard. Viton is optional (consult factory for other seal compounds).
- Valve is designed for use with general purpose hydraulic fluids (MIL-H-5606, SAE #10, etc.).
- Valve weight 4.10 lbs (1.86 kg).

All dimensions in inches (mm)



TYPICAL PERFORMANCE

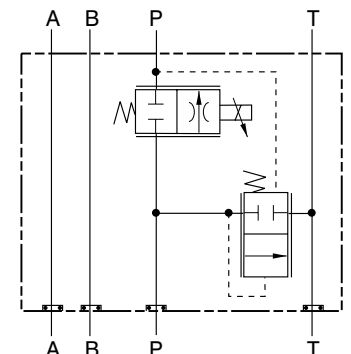
154 SUS (33 cSt) HYD. OIL @ 100° F (38° C)



ORDERING INFORMATION

CP800 - 32 - B - 10 - 24D - S

- | | | | |
|--------------------|---------------------------|---------------------------|--------------------------------------|
| BASIC VALVE | CP800 - 32 | TERMINATION | S - SPADE
H - DIN 43650 |
| SEALS | B - BUNA-N
V - VITON | VOLTAGE | 12D - 12 VOLT DC
24D - 24 VOLT DC |
| | SEAL KIT | VALVE SOLD WITH COIL ONLY | |
| | 120330 | | |
| | 120382 | | |
| FLOW CODE | 10 - 0 to 10 gpm (38 l/m) | | |
| | 5 - 0 to 5 gpm (19 l/m) | | |



CP801-32

PROPORTIONAL VALVE

(Proportional Bypass Valve)

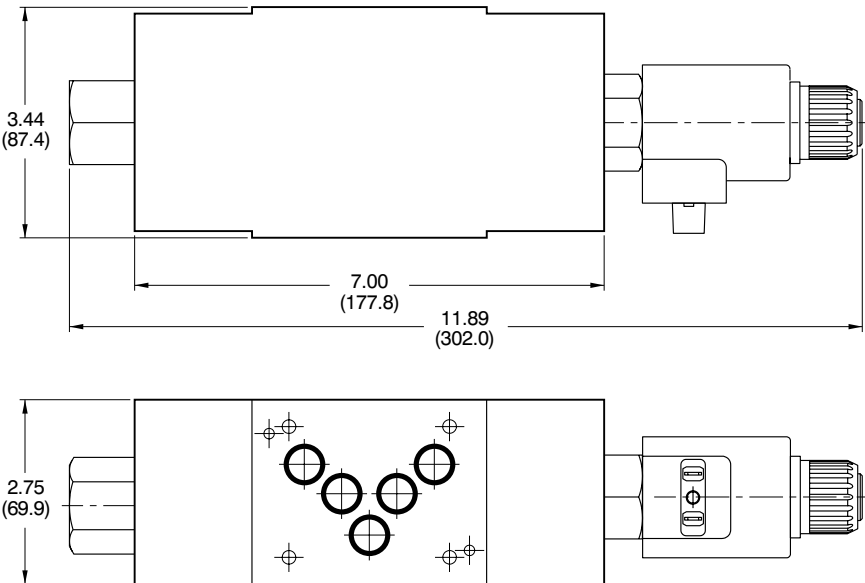


SERIES 12

SPECIFICATIONS

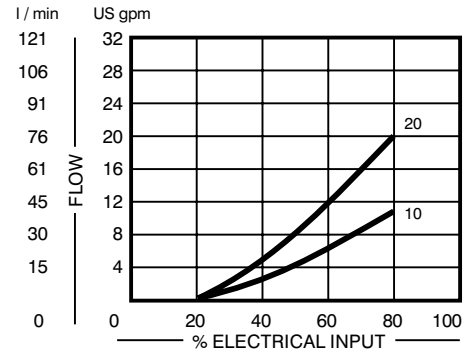
- Sandwich valve (fits CETOP05 (NG10) / D05 pattern) is a proportional bypass type pressure compensated flow control. It utilizes CP551-30 and CP701-1 elements.
- Valve is normally closed with the input flow directed to tank. As electrical power is applied to the CP551-30 coil the proportional element opening is controlled. For a given opening the regulated flow is determined by the CP701-1 which will maintain a fixed pressure drop across the CP551-30 that is equal to the bias spring in the CP701-1 (usually 80 psid for low flows and 150 psid for higher flows). By maintaining a fixed pressure drop across the proportional element a regulated (pressure compensated) flow is maintained at the regulated port with any excess flow going to tank. By varying the electrical power to the proportional element the regulated flow will be proportional to the input electrical power.
- Nominal flow: 20.0 gpm (76 l/m).
- Valve rated to 3000 psi (207 bar) working pressure.
- For electrical requirements see CP550-30/CP551-30 coil specifications [page 9.13](#).
- Hi-strength aluminum alloy body allows for maximum circuit design flexibility.
- Buna-N seals are standard. Viton is optional (consult factory for other seal compounds).
- Valve is designed for use with general purpose hydraulic fluids (MIL-H-5606, SAE #10, etc.).
- Valve weight 6.60 lbs (2.99 kg).

All dimensions in inches (mm)



TYPICAL PERFORMANCE

154 SUS (33 cSt) HYD. OIL @ 100° F (38° C)



ORDERING INFORMATION

CP801 - 32 - B - 20 - 24D - S

BASIC VALVE _____

SEALS _____

SEAL KIT

B - BUNA-N 120383

V - VITON 120384

FLOW CODE _____

10 - 0 to 10 gpm (38 l/m)

20 - 0 to 20 gpm (76 l/m)

TERMINATION

S - SPADE

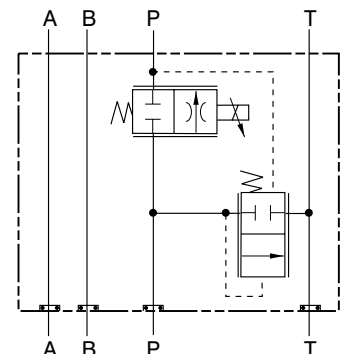
H - DIN 43650

VOLTAGE

12D - 12 VOLT DC

24D - 24 VOLT DC

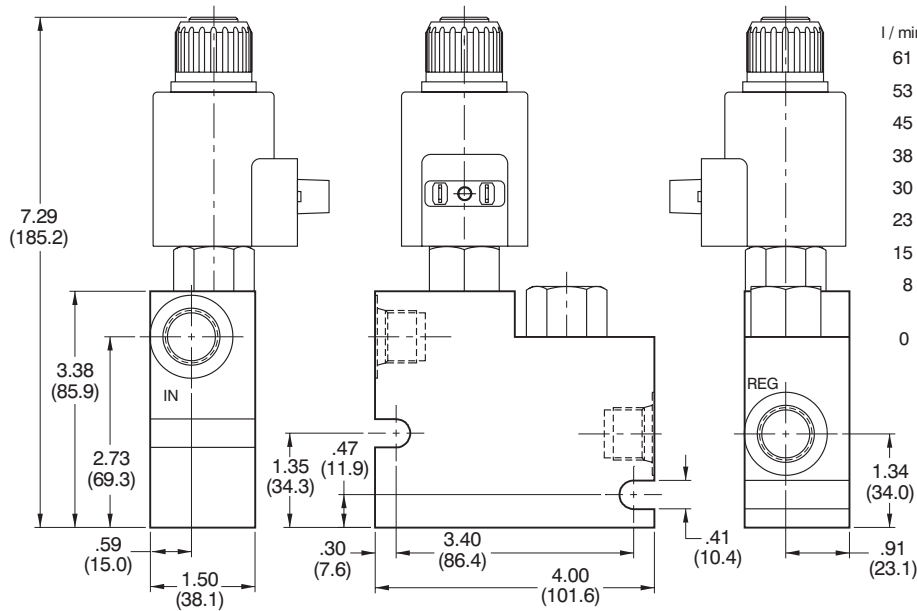
VALVE SOLD WITH COIL ONLY



SPECIFICATIONS

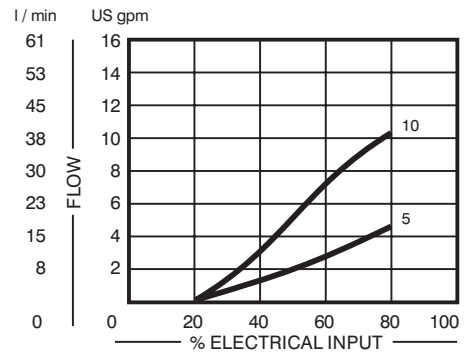
- Valve is a proportional restrictive type pressure compensated flow control. It utilizes CP550-30 and CP300-4 control elements.
- Valve is normally closed with the input flow blocked. As electrical power is applied to the CP550-30 coil the proportional element opening is controlled. For a given opening the regulated flow is determined by the CP300-4 which will maintain a fixed pressure drop across the CP550-30 that is equal to the bias spring in the CP300-4 (usually 80 psid for low flows and 190 psid for higher flows). By maintaining a fixed pressure drop across the proportional element a regulated (pressure compensated) flow is maintained at the regulated port. By varying the electrical power to the proportional element the regulated flow will be proportional to the input electrical power.
- Nominal flow: 10.0 gpm (38 l/m).
- Valve rated to 3000 psi (207 bar) working pressure.
- For electrical requirements see CP550-30/CP551-30 coil specifications [page 9.13](#).
- Hi-strength aluminum alloy body allows for maximum circuit design flexibility.
- Buna-N seals are standard. Viton is optional (consult factory for other seal compounds).
- Valve is designed for use with general purpose hydraulic fluids (MIL-H-5606, SAE #10, etc.).
- Valve weight 3.30 lbs (1.50 kg).

All dimensions in inches (mm)



TYPICAL PERFORMANCE

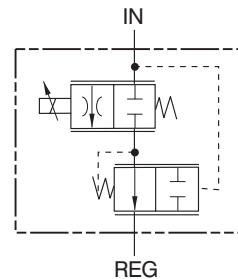
154 SUS (33 cSt) HYD. OIL @ 100° F (38° C)



ORDERING INFORMATION

CP550 - 33 - B - 8S - 10 - 24D - S

BASIC VALVE	CP550 - 33	TERMINATION	S - SPADE H - DIN 43650
SEALS	B - BUNA-N V - VITON	VOLTAGE	12D - 12 VOLT DC 24D - 24 VOLT DC VALVE SOLD WITH COIL ONLY
PORTS	3P - 3/8 NPTF 4P - 1/2 NPTF 6S - #6 SAE 8S - #8 SAE 3B - 3/8 BSP 4B - 1/2 BSP	FLOW CODE	5 - 0 to 5 gpm (19 l/m) 10 - 0 to 10 gpm (38 l/m)
SEAL KIT	120370 120371	BODY P/N	221393 221392 221391 221390 221529 221528



CP551-33

PROPORTIONAL VALVE

(Proportional Restrictive Valve)

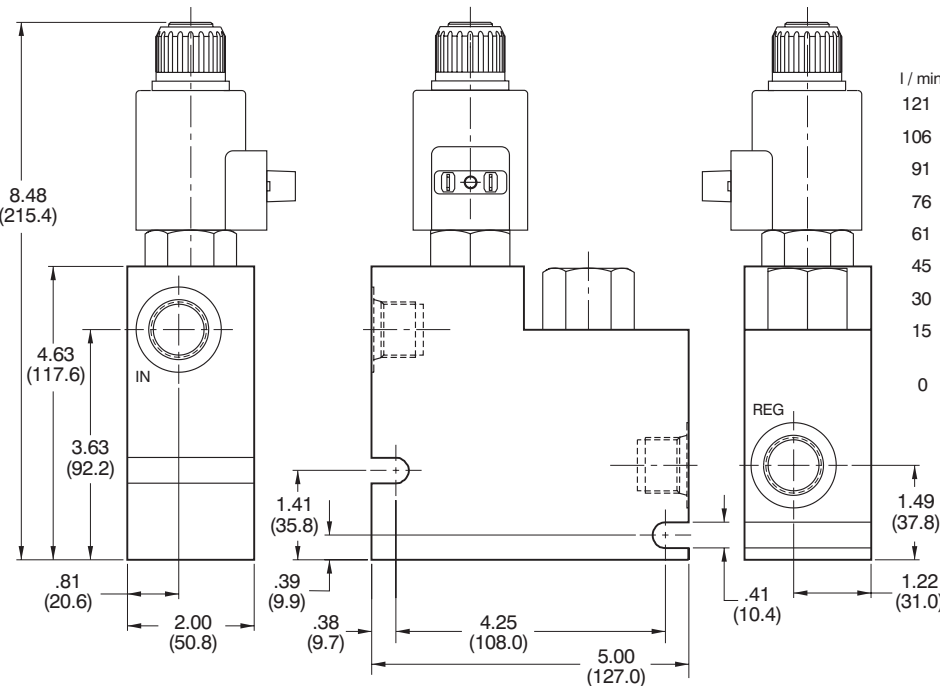


SERIES 12

SPECIFICATIONS

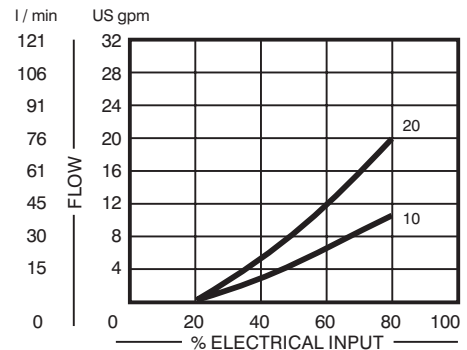
- Valve is a proportional restrictive type pressure compensated flow control. It utilizes CP551-30 and CP301-4 control elements.
- Valve is normally closed with the input flow blocked. As electrical power is applied to the CP551-30 coil the proportional element opening is controlled. For a given opening the regulated flow is determined by the CP301-4 which will maintain a fixed pressure drop across the CP551-30 that is equal to the bias spring in the CP301-4 (usually 80 psid for low flows and 150 psid for higher flows). By maintaining a fixed pressure drop across the proportional element a regulated (pressure compensated) flow is maintained at the regulated port. By varying the electrical power to the proportional element the regulated flow will be proportional to the input electrical power.
- Nominal flow: 20.0 gpm (76 l/m).
- Valve rated to 3000 psi (207 bar) working pressure.
- For electrical requirements see CP550-30/CP551-30 coil specifications [page 9.13](#).
- Hi-strength aluminum alloy body allows for maximum circuit design flexibility.
- Buna-N seals are standard. Viton is optional (consult factory for other seal compounds).
- Valve is designed for use with general purpose hydraulic fluids (MIL-H-5606, SAE #10, etc.).
- Valve weight 6.33 lbs (2.87 kg).

All dimensions in inches (mm)

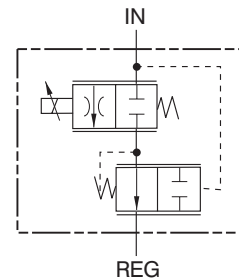
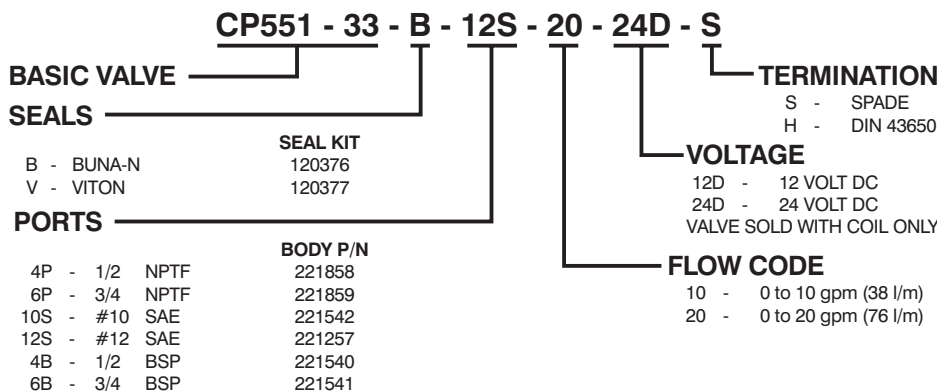


TYPICAL PERFORMANCE

154 SUS (33 cSt) HYD. OIL @ 100° F (38° C)



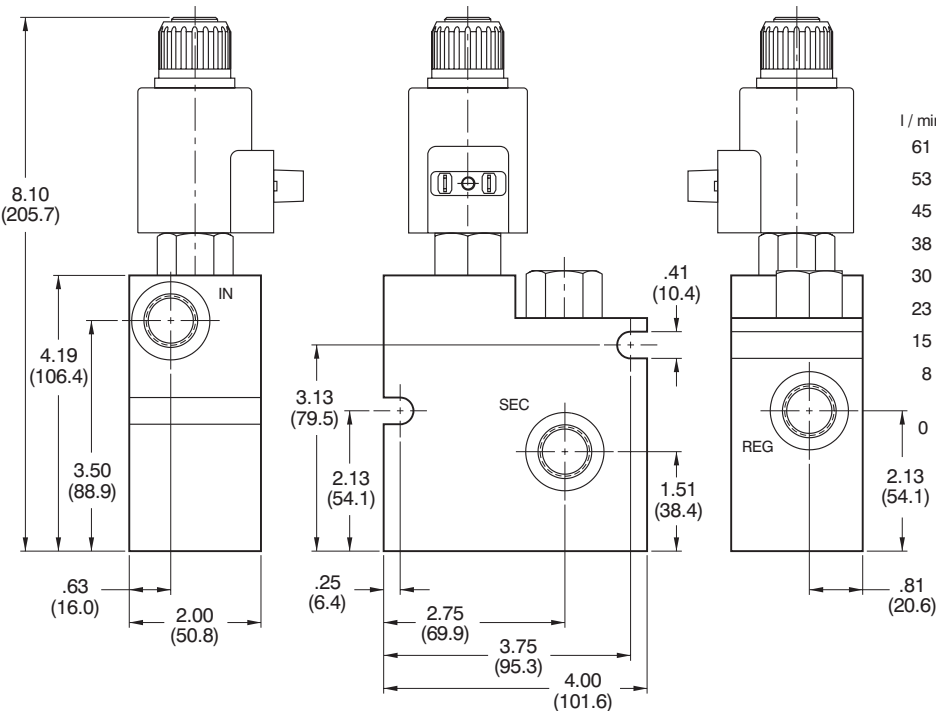
ORDERING INFORMATION



SPECIFICATIONS

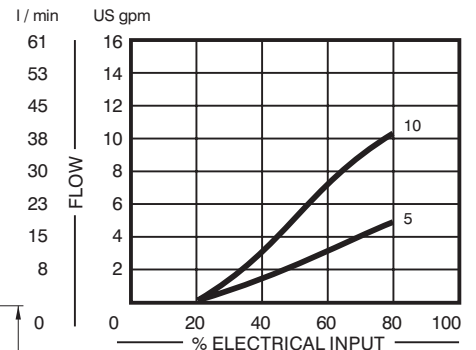
- Valve is a proportional combination type pressure compensated flow control. It utilizes CP550-30 and CP310-4 control elements.
- Valve is normally closed with the input flow directed to the secondary port. As electrical power is applied to the CP550-30 coil the proportional element opening is controlled. For a given opening the regulated flow is determined by the CP310-4 which will maintain a fixed pressure drop across the CP550-30 that is equal to the bias spring in the CP310-4 (usually 80 psid for low flows and 190 psid for higher flows). By maintaining a fixed pressure drop across the proportional element a regulated (pressure compensated) flow is maintained at the regulated port with any excess flow going to secondary (the secondary flow can be fully pressurized). By varying the electrical power to the proportional element the regulated flow will be proportional to the input electrical power.
- Nominal flow: 10.0 gpm (38 l/m).
- Valve rated to 3000 psi (207 bar) working pressure.
- For electrical requirements see CP550-30/CP551-30 coil specifications [page 9.13](#).
- Hi-strength aluminum alloy body allows for maximum circuit design flexibility.
- Buna-N seals are standard. Viton is optional (consult factory for other seal compounds).
- Valve is designed for use with general purpose hydraulic fluids (MIL-H-5606, SAE #10, etc.).
- Valve weight 4.38 lbs (1.99 kg).

All dimensions in inches (mm)



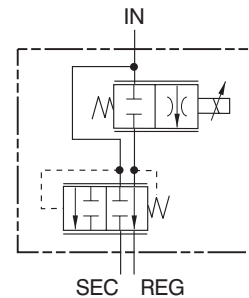
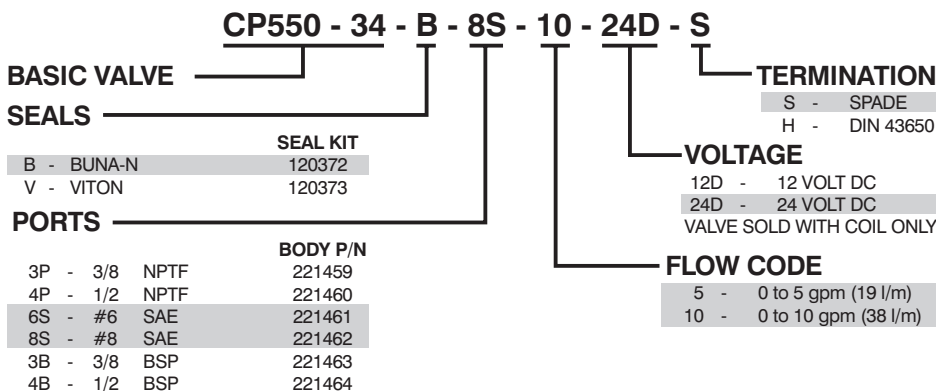
TYPICAL PERFORMANCE

154 SUS (33 cSt) HYD. OIL @ 100° F (38° C)



ORDERING INFORMATION

Shaded area represents standard product



CP551-34

PROPORTIONAL VALVE

(Proportional Combination Valve)

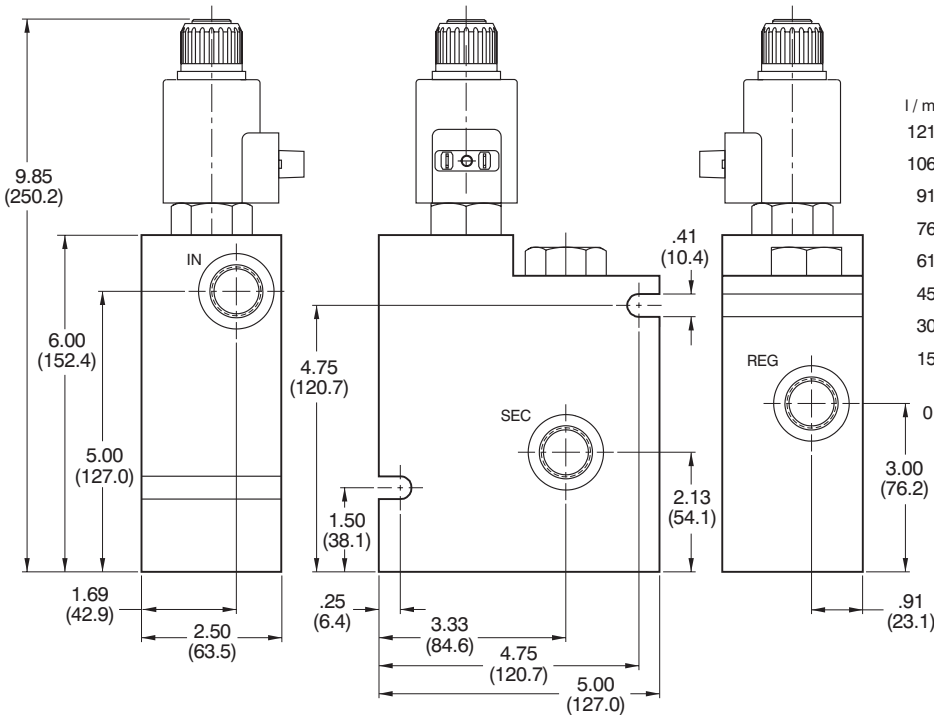


SERIES 12

SPECIFICATIONS

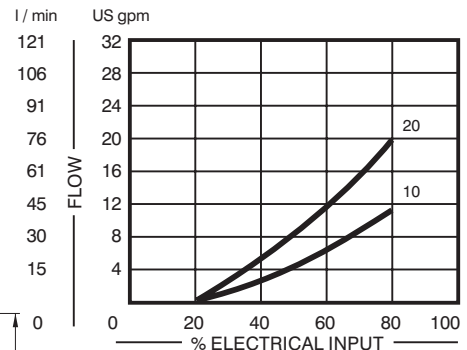
- Valve is a proportional combination type pressure compensated flow control. It utilizes CP551-30 and CP311-4 control elements.
- Valve is normally closed with the input flow directed to the secondary port. As electrical power is applied to the CP551-30 coil the proportional element opening is controlled. For a given opening the regulated flow is determined by the CP311-4 which will maintain a fixed pressure drop across the CP551-30 that is equal to the bias spring in the CP311-4 (usually 80 psid for low flows and 150 psid for higher flows). By maintaining a fixed pressure drop across the proportional element a regulated (pressure compensated) flow is maintained at the regulated port with any excess flow going to secondary (the secondary flow can be fully pressurized). By varying the electrical power to the proportional element the regulated flow will be proportional to the input electrical power.
- Nominal flow: 20.0 gpm (76 l/m).
- Valve rated to 3000 psi (207 bar) working pressure.
- For electrical requirements see CP550-30/CP551-30 coil specifications [page 9.13](#).
- Hi-strength aluminum alloy body allows for maximum circuit design flexibility.
- Buna-N seals are standard. Viton is optional (consult factory for other seal compounds).
- Valve is designed for use with general purpose hydraulic fluids (MIL-H-5606, SAE #10, etc.).
- Valve weight 7.91 lbs (3.59 kg).

All dimensions in inches (mm)



TYPICAL PERFORMANCE

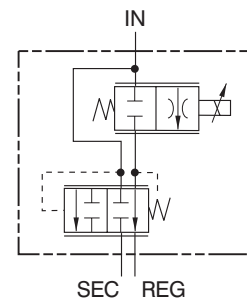
154 SUS (33 cSt) HYD. OIL @ 100° F (38° C)



ORDERING INFORMATION

CP551 - 34 - B - 12S - 20 - 24D - S

BASIC VALVE	SEALS	SEAL KIT	TERMINATION
B - BUNA-N	V - VITON	120378 120379	S - SPADE H - DIN 43650
PORTS	BODY P/N	VOLTAGE	FLOW CODE
4P - 1/2 NPTF	221468	12D - 12 VOLT DC	10 - 0 to 10 gpm (38 l/m)
6P - 3/4 NPTF	221467	24D - 24 VOLT DC	20 - 0 to 20 gpm (76 l/m)
10S - #10 SAE	221469	VALVE SOLD WITH COIL ONLY	
12S - #12 SAE	221470		
4B - 1/2 BSP	221472		
6B - 3/4 BSP	221471		

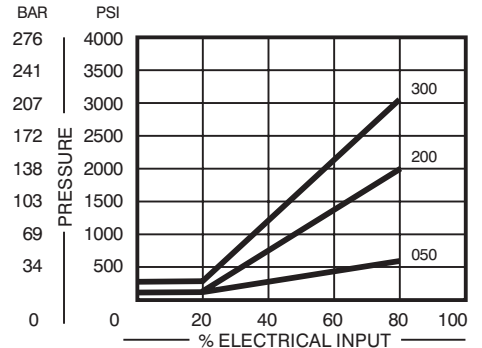


SPECIFICATIONS

- Cartridge is a normally open type proportional pressure control. It uses a fixed air gap actuator to provide a controlled pressure as a function of input.
- Valve is intended to be used with various pressure compensating elements. Some of the cartridges the CP558-20 can be used with are: CP700-2, and CP700-3 as well as any of the larger versions of these cartridges.
- In the de-energized mode port **1** is connected to tank port **2**. As electrical current is applied to the coil the poppet restricts the flow from **1** and thus acts as a relief valve. The pressure at **1** is directly proportional to the output force (current) of the electrical actuator.
- Nominal flow: .5 gpm (1.9 l/m).
- Valve rated to 3000 psi (207 bar) working pressure.
- For electrical requirements see CP558-20/CP558-23 coil specifications [page 9.15](#).
- Valve cartridge is **all** steel construction with precision ground and hardened components to assure smooth operation and extended service life.
- Hi-strength aluminum alloy body allows for maximum circuit design flexibility.
- Buna-N seals are standard. Viton is optional (consult factory for other seal compounds).
- Valve is designed for use with general purpose hydraulic fluids (MIL-H-5606, SAE #10, etc.).
- Cartridge weight 1.06 lbs (.48 kg).
- Valve cartridge fits Compact Controls [cavity CP8-2](#).

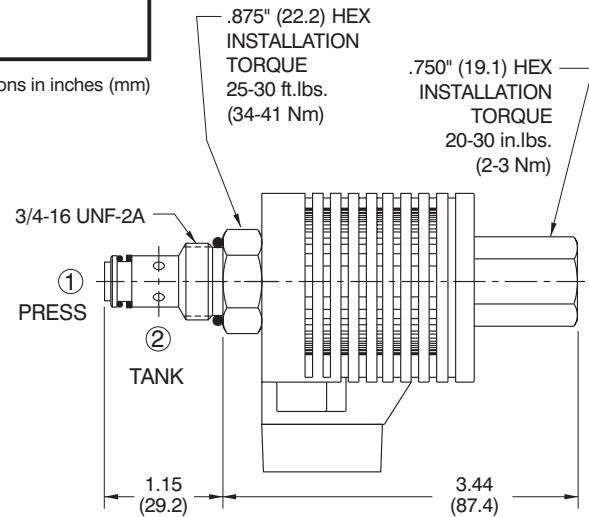
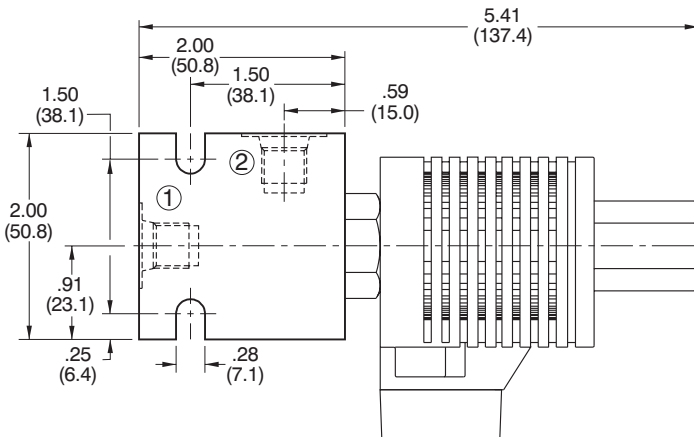
TYPICAL PERFORMANCE

154 SUS (33 cSt) HYD. OIL @ 100° F (38° C)



Body Size: 1.25 (31.8) x 2.00 (50.8) x 2.00 (50.8)

All dimensions in inches (mm)



ORDERING INFORMATION

Shaded area represents standard product

CP558 - 20 - B - 6S - 300 - 24D - S

BASIC CARTRIDGE

SEALS

SEAL KIT	SEAL KIT
B - BUNA-N	120221
V - VITON	120222

PORTS

PORTS	BODY P/N
0 - CARTRIDGE	NO BODY
2P - 1/4 NPTF	220814
3P - 3/8 NPTF	220815
4S - #4 SAE	220816
6S - #6 SAE	220817
2B - 1/4 BSP	221285
3B - 3/8 BSP	221286

TERMINATION

S - SPADE
H - DIN 43650

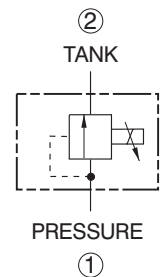
VOLTAGE

12D - 12 VOLT DC
24D - 24 VOLT DC
VALVE SOLD WITH COIL ONLY

PRESSURE CODE

050 - 500 PSI MAX
200 - 2000 PSI MAX
300 - 3000 PSI MAX

CONSULT FACTORY FOR OTHER PRESSURE RANGES



CP558-23

PROPORTIONAL VALVE

(Proportional Pressure Reducing Element)



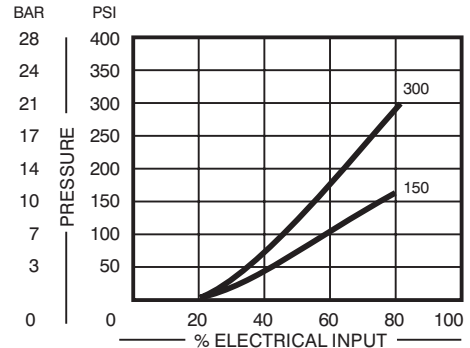
SERIES 8

SPECIFICATIONS

- Cartridge is a relieving type proportional pressure reducer. It uses a fixed air gap actuator to provide a controlled pressure as a function of input.
- Valve is intended to be used to stroke large spool valves or other valves requiring proportional pilot pressures to either 150 or 300 psi.
- In the de-energized mode the pressure port **2** is blocked and the regulated port **1** is unloaded to tank **3**. As electrical current is applied to the coil pressure at **2** is directed to the regulated port **1** whose output is directly proportional to the output force (current) of the electrical actuator.
- Nominal flow: .5 gpm (1.9 l/m).
- Valve inlet pressures to 1500 psi (103 bar) working pressure.
- For electrical requirements see CP558-20/CP558-23 coil specifications [page 9.15](#).
- Valve cartridge is **all** steel construction with precision ground spool and case hardened and honed sleeve to assure smooth operation and extended service life.
- Hi-strength aluminum alloy body allows for maximum circuit design flexibility.
- Buna-N seals are standard. Viton is optional (consult factory for other seal compounds).
- Valve is designed for use with general purpose hydraulic fluids (MIL-H-5606, SAE #10, etc.).
- Cartridge weight 1.09 lbs (.50 kg).
- Valve cartridge fits Compact Controls [cavity CP8-3](#).

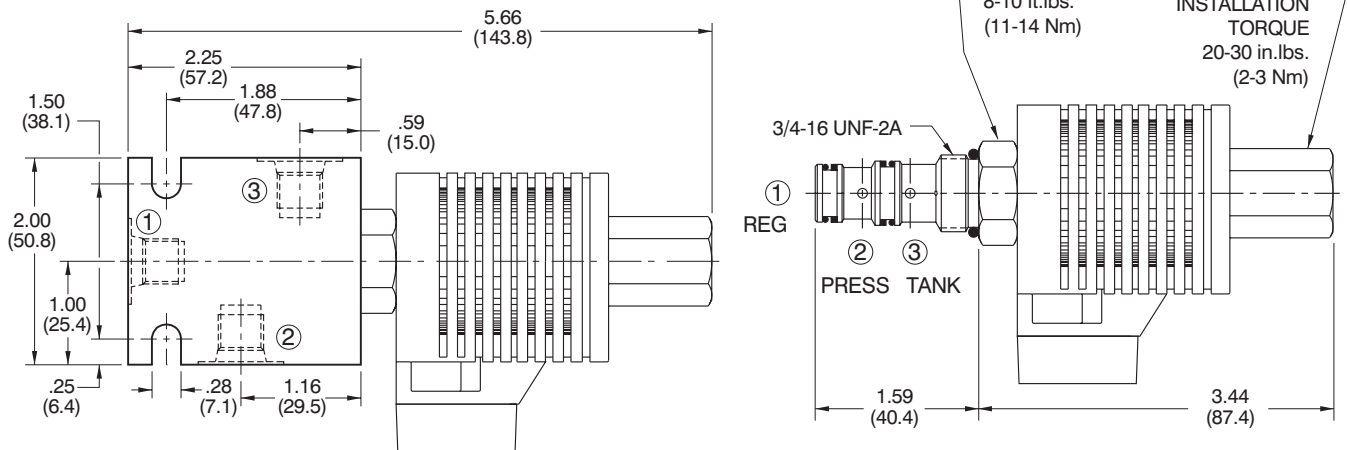
TYPICAL PERFORMANCE

154 SUS (33 cSt) HYD. OIL @ 100° F (38° C)



Body Size: 1.25 (31.8) x 2.00 (50.8) x 2.25 (57.2)

All dimensions in inches (mm)



ORDERING INFORMATION

CP558 - 23 - B - 6S - 150 - 24D - S

BASIC CARTRIDGE

SEALS

B - BUNA-N
V - VITON

SEAL KIT
120238
120239

PORTS

0 - CARTRIDGE
2P - 1/4 NPTF
3P - 3/8 NPTF
4S - #4 SAE
6S - #6 SAE
2B - 1/4 BSP
3B - 3/8 BSP

BODY P/N
NO BODY
220819
220820
220821
220822
221288
221287

TERMINATION

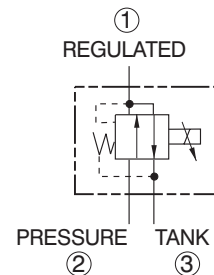
S - SPADE
H - DIN 43650

VOLTAGE

12D - 12 VOLT DC
24D - 24 VOLT DC
VALVE SOLD WITH COIL ONLY

PRESSURE CODE

150 - 150 PSI (10.3 BAR)
300 - 300 PSI (20.7 BAR)



D14 PROPORTIONAL

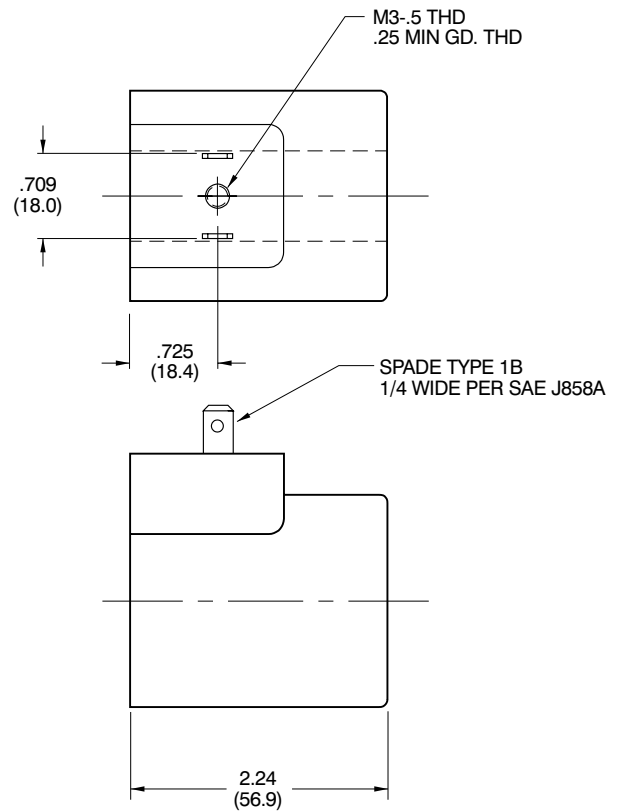
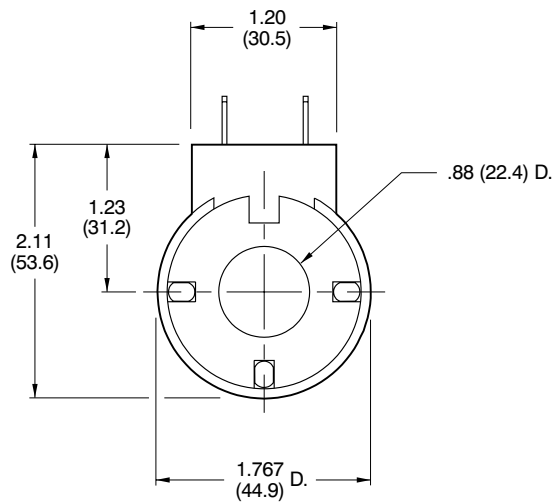
SPECIFICATIONS

- Duty rating: Continuous at 100% voltage.
- Ambient operating temperature range = -65° F to 140° F (-17° C to 60° C).
- Encapsulating material: Glass filled polyester.
- Termination options: See below.
- See page 9.14 for additional coil specifications.

All dimensions in inches (mm)

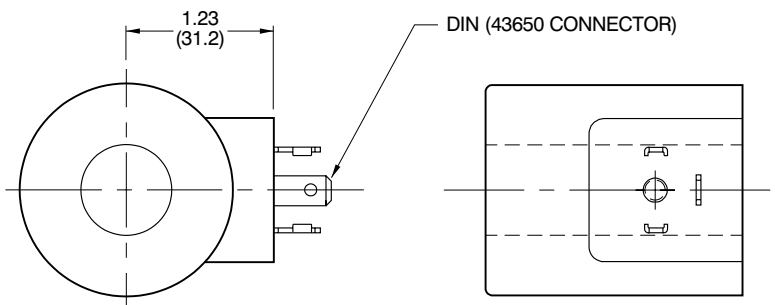
SPADE TYPE COIL CODE - S

VOLTS	P/N
12VDC	321322
24VDC	321323



DIN TYPE COIL CODE - H

VOLTS	P/N
12VDC	321318
24VDC	321319



D14 PROPORTIONAL

COIL SPECIFICATIONS

D14 PROPORTIONAL ACTUATORS COIL SPECIFICATIONS AND CONTROL RECOMENDATIONS

CONTROLLER:

A pulse width modulated controller operating at 115 to 125 hz. the controller should use current feedback for best performance.

COIL CHARACTERISTICS:

12 Volt System

Resistance @ 70° F	4.8 ohms ± 10%
Inductance	24 mh
No. of turns	665 ± 2
Maximum current draw	2.5 amps
Maximum operating temperature above ambient	140 ° F

24 Volt System

Resistance @ 70° F	19.0 ohms ± 10%
Inductance	190 mh
No. of turns	1325 ± 5
Maximum current draw	1.25 amps
Maximum operating temperature above ambient	140 ° F

ELECTRICAL TERMINATION:

The coils come standard with 2 spade connectors. Din 43650 is available as an option.

SERVICING:

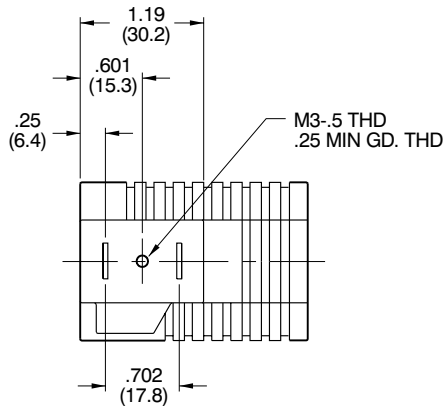
The coils are replaceable as well as all seals. The actuator assembly is not serviceable and should be replaced complete if required.

D10 PROPORTIONAL

SPECIFICATIONS

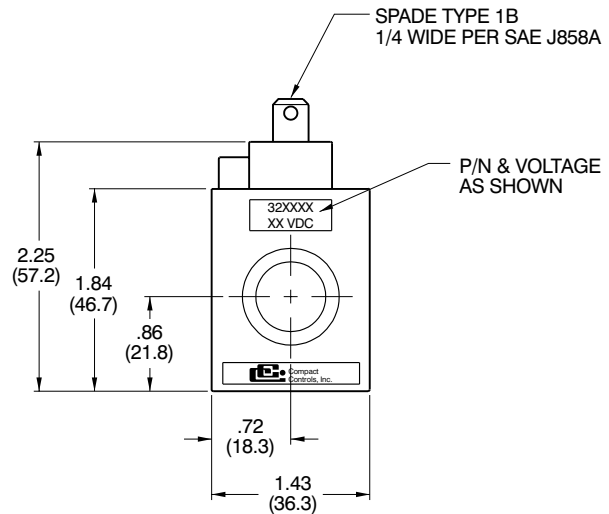
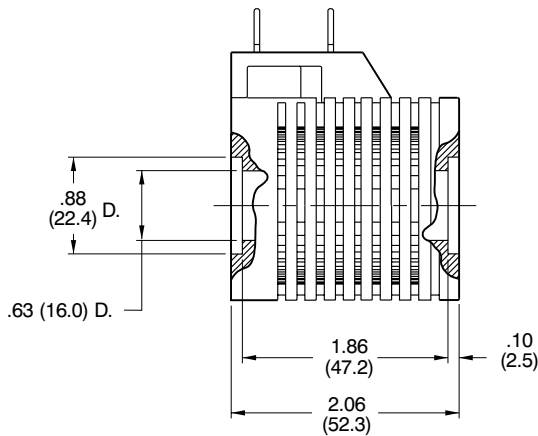
- Duty rating: Continuous at 100% voltage.
- Ambient operating temperature range = -65° F to 140° F (-17° C to 60° C).
- Encapsulating material: Glass filled polyester.
- Termination options: See below.
- See page 9.16 for additional coil specifications.

All dimensions in inches (mm)

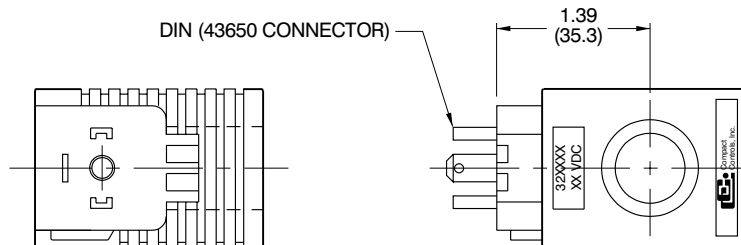


**SPADE TYPE COIL
CODE - S**

VOLTS	P/N
12VDC	320869
24VDC	320870



DIN (43650 CONNECTOR)



**DIN TYPE COIL
CODE - H**

VOLTS	P/N
12VDC	320969
24VDC	320974

D10 PROPORTIONAL

COIL SPECIFICATIONS

D10 PROPORTIONAL ACTUATORS COIL SPECIFICATIONS AND CONTROL RECOMENDATIONS

CONTROLLER:

A pulse width modulated controller operating at 120 to 130 hz. the controller should use current feedback for best performance.

COIL CHARACTERISTICS:

12 Volt System

Resistance @ 70° F	4.8 ohms ± 10%
Inductance	15 mh
No. of turns	700 ± 2
Maximum current draw	2.5 amps
Maximum operating temperature above ambient	140 ° F

24 Volt System

Resistance @ 70° F	19.0 ohms ± 10%
Inductance	60 mh
No. of turns	1400 ± 5
Maximum current draw	1.25 amps
Maximum operating temperature above ambient	140 ° F

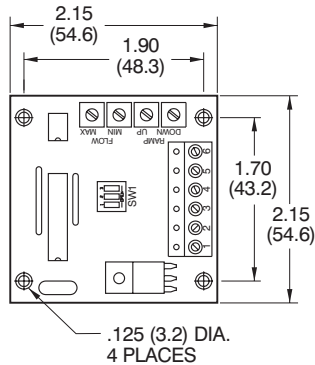
ELECTRICAL TERMINATION:

The coils come standard with 2 spade connectors. Din 43650 is available as an option.

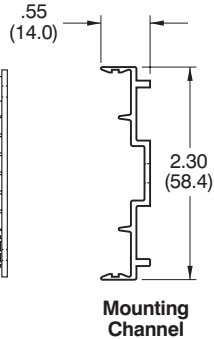
SERVICING:

The coils are replaceable as well as all seals. The actuator assembly is not serviceable and should be replaced complete if required.

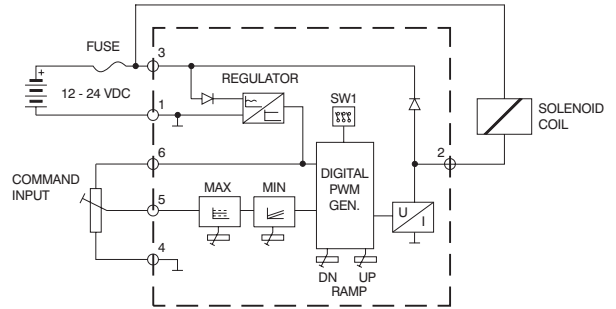
DIMENSIONS



All dimensions in inches (mm)

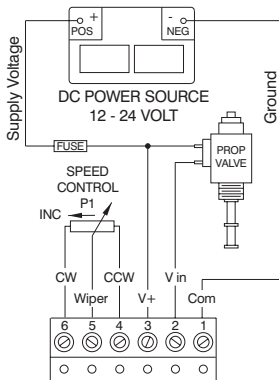


BLOCK DIAGRAM



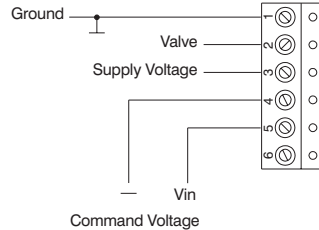
CONNECTIONS

Connection with external preset potentiometer

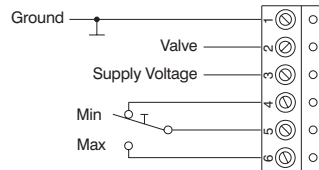


Fuse: 24V = 1.5 A fast-blow
12V = 3.0 A fast-blow
P1 = 5kOhm to 10kOhm

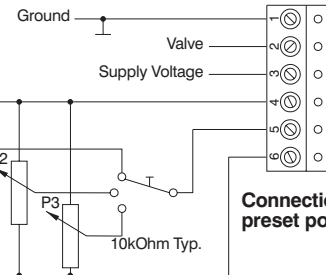
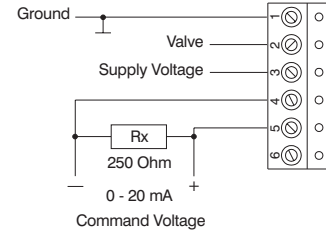
Connection for external voltage source $V_{in} = 0-5V$ or $0-10V$



Connection with preset switch Set Max and Min Speed on Board



Connection for external current source $0-20mA$ or $4-20mA$ (optional)



Connection with multiple preset potentiometers

SPECIFICATIONS

Supply Voltage

12 to 24 VDC
Positive to terminal 3
Negative to terminal 1

Regulated Output Voltage

5 VDC (terminal 6)
Maximum load is 10mA

Command Input

4 VDC minimum for full output
10 VDC maximum (terminal 5)
referenced to supply common

Valve Load

12 to 24 VDC 30 watt max

PWM Frequency

90 Hz, 100 Hz, 125 Hz, 150 Hz, 175 Hz, 200 Hz, 250 Hz
Switch selectable

Ramp Time

Independent UP and Down Ramps
Adjustable 0 to 5 Second

ADJUSTMENTS

Minimum Output

Set external command value to minimum
Adjust MIN pot for desired flow/pressure

Maximum Output

Set external command value to maximum
Adjust MAX pot for desired flow/pressure

Ramp Adjustment

Up and Down Ramps are independent
Adjust the UP pot clockwise for slower acceleration
Adjust the DOWN pot clockwise for slower deceleration

PWM Frequency

Select frequency using switch SW1. Use a ball point pen or small screw driver to set the proper switches. Press the end marked OPEN to set the switch to the OPEN position. Use the table below for settings.

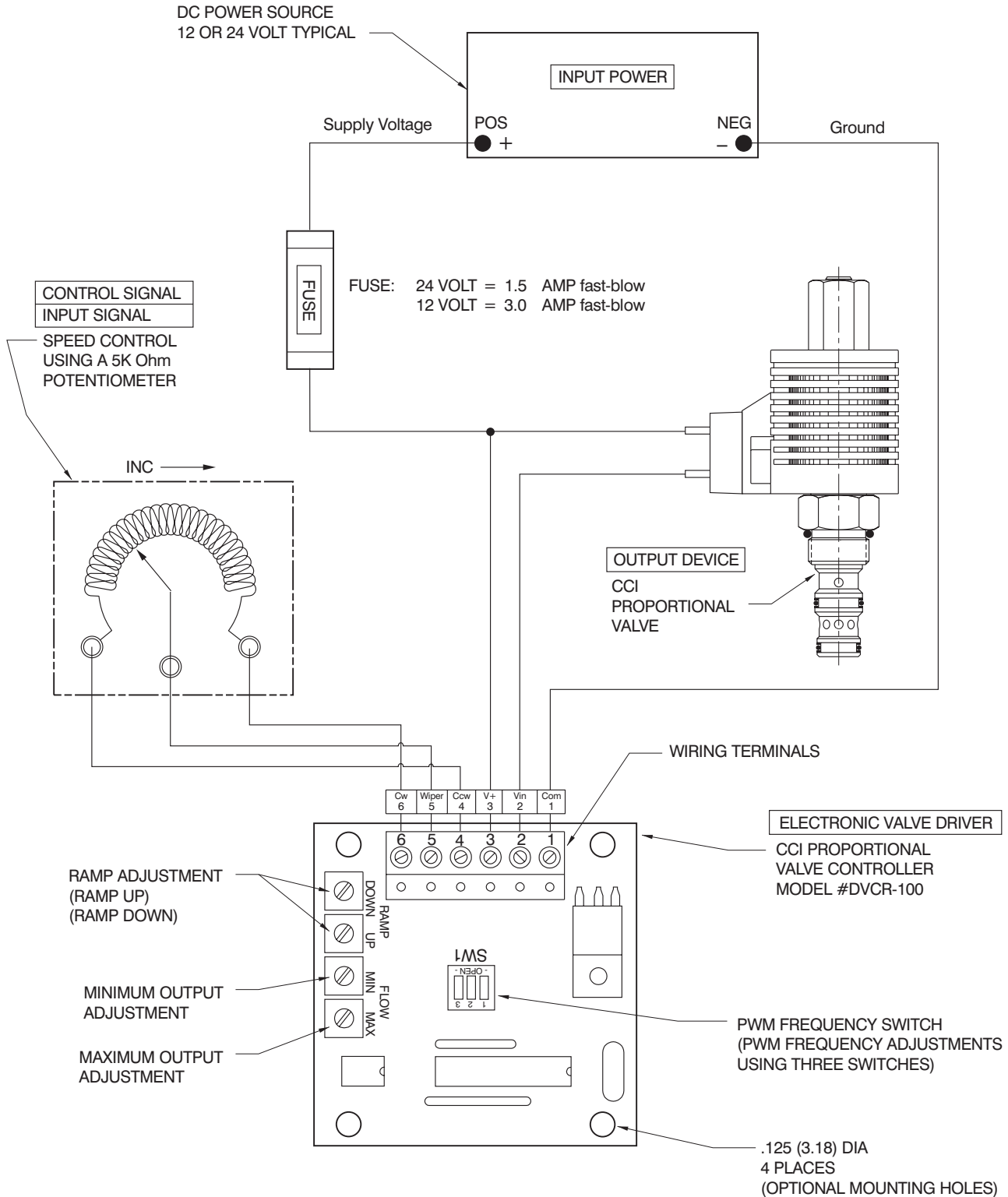
Hertz	SW1	SW2	SW3
90	Open	Open	Closed
100	Open	Open	Open
125	Closed	Open	Open
150	Open	Closed	Open
175	Closed	Closed	Open
200	Open	Closed	Closed
250	Closed	Closed	Closed

DVCR-100
PROPORTIONAL VALVE CONTROLLER
VOLTAGE DRIVEN



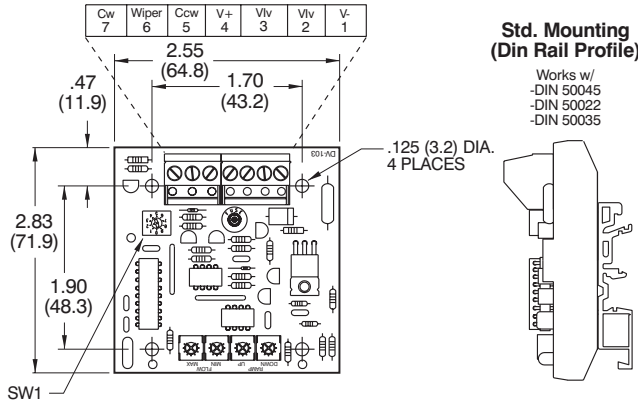
CONNECTION DIAGRAM

All dimensions in inches (mm)

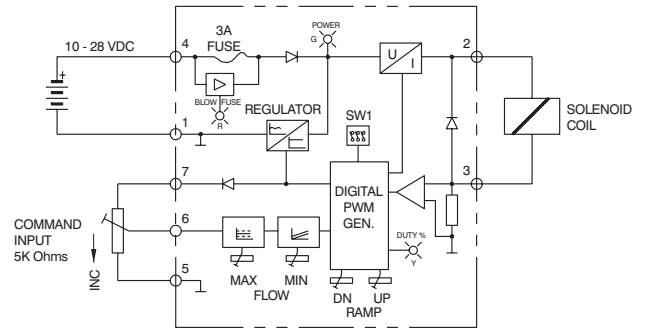


DIMENSIONS

All dimensions in inches (mm)

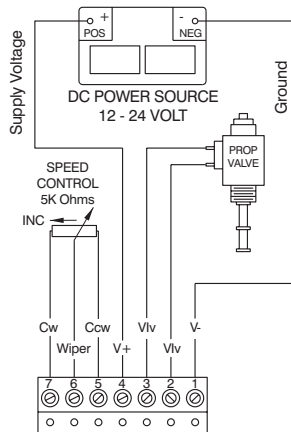


BLOCK DIAGRAM

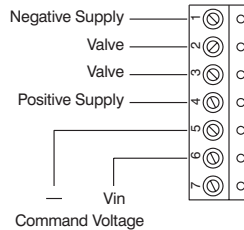


CONNECTIONS

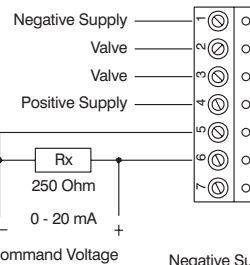
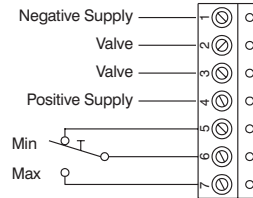
Connection with single external potentiometer



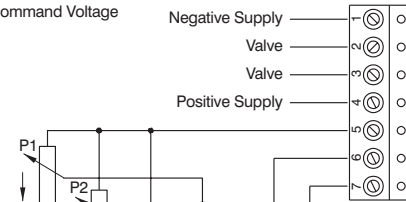
Connection for external voltage source Vin = 0-5V or 0-10V



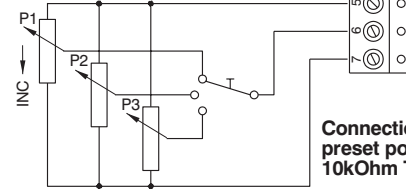
Connection with preset switch Set Max and Min Speed on Board



Connection for external current source 0-20mA or 4-20mA



Connection with multiple preset potentiometers 10kOhm Typ.



SPECIFICATIONS

Supply Voltage

Nominally 12 to 24 VDC
12V Valves - 10V to 15V
24V Valves - 20V to 28V

Reference Voltage

5 VDC (terminal 7)
Maximum load is 10mA

Command Input

4 VDC minimum for full output
10 VDC maximum (terminal 6)
referenced to supply common

Valve Load

12 to 24 VDC 30 watt max

PWM Frequency

10 switch selectable frequencies
90 Hz to 250 Hz

Ramp Time

Independent UP and Down Ramps
Adjustable 0 to 5 Second

LED-Indicators

Power - (Green)
Duty Cycle - (Yellow)
Blown Fuse - (Red)

ADJUSTMENTS

Minimum Output

Set external command value to minimum
Adjust MIN pot for desired flow/pressure

Maximum Output

Set external command value to maximum
Adjust MAX pot for desired flow/pressure

Ramp Adjustment

Up and Down Ramps are independent
Adjust the UP pot clockwise for slower acceleration
Adjust the DOWN pot clockwise for slower deceleration

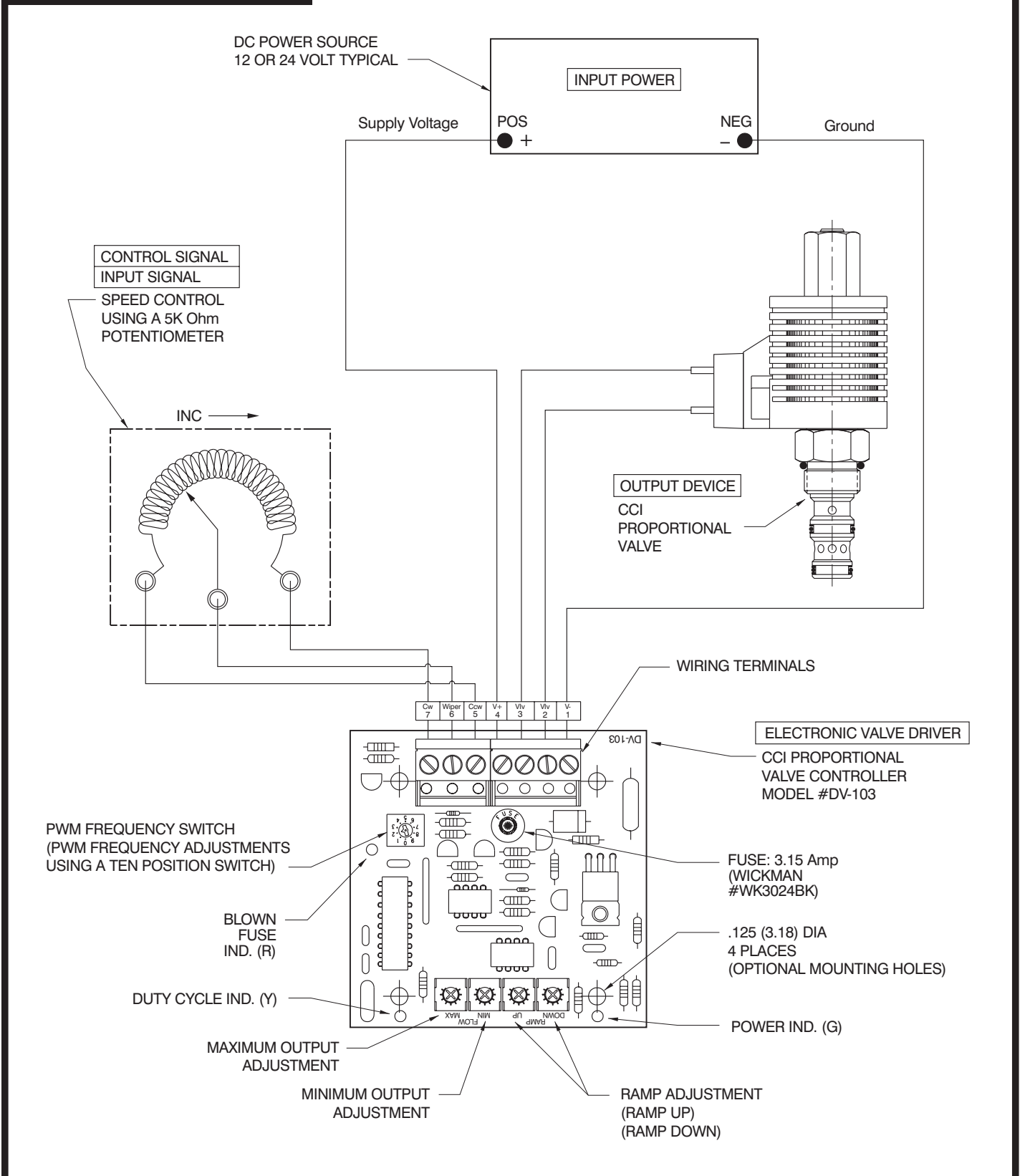
PWM Frequency

Set switch SW1 to position corresponding to desired frequency.
Use the table below for settings.

Hertz	SW1	Hertz	SW1
90	0	160	5
100	1	175	6
110	2	200	7
125	3	225	8
150	4	250	9

CONNECTION DIAGRAM

All dimensions in inches (mm)



SPECIFICATIONS

The DVC-150 Proportional Valve Control utilizes digital circuitry to provide precise control of single solenoid Electro-Hydraulic Proportional Pressure and Flow control valves.

FEATURES:

- Switch Selected Frequencies (90, 100, 125, 150, 175, 200 and 250Hz)
- Suitable for valves rated 12VDC to 24VDC up to 3 Amp
- Individual Maximum and Minimum adjustments
- Polycarbonate Enclosure
- Quick Connect Plug Brad Harrison Style (cable not included)
- Use Brad Harrison cable 41108 (6') or similar
- Rocker Style Power Switch
- Digital ramps for smooth speed changes
- Simple installation and dependable operation
- High grade industrial components used through out
- Fuse protected on positive supply

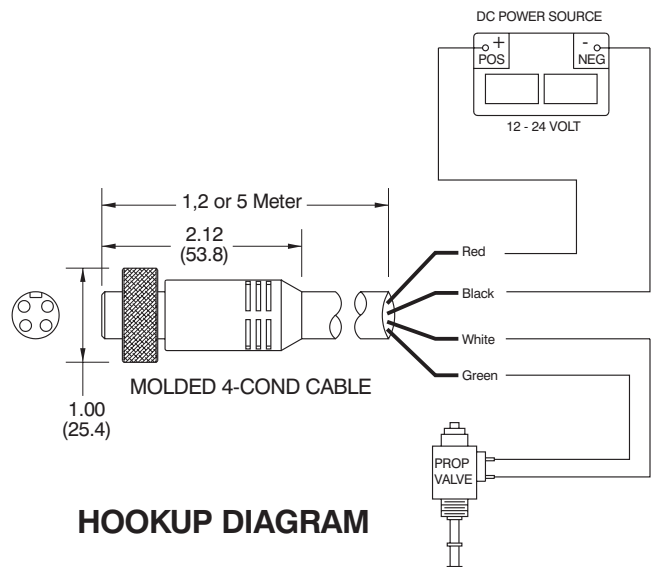
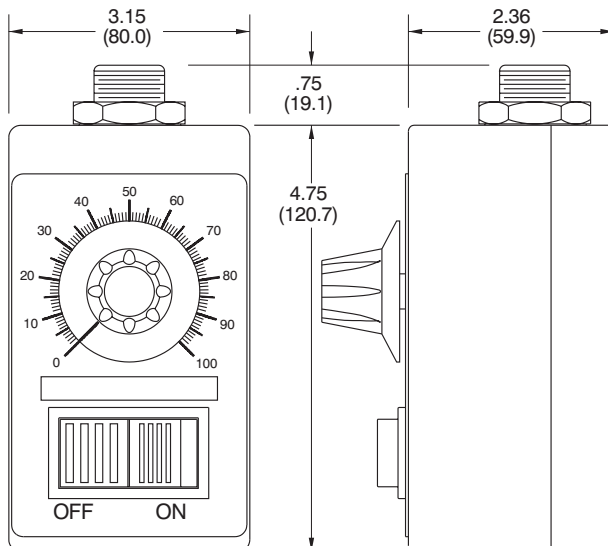
ORDERING INFORMATION

DVC - 150 - DV - 103

CONTROLLER

- OMIT - VOLTAGE DRIVEN (DVCR - 100)
- DV - 103 - CONSTANT CURRENT

DIMENSIONS



HOOKUP DIAGRAM

All dimensions in inches (mm)

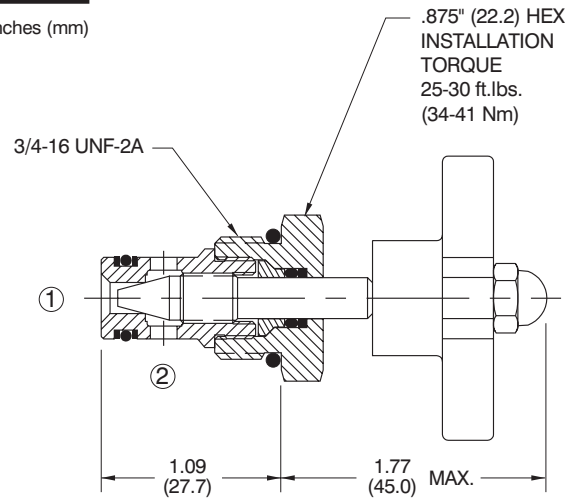
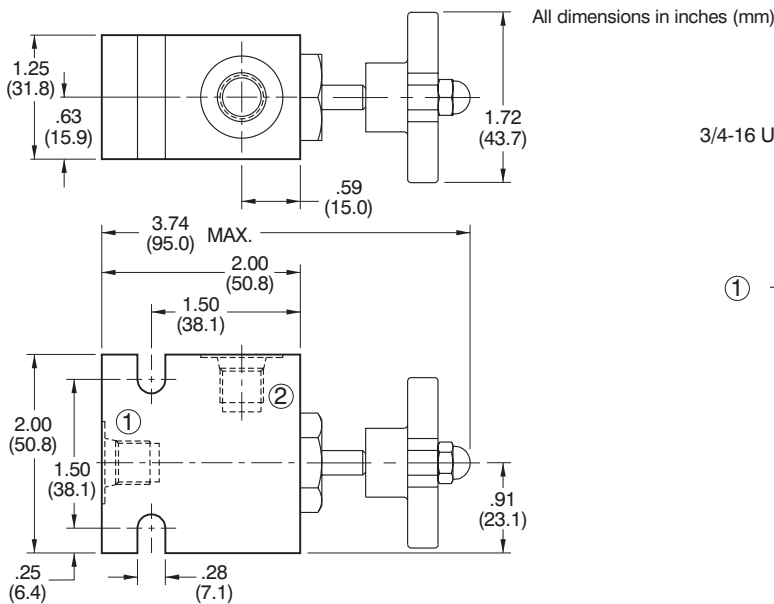
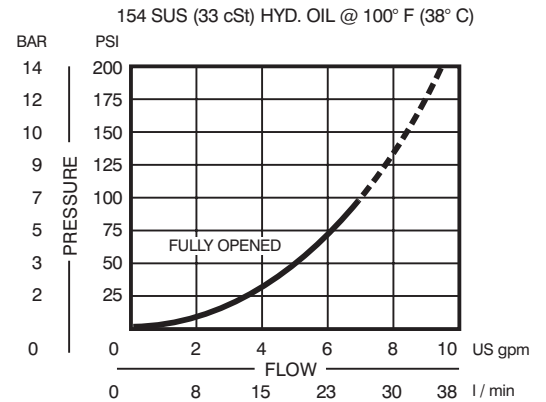
NEEDLE VALVES

SIZE	DESCRIPTION	FLOW gpm (l/m)	PRESSURE psi (bar)	PAGE
SERIES 8				
CP618-1	NEEDLE VALVE	7 (26)	3000 (207)	10.01
CP618-2	NEEDLE VALVE	12 (45)	3000 (207)	10.02
CP618-6	NEEDLE VALVE FINE METERING	3 (11)	3000 (207)	10.03
SERIES 10				
CP610-1	NEEDLE VALVE	14 (53)	3000 (207)	10.04
CP610-2	NEEDLE VALVE	14 (53)	3000 (207)	10.05
CP610-3	NEEDLE VALVE FREE REV FLOW	10 (38)	3000 (207)	10.06
CP610-4	NEEDLE VALVE FREE REV FLOW	14 (53)	3000 (207)	10.07
SERIES 12				
CP611-2	NEEDLE VALVE	30 (114)	3000 (207)	10.08
SERIES 16				
CP612-1	NEEDLE VALVE	50 (189)	3000 (207)	10.09
CP612-2	NEEDLE VALVE	50 (189)	3000 (207)	10.10

SPECIFICATIONS

- Valve is a non-pressure compensated, adjustable orifice used for flow control. The valve can also be used for a shut-off valve. It can regulate flow either from **1 to 2** or **2 to 1**.
- Nominal flow: 7.0 gpm (26 l/m).
- Valve rated to 3000 psi (207 bar) working pressure.
- Valve leakage in closed position: 6 drops per min. max.
- Valve cartridge is **all** steel construction with precision ground, hardened components to assure smooth operation and extended service life.
- Hi-strength aluminum alloy body allows for maximum circuit design flexibility.
- Buna-N seals are standard. Viton is optional (consult factory for other seal compounds).
- Valve is designed for use with general purpose hydraulic fluids (MIL-H-5606, SAE #10, etc.).
- Cartridge weight .15 lbs (.07 kg).
- Valve cartridge fits Compact Controls **cavity CP8-2**.

