



7520D

FORD

V8 5.0L w-w/o AC

1988 - 96

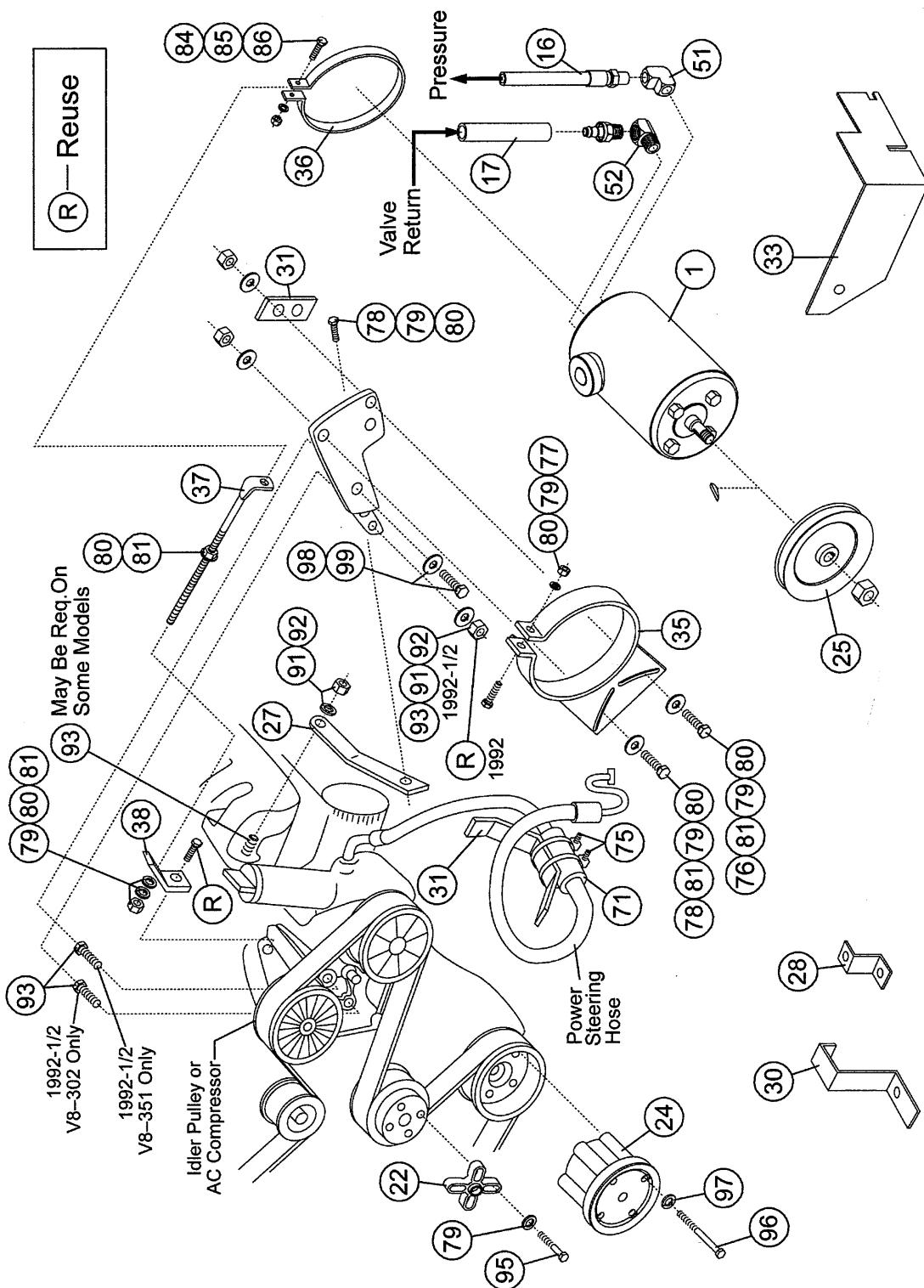
Belt Drive Hydraulics

V8 5.8L w-w/o AC

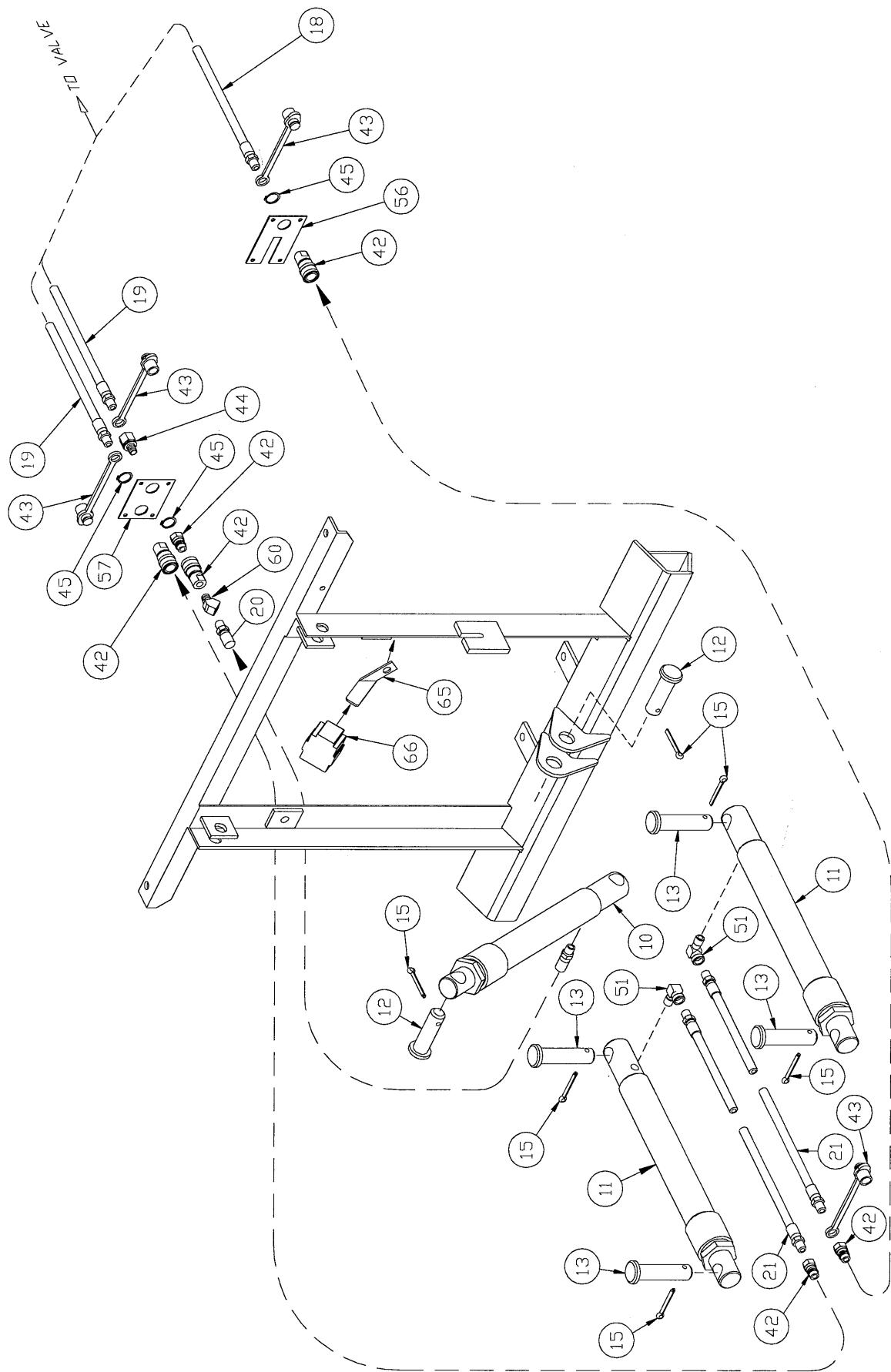
1988 - 97

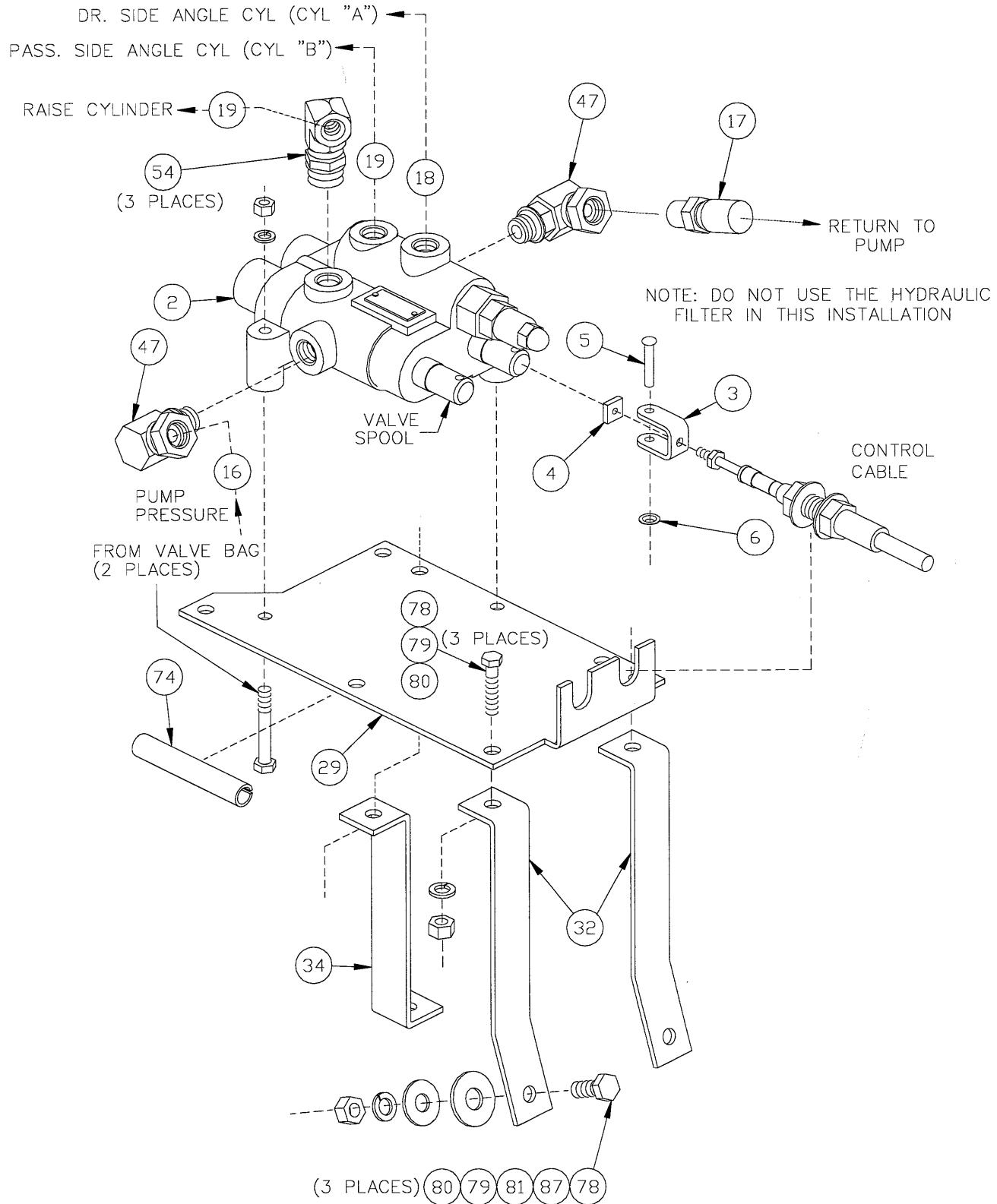
SLC

Underhood Valve



6437





## Parts List

Ref #	A4468-40	Qty	7520D	Part #	Description
1	1			A2311	Pump Tank assembly
2	1			A4466-40	Control Valve Assembly
3	2			4483	Clevis
4	2			4494	10-32 Square Nut
5	2			4491	Clevis Pin - 3/16" x 1
6	2			4493	3/16" Push Nut Zp
8		1		4419	SLC Head - Belt Drive
9		2		A4490	90" SLC Cable
10	1			20116	1-1/2" x 10" Cylinder Assy - XL
11	2			20117	1-1/2" x 12" Cylinder Assy - XL
12	2			6814	Clevis Pin - 1" x 3-5/16"
13	4			6816	Anchor Pin - 1" x 4"
15	6			90601	1/4" x 1-1/2" Cotter Pin
16		1		2516	72" Hp Hose - 1/4P - 3/8P
17		1		21203	69" Hp Hose 3/8P-3/8P
18		1		6066	Hose - 66" Hp 1/4P - 1/4P
19		2		375	Hose - 42" Hp 1/4P - 1/4P
20		1		3074	Hose - 22" Hp 1/4P - 1/4P
21		2		4424	Hose - 36" Hp 1/4P - 1/4P
22		1		*3677	Fan Spacer - 1/2"
23		1		1022	Fan Belt, 55" (not shown) (4L 550)
24		1		5786	Drive Sheave
25		1		3696	Pump Sheave
26		1		6513	Pump Bracket
27		1		6511	Pump Bracket Brace
28		1		7968	Brace
29		1		5329	Valve Plate
30		1		6514	Fender Bracket
31		1		6507	Hose Support Bracket
32		2		7965	Brace
33		1		6154	Air intake Bracket
34		1		7966	Brace
35		1		4921	Saddle Bracket - Universal
36	1			2036	Rear Tank Strap
37	1			2116	Universal Brace Rod
38		1		*2115	Universal Brace Tab
40		2		*8011	Nylon Mounting Tie Wrap
42	3			21096	Hose Disconnect Assembly
43	2	2		*1588	Dust Plug - Closure/Male
44		1		* 4486	Adapter - Bulkhead 1/4" Npt
45		3		* 4485	Snap Ring - 7/8" External Bowed
47	2			2315	9/16 w/O-Ring x 3/8 F Pi Swivel
50	2			2780	1/4 Npt x 90° Street Elbow Frgd
51		1		* 2318	1/4 Npt x 90° Union Elbow
52		1		*3979	3/8" Npt x 90° Street Elbow
53		3		*20316	9/16 O-Ring to 1/4 Npt 90° Elbow
56		1		*8599	QD/Electric - Long
57		1		*8600	2 QD - Long
59		8		*8324	Hose Tie - 3/16" x 14"

NC FASTENER TORQUE (FT-LB)	
DIAMETER-	GRADE
THREADS	G2 G5 G8
PER INCH	
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

### Parts List

Ref #	A4468-40	7520D	Qty	Description
60		1	*8476	1/4" x 45 degree Street Elbow
65		1	*8741	Bracket - Cable Boot
66		1	*8284	Boot
71		1	*6595	3/4" Split Hose Grommet
72		1	5704	Caution Label - Cab
73	2		3042	Grommet - Rubber, Split
74	1		4477	Grommet - Split Hose
75	3	12	*3666	Hose Tie, nylon 3/16" x 8"
76		1	90048	5/16" x 1-1/4" (NC) Gr. 5 Cap Screw
77	1		90054	5/16" x 1-1/2" (NC) Gr. 5 Cap Screw
78	4	7	*90042	5/16" x 1" (NC) Gr. 5 Cap Screw
79	6	10	* 90360	5/16" Sp Lk Washer ZP
80	7	6	*90332	5/16" (NC) Nut
81	4	5	*90313	5/16" Flat Washer
84	1		90614	1/4" x 1-1/4" (NC) Gr. 5 Cap Screw
85	1		90359	1/4" Sp Lk Washer
86	1		90330	1/4" (NC) Nut
87		4	*4433	1/2" Special Washer
90		2	*90659	7/16" x 7-1/2" (NC) Gr. 5 Cap Screw
91		2	*90361	3/8" Lock Washer
92		2	*90334	3/8" (NC) Nut
93		2	*90106	3/8" x 1-1/4" (NC) Gr. 5 Cap Screw
95		4	9015	5/16" x 1-1/2" (NF) Gr. 5 Cap Screw
96		4	*90156	3/8" x 4-1/4" (NC) Gr. 5 Cap Screw
97		4	*4268	Spacer Washer
98		1	*90628	7/16" x 7-1/2" (NC) Gr. 5 Cap Screw
99		1	*90362	7/16" Lock Washer

A4468-40 uses Bolt bag 5425 \* Part of 8705 Bolt Bag

## Installation Instructions

### 1. Cylinder and Cylinder Hose Assembly

- Attach female half of disconnect (42) and a 1/4" Npt 45 degree street ell (60) to 22" Hp Hose (20). Using bench vise to hold lift cylinder (10), remove closure from port and screw the other end of the hose directly into this port. Place lift cylinder with hose pointing to passenger side into ears on lift arm and upper gear. Secure with clevis pins (12) and cotter pins (15).
- Attach male half of quick disconnect (42) to one other end of a 36" Hp hose (21). Place a dust cover (43) on the end of the other 36" Hp Hose (21) and put another male half of a disconnect (42) on this hose.
- Using a bench vise to hold angle cylinders (11), remove closures from ports and screw brass forged street ells (51) into ports. Point forward toward live end of cylinder and slightly upward as they will be installed on the A-Frame. The driver side cylinder uses the 36" Hp hose (21) with the dust cover and male disconnect half. The passenger side uses the 36" Hp hose (21) with the male disconnect end and no dust cover. Install cylinders to their respective sides so that ells are between the cylinders and the A-frame. Secure cylinder with anchor pins (13) at both ends, with cotter pins (15) in each anchor.

## 2. Control Head and Control Cables

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

- A. Drill two 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.
- 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 and 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. Install three 9/16" o-ring to 1/4" Npt 90° elbows (54) in lift and angle ports. When tight, elbows should point at 2 o'clock, away from cable end of valve.
- 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 cap screws from bottom of valve plate, with lock washer and nut on top of valve. Attach the two long valve leg braces (32) to the two holes in the cable attaching end of valve plate. Attach with two 5/16" x 1" cap screws Gr. 5 (NC) (78), lock washers (79) and nuts (80). Attach rear leg brace (34) to hole in rear of valve plate on "out" port side with one 5/16" x 1" cap screw Gr. 5 (NC) (78), lock washer (79) and nut (80). Attach split hose (74) to end of valve plate. Place valve plate and legs over smog control vacuum on passenger side of vehicle. (Vehicles with bracket on back of vacuum. The bracket needs to be removed and the bottom hole placed on the top threaded stud.) Vehicles with plastic hose coming out of top of vacuum: Place valve plate on fire wall side of vacuum and valve spools pointing toward radiator hose. Position so nothing is chaffing and drill three 11/32" holes in fender. Attach with three 5/16" x 1" cap screws Gr. 5 (NC) (78), large 1/2" flat washers (87), 5/16" flat washers (81), lock washers (79) and nuts (80).

**Note: The large vacuum canister will have to be moved closer to heater motor and to the engine using vacuum brace (28), 5/16" x 1" cap screw (78), flat washer (81), lock washer (79) and nut (80).**

- C. Install control cables to valve plate 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. Adjust cables so control 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 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. Use three nylon ties (75) to**

## 4. Drive Sheave Installation

**Note:** Apply a *removable* loosening prevention compound (such as "Lock-tite") to all drive sheave fasteners prior to installation.

- A. Remove serpentine belt. Remove four 3/8" cap screws from crank shaft pulley. Install drive sheave (24) into center of crankshaft pulley being certain machined pilot of drive sheave seats fully into crankshaft pulley. Fasten drive sheave to crankshaft with four 3/8" x 4-1/4" cap screws (96) and spacer washers (97) torqued to 31 ft-lbs.
- B. Remove and discard four cap screws holding fan to water pump shaft flange. Place fan spacer (22) between fan and pulley. Reinstall fan and secure with four 5/16" x 1-1/2" (NF) Gr. 5 cap screws (95) and lock washers (79) torqued to 18 ft-lbs.

## 5. Pump Tank and Pump Bracket

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

- A. Remove two cap screws holding the catalyst filter container to the driver-side fender well. Remove flexible plastic pipe from molded plastic air intake duct. Lift and place container up out of the way.
- B. Remove and save nut from stud on bracket holding idler pedestal (or air conditioner) and power steering pump. Also, remove outer bolt from bracket. Position pump bracket (26) behind serpentine belt and place proper hole in tab on end of pump bracket over stud so that the 15/32" hole with pipe spacer lines up with the hole from which bolt was removed. Fasten tab with previously removed nut. Install 7/16" x 7-1/2" cap screw (98) and lock washer (99) in hole in pump bracket with pipe spacer. Place cropped end of pump bracket brace (27) onto front exhaust manifold stud and fasten with a 3/8" lock washer (91) and nut (92). On some models cap screw may have to be removed. Replace with one 3/8" x 1-1/4" cap screw (NC) Gr. 5 ZP (93) and lock washer (81). Place opposite end of brace on pump bracket tab and fasten with one 5/16" x 1" Gr. 5 cap screw (78) lock washer (79) and nut (80). Tighten all fasteners. Remove rear bolt on idler pulley bracket or air conditioner (if equipped) and install universal brace tab (38). Reinstall bolt and serpentine belt at this time. On 5.0L engine, remove A/C or idler mount. Holding A/C or idle pulley, install a 3/8 x 1-1/4 cap screw (93) from back of bracket. Reinstall mount and install pump bracket same as above instructions. On 5.8L engine, 3/8 x 1-1/4 (93) cap screw can be installed without removing mount. Fasten cap screw with one 3/8 lock washer (91) and nut (NC) (92).
- C. For Vehicles with 5.8L Engine:

**Note:** Plastic inner fender well must be pulled outward to provide clearance for Fisher hydraulic pump.

Place fender bracket (30) in driver-side fender well around coil spring bracket (F-150 Models) or shock mount bracket (F-250, F-350 models). Position bracket where, with inner fender attached to it, adequate clearance will result. Using hole in bracket as guide, drill a 11/32" hole through inner fender. Install a 5/16" x 1" cap screw (78) flat washer (81) and 1/2" special washer (87) out through inside of fender and fasten to bracket with a 5/16" lock washer (79) and nut (80).

- D. Holding pump tank (1) in bench vise, screw a 3/8" brass bar street ell (53) into return port on pump tank. Install a 1/4" brass bar ell (52) onto pressure port. Both fittings should face upward. Install pump sheave (25) onto 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" cap screw (77), lock washer (79) and nut (80). Do not fully tighten. Fasten the hose support bracket (31) on the back side of pump bracket with the lower saddle bracket

hardware (one 5/16" x 1-1/4" (NC) Gr. 5 cap screw (76), flat washer (81), lock washer (79) and nut (80)). Do not fully tighten. Use the upper hole in the hose support bracket on the 5.0L engines and the lower hole on 5.8L engines. Install 3/4" split hose grommet (71) onto power steering hose beneath the hose support bracket.

Secure power steering hose and split hose grommet to hose support bracket with two tie wraps (75). Install 55" V-belt (23) onto installed drive and pump sheaves. Position the power steering hose and support bracket to minimize hose twist and maximize hose bend radius. Tighten V-belt and saddle bracket fasteners. Adjust for proper belt tension by pivoting saddle bracket on top bolt.

**Note: There should be a minimum of 1/2" clearance between hose support and drive sheave V-belt. Bend bracket to increase clearance if necessary.**

- E. Align sheaves and tighten 1-1/2" saddle bracket fastener. Install rear tank strap (36) on over rear of pump tank. Check the length of universal brace rod (37) and cut to length as needed. Install one 5/16" nut (80) and flat washer (81) onto brace rod and insert brace rod through previously installed universal brace tab. Bend tab as needed. 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.
- F. Loosen the two brass colored nuts on coolant reservoir and catalyst filter container brace. With long leg of air intake bracket (33) towards firewall, slide top of bracket between catalyst brace and tab on reservoir. Rotate bracket counter clockwise and slide lower slot onto remaining fastener. Tighten fasteners. Reinstall catalyst filter container. The container should be resting on top of the air intake bracket.

## 6. Hydraulic Hose Installation

- A. Attach 1/4" end of 72" Hp hose (16) to the 1/4" brass ell on pump tank and one end of 69" Hp hose (17) into the 3/8" street ell on pump tank. Remove two rear rubber hood seal to firewall screws that are approximately fifteen inches apart and centered on vehicle. Replace with two nylon mounting tie wraps (40) and #12 sheet metal screws (90). Route both Hp hoses from pump to valve. Secure with previously installed tie wraps.

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

Install the end of the 69" Hp hose (17) into the "out" port of the valve, and the end of the 72" Hp hose (16) into the "in" port. Install 66" HP hose (18) to elbow in angle port closest to cables on valve. Pass this hose by the battery and out through the core support near the radiator. Pass the hose out through the grille low and about 14" off center on the driver-side. Attach a female QD half to the long QD/electric grille plate (56) with a snap ring (45). Pass the 66" hose through a rubber dust cover (43) and attach it to the female disconnect half. Put a dust cover on the plug of the vehicle harness and slide it into the slot of the grille plate. Attach the grille plate to the grille with four long tie wraps (59).

**Note: Do not install the hydraulic filter in this installation.**

- B. Attach a 42" hose (19) to the raise port elbow and one 42" hose (19) to the angle port elbow farthest from the cables. Pass these hoses out through the core support by the radiator, low about 14" off center on the passenger side of the grille. Attach a bulkhead adapter (44) to one hole of the long QD/QD grille plate (57) with a snap ring (45). Attach a male half of a QD to this adapter. Secure a female QD half to the other hole in the grille plate with a snap ring (45). Slide a rubber dust cover over the end of the raise hose and attach this to the male disconnect on the in-board side of the grille plate. Slide a dust cover over the angle hose and attach it to the female QD half on the outboard side of the plate. Slide the plate back to the grille and attach it with four long tie wraps (59).

- C. Install cable boot bracket (65) on driver-side headgear brace, between brace and fasteners. Insert cable boot (66) on over bracket.

## 7. Operations

- A. Check all fittings and fasteners for tightness. Secure hoses with nylon tie wraps (75). Be sure hoses clear battery post. Place caution label (72) on the dash beside the control head.
- B. Fill reservoir with FISHER® High Performance Hydraulic Fluid (recommended for superior cold-weather performance) or 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.