VALVE AND PLUMBING KIT (PARALLEL VALVE)
2405 LOADER
NEW HOLLAND & CASE IH TRACTORS

CASE IH MODEL	NEW HOLLAND MODEL	FWA	ROPS
DX18E	TZ18DA	X	X
DX24E	TZ24DA	X	X

VALVE AND PLUMBING GENERAL INFORMATION

This kit includes a joystick and parallel valve which can perform two functions simultaneously, each at full valve pressure. However, the function requiring lower pressure will take priority.

Example: *When simultaneously operating lift and rollback, bucket may roll back until tilt cylinders are completely retracted before lift cylinders raise loader.*

Each function can be operated separately when desired.

IMPORTANT: *This valve and plumbing kit includes a poppet valve (19, Figure 1C), which must be installed before plumbing control valve to tractor hydraulics. Refer to Figure 1C and instruction 6 of "Plumbing Control Valve to Tractor Hydraulics" section.*

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 tape 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.*

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.

NOTE: *Valve is preassembled at factory with handle and fittings inside enclosure on valve stand.*

ATTACHING VALVE ASSEMBLY TO TRACTOR (FIGURE 1)

Positioning control valve and stand assembly (1) between right loader mid mounting bracket and tractor foot platform, fasten valve and stand assembly (1) to loader right mid mounting bracket using 1/2 x 2-3/4" cap screws (2), 1/2" flat washers (3) and 1/2" lock nuts (4).

PLUMBING CONTROL VALVE TO TRACTOR HYDRAULICS (FIGURES 1 & 3)

NOTE: *To ease installation of fittings and hoses to tractor hydraulic ports, support rear of tractor and remove right rear wheel and tire.*

1. Temporarily remove cover from valve enclosure by removing 5/16 x 3/4" cap screws (30, Figure 3) and lock washers (31, Figure 3), saving cap screws and lock washers to refasten cover to enclosure later.
2. Install 3/8 x 82" hoses (13, Figure 1) to straight fitting (15, Figure 3) in pressure port and elbow fitting (20, Figure 3) in power beyond port of loader control valve (1). Install 3/8 x 72" hose (14, Figure 1) to straight fitting (15, Figure 3) in tank port of loader control valve (1). Mark opposite end of each hose to identify pressure, tank, and power beyond hose.
3. Slip 82" hose sleeves (15) over 82" pressure and power beyond hoses (13) and slip 72" hose sleeve (16) over 72" tank hose (14).
4. Route all three hoses (13 & 14) in sleeves (15 & 16) down along valve stand tube, over loader right mid mounting bracket, under tractor foot platform, and along tractor frame back toward tractor right rear axle.
5. Locate tractor pressure, tank, and power beyond ports to right side of tractor above right rear axle housing, to access tractor hydraulics.

PLUMBING CONTROL VALVE TO TRACTOR HYDRAULICS (Continued)

6. Remove plugs from tractor pressure, power beyond and tank ports and install 1/4 x 9/16 straight fittings (5) into all three hydraulic ports. Install 9/16 x 9/16 x 90° elbow fittings (6) onto straight fittings (5) only in power beyond and tank ports.

   NOTE: *Also temporarily remove plug in bottom of tractor HPL control valve and install poppet (19). Insert poppet (19) as shown in Figure 1C and reinstall plug.*

7. Connect 72" tank hose (14) to 9/16 x 9/16 x 90° elbow fitting (6) in tractor tank port. Connect 82" pressure hose (13) to 1/4 x 9/16 straight fitting (5) in tractor pressure port. Connect 82" power beyond hose (13) to 9/16 x 9/16 x 90° elbow fitting (6) in tractor power beyond port.

8. Using plastic tie straps (18), bundle hoses together and secure to tractor frame and valve stand tube. Make sure there is adequate clearance for tires and all other moving parts.

9. Tighten all hydraulic connections.

10. Reinstall cover onto valve enclosure using 5/16 x 3/4" cap screws (30, Figure 3) and 5/16" lock washers (31, Figure 3), which were removed earlier.

