



**Tree Spade
Models 3S & 4S**

For

Skid Steer Loaders

**Operator's Manual
Maintenance
Parts Information**



Read this Manual Before Use

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REFERENCE INFORMATION

Write the correct information for your attachment in the spaces below. Always use these numbers when referring to your attachment.

Serial Number..... _____

YOUR ATTACHMENT DEALER

ADDRESS:

PHONE:

CONTACT:

NOTE: *Erskine Attachments LLC reserves the right to make improvements in design or changes in specifications at any time without notice and without incurring any obligations to install them on units previously sold.*

SAFETY

DO NOT use or perform maintenance on this machine until this manual has been read and understood. In addition, read the Operation and Maintenance Manual(s) pertaining to the attachment and the attachment carrier (“Loader”).

The user is responsible for inspecting the machine daily, and for having parts repaired or replaced when continued use of the machine would cause damage, excessive wear to other parts or make the machine unsafe for continued operation.

If an operating procedure, tool device, maintenance or work method not specifically recommended is used, you must satisfy yourself that it is safe for you and others. You must also ensure that the attachment will not be damaged or made unsafe by the procedures you choose.

Erskine Attachments LLC cannot anticipate every possible circumstance that might involve potential hazard. The safety messages found in this manual and on the machine are therefore not all inclusive.

The signal words **CAUTION**, **WARNING**, or **DANGER** are used to indicate hazards.

⚠ CAUTION Indicates a potentially hazardous situation which, if not avoided, may result in minor or moderate injury.

⚠ WARNING Indicates a potentially hazardous situation which, if not avoided, could result in death or serious injury.

⚠ DANGER Indicates a potentially hazardous situation which, if not avoided, will result in death or serious injury.

The word **IMPORTANT**, is used in the text when immediate damage will occur due to improper technique or operation.

The word **NOTE** is used to convey information that is out of context with the manual text; special information such as specifications, techniques, reference information, and other information of a supplementary nature.

Call Before You Dig
1-888-258-0808



SAFETY

Improper operation can cause serious injury or death.

Pre-operation

- This attachment is designed to be used for removing and relocating small trees. **NEVER** use this machine for any other purpose.

Maximum Tree Diameter

Tree Type	3S Model	4S Model
Hardwood	2.5"	3"
Evergreen	3"	4"

- Read the operator's manual for the "Skid Steer Loader." **NEVER** allow untrained people to operate.
- Operating instructions must be given to everyone before operating this attachment and at least once a year thereafter in accordance with OSHA regulations.
- **NEVER** exceed the maximum recommended input power or speed specifications for the attachment. Over-powering or over-speeding the attachment may cause personal injury and/or machine damage.
- Keep all shields, guards, and covers in place.
- Do not modify equipment or add attachments that are not approved by Erskine Attachments LLC.
- Use adequate safety warning lights and devices as required by local regulations. Obey all local laws and regulations regarding machine operation on public property. Always call before you dig (1-888-258-0808). When you call, you will be directed to a location in your state/city for information about buried lines (electric, telephone, cable TV, water, sewer, gas, etc.).

Operation

- Hydraulic connections may be hot after use. Use gloves if connecting or disconnecting after use.
- Check and be sure all operating controls are in neutral before starting the engine.
- To avoid electric shock or electrocution, **NEVER** operate the attachment near overhead power lines.

Operation (continued)

- Keep people away from loader and attachment when in use. This attachment lifts objects and has moving parts.
- **NEVER** attempt to lift a tree larger than the specified capacity of tree spade model.
- **NEVER** operate near embankments or terrain that is so steep that rollover could occur.
- Always stay in the operator position when using the attachment.
- Before leaving the operator's position, disengage hydraulic drive, lower the attachment to rest flat on the ground, stop engine, set park brake, and wait for all motion to stop.
- **NEVER** place hands near attachment or clear debris while the engine is running.

Avoid High Pressure Fluids Hazard



- Escaping fluid under pressure can penetrate the skin causing serious injury.
- Avoid the hazard by relieving the pressure before disconnecting hydraulic lines.
- Use a piece of paper or cardboard, NOT BODY PARTS, to check for suspected leaks. Wear protective gloves and safety glasses or goggles when servicing or performing maintenance on hydraulic systems.
- If an accident occurs, see a doctor immediately. Any fluid injected into the skin must be surgically removed within a few hours or gangrene may result.

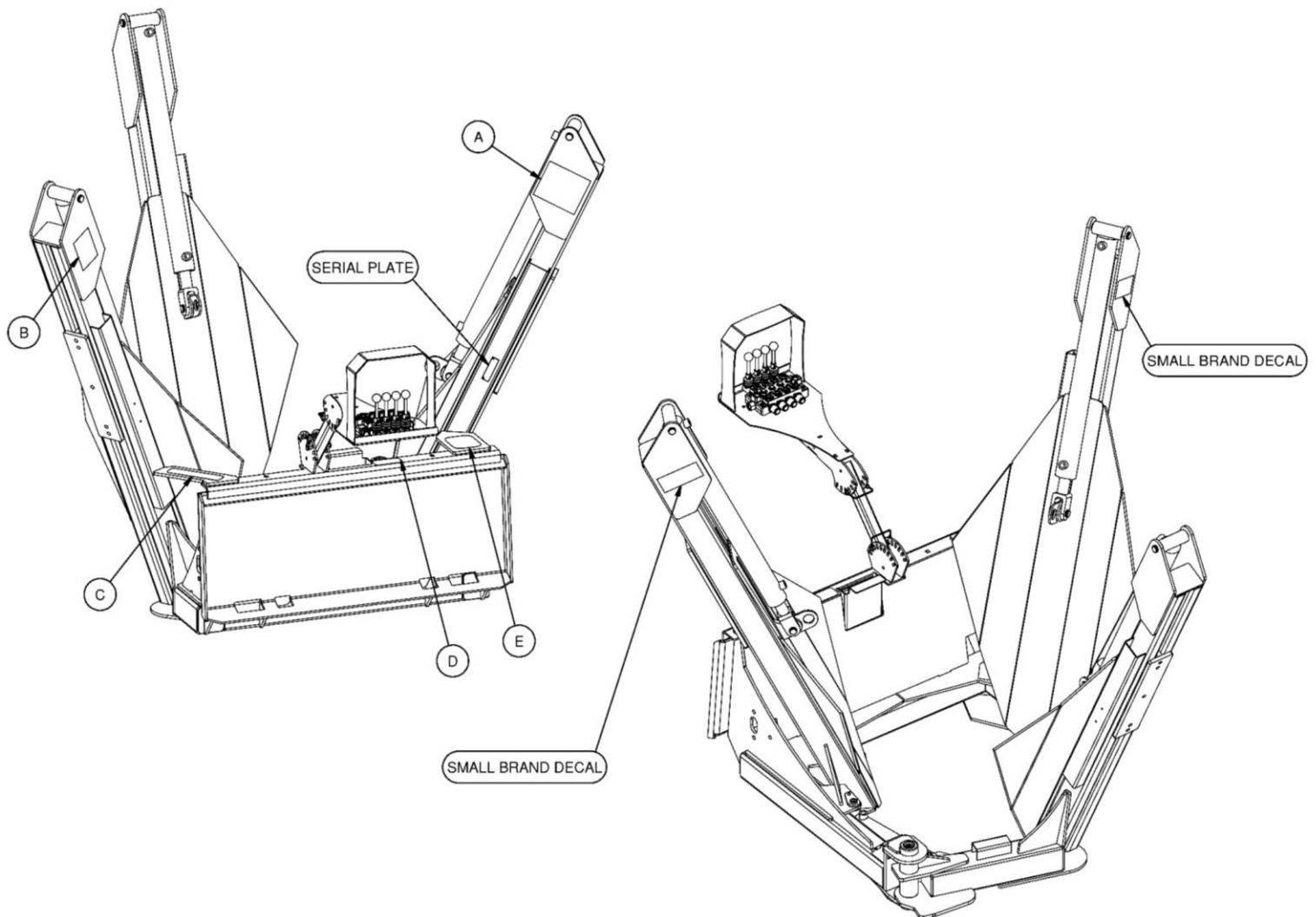
Maintenance

- **NEVER** make adjustments, lubricate, clean, or perform any service on the machine while it is in operation.
- Make sure the attachment is serviced on a daily basis. Improper maintenance can cause serious injury or death in addition to damage to the attachment and/or your equipment.

SERIAL NUMBER AND SAFETY DECAL LOCATIONS

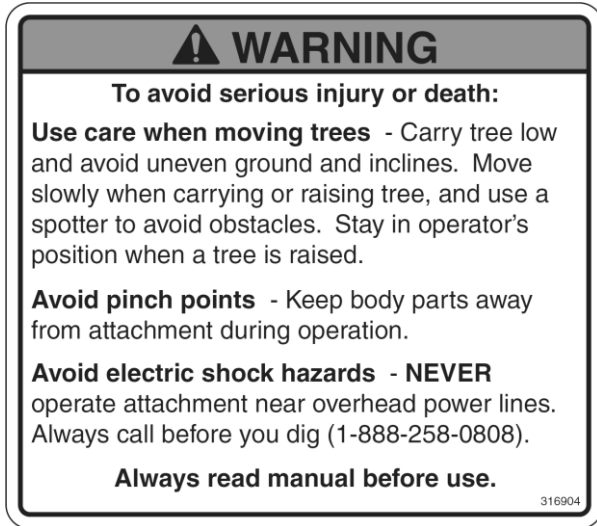
Serial Number Location:

It is important to refer to the serial number of your attachment when making repairs or ordering parts. Early or later models (identification made by serial number) may use different parts, or it may be necessary to use different procedures in doing a specific operation.



SERIAL NUMBER AND SAFETY DECAL LOCATIONS

(A)



Part Number: 316904

Location: On right rear tower facing controls

Quantity: 1

(B)



Part Number: 200001

Location: On left rear tower facing controls

Quantity: 1

(C)

Part Number: 202152 (ON 3S ONLY)

Location: On mounting plate top left

Quantity: 1

(D)

Part Number: 316855

Location: On mounting plate top centered under hyd controls bracket

Quantity: 1

Small Brand Decal

Location: On rear towers facing front

Quantity: 2

(E)

Part Number: 316856 (ON 3S ONLY)

Location: On mounting plate top right

Quantity: 1 (on 3S only) (2 on 4S – replace 202152)

Safety Decals Locations:

The locations of the safety decals are shown. If these decals are missing, damaged, or painted over they must be replaced. Call Erskine Attachments LLC (218-435-4045) for replacement decals.

USER'S MOUNTING INSTRUCTIONS

After the initial set-up assembly is completed, use the following procedure to mount the attachment to the loader for user operation.

⚠ WARNING Coupler wedges or pins must extend through the holes in the attachment mounting plate. Levers must be fully down and locked. Failure to secure wedges or pins can allow attachment to come off and cause injury or death.



1. Use the step, safety treads, and grab handles to get on and off the loader and attachment.

2. Sitting in the operator's seat, lower seat bar and fasten the seat belt.

3. Drive the loader to the rear of the attachment. Put the loader quick attach coupler into the attachment mounting bracket.



4. Tilt the loader coupler backward a small amount until it is fully engaged in the attachment mounting bracket.

5. Stop the engine and engage the park brake.



6. Secure the coupler locking mechanism that attaches the attachment to the loader.

USER'S MOUNTING INSTRUCTIONS

7. Connect the hydraulic quick couplers from the attachment to the loader.

IMPORTANT: Make sure the quick couplers are fully engaged. If the quick couplers do not fully engage, check to see that the couplers are the same size and brand. Do not force the quick couplers together.

IMPORTANT: Wipe the ends of the hydraulic quick couplers (both lead and loader) with a rag to remove any possible contamination. Contamination can cause hydraulic components to fail and is not covered under warranty.

NOTE: See the loader's operator's manual.

NOTE: Attachment is shipped with 8FJX (3/4" Female JIC Swivel) fittings on the ends of the lead hoses.

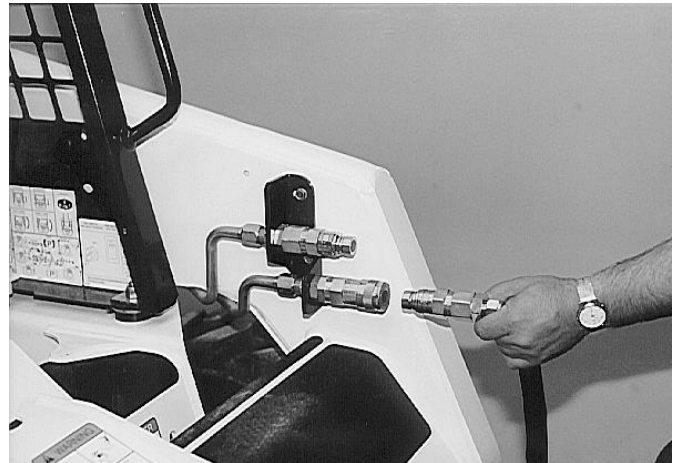
8. Make sure the hoses are properly routed to fit your specific loader. If the hoses are not routed correctly, hoses may get pinched or rub on tires. Be sure to check the hose routing through the full range of intended motion of the attachment before operating it.

More than one routing may be acceptable depending on the loader. Pick the routing that best suits your loader.

IMPORTANT: Proper hose routing is the responsibility of the owner and/or operator. Pinched or stretched hoses are not covered under warranty.

NOTE: Make sure the pressurized hose from the skid steer is routed to the "P" port of the valve block. If not the attachment will not operate properly.