TYPICAL PERFORMANCE



ORDERING INFORMATION

Shaded area represents standard product

CP618 - 1 - B - 6S - B

BASIC CARTRIDGE

SEALS

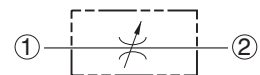
	SEAL KIT
B - BUNA-N	120227
V - VITON	120228

PORTS

	BODY P/N
0 - CARTRIDGE	NO BODY
2P - 1/4 NPTF	220814
3P - 3/8 NPTF	220815
4S - #4 SAE	220816
6S - #6 SAE	220817
2B - 1/4 BSP	221285
3B - 3/8 BSP	221286

KNOB OPTION

B - BLACK
R - RED



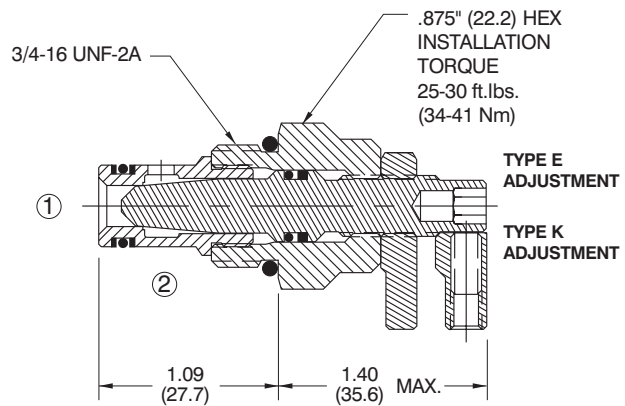
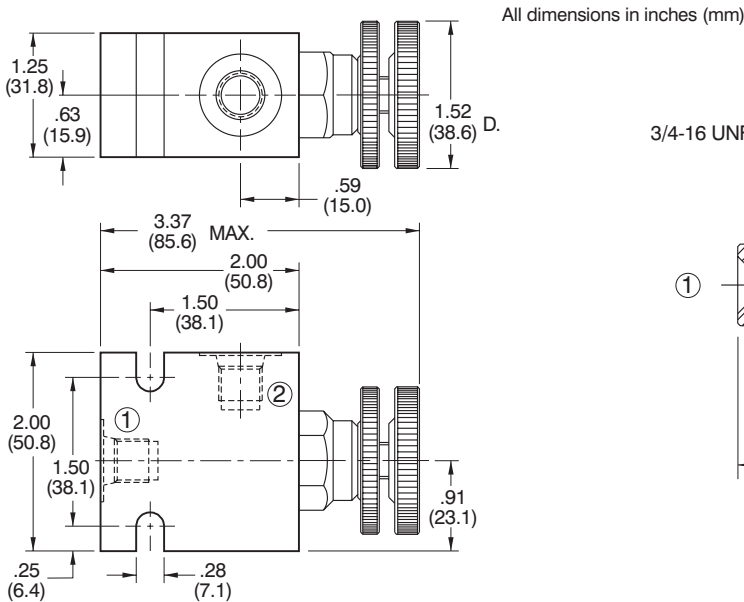
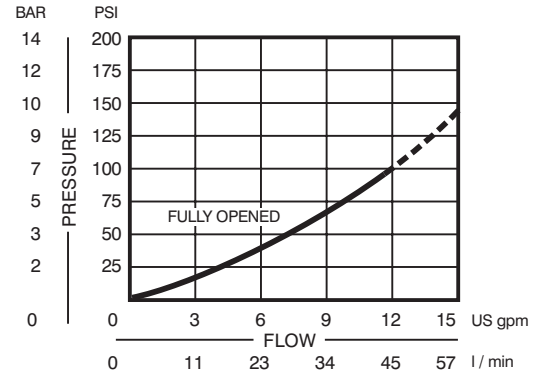
SERIES 8

SPECIFICATIONS

- Valve is a non-pressure compensated, adjustable orifice used for flow control. It can regulate flow either from 1 to 2 or 2 to 1 and can be locked in position.
- Nominal flow: 12.0 gpm (45 l/m).
- Valve rated to 3000 psi (207 bar) working pressure.
- Valve leakage in closed position: 6 drops per min. max.
- Valve cartridge is *all* steel construction with precision ground, hardened components to assure smooth operation and extended service life.
- Hi-strength aluminum alloy body allows for maximum circuit design flexibility.
- Buna-N seals are standard. Viton is optional (consult factory for other seal compounds).
- Valve is designed for use with general purpose hydraulic fluids (MIL-H-5606, SAE #10, etc.).
- Cartridge weight .19 lbs (.09 kg).
- Valve cartridge fits Compact Controls [cavity CP8-2](#).

TYPICAL PERFORMANCE

154 SUS (33 cSt) HYD. OIL @ 100° F (38° C)



ORDERING INFORMATION

CP618 - 2 - B - 6S - K

BASIC CARTRIDGE

SEALS

B - BUNA-N
V - VITON

SEAL KIT
120227
120228

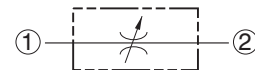
PORTS

0 - CARTRIDGE
2P - 1/4 NPTF
3P - 3/8 NPTF
4S - #4 SAE
6S - #6 SAE
2B - 1/4 BSP
3B - 3/8 BSP

BODY P/N
NO BODY
220814
220815
220816
220817
221285
221286

ADJUSTMENT OPTION

E - EXTERNAL ADJUSTMENT
K - KNOB ADJUSTMENT

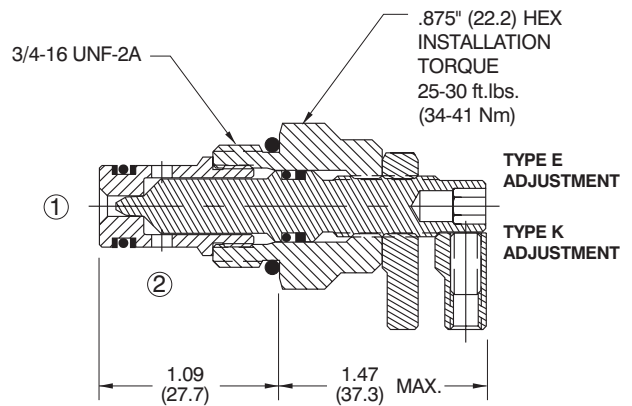
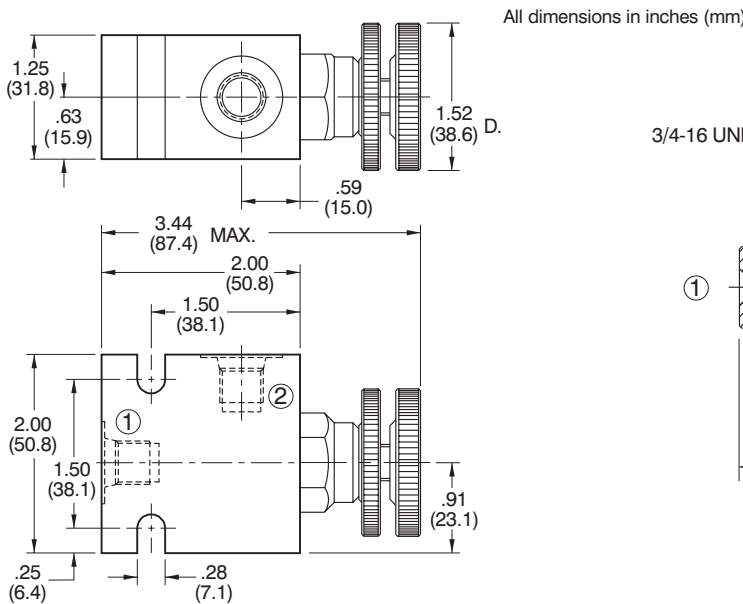
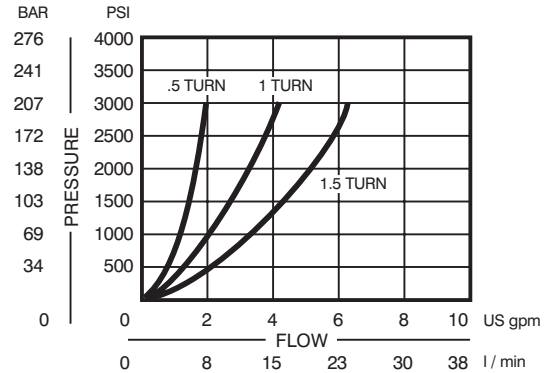


SPECIFICATIONS

- Valve is a non-pressure compensated, adjustable orifice used for fine flow control. It can regulate flow either from 1 to 2 or 2 to 1 and can be locked in position.
- Nominal flow: 3.0 gpm (11 l/m).
- Valve rated to 3000 psi (207 bar) working pressure.
- Valve leakage in closed position: 6 drops per min. max.
- Valve cartridge is **all** steel construction with precision ground, hardened components to assure smooth operation and extended service life.
- Hi-strength aluminum alloy body allows for maximum circuit design flexibility.
- Buna-N seals are standard. Viton is optional (consult factory for other seal compounds).
- Valve is designed for use with general purpose hydraulic fluids (MIL-H-5606, SAE #10, etc.).
- Cartridge weight .26 lbs (.12 kg).
- Valve cartridge fits Compact Controls cavity CP8-2.

TYPICAL PERFORMANCE

154 SUS (33 cSt) HYD. OIL @ 100° F (38° C)



ORDERING INFORMATION

Shaded area represents standard product

CP618 - 6 - B - 6S - K

BASIC CARTRIDGE

SEALS

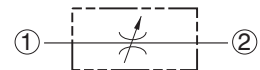
	SEAL KIT
B - BUNA-N	120227
V - VITON	120228

PORTS

	BODY P/N
0 - CARTRIDGE	NO BODY
2P - 1/4 NPTF	220814
3P - 3/8 NPTF	220815
4S - #4 SAE	220816
6S - #6 SAE	220817
2B - 1/4 BSP	221285
3B - 3/8 BSP	221286

ADJUSTMENT OPTION

E - EXTERNAL ADJUSTMENT
K - KNOB ADJUSTMENT



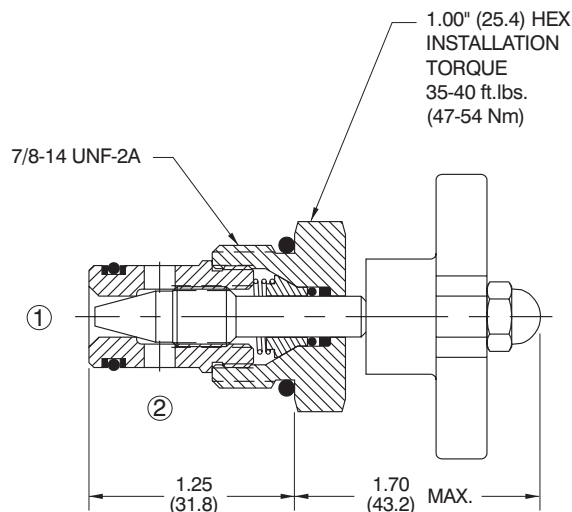
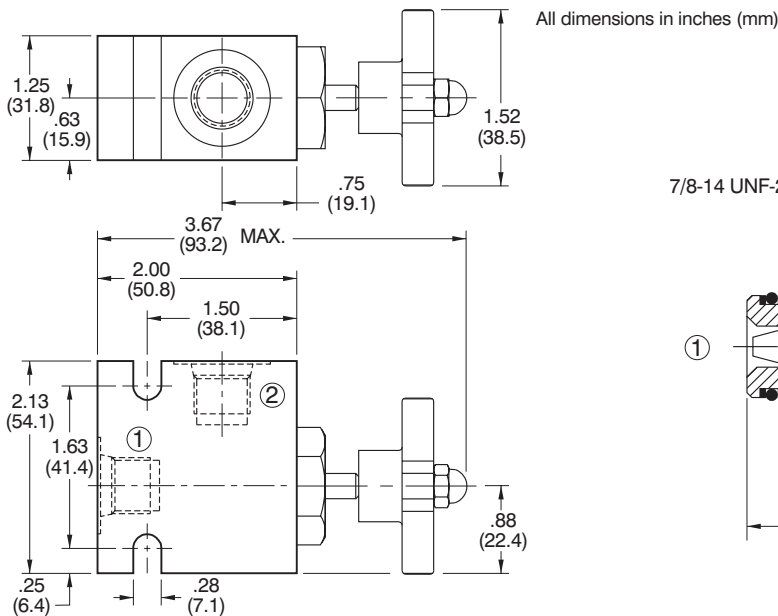
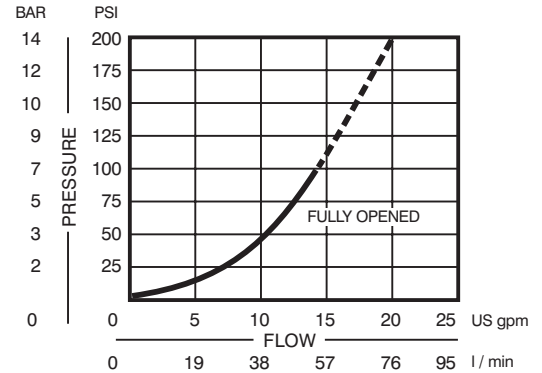
SERIES 10

SPECIFICATIONS

- Valve is a non-pressure compensated, adjustable orifice used for flow control. The valve can also be used for a shut-off valve. It can regulate flow either from 1 to 2 or 2 to 1.
- Nominal flow: 14.0 gpm (53 l/m).
- Valve rated to 3000 psi (207 bar) working pressure.
- Valve leakage in closed position: 6 drops per min. max.
- Valve cartridge is **all** steel construction with precision ground, hardened components to assure smooth operation and extended service life.
- Hi-strength aluminum alloy body allows for maximum circuit design flexibility.
- Buna-N seals are standard. Viton is optional (consult factory for other seal compounds).
- Valve is designed for use with general purpose hydraulic fluids (MIL-H-5606, SAE #10, etc.).
- Cartridge weight .22 lbs (.10 kg).
- Valve cartridge fits Compact Controls cavity CP10-2.

TYPICAL PERFORMANCE

154 SUS (33 cSt) HYD. OIL @ 100° F (38° C)



ORDERING INFORMATION

Shaded area represents standard product

CP610 - 1 - B - 8S - B

BASIC CARTRIDGE

SEALS

SEAL KIT

B - BUNA-N	120073
V - VITON	120074

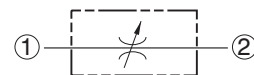
KNOB OPTION

B - BLACK
R - RED

PORTS

BODY P/N

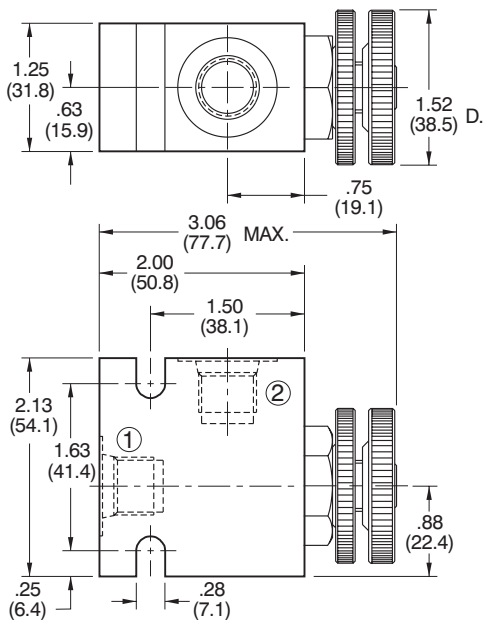
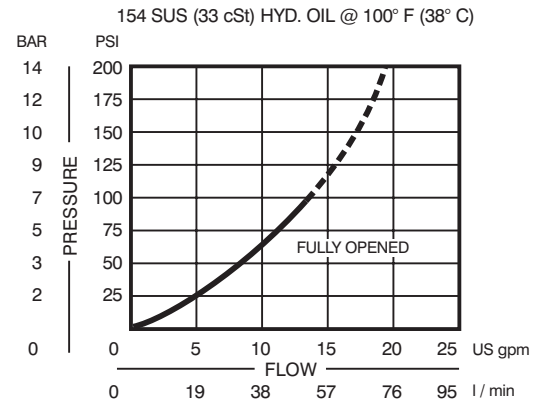
0 - CARTRIDGE	NO BODY
3P - 3/8 NPTF	220092
4P - 1/2 NPTF	220124
6S - #6 SAE	220125
8S - #8 SAE	220126
3B - 3/8 BSP	221214
4B - 1/2 BSP	221215



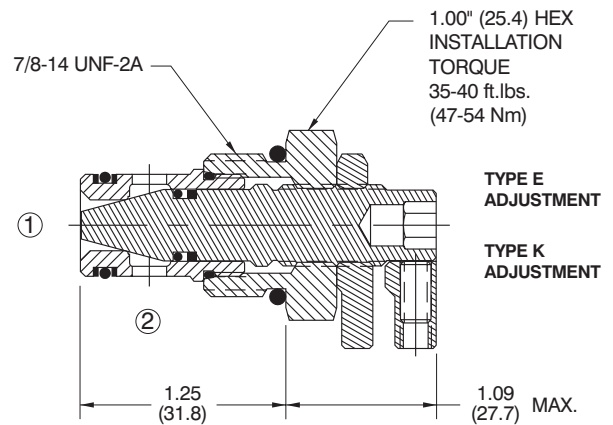
SPECIFICATIONS

- Valve is a non-pressure compensated, adjustable orifice used for flow control. It can regulate flow either from 1 to 2 or 2 to 1 and can be locked in position.
- Nominal flow: 14.0 gpm (53 l/m).
- Valve rated to 3000 psi (207 bar) working pressure.
- Valve leakage in closed position: 6 drops per min. max.
- Valve cartridge is *all* steel construction with precision ground, hardened components to assure smooth operation and extended service life.
- Hi-strength aluminum alloy body allows for maximum circuit design flexibility.
- Buna-N seals are standard. Viton is optional (consult factory for other seal compounds).
- Valve is designed for use with general purpose hydraulic fluids (MIL-H-5606, SAE #10, etc.).
- Cartridge weight .29 lbs (.13 kg).
- Valve cartridge fits Compact Controls [cavity CP10-2](#).

TYPICAL PERFORMANCE



All dimensions in inches (mm)



ORDERING INFORMATION

Shaded area represents standard product

CP610 - 2 - B - 8S - K

BASIC CARTRIDGE

SEALS

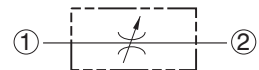
	SEAL KIT
B - BUNA-N	120073
V - VITON	120074

PORTS

	BODY P/N
0 - CARTRIDGE	NO BODY
3P - 3/8 NPTF	220092
4P - 1/2 NPTF	220124
6S - #6 SAE	220125
8S - #8 SAE	220126
3B - 3/8 BSP	221214
4B - 1/2 BSP	221215

ADJUSTMENT OPTION

E - EXTERNAL ADJUSTMENT
K - KNOB ADJUSTMENT



CP610-3

NEEDLE VALVE

(Free Reverse Flow)



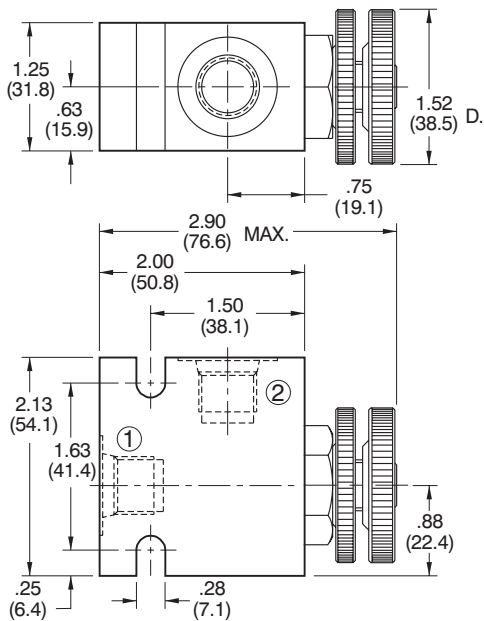
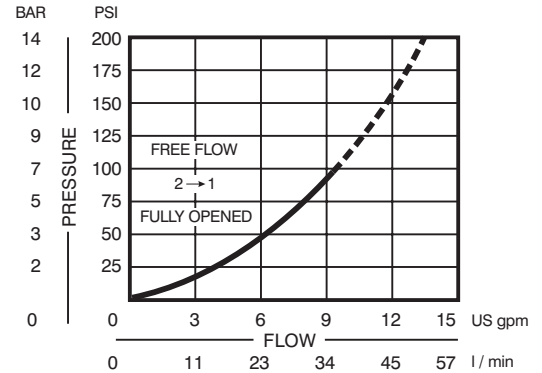
SERIES 10

SPECIFICATIONS

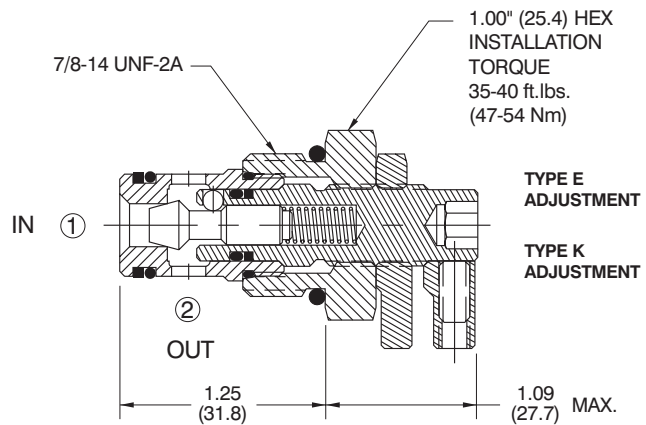
- Valve is a non-pressure compensated, adjustable orifice with free reverse flow. The flow is restricted from 2 to 1 and free flow from 1 to 2.
- Nominal flow: 10.0 gpm (38 l/m).
- Valve rated to 3000 psi (207 bar) working pressure.
- Valve cartridge is *all* steel construction with precision ground, hardened components to assure smooth operation and extended service life.
- Hi-strength aluminum alloy body allows for maximum circuit design flexibility.
- Buna-N seals are standard. Viton is optional (consult factory for other seal compounds).
- Valve is designed for use with general purpose hydraulic fluids (MIL-H-5606, SAE #10, etc.).
- Cartridge weight .22 lbs (.10 kg).
- Valve cartridge fits Compact Controls [cavity CP10-2](#).

TYPICAL PERFORMANCE

154 SUS (33 cSt) HYD. OIL @ 100° F (38° C)



All dimensions in inches (mm)



ORDERING INFORMATION

CP610 - 3 - B - 8S - K

BASIC CARTRIDGE

SEALS

B - BUNA-N
V - VITON

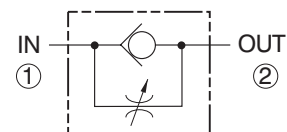
SEAL KIT
120015
120016

PORTS

0 - CARTRIDGE	NO BODY
3P - 3/8 NPTF	220092
4P - 1/2 NPTF	220124
6S - #6 SAE	220125
8S - #8 SAE	220126
3B - 3/8 BSP	221214
4B - 1/2 BSP	221215

ADJUSTMENT OPTION

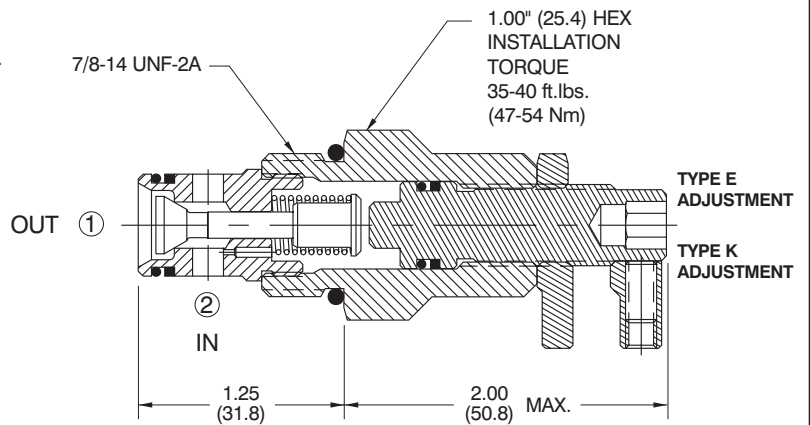
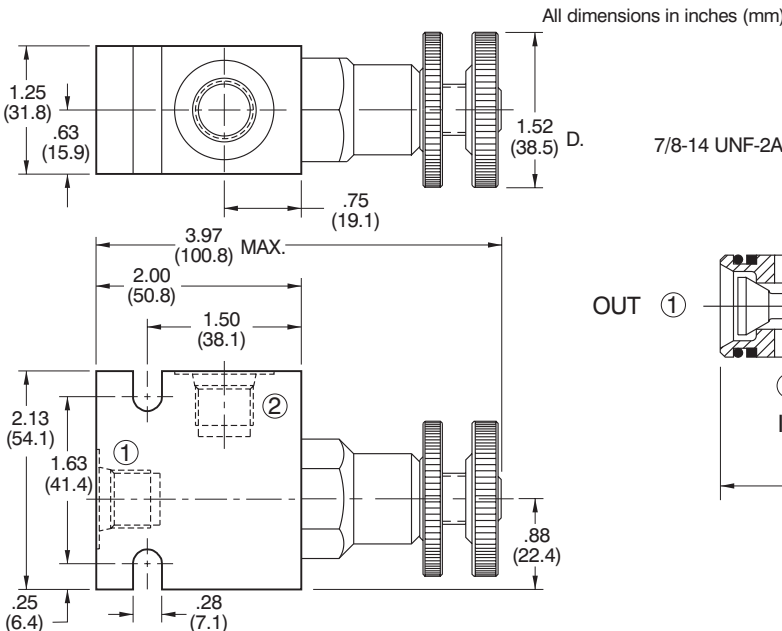
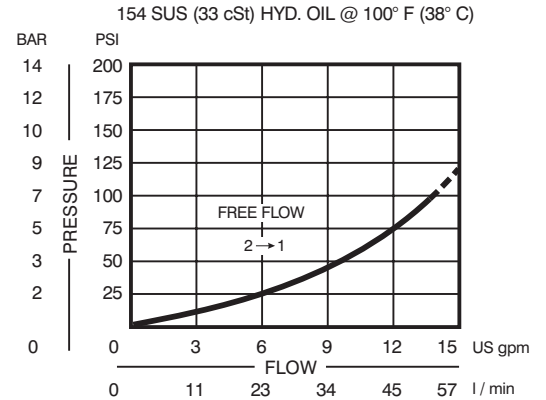
E - EXTERNAL ADJUSTMENT
K - KNOB ADJUSTMENT



SPECIFICATIONS

- Valve is a non-pressure compensated, adjustable orifice with free reverse flow. The flow is restricted from 1 to 2 and free flow from 2 to 1.
- Nominal flow: 14.0 gpm (53 l/m).
- Valve rated to 3000 psi (207 bar) working pressure.
- Valve leakage in closed position: 6 drops per min. max.
- Valve cartridge is *all* steel construction with precision ground, hardened components to assure smooth operation and extended service life.
- Hi-strength aluminum alloy body allows for maximum circuit design flexibility.
- Buna-N seals are standard. Viton is optional (consult factory for other seal compounds).
- Valve is designed for use with general purpose hydraulic fluids (MIL-H-5606, SAE #10, etc.).
- Cartridge weight .36 lbs (.16 kg).
- Valve cartridge fits Compact Controls [cavity CP10-2](#).

TYPICAL PERFORMANCE



ORDERING INFORMATION

CP610 - 4 - B - 8S - K

BASIC CARTRIDGE

SEALS

- B - BUNA-N
- V - VITON

PORTS

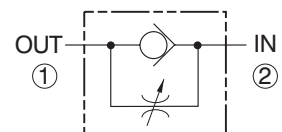
- 0 - CARTRIDGE
- 3P - 3/8 NPTF
- 4P - 1/2 NPTF
- 6S - #6 SAE
- 8S - #8 SAE
- 3B - 3/8 BSP
- 4B - 1/2 BSP

SEAL KIT
 120015
 120016

BODY P/N
 NO BODY
 220092
 220124
 220125
 220126
 221214
 221215

ADJUSTMENT OPTION

- E - EXTERNAL ADJUSTMENT
- K - KNOB ADJUSTMENT



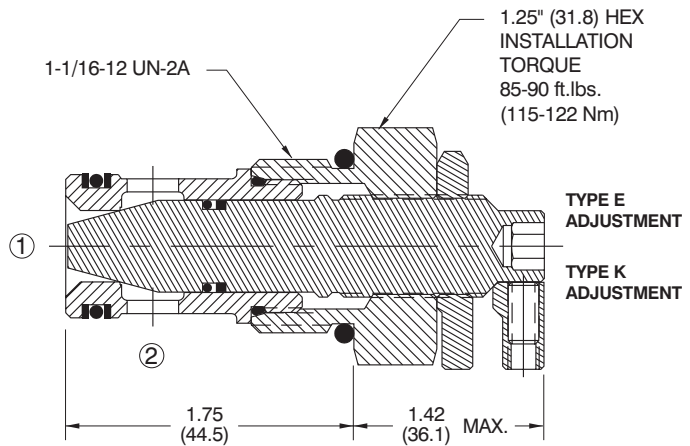
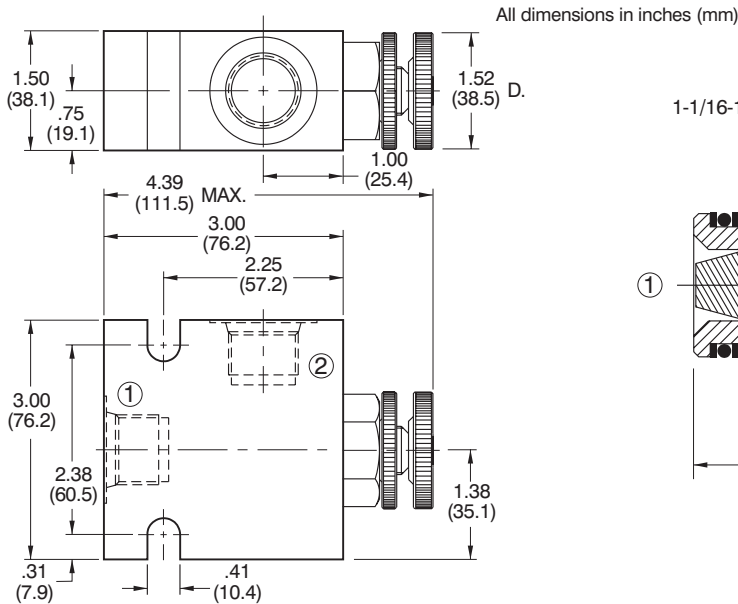
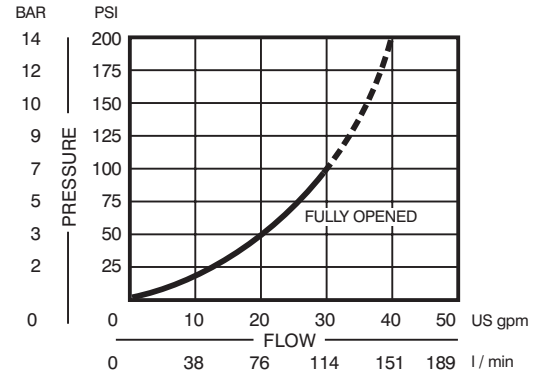
SERIES 12

SPECIFICATIONS

- Valve is a non-pressure compensated, adjustable orifice used for flow control. It can regulate flow either from 1 to 2 or 2 to 1 and can be locked in position.
- Nominal flow: 30.0 gpm (114 l/m).
- Valve rated to 3000 psi (207 bar) working pressure.
- Valve leakage in closed position: 6 drops per min. max.
- Valve cartridge is *all* steel construction with precision ground, hardened components to assure smooth operation and extended service life.
- Hi-strength aluminum alloy body allows for maximum circuit design flexibility.
- Buna-N seals are standard. Viton is optional (consult factory for other seal compounds).
- Valve is designed for use with general purpose hydraulic fluids (MIL-H-5606, SAE #10, etc.).
- Cartridge weight .58 lbs (.26 kg).
- Valve cartridge fits Compact Controls [cavity CP12-2](#).

TYPICAL PERFORMANCE

154 SUS (33 cSt) HYD. OIL @ 100° F (38° C)



ORDERING INFORMATION

Shaded area represents standard product

CP611 - 2 - B - 12S - K

BASIC CARTRIDGE

SEALS

SEAL KIT

B - BUNA-N	120332
V - VITON	120333

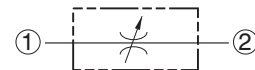
PORTS

BODY P/N

0 - CARTRIDGE	NO BODY
4P - 1/2 NPTF	220130
6P - 3/4 NPTF	220131
10S - #10 SAE	220132
12S - #12 SAE	220133
4B - 1/2 BSP	221234
6B - 3/4 BSP	221235

ADJUSTMENT OPTION

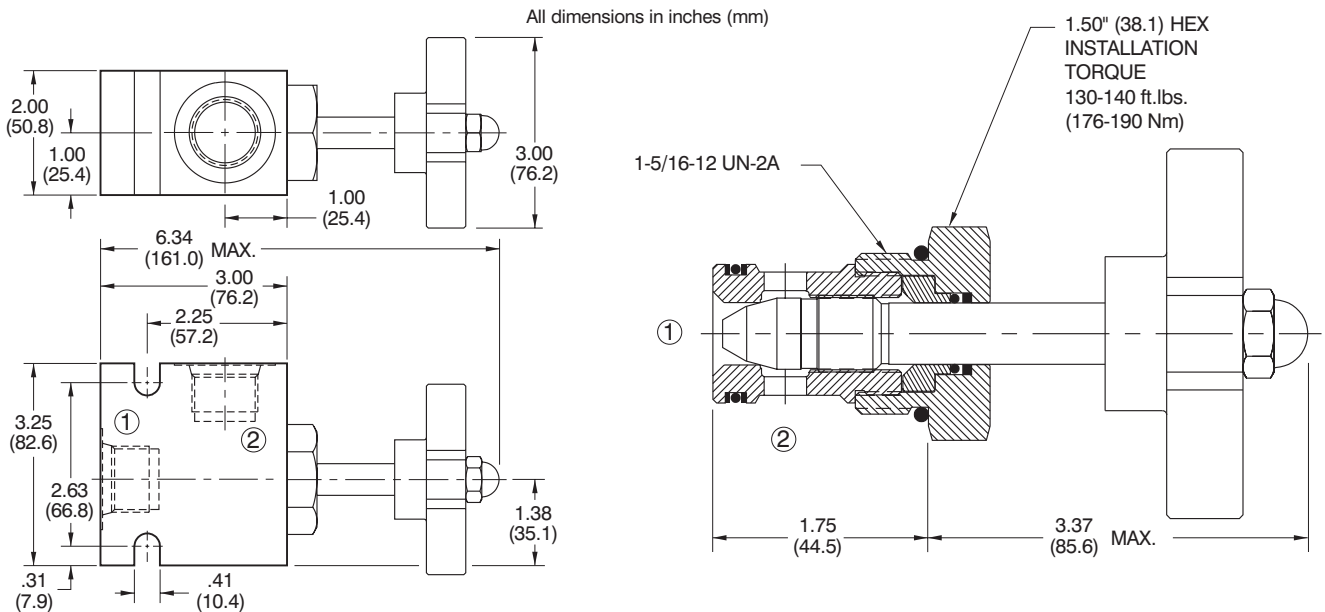
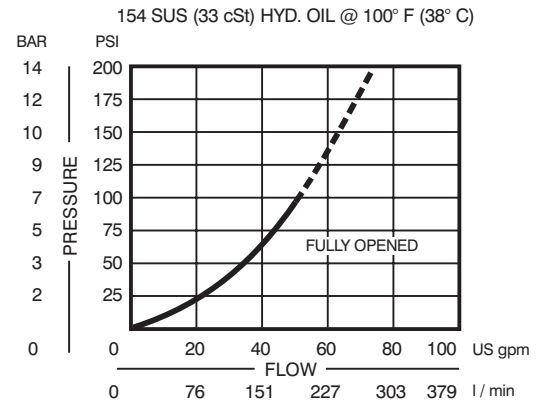
E - EXTERNAL ADJUSTMENT
K - KNOB ADJUSTMENT



SPECIFICATIONS

- Valve is a non-pressure compensated, adjustable orifice used for flow control. The valve can also be used for a shut-off valve. It can regulate flow either from **1 to 2** or **2 to 1**.
- Nominal flow: 50.0 gpm (189 l/m).
- Valve rated to 3000 psi (207 bar) working pressure.
- Valve leakage in closed position: 6 drops per min. max.
- Valve cartridge is **all** steel construction with precision ground, hardened components to assure smooth operation and extended service life.
- Hi-strength aluminum alloy body allows for maximum circuit design flexibility.
- Buna-N seals are standard. Viton is optional (consult factory for other seal compounds).
- Valve is designed for use with general purpose hydraulic fluids (MIL-H-5606, SAE #10, etc.).
- Cartridge weight .68 lbs (.31 kg).
- Valve cartridge fits Compact Controls [cavity CP16-2](#).

TYPICAL PERFORMANCE

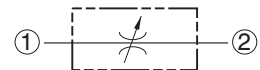


ORDERING INFORMATION

Shaded area represents standard product

CP612 - 1 - B - 16S

BASIC CARTRIDGE	_____	
SEALS	_____	
	SEAL KIT	
B - BUNA-N	120567	
V - VITON	120568	
PORTS	_____	
	BODY P/N	
0 - CARTRIDGE	NO BODY	
6P - 3/4 NPTF	220136	
8P - 1" NPTF	220137	
12S - #12 SAE	220134	
16S - #16 SAE	220135	
6B - 3/4 BSP	221306	
8B - 1" BSP	221238	



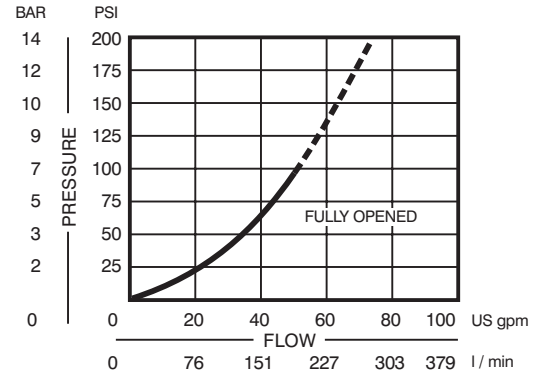
SERIES 16

SPECIFICATIONS

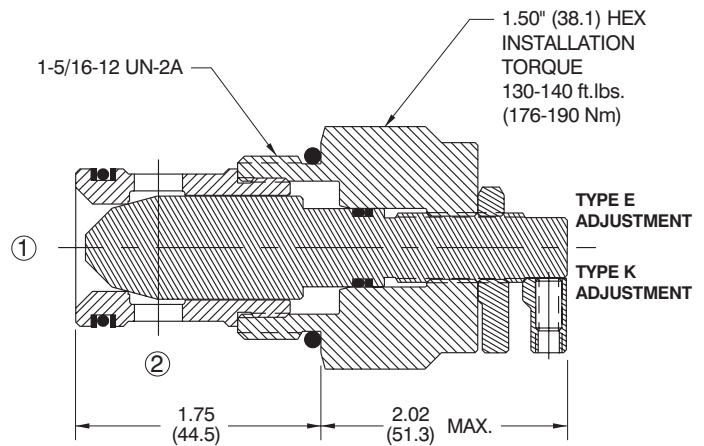
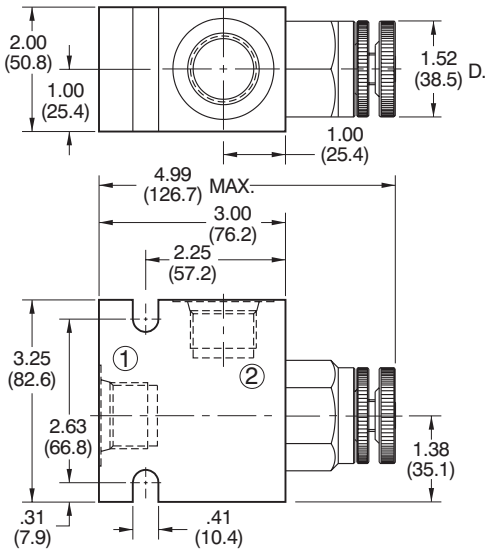
- Valve is a non-pressure compensated, adjustable orifice used for flow control. It can regulate flow either from 1 to 2 or 2 to 1 and can be locked in position.
- Nominal flow: 50.0 gpm (189 l/m).
- Valve rated to 3000 psi (207 bar) working pressure.
- Valve leakage in closed position: 6 drops per min. max.
- Valve cartridge is *all* steel construction with precision ground, hardened components to assure smooth operation and extended service life.
- Hi-strength aluminum alloy body allows for maximum circuit design flexibility.
- Buna-N seals are standard. Viton is optional (consult factory for other seal compounds).
- Valve is designed for use with general purpose hydraulic fluids (MIL-H-5606, SAE #10, etc.).
- Cartridge weight 1.06 lbs (.48 kg).
- Valve cartridge fits Compact Controls [cavity CP16-2](#).

TYPICAL PERFORMANCE

154 SUS (33 cSt) HYD. OIL @ 100° F (38° C)



All dimensions in inches (mm)



ORDERING INFORMATION

CP612 - 2 - B - 16S - K

BASIC CARTRIDGE

SEALS

- B - BUNA-N
- V - VITON

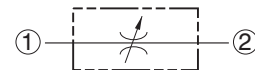
- SEAL KIT**
- 120567
 - 120568

PORTS

- | | |
|---------------|---------|
| 0 - CARTRIDGE | NO BODY |
| 6P - 3/4 NPTF | 220136 |
| 8P - 1" NPTF | 220137 |
| 12S - #12 SAE | 220134 |
| 16S - #16 SAE | 220135 |
| 6B - 3/4 BSP | 221306 |
| 8B - 1" BSP | 221238 |

ADJUSTMENT OPTION

- E - EXTERNAL ADJUSTMENT
- K - KNOB ADJUSTMENT



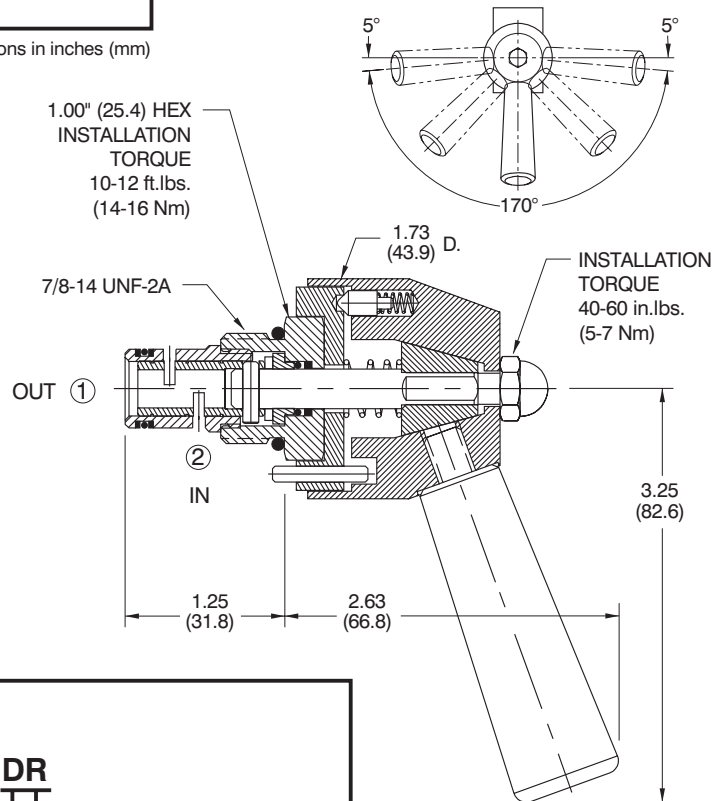
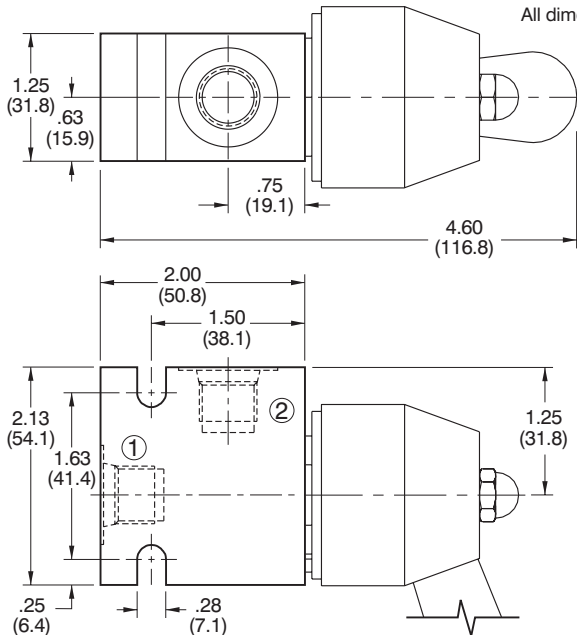
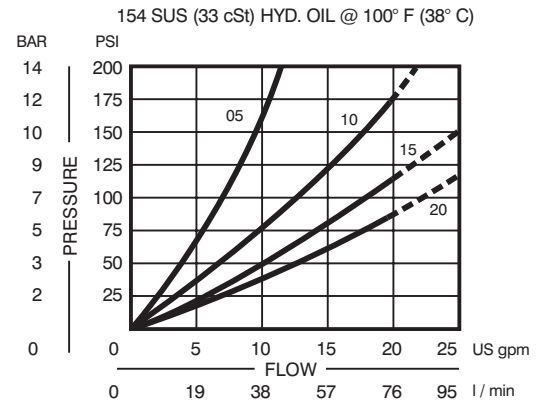
DIRECTIONAL CONTROL VALVES

SIZE	DESCRIPTION	FLOW gpm (l/m)	PRESSURE psi (bar)	PAGE
SERIES 10				
CP620-1	ROTARY 2 POS 2 WAY	20 (76)	3000 (207)	11.01
CP630-1	ROTARY 2 POS 3 WAY	8 (30)	3000 (207)	11.02
CP640-1	ROTARY 3 POS 4 WAY	3 (11)	3000 (207)	11.03
CP710-1	2 POS 2 WAY pilot operated	10 (38)	3000 (207)	11.04
CP720-1	2 POS 3 WAY pilot operated	8 (30)	3000 (207)	11.05
CP720-5	2 POS 3 WAY pilot operated	10 (38)	3000 (207)	11.06
SERIES 16				
CP712-1	2 POS 2 WAY pilot operated	35 (132)	3000 (207)	11.07
CP712-2	2 POS 2 WAY pilot operated	35 (132)	3000 (207)	11.07
CP722-1	2 POS 3 WAY pilot operated	35 (132)	3000 (207)	11.08
CP722-2	2 POS 3 WAY pilot operated	35 (132)	3000 (207)	11.08
CP722-5	2 POS 3 WAY pilot operated	35 (132)	3000 (207)	11.09
SERIES 20				
CP713-1	2 POS 2 WAY pilot operated	70 (265)	3000 (207)	11.10
CP713-2	2 POS 2 WAY pilot operated	70 (265)	3000 (207)	11.10
CP723-1	2 POS 3 WAY pilot operated	70 (265)	3000 (207)	11.11
CP723-2	2 POS 3 WAY pilot operated	70 (265)	3000 (207)	11.11
CP723-5	2 POS 3 WAY pilot operated	70 (265)	3000 (207)	11.12

SPECIFICATIONS

- Valve is a non-pressure compensated, adjustable orifice (170° rotation) used for flow control. It can regulate flow from 2 to 1 or from 1 to 2. Various metered orifice openings are available.
- Nominal flow: 20.0 gpm (76 l/m).
- Valve rated to 3000 psi (207 bar) working pressure.
- Valve leakage: 5 cu. in. (82 cc) per min. max. at 3000 psi (207 bar).
- Valve cartridge is **all** steel construction with precision ground and hardened components to assure smooth operation and extended service life.
- Hi-strength aluminum alloy body allows for maximum circuit design flexibility.
- Buna-N seals are standard. Viton is optional (consult factory for other seal compounds).
- Valve is designed for use with general purpose hydraulic fluids (MIL-H-5606, SAE #10, etc.).
- Cartridge weight .69 lbs (.31 kg).
- Valve cartridge fits Compact Controls cavity CP10-2.

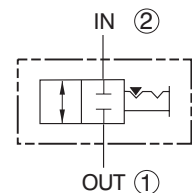
TYPICAL PERFORMANCE



ORDERING INFORMATION

CP620 - 1 - B - 8S - 20 - 2 - DR

BASIC CARTRIDGE	SEAL KIT	ROTATION TO CLOSE
SEALS	B - BUNA-N V - VITON	R - CLOCKWISE L - COUNTERCLOCKWISE
	120073 120074	DETENT
PORTS	BODY P/N	D - DETENT WITH HANDLE
0 - CARTRIDGE	NO BODY	POSITION
3P - 3/8 NPTF	220092	2 - 2 POSITION DETENT
4P - 1/2 NPTF	220124	3 - 3 POSITION DETENT
6S - #6 SAE	220125	10 - 10 POSITION DETENT
8S - #8 SAE	220126	
3B - 3/8 BSP	221214	
4B - 1/2 BSP	221215	
		FLOW
		gpm l/m
		05 - 5 (19)
		10 - 10 (38)
		15 - 15 (57)
		20 - 20 (77)



CP630-1

DIRECTIONAL CONTROL VALVE

(Rotary 2 Pos. 3 Way Spool Type)



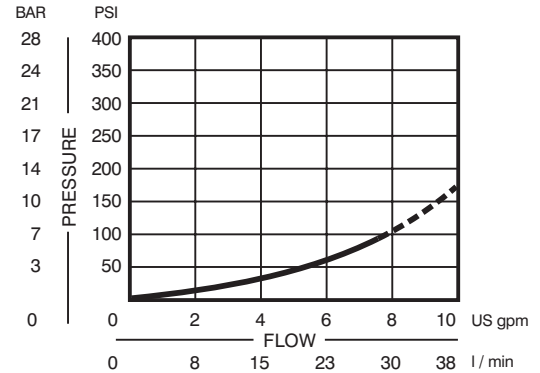
SERIES 10

SPECIFICATIONS

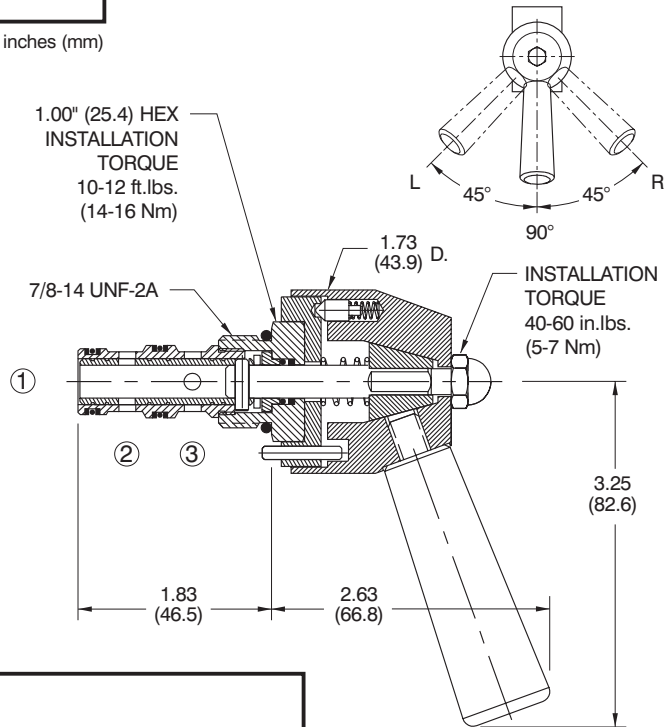
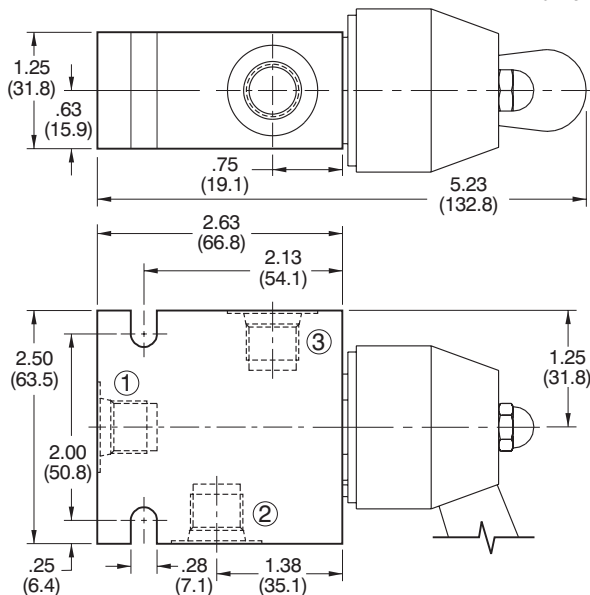
- Valve is a 2 position 3 way (90° rotation) directional control valve. In full counterclockwise position flow is from **1** to **3** and in clockwise position flow is from **1** to **2**.
- Nominal flow: 8.0 gpm (30 l/m).
- Valve rated to 3000 psi (207 bar) working pressure.
- Valve leakage: 5 cu. in. (82 cc) per min. max. at 3000 psi (207 bar).
- Valve cartridge is **all** steel construction with precision ground and hardened components to assure smooth operation and extended service life.
- Hi-strength aluminum alloy body allows for maximum circuit design flexibility.
- Buna-N seals are standard. Viton is optional (consult factory for other seal compounds).
- Valve is designed for use with general purpose hydraulic fluids (MIL-H-5606, SAE #10, etc.).
- Cartridge weight .71 lbs (.32 kg).
- Valve cartridge fits Compact Controls [cavity CP10-3](#).

TYPICAL PERFORMANCE

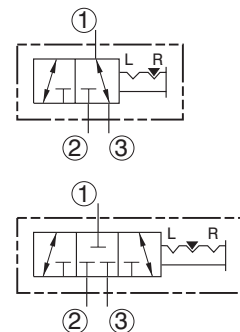
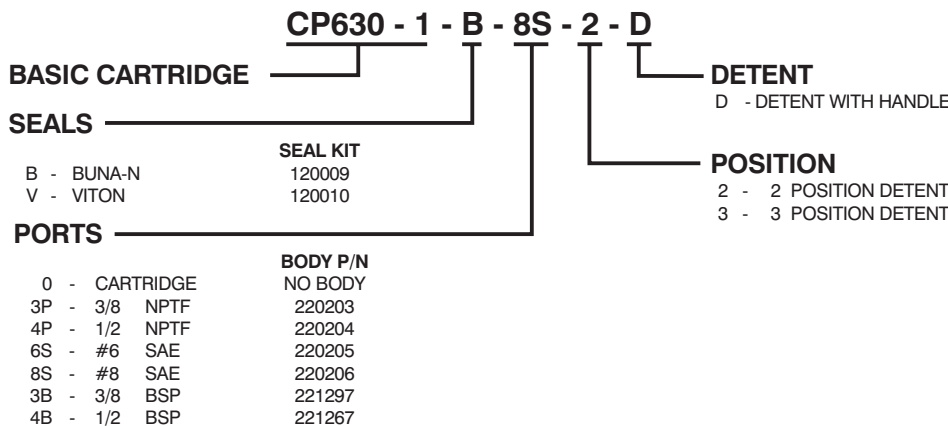
154 SUS (33 cSt) HYD. OIL @ 100° F (38° C)



All dimensions in inches (mm)



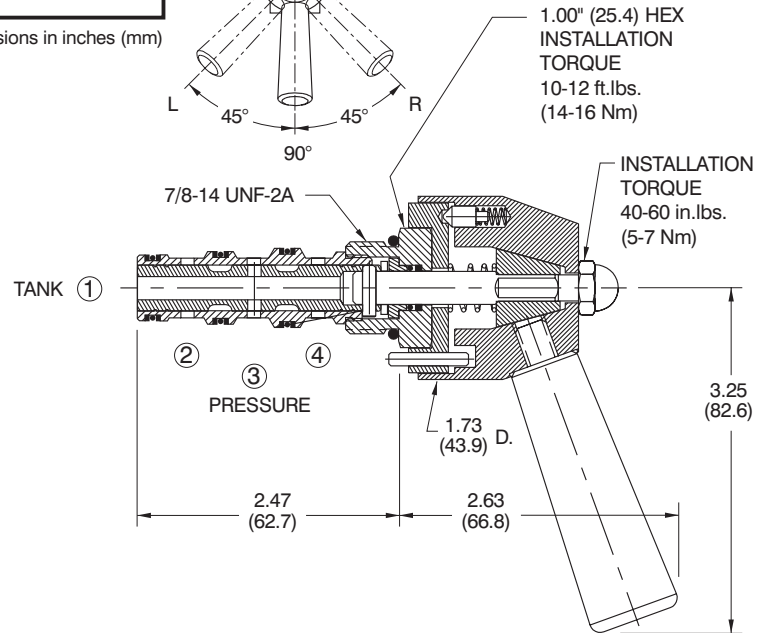
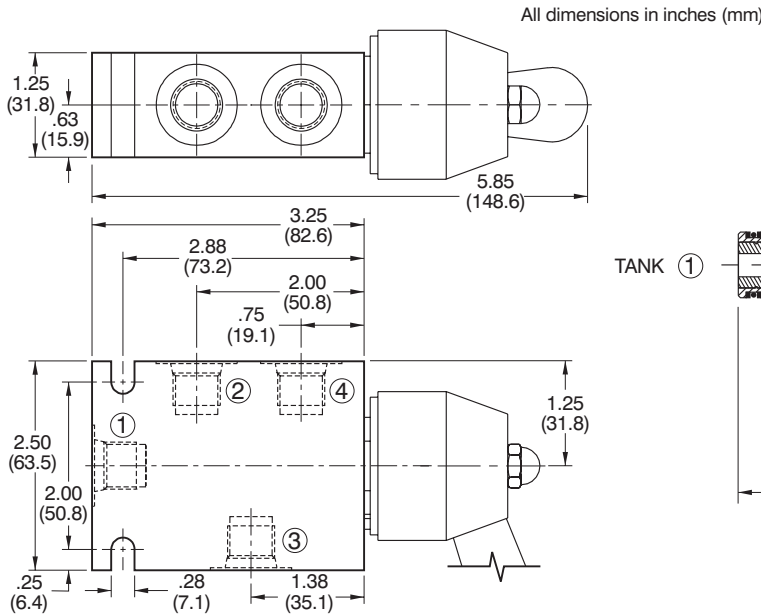
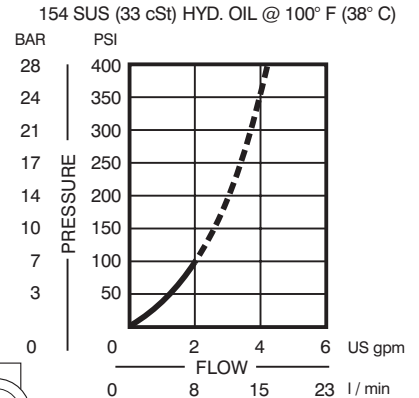
ORDERING INFORMATION



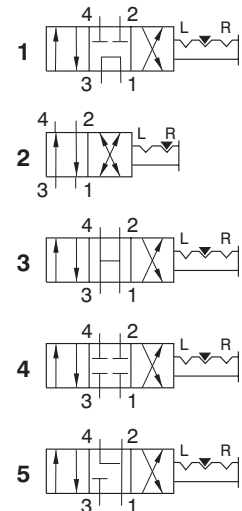
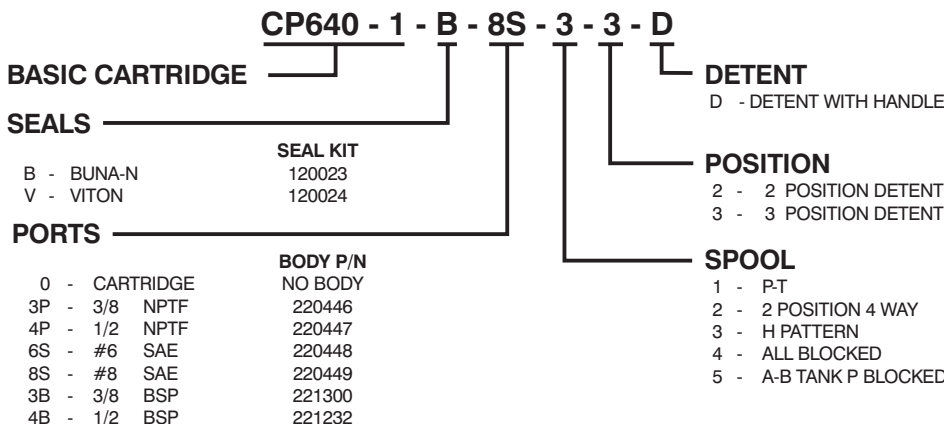
SPECIFICATIONS

- Valve is a 3 position 4 way (90° rotation) directional control valve. Input 3 is directed to 2 or 4 with opposite port 4 to 2 respectively directed to tank 1.
- Various centered spool conditions are available (see schematics below).
- Nominal flow: 3.0 gpm (11 l/m).
- Valve rated to 3000 psi (207 bar) working pressure.
- Valve leakage: 5 cu. in. (82 cc) per min. max. at 3000 psi (207 bar).
- Valve cartridge is **all** steel construction with precision ground and hardened components to assure smooth operation and extended service life.
- Hi-strength aluminum alloy body allows for maximum circuit design flexibility.
- Buna-N seals are standard. Viton is optional (consult factory for other seal compounds).
- Valve is designed for use with general purpose hydraulic fluids (MIL-H-5606, SAE #10, etc.).
- Cartridge weight .77 lbs (.35 kg).
- Valve cartridge fits Compact Controls cavity CP10-4.

TYPICAL PERFORMANCE



ORDERING INFORMATION



CP710-1

DIRECTIONAL CONTROL VALVE

(2 Pos. 2 Way Pilot Operated Type)



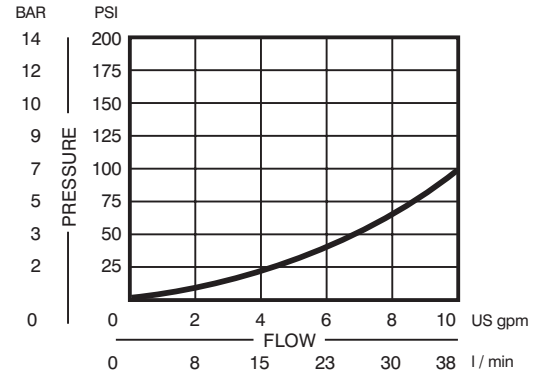
SERIES 10

SPECIFICATIONS

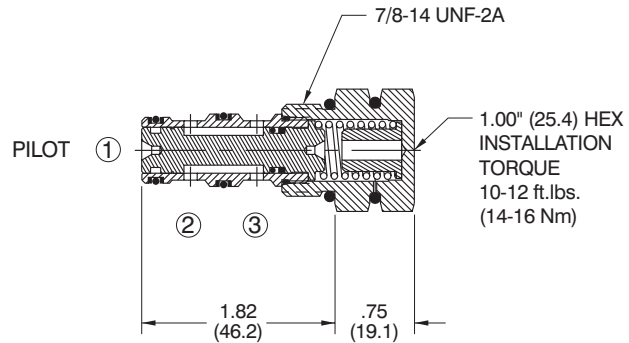
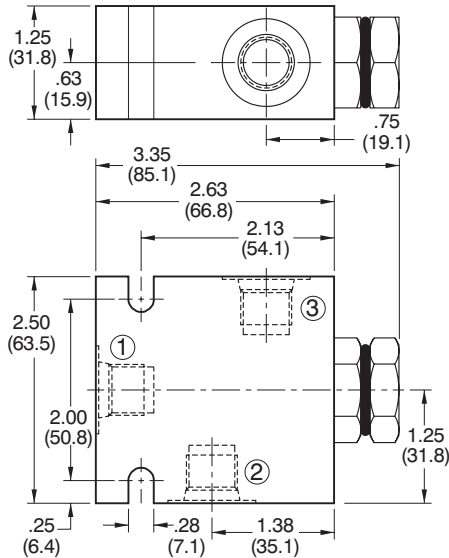
- Valve is a pilot operated, 2 position 2 way directional control valve. When an external pilot signal is applied at **1** flow is blocked or opened between **2** and **3** depending on the spool configuration ordered. Cartridge utilizes an atmospheric vent and is spring returned.
- Nominal flow: 10.0 gpm (38 l/m).
- Valve rated to 3000 psi (207 bar) working pressure.
- Valve leakage is 5 cu. in. (82 cc) per min. max. at 3000 psi (207 bar).
- Valve cartridge is **all** steel construction with precision ground and hardened components to assure smooth operation and extended service life.
- Hi-strength aluminum alloy body allows for maximum circuit design flexibility.
- Buna-N seals are standard. Viton is optional (consult factory for other seal compounds).
- Valve is designed for use with general purpose hydraulic fluids (MIL-H-5606, SAE #10, etc.).
- Cartridge weight .29 lbs (.13 kg).
- Valve cartridge fits Compact Controls [cavity CP10-3](#).

