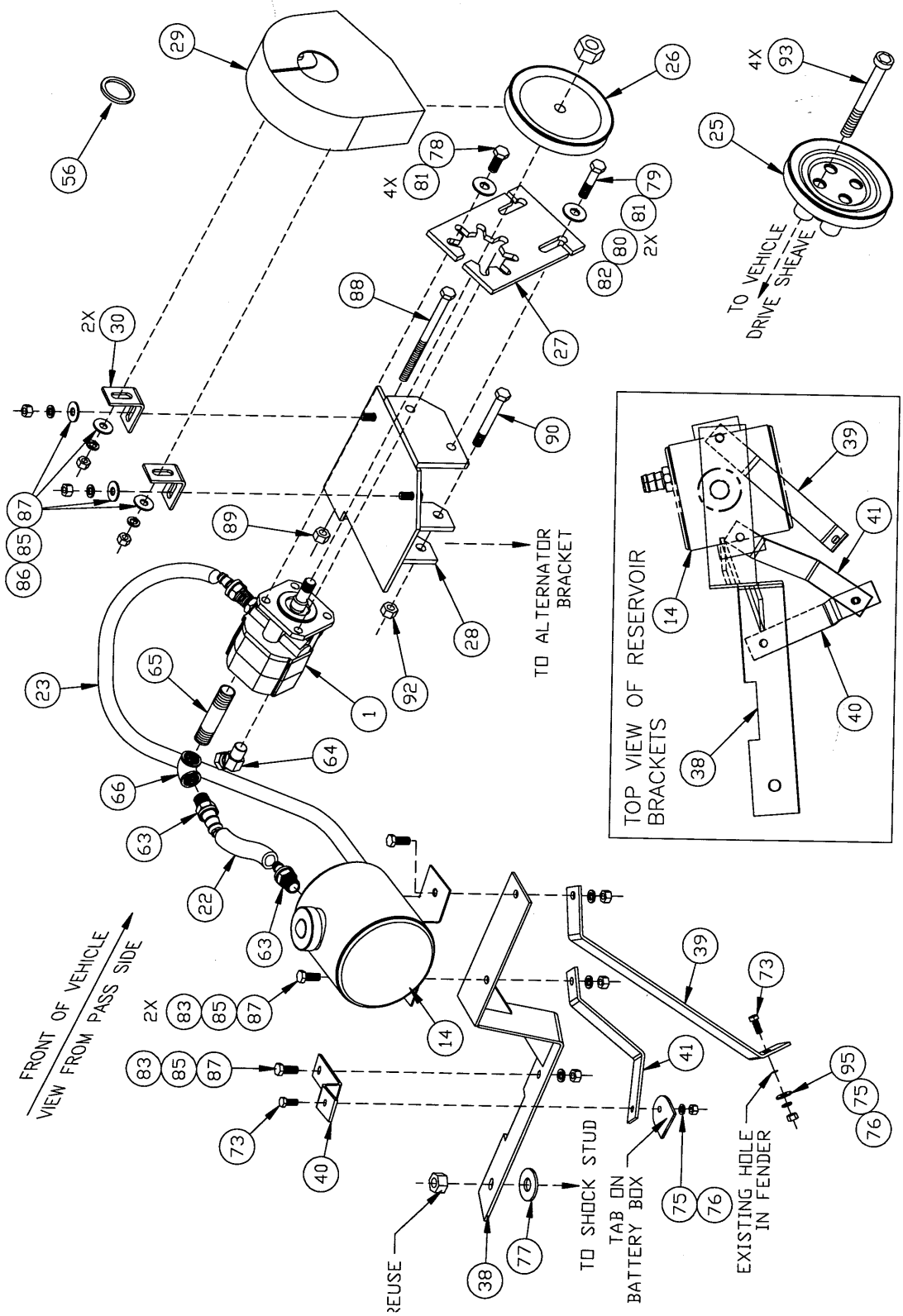