11. If right rear wheel and tire was removed earlier to ease installation, reinstall right rear wheel and tire.

PARTS LIST — Plumbing Loader & Valve to Tractor Hydraulics (Figure 1)

Item	Part No.	Description	Qty.
1	52530	VALVE, Assembly, with Handle, Fittings, Enclosure & Mounting Tube	1
2	41838-73	SCREW, Cap, 1/2-13 x 2-3/4"	2
3	42502-10	WASHER, Flat, 1/2"	2
4	41840-5	NUT, Lock, 1/2-13	2
5	43518-2	FITTING, Straight, 1/4 BSPT Male x 9/16 JIC Male	3
6	34128-3	FITTING, Elbow, 90°, 9/16 JIC Female Swivel x 9/16 JIC Male	2
7	36240-1	BAND, Spiral, 3/4", Blue	1
8	36240-2	BAND, Spiral, 3/4", Red	1
9	36240-3	BAND, Spiral, 3/4", Yellow	1
10	36240-4	BAND, Spiral, 3/4”, Green	1
11	6137-9	COUPLER, Quick, Male	4
12	36388-8	HOSE, 3/8 x 38" (Loader Boom Oil Lines)	4
13	36386-18	HOSE, 3/8 x 82” (Pressure & Power Beyond)	2
14	36386-6	HOSE, 3/8 x 72" (Tank)	1
15	34853-44	SLEEVE, Hose, 82"	2
16	34853-78	SLEEVE, Hose, 72”	1
17	34853-33	SLEEVE, Hose, 38”	4
18	8137-1	STRAP, Adjustable	14
19	52788	POPPET, Assembly with O-Ring	1

