

Keep With Operator's Manual

**VALVE AND PLUMBING KIT (SERIES VALVE)
2406 LOADER
KUBOTA TRACTORS**

MODEL	2WD	4WD	LESS CAB	WITH CAB
B2150DT & B2150HSD		X	X	
B8200DT & B8200HSD		X	X	
B9200DT & B9200HSD		X	X	

Valve and Plumbing General Information

This kit includes a series hydraulic valve. A series valve may be preferred over a parallel valve for the relative ease with which two functions can be performed simultaneously. However, attempting to simultaneously lift and roll back will cause a reduction in power and eventually, a stall. To prevent this, a shield (19) (Figure 1) is installed onto valve, which will allow lift or roll back, but not both simultaneously. It is important that this shield (19) be in place at all times to assure maximum loader efficiency. This shield also displays important safety (16) and operation decals (17 & 18) which must be visible and legible on valve at all times.

NOTE: Valve handle is equipped with a spool lock/unlock feature. Spool lock/unlock operation decal (17) near handle boot (5) shows how to operate small knob at base of handle linkage to allow or prevent handle operation (See Figure 1)

Pulling small knob outward and turning it a quarter turn to hold it out, allows handle operation.

Pulling small knob, turning it a quarter turn, and allowing spring to retract it to inward position locks handle to prevent operation.

Valve and plumbing kit can be installed on tractor using tools ordinarily available. Shut off engine, engage parking brake, and remove key before installation.

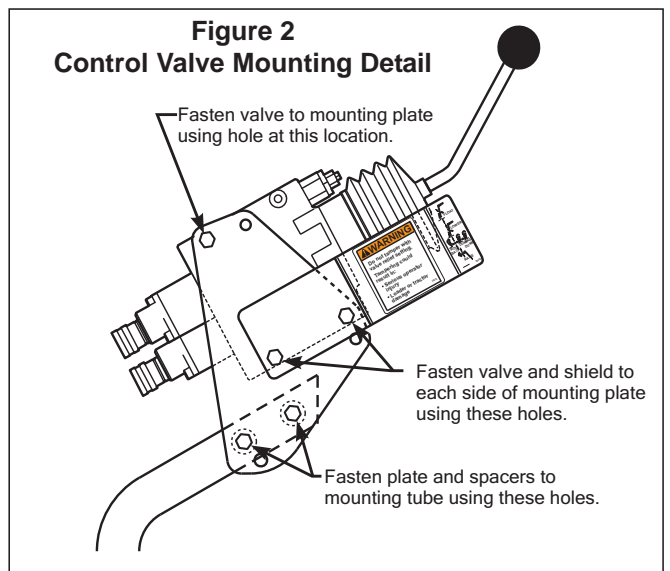
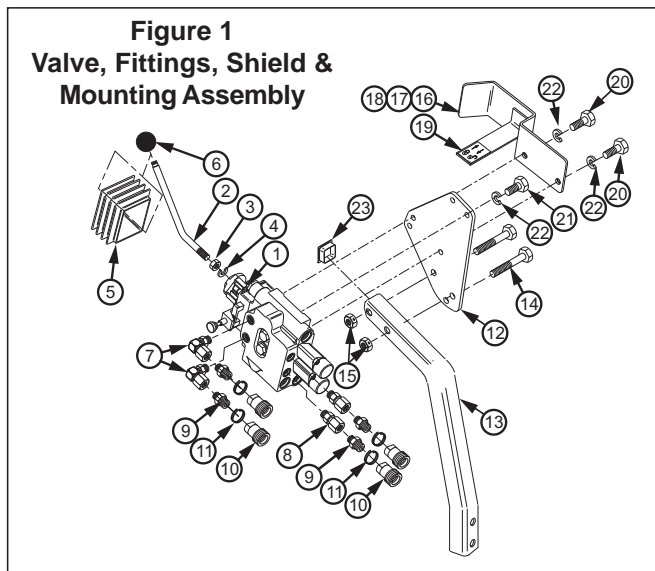
NOTE: Apply sealant only to all tapered threads unless coupled with swivel adapters. When using Teflon tape, wrap tape clockwise (as viewed from end) and wrap only twice. Keep sealant away from first two threads of tapered end to prevent contamination of hydraulic fluid. Do not use sealant on O-ring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

