

VALVE AND PLUMBING KIT INSTRUCTIONS NEW HOLLAND TRACTORS WITH TANDEM GEAR PUMP HYDRAULIC SYSTEM

MODEL	2WD	4WD	LESS CAB	WITH CAB
5640, 6640, 7740	X	X		X

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.

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.

INSTALLING VALVE MOUNTING BRACKET (Figure 2)

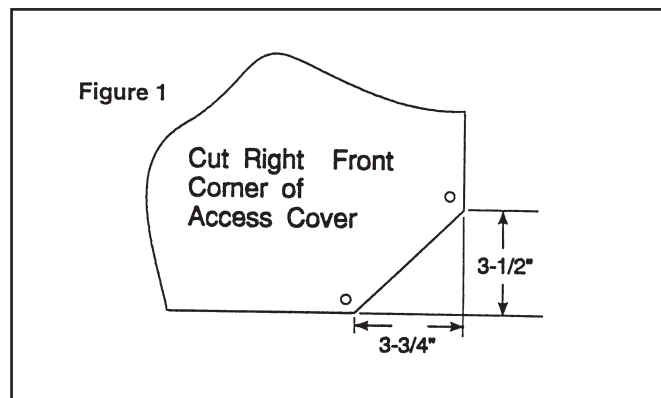
1. Temporarily remove right steps and right step mounting bracket. If necessary, temporarily remove batteries.
2. Install valve mounting bracket (2) and step mounting bracket to underside of cab using 10MM x 45MM cap screws (23) and original lock washers. Mounting bracket (2) bolt holes are slotted to provide adjustment for control cable (28) and quick coupler (18 & 31) clearance.

ATTACHING VALVE TO VALVE MOUNTING BRACKET (Figure 2)

1. Install 7/8 O-ring x 1/2 NPT adapter fittings (33), female couplers (18) and colored rings (32) to working ports of valve (1).
2. Install 9/16 O-ring x 7/16 JIC adapter (21) to load sense port of valve. Install 1-1/16 O-ring x 7/8 JIC adapter fitting (10) to tank port of valve. Install 1-1/16 O-ring x 1-1/16 JIC 45 adapter fitting (36) to pressure port of valve.
3. Install valve (1) to valve mounting bracket (2) using 8MM x 25MM cap screws (8) and 5/16 lock washers (12).

INSTALLING REMOTE HANDLE AND CONTROL CABLES (Figure 2)

1. Remove rubber floor mat from cab.
2. Install remote handle mounting stand (4) to inside of cab using existing 3/4 cap screw and 3/4 lock nut. Torque 3/4 cap screw and 3/4 lock nut to 262 ft lbs.



3. Remove access cover from floor of cab. Cut corner of access cover as shown (Figure 1).
4. Install control cables (28) to remote handle (29). Refer to instruction sheet provided with remote handle for proper cable installation procedure.

IMPORTANT: Cable activated when handle is moved forward or backward is connected to float spool of valve (spool with longer end cover).
5. Install remote handle (29) and decal mounting bracket (15) to stand (4) using 5/16 x 4 cap screws (22), 5/16 flat washers (26) and 5/16 lock nuts (35).
6. Route control cables through floor of cab. Loop cables 180° to attach to rear of valve.
7. Install control cables (28) to rear of valve using connector kits (30). Refer to instructions provided with connector kits for proper assembly and adjustment.

NOTE: To ease installation of control cables to valve, do not connect pressure and return hoses to valve until after control cables have been installed and adjusted.
8. Replace access cover on floor of cab. Cut rubber mat as needed to fit around mounting stand and replace rubber mat.
9. Install tie strap (24) around control cables (28) and handle mounting stand (4) to keep control cables away from accelerator pedal.

INSTALLING LOAD SENSING LINES (Figures 2 - 5)

1. Disconnect small load sense line from front of right tractor remote valve (this location is common to all tractors with two or four rear remote valves). If this small load sense line is short (less than 16 inches), disconnect other end of this line and discard. If this line is more than 16 inches long, slightly bend aside for now.
 2. Remove o-ring adapter fitting from front of tractor remote valve where small load sense line was connected. Screw shuttle valve (17) directly into port vacated. Make sure male tip with o-ring goes into tractor valve. Leave shuttle valve (17) loose at this time until best position is determined.
 3. Screw 7/16 x 9/16 x 90 elbow (11) into female port of shuttle valve. Position this elbow so:
 - A. If short load sense line is removed, 1/4 x 16 hose (20)(Figures 4 & 5) can be connected from 7/16 x 9/16 x 90 elbow (11) to fitting where other end of load sense line was removed. Connect 1/4 x 16 hose (20) and tighten all fittings and shuttle valve.
- OR:
- B. If steel load sense line is longer than 16 inches, it can be rerouted to screw directly into 7/16 x 9/16 x 90 elbow (11). Connect this load sense line to 7/16 x 9/16 x 90 elbow (11) and tighten fittings and shuttle valve. Discard 1/4 x 16 hose (20) since it will not be used.
 4. Connect 1/4 x 48 hose (16) from load sense port of auxiliary control valve (1) to male 7/16-20 flare end of shuttle valve. This completes the load sense circuit.

PLUMBING VALVE TO TRACTOR HYDRAULICS

1. A. Remove flow bolt at base of transmission filler tube at rear of tractor and replace it with 3/4 BSPP x 7/8 JIC adapter fitting (44) and 7/8 x 7/8 x 90° elbow (34) onto adapter fitting (44). Connect 1/2 x 65 hose (6) from tank port (outlet) of auxiliary control valve (1) to elbow fitting (34).
- OR
- B. Remove flow bolt at base of transmission filter tube at rear of tractor and replace it with return port fitting (14). Install 7/8 JIC adapter fitting (7) and 7/8 x 7/8 x 90° elbow (34) into return port (14). Connect 1/2 x 65 hose (6) from tank port (outlet) of auxiliary control valve (1) to elbow fitting (34).
 2. To ease removal and installation of tractor pressure line in step 3, disconnect tractor ground strap. Disconnecting tractor remote valve control cables from front of tractor remote valve spools may facilitate installation.

3. Remove existing pressure line from rearmost elbow on top of remote valve and priority pack on top of hydraulic lift cover. Install 7/8 O-ring x 1-1/16 flare straight fitting (38) into priority pack port. Install hydraulic tube with tee (39) onto fitting and to elbow on remote valve. Connect 3/4 x 39 hose (5) from auxiliary valve inlet port onto 1-1/16 tee fitting on tube (39). Reinstall control cables to remote valve.
4. Tractors with optional dual set of remote valves, remove rearmost elbows from both remote valves. Install 1" tee (9) on R.S. remote valve and attach pressure tube (39). Attach elbow end of 5/8 x 20 hose (43) to top of tee and attach other end of hose to straight fitting on L.S. Remote valve.
5. Attach clamp bracket (37) using existing 7/16 cap screw just in front of R.S. upper lift arm. Wrap clamp (40) around hose (5) and secure to bracket with 3/8 x 3/4 cap screw (41) and 3/8 nut (42).
6. Use small plastic tie straps (19) to hold inlet, outlet and load sensing hoses from rubbing against rotating 3-point lift arms, brake levers, shift levers, etc., on tractor that could cause hose wear.
7. Reinstall tractor batteries and step. Tighten fittings as required. The auxiliary valve installation is now complete.

