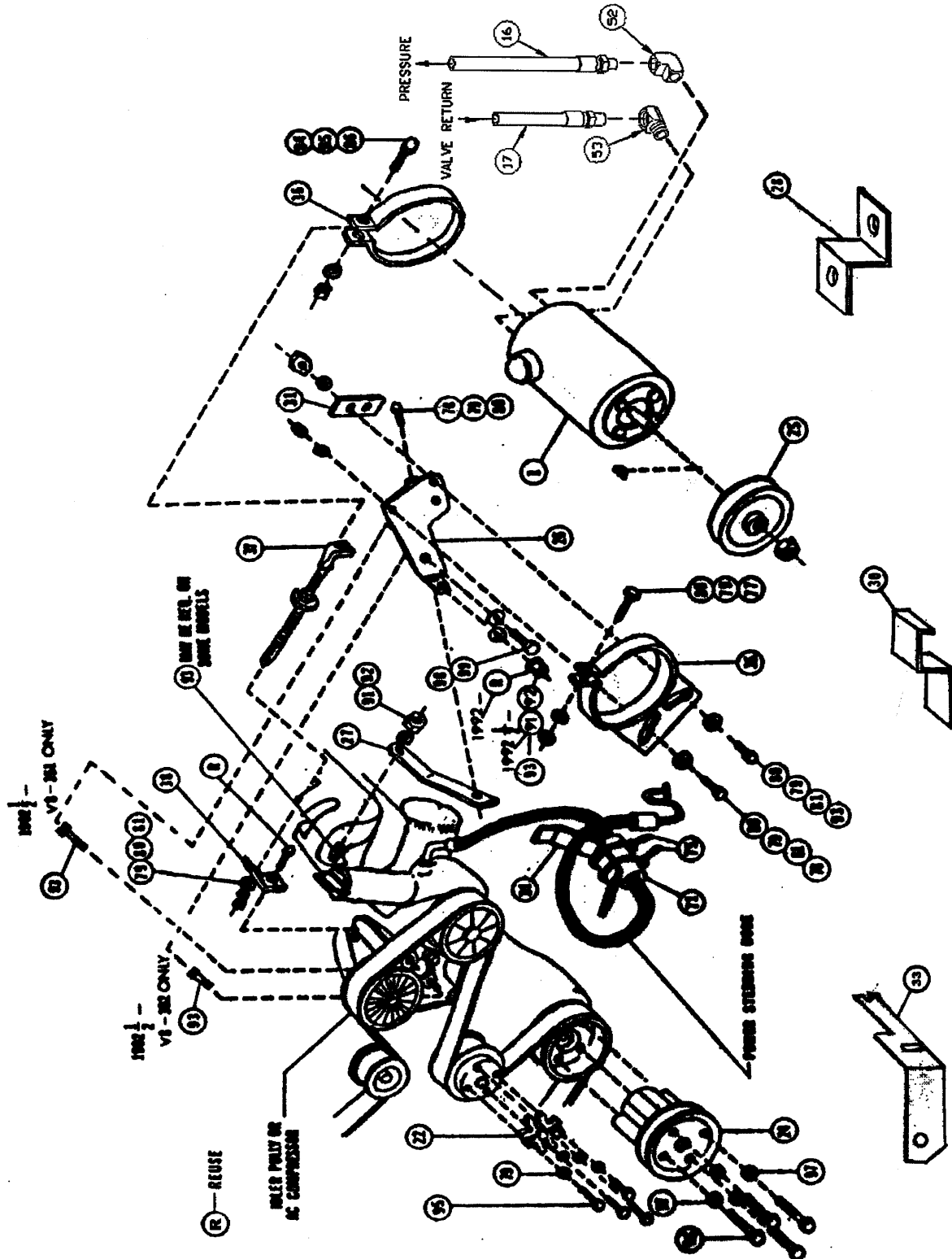
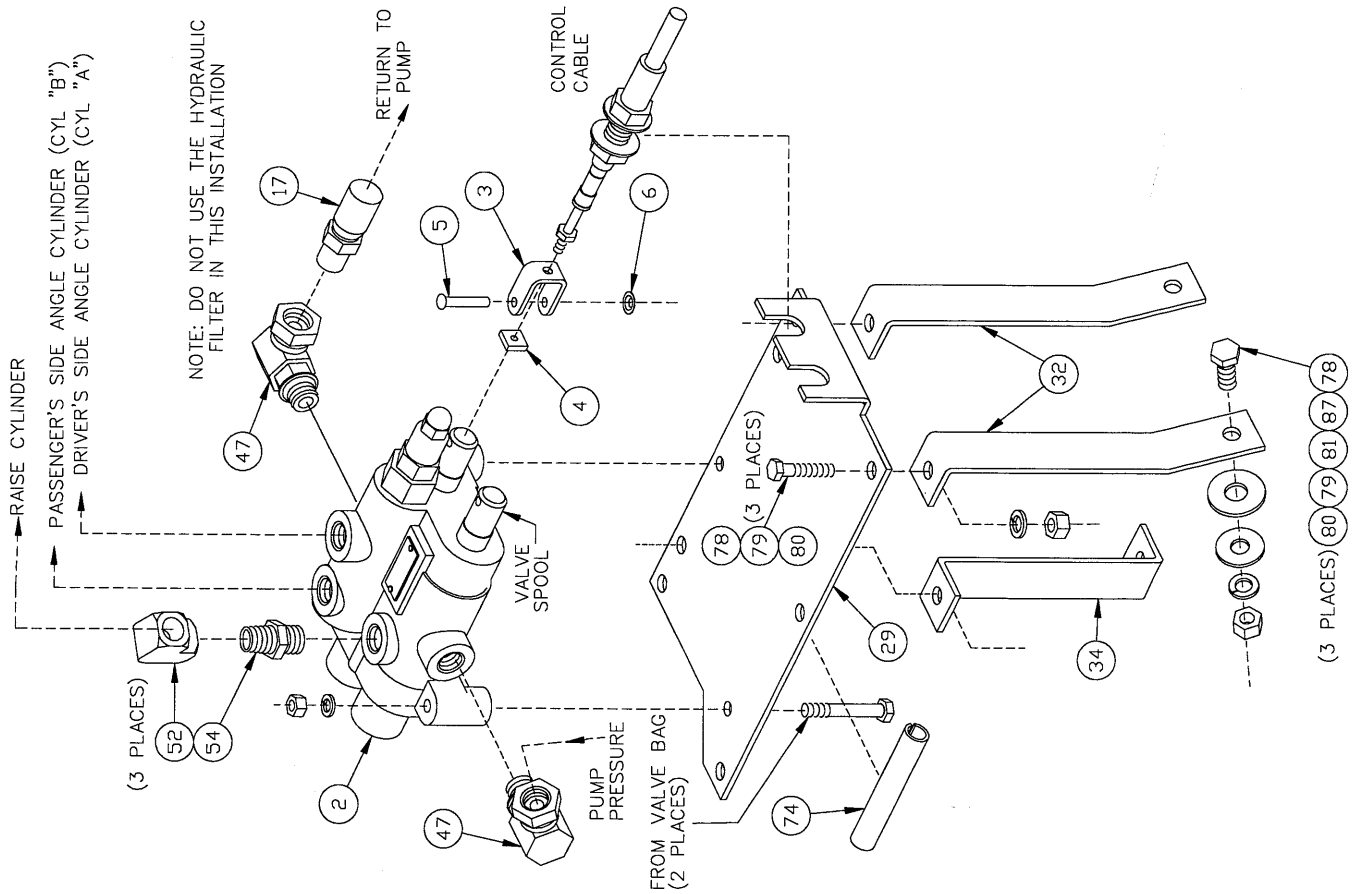
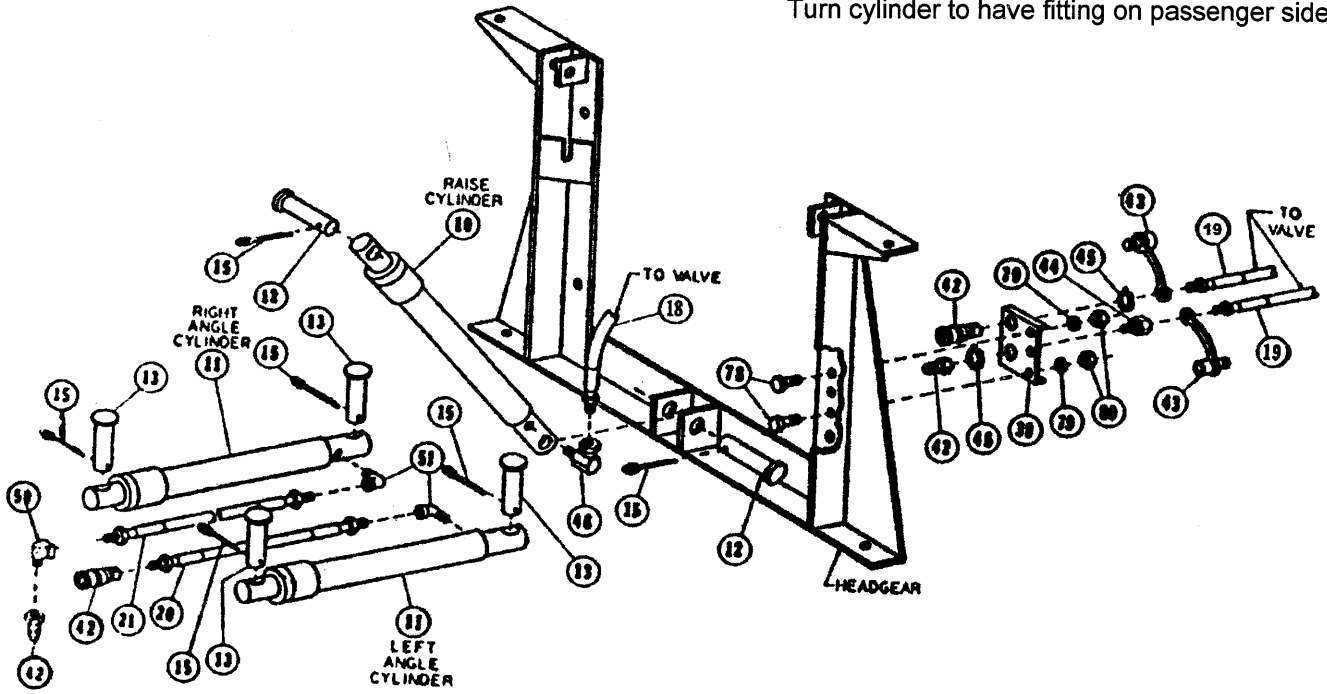


FORD  
V8 5.0L & 5.8L 1988-19\_\_  
w-w/o AC

Belt Drive Hydraulics



Turn cylinder to have fitting on passenger side



## Hydraulics Parts List

Ref. #	Qty in Kit	Part #	Description	Ref. #	Qty in Kit	Part #	Description
	A4468	7504	* Part of 8010 Bolt Bag		A4468	7504	* Part of 8010 Bolt Bag
	-40	C			-40	C	
1	1	A2311	Pump tank assembly	40	2	*8011	Nylon Mounting Tie Wrap
2	1	A4466	Control Valve Assembly	42	2	A1587	Hose Disconnect Assembly
3	2	4483	Clevis - VM	43	2	1588	Dust Plug - Closure/Male
4	2	4494	10-32 Square Nut - VM	44	1	* 4486	Adapter - Bulkhead 1/4" Npt
5	2	4491	Clevis Pin - 3/16" x 1	45	2	* 4485	Snap Ring - 7/8" Ext. Bowed
6	2	4493	3/16" Push Nut Zp	46	1	319	1/4" x 90 Swivel Adapter
8	1	4419	SLC Head - Belt Drive	47	2	2315	9/16-18 w/O-Ring x 3/8 F Pi Swi
9	2	A4490	90" Control Cable, SLC	50	1	* 765	1/4 Npt x 90 Deg Street Elbow
10	1	A318	1-1/2" x 10" Cylinder Assy	51	2	2780	1/4 Npt x 90 Deg Street Elbow Frgd
11	2	A3660	1-1/2" x 12" Cylinder Assy	52	4	* 2318	1/4 Npt x 90 Deg Union Elbow
12	2	6814	Clevis Pin - 1 x 3-5/16	53	1	*3979	3/8 NPT x 90 Deg Street Elbow
13	4	6816	Anchor Pin - 1 x 4	54	3	*3058	9/16" O.R. to 1/4P Adapter
15	6	90601	1/4" x 1-1/2" Cotter Pin				
16	1	2516	72" HP Hose - 1/4P - 3/8P	71	1	*6595	Split Hose Grommet
17	1	21203	69" HP Hose 3/8P - 3/8P	72	1	5704	Caution Label - Cab
18	1	5193	54" HP Hose 1/4P to 1/4P	73	2	3042	Grommet - Rubber, Split
19	2	5192	60" HP Hose, 1/4P to 1/4P	74	1	4477	Grommet - Split Hose
20	1	376	32" HP Hose, 1/4P to 1/4P	75	3	12	*3666 Hose Tie, nylon 3/16 x 8
21	2	4424	36" HP Hose, 1/4P to 1/4P	76	1	*90048	5/16" x 1-1/4" (NC) Gr. 5 Cap Screw
22	1	*3677	Fan Spacer, 1/2"	77	1	90054	5/16 x 1-1/2 (NC) Gr. 5 Cap Screw
23	1	1022	55" Fan Belt (not shown)	78	4	9	*90042 5/16 x 1 (NC) Gr. 5 Cap Screw
24	1	5786	Drive Sheave	79	6	12	* 90360 5/16 Sp Lk Washer
25	1	3696	Pump Sheave	80	7	8	*90332 5/16 (NC) Nut
26	1	6513	Pump Bracket	81	4	5	*90313 5/16 Plain Washer
27	1	6511	Pump Bracket Brace	84	1	90614	1/4 x 1-1/4 (NC) Gr. 5 Cap Screw
28	1	7968	Brace	85	1	90359	1/4 Sp Lk Washer
29	1	5329	Valve Plate	86	1	90330	1/4 (NC) Nut
30	1	6514	Fender Bracket	87	4	*4433	1/2" Special Washer
31	1	6507	Hose Support Bracket	90	2	*90659	#12 x3/4" PN HD SM Screw
32	2	7965	Brace	91	2	*90361	3/8 SP LK Washer
33	1	6154	Air Intake Bracket	92	2	*90334	3/8" (NC) Nut
34	1	7966	Brace	93	2	*90106	3/8" x 1-1/4 (NC) Gr. 5 Cap Screw
35	1	4921	Saddle Bracket	95	4	*9015	5/16" x 1-1/2" (NF) Gr. 5 Cap Screw
36	1	2036	Rear Tank Strap	96	4	*90156	3/8" x 4-1/4" (NC) Gr. 5 Cap Screw
37	1	2116	Universal Brace Rod	97	4	*4268	Spacer Washer
38	1	*2115	Universal Brace Tab	98	1	*90628	7/16" x 7-1/2" (NC) Gr. 5 Cap Screw
39	1	4467	Disconnect Mounting Plate	99	1	*90362	7/16" Lock Washer

## 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.**
- 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) and shock absorber (49) into male run tee (48) as illustrated. Screw this tee assembly into this swivel adapter in the "out" port of the valve. **Be sure the shock absorber is standing straight up.** Install three 9/16" o-ring 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 at 2 o'clock, away from cable end of valve.
- B. Mount valve to valve plate (29) using two 1/4" x 1-1/4" 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 holes in the cable attaching end of valve plate. Attach with two 5/16" x 1" cap screws Gr. 5 (NC) (78), lock washer (79) and nut (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's 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 (78) and nuts (80).

**Note: The large vacuum canister will have to be moved closer to the 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 washer 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 they are exactly in line with valve spool centers. Attach cable clevis (3) to cables using square nuts (4). Slip cable clevis over spools. Install clevis pin. Adjust 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. Use three nylon ties to run cables along air intake hoses.**

#### 4. Drive Sheave Installation

- A. Remove serpentine belt. Remove four 3/8" cap screws from crank shaft pulley. Install drive sheave (24) into center of crank shaft pulley being certain machined pilot of drive sheave seats fully into crankshaft pulley. Fasten drive sheave to crank shaft with four 3/8" x 4-1/4" cap screws (96) and spacer washers (97) torqued to 31 ft-lbs.
- Note: Apply a removable loosening prevention compound (such as "Lock-tite") to all drive sheave fasteners prior to installation.**
- B. Remove and discard four cap screws holding fan to water pump shaft flange. Place fan spacer (22) between fan and pulley. Reinstall fan after installing pump bracket.

#### 5. Pump and Pump Bracket

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

- A. Remove the two cap screws holding the catalyst filter container to the driver's 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 the pipe spacer lines up with the hole from which the bolt was removed. Fasten tab with previously removed nut. Install 7/16" x 7-1/2" cap screw (98) and 7/16" 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 and lock washer. 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 5.0 L 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 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, 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 (92). 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.
- C. **For vehicles with 5.8L engine. Plastic inner fender well must be pulled outward to provide clearance for Fisher hydraulic pump.** Place fender bracket (30) in driver's 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 3/8" brass bar street ell (53) onto 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 Gr. 5 cap screw (78), flat washer (81), lock washer (79) and nut (80). Do not fully tighten. Fasten the support hose 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 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. Secure power steering hose and split hose grommet to hose 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.

**Caution: There should be a minimum of 1/2" clearance between hose support bracket 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 rear of pump tank. Check 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 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 fire wall, slide top slot of bracket between catalyst brace and tab 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 1/4" brass bar elbow on pump tank and one end of the 69" HP hose (17) into the 3/8" street ell on pump tank. Remove two rear rubber hood seal to fire wall 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**

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.

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

- B. Install 54" HP hose (18) to brass ell in lift cylinder port of valve (Spool #1). Install two 60" hoses (19) to brass ells in angle ports of valve (Spool #2). On vehicles without air conditioning, hoses may be routed out between radiator and radiator web, then through the grill near the center of vehicle. If vehicle is equipped with air conditioning, a 1-7/8" hole must be drilled through the radiator web on passenger's side inboard of battery. Install split hose grommet (74) around hole. Route 60" and 54" hoses out through this hole and through grill near center of vehicle. Attach 54" hose (18) to previously installed 90 degree swivel adapter on lift cylinder. Turn brass ell's and tie hoses to prevent hoses from rubbing battery or metal on radiator web.

## 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 60" right angle hose (spool #2, Cyl. B) to back of female disconnect installed in top hole of disconnect bracket. Connect 60" 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 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.