

Keep With Operator's Manual

VALVE AND PLUMBING KIT 4211 LOADER MASSEY FERGUSON 471 & 481 ROPS TRACTORS EQUIPPED WITH SAUER DANFOSS REAR REMOTE VALVE

Valve and plumbing kit can be installed using tools ordinarily available. Valve control handle linkage has been factory preassembled for ease of installation. Shut off engine and engage brakes during installation.

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.

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

1. Remove power beyond sleeve from power beyond port in bottom of valve (1) and replace with 1-1/16" plug (9)(See figure 1). Install adapter fittings (20), female quick couplers (15) and 1" colored bands (16) to working ports of valve (1)(See figure 3).
2. Fasten valve mounting plate (21) to valve mounting bracket (22) using 3/8 x 2-1/4" cap screws (2) and 3/8" lock nuts (5).
3. Fasten valve (1) with power beyond plug on the bottom to valve mounting plate (21) using 5/16 x 3/4" cap screws (6) and 5/16" lock washers (7)(See figures 1 & 3).
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 (18) and apply it to decal mounting plate (See figures 2 & 3).

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.

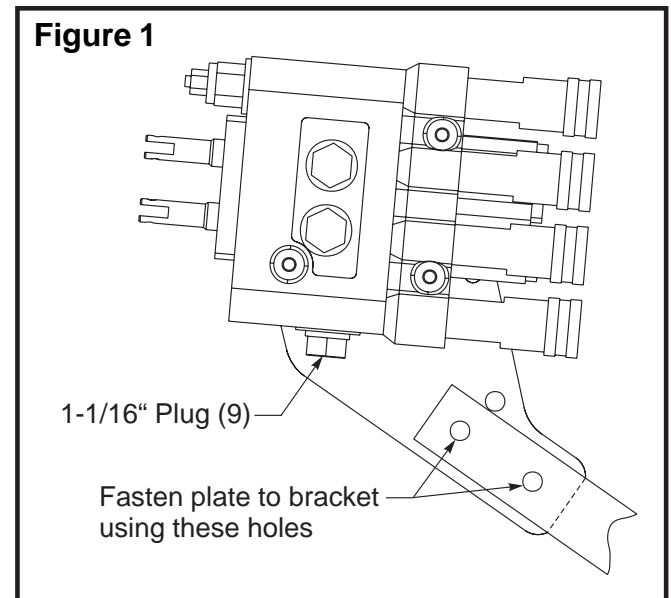
6. Attach valve mounting bracket (22) to right midmounting assembly using 1/2 x 2-1/2" cap screws (24), 1/2" flatwashers (23) and 1/2" lock nuts (26).



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.