PLUMBING LOADER TO CONTROL VALVE

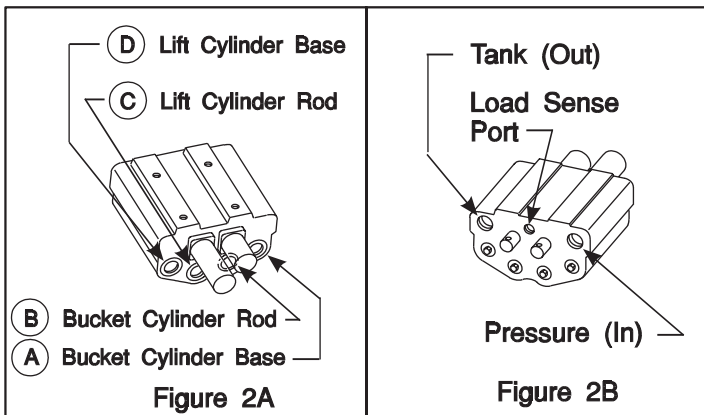
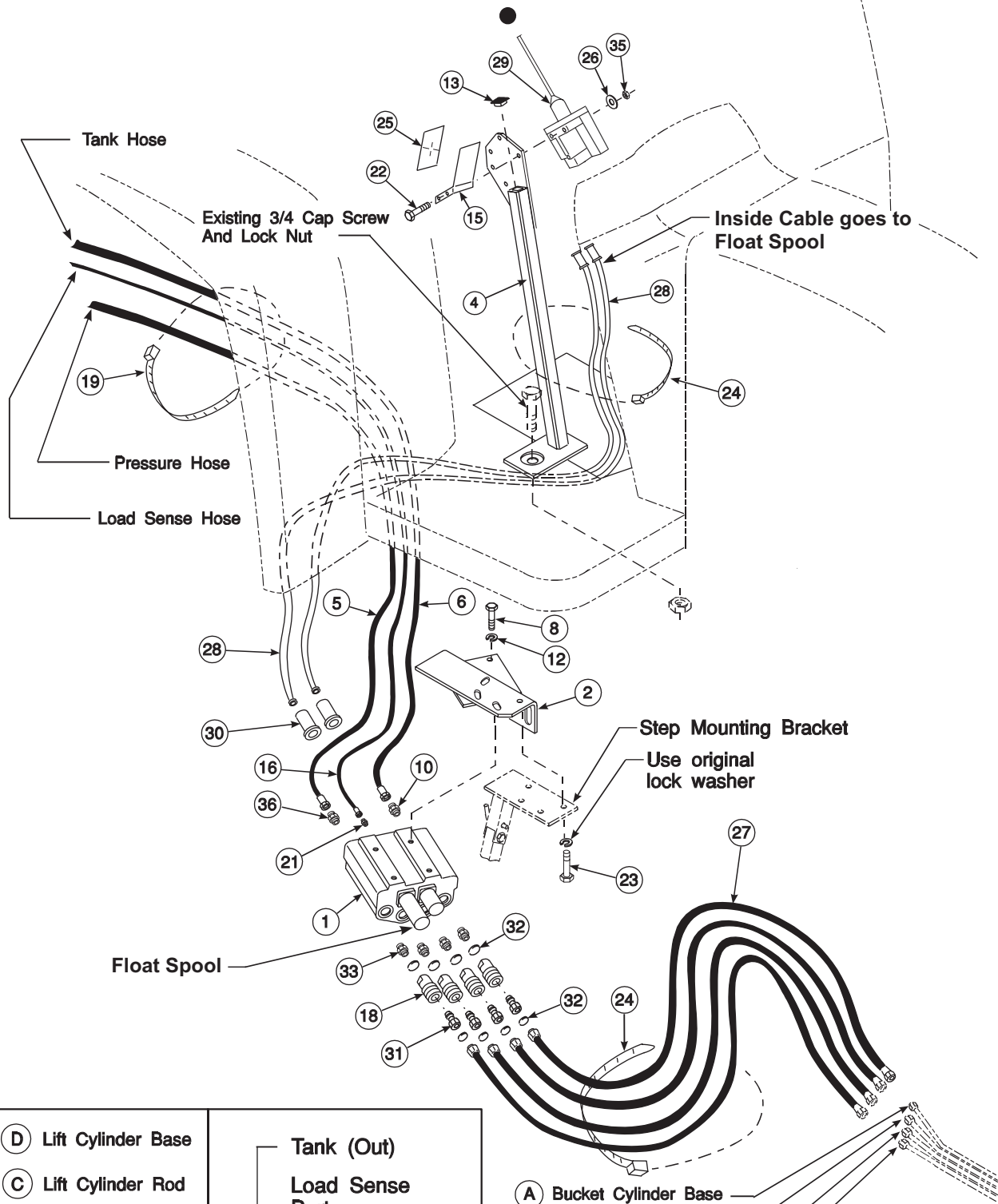
NOTE: For a simplified view of Plumbing Loader to Control Valve and Self Leveling Valve see (Figures 6 & 7). Refer to Figure 8 for location of rubber straps (3) on a typical loader installation.

1. Install 1/2 x 120 hoses (27) onto boom oil line tubes. Install and tighten hose fittings one at a time from bottom up. Loosening closest oil line clamp will ease installation.
2. Install male quick couplers (31), and colored rings (32) onto free ends of hoses. Do not overtighten male couplers.
3. Connect hoses as shown in Figures 2 and 2A.
4. After all plumbing has been completed and all parts have been tightened, start engine and slowly cycle lift and bucket cylinders several times to purge air out of system, then retract cylinders and shut off tractor engine. Add additional tractor hydraulic fluid as specified in tractor owners manual to bring level of hydraulic fluid up to full.

NOTE: When cycling loader, operate loader according to operation decal (25). If direction of control lever is wrong, or loader will not lower, recheck connections shown.