Figure 1
Plumbing Loader & Valve to Tractor Hydraulics

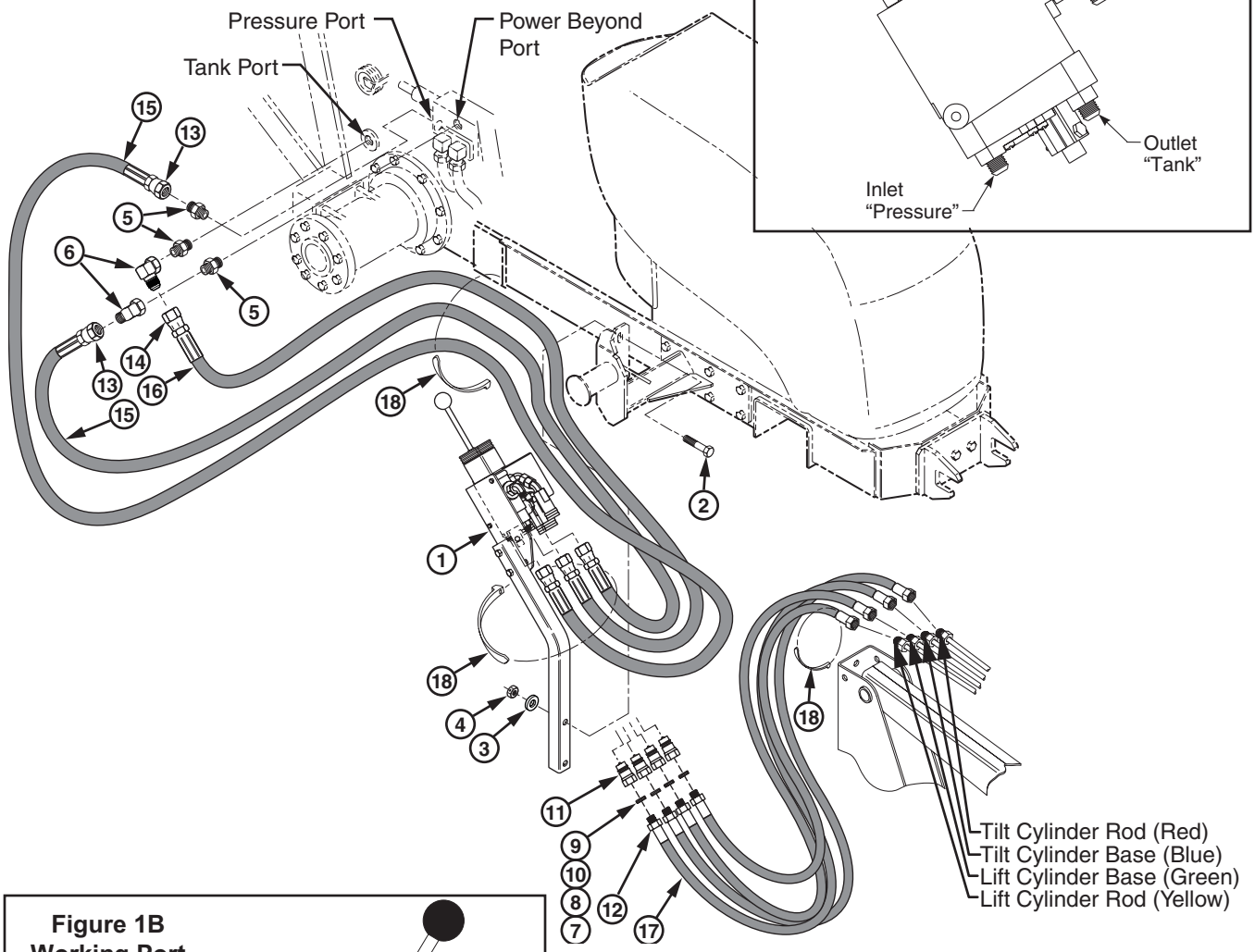


Figure 1A
Reverse View of Control Valve Identifying Hydraulic Connection Ports

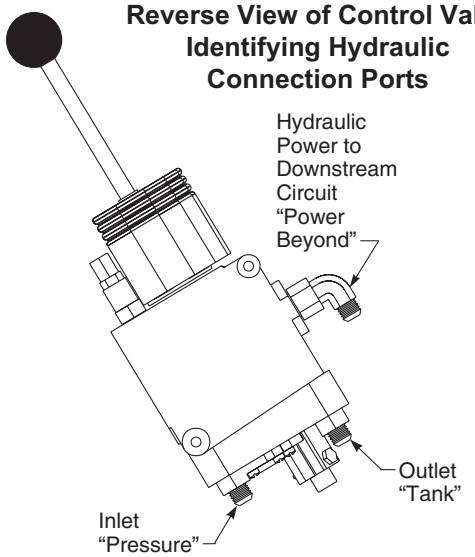


Figure 1B
Working Port Function Detail

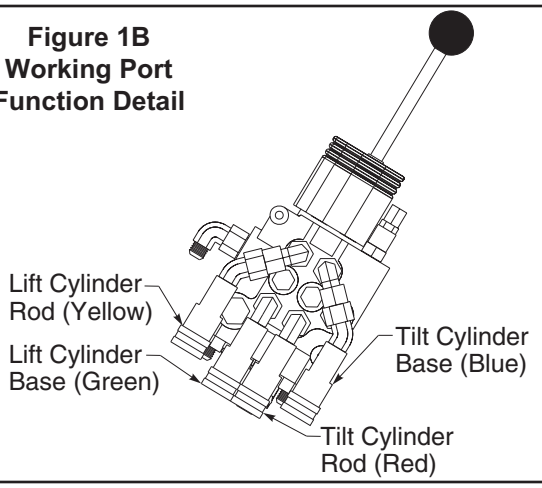
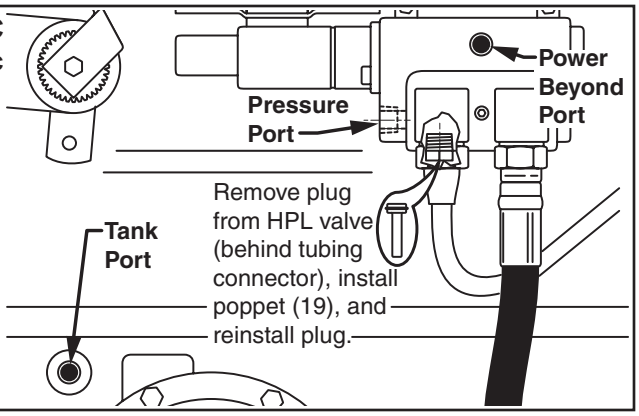


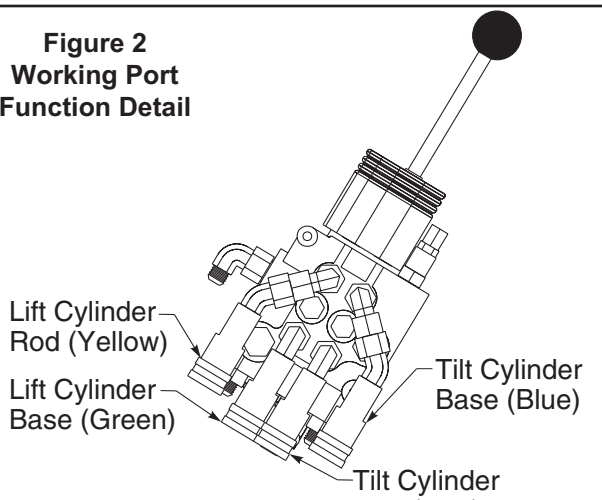
Figure 1C
Hydraulic Access Detail



PLUMBING CONTROL VALVE TO LOADER (FIGURES 1 & 2)

1. Install 3/8 x 38 hoses (12) to loader steel oil lines. Slip 38” sleeves (17) over each hose (12) and secure each end using tie straps (18).

Figure 2
Working Port Function Detail



2. Install colored 3/4" spiral bands (7-10) onto free end of hoses (12) to match bands on female quick couplers. Install male quick couplers (11) onto free end of hoses (12). Connect corresponding quick couplers from loader to valve.
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 (38 Figure 3) on valve cover. 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.*

CONTROL VALVE WITH HANDLE, FITTINGS & STAND DISASSEMBLY (Figure 3)

The following procedure is provided in the event it is ever necessary to disassemble the control valve and stand assembly. It is advisable to mark or tag all parts so they will be reinstalled in their proper position.

Before removing and disassembling valve, remove loader from tractor and disconnect quick couplers. Shut off tractor engine and set tractor brakes, and move valve lever forward and back and side to side several times to all positions to relieve any pressure in valve or hoses.

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.

1. Unfasten cover (27) from valve stand by removing 5/16 x 3/4" cap screws (30) and 5/16" lock washers (31) from speed nuts (29). If replacing speed nuts (29), remove speed nuts (29) from cover (27).
2. Remove 82" hoses (13 Figure 1) from straight fitting (15 Figure 3) in pressure port of valve (1) and from 90° elbow fitting (20) in power beyond port of valve (1). Remove 72" hose (14 Figure 1) from straight fitting (15 Figure 3) in tank port of valve (1).
3. Remove valve mounting angle (34) and valve assembly from valve stand tube (26) by removing 3/8 x 2-1/4" cap screws (35) and lock nuts (36). Remove valve assembly from valve mounting angle (34) by removing 1/4 x 2" cap screws (32) and 1/4" lock nuts (33).
4. Remove female quick couplers (21) and 3/4" color spiral bands (22-25) from fittings (18 & 19). Remove 90° fittings (19) from straight fittings (15) and remove 45° elbow fitting (18) from 90° elbow fittings (17) in working ports of valve.
5. Remove straight male fitting (15) from working ports C and D of valve (1) and remove straight female fittings (16) from working ports A and B of valve (1).

   CAUTION: *When removing straight male fittings (15) from working ports C and D of valve (1), take care to not lose .062 orifice plate from working port B or .109 orifice plate from working port D.*

CONTROL VALVE WITH HANDLE, FITTINGS & STAND DISASSEMBLY (Continued)

6. Remove straight fittings (15) from pressure and tank ports of valve. Remove 90° fitting (20) from power beyond port of valve (1).
7. Remove ball (2) from valve handle (4) and slip boot (3) off handle (4).
8. Remove 1/4 x 3/4" cap screws (5) from adapter plate of valve handle (4).
9. Remove 1/4-28 hex nuts (10) and 1/4" lock washers (9) from male ball joint studs (11) on both spools of valve to remove male ball joint studs (11) from spools.

   NOTE: *Rotate tilt spool (spool without float) approximately 45° to ease removal of male ball joint (11), 1/4-28 hex nut (10), and 1/4" lock washer (9).*
10. Slide female ball joint (7) off stud (6) and remove 1/4-28 lock nut (8) to remove ball joint stud from valve linkage bracket (12).
11. Remove 5/16 x 3/4" socket head cap screw (13) and 5/16 x 3/4" flat head socket screw (14) to remove valve linkage bracket (12) from valve (1).

CONTROL VALVE WITH HANDLE, FITTINGS & STAND ASSEMBLY (Figure 3)

1. Fasten valve linkage bracket (12) to valve (1) using 5/16 x 3/4" flat head socket screw (14) and 5/16 x 3/4" socket head cap screw (13).
2. Fasten ball joint stud (6) to valve linkage bracket (12) using 1/4-28 lock nut (8). Slide female ball joint (7) onto stud (6).
3. Fasten male ball joint studs (11) to both spools of valve (1) using 1/4-28 hex nuts (10) and 1/4" lock washers (9).

   NOTE: *Rotate tilt spool (spool without float) approximately 45° to ease installation of male ball joint (11), 1/4" lock washer (9), and 1/4" hex nut (10).*
4. Fasten adapter plate of valve handle (4) to ball joints (7 & 11) using 1/4-28 x 3/4" socket head cap screws (5).
5. Slip boot (3) over handle (4) and attach ball (2).
6. Install straight fittings (15) onto pressure and tank ports in valve (1). Install 90° fitting (20) into power beyond port in valve (1).
7. Install straight female fittings (16) into working ports A and B of valve (1). Install straight male fittings (15) into working ports C and D of valve (1).

