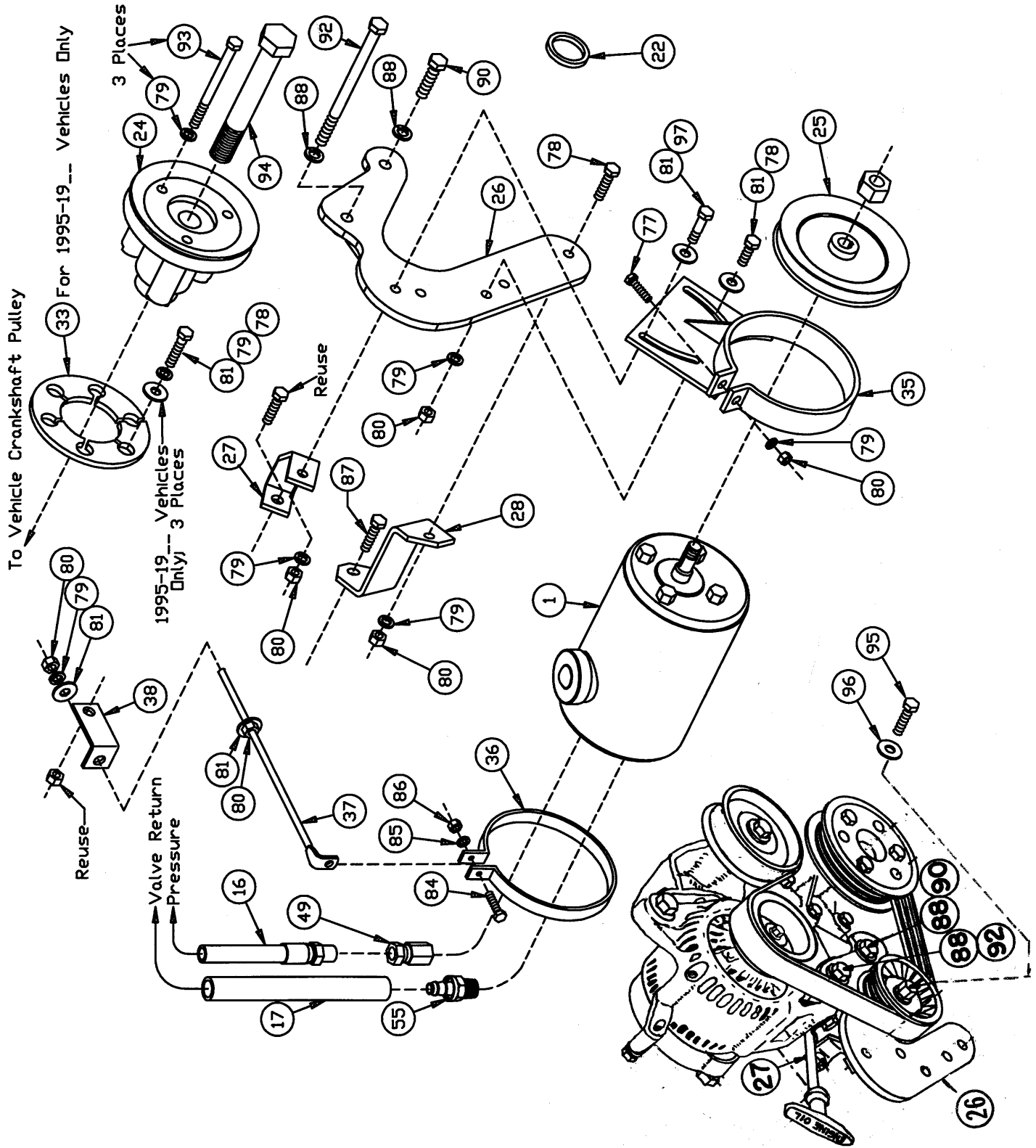


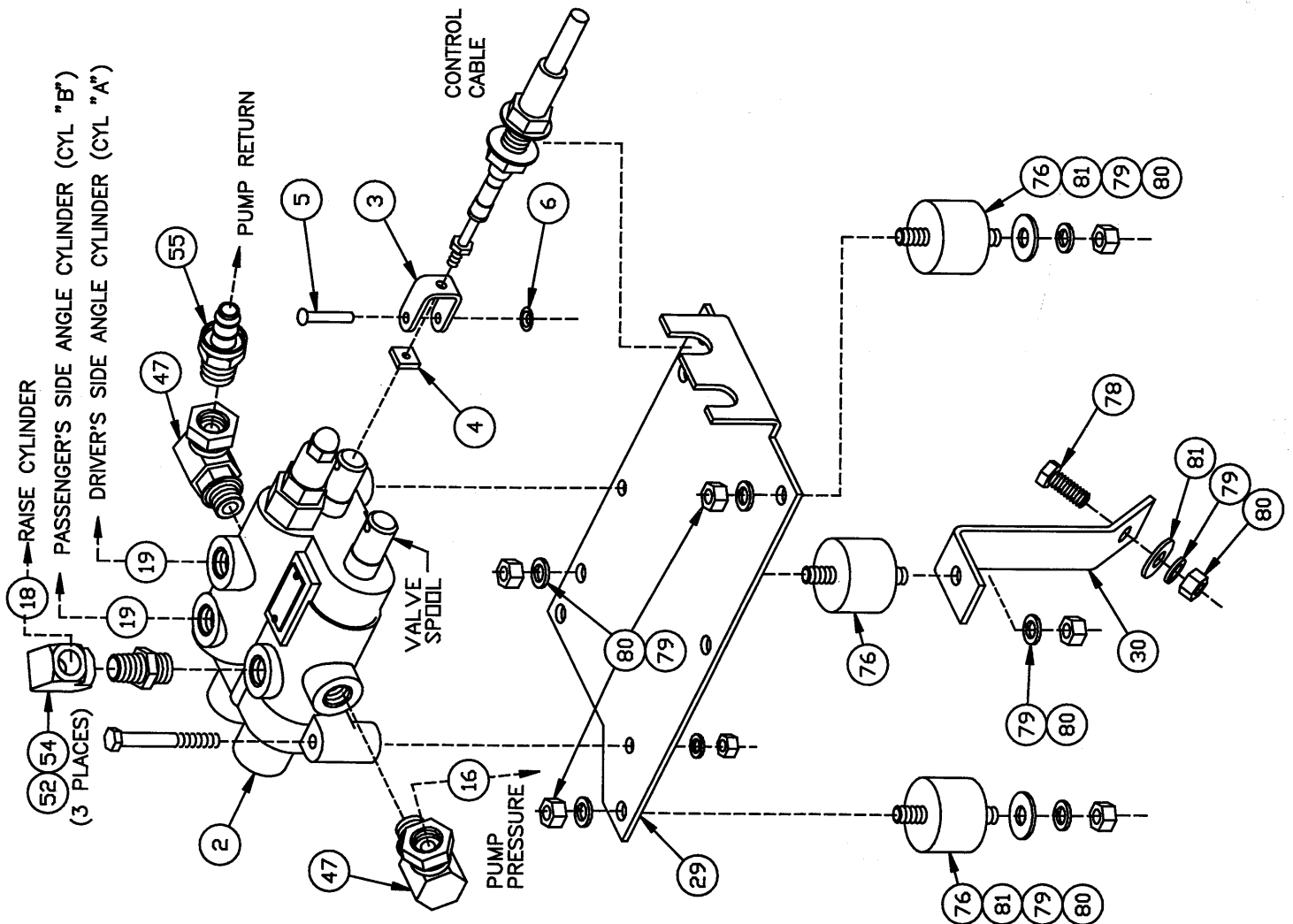
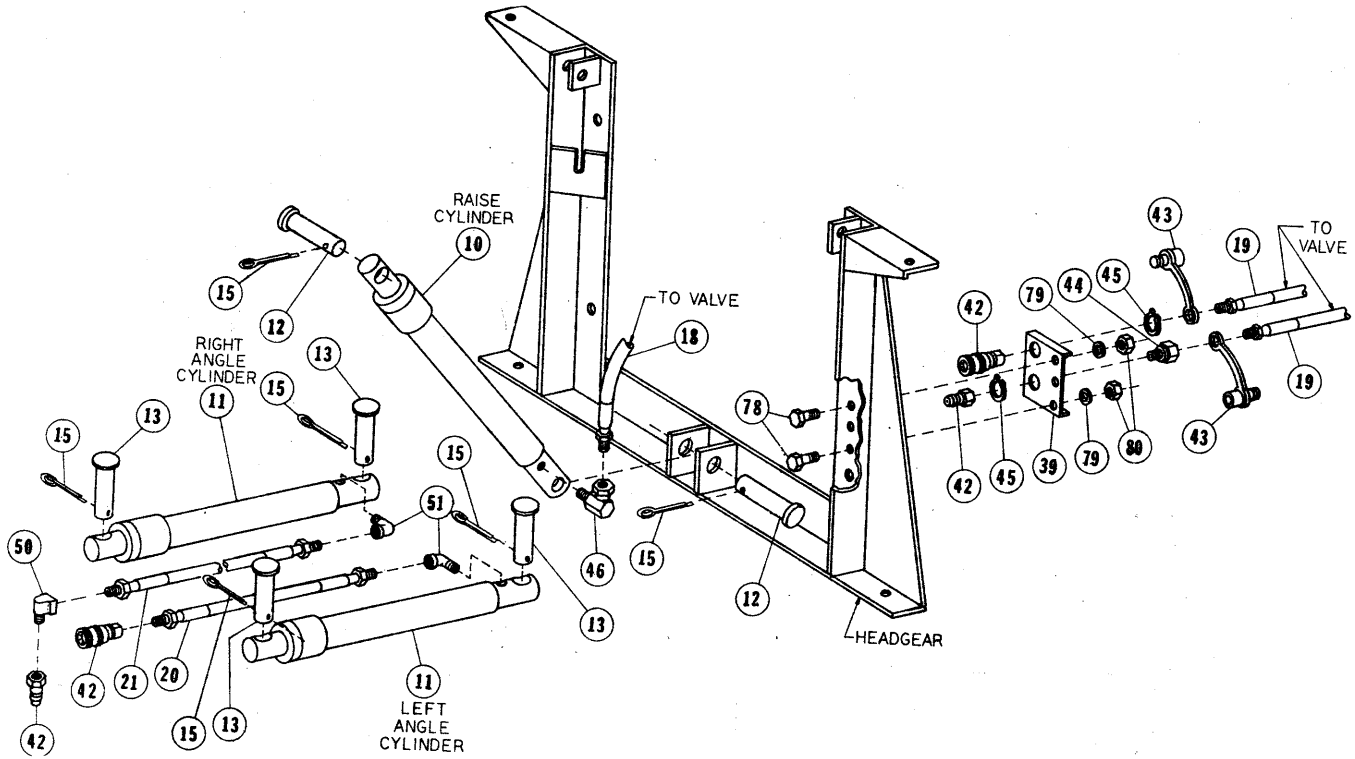
DODGE Dakota  
 V6 3.9 L w-w/o AC  
 w/AT  
 w-w/o AT

1992-1993  
 1993-19\_\_

Peculiar Hydraulics 7509B  
 Belt Drive, SLC  
 Underhood Valve






6393



## Hydraulics Parts List

Ref #	Qty	In Kit	Part #	Description	Ref #	Qty	In Kit	Part #	Description
# A4468-40 7509B			#	* Part of 8038 Bolt Bag	# A4468-40 7509B			#	* Part of 8038 Bolt Bag
1	1		A2311	Pump assembly	50	1		*765	1/4 Brass Bar Street Elbow
2	1		A4466-40	Control Valve Assembly	51	2		2780	1/4 Npt x 90 Deg Street Elbow Frgd
3	2		4483	Clevis - VM	52	3		* 2318	1/4 Npt x 90 Deg Union Elbow
4	2		4494	10-32 Square Nut - VM	53				
5	2		4491	Clevis Pin - 3/16" x 1	54	3		*3058	9/16 O-Ring to 1/4 Npt Adapter
6	2		4493	3/16" Push Nut Zp	55	2		1658	Quill - 3/8 Nptm to 3/8 ID Hose
7	1		8764	Filter Kit	56				
8		1	4419	Single Lever Control	57				
9		2	A4488	40" Control Cable, SLC	58				
10	1		A318	1-1/2" x 10" Cylinder Assembly	59				
11	2		A3660	1-1/2" x 12" Cylinder Assembly	60				
12	2		6814	Clevis Pin - 1 x 3-5/16	61				
13	4		6816	Anchor Pin - 1 x 4	62				
14					63				
15	6		90601	1/4" x 1-1/2" Cotter Pin	64				
16		1	2516	Hose - 72" Hp 1/4P - 3/8P	65				
17		1	2515	Hose - 72" Lp	66				
18		1	5193	Hose - 54" Hp 1/4P - 1/4P	67				
19		2	5215	Hose - 48" Hp 1/4P - 1/4P	68				
20		1	376	Hose - 32" Hp 1/4P - 1/4P	69				
21		1	4424	Hose - 36" Hp 1/4P - 1/4P	70				
22		1	*5588	Fan Spacer - 3/16"	71				
23		1	419	Fan Belt, 53"	72		1	5704	Caution Label - Cab
24		1	8040	Drive Sheave	73		2	3042	Grommet - Rubber, Split
25		1	3696	Pump Sheave	74		1	4477	Grommet - Split Hose
26		1	8041	Pump Bracket	75		3	*3666	Hose Tie, nylon 3/16" x 8"
27		1	8042	Brace	76		3	*5529	Rubber Shock Mount
28		1	8043	Brace	77		1	90054	5/16 x 1-1/2 (NC) Gr. 5 Cap Screw
29		1	5329	Valve Plate	78		4	*90042	5/16 x 1 (NC) Gr. 5 Cap Screw
30		1	4476	Valve Plate Brace	79		6	*90360	5/16 Sp Lock Washer
31		1	*7728	Hose Protector	80		7	*90332	5/16 (NC) Nut
32		1	6060	Brace Tab	81		4	*90313	5/16 Flat Washer
33		1	20296	Drive Sheave spacer	82				
34					83				
35		1	5530	Saddle Bracket	84		1	90614	1/4 x 1-1/4 (NC) Gr. 5 Cap Screw
36		1	2036	Rear Tank Strap	85		1	90359	1/4 Sp Lock Washer
37		1	2116	Universal Brace Rod	86		1	90330	1/4 (NC) Nut
38		1	*2115	Universal Brace Tab	87		1	*90103	3/8 x 1 (NC) Gr. 5 Cap Screw
39		1	4467	Disconnect mounting plate	88		2	*90361	3/8 Lock Washer
40					89				
41					90		1	*90619	3/8 x 2-1/2 (NC) Gr. 5 Cap Screw
42		2	*A1587	Hose Disconnect Assembly	91				
43		2	*1588	Dust Plug - Closure/Male	92		1	*90570	3/8 x 5 (NC) Gr. 5 Cap Screw
44		1	*4486	Adapter - Bulkhead 1/4" Npt	93		3	*90666	5/16 x 3-1/2 (NC) Gr. 5 Cap Screw
45		2	*4485	Snap Ring - 7/8" External Bowed	94		1	*90534	3/4 x 4-1/2 (NF) Gr. 5 Cap Screw
46		1	319	1/4" x 90 Swivel Adapter	95		1	*90391	M10 x 1.5 x 30 Gr. 8.8 Cap Screw
47		2	2315	9/16-18 w/O-Ring x 3/8 F Pi Swivel	96		1	*90420	M10 Flat Washer
48					97		1	*90048	5/16 x 1-1/4 (NC) Gr. 5 Cap Screw
49		1	*1659	Adapter Union, 1/4 N.P.T. both ends	98		1	*8011	Nylon Mounting Tie Wrap
					99		1	*90659	#12 x 3/4 Sheet Metal Screw

FASTENER TORQUE (FT-LB)			
DIAMETER- THREADS PER INCH	GRADE		
			
	G2	G5	G8
1/4 - 20	6	9	13
5/16 - 18	11	18	28
3/8 - 16	19	31	46
7/16 - 14	30	50	75
1/2 - 13	45	75	115
9/16 - 12	66	110	165
5/8 - 11	93	150	225
9/16 - 12	150	250	370
7/8 - 9	150	378	591
1 - 8	220	583	893

## 1. Cylinder & Cylinder Hose Assembly

- A. Using bench vise to hold lift cylinder (10), remove closure from port. Screw 90 degree swivel adapter (46) into port. Place lift cylinder with installed adapter between ears on underside of lift arm and lower head gear ears. Attach cylinder to ears using clevis pins (12) and cotter pins (15).
- B. Using bench vise to hold 32" Hp hose (20), install female half of hose disconnect assembly (42) directly to hose. Then, holding 36" Hp hose (21) install brass bar street ell (50) and male half of hose disconnect assembly (42) on same hose end.
- C. Using a bench vise to hold angle cylinders (11), remove closures from ports. Screw brass forged street ells (51) into ports. Ells should be parallel with cylinder and pointed toward live end. Install 32" Hp hose with female disconnect half to driver side angle cylinder street ell. Install other Hp hose with male disconnect half to passenger side angle cylinder street ell. Install other Hp hose with male disconnect half to passenger side angle cylinder street ell. Install angle cylinders to "A" frame on their respective sides so ells are between cylinders and "A" frame. Secure cylinders with anchor pins (13) at port end and ram end. Secure anchor pins with cotter pins (15).

**Note: Dash bracket, hardware, drilling guide and mounting instructions will be found in peculiar attachments box.**

## 2. Control Head & Control Cables

- A. Drill three 5/8" holes in the firewall for the control cables and wiring harness and one 1/2" hole in dash for light switch using drilling guide as a reference only. **Be sure both sides of the firewall are clear of obstructions before drilling.**
- B. Install the dash bracket as per dash bracket instructions.
- C. Loosen the "jam nuts" on control head end of cables (9) and install into slots in control head (8). (Raise cable centers in beginning of lower slot.) Snap cable ends onto ball studs and tighten jam nuts to secure cables to control head. Remove the nuts and washers from the valve end of the cables. Route the cables out through the firewall up to top of the driver side fender well. Attach control head to dash bracket as per dash bracket instructions. Install rubber grommets (73) around cables where they pass through the fire wall.

## 3. Valve & Valve Plate

- A. Using a bench vise to hold control valve assembly (2), remove closures from valve ports. Screw the 90 degree swivel adapter unions (47) into the "in" and "out" ports. Screw quill (55) into installed adapter in the "out" port.

**Note: Valve fittings are installed as described to insure proper operation. First indication of incorrect installation is failure of plow to lift although plow will angle.**

Install three 9/16" O-rings to 1/4" pipe adapters (54) in lift and angle ports. Install one 1/4" brass bar ell (52) to each adapter. When tight, ells should point away from cable end of valve.

- B. Install two rubber shock mounts (76) to bottom of valve plate (29) on driver's side at foremost and rearmost holes. Install a third shock mount (76) on passenger's side at middle hole. Fasten all three with 5/16 lock washers (79) and nuts (80). Install valve plate brace (30) to bottom third shock mount and fasten with a 5/16 lock washer (79) and nut (80). Mount valve to valve plate using two 1/4 x 1-1/4 cap screws, lock washers and nuts found in valve bag. Connect control cables to valve plate and valve before fastening valve to vehicle. Reinstall jam nuts and washers on cables. Place control cables in respective slots of valve plate bulkhead with one nut and washer on each side of bulkhead. Center cables in slots so that they are exactly in line with valve spool centers. Attach cable clevis (3) to cables using square nuts (4). Slip cable clevises over spools. Install clevis pins (5) through clevis and spools then secure with push nuts (6) on clevis pins. Temporarily adjust cables so that control lever is somewhere near centered in control head.
- C. Locate and remove plastic plug from hole in driver's side inner fender below windshield washer reservoir and ream to 11/32". Place hole in valve plate brace over this hole and locate valve plate on top of fenderwell. Check to see that cables run in as smooth a path as possible and that hydraulic hoses will clear windshield washer reservoir. Using shock mounts as guides, mark and drill two 11/32 holes. Place shock mounts through fenderwell and fasten with two 5/16 flat washers (81), lock washers (79) and nuts (80). Insert a 5/16 x 1 (NC) cap screw (78) down through the valve plate brace and reamed hole and fasten with a 5/16 flat washer (81), lock washer (79) and nut (80). **On vehicle with cruise control, the cruise control vacuum unit must be relocated to valve plate.**

- D. With valve plate fastened to inner fender, readjust control cables so that control head lever is centered between angle and raise/lower positions. If cable clevis does not allow enough adjustment, reposition cable at valve plate bulkhead. After checking to see that valve spools are in the centered position, tighten cable clevis nuts.

**Caution: Valve spools must be free and self centering when cables and control head are attached. Failure to center spools will restrict fluid flow through valve. This may cause hydraulic fluid to overheat resulting in pump damage and or hydraulic hose failure. Hose failures can cause engine fires.**

When adjusted, the control lever must be in the neutral position to allow enough spool travel each way for proper valve actuation.

#### 4. Drive Sheave Installation

- A. Remove fan from water pump and install 3/16" fan spacer (22). Reinstall fan.
- B. **For 1992-1994 models:** Remove and discard 3/4" cap screw and washer from center of crankshaft pulley. Remove and discard every other 5/16" cap screw from inside of crankshaft pulley (total of three 5/16" cap screws).
- For 1995-19\_\_ models:** Remove and discard all fasteners (one 3/4" cap screw, one washer, six 5/16" cap screws) from inside of crankshaft pulley.
- C. Apply Loctite on all cap screws before installing drive sheave.
- D. **For 1992-1994 models: DO NOT USE DRIVE SHEAVE SPACER (33) with 1992-1994 ENGINES.** Install drive sheave (24) with one 3/4 x 4-1/2 (NF) Gr. 5 cap screw (94) through center hole onto center of crankshaft pulley. Install three 5/16 x 3-1/2 (NC) Gr. 5 cap screws (93) with 5/16 lock washers (79) through remaining hole in drive sheave and crankshaft pulley. Snug-up the 3/4 x 4-1/2 cap screw first, then the three 5/16 x 3-1/2 cap screws and torque them to 18 ft-lbs. Last, torque the 3/4 x 4-1/2 cap screw to 100 ft-lbs.

**For 1995-19\_\_ models:** Place the drive sheave spacer (33) into crankshaft pulley and install three 5/16 x 1 (NC) Gr. 5 cap screws (78) with 5/16 lock washers (79) and 5/16 flat washers (81) in every other hole. Tighten these fasteners to 18 ft-lbs of torque. Install drive sheave (24) with one 3/4 x 4-1/2 (NF) Gr. 5 cap screw (94) through center hole onto center of crankshaft pulley. Install three 5/16 x 3-1/2 (NC) Gr. 5 cap screws (93) with 5/16 lock washers (79) through remaining holes in drive sheave and crankshaft pulley. Snug-up the 3/4 x 4-1/2 cap screw first, then the three 5/16 x 3-1/2 cap screws and torque them to 18 ft-lbs. Last, torque the 3/4 x 4-1/2 cap screw to 100 ft-lbs.

**Caution: Pump tank fill must be vertical to engine.**

#### 5. Pump Tank and Pump Bracket

- A. Remove the 3/8" cap screw from under coil and discard. Install lower pump bracket brace (28) with one 3/8 x 1 (NC) Gr. 5 cap screw (87). **Do not fully tighten fasteners at this time.** Remove the two 3/8 cap screws below alternator and discard. Install pump bracket (26) between idler pulley and coil. Install 3/8 x 2-1/2 (NC) Gr. 5 cap screw (90) and lock washer (88) in lower hole of pump bracket. Install 3/8 x 5 (NC) Gr. 5 cap screw (92) and lock washer (88) into top hole. Attach lower pump bracket brace to lowest hole in pump bracket with one 5/16 x 1 (NC) Gr. 5 cap screw (78), lock washer (79) and nut (80). Remove and discard cap screw from center of idler pulley and replace with a M10 x 1.5 x 30 Gr 8.8 cap screw (95) and M10 flat washer (96). Remove cap screw from top of coil, place upper pump bracket brace (27) over hole and reinstall fastener. Tighten all fasteners except the one for upper pump bracket brace at this time.
- B. Holding pump tank (1) in bench vise, screw straight swivel adapter (49) onto pressure port of pump and screw quill (55) into return port of pump. Install pump sheave (25) onto pump shaft using lock nut and key supplied with pump. Remove pump from vise and install saddle bracket (35) on over front of pump. Secure with a 5/16 x 1-1/2 Gr. 5 cap screw (77), lock washer (79) and nut (80). Attach saddle bracket and pump to pump bracket using a 5/16 x 1-1/4 cap screw (97) (attach through upper pump bracket brace as shown in illustration), flat washer (81), lock washer (79) and nut (80) on top hole and a 5/16 x 1 cap screw (78), flat washer (81), lock washer (79) and nut (80) to the third hole in pump bracket.
- C. Install 53" V-belt (23) on over installed drive and pump sheaves. Align sheaves and tighten 1-1/2" saddle bracket fastener. Adjust for proper tension by pivoting saddle bracket on top fastener. Adjust for proper tension by pivoting saddle bracket on top fastener.

Tighten remaining fastener on top pump bracket brace. Install rear tank strap (36) on over rear of pump tank. Remove nut from rear of alternator. Install universal brace tab (38) and reattach nut. Align universal brace tab with universal brace rod (37). Measure or gauge needed length of brace rod and cut to length. Install one 5/16 nut (80) and flat washer (81) onto universal brace rod and insert brace rod through universal brace tab. Connect brace rod to tank strap with one 1/4 x 1-1/4 cap screw (84), lock washer (85) and nut (86). Fasten other end of brace rod to brace tab with a 5/16 flat washer (81), lock washer (79) and nut (80). Use brace rod to adjust alignment of drive and pump sheaves. Check belt for proper tension.

## 6. Hydraulic Hose Installation

- A. Attach one end of the 72" H.P hose (16) to the 1/4" swivel adapter on the pump tank and push the 72" Lp hose (17) onto the quill on pump tank. Route these hoses to the control valve via fire wall.

**Caution: Keep hoses away from hot or moving engine components. Failure to do so may cause hose to burst resulting in a possible fire.**

Push L.P hose onto quill (out port) of valve and screw H.P hose into 90 degree swivel adapter (in port) of valve. Remove top nut on driver's side of wiper motor, install brace (32) then reinstall nut. Drill a 5/32 hole in fire wall 18" from brace on passenger's side. Install a mounting tie wrap (98) with a #12 sheet metal screw (99) to this hole. Tie hoses with tie and use a tie wrap (75) on tab to hold hoses.

- B. Install 54" Hp hose (18) to lift cylinder port of valve. Install two 48" hoses (19) to angle ports of valve (driver side angle hose goes in "A" port; passenger angle hose goes in "B" port). Route hoses through side of radiator to grille. Wrap all three hoses with hose protector (31) where they pass by radiator and secure with a tie wrap (75). Attach 54" hose to previously installed 90 degree swivel adapter on lift cylinder.

**For vehicles with air conditioning:** Remove grille and drill a 1-7/8" hole between radiator and headlight below battery box. Install 6" split hose grommet (74) to hole. Route hoses under battery box and through hole.

- C. Install in-line oil filter as per filter kit (7) instructions located in the common hydraulics kit.

## 7. Disconnect Assembly

- A. With disconnect mounting plate (39) held in bench vise, install disconnect halves as shown in illustration. Bulkhead adapter (44) and male disconnect half (42) go in bottom hole. Female disconnect half (42) goes in top hole. Secure both with 7/8" snap rings (45). Attach mounting plate to back of drivers' side headgear post with two 5/16 x 1 cap screws (78) lock washers (79) and nuts (80). Install dust plugs (43) over ends of hoses routed to front of vehicle in the previous step. Connect 48" passenger side angle hose (Port "B") to back of female disconnect installed in top hole of disconnect bracket. Connect 48" driver side angle hose (Port "A") to bottom (male) disconnect. Tighten all fasteners.

## 8. Operations

- A. Check all fittings and fasteners for tightness. Secure hoses with nylon tie wraps (75). Place caution label (72) on the dash beside the control head.
- B. Fill reservoir with type "A" automatic transmission fluid. Start the engine, lift and angle the blade. **If the blade angles opposite from the control lever position, reverse the two Hp hose connections on the back of the disconnect bracket.** Raise the front end of the vehicle until the plow is clear of the ground with the lift cylinder fully retracted. Check the reservoir oil level. Angle the blade (with the lift cylinder retracted) to remove air from the system. Recheck the reservoir oil level.

**Note: The installer must inform the end user of the proper procedure for removing any residual hydraulic pressure that may be trapped in the raise or angle hoses. The plow will be much easier to install or remove if the proper procedures are followed.**

Before coupling or uncoupling the hydraulic disconnects you must first turn off the ignition. Move the control to all four plowing positions and return the control to lower. You may then remove or install the plow.