PARTS LIST

ITEM	SMC NO.	NH NO.	DESCRIPTION	QTY.
1	44753	SML44753	VALVE, Walvoil	1
2	45040	SML45040	BRACKET, Valve Mounting	1
3	7438-1	SML74381	STRAP, Tarp	2
4	44750	SML44750	STAND, Remote, Handle	1
5	41304-3	SML413043	HOSE, 3/4 x 39" (Pressure)	1
6	36698-14	SML3669814	HOSE, 1/2 x 65" (Tank)	1
7	32844-3	00325059	FITTING, Adapter, 7/8-14 JIC x 7/8-14 JIC	1
8	6090-121	00043127	SCREW, Cap, 8MM-1.25 x 25MM	4
9	40655-1	SML406551	FITTING, TEE, 1-14 O-ring Face Seal, Swivel Nut Run	1
10	32844-9	86507102	FITTING, 1-1/16-12 O-Ring x 7/8-14 JIC	1
11	40654-1	00984054	FITTING, Elbow, 9/16-18 O-ring Face Seal x 7/16-20 SAE O-ring	1
12	G120214	00080681	WASHER, Lock, 5/16	4
13	44274-1	SML442741	PLUG, Square, Plastic	1
14	40639	SML40639	RETURN PORT, Fitting	1
15	44287	SML44287	BRACKET, Decal Mounting	1
16	40656-1	SML406561	HOSE, 1/4 x 48"	1
17	40777	SML40777	SHUTTLE VALVE	1
18	6147-8	SML61478	COUPLER, Female	4
19	8137-1	SML81371	STRAP, Adjustable Tie, 3/16 x 11	2
20	40776-1	SML407761	HOSE, 1/4 x 16"	1
21	32844-12	00139398	FITTING, Adapter, 9/16-18 O-ring x 7/16-20 JIC	1
22	G189298	00088964	SCREW, Cap, 5/16-18 x 4	3
23	6090-9	00325829	SCREW, Cap, 10MM-1.5MM x 45MM	4
24	8137-3	SML81373	STRAP, Adjustable, Tie, 1/2-x 20	2
25	38929	SML38929	DECAL, Loader Operation	1
26	G120393	0087362	WASHER, Flat, 5/16	3
27	36845-5	SML368455	HOSE, 1/2 x 120"	4
28	44795-2	SML447952	CABLE, Control (70")	2
29	44471	SML44471	HANDLE, Remote	1
30	44762	SML44762	CONNECTOR KIT, Cable	2
31	6137-6	SML61376	COUPLER, Male	4
32	36240-9	SML362409	RING, 1", Blue	2
	36240-10	SML3624010	RING, 1", Red	2
	36240-11	SML3624011	RING, 1", Yellow	2
	36240-12	SML3624012	RING, 1", Green	2
33	39280-10	SML3928010	FITTING, Adapter, 7/8-14 O-ring x 1/2 NPT	4
34	34128-1	00182977	FITTING, Elbow, 7/8-14 JIC Swivel x 7/8-14 JIC, 90°	1
35	G9413447	00087382	NUT, Lock, 5/16-18	3
36	31213-3	SML312133	FITTING, Elbow, 1-1/16 O-ring x 1-1/16-12 JIC45	1
37	41301	SML41301	BRACKET, Angle	1
38	45184	SML45184	FITTING, Adapter, (Machined)	1
39	41302	SML41302	OIL LINE, Assembly	1
40	8222-5	SML8222-5	CLAMP, Tube	1
41	G180120	00255918	SCREW, Cap, 3/8-16 x 3/4	1
42	G120377	09637692	NUT, Hex, 3/8-16	1
43	41303-1	SML413031	HOSE, 5/8 x 20 (Dual Remote)	1
44	36249-2	SML362492	FITTING, Adapter, 3/4-16 DSPP x 7/8-14 JIC	1



- (A) Bucket Cylinder Base
- (B) Bucket Cylinder Rod
- (C) Lift Cylinder Rod
- (D) Lift Cylinder Base

Figure 2
Plumbing Control Valve
to Loader and
Tractor Hydraulics

Figure 3
Plumbing Control Valve
to Single Set of
Rear Remotes

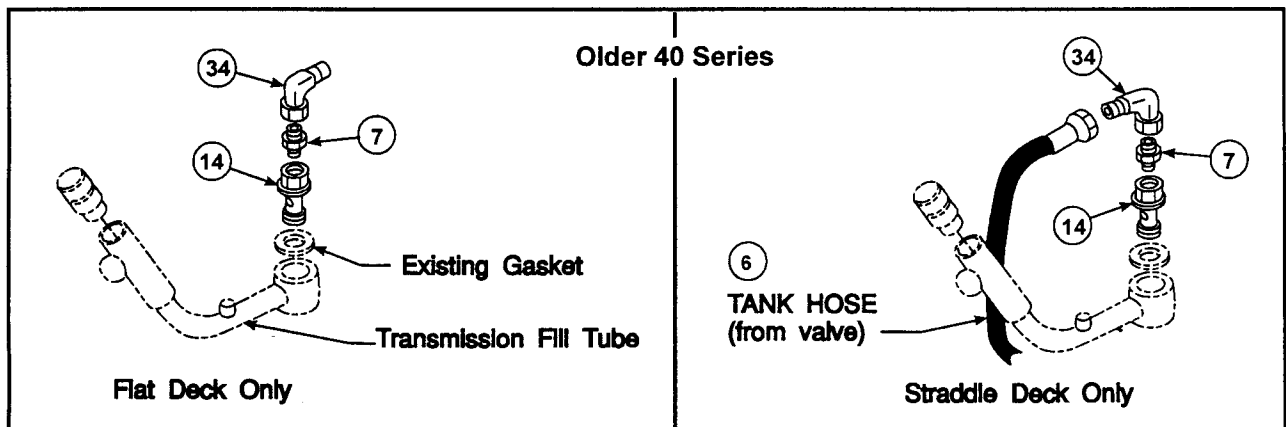
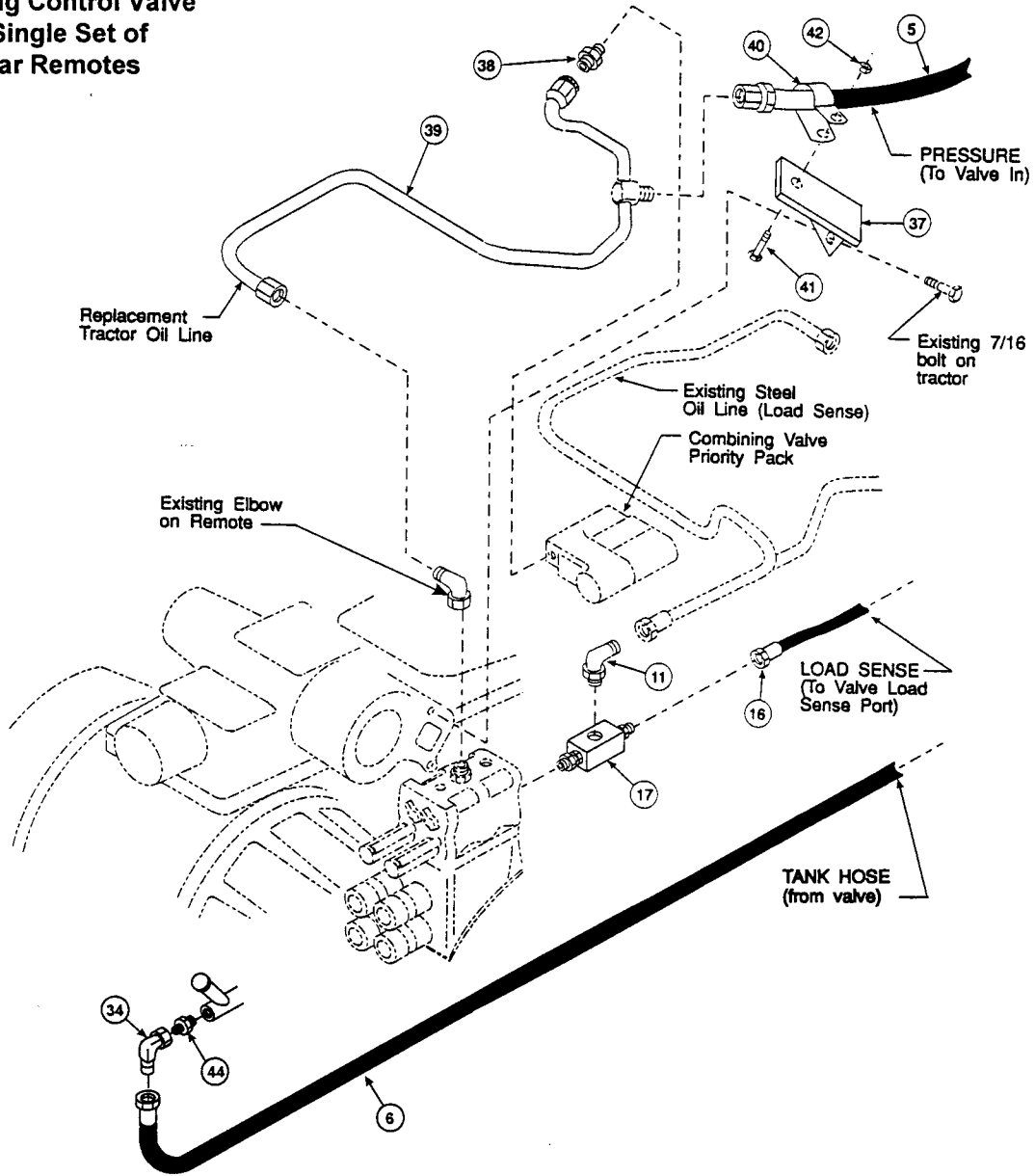