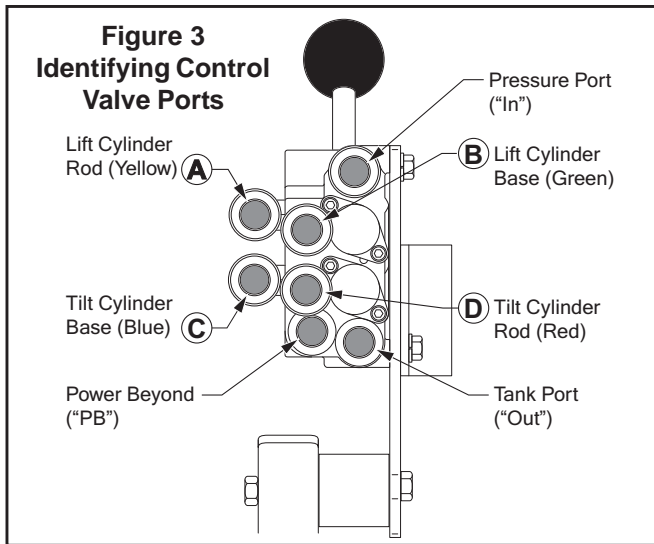


Warning: Escaping hydraulic fluid under pressure can penetrate skin causing serious injury.

- DO NOT use hands to check for leaks. Use a piece of cardboard or paper to search for leaks.
- Stop engine and relieve pressure (by actuating levers) 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.





Attaching Valve to Loader Mounting Brackets (Figures 1, 2, 3, & 4)

1. Install 9/16 x 9/16 x 90" elbow fittings (7) into ports A and C of valve (1). Orient elbow fittings (7) parallel with valve body to point in same direction as valve ports B and D, then tighten jam nuts to lock elbows in position. Install 9/16 x 9/16 straight fittings (9) into fittings (7 & 8) and install female quick couplers (10) and large identification bands (11) onto straight fittings (9).

NOTE: Be sure to attach color-coded identification bands (11) in sequence shown in Figure 3.

2. Fasten valve mounting plate (12) to valve mounting bracket (13) using 3/8 x 2-1/4" HHCS (14) and 318" HL Nuts (15). Insert square plug (23) into top of valve mounting tube (13).
3. Fasten valve (1) and decal mounting plate (19) to valve mounting plate (12) with tank and power beyond ports to bottom using HHCS 5/16 x 3/4" (20) and 5/16" lock washer (22). Fasten valve shield (10) to valve (1), through mounting plate (19), using 5/16 x 1" HHCS (20) and 5/16" lock washer (22) in bottom holes in valve.

NOTE: Decals (16 17& 18 are affixed to valve shield (19) from factory. (See Figure 2.) Replace decals if they become worn or illegible. When applying replacement decals, make sure surface of valve shield (19) is clean and dry.

4. Thread 7/16 - 20 nut (3) onto valve handle (2) and place 7/16" lock washer (4) onto handle. Attach handle (2) to valve (1). Slip boot (5) over handle to cover handle linkage assembly. Thread ball (6) onto end of valve handle.

NOTE: To allow valve handle to be adjusted to best position for operator, leave nut (3) with lock washer (4) loose for adjustment until valve and mounting tube is secured to loader right mounting bracket. Tighten nut (3) and secure valve handle boot (5) with plastic tie strap (27) only after valve and plumbing assembly are complete.

5. Attach valve mounting tube (13) to right loader mid mounting bracket using 1/2" x 2-3/4" HHCS (24), 1/2" flat washers (25), and 1/2" HL nuts (26).