TYPICAL PERFORMANCE

154 SUS (33 cSt) HYD. OIL @ 100° F (38° C)



All dimensions in inches (mm)



ORDERING INFORMATION

Shaded area represents standard product

CP710 - 1 - B - 8S - C - 150 - S1

BASIC CARTRIDGE

SEALS

	SEAL KIT
B - BUNA-N	120009
V - VITON	120010

PORTS

	BODY P/N
0 - CARTRIDGE	NO BODY
3P - 3/8 NPTF	220203
4P - 1/2 NPTF	220204
6S - #6 SAE	220205
8S - #8 SAE	220206
3B - 3/8 BSP	221297
4B - 1/2 BSP	221267

SPOOL SEALS

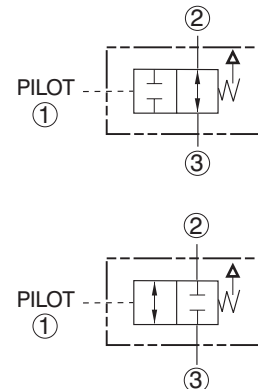
- S1 - SEAL BETWEEN 4 AND VENT (REQUIRED)
- S2 - PILOT SEAL INCLUDED

SHIFT PRESSURE

	PSI	BAR
050	50	(3.5)
080	80	(5.5)
150	150	(10.3)

CONFIGURATION

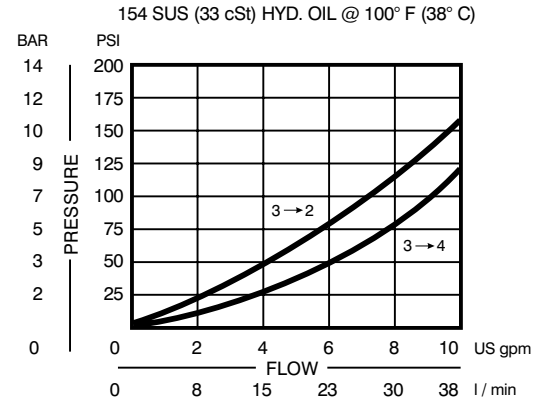
- O - NORMALLY OPEN
- C - NORMALLY CLOSED



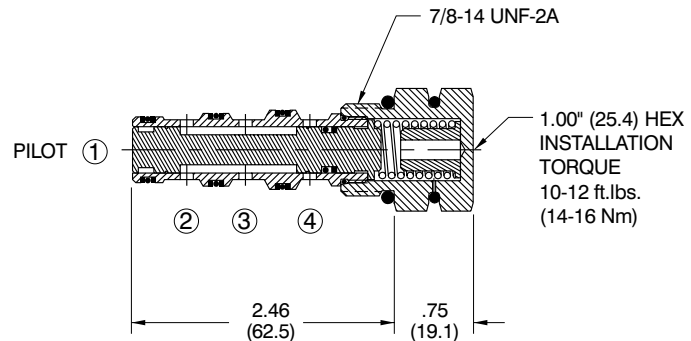
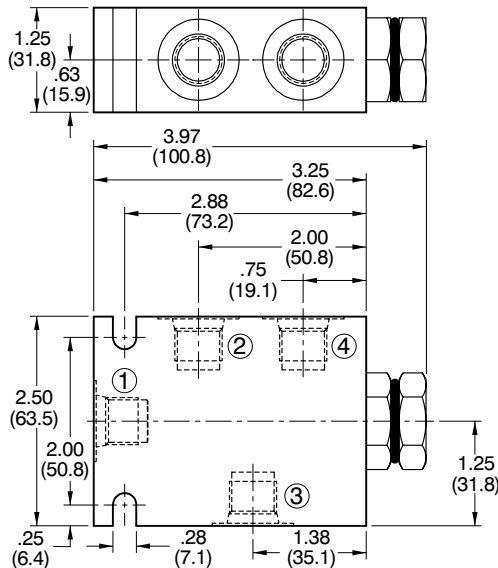
SPECIFICATIONS

- Valve is 2 position 3 way pilot spool type directional control valve. With no pilot pressure at 1, 2 connects to 3 and 4 is blocked. Pilot pressure at 1 connects 4 to 3 and blocks 2. When the spool is in crossover, ports 2, 3 and 4 are connected. Cartridge utilizes an atmospheric vent and is spring returned.
- Nominal flow: 8.0 gpm (30 l/m).
- Valve rated to 3000 psi (207 bar) working pressure.
- Valve leakage is 5 cu. in. (82 cc) per min. max. at 3000 psi (207 bar).
- Valve cartridge is *all* steel construction with precision ground and hardened components to assure smooth operation and extended service life.
- Hi-strength aluminum alloy body allows for maximum circuit design flexibility.
- Buna-N seals are standard. Viton is optional (consult factory for other seal compounds).
- Valve is designed for use with general purpose hydraulic fluids (MIL-H-5606, SAE #10, etc.).
- Cartridge weight .33 lbs (.15 kg).
- Valve cartridge fits Compact Controls [cavity CP10-4](#).

TYPICAL PERFORMANCE



All dimensions in inches (mm)



ORDERING INFORMATION

Shaded area represents standard product

CP720 - 1 - B - 8S - 150 - S1

BASIC CARTRIDGE

SEALS

B - BUNA-N
V - VITON

SEAL KIT

120023
120024

PORTS

0 - CARTRIDGE
3P - 3/8 NPTF
4P - 1/2 NPTF
6S - #6 SAE
8S - #8 SAE
3B - 3/8 BSP
4B - 1/2 BSP

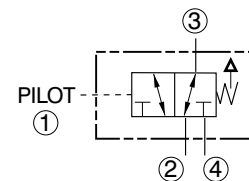
BODY P/N
NO BODY
220446
220447
220448
220449
221300
221232

SPOOL SEALS

S1 - SEAL BETWEEN 4 AND VENT (REQUIRED)
S2 - PILOT SEAL INCLUDED

SHIFT PRESSURE

	PSI	BAR
050	50	(3.5)
080	80	(5.5)
125	125	(8.6)
150	150	(10.3)



CP720-5

DIRECTIONAL CONTROL VALVE
(2 Pos. 3 Way Pilot Operated Type)



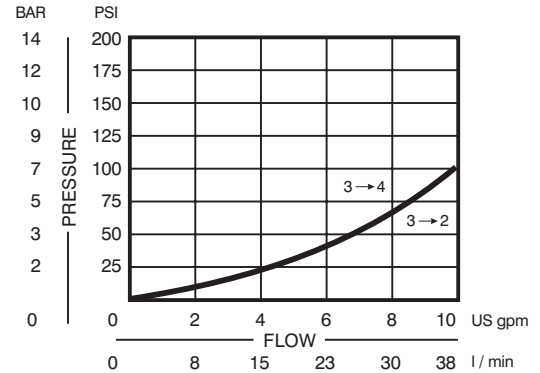
SERIES 10

SPECIFICATIONS

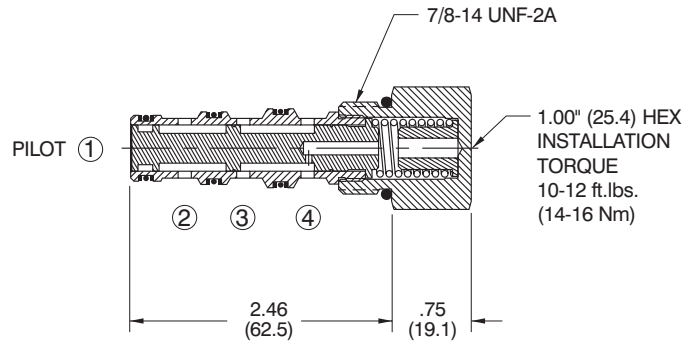
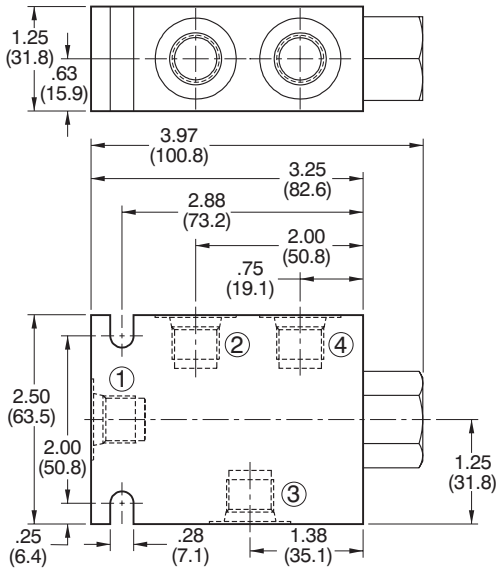
- Valve is 2 position 3 way, spring return, spool type directional control valve. In the absence of a pilot signal at **1**, **2** is blocked and **3** is connected to **4**. When a pilot signal is applied at **1**, **3** is connected to **2** and **4** is blocked. Cartridge is spring returned with the spring chamber drained to **4**.
- Nominal flow: 10.0 gpm (38 l/m).
- Valve rated to 3000 psi (207 bar) working pressure.
- Valve leakage is 5 cu. in. (82 cc) per min. max. at 3000 psi (207 bar).
- Valve cartridge is **all** steel construction with precision ground and hardened components to assure smooth operation and extended service life.
- Hi-strength aluminum alloy body allows for maximum circuit design flexibility.
- Buna-N seals are standard. Viton is optional (consult factory for other seal compounds).
- Valve is designed for use with general purpose hydraulic fluids (MIL-H-5606, SAE #10, etc.).
- Cartridge weight .33 lbs (.15 kg).
- Valve cartridge fits Compact Controls [cavity CP10-4](#).

TYPICAL PERFORMANCE

154 SUS (33 cSt) HYD. OIL @ 100° F (38° C)



All dimensions in inches (mm)



ORDERING INFORMATION

CP720 - 5 - B - 8S - 150 - S3

BASIC CARTRIDGE

SEALS

B - BUNA-N
V - VITON

SEAL KIT
120023
120024

PORTS

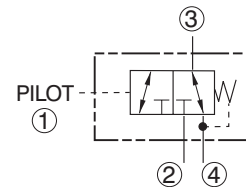
0 - CARTRIDGE
3P - 3/8 NPTF
4P - 1/2 NPTF
6S - #6 SAE
8S - #8 SAE
3B - 3/8 BSP
4B - 1/2 BSP

BODY P/N
NO BODY
220446
220447
220448
220449
221300
221232

SPOOL SEALS
S3 - OMIT SEALS

SHIFT PRESSURE

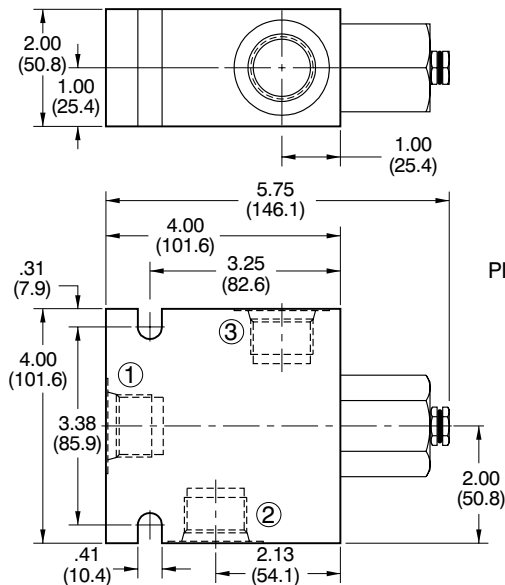
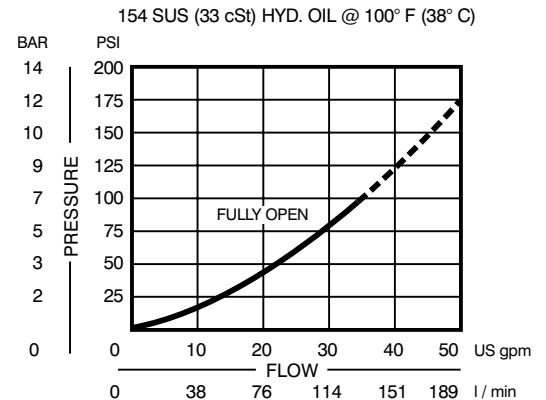
	PSI	BAR
050	50	(3.5)
080	80	(5.5)
125	125	(8.6)
150	150	(10.3)



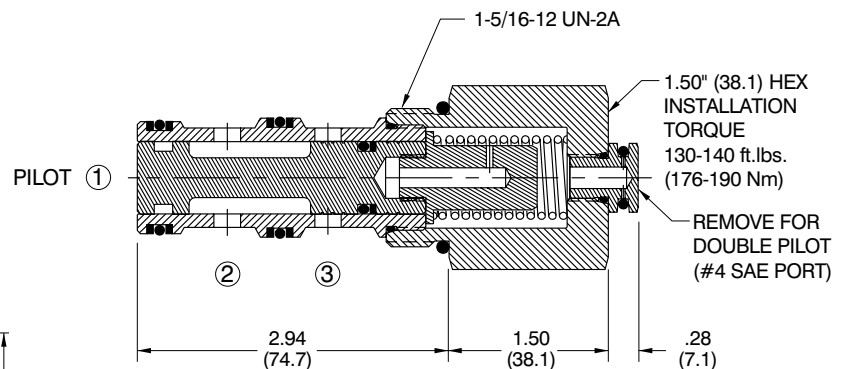
SPECIFICATIONS

- Valve is a pilot operated, 2 position 2 way directional control valve. When an external pilot signal is applied at 1 flow is blocked or opened between 2 and 3 depending on the spool configuration ordered. Cartridge utilizes an atmospheric vent and is spring returned.
- Nominal flow: 35.0 gpm (132 l/m).
- Valve rated to 3000 psi (207 bar) working pressure.
- Valve leakage is 10 cu. in. (164 cc) per min. max. at 3000 psi (207 bar).
- Valve cartridge is *all* steel construction with precision ground and hardened components to assure smooth operation and extended service life.
- Hi-strength aluminum alloy body allows for maximum circuit design flexibility.
- Buna-N seals are standard. Viton is optional (consult factory for other seal compounds).
- Valve is designed for use with general purpose hydraulic fluids (MIL-H-5606, SAE #10, etc.).
- Cartridge weight 1.25 lbs (.57 kg).
- Valve cartridge fits Compact Controls [cavity CP16-3](#).

TYPICAL PERFORMANCE



All dimensions in inches (mm)



ORDERING INFORMATION

Shaded area represents standard product

CP712 - 1 - B - 16S - C - 080 - S1

BASIC CARTRIDGE

PILOT CODE

- 1 - ATMOSPHERIC VENT
- 2 - DOUBLE PILOT

SEALS

SEAL	SEAL KIT
B - BUNA-N	120202
V - VITON	120203

PORTS

PORTS	BODY P/N
0 - CARTRIDGE	NO BODY
6P - 3/4 NPTF	220320
8P - 1" NPTF	220321
12S - #12 SAE	220322
16S - #16 SAE	220323
6B - 3/4 BSP	221309
8B - 1" BSP	221310

SPOOL SEALS

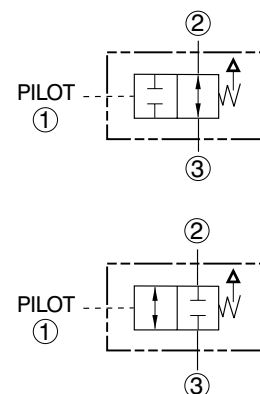
- S1 - SEAL BETWEEN 3 & VENT
- S2 - SEALS BOTH ENDS OF SPOOL
- S3 - OMIT SEALS
- S4 - PILOT END ONLY

SHIFT PRESSURE

SHIFT PRESSURE	PSI	BAR
000 - NO SPRING		
040 - 40	40	(2.8)
080 - 80	80	(5.5)
150 - 150	150	(10.3)

CONFIGURATION

- 0 - NORMALLY OPEN
- C - NORMALLY CLOSED



CP722-1, -2

DIRECTIONAL CONTROL VALVE

(2 Pos. 3 Way Pilot Operated Type)



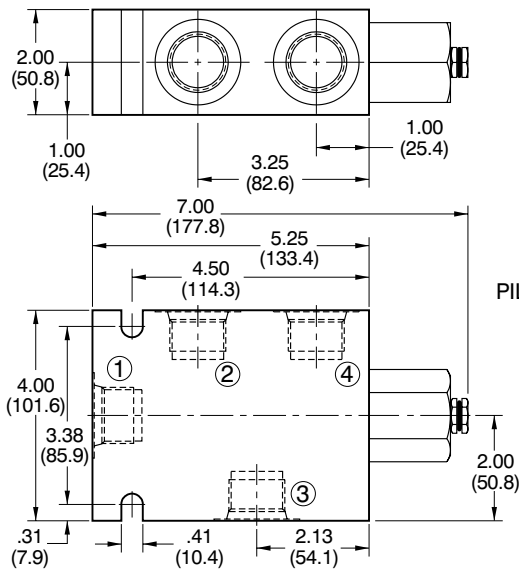
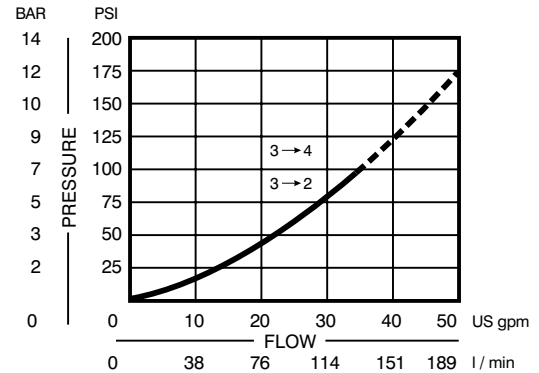
SERIES 16

SPECIFICATIONS

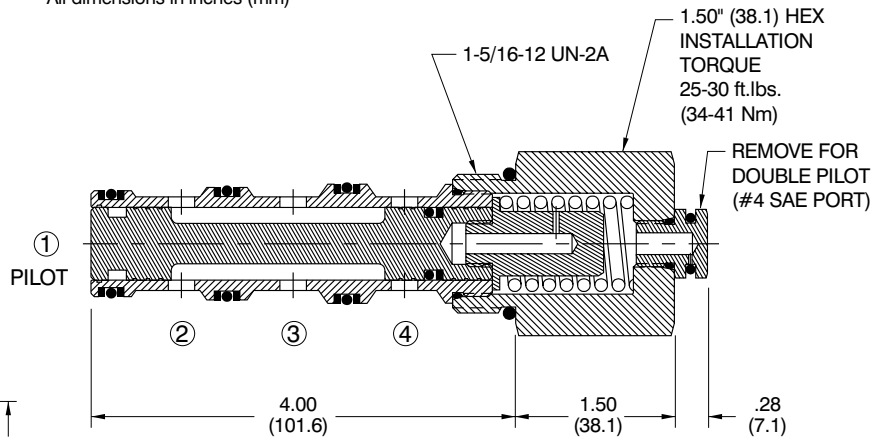
- Valve is 2 position 3 way, spring return, spool type directional control valve. In the absence of a pilot signal at 1, 2 is connected to 3 and 4 is blocked. When a pilot signal is applied at 1, 4 is connected to 3 and 2 is blocked. When the spool is in crossover, ports 2, 3 and 4 are connected. Cartridge utilizes an atmospheric vent and is spring returned.
- Nominal flow: 35.0 gpm (132 l/m).
- Valve rated to 3000 psi (207 bar) working pressure.
- Valve leakage is 10 cu. in. (164 cc) per min. max. at 3000 psi (207 bar).
- Valve cartridge is *all* steel construction with precision ground and hardened components to assure smooth operation and extended service life.
- Hi-strength aluminum alloy body allows for maximum circuit design flexibility.
- Buna-N seals are standard. Viton is optional (consult factory for other seal compounds).
- Valve is designed for use with general purpose hydraulic fluids (MIL-H-5606, SAE #10, etc.).
- Cartridge weight 1.34 lbs (.61 kg).
- Valve cartridge fits Compact Controls [cavity CP16-4](#).

TYPICAL PERFORMANCE

154 SUS (33 cSt) HYD. OIL @ 100° F (38° C)



All dimensions in inches (mm)



ORDERING INFORMATION

Shaded area represents standard product

CP722 - 1 - B - 16S - 150 - S1

BASIC CARTRIDGE

PILOT CODE

- 1 - ATMOSPHERIC VENT
- 2 - DOUBLE PILOT

SEALS

SEAL KIT	
B - BUNA-N	120025
V - VITON	120026

PORTS

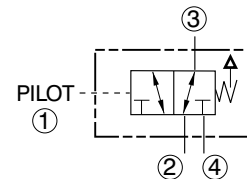
PORTS	BODY P/N
0 - CARTRIDGE	NO BODY
6P - 3/4 NPTF	220708
8P - 1" NPTF	220709
12S - #12 SAE	220710
16S - #16 SAE	220711
6B - 3/4 BSP	221311
8B - 1" BSP	221239

SPOOL SEALS

- S1 - SEAL BETWEEN 4 & VENT
- S2 - SEALS BOTH ENDS OF SPOOL
- S3 - OMIT SEALS
- S4 - PILOT END ONLY

SHIFT PRESSURE

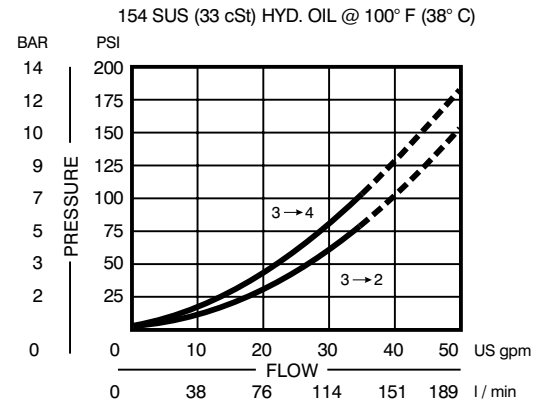
SHIFT PRESSURE	PSI	BAR
000 - NO SPRING		
040 - 40	(2.8)	
080 - 80	(5.5)	
150 - 150	(10.3)	



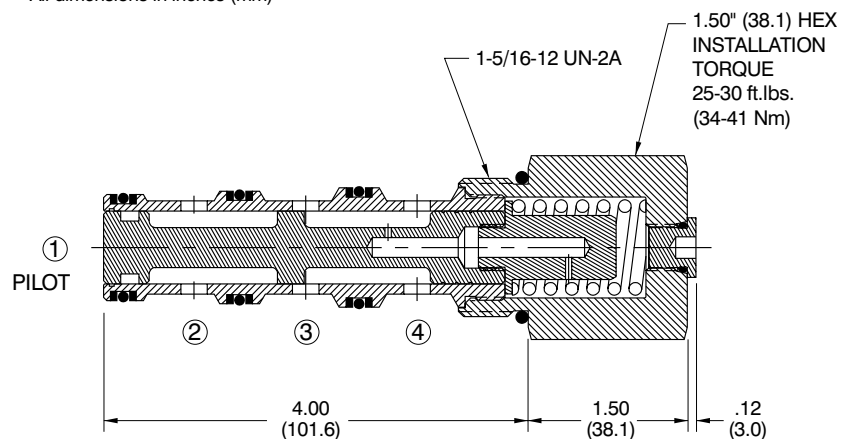
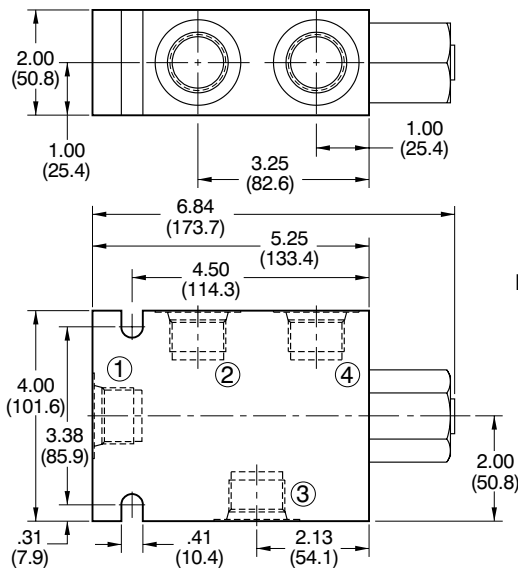
SPECIFICATIONS

- Valve is 2 position 3 way, spring return, spool type directional control valve. In the absence of a pilot signal at 1, 2 is blocked and 3 is connected to 4. When a pilot signal is applied at 1, 3 is connected to 2 and 4 is blocked. Cartridge is spring returned with the spring chamber drained to 4.
- Nominal flow: 35.0 gpm (132 l/m).
- Valve rated to 3000 psi (207 bar) working pressure.
- Valve leakage is 10 cu. in. (164 cc) per min. max. at 3000 psi (207 bar).
- Valve cartridge is *all* steel construction with precision ground and hardened components to assure smooth operation and extended service life.
- Hi-strength aluminum alloy body allows for maximum circuit design flexibility.
- Buna-N seals are standard. Viton is optional (consult factory for other seal compounds).
- Valve is designed for use with general purpose hydraulic fluids (MIL-H-5606, SAE #10, etc.).
- Cartridge weight 1.34 lbs (.61 kg).
- Valve cartridge fits Compact Controls [cavity CP16-4](#).

TYPICAL PERFORMANCE



All dimensions in inches (mm)



ORDERING INFORMATION

CP722 - 5 - B - 16S - 150 - S3

BASIC CARTRIDGE

SEALS

B - BUNA-N
 V - VITON

SEAL KIT
 120025
 120026

PORTS

0 - CARTRIDGE
 6P - 3/4 NPTF
 8P - 1" NPTF
 12S - #12 SAE
 16S - #16 SAE
 6B - 3/4 BSP
 8B - 1" BSP

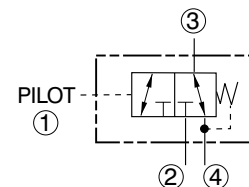
BODY P/N
 NO BODY 220708
 220709
 220710
 220711
 221311
 221239

SPOOL SEALS

S3 - OMIT SEALS

SHIFT PRESSURE

	PSI	BAR
040	40	(2.8)
080	80	(5.5)
150	150	(10.3)



CP713-1, -2

DIRECTIONAL CONTROL VALVE

(2 Pos. 2 Way Pilot Operated Type)



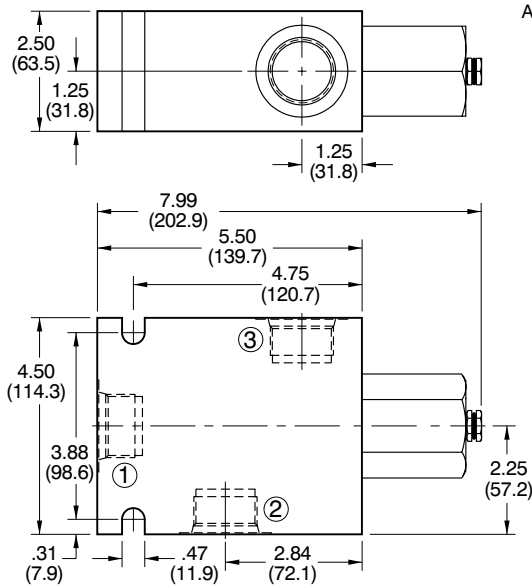
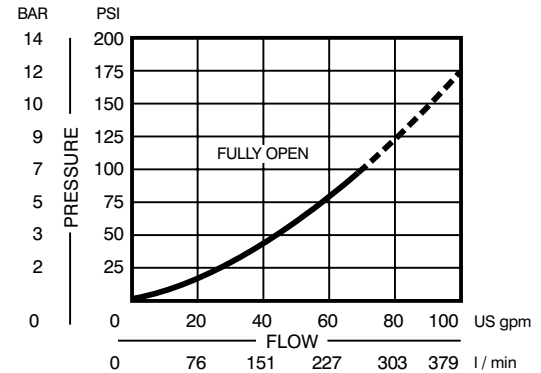
SERIES 20

SPECIFICATIONS

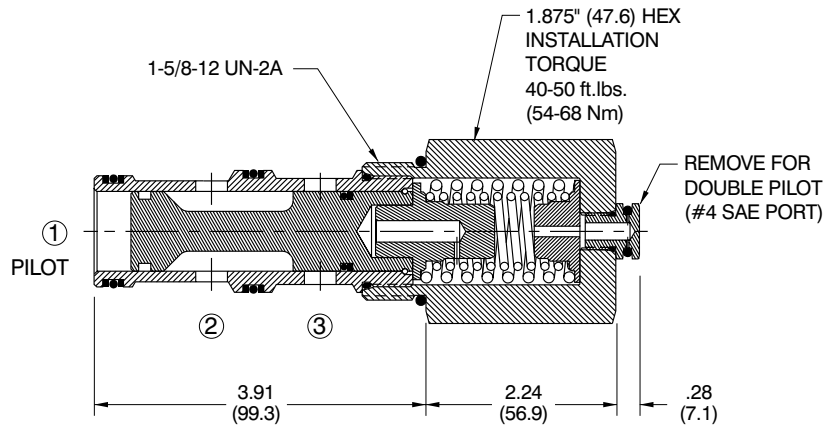
- Valve is a pilot operated, 2 position 2 way directional control valve. When an external pilot signal is applied at 1 flow is blocked or opened between 2 and 3 depending on the spool configuration ordered. Cartridge utilizes an atmospheric vent and is spring returned.
- Nominal flow: 70.0 gpm (265 l/m).
- Valve rated to 3000 psi (207 bar) working pressure.
- Valve leakage is 10 cu. in. (164 cc) per min. max. at 3000 psi (207 bar).
- Valve cartridge is *all* steel construction with precision ground and hardened components to assure smooth operation and extended service life.
- Hi-strength aluminum alloy body allows for maximum circuit design flexibility.
- Buna-N seals are standard. Viton is optional (consult factory for other seal compounds).
- Valve is designed for use with general purpose hydraulic fluids (MIL-H-5606, SAE #10, etc.).
- Cartridge weight 2.78 lbs (1.26 kg).
- Valve cartridge fits Compact Controls [cavity CP20-3](#).

TYPICAL PERFORMANCE

154 SUS (33 cSt) HYD. OIL @ 100° F (38° C)



All dimensions in inches (mm)



ORDERING INFORMATION

CP713 - 1 - B - 20S - C - 150 - S1

BASIC CARTRIDGE

PILOT CODE

- 1 - ATMOSPHERIC VENT
- 2 - DOUBLE PILOT

SEALS

- B - BUNA-N
- V - VITON

SEAL KIT

- 120200
- 120201

PORTS

- 0 - CARTRIDGE
- 8P - 1" NPTF
- 10P - 1-1/4 NPTF
- 16S - #16 SAE
- 20S - #20 SAE
- 8B - 1" BSP
- 10B - 1-1/4 BSP

BODY P/N

- NO BODY
- 220713
- 220714
- 220715
- 220716
- 221315
- 221316

CONFIGURATION

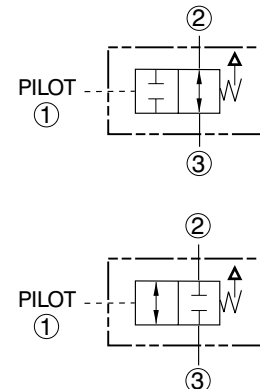
- 0 - NORMALLY OPEN
- C - NORMALLY CLOSED

SPOOL SEALS

- S1 - SEAL BETWEEN 3 & VENT
- S2 - SEALS BOTH ENDS OF SPOOL
- S3 - OMIT SEALS
- S4 - PILOT END ONLY

SHIFT PRESSURE

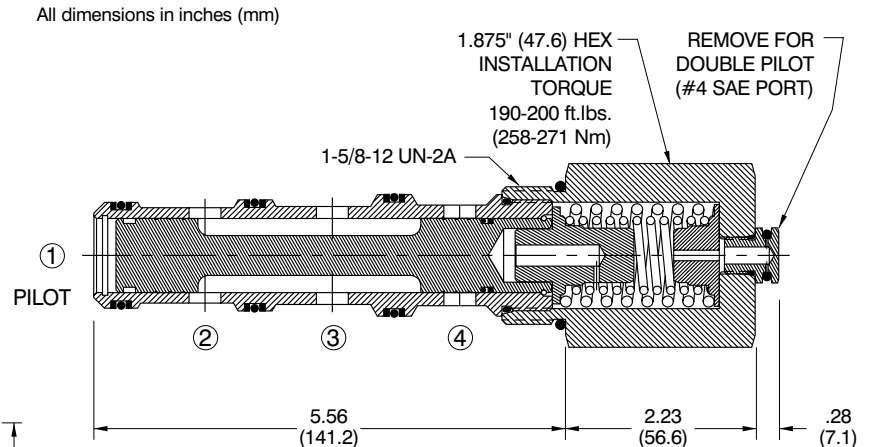
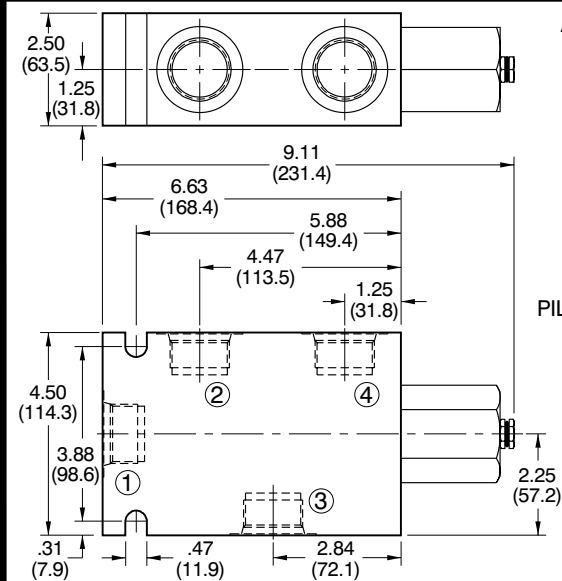
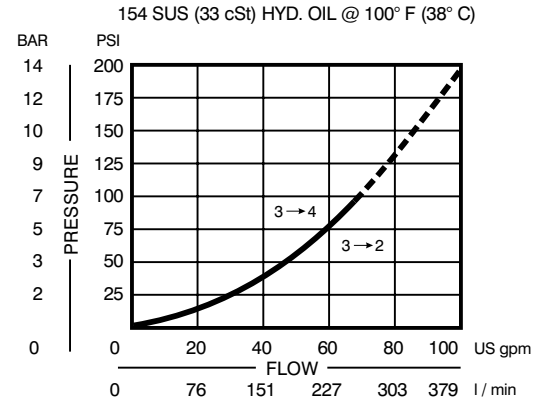
- | | PSI | BAR |
|-----|-----|-----------|
| 000 | - | NO SPRING |
| 050 | 50 | (3.5) |
| 080 | 80 | (5.5) |
| 100 | 100 | (6.9) |
| 130 | 130 | (9.0) |
| 150 | 150 | (10.3) |



SPECIFICATIONS

- Valve is 2 position 3 way, spring return, spool type directional control valve. In the absence of a pilot signal at 1, 2 is connected to 3 and 4 is blocked. When a pilot signal is applied at 1, 4 is connected to 3 and 2 is blocked. When the spool is in crossover, ports 2, 3 and 4 are blocked. Cartridge utilizes an atmospheric vent and is spring returned.
- Nominal flow: 70.0 gpm (265 l/m).
- Valve rated to 3000 psi (207 bar) working pressure.
- Valve leakage is 10 cu. in. (164 cc) per min. max. at 3000 psi (207 bar).
- Valve cartridge is *all* steel construction with precision ground and hardened components to assure smooth operation and extended service life.
- Hi-strength aluminum alloy body allows for maximum circuit design flexibility.
- Buna-N seals are standard. Viton is optional (consult factory for other seal compounds).
- Valve is designed for use with general purpose hydraulic fluids (MIL-H-5606, SAE #10, etc.).
- Cartridge weight 2.68 lbs (1.22 kg).
- Valve cartridge fits Compact Controls [cavity CP20-4](#).

TYPICAL PERFORMANCE



ORDERING INFORMATION

CP723 - 1 - B - 20S - 150 - S1

BASIC CARTRIDGE

PILOT CODE

- 1 - ATMOSPHERIC VENT
- 2 - DOUBLE PILOT

SEALS

- B - BUNA-N
- V - VITON

SEAL KIT

- 120181
- 120182

PORTS

- 0 - CARTRIDGE
- 8P - 1" NPTF
- 10P - 1-1/4 NPTF
- 16S - #16 SAE
- 20S - #20 SAE
- 8B - 1" BSP
- 10B - 1-1/4 BSP

BODY P/N

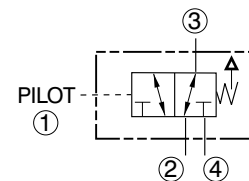
- NO BODY
- 220718
- 220719
- 220720
- 220721
- 221317
- 221318

SPOOL SEALS

- S1 - SEAL BETWEEN 4 & VENT
- S2 - SEALS BOTH ENDS OF SPOOL
- S3 - OMIT SEALS
- S4 - PILOT END ONLY

SHIFT PRESSURE

- | PSI | BAR |
|-----|-----------------------------|
| 000 | NO SPRING DOUBLE PILOT ONLY |
| 050 | 50 (3.5) |
| 080 | 80 (5.5) |
| 100 | 100 (6.9) |
| 130 | 130 (9.0) |
| 150 | 150 (10.3) |



CP723-5

DIRECTIONAL CONTROL VALVE (2 Pos. 3 Way Pilot Operated Type)



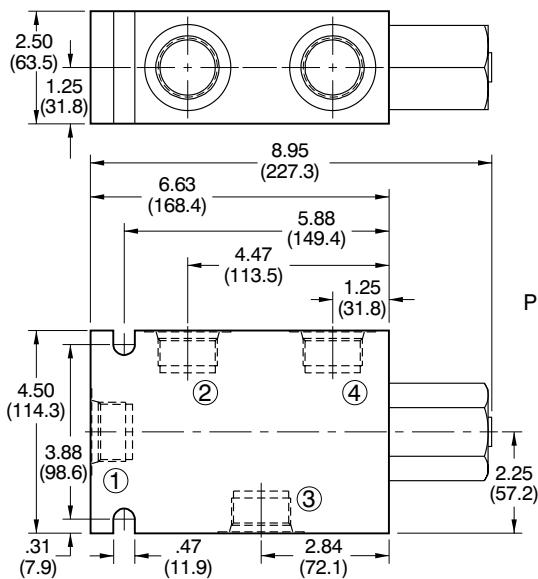
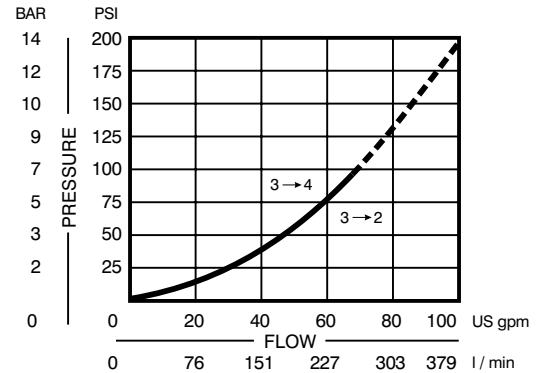
SERIES 20

SPECIFICATIONS

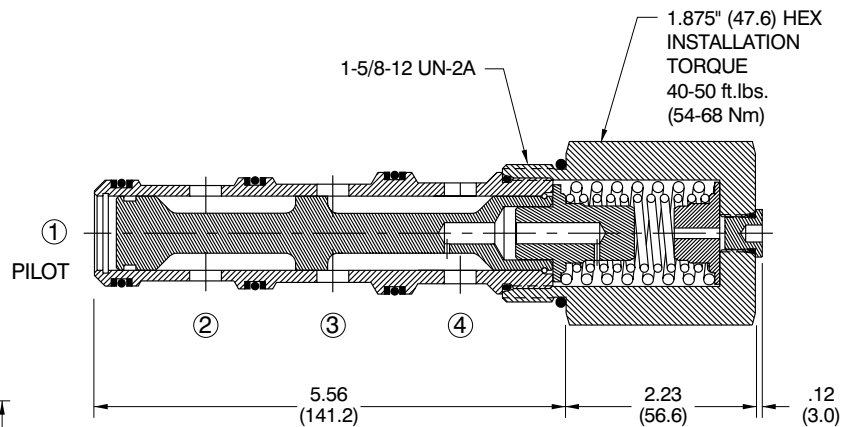
- Valve is 2 position 3 way, spring return, spool type directional control valve. In the absence of a pilot signal at 1, 2 is blocked and 3 is connected to 4. When a pilot signal is applied at 1, 3 is connected to 2 and 4 is blocked. Cartridge is spring returned with the spring chamber drained to 4.
- Nominal flow: 70.0 gpm (265 l/m).
- Valve rated to 3000 psi (207 bar) working pressure.
- Valve leakage is 10 cu. in. (164 cc) per min. max. at 3000 psi (207 bar).
- Valve cartridge is *all* steel construction with precision ground and hardened components to assure smooth operation and extended service life.
- Hi-strength aluminum alloy body allows for maximum circuit design flexibility.
- Buna-N seals are standard. Viton is optional (consult factory for other seal compounds).
- Valve is designed for use with general purpose hydraulic fluids (MIL-H-5606, SAE #10, etc.).
- Cartridge weight 2.68 lbs (1.22 kg).
- Valve cartridge fits Compact Controls [cavity CP20-4](#).

TYPICAL PERFORMANCE

154 SUS (33 cSt) HYD. OIL @ 100° F (38° C)



All dimensions in inches (mm)



ORDERING INFORMATION

CP723 - 5 - B - 20S - 150 - S3

BASIC CARTRIDGE

SEALS

B - BUNA-N
V - VITON

SEAL KIT
120181
120182

PORTS

0 - CARTRIDGE
8P - 1" NPTF
10P - 1-1/4 NPTF
16S - #16 SAE
20S - #20 SAE
8B - 1" BSP
10B - 1-1/4 BSP

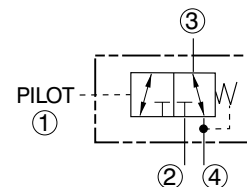
BODY P/N
NO BODY
220718
220719
220720
220721
221317
221318

SPOOL SEALS

S3 - OMIT SEALS

SHIFT PRESSURE

	PSI	BAR
050	50	(3.5)
080	80	(5.5)
100	100	(6.9)
130	130	(9.0)
150	150	(10.3)



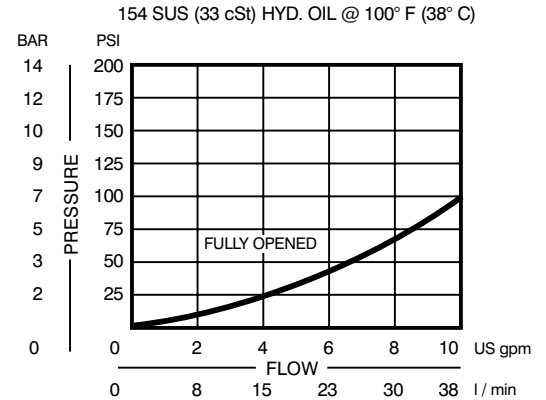
DIFFERENTIAL SENSING VALVES

SIZE	DESCRIPTION	FLOW gpm (l/m)	PRESSURE psi (bar)	PAGE
SERIES 10				
CP300-4	EXT ORIFICE RESTRICTIVE REGULATOR	10 (38)	3000 (207)	12.01
CP310-4	EXT ORIFICE PRIORITY REGULATOR	10 (38)	3000 (207)	12.02
CP700-1	DIFFERENTIAL SENSING VALVE	10 (38)	3000 (207)	12.03
CP700-1L	DIFFERENTIAL SENSING VALVE	15 (57)	3000 (207)	12.04
CP700-2	DIFFERENTIAL SENSING VALVE	10 (38)	3000 (207)	12.05
CP700-2L	DIFFERENTIAL SENSING VALVE	15 (57)	3000 (207)	12.06
CP700-3	DIFFERENTIAL SENSING VALVE	10 (38)	3000 (207)	12.07
CP700-4	DIFFERENTIAL SENSING VALVE	10 (38)	3000 (207)	12.08
SERIES 12				
CP301-4	EXT ORIFICE RESTRICTIVE REGULATOR	15 (57)	3000 (207)	12.09
CP311-4	EXT ORIFICE PRIORITY REGULATOR	15 (57)	3000 (207)	12.10
CP701-1	DIFFERENTIAL SENSING VALVE	40 (151)	3000 (207)	12.11
CP701-2	DIFFERENTIAL SENSING VALVE	40 (151)	3000 (207)	12.12
CP701-3	DIFFERENTIAL SENSING VALVE	20 (76)	3000 (207)	12.13
CP701-4	DIFFERENTIAL SENSING VALVE	20 (76)	3000 (207)	12.14
SERIES 16				
CP302-4	EXT ORIFICE RESTRICTIVE REGULATOR	35 (132)	3000 (207)	12.15
CP312-4	EXT ORIFICE PRIORITY REGULATOR	35 (132)	3000 (207)	12.16
CP702-1	DIFFERENTIAL SENSING VALVE	50 (189)	3000 (207)	12.17
CP702-2	DIFFERENTIAL SENSING VALVE	50 (189)	3000 (207)	12.18
CP702-3	DIFFERENTIAL SENSING VALVE	30 (114)	3000 (207)	12.19
CP702-4	DIFFERENTIAL SENSING VALVE	30 (114)	3000 (207)	12.20

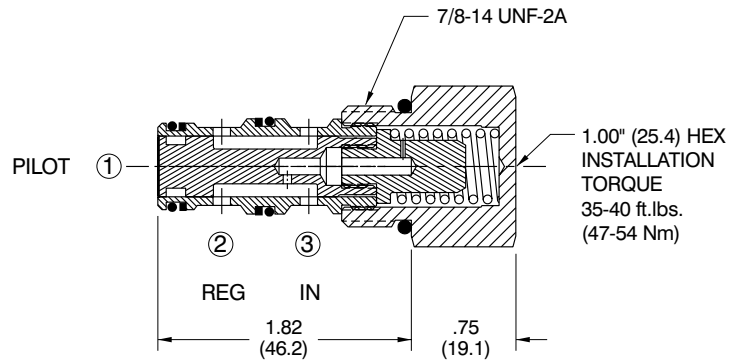
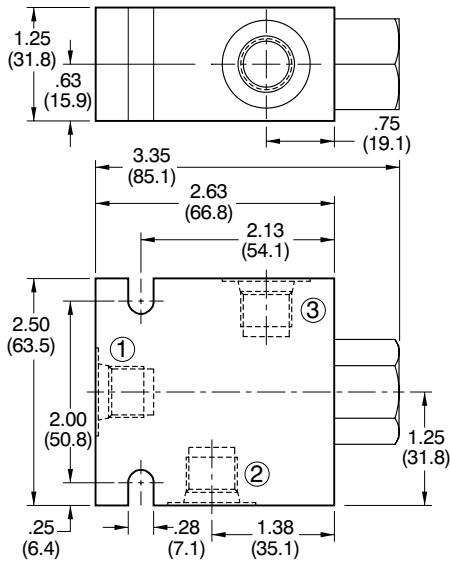
SPECIFICATIONS

- This cartridge is a differential pressure compensating element intended to be used with an external fixed or variable orifice.
- Valve maintains a constant differential pressure supply to 3, thus maintaining a constant flow from 2 regardless of system pressure.
- Nominal flow: 10.0 gpm (38 l/m).
- Valve rated to 3000 psi (207 bar) working pressure.
- Valve cartridge is *all* steel construction with precision ground spool, honed and hardened sleeve to assure good flow regulation and extended service life.
- Hi-strength aluminum alloy body allows for maximum circuit design flexibility.
- Buna-N seals are standard. Viton is optional (consult factory for other seal compounds).
- Valve is designed for use with general purpose hydraulic fluids (MIL-H-5606, SAE #10, etc.).
- Cartridge weight .29 lbs (.13 kg).
- Valve cartridge fits Compact Controls [cavity CP10-3](#).

TYPICAL PERFORMANCE



All dimensions in inches (mm)



ORDERING INFORMATION

Shaded area represents standard product

CP300 - 4 - B - 8S - 0 - 080

BASIC CARTRIDGE

SEALS

	SEAL KIT
B - BUNA-N	120027
V - VITON	120028

PORTS

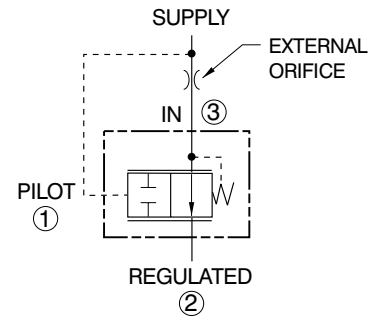
	BODY P/N
0 - CARTRIDGE	NO BODY
3P - 3/8 NPTF	220203
4P - 1/2 NPTF	220204
6S - #6 SAE	220205
8S - #8 SAE	220206
3B - 3/8 BSP	221297
4B - 1/2 BSP	221267

DIFFERENTIAL CONTROL PRESSURE

	PSI	BAR
040	40	(2.76)
080	80	(5.52)
110	110	(7.58)
150	150	(10.34)

SPOOL SEAL

0	NO SEAL
S	SEAL INCLUDED



CP310-4

DIFFERENTIAL SENSING VALVE
(External Orifice - Priority Regulator Type)



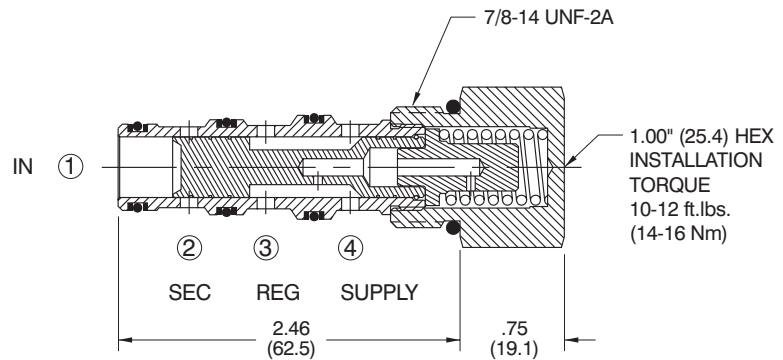
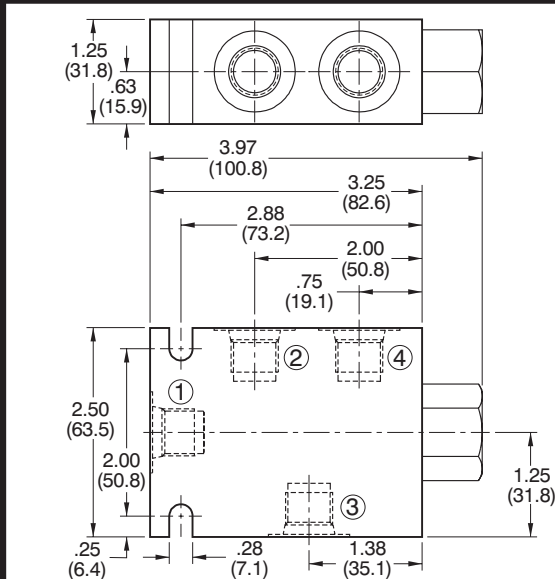
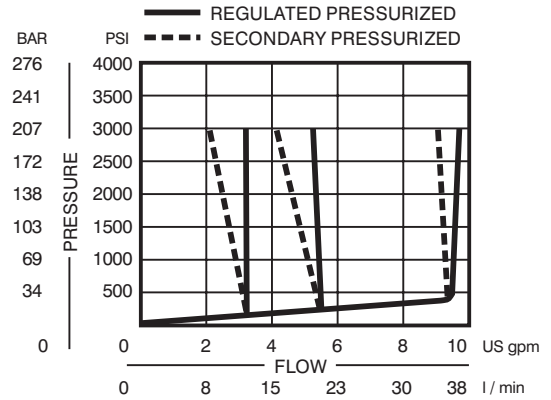
SERIES 10

SPECIFICATIONS

- This cartridge is a differential pressure compensating element intended to be used with an external fixed or variable orifice.
- Valve maintains a constant differential pressure from **1** to **4** by maintaining a fixed output flow at **3** which is determined by the flow (ΔP) across the external orifice. Flow is delivered out **3** first with the excess going to **2**. All ports can be pressurized.
- Nominal flow to 10.0 gpm (38 l/m).
- Valve rated to 3000 psi (207 bar) working pressure.
- Valve cartridge is **all** steel construction with precision ground spool, honed and hardened sleeve to assure good flow regulation and extended service life.
- Hi-strength aluminum alloy body allows for maximum circuit design flexibility.
- Buna-N seals are standard. Viton is optional (consult factory for other seal compounds).
- Valve is designed for use with general purpose hydraulic fluids (MIL-H-5606, SAE #10, etc.).
- Cartridge weight .32 lbs (.15 kg).
- Valve cartridge fits Compact Controls [cavity CP10-4](#).

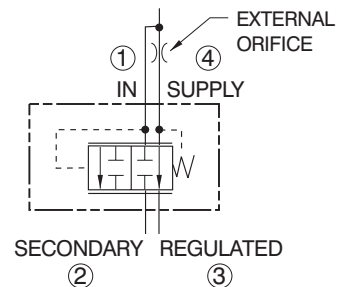
TYPICAL PERFORMANCE

154 SUS (33 cSt) HYD. OIL @ 100° F (38° C)



ORDERING INFORMATION

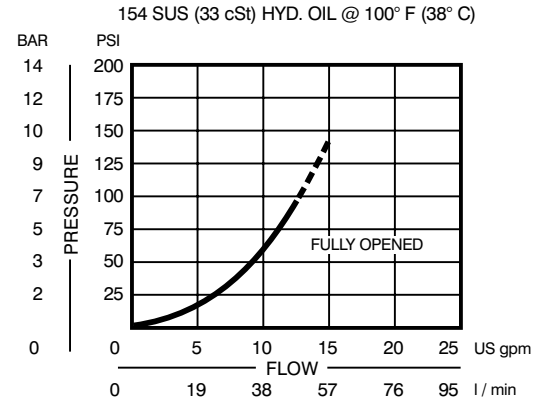
CP310 - 4 - B - 8S - 080		
BASIC CARTRIDGE		DIFFERENTIAL CONTROL PRESSURE
SEALS	SEAL KIT	PSI BAR
B - BUNA-N	120023	040 - 40 (2.76)
V - VITON	120024	080 - 80 (5.52)
PORTS	BODY P/N	110 - 110 (7.58)
0 - CARTRIDGE	NO BODY	150 - 150 (10.34)
3P - 3/8 NPTF	220446	
4P - 1/2 NPTF	220447	
6S - #6 SAE	220448	
8S - #8 SAE	220449	
3B - 3/8 BSP	221300	
4B - 1/2 BSP	221232	



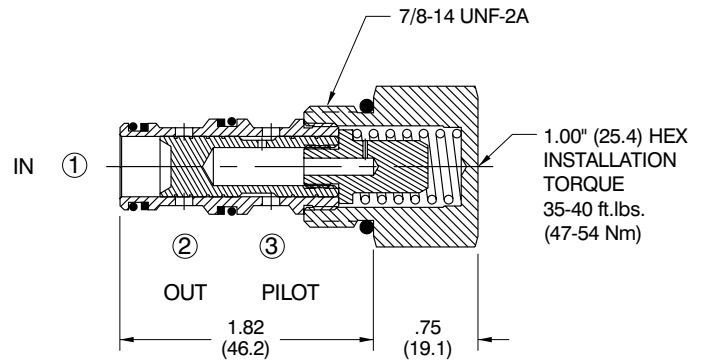
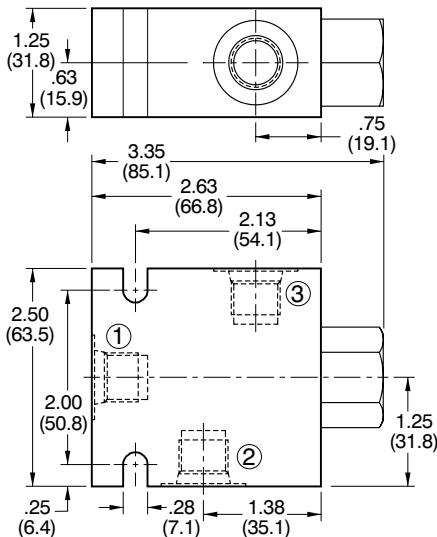
SPECIFICATIONS

- Differential sensing valves are used in conjunction with other valves to provide various control functions such as: flow control, pressure control and/or logic control circuits.
- Valve is a spring-biased normally closed valve. Flow is allowed from 1 to 2 only if pressure at 1 exceeds the spring bias pressure and the pilot pressure at 3. With no pressure at 3 flow is allowed from 1 to 2 once the selected spring bias pressure is exceeded at 1.
- Nominal flow: 10.0 gpm (38 l/m).
- Valve rated to 3000 psi (207 bar) working pressure.
- Valve cartridge is *all* steel construction with precision ground and hardened components to assure smooth operation and extended service life.
- Hi-strength aluminum alloy body allows for maximum circuit design flexibility.
- Buna-N seals are standard. Viton is optional (consult factory for other seal compounds).
- Valve is designed for use with general purpose hydraulic fluids (MIL-H-5606, SAE #10, etc.).
- Cartridge weight .27 lbs (.12 kg).
- Valve cartridge fits Compact Controls [cavity CP10-3](#).

TYPICAL PERFORMANCE



All dimensions in inches (mm)



ORDERING INFORMATION

Shaded area represents standard product

CP700 - 1 - B - 8S - 080

BASIC CARTRIDGE

SEALS

B - BUNA-N
V - VITON

SEAL KIT

120027
120028

PORTS

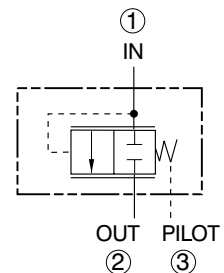
0 - CARTRIDGE
3P - 3/8 NPTF
4P - 1/2 NPTF
6S - #6 SAE
8S - #8 SAE
3B - 3/8 BSP
4B - 1/2 BSP

BODY P/N

NO BODY
220203
220204
220205
220206
221297
221267

DIFFERENTIAL CONTROL PRESSURE

PSI	BAR
040	2.76
080	5.52
110	7.58
150	10.34



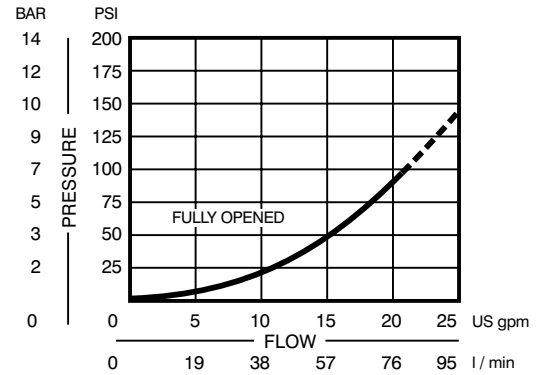
SERIES 10

SPECIFICATIONS

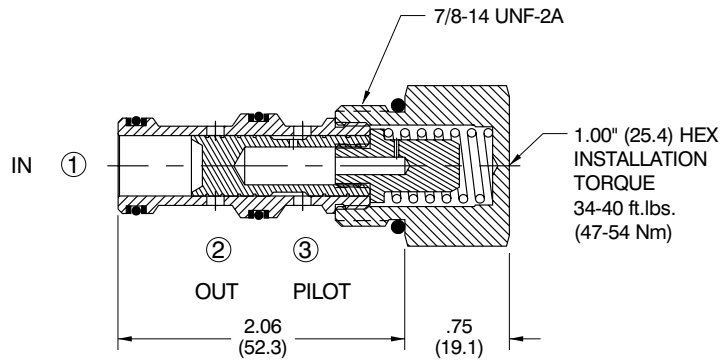
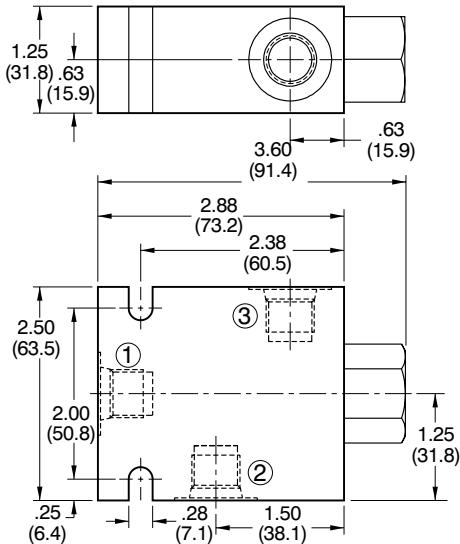
- Differential sensing valves are used in conjunction with other valves to provide various control functions such as: flow control, pressure control and/or logic control circuits.
- Valve is a spring-biased normally closed valve. Flow is allowed from 1 to 2 only if pressure at 1 exceeds the spring bias pressure and the pilot pressure at 3. With no pressure at 3 flow is allowed from 1 to 2 once the selected spring bias pressure is exceeded at 1.
- Nominal flow: 15.0 gpm (57 l/m).
- Valve rated to 3000 psi (207 bar) working pressure.
- Valve cartridge is *all* steel construction with precision ground and hardened components to assure smooth operation and extended service life.
- Hi-strength aluminum alloy body allows for maximum circuit design flexibility.
- Buna-N seals are standard. Viton is optional (consult factory for other seal compounds).
- Valve is designed for use with general purpose hydraulic fluids (MIL-H-5606, SAE #10, etc.).
- Cartridge weight .27 lbs (.12 kg).
- Valve cartridge fits Compact Controls [cavity CP10-3L](#).

TYPICAL PERFORMANCE

154 SUS (33 cSt) HYD. OIL @ 100° F (38° C)



All dimensions in inches (mm)



ORDERING INFORMATION

CP700 - 1L - B - 8S - 080

BASIC CARTRIDGE

SEALS

B - BUNA-N
V - VITON

SEAL KIT

120140
120141

PORTS

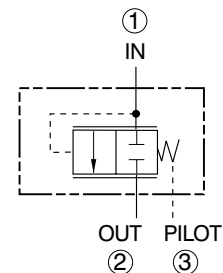
0 - CARTRIDGE
3P - 3/8 NPTF
4P - 1/2 NPTF
6S - #6 SAE
8S - #8 SAE
3B - 3/8 BSP
4B - 1/2 BSP

BODY P/N

NO BODY
220727
220728
220729
220730
221298
221299

DIFFERENTIAL CONTROL PRESSURE

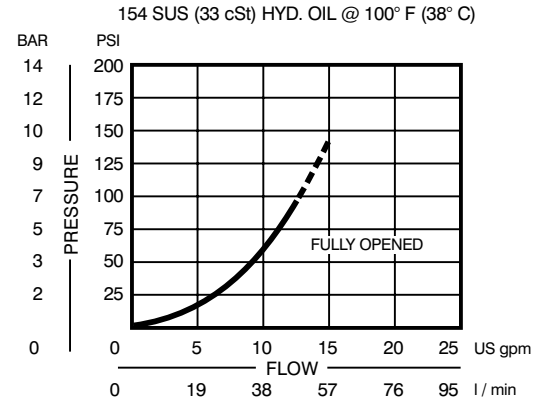
PSI	BAR
040	40 (2.76)
080	80 (5.52)
110	110 (7.58)
150	150 (10.34)



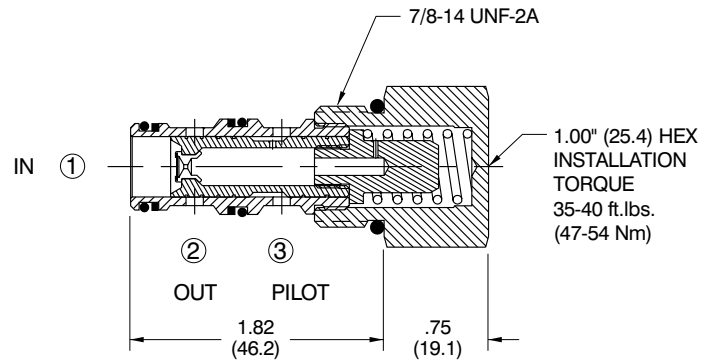
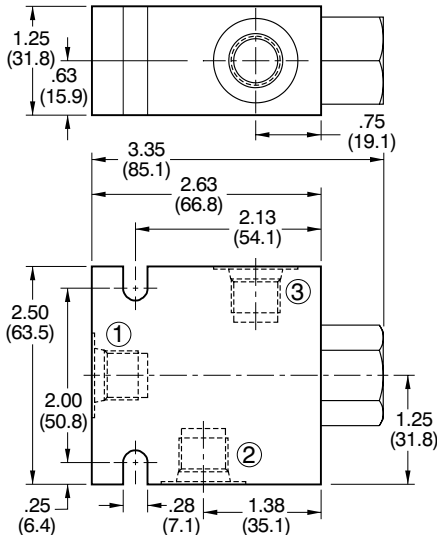
SPECIFICATIONS

- Differential sensing valves are used in conjunction with other valves to provide various control functions such as: flow control, pressure control and/or logic control circuits.
- Valve is a normally closed vent to open valve. The valve will shift to allow flow from 1 to 2 only when 3 is vented to create a pressure drop across the internal orifice that exceeds the selected spring bias pressure.
- Nominal flow: 10.0 gpm (38 l/m).
- Valve rated to 3000 psi (207 bar) working pressure.
- Valve cartridge is *all* steel construction with precision ground and hardened components to assure smooth operation and extended service life.
- Hi-strength aluminum alloy body allows for maximum circuit design flexibility.
- Buna-N seals are standard. Viton is optional (consult factory for other seal compounds).
- Valve is designed for use with general purpose hydraulic fluids (MIL-H-5606, SAE #10, etc.).
- Cartridge weight .28 lbs (.13 kg).
- Valve cartridge fits Compact Controls [cavity CP10-3](#).

TYPICAL PERFORMANCE

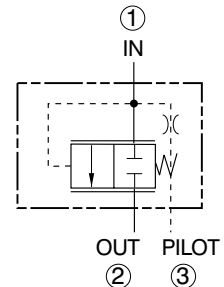


All dimensions in inches (mm)



ORDERING INFORMATION

CP700 - 2 - B - 8S - 080		
BASIC CARTRIDGE		DIFFERENTIAL CONTROL PRESSURE
SEALS	SEAL KIT	PSI BAR
B - BUNA-N	120027	040 - 40 (2.76)
V - VITON	120028	080 - 80 (5.52)
PORTS	BODY P/N	110 - 110 (7.58)
0 - CARTRIDGE	NO BODY	150 - 150 (10.34)
3P - 3/8 NPTF	220203	
4P - 1/2 NPTF	220204	
6S - #6 SAE	220205	
8S - #8 SAE	220206	
3B - 3/8 BSP	221297	
4B - 1/2 BSP	221267	



CP700-2L

DIFFERENTIAL SENSING VALVE

(Internal Orifice)



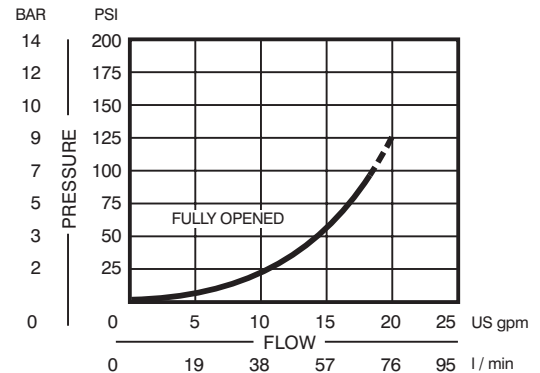
SERIES 10

SPECIFICATIONS

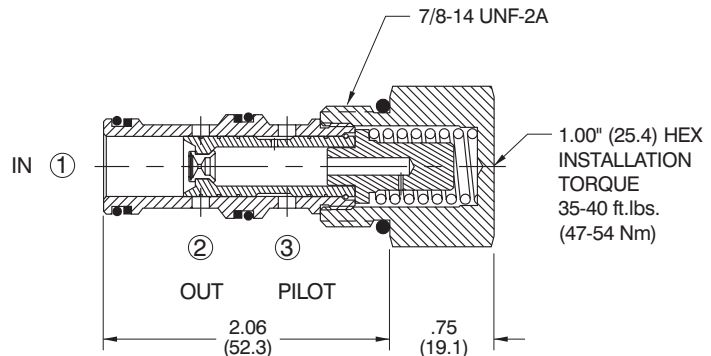
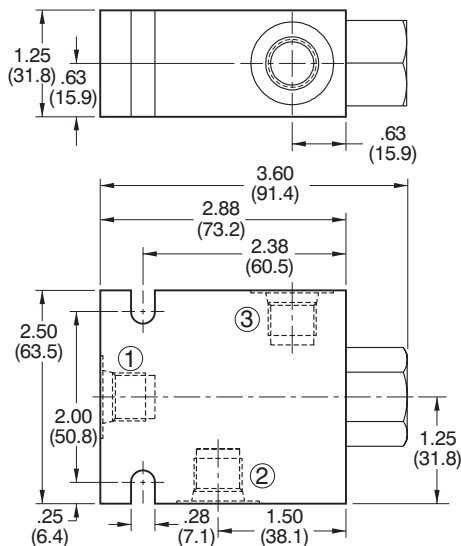
- Differential sensing valves are used in conjunction with other valves to provide various control functions such as: flow control, pressure control and/or logic control circuits.
- Valve is a normally closed vent to open valve. The valve will shift to allow flow from **1** to **2** only when **3** is vented to create a pressure drop across the internal orifice that exceeds the selected spring bias pressure.
- Nominal flow: 15.0 gpm (57 l/m).
- Valve rated to 3000 psi (207 bar) working pressure.
- Valve cartridge is **all** steel construction with precision ground and hardened components to assure smooth operation and extended service life.
- Hi-strength aluminum alloy body allows for maximum circuit design flexibility.
- Buna-N seals are standard. Viton is optional (consult factory for other seal compounds).
- Valve is designed for use with general purpose hydraulic fluids (MIL-H-5606, SAE #10, etc.).
- Cartridge weight .31 lbs (.14 kg).
- Valve cartridge fits Compact Controls [cavity CP10-3L](#).

