

Keep With Operator's Manual

VALVE AND PLUMBING KIT INSTRUCTIONS SMC 84Q & 2408 LOADERS JOHN DEERE 850, 950, & 1050 TRACTORS

Valve and plumbing kit can be installed using tools ordinarily available. Valve control handle has been factory preassembled for ease of installation. Shut off engine and engage brakes during installation. If tractor is equipped with a selective control valve (SCV), move both control levers back and forth several times after shutting off engine to relieve any hydraulic pressure.

NOTE: If tractor is an early John Deere 850 (S/N 01000-09000) or 950 (S/N 01000-12000) without power steering and selective control valve (SCV), it is necessary to order hydraulic adapter kit (SMC 2-5579) to make valve and plumbing kit compatible.

Depending on optional equipment on tractor (power steering or SCV) it may be necessary to order an additional fitting from your John Deere dealer. Refer to following table for a list of fittings.

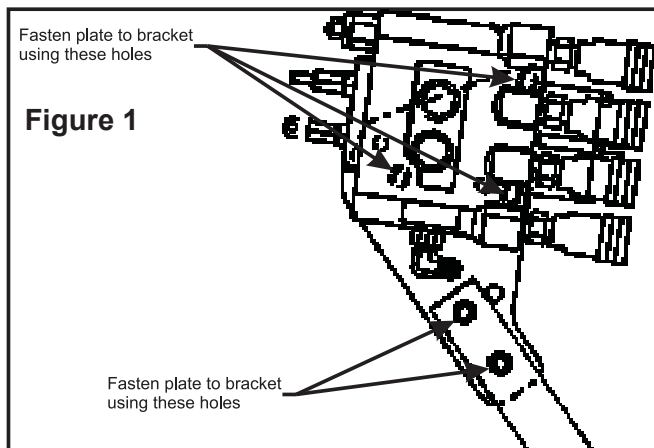
NOTE: Apply sealant only to all tapered threads unless coupled with swivel adapters. When using Teflon tape, wrap tape clockwise (as viewed from end) and wrap only twice. Keep sealant away from first two threads of tapered end to prevent contamination of hydraulic fluid. Do not use sealant on O-ring or flare adapter threads.

POWER STEERING	SCV	FITTING REQUIRED	JOHN DEERE PART NUMBER
NO	NO	ELBOW, TANK	AR27699
NO	YES	TEE, TANK	AT50894
YES	NO	NONE REQUIRED	—
YES	YES	TEE, BRANCH 3/4" JIC-3/4 JIC 3/4 SAE	AN140263

2-6392

ATTACHING VALVE TO LOADER MOUNTING BRACKET (Figures 1 & 3)

1. Install 3/4 x 9/16 elbow fitting (9) to power beyond port of valve (1). Install 3/4 x 9/16 adapter fittings (30) to pressure and tank ports of valve (1). Install adapter fittings (22), female quick couplers (15) and 1" colored bands (16) to working ports of valve (1).
2. Fasten valve mounting plate (23) to valve mounting bracket (24) using 3/8 x 2-1/4 cap screws (2) and 3/8 lock nuts (5).
3. Fasten valve (1) with power beyond port on the bottom to valve mounting plate (23), using 5/16 x 3/4 cap screws (6) and 5/16 lock washers (7)(Figures 1 & 4).
4. Fasten decal mounting plate (4) to valve using 5/16 x 3/4 cap screw (6) and 5/16 lock washer (7). Making sure surface of decal mounting plate is clean and dry, remove backing from decal (20) and apply it to decal mounting plate.
5. Thread nut (13) onto handle (3). Attach handle (3) to valve (1). Slip boot (14) over handle and cover handle assembly. Attach ball (8) to handle.
6. Attach valve mounting bracket (24) to right midmounting bracket using 1/2 x 2-1/4 cap screws (29), 1/2 flat washer (28) and 1/2 lock nuts (33).



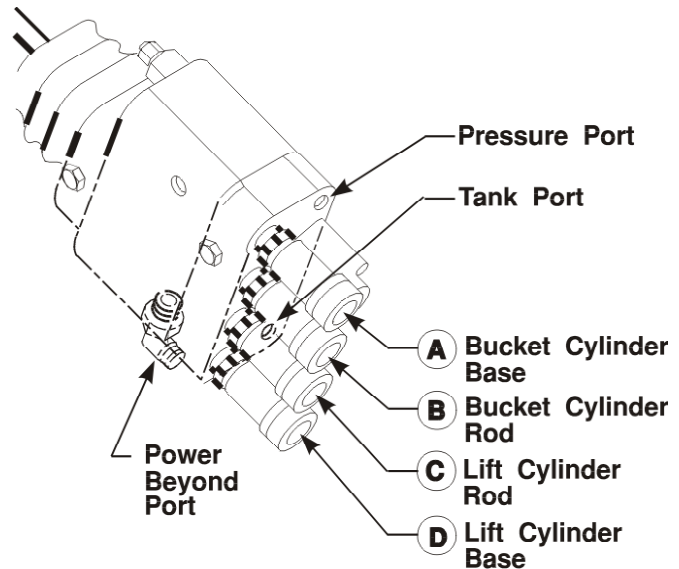
WARNING: Escaping hydraulic fluid under pressure can penetrate skin causing serious injury.

- **DO NOT** use your hands to check for leaks. Use a piece of cardboard or paper to search for leaks.
- Stop engine and relieve pressure before connecting or disconnecting lines.
- Tighten all connections before starting engine or pressurizing lines.

If any fluid is injected into skin, obtain medical attention immediately or gangrene may result.

PLUMBING CONTROL VALVE TO TRACTOR HYDRAULICS

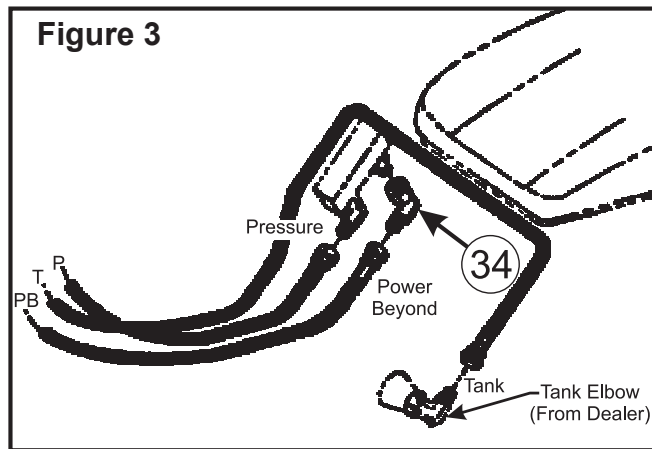
Connect 3/8 x 90 power beyond hose (10) to power beyond port in valve. Connect 3/8 x 78 pressure hose (11) to pressure port in valve. Connect 3/8 x 90 tank hose (12) to tank port in valve.



NOTE: Instructions are subdivided according to tractor model, time of manufacture and optional equipment. Follow instructions under the heading that best describes your tractor.

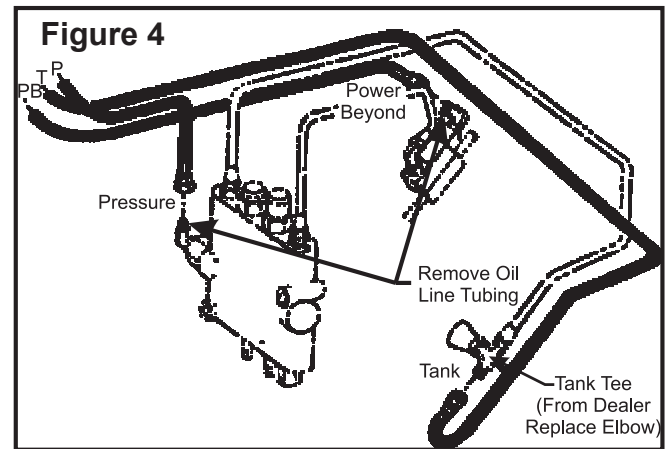
SERIAL NUMBER CUT OFFS

*EARLY: 850(01000-09000) **LATE: 850(09001-)
*EARLY: 950(01000-12000) **LATE: 950(12001-)



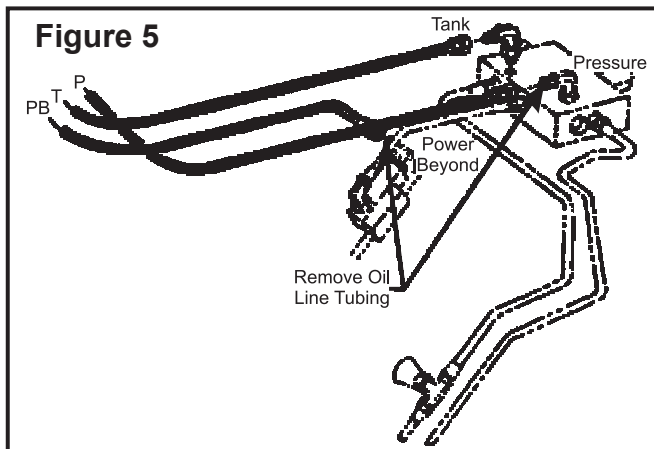
EARLY* 850 AND 950 TRACTORS WITHOUT POWER STEERING AND WITHOUT SCV (Figure 3)

1. Install hydraulic adapter kit (2-5579). Install one 3/4-3/4 x 90° elbow fitting (34) onto straight adapter in upper rear (power beyond) port of hydraulic adapter block. Remove plug from tractor tank port, located on left side of tractor transmission housing, and replace with tank elbow (from tractor dealer).
2. Route hoses down along valve mounting tube (24), under tractor footrest platform and up to hydraulic adapter block. Connect 3/8 x 78 pressure hose (11) to elbow fitting in lower rear (pressure) port of hydraulic adapter block. Connect 3/8 x 90 power beyond hose (10) to elbow fitting (34) in upper rear (power beyond) port of hydraulic adapter block. Route 3/8 x 90 tank hose (12) across tractor transmission housing to left side and connect to tractor tank elbow.
3. Use plastic tie straps (21) to secure hoses to valve mounting tube (24), tractor footrest platform and under tractor seat.



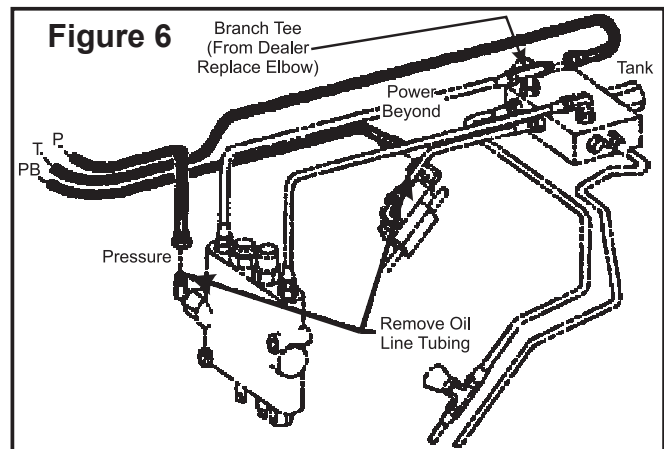
EARLY* 850 AND 950 TRACTORS WITHOUT POWER STEERING AND WITH SCV (Figure 4)

1. Remove the tractor oil line which connects "BYD" port of SCV (pressure) to the rear (power beyond) port of tractor junction block, leaving oil line fittings in place. Disconnect the oil line from the tank elbow with tank tee (from tractor dealer) and reconnect oil line to one branch.
2. Route hoses down along valve mounting tube (24), under tractor footrest platform and up to tractor oil line fittings. Connect 3/8 x 78 pressure hose (11) to elbow fitting in "BYD" port of SCV. Connect 3/8 x 90 power beyond hose (10) to elbow fitting in rear port of tractor hydraulic junction block. Route 3/8 x 90 tank hose (12) across tractor transmission casting to left side and connect end to available branch of tank tee.
3. Use plastic tie straps (21) to secure hoses to valve mounting tube (24), tractor footrest platform and under tractor seat.



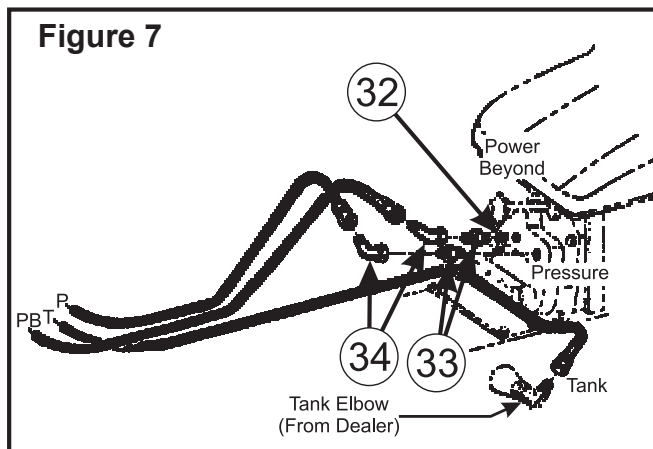
EARLY* 850 AND 950 TRACTORS WITH POWER STEERING AND WITHOUT SCV (Figure 5)

1. Remove the tractor oil line which connects the rear (power beyond) port of tractor junction block to the left top (pressure) port of power steering flow divider block, leaving oil line fittings in place. Remove the plug from the right top (tank) port of flow divider block and replace it with 3/4-3/4 x 90° elbow fitting (31).
2. Route hoses down along valve mounting tube (24), under tractor footrest platform and up toward tractor junction block and flow divider. Connect 3/8 x 90 power beyond hose (10) to elbow fitting in rear port of tractor hydraulic junction block. Connect 3/8 x 90 tank hose (12) to elbow (31) in right top of flow divider block. Connect 3/8 x 78 pressure hose (11) to elbow fitting in left top port of flow divider block.
3. Use plastic tie straps (21) to secure hoses to valve mounting tube (24), tractor footrest platform and under tractor seat.



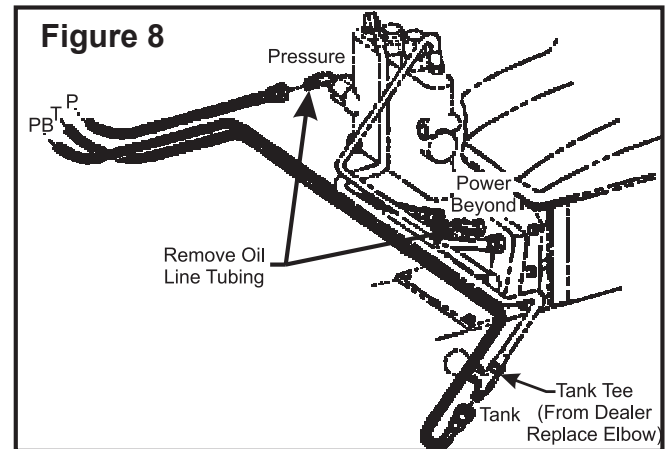
EARLY* 850 AND 950 TRACTORS WITH POWER STEERING AND WITH SCV (Figure 6)

1. Remove the tractor oil line tube which connects the "BYD" port of SCV (pressure) to the rear (power beyond) port of tractor junction block, leaving oil line fittings in place. Disconnect the oil line from the elbow in the right top (tank) port of flow divider. Replace elbow with branch tee (from tractor dealer) and reconnect oil line to one branch.
2. Route hoses down along valve mounting tube (24), under tractor footrest platform and up toward SCV and flow divider. Connect 3/8 x 78 pressure hose (11) to elbow in "BYD" port of SCV. Connect 3/8 x 90 power beyond hose (10) to elbow fitting in rear (power beyond) port of tractor junction block. Connect 3/8 x 90 tank hose (12) to branch tee in right top port of flow divider.
3. Use plastic tie straps (21) to secure hoses to valve mounting tube (24), tractor footrest platform and under tractor seat.



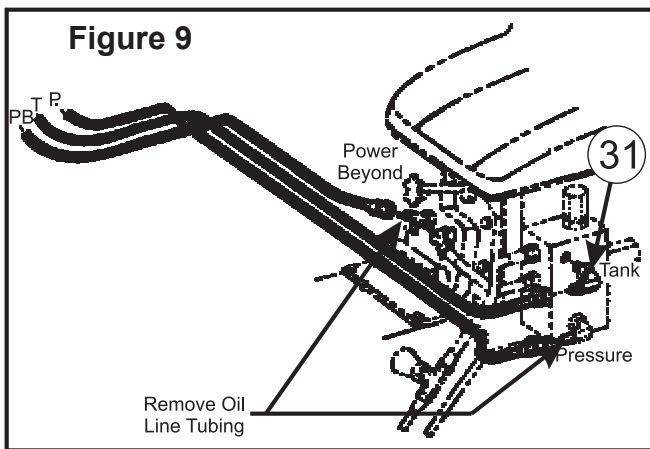
LATE 850 AND 950 TRACTORS WITHOUT POWER STEERING AND WITHOUT SCV (Figure 7)**

1. Remove plugs from both ports in tractor rockshaft cover to access tractor power beyond and pressure ports. Install 1/4 NPT hex socket pipe plug (32) into right (power beyond) port to block internal flow in tractor rockshaft cover. Install 3/4-3/4 straight fittings (33) into each port and install 3/4-3/4 x 90° elbow fittings (34) onto straight fittings (33). Remove plug from tractor tank port, located on left side of tractor transmission housing and install tank elbow (from tractor dealer).
2. Route hoses down along valve mounting bracket (24), under tractor footrest platform and up toward tractor rockshaft cover. Connect 3/8 x 78 pressure hose (11) to 3/4-3/4 x 90° elbow fitting (34) in left port in rockshaft cover, and connect 3/8 x 90 power beyond left port in rockshaft cover, and connect 3/8 x 90 power beyond hose (10) to 3/4-3/4 x 90° elbow fitting (34) in right port of rockshaft cover. Route 3/8 x 90 tank hose (12) across tractor transmission housing to left side and connect end to tank elbow.
3. Use plastic tie straps (21) to secure hoses to valve mounting tube (24), tractor footrest platform and under tractor seat.



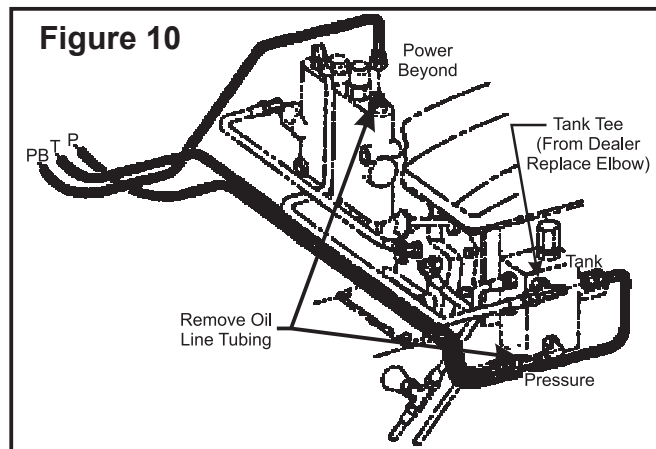
LATE 850 AND 950 TRACTORS WITHOUT POWER STEERING AND WITH SCV (Figure 8)**

1. Remove the tractor oil line which connects "BYD" port of SCV (pressure) to the right (power beyond) port in tractor rockshaft cover, leaving oil line fittings in place. Disconnect the oil line from the tank elbow in the left side of tractor transmission housing. Replace tank elbow with tank tee (from tractor dealer) and reconnect oil line to one branch.
2. Route hoses down along valve mounting tube (24), under tractor footrest platform and up toward tractor rockshaft cover and SCV. Connect 3/8 x 90 power beyond hose (10) to elbow fitting in right port of tractor rockshaft cover. Connect 3/8 x 78 pressure hose (11) to elbow fitting in "BYD" port of SCV. Route 3/8 x 90 tank hose (12) across tractor transmission housing to left side and connect end to available branch of tank tee.
3. Use plastic tie straps (21) to secure hoses to valve mounting tube (24), tractor footrest platform and under tractor seat.



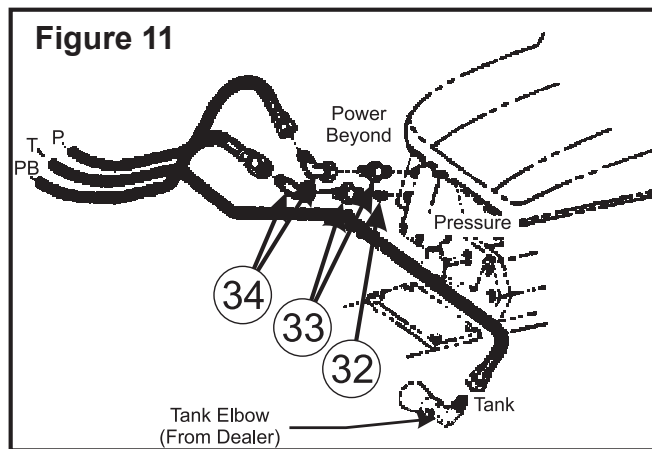
LATE 850 AND 950 TRACTORS WITH POWER STEERING AND WITHOUT SCV (Figure 9)**

1. Remove the tractor oil line which connects the right (power beyond) port of tractor rockshaft cover to lower (pressure) port in left side of power steering flow divider block, leaving oil line fittings in place. Remove the plug from the upper (tank) port in left side of flow divider block and install 3/4-3/4 x 90° elbow fitting (31).
2. Route hoses down along valve mounting tube (24), under tractor footrest platform and up toward rockshaft cover and flow divider block. Connect 3/8 x 78 pressure hose (11) to elbow fitting in lower port in left side of flow divider block. Connect 3/8 x 90 tank hose (12) to 3/4-3/4 x 90 power beyond hose (12) to fitting in right port of tractor rockshaft cover.
3. Use plastic tie straps (21) to secure hoses to valve mounting tube (24), tractor footrest platform and under tractor seat.



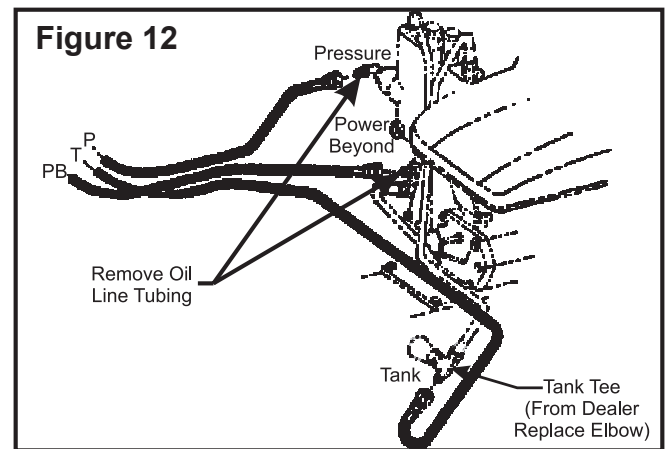
LATE 850 AND 950 TRACTORS WITH POWER STEERING AND WITH SCV (Figure 10)**

1. Remove the tractor oil line which connects the lower (pressure) port of left side of power steering flow divider block to the top left port of SCV (power beyond), leaving oil line fittings in place. Disconnect the oil line from the elbow in the upper (tank) port in left side of flow divider. Replace elbow with branch tee (from tractor dealer) and reconnect oil line to one branch.
2. Route hoses down along valve mounting tube (24), under tractor footrest platform and up toward SCV and flow divider block. Connect 3/8 x 90 power beyond hose (10) to top left port of tractor SCV. Connect 3/8 x 78 pressure hose (11) to elbow in lower port in left side of flow divider block. Connect 3/8 x 90 tank hose (12) to branch tee in upper port in left side of flow divider block.
3. Use plastic tie straps (21) to secure hoses to valve mounting tube (24), tractor footrest platform and under tractor seat.



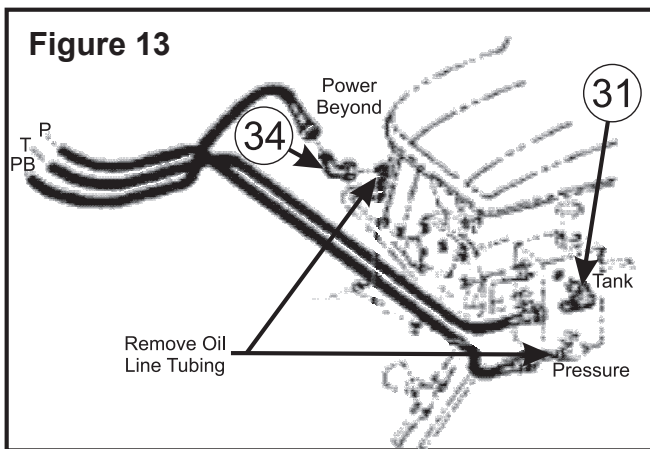
1050 TRACTORS WITHOUT POWER STEERING AND WITHOUT SCV (Figure 11)

1. Remove both plugs from pressure beyond ports of tractor junction block. Install 1/4 NPT hex socket pipe plug (32) into bottom (pressure) port to block internal hydraulic flow within the junction block. Install 3/4-3/4 straight fittings (33) into each port of junction block and install 3/4-3/4 x 90° elbow fittings (34) onto straight adapters (33). Remove plug from tractor tank port, located on left side of tractor transmission housing, and install tank elbow (from tractor dealer).
2. Route hoses down along valve mounting tube (24), under tractor footrest platform and up toward tractor junction block. Connect 3/8 x 78 pressure hose (11) to 3/4-3/4 x 90° elbow fitting (34) in bottom port of junction block. Connect 3/8 x 90 power beyond hose (10) to 3/4-3/4 x 90° elbow fitting (34) in top (power beyond) port of junction block. Route 3/8 x 90 tank hose (12) across tractor transmission housing to left side and connect end to tank elbow.
3. Use plastic tie straps (21) to secure hoses to valve mounting tube (24), tractor footrest platform and under tractor seat.



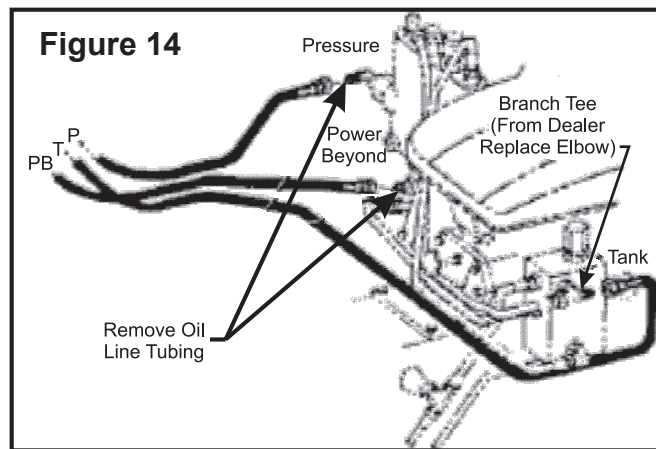
1050 TRACTORS WITHOUT POWER STEERING AND WITH SCV (Figure 12)

1. Remove the tractor oil line which connects “BYD” port of SCV (pressure) to upper (power beyond) port of tractor junction block, leaving oil line fittings in place. Disconnect the oil line from the tank elbow in the left side of tractor transmission housing. Replace tank elbow with tank tee (from tractor dealer) and reconnect oil line to one branch.
2. Route hoses down along valve mounting tube (24), under tractor footrest platform and up toward tractor junction block and SCV. Connect 3/8 x 78 pressure hose (11) to upper port of tractor junction block. Route 3/8 x 90 tank hose (12) across tractor transmission housing to left side and connect end to available branch of tank tee.
3. Use plastic tie straps (21) to secure hoses to valve mounting tube (24), tractor footrest platform and under tractor seat.



1050 TRACTORS WITH POWER STEERING AND WITHOUT SCV (Figure 13)

1. Remove tractor oil line which connects upper (power beyond) port of tractor junction block to lower (pressure) port in left side of power steering flow divider block, leaving oil line fittings in place. Install 3/4-3/4 x 90° elbow fitting (34) onto oil line fitting in upper port of tractor junction block. Remove plug from upper (tank) port in the left side of flow divider block and install 3/4-3/4 x 90° elbow fitting (31).
2. Route hoses down along valve mounting tube (24), under tractor footrest platform and up toward junction block and flow divider. Connect 3/8 x 90 power beyond hose (10) to elbow fitting (34) in upper port of junction block. Connect 3/8 x 78 pressure hose (11) onto oil line elbow in lower port in left side of flow divider. Connect 3/8 x 90 tank hose (12) onto elbow fitting (31) in upper port in left side of flow divider block.
3. Use plastic tie straps (21) to secure hoses to valve mounting tube (24), tractor footrest platform and under tractor seat.



1050 TRACTORS WITH POWER STEERING AND WITH SCV (Figure 14)

1. Remove tractor oil line which connects "BYD" port of SCV (pressure) to upper (power beyond) port of tractor junction block, leaving oil line fittings in place. Disconnect oil line from upper (tank) port in left side of power steering flow divider. Replace tank elbow with tank tee (from tractor dealer) and reconnect oil line to one branch.
2. Route hoses down along valve mounting tube (24), under tractor footrest platform and up toward tractor junction block and SCV. Connect 3/8 x 78 pressure hose (11) to oil line elbow in "BYD" port of SCV. Connect 3/8 x 90 power beyond hose (10) to oil line fitting in upper port of tractor junction block. Connect 3/8 x 90 tank hose (12) to available branch of tank tee.
3. Use plastic tie straps (21) to secure hoses to valve mounting tube (24), tractor footrest platform and under tractor seat.

PRINCE LVR VALVE SERVICE

Following is an outline procedure for disassembling and reassembling valve.



WARNING: The valve has a factory pre-set valve relief setting. Tampering with this setting can cause serious injury to operator and damage to tractor or loader. Unauthorized adjustments or service to valve relief will VOID WARRANTY of both loader and tractor. If adjustments or service to valve relief are required during warranty period, an authorized service department must be consulted for authorization.

VALVE DISASSEMBLY (Figure 16)

NOTE: Mark or tag all parts so they are reinstalled in their proper positions.

1. Slide boot (6) to top of handle (34). Remove hex head cap screws (36) from rod ends (9 & 10). Remove handle with boot and adapter plate (8). Remove nuts (28 & 31) from spool stud (7) and rod end assemblies (10). Remove spool stud (7) and rod end assemblies (10) from valve.

NOTE: Spool adapters (33) are factory assembled. Removal from spools is not necessary. If replacing a damaged adapter, clean threads with loctite primer and install using loctite 262.

2. Remove hex head cap screws (13) and end caps (14) from both spools. Remove detent sleeve (12) from regen spool. Remove steel balls (20), poppet (21), and poppet spring (19) from detent retainer (24). Remove retaining flat (15) and detent spacer (16) from regen spool.
3. Secure handle end of regen spool. Using a rod through retainer ball holes, remove detent retainer (24) from regen spool.

NOTE: Detent retainers (18 & 24) are installed on spools using Loctite 222 or equivalent. If spool adapter comes loose instead of detent retainer, pull spool completely out of valve and secure spool using vice grips on land section of spool not machined for valve bore.

4. Remove washer (17), centering spring (26), and stop cup (23) from regen spool.
5. Holding in on float detent sleeve (22), push in float spool from handle end and remove steel balls (20) from float detent retainer (18). Remove float detent sleeve (22), poppet (21), poppet spring (19), retaining flat (15) and spacer (16) from float spool.

6. Secure handle end of float spool. Using a rod through retainer ball holes, remove detent retainer (18) from float spool.

NOTE: Detent retainers (18 & 24) are installed on spools using Loctite 222 or equivalent. If spool adapter comes loose instead of detent retainer, pull spool completely out of valve and secure spool using vice grips on land section of spool not machined for valve bore.

Remove washer (17), centering spring (26) and stop cup (23) from float spool.

7. Push spools in from handle end until rear spool seals (1) are exposed. Using wire hook and screwdriver remove rear spool seals. Push spools in from the rear until front spool seals (1) are exposed. Using wire hook and screwdriver remove front spool seals.
8. Clean all parts, including valve body, in suitable cleaning solvent. After cleaning parts with solvent, use air pressure to blow any dirt or excess solvent from all parts including inside of valve body.

VALVE REASSEMBLY

1. Examine all parts for wear and damage and replace if necessary.
2. Lubricate all O-rings and spools with oil to prevent damage when assembling.
3. Lubricate all detent and spring centering parts with a light coat of grease before assembling.
4. Reassemble all parts in reverse order of disassembly.

NOTE: Use Loctite 222 or equivalent when installing detent retainers (18 & 24).

RELIEF VALVE, LOAD CHECK PLUGS and POWER BEYOND SLEEVE

NOTE: Relief valve (3), load check plugs (27) and power beyond sleeve (2) may be removed separately to clean inspect or replace parts without removing valve spools.

NOTE: If repairing or replacing relief valve (3), torque larger hex nut (relief body) to 20-25 ft-lbs.

REPLACING HANDLE PARTS

If replacing damaged handle parts, clean threads with loctite primer and install using loctite 242. Torque parts as shown in Figure 4.

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PARTS LIST — VALVE AND PLUMBING KIT

Item	Part No.	Description	QTY.
1	53462	VALVE, Prince LVR (1800 PSI)	1
2	G180132	SCREW, Cap, 3/8-16 x 2-1/4	2
3	43517	HANDLE, Standard	1
4	43451	ANGLE, Decal Mounting	1
5	G9413534	NUT, Lock, 3/8-16	2
6	G180077	SCREW, Cap, 5/16-18 x 3/4	3
7	G120214	WASHER, Lock, 5/16	3
8	38902	BALL, Handle	1
9	32845-7	FITTING, Elbow, 9/16-18 JIC x 3/4-16 O-ring, 90°	1
10	39201-1	HOSE, 3/8 X 90 (Power Beyond)	1
11	38576-2	HOSE, 3/8 x 78 (Pressure)	1
12	38576-5	HOSE, 3/8 x 90 (Tank)	1
13	G271506	NUT, Hex, 7/16-20	1
14	43635	BOOT	1
15	6147-4	COUPLER, Female	4
16	36240-9	SPIRAL BAND, Plastic, Blue, 1"	1
	36240-10	SPIRAL BAND, Plastic, Red, 1"	1
	36240-11	SPIRAL BAND, Plastic, Yellow, 1"	1
	36240-12	SPIRAL BAND, Plastic, Green, 1"	1
17	36336-1	HOSE, 3/8 x 78	4
18	36240-5	SPIRAL BAND, Plastic, Blue, 5/8	1
	36240-6	SPIRAL BAND, Plastic, Red, 5/8	1
	36240-7	SPIRAL BAND, Plastic, Yellow, 5/8	1
	36240-8	SPIRAL BAND, Plastic, Green, 5/8	1
19	6137-4	COUPLER, Male	4
20	43453	DECAL, Single Handle Control	1
21	8137-1	STRAP, Adjustable	5
22	39280-7	FITTING, Adapter, 3/4-16 O-ring x 3/8 NPT	4
23	43450	PLATE, Valve Mounting	1
24	44646	BRACKET, Valve Mounting	1
25	34853-2	SLEEVE, Nylon	66"
26	7438-1	TARP Strap	1
27	G180185	SCREW, Cap, 1/2-13 x 2-1/2	2
28	G120396	WASHER, Flat, 1/2	2
29	G9414074	NUT, Lock, 1/2-13	2
30	44286-1	FITTING, Adapter, SAE, O-ring	2
31	32845-2	FITTING, Elbow, 3/4 JIC x 3/4 SAE, 90°	1
32	G444691	FITTING, Plug, 1/4 NPT	1
33	32844-4	FITTING, Adapter, 3/4 JIC x 3/4 SAE	2
34	34128-2	FITTING, Elbow, 3/4 x JIC, 90°	2

PLUMBING LOADER TO CONTROL VALVE

provided in right side frame channel.

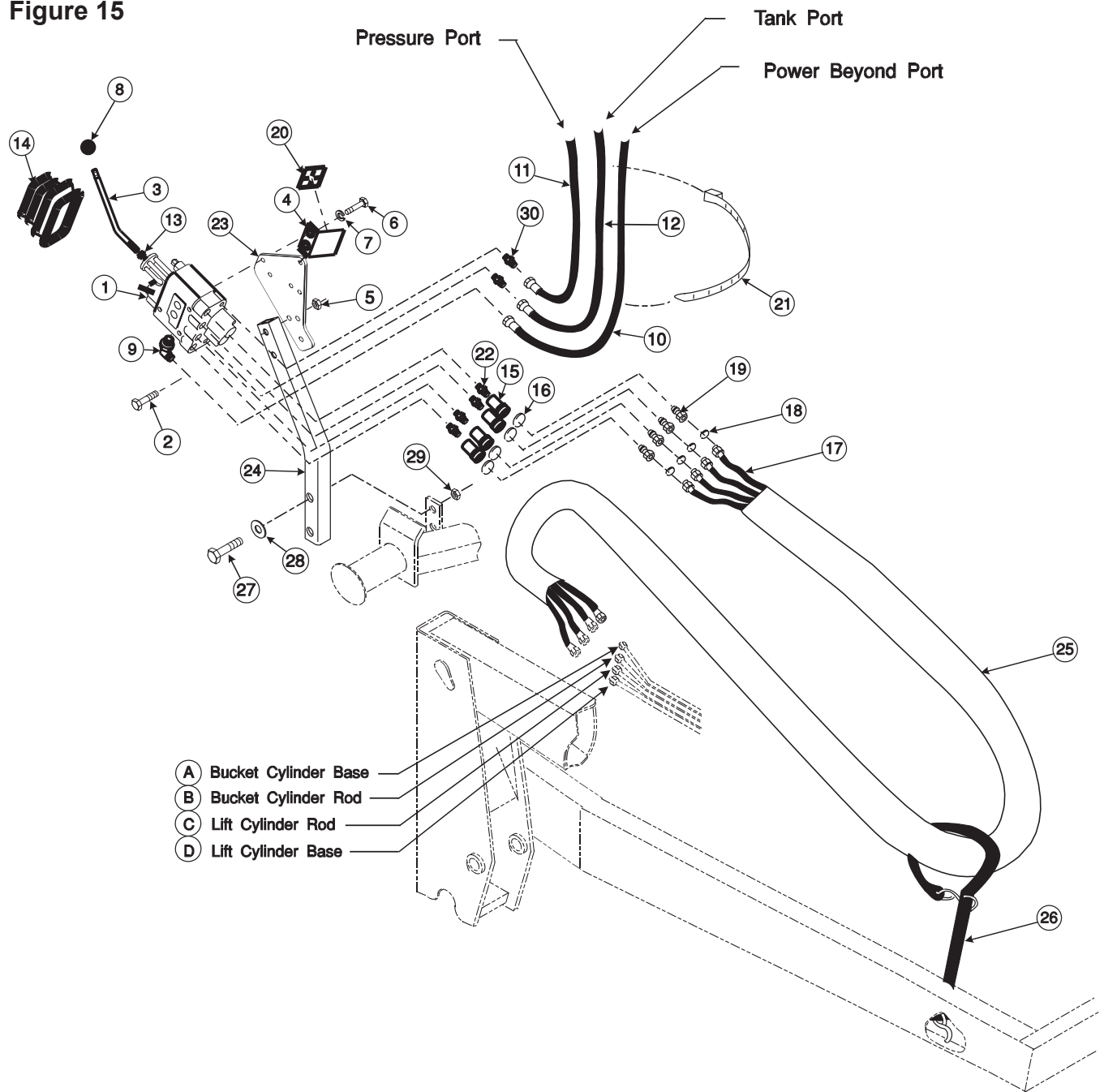
1. Install 3/8 x 72 hoses (17) onto boom oil line tubes. Install and tighten hose fittings one at a time from the bottom up. Loosening the closest oil line clamp will ease installation.
2. Install spiral bands (18) onto free ends of hoses (17) to match bands on female quick couplers (15). Slide nylon sleeve (25) over hoses (17) and install male quick couplers (19) onto free ends.
3. Connect hoses from upper two boom oil lines to upper quick couplers and connect hoses from lower two boom oil lines to lower quick couplers (Figure 2). Wrap rubber strap (26) around nylon sleeve and hook on itself. Attach free end of rubber strap to hole
4. After all plumbing has been completed slowly cycle lift and bucket cylinders several times to purge air from hydraulic system. Retract cylinders and shut off tractor engine. Replenish tractor hydraulic system.



WARNING: Escaping hydraulic fluid under pressure can have sufficient force to penetrate skin causing serious personal injury. If injured by escaping hydraulic fluid, obtain medical treatment immediately.

NOTE: When cycling loader, operate loader according to operation decal (20) on valve box. If direction of control lever is wrong, or loader will not lower, recheck connections shown.

Figure 15



2-6392**PARTS LIST – PRINCE LVR VALVE**

Item	Part No.	Description	Qty.
1	43633	SEAL KIT	1
2	43636	POWER BEYOND SLEEVE	1
3	43637-4	RELIEF VALVE (1800 PSI)	1
4	43638	FLOAT KIT, (Includes 13, 14, 15, 16, 17, 18, 19, 20, 21, 22, 23, and 26)	1
5	43639	REGEN KIT, (Includes items 12, 13, 14, 15, 16, 17, 19, 20, 21, 24, and 26)	1
6	43635	BOOT, Rubber, Valve Handle	1
7	51076	STUD, Spool	1
8	51078	ADAPTER PLATE	1
9	38900-4	ROD END	1
10	51075	ROD END, Assembly	2
11	51079	CLEVIS	1
14	44476-2	END CAP (Manufacturer's part number (HC-V-AA26) stamped on end cap identifies valve and relief setting)	2
25	44743-5	SCREW, Cap,Socket Head, 1/4-20 x 1/2"	2
26	44460	PLUG, Load Check	2
28	41836-2	NUT, Hex, 5/16"	3
29	44743-3	SCREW, Cap, Socket Head, 1/4-20 x 7/8"	2
30	51080	PLATE	1
31	51081	WASHER, Shim, 5/16"	1
32	G271506	NUT, Hex, 7/16-20	1
33	51077	END, Spool	2
34	43517	HANDLE, Valve, Standard	1
35	38902	BALL, Handle	1
36	44743-4	SCREW, Cap, Socket Head, 5/16-24 x 3/4"	3
37	G120383	WASHER, Lock, 7/16"	1

NOTE: Individual items not listed in repair parts listing are not available separately.

Figure 16

Spool ends do not need to be removed to service valve. If replacing damaged spool end, clean threads using Loctite® primer and install using Loctite® 262.

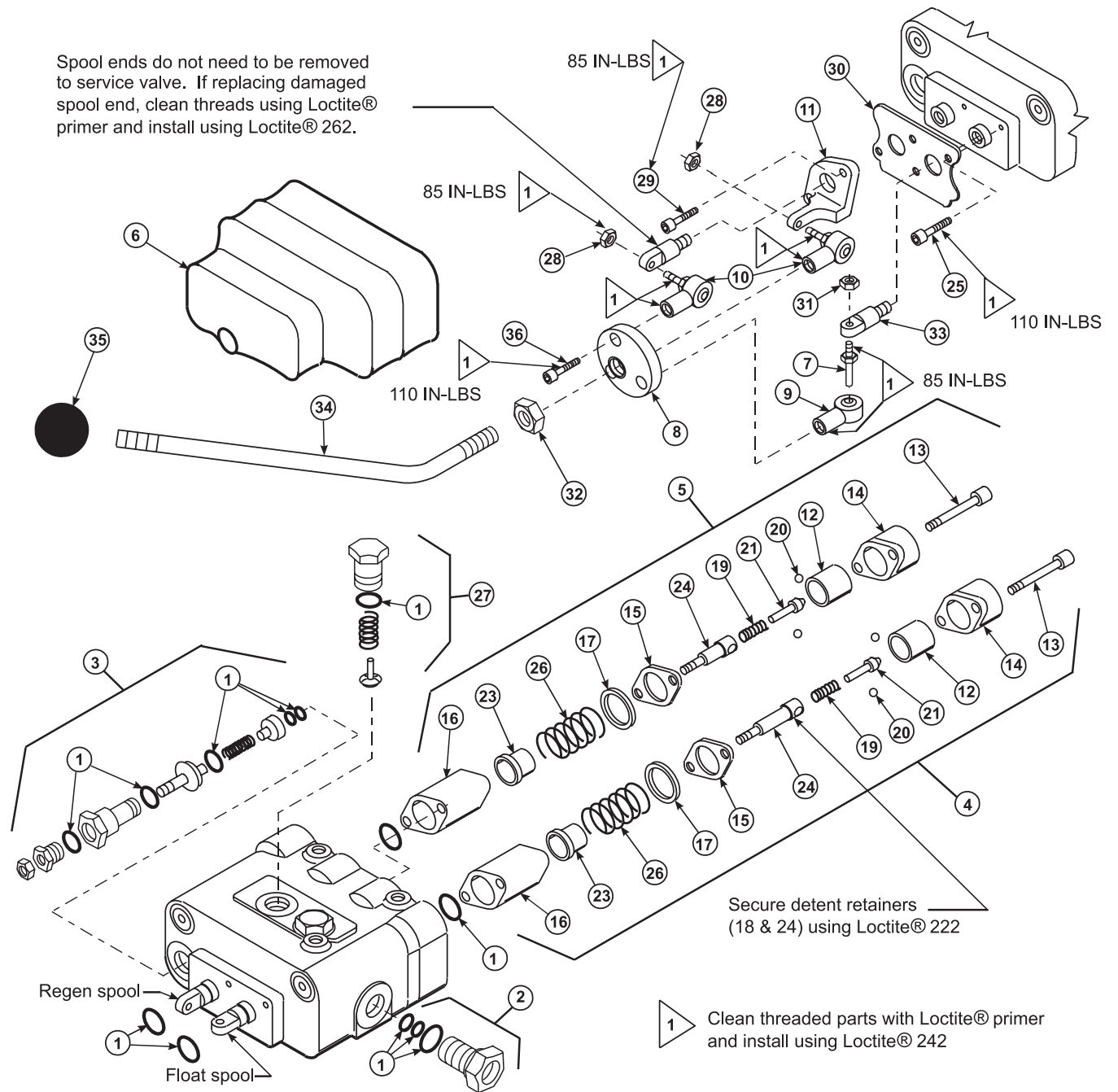
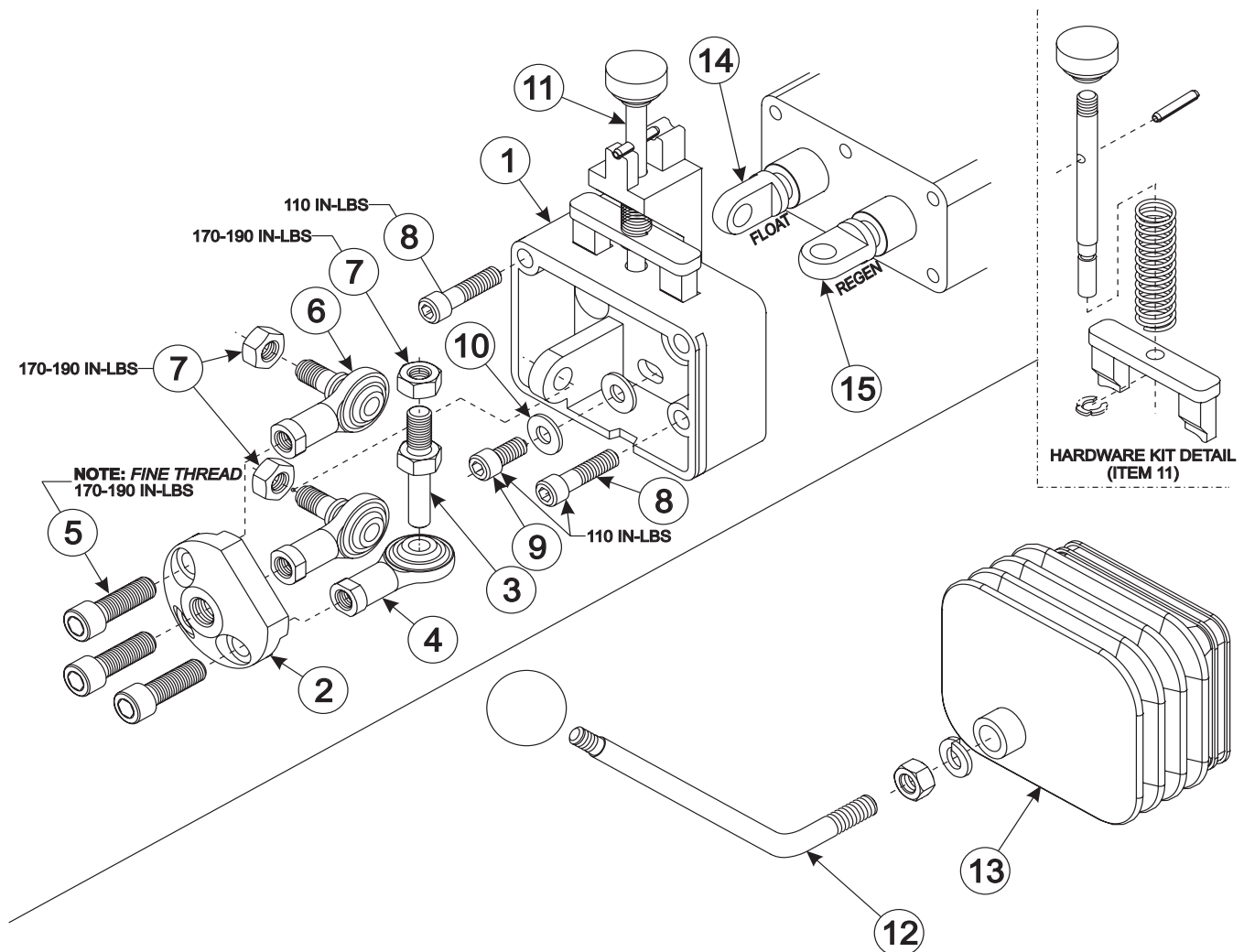


Figure 17
VALVE EQUIPPED WITH LOCKOUT FEATURE



PARTS LIST - JOYSTICK SUB-ASSY WITH DUAL SPOOL LOCK

Item	Part No.	Description	Qty.
1	*	CLEVIS, Spool Lock	1
2	*	PLATE, Adapter	1
3	55821	STUD, Spool	1
4	55822	END, Rod	1
5	*	SCREW, Cap	3
6	55823	ASSY, Rod End	2
7	*	NUT, Hex	3
8	*	SCREW, Cap	2
9	*	SCREW, Cap	1
10	*	WASHER, Flat	1
11	55824	KIT, Spool Lock Hardware	1
12	56004	KIT, Bent Handle	1
13	55826	KIT, Boot/Cable Tie	1
14	55917	ADAPTER, Float Spool	1
15	55918	ADAPTER, Regen Spool	1
16	55827	KIT, Sub-Assy, Includes Items 1-11	1

* **NOTE:** Individual items not listed in repair parts listing are not available separately.
For valve block service parts, see previous page.

GENERAL TORQUE SPECIFICATIONS

USE THE FOLLOWING TORQUES WHEN SPECIAL TORQUES ARE NOT GIVEN

Standard American and Metric Cap Screws

AMERICAN STANDARD CAP SCREWS										METRIC CAP SCREWS							
SAE Grade	5				8				Metric Class	8.8				10.9			
Typ. Head Markings									Typ. Head Markings								
Cap Screw	TORQUE				TORQUE				Cap Screw	TORQUE				TORQUE			
Size	FT-LBS		N-m		FT-LBS		N-m		Size	FT-LBS		N-m		FT-LBS		N-m	
Inches	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	Millimeters	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX
1/4 - 20	6.25	7.25	8.5	10	8.25	9.5	11	13	M6 x 1.00	6	8	8	11	9	11	12	15
1/4 - 28	8	9	11	12	10.5	12	14	16	M8 x 1.25	16	20	21.5	27	23	27	31	36.5
5/16 - 18	14	15	19	20	18.5	20	25	27	M10 x 1.50	29	35	39	47	42	52	57	70
5/16 - 24	17.5	19	23	26	23	25	31	34	M12 x 1.75	52	62	70	84	75	91	102	123
3/8 - 16	26	28	35	38	35	37	47.5	50	M14 x 2.00	85	103	115	139	120	146	163	198
3/8 - 24	31	34	42	46	41	45	55.5	61	M16 x 2.50	130	158	176	214	176	216	238	293
7/16 - 14	41	45	55.5	61	55	60	74.5	81	M18 x 2.50	172	210	233	284	240	294	325	398
7/16 - 20	51	55	69	74.5	68	75	92	102	M20 x 2.50	247	301	335	408	343	426	465	577
1/2 - 13	65	72	88	97.5	86	96	116	130	M22 x 2.50	332	404	450	547	472	576	639	780
1/2 - 20	76	84	103	114	102	112	138	152	M24 x 3.00	423	517	573	700	599	732	812	992
9/16 - 12	95	105	129	142	127	140	172	190	M27 x 3.00	637	779	863	1055	898	1098	1217	1488
9/16 - 18	111	123	150	167	148	164	200	222	M30 x 3.00	872	1066	1181	1444	1224	1496	1658	2027
5/8 - 11	126	139	171	188	168	185	228	251									
5/8 - 18	152	168	206	228	203	224	275	304									
3/4 - 10	238	262	322	355	318	350	431	474									
3/4 - 16	274	305	371	409	365	402	495	544									
7/8 - 9	350	386	474	523	466	515	631	698									
7/8 - 14	407	448	551	607	543	597	736	809									
1 - 8	537	592	728	802	716	790	970	1070									
1 - 14	670	740	908	1003	894	987	1211	1337									

NOTE: These values apply to fasteners as received from supplier, dry or when lubricated with normal engine oil. They do not apply if special graphite or moly sulphide greases or other extreme lubricants are used.

37° JIC Fittings

Size	Thread Size	Assembly Torque		Tube Connection F. F. F. T.	Swivel Nut or Hose Connection F. F. F. T.
		in.·lb.	ft.·lb.		
-4	7/16 - 20	140 ± 10	12 ± 1	2	2
-5	1/2 - 20	180 ± 15	15 ± 1	2	2
-6	9/16 - 18	250 ± 15	21 ± 1	1 1/2	1 1/4
-8	3/4 - 16	550 ± 25	45 ± 5	1 1/2	1
-12	1 1/16 - 12	1000 ± 50	85 ± 5	1 1/4	1
-16	1 5/16 - 12	1450 ± 50	120 ± 5	1	1
-20	1 5/8 - 12	2000 ± 100	170 ± 10	1	1
-24	1 7/8 - 12	2400 ± 150	200 ± 15	1	1
-32	2 1/2 - 12	3200 ± 200	270 ± 20	1	1

O-Ring Face Seal Tube/

Hose Swivel Nut

Metric Tube O.D. (mm)	Dash Size	Thread Size (in.)	Swivel Nut Hex Size (in.)	Swivel Nut Torque	
				N-m	lb _f ·ft
5	-3	--	--	--	--
6	-4	9/16 - 18	11/16	16	12
8	-5	--	--	--	--
10	-6	11/16 - 16	13/16	24	18
12	-8	13/16 - 16	15/16	50	37
16	-10	1 - 14	1-1/8	69	51
20	-12	1-3/16 - 12	1-3/8	102	75
22	-14	1-3/16 - 12	--	102	75
25	-16	1-7/16 - 12	1-5/8	142	105
32	-20	1-11/16 - 12	1-7/8	190	140
38	-24	2 - 12	2-1/4	217	160
50.8	-32	--	--	--	--

SAE O-Ring Fittings

Size	Swivel Nut or Hose	Assembly Torque		F. F. F. T.
		in.·lb.	ft.·lb.	
2	5/16 - 24	90 ± 5	7.5 ± 0.5	1 ± .25
3	3/8 - 24	170 ± 10	14 ± 1	1 ± .25
4	7/16 - 20	220 ± 15	18 ± 1	1 ± .25
5	1/2 - 20	260 ± 15	22 ± 1	1 ± .25
6	9/16 - 18	320 ± 20	27 ± 2	1.5 ± .25
8	3/4 - 16	570 ± 25	48 ± 2	1.5 ± .25
10	7/8 - 14	1060 ± 50	90 ± 5	1.5 ± .25
12	1 1/16 - 12	1300 ± 50	110 ± 5	1.5 ± .25
14	1 3/16 - 12	1750 ± 75	145 ± 6	1.5 ± .25
16	1 5/16 - 12	1920 ± 125	160 ± 6	1.5 ± .25
20	1 5/8 - 12	2700 ± 150	225 ± 12	1.5 ± .25
24	1 7/8 - 12	3000 ± 150	250 ± 12	1.5 ± .25
32	2 1/2 - 12	3900 ± 200	325 ± 15	1.5 ± .25

INSTALLATION INSTRUCTIONS