Figure 4
Alternate
Plumbing Control Valve
to Single Set of
Rear Remotes

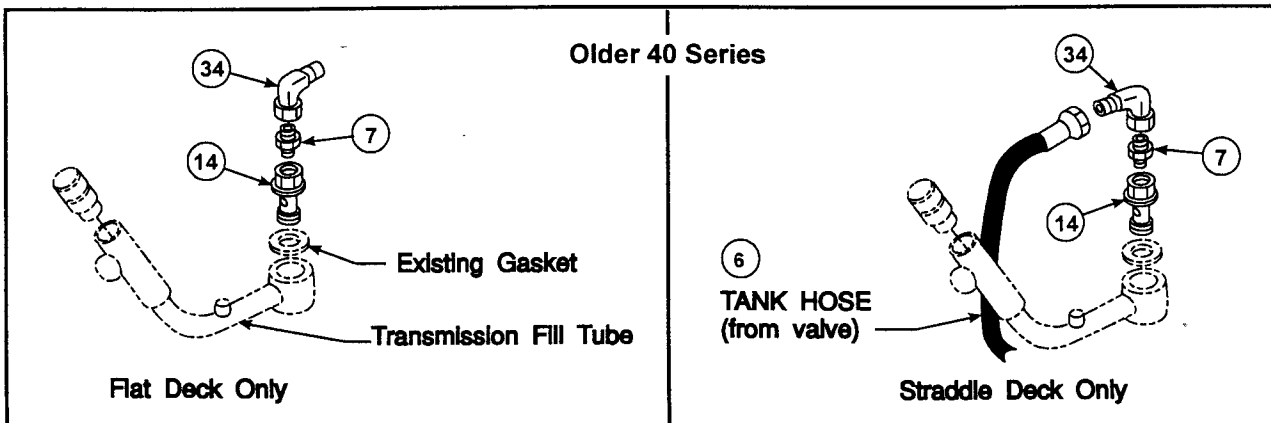