TYPICAL PERFORMANCE

154 SUS (33 cSt) HYD. OIL @ 100° F (38° C)



All dimensions in inches (mm)



ORDERING INFORMATION

CP700 - 2L - B - 8S - 080

BASIC CARTRIDGE

SEALS

B - BUNA-N
V - VITON

SEAL KIT
120080
120082

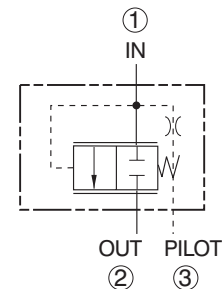
PORTS

0 - CARTRIDGE
3P - 3/8 NPTF
4P - 1/2 NPTF
6S - #6 SAE
8S - #8 SAE
3B - 3/8 BSP
4B - 1/2 BSP

BODY P/N
NO BODY
220727
220728
220729
220730
221298
221299

DIFFERENTIAL CONTROL PRESSURE

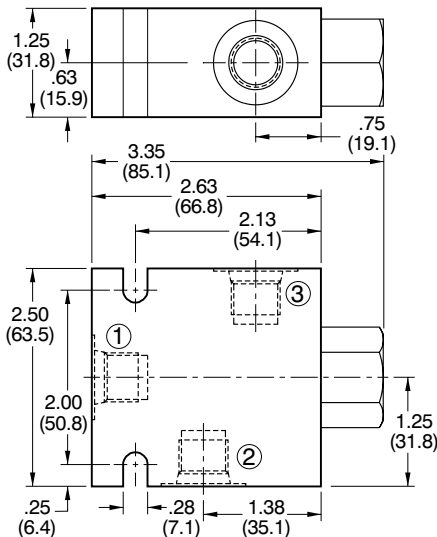
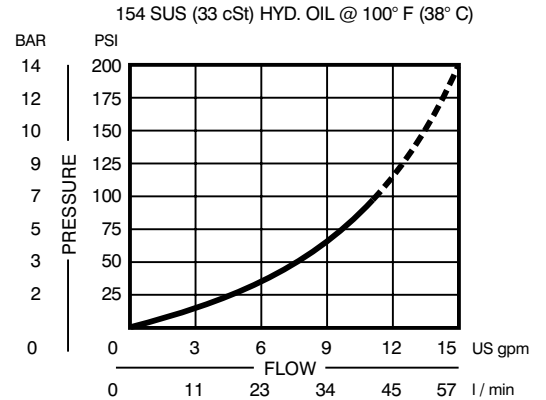
PSI	BAR
040 - 40	(2.76)
080 - 80	(5.52)
110 - 110	(7.58)
150 - 150	(10.34)



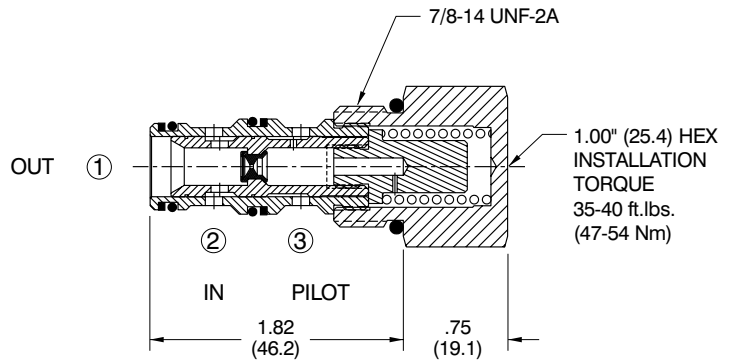
SPECIFICATIONS

- Differential sensing valves are used in conjunction with other valves to provide various control functions such as: flow control, pressure control and/or logic control circuits.
- Valve is a normally open pressure reducing element. Valve is normally used as a remotely controlled main stage of a pressure reducing circuit. By connecting a pilot relief valve to 3 the pressure at 1 can be regulated via the pilot relief.
- Nominal flow: 10.0 gpm (38 l/m).
- Valve rated to 3000 psi (207 bar) working pressure.
- Valve cartridge is *all* steel construction with precision ground and hardened components to assure smooth operation and extended service life.
- Hi-strength aluminum alloy body allows for maximum circuit design flexibility.
- Buna-N seals are standard. Viton is optional (consult factory for other seal compounds).
- Valve is designed for use with general purpose hydraulic fluids (MIL-H-5606, SAE #10, etc.).
- Cartridge weight .28 lbs (.13 kg).
- Valve cartridge fits Compact Controls cavity CP10-3.

TYPICAL PERFORMANCE



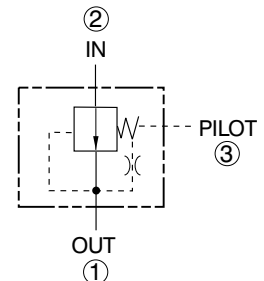
All dimensions in inches (mm)



ORDERING INFORMATION

CP700 - 3 - B - 8S - 080

BASIC CARTRIDGE	SEAL KIT	DIFFERENTIAL CONTROL PRESSURE
SEALS		
B - BUNA-N	120027	PSI BAR
V - VITON	120028	040 - 40 (2.76)
		080 - 80 (5.52)
		110 - 110 (7.58)
		150 - 150 (10.34)
PORTS	BODY P/N	
0 - CARTRIDGE	NO BODY	
3P - 3/8 NPTF	220203	
4P - 1/2 NPTF	220204	
6S - #6 SAE	220205	
8S - #8 SAE	220206	
3B - 3/8 BSP	221297	
4B - 1/2 BSP	221267	



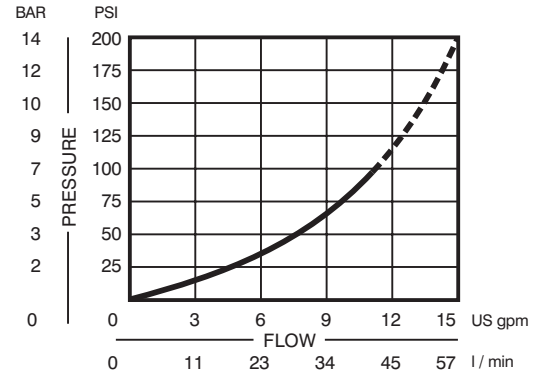
SERIES 10

SPECIFICATIONS

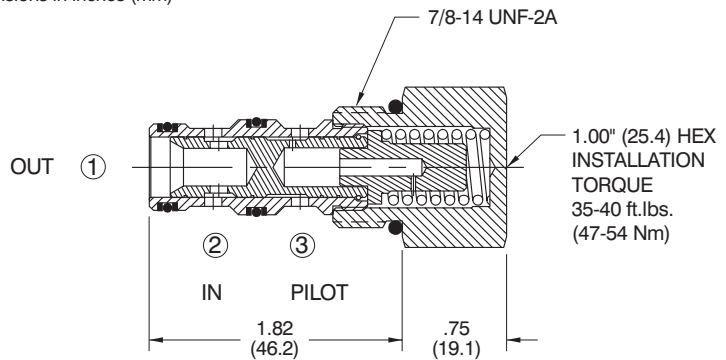
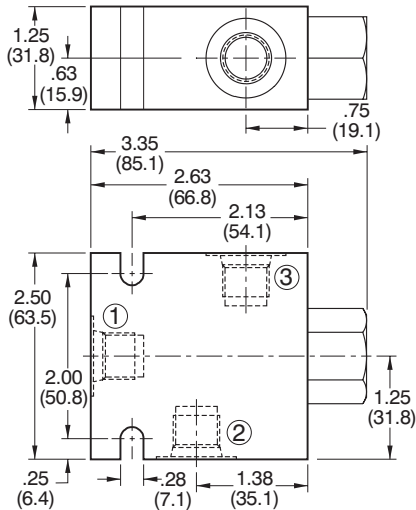
- Differential sensing valves are used in conjunction with other valves to provide various control functions such as: flow control, pressure control and/or logic control circuits.
- Valve is a normally open differential sensing valve. Flow is allowed from **2** to **1** and if **3** is vented then pressure at **1** is limited to the spring bias pressure. If **3** is pressurized then the regulated pressure at **1** is determined by the spring bias pressure plus the pressure at **3**. The valve can be used as a restrictive flow control, a pressure reducing element or both simultaneously.
- Nominal flow: 10.0 gpm (38 l/m).
- Valve rated to 3000 psi (207 bar) working pressure.
- Valve cartridge is **all** steel construction with precision ground and hardened components to assure smooth operation and extended service life.
- Hi-strength aluminum alloy body allows for maximum circuit design flexibility.
- Buna-N seals are standard. Viton is optional (consult factory for other seal compounds).
- Valve is designed for use with general purpose hydraulic fluids (MIL-H-5606, SAE #10, etc.).
- Cartridge weight .28 lbs (.13 kg).
- Valve cartridge fits Compact Controls [cavity CP10-3](#).

TYPICAL PERFORMANCE

154 SUS (33 cSt) HYD. OIL @ 100° F (38° C)

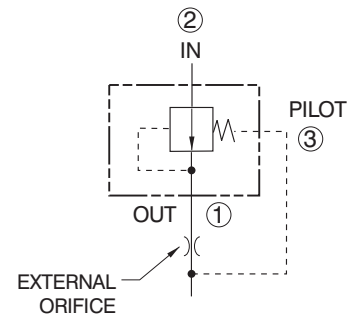


All dimensions in inches (mm)



ORDERING INFORMATION

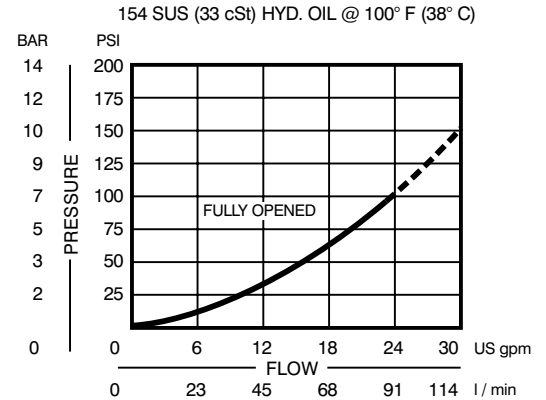
CP700 - 4 - B - 8S - 080		
BASIC CARTRIDGE		DIFFERENTIAL CONTROL PRESSURE
SEALS	SEAL KIT	PSI BAR
B - BUNA-N	120009	040 - 40 (2.76)
V - VITON	120010	080 - 80 (5.52)
PORTS	BODY P/N	110 - 110 (7.58)
0 - CARTRIDGE	NO BODY	150 - 150 (10.34)
3P - 3/8 NPTF	220203	
4P - 1/2 NPTF	220204	
6S - #6 SAE	220205	
8S - #8 SAE	220206	
3B - 3/8 BSP	221297	
4B - 1/2 BSP	221267	



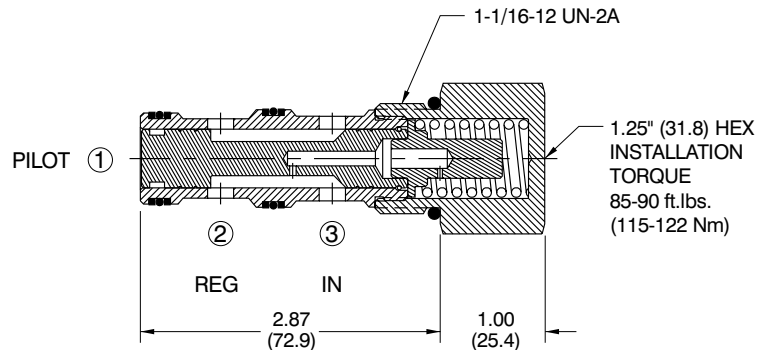
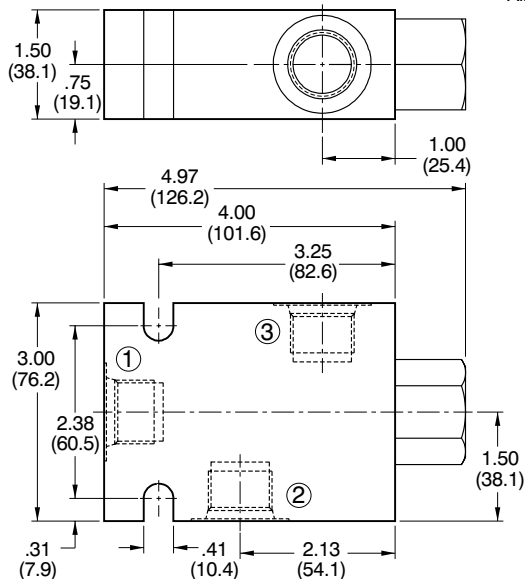
SPECIFICATIONS

- This cartridge is a differential pressure compensating element intended to be used with an external fixed or variable orifice.
- Valve maintains a constant differential pressure supply to 3, thus maintaining a constant flow from 2 regardless of system pressure.
- Nominal flow: 15.0 gpm (57 l/m).
- Valve rated to 3000 psi (207 bar) working pressure.
- Valve cartridge is *all* steel construction with precision ground spool, honed and hardened sleeve to assure good flow regulation and extended service life.
- Hi-strength aluminum alloy body allows for maximum circuit design flexibility.
- Buna-N seals are standard. Viton is optional (consult factory for other seal compounds).
- Valve is designed for use with general purpose hydraulic fluids (MIL-H-5606, SAE #10, etc.).
- Cartridge weight .67 lbs (.30 kg).
- Valve cartridge fits Compact Controls [cavity CP12-3](#).

TYPICAL PERFORMANCE



All dimensions in inches (mm)



ORDERING INFORMATION

Shaded area represents standard product

CP301 - 4 - B - 12S - 0 - 080

BASIC CARTRIDGE

SEALS

	SEAL KIT
B - BUNA-N	120053
V - VITON	120052

PORTS

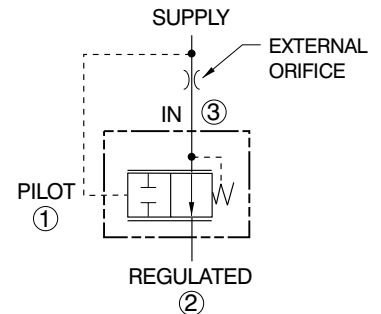
	BODY P/N
0 - CARTRIDGE	NO BODY
4P - 1/2 NPTF	220208
6P - 3/4 NPTF	220209
10S - #10 SAE	220210
12S - #12 SAE	220211
4B - 1/2 BSP	221303
6B - 3/4 BSP	221237

DIFFERENTIAL CONTROL PRESSURE

PSI	BAR
050 - 50	(3.45)
080 - 80	(5.52)
100 - 100	(6.89)
150 - 150	(10.34)

SPOOL SEAL

0 - NO SEAL
S - SEAL INCLUDED



CP311-4

DIFFERENTIAL SENSING VALVE
(External Orifice - Priority Regulator Type)



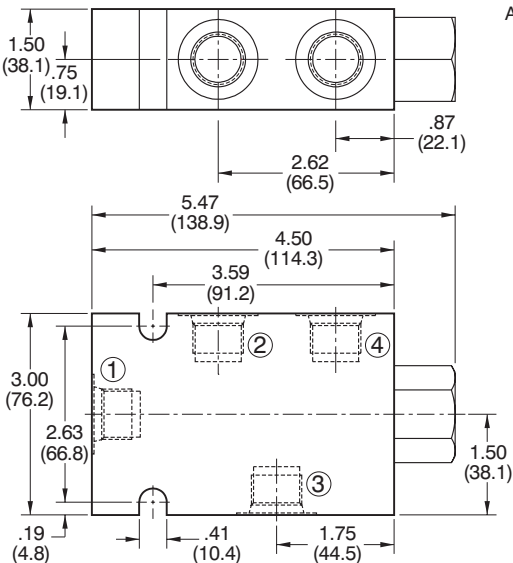
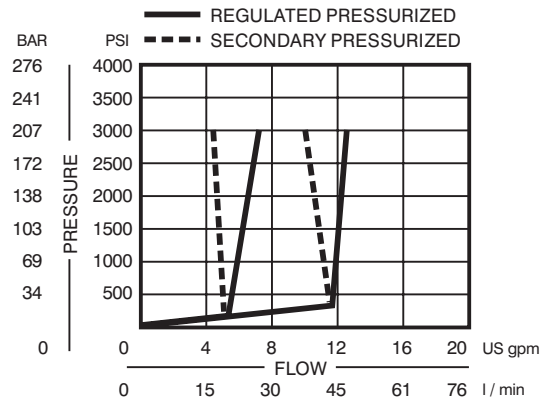
SERIES 12

SPECIFICATIONS

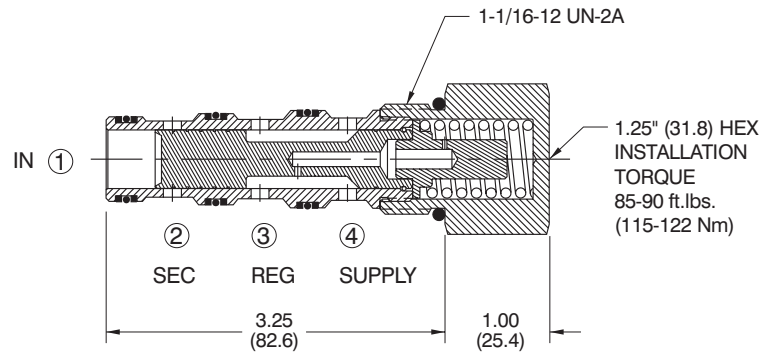
- This cartridge is a differential pressure compensating element intended to be used with an external fixed or variable orifice.
- Valve maintains a constant differential pressure from **1** to **4** by maintaining a fixed output flow at **3** which is determined by the flow (ΔP) across the external orifice. Flow is delivered out **3** first with the excess going to **2**. All ports can be pressurized.
- Nominal flow: 15.0 gpm (57 l/m).
- Valve rated to 3000 psi (207 bar) working pressure.
- Valve cartridge is **all** steel construction with precision ground spool, honed and hardened sleeve to assure good flow regulation and extended service life.
- Hi-strength aluminum alloy body allows for maximum circuit design flexibility.
- Buna-N seals are standard. Viton is optional (consult factory for other seal compounds).
- Valve is designed for use with general purpose hydraulic fluids (MIL-H-5606, SAE #10, etc.).
- Cartridge weight .69 lbs (.31 kg).
- Valve cartridge fits Compact Controls [cavity CP12-4](#).

TYPICAL PERFORMANCE

154 SUS (33 cSt) HYD. OIL @ 100° F (38° C)

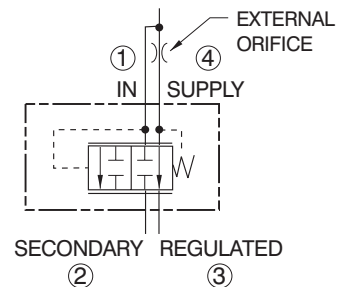


All dimensions in inches (mm)



ORDERING INFORMATION

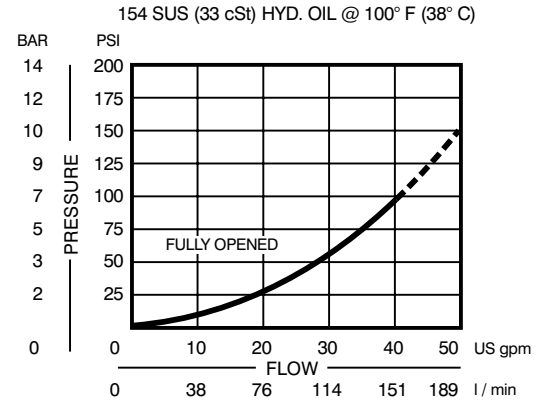
CP311 - 4 - B - 10S - 080		
BASIC CARTRIDGE		DIFFERENTIAL CONTROL PRESSURE
SEALS	SEAL KIT	PSI BAR
B - BUNA-N	120262	050 - 50 (3.45)
V - VITON	120263	080 - 80 (5.52)
PORTS	BODY P/N	100 - 100 (6.89)
0 - CARTRIDGE	NO BODY	150 - 150 (10.34)
3P - 3/8 NPTF	220694	
4P - 1/2 NPTF	220693	
8S - #8 SAE	220696	
10S - #10 SAE	220695	
3B - 3/8 BSP	221304	
4B - 1/2 BSP	221305	



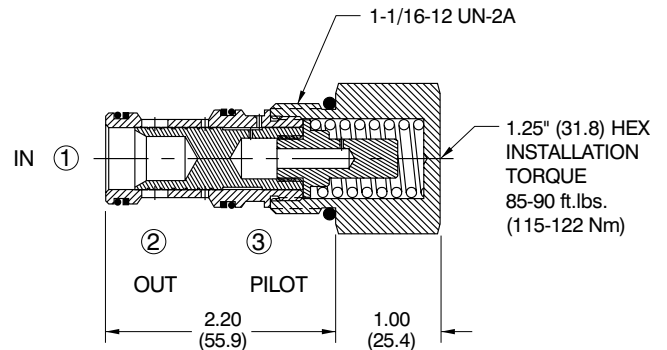
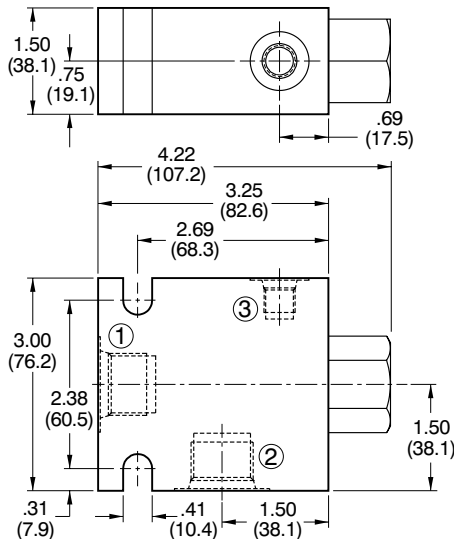
SPECIFICATIONS

- Differential sensing valves are used in conjunction with other valves to provide various control functions such as: flow control, pressure control and/or logic control circuits.
- Valve is a spring-biased normally closed valve. Flow is allowed from 1 to 2 only if pressure at 1 exceeds the spring bias pressure and the pilot pressure at 3. With no pressure at 3 flow is allowed from 1 to 2 once the selected spring bias pressure is exceeded at 1.
- Nominal flow: 40.0 gpm (151 l/m).
- Valve rated to 3000 psi (207 bar) working pressure.
- Valve cartridge is *all* steel construction with precision ground and hardened components to assure smooth operation and extended service life.
- Hi-strength aluminum alloy body allows for maximum circuit design flexibility.
- Buna-N seals are standard. Viton is optional (consult factory for other seal compounds).
- Valve is designed for use with general purpose hydraulic fluids (MIL-H-5606, SAE #10, etc.).
- Cartridge weight .57 lbs (.26 kg).
- Valve cartridge fits Compact Controls [cavity CP12-3S](#).

TYPICAL PERFORMANCE



All dimensions in inches (mm)



ORDERING INFORMATION

CP701 - 1 - B - 12S - 080

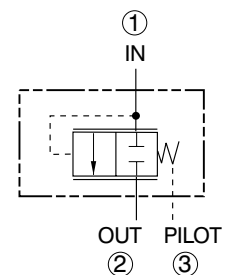
BASIC CARTRIDGE **DIFFERENTIAL CONTROL PRESSURE**

SEALS **SEAL KIT**

B - BUNA-N 120335
V - VITON 120336

PORTS	BODY P/N	PILOT PORT
0 - CARTRIDGE	NO BODY	
4P - 1/2 NPTF	220648	2P - 1/4 NPTF
6P - 3/4 NPTF	220649	2P - 1/4 NPTF
10S - #10 SAE	220650	4S - #4 SAE
12S - #12 SAE	220651	4S - #4 SAE
4B - 1/2 BSP	221301	2B - 1/4 BSP
6B - 3/4 BSP	221302	2B - 1/4 BSP

PSI	BAR
030 - 30	(2.07)
050 - 50	(3.45)
080 - 80	(5.52)
100 - 100	(6.89)
150 - 150	(10.34)



CP701-2

DIFFERENTIAL SENSING VALVE

(Internal Orifice)



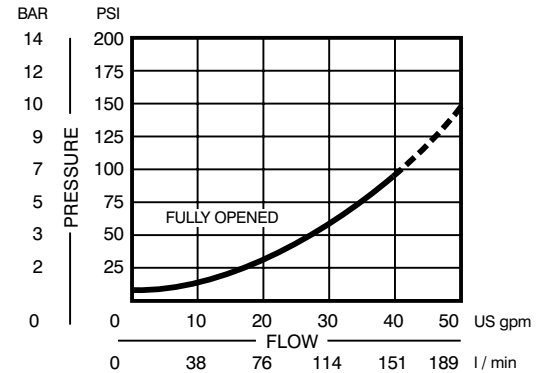
SERIES 12

SPECIFICATIONS

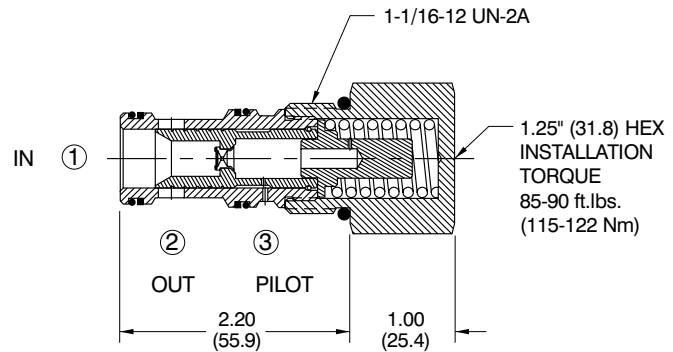
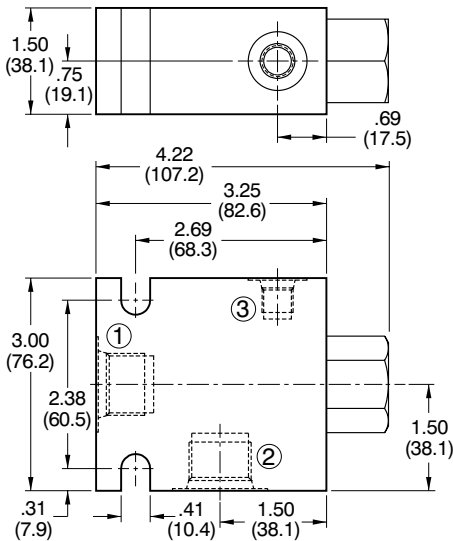
- Differential sensing valves are used in conjunction with other valves to provide various control functions such as: flow control, pressure control and/or logic control circuits.
- Valve is a normally closed vent to open valve. The valve will shift to allow flow from 1 to 2 only when 3 is vented to create a pressure drop across the internal orifice that exceeds the selected spring bias pressure.
- Nominal flow: 40.0 gpm (151 l/m).
- Valve rated to 3000 psi (207 bar) working pressure.
- Valve cartridge is *all* steel construction with precision ground and hardened components to assure smooth operation and extended service life.
- Hi-strength aluminum alloy body allows for maximum circuit design flexibility.
- Buna-N seals are standard. Viton is optional (consult factory for other seal compounds).
- Valve is designed for use with general purpose hydraulic fluids (MIL-H-5606, SAE #10, etc.).
- Cartridge weight .57 lbs (.26 kg).
- Valve cartridge fits Compact Controls [cavity CP12-3S](#).

TYPICAL PERFORMANCE

154 SUS (33 cSt) HYD. OIL @ 100° F (38° C)



All dimensions in inches (mm)



ORDERING INFORMATION

CP701 - 2 - B - 12S - 080

BASIC CARTRIDGE **DIFFERENTIAL CONTROL PRESSURE**

SEALS

B - BUNA-N
V - VITON

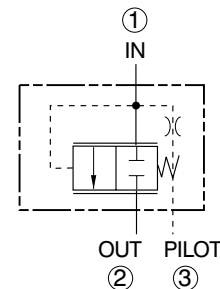
SEAL KIT

120335
120336

PORTS

	BODY P/N	PILOT PORT
0 - CARTRIDGE	NO BODY	
4P - 1/2 NPTF	220648	2P - 1/4 NPTF
6P - 3/4 NPTF	220649	2P - 1/4 NPTF
10S - #10 SAE	220650	4S - #4 SAE
12S - #12 SAE	220651	4S - #4 SAE
4B - 1/2 BSP	221301	2B - 1/4 BSP
6B - 3/4 BSP	221302	2B - 1/4 BSP

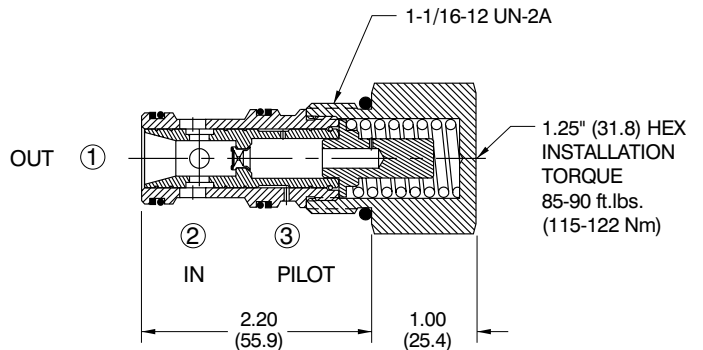
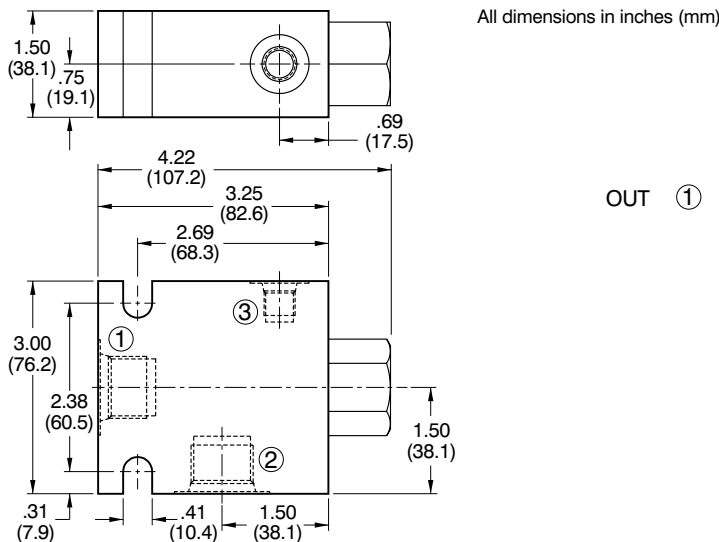
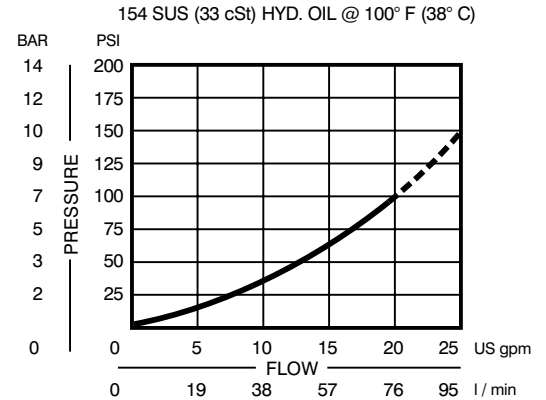
PSI	BAR
030	30 (2.07)
050	50 (3.45)
080	80 (5.52)
100	100 (6.89)
150	150 (10.34)



SPECIFICATIONS

- Differential sensing valves are used in conjunction with other valves to provide various control functions such as: flow control, pressure control and/or logic control circuits.
- Valve is a normally open pressure reducing element. Valve is normally used as a remotely controlled main stage of a pressure reducing circuit. By connecting a pilot relief valve to 3 the pressure at 1 can be regulated via the pilot relief.
- Nominal flow: 20.0 gpm (76 l/m).
- Valve rated to 3000 psi (207 bar) working pressure.
- Valve cartridge is *all* steel construction with precision ground and hardened components to assure smooth operation and extended service life.
- Hi-strength aluminum alloy body allows for maximum circuit design flexibility.
- Buna-N seals are standard. Viton is optional (consult factory for other seal compounds).
- Valve is designed for use with general purpose hydraulic fluids (MIL-H-5606, SAE #10, etc.).
- Cartridge weight .57 lbs (.26 kg).
- Valve cartridge fits Compact Controls [cavity CP12-3S](#).

TYPICAL PERFORMANCE



ORDERING INFORMATION

CP701 - 3 - B - 12S - 080

BASIC CARTRIDGE

SEALS

B - BUNA-N
V - VITON

SEAL KIT

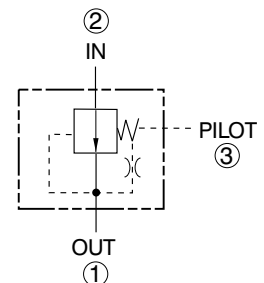
120335
120336

PORTS

	BODY P/N	PILOT PORT
0 - CARTRIDGE	NO BODY	
4P - 1/2 NPTF	220648	2P - 1/4 NPTF
6P - 3/4 NPTF	220649	2P - 1/4 NPTF
10S - #10 SAE	220650	4S - #4 SAE
12S - #12 SAE	220651	4S - #4 SAE
4B - 1/2 BSP	221301	2B - 1/4 BSP
6B - 3/4 BSP	221302	2B - 1/4 BSP

DIFFERENTIAL CONTROL PRESSURE

PSI	BAR
030	30 (2.07)
050	50 (3.45)
080	80 (5.52)
100	100 (6.89)
150	150 (10.34)



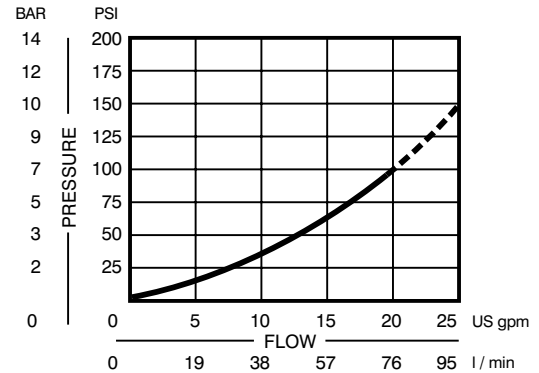
SERIES 12

SPECIFICATIONS

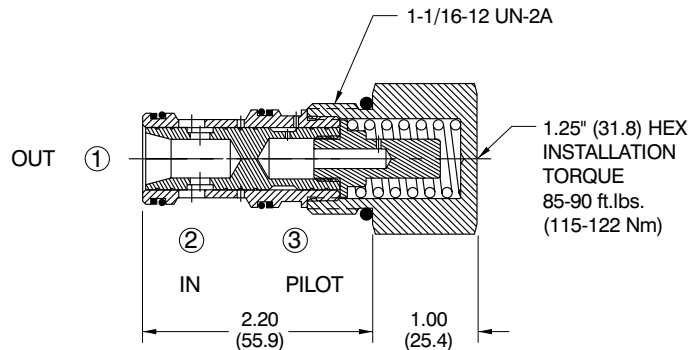
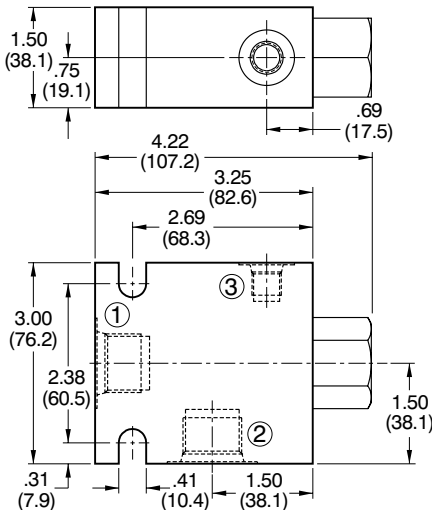
- Differential sensing valves are used in conjunction with other valves to provide various control functions such as: flow control, pressure control and/or logic control circuits.
- Valve is a normally open differential sensing valve. Flow is allowed from 2 to 1 and if 3 is vented then pressure at 1 is limited to the spring bias pressure. If 3 is pressurized then the regulated pressure at 1 is determined by the spring bias pressure plus the pressure at 3. The valve can be used as a restrictive flow control, a pressure reducing element or both simultaneously.
- Nominal flow: 20.0 gpm (76 l/m).
- Valve rated to 3000 psi (207 bar) working pressure.
- Valve cartridge is *all* steel construction with precision ground and hardened components to assure smooth operation and extended service life.
- Hi-strength aluminum alloy body allows for maximum circuit design flexibility.
- Buna-N seals are standard. Viton is optional (consult factory for other seal compounds).
- Valve is designed for use with general purpose hydraulic fluids (MIL-H-5606, SAE #10, etc.).
- Cartridge weight .57 lbs (.26 kg).
- Valve cartridge fits Compact Controls [cavity CP12-3S](#).

TYPICAL PERFORMANCE

154 SUS (33 cSt) HYD. OIL @ 100° F (38° C)



All dimensions in inches (mm)



ORDERING INFORMATION

Shaded area represents standard product

CP701 - 4 - B - 12S - 080

BASIC CARTRIDGE

SEALS

B - BUNA-N
V - VITON

SEAL KIT

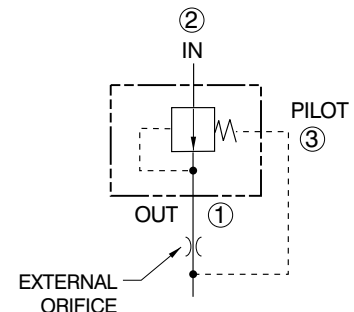
120335
120336

PORTS

	BODY P/N	PILOT PORT
0 - CARTRIDGE	NO BODY	
4P - 1/2 NPTF	220648	2P - 1/4 NPTF
6P - 3/4 NPTF	220649	2P - 1/4 NPTF
10S - #10 SAE	220650	4S - #4 SAE
12S - #12 SAE	220651	4S - #4 SAE
4B - 1/2 BSP	221301	2B - 1/4 BSP
6B - 3/4 BSP	221302	2B - 1/4 BSP

DIFFERENTIAL CONTROL PRESSURE

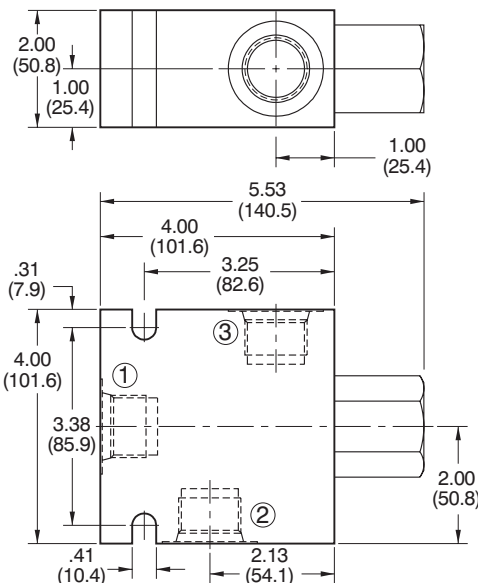
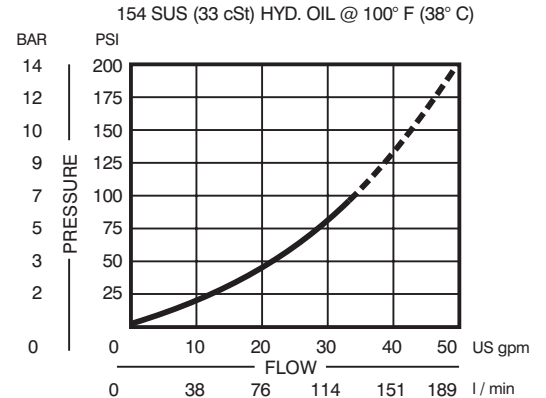
PSI	BAR
030 - 30	(2.07)
050 - 50	(3.45)
080 - 80	(5.52)
100 - 100	(6.89)
150 - 150	(10.34)



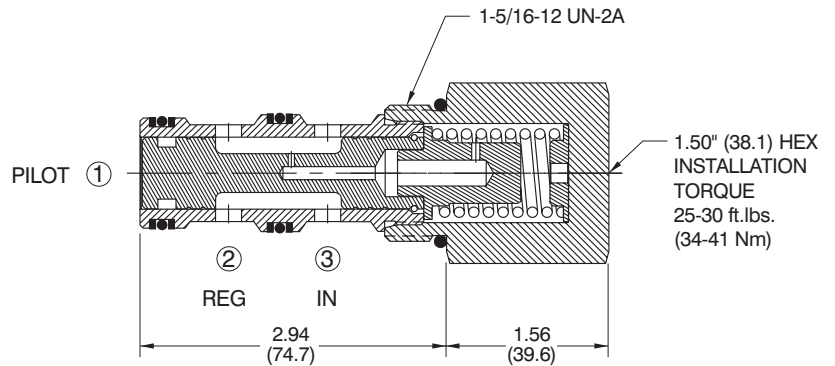
SPECIFICATIONS

- This cartridge is a differential pressure compensating element intended to be used with an external fixed or variable orifice.
- Valve maintains a constant differential pressure supply to 3, thus maintaining a constant flow from 2 regardless of system pressure.
- Nominal flow: 35.0 gpm (132 l/m).
- Valve rated to 3000 psi (207 bar) working pressure.
- Valve cartridge is **all** steel construction with precision ground spool, honed and hardened sleeve to assure good flow regulation and extended service life.
- Hi-strength aluminum alloy body allows for maximum circuit design flexibility.
- Buna-N seals are standard. Viton is optional (consult factory for other seal compounds).
- Valve is designed for use with general purpose hydraulic fluids (MIL-H-5606, SAE #10, etc.).
- Cartridge weight 1.24 lbs (.56 kg).
- Valve cartridge fits Compact Controls [cavity CP16-3](#).

TYPICAL PERFORMANCE



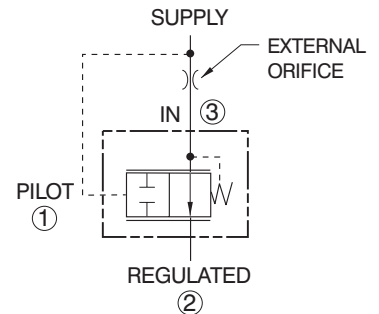
All dimensions in inches (mm)



ORDERING INFORMATION

CP302 - 4 - B - 16S - 0 - 080

BASIC CARTRIDGE	SEAL KIT	DIFFERENTIAL CONTROL PRESSURE
B - BUNA-N	120202	PSI BAR
V - VITON	120203	040 - 40 (2.76)
		080 - 80 (5.52)
		100 - 100 (6.89)
		150 - 150 (10.34)
PORTS	BODY P/N	SPOOL SEAL
0 - CARTRIDGE	NO BODY	0 - NO SEAL
6P - 3/4 NPTF	220320	S - SEAL INCLUDED
8P - 1" NPTF	220321	
12S - #12 SAE	220322	
16S - #16 SAE	220323	
6B - 3/4 BSP	221309	
8B - 1" BSP	221310	



CP312-4

DIFFERENTIAL SENSING VALVE
(External Orifice - Priority Regulator Type)



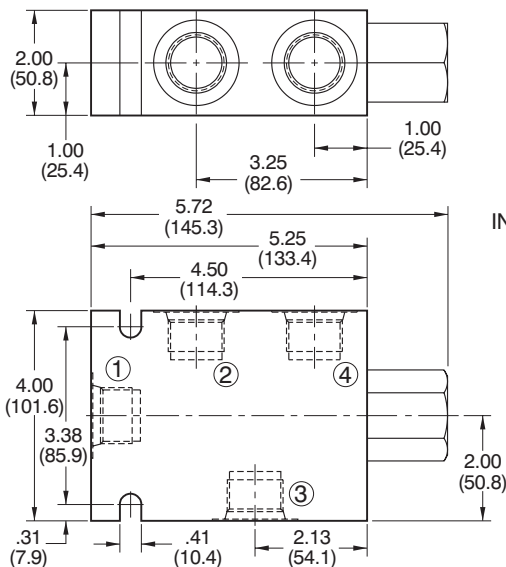
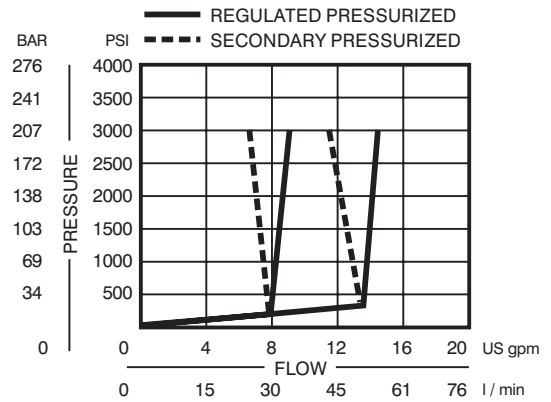
SERIES 16

SPECIFICATIONS

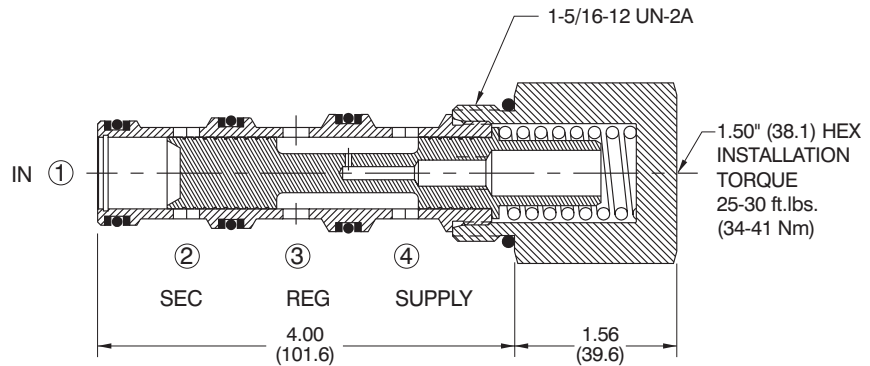
- This cartridge is a differential pressure compensating element intended to be used with an external fixed or variable orifice.
- Valve maintains a constant differential pressure from **1** to **4** by maintaining a fixed output flow at **3** which is determined by the flow (ΔP) across the external orifice. Flow is delivered out **3** first with the excess going to **2**. All ports can be pressurized.
- Nominal flow: 35.0 gpm (132 l/m).
- Valve rated to 3000 psi (207 bar) working pressure.
- Valve cartridge is **all** steel construction with precision ground spool, honed and hardened sleeve to assure good flow regulation and extended service life.
- Hi-strength aluminum alloy body allows for maximum circuit design flexibility.
- Buna-N seals are standard. Viton is optional (consult factory for other seal compounds).
- Valve is designed for use with general purpose hydraulic fluids (MIL-H-5606, SAE #10, etc.).
- Cartridge weight 1.32 lbs (.60 kg).
- Valve cartridge fits Compact Controls [cavity CP16-4](#).

TYPICAL PERFORMANCE

154 SUS (33 cSt) HYD. OIL @ 100° F (38° C)

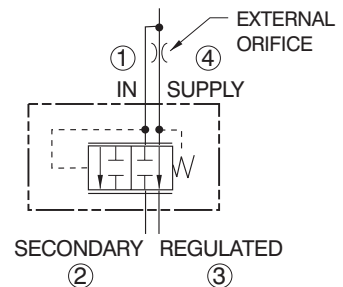


All dimensions in inches (mm)



ORDERING INFORMATION

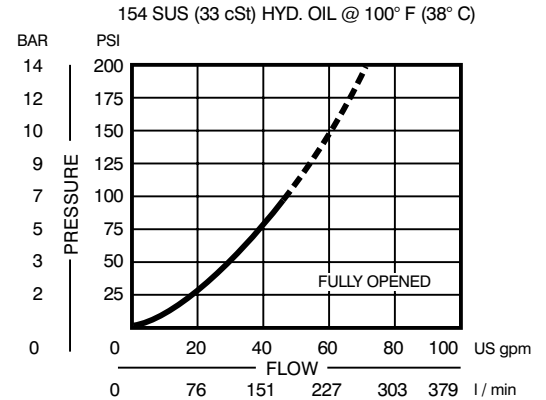
CP312 - 4 - B - 16S - 080		
BASIC CARTRIDGE		DIFFERENTIAL CONTROL PRESSURE
SEALS	SEAL KIT	PSI BAR
B - BUNA-N	120025	040 - 40 (2.76)
V - VITON	120026	080 - 80 (5.52)
PORTS	BODY P/N	110 - 110 (7.58)
0 - CARTRIDGE	NO BODY	150 - 150 (10.34)
6P - 3/4 NPTF	220708	
8P - 1" NPTF	220709	
12S - #12 SAE	220710	
16S - #16 SAE	220711	
6B - 3/4 BSP	221311	
8B - 1" BSP	221239	



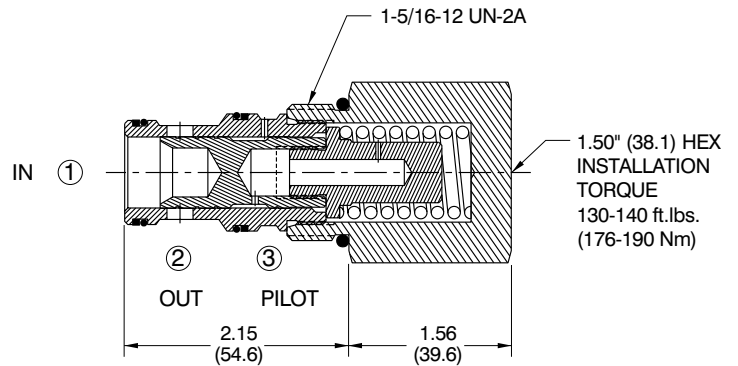
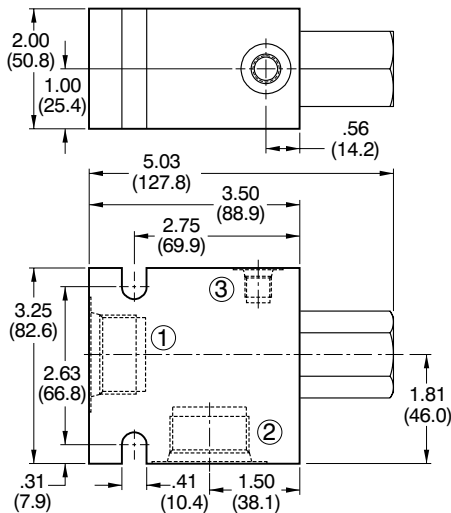
SPECIFICATIONS

- Differential sensing valves are used in conjunction with other valves to provide various control functions such as: flow control, pressure control and/or logic control circuits.
- Valve is a spring-biased normally closed valve. Flow is allowed from 1 to 2 only if pressure at 1 exceeds the spring bias pressure and the pilot pressure at 3. With no pressure at 3 flow is allowed from 1 to 2 once the selected spring bias pressure is exceeded at 1.
- Nominal flow: 50.0 gpm (189 l/m).
- Valve rated to 3000 psi (207 bar) working pressure.
- Valve cartridge is *all* steel construction with precision ground and hardened components to assure smooth operation and extended service life.
- Hi-strength aluminum alloy body allows for maximum circuit design flexibility.
- Buna-N seals are standard. Viton is optional (consult factory for other seal compounds).
- Valve is designed for use with general purpose hydraulic fluids (MIL-H-5606, SAE #10, etc.).
- Cartridge weight .83 lbs (.38 kg).
- Valve cartridge fits Compact Controls [cavity CP16-3S](#).

TYPICAL PERFORMANCE



All dimensions in inches (mm)



ORDERING INFORMATION

CP702 - 1 - B - 16S - 080

BASIC CARTRIDGE

SEALS

B - BUNA-N
V - VITON

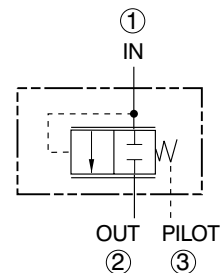
SEAL KIT
120033
120034

PORTS

	BODY P/N	PILOT PORT
0 - CARTRIDGE	NO BODY	
6P - 3/4 NPTF	220618	2P - 1/4 NPTF
8P - 1" NPTF	220619	2P - 1/4 NPTF
12S - #12 SAE	220616	4S - #4 SAE
16S - #16 SAE	220617	4S - #4 SAE
6B - 3/4 BSP	221307	2B - 1/4 BSP
8B - 1" BSP	221308	2B - 1/4 BSP

DIFFERENTIAL CONTROL PRESSURE

PSI	BAR
040 - 40	(2.76)
080 - 80	(5.52)
110 - 110	(7.58)
150 - 150	(10.34)



CP702-2

DIFFERENTIAL SENSING VALVE

(Internal Orifice)



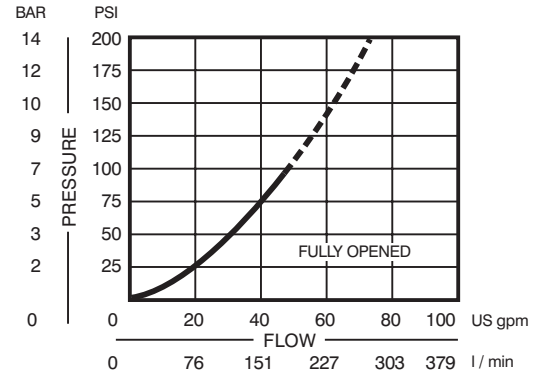
SERIES 16

SPECIFICATIONS

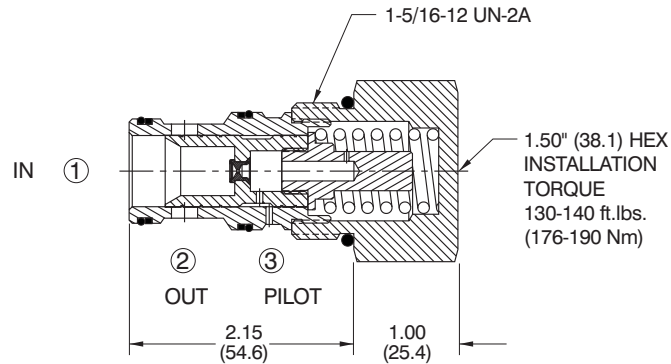
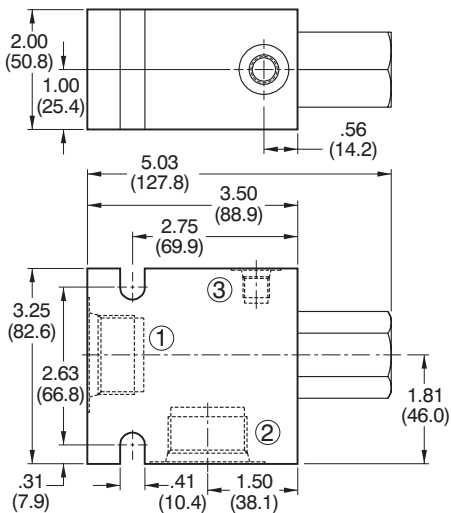
- Differential sensing valves are used in conjunction with other valves to provide various control functions such as: flow control, pressure control and/or logic control circuits.
- Valve is a normally closed vent to open valve. The valve will shift to allow flow from **1** to **2** only when **3** is vented to create a pressure drop across the internal orifice that exceeds the selected spring bias pressure.
- Nominal flow: 50.0 gpm (189 l/m).
- Valve rated to 3000 psi (207 bar) working pressure.
- Valve cartridge is **all** steel construction with precision ground and hardened components to assure smooth operation and extended service life.
- Hi-strength aluminum alloy body allows for maximum circuit design flexibility.
- Buna-N seals are standard. Viton is optional (consult factory for other seal compounds).
- Valve is designed for use with general purpose hydraulic fluids (MIL-H-5606, SAE #10, etc.).
- Cartridge weight .83 lbs (.38 kg).
- Valve cartridge fits Compact Controls [cavity CP16-3S](#).

TYPICAL PERFORMANCE

154 SUS (33 cSt) HYD. OIL @ 100° F (38° C)



All dimensions in inches (mm)



ORDERING INFORMATION

CP702 - 2 - B - 16S - 080

BASIC CARTRIDGE

SEALS

B - BUNA-N
V - VITON

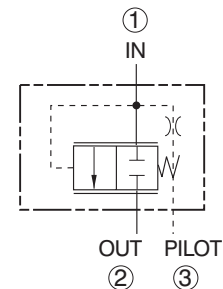
SEAL KIT
120033
120034

PORTS

	BODY P/N	PILOT PORT
0 - CARTRIDGE	NO BODY	
6P - 3/4 NPTF	220618	2P - 1/4 NPTF
8P - 1" NPTF	220619	2P - 1/4 NPTF
12S - #12 SAE	220616	4S - #4 SAE
16S - #16 SAE	220617	4S - #4 SAE
6B - 3/4 BSP	221307	2B - 1/4 BSP
8B - 1" BSP	221308	2B - 1/4 BSP

DIFFERENTIAL CONTROL PRESSURE

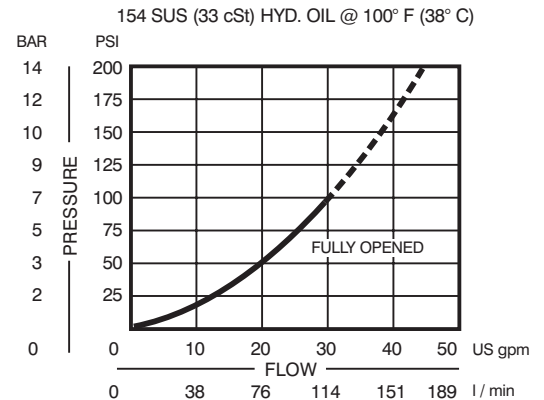
PSI	BAR
040 - 40	(2.76)
080 - 80	(5.52)
110 - 110	(7.58)
150 - 150	(10.34)



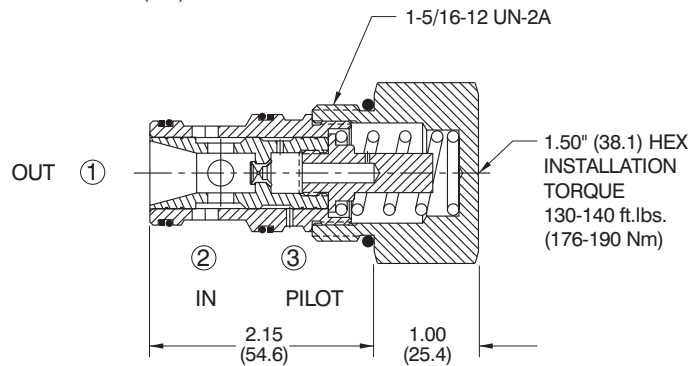
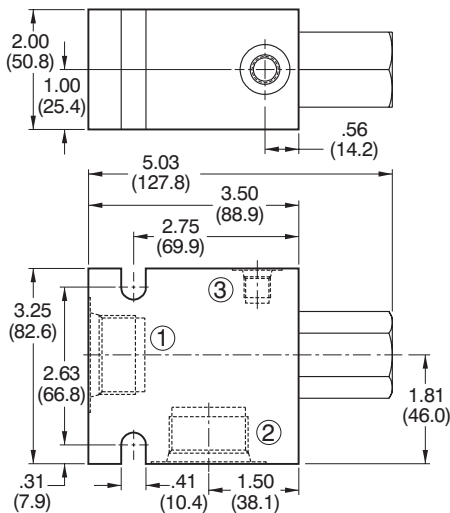
SPECIFICATIONS

- Differential sensing valves are used in conjunction with other valves to provide various control functions such as: flow control, pressure control and/or logic control circuits.
- Valve is a normally open pressure reducing element. Valve is normally used as a remotely controlled main stage of a pressure reducing circuit. By connecting a pilot relief valve to **3** the pressure at **1** can be regulated via the pilot relief.
- Nominal flow: 30.0 gpm (114 l/m).
- Valve rated to 3000 psi (207 bar) working pressure.
- Valve cartridge is **all** steel construction with precision ground and hardened components to assure smooth operation and extended service life.
- Hi-strength aluminum alloy body allows for maximum circuit design flexibility.
- Buna-N seals are standard. Viton is optional (consult factory for other seal compounds).
- Valve is designed for use with general purpose hydraulic fluids (MIL-H-5606, SAE #10, etc.).
- Cartridge weight .83 lbs (.38 kg).
- Valve cartridge fits Compact Controls [cavity CP16-3S](#).

TYPICAL PERFORMANCE



All dimensions in inches (mm)

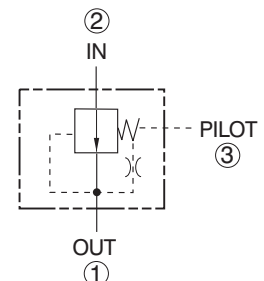


ORDERING INFORMATION

CP702 - 3 - B - 16S - 080

BASIC CARTRIDGE	SEALS	SEAL KIT	DIFFERENTIAL CONTROL PRESSURE
B - BUNA-N		120033	PSI BAR
V - VITON		120034	040 - 40 (2.76)
			080 - 80 (5.52)
			110 - 110 (7.58)
			150 - 150 (10.34)

PORTS	BODY P/N	PILOT PORT
0 - CARTRIDGE	NO BODY	
6P - 3/4 NPTF	220618	2P - 1/4 NPTF
8P - 1" NPTF	220619	2P - 1/4 NPTF
12S - #12 SAE	220616	4S - #4 SAE
16S - #16 SAE	220617	4S - #4 SAE
6B - 3/4 BSP	221307	2B - 1/4 BSP
8B - 1" BSP	221308	2B - 1/4 BSP



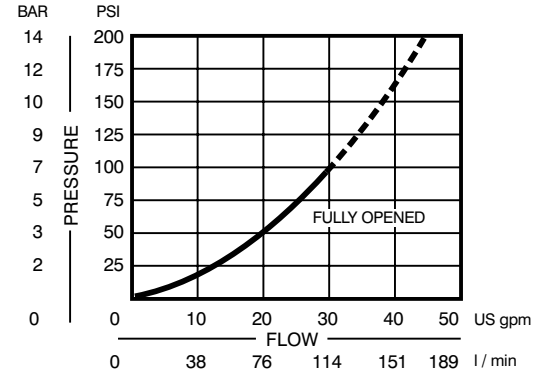
SERIES 16

SPECIFICATIONS

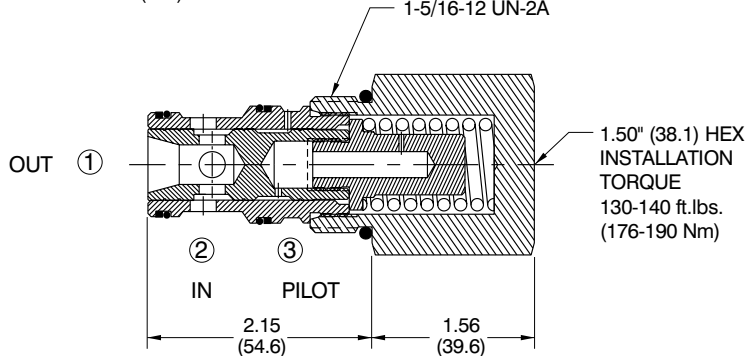
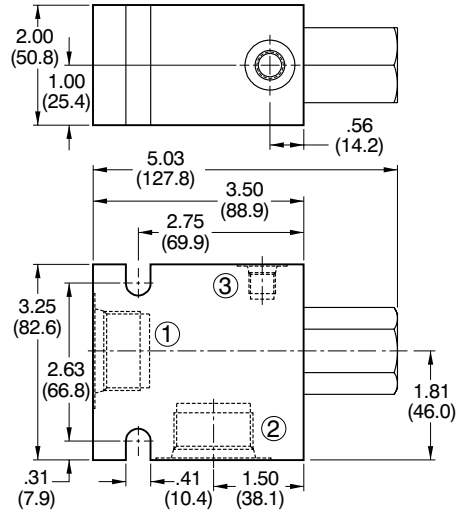
- Differential sensing valves are used in conjunction with other valves to provide various control functions such as: flow control, pressure control and/or logic control circuits.
- Valve is a normally open differential sensing valve. Flow is allowed from 2 to 1 and if 3 is vented then pressure at 1 is limited to the spring bias pressure. If 3 is pressurized then the regulated pressure at 1 is determined by the spring bias pressure plus the pressure at 3. The valve can be used as a restrictive flow control, a pressure reducing element or both simultaneously.
- Nominal flow: 30.0 gpm (114 l/m).
- Valve rated to 3000 psi (207 bar) working pressure.
- Valve cartridge is *all* steel construction with precision ground and hardened components to assure smooth operation and extended service life.
- Hi-strength aluminum alloy body allows for maximum circuit design flexibility.
- Buna-N seals are standard. Viton is optional (consult factory for other seal compounds).
- Valve is designed for use with general purpose hydraulic fluids (MIL-H-5606, SAE #10, etc.).
- Cartridge weight .83 lbs (.38 kg).
- Valve cartridge fits Compact Controls [cavity CP16-3S](#).

TYPICAL PERFORMANCE

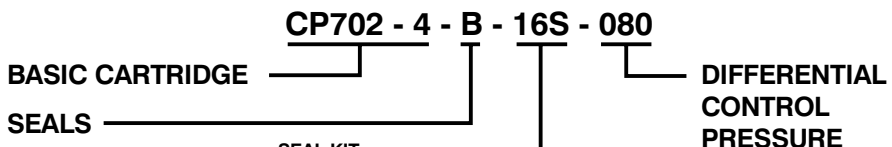
154 SUS (33 cSt) HYD. OIL @ 100° F (38° C)



All dimensions in inches (mm)



ORDERING INFORMATION

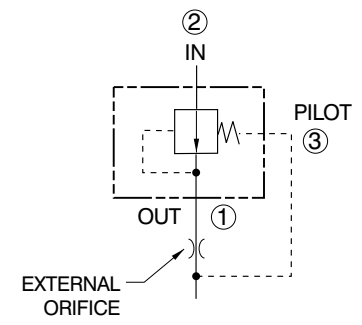


SEALS
B - BUNA-N
V - VITON

SEAL KIT
120033
120034

PORTS	BODY P/N	PILOT PORT
0 - CARTRIDGE	NO BODY	
6P - 3/4 NPTF	220618	2P - 1/4 NPTF
8P - 1" NPTF	220619	2P - 1/4 NPTF
12S - #12 SAE	220616	4S - #4 SAE
16S - #16 SAE	220617	4S - #4 SAE
6B - 3/4 BSP	221307	2B - 1/4 BSP
8B - 1" BSP	221308	2B - 1/4 BSP

PSI	BAR
040	40 (2.76)
080	80 (5.52)
110	110 (7.58)
150	150 (10.34)



SANDWICH VALVES

DESCRIPTION	PAGE
GENERAL INFORMATION	13.00.01
SEAL PLATES	13.00.01
ISO 03	13.00.01
Assembly Notes for ISO 03 Bodies With Seal Plates	13.00.01
ISO 05	13.00.02
Assembly Notes for ISO 05 Bodies With Seal Plates	13.00.03
CARTRIDGE VALVE INSTALLATION	13.00.04
ASSEMBLY NOTES FOR STACKED BODIES	13.00.04
SANDWICH KIT ORDERING CODE	13.00.05
CATALOG GUIDE	13.00.06
TABLE OF CONTENTS	
Relief Valves	13.00.09
Reducing Valves	13.00.10
Reducing/Relieving Valves	13.00.11
Sequence Valves	13.00.11
Check Valves	13.00.12
Flow Control Valves	13.00.14
Pilot Operated Check Valves	13.00.16
Counterbalance Valves	13.00.17
Solenoid Valves	
Load holding	13.00.18
Flow Control	13.00.19
Blocking	13.00.20
Dumping	13.00.20
Unloading	13.00.21
Proportional	13.00.22
Circuit Savers	13.00.23
Solenoid Valves (Directional Control)	13.00.24
Cover Plates	13.00.25
SPACER PLATE KITS	13.A7
STUD KITS/SEAL PLATE KITS	13.A8
MOUNTING PATTERNS	13.A9

GENERAL INFORMATION

Compact Controls offers a wide variety of sandwich bodies that conform to ISO size and format requirements. The sandwiches are available in both aluminum (3000 psi) and ductile iron (5000 psi).

NOTE: CCI manufactures a variety of cartridge valves with similar or identical physical appearance but very different functions and uses. Users should carefully check the part identification code of each valve to ensure correct identification for a particular use. Users are cautioned that identical physical appearance does not indicate identical function or use and that replacement with an incorrect valve may result in serious injury to persons or property. **When replacing any CCI cartridges Users should first check with the manufacturer's service literature. Users are solely responsible for the selection, installation, use, efficiency and suitability of the CCI product.**

NOTE: To avoid serious injury, consult the manufacturer's service manual before working on any hydraulic system and follow all instructions, warnings, and cautions contained therein.

NOTE: When using CCI cartridges, be sure to check the pressure rating of the cartridge before using. [All solenoid valves are rated to 3000 psi (consult factory before using at higher pressures)].

NOTE: When ordering cartridges, be sure to check that the cartridge fits the cavity called out on the sandwich body and that the hook up and flow direction are correct.

SEAL PLATES

The ISO 03 & ISO 05 sandwich bodies are designed to be used with different types of cartridges to allow for maximum circuit versatility. To maximize this flexibility some sandwich valves utilize a seal plate (see fig. 1) instead of using O'ring counter bores in the bodies. This seal plate allows the body to be rotated or flipped, thus allowing the desired function.

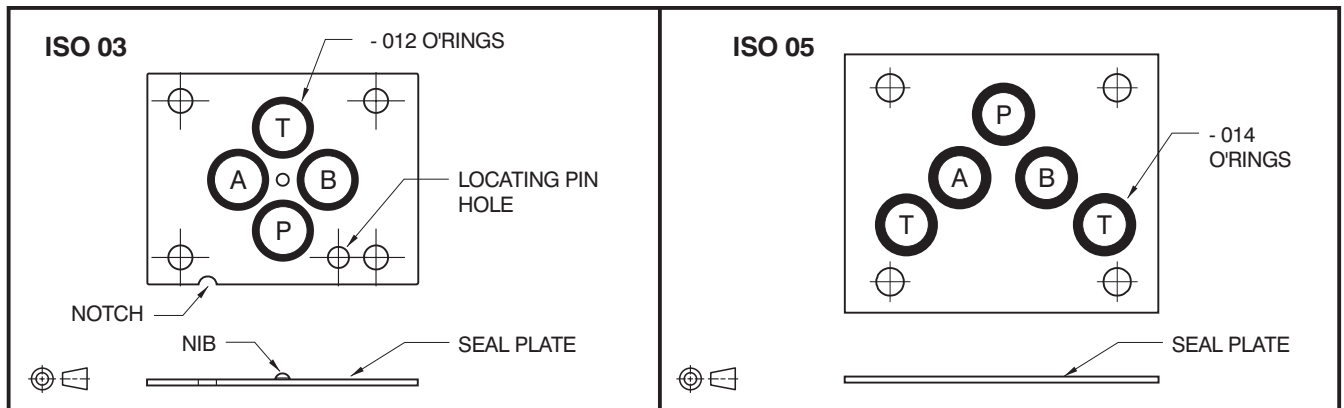


Fig. 1 Seal Plate

ISO 03

Sandwiches that do not utilize the seal plate will have the appropriate locating pin installed and counter bores for O-rings machined into the body, thus their orientation is fixed. Those sandwich bodies requiring the seal plate will have a nib locating hole which is drilled on each mounting face to position the sandwich in the correct relationship to the ports and mounting holes. To ensure that the bodies are oriented correctly the bodies have an arrow and a 1, 2, 3 or 4 above the arrow that will line up with the notch in the seal plate (see fig. 2 and 3). To be sure that the correct sandwich body is used check the catalog page for the desired function and make sure that the body kit number is correct. Multi function sandwiches are stamped for all possible mounting positions and should be carefully inspected to make sure the intended function is correctly installed. Each sandwich page also includes a detail drawing of each possible orientation along with the correct pin location.

Fig. 3 shows how the sandwich valve is oriented relative to the catalog page schematic. The body kit part number is the only identification on the sandwich other than the orientation code.

Assembly Notes for ISO 03 Bodies With Seal Plates:

To assemble ISO 03 sandwich valves with seal plates, follow these steps. (refer to catalog page for detail of each possible orientation)

1. Locate the seal plate (nib upward) in the proper position to correctly align the mounting holes and fluid ports. The notch in the seal plate must be adjacent to the valve interface port P (see fig. 1).
2. Position the sandwich body so that the required function arrow/number points to the notch in the seal plate (see fig. 2).
3. The nib in the seal plate must line up with the clearance hole in the sandwich. The nib always faces the directional control valve and away from the subplate or manifold. If several sandwiches are stacked on top of each other the seal plate nib always faces the directional control valve.

SANDWICH BODIES

ISO 03 & ISO 05

Assembly Notes for ISO 03 Bodies With Seal Plates (continued):

- Once the correct orientation is determined, lift the seal plate up with the sandwich and locate the correct hole in which to press the locating pin (fig. 2 and 3). Press the pin into the hole until it stops. The pin should stick below the seal plate.
- Once the sandwich bodies have been set and the pins installed, the valve stack can be assembled. Make sure all the O-rings are positioned correctly. Install the directional valve on top of the stack and tighten the stud nuts to 40 - 45 in. lb.

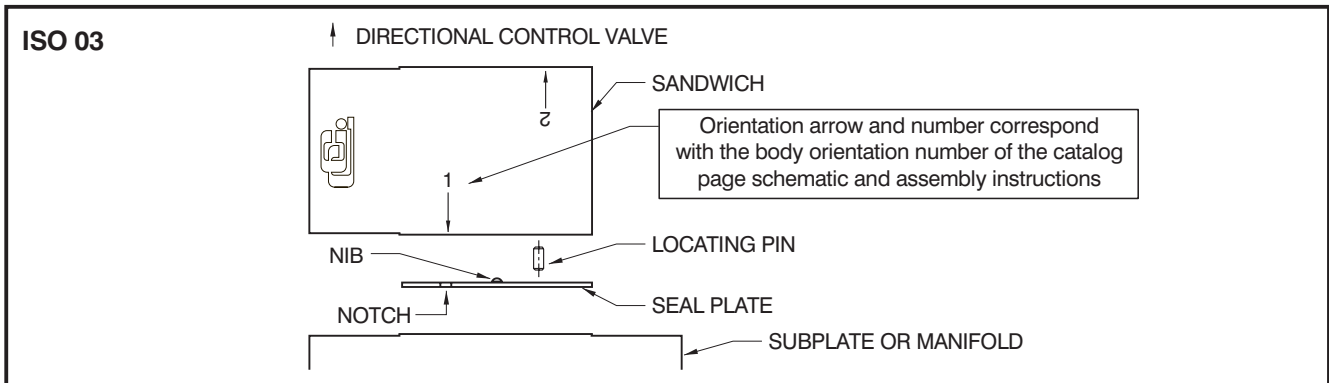


Fig. 2 - Function Orientation

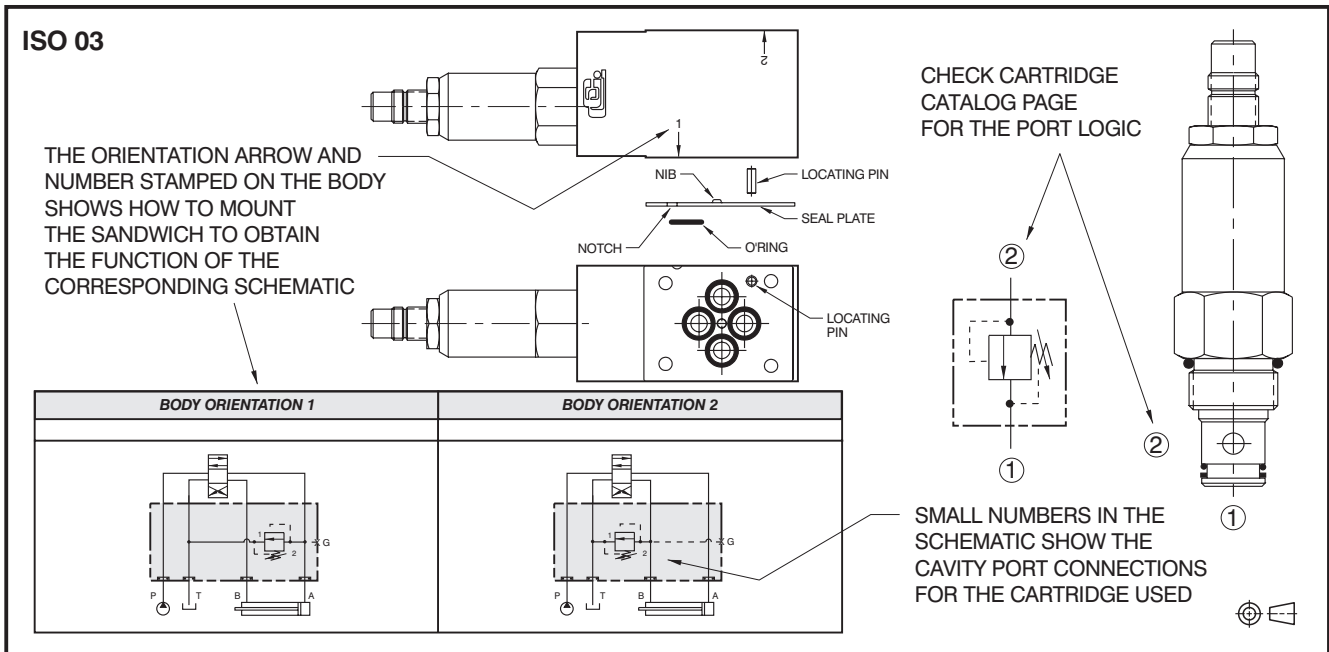


Fig. 3

ISO 05

Sandwiches that do not utilize the seal plate will have counter bores for O-rings machined into the body, thus their orientation is fixed. Those sandwich bodies requiring the seal plate will have arrows and a 1 or 2 stamped above each arrow (see fig. 4 and 5). The arrow will point towards the subplate or manifold that the sandwich is bolting to. To be sure that the correct sandwich body is used check the catalog page for the desired function and make sure that the body kit number is correct. Sandwiches with multiple orientations are stamped for all possible mounting positions and should be carefully inspected to make sure the intended function is correctly installed. Each sandwich page also includes a detail drawing of each possible orientation.

Fig. 5 shows how the sandwich valve is oriented relative to the catalog page schematic. The body kit part number is the only identification on the sandwich other than the orientation code.

Assembly Notes for ISO 05 Bodies With Seal Plates:

To assemble ISO 05 sandwich valves with seal plates, follow these steps.

1. Locate the seal plate in the proper position to correctly align the mounting holes and fluid ports (see fig. 1).
2. Position the sandwich body so that the required function arrow/number points to the seal plate and the mounting holes and fluid ports are correctly aligned. (see fig. 4 & 5).
3. Once the sandwich bodies have been set, the valve stack can be assembled. Make sure all the O-rings are positioned correctly. Install the directional valve on top of the stack and tighten the stud nuts to 105 - 110 in. lb.

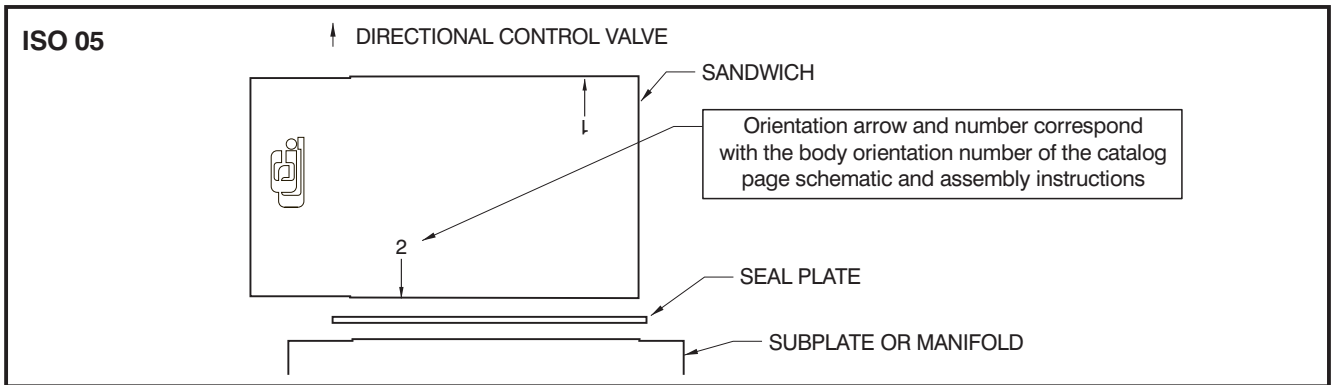


Fig. 4 - Function Orientation

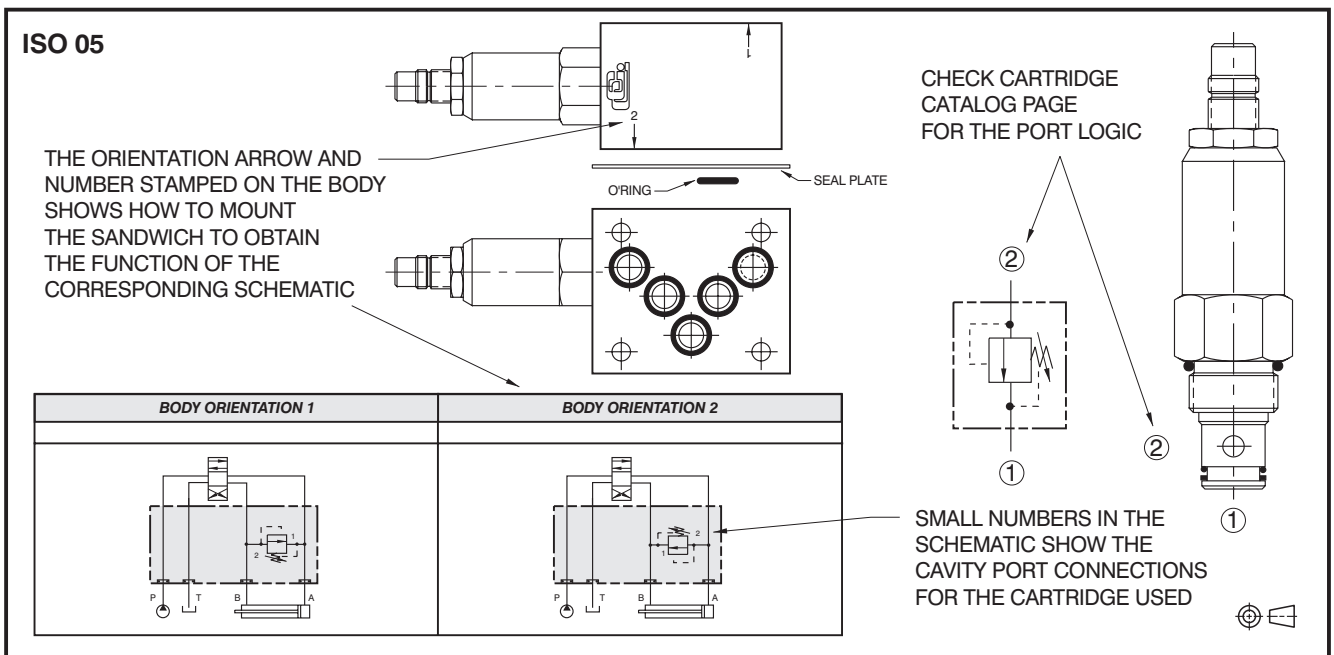


Fig. 5

SANDWICH BODIES

ISO 03 & ISO 05

CARTRIDGE VALVE INSTALLATION:

1. Visually inspect the sandwich body
 - a. Refer to the catalog sheet to insure proper port identification for cartridge functions.
 - b. Inspect the valve cavity to be sure it is free of burrs, chips or other contamination.
2. Prepare the cartridge for insertion into the block.
 - a. Check the cartridge to insure it is free of external contamination.
 - b. Check to be sure O'rings and back-up rings are intact.
 - c. Dip cartridge into clean oil, to top of the threads, to lubricate the O'rings.
3. Assembly
 - a. Insert and screw cartridge into its cavity by hand. It should turn easily up to the top O'ring. If it does not turn easily, the cavity has been machined improperly and the body should not be used.
 - b. Final tightening: See order sheet.

ASSEMBLY NOTES FOR STACKED BODIES:

1. Stack top and stack bottom interface directly with the bottom sealing surface of a directional control valve and the top sealing surface of a subplate, manifold or another sandwich to create a multiple function stack.
2. When stacking sandwich bodies the stacking order can negatively influence the overall performance of the control stack. In general, bodies containing relief or reducing valves connected to the pressure line should be placed at the bottom of the stack (e.g. on top of the fixed mounting interface). Where two sandwich bodies having cartridge valves connected to the control ports, "A" and/or "B" are to be sequentially stacked, priority (bottom of the stack placement) should be given to the sandwich package that is least affected by back pressure (i.e. non-cross piloted functional operations), See example below.

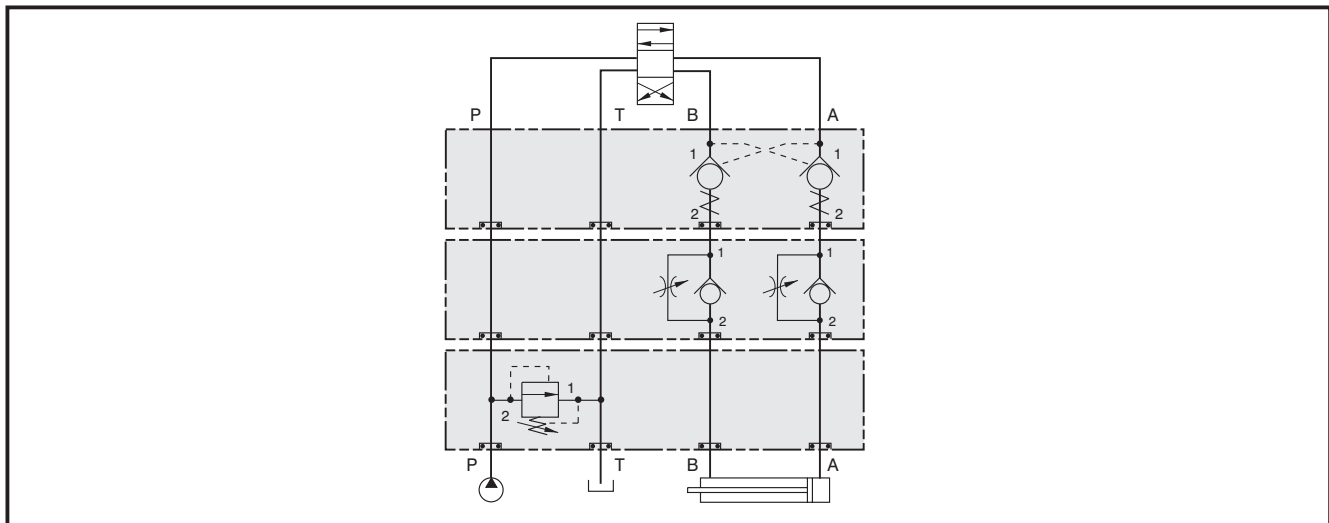
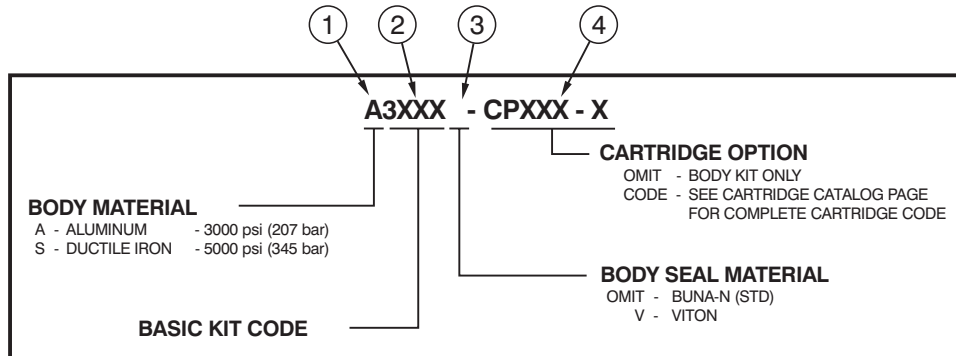


Fig. 6

3. Stack valve body arrangements are simplified with cut-to-length stud kits eliminating the requirement for special-length bolts, see accessories in the sandwich catalog.
4. Spacer plates are available to allow knob adjustment options or coil clearance on cartridge valves that might otherwise pose an interference fit, see accessories in the sandwich catalog.
5. Many sandwiches can be oriented with the adjustment located on the most convenient side (see sandwich catalog page for orientation options), this feature can be applied to other bodies by utilizing the swap blocks, see accessories in the sandwich catalog.
6. A gauge port is standard on some bodies to simplify and assist in system diagnostics and pressure adjustments. This feature can be applied to other bodies by utilizing tap-in blocks, see accessories in the sandwich catalog.

ORDERING INFORMATION



SANDWICH KIT ORDERING CODE:

1. All sandwich kits start with the body material code, A for aluminum (3000 psi) or S for ductile iron (5000 psi).
2. Following the material code is the basic kit code.
3. Next comes the body seal material code. This one digit code is omitted for the standard Buna-N seals, or a V in this position designates Viton seals.
4. The last part of the ordering code is for the cartridge option. Place the ordering code for the cartridge you want in this position. See the appropriate page in the *HYDRAULIC CARTRIDGES AND MANIFOLDS* catalog for the complete cartridge code and options. Order cartridge with ports code "0".

If this code is omitted then you are ordering the *BODY KIT ONLY*. The body kit will contain the sandwich body and body seal material. or in applications that allow the sandwich body to be rotated or flipped, the kit will contain the sandwich body and a seal plate kit. The D03 seal plate kit contains a seal plate, seal material, and a locating pin. The D05 seal plate kit contains a seal plate and seal material.

SANDWICH BODIES

ISO 03 & ISO 05

CATALOG GUIDE



TABLE OF CONTENTS

RELIEF VALVES

Function	ISO 03	ISO 05
Relief Valve - Out of T Cartridge rated to 3000 psi	 Aluminum Kit - A3107 Ductile Iron Kit - S3107 See Page - 13.23 Stack Height - 1.97 (50.0)* Order Cartridge - CP200-1	 Aluminum Kit - A3107 Ductile Iron Kit - S3107 See Page - 13.23 Stack Height - 1.97 (50.0)* Order Cartridge - CP210-2
Relief Valve - Out of T Cartridge rated to 5000 psi	 Aluminum Kit - A3102 Ductile Iron Kit - S3102 See Page - 13.09 Stack Height - 1.97 (50.0)* Order Cartridge - CP200-1	 Aluminum Kit - A5102 (w/o Gauge Port) Ductile Iron Kit - S5102 (w/o Gauge Port) See Page - 13.09 Stack Height - 1.97 (50.0)* Order Cartridge - CP200-1
Relief Valve - P to T Cartridge rated to 3000 psi	 Aluminum Kit - A3101 Ductile Iron Kit - S3101 See Page - 13.05 Stack Height - 1.97 (50.0)* Order Cartridge - CP200-1	 Aluminum Kit - A5101 (w/o Gauge Port) Ductile Iron Kit - S5101 (w/o Gauge Port) See Page - 13.05 Stack Height - 1.97 (50.0)* Order Cartridge - CP210-2
Relief Valve - P to T Cartridge rated to 5000 psi	 Aluminum Kit - A3104 Ductile Iron Kit - S3104 See Page - 13.15 Stack Height - 1.97 (50.0)* Order Cartridge - CP210-2	 Aluminum Kit - A5104 Ductile Iron Kit - S5104 See Page - 13.15 Stack Height - 2.36 (60.0)* Order Cartridge - CP311-2
Relief Valve - B to T Cartridge rated to 3000 psi	 Aluminum Kit - A3101 Ductile Iron Kit - S3101 See Page - 13.05 Stack Height - 1.97 (50.0)* Order Cartridge - CP200-1	 Aluminum Kit - A5101 Ductile Iron Kit - S5101 See Page - 13.05 Stack Height - 1.97 (50.0)* Order Cartridge - CP210-2
Relief Valve - B to T Cartridge rated to 5000 psi	 Aluminum Kit - A3104 Ductile Iron Kit - S3104 See Page - 13.15 Stack Height - 1.97 (50.0)* Order Cartridge - CP210-2	 Aluminum Kit - A5104 Ductile Iron Kit - S5104 See Page - 13.15 Stack Height - 2.36 (60.0)* Order Cartridge - CP311-2
Relief Valve - A to T Cartridge rated to 3000 psi	 Aluminum Kit - A3101 Ductile Iron Kit - S3101 See Page - 13.05 Stack Height - 1.97 (50.0)* Order Cartridge - CP200-1	 Aluminum Kit - A5101 Ductile Iron Kit - S5101 See Page - 13.05 Stack Height - 1.97 (50.0)* Order Cartridge - CP210-2
Relief Valve - A to T Cartridge rated to 5000 psi	 Aluminum Kit - A3104 Ductile Iron Kit - S3104 See Page - 13.15 Stack Height - 1.97 (50.0)* Order Cartridge - CP210-2	 Aluminum Kit - A5104 Ductile Iron Kit - S5104 See Page - 13.15 Stack Height - 2.36 (60.0)* Order Cartridge - CP311-2
Relief Valve - A and B to T Cartridge rated to 3000 psi	 Aluminum Kit - A3101 Ductile Iron Kit - S3101 See Page - 13.05 Stack Height - 1.97 (50.0)* Order Cartridge - CP200-1	 Aluminum Kit - A5101 Ductile Iron Kit - S5101 See Page - 13.05 Stack Height - 1.97 (50.0)* Order Cartridge - CP210-2
Relief Valve - A to B Cartridge rated to 3000 psi	 Aluminum Kit - A3101 Ductile Iron Kit - S3101 See Page - 13.05 Stack Height - 1.97 (50.0)* Order Cartridge - CP200-1	 Aluminum Kit - A5101 Ductile Iron Kit - S5101 See Page - 13.05 Stack Height - 1.97 (50.0)* Order Cartridge - CP210-2
Relief Valve - A to B Cartridge rated to 5000 psi	 Aluminum Kit - A3104 Ductile Iron Kit - S3104 See Page - 13.15 Stack Height - 1.97 (50.0)* Order Cartridge - CP210-2	 Aluminum Kit - A5104 Ductile Iron Kit - S5104 See Page - 13.15 Stack Height - 2.36 (60.0)* Order Cartridge - CP311-2

USING THE CATALOG PAGES:

The following is an example of how to use the Compact Controls *Sandwich Catalog* and the *Hydraulic Cartridges and Manifolds* catalog.

- Find the desired schematic in the table of contents.
- Select either the ISO 03 or ISO 05 column.
- From the ISO 03/ISO 05 column select either the aluminum kit (body rated to 3000 psi) or the ductile iron kit (body rated to 5000 psi).
- The cartridge required to achieve the desired function will be listed here. See the cartridge page located in the *Hydraulic Cartridges and Manifolds* catalog for complete code and options.

Note: When ordering cartridges for use with a sandwich kit, always order the "PORTS" option "0 - cartridge no body."



Hydraulic Cartridges • Manifolds

3102 SANDWICH VALVE BODY

ISO 03

SANDWICH KIT ORDERING CODE

A3102 - CPXXX - X

BODY MATERIAL
 A - ALUMINUM - 3000 psi (207 bar)
 S - DUCTILE IRON - 5000 psi (345 bar)

CARTRIDGE OPTION
 DMT - BODY KIT ONLY
 CODE - SEE CARTRIDGE CATALOG PAGE FOR COMPLETE CARTRIDGE CODE (for application options see page 13.10)

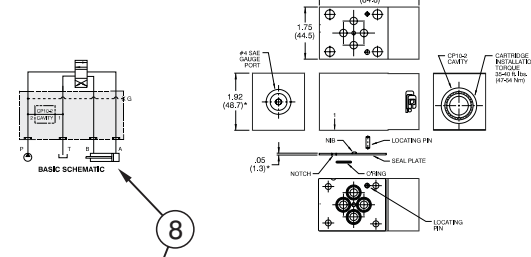
BODY SEAL MATERIAL
 DMT - Buna-N (STD) 120076
 V - Viton 120168

SPECIFICATIONS

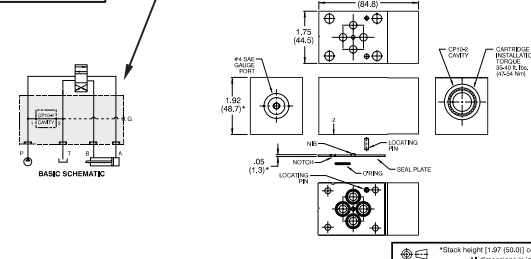
- Mounting Pattern:** ISO 4401-03-02
 CETOP RP 121 H4-2-A-03
 DIN 24 340 A6
 NFPA T3.51 R2 D03
- Non-Shock Pressure Ratings:**
 Aluminum Bodies (A) - 3000 psi (207 bar)
 Ductile Bodies (S) - 5000 psi (345 bar)
- Weight (Body and Seal Plate):**
 Aluminum Bodies (A) - .95 lbs (-.43 kg)
 Ductile Bodies (S) - 2.91 lbs (1.32 kg)

ASSEMBLY INSTRUCTIONS

BODY ORIENTATION 1



BODY ORIENTATION 2



*Stack height 1.97 (50.0) conforms to ISO 7790

† Dimensions in inches (mm)

13


13.09

PAGE LOCATED IN SANDWICH CATALOG

CATALOG GUIDE

USING THE CATALOG PAGES (continued):

5. Page location of the sandwich kit in the *Sandwich Catalog*. This page contains the assembly information and the orientation options.
6. Sandwich page includes detailed assembly instructions and comes with each sandwich kit, or can be found in the *Sandwich Catalog*.
7. Body orientation: select desired orientation and follow assembly instructions to achieve the desired function.
8. Basic schematic function of selected kit orientation.
9. Determine orientation to achieve desired sandwich kit function. Use this orientation choice for assembly instructions (see step 7).
10. See *Hydraulic Cartridges and Manifolds* catalog for complete cartridge code and options.


Compact Controls, Inc.
 Hydraulic Cartridges • Manifolds

3102 SANDWICH APPLICATION OPTIONS

ISO 03

SANDWICH KIT ORDERING CODE

A3102 - CPXXX - X

BODY MATERIAL
 A - ALUMINUM - 3000 psi (207 bar)
 S - DUCTILE IRON - 5000 psi (345 bar)

BODY SEAL MATERIAL
 OMIT - BUNA-N (STD) SEAL KIT 120076
 VITON SEAL KIT 120188

CARTRIDGE OPTION (BODY KIT ONLY)	SCHEMATIC	
	BODY ORIENTATION 1	BODY ORIENTATION 2
OMIT (BODY KIT ONLY)		
CP100 - 1 - X - 0 - XXX CHECK VALVE Cartridge rated to 3000 psi FOR CODE AND OPTIONS SEE CP100-1		
CP100 - 2 - X - 0 - XXX CHECK VALVE Cartridge rated to 5000 psi FOR CODE AND OPTIONS SEE CP100-2		
CP200 - 1 - X - 0 - X - X RELIEF VALVE Cartridge rated to 3000 psi FOR CODE AND OPTIONS SEE CP200-1		
CP210 - 2 - X - 0 - X - X RELIEF VALVE Cartridge rated to 5000 psi FOR CODE AND OPTIONS SEE CP210-2		

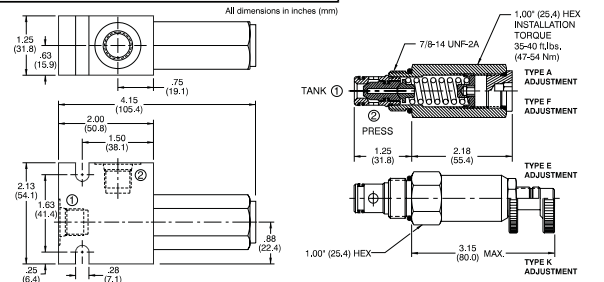
13.10

CP200-1 RELIEF VALVE (Differential Area Type)

SERIES 10

SPECIFICATIONS

- This valve relieves from 2 to 1 and is a direct acting differential area type relief. It provides fast response, is rugged, dirt tolerant and has pressure vs. flow characteristics.
- Nominal flow: 20.0 gpm (76 l/m).
- Valve rated to 3000 psi (207 bar) working pressure.
- Valve leakage: 10 drops per min, max, at 80% of pressure setting.
- Valve cartridge is all steel construction with precision ground and l components to assure smooth operation and extended service life.
- Hi-strength aluminum alloy body allows for maximum circuit design.
- Buna-N seals are standard, Viton is optional (consult factory for oil compounds).
- Valve is designed for use with general purpose hydraulic fluids (MIL SAE #10, etc.).
- Cartridge weight: 47 lbs (21 kg).
- Valve cartridge fits Compact Controls cavity CP10-2.



ORDERING INFORMATION

CP200 - 1 - B - BS - A - C

BASIC CARTRIDGE

SEALS
 B - BUNA-N
 V - VITON

PORTS
 0 - CARTRIDGE
 3P - 3/8 NPTF
 4P - 1/2 NPTF
 6S - #6 SAE
 8S - #8 SAE
 3B - 3/8 BSP
 4B - 1/2 BSP

BODY P/N
 NO BODY
 220292
 220124
 220125
 220126
 221214
 221215

PRESSURE RANGE

PSI	BAR
A - 100-500 (7-35)	
Std. Setting 400 (28)	
B - 2500-3000 (17-198)	
Std. Setting 1000 (69)	
C - 600-3600 (41-248)	
Std. Setting 1500 (103)	

ADJUSTMENT OPTION
 A - INTERNAL ADJUSTMENT
 E - EXTERNAL ADJUSTMENT
 F - TAMPER RESISTANT
 K - KNOB ADJUSTMENT

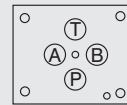
3.04

PAGE LOCATED IN SANDWICH CATALOG

PAGE LOCATED IN HYDRAULIC CARTRIDGES AND MANIFOLDS CATALOG

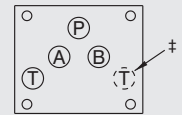
TABLE OF CONTENTS

ISO 03



ISO 4401-03-02
CETOP RP 121 H-4.2-4-03
DIN 24 340 A6
NFPA/T3.51 R2 D03

ISO 05



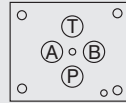
ISO 4401-05-04
CETOP RP 121 H-4.2-4-05
DIN 24 340 A10-FORM A
‡ DIN 24 340 A10-FORM B
NFPA/T3.51 R2 D05
‡ 2 Symmetrical Tank Connections Provided

RELIEF VALVES			
Function			
Relief Valve - Out of T Cartridge rated to 3000 psi		Aluminum Kit - A3107 Ductile Iron Kit - S3107 See Page - 13.23 Stack Height - 1.97 (50.0)* Order Cartridge - CP200-1	
Relief Valve - Out of T Cartridge rated to 5000 psi		Aluminum Kit - A3107 Ductile Iron Kit - S3107 See Page - 13.23 Stack Height - 1.97 (50.0)* Order Cartridge - CP210-2	
Relief Valve - P to T Cartridge rated to 3000 psi		Aluminum Kit - A3102 Ductile Iron Kit - S3102 See Page - 13.09 Stack Height - 1.97 (50.0)* Order Cartridge - CP200-1	Aluminum Kit - A5100 (w/o Gauge Port) Ductile Iron Kit - S5100 (w/o Gauge Port) See Page - 13.65 Stack Height - 1.97 (50.0)* Order Cartridge - CP200-1
Relief Valve - P to T Cartridge rated to 5000 psi		Aluminum Kit - A3102 Ductile Iron Kit - S3102 See Page - 13.09 Stack Height - 1.97 (50.0)* Order Cartridge - CP210-2	Aluminum Kit - A5101 (w/o Gauge Port) Ductile Iron Kit - S5101 (w/o Gauge Port) See Page - 13.69 Stack Height - 1.97 (50.0)* Order Cartridge - CP210-2
Relief Valve - B to T Cartridge rated to 3000 psi		Aluminum Kit - A3101 Ductile Iron Kit - S3101 See Page - 13.05 Stack Height - 1.97 (50.0)* Order Cartridge - CP200-1	
Relief Valve - B to T Cartridge rated to 5000 psi		Aluminum Kit - A3104 Ductile Iron Kit - S3104 See Page - 13.15 Stack Height - 1.97 (50.0)* Order Cartridge - CP210-2	Aluminum Kit - A5110‡ Ductile Iron Kit - S5110‡ See Page - 13.89 Stack Height - 2.36 (60.0)* Order Cartridge - CP211-2
Relief Valve - A to T Cartridge rated to 3000 psi		Aluminum Kit - A3101 Ductile Iron Kit - S3101 See Page - 13.05 Stack Height - 1.97 (50.0)* Order Cartridge - CP200-1	
Relief Valve - A to T Cartridge rated to 5000 psi		Aluminum Kit - A3104 Ductile Iron Kit - S3104 See Page - 13.15 Stack Height - 1.97 (50.0)* Order Cartridge - CP210-2	Aluminum Kit - A5110‡ Ductile Iron Kit - S5110‡ See Page - 13.89 Stack Height - 2.36 (60.0)* Order Cartridge - CP211-2
Relief Valve - A and B to T Cartridge rated to 3000 psi		Aluminum Kit - A3100 Ductile Iron Kit - S3100 See Page - 13.01 Stack Height - 1.97 (50.0)* Order Cartridge - CP200-1 (2 REQ'D)	
Relief Valve - A to B Cartridge rated to 3000 psi		Aluminum Kit - A3121 Ductile Iron Kit - S3121 See Page - 13.39 Stack Height - 1.97 (50.0)* Order Cartridge - CP200-1	Aluminum Kit - A5106‡ Ductile Iron Kit - S5106‡ See Page - 13.79 Stack Height - 1.97 (50.0)* Order Cartridge - CP200-1
Relief Valve - A to B Cartridge rated to 5000 psi		Aluminum Kit - A3121 Ductile Iron Kit - S3121 See Page - 13.39 Stack Height - 1.97 (50.0)* Order Cartridge - CP210-2	Aluminum Kit - A5106‡ Ductile Iron Kit - S5106‡ See Page - 13.79 Stack Height - 1.97 (50.0)* Order Cartridge - CP210-2



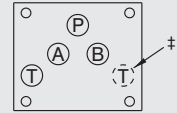
TABLE OF CONTENTS

ISO 03



ISO 4401-03-02
CETOP RP 121 H-4.2-4-03
DIN 24 340 A6
NFPA/T3.51 R2 D03

ISO 05



ISO 4401-05-04
CETOP RP 121 H-4.2-4-05
DIN 24 340 A10-FORM A
‡ DIN 24 340 A10-FORM B
NFPA/T3.51 R2 D05

‡ 2 Symmetrical Tank Connections Provided

RELIEF VALVES <i>(CONTINUED)</i>				
Function	P	T	B	A
Relief Valve - B to A Cartridge rated to 3000 psi				
Relief Valve - B to A Cartridge rated to 5000 psi				
Bi-Directional Relief Valve - A to B and B to A Cartridge rated to 3000 psi				
Dual Cross Relief A to B and B to A Cartridge rated to 3000 psi				
Dual Cross Relief A to B and B to A Cartridge rated to 5000 psi				
Dual Cross Relief A to B and B to A (High Capacity) Cartridge rated to 5000 psi				
REDUCING VALVES				
Pressure Reducing Valve On A - Drained to B Cartridge rated to 5000 psi				
Pressure Reducing Valve On B - Drained to A Cartridge rated to 5000 psi				
Pressure Reducing Valve On A and B Drains to Opposite Port Cartridge rated to 5000 psi				

Aluminum Kit - **A3121**
Ductile Iron Kit - **S3121**
See Page - **13.39**
Stack Height - **1.97 (50.0)***
Order Cartridge - **CP200-1**

Aluminum Kit - **A3121**
Ductile Iron Kit - **S3121**
See Page - **13.39**
Stack Height - **1.97 (50.0)***
Order Cartridge - **CP210-2**

Aluminum Kit - **A3121**
Ductile Iron Kit - **S3121**
See Page - **13.39**
Stack Height - **1.97 (50.0)***
Order Cartridge - **CP200-7**

Aluminum Kit - **A3103**
Ductile Iron Kit - **S3103**
See Page - **13.13**
Stack Height - **1.97 (50.0)***
Order Cartridge - **CP200-1 (2 REQ'D)**

Aluminum Kit - **A3103**
Ductile Iron Kit - **S3103**
See Page - **13.13**
Stack Height - **1.97 (50.0)***
Order Cartridge - **CP210-2 (2 REQ'D)**

Aluminum Kit - **A5106‡**
Ductile Iron Kit - **S5106‡**
See Page - **13.79**
Stack Height - **1.97 (50.0)***
Order Cartridge - **CP200-1**

Aluminum Kit - **A5106‡**
Ductile Iron Kit - **S5106‡**
See Page - **13.79**
Stack Height - **1.97 (50.0)***
Order Cartridge - **CP210-2**

Aluminum Kit - **A5106‡**
Ductile Iron Kit - **S5106‡**
See Page - **13.79**
Stack Height - **1.97 (50.0)***
Order Cartridge - **CP200-7**

Aluminum Kit - **A5102**
Ductile Iron Kit - **S5102**
See Page - **13.71**
Stack Height - **2.36 (60.0)***
Order Cartridge - **CP200-1 (2 REQ'D)**

Aluminum Kit - **A5102**
Ductile Iron Kit - **S5102**
See Page - **13.71**
Stack Height - **2.36 (60.0)***
Order Cartridge - **CP210-2 (2 REQ'D)**

Aluminum Kit - **A5108**
Ductile Iron Kit - **S5108**
See Page - **13.85**
Stack Height - **2.76 (70.0)***
Order Cartridge - **CP211-2 (2 REQ'D)**

Aluminum Kit - **A3122**
Ductile Iron Kit - **S3122**
See Page - **13.43**
Stack Height - **1.97 (50.0)***
Order Cartridge - **CP230-4**

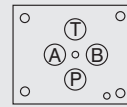
Aluminum Kit - **A3122**
Ductile Iron Kit - **S3122**
See Page - **13.43**
Stack Height - **1.97 (50.0)***
Order Cartridge - **CP230-4**

Aluminum Kit - **A3123**
Ductile Iron Kit - **S3123**
See Page - **13.45**
Stack Height - **1.97 (50.0)***
Order Cartridge - **CP230-4 (2 REQ'D)**



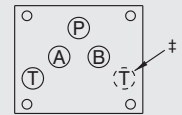
TABLE OF CONTENTS

ISO 03



ISO 4401-03-02
CETOP RP 121 H-4.2-4-03
DIN 24 340 A6
NFPA/T3.51 R2 D03

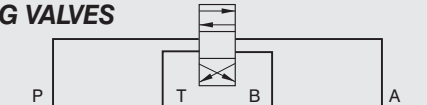
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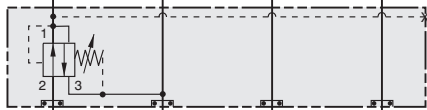
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CETOP RP 121 H-4.2-4-05
DIN 24 340 A10-FORM A
‡ DIN 24 340 A10-FORM B
NFPA/T3.51 R2 D05
‡ 2 Symmetrical Tank Connections Provided

REDUCING/RELIEVING VALVES

Function



Pressure Reducing/
Relieving Valve
On **P** - Tank to **T**
Cartridge rated to 5000 psi



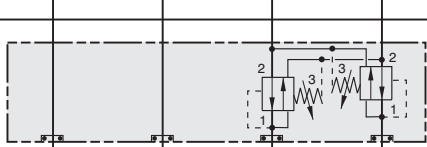
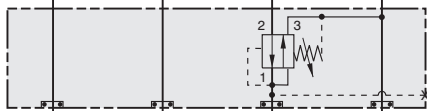
Aluminum Kit - **A3105**
Ductile Iron Kit - **S3105**
See Page - **13.17**
Stack Height - **2.36 (60.0)***
Order Cartridge - **CP230-3**

Pressure Reducing/
Relieving Valve
On **A** - Tank to **B**
Cartridge rated to 5000 psi



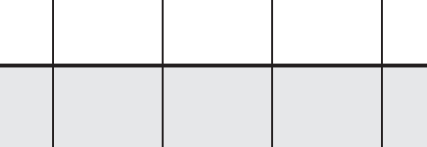
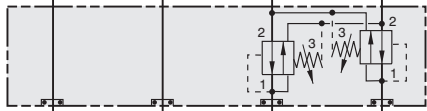
Aluminum Kit - **A3122**
Ductile Iron Kit - **S3122**
See Page - **13.43**
Stack Height - **1.97 (50.0)***
Order Cartridge - **CP230-3**

Pressure Reducing/
Relieving Valve
On **B** - Tank to **A**
Cartridge rated to 5000 psi



Aluminum Kit - **A3122**
Ductile Iron Kit - **S3122**
See Page - **13.43**
Stack Height - **1.97 (50.0)***
Order Cartridge - **CP230-3**

Pressure Reducing/
Relieving Valve
On **A and B**
Tank to Opposite Port
Cartridge rated to 5000 psi



Aluminum Kit - **A3123**
Ductile Iron Kit - **S3123**
See Page - **13.45**
Stack Height - **1.97 (50.0)***
Order Cartridge - **CP230-3 (2 REQD)**

SEQUENCE VALVES

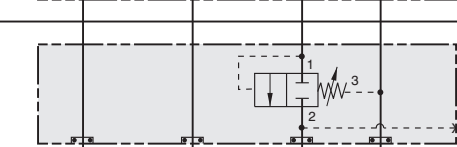
Function

Sequence Valve
On **P**
Cartridge rated to 3000 psi



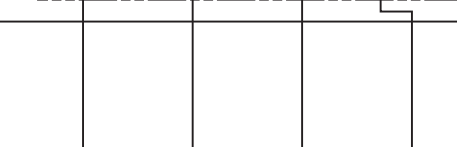
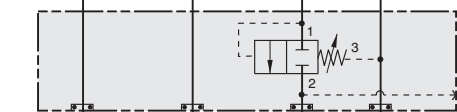
Aluminum Kit - **A3105**
Ductile Iron Kit - **S3105**
See Page - **13.17**
Stack Height - **2.36 (60.0)***
Order Cartridge - **CP240-8**

Sequence Valve
On **A**
Cartridge rated to 3000 psi



Aluminum Kit - **A3122**
Ductile Iron Kit - **S3122**
See Page - **13.43**
Stack Height - **1.97 (50.0)***
Order Cartridge - **CP240-8**

Sequence Valve
On **B**
Cartridge rated to 3000 psi

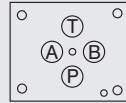


Aluminum Kit - **A3122**
Ductile Iron Kit - **S3122**
See Page - **13.43**
Stack Height - **1.97 (50.0)***
Order Cartridge - **CP240-8**



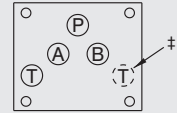
TABLE OF CONTENTS

ISO 03



ISO 4401-03-02
CETOP RP 121 H-4.2-4-03
DIN 24 340 A6
NFPA/T3.51 R2 D03

ISO 05

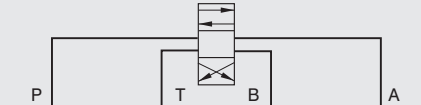


ISO 4401-05-04
CETOP RP 121 H-4.2-4-05
DIN 24 340 A10-FORM A
‡ DIN 24 340 A10-FORM B
NFPA/T3.51 R2 D05

‡ 2 Symmetrical Tank Connections Provided

CHECK VALVES

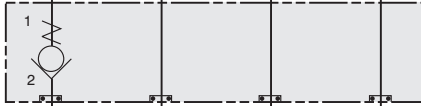
Function



Check Valve on **P**
Cartridge rated to 3000 psi



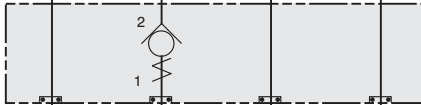
Check Valve on **P**
Cartridge rated to 5000 psi



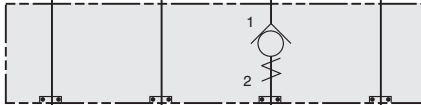
Check Valve on **T**
Cartridge rated to 3000 psi



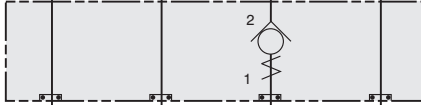
Check Valve on **T**
Cartridge rated to 5000 psi



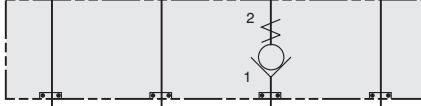
Check Valve on **B**
Free Flow Out of Valve
Cartridge rated to 3000 psi



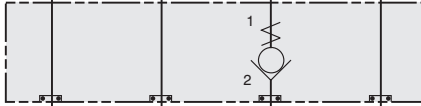
Check Valve on **B**
Free Flow Out of Valve
Cartridge rated to 5000 psi



Check Valve on **B**
Free Flow Into Valve
Cartridge rated to 3000 psi



Check Valve on **B**
Free Flow Into Valve
Cartridge rated to 5000 psi



Check Valve on **A**
Free Flow Out of Valve
Cartridge rated to 3000 psi



Check Valve on **A**
Free Flow Out of Valve
Cartridge rated to 5000 psi



Check Valve on **A**
Free Flow Into Valve
Cartridge rated to 3000 psi



Aluminum Kit - **A3107**
Ductile Iron Kit - **S3107**
See Page - **13.23**
Stack Height - **1.97 (50.0)***
Order Cartridge - **CP100-1**

Aluminum Kit - **A3107**
Ductile Iron Kit - **S3107**
See Page - **13.23**
Stack Height - **1.97 (50.0)***
Order Cartridge - **CP100-2**

Aluminum Kit - **A3107**
Ductile Iron Kit - **S3107**
See Page - **13.23**
Stack Height - **1.97 (50.0)***
Order Cartridge - **CP100-1**

Aluminum Kit - **A3107**
Ductile Iron Kit - **S3107**
See Page - **13.23**
Stack Height - **1.97 (50.0)***
Order Cartridge - **CP100-2**

Aluminum Kit - **A3124**
Ductile Iron Kit - **S3124**
See Page - **13.47**
Stack Height - **1.97 (50.0)***
Order Cartridge - **CP100-1**

Aluminum Kit - **A3124**
Ductile Iron Kit - **S3124**
See Page - **13.47**
Stack Height - **1.97 (50.0)***
Order Cartridge - **CP100-2**

Aluminum Kit - **A3124**
Ductile Iron Kit - **S3124**
See Page - **13.47**
Stack Height - **1.97 (50.0)***
Order Cartridge - **CP100-1**

Aluminum Kit - **A3124**
Ductile Iron Kit - **S3124**
See Page - **13.47**
Stack Height - **1.97 (50.0)***
Order Cartridge - **CP100-2**

Aluminum Kit - **A3124**
Ductile Iron Kit - **S3124**
See Page - **13.47**
Stack Height - **1.97 (50.0)***
Order Cartridge - **CP100-1**

Aluminum Kit - **A3124**
Ductile Iron Kit - **S3124**
See Page - **13.47**
Stack Height - **1.97 (50.0)***
Order Cartridge - **CP100-2**

Aluminum Kit - **A3124**
Ductile Iron Kit - **S3124**
See Page - **13.47**
Stack Height - **1.97 (50.0)***
Order Cartridge - **CP100-1**

Aluminum Kit - **A5112‡**
Ductile Iron Kit - **S5112‡**
See Page - **13.95**
Stack Height - **2.36 (60.0)***
Order Cartridge - **CP101-1**

Aluminum Kit - **A5113‡**
Ductile Iron Kit - **S5113‡**
See Page - **13.99**
Stack Height - **2.36 (60.0)***
Order Cartridge - **CP101-2**

Aluminum Kit - **A5113‡**
Ductile Iron Kit - **S5113‡**
See Page - **13.99**
Stack Height - **2.36 (60.0)***
Order Cartridge - **CP101-1**

Aluminum Kit - **A5112‡**
Ductile Iron Kit - **S5112‡**
See Page - **13.95**
Stack Height - **2.36 (60.0)***
Order Cartridge - **CP101-2**

Aluminum Kit - **A5113‡**
Ductile Iron Kit - **S5113‡**
See Page - **13.99**
Stack Height - **2.36 (60.0)***
Order Cartridge - **CP101-1**

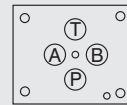
Aluminum Kit - **A5112‡**
Ductile Iron Kit - **S5112‡**
See Page - **13.95**
Stack Height - **2.36 (60.0)***
Order Cartridge - **CP101-2**

Aluminum Kit - **A5112‡**
Ductile Iron Kit - **S5112‡**
See Page - **13.95**
Stack Height - **2.36 (60.0)***
Order Cartridge - **CP101-1**



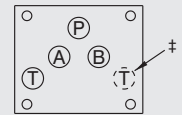
TABLE OF CONTENTS

ISO 03



ISO 4401-03-02
CETOP RP 121 H-4.2-4-03
DIN 24 340 A6
NFPA/T3.51 R2 D03

ISO 05



ISO 4401-05-04
CETOP RP 121 H-4.2-4-05
DIN 24 340 A10-FORM A
‡ DIN 24 340 A10-FORM B
NFPA/T3.51 R2 D05

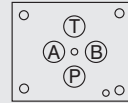
‡ 2 Symmetrical Tank Connections Provided

CHECK VALVES (CONTINUED)			
Function			
Check Valve on A Free Flow Into Valve Cartridge rated to 5000 psi		Aluminum Kit - A3124 Ductile Iron Kit - S3124 See Page - 13.47 Stack Height - 1.97 (50.0)* Order Cartridge - CP100-2	Aluminum Kit - A5113‡ Ductile Iron Kit - S5113‡ See Page - 13.99 Stack Height - 2.36 (60.0)* Order Cartridge - CP101-2
Check Valve on A and B Free Flow Out of Valve Cartridge rated to 3000 psi		Aluminum Kit - A3106 Ductile Iron Kit - S3106 See Page - 13.19 Stack Height - 1.97 (50.0)* Order Cartridge - CP100-1 (2 REQ'D)	Aluminum Kit - A5111‡ Ductile Iron Kit - S5111‡ See Page - 13.91 Stack Height - 2.36 (60.0)* Order Cartridge - CP101-1 (2 REQ'D)
Check Valve on A and B Free Flow Out of Valve Cartridge rated to 5000 psi		Aluminum Kit - A3106 Ductile Iron Kit - S3106 See Page - 13.19 Stack Height - 1.97 (50.0)* Order Cartridge - CP100-2 (2 REQ'D)	Aluminum Kit - A5111‡ Ductile Iron Kit - S5111‡ See Page - 13.91 Stack Height - 2.36 (60.0)* Order Cartridge - CP101-2 (2 REQ'D)
Check Valve on A and B Free Flow Into Valve Cartridge rated to 3000 psi		Aluminum Kit - A3106 Ductile Iron Kit - S3106 See Page - 13.19 Stack Height - 1.97 (50.0)* Order Cartridge - CP100-1 (2 REQ'D)	Aluminum Kit - A5111‡ Ductile Iron Kit - S5111‡ See Page - 13.91 Stack Height - 2.36 (60.0)* Order Cartridge - CP101-1 (2 REQ'D)
Check Valve on A and B Free Flow Into Valve Cartridge rated to 5000 psi		Aluminum Kit - A3106 Ductile Iron Kit - S3106 See Page - 13.19 Stack Height - 1.97 (50.0)* Order Cartridge - CP100-2 (2 REQ'D)	Aluminum Kit - A5111‡ Ductile Iron Kit - S5111‡ See Page - 13.91 Stack Height - 2.36 (60.0)* Order Cartridge - CP101-2 (2 REQ'D)
Check Valve - T to P Cartridge rated to 3000 psi		Aluminum Kit - A3102 Ductile Iron Kit - S3102 See Page - 13.09 Stack Height - 1.97 (50.0)* Order Cartridge - CP100-1	Aluminum Kit - A5100 (w/o Gauge Port) Ductile Iron Kit - S5100 (w/o Gauge Port) See Page - 13.65 Stack Height - 1.97 (50.0)* Order Cartridge - CP100-1
Check Valve - T to P Cartridge rated to 5000 psi		Aluminum Kit - A3102 Ductile Iron Kit - S3102 See Page - 13.09 Stack Height - 1.97 (50.0)* Order Cartridge - CP100-2	Aluminum Kit - A5101 (w/o Gauge Port) Ductile Iron Kit - S5101 (w/o Gauge Port) See Page - 13.69 Stack Height - 1.97 (50.0)* Order Cartridge - CP100-2
Check Valve - T to B Cartridge rated to 3000 psi		Aluminum Kit - A3101 Ductile Iron Kit - S3101 See Page - 13.05 Stack Height - 1.97 (50.0)* Order Cartridge - CP100-1	
Check Valve - T to B Cartridge rated to 5000 psi		Aluminum Kit - A3104 Ductile Iron Kit - S3104 See Page - 13.15 Stack Height - 1.97 (50.0)* Order Cartridge - CP100-2	Aluminum Kit - A5110‡ Ductile Iron Kit - S5110‡ See Page - 13.89 Stack Height - 2.36 (60.0)* Order Cartridge - CP101-2
Check Valve - T to A Cartridge rated to 3000 psi		Aluminum Kit - A3101 Ductile Iron Kit - S3101 See Page - 13.05 Stack Height - 1.97 (50.0)* Order Cartridge - CP100-1	
Check Valve - T to A Cartridge rated to 5000 psi		Aluminum Kit - A3104 Ductile Iron Kit - S3104 See Page - 13.15 Stack Height - 1.97 (50.0)* Order Cartridge - CP100-2	Aluminum Kit - A5110‡ Ductile Iron Kit - S5110‡ See Page - 13.89 Stack Height - 2.36 (60.0)* Order Cartridge - CP101-2



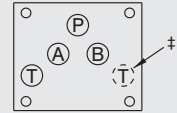
TABLE OF CONTENTS

ISO 03



ISO 4401-03-02
CETOP RP 121 H-4.2-4-03
DIN 24 340 A6
NFPA/T3.51 R2 D03

ISO 05



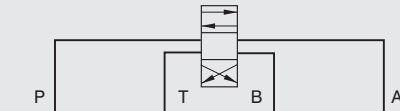
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CETOP RP 121 H-4.2-4-05
DIN 24 340 A10-FORM A
‡ DIN 24 340 A10-FORM B
NFPA/T3.51 R2 D05

‡ 2 Symmetrical Tank Connections Provided

CHECK VALVES

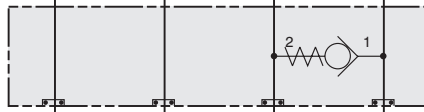
(CONTINUED)

Function



Check Valve - A to B

Cartridge rated to 3000 psi



Aluminum Kit - **A3121**
Ductile Iron Kit - **S3121**
See Page - **13.39**
Stack Height - **1.97 (50.0)***
Order Cartridge - **CP100-1**

Aluminum Kit - **A5106‡**
Ductile Iron Kit - **S5106‡**
See Page - **13.79**
Stack Height - **1.97 (50.0)***
Order Cartridge - **CP100-1**

Check Valve - A to B

Cartridge rated to 5000 psi

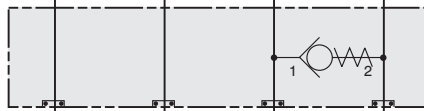


Aluminum Kit - **A3121**
Ductile Iron Kit - **S3121**
See Page - **13.39**
Stack Height - **1.97 (50.0)***
Order Cartridge - **CP100-2**

Aluminum Kit - **A5106‡**
Ductile Iron Kit - **S5106‡**
See Page - **13.79**
Stack Height - **1.97 (50.0)***
Order Cartridge - **CP100-2**

Check Valve - B to A

Cartridge rated to 3000 psi

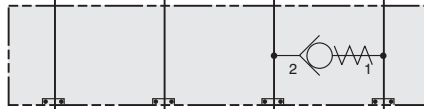


Aluminum Kit - **A3121**
Ductile Iron Kit - **S3121**
See Page - **13.39**
Stack Height - **1.97 (50.0)***
Order Cartridge - **CP100-1**

Aluminum Kit - **A5106‡**
Ductile Iron Kit - **S5106‡**
See Page - **13.79**
Stack Height - **1.97 (50.0)***
Order Cartridge - **CP100-1**

Check Valve - B to A

Cartridge rated to 5000 psi

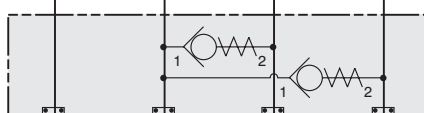


Aluminum Kit - **A3121**
Ductile Iron Kit - **S3121**
See Page - **13.39**
Stack Height - **1.97 (50.0)***
Order Cartridge - **CP100-2**

Aluminum Kit - **A5106‡**
Ductile Iron Kit - **S5106‡**
See Page - **13.79**
Stack Height - **1.97 (50.0)***
Order Cartridge - **CP100-2**

Check Valve - T to A and B

Cartridge rated to 3000 psi



Aluminum Kit - **A3100**
Ductile Iron Kit - **S3100**
See Page - **13.01**
Stack Height - **1.97 (50.0)***
Order Cartridge - **CP100-1 (2 REQ'D)**

FLOW CONTROL VALVES

Function

Flow Control Valve On P

Cartridge rated to 3000 psi



Aluminum Kit - **A3107**
Ductile Iron Kit - **S3107**
See Page - **13.23**
Stack Height - **1.97 (50.0)***
Order Cartridge - **CP300-2**

Flow Control Valve On P

Cartridge rated to 3000 psi



Aluminum Kit - **A3108**
Ductile Iron Kit - **S3108**
See Page - **13.27**
Stack Height - **2.36 (60.0)***
Order Cartridge - **CP310-2**

Meter In - P

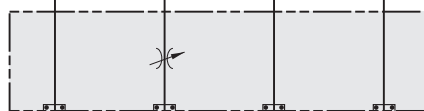
Cartridge rated to 3000 psi



Aluminum Kit - **A3107**
Ductile Iron Kit - **S3107**
See Page - **13.23**
Stack Height - **1.97 (50.0)***
Order Cartridge - **CP610-2**

Meter Out - T

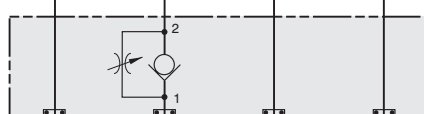
Cartridge rated to 3000 psi



Aluminum Kit - **A3107**
Ductile Iron Kit - **S3107**
See Page - **13.23**
Stack Height - **1.97 (50.0)***
Order Cartridge - **CP610-2**

Needle Valve on T

Cartridge rated to 3000 psi

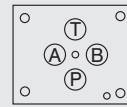


Aluminum Kit - **A3107**
Ductile Iron Kit - **S3107**
See Page - **13.23**
Stack Height - **1.97 (50.0)***
Order Cartridge - **CP610-3**



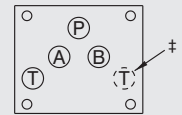
TABLE OF CONTENTS

ISO 03



ISO 4401-03-02
CETOP RP 121 H-4.2-4-03
DIN 24 340 A6
NFPA/T3.51 R2 D03

ISO 05



ISO 4401-05-04
CETOP RP 121 H-4.2-4-05
DIN 24 340 A10-FORM A
‡ DIN 24 340 A10-FORM B
NFPA/T3.51 R2 D05

‡ 2 Symmetrical Tank Connections Provided

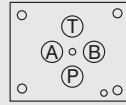
FLOW CONTROL VALVES (CONTINUED)			
Function			
Needle Valve on B Cartridge rated to 3000 psi		Aluminum Kit - A3124 Ductile Iron Kit - S3124 See Page - 13.47 Stack Height - 1.97 (50.0)* Order Cartridge - CP610-2	Aluminum Kit - A5112‡ or A5113‡ Ductile Iron Kit - S5112‡ or S5113‡ See Page - 13.95 or 13.99 Stack Height - 2.36 (60.0)* Order Cartridge - CP611-2
Meter In - B Cartridge rated to 3000 psi		Aluminum Kit - A3124 Ductile Iron Kit - S3124 See Page - 13.47 Stack Height - 1.97 (50.0)* Order Cartridge - CP610-3	
Meter Out - B Cartridge rated to 3000 psi		Aluminum Kit - A3124 Ductile Iron Kit - S3124 See Page - 13.47 Stack Height - 1.97 (50.0)* Order Cartridge - CP610-3	
Needle Valve on A Cartridge rated to 3000 psi		Aluminum Kit - A3124 Ductile Iron Kit - S3124 See Page - 13.47 Stack Height - 1.97 (50.0)* Order Cartridge - CP610-2	Aluminum Kit - A5112‡ or A5113‡ Ductile Iron Kit - S5112‡ or S5113‡ See Page - 13.95 or 13.99 Stack Height - 2.36 (60.0)* Order Cartridge - CP611-2
Meter In - A Cartridge rated to 3000 psi		Aluminum Kit - A3124 Ductile Iron Kit - S3124 See Page - 13.47 Stack Height - 1.97 (50.0)* Order Cartridge - CP610-3	
Meter Out - A Cartridge rated to 3000 psi		Aluminum Kit - A3124 Ductile Iron Kit - S3124 See Page - 13.47 Stack Height - 1.97 (50.0)* Order Cartridge - CP610-3	
Needle Valve on A and B Cartridge rated to 3000 psi		Aluminum Kit - A3106 Ductile Iron Kit - S3106 See Page - 13.19 Stack Height - 1.97 (50.0)* Order Cartridge - CP610-2 (2 REQ'D)	Aluminum Kit - A5111‡ Ductile Iron Kit - S5111‡ See Page - 13.91 Stack Height - 2.36 (60.0)* Order Cartridge - CP611-2 (2 REQ'D)
Needle Valve on A and B Meter In Cartridge rated to 3000 psi		Aluminum Kit - A3106 Ductile Iron Kit - S3106 See Page - 13.19 Stack Height - 1.97 (50.0)* Order Cartridge - CP610-3 (2 REQ'D)	
Needle Valve on A and B Meter Out Cartridge rated to 3000 psi		Aluminum Kit - A3106 Ductile Iron Kit - S3106 See Page - 13.19 Stack Height - 1.97 (50.0)* Order Cartridge - CP610-3 (2 REQ'D)	
Bleed Off - P to T Cartridge rated to 3000 psi		Aluminum Kit - A3102 Ductile Iron Kit - S3102 See Page - 13.09 Stack Height - 1.97 (50.0)* Order Cartridge - CP610-3	Aluminum Kit - A5100 (w/o Gauge Port) Ductile Iron Kit - S5100 (w/o Gauge Port) See Page - 13.65 Stack Height - 1.97 (50.0)* Order Cartridge - CP610-3
Needle Valve - B to T Cartridge rated to 3000 psi		Aluminum Kit - A3104 Ductile Iron Kit - S3104 See Page - 13.15 Stack Height - 1.97 (50.0)* Order Cartridge - CP610-2	Aluminum Kit - A5110‡ Ductile Iron Kit - S5110‡ See Page - 13.89 Stack Height - 2.36 (60.0)* Order Cartridge - CP611-2



*Stack height conforms to ISO 7790
All dimensions in inches (mm)

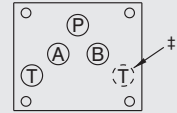
TABLE OF CONTENTS

ISO 03



ISO 4401-03-02
CETOP RP 121 H-4.2-4-03
DIN 24 340 A6
NFPA/T3.51 R2 D03

ISO 05



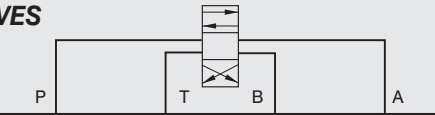
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CETOP RP 121 H-4.2-4-05
DIN 24 340 A10-FORM A
‡ DIN 24 340 A10-FORM B
NFPA/T3.51 R2 D05

‡ 2 Symmetrical Tank Connections Provided

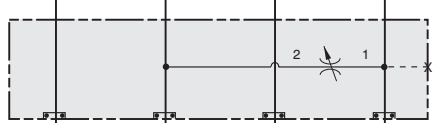
FLOW CONTROL VALVES

(CONTINUED)

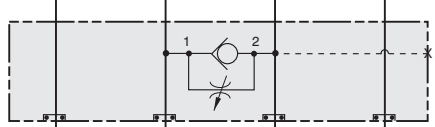
Function



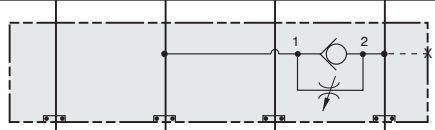
Needle Valve - A to T
Cartridge rated to 3000 psi



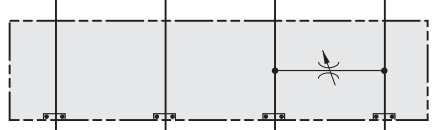
Bleed Off - B to T
Cartridge rated to 3000 psi



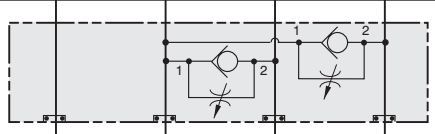
Bleed Off - A to T
Cartridge rated to 3000 psi



Bleed Off - A to B
and - B to A
Cartridge rated to 3000 psi



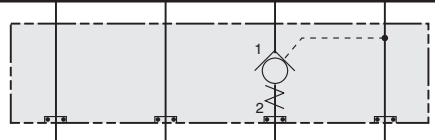
Bleed Off - A and B to T
Cartridge rated to 3000 psi



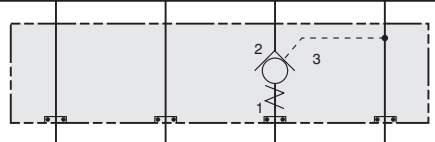
PILOT OPERATED CHECK VALVES

Function

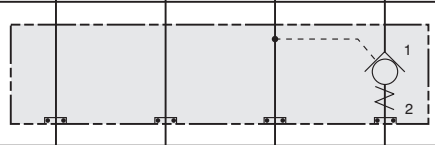
P/O Check Valve on B -
Pilot Piston From A
w/ Pilot Piston
Cartridge rated to 3000 psi



Pilot To Open Check Valve
on B
Pilot From A
Cartridge rated to 3000 psi



P/O Check Valve on A -
Pilot Piston From B
w/ Pilot Piston
Cartridge rated to 3000 psi



Pilot To Open Check Valve
on A
Pilot From B
Cartridge rated to 3000 psi

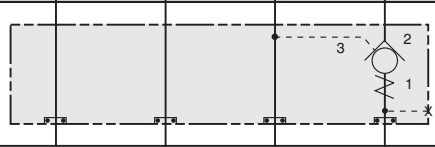
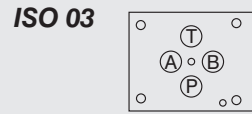
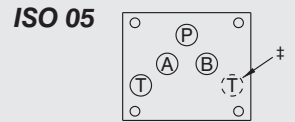


TABLE OF CONTENTS



ISO 4401-03-02
 CETOP RP 121 H-4.2-4-03
 DIN 24 340 A6
 NFPA/T3.51 R2 D03



ISO 4401-05-04
 CETOP RP 121 H-4.2-4-05
 DIN 24 340 A10-FORM A
 ‡ DIN 24 340 A10-FORM B
 NFPA/T3.51 R2 D05

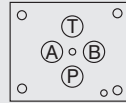
‡ 2 Symmetrical Tank Connections Provided

PILOT OPERATED CHECK VALVES (CONTINUED)			
Function			
Dual P/O Check Valve on A and B w/ Pilot Piston Cartridge rated to 3000 psi		Aluminum Kit - A3109 Ductile Iron Kit - S3109 See Page - 13.29 Stack Height - 1.57 (40.0)* Order Cartridge - CP100-1 (2 REQ'D)	Aluminum Kit - A5103 Ductile Iron Kit - S5103 See Page - 13.73 Stack Height - 2.36 (60.0)* Order Cartridge - CP100-1 (2 REQ'D)
Dual Pilot To Open Check Valve Cartridge rated to 3000 psi		Aluminum Kit - A3111 Ductile Iron Kit - S3111 See Page - 13.33 Stack Height - 1.97 (50.0)* Order Cartridge - CP450-2L (2 REQ'D)	Aluminum Kit - A5104 Ductile Iron Kit - S5104 See Page - 13.75 Stack Height - 1.97 (50.0)* Order Cartridge - CP450-2L (2 REQ'D)
Dual Pilot To Open Check Valve (High Capacity) Cartridge rated to 3000 psi			Aluminum Kit - A5105 Ductile Iron Kit - S5105 See Page - 13.77 Stack Height - 2.36 (60.0)* Order Cartridge - CP451-2 (2 REQ'D)
COUNTERBALANCE VALVES			
Counterbalance Valve on B - Pilot From A Cartridge rated to 5000 psi		Aluminum Kit - A3112 Ductile Iron Kit - S3112 See Page - 13.35 Stack Height - 1.97 (50.0)* Order Cartridge - CP440-1	
Counterbalance Valve on A - Pilot From B Cartridge rated to 5000 psi		Aluminum Kit - A3112 (w/o Gauge Port) Ductile Iron Kit - S3112 (w/o Gauge Port) See Page - 13.35 Stack Height - 1.97 (50.0)* Order Cartridge - CP440-1	Aluminum Kit - A5109 Ductile Iron Kit - S5109 See Page - 13.87 Stack Height - 2.36 (60.0)* Order Cartridge - CP441-1
Dual Counterbalance Valve (Low Capacity) Cartridge rated to 5000 psi		Aluminum Kit - A3129 Ductile Iron Kit - S3129 See Page - 13.55 Stack Height - 1.97 (50.0)* Order Cartridge - CP448-1 (2 REQ'D)	
Dual Counterbalance Valve Cartridge rated to 5000 psi		Aluminum Kit - A3111 Ductile Iron Kit - S3111 See Page - 13.33 Stack Height - 1.97 (50.0)* Order Cartridge - CP440-1 (2 REQ'D)	Aluminum Kit - A5104 Ductile Iron Kit - S5104 See Page - 13.75 Stack Height - 1.97 (50.0)* Order Cartridge - CP440-1 (2 REQ'D)
Dual Counterbalance Valve (High Capacity) Cartridge rated to 5000 psi			Aluminum Kit - A5105 Ductile Iron Kit - S5105 See Page - 13.77 Stack Height - 2.36 (60.0)* Order Cartridge - CP441-1 (2 REQ'D)



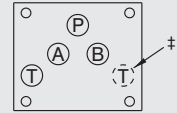
TABLE OF CONTENTS

ISO 03



ISO 4401-03-02
CETOP RP 121 H-4.2-4-03
DIN 24 340 A6
NFPA/T3.51 R2 D03

ISO 05



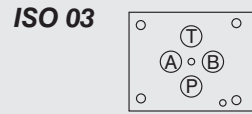
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CETOP RP 121 H-4.2-4-05
DIN 24 340 A10-FORM A
‡ DIN 24 340 A10-FORM B
NFPA/T3.51 R2 D05

‡ 2 Symmetrical Tank Connections Provided

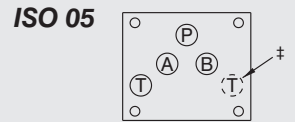
SOLENOID VALVES (LOAD HOLDING)			
Function			
N/C Solenoid Valve on B Free Flow Into Valve Cartridge rated to 3000 psi		Aluminum Kit - A3124 Ductile Iron Kit - S3124 See Page - 13.47 Stack Height - 1.97 (50.0)* Order Cartridge - CP500-1	Aluminum Kit - A5113‡ Ductile Iron Kit - S5113‡ See Page - 13.99 Stack Height - 2.36 (60.0)* Order Cartridge - CP501-1
N/O Solenoid Valve on B Free Flow Into Valve Cartridge rated to 3000 psi		Aluminum Kit - A3124 Ductile Iron Kit - S3124 See Page - 13.47 Stack Height - 1.97 (50.0)* Order Cartridge - CP500-2	Aluminum Kit - A5113‡ Ductile Iron Kit - S5113‡ See Page - 13.99 Stack Height - 2.36 (60.0)* Order Cartridge - CP501-2
N/C Solenoid Valve on B Free Flow Out of Valve Cartridge rated to 3000 psi		Aluminum Kit - A3124 Ductile Iron Kit - S3124 See Page - 13.47 Stack Height - 1.97 (50.0)* Order Cartridge - CP500-1	Aluminum Kit - A5112‡ Ductile Iron Kit - S5112‡ See Page - 13.95 Stack Height - 2.36 (60.0)* Order Cartridge - CP501-1
N/O Solenoid Valve on B Free Flow Out of Valve Cartridge rated to 3000 psi		Aluminum Kit - A3124 Ductile Iron Kit - S3124 See Page - 13.47 Stack Height - 1.97 (50.0)* Order Cartridge - CP500-2	Aluminum Kit - A5112‡ Ductile Iron Kit - S5112‡ See Page - 13.95 Stack Height - 2.36 (60.0)* Order Cartridge - CP501-2
N/C Solenoid Valve on A Free Flow Out of Valve Cartridge rated to 3000 psi		Aluminum Kit - A3124 Ductile Iron Kit - S3124 See Page - 13.47 Stack Height - 1.97 (50.0)* Order Cartridge - CP500-1	Aluminum Kit - A5113‡ Ductile Iron Kit - S5113‡ See Page - 13.99 Stack Height - 2.36 (60.0)* Order Cartridge - CP501-1
N/O Solenoid Valve on A Free Flow Out of Valve Cartridge rated to 3000 psi		Aluminum Kit - A3124 Ductile Iron Kit - S3124 See Page - 13.47 Stack Height - 1.97 (50.0)* Order Cartridge - CP500-2	Aluminum Kit - A5113‡ Ductile Iron Kit - S5113‡ See Page - 13.99 Stack Height - 2.36 (60.0)* Order Cartridge - CP501-2
N/C Solenoid Valve on A Free Flow Into Valve Cartridge rated to 3000 psi		Aluminum Kit - A3124 Ductile Iron Kit - S3124 See Page - 13.47 Stack Height - 1.97 (50.0)* Order Cartridge - CP500-1	Aluminum Kit - A5112‡ Ductile Iron Kit - S5112‡ See Page - 13.95 Stack Height - 2.36 (60.0)* Order Cartridge - CP501-1
N/O Solenoid Valve on A Free Flow Into Valve Cartridge rated to 3000 psi		Aluminum Kit - A3124 Ductile Iron Kit - S3124 See Page - 13.47 Stack Height - 1.97 (50.0)* Order Cartridge - CP500-2	Aluminum Kit - A5112‡ Ductile Iron Kit - S5112‡ See Page - 13.95 Stack Height - 2.36 (60.0)* Order Cartridge - CP501-2



TABLE OF CONTENTS



ISO 4401-03-02
 CETOP RP 121 H-4.2-4-03
 DIN 24 340 A6
 NFPA/T3.51 R2 D03



ISO 4401-05-04
 CETOP RP 121 H-4.2-4-05
 DIN 24 340 A10-FORM A
 ‡ DIN 24 340 A10-FORM B
 NFPA/T3.51 R2 D05

‡ 2 Symmetrical Tank Connections Provided

SOLENOID VALVES (LOAD HOLDING-CONTINUED)			
Function	P	T	B
N/C Solenoid Valve on A and B Free Flow Into Valve Cartridge rated to 3000 psi			
N/C Solenoid Valve on A and B Free Flow Out of Valve Cartridge rated to 3000 psi			
N/O Solenoid Valve on A and B Free Flow Into Valve Cartridge rated to 3000 psi			
N/O Solenoid Valve on A and B Free Flow Out of Valve Cartridge rated to 3000 psi			
SOLENOID VALVES (FLOW CONTROL)			
N/C Solenoid Valve on P Cartridge rated to 3000 psi			
N/O Solenoid Valve on P Cartridge rated to 3000 psi			
N/C Solenoid Valve on T Cartridge rated to 3000 psi			

Aluminum Kit - **A3106**
 Ductile Iron Kit - **S3106**
 See Page - **13.19**
 Stack Height - **1.97 (50.0)***
 Order Cartridge - **CP500-1 (2 REQ'D)**

Aluminum Kit - **A5111‡**
 Ductile Iron Kit - **S5111‡**
 See Page - **13.91**
 Stack Height - **2.36 (60.0)***
 Order Cartridge - **CP501-1 (2 REQ'D)**

Aluminum Kit - **A3106**
 Ductile Iron Kit - **S3106**
 See Page - **13.19**
 Stack Height - **1.97 (50.0)***
 Order Cartridge - **CP500-1 (2 REQ'D)**

Aluminum Kit - **A5111‡**
 Ductile Iron Kit - **S5111‡**
 See Page - **13.91**
 Stack Height - **2.36 (60.0)***
 Order Cartridge - **CP501-1 (2 REQ'D)**

Aluminum Kit - **A3106**
 Ductile Iron Kit - **S3106**
 See Page - **13.19**
 Stack Height - **1.97 (50.0)***
 Order Cartridge - **CP500-2 (2 REQ'D)**

Aluminum Kit - **A5111‡**
 Ductile Iron Kit - **S5111‡**
 See Page - **13.91**
 Stack Height - **2.36 (60.0)***
 Order Cartridge - **CP501-2 (2 REQ'D)**

Aluminum Kit - **A3106**
 Ductile Iron Kit - **S3106**
 See Page - **13.19**
 Stack Height - **1.97 (50.0)***
 Order Cartridge - **CP500-2 (2 REQ'D)**

Aluminum Kit - **A5111‡**
 Ductile Iron Kit - **S5111‡**
 See Page - **13.91**
 Stack Height - **2.36 (60.0)***
 Order Cartridge - **CP501-2 (2 REQ'D)**

Aluminum Kit - **A3107**
 Ductile Iron Kit - **S3107**
 See Page - **13.23**
 Stack Height - **1.97 (50.0)***
 Order Cartridge - **CP500-1**

Aluminum Kit - **A3107**
 Ductile Iron Kit - **S3107**
 See Page - **13.23**
 Stack Height - **1.97 (50.0)***
 Order Cartridge - **CP500-2**

Aluminum Kit - **A3107**
 Ductile Iron Kit - **S3107**
 See Page - **13.23**
 Stack Height - **1.97 (50.0)***
 Order Cartridge - **CP500-1**

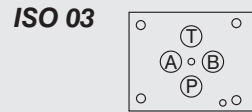


TABLE OF CONTENTS

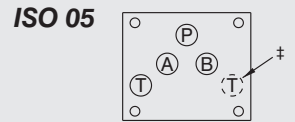
SOLENOID VALVES (FLOW CONTROL-CONTINUED)		ISO 03	ISO 05
Function			
N/O Solenoid Valve on T Cartridge rated to 3000 psi		Aluminum Kit - A3107 Ductile Iron Kit - S3107 See Page - 13.23 Stack Height - 1.97 (50.0)* Order Cartridge - CP500-2	ISO 4401-03-02 CETOP RP 121 H-4.2-4-03 DIN 24 340 A6 NFPA/T3.51 R2 D03
SOLENOID VALVES (BLOCKING)			
Solenoid Valve 2 Pos. 3 Way Spool Type Cartridge rated to 3000 psi		Aluminum Kit - A3108 Ductile Iron Kit - S3108 See Page - 13.27 Stack Height - 2.36 (60.0)* Order Cartridge - CP520-1	
Solenoid Valve 2 Pos. 3 Way Spool Type Cartridge rated to 3000 psi		Aluminum Kit - A3105 Ductile Iron Kit - S3105 See Page - 13.17 Stack Height - 2.36 (60.0)* Order Cartridge - CP520-1	
SOLENOID VALVES (DUMPING)			
N/C Solenoid Valve - P to T Cartridge rated to 3000 psi		Aluminum Kit - A3102 Ductile Iron Kit - S3102 See Page - 13.09 Stack Height - 1.97 (50.0)* Order Cartridge - CP500-1	Aluminum Kit - A5100 (w/o Gauge Port) Ductile Iron Kit - S5100 (w/o Gauge Port) See Page - 13.65 Stack Height - 1.97 (50.0)* Order Cartridge - CP500-1
N/O Solenoid Valve - P to T Cartridge rated to 3000 psi		Aluminum Kit - A3102 Ductile Iron Kit - S3102 See Page - 13.09 Stack Height - 1.97 (50.0)* Order Cartridge - CP500-2	Aluminum Kit - A5100 (w/o Gauge Port) Ductile Iron Kit - S5100 (w/o Gauge Port) See Page - 13.65 Stack Height - 1.97 (50.0)* Order Cartridge - CP500-2
Solenoid Valve 2 Pos. 3 Way Spool Type Cartridge rated to 3000 psi		Aluminum Kit - A3105 Ductile Iron Kit - S3105 See Page - 13.17 Stack Height - 2.36 (60.0)* Order Cartridge - CP520-1	



TABLE OF CONTENTS



ISO 4401-03-02
 CETOP RP 121 H-4.2-4-03
 DIN 24 340 A6
 NFPA/T3.51 R2 D03



ISO 4401-05-04
 CETOP RP 121 H-4.2-4-05
 DIN 24 340 A10-FORM A
 ‡ DIN 24 340 A10-FORM B
 NFPA/T3.51 R2 D05

‡ 2 Symmetrical Tank Connections Provided

SOLENOID VALVES (DUMPING-CONTINUED)			
Function			
Solenoid Valve 2 Pos. 3 Way Spool Type Cartridge rated to 3000 psi		Aluminum Kit - A3108 Ductile Iron Kit - S3108 See Page - 13.27 Stack Height - 2.36 (60.0)* Order Cartridge - CP520-1	
SOLENOID VALVES (UNLOADING)			
Function			
N/C Solenoid Valve - B to T Cartridge rated to 3000 psi		Aluminum Kit - A3101 Ductile Iron Kit - S3101 See Page - 13.05 Stack Height - 1.97 (50.0)* Order Cartridge - CP500-1	
N/O Solenoid Valve - B to T Cartridge rated to 3000 psi		Aluminum Kit - A3101 Ductile Iron Kit - S3101 See Page - 13.05 Stack Height - 1.97 (50.0)* Order Cartridge - CP500-2	
N/C Solenoid Valve - A to T Cartridge rated to 3000 psi		Aluminum Kit - A3101 Ductile Iron Kit - S3101 See Page - 13.05 Stack Height - 1.97 (50.0)* Order Cartridge - CP500-1	
N/O Solenoid Valve - A to T Cartridge rated to 3000 psi		Aluminum Kit - A3101 Ductile Iron Kit - S3101 See Page - 13.05 Stack Height - 1.97 (50.0)* Order Cartridge - CP500-2	
N/C Solenoid Valve - A and B to T Cartridge rated to 3000 psi		Aluminum Kit - A3100 Ductile Iron Kit - S3100 See Page - 13.01 Stack Height - 1.97 (50.0)* Order Cartridge - CP500-1 (2 REQ'D)	
N/O Solenoid Valve - A and B to T Cartridge rated to 3000 psi		Aluminum Kit - A3100 Ductile Iron Kit - S3100 See Page - 13.01 Stack Height - 1.97 (50.0)* Order Cartridge - CP500-2 (2 REQ'D)	



*Stack height conforms to ISO 7790
 All dimensions in inches (mm)

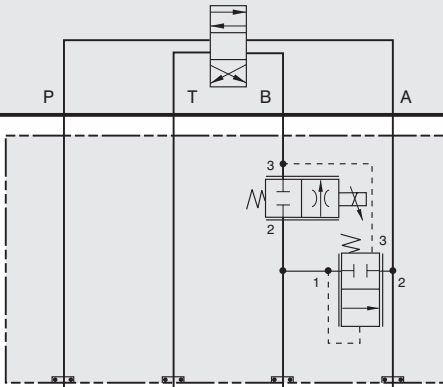
TABLE OF CONTENTS

SOLENOID VALVES (PROPORTIONAL)

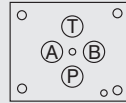
Function

P T B A

Proportional Bypass Valve
Cartridges rated to 3000 psi

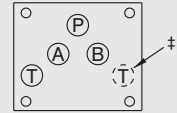


ISO 03



ISO 4401-03-02
CETOP RP 121 H-4.2-4-03
DIN 24 340 A6
NFPA/T3.51 R2 D03

ISO 05



ISO 4401-05-04
CETOP RP 121 H-4.2-4-05
DIN 24 340 A10-FORM A
‡ DIN 24 340 A10-FORM B
NFPA/T3.51 R2 D05

‡ 2 Symmetrical Tank Connections Provided

See Page - **13.57**

Stack Height - **2.94 (74.7)**

Order - **CP800 - 32 - B - 10 - 24D - S**

BASIC VALVE

SEALS

B - BUNA-N
V - VITON

FLOW CODE

5 - 0 to 5 gpm (19 l/m)
10 - 0 to 10 gpm (38 l/m)

VOLTAGE

12D - 12 VOLT DC
24D - 24 VOLT DC

Valve sold with coil only

TERMINATION

S - SPADE
H - DIN 43650

See Page - **13.103**

Stack Height - **3.44 (87.4)**

Order - **CP801 - 32 - B - 20 - 24D - S**

BASIC VALVE

SEALS

B - BUNA-N
V - VITON

FLOW CODE

10 - 0 to 10 gpm (38 l/m)
20 - 0 to 20 gpm (76 l/m)

VOLTAGE

12D - 12 VOLT DC
24D - 24 VOLT DC

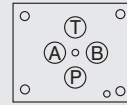
Valve sold with coil only

TERMINATION

S - SPADE
H - DIN 43650

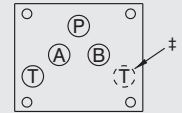
TABLE OF CONTENTS

ISO 03



ISO 4401-03-02
CETOP RP 121 H-4.2-4-03
DIN 24 340 A6
NFPA/T3.51 R2 D03

ISO 05



ISO 4401-05-04
CETOP RP 121 H-4.2-4-05
DIN 24 340 A10-FORM A
‡ DIN 24 340 A10-FORM B
NFPA/T3.51 R2 D05

‡ 2 Symmetrical Tank Connections Provided

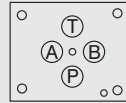
CIRCUIT SAVERS			
Function			
Shuttle A and B Output External Cartridge rated to 3000 psi		Aluminum Kit - A3121 Ductile Iron Kit - S3121 See Page - 13.39 Stack Height - 1.97 (50.0)* Order Cartridge - CP120-2	Aluminum Kit - A5106‡ Ductile Iron Kit - S5106‡ See Page - 13.79 Stack Height - 1.97 (50.0)* Order Cartridge - CP120-2
Pressure Compensator (Restrictive) w/ Load Sensing Port Cartridge rated to 3000 psi		Aluminum Kit - A3125 Ductile Iron Kit - S3125 See Page - 13.51 Stack Height - 2.36 (60.0)* Order Cartridge - CP700-4	Aluminum Kit - A5107 Ductile Iron Kit - S5107 See Page - 13.83 Stack Height - 2.76 (70.0)* Order Cartridge - CP701-4
Pilot Choke Cartridge rated to 3000 psi		Aluminum Kit - A3126 Ductile Iron Kit - S3126 See Page - 13.53 Stack Height - 1.97 (50.0)* Order Cartridge - CP230-4 - and - CP618-6	
With A and B ports		Aluminum Kit - A3114 Ductile Iron Kit - S3114 See Page - 13.A1 Stack Height - 1.18 (30.0)* Order Cartridge - N/A	Aluminum Kit - A5117‡ Ductile Iron Kit - S5117‡ See Page - 13.A2 Stack Height - 1.18 (30.0)* Order Cartridge - N/A
A to B B to A		Aluminum Kit - A3127 Ductile Iron Kit - S3127 See Page - 13.A3 Stack Height - .79 (20.0)* Order Cartridge - N/A	Aluminum Kit - A5118 Ductile Iron Kit - S5118 See Page - 13.A4 Stack Height - 1.18 (30.0)* Order Cartridge - N/A
D03 to D05		Aluminum Kit - A3128 Ductile Iron Kit - S3128 See Page - 13.A5 Stack Height - 1.58 (40.0)* Order Cartridge - N/A	



*Stack height conforms to ISO 7790
All dimensions in inches (mm)

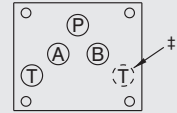
TABLE OF CONTENTS

ISO 03



ISO 4401-03-02
CETOP RP 121 H-4.2-4-03
DIN 24 340 A6
NFPA/T3.51 R2 D03

ISO 05



ISO 4401-05-04
CETOP RP 121 H-4.2-4-05
DIN 24 340 A10-FORM A
‡ DIN 24 340 A10-FORM B
NFPA/T3.51 R2 D05

‡ 2 Symmetrical Tank Connections Provided

SOLENOID VALVES (DIRECTIONAL CONTROL)

Function

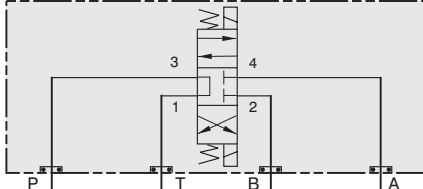
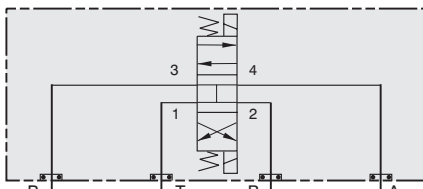
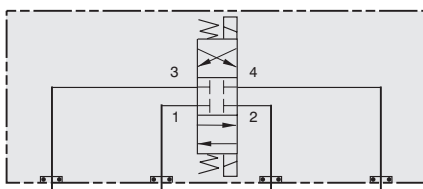
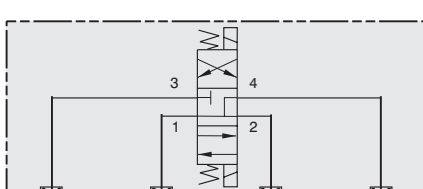
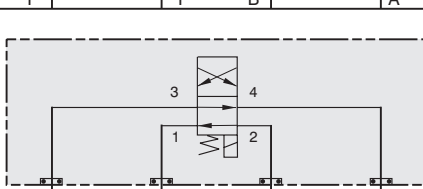
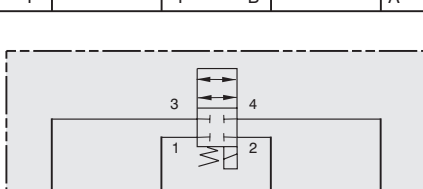
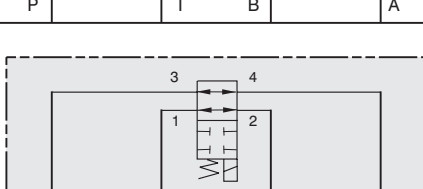
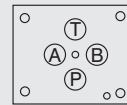
<p>3 Pos. 4 Way Tandem Solenoid Valve Cartridge rated to 3000 psi</p> 	<p>Aluminum Kit - A3113 Ductile Iron Kit - S3113 See Page - 13.37 Stack Height - 1.97 (50.0)* Order Cartridge - CP530-3P (Spool 1)</p>	
<p>3 Pos. 4 Way Open Center Solenoid Valve Cartridge rated to 3000 psi</p> 	<p>Aluminum Kit - A3113 Ductile Iron Kit - S3113 See Page - 13.37 Stack Height - 1.97 (50.0)* Order Cartridge - CP530-3P (Spool 3)</p>	
<p>3 Pos. 4 Way Closed Center Solenoid Valve Cartridge rated to 3000 psi</p> 	<p>Aluminum Kit - A3113 Ductile Iron Kit - S3113 See Page - 13.37 Stack Height - 1.97 (50.0)* Order Cartridge - CP530-3P (Spool 4)</p>	
<p>3 Pos. 4 Way Motor Spool Solenoid Valve Cartridge rated to 3000 psi</p> 	<p>Aluminum Kit - A3113 Ductile Iron Kit - S3113 See Page - 13.37 Stack Height - 1.97 (50.0)* Order Cartridge - CP530-3P (Spool 5)</p>	
<p>2 Pos. 4 Way Solenoid Valve Cartridge rated to 3000 psi</p> 	<p>Aluminum Kit - A3113 Ductile Iron Kit - S3113 See Page - 13.37 Stack Height - 1.97 (50.0)* Order Cartridge - CP530-1</p>	
<p>2 Pos. 4 Way Solenoid Valve Cartridge rated to 3000 psi</p> 	<p>Aluminum Kit - A3113 Ductile Iron Kit - S3113 See Page - 13.37 Stack Height - 1.97 (50.0)* Order Cartridge - CP530-2</p>	
<p>2 Pos. 4 Way Solenoid Valve Cartridge rated to 3000 psi</p> 	<p>Aluminum Kit - A3113 Ductile Iron Kit - S3113 See Page - 13.37 Stack Height - 1.97 (50.0)* Order Cartridge - CP530-3</p>	



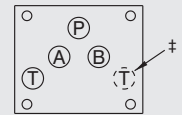
TABLE OF CONTENTS

ISO 03



ISO 4401-03-02
CETOP RP 121 H-4.2-4-03
DIN 24 340 A6
NFPA/T3.51 R2 D03

ISO 05



ISO 4401-05-04
CETOP RP 121 H-4.2-4-05
DIN 24 340 A10-FORM A
‡ DIN 24 340 A10-FORM B
NFPA/T3.51 R2 D05
‡ 2 Symmetrical Tank Connections Provided

COVER PLATES			
Function			
P to A, T to B		Aluminum Kit - A3115 Ductile Iron Kit - S3115 See Page - 13.A6 Stack Height - .79 (20.0)* Order Cartridge - N/A	
P to B, A to T		Aluminum Kit - A3116 Ductile Iron Kit - S3116 See Page - 13.A6 Stack Height - .79 (20.0)* Order Cartridge - N/A	
P to A and B T Blocked		Aluminum Kit - A3117 Ductile Iron Kit - S3117 See Page - 13.A6 Stack Height - .79 (20.0)* Order Cartridge - N/A	
A and B to T P Blocked		Aluminum Kit - A3118 Ductile Iron Kit - S3118 See Page - 13.A6 Stack Height - .79 (20.0)* Order Cartridge - N/A	
P to T A and B Blocked		Aluminum Kit - A3119 Ductile Iron Kit - S3119 See Page - 13.A6 Stack Height - .79 (20.0)* Order Cartridge - N/A	
All Ports Blocked		Aluminum Kit - A3120 Ductile Iron Kit - S3120 See Page - 13.A6 Stack Height - .79 (20.0)* Order Cartridge - N/A	



*Stack height conforms to ISO 7790
All dimensions in inches (mm)

SANDWICH KIT ORDERING CODE

A3001

BODY MATERIAL

- A - ALUMINUM - 3000 psi (207 bar)
- S - DUCTILE IRON - 5000 psi (345 bar)

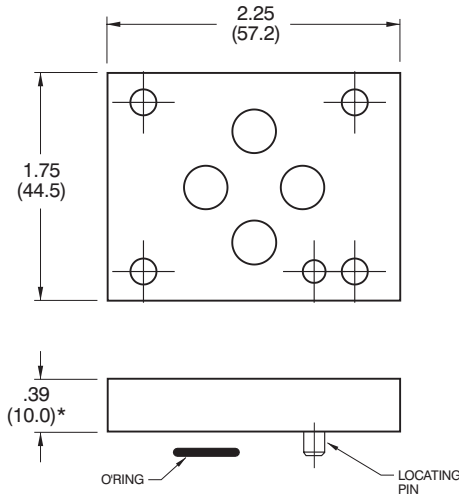
BODY SEAL MATERIAL

- OMIT - BUNA-N (STD)
- V - VITON

SEAL KIT
120076
120168

- Each kit contains spacer plate, (4) -012 O'Rings and locating pin
- For Stud Kit see [page 13.A8](#)

ASSEMBLY INSTRUCTIONS



SPECIFICATIONS

1. Mounting Pattern:

- ISO 4401-03-02
- CETOP RP 121 H-4.2-4-03
- DIN 24 340 A6
- NFPA/T3.51 R2 D03

2. Non-Shock Pressure Ratings:

- Aluminum Bodies (A) - 3000 psi (207 bar)
- Ductile Bodies (S) - 5000 psi (345 bar)

3. Weight:

- Aluminum Bodies (A) - .14 lbs (.06 kg)
- Ductile Bodies (S) - .40 lbs (.18 kg)

SANDWICH KIT ORDERING CODE

A5001

BODY MATERIAL

- A - ALUMINUM - 3000 psi (207 bar)
- S - DUCTILE IRON - 5000 psi (345 bar)

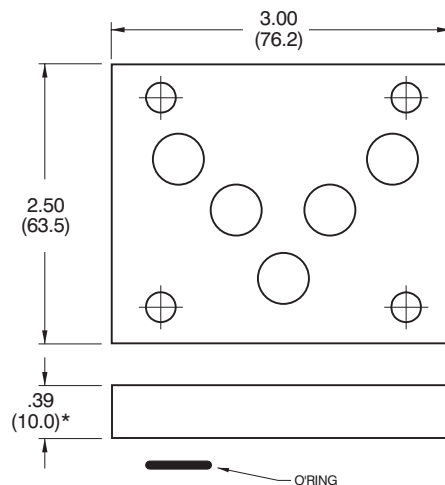
BODY SEAL MATERIAL

- OMIT - BUNA-N (STD)
- V - VITON

SEAL KIT
120285
120286

- Each kit contains spacer plate and (5) -014 O'Rings
- For Stud Kit see [page 13.A8](#)

ASSEMBLY INSTRUCTIONS



SPECIFICATIONS

1. Mounting Pattern:

- ISO 4401-05-04
- CETOP RP 121 H-4.2-4-05
- DIN 24 340 A10-FORM A
- NFPA/T3.51 R2 D05

2. Non-Shock Pressure Ratings:

- Aluminum Bodies (A) - 3000 psi (207 bar)
- Ductile Bodies (S) - 5000 psi (345 bar)

3. Weight:

- Aluminum Bodies (A) - .25 lbs (.11 kg)
- Ductile Bodies (S) - .76 lbs (.34 kg)



*Stack height [.39 (10.0)] conforms to ISO 7790
All dimensions in inches (mm)



*Stack height [.39 (10.0)] conforms to ISO 7790
All dimensions in inches (mm)

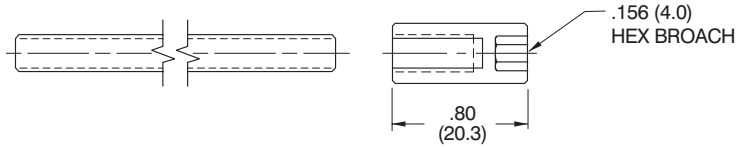
ISO 03 & ISO 05

STUD KITS

ISO 03 - Torque to 40-45 in. lb.(4.5-5.0 Nm)

KIT NO.	DESCRIPTION
120487	10-24 UNC x 7" Long Threaded Rod
120488	10-24 UNC x 12" Long Threaded Rod
120489	M5 x 7" Long Threaded Rod
120490	M5 x 12" Long Threaded Rod

➤ Each kit contains 4 threaded rods and 4 stud nuts



THREADED ROD

PART NO.	SIZE
623934	10-24 x 7"
623935	10-24 x 12"
623936	M5 x 7"
623937	M5 x 12"

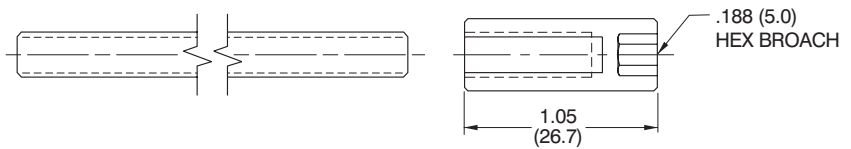
STUD NUT

PART NO.	SIZE
623650	10-24 UNC
623651	M5

ISO 05 - Torque to 105-110 in. lb.(12.0-12.5 Nm)

KIT NO.	DESCRIPTION
120491	1/4-20 UNC x 7" Long Threaded Rod
120492	1/4-20 UNC x 12" Long Threaded Rod
120493	M6 x 7" Long Threaded Rod
120494	M6 x 12" Long Threaded Rod

➤ Each kit contains 4 threaded rods and 4 stud nuts



THREADED ROD

PART NO.	SIZE
623938	1/4-20 x 7"
623939	1/4-20 x 12"
623940	M6 x 7"
623941	M6 x 12"

STUD NUT

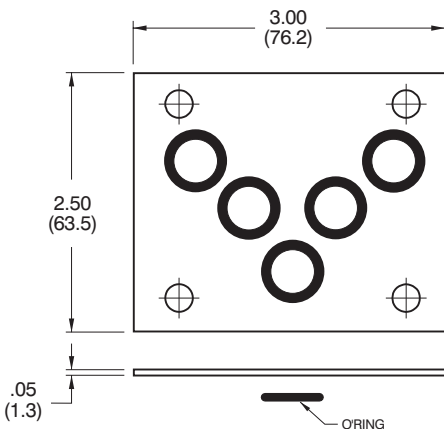
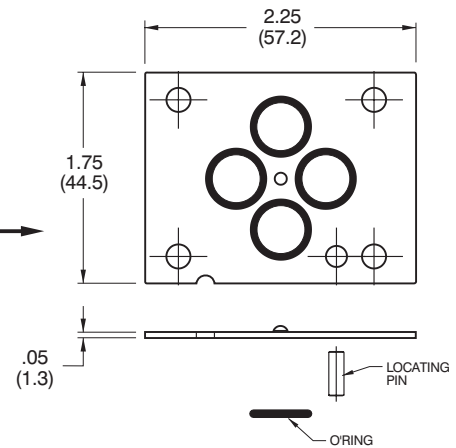
PART NO.	SIZE
623652	1/4-20 UNC
623653	M6

All dimensions in inches (mm)

SEAL PLATE KITS

- Seal plate kit contains seal plate, (4) -012 O'Rings and locating pin
- Seal kit contains (4) -012 O'Rings
- ISO 03 Weight: .04 lbs (.02 kg)

ISO 03	SEAL PLATE KIT	SEAL KIT	LOCATING PIN
BUNA-N	120454	120076	320450
VITON	120455	120168	320450

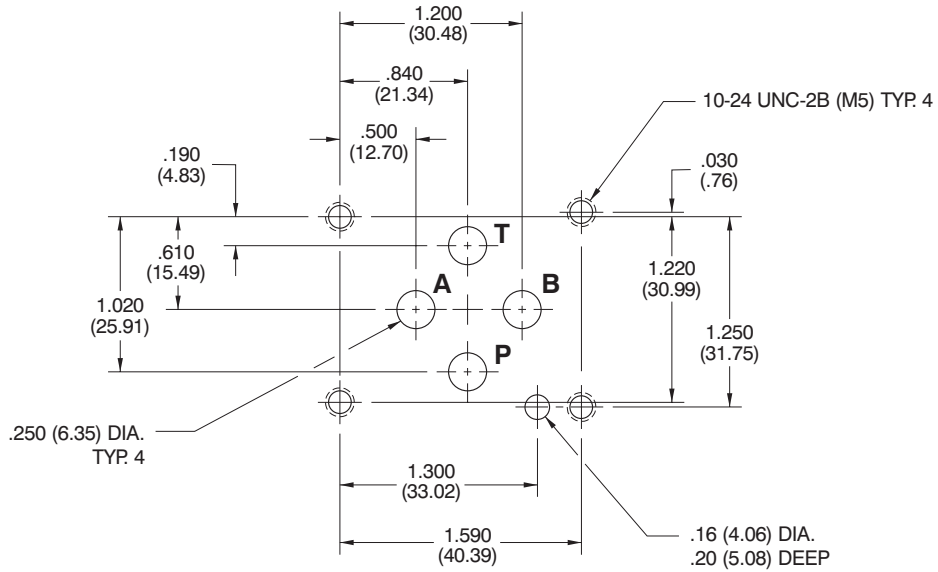


ISO 05	SEAL PLATE KIT	SEAL KIT
BUNA-N	120541	120285
VITON	120542	120286

- Seal plate kit contains seal plate and (5) -014 O'Rings
- Seal kit contains (5) -014 O'Rings
- ISO 05 Weight: .08 lbs (.03 kg)

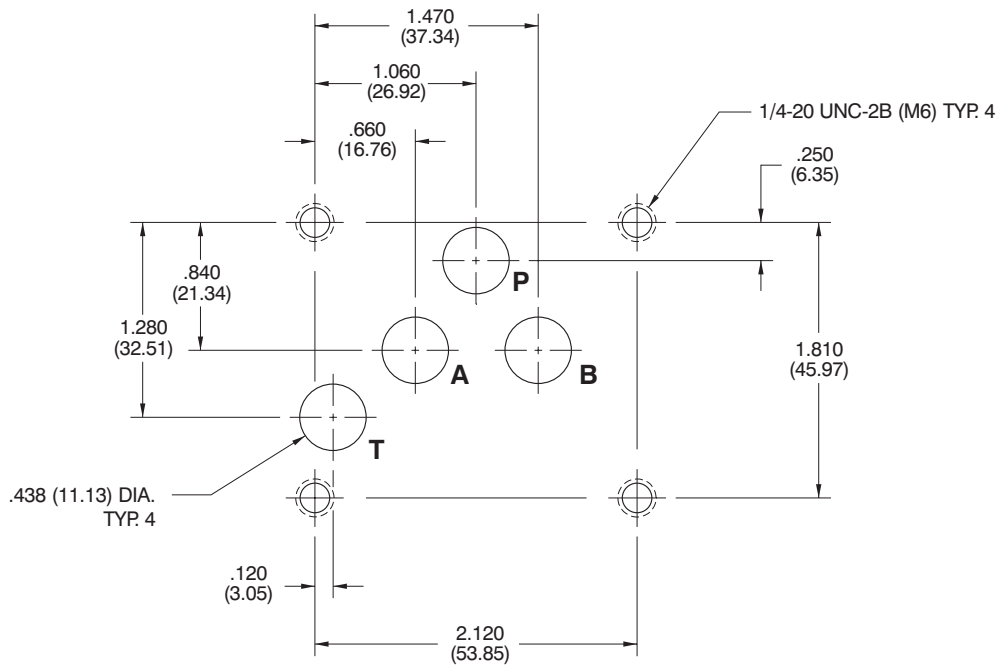
All dimensions in inches (mm)

ISO 03



All dimensions in inches (mm)

ISO 05



All dimensions in inches (mm)

MOTOR CONTROL VALVES

Compact Controls offers a selected variety of valves that can be directly mounted to a hydraulic motor (Char Lynn, HPI, Ross/Parker and White motors use the same mounting patterns). See back of this index page to check the mounting pattern to be sure it will fit your application. Some motor applications may require a spacer kit to provide motor clearance. Order kit number 120313.

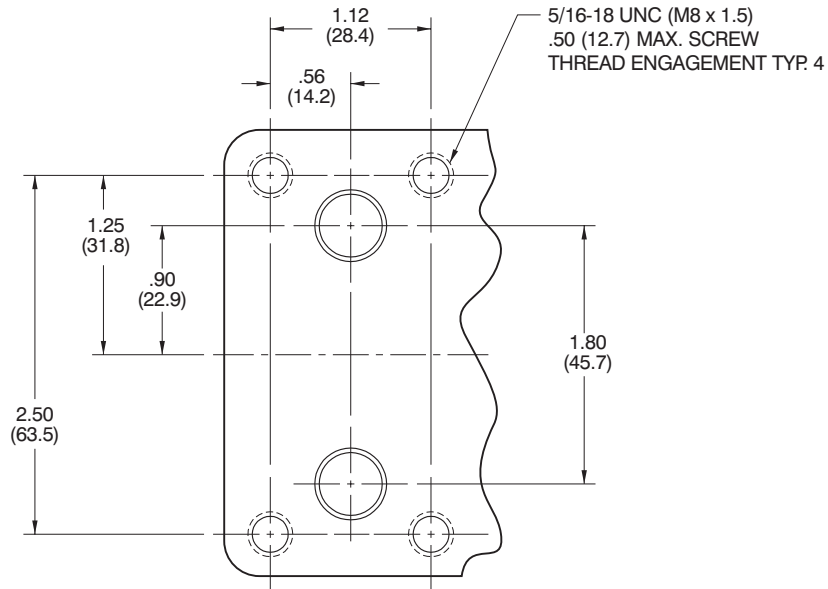
SIZE	DESCRIPTION	FLOW gpm (l/m)	PRESSURE psi (bar)	PAGE
CP810-1	CROSS RELIEF	20 (76)	3000 (207)	14.01
CP810-2	CROSS RELIEF with brake shuttle	20 (76)	3000 (207)	14.02
CP810-7	DUAL COUNTERBALANCE	15 (57)	3000 (207)	14.03
CP810-8	DUAL COUNTERBALANCE with brake shuttle	15 (57)	3000 (207)	14.04

HYDRAULIC MOTOR MOUNTING PATTERNS



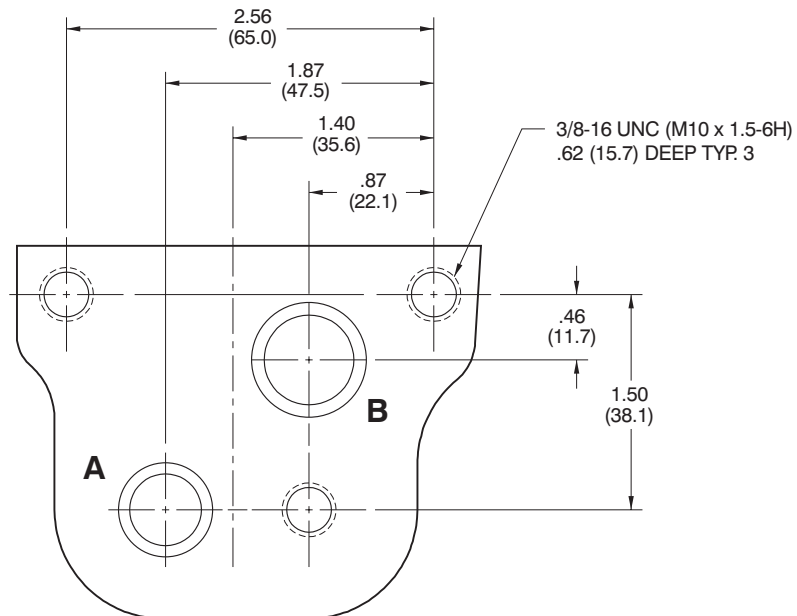
H & S SERIES

All dimensions in inches (mm)



2000 SERIES

All dimensions in inches (mm)

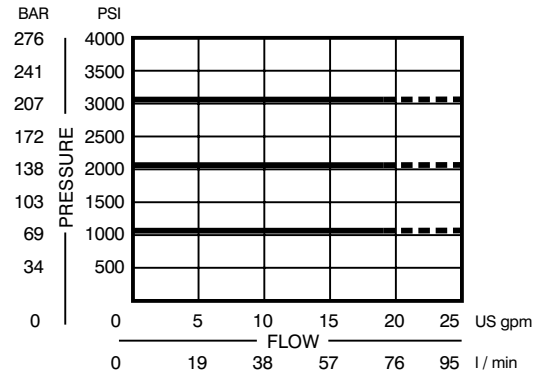


SPECIFICATIONS

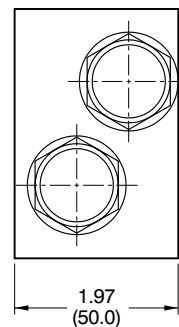
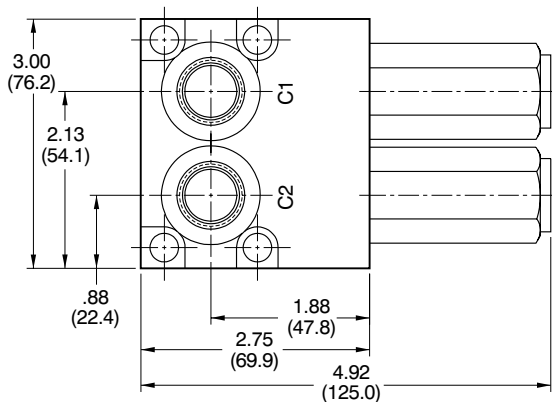
- This valve is a direct motor mounted, dual cross relief valve. It is designed to fit CHAR-LYNN "H" & "S" series, and WHITE hydraulic motors.
- Nominal flow: 20.0 gpm (76 l/m).
- Valve rated to 3000 psi (207 bar) working pressure.
- Cartridge leakage: 10 drops per min. max. at 80% of pressure setting.
- Valve cartridge is *all* steel construction with precision ground and hardened components to assure smooth operation and extended service life.
- Hi-strength aluminum alloy body allows for maximum circuit design flexibility.
- Buna-N seals are standard. Viton is optional (consult factory for other seal compounds).
- Valve is designed for use with general purpose hydraulic fluids (MIL-H-5606, SAE #10, etc.).
- Valve weight 2.22 lbs (1.01 kg).
- Valve uses two CP200-1 differential area type relief valves.
- Some motor applications may require a spacer kit to provide motor clearance. Order kit number 120313.

RELIEF VALVE PERFORMANCE

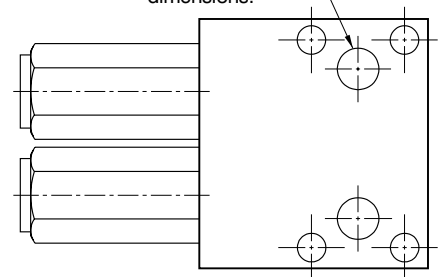
154 SUS (33 cSt) HYD. OIL @ 100° F (38° C)



All dimensions in inches (mm)



See back of motor control index for H & S series mounting pattern dimensions.



ORDERING INFORMATION

CP810 - 1 - 8S - B 0 A C

BASIC VALVE

PORTS

	BODY P/N
3P - 3/8 NPTF	220579
4P - 1/2 NPTF	220578
6S - #6 SAE	220577
8S - #8 SAE	220576
3B - 3/8 BSP	221815
4B - 1/2 BSP	221816

SEALS

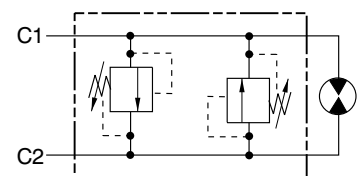
	SEAL KIT
B - BUNA-N	120072
V - VITON	120161

PRESSURE RANGE

	PSI	BAR
A - 100-800	(7-55)	
Std. Setting	400	(28)
B - 250-2000	(17-138)	
Std. Setting	1000	(69)
C - 600-3000	(41-207)	
Std. Setting	1500	(103)

ADJUSTMENT OPTION

- A - INTERNAL ADJUSTMENT
- E - EXTERNAL ADJUSTMENT
- F - TAMPER RESISTANT



CP810-2

MOTOR CONTROL VALVE

(Direct Mounted Cross Relief With Brake Shuttle Type)



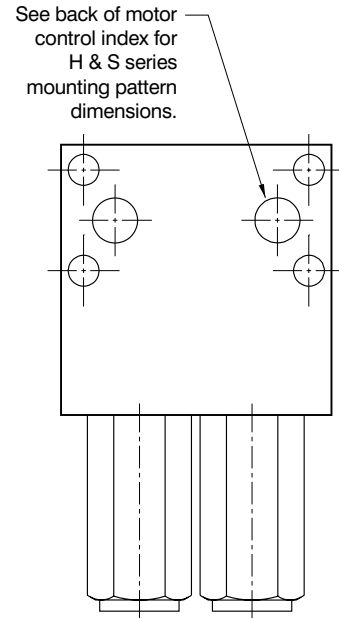
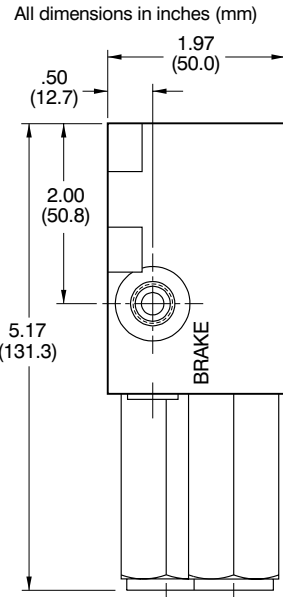
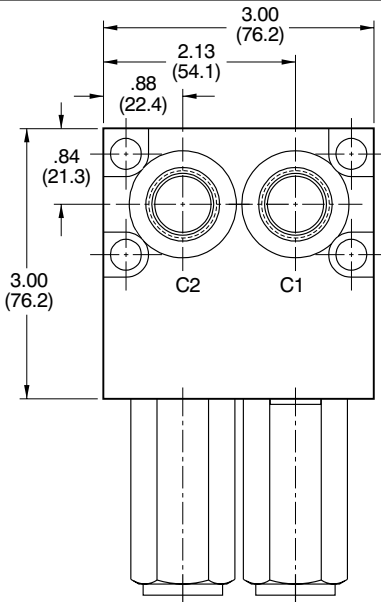
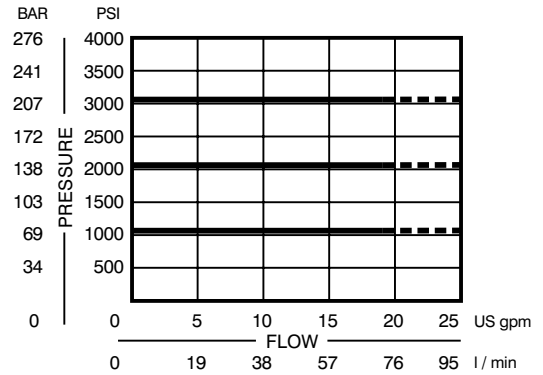
SERIES 10

SPECIFICATIONS

- This valve is a direct motor mounted, dual cross relief valve, with a brake release shuttle. It is designed to fit CHAR-LYNN "H" & "S" series, and WHITE hydraulic motors.
- Nominal flow: 20.0 gpm (76 l/m).
- Valve rated to 3000 psi (207 bar) working pressure.
- Cartridge leakage: 10 drops per min. max. at 80% of pressure setting.
- Valve cartridge is *all* steel construction with precision ground and hardened components to assure smooth operation and extended service life.
- Hi-strength aluminum alloy body allows for maximum circuit design flexibility.
- Buna-N seals are standard. Viton is optional (consult factory for other seal compounds).
- Valve is designed for use with general purpose hydraulic fluids (MIL-H-5606, SAE #10, etc.).
- Valve weight 2.26 lbs (1.03 kg).
- Valve uses two CP200-1 differential area type relief valves.
- Some motor applications may require a spacer kit to provide motor clearance. Order kit number 120313.

RELIEF VALVE PERFORMANCE

154 SUS (33 cSt) HYD. OIL @ 100° F (38° C)



ORDERING INFORMATION

CP810 - 2 - 8S - B 0 A C

BASIC VALVE

PORTS

	BODY P/N	BRAKE PORT
3P - 3/8 NPTF	220678	2P - 1/4 NPTF
4P - 1/2 NPTF	220679	2P - 1/4 NPTF
6S - #6 SAE	220680	4S - #4 SAE
8S - #8 SAE	220681	4S - #4 SAE
3B - 3/8 BSP	221817	2B - 1/4 BSP
4B - 1/2 BSP	221818	2B - 1/4 BSP

SEALS

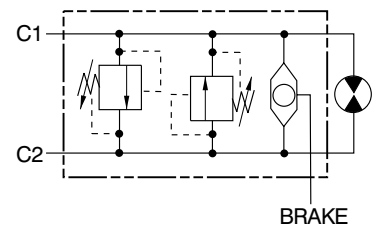
SEAL KIT
B - BUNA-N 120434
V - VITON 120435

PRESSURE RANGE

PSI	BAR
A - 100-800	(7-55)
Std. Setting 400	(28)
B - 250-2000	(17-138)
Std. Setting 1000	(69)
C - 600-3000	(41-207)
Std. Setting 1500	(103)

ADJUSTMENT OPTION

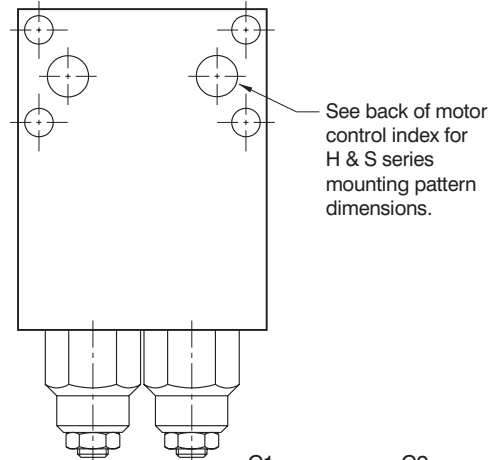
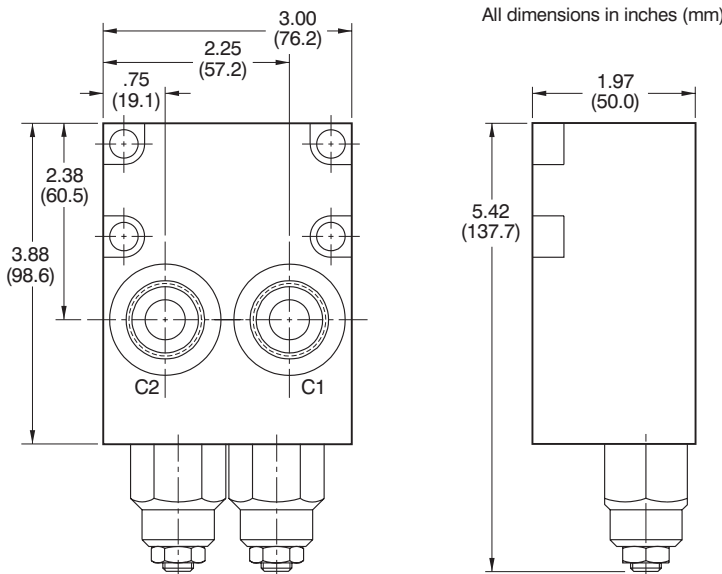
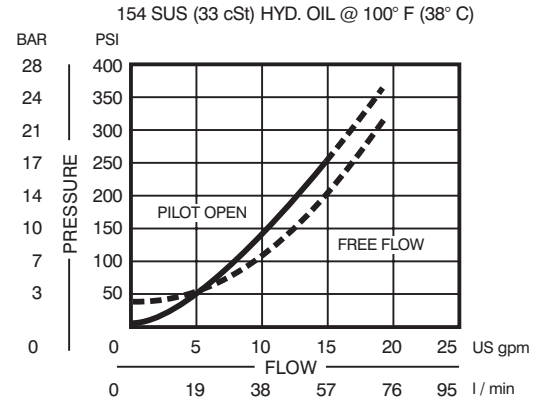
- A - INTERNAL ADJUSTMENT
- E - EXTERNAL ADJUSTMENT
- F - TAMPER RESISTANT



SPECIFICATIONS

- This valve is a direct motor mounted, counterbalance valve. It is designed to fit CHAR-LYNN "H" & "S" series, and WHITE hydraulic motors.
- Nominal flow: 15.0 gpm (57 l/m).
- Valve rated to 3000 psi (207 bar) working pressure.
- Cartridge leakage: 10 drops per min. max. at 70% of pressure setting.
- Valve cartridge is **all** steel construction with precision ground and hardened components to assure smooth operation and extended service life.
- Hi-strength aluminum alloy body allows for maximum circuit design flexibility.
- Buna-N seals are standard. Viton is optional (consult factory for other seal compounds).
- Valve is designed for use with general purpose hydraulic fluids (MIL-H-5606, SAE #10, etc.).
- Valve weight 3.35 lbs (1.52 kg).
- Valve uses two CP440-1 counterbalance valves.
- Some motor applications may require a spacer kit to provide motor clearance. Order kit number 120313.

TYPICAL PERFORMANCE



ORDERING INFORMATION

CP810 - 7 - 10S - B - E - B - * - 4.5 - 015**

BASIC VALVE
PORTS

		PORTS	BODY P/N
3P	-	3/8 NPTF	221820
4P	-	1/2 NPTF	221821
8S	-	#8 SAE	221822
10S	-	#10 SAE	221823
3B	-	3/8 BSP	221824
4B	-	1/2 BSP	221825

SEALS

SEAL KIT	
B - BUNA-N	120164
V - VITON	120165

ADJUSTMENT OPTION

- E - EXTERNAL ADJUSTMENT
- F - TAMPER RESISTANT

FREE FLOW CHECK CRACKING PRESSURE

PSI	BAR
005 - 5	(.34)
015 - 15	(1.03)

PILOT RATIO 3.0

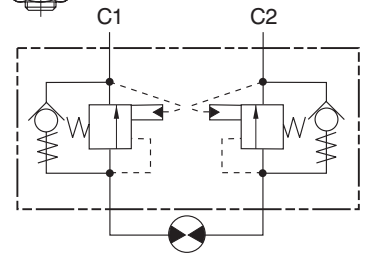
PSI	BAR
A - 500-1500	(34-103)
Std. Setting 1000	(69)
B - 1000-2500	(69-172)
Std. Setting 1500	(103)
C - 1500-3500	(103-241)
Std. Setting 2500	(172)

PILOT RATIO 4.5

PSI	BAR
A - 500-2500	(34-172)
Std. Setting 1500	(103)
B - 1000-3500	(69-241)
Std. Setting 1500	(103)
C - 1500-5000	(103-345)
Std. Setting 2500	(172)

PILOT RATIO 10.0

PSI	BAR
A - 1500-5000	(103-345)
Std. Setting 2500	(172)
B -	N/A
C -	N/A



CP810-8

MOTOR CONTROL VALVE

(Dual Counterbalance Valve With Brake Shuttle Type)



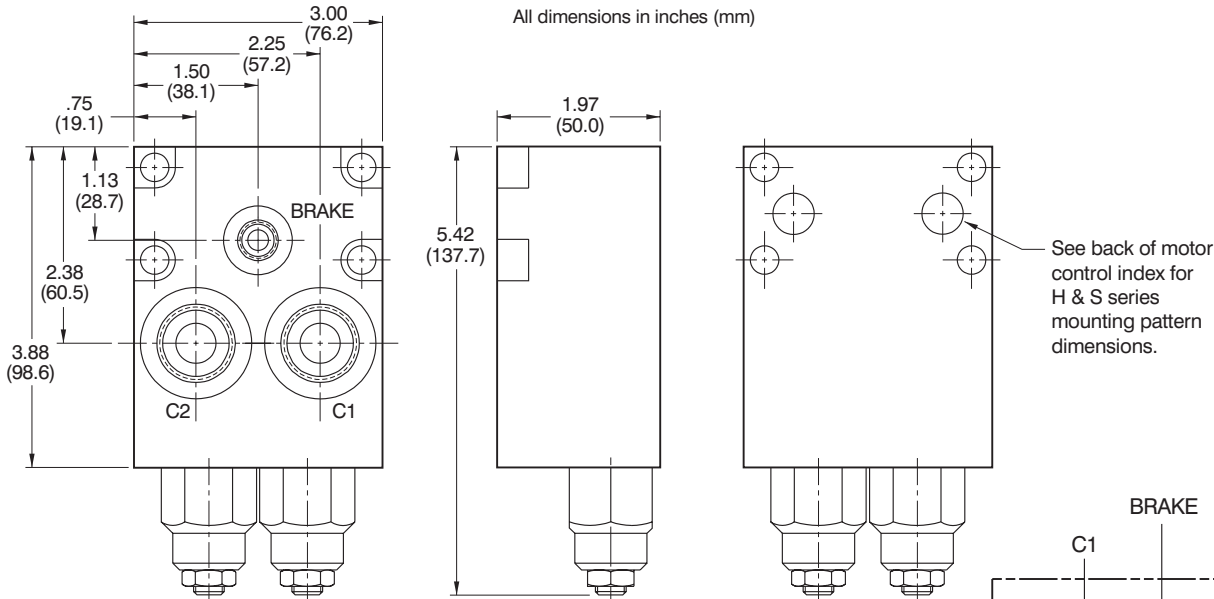
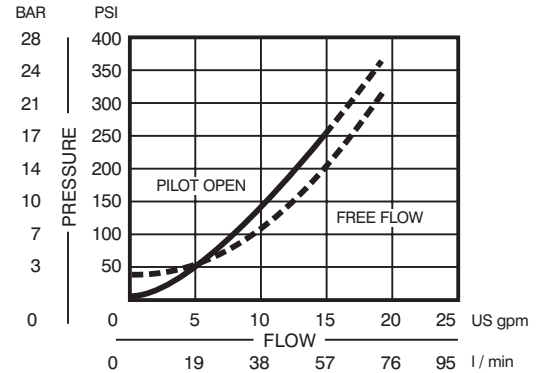
SERIES 10

SPECIFICATIONS

- This valve is a direct motor mounted, counterbalance valve. It is designed to fit CHAR-LYNN "H" & "S" series, and WHITE hydraulic motors.
- Nominal flow: 15.0 gpm (57 l/m).
- Valve rated to 3000 psi (207 bar) working pressure.
- Cartridge leakage: 10 drops per min. max. at 70% of pressure setting.
- Valve cartridge is **all** steel construction with precision ground and hardened components to assure smooth operation and extended service life.
- Hi-strength aluminum alloy body allows for maximum circuit design flexibility.
- Buna-N seals are standard. Viton is optional (consult factory for other seal compounds).
- Valve is designed for use with general purpose hydraulic fluids (MIL-H-5606, SAE #10, etc.).
- Valve weight 3.39 lbs (1.54 kg).
- Valve uses two CP440-1 counterbalance valves.
- Some motor applications may require a spacer kit to provide motor clearance. Order kit number 120313.

TYPICAL PERFORMANCE

154 SUS (33 cSt) HYD. OIL @ 100° F (38° C)



ORDERING INFORMATION

CP810 - 8 - 10S - B - E - B - * - 4.5 - 015**

BASIC VALVE

PORTS

	BODY P/N	BRAKE PORT
3P - 3/8 NPTF	221827	2P - 1/4 NPTF
4P - 1/2 NPTF	221828	2P - 1/4 NPTF
8S - #8 SAE	221829	4S - #4 SAE
10S - #10 SAE	221830	4S - #4 SAE
3B - 3/8 BSP	221831	2B - 1/4 BSP
4B - 1/2 BSP	221832	2B - 1/4 BSP

SEALS

	SEAL KIT
B - BUNA-N	120436
V - VITON	120437

ADJUSTMENT OPTION

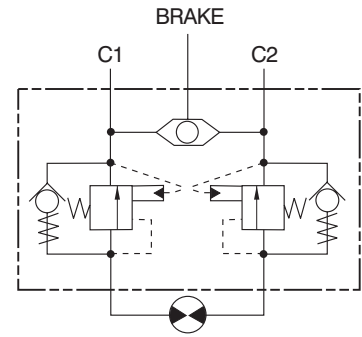
- E - EXTERNAL ADJUSTMENT
- F - TAMPER RESISTANT

FREE FLOW CHECK
CRACKING PRESSURE

	PSI	BAR
005	5	(.34)
015	15	(1.03)

PRESSURE RANGE

PILOT RATIO 3.0		PILOT RATIO 4.5		PILOT RATIO 10.0	
PSI	BAR	PSI	BAR	PSI	BAR
A - 500-1500	(34-103)	A - 500-2500	(34-172)	A - 1500-5000	(103-345)
Std. Setting	1000 (69)	Std. Setting	1500 (103)	Std. Setting	2500 (172)
B - 1000-2500	(69-172)	B - 1000-3500	(69-241)	B -	N/A
Std. Setting	1500 (103)	Std. Setting	1500 (103)	C -	N/A
C - 1500-3500	(103-241)	C - 1500-5000	(103-345)		
Std. Setting	2500 (172)	Std. Setting	2500 (172)		



PILOT RATIO

CAVITIES, CAVITY PLUGS AND FILTERS

DESCRIPTION	PAGE
SERIES 4 CAVITY	
CP4-2	15.01
CP4-3	15.02
SERIES 8 CAVITY	
CP8-2	15.03
CP8-3	15.04
CP8-3L	15.05
CP8-4	15.06
SERIES 10 CAVITY	
CP10-2	15.07
CP10-3	15.08
CP10-3L	15.09
CP10-4	15.10
CP10-4L	15.11
SERIES 12 CAVITY	
CP12-2	15.12
CP12-3S	15.13
CP12-3	15.14
CP12-3M	15.15
CP12-4	15.16
SERIES 16 CAVITY	
CP16-2	15.17
CP16-3S	15.18
CP16-3	15.19
CP16-4	15.20
SERIES 20 CAVITY	
CP20-2	15.21
CP20-3S	15.22
CP20-3	15.23
CP20-4	15.24
CAVITY PLUGS	15.25
CAVITY FILTERS	
CPF20-3 (FITS CP20-3 CAVITY)	15.26

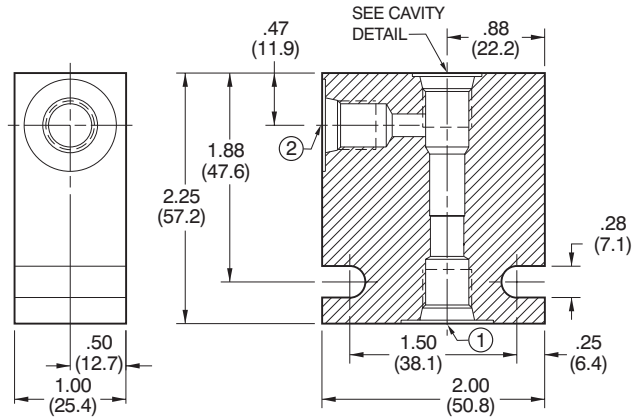
CAVITY CP4-2

Cavity bores can be machined simultaneously with **Compact Controls** form tools:
 CP-4-2-RT (Roughing Tool)
 CP-4-2-FT (Finishing Tool)
 7/16-20 UNF-2A (Tap)

CODE	PORT	BODY P/N
1P	1/8-27 NPTF	221698
2P	1/4-18 NPTF	221699
4S	#4 SAE	221701
2B	1/4 BSP	221700

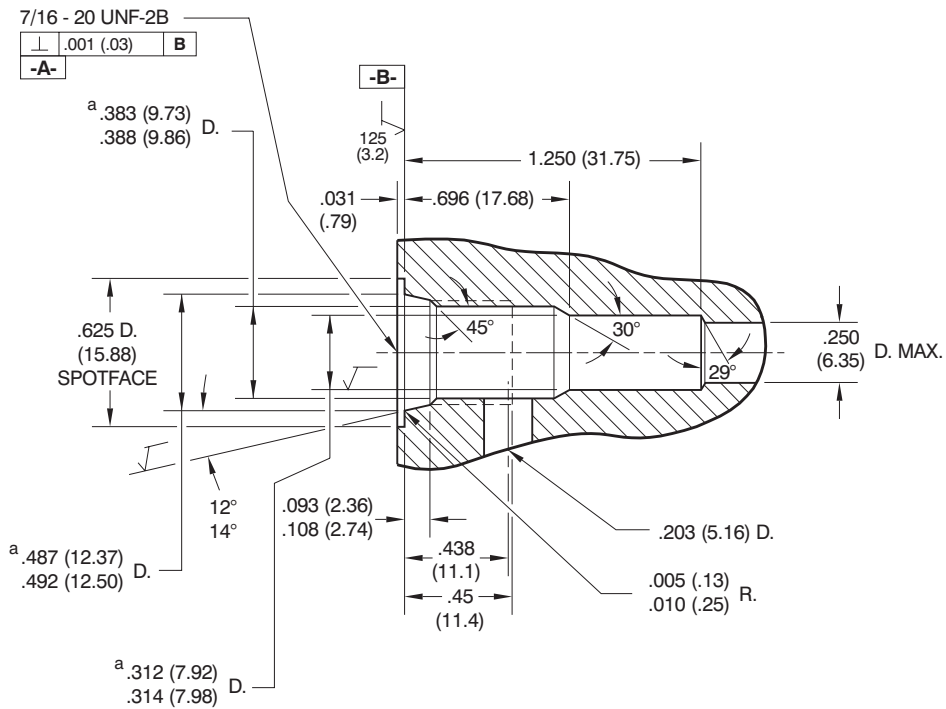
APPROXIMATE WEIGHT: .33 lb. (.15 Kg)

INCHES
(mm)



14051R1 6/94

Note: Contact Compact Controls to verify latest cavity design



$\sqrt{63} = 63 (1.6)$

16015R6 3/98

a		.002 (.05) D.	A
		.001 (.03)	B

UNLESS OTHERWISE NOTED
 Specifications subject to change, consult factory.
 All dimensions in inches (mm)

2 PLACE DIM. ± .01 (0.25)
 3 PLACE DIM. ± .005 (0.13)
 ANGLES ± .5

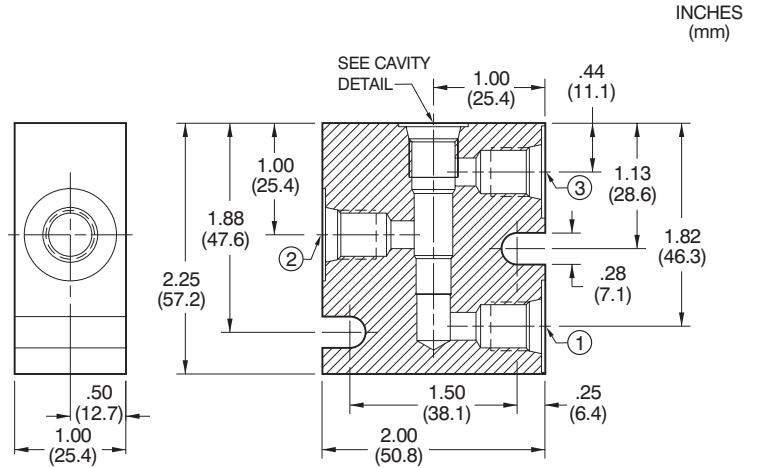
SERIES 4

CAVITY CP4-3

Cavity bores can be machined simultaneously with **Compact Controls** form tools:
 CP-4-3-RT (Roughing Tool)
 CP-4-3-FT (Finishing Tool)
 7/16-20 UNF-2A (Tap)

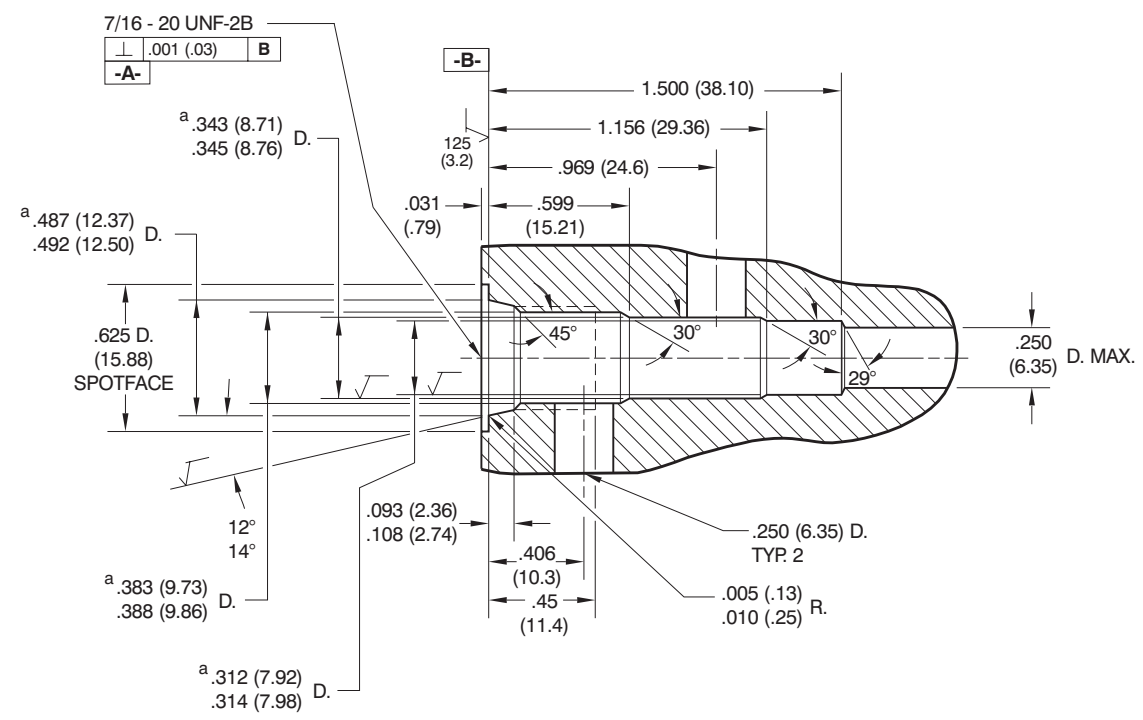
CODE	PORT	BODY P/N
1P	1/8-27 NPTF	220928
2P	1/4-18 NPTF	221704
4S	#4 SAE	220929
2B	1/4 BSP	221703

APPROXIMATE WEIGHT: .33 lb. (.15 Kg)



14050R1 6/94

Note: Contact Compact Controls to verify latest cavity design



$$\sqrt{\quad} = 63 (1.6) \sqrt{\quad}$$

17972R4 6/98

a		.002 (.05) D.	A
		.001 (.03)	B

UNLESS OTHERWISE NOTED
 Specifications subject to change, consult factory.
 All dimensions in inches (mm)

2 PLACE DIM. ± .01 (0.25)
 3 PLACE DIM. ± .005 (0.13)
 ANGLES ± .5

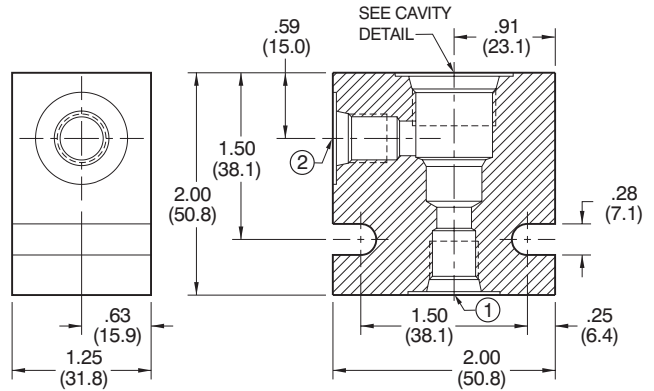
CAVITY CP8-2

Cavity bores can be machined simultaneously with **Compact Controls** form tools:
 CP-8-2-RT (Roughing Tool)
 CP-8-2-FT (Finishing Tool)
 3/4-16 UNF-2A (Tap)

CODE	PORT	BODY P/N
2P	1/4-18 NPTF	220814
3P	3/8-18 NPTF	220815
4S	#4 SAE	220816
6S	#6 SAE	220817
2B	1/4 BSP	221285
3B	3/8 BSP	221286

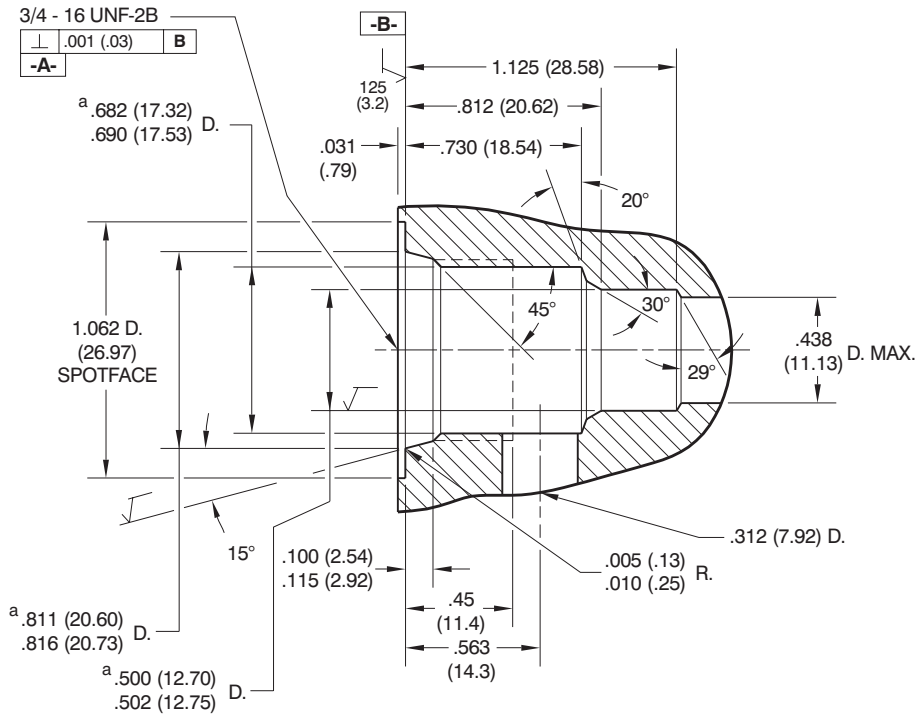
APPROXIMATE WEIGHT: .37 lb. (.17 Kg)

INCHES
(mm)



12451R9 8/91

Note: Contact Compact Controls to verify latest cavity design



$\sqrt{\text{---}} = 63 (1.6) \sqrt{\text{---}}$

16015R2 5/97

a	---	.002 (.05) D.	A
	---	.001 (.03)	B

UNLESS OTHERWISE NOTED
 Specifications subject to change, consult factory.
 All dimensions in inches (mm)

2 PLACE DIM. $\pm .01 (0.25)$
 3 PLACE DIM. $\pm .005 (0.13)$
 ANGLES $\pm .5$

SERIES 8

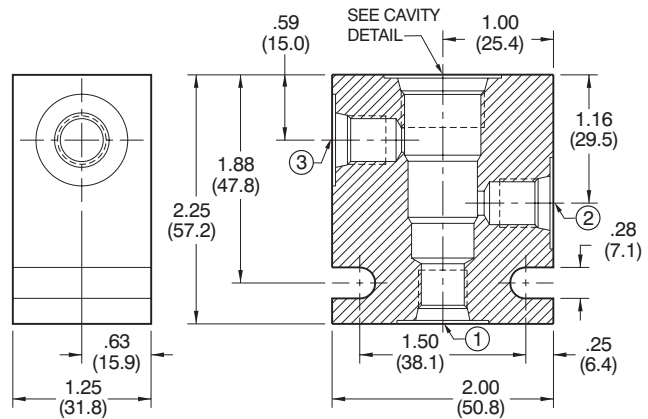
CAVITY CP8-3

Cavity bores can be machined simultaneously with **Compact Controls** form tools:
 CP-8-3-RT (Roughing Tool)
 CP-8-3-FT (Finishing Tool)
 3/4-16 UNF-2A (Tap)

CODE	PORT	BODY P/N
2P	1/4-18 NPTF	220819
3P	3/8-18 NPTF	220820
4S	#4 SAE	220821
6S	#6 SAE	220822
2B	1/4 BSP	221288
3B	3/8 BSP	221287

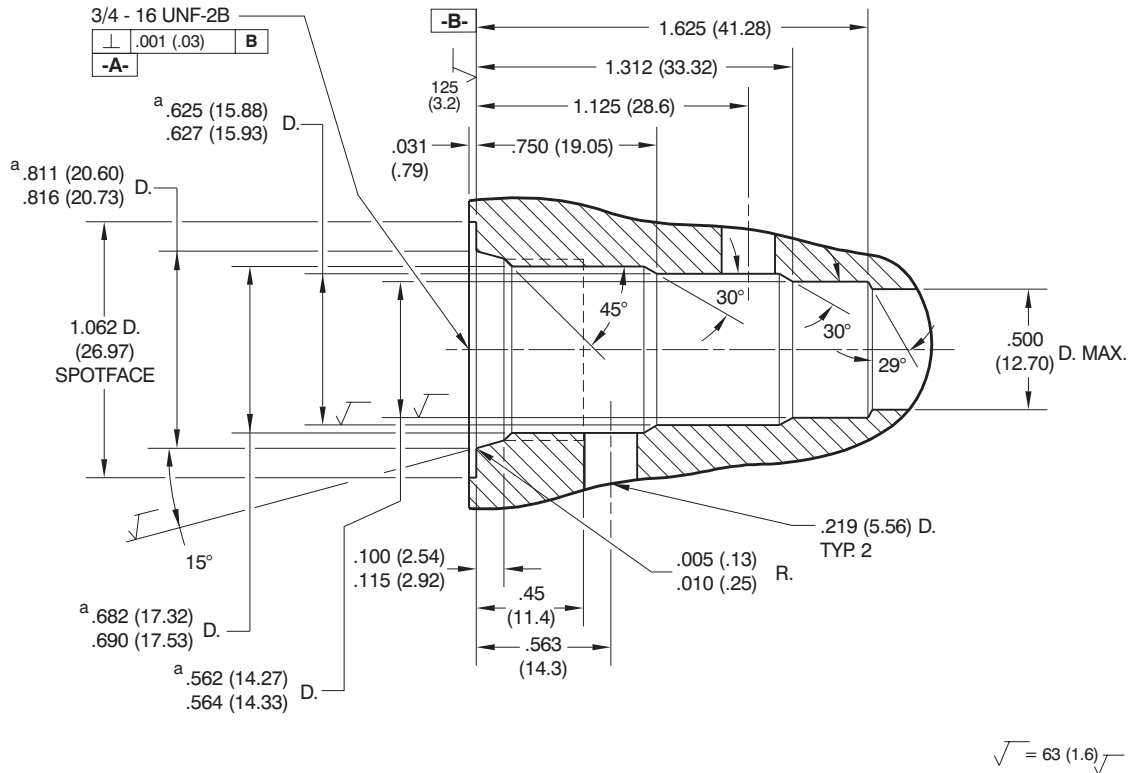
APPROXIMATE WEIGHT: .58 lb. (.26 Kg)

INCHES
(mm)



15338R8 6/96

Note: Contact Compact Controls to verify latest cavity design



16015R2 5/97

a	⊙	.002 (.05) D.	A
	⊥	.001 (.03)	B

UNLESS OTHERWISE NOTED
 Specifications subject to change,
 consult factory.
 All dimensions in inches (mm)

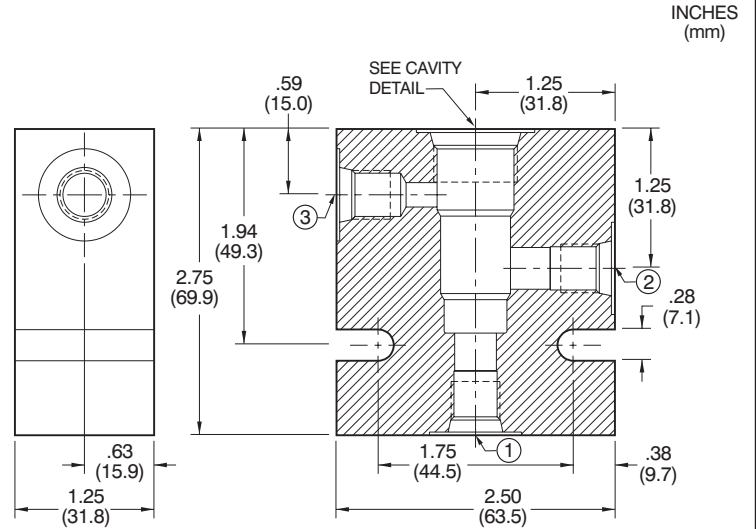
2 PLACE DIM. ± .01 (0.25)
 3 PLACE DIM. ± .005 (0.13)
 ANGLES ± .5

CAVITY CP8-3L

Cavity bores can be machined simultaneously with **Compact Controls** form tools:
 CP-8-3L-RT (Roughing Tool)
 CP-8-3L-FT (Finishing Tool)
 3/4-16 UNF-2A (Tap)

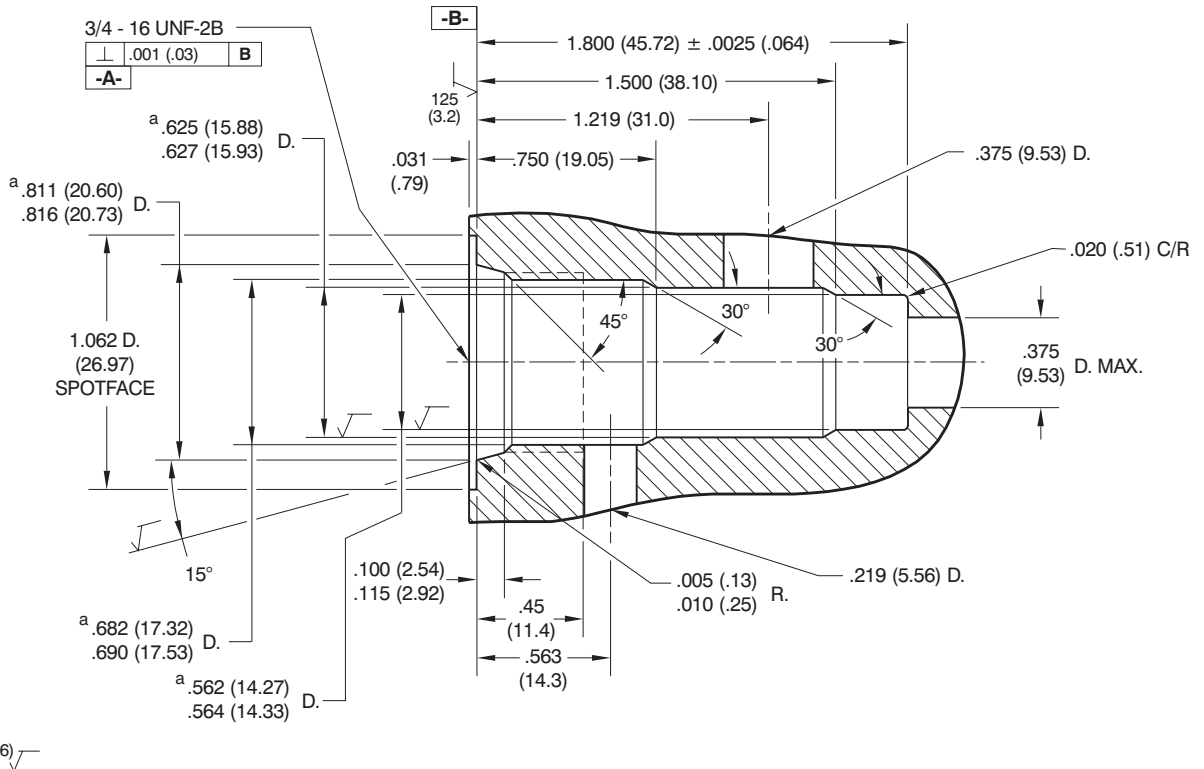
CODE	PORT	BODY P/N
2P	1/4-18 NPTF	221842
3P	3/8-18 NPTF	221843
4S	#4 SAE	221844
6S	#6 SAE	221845
2B	1/4 BSP	221846
3B	3/8 BSP	221847

APPROXIMATE WEIGHT: .67 lb. (.30 Kg)



16406R2 5/98

Note: Contact Compact Controls to verify latest cavity design



$\sqrt{\quad} = 63 (1.6)$

16015P2 5/97

a		.002 (.05) D.	A
		.001 (.03)	B

UNLESS OTHERWISE NOTED
 Specifications subject to change,
 consult factory.
 All dimensions in inches (mm)

2 PLACE DIM. ± .01 (0.25)
 3 PLACE DIM. ± .005 (0.13)
 ANGLES ± .5

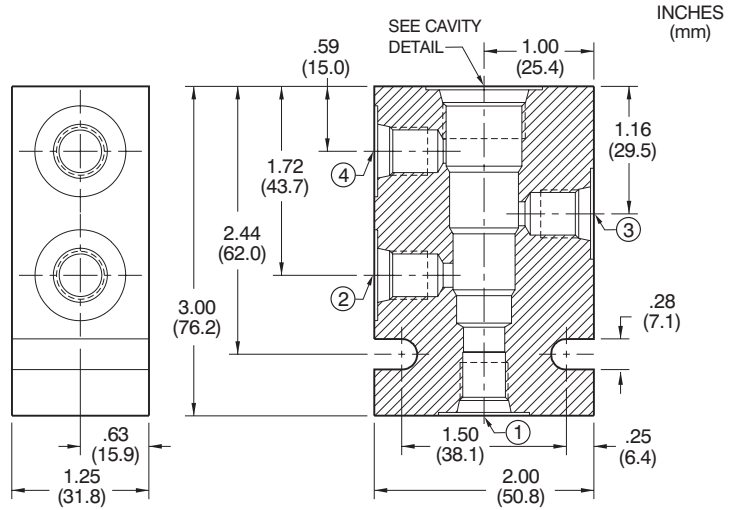
SERIES 8

CAVITY CP8-4

Cavity bores can be machined simultaneously with **Compact Controls** form tools:
 CP-8-4-RT (Roughing Tool)
 CP-8-4-FT (Finishing Tool)
 3/4-16 UNF-2A (Tap)

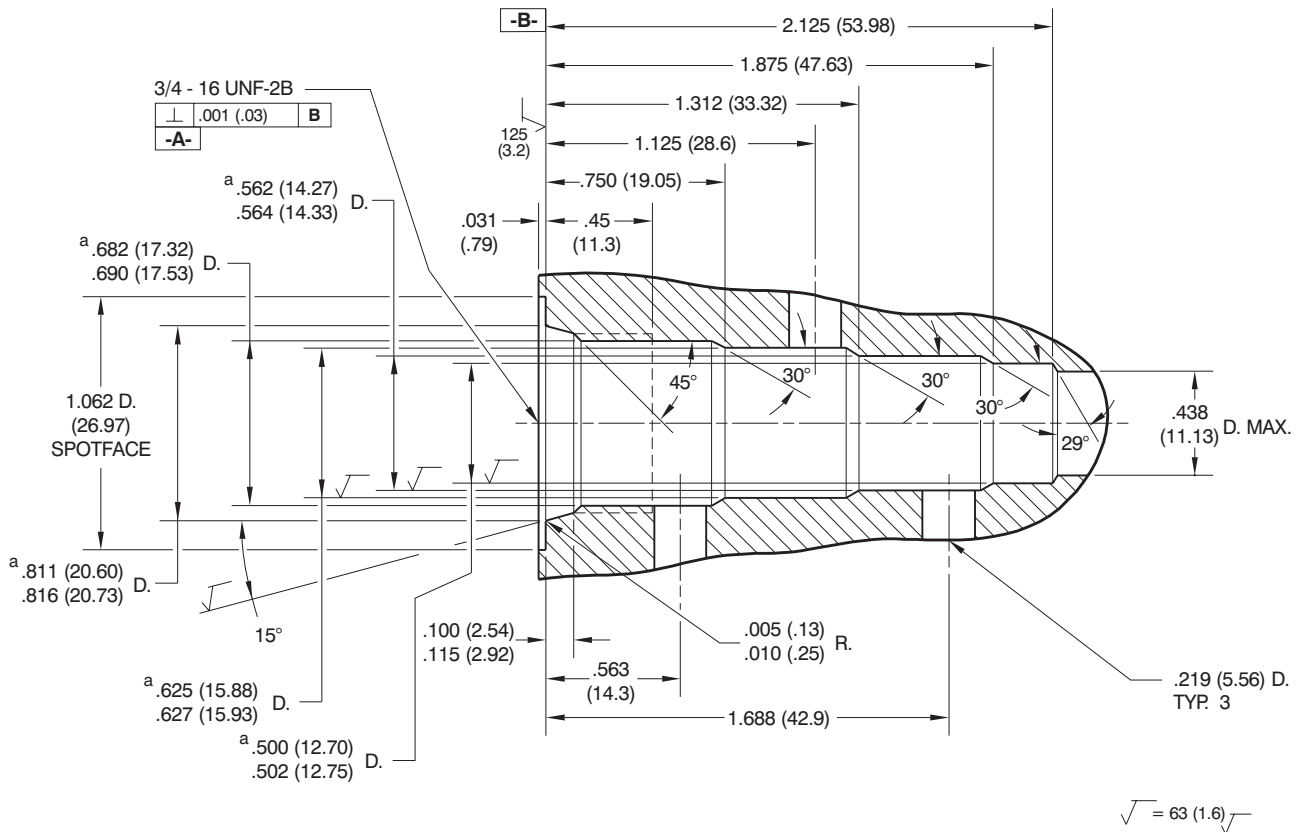
CODE	PORT	BODY P/N
2P	1/4-18 NPTF	220824
3P	3/8-18 NPTF	220825
4S	#4 SAE	220826
6S	#6 SAE	220827
2B	1/4 BSP	221291
3B	3/8 BSP	221292

APPROXIMATE WEIGHT: .67 lb. (.30 Kg)



12269R5 3/91

Note: Contact Compact Controls to verify latest cavity design



16015R2 5/97

a	⊙	.002 (.05) D.	A
	⊥	.001 (.03)	B

UNLESS OTHERWISE NOTED
 Specifications subject to change,
 consult factory.
 All dimensions in inches (mm)

2 PLACE DIM. ± .01 (0.25)
 3 PLACE DIM. ± .005 (0.13)
 ANGLES ± .5

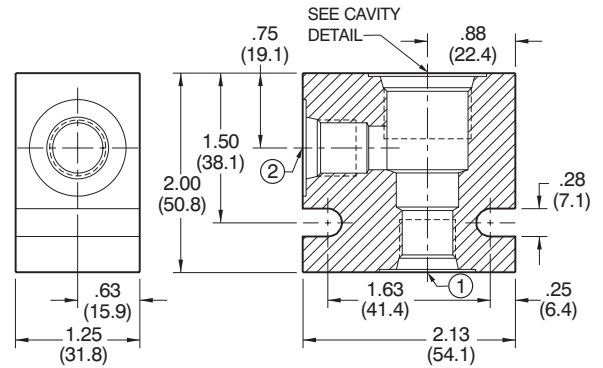
CAVITY CP10-2

INCHES
(mm)

Cavity bores can be machined simultaneously with **Compact Controls** form tools:
 CP-10-2-RT (Roughing Tool)
 CP-10-2-FT (Finishing Tool)
 7/8-14 UNF-2A (Tap)

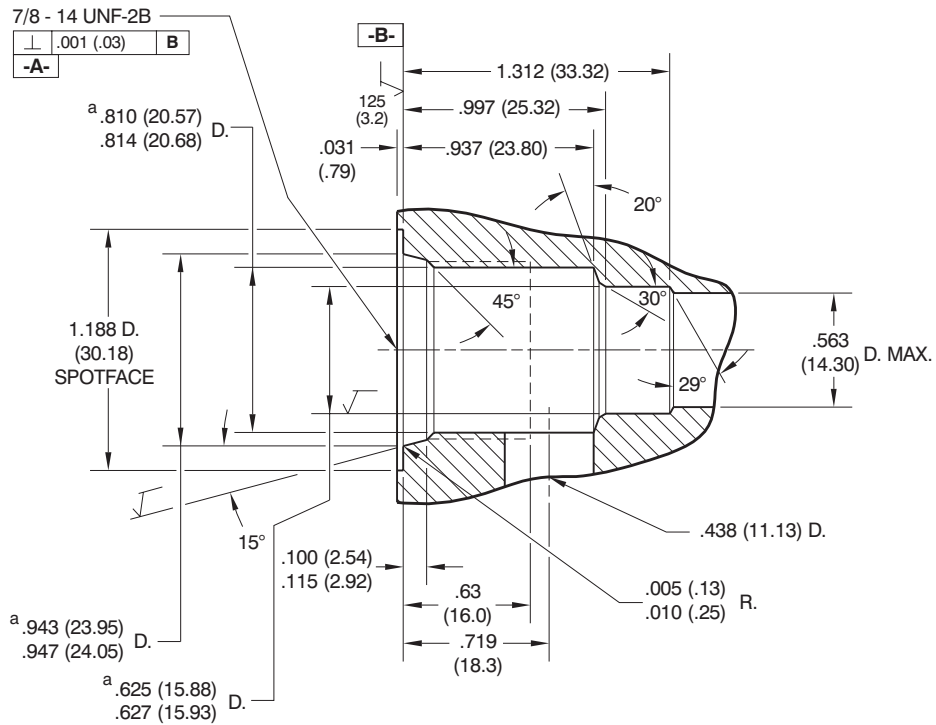
CODE	PORT	BODY P/N
3P	3/8-18 NPTF	220092
4P	1/2-14 NPTF	220124
6S	#6 SAE	220125
8S	#8 SAE	220126
3B	3/8 BSP	221214
4B	1/2 BSP	221215

APPROXIMATE WEIGHT: .38 lb. (.17 Kg)



15343R11 7/96

Note: Contact Compact Controls to verify latest cavity design



$\sqrt{\quad} = .63 (1.6)$

16015R8 5/97

a		.002 (.05) D.	A
		.001 (.03)	B

UNLESS OTHERWISE NOTED
 Specifications subject to change, consult factory.
 All dimensions in inches (mm)

2 PLACE DIM. ± .01 (0.25)
 3 PLACE DIM. ± .005 (0.13)
 ANGLES ± .5

SERIES 10

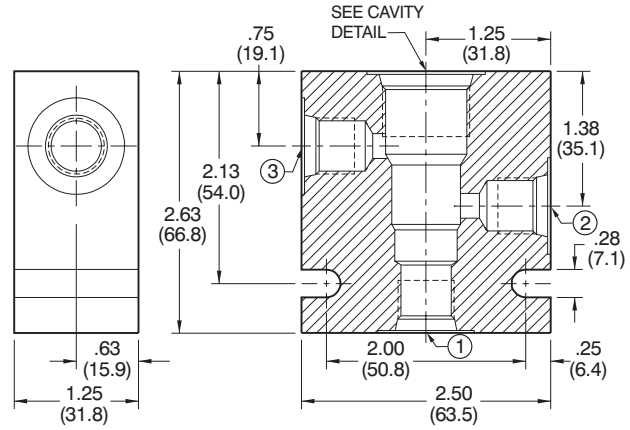
CAVITY CP10-3

INCHES
(mm)

Cavity bores can be machined simultaneously with **Compact Controls** form tools:
 CP-10-3-RT (Roughing Tool)
 CP-10-3-FT (Finishing Tool)
 7/8-14 UNF-2A (Tap)

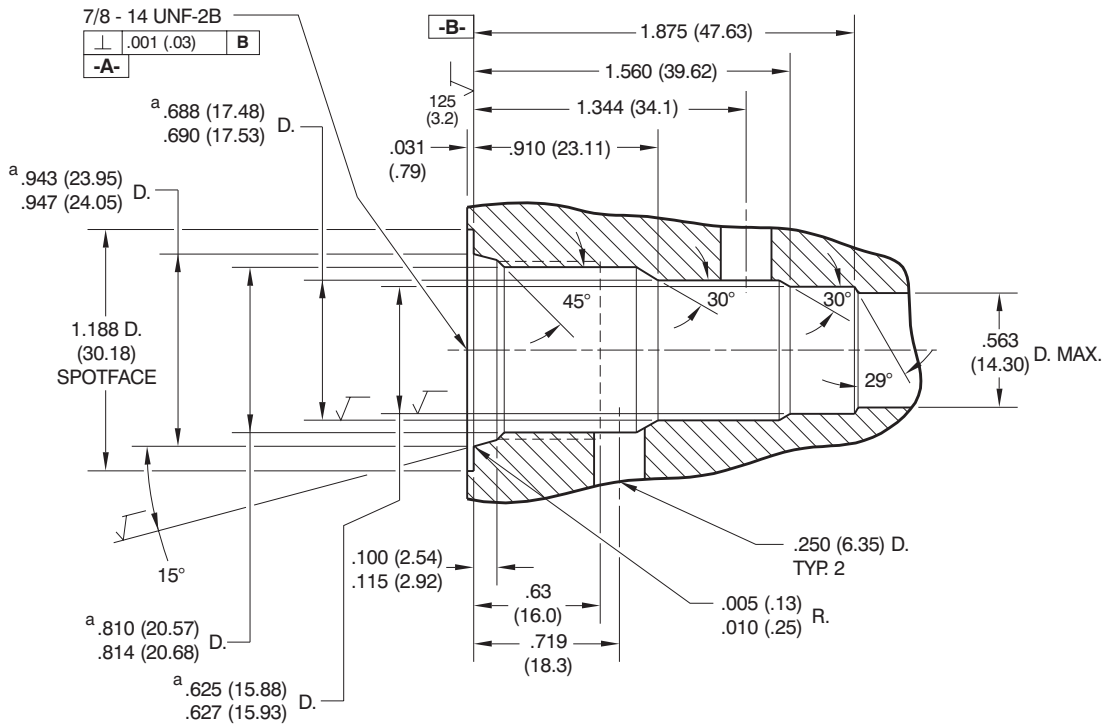
CODE	PORT	BODY P/N
3P	3/8-18 NPTF	220203
4P	1/2-14 NPTF	220204
6S	#6 SAE	220205
8S	#8 SAE	220206
3B	3/8 BSP	221297
4B	1/2 BSP	221267

APPROXIMATE WEIGHT: .55 lb. (.25 Kg)



18031R19 7/98

Note: Contact Compact Controls to verify latest cavity design



$$\sqrt{\text{R}} = 63 (1.6)$$

16015R5 5/97

a	⊙	.002 (.05) D.	A
	⊥	.001 (.03)	B

UNLESS OTHERWISE NOTED
 Specifications subject to change,
 consult factory.
 All dimensions in inches (mm)

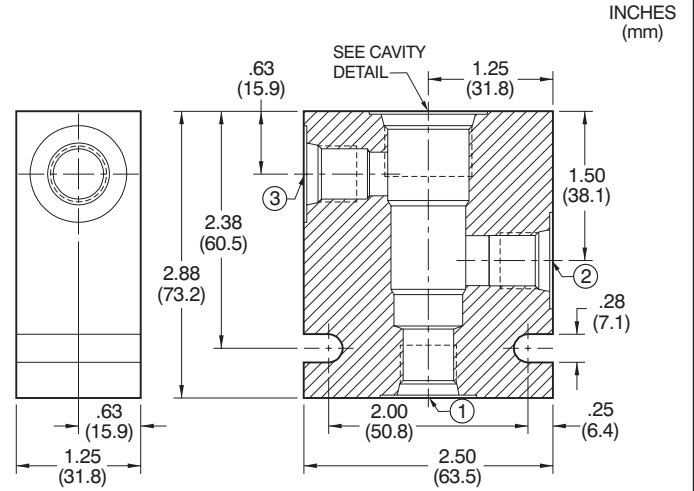
2 PLACE DIM. ± .01 (0.25)
 3 PLACE DIM. ± .005 (0.13)
 ANGLES ± .5

CAVITY CP10-3L

Cavity bores can be machined simultaneously with **Compact Controls** form tools:
 CP-10-3L-RT (Roughing Tool)
 CP-10-3L-FT (Finishing Tool)
 7/8-14 UNF-2A (Tap)

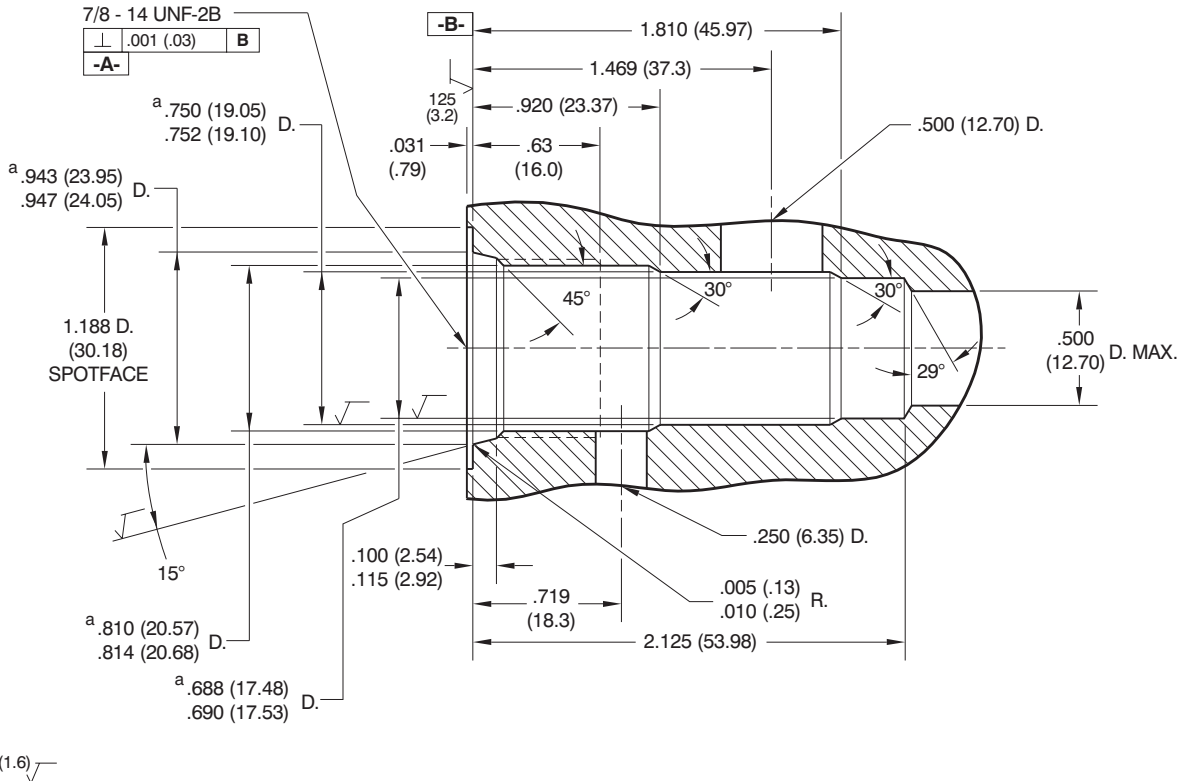
CODE	PORT	BODY P/N
3P	3/8-18 NPTF	220727
4P	1/2-14 NPTF	220728
6S	#6 SAE	220729
8S	#8 SAE	220730
3B	3/8 BSP	221298
4B	1/2 BSP	221299

APPROXIMATE WEIGHT: .66 lb. (.30 Kg)



16405R9 6/97

Note: Contact Compact Controls to verify latest cavity design



16015R5 5/97

a		.002 (.05) D.	A
		.001 (.03)	B

UNLESS OTHERWISE NOTED
 Specifications subject to change, consult factory.
 All dimensions in inches (mm)

2 PLACE DIM. ± .01 (0.25)
 3 PLACE DIM. ± .005 (0.13)
 ANGLES ± .5

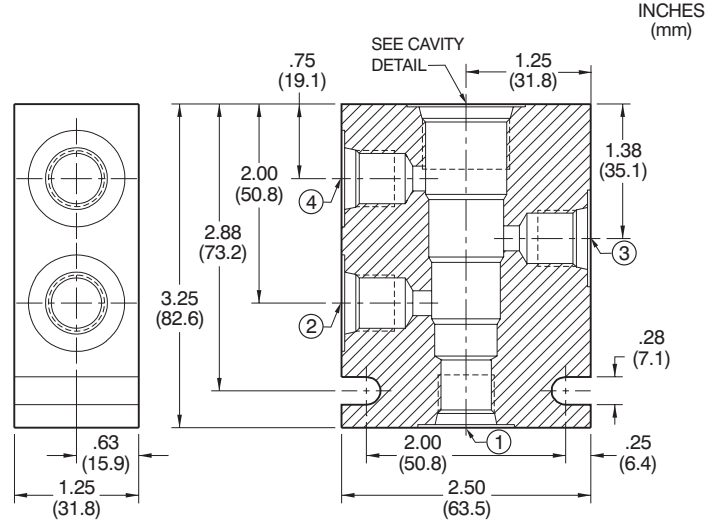
SERIES 10

CAVITY CP10-4

Cavity bores can be machined simultaneously with **Compact Controls** form tools:
 CP-10-4-RT (Roughing Tool)
 CP-10-4-FT (Finishing Tool)
 7/8-14 UNF-2A (Tap)

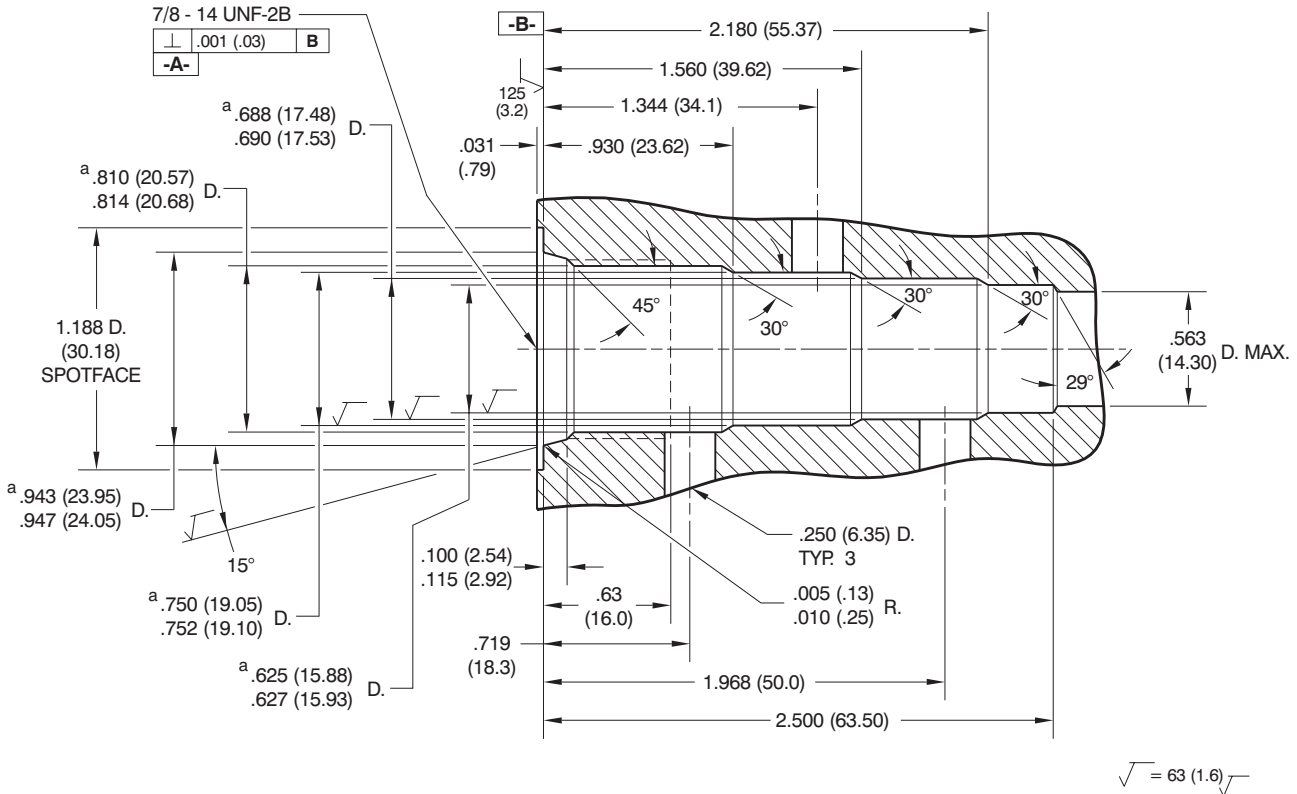
CODE	PORT	BODY P/N
3P	3/8-18 NPTF	220446
4P	1/2-14 NPTF	220447
6S	#6 SAE	220448
8S	#8 SAE	220449
3B	3/8 BSP	221300
4B	1/2 BSP	221232

APPROXIMATE WEIGHT: .73 lb. (.33 Kg)



12728R11 5/92

Note: Contact Compact Controls to verify latest cavity design



16015R5 5/97

a	⊙	.002 (.05) D.	A
	⊥	.001 (.03)	B

UNLESS OTHERWISE NOTED
 Specifications subject to change,
 consult factory.
 All dimensions in inches (mm)

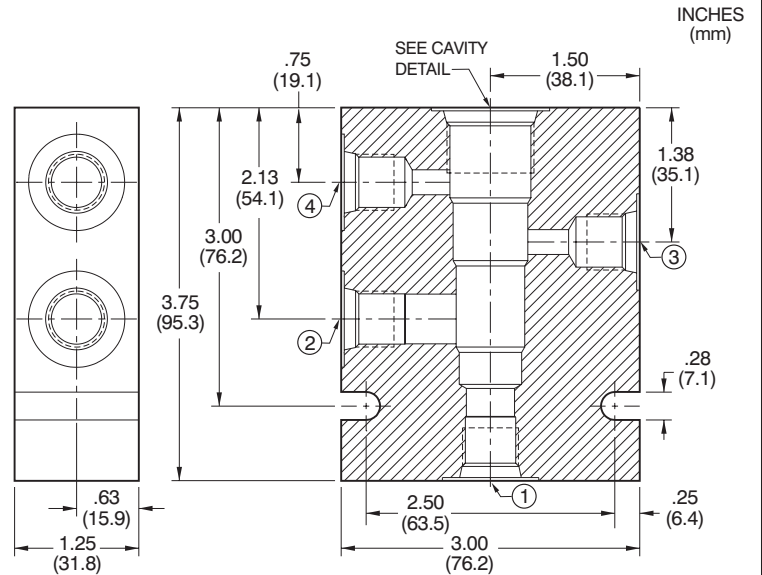
2 PLACE DIM. ± .01 (0.25)
 3 PLACE DIM. ± .005 (0.13)
 ANGLES ± .5

CAVITY CP10-4L

Cavity bores can be machined simultaneously with **Compact Controls** form tools:
 CP-10-4L-RT (Roughing Tool)
 CP-10-4L-FT (Finishing Tool)
 7/8-14 UNF-2A (Tap)

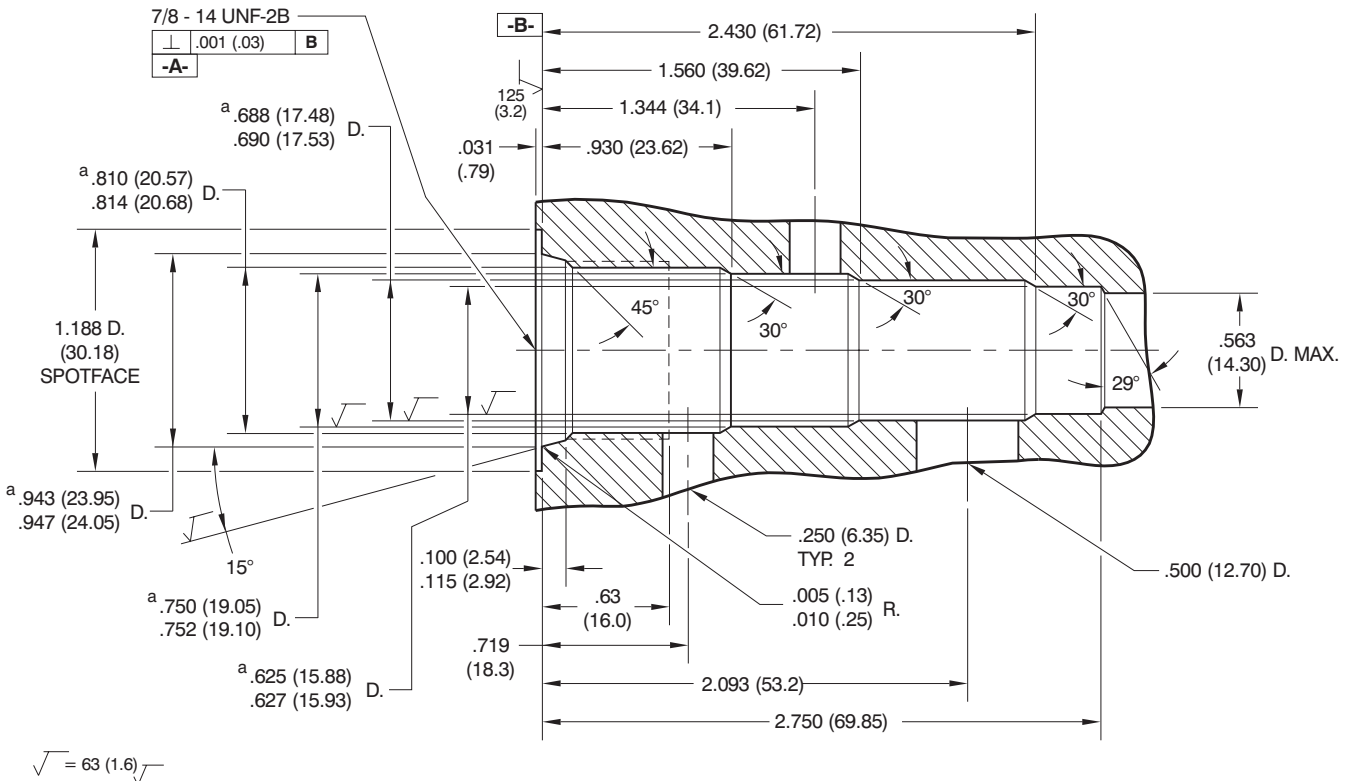
CODE	PORT	BODY P/N
3P	3/8-18 NPTF	221628
4P	1/2-14 NPTF	221629
6S	#6 SAE	221630
8S	#8 SAE	221631
3B	3/8 BSP	221632
4B	1/2 BSP	221633

APPROXIMATE WEIGHT: .85 lb. (.39 Kg)



13603R1 10/94

Note: Contact Compact Controls to verify latest cavity design



$$\sqrt{\text{R}} = .63 (1.6)$$

16015P1 5/97

a		.002 (.05) D.	A
		.001 (.03)	B

UNLESS OTHERWISE NOTED
 Specifications subject to change,
 consult factory.
 All dimensions in inches (mm)

2 PLACE DIM. ± .01 (0.25)
 3 PLACE DIM. ± .005 (0.13)
 ANGLES ± .5

SERIES 12

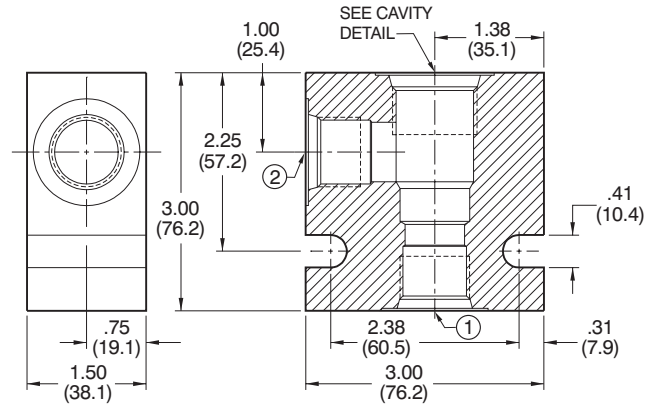
CAVITY CP12-2

Cavity bores can be machined simultaneously with **Compact Controls** form tools:
 CP-12-2-RT (Roughing Tool)
 CP-12-2-FT (Finishing Tool)
 1-1/16-12 UN-2A (Tap)

CODE	PORT	BODY P/N
4P	1/2-14 NPTF	220130
6P	3/4-14 NPTF	220131
10S	#10 SAE	220132
12S	#12 SAE	220133
4B	1/2 BSP	221234
6B	3/4 BSP	221235

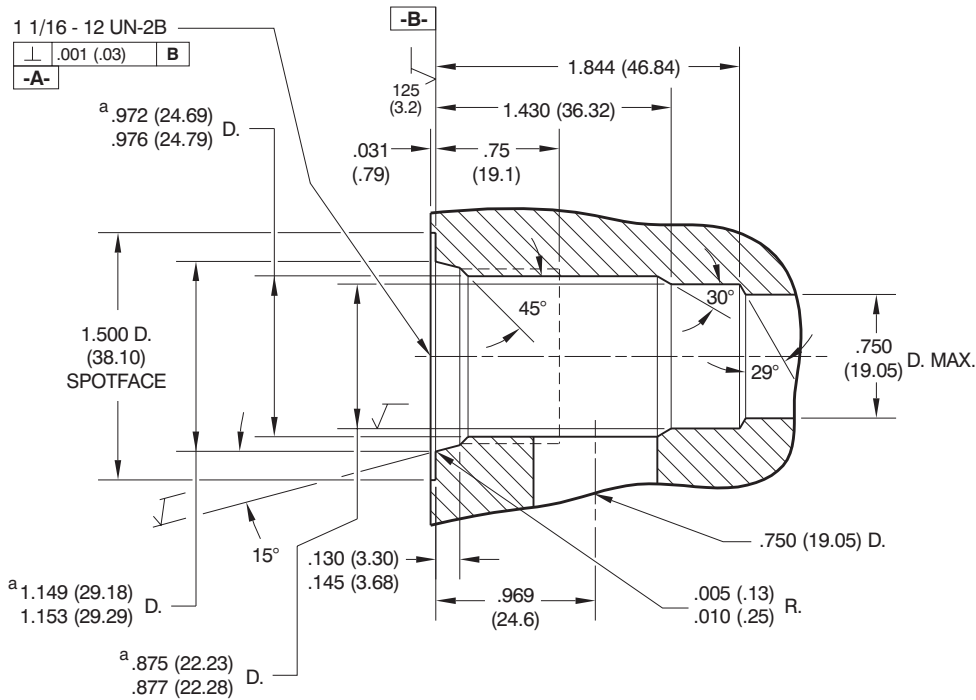
APPROXIMATE WEIGHT: .97 lb. (.44 Kg)

INCHES
(mm)



14577R8 4/95

Note: Contact Compact Controls to verify latest cavity design



16015R4 5/97

a	⊙	.002 (.05) D.	A
	⊥	.001 (.03)	B

UNLESS OTHERWISE NOTED
 Specifications subject to change,
 consult factory.
 All dimensions in inches (mm)

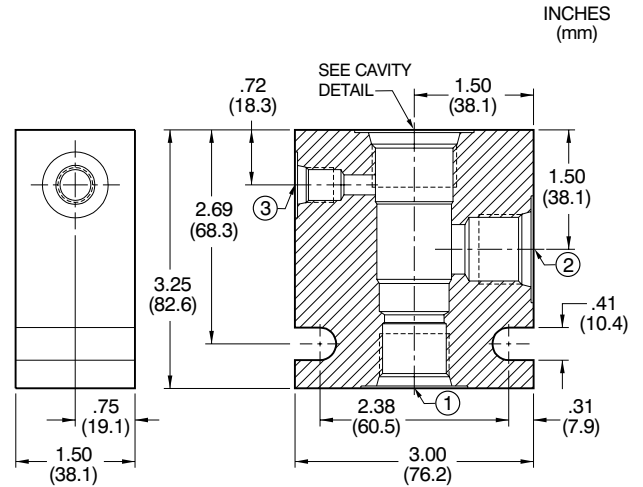
2 PLACE DIM. ± .01 (0.25)
 3 PLACE DIM. ± .005 (0.13)
 ANGLES ± .5

CAVITY CP12-3S

Cavity bores can be machined simultaneously with **Compact Controls** form tools:
 CP-12-3S-RT (Roughing Tool)
 CP-12-3S-FT (Finishing Tool)
 1-1/16-12 UN-2A (Tap)

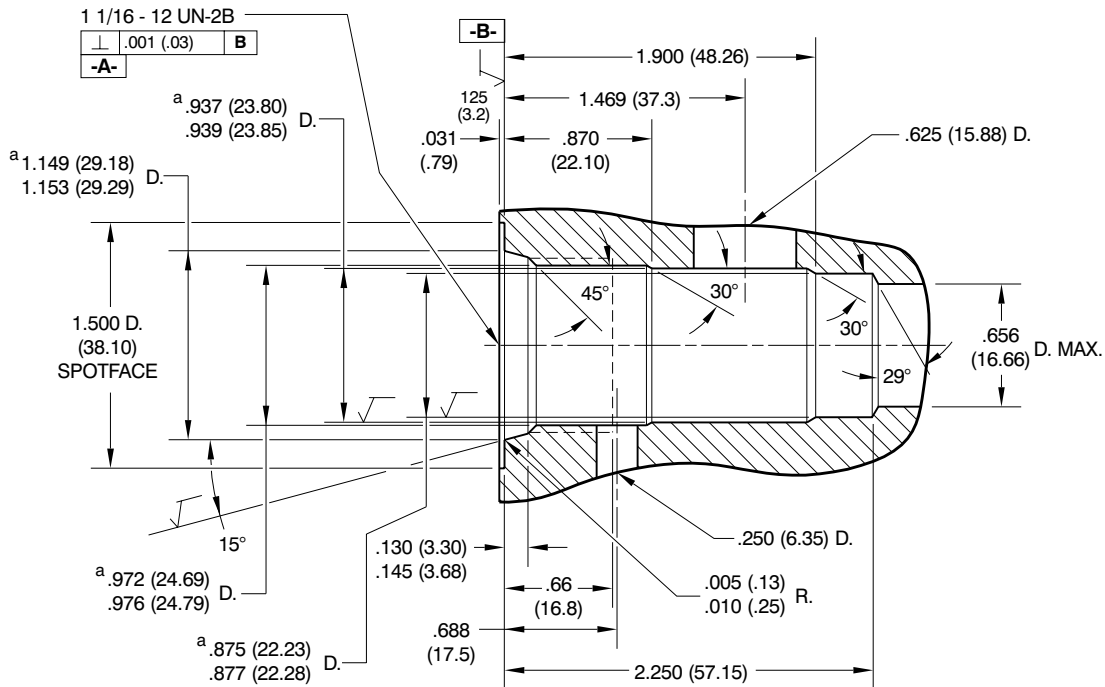
CODE	PORT	BODY P/N	PORT 3
4P	1/2-14 NPTF	220648	1/4-18 NPTF
6P	3/4-14 NPTF	220649	1/4-18 NPTF
10S	#10 SAE	220650	#4 SAE
12S	#12 SAE	220651	#4 SAE
4B	1/2 BSP	221301	1/4 BSP
6B	3/4 BSP	221302	1/4 BSP

APPROXIMATE WEIGHT: 1.12 lb. (.51 Kg)



14575R4 11/99

Note: Contact Compact Controls to verify latest cavity design



$\sqrt{\quad} = 63 (1.6) \sqrt{\quad}$

16015R5 11/99

a	⊙ .002 (.05) D.	A
	⊥ .001 (.03)	B

UNLESS OTHERWISE NOTED
 Specifications subject to change,
 consult factory.
 All dimensions in inches (mm)

2 PLACE DIM. $\pm .01 (0.25)$
 3 PLACE DIM. $\pm .005 (0.13)$
 ANGLES $\pm .5$

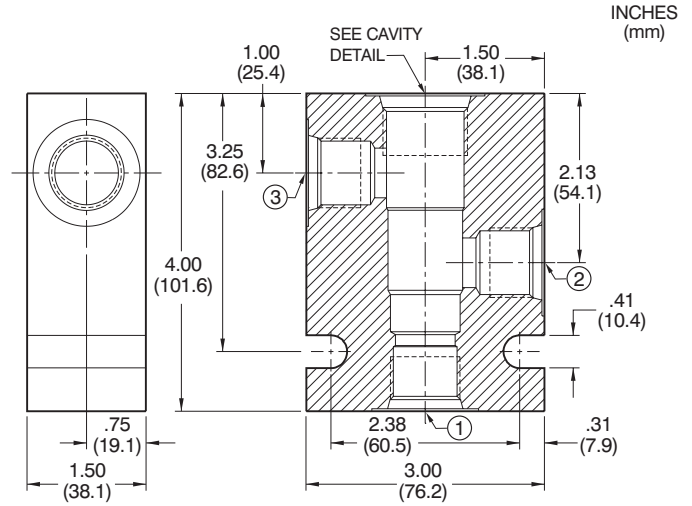
SERIES 12

CAVITY CP12-3

Cavity bores can be machined simultaneously with **Compact Controls** form tools:
 CP-12-3-RT (Roughing Tool)
 CP-12-3-FT (Finishing Tool)
 1-1/16-12 UN-2A (Tap)

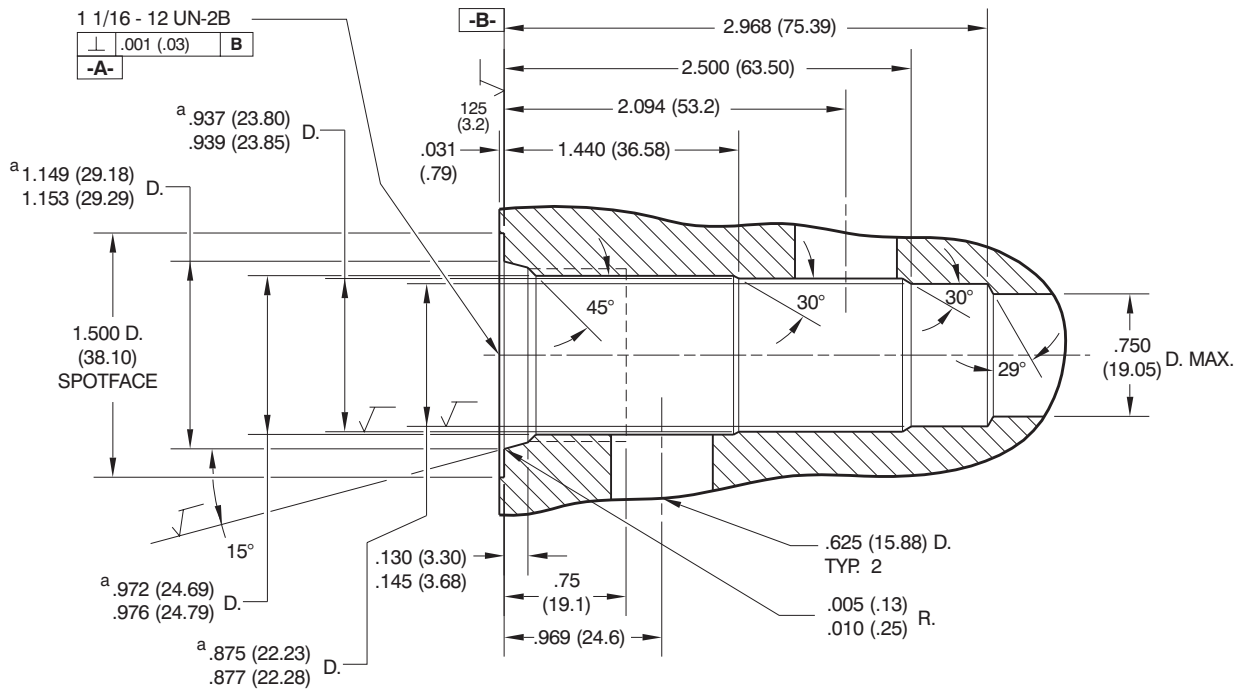
CODE	PORT	BODY P/N
4P	1/2-14 NPTF	220208
6P	3/4-14 NPTF	220209
10S	#10 SAE	220210
12S	#12 SAE	220211
4B	1/2 BSP	221303
6B	3/4 BSP	221237

APPROXIMATE WEIGHT: 1.60 lb. (.73 Kg)



12616R10 2/92

Note: Contact Compact Controls to verify latest cavity design



$\sqrt{\quad} = 63 (1.6) \sqrt{\quad}$

16015R4 5/97

a	Ⓢ	.002 (.05) D.	A
	Ⓢ	.001 (.03)	B

UNLESS OTHERWISE NOTED
 Specifications subject to change,
 consult factory.
 All dimensions in inches (mm)

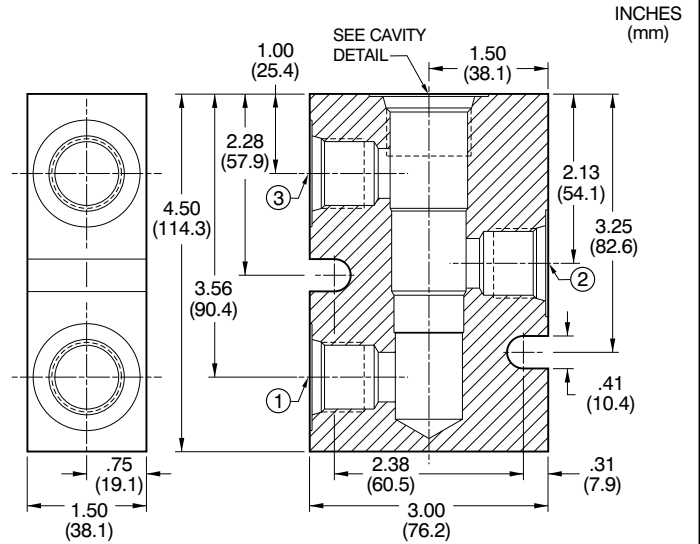
2 PLACE DIM. $\pm .01 (0.25)$
 3 PLACE DIM. $\pm .005 (0.13)$
 ANGLES $\pm .5$

CAVITY CP12-3M

Cavity bores can be machined simultaneously with **Compact Controls** form tools:
 CP-12-3M-RT (Roughing Tool)
 CP-12-3-FT (Finishing Tool)
 1-1/16-12 UN-2A (Tap)

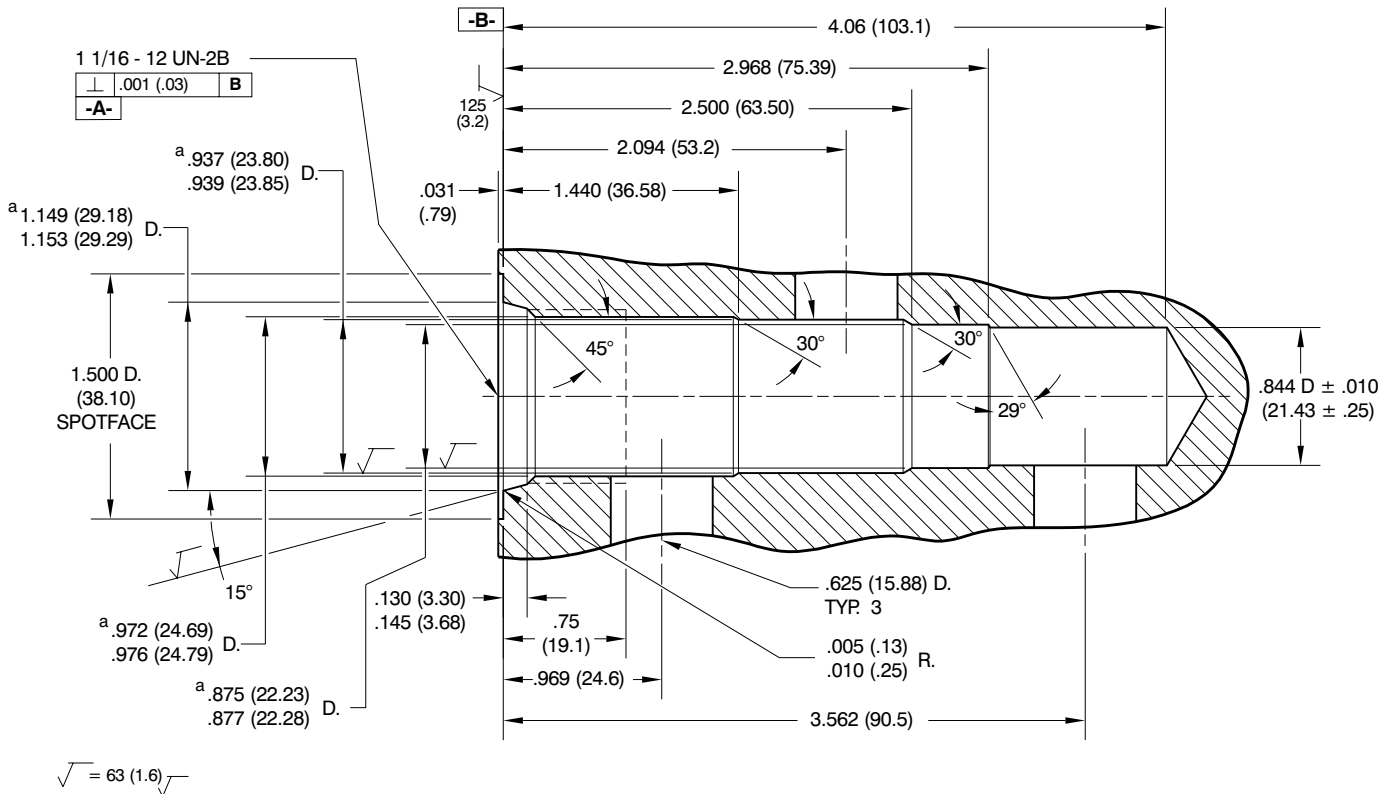
CODE	PORT	BODY P/N
4P	1/2-14 NPTF	220762
6P	3/4-14 NPTF	220763
10S	#10 SAE	220764
12S	#12 SAE	220765
4B	1/2 BSP	221344
6B	3/4 BSP	221345

APPROXIMATE WEIGHT: 1.87 lb. (.85 Kg)



12429R4 11/98

Note: Contact Compact Controls to verify latest cavity design



16015R4 5/97

a	⊙	.002 (.05) D.	A
	⊥	.001 (.03)	B

UNLESS OTHERWISE NOTED
 Specifications subject to change,
 consult factory.
 All dimensions in inches (mm)

2 PLACE DIM. ± .01 (0.25)
 3 PLACE DIM. ± .005 (0.13)
 ANGLES ± .5

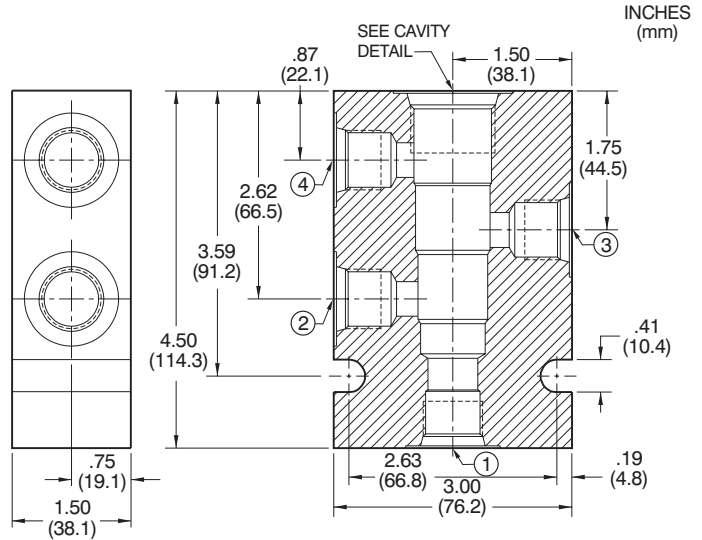
SERIES 12

CAVITY CP12-4

Cavity bores can be machined simultaneously with **Compact Controls** form tools:
 CP-12-4-RT (Roughing Tool)
 CP-12-4-FT (Finishing Tool)
 1-1/16-12 UN-2A (Tap)

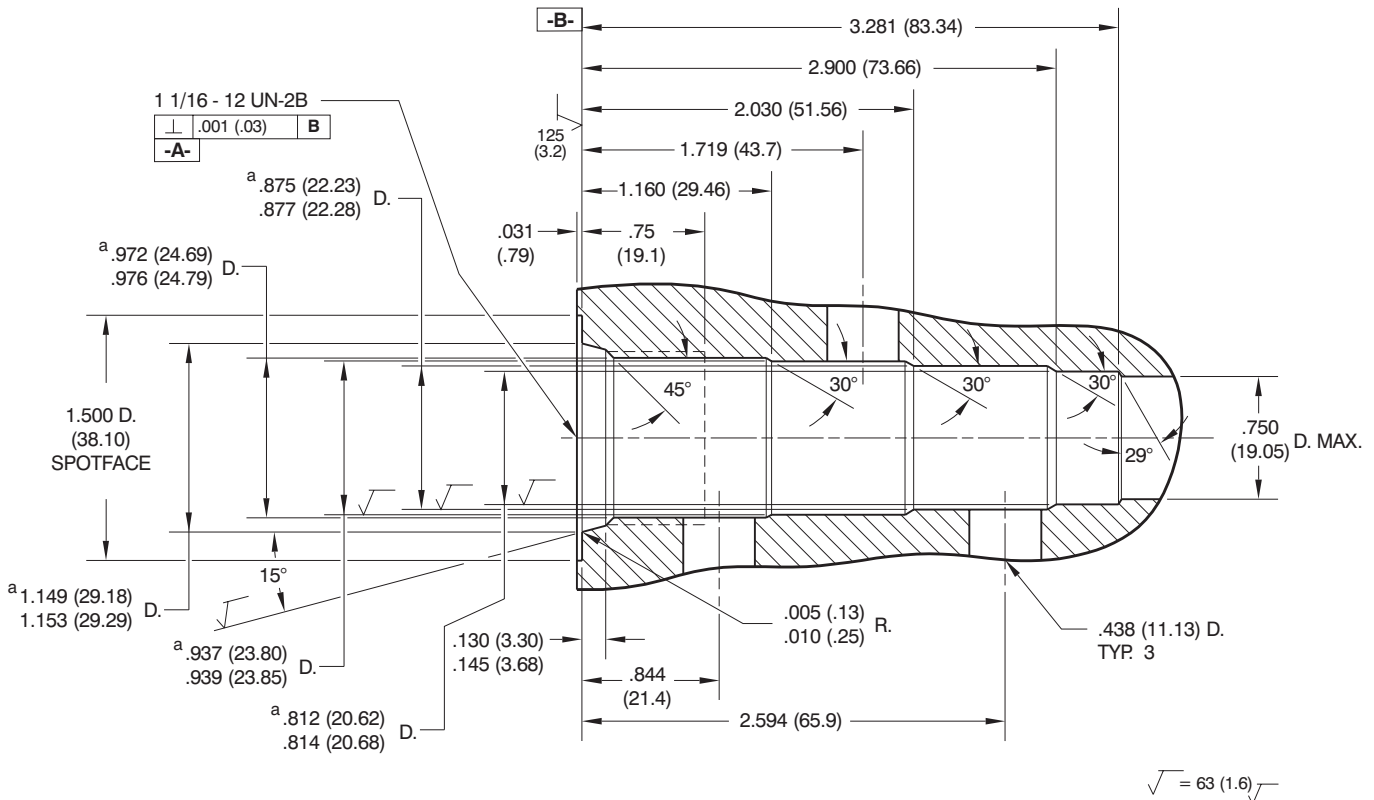
CODE	PORT	BODY P/N
3P	3/8-18 NPTF	220694
4P	1/2-14 NPTF	220693
8S	#8 SAE	220696
10S	#10 SAE	220695
3B	3/8 BSP	221304
4B	1/2 BSP	221305

APPROXIMATE WEIGHT: 1.87 lb. (.85 Kg)



14365R9 4/96

Note: Contact Compact Controls to verify latest cavity design



16015R4 5/97

a	⊙	.002 (.05) D.	A
	⊥	.001 (.03)	B

UNLESS OTHERWISE NOTED
 Specifications subject to change,
 consult factory.
 All dimensions in inches (mm)

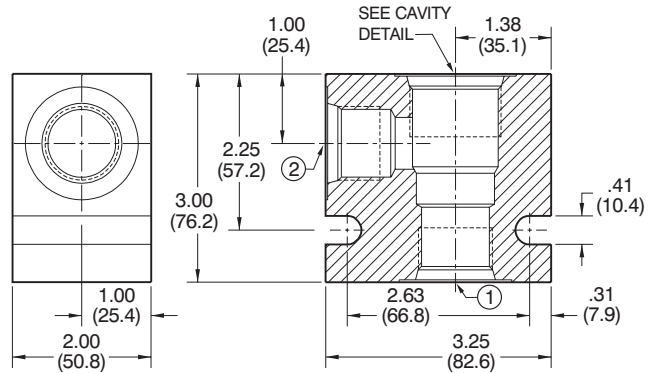
2 PLACE DIM. ± .01 (0.25)
 3 PLACE DIM. ± .005 (0.13)
 ANGLES ± .5

CAVITY CP16-2

INCHES
(mm)

Cavity bores can be machined simultaneously with **Compact Controls** form tools:
 CP-16-2-RT (Roughing Tool)
 CP-16-2-FT (Finishing Tool)
 1-5/16-12 UN-2A (Tap)

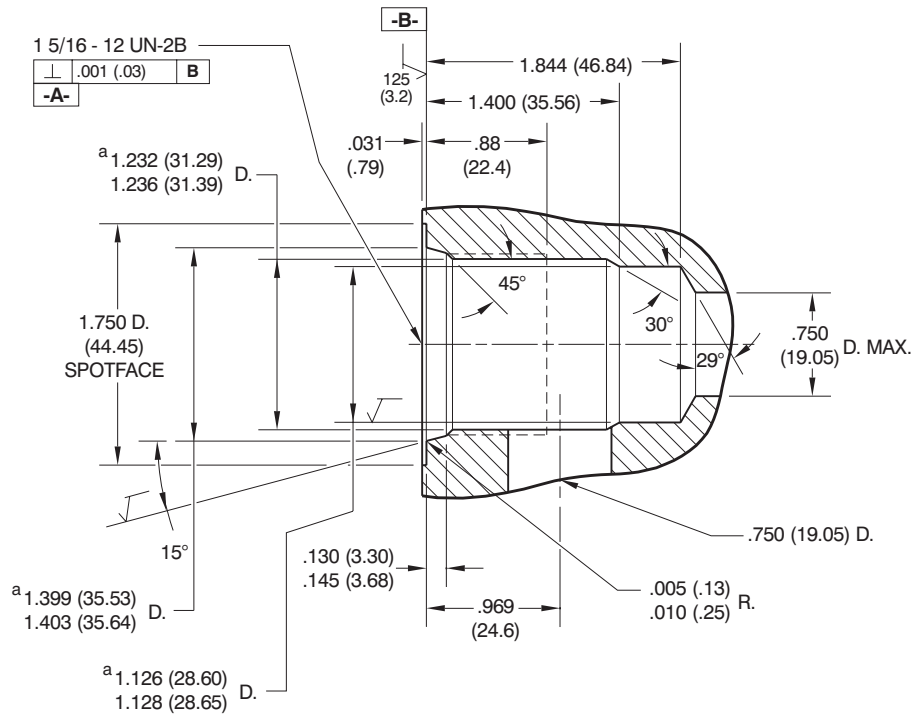
CODE	PORT	BODY P/N
6P	3/4-14 NPTF	220136
8P	1"-11.5 NPTF	220137
12S	#12 SAE	220134
16S	#16 SAE	220135
6B	3/4 BSP	221306
8B	1" BSP	221238



APPROXIMATE WEIGHT: 1.46 lb. (.66 Kg)

12994R8 2/93

Note: Contact Compact Controls to verify latest cavity design



$$\sqrt{\quad} = 63 (1.6) \sqrt{\quad}$$

16015R4 5/97

a	⊙	.002 (.05) D.	A
	⊥	.001 (.03)	B

UNLESS OTHERWISE NOTED
 Specifications subject to change,
 consult factory.
 All dimensions in inches (mm)

2 PLACE DIM. $\pm .01 (0.25)$
 3 PLACE DIM. $\pm .005 (0.13)$
 ANGLES $\pm .5$

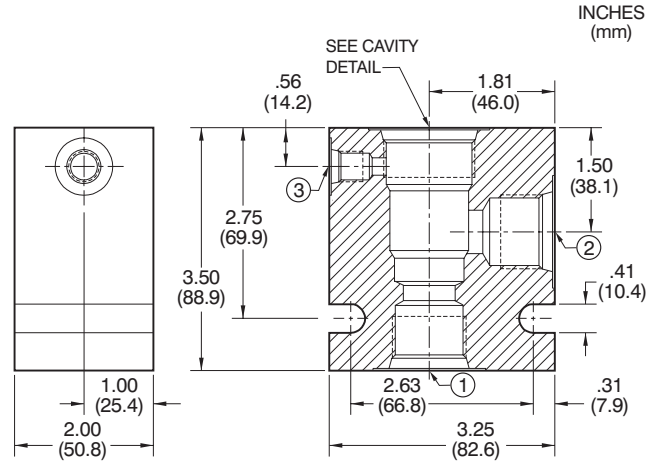
SERIES 16

CAVITY CP16-3S

Cavity bores can be machined simultaneously with **Compact Controls** form tools:
 CP-16-3S-RT (Roughing Tool)
 CP-16-3S-FT (Finishing Tool)
 1-5/16-12 UN-2A (Tap)

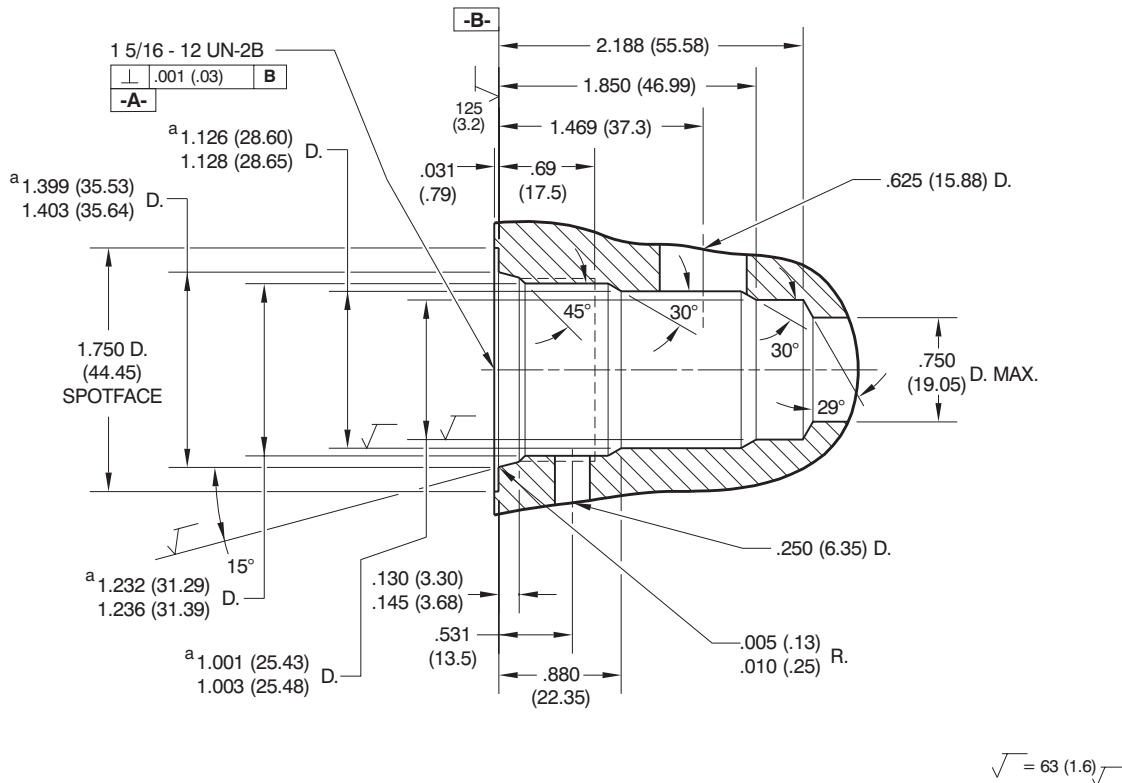
CODE	PORT	BODY P/N	PORT 3
6P	3/4-14 NPTF	220618	1/4-18 NPTF
8P	1"-11.5 NPTF	220619	1/4-18 NPTF
12S	#12 SAE	220616	#4 SAE
16S	#16 SAE	220617	#4 SAE
6B	3/4 BSP	221307	1/4 BSP
8B	1" BSP	221308	1/4 BSP

APPROXIMATE WEIGHT: 1.75 lb. (.79 Kg)



13078R7 2/93

Note: Contact Compact Controls to verify latest cavity design



16015R4 5/97

a	⊙	.002 (.05) D.	A
	⊥	.001 (.03)	B

UNLESS OTHERWISE NOTED
 Specifications subject to change,
 consult factory.
 All dimensions in inches (mm)

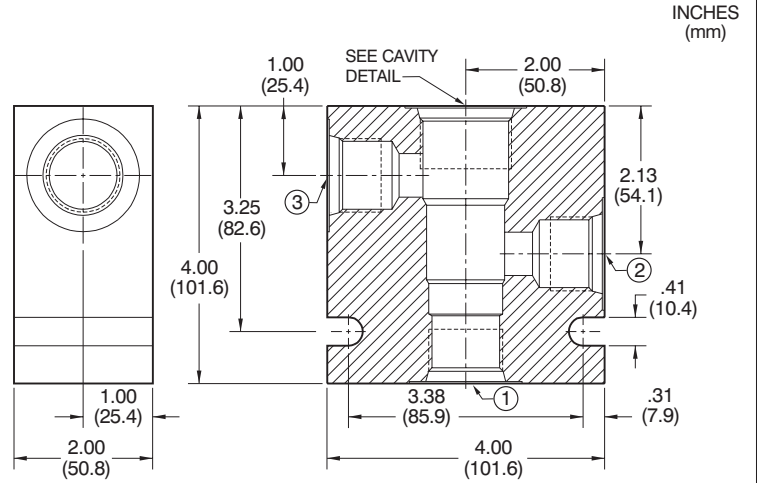
2 PLACE DIM. ± .01 (0.25)
 3 PLACE DIM. ± .005 (0.13)
 ANGLES ± .5

CAVITY CP16-3

Cavity bores can be machined simultaneously with **Compact Controls** form tools:
 CP-16-3-RT (Roughing Tool)
 CP-16-3-FT (Finishing Tool)
 1-5/16-12 UN-2A (Tap)

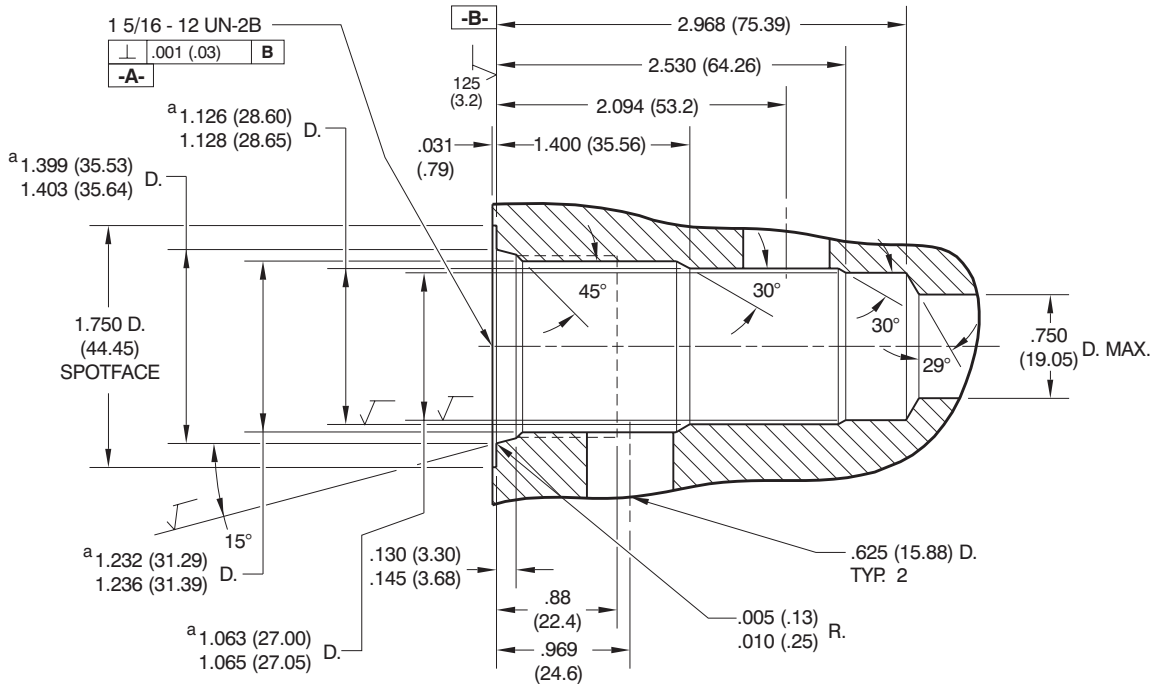
CODE	PORT	BODY P/N
6P	3/4-14 NPTF	220320
8P	1"-11.5 NPTF	220321
12S	#12 SAE	220322
16S	#16 SAE	220323
6B	3/4 BSP	221309
8B	1" BSP	221310

APPROXIMATE WEIGHT: 2.41 lb. (1.09 Kg)



12628R4 3/92

Note: Contact Compact Controls to verify latest cavity design



$$\sqrt{\text{---}} = 63 (1.6) \sqrt{\text{---}}$$

16015R4 5/97

a		.002 (.05) D.	A
		.001 (.03)	B

UNLESS OTHERWISE NOTED
 Specifications subject to change,
 consult factory.
 All dimensions in inches (mm)

2 PLACE DIM. ± .01 (0.25)
 3 PLACE DIM. ± .005 (0.13)
 ANGLES ± .5

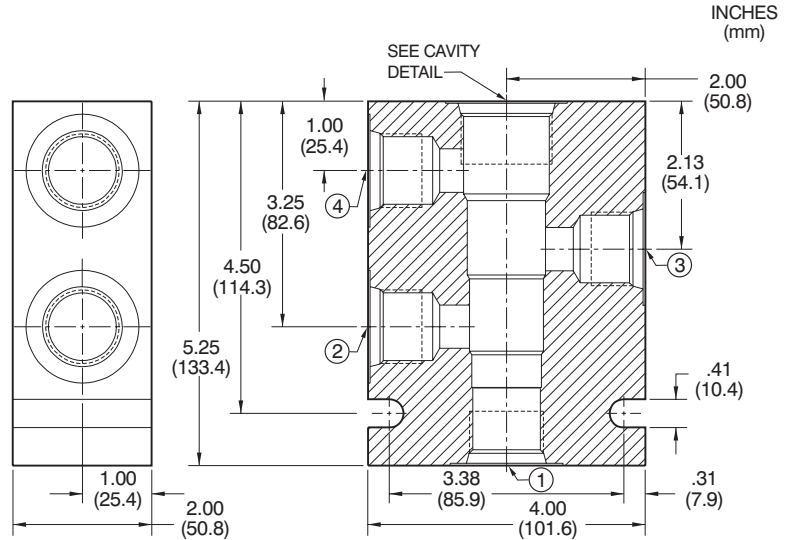
SERIES 16

CAVITY CP16-4

Cavity bores can be machined simultaneously with **Compact Controls** form tools:
 CP-16-4-RT (Roughing Tool)
 CP-16-4-FT (Finishing Tool)
 1-5/16-12 UN-2A (Tap)

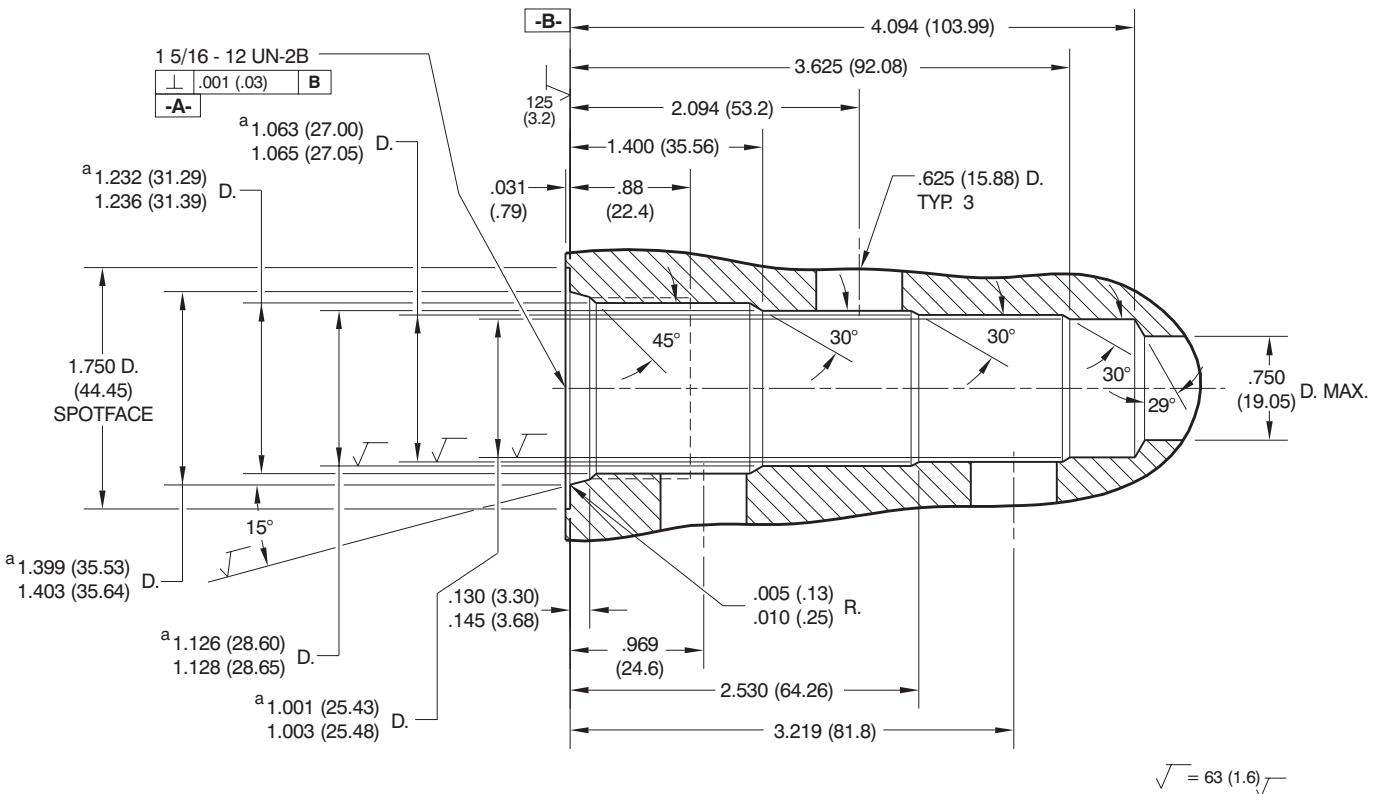
CODE	PORT	BODY P/N
6P	3/4-14 NPTF	220708
8P	1"-11.5 NPTF	220709
12S	#12 SAE	220710
16S	#16 SAE	220711
6B	3/4 BSP	221311
8B	1" BSP	221239

APPROXIMATE WEIGHT: 3.25 lb. (1.47 Kg)



12210R4 1/91

Note: Contact Compact Controls to verify latest cavity design



16015R4 5/97

a	⊙	.002 (.05) D.	A
	⊥	.001 (.03)	B

UNLESS OTHERWISE NOTED
 Specifications subject to change, consult factory.
 All dimensions in inches (mm)

2 PLACE DIM. ± .01 (0.25)
 3 PLACE DIM. ± .005 (0.13)
 ANGLES ± .5

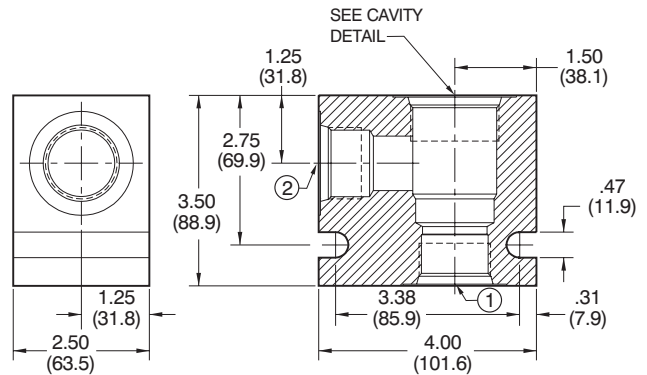
CAVITY CP20-2

Cavity bores can be machined simultaneously with **Compact Controls** form tools:
 CP-20-2-RT (Roughing Tool)
 CP-20-2-FT (Finishing Tool)
 1-5/8-12 UN-2A (Tap)

CODE	PORT	BODY P/N
8P	1"-11.5 NPTF	220139
10P	1-1/4"-11.5 NPTF	220140
16S	#16 SAE	220141
20S	#20 SAE	220142
8B	1" BSP	221240
10B	1-1/4" BSP	221312

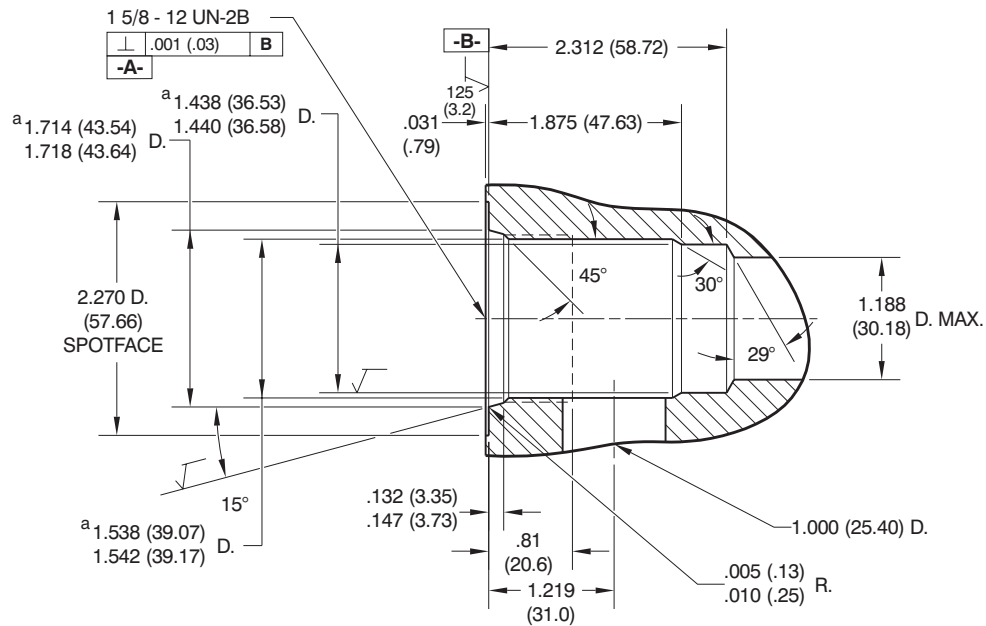
APPROXIMATE WEIGHT: 2.56 lb. (1.16 Kg)

INCHES
(mm)



12210R2 1/91

Note: Contact Compact Controls to verify latest cavity design



$$\sqrt{\quad} = 63 (1.6) \sqrt{\quad}$$

16015R4 5/97

a	⊙	.002 (.05) D.	A
	⊥	.001 (.03)	B

UNLESS OTHERWISE NOTED
 Specifications subject to change, consult factory.
 All dimensions in inches (mm)

2 PLACE DIM. ± .01 (0.25)
 3 PLACE DIM. ± .005 (0.13)
 ANGLES ± .5

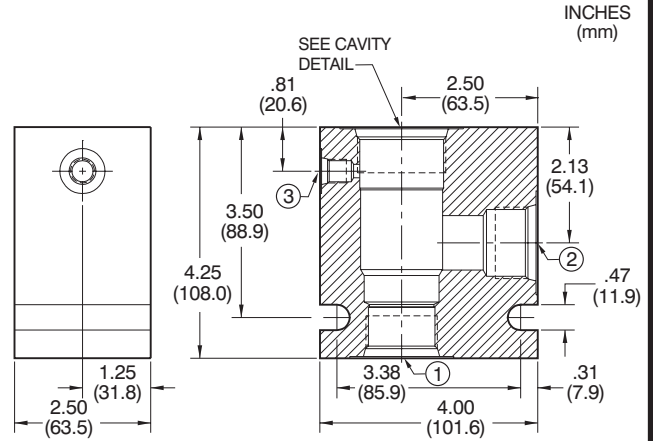
SERIES 20

CAVITY CP20-3S

Cavity bores can be machined simultaneously with **Compact Controls** form tools:
 CP-20-3S-RT (Roughing Tool)
 CP-20-3S-FT (Finishing Tool)
 1-5/8-12 UN-2A (Tap)

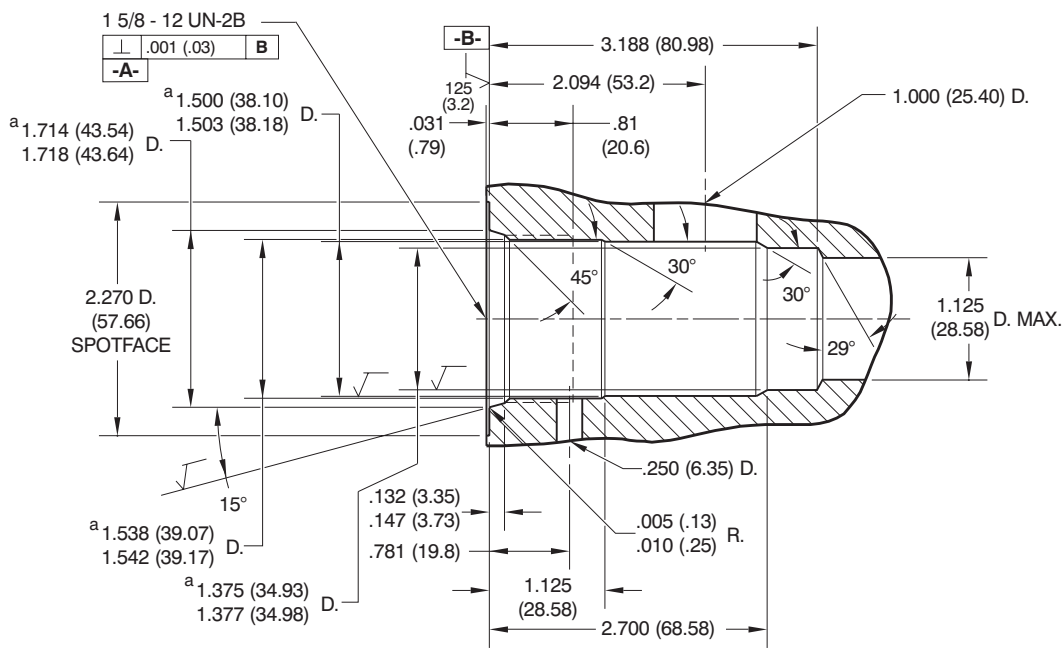
CODE	PORT	BODY P/N	PORT 3
8P	1"-11.5 NPTF	220685	1/4-18 NPTF
10P	1-1/4-11.5 NPTF	220686	1/4-18 NPTF
16S	#16 SAE	220687	#4 SAE
20S	#20 SAE	220688	#4 SAE
8B	1" BSP	221313	1/4 BSP
10B	1-1/4 BSP	221314	1/4 BSP

APPROXIMATE WEIGHT: 3.00 lb. (1.36 Kg)



12210R4 1/91

Note: Contact Compact Controls to verify latest cavity design



$$\sqrt{\quad} = 63 (1.6) \sqrt{\quad}$$

16015R5 5/97

a	⊙	.002 (.05) D.	A
	⊥	.001 (.03)	B

UNLESS OTHERWISE NOTED
 Specifications subject to change, consult factory.
 All dimensions in inches (mm)

2 PLACE DIM. ± .01 (0.25)
 3 PLACE DIM. ± .005 (0.13)
 ANGLES ± .5

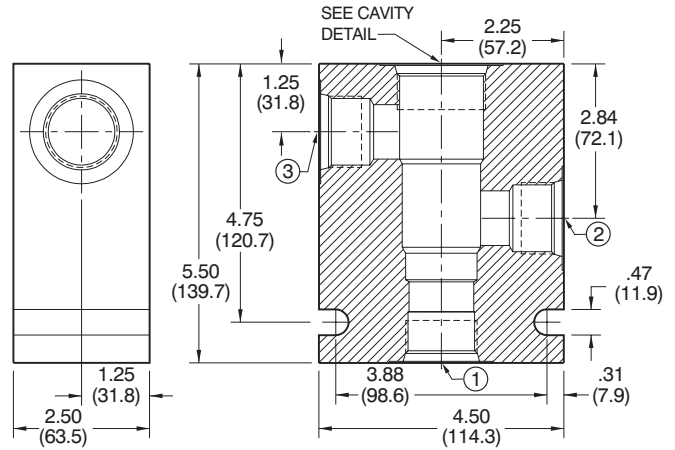
CAVITY CP20-3

Cavity bores can be machined simultaneously with **Compact Controls** form tools:
 CP-20-3-RT (Roughing Tool)
 CP-20-3-FT (Finishing Tool)
 1-5/8-12 UN-2A (Tap)

CODE	PORT	BODY P/N
8P	1"-11.5 NPTF	220713
10P	1-1/4"-11.5 NPTF	220714
16S	#16 SAE	220715
20S	#20 SAE	220716
8B	1" BSP	221315
10B	1-1/4" BSP	221316

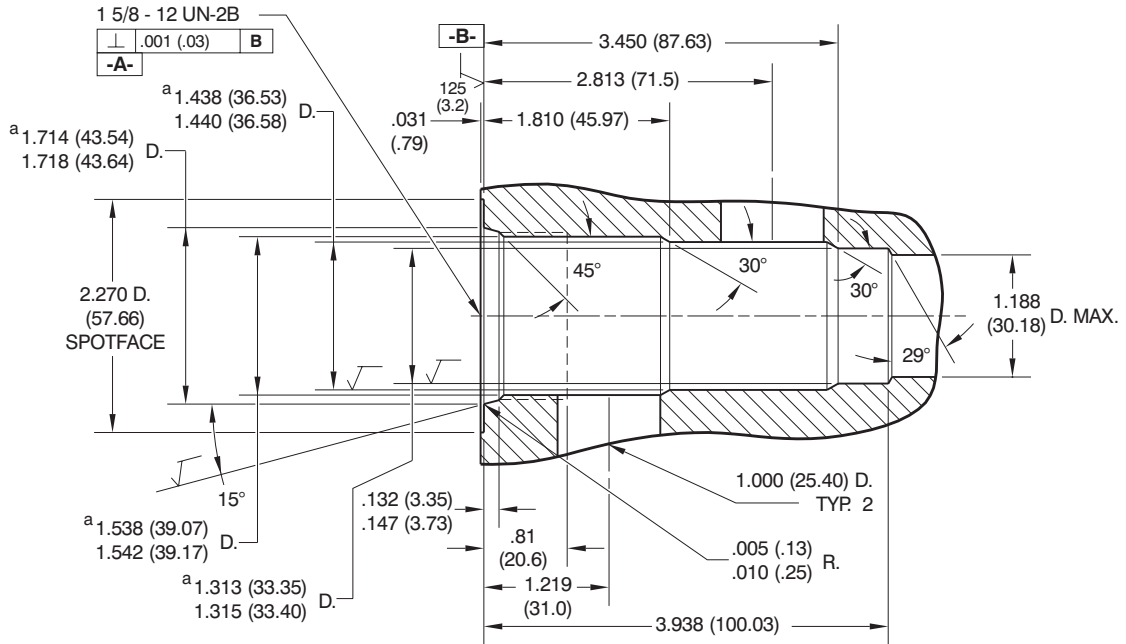
APPROXIMATE WEIGHT: 4.50 lb. (2.04 Kg)

INCHES
(mm)



12363R4 6/91

Note: Contact Compact Controls to verify latest cavity design



$$\sqrt{\quad} = 63 (1.6) \sqrt{\quad}$$

16015R4 5/97

a	⊙	.002 (.05) D.	A
	⊥	.001 (.03)	B

UNLESS OTHERWISE NOTED
 Specifications subject to change, consult factory.
 All dimensions in inches (mm)

2 PLACE DIM. ± .01 (0.25)
 3 PLACE DIM. ± .005 (0.13)
 ANGLES ± .5

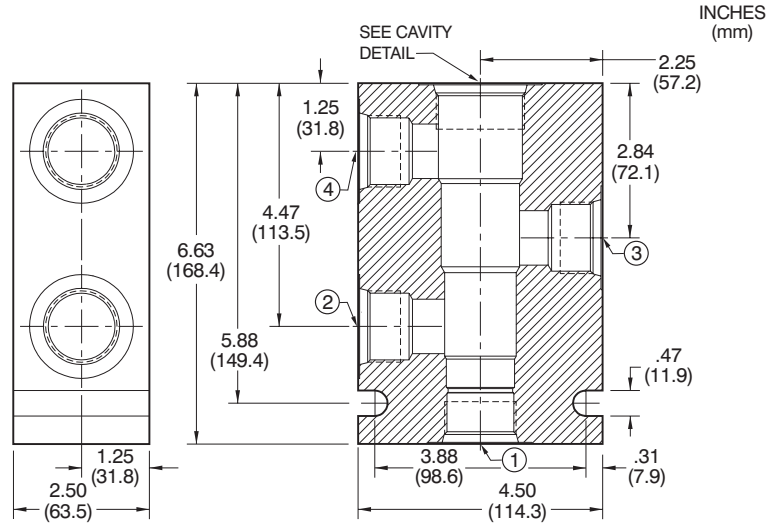
SERIES 20

CAVITY CP20-4

Cavity bores can be machined simultaneously with **Compact Controls** form tools:
 CP-20-4-RT (Roughing Tool)
 CP-20-4-FT (Finishing Tool)
 1-5/8-12 UN-2A (Tap)

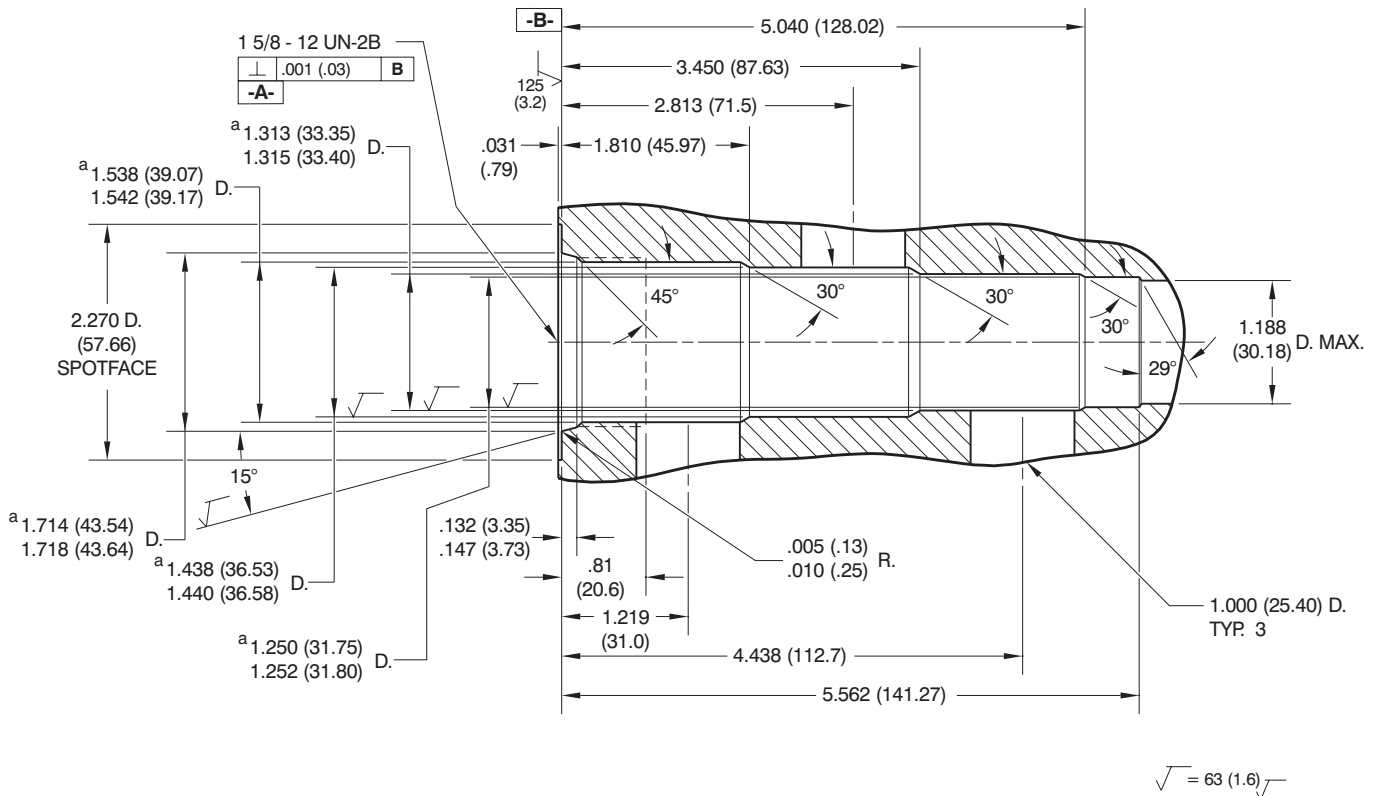
CODE	PORT	BODY P/N
8P	1"-11.5 NPTF	220718
10P	1-1/4"-11.5 NPTF	220719
16S	#16 SAE	220720
20S	#20 SAE	220721
8B	1" BSP	221317
10B	1-1/4" BSP	221318

APPROXIMATE WEIGHT: 5.50 lb. (2.50 Kg)



13727R6 2/94

Note: Contact Compact Controls to verify latest cavity design



16015R4 5/97

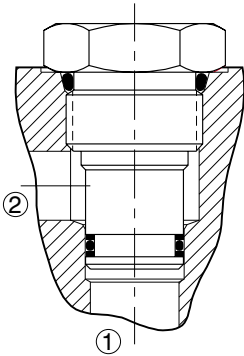
a	⊙	.002 (.05) D.	A
	⊥	.001 (.03)	B

UNLESS OTHERWISE NOTED
 Specifications subject to change,
 consult factory.
 All dimensions in inches (mm)

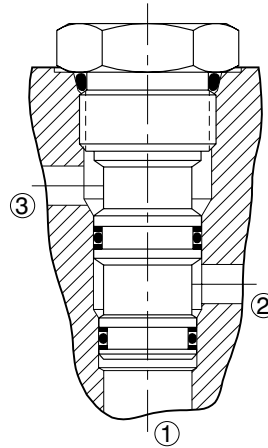
2 PLACE DIM. ± .01 (0.25)
 3 PLACE DIM. ± .005 (0.13)
 ANGLES ± .5

SERIES 4 THRU 20

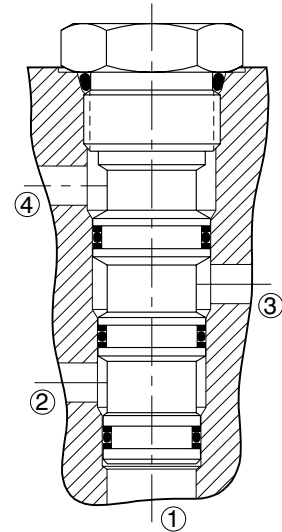
2 WAY



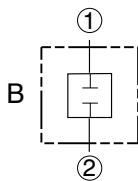
3 WAY



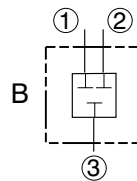
4 WAY



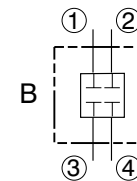
STD.



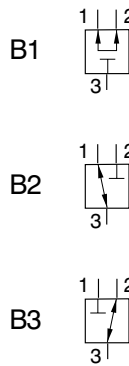
STD.



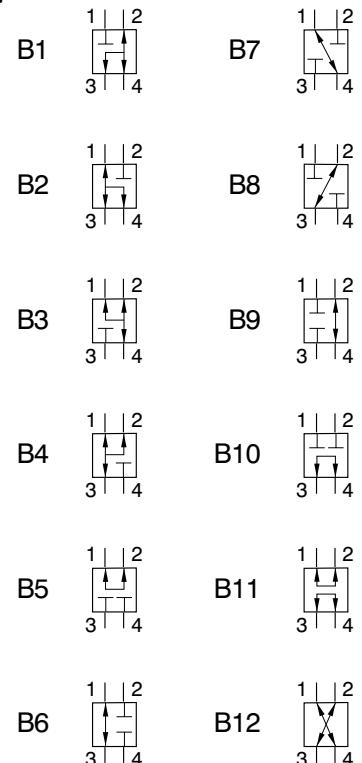
STD.



OPT.



OPT.



ORDERING INFORMATION

CP10 - B - 3 - B

SERIES

- 04 - 4 SERIES
- 08 - 8 SERIES
- 10 - 10 SERIES
- 12 - 12 SERIES
- 16 - 16 SERIES
- 20 - 20 SERIES

SEALS

- B - BUNA-N (Std.)
- V - VITON (Opt.)

CONFIGURATION

SEE SCHEMATICS

CAVITY TYPE

- 2 - 2 WAY
- 3 - 3 WAY
- 3S - 3 WAY (12, 16 & 20 SERIES ONLY)
- 3L - 3 WAY (8 & 10 SERIES ONLY)
- 4 - 4 WAY

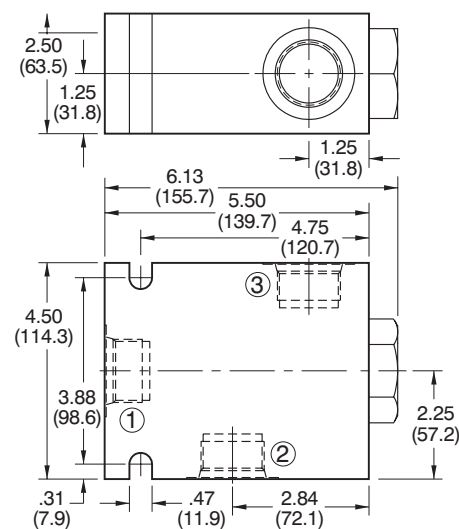
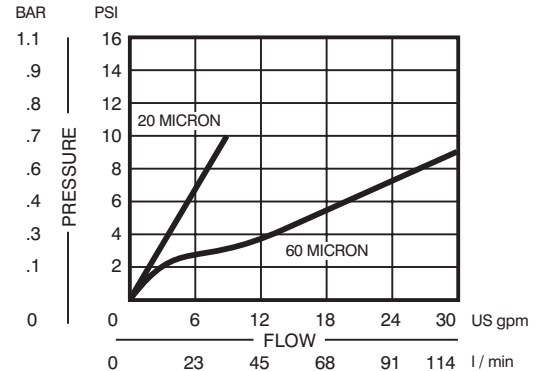
SERIES 20

SPECIFICATIONS

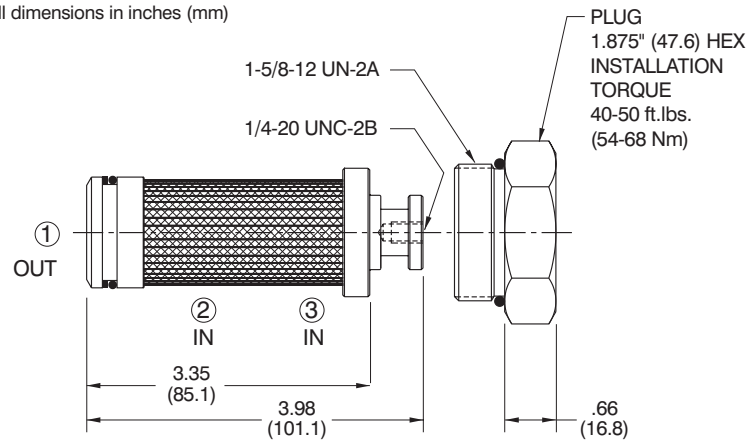
- Application: Pressure Filter [Non-Bypass or Bypass circuit]
Return Line Filter [use Bypass circuit]
- Filter can be ordered with a 20 or 60 micron filtration rating and can be used as a pressure filter or a return line filter. When used as a return line filter, a bypass check valve is required from inlet ports 2 and/or 3 to outlet port 1. Fluid will start to bypass filter at the cracking pressure of the check valve.
- High crush element - 3000 psi (207 bar) differential collapse rating. For cleaning procedures reference bulletin #820472.
- Maximum operating temperature 250 ° F.
- Reusable stainless steel pleated wire mesh element.
- Nominal flow - 20 micron element: 10.0 gpm (38 l/m).
- Nominal flow - 60 micron element: 30.0 gpm (114 l/m).
- Hi-strength aluminum alloy body allows for maximum circuit design flexibility.
- Buna-N seals are standard. Viton is optional (consult factory for other seal compounds).
- Filter is designed for use with general purpose hydraulic fluids (MIL-H-5606, SAE #10, etc.).
- Cartridge weight 1.04 lbs (.47 kg).
- Filter cartridge fits Compact Controls [cavity CP20-3](#).

TYPICAL PERFORMANCE

154 SUS (33 cSt) HYD. OIL @ 100° F (38° C)



All dimensions in inches (mm)



ORDERING INFORMATION

CPF20 - 3 - B - 20S - P - 020

BASIC FILTER

SEALS

B - BUNA-N
V - VITON

PORTS

0 - CARTRIDGE
8P - 1" NPTF
10P - 1-1/4 NPTF
16S - #16 SAE
20S - #20 SAE
8B - 1" BSP
10B - 1-1/4 BSP

SEAL KIT
120608
120609

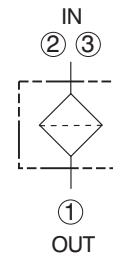
BODY P/N
NO BODY 220713
220714
220715
220716
221315
221316

FILTER MESH

020 - 20 MICRON
060 - 60 MICRON

PLUG OPTION

P - FILTER w/ #20 SAE HEX PLUG
OMIT - FILTER ONLY



MODEL NUMBER INDEX

MODEL	CAVITY	PAGE	MODEL	CAVITY	PAGE	MODEL	CAVITY	PAGE
CP100-1	CP10-2	1.05	CP300-4	CP10-3	12.01	CP501-3	CP12-2	8.26
CP100-2	CP10-2	1.06	CP301-1	CP12-2	6.08	CP501-4	CP12-2	8.27
CP100-3	CP10-2	1.07	CP301-4	CP12-3	12.09	CP502-3	CP16-2	8.29
CP101-1	CP12-2	1.08	CP302-4	CP16-3	12.15	CP502-4	CP16-2	8.30
CP101-2	CP12-2	1.09	CP308-1	CP8-2	6.01	CP503-3	CP20-2	8.31
CP102-1	CP16-2	1.10	CP308-2	CP8-2	6.02	CP503-4	CP20-2	8.32
CP102-2	CP16-2	1.11	CP310-1	CP10-3	6.05	CP508-1	CP8-2	8.01
CP103-1	CP20-2	1.12	CP310-2	CP10-3	6.06	CP508-2	CP8-2	8.02
CP103-2	CP20-2	1.13	CP310-4	CP10-4	12.02	CP508-3	CP8-2	8.03
CP104-1	CP4-2	1.01	CP311-1	CP12-3	6.09	CP508-4	CP8-2	8.04
CP104-2	CP4-2	1.02	CP311-4	CP12-4	12.10	CP510-1	CP10-2	8.17
CP108-1	CP8-2	1.03	CP312-1	CP16-3	6.11	CP510-2	CP10-2	8.18
CP108-2	CP8-2	1.04	CP312-4	CP16-4	12.16	CP518-1	CP8-2	8.05
CP120-1	CP10-3	2.04	CP340-1	CP10-4	6.07	CP518-2	CP8-2	8.06
CP120-2	CP10-2	2.05	CP341-1	CP12-4	6.10	CP520-1	CP10-3	8.19
CP124-1	CP4-3	2.01	CP342-1	CP16-4	6.12	CP521-1	CP12-3	8.28
CP128-1	CP8-3	2.02	CP400-1	————	7.18	CP528-1	CP8-3	8.07
CP128-2	CP8-2	2.03	CP410-1	————	7.19	CP528-2	CP8-3	8.08
CP200-1	CP10-2	3.03	CP440-1	CP10-3L	7.04	CP528-5	CP8-3	8.09
CP200-3	CP10-2	3.04	CP440-2	————	7.05	CP530-1	CP10-4	8.20
CP200-7	CP10-2	3.05	CP440-4	CP10-3L	7.06	CP530-2	CP10-4	8.21
CP201-1	CP12-2	3.08	CP441-1	CP12-3S	7.11	CP530-3	CP10-4	8.22
CP208-1	CP8-2	3.01	CP441-2	————	7.12	CP530-3P	CP10-4	8.23
CP208-3	CP8-2	3.02	CP448-1	CP8-3L	7.01	CP538-1	CP8-4	8.10
CP210-1	CP10-2	3.06	CP450-1	CP10-3	7.07	CP538-3P	CP8-4	8.11
CP210-2	CP10-2	3.07	CP450-2	CP10-3	7.08	CP550-30	CP10-3	9.01
CP211-2	CP12-2	3.09	CP450-2L	CP10-3L	7.09	CP550-32	————	9.03
CP220-1	————	3.10	CP451-2	CP12-3S	7.13	CP550-33	————	9.07
CP221-1	————	3.11	CP452-2	CP16-3S	7.15	CP550-34	————	9.09
CP230-1	CP10-3	4.01	CP453-2	CP20-3S	7.17	CP551-30	CP12-3	9.02
CP230-2	CP10-3	4.02	CP458-2	CP8-3	7.02	CP551-32	————	9.04
CP230-3	CP10-3	4.03	CP460-1	CP10-3	7.10	CP551-33	————	9.08
CP230-4	CP10-3	4.04	CP461-1	CP12-3S	7.14	CP551-34	————	9.10
CP240-1	CP10-3	5.01	CP462-1	CP16-3S	7.16	CP558-20	CP8-2	9.11
CP240-2	CP10-3	5.02	CP468-1	CP8-3	7.03	CP558-23	CP8-3	9.12
CP240-8	CP10-3	5.03	CP500-1	CP10-2	8.13	CP610-1	CP10-2	10.04
CP240-21	CP10-3	5.04	CP500-2	CP10-2	8.14	CP610-2	CP10-2	10.05
CP240-22	CP10-3	5.05	CP500-3	CP10-2	8.15	CP610-3	CP10-2	10.06
CP240-30	CP10-3	5.06	CP500-4	CP10-2	8.16	CP610-4	CP10-2	10.07
CP300-1	CP10-2	6.03	CP501-1	CP12-2	8.24	CP611-2	CP12-2	10.08
CP300-2	CP10-2	6.04	CP501-2	CP12-2	8.25	CP612-1	CP16-2	10.09

PART NUMBER INDEX

PART NO.	CAVITY	PAGE	PART NO.	CAVITY	PAGE	PART NO.	CAVITY	PAGE
220092	CP10-2	15.07	220686	CP20-3S	15.22	221214	CP10-2	15.07
220124	CP10-2	15.07	220687	CP20-3S	15.22	221215	CP10-2	15.07
220125	CP10-2	15.07	220688	CP20-3S	15.22	221232	CP10-4	15.10
220126	CP10-2	15.07	220693	CP12-4	15.16	221234	CP12-2	15.12
220130	CP12-2	15.12	220694	CP12-4	15.16	221235	CP12-2	15.12
220131	CP12-2	15.12	220695	CP12-4	15.16	221237	CP12-3	15.14
220132	CP12-2	15.12	220696	CP12-4	15.16	221238	CP16-2	15.17
220133	CP12-2	15.12	220708	CP16-4	15.20	221239	CP16-4	15.20
220134	CP16-2	15.17	220709	CP16-4	15.20	221240	CP20-2	15.21
220135	CP16-2	15.17	220710	CP16-4	15.20	221267	CP10-3	15.08
220136	CP16-2	15.17	220711	CP16-4	15.20	221285	CP8-2	15.03
220137	CP16-2	15.17	220713	CP20-3	15.23	221286	CP8-2	15.03
220139	CP20-2	15.21	220714	CP20-3	15.23	221287	CP8-3	15.04
220140	CP20-2	15.21	220715	CP20-3	15.23	221288	CP8-3	15.04
220141	CP20-2	15.21	220716	CP20-3	15.23	221291	CP8-4	15.06
220142	CP20-2	15.21	220718	CP20-4	15.24	221292	CP8-4	15.06
220203	CP10-3	15.08	220719	CP20-4	15.24	221297	CP10-3	15.08
220204	CP10-3	15.08	220720	CP20-4	15.24	221298	CP10-3L	15.09
220205	CP10-3	15.08	220721	CP20-4	15.24	221299	CP10-3L	15.09
220206	CP10-3	15.08	220727	CP10-3L	15.09	221300	CP10-4	15.10
220208	CP12-3	15.14	220728	CP10-3L	15.09	221301	CP12-3S	15.13
220209	CP12-3	15.14	220729	CP10-3L	15.09	221302	CP12-3S	15.13
220210	CP12-3	15.14	220730	CP10-3L	15.09	221303	CP12-3	15.14
220211	CP12-3	15.14	220762	CP12-3M	15.15	221304	CP12-4	15.16
220320	CP16-3	15.19	220763	CP12-3M	15.15	221305	CP12-4	15.16
220321	CP16-3	15.19	220764	CP12-3M	15.15	221306	CP16-2	15.17
220322	CP16-3	15.19	220765	CP12-3M	15.15	221307	CP16-3S	15.18
220323	CP16-3	15.19	220814	CP8-2	15.03	221308	CP16-3S	15.18
220446	CP10-4	15.10	220815	CP8-2	15.03	221309	CP16-3	15.19
220447	CP10-4	15.10	220816	CP8-2	15.03	221310	CP16-3	15.19
220448	CP10-4	15.10	220817	CP8-2	15.03	221311	CP16-4	15.20
220449	CP10-4	15.10	220819	CP8-3	15.04	221312	CP20-2	15.21
220616	CP16-3S	15.18	220820	CP8-3	15.04	221313	CP20-3S	15.22
220617	CP16-3S	15.18	220821	CP8-3	15.04	221314	CP20-3S	15.22
220618	CP16-3S	15.18	220822	CP8-3	15.04	221315	CP20-3	15.23
220619	CP16-3S	15.18	220824	CP8-4	15.06	221316	CP20-3	15.23
220648	CP12-3S	15.13	220825	CP8-4	15.06	221317	CP20-4	15.24
220649	CP12-3S	15.13	220826	CP8-4	15.06	221318	CP20-4	15.24
220650	CP12-3S	15.13	220827	CP8-4	15.06	221344	CP12-3M	15.15
220651	CP12-3S	15.13	220928	CP4-3	15.02	221345	CP12-3M	15.15
220685	CP20-3S	15.22	220929	CP4-3	15.02	221628	CP10-4L	15.11

PART NUMBER INDEX

PART NO.	CAVITY	PAGE	PART NO.	CAVITY	PAGE	PART NO.	CAVITY	PAGE
221629	CP10-4L	15.11	320576	———	8.56	321115	———	8.52
221630	CP10-4L	15.11	320577	———	8.56	321116	———	8.52
221631	CP10-4L	15.11	320578	———	8.56	321117	———	8.52
221632	CP10-4L	15.11	320579	———	8.56	321118	———	8.52
221633	CP10-4L	15.11	320580	———	8.56	321119	———	8.52
221698	CP4-2	15.01	320581	———	8.56	321120	———	8.52
221699	CP4-2	15.01	320582	———	8.56	321121	———	8.52
221700	CP4-2	15.01	320583	———	8.56	321122	———	8.52
221701	CP4-2	15.01	320584	———	8.56	321123	———	8.52
221703	CP4-3	15.02	320585	———	8.56	321124	———	8.52
221704	CP4-3	15.02	320586	———	8.56	321289	———	8.58
221842	CP8-3L	15.05	320587	———	8.56	321290	———	8.58
221843	CP8-3L	15.05	320588	———	8.56	321291	———	8.58
221844	CP8-3L	15.05	320728	———	8.56	321292	———	8.58
221845	CP8-3L	15.05	320729	———	8.56	321293	———	8.58
221846	CP8-3L	15.05	320730	———	8.56	321294	———	8.58
221847	CP8-3L	15.05	320731	———	8.56	321295	———	8.58
320508	———	8.55	320732	———	8.56	321296	———	8.58
320509	———	8.55	320733	———	8.56	321297	———	8.57
320510	———	8.55	320734	———	8.56	321298	———	8.57
320511	———	8.55	320735	———	8.56	321299	———	8.57
320512	———	8.56	320869	———	9.15	321300	———	8.57
320513	———	8.56	320870	———	9.15	321301	———	8.57
320514	———	8.56	320889	———	8.56	321302	———	8.57
320515	———	8.56	320890	———	8.56	321303	———	8.57
320516	———	8.56	320891	———	8.56	321304	———	8.57
320517	———	8.56	320892	———	8.56	321305	———	8.58
320518	———	8.56	320893	———	8.56	321306	———	8.58
320519	———	8.56	320894	———	8.56	321307	———	8.58
320520	———	8.56	320895	———	8.56	321308	———	8.58
320521	———	8.56	320896	———	8.56	321309	———	8.58
320522	———	8.56	320897	———	8.56	321310	———	8.58
320523	———	8.56	320898	———	8.56	321311	———	8.58
320553	———	8.56	320899	———	8.56	321312	———	8.58
320567	———	8.56	320900	———	8.56	321318	———	9.13
320568	———	8.56	320901	———	8.56	321319	———	9.13
320569	———	8.56	320902	———	8.56	321322	———	9.13
320571	———	8.55	320903	———	8.56	321323	———	9.13
320573	———	8.55	320904	———	8.56	321328	———	8.52
320574	———	8.55	320969	———	9.15	321329	———	8.52
320575	———	8.55	320974	———	9.15	321330	———	8.52

PART NUMBER INDEX

PART NO.	CAVITY	PAGE	PART NO.	CAVITY	PAGE	PART NO.	CAVITY	PAGE
321331		8.52	321734	—	8.54	321835	—	8.53
321332	—	8.52	321735	—	8.54			
321333	—	8.52	321736	—	8.54			
321334	—	8.52	321737	—	8.54			
321335	—	8.52	321738	—	8.54			
321336	—	8.52	321739	—	8.54			
321337	—	8.52	321740	—	8.54			
321360	—	8.51	321741	—	8.54			
321361	—	8.51	321742	—	8.54			
321362	—	8.51	321743	—	8.54			
321363	—	8.51	321766	—	8.54			
321364	—	8.51	321767	—	8.54			
321365	—	8.51	321768	—	8.54			
321366	—	8.51	321769	—	8.54			
321367	—	8.51	321770	—	8.54			
321368	—	8.51	321771	—	8.54			
321369	—	8.51	321772	—	8.54			
321370	—	8.52	321773	—	8.54			
321371	—	8.52	321774	—	8.54			
321372	—	8.52	321775	—	8.54			
321373	—	8.52	321777	—	8.54			
321374	—	8.52	321778	—	8.54			
321375	—	8.52	321779	—	8.54			
321376	—	8.52	321780	—	8.54			
321377	—	8.52	321781	—	8.54			
321378	—	8.52	321782	—	8.54			
321379	—	8.52	321783	—	8.54			
321463	—	8.52	321784	—	8.54			
321464	—	8.52	321785	—	8.54			
321465	—	8.52	321786	—	8.54			
321466	—	8.52	321798	—	8.53			
321467	—	8.52	321799	—	8.53			
321468	—	8.52	321801	—	8.53			
321469	—	8.52	321802	—	8.53			
321470	—	8.52	321803	—	8.53			
321471	—	8.52	321804	—	8.53			
321472	—	8.52	321805	—	8.53			
321473	—	8.52	321806	—	8.53			
321474	—	8.52	321807	—	8.53			
321482	—	8.52	321830	—	8.54			
321483	—	8.52	321831	—	8.54			