

VALVE AND PLUMBING KIT INSTRUCTIONS NEW HOLLAND TRACTORS WITH CLOSED CENTER LOAD SENSING HYDRAULIC SYSTEM

MODEL	2WD	4WD	LESS CAB	WITH CAB
5640, 6640, 7740	X	X	X	
7840, 8240 & 8340	X	X	X	
TS90, TS100 & TS110	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 TO TRACTOR (Figures 1 & 2)

1. Attach valve mounting bracket (7) to clutch housing using 3/4 x 2-3/4 cap screws (12) (for 40 Series Tractors) or 20MM x 40MM cap screws (12A) (for TS series tractors), 20MM lock washers (13) and spacer plate (5). Tractors with loader use no spacer plate and tractors without loader use one spacer plate.

NOTE: 40 Series hand railing on right side may have to be modified to fit around valve box assembly.

NOTE: Check clearance between tractor control levers and valve handle. Handle location can be adjusted slightly by adjusting mounting plate (7) or adjusting support flat (16) (Figure 7) on valve box.

2. Mount valve assembly to mounting bracket (7) using 8MM x 30MM cap screws (4) and 5/16 lock washers (1) and 5/16 flat washers (22).

NOTE: Flat deck tractors use top set of holes and straddle deck tractors use bottom set of holes.

3. Route hoses under platform and back to rear of tractor. Be sure hoses do not interfere with draft control or foot pedal linkages.



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.

INSTALLING LOAD SENSING LINES (Figures 1, 2, 3, or 4)

NOTE: To identify pressure, Load sense and tank hoses, refer to Figure 7.

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 (9) directly into port vacated. Make sure male tip with o-ring goes into tractor valve. Leave shuttle valve (9) loose at this time until best position is determined.
3. Screw 7/16 x 9/16 x 90 elbow (10) into female port of shuttle valve. Position this elbow so:
 - A. If short load sense line is removed, 1/4 x 16 hose (11) (Figures 3 & 4) can be connected from 7/16 x 9/16 x 90 elbow (10) to fitting where other end of load sense line was removed. Connect 1/4 x 16 hose (11) and tighten all fittings and shuttle valve.

OR:

- B. If steel load sense line is longer than 16 inches, it can be rerouted directly to 7/16 x 9/16 x 90 elbow (10). Connect this load sense line to 7/16 x 9/16 x 90 elbow (10) and tighten fittings and shuttle valve. Discard 1/4 x 16 hose (11) since it will not be used.

4. FLAT DECK TRACTORS - Connect 1/4 x 92 pressure hose (41) 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.

STRADDLE DECK TRACTORS - Use 7/16 elbow fitting (3) between shuttle valve and 1/4 x 92 hose. Route hoses to clear back panel of operator's platform. This completes the load sense circuit.

PLUMBING CONTROL VALVE TO TRACTOR HYDRAULICS (Figure 2, 3, 4, or 5)

NOTE: For TS series tractors, use 1A, and for 40 series tractors, use 1B.

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 (21). Install 7/8 x 7/8 x 90° elbow (2) onto adapter fitting. Connect 1/2 x 108 hose (40) from tank port (outlet) of auxiliary control valve (1) to elbow fitting (2).
- OR:
B. Remove flow bolt at base of transmission filler tube at rear of tractor and replace it with return port fitting (6). Install 7/8 JIC adapter fitting (20) and 7/8 x 7/8 x 90° elbow (2) into return port (6). Connect 1/2 x 108 hose (40) from tank port (outlet) of auxiliary control valve (1) to elbow fitting (2).
2. Remove rearmost elbow on top of right remote tractor valve and replace with 1 x 1 swivel nut run tee (8). This is the pressure port. Connect existing tractor steel oil line to stem of swivel nut run tee (8) and connect 1/2 x 112" hose (42) from auxiliary control valve (1) inlet port (pressure) to branch of swivel nut run tee (8).

3. Use small plastic tie straps (18) 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.

4. 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 5 & 6). Refer to Figure 6 for location of rubber straps (16) on a typical loader installation.

1. Install 1/2 x 120 hoses (15) 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 (14), and colored rings (19) onto free ends of hoses. Do not overtighten male couplers.
3. Connect hoses as shown in Figures 1 and 1A.
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 (37). If direction of control lever is wrong, or loader will not lower, recheck connections shown.

PARTS LIST - VALVE AND PLUMBING KIT

ITEM	SMC NO.	NH NO.	DESCRIPTION	QTY.
1	G120214	000800681	WASHER, Lock, 5/16	2
2	34128-1	001822977	FITTING, Elbow, 7/8-16 JIC Swivel x 7/8-14 JIC x 90°	1
3	34128-4	86512933	FITTING, Elbow, 7/16-20 x 7/16-20 Flair x 90°	1
4	6090-46	00043128	SCREW, Cap, 8MM-1.25 x 30MM Class 8.8	2
5	46087	SML46087	SPACER, Flat	1
6	40639	SML40639	FITTING, Tank Port, Rear Axle	1
7	46224	SML46224	BRACKET, Mounting	1
8	40655-1	SML406551	FITTING, Run Tee, 1-14 x 1-14 x 1-14 Face Seal	1
9	40777	SML40777	SHUTTLE VALVE Assembly	1
10	40654-1	SML406541	ELBO, 7/16-20 O-Ring x 9/16-18 Face Seal	1
11	40776-1	SML407761	HOSE, 1/4 x 16	1
12	G271774	00280173	SCREW, Cap, 3/4-10 x 2-3/4 (40 series)	2
12A	6090-67	09512573	SCREW, Cap, 20MM-2.5 x 40MM Class 8.8 (TS series)	2
13	G11500166	09847025	WASHER, Lock, 20MM	2
14	6137-6	SML61376	COUPLER, Male Quick, 1/2-14	4
15	36845-5	SM368455	HOSE, 1/2 x 120	4
16	7438-1	SML74381	STRAP, Rubber	2
17	8137-3	SML81373	STRAP, Reusable Tie, 1/2 x 20	1
18	8137-1	SML81371	STRAP, Reusable Tie, 3/16 x 11	4
19	36240-9 thru 12	SML36240	BAND, Spiral Identification, 1 inch, Blue, Red, Yellow, Green	1 ea.
20	32844-3	00325059	FITTING, Adapter, 7/8-14 x 7/8-14	1
21	36249-2	SML362492	FITTING, Adapter, 3/4-16 DSPPX 7/8-14 JIC	1
22	G120393	00080664	WASHER, Flat, 5/16	2

Figure 1
Installing Valve Assembly

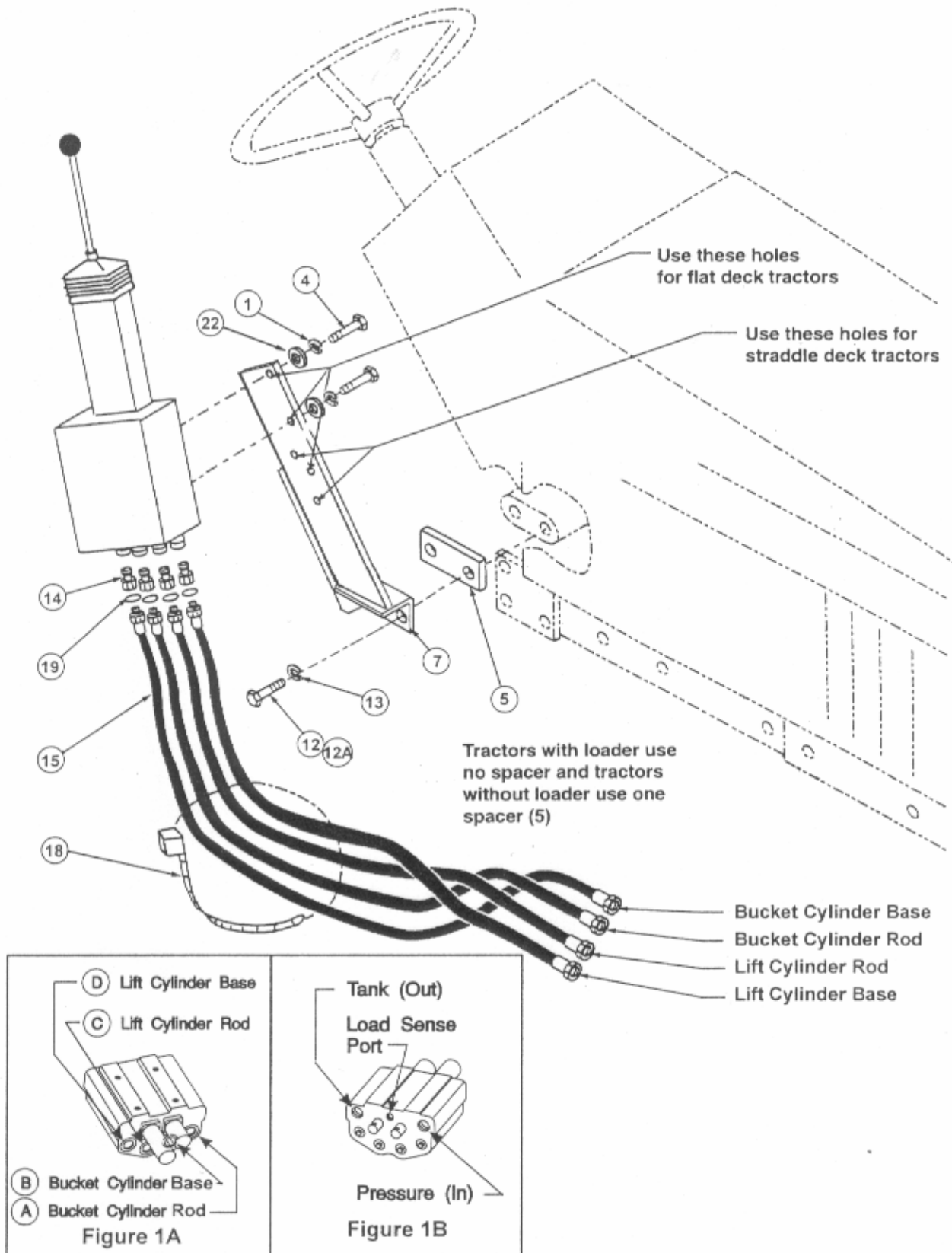


Figure 2
Plumbing Control Valve
to Single Set of
Rear Remotes

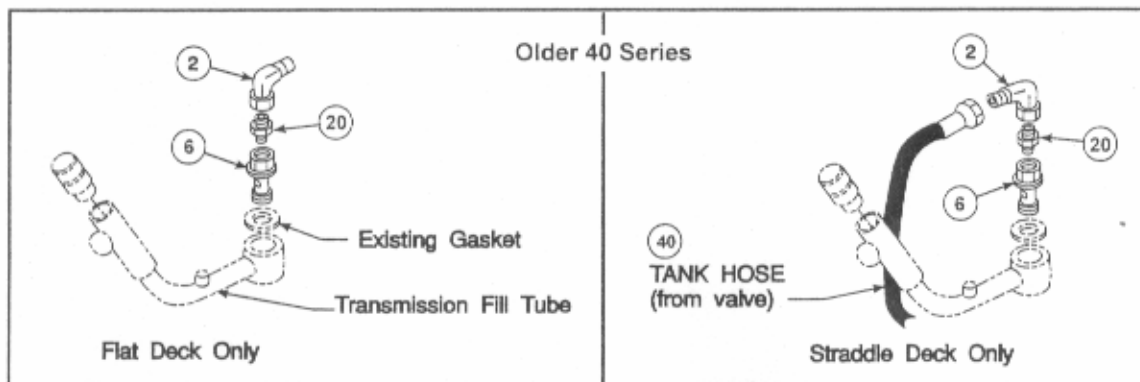
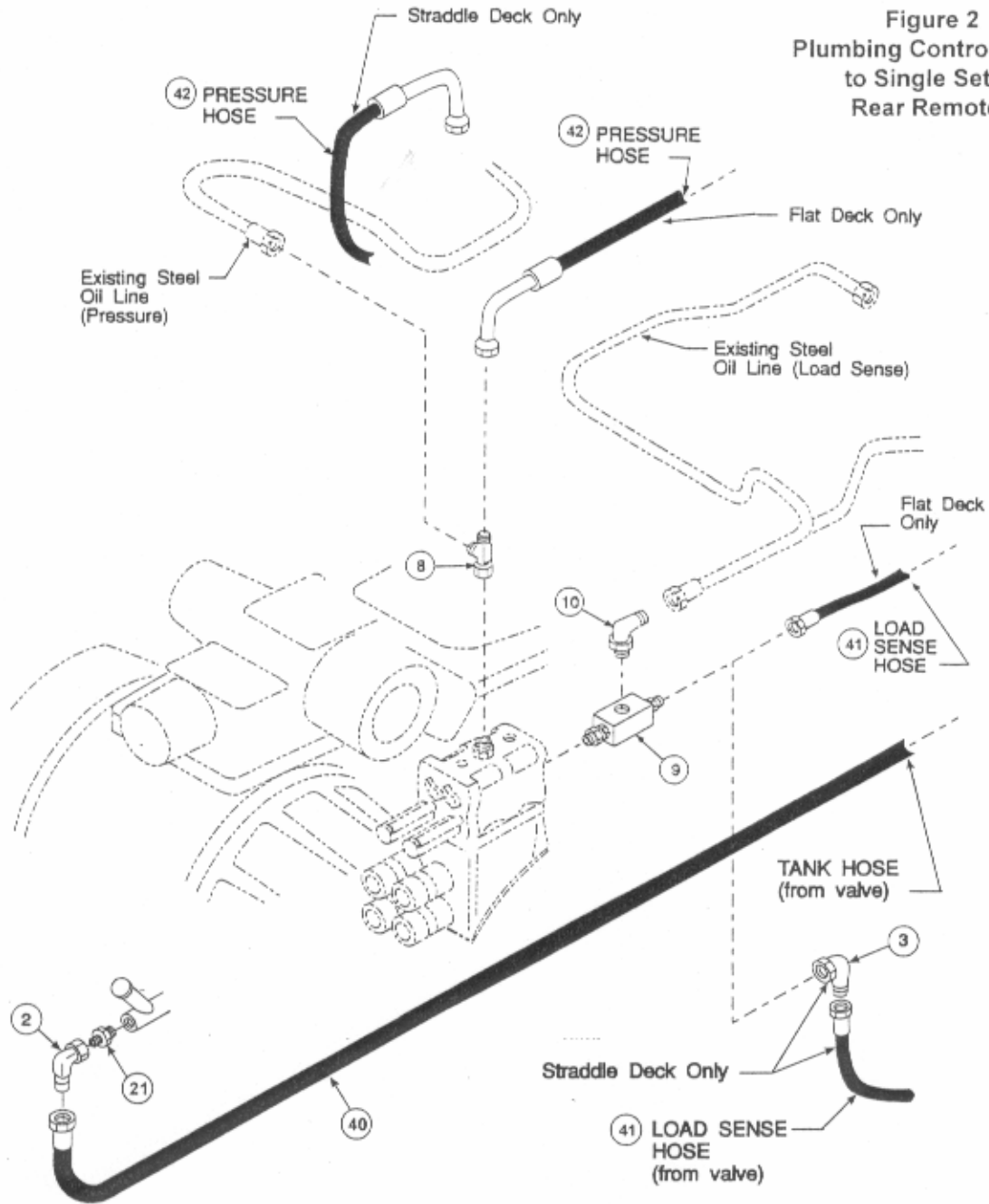


Figure 3
Alternate
Plumbing Control Valve
to Single Set of
Rear Remotes

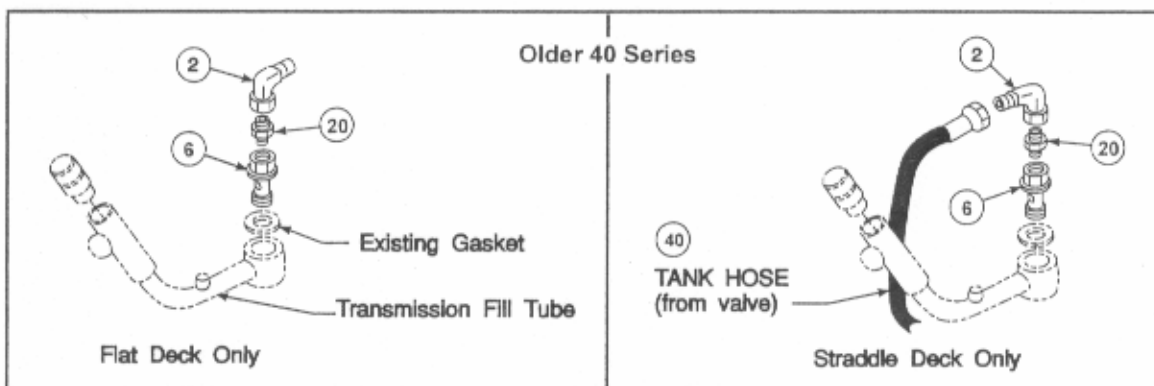
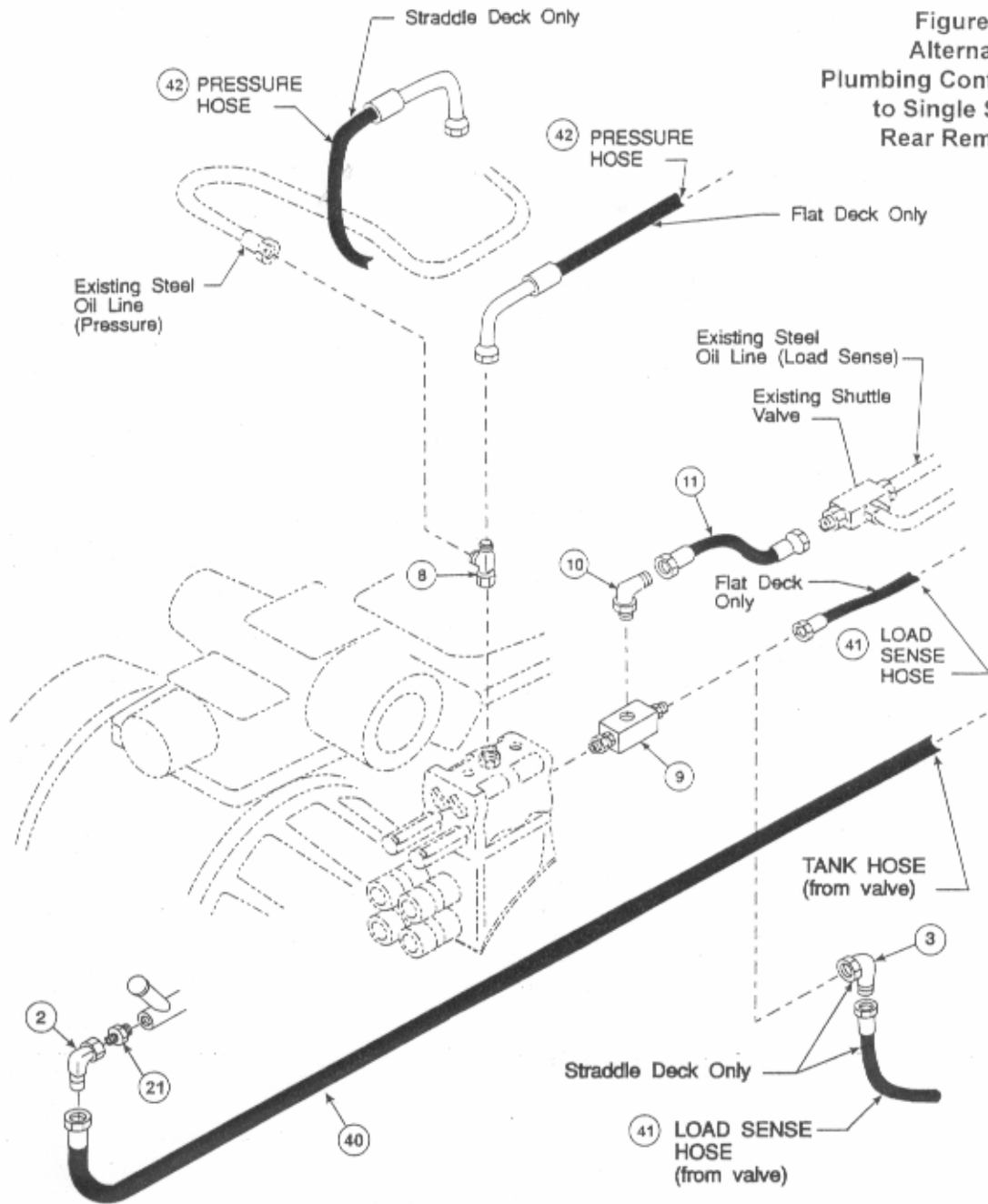
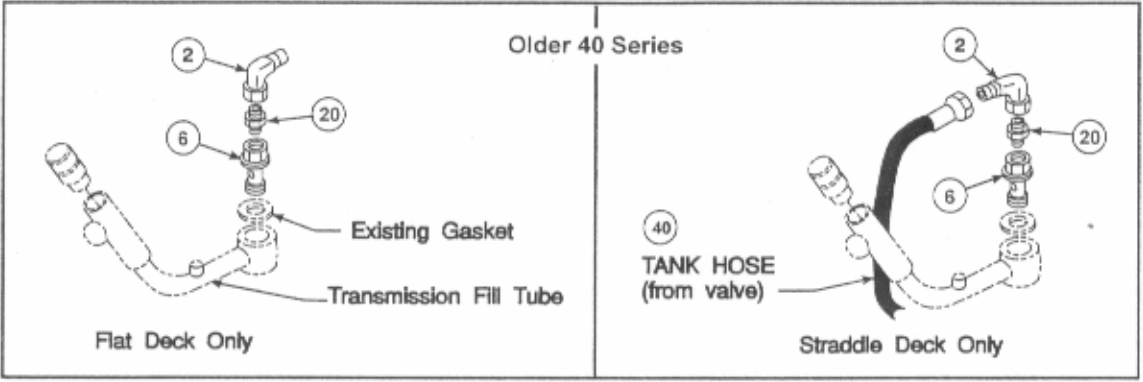
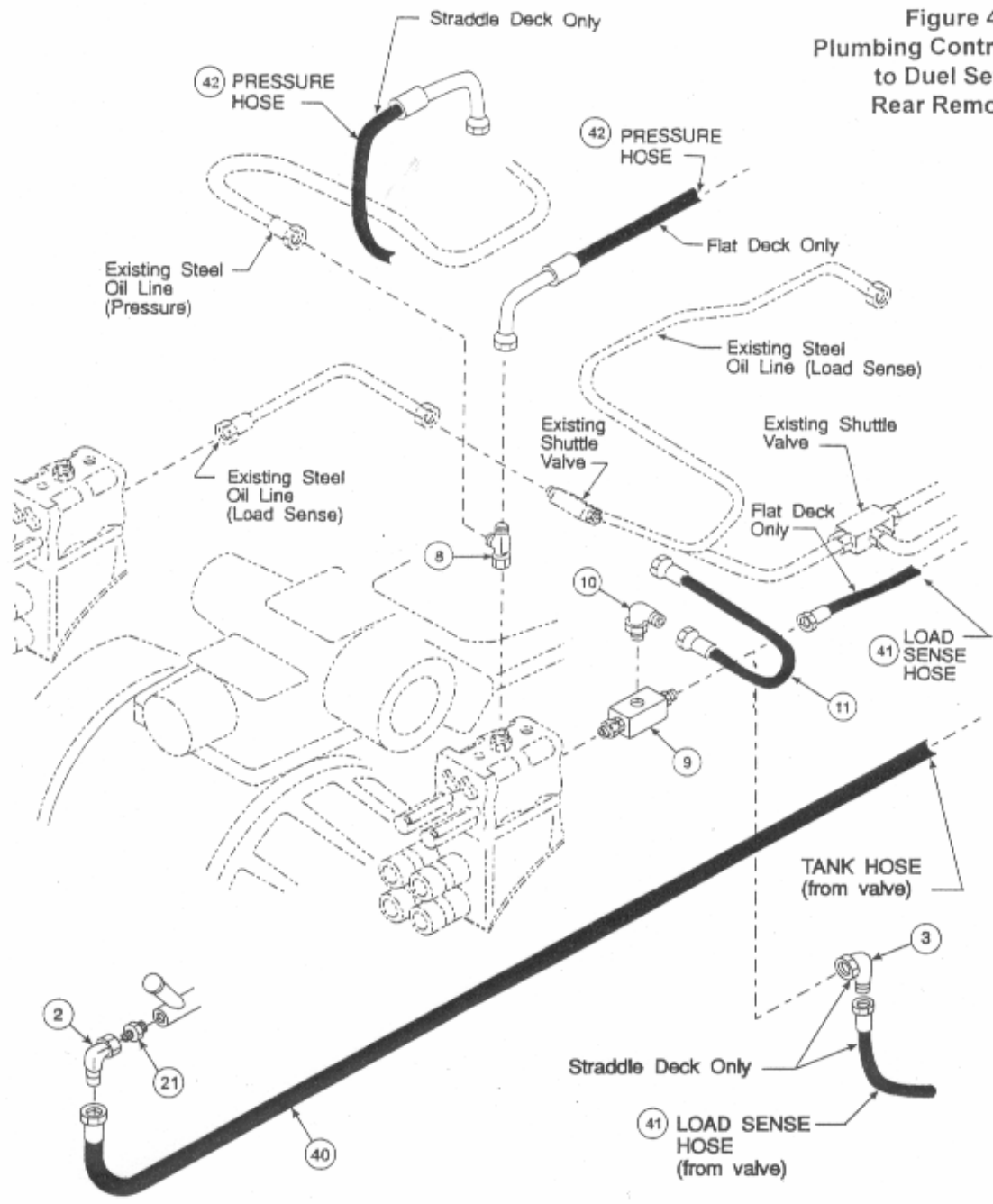
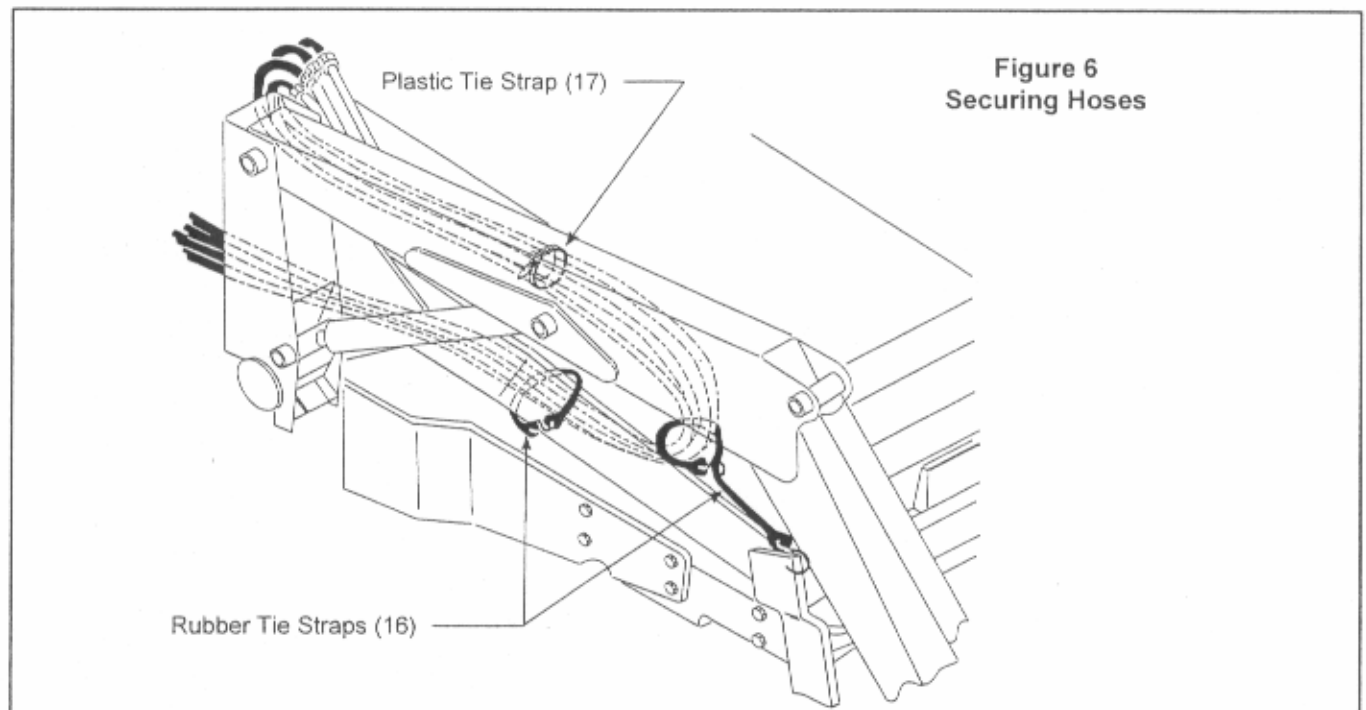
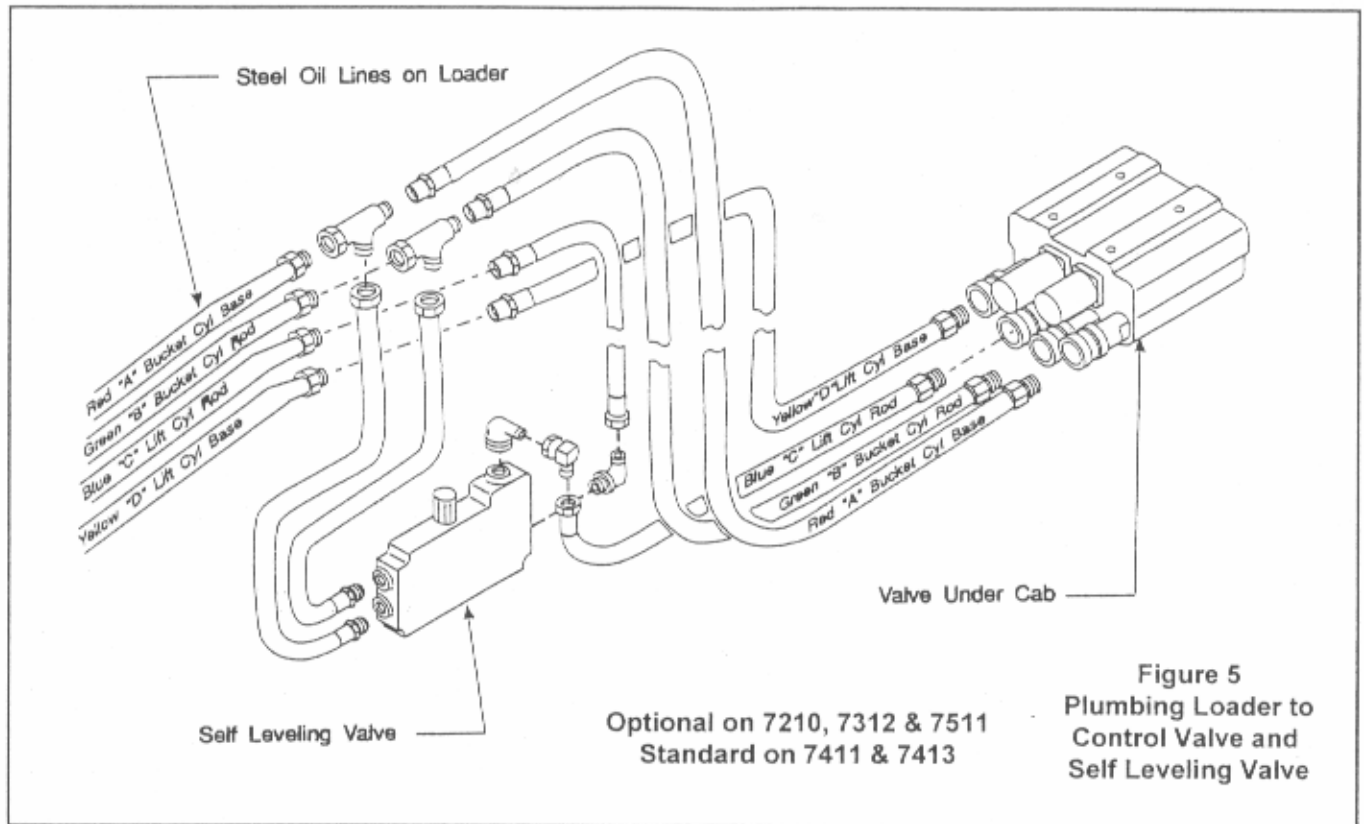


Figure 4
Plumbing Control Valve
to Duel Set of
Rear Remotes





**SECURING HOSES USING RUBBER TARP STRAPS
(Figure 7)**

Install loader onto tractor according to instructions included with mounting kit. Use larger plastic tie strap (17) to bundle 1/2 x 120 hoses together. Loop one rubber strap (16) around

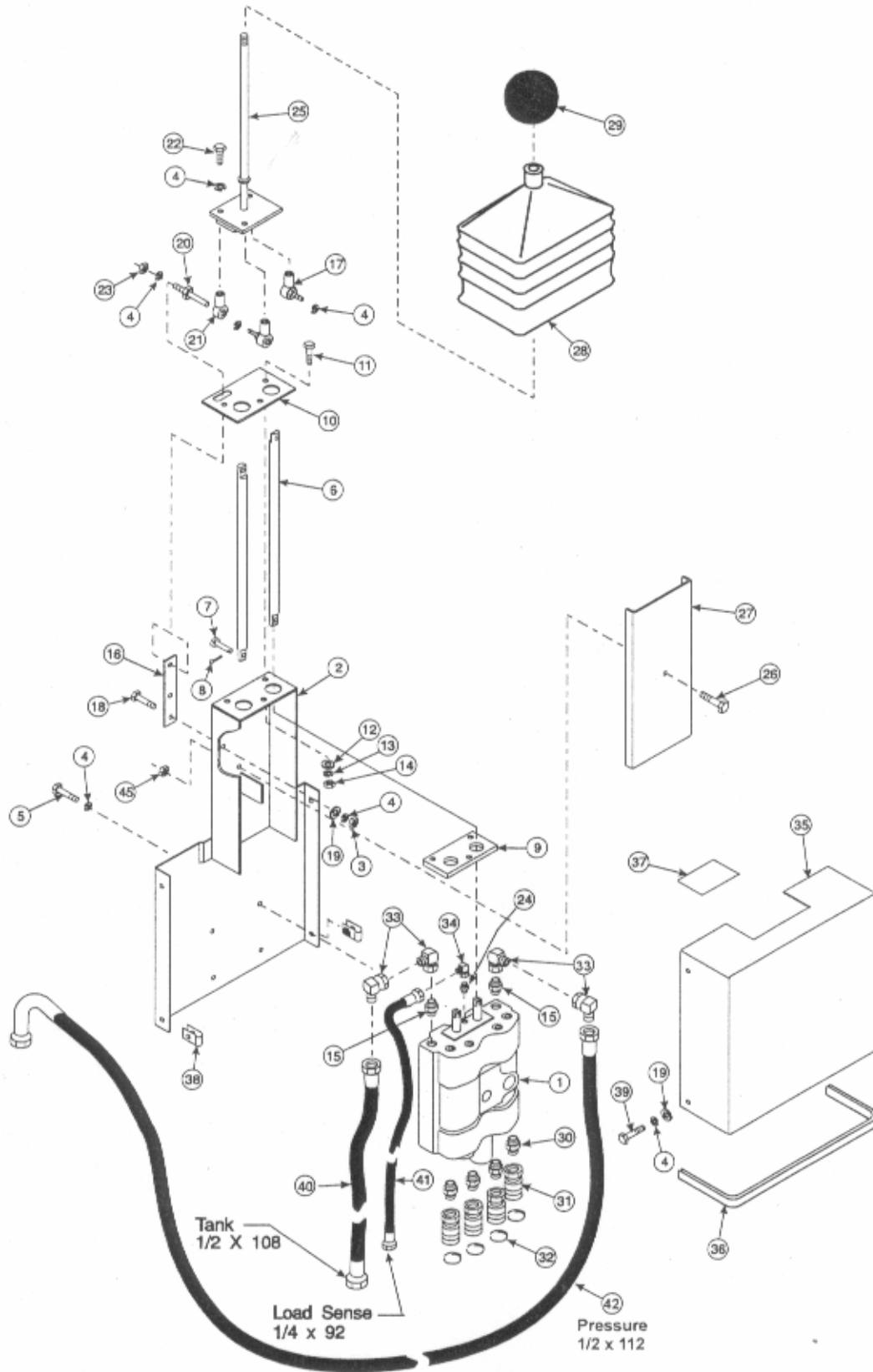
hoses onto itself, and secure other end near front mounting. Wrap remaining rubber strap (16) around bundled hoses and loader side frame. Make sure rubber straps secure hoses away from tractor axle, wheel or moving loader parts.

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VALVE ASSEMBLY - PREASSEMBLED

1	44753	SML44753	VALVE, Walvoil	1
2	45222	SML45222	BRACKET, Valve Mounting	1
3	G120376	09635082	NUT, Hex, 5/16-18	2
4	G120214	00080681	WASHER, Lock, 5/16	14
5	6090-30	00120104	SCREW, Cap, 8MM-1.25 x 20MM Class 8.8	2
6	45218	SML45218	ROD, Spool Extension	2
7	6021-16	SML602116	PIN, Clevis, 5/16 x 1	2
8	G121222	00280250	PIN, Cotter, 3/32 x 3/4	2
9	40811	SML40811	GUIDE, Extension Rod, Plastic	1
10	40828	SML40828	PLATE, Bellows Mounting	1
11	G180022	00088146	SCREW, Cap, 1/4-20 x 1	3
12	G120392	00087361	WASHER, Flat, 1/4	3
13	G120380	00080682	WASHER, Lock, 1/4	3
14	G120375	00007770	NUT, Hex, 1/4-20	3
15	32844-9	86507102	FITTING, Adapter, 1-1/16-12 O-ring x 7/8-14-JIC	2
16	40817	SML40817	FLAT, Support	1
17	26009-4	SML260094	ROD END	2
18	G122017	09635884	SCREW, Cap, 5/16-18 x 1	2
19	G120393	00080664	WASHER, Flat, 5/16	6
20	38904-2	SML389042	STUD, Ball Joint, 5/16-24	1
21	38900-4	SML389004	BALL JOINT	1
22	G181608	00280483	SCREW, Cap, 5/16-24 x 1	3
23	G120368	00012628	NUT, Hex, 5/16-24	1
24	32844-12	00139398	FITTING, Adapter, 9/16-18 O-ring x 7/16-20 JIC	1
25	45219	SML45219	HANDLE ASSEMBLY	1
26	G180048	00087405	SCREW, Cap, 1/4-20 x 2-1/2	1
27	40822	SML40822	COVER, Valve Enclosure	1
28	36077	SML36077	BOOT	1
29	38902	SML38902	KNOB, Valve Handle	1
30	39280-10	SML3928010	FITTING, Straight, 7/8-14 O-Ring x 1/2-14 NPTF	4
31	6147-8	SML61478	COUPLER, Female Quick, 1/2-14	4
32	36240-9thru12	SML36240	BAND, Spiral Identification, 1 inch, Blue, Red, Yellow, Green	1ea.
33	34128-1	00182977	FITTING, Elbow, 7/8-14 JIC Swivel x 7/8-14 JIC x 90	4
34	34128-4	86512933	FITTING, Elbow, 7/16-20 x 7/16-20 Flare x 90	1
35	45220	SML45220	COVER, Weldment	1
36	24765-3	SML247653	TRIM, Plastic, 15 inches	1
37	38929	SML38929	DECAL, Valve Operation	1
38	6067-1	09626645	NUT, Speed Clip, 5/16-18	4
39	G180077	00087872	SCREW, Cap, 5/16-18 x 3/4	4
40	36698-12	SML3669812	HOSE, 1/2 x 108 (Tank)	1
41	40656-3	SML406563	HOSE, 1/4 x 92 (Load Sense)	1
42	40653-4	SML406534	HOSE, 1/2 x 112 (Pressure)	1



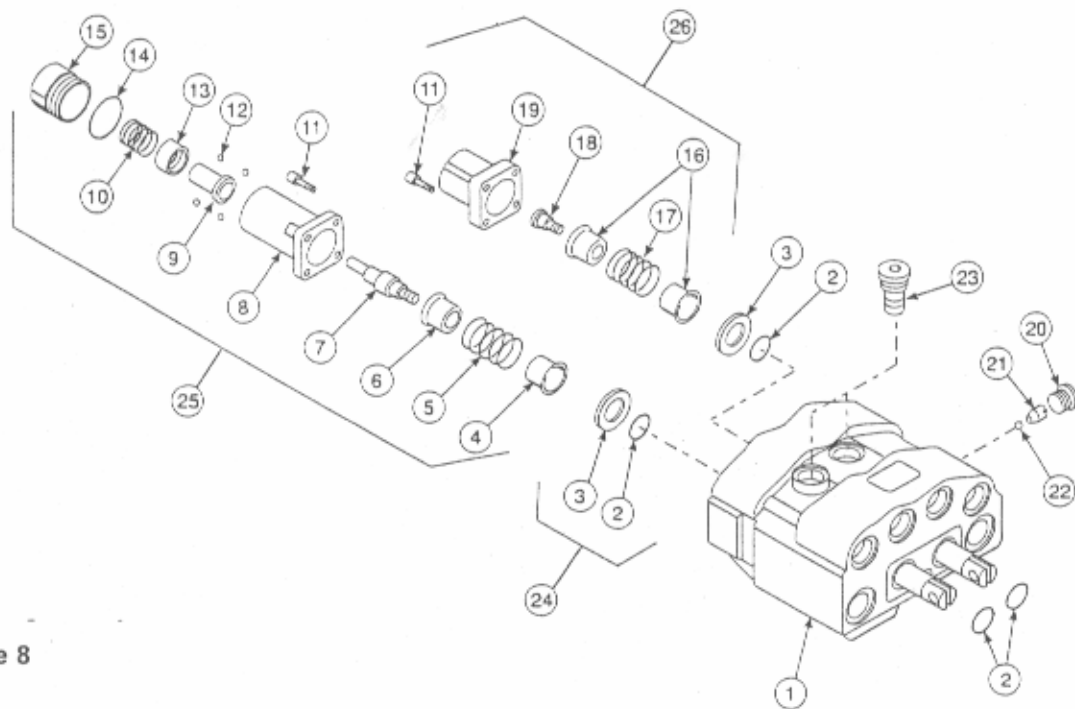


Figure 8

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).

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INSTALLATION INSTRUCTIONS