Plumbing Control Valve to Tractor Hydraulics (Figures 3 & 4)

1. Install 3/8 x 44" hose (33) into tank port of valve (1) and slide hose sleeve (33) over hose (33), securing sleeve over hose crimp with plastic tie strap (27).
 2. Install 3/8 x 50" hoses (34) into pressure port and 3/8" x 44" hose (36) into power beyond ports of valve (1) and slide hose sleeve (34 & 36) over hoses (34 & 36), securing sleeves over hose crimps at valve with plastic tie straps (27).
 3. Route hoses (33, 34, & 36) to ports on tractor hydraulic block. Remove plugs from ports of tractor hydraulic block.
 4. Install banjo fittings (38) (facing forward) to tractor hydraulic ports using flow bolts (37), O-rings (39) and copper seal rings (40). O-rings (39) act only as spacer to center copper seal rings on flow bolt.
- NOTE:** To avoid leaks, orient banjo fittings so fitting body does not overlap areas of hydraulic outlet which are not spot faced. Torque flow bolts (37) to 60 ft-lbs (84 N*M).
6. Install 9/16" adapter fittings (35) into banjo fittings (38).
 7. Connect power beyond hose (38) to power beyond port in tractor hydraulic block. Connect pressure hose (34) to pressure port in tractor hydraulic adapter block. Connect tank hose (33) to tank port in tractor transmission. Route hoses (33, 34, & 36) down valve mounting stand (13) and under operator's platform to tractor hydraulic ports.

8. Secure hoses (33, 34, & 36) to valve mounting stand (13) using plastic tie strap (27). Bundle hoses together under operator's platform using plastic tie strap (27). Use extra tie straps (27) to bundle hoses together and avoid interference with loader and tractor tires.
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, engage parking brakes, and remove key. Replenish tractor hydraulic oil as specified in tractor operator's manual.

Plumbing Loader to Control Valve (Figures 3 & 4)

1. Install 114 x 60" hoses (30) onto boom oil line tubes. (See Figure 4.) Install and tighten hose fittings one at a time from the bottom up. Loosening the closest oil line clamp will ease installation.
2. Install small identification bands (31) onto free ends of hoses (30) to match bands on female quick couplers (10). Slide hose sleeves (29) over hoses (30). Install male quick couplers (32) onto free ends of hoses (30).
3. Connect hoses (30) from upper two boom oil lines to lower female quick couplers on valve and connect hoses (30) from lower two boom oil lines to upper female quick couplers on valve. Wrap tarp strap (28) around hoses (30) and hook on itself. Attach free end of rubber strap to loader right side frame. (See Figure 4)

NOTE: *When cycling loader, operate loader according to operation decal (18) on valve shield (19). 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.*

2-7385

Parts Listing - Plumbing Control Valve

Item	Part No.	Description	Qty.
1	52208	VALVE/PRINCE LVS SERIES/ 2 SPOOL (1600 PSI)	1
2	43517	HANDLE/ VALVE/ STANDARD	1
3	41836-14	NUT/HEX 7/16 - 20	1
4	41837-4	WASHER/LOCK 7/16	1
5	52172	BOOT/ VALVE HANDLE LINKAGE	1
6	38902	BALL/ VALVE HANDLE	1
7	44277-2	FITTING/ ELBOW 90/ 9/16-18 SAE O-RING MALE X 9/16-18 JIC FEMALE	2
8	42062-6	FITTING/ STRAIGHT 90/ 9/16-18 SAE O-RING MALE X 9/16-18 JIC FEMALE	2
9	31221-4	FITTING/ STRAIGHT 3/8 NPT MALE X 9/16-18 JIC MALE	4
10	6147-4	COUPLER/ FEMALE QUICK/ 3/8"	4
11	36240-9	BAND/SPIRAL - PLASTIC/ BLUE - 1"	1
11	36240-10	BAND/SPIRAL - PLASTIC/ RED - 1"	1
11	36240-11	BAND/SPIRAL - PLASTIC/ YELLOW - 1"	1
11	36240-12	BAND/SPIRAL - PLASTIC/ GREEN - 1"	1
12	52201	PLATE/ VALVE MOUNTING	1
13	44366	TUBE/VALVE MOUNT	1
14	41838-19	HHCS 3/8-16 X 2-1/4" LG GR5	2
15	41840-3	HLN 3/8"	2
16	52074	DECAL/WARNING DO NOT TAMPER W/ VALVE RELIEF SETTING	1
17	52203	DECAL/LOCK/ UNLOCK	1
18	52204	DECAL, SINGLE HANDLE CONTROL	1
19	52189	SHIELD/SERIES VALVE W/DECALS	1
20	41838-60	HHCS 5/16-18 X 1.00 GR5	2
21	41838-26	HHCS, 5/16-18 X 3/4" LG GR5	1
22	41837-2	WASHER/LOCK 5/16"	3
23	44274-1	PLUG/PLASTIC SQ TUBE	1
24	41838-25	HHCS, 1/2-13 X 2-1/2" LG GR5	2
25	42502-10	WASHER/FLAT 1/2"	2
26	41840-5	LOCK NUT 1/2-13	2
27	8137-1	STRAP/ PLASTIC/ ADJUSTABLE/ 3/16 WIDE X 11" LONG	5
28	7438-1	STRAP/TARP	1
29	34853-34	NYLON SLEEVE 1.00 X 60"	4
30	36251-3	HOSE/HYD 1/4 X 60"	4
31	36240-5	BAND/SPIRAL/ PLASTIC/ BLUE/ 5/8"	1
31	36240-6	BAND/SPIRAL/ PLASTIC/ RED/ 5/8"	1
31	36240-7	BAND/SPIRAL/ PLASTIC/ YELLOW/ 5/8"	1
31	36240-8	BAND/SPIRAL/ PLASTIC/ GREEN/ 5/8"	1
32	6137-4	COUPLER/ MALE QUICK/ 3/8"	4
33	43454-7	HOSE/HYD 3/8 X 44	1
	34853-61	NYLON SLEEVE, 1.25 X 44"	1
34	43454-10	HOSE/HYD 3/8 X 50	1
	34853-43	NYLON SLEEVE 1.25 X 50"	1
35	32844-1	ADAPTER/HY 9/16 - 18 37DE	3
36	43454-7	HOSE/HYD 3/8 X 44	1
	34853-61	NYLON SLEEVE, 1.25 X 44"	1
37	43763	FLOW BOLT	3
38	36766	BANJO HYD FITTING	3
39	6000-82	O-RING .364 X .504 X .070	3
40	36769	COPPER SEAL RING (18MM)	3

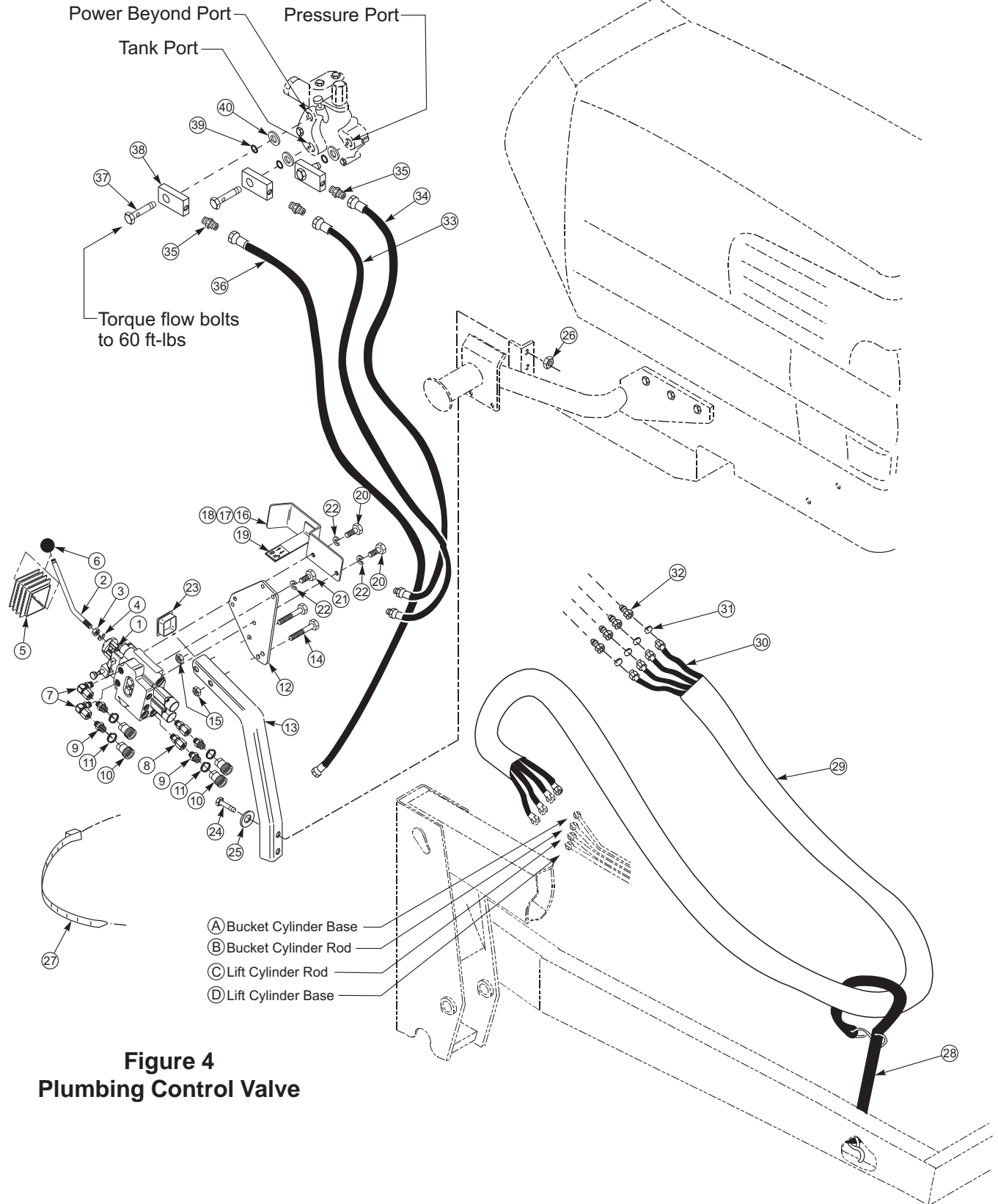


Figure 4
Plumbing Control Valve

PARTS LIST – PRINCE LVS (SERIES) VALVE

Item	Part No.	Description	Qty.
1	52253	SEAL KIT, Prince LVS Valve	1
2	43637-5	RELIEF VALVE (1600 PSI)	1
3	55764	PLUG, Load Check	2
4	52254	FLOAT KIT (Includes items 6, 7, 8, 10, 11, 12, 13, 14, 15, 16, 17, and 18)	1
5	52255	REGEN KIT (Includes items 6, 7, 9, 10, 11, 12, 13, 14, 15, 16, 17, and 18)	1
7	44476-3	END CAP, Manufacturer's part number (HC-V-AA25) stamped on end cap identifies valve and relief setting.)	2
19	43517	HANDLE, Valve, Standard	1
20	41836-14	NUT, Hex, 7/16-20	1
21	41837-4	WASHER, Lock, 7/16"	1
22	52172	BOOT, Rubber, Valve Handle	1
23	38902	BALL, Handle	1
24	-----	TIE STRAP, 3/16" wide x 13" long	1
25	52251	DISK, Adapter, Handle to Linkage	1
26	44743-4	SCREW, Cap, Socket Head, 5/16-24 x 3/4"	3
27	51075	ROD END, Assembly	2
28	38900-4	ROD END	1
29	51076	STUD, Spool	1
30	41836-12	NUT, Hex, 5/16-24	3
31	52252	CLEVIS, Lock, Housing	1
32	44743-7	SCREW, Cap, Socket Head, 1/4-20 x 1-3/4"	2
33	44743-6	SCREW, Cap, Socket Head, 1/4-20 x 3/4"	1
34	42502-6	WASHER, Flat, 1/4"	1
35	52250	KNOB, Spool Lock	1
36	52247	HANDLE, Spool Lock	1
37	52246	BLADE LOCK	1
38	52249-1	RING, Retaining, External	1
39	52248	SPRING	1
40	G273625	ROLL PIN	1

NOTE: Valve spools are one-piece construction, which includes spool ends for connecting handle linkage. Valve spools and body are matched parts and are not available separately. Individual items not listed in repair parts listing are not available separately.

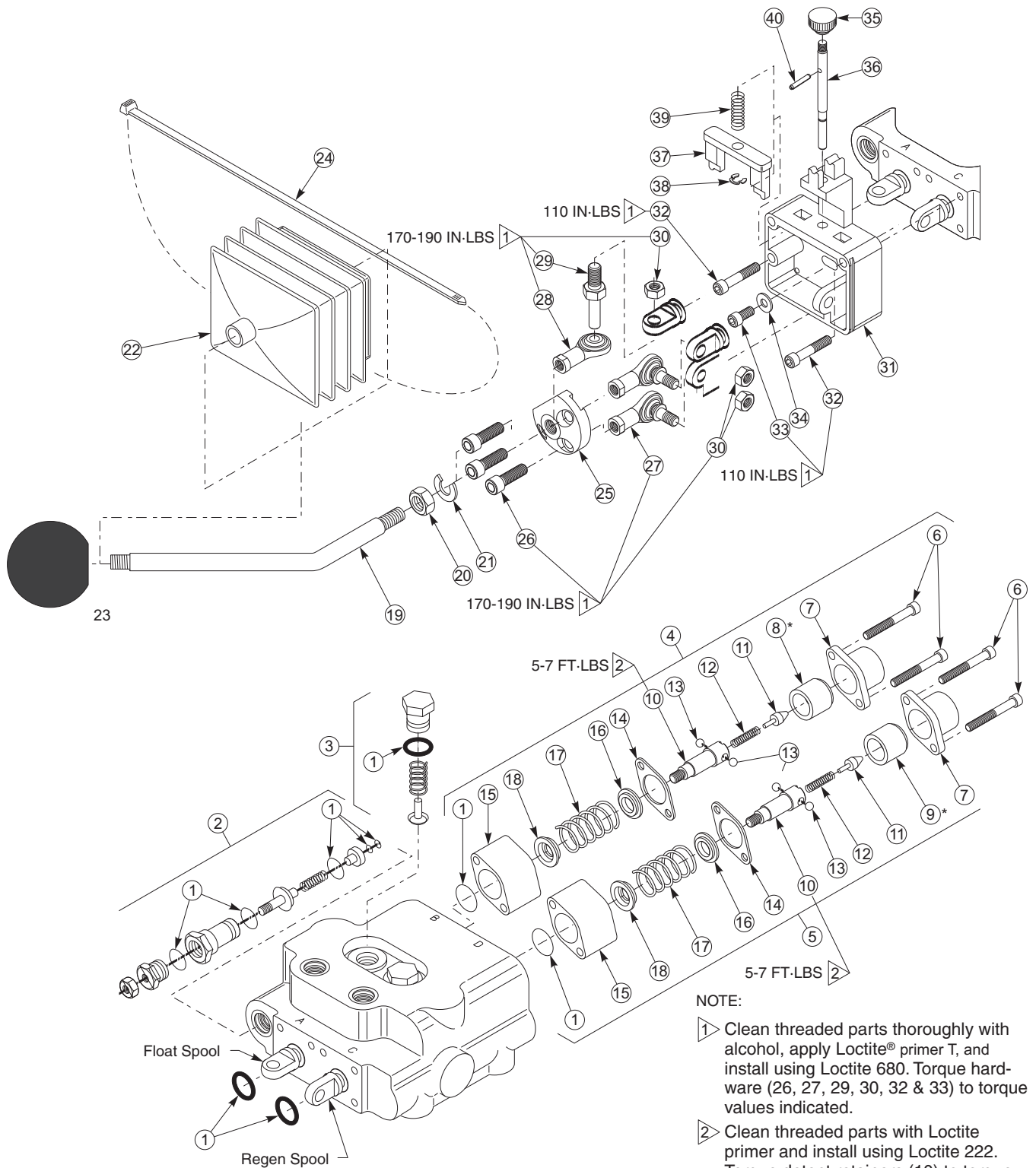


Figure 5
PRINCE LVS
(SERIES) VALVE

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	<p>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.</p>									
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										

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