Figure 1

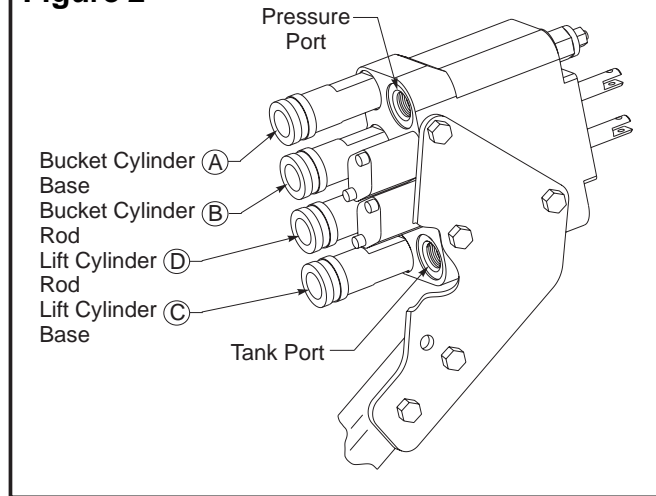


PLUMBING CONTROL VALVE TO TRACTOR HYDRAULICS

1. Install 1/2 x 102" hose (10) to pressure port on valve (1).
2. Slide 102" sleeve (12) over pressure hose (10).
3. Install 1/2 x 120" hose (11) to tank port on valve (1).
4. Slide 120" sleeve (27) over tank hose (11).
5. Route hoses (10 & 11) down along valve mounting tube, behind midmounting, under platform, over rear axle, and up to rear remote area.
6. Remove O-Ring plug on right hand end cover of tractor rear remote valve. Install power beyond sleeve (25) into port from which O-Ring plug removed.
7. Attach 90° fitting (28) to hydraulic cover block (25).
8. Attach 102" pressure hose (10) to 90° fitting (28).
9. Remove tank cap from left side of rear control valve tee fitting.
10. Loop 120" tank hose (11) over rear control valve and fasten to tee fitting.
11. Bundle hoses and secure to tractor frame and valve stand using adjustable straps (19) and tarp strap (17).

NOTE: Rear control valve flow control knobs (located under control valve) must be turned to maximum flow position (refer to tractor's operator's manual).

Figure 2



PLUMBING LOADER TO CONTROL VALVE

1. Connect male ends of supplied loader hoses to corresponding female quick couplers (15) (See figure 2).
2. Tighten all connections.
3. 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.

NOTE: When cycling loader, operate loader according to operation decal (18) on valve box. If direction of control lever is wrong, or loader will not lower, recheck connections shown.



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.

PARTS LIST - PLUMBING CONTROL VALVE

Item	Part No.	Description	Qty.
1	51033	VALVE, Prince LVR (2500 PSI)	1
2	41838-19	SCREW, Cap, 3/8-16 x 2-1/4"	2
3	43517	HANDLE, Standard	1
4	43451	ANGLE, Decal Mounting	1
5	41840-3	NUT, Lock, 3/8-16	2
6	41838-26	SCREW, Cap, 5/16-18 x 3/4"	4
7	41837-2	WASHER, Lock, 5/16"	4
8	38902	BALL, Handle	1
9	6027-4	PLUG, 1-1/16-12	1
10	42923-6	HOSE, 1/2 x 102" (Pressure)	1
11	51616-1	HOSE, 1/2 x 120" (Return)	1
12	34853-8	SLEEVE, 1.59 x 102"	1
13	G271506	NUT, Hex, 7/16-20	1
14	43635	BOOT	1
15	6147-8	COUPLER, Female, 1/2" NPT	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	7438-1	TARP STRAP	1
18	43453	DECAL, Single Handle Control	1
19	8137-1	STRAP, Adjustable	4
20	39280-8	FITTING, Adapter, 3/4-16 O-Ring x 1/2 NPT	4
21	43450	PLATE, Mounting	1
22	51620	BRACKET, Valve Mounting	1
23	42502-10	WASHER, Flat, 1/2"	2
24	41838-25	SCREW, Cap, 1/2-13 x 2-1/2"	2
25	52990	POWER BEYOND SLEEVE (Sauer Dannfoss CD12828)	1
26	41840-5	NUT, Lock, 1/2-13	2
27	34853-57	SLEEVE, 1.59 x 120"	1
28	32845-3	FITTING, 90° Elbow Adapter, 7/8-14 O-Ring x 7/8-14 JIC	1

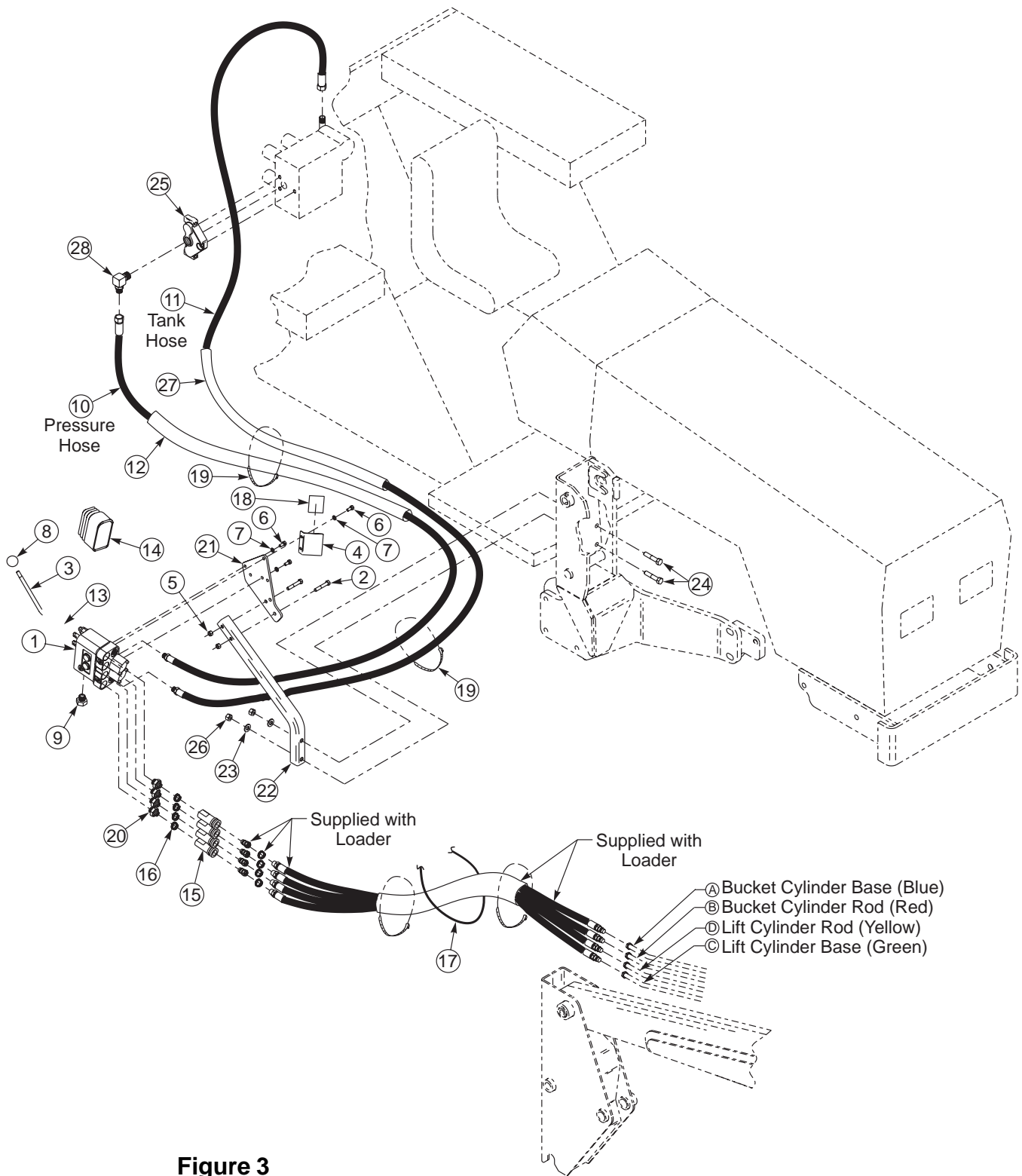


Figure 3
Plumbing Control Valve
to Loader and
Tractor Hydraulics

PRINCE LVR VALVE SERVICE

Following is an outline procedure for disassembling and reassembling valve.



WARNING: *The valve has a valve relief setting pre-set at the factory. 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 5)

NOTE: *It is advisable to mark or tag all parts so they will be reinstalled in their proper position.*

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

NOTE: *Spool adapters (38) 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 detent 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 on 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 (40) 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 5.

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

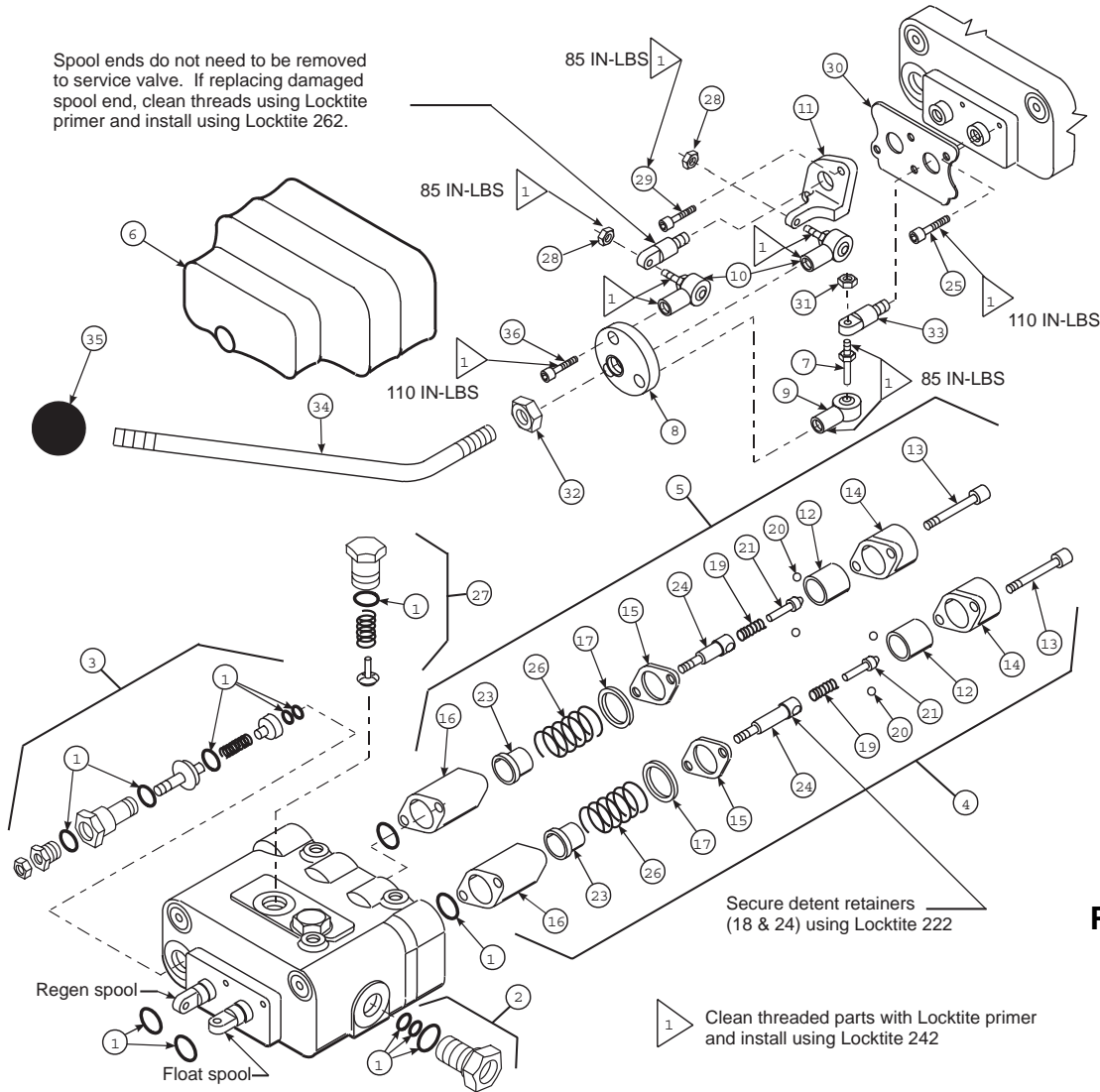


Figure 4
Prince LVR
Valve

PARTS LIST - REPAIR PARTS

Item	Part No.	Description	Qty.
1	43633	SEAL KIT	1
2	43636	POWER BEYOND SLEEVE	1
3	43637-2	RELIEF VALVE (2500 PSI)	1
4	43638	FLOAT KIT (Includes items 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	1
7	43640	STUD, Spool	1
8	43641	ADAPTER PLATE	1
9	38900-5	ROD END	1
10	43642	ROD END, Assembly	2
11	43643	CLEVIS	1
14	44476-5	END CAP (Manufacturers part number(HC-V-AA24) stamped on end cap identifies valve and relief setting)	2
29	44743-3	SCREW, Cap, Socket Head, 1/4-20 x 7/8	-
36	44743-2	SCREW, Cap, Socket Head, 1/4-28 x 3/4	-
38	44707	END, Spool	-
39	44744	PLATE	1
41	44743-1	SCREW, Cap, Socket Head, 1/4-20 x 3/8	-

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

INSTALLATION INSTRUCTIONS