   IMPORTANT: *Before installing straight male fittings (15) into working ports B and C, make sure orifice plate with .062" diameter hole is installed (feet up) in working port B and orifice plate with .109" diameter hole is installed (feet up) in working port C.*
8. Install 90° elbow fittings (17) into female straight fittings (16). Install 45° elbow fittings (18) into 90° elbow fittings (17). Install 90° elbow fittings (19) onto male straight fittings (15).
9. Install female quick couplers (21) and 3/4" colored spiral bands (22-25) to fittings (18 & 19). Align quick couplers (21) parallel with top of valve (1).
10. Fasten valve assembly onto valve mounting angle (34) using 1/4 x 2" cap screws (32) and 1/4" lock nuts (33). Fasten valve mounting angle (34) to valve stand tube (26) using 3/8 x 2-1/4" cap screws (35) and 3/8" lock nuts (36).
11. Slip 5/16-18 speed nuts (29) over holes in cover (27). Fasten cover (27) to valve stand (26) using 5/16 x 3/4" cap screws (30) and 5/16" lock washers (31).
12. If replacing warning or operation decals (37 or 38), make sure outer surfaces of cover assembly (27) are clean and dry. Remove backing from operation decal (38) and apply it to top of cover (27). Remove backing from warning decal (37) and apply it to side of cover (27), making sure it is clearly visible to operator.

PARTS LIST — Control Valve Assembly with Handle & Fittings, 52530 (Figure 1)

Item	Part No.	Description	Qty.
1	52190	VALVE, (1800 PSI)	1
2	38902	BALL	1
3	43635	BOOT	1
4	38908	HANDLE	1
5	38910-1	SCREW, Socket Head, 1/4-28 x 3/4"	3
6	38904-1	STUD, Ball Joint	1
7	38900-5	BALL JOINT, Female	1
8	41840-21	NUT, Lock, 1/4-28	1
9	41837-1	WASHER, Lock, 1/4"	2
10	41836-11	NUT, Hex, 1/4-28	2
11	26009-3	BALL JOINT, Male	2
12	38903	BRACKET, Valve Linkage	1
13	38910-2	SCREW, Socket Head, 5/16-24 x 3/4"	1
14	38911-1	SCREW, Flat Head Socket, 5/16-24 x 3/4"	1
15	32844-1	FITTING, Straight, 9/16 JIC x 9/16 O-Ring	4
16	42062-6	FITTING, Straight, Swivel, 9/16 JIC x 9/16 O-Ring	2
17	34128-3	FITTING, Elbow, 90°, 9/16 JIC x 9/16 JIC	2
18	31213-5	FITTING, Elbow, 45°, 9/16 JIC x 9/16 O-Ring	2
19	44277-2	FITTING, Elbow, 90°, 9/16 JIC x 9/16 O-Ring	2
20	32845-1	FITTING, Elbow, 90°, 9/16 JIC x 9/16 O-Ring	1
21	6147-9	COUPLER, Female	4
22	36240-1	BAND, Spiral, 3/4", Blue	1
23	36240-2	BAND, Spiral, 3/4", Red	1
24	36240-3	BAND, Spiral, 3/4", Yellow	1
25	36240-4	BAND, Spiral, 3/4", Green	1
26	50206	VALVE STAND, Tube	1
27	51910	COVER ASSEMBLY, Valve, with Decals	1
28	44274-1	PLUG, Square Tube	1
29	6067-1	NUT, Speed, 5/16-18	2
30	41838-26	SCREW, Cap, 5/16-18 x 3/4"	2
31	41837-2	WASHER, Lock, 5/16	2
32	41838-82	SCREW, Cap, 1/4-20 x 2"	2
33	41840-11	NUT, Lock, 1/4-20	2
34	52529	ANGLE, Valve Mounting	1
35	41838-19	SCREW, Cap, 3/8-16 x 2-1/4"	2
36	41840-3	NUT, Lock, 3/8-16	2
37	25801	DECAL, Warning	1
38	38929	DECAL, Single Handle Control	1

Figure 3
Control Valve Assembly with Handle & Fittings

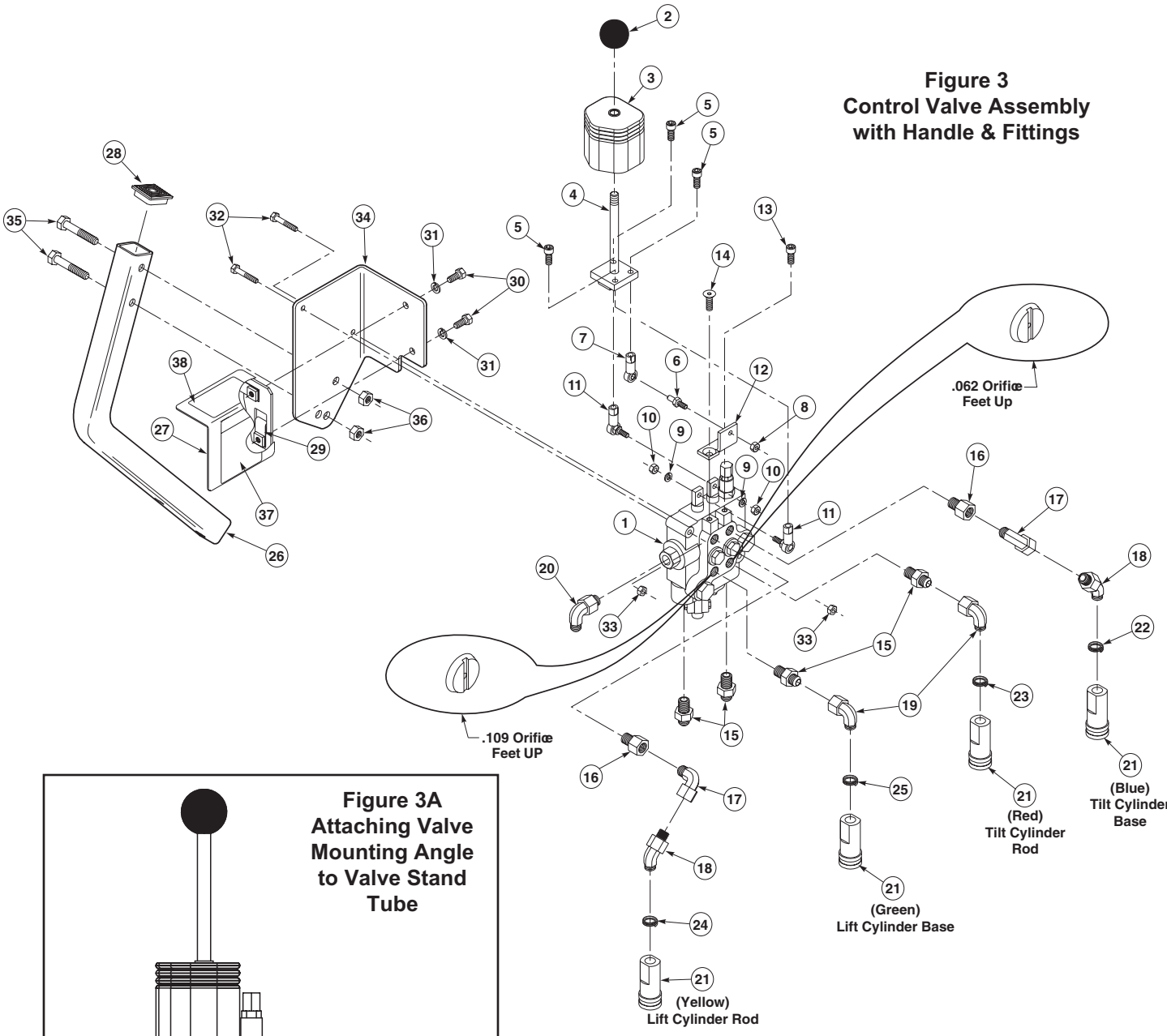
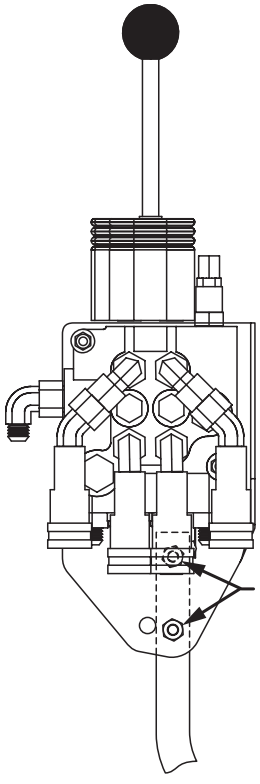


Figure 3A
Attaching Valve Mounting Angle to Valve Stand Tube



Fasten valve mounting angle to valve stand tube using holes at these locations.

Figure 3B
Reverse View of Control Valve (1)

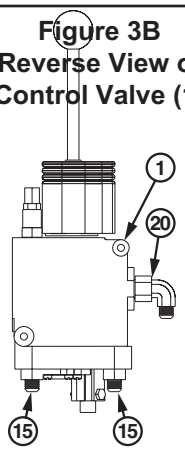
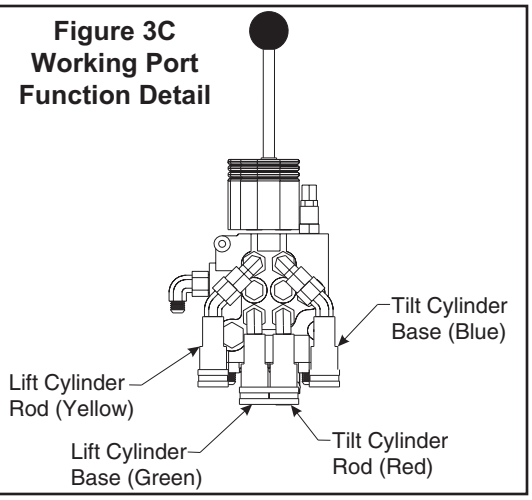


Figure 3C
Working Port Function Detail



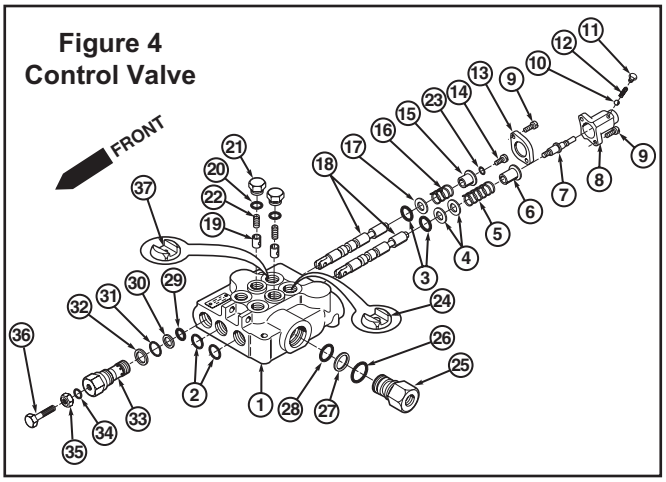
DUKES DV-27 VALVE SERVICE (FIGURE 4)

The control valve is designed to be reliable and easy to service. The valve body and spools are not sold as separate repair items, because the body is factory honed to fit the spools. If the valve should malfunction during warranty period, return the complete valve assembly, without disassembling, to your authorized service department or contact your authorized service department for instructions. Unauthorized disassembly of the valve in the warranty period will VOID WARRANTY.

WARNING: *This valve has a valve relief setting preset at the factory. Tampering with this setting can cause SERIOUS INJURY to the operator and DAMAGE to the tractor or loader. Unauthorized adjustments or service to the valve relief will VOID WARRANTY of both loader and tractor. If adjustments or service to the valve relief are required during the warranty period, an authorized service department must be consulted for authorization.*

Follow the following procedure to disassemble and reassemble the valve.

Figure 4
Control Valve



VALVE DISASSEMBLY

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

1. Remove 1-way restrictor plates with .109 hole (24) and .062 hole (37) from working ports B and D of valve body by holding the valve body upside down and lightly tapping on the bottom of valve.
2. Remove detent screws (11), detent springs (12) and steel balls (10) from both sides of detent end cap (8). Remove detent end cap (8) and end cap (13) from rear of valve body (1) by removing two screws (9) from each end cap.
3. Remove detent stud (7), spring spacer (6), detent centering spring (5) and flat washers (4) from detent spool. Remove screw (14), o-ring (23), spring spacer (15), centering spring (16) and flat washer (17) from the other spool.

   NOTE: *If spring centering parts are not damaged, it is advisable not to remove the parts from the spools, because detent stud (7) and screw (14) are installed with Loctite® and torqued to 3 ft. Lbs.*
4. Push spools (18) into valve body (1) from the rear until rear spool o-rings (3) are exposed, then remove o-rings by using a wire hook and a screwdriver. Push spools back into valve body from the front and pull spools out of valve body from the rear. Remove front spool o-rings (2) with wire hook and screwdriver.
5. Remove load check plugs (21), load check springs (22) and load check poppets (19) from the top of the valve body. Remove load check plug o-rings (20) from plugs only if o-rings are to be replaced.
6. For valves with pilot-operated relief cartridge (33), remove pilot-operated relief cartridge (33) from front of valve body. Remove o-rings (29 & 31) and back-up washers (30 & 32) only if they are to be replaced.

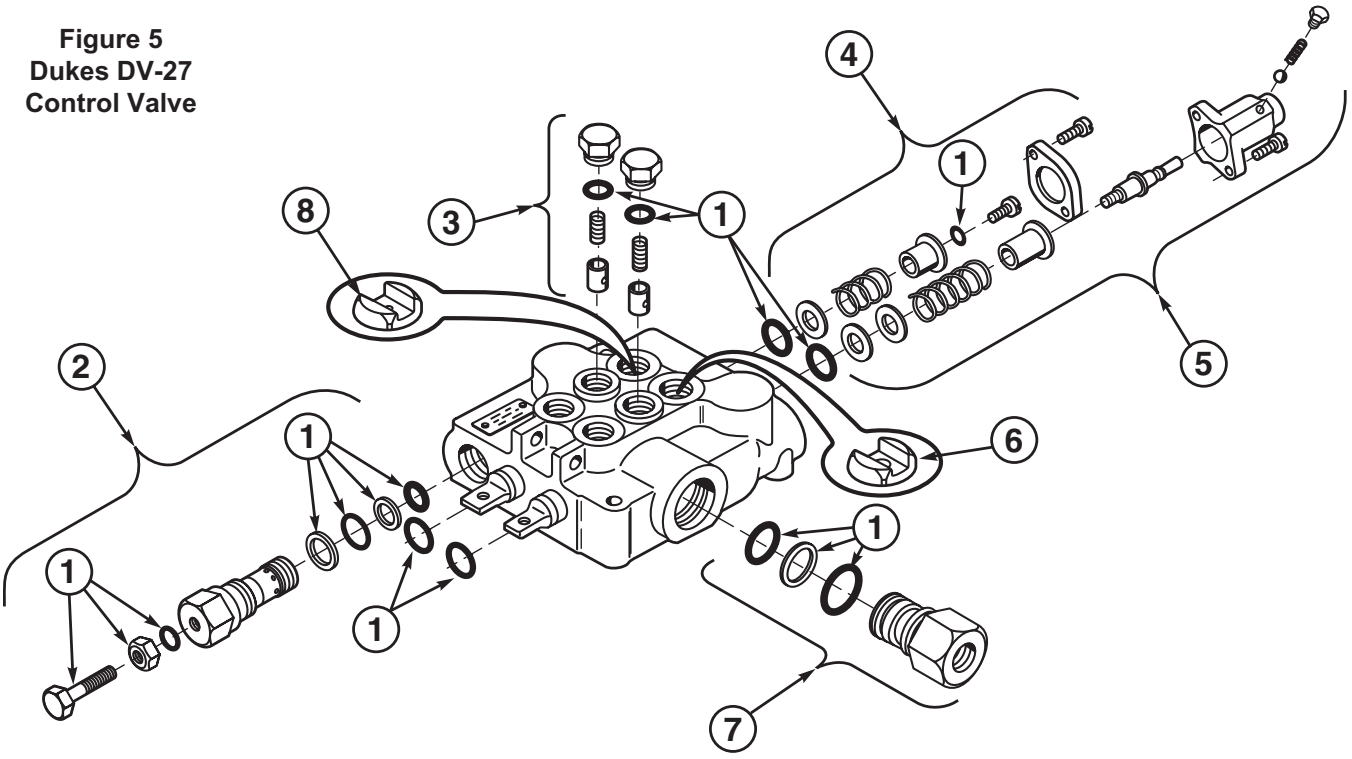
CAUTION: *Do not remove or adjust smaller nuts of relief cartridge (29).*

7. Clean all parts, including valve body, in a 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.

Figure 5
Dukes DV-27
Control Valve



PARTS LIST - DUKES DV-27 VALVE, 52190

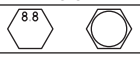
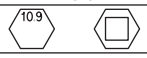
ITEM	PART NO.	DESCRIPTION	QTY.
1	41270	REPAIR KIT, Seal - Pilot operated relief	1
2	36583	REPAIR KIT, Pilot operated relief, 1800 PSI	1
3	33101	REPAIR KIT, Load Check	2
4	41269	REPAIR KIT, Spring Centering	1
5	33103	REPAIR KIT, Detent Spring Centering	1
6	48004	PLATE, 1-Way Restrictor with .109 Orifice	1
7	36584	POWER BEYOND KIT	1
8	25944	PLATE, 1-Way Restrictor with .062 Orifice	1

* **NOTE:** *Individual items not listed in parts list are not available separately.*

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 molysulphide 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