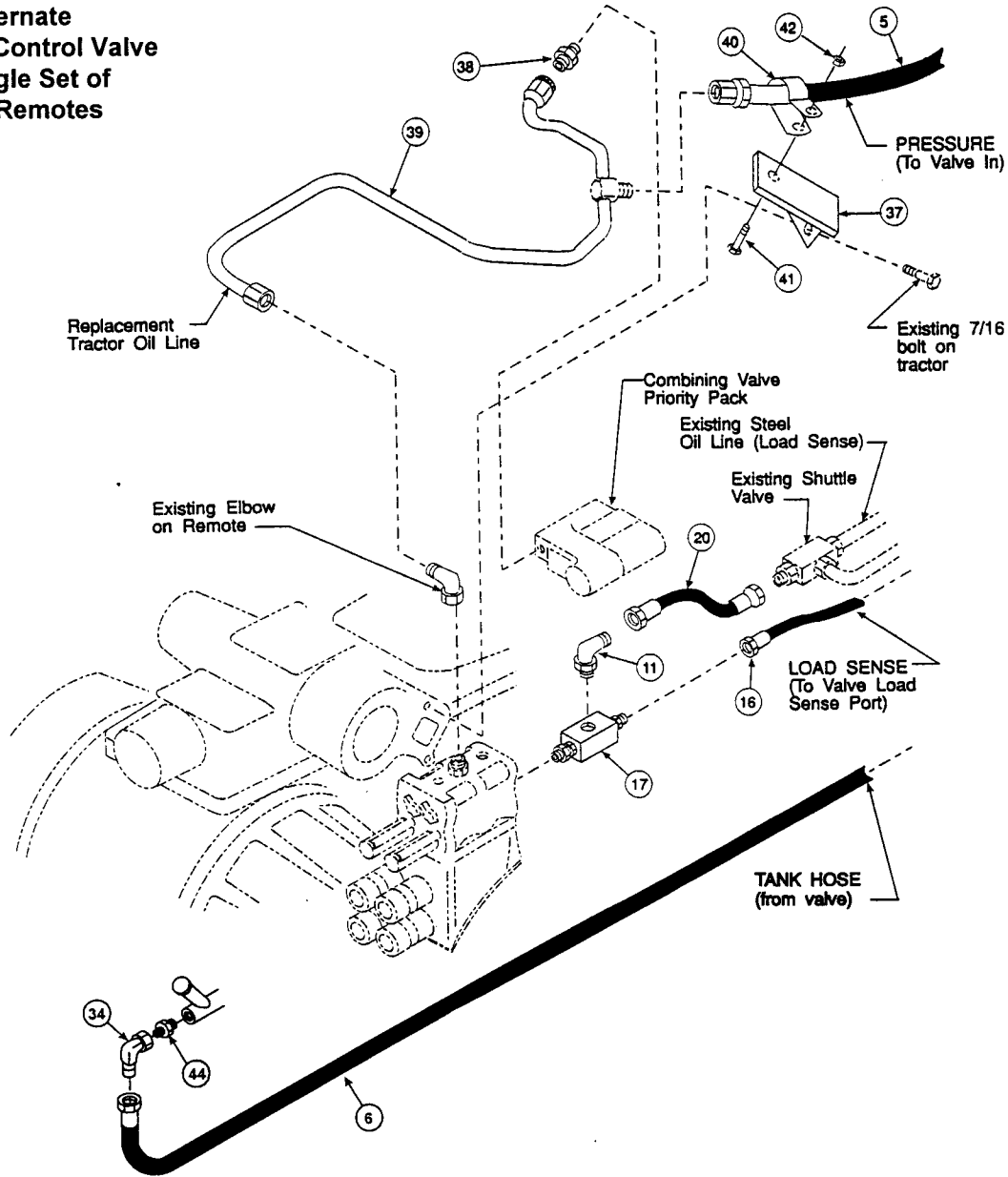
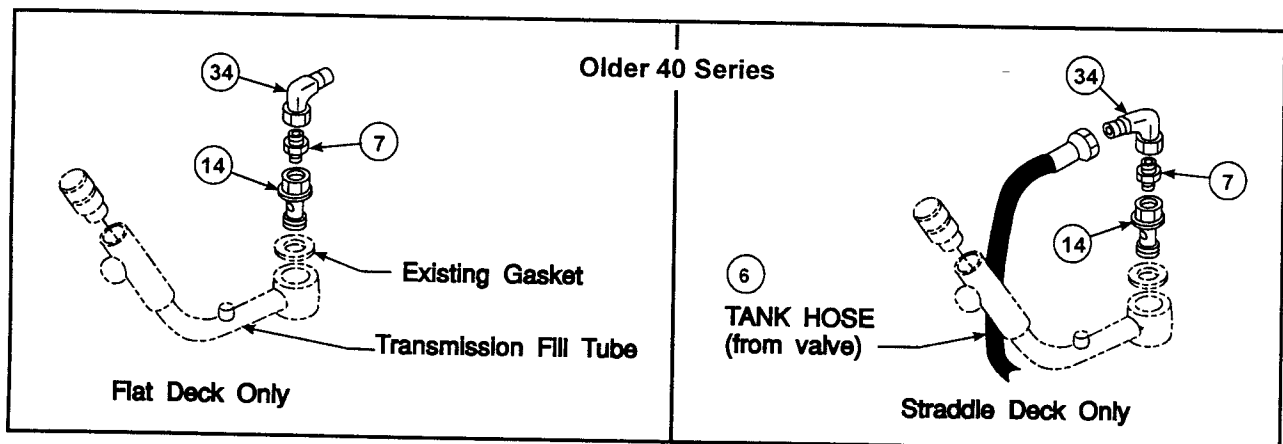
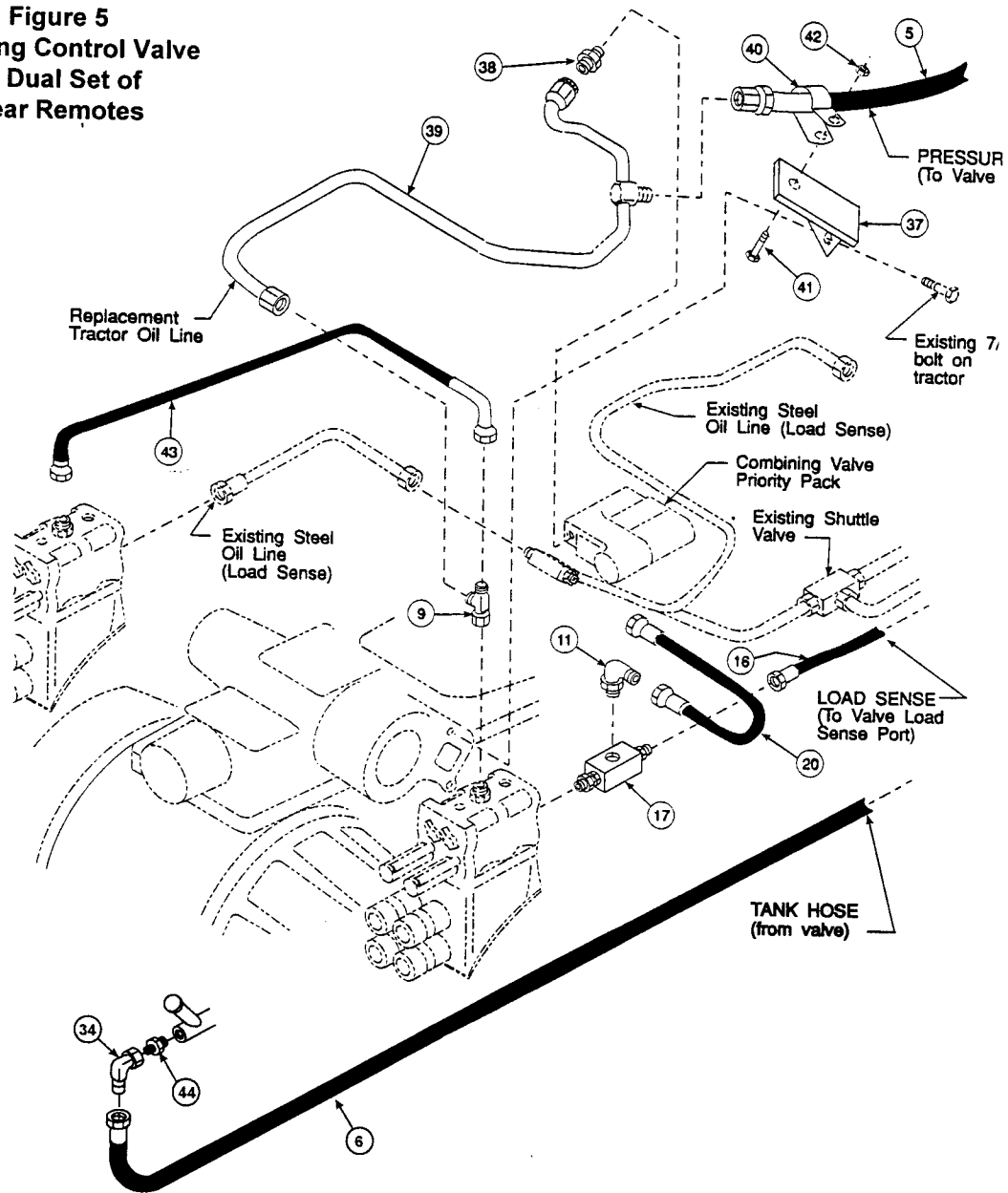


Figure 5
Plumbing Control Valve
to Dual Set of
Rear Remotes



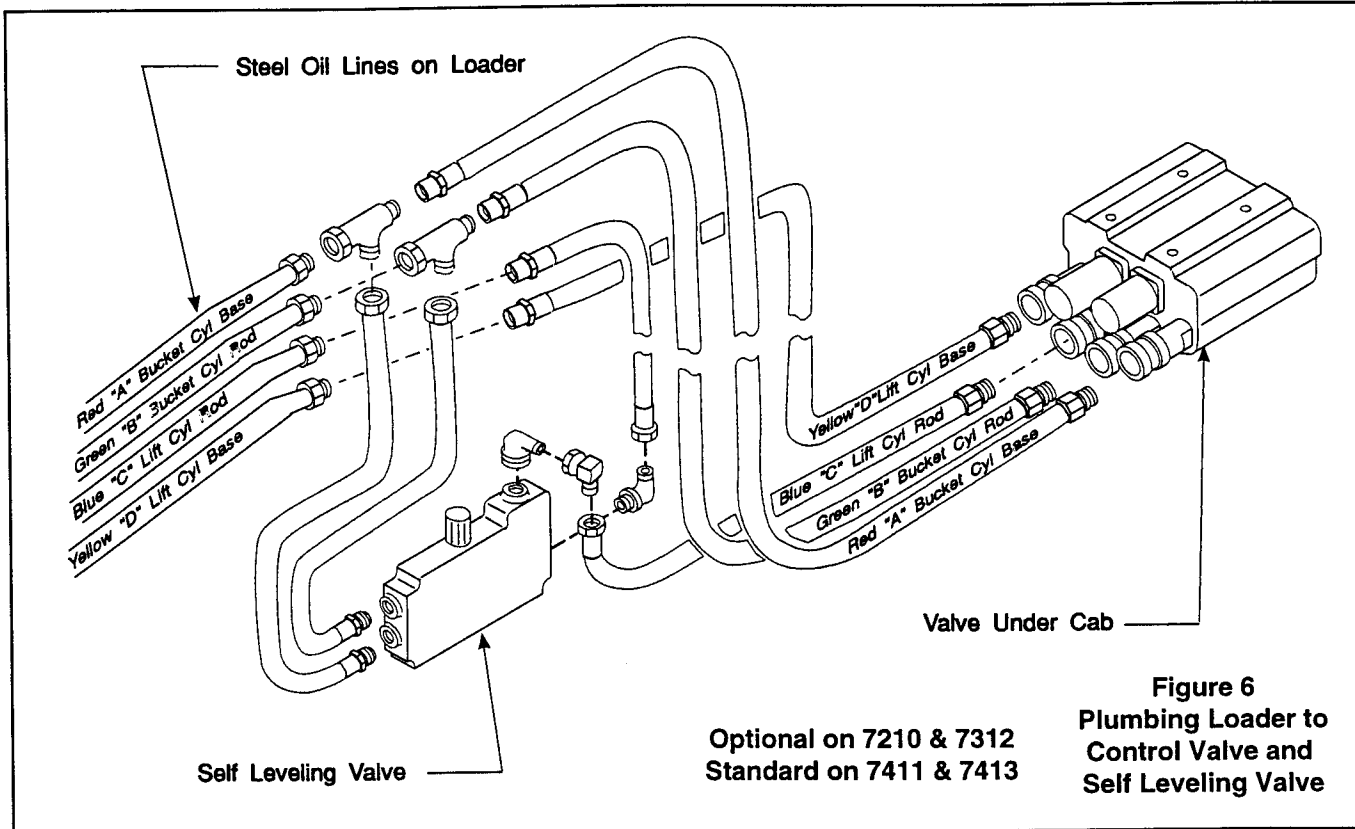


Figure 6
Plumbing Loader to
Control Valve and
Self Leveling Valve

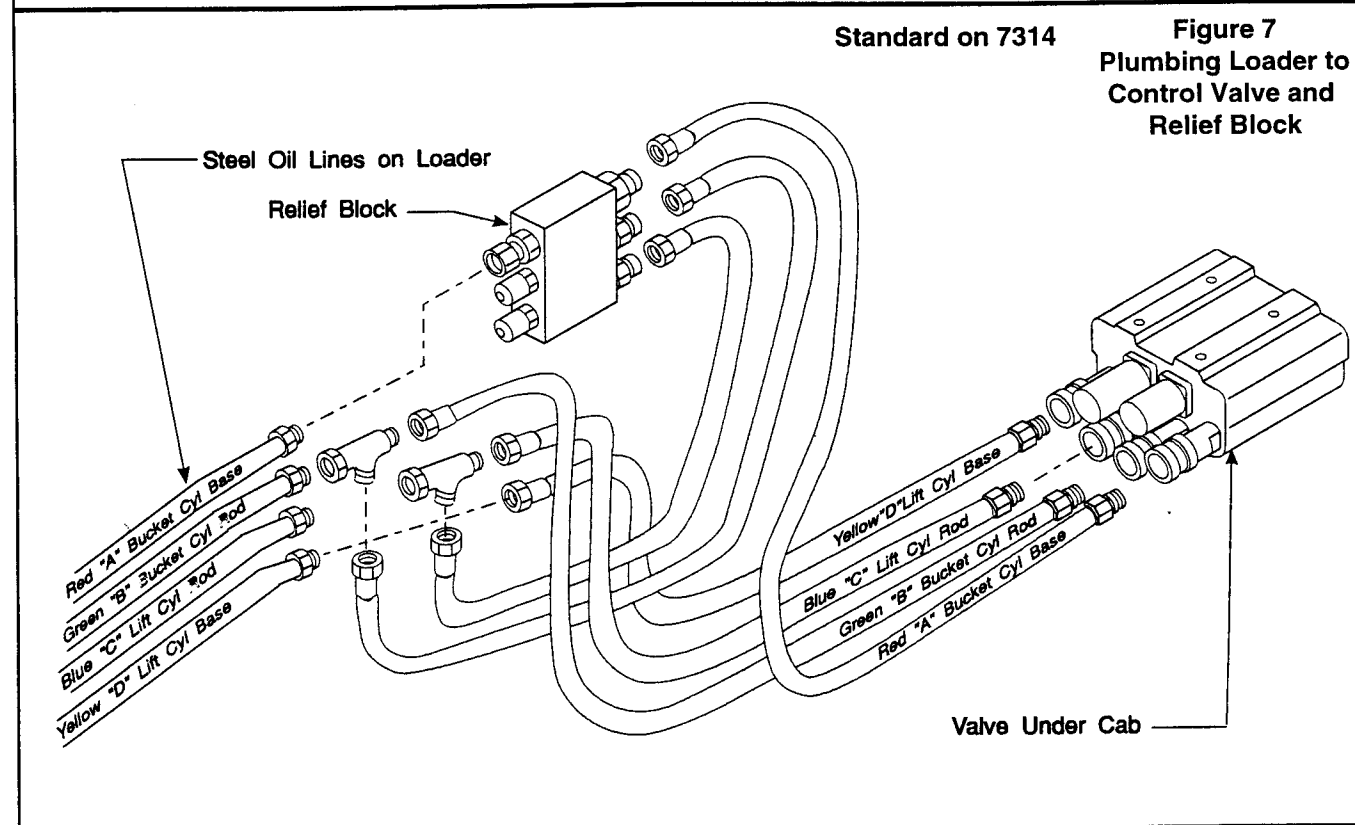
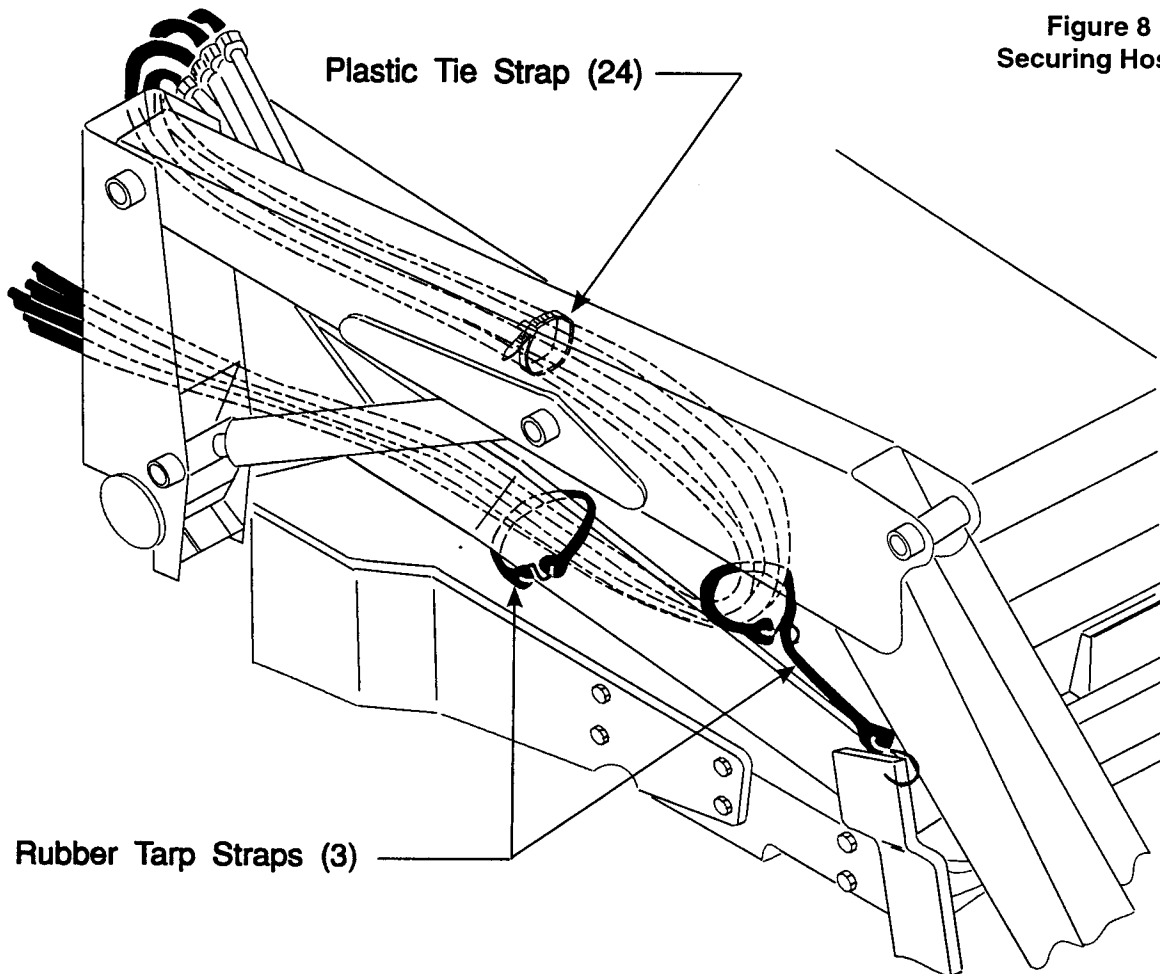


Figure 7
Plumbing Loader to
Control Valve and
Relief Block

Figure 8
Securing Hoses



SECURING HOSES USING RUBBER TARP STRAPS (Figure 8)

Install loader onto tractor according to instructions included with mounting kit. Use larger plastic tie strap (24) to bundle 1/2 x 120 hoses together. Loop one

rubber strap (3) around hoses onto itself, and secure other end near front mounting. Wrap remaining rubber strap (3) around bundled hoses and loader side frame. Make sure rubber straps secure hoses away from tractor axle, wheel or moving loader parts.

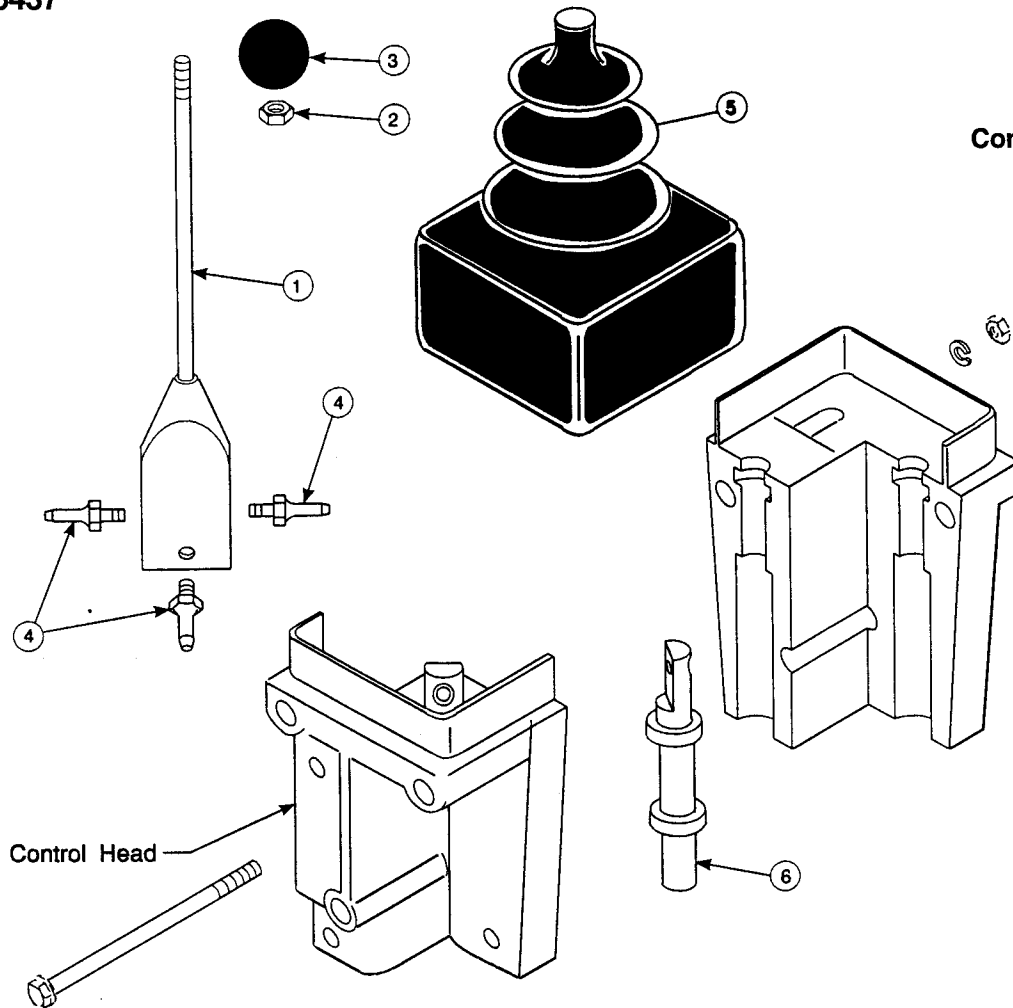


Figure 9
Control Handle

PARTS LIST - CONTROL HANDLE REPAIR PARTS

ITEM	SMC NO.	NH NO.	DESCRIPTION	QTY.
1	44336	SML44336	LEVER ASSEMBLY	1
2	G124925	00087307	NUT, Jamb, 3/8-24	1
3	44279	SML44279	KNOB	1
4	44337	SML44337	BALL STUD	3
5	44335	SML44335	BOOT	1
6	45287	SML45287	PLUNGER, Assembly	2

Parts shown can be replaced if necessary.

REPLACE HANDLE OR BALL STUDS

1. Remove control handle from mounting stand.
2. Slide boot (5) up on shaft of lever assembly.
3. Split halves of control head by removing screws which hold them together. Lever assembly can now be removed from head.
4. Replace lever assembly (1) or ball studs (4) as needed.
5. Insert ball studs (4) into pivot points while joining halves of control head. Secure halves using screws previously removed.

6. Grease ball studs at pivot points. Slide boot (5) down to cover top of control head.

7. Replace control head onto mounting stand.

NOTE: Individual parts inside control heads are not available as repair parts.

REPLACE PLUNGER ASSEMBLY

1. Slide boot (5) up on handle. Remove cap screws and separate halves of control head.
2. Replace plunger assembly (6).
3. Grease replacement plunger assembly (6), reassemble control head and reinstall to mounting stand.

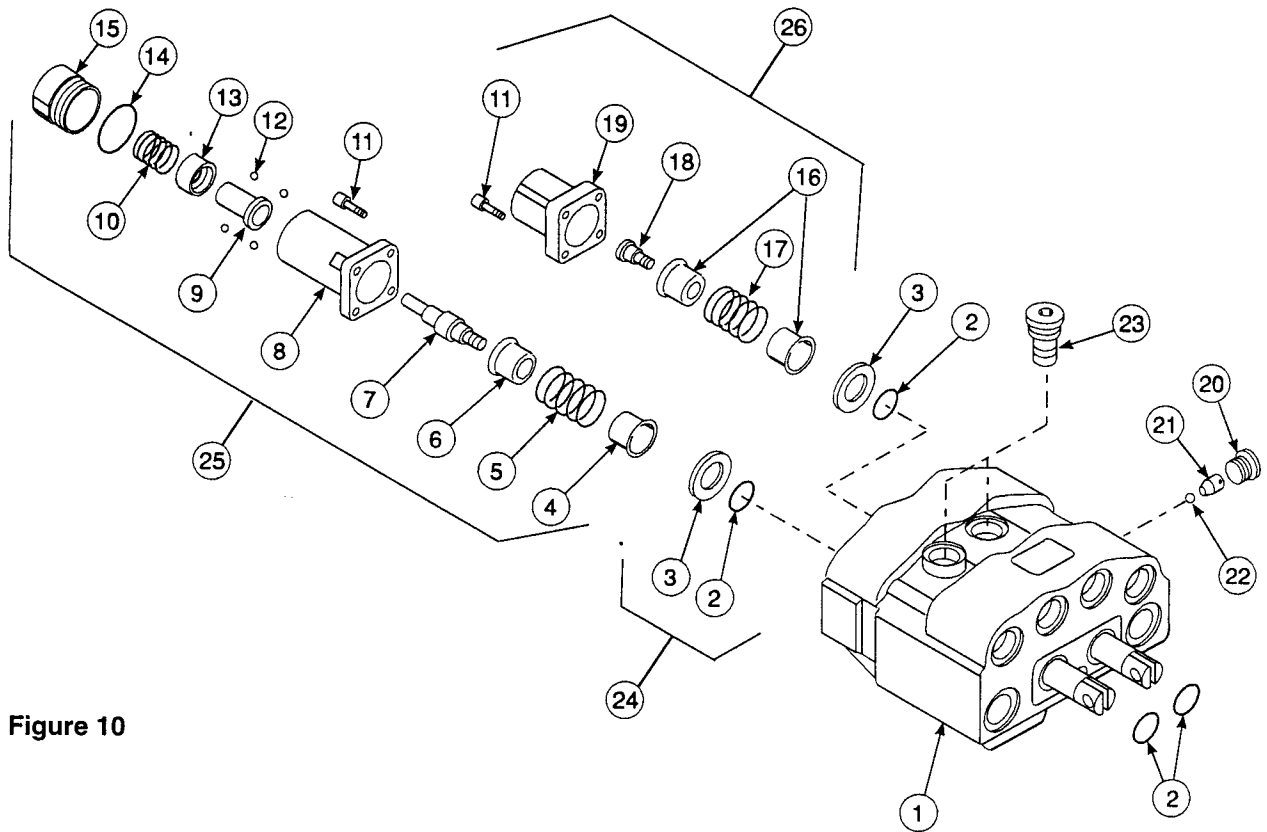


Figure 10

PARTS LIST - WALVOIL VALVE - 44753

ITEM	SMC NO.	NH NO.	DESCRIPTION	QTY.
1	*		VALVE BODY (Includes spools)	1
2	*		SEAL, O-Ring	4
3	*		WASHER, 18MM x 34MM x 4MM	2
4	45024	SML45024	BUSHING	1
5	45025	SML45025	SPRING	1
6	45026	SML45026	BUSHING	1
7	45027	SML45027	PIN, Spool Anchor	1
8	*		COVER	1
9	45029	SML45029	BUSHING, Carrier	1
10	45030	SML45030	SPRING	1
11	45028	SML45028	SCREW, Cap, Socket Head, 5MM x 16MM	8
12	45032	SML45032	BALL BEARING	4
13	45033	SML45033	RING, Thrust	1
14	45031	SML45031	O-Ring	1
15	*		END CAP	1
16	45034	SML45034	BUSHING	2
17	45035	SML45035	SPRING	1
18	45036	SML45036	SCREW, Spool Control	1
19	*		ENDCAP	1
20	45041	SML45041	PLUG,	1
21	45042	SML45042	PLUG, with seat	1
22	45043	SML45043	BALL BEARING	1
23	45023	SML45023	LOAD CHECK PLUG, VR10	2
24	45020	SML45020	SEAL KIT, Body [item #2 (Qty. 4) and item #3 (Qty. 2)]	1
25	45021	SML45021	REPAIR KIT [items 4, 5, 6, 7, 9, 10, 11 (Qty. 4), 12 (Qty. 4), 13, 14 & 15]	1
26	45022	SML45022	REPAIR KIT [items 11 (Qty. 4), 16 (Qty. 2), 17, 18 & 19]	1

* Not available as repair part. Order appropriate repair kit or complete valve (44753).