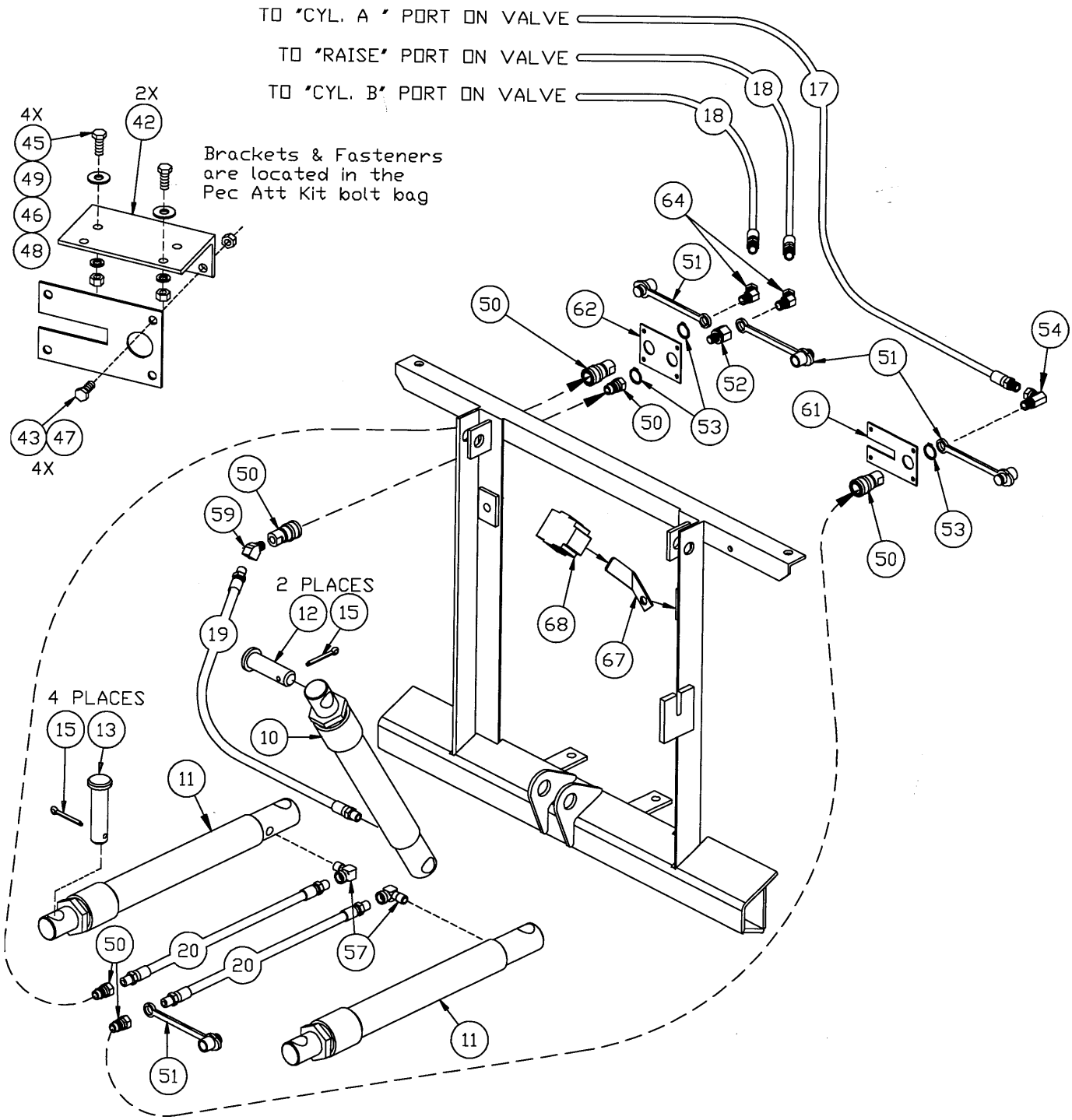
Minute Mount SYSTEM

