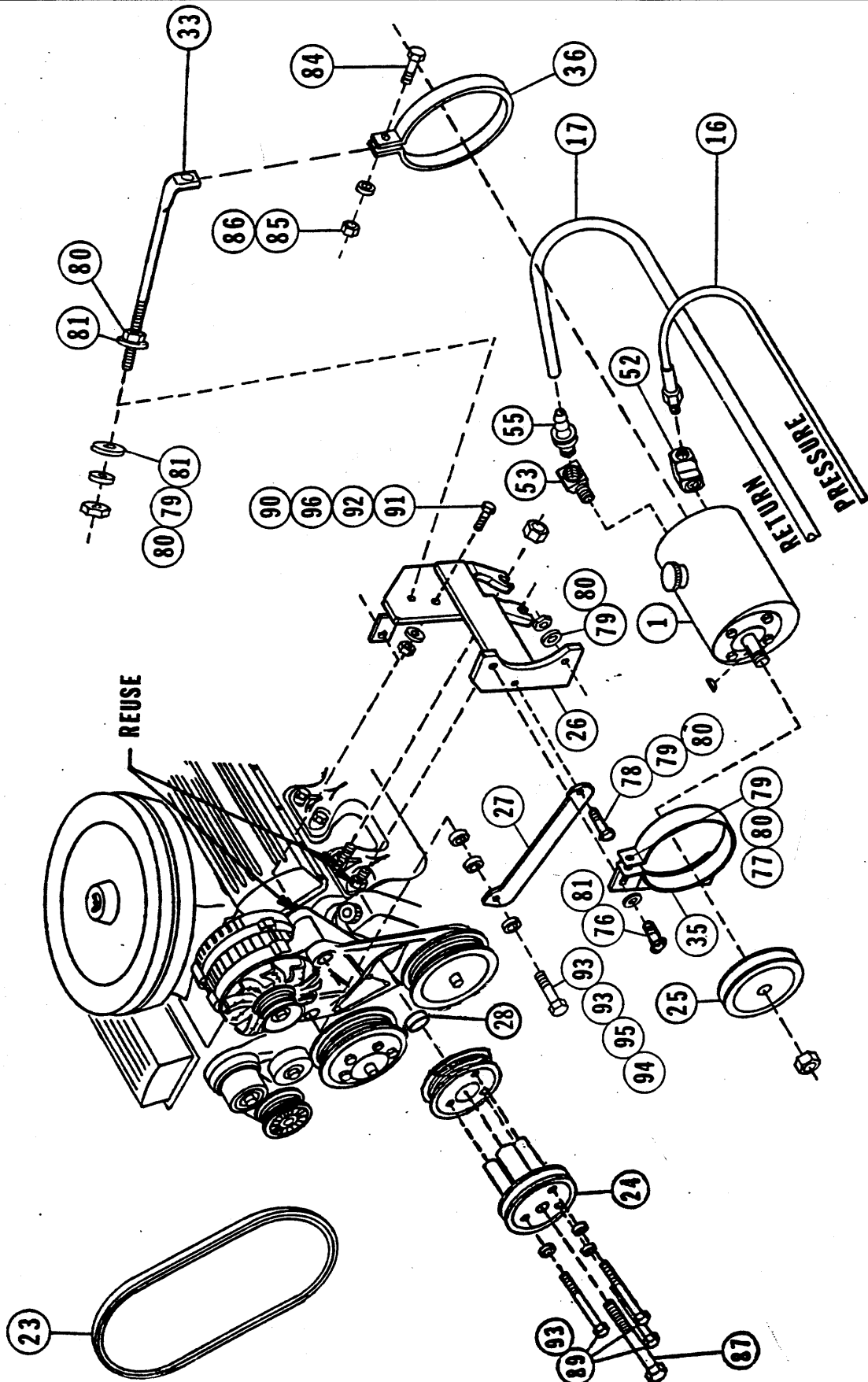


CHEV/GMC
V8 5.0L & 5.7L
w-w/o AC, w/ABS

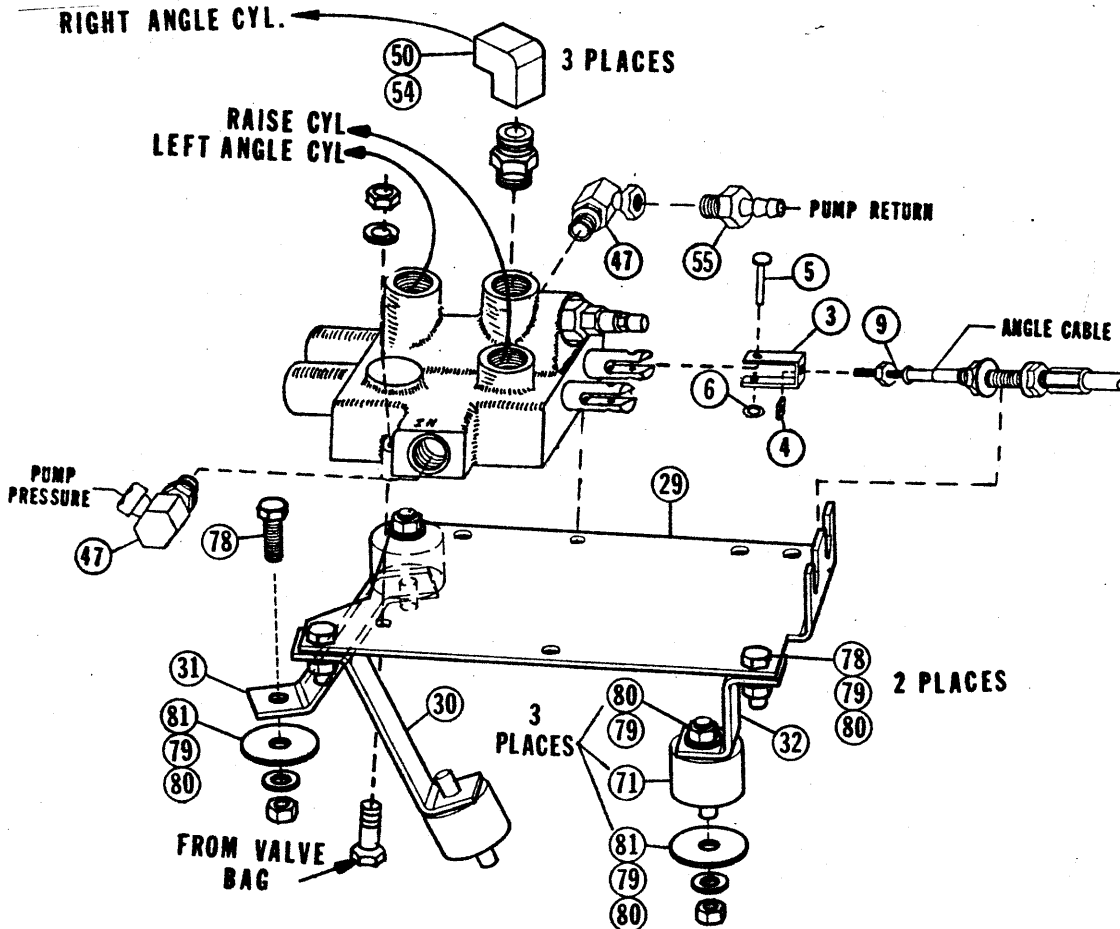
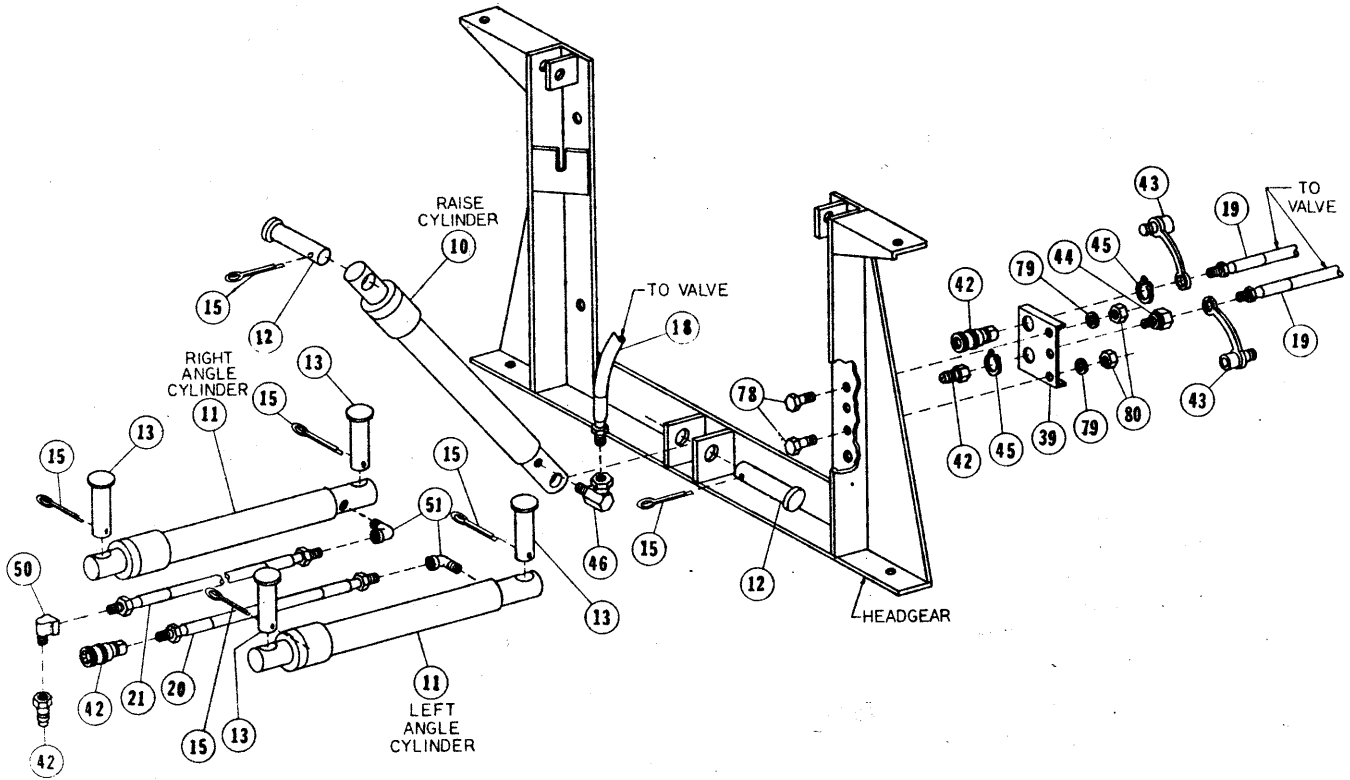
1992 -1994

Peculiar Hydraulics
Belt Drive, SLC
Underhood Valve

7511
Rev B



6401



Hydraulics Parts List

Ref #	Qty	In Kit	Part #	Description	Ref #	Qty	In Kit	Part #	Description
* Part of 8201 Bolt Bag					* Part of 8201 Bolt Bag				
1	1		A2311	Pump tank assembly	50	1		* 765	1/4 Npt x 90 Deg Street Elbow
2	1		A4466	Control Valve Assembly	51	2		2780	1/4 Npt x 90 Deg Street Elbow Frgd
3	2		4483	Clevis - VM	52	4		* 2318	1/4 Npt x 90 Deg Union Elbow
4	2		4494	10-32 Square Nut - VM	53	1		*3979	3/8 NPT x 90 Deg Street Elbow
5	2		4491	Clevis Pin - 3/16" x 1	54	3		*3058	9/16 O-ring to 1/4 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	SLC Head - Belt Drive	57				
9		2	A4922	32" 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	21214	26" HP Hose--1/4P-3/8P Flat Crimp	65				
17		1	1681	24" LP Hose	66				
18		1	6066	66" HP Hose, 1/4P to 1/4P	67				
19		2	5192	60" HP Hose, 1/4P to 1/4P	68				
20		1	376	32" HP Hose, 1/4P to 1/4P	69				
21		1	4424	36" HP Hose, 1/4P to 1/4P	70				
22					71		3	*5529	Shock Mount
23		1	358	51" V-Belt	72		1	5704	Caution Label - Cab
24		1	20056	Drive Sheave**	73		2	3042	Grommet - Rubber, Split
25		1	3696	Pump Sheave	74		1	4477	Grommet - Split Hose
26		1	8215	Pump Bracket	75		3	*3666	Hose Tie, nylon 3/16 x 8
27		1	7009	Pump Bracket Brace	76		2	*90048	5/16 x 1-1/4 (NC) Gr. 5 Cap screw
28		1	*20057	Drive Sheave Bushing .750**	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	8203	Valve Plate Brace	79		6	* 90360	5/16 Sp Lk Washer
31		1	8204	Valve Plate Brace	80		7	*90332	5/16 (NC) Nut
32		1	8205	Valve Plate Brace	81		4	*90313	5/16 Plain Washer
33					82				
34					83				
35		1	8210	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 Lk Washer
37		1	2116	Universal Brace Rod	86		1	90330	1/4 (NC) Nut
38					87		1	*90202	7/16 x 5-1/4 (NF) Gr. 5 Cap Screw
39		1	4467	Disconnect Mounting Plate	88		1	*90317	7/16 Plain Washer ZP
40					89		3	*90154	3/8" x 4" (NF) Gr. 5 Cap Screw
41					90		1	*90103	3/8" x 1 (NC) Cap Screw
42		2	A1587	Hose Disconnect Assembly	91		1	*90361	3/8 SP LK Washer
43		2	1588	Dust Plug - Closure/Male	92		1	*90334	3/8" (NC) Nut
44		1	* 4486	Adapter - Bulkhead 1/4" Npt	93		5	* 4268	5/8" Spacer Washer
45		2	* 4485	Snap Ring - 7/8" External Bowed	94		1	*90605	M8 x 1.25 x 35 Gr. 8.8 Cap Screw
46		1	319	1/4" x 90 Swivel Adapter	95		1	*90428	M8 Lock Washer
47		2	2315	9/16-18 w/O-Ring x 3/8 F Pi Swivel	96		1	*90315	3/8 Flat Washer
48					97				
49					98				

NC 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
3/4 - 10	150	250	370
7/8 - 9	150	378	591
1 - 8	220	583	893

** Order PN 20058 for Drive Sheave w/Bushing for Service

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 headgear 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 the same hose end.
- C. Using a bench vise to hold angle cylinders (11), remove closures from ports and screw brass forged street ells (51) into ports so that ells are parallel with cylinder and point toward live end. Install 32" HP hose with female disconnect half to driver's side angle cylinder street ell. Install other HP hose with male disconnect half to passenger side angle cylinder street ells. Install angle cylinders to "A" frame on their respective sides so that 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).

2. Control Head & Control Cables

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

- A. Drill three 5/8" holes in the firewall for the control cables and wiring harness using drilling guide as a reference only. **Be sure both sides of the firewall are clear of obstructions before drilling.** Drill 1/2" hole in underside of dash as shown in dash illustration.
- 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 installation. First indication of incorrect installation is failure to plow to lift although plow will angle.

Install three 9/16" O-ring to 1/4" pipe adapters (54) in lift and angle ports. Install one 1/4" brass bar ell (50) to each adapter. When tight, ells should point toward the rear of the valve at approximately 7 o'clock.

- B. Mount valve to valve plate (29) using two 1/4" x 1-3/4" cap screws, lock washers and nuts located in the valve bag. Install valve plate braces (30, 31, 32) and shock mounts (71) as per illustration. Leave braces loose on valve plate top allow movement. Remove and save bolt from anti-lock brake system in front of window washer container. Place valve plate between fire wall and anti-lock brake system. Connect control cables (9) to valve plate before fastening valve plate to vehicle. Begin by reinstalling jam nuts and washers on cables. Place control cables in respective slots of valve plate bulkhead with one nut and one 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 pin (5) through clevis and spool and secure with push nut (6) on clevis pin. Temporarily adjust cables so that control lever is somewhere near centered in control head.
- C. Locate valve plate, with valve and cables attached, on top of driver's side inner fender well so that valve is near level and cables run in as smooth a path as possible (be sure swivel adapter does not rub up against windshield water bottle). Using the two previously installed shock mounts as guides, mark and drill two 11/32" holes through the fender well. Fasten each shock mount to the fender well with one 5/16 flat washer (81), lock washer (79) and nut (80). Attach 90 degree bent end of valve plate brace (30) to valve plate as shown in illustration with a 5/16 x 1 cap screw (78) lock washer (79) and nut (80). Attach a rubber shock mount (71) to hole in other end of brace with a 5/16 lock washer (79) and nut (80). Using the shock mount as a guide, drill another 11/32" hole through the fender well and fasten shock mount to the fender well with a 5/16 flat washer (81), lock washer (79) and nut (80).

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

Caution: Before inserting bushing, check center of crankshaft for rust or any foreign material and remove.

- A. Remove serpentine belt. Remove and discard the three cap screws holding vehicle crank pulley to vibration damper. Remove and discard cap screw and flat washer holding vibration damper to crankshaft, if vehicle is so equipped. Check vehicle crank pulley and remove any burrs around the holes that the cap screws were removed from.
- B. Install drive sheave bushing (28) into center of crank shaft, reinstall vehicle sheave. Place the drive sheave (24) center hub through the vehicle sheave and bushing. Place a 7/16 x 5-1/4 (NF) Gr. 5 cap screw (87) and flat washer (88) in center of sheave, plus three 3/8 x 4 (NF) Gr. 5 cap screws (89) with spacer washers (93) through sheave spacers. **Tighten 7/16 x 5-1/4 cap screw (torque to 50 ft-lbs) before tightening the three 3/8 x 4 cap screws torque to 31 ft-lbs.**

5. Pump and Pump Bracket

Caution: Pump tank fill must be vertical to engine.

- A. Remove and save both nuts from front exhaust manifold port. Remove and save bolt on back of alternator, above valve cover. Remove and discard bolt on front of alternator to left of fan. Install pump bracket (26) by placing slots onto manifold studs and reinstall previously removed nuts.. **Do not fully tighten any fasteners until all fasteners and pump bracket brace (27) are installed.** Align tab on pump bracket with previously removed bolt. Reinstall bolt. Fasten pump bracket brace to remaining hole in front of alternator. Attach with one M8 x 1.25 x 35 Gr. 8.8 cap screw (94), M8 lock washer (95) and two spacer washers (93) between brace and alternator. **Cropped out portion of pump bracket brace should be positioned towards alternator cooling fins.** Attach other end of brace to lower hole in pump bracket with one 5/16 x 1 Gr. 5 cap screw (78), lock washer (79) and nut (80). Tighten all pump bracket fasteners. Using hole above manifold in pump bracket and fasten with a 3/8 x 1 (NC) Gr.5 cap screw (90), flat washer (96), lock washer (91) and nut (92). Tighten.
- B. Holding pump tank (1) in bench vise, screw 1/4" brass bar elbow (52) onto pressure port and 3/8" brass bar street ell (53) with quill (55) into return port. These fittings should point slightly inward (approximately 1 o'clock) while looking at rear of pump tank. 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 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 two 5/16 x 1 cap screws (78), flat washers (81), lock washers (79) and nuts (80).
- C. Reinstall serpentine belt. Install 51" V-belt (23) on over installed drive and pump sheaves. (If belt will not go over pump sheave, rotate pump in saddle bracket again.) Align sheaves and tighten 1-1/2" saddle bracket fastener. Adjust for proper tension by pivoting saddle bracket on top bolt. (Make sure pump is clearing hydraulic lines going into anti-lock brake system.)

Caution: Position power steering hoses so there is at least 1-1/2 " clearance from the pump "V" belt.

Install rear tank strap (36) on over rear of pump. Install one 5/16 nut (80) and 5/16 flat washer (81) onto universal brace rod (37). Install bent end of brace rod between ears of tank strap while inserting other end through hole in remaining hole on pump bracket. Cut universal brace rod to proper length. Fasten brace rod to ears of tank strap with a 1/4 x 1-1/4 cap screw (84), lock washer (85) and nut (86). Fasten other end of brace rod to tab with a 5/16 flat washer (81), 5/16 lock washer (79) and nut (80). Use brace rod to adjust alignment of drive and pump sheaves. Check belt for proper tension. Tighten power steering and alternator belts.

6. Hydraulic Hose Installation

- A. Attach 26" HP hose (16) to 1/4" brass bar elbow on pump tank and push 24" LP hose (17) onto quill on pump tank. Route these hoses to the control valve. Cut 24" hose to proper length.

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

Screw HP hose into 90 degree swivel. Turn swivel so hose goes just over top and not hitting window washer container. Route LP hose along HP hose and push onto quill on valve. Tie hoses together. Remove parking light and drill a 1-7/8 hole through web behind light. Install 6" split rubber grommet (74) around drilled hole. Install 66" HP hose (18) to lift cylinder port of valve (Spool #1). Install two 60" HP hoses (19) to angle ports of valve (Spool #2). Run valve hoses under pump to valve HP hose and tie, out through rubber grommet behind parking light over and out through grill near center of grill.

- B. Install the in-line oil filter (7) as per 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 the top hole. Secure both with 7/8" snap rings (45). Attach mounting plate to back of driver's 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 54" right angle hose (spool #2, Cyl. B) to back of female disconnect installed in top hole of disconnect bracket. Connect 54" left angle hose (Spool #2, Cyl. A) to bottom (male) disconnect. Tighten by holding hoses and rotating the disconnect halves in the bracket.

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 valve.** 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.