Mounting is now complete and you are ready to use the attachment. Use the above instructions in a reverse order to dismount the attachment from the loader.



OPERATING INSTRUCTIONS



Operating manual controls

NOTE: The tree spade with manual controls is designed for use on a skid steer without a door. If your skid steer is equipped with a cab door, remove door before use with manual tree spade controls.

1. With the operator in the seat of the loader, the seat belt fastened and the seat bar lowered (if so equipped), start the engine.



2. Raise the attachment slightly off the ground.



3. Engage the auxiliary hydraulics in continuous flow. Using the levers on the valve, the tree spade can be operated as detailed below.

NOTE: The loader should be run at about half-throttle when operating the tree spade. Operating the tree spade while the loader is at full throttle may overload the valve and cause the attachment to function improperly.

Direction	Hinge	Blade
← Forward	Close	Insert
→ Back	Open	Retract

Model	Lever 1	Lever 2	Lever 3	Lever 4	Lever 5	Lever 6
3S	Rear Left Blade	Rear Right Blade	Front Middle Blade	Hinge		
4S	Left Hinge	Front Left Blade	Rear Left Blade	Rear Right Blade	Front Right Blade	Right Hinge

NOTE: Controls are listed from left to right on valve block while sitting in the operator's seat.

OPERATING OPTIONAL ELECTRIC CONTROLS

The tree spade can be run using optional wired or wireless electric controls. When using electric controls, mount the tree spade using the “USER’S MOUNTING INSTRUCTIONS” on pages 8-9, then follow the instructions below.

1. Connect the wire harness to the loader’s 12V receptacle.

NOTE: The 12V receptacle is not mounted on the loader lift arms. The distance between the 12V socket and the valve will change when the loader lift arms are raised. Be sure there is sufficient slack when lifting the tree spade. Check the harness slack through the entire full range of intended motion before operating.

2. With the operator in the seat of the loader, the seat belt fastened and the seat bar lowered (if so equipped), start the engine.
3. Raise the attachment slightly off the ground.
4. Engage the auxiliary hydraulics, turn on the 12V connector switch, and push the POWER button on the controller. The green LED will blink rapidly (3 times per second) to indicate that communication has been established.

NOTE: If green LED blinks slowly (once per second), or if red LED is blinking, see “Troubleshooting” (pg. 33-34).

The tree spade can now be operated using the electric controller.

NOTE: The loader should be run at about half-throttle when operating the tree spade. Operating the tree spade while the loader is at full throttle may overload the valve and cause the attachment to function improperly.



OPTIONAL ELECTRIC CONTROLS LAYOUTS



3S Wired Controller

Function	Toggle Switch
Hinge	A (Up = Open; Down = Close)
Blade 1	B (Up = Retract; Down = Insert)
Blade 2	C (Up = Retract; Down = Insert)
Blade 3	D (Up = Retract; Down = Insert)



3S Wireless Controller

Function	Buttons
Hinge	A = Open; B = Close
Blade 1	C = Retract; D = Insert
Blade 2	E = Retract; F = Insert
Blade 3	G = Retract; H = Insert



4S Wired Controller

Function	Toggle Switch
Blade 4	A (Up = Retract; Down = Insert)
Blade 3	B (Up = Retract; Down = Insert)
Blade 1	C (Up = Retract; Down = Insert)
Hinge LH	D (Up = Open; Down = Close)
Hinge RH	E (Up = Open; Down = Close)
Blade 2	F (Up = Retract; Down = Insert)



4S Wireless Controller

Function	Buttons
Hinge LH	A = Open; B = Close
Hinge RH	C = Open; D = Close
Blade 1	E = Retract; F = Insert
Blade 2	G = Retract; H = Insert
Blade 3	I = Retract; J = Insert
Blade 4	K = Retract; L = Insert

DIGGING PROCEDURE

With the tree spade properly mounted, use the following procedure for digging the new hole for the tree and for digging the tree.

⚠ WARNING To avoid injury or death due to tipping, avoid using the attachment on an incline or uneven ground.

1. Raise the tree spade so that the frame is 4-6 inches off the ground.
2. Open the hinged base.
3. Position the tree spade so that it is level with the ground and the tree is centered between the blades.



NOTE: Try to position the loader facing the same direction when digging the new hole and the tree. This will help the blades line up better in the hole, reducing air pockets under the root ball.

4. Close the hinged base.
5. Lower the tree spade to apply down pressure.
6. Insert the left rear blade (closest to loader) about a quarter of its length, or until the frame begins to lift off of the ground. Then retract the blade until the frame touches the ground again.



IMPORTANT: DO NOT reposition or tilt the tree spade while blades are in the ground. This could cause the blades to bend.

NOTE: The frame of the tree spade must always be touching the ground before inserting the next blade. Digging with the frame raised will result in a smaller root ball and could damage the tree.



DIGGING PROCEDURE



7. Insert the right rear blade in the same manner and retract slightly until the frame touches the ground.
8. Move to the next blade and continue this process for each blade until all blades are fully inserted.
9. Lift the tree spade completely out of the hole and tilt it back.

⚠ WARNING To avoid injury or death, never attempt to lift a tree larger than the attachment is capable.

Maximum Tree Diameter

Tree Type	3S Model	4S Model
Hardwood	2.5"	3"
Evergreen	3"	4"

IMPORTANT: Use caution when tilting the tree spade back. Always be aware of clearance between the attachment and hydraulic couplers. Failure to do so could result in damage to the couplers.



10. Stop the loader, engage the park brake and have a second person cut any protruding roots.

⚠ WARNING To avoid injury or death, do not leave operator's seat while tree spade is raised and do not allow anyone to be underneath the load or tree spade.



11. Once all roots are cut, move the tree to its new location. Use a spotter to avoid obstacles and stay in operator's seat.

⚠ WARNING To avoid injury or death due to tipping, carry tree in the tree spade as low as possible when moving to its new location.

⚠ WARNING To avoid injury or death, be aware of your surroundings. Contact with electrical power lines can be fatal. Always use a spotter to help guide you when moving or lifting.

NOTE: During extensive use, turn auxiliary hydraulics off while moving trees between digging. This will help to prevent oil from overheating.

PLANTING PROCEDURE

With the tree in the tree spade, use the following procedure to plant or basket the tree.

1. Position the tree spade so that it lines up with the hole where the tree is to be planted.



2. Lower the tree spade into the hole, ensuring that the root ball is well centered.



3. Retract each blade one inch until the root ball is loose; then retract each blade completely.

4. Once all blades are fully retracted, raise the tree spade 4-6 inches above the ground, open the hinged base, and back the loader away from the tree.







ROUTINE MAINTENANCE



⚠ WARNING Lower the attachment to rest, shut down the engine, relieve the hydraulic pressure to the attachment, wait for all motion to stop, and set park brake before leaving the operator's seat to perform service of any kind.

It is the operator's responsibility to make daily inspections of the loader and attachment for damage, loose bolts, fluid leaks, or anything else that could cause a potential service or safety problem. Preventive maintenance is the easiest and least expensive type of maintenance.

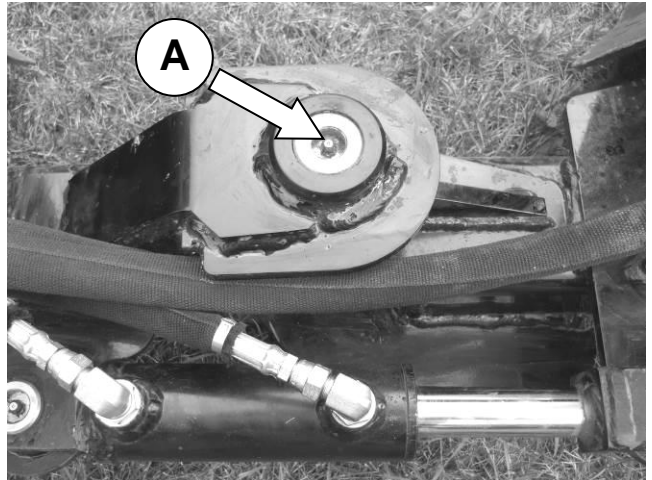
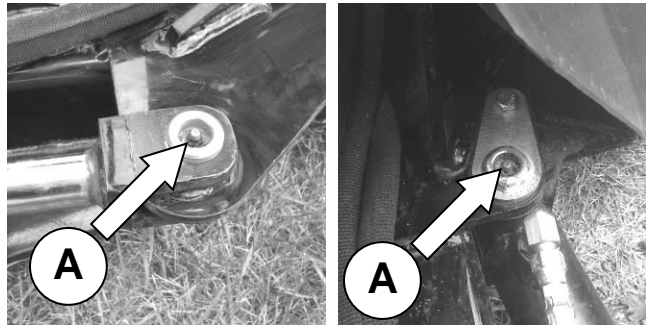
IMPORTANT: Bolts and set screws can loosen after initial usage. After the first hour of operation check all bolts and set screws.

Lubrication Legend	 Multipurpose spray lube	 No. 2 Lithium base gun grease	 Clean engine oil	 Intervals at which lubrication is required
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Use No. 2 lithium base gun grease when lubricating all attachment grease fittings.

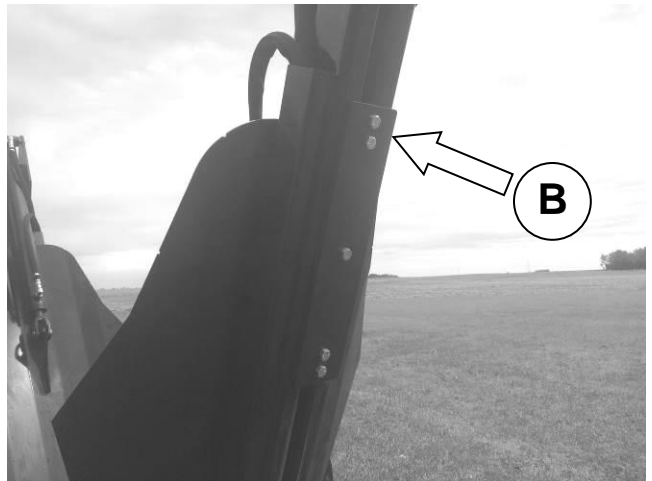
	
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Grease all hinge pins [A] once every eight (8) hours, or more frequently during heavy use.



Keep slides [B] clean and free from obstructions. DO NOT grease slides as this will cause dirt to collect and lead to faster wear.

If blades become dull, they can be sharpened using a grinder. To remove blades for sharpening, secure the blade with the lift ring, remove the pin connecting the cylinder to the blade, and remove the bolts securing the blade to the slide plate.



BOLT TORQUE INFORMATION

Torque-Tension Relationships for SAE J429 Grade Bolts

Nominal Thread Size	SAE J429 Grade 2			SAE J429 Grade 5			SAE J429 Grade 8		
	Clamp Load (lbs)	Tightening Torque		Clamp Load (lbs)	Tightening Torque		Clamp Load (lbs)	Tightening Torque	
		K = .15	K = .20		K = .15	K = .20		K = .15	K = .20
Unified Coarse Thread Series									
1/4-20	1,300	49 in-lbs	65 in-lbs	2,000	75 in-lbs	100 in-lbs	2,850	107 in-lbs	143 in-lbs
5/16-18	2,150	101	134	3,350	157	210	4700	220	305
3/8-16	3,200	15 ft-lbs	20 ft-lbs	4,950	23 ft-lbs	31 ft-lbs	6,950	32.5 ft-lbs	44 ft-lbs
7/16-14	4,400	24	30	6,800	37	50	9,600	53	70
1/2-13	5,850	36.5	49	9,050	57	75	12,800	80	107
9/16-12	7,500	53	70	11,600	82	109	16,400	115	154
5/8-11	9,300	73	97	14,500	113	151	20,300	159	211
3/4-10	13,800	129	173	21,300	200	266	30,100	282	376
7/8-9	11,425	125	166	29,435	321	430	41,550	454	606
1-8	15,000	187.5	250	38,600	482.5	640	54,540	680	900
Unified Fine Thread Series									
1/4-28	1,500	55 in-lbs	75 in-lbs	2,300	85 in-lbs	115 in-lbs	3,250	120 in-lbs	163 in-lbs
5/16-24	2,400	112	150	3,700	173	230	5,200	245	325
3/8-24	3,600	17 ft-lbs	22.5 ft-lbs	5,600	26 ft-lbs	35 ft-lbs	7,900	37 ft-lbs	50 ft-lbs
7/16-20	4,900	27	36	7,550	42	55	10,700	59	78
1/2-20	6,600	41	55	10,200	64	85	14,400	90	120
9/16-18	8,400	59	79	13,000	92	122	18,300	129	172
5/8-18	10,600	83	110	16,300	128	170	23,000	180	240
3/4-16	15,400	144	193	23,800	223	298	33,600	315	420
7/8-14	12,610	138	184	32,480	355	473	45,855	500	668
1-12	16,410	205	273	42,270	528	704	59,670	745	995

Clamp load estimated as 75% of proof load for specified bolts.

Torque values for 1/4 and 5/16 inch series are in inch-pounds. All other torque values are in foot-pounds.

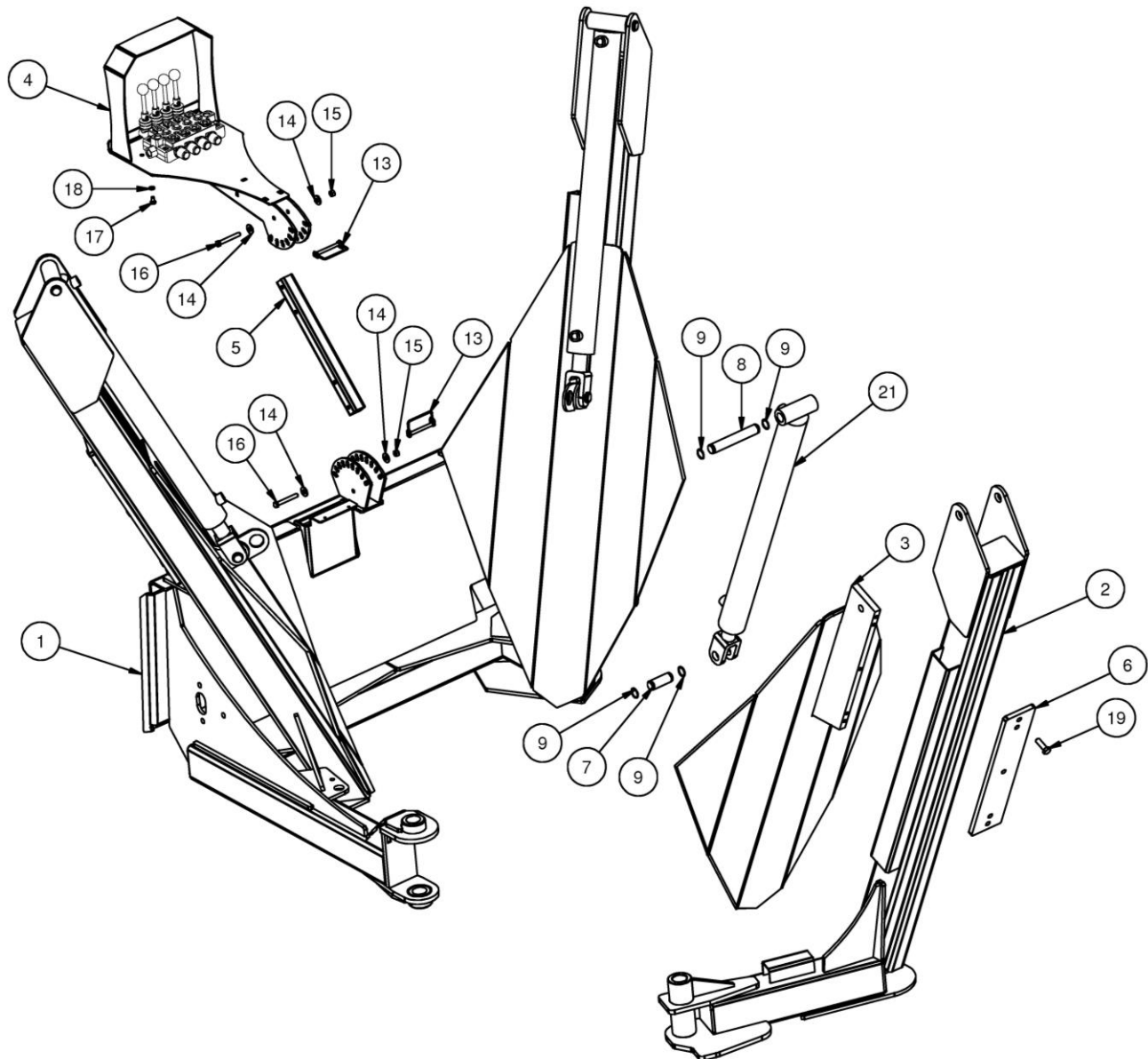
Torque values calculated from formula $T = KDF$

where: $K=0.15$ for "lubricated" conditions

$K=0.20$ for "dry" conditions

TREE SPADE 3S (30) PARTS INFORMATION

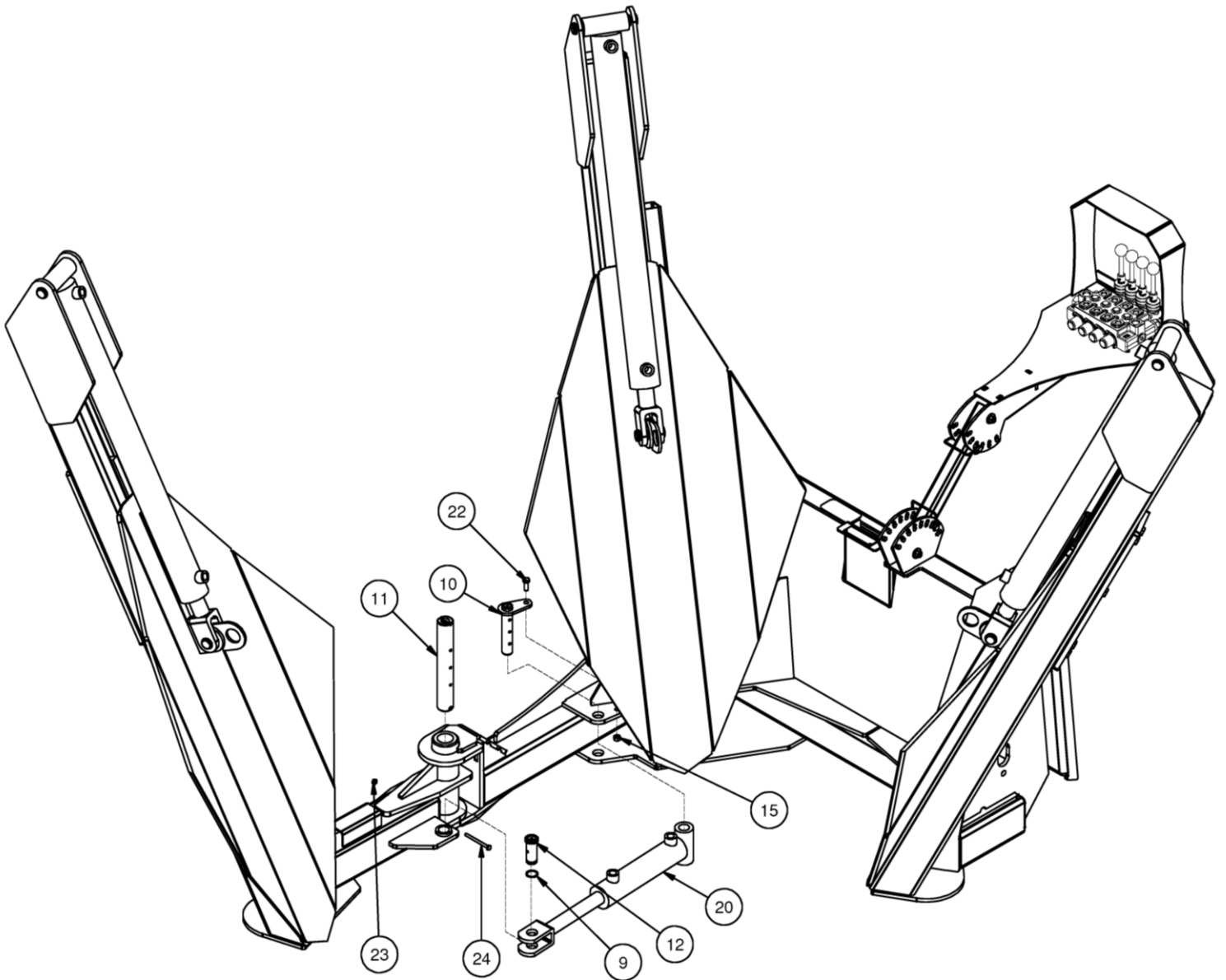
ITEM	QTY	PART NO.	DESCRIPTION	STOCK NO.
1	1	316858	MOUNT FRAME 30 W/A	
2	1	316859	TOWER 30 W/A	
3	3	316860	BLADE 30 W/A	
4	1	316804	CONTROL ARM W/A	
5	1	316850	TUBE SQ .19 X 1.5 X 16 W/H&Z	
6	3	316857	PLATE SPADE RETENTION PNT	(UNPAINTED P/N 316844)
7	3	316854	PIN 1 X 2.25 SNP RNG Z	
8	3	316853	PIN 1 X 5.75 SNP RNG Z	
9	13	28279	RING SNAP EXT 1 X .042	
13	2	300581	PIN SNAPPER 5/16" X 3"	
14	4	33008	WASHER FLAT	3/8"
15	3	37212	NUT REV LOCK	3/8 NC
16	2	13114	BOLT HEX	3/8 X 2 3/4 NC GR5
17	3	13051	BOLT HEX	5/16 X 1/2 NC GR 5
18	3	33620	WASHER LOCK	5/16"
19	15	13209	BOLT HEX	1/2 X 1-1/2 NC GR 5
21	3	316898	CYLINDER 2.5 X 30 B-C	SPADE CYLINDER



TREE SPADE 3S (30) PARTS INFORMATION

ITEM	QTY	PART NO.	DESCRIPTION	STOCK NO.
9	13	28279	RING SNAP EXT 1 X .042	
10	1	318731	PIN 1 X 4.88 GRS W/A	
11	1	316852	PIN 1.5 X 10.13 GRS W/H Z	
12	1	316851	PIN 1 X 2.19 SNP RNG GRS Z	
15	3	37212	NUT REV LOCK	3/8 NC
20	1	316896	CYLINDER 2 X 7 B-C	HINGE CYLINDER
22	1	13105	BOLT HEX	3/8 X 1 NC GR 5
23	1	37210	NUT REV LOCK	1/4 NC
24	1	13015	BOLT HEX	1/4 X 3 NC GR 5

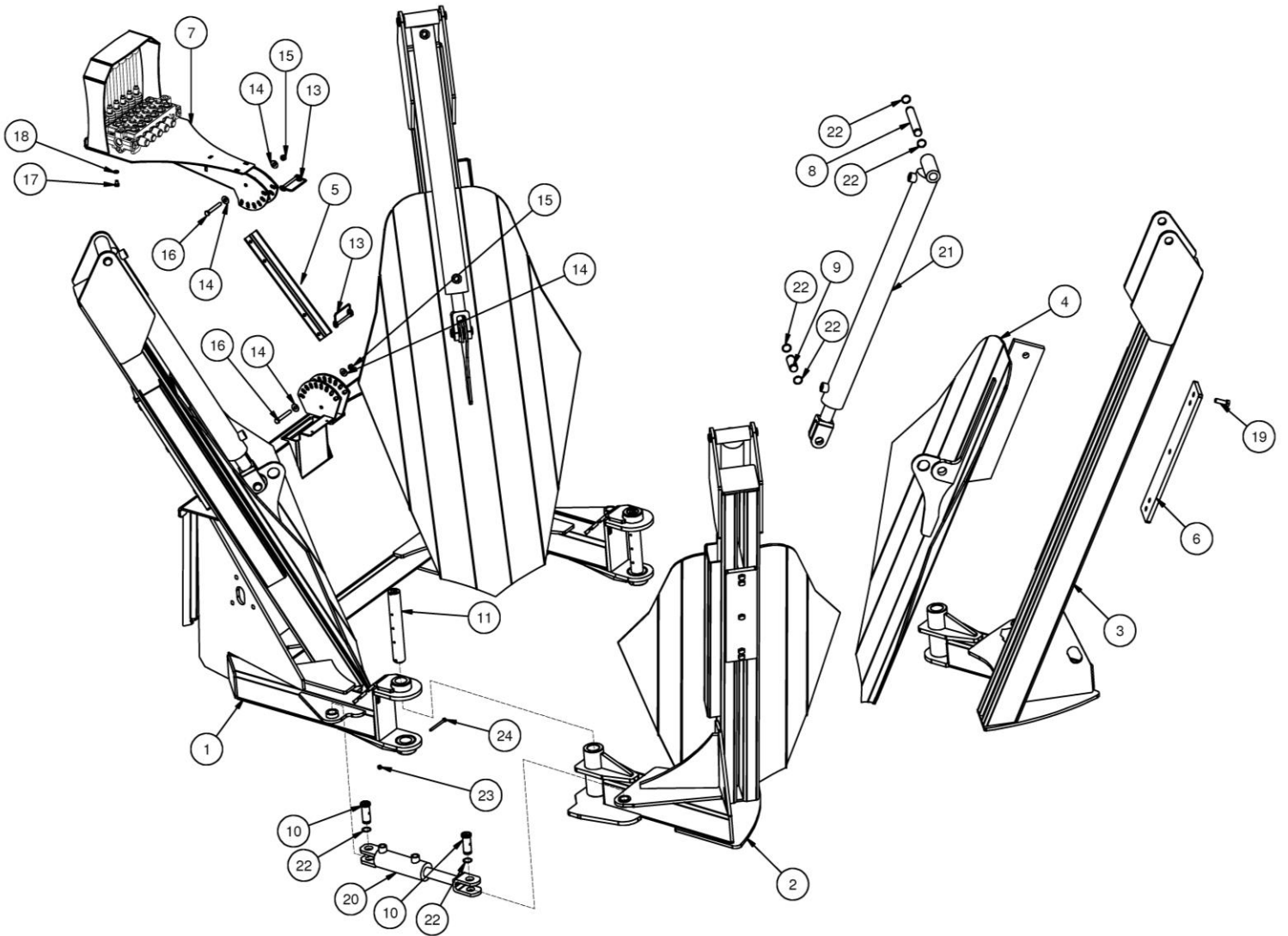
TREE SPADE 3S (30) PARTS INFORMATION



TREE SPADE 4S (40) PARTS INFORMATION

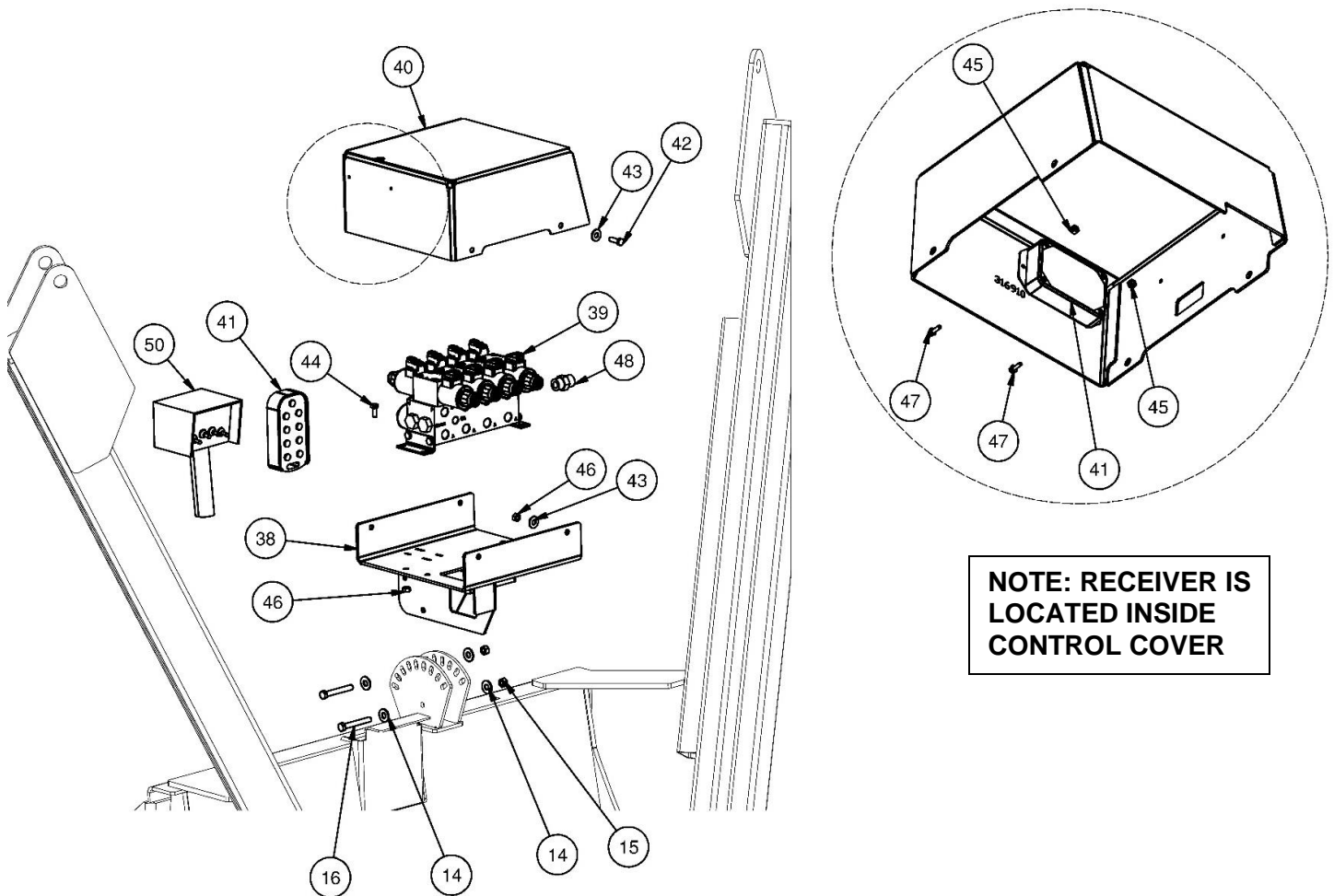
ITEM	QTY	PART NO.	DESCRIPTION	STOCK NO.
1	1	316800	MOUNT FRAME 40 W/A	
2	1	316801	RH TOWER 40 W/A	
3	1	316802	LH TOWER 40 W/A	
4	4	316803	BLADE 40 W/A	
5	1	316850	TUBE SQ .19 X 1.5 X 16 W/H&Z	
6	4	316857	PLATE SPADE RETENTION PNT	(UNPAINTED P/N 316844)
7	1	316804	CONTROL ARM W/A	
8	4	316853	PIN 1 X 5.75 SNP RNG Z	
9	4	316854	PIN 1 X 2.25 SNP RNG Z	
10	4	316851	PIN 1 X 2.19 SNP RNG GRS Z	
11	2	316852	PIN 1.5 X 10.13 GRS W/H Z	
13	2	300581	PIN SNAPPER 5/16" X 3"	
14	4	33008	WASHER FLAT	3/8"
15	2	37212	NUT REV LOCK	3/8 NC
16	2	13114	BOLT HEX	3/8 X 2 3/4 NC GR5
17	3	13051	BOLT HEX	5/16 X 1/2 NC GR 5
18	3	33620	WASHER LOCK	5/16"
19	20	13209	BOLT HEX	1/2 X 1-1/2 NC GR 5
20	2	316897	CYLINDER 2 X 4.5 C-C	HINGE CYLINDER
21	4	316898	CYLINDER 2.5 X 30 B-C	SPADE CYLINDER
22	20	28279	RING SNAP EXT 1 X .042	
23	2	37210	NUT REV LOCK	1/4 NC
24	2	13015	BOLT HEX	1/4 X 3 NC GR 5

TREE SPADE 4S (40) PARTS INFORMATION



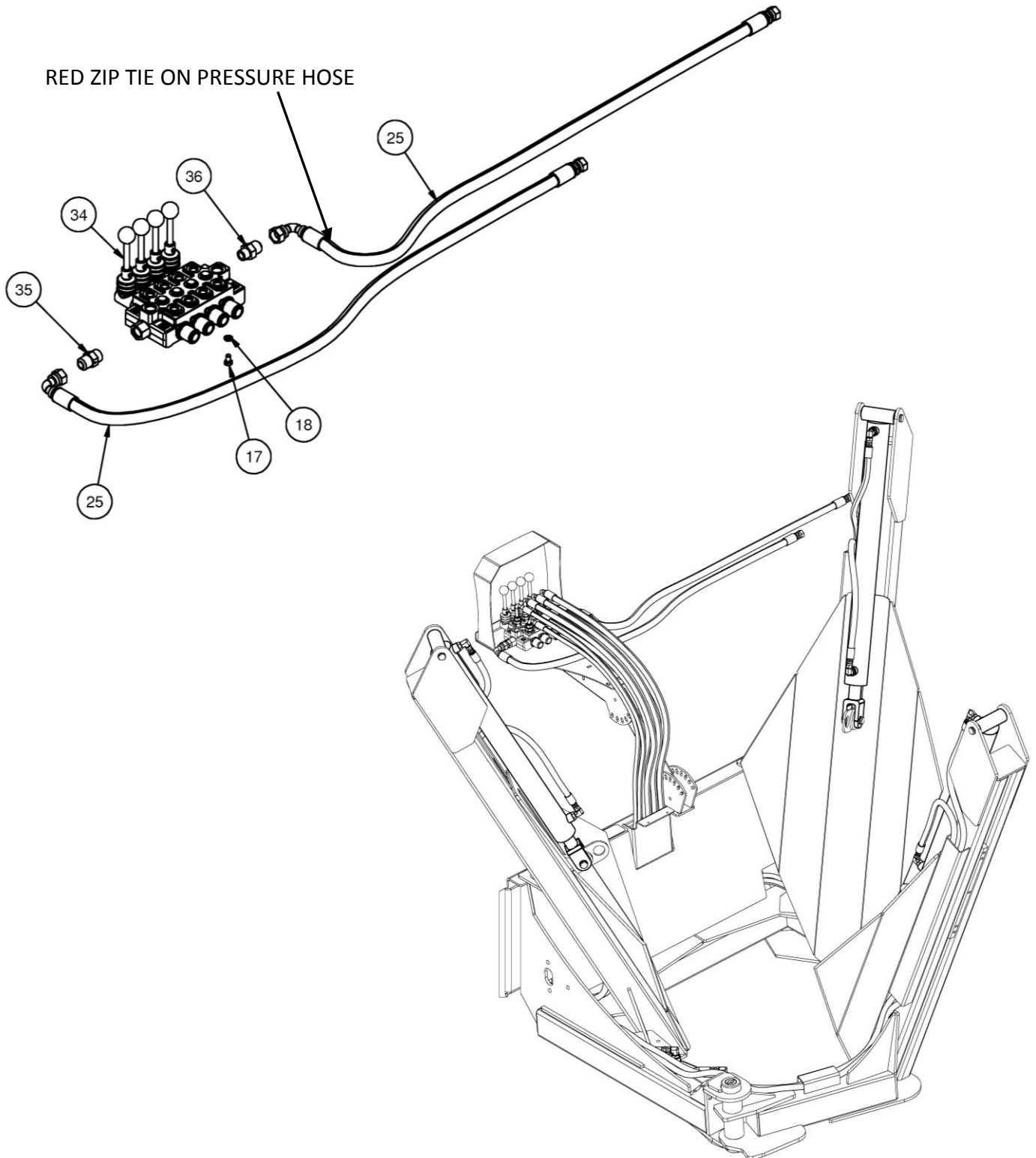
TREE SPADE 3S & 4S OPTIONAL PARTS INFORMATION

ITEM	QTY	PART NO.	DESCRIPTION	STOCK NO.
14	4	33008	WASHER FLAT	3/8"
15	2	37212	NUT REV LOCK	3/8 NC
16	2	13114	BOLT HEX	3/8 X 2 3/4 NC GR5
38	1	316900	BASE CONTROL OPT 3S W/A	OPT ELECTRIC PACKAGES
	1	316901	BASE CONTROL OPT 4S W/A	OPT ELECTRIC PACKAGES
39	1	316915	VALVE ASSM 3S ELECTRIC	OPT ELECTRIC PACKAGES
	1	316916	VALVE ASSM 4S ELECTRIC	OPT ELECTRIC PACKAGES
40	1	316902	COVER CONTROL OPT 3S W/A	OPT ELECTRIC PACKAGES
	1	316903	COVER CONTROL OPT 4S W/A	OPT ELECTRIC PACKAGES
41	1	316917	RADIO RCVR 3S ASSM W/WIRELESS CTRL	WIRELESS ELEC PKG
	1	316925	RADIO RCVR ONLY 3S (PARTS ONLY)	INCLUDED IN 316917
	1	316918	RADIO RCVR 4S ASSM W/WIRELESS CTRL	WIRELESS ELEC PKG
	1	316926	RADIO RCVR ONLY 4S (PARTS ONLY)	INCLUDED IN 316918
42	4	13055	BOLT 5/16 X 1 NC GR 5	OPT ELECTRIC PACKAGES
43	8	33006	WASHER FLAT USS 5/16	OPT ELECTRIC PACKAGES
44	4	13053	BOLT 5/16 X 3/4 NC GR 5	OPT ELECTRIC PACKAGES
45	2	37206	NUT REV LOCK #8-32	OPT ELECTRIC PACKAGES
46	8	37211	NUT REV LOCK 5/16 NC	OPT ELECTRIC PACKAGES
47	2	0148120	BOLT #8-32 X 1/2	OPT ELECTRIC PACKAGES
48	1	201852	ADPT STR 10MB-10MJ	OPT ELECTRIC PACKAGES
49	1	316923	WIRE HRN OPT CTRL 3S (NOT SHOWN)	OPT ELECTRIC PACKAGES
	1	316924	WIRE HRN OPT CTRL 4S (NOT SHOWN)	OPT ELECTRIC PACKAGES
50	1	316919	CONTROLLER WIRED 3S	WIRED ELEC PKG
	1	316920	CONTROLLER WIRED 4S	WIRED ELEC PKG
51	1	316921	CONTROLLER WIRELESS 3S (PARTS ONLY)	INCLUDED IN 316917
	1	316922	CONTROLLER WIRELESS 4S (PARTS ONLY)	INCLUDED IN 316918



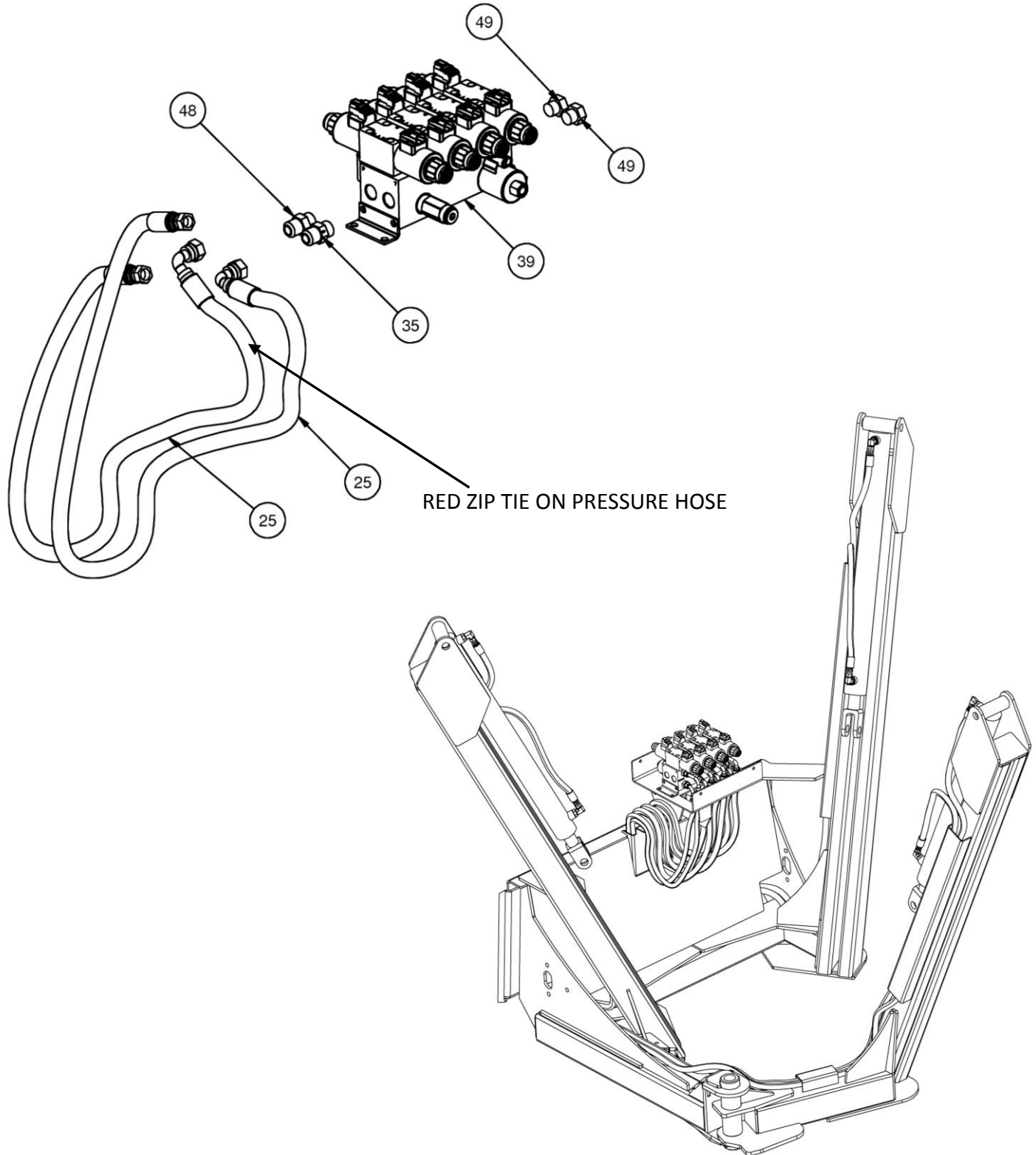
TREE SPADE 3S & 4S STD HYD PARTS INFORMATION

ITEM	QTY	PART NO.	DESCRIPTION	STOCK NO.
17	3	13051	BOLT HEX	5/16 X 1/2 NC GR 5
18	3	33620	WASHER LOCK	5/16"
25	2	316891	HOSE 1/2 X 48 8FJX-10FJX-90	LEAD HOSES
34	1	316894	VALVE ASSM 3S (4 LEVER)	
	1	316895	VALVE ASSM 4S (6 LEVER)	
35	1	318295	ADPT STR 10MB-10MJ CHECK	INCLUDED IN VALVE ASSM
36	1	300902	ADPT STR 8MB-10MJ	



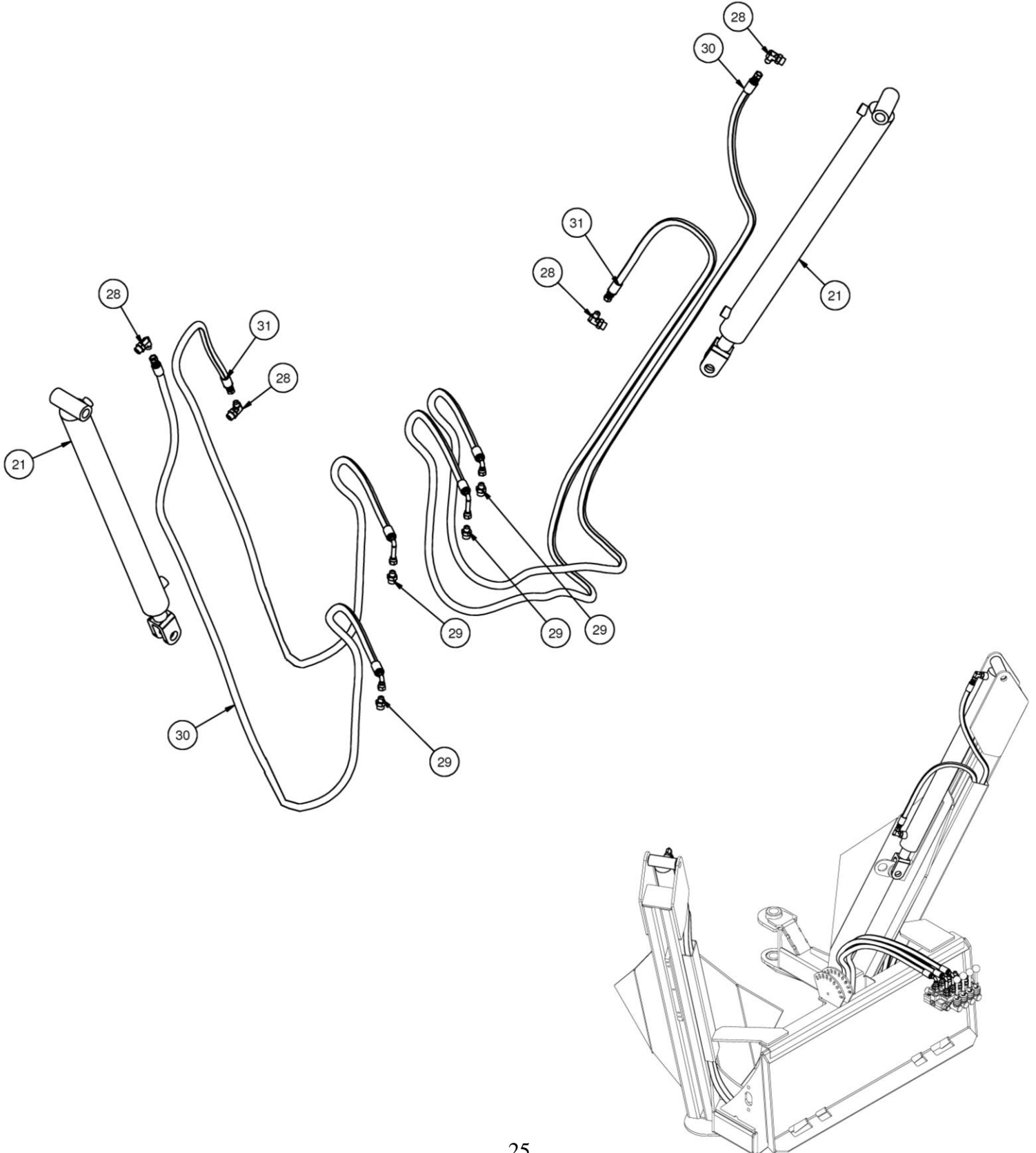
TREE SPADE 3S & 4S LEAD HYD W/ELECT OPT PARTS INFORMATION

ITEM	QTY	PART NO.	DESCRIPTION	STOCK NO.
25	2	316891	HOSE 1/2 X 48 8FJX-10FJX-90	LEAD HOSES
35	1	318295	ADPT STR 10MB-10MJ CHECK	INCLUDED IN VALVE ASSM
39	1	316915	VALVE ASSM 3S ELECTRIC	OPT ELECTRIC PACKAGES
	1	316916	VALVE ASSM 4S ELECTRIC	OPT ELECTRIC PACKAGES
48	1	201852	ADPT STR 10MB-10MJ	OPT ELECTRIC PACKAGES
49	2	330643	ADPT PLUG 10MB	INCLUDED IN VALVE ASSM



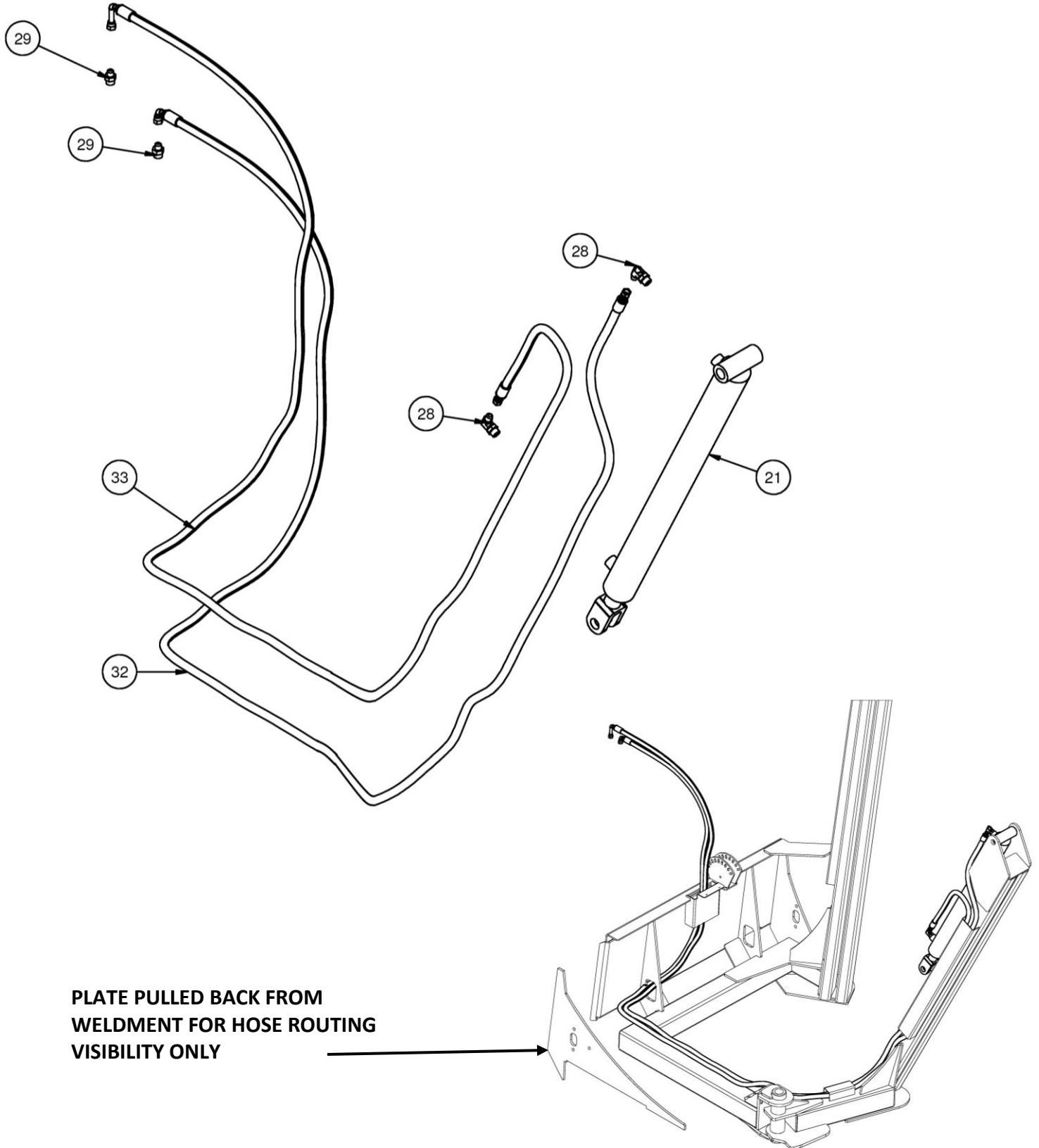
TREE SPADE 3S & 4S REAR SPADE HYD PARTS INFORMATION

ITEM	QTY	PART NO.	DESCRIPTION	STOCK NO.
21	3	316898	CYLINDER 2.5 X 30 B-C	SPADE CYLINDER
28	4	320089	ADPT ELB 8MB-6MJ-90	
29	4	201925	ADPT STR 8MB-6MJ	
30	2	318371	HOSE 3/8 X 140 6FJX- 6FJX-90	REAR SPADE CYL BASE
31	2	316888	HOSE 3/8 X 140 6FJX- 6FJX-90 LONG	REAR SPADE CYL ROD



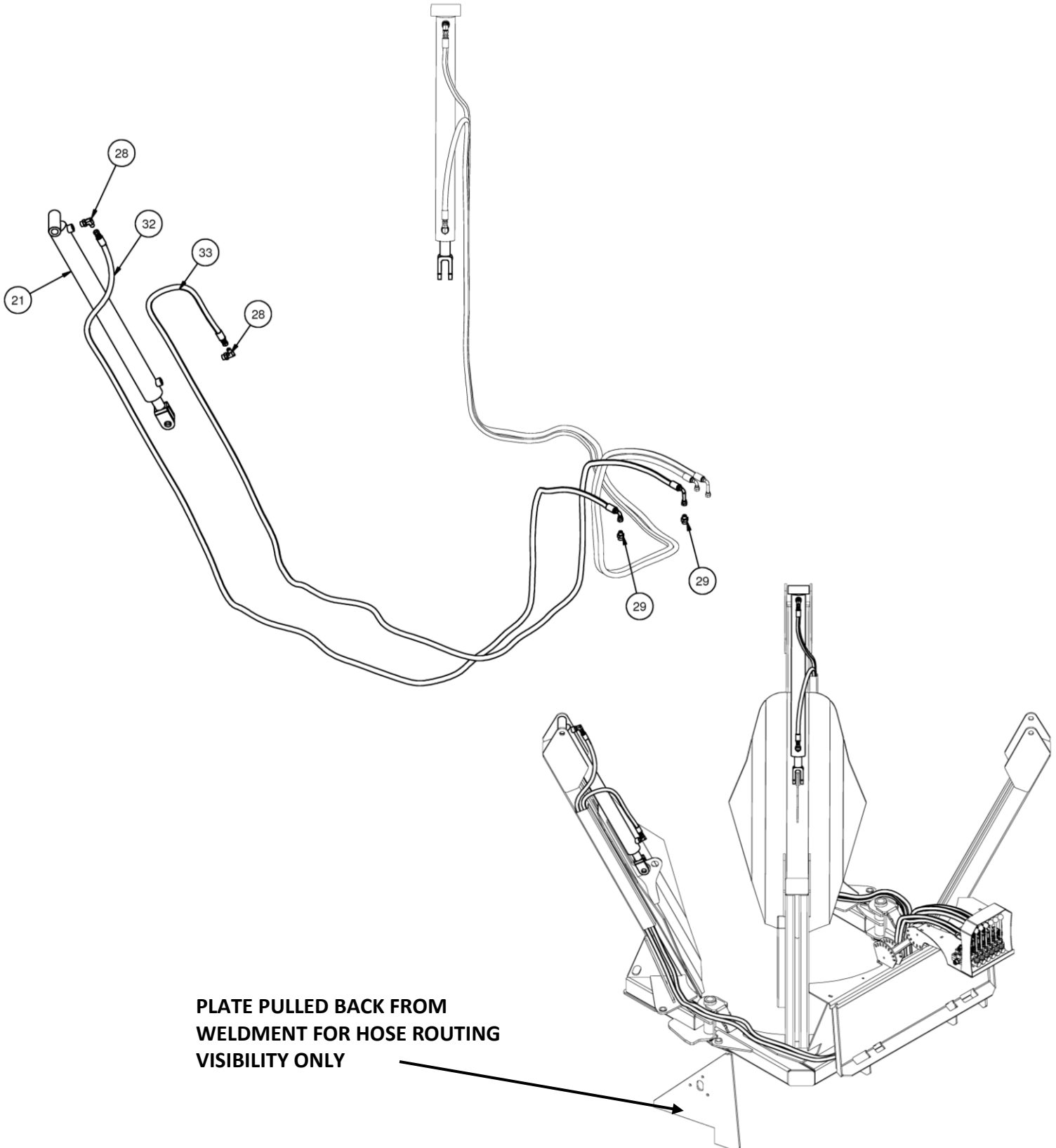
TREE SPADE 3S FRONT SPADE HYD PARTS INFORMATION

ITEM	QTY	PART NO.	DESCRIPTION	STOCK NO.
21	3	316898	CYLINDER 2.5 X 30 B-C	SPADE CYLINDER
28	2	320089	ADPT ELB 8MB-6MJ-90	
29	2	201925	ADPT STR 8MB-6MJ	
32	1	316889	HOSE 3/8 X 180 6FJX-6FJX-90	FRONT SPADE CYL BASE
33	1	316890	HOSE 3/8 X 180 6FJX-6FJX-90 LONG	FRONT SPADE CYL ROD



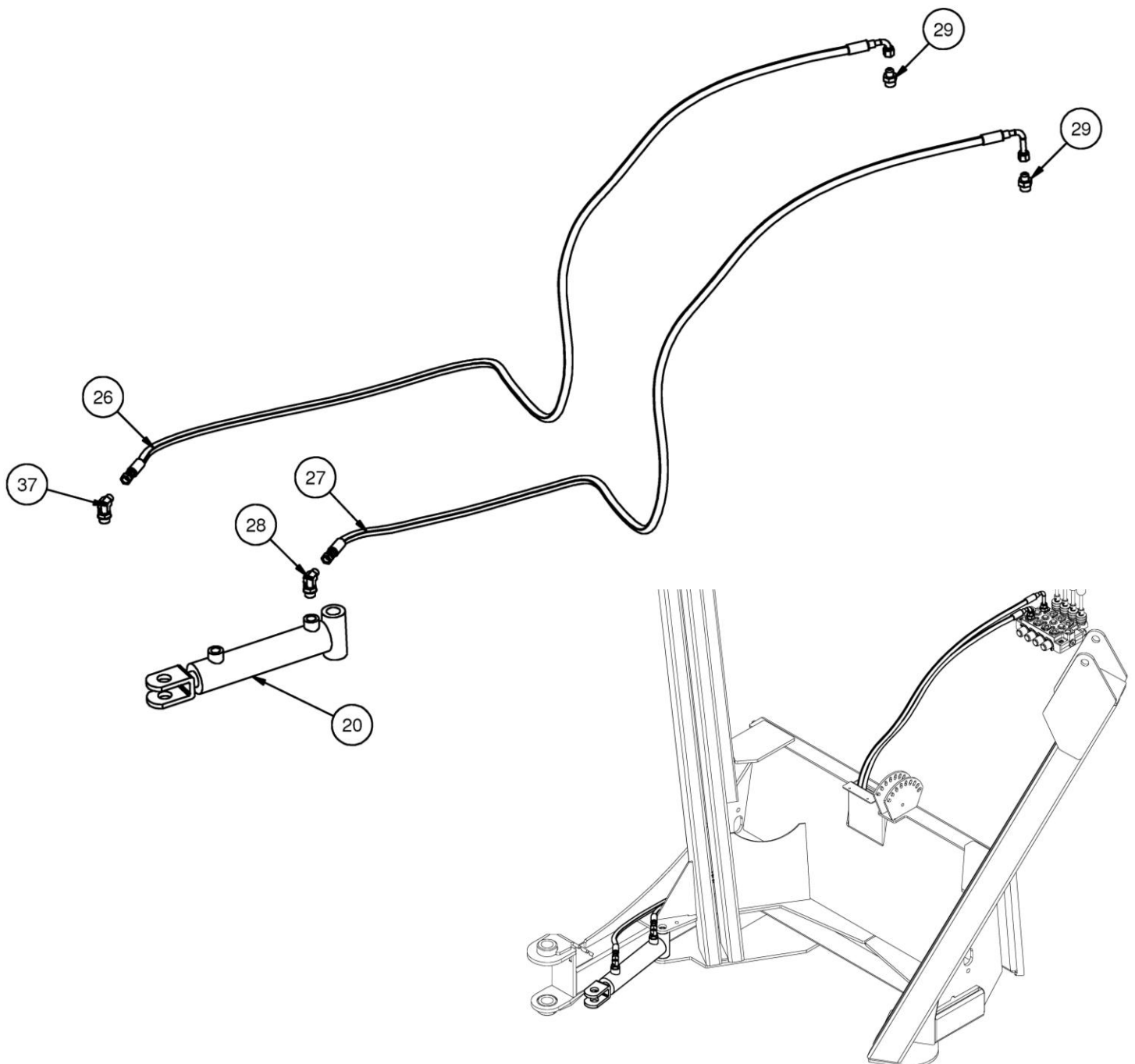
TREE SPADE 4S FRONT SPADE HYD PARTS INFORMATION

ITEM	QTY	PART NO.	DESCRIPTION	STOCK NO.
21	4	316898	CYLINDER 2.5 X 30 B-C	SPADE CYLINDER
28	4	320089	ADPT ELB 8MB-6MJ-90	
29	4	201925	ADPT STR 8MB-6MJ	
32	2	316889	HOSE 3/8 X 180 6FJX-6FJX-90	FRONT SPADE CYL BASE
33	2	316890	HOSE 3/8 X 180 6FJX-6FJX-90 LONG	FRONT SPADE CYL ROD



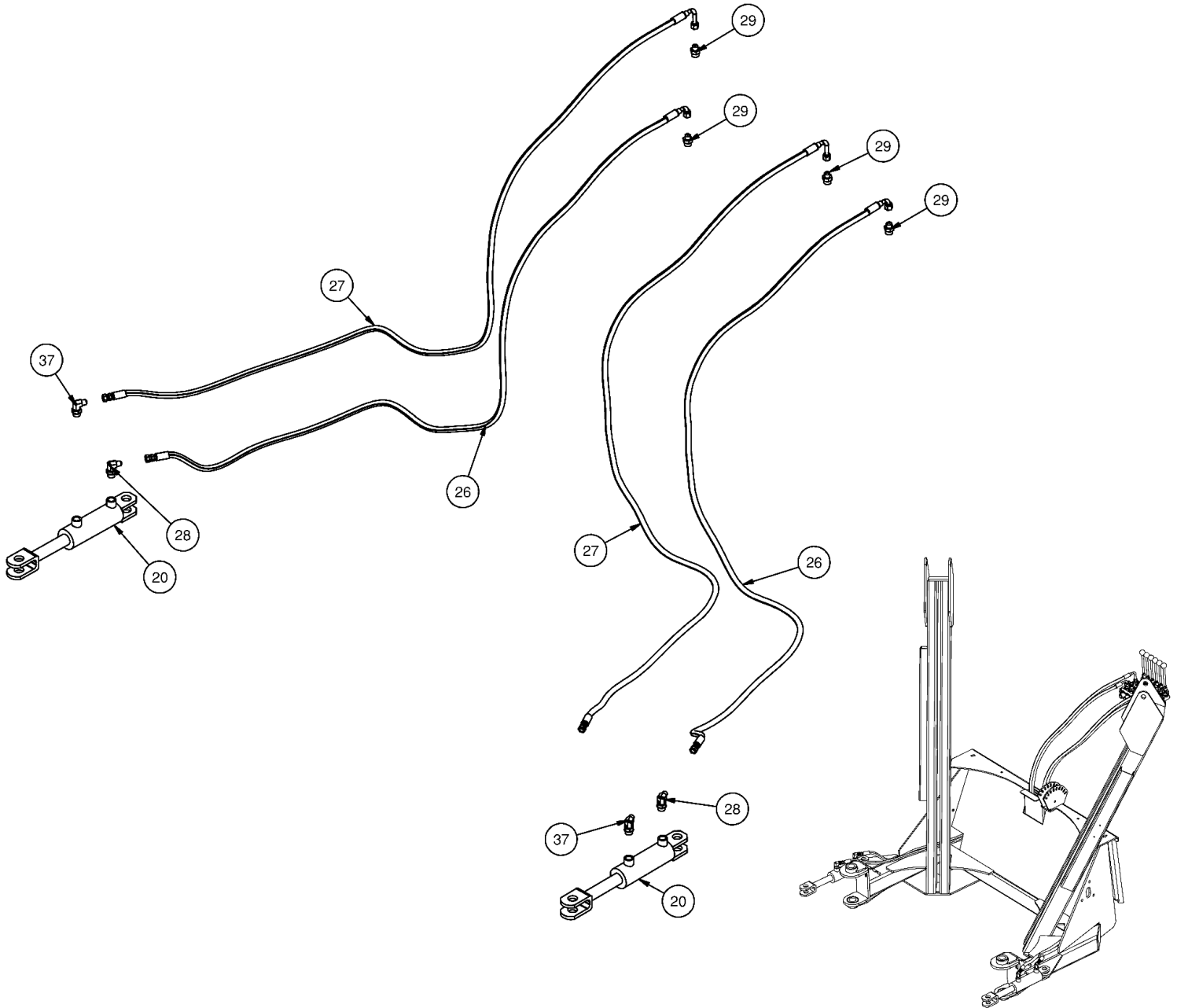
TREE SPADE 3S HINGE HYD PARTS INFORMATION

ITEM	QTY	PART NO.	DESCRIPTION	STOCK NO.
20	1	316896	CYLINDER 2 X 7 B-C	HINGE CYLINDER 3S
26	1	316886	HOSE 1/4 X 96 6FJX-6FJX-90	HINGE CYLINDER ROD 3S
27	1	316887	HOSE 1/4 X 96 6FJX-6FJX-90 LONG	HINGE CYLINDER BASE 3S
28	1	320089	ADPT ELB 8MB-6MJ-90	3S
29	2	201925	ADPT STR 8MB-6MJ	3S
37	1	300839	ADPT REST ELB 8MB-6MJ-90-.04	HINGE CYL ROD END 3S



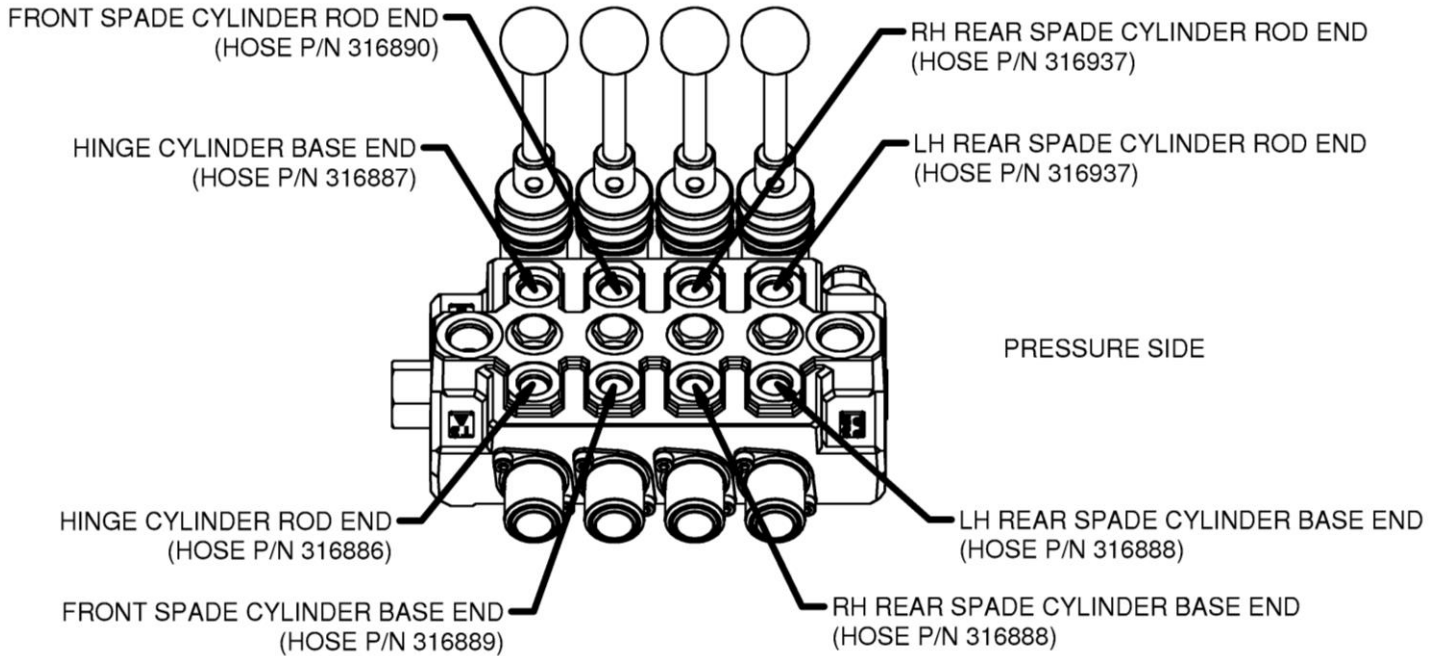
TREE SPADE 4S HINGE HYD PARTS INFORMATION

ITEM	QTY	PART NO.	DESCRIPTION	STOCK NO.
20	2	316897	CYLINDER 2 X 7 B-C	HINGE CYLINDER 4S
26	2	316886	HOSE 1/4 X 96 6FJX-6FJX-90	HINGE CYLINDER ROD 4S
27	2	316887	HOSE 1/4 X 96 6FJX-6FJX-90 LONG	HINGE CYLINDER BASE 4S
28	2	320089	ADPT ELB 8MB-6MJ-90	4S
29	4	201925	ADPT STR 8MB-6MJ	4S
37	2	300839	ADPT REST ELB 8MB-6MJ-90-.04	HINGE CYL ROD END 4S

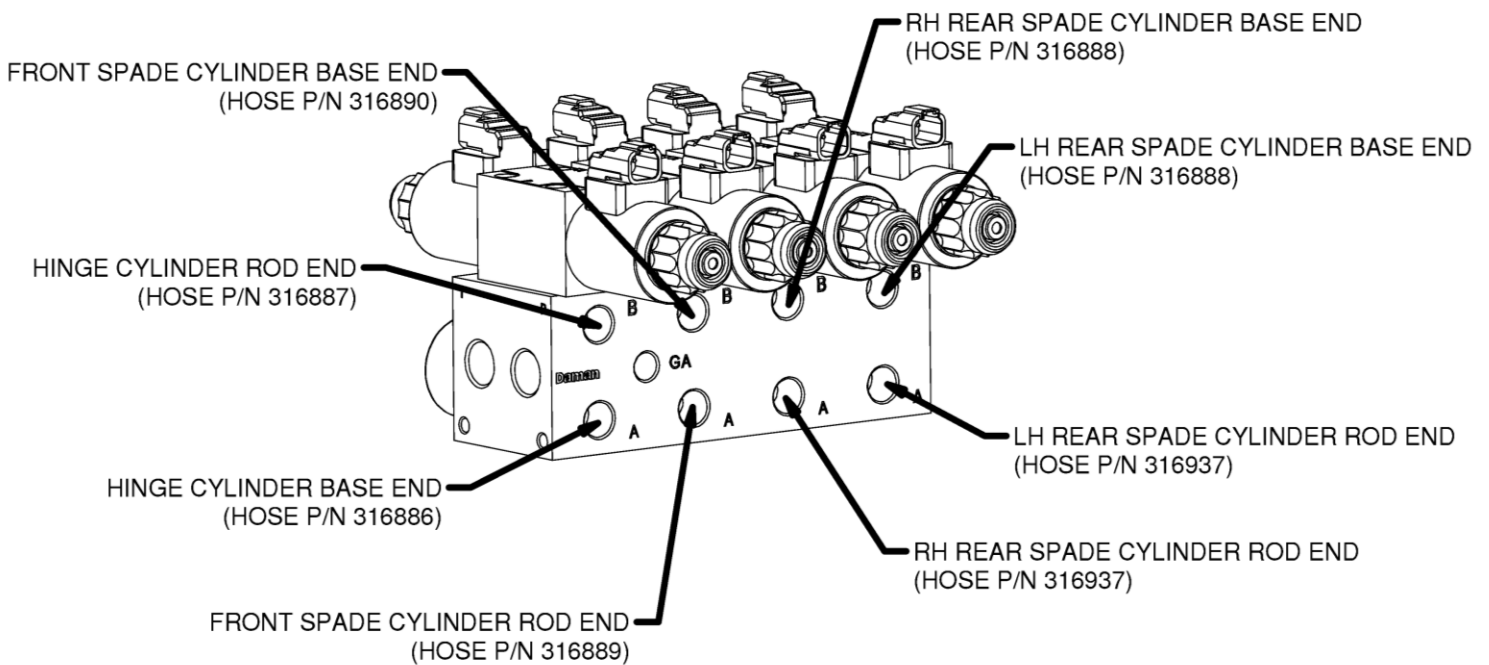


TREE SPADE 3S HOSE ROUTING PARTS INFORMATION

VALVE BLOCK 316894 STANDARD

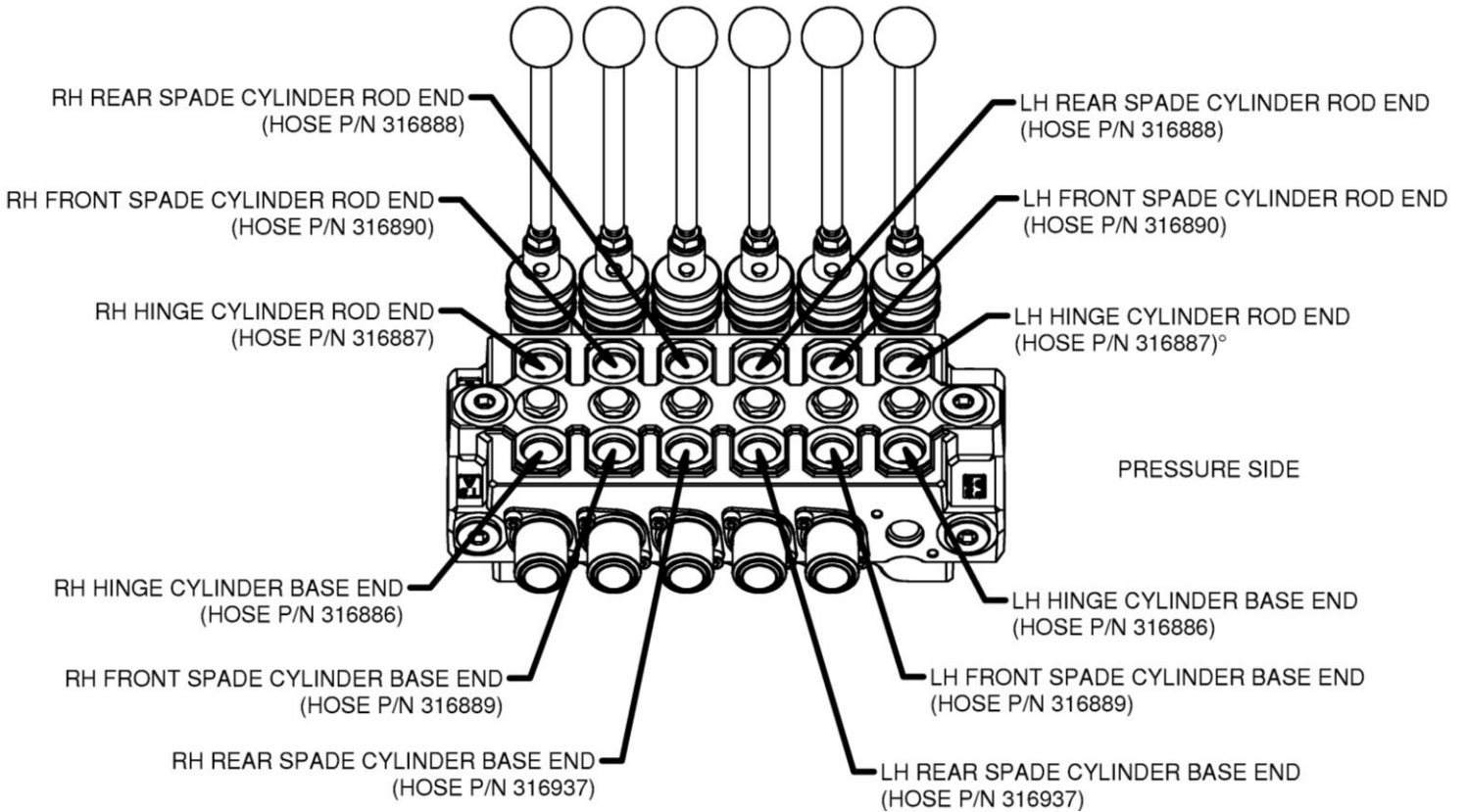


VALVE BLOCK 316915 ELECTRIC

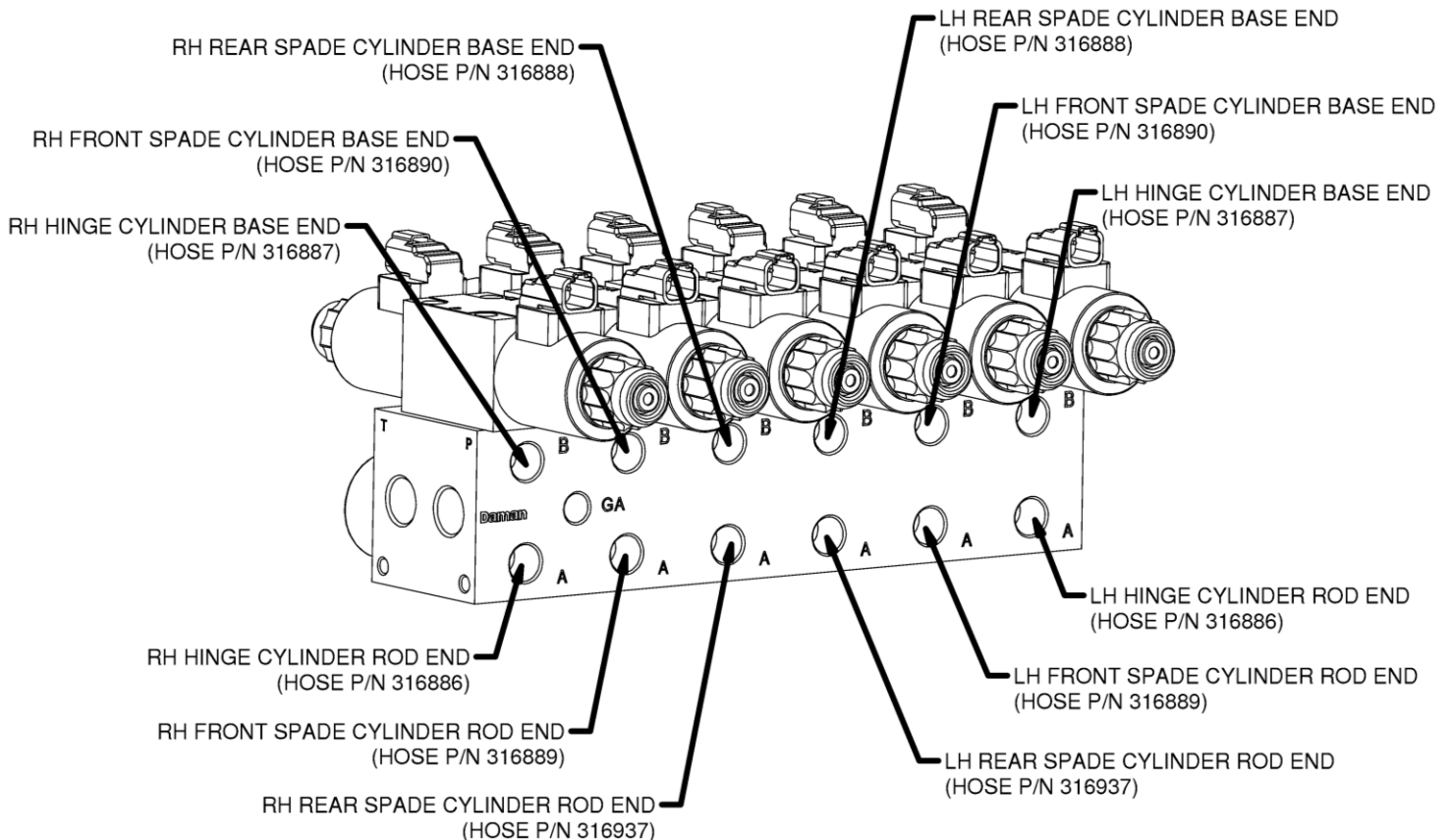


TREE SPADE 4S HOSE ROUTING PARTS INFORMATION

VALVE BLOCK 316895 STANDARD

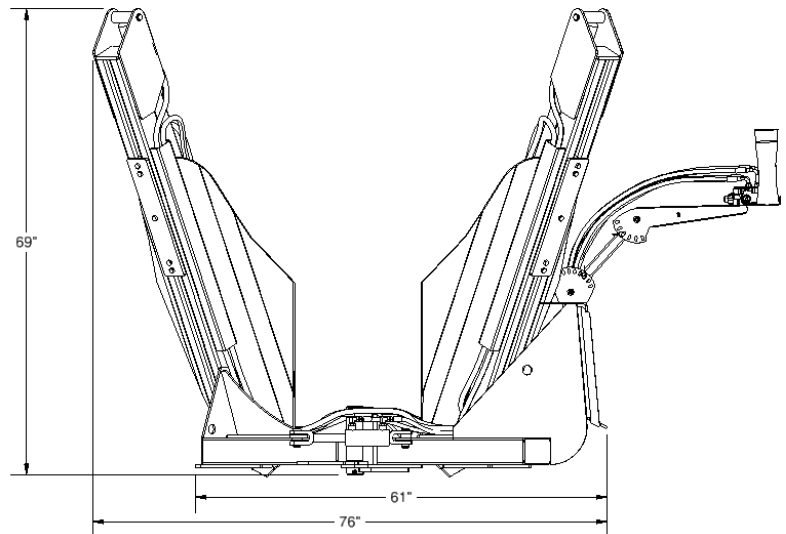
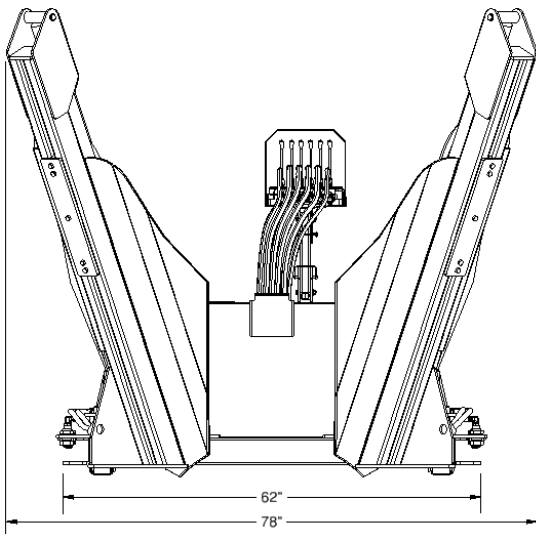
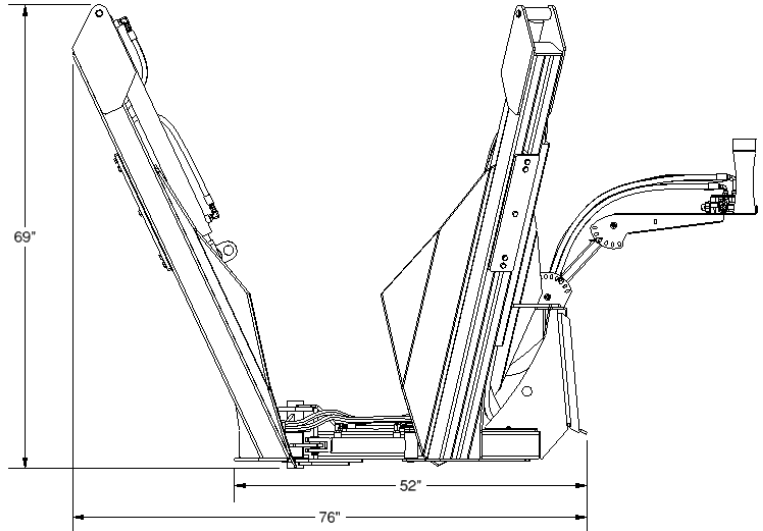
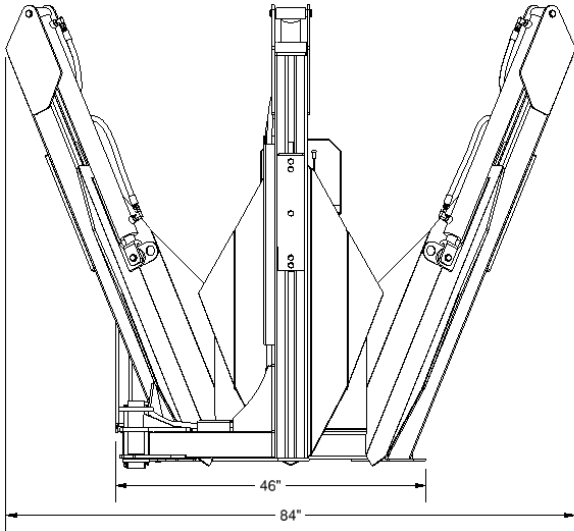


VALVE BLOCK 316916 ELECTRIC



GENERAL SPECIFICATIONS

Root Ball Diameter (3S / 4S)	30" / 40"
Maximum Tree Size – Hardwood (3S / 4S)	2.5" / 3"
Maximum Tree Size – Evergreen (3S / 4S)	3" / 4"
Maximum Swing Opening (3S / 4S)	53" / 52"
Operating Weight (3S / 4S)	1480 lbs. / 1910 lbs.
Weight with Root Ball (3S / 4S)	1980 lbs. / 3110 lbs.



All dimensions are in INCHES.

TROUBLESHOOTING

The following table gives troubleshooting tips for problems that can be easily isolated and fixed. *Italicized* information pertains only to tree spades with an optional electric control package installed. If the tips below do not resolve the problem, call the Parts and Service department for further help and instructions.

Problem	Possible Cause	Solution
All hydraulic cylinders not functioning	Hydraulic hoses connected backwards	Switch couplers on lead hoses
	Damaged quick coupler	Replace if necessary
	<i>No power to electric controller/receiver</i>	<i>Check that 12V power is plugged in and that any batteries are not dead</i>
	<i>Blown fuse</i>	<i>Check fuse on 12V power cord</i>
	<i>Damaged electrical wiring</i>	<i>Refer to loader's operator's manual</i> <i>Test and replace if necessary</i>
A hydraulic cylinder not functioning	Insufficient hydraulic flow from skid steer	Refer to loader's operator's manual
	Cylinder rod bent	Visually inspect cylinder for damage
	Cylinder seals damaged	Replace cylinder seals
	Obstruction in hydraulic lines	Remove obstruction, replace if necessary
	<i>Damaged electrical wiring</i>	<i>Test and replace if necessary</i>
Blades will not cut into ground	Insufficient hydraulic pressure	Check loader's oil level and add if necessary (Refer to loader's operator's manual)
	Slides obstructed	Clean the slides
	Incorrect digging procedure	Refer to "Digging Procedure" (pg. 13-14) in this manual
	Ground is too dry	Wait until ground is moist, or soak ground for at least half an hour (may take longer depending on soil conditions)
Leaking hydraulic oil	Loose or damaged hydraulic hose	Tighten or replace
	Fittings loose or damaged	Tighten or replace
	O-Rings on fittings damaged or worn	Replace if necessary
	Cylinder seals damaged	Replace cylinder seals

TROUBLESHOOTING

The following table gives troubleshooting tips for problems that can be easily isolated and fixed. *Italicized* information pertains only to tree spades with an optional electric control package installed. If the tips below do not resolve the problem, call the Parts and Service department for further help and instructions.

Problem	Possible Cause	Solution
<i>Green LED blinks slowly (once per second)</i>	<i>No communication between controller and receiver</i>	<i>Check that receiver has power</i>
<i>Red LED light blinking</i>	<i>Battery voltage low</i>	<i>Replace batteries</i>
	<i>Error code</i>	<i>See Controller Error Codes table below</i>

Controller Error Codes	
Code	Probable Cause
1	Low controller battery
2	Faulty circuit to Output 1
3	Faulty circuit to Output 2
4	Faulty circuit to Output 3
5	Faulty circuit to Output 4
6	Faulty circuit to Output 5
7	Faulty circuit to Output 6
8	Faulty circuit to Output 7
9	Faulty circuit to Output 8
10	Faulty circuit to Output 9
11	Faulty circuit to Output 10
12	Faulty circuit to Output 11
13	Faulty circuit to Output 12



The error code number is the number of times that the red LED blinks between every pause.

TREE CARE

To help protect your trees and raise their survival rate after they are transplanted, follow the tips and instructions below.

Tree Selection

Spade size and surrounding environment are important factors when selecting a tree to transplant. The average tree has a root system about the same size underground as the branches are above ground. If no further care is planned for the tree after being replanted, the root ball of the tree should be no larger than the spade being used. If moderate care is planned, cutting 25% of the roots still allows a 90% survival rate. If very good care is planned, cutting up to 50% of the roots will still allow a 90% survival rate.

NOTE: In a dry environment, it is necessary to provide more water to the tree. Providing more water ensures faster growth, which leads to a better survival rate for the tree.

Planting Tips

The recovery period for a tree after transplanting normally takes 3 years, but may range from 2-8 years. To get the best performance from your trees, attention must be given to planting details. Using good practices such as watering, pruning, and fertilizing after the transplant will not compensate for poor planting technique or poor tree selection.

- Try to position the spade at the same angle when digging and planting so that the blades match the contour of the hole, leaving less air under the root ball.
- Try to position the tree in the same direction when planting as when it was dug. This will reduce the risk of sunscald.
- When lowering the tree, ensure that the root ball is well centered to prevent the tree from tipping and damaging the roots.
- When releasing the tree, if the tree is leaning, raise the blade that the trunk is leaning toward first. This will spin the root ball up a little.
- Use water to settle the soil around the root ball.
- Mulch 2"-4" deep with woodchips, bark mulch, or other suitable mulch.
- Prune trees to remove damaged and dead branches.

Basketing a Tree

It may be desired to basket a tree for transport or later planting. It is recommended to basket the tree in the same hole that the tree was removed from. Putting the basket in the hole keeps the basket and tree more stable than sitting on the ground, so the tree is less likely to fall over. It also keeps the Tree Spade controls at a more comfortable working position.

Fertilizing

In general, fertilizing is not necessary until the tree recovers from the shock of being transplanted. This usually takes at least one year in non-tropical areas, but can take less than one year in tropical and sub-tropical areas.

Mulching

Mulching helps protect the tree by discouraging other plants from growing near it, increasing water holding capacity in the soil, and maintaining a uniform soil temperature around the tree. Mulch can be applied almost any time of year, but the best time is mid spring when the soil has warmed up enough for sufficient root growth. Mulch should be applied 2 to 4 inches deep in weed-free soil, and should be kept back 12 inches from the tree trunk.

Watering

Moisture is critical to trees, but too much moisture can lead to serious damage. The amount of watering necessary depends on the tree and when it was planted. It is important to select the proper type of tree, especially in dry environments, to avoid high watering requirements.

The tree should be watered immediately after planting to settle the soil and ensure adequate moisture. Most trees need to be watered for 2 to 3 years after transplanting while the root system becomes established. Critical months for watering are from May through September (this period may extend in warmer/drier climates).

To determine soil moisture, remove a small amount of soil at the edge of the dirt ball with a hand trowel and squeeze it. If you can make a moist, sticky ball, it is too wet. If it crumbles like chalk, it is too dry. Enough water should be provided to keep the top 4 inches of soil moist at the root ball and the surrounding area. Overwatering can drown the roots and kill the tree. The exact amount of water necessary will vary from tree to tree.

Pruning

Pruning trees helps promote good branch structure and reduces potential hazards. When a tree is first planted, any dead, broken, and damaged branches should be removed.

The need for pruning and maintenance can be limited by knowing the growth habits of the tree. Plant the tree in an area where expected future growth will not cause any interferences or potential hazards.

Guying and Staking

Guys or stakes should only be used when necessary, such as when roots are not solid in the planting hole or when high winds may dislodge the tree. Generally, if planted properly, the weight of the root ball is sufficient to hold the tree in place. Trees not guyed or staked will become established and grow faster than trees that are guyed or staked. Consult a professional before the installation of guys or stakes. Guys and stakes must later be removed to prevent damage to the tree.

Tree Wraps

Tree wrap should only be used when necessary, generally for thin-barked trees, exposed trees, or trees in danger of rodent and mammal feeding. Consult an arborist to determine if tree wrap is needed. Always remove tree wraps after the specified time period to avoid damaging the trunk.



LIMITED WARRANTY

Erskine Attachments LLC warrants each new machine manufactured by us to be free from defects in material and workmanship for a period of twelve (12) months from date of delivery to the original purchaser.

Our obligation under this warranty is to replace free of charge, at our factory or authorized dealership, any part proven defective within the stated warranty time limit.

All parts must be returned freight prepaid and adequately packaged to prevent damage in transit.

This warranty does not cover:

1. New products which have been operated in excess of rated capacities or negligence
2. Misuse, abuse, accidents or damage due to improperly routed hoses
3. Machines which have been altered, modified or repaired in any manner not authorized by our company
4. Previously owned equipment
5. Any ground engaging tools in which natural wear is involved, i.e. tooth tips, cutting teeth, etc
6. Normal maintenance
7. Fork tines
8. Hydraulic motors that have been disassembled in any manor

In no event will the Sales Representative, Dealership, Erskine Attachments LLC, or any other company affiliated with it or them be liable for incidental or consequential damages or injuries, including but not limited to the loss of profit, rental or substitute equipment or other commercial loss. Purchaser's sole and exclusive remedy being as provided here in above.

Erskine Attachments LLC must receive immediate notification of defect and no allowance will be made for repairs without our consent or approval.

This warranty is in lieu of all other warranties, express or implied by law or otherwise, and there is no warranty of merchantability or fitness purpose.

No agent, employee, or representative of Erskine Attachments LLC has any authority to bind Erskine Attachments LLC to any warranty except as specifically set forth herein. Any of these limitations excluded by local law shall be deemed deleted from this warranty; all other terms apply.

This warranty may not be enlarged or modified in any manner except in writing signed by an executive officer of Erskine Attachments LLC to improve its products whenever it is possible and practical to do so. Erskine Attachments LLC reserves the right to make changes and or add improvements at any time without incurring any obligation to make such changes or add such improvements to products previously sold.

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