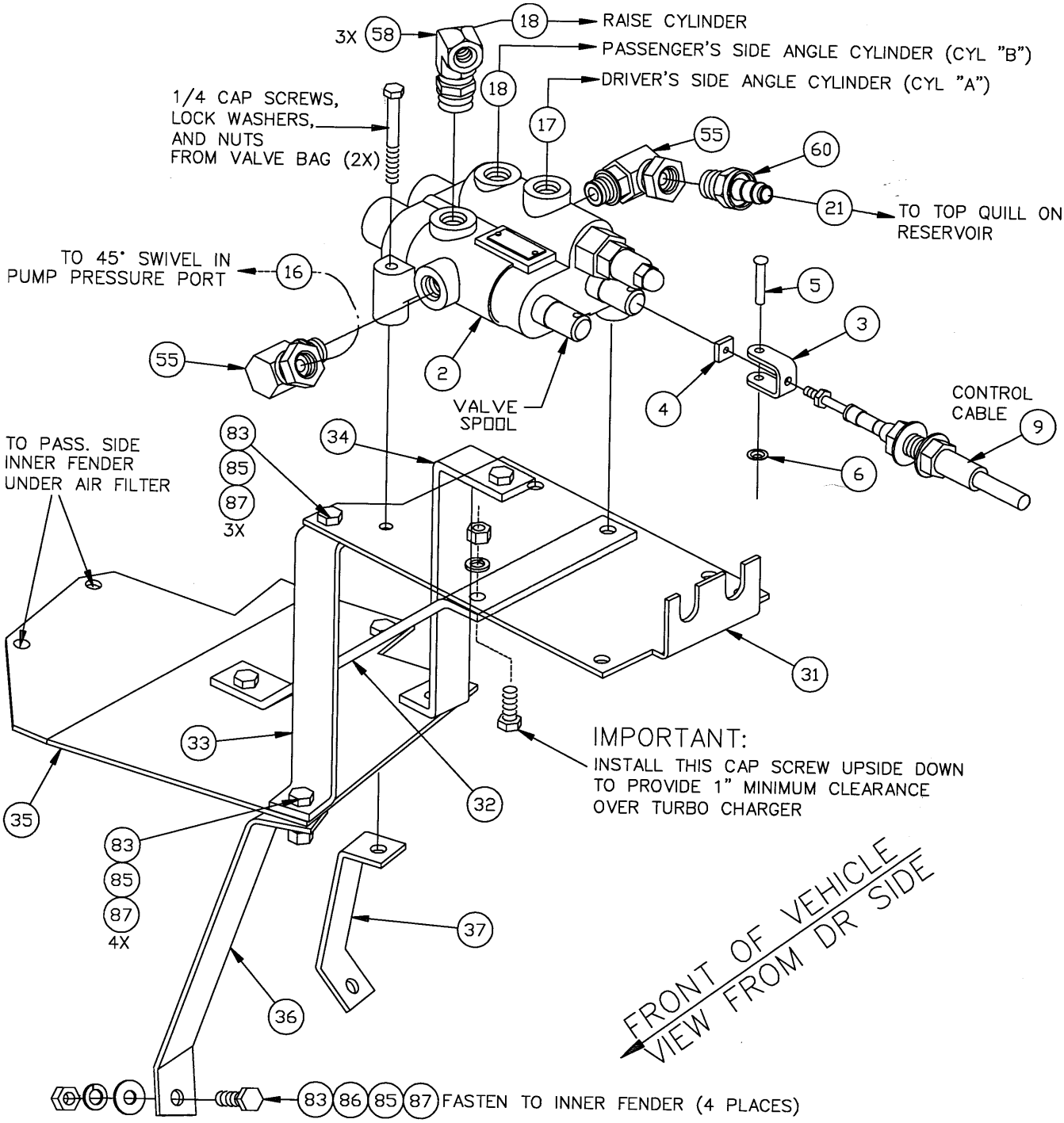
DODGE
5.9L DIESEL 1994- 97
w-w/o AC

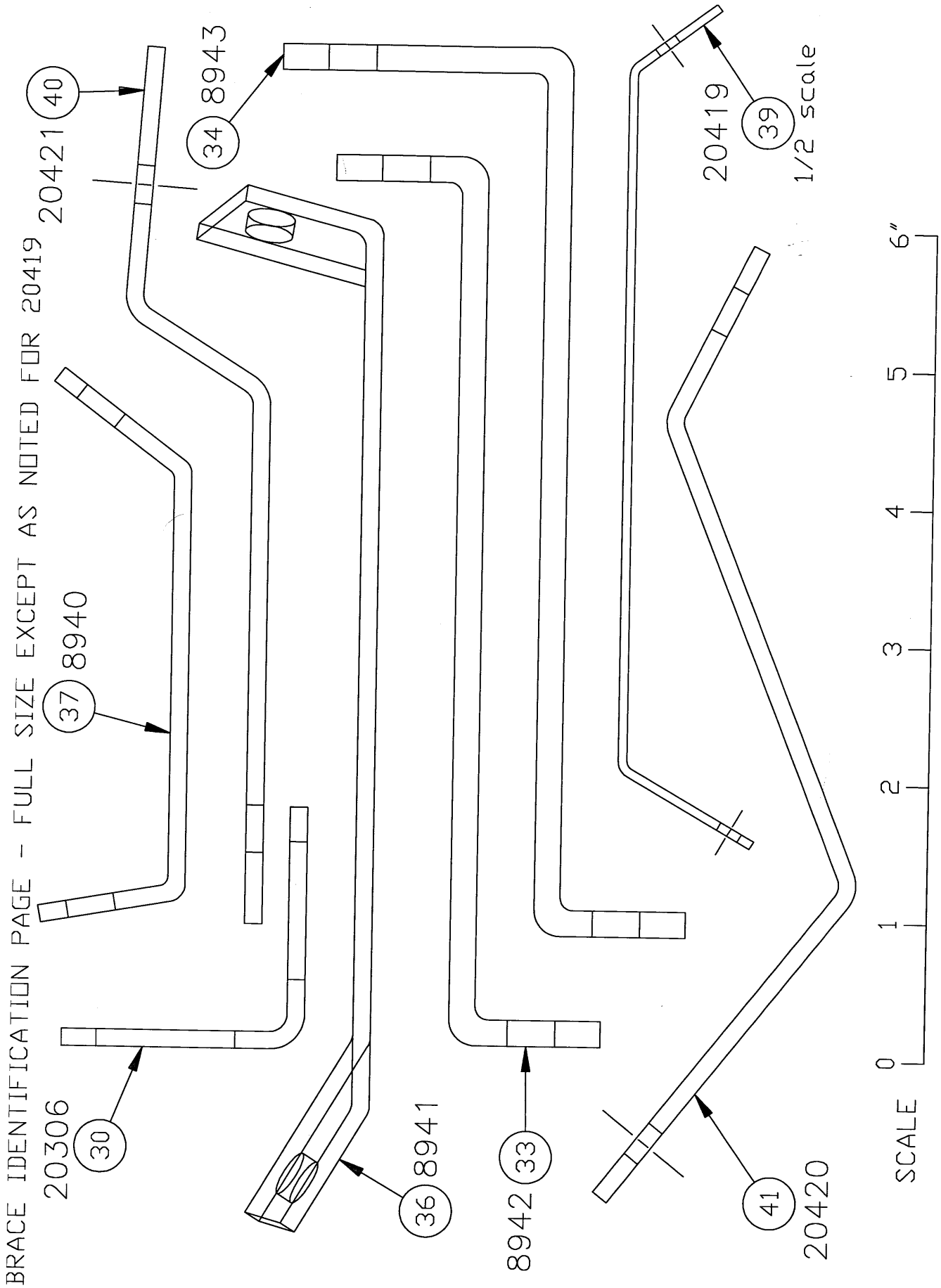
7549B
Belt Drive Hydraulics



20313


TO "CYL. A " PORT ON VALVE
TO "RAISE" PORT ON VALVE
TO "CYL. B" PORT ON VALVE
Brackets & Fasteners are located in the Pec Att Kit bolt bag
4X
2X
4X
2 PLACES
4 PLACES
45
49
46
48
42
43
47
64
51
50
62
52
53
54
61
18
17
59
19
12
15
10
11
13
68
67
20
57
51


3X 58
18
RAISE CYLINDER
PASSENGER'S SIDE ANGLE CYLINDER (CYL "B")
DRIVER'S SIDE ANGLE CYLINDER (CYL "A")
1/4 CAP SCREWS, LOCK WASHERS, AND NUTS FROM VALVE BAG (2X)
17
55
60
21
TO TOP QUILL ON RESERVOIR
TO 45° SWIVEL IN PUMP PRESSURE PORT
16
5
3
55
2
VALVE SPOOL
4
CONTROL CABLE
9
6
83
85
87
3X
34
TO PASS. SIDE INNER FENDER UNDER AIR FILTER
31
33
32
IMPORTANT:
INSTALL THIS CAP SCREW UPSIDE DOWN TO PROVIDE 1" MINIMUM CLEARANCE OVER TURBO CHARGER
35
83
85
87
4X
37
36
FRONT OF VEHICLE
VIEW FROM DR SIDE
83 86 85 87 FASTEN TO INNER FENDER (4 PLACES)

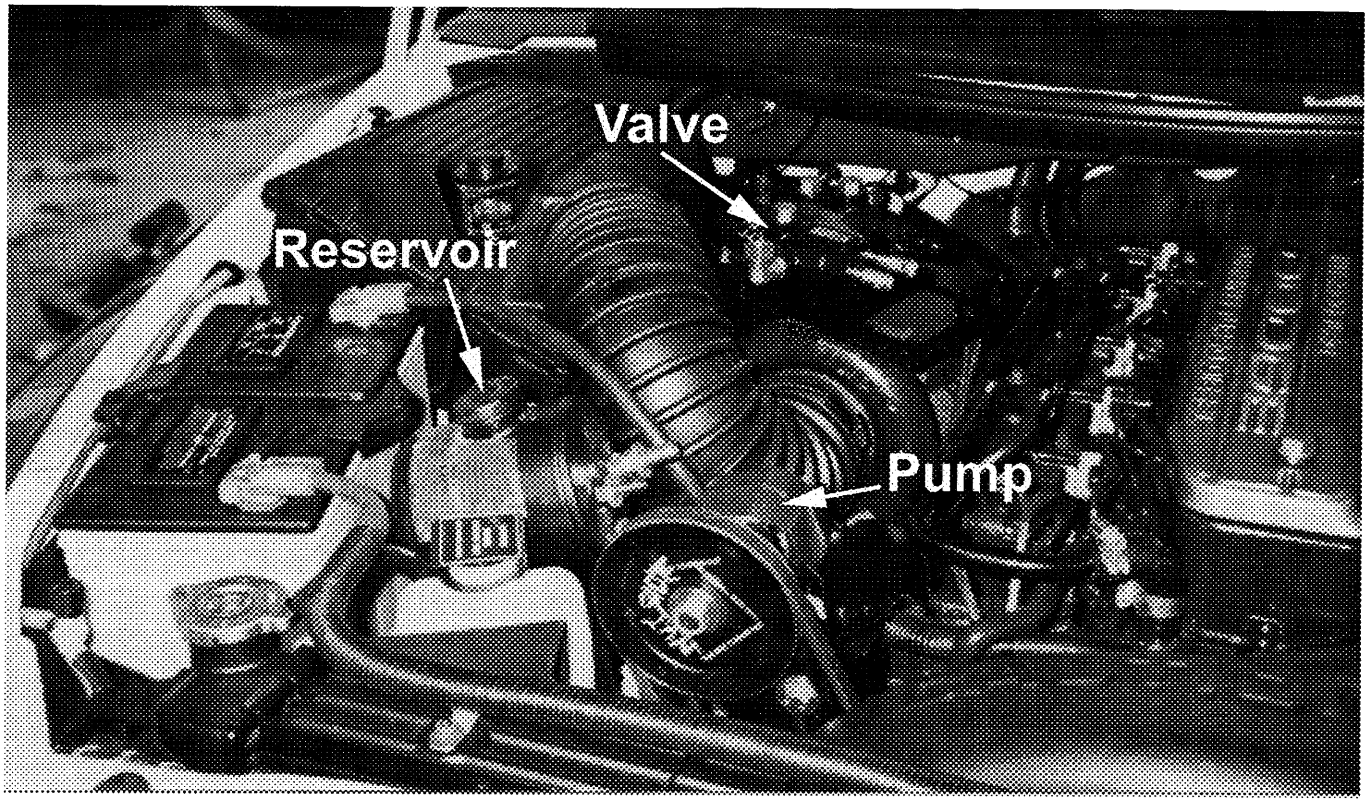

BRACE IDENTIFICATION PAGE - FULL SIZE EXCEPT AS NOTED FOR 20419
20306
30
8940
37
20421
40
8941
36
8943
34
8942
33
20419
39
1/2 scale
20420
41
SCALE
0
1
2
3
4
5
6"

Parts List

Ref#	Qty 8500 -40	Qty 7549 B	Part	Description
1	1		8356	Pump assembly
2	1		A4466-40	Control Valve Assembly
3	2		4483	Clevis
4	2		4494	10-32 Square Nut - VM
5	2		4491	Clevis Pin - 3/16 x 1"
6	2		4493	3/16" Push Nut Zp
7	1		8764	Filter Kit
8		1	4419	Single Lever Control
9		2	A4926	78" Control Cable, SLC
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
14	1		8389	Oil Reservoir
15	6		90601	1/4" x 1-1/2" Cotter Pin
16		1	4934	18" HP Hose 1/4P to 3/8P
17		1	8632	78" HP Hose 1/4P to 1/4P
18		2	5192	60" HP Hose, 1/4P to 1/4P
19		1	3074	22" HP Hose, 1/4P to 1/4P
20		2	4424	36" HP Hose, 1/4P to 1/4P
21		1	1681	3/8" LP Hose, 24" long
22		1	8979	1/2" LP Hose, 6" long
23		1	8980	3/8" LP Hose, 18" long
24		1	1714	V-Belt , 57"
25		1	20031	Drive Sheave
26		1	3696	Pump Sheave
27		1	8380	Pump Plate
28		1	20304	Pump Bracket
29		1	20305	Belt Shield
30		2	20306	Bracket (Slotted)
31		1	5329	Valve Plate
32		1	8946	Brace "T"
33		1	8942	Brace - Valve Plate
34		1	8943	Brace - Valve Plate
35		1	8939	Plate - Support
36		1	8941	Brace (Long)
37		1	8940	Brace (Short)
38		1	20424	Reservoir Bracket
39		1	20419	Brace (Long)
40		1	20421	Brace
41		1	20420	Brace
42			**8914	Grille Bracket
43			**90615	1/4"x1/2" (NC) Gr. 5 Cap screw
44			**8324	Hose Tie -3/16" x14" (not shown)
45			**90461	1/4"x3/4"(NC) Gr. 5 Cap screw
46			**90359	1/4" Lock Washer
47			**90350	1/4" Lock Nut
48			**90330	1/4" (NC) Nut
49			**90311	1/4" Flat Washer
50	3		21096	Disconnect Assembly
51	2	2	*1588	Dust Plug
52		1	* 4486	Adapter - Bulkhead 1/4" Npt
53		3	* 4485	7/8" Snap Ring
54	1		319	1/4 Npt x 90 deg Swivel Adapt
55	2		2315	9/16-18 w/o-Ring x 3/8 F Pi SW SWV
56		1	*20036	Fan Spacer
57	2		2780	1/4 Npt x 90 Deg Street Elbow F
58		3	*20316	9/16 O-ring to 1/4 Npt 90° Elbow
59		1	*8476	1/4 x 45 deg. Street Elbow
60	2		1658	Quill - 3/8 Nptm to 3/8 ID Hose
61		1	*8688	QD/Electric Grille Plate (Short)
62		1	*8686	2 QD Grille Plate (Short)
63		2	*8391	Quill 3/8" NPTM to 1/2" ID Hose
64		3	*8127	1/4" x 45 deg. Swivel
65		1	*8981	3/8" x 3" NPT Steel Pipe Nipple
66		1	*7311	3/8" 90 degree Elbow (black iron)
67		1	*8741	Bracket - Cable Boot
68		1	*8284	Cable Boot
69		2	*6595	Split Hose Grommet (3/4 x 2-1/2)
70	2		3042	Grommet-Rubber,Split (not shwn)
71	1		4477	Split Hose Grommet (3/8 x 6)
72	3	9	*3666	Hose Tie, nylon 3/16 x 8
73		2	*90612	1/4 x 1" (NC) Gr.5 Cap Screw
74	1		90614	1/4" x 1-1/4"(NC) Gr. 5 Cap Screw
75	1	2	*90359	1/4 " Lock Washer
76	1	2	*90330	1/4" (NC) Nut
77		1	*90319	1/2" Flat washer
78		4	*90638	3/8"x 5/8" (NC) Nyl Gr. 5 Cap scrw
79		2	*90106	3/8" x 1-1/4" (NC) Gr. 5 Cap screw
80		2	*90361	3/8 Sp Lk Washer
81		6	*90315	3/8" Flat Washer
82		2	*90334	3/8" Nut
83	4	13	*90042	5/16" x 1(NC) Gr. 5 Cap screw
84	1		90054	5/16 x1-1/2(NC) Gr. 5 Cap screw
85	6	14	*90360	5/16" Lock Washer
86	4	4	*90313	5/16" Flat Washer
87	7	13	*90332	5/16" (NC) Nut
88		1	*90700	8mmx1.25x130 Gr.10.9 Cap Scrw
89		1	*90423	8 mm x 1.25 Nut Gr. 8.8
90		1	*90701	10mm x 1.5x70 Gr. 8.8 Cap screw
92		1	*90425	10mm x 1.5 Nut Gr. 8.8
93		4	*90702	12mm x 1.25 x 80 Gr.12.9 Cap screw
94		1	5704	Caution Label
95		1	*90311	1/4" Flat Washer

8500-40 uses 5425 Bolt Bag

** Packed in Peculiar Attachment Kit Bolt Bag to be available for both EHP and Belt Drive options.



General Valve, Pump and Reservoir placement. Please note that the pump pulley will have a protective cover over it in a complete installation.

1. Cylinder and Cylinder Hose Assembly

A. Attach female half of disconnect (50) and a 1/4" Npt 45 degree street ell (59) to the 22" Hp hose (19). 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 the lift cylinder with hose pointing towards passenger side into ears on lift arm and lower gear. Secure with the clevis pins (12) and cotter pins (15).

B. Attach a male quick disconnect half (50) to one end of a 36" Hp hose (20). On the other 36" Hp hose (20), attach a male disconnect half (50) and a dust plug (51) to one end.

C. Using bench vise to hold angle cylinders (11), remove closures from ports. Fasten the brass forged street ells (57) into ports. Ells should point forward toward live end of cylinder and slightly upward as they will be installed on the A-frame. The driver's side cylinder uses the 36" Hp hose with the dust cover and male disconnect half. The passenger's side cylinder uses the 36" hose with the male disconnect half and **no dust cover**. Install cylinders to their respective sides so that the brass ells are between the cylinders and A-frame. Secure cylinders with anchor pins (13) and cotter pins (15) at each end.

2. Control Head and Control Cables

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

A. Remove 2" rubber plug from engine side of fire wall beside brake master cylinder. Vehicles with standard transmission will have to have two 5/8" holes drilled as per Dash bracket instructions.

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 nuts and washers from the valve end of the cables. Route the cables from dash through hole created when rubber plug was removed from fire wall (or the two holes drilled in fire wall). Attach control head to dash bracket as per dash bracket instructions. Cut out previously remove rubber plug to accommodate control cables and reinstall. **For standard transmission:** install rubber grommets (70) around cables where they pass through the fire wall.

3. Drive Sheave Installation

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

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

A. Loosen serpentine belt. Remove and discard fasteners from engine sheave. Place the drive sheave (25) inside of the vehicle sheave with the center over the pilot end of the crank shaft. Fasten with four 12mm x 1.25 x 80 Gr. 12.9 (93) cap screws and tighten. Remove fan and install fan spacer (56). Fan clutch nut has left-hand thread. Replace fan and tighten. Reinstall the serpentine belt.

4. Pump and Pump Bracket Installation

A. Remove bolts from the bracket on the top of the alternator. Place legs of pump bracket (28) over the alternator bracket and install one 8mm x 1.25 x 130 Gr. 10.9 cap screw (88) and one 10mm x 1.5 x 70 Gr. 9.8 cap screw (90) through each bracket leg of the pump bracket. "Double nut" the back of the fasteners with one 8mm x 1.25 nut (89) and one 10mm x 1.5 nut (92). Tighten fasteners.

B. Place the pump (1) in a vise with the relief quill toward the driver's side. Install a 1/4" x 45 degree swivel (64) in the high pressure port of the pump. Tighten until the swivel is pointing to the driver's side and down, as illustrated. On the suction port install a 3/8" x 3" pipe nipple (65) and a 90 degree elbow (66) pointing to the opposite direction of the relief quill. Install a 1/2" quill (63) into the elbow. Use four 3/8" x 5/8" nylon patched cap screws (78) and flat washers (81) to attach pump to pump plate (27) in the direction shown on the illustration. Install the pump sheave (26) onto the pump shaft using the lock nut and key supplied with the pump.

C. Attach the pump plate, with the pump, to the previously installed pump bracket (28) with two 3/8" x 1 1/4" cap screws (79), flat washers (81) and tie down with lock washers (80) and nuts (82). Install a 57" "V" - Belt (24) (not shown) over drive and pump sheaves (25,26). Adjust and tighten fasteners. Attach the two slotted brackets (30) to the pump bracket with two 5/16 flat washers (86), lock washers (85) and nuts (87). Place the belt shield (29) over the sheave and pump shaft. Studs on belt shield should be through slots in brackets (30). Adjust to achieve clearance between belt shield and vehicle fan shroud and engine coolant reservoir. Attach belt shield to slotted brackets with two 5/16 flat washers (86), lock washers (85) and nuts (87).

5. Oil Reservoir Installation

Caution: Reservoir tank fill must be vertical to engine.

A. Remove the top mounting nut from passenger's side front shock absorber. Place a 1/2" flat washer (77) over the shock stud. Place reservoir bracket (38) over stud and re-install the mounting nut. Do not tighten at this time.

B. Install a 1/2" quill (63) into the oil reservoir (14). Place the oil reservoir on the reservoir bracket (38) with the hose quills pointing towards the engine. Place the end of the long brace (39), with the hole closest to the end, under the front hole in the reservoir bracket. Attach the brace and the oil reservoir to the reservoir bracket with a 5/16 x 1" cap screw (83), lock washer (85), and nut (87). Attach the other end of the brace to the existing 1/4" hole in the lower part of the fender, below the battery with a 1/4 x 1" cap screw (73), flat washer (95), lock washer (75), and nut (76). Attach the other two reservoir support braces (40,41) to the existing 1/4" hole in the tab on the battery box with a 1/4 x 1" cap screw (73), lock washer (75), and nut (76). Attach the other end of brace (41) and the remaining hole in the oil reservoir to the rear reservoir mounting hole in the reservoir bracket with a 5/16 x 1" cap screw (83), lock washer (85), and nut (87).

Attach the other end of brace (40) to the remaining hole in the reservoir bracket with a 5/16 x 1" cap screw (83), lock washer (85), and nut (87). Tighten all fasteners.

6. 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 (55) into the "in" and "out" ports. Screw Quill (60) into installed adapter in the "out" port. Install three 9/16" O-rings to 1/4" Npt elbows (58) in lift and angle ports. When tight, ells should point between cables and "in" port of valve.

B. Mount valve to valve plate (31) using two 1/4 x 1-3/4 cap screws, lock washers, and nuts located in the valve bag. Attach three valve plate braces (32,33,34) to the valve plate (see illustration) with three 5/16" x 1" cap screws (83), lock washers (85), and nuts (87).

> **Note: It is important to install the 5/16 x 1 cap screw that fastens the brace (32) to the valve plate (31) upside down. This will provide more clearance over the turbo charger**

Do not fully tighten braces at this time. One 1/4" valve fastener will be used to attach the second hole in the crossing bar of the center brace (32) to the valve plate.

C. Install the support plate braces (36,37) to the support plate (35) using two 5/16" x 1" cap screws (83), lock washers (85), and nuts (87), do not tighten. Fasten the valve plate (31) and braces (32,33,34) to the support plate (35) using the fasteners for brace (36) and two additional 5/16" x 1" cap screws (83), lock washers (85), and nuts (87). Tighten these fasteners at this time. Remove engine air filter box from the fender of the passenger's side of the vehicle. Position valve, valve plate, support plate, and attached braces on inner fender with the valve spool ends pointing toward the engine so that they will not interfere with the top half of the air filter housing and duct work when they are installed. Using the holes in the support plate (35) and attached braces as guides, mark and drill four 11/32" holes through the inner fender and fender liner. Attach support plate and braces to fender with four 5/16 x 1" cap screws (83), flat washers (86), lock washers (85), and nuts (87). Tighten all fasteners and reinstall the air filter. There should be 1" minimum clearance from the valve plate fastener to the turbo charger.

D. Connect control cables to valve plate. Begin by reinstalling jam nuts and washers on cables. Place control cables in respective slots of valve plate bulkhead (31) 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 clevises (3) to cables using square nuts (4). Slip cable clevises over spools. Install clevis pins (5) through clevis and spools and secure with push nuts (6). Adjust cables so that control lever is centered between raise and angle positions in the control head. If the cable clevis does not allow enough adjustment, reposition the cable at the valve plate bulkhead. After checking to see that the valve spools are in the center position, tighten the cable clevis nuts. Use a hose tie (72) to attach the cables loosely down on the engine air intake on the driver's side.

> **CAUTION: The valve spools must be free and self centering when the cables and the control head are attached. Failure to center the spools will restrict the fluid flow through the 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.**

7. Hydraulic Hose Installation

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

A. Install a 6", 1/2" Lp Hose (22) (check for the length and cut shorter if necessary) from the back of the pump (1) to the reservoir (14). Install a 18" Lp Hose (23) (check for length and cut shorter if necessary) from the relief quill on the pump (1) to the bottom quill on the reservoir (14). Install a 24" Lp hose (21) (check for length and cut shorter if necessary) from the top quill on the reservoir to the "out" port quill on the valve. Install a 18" Hp Hose (16) from

the "in" port of the valve to the previously installed swivel fitting on the back of the pump. Angle and tie all hoses with tie wraps (72) so they are not against the hood or engine parts. Place 3/4" split rubber hose grommets (69) over the hoses that may rub or hit other components and secure them with hose ties (72).

B. Attach 78" HP hose (17) to Cyl. "A" on the angle port of valve (2). Attach a 60" HP hose (18) to Cyl. "B" port of valve and another 60" HP hose (18) to the raise port. Route hoses together through the side of the radiator and bumper.

C. **Grille brackets and fasteners are in the Peculiar Attachment Kit bolt bag to be available for both Electric Hydraulic Pak and Belt Drive options.** Attach a female quick disconnect half (50) to the QD/Electric grille plate (61) with a snap ring (53). Install a dust plug (51) and 1/4 x 90 degree swivel adapter (54) to disconnect. Place a grille bracket (42) on back of grille plate as shown on illustration, and attach with two 1/4 x 1/2 cap screws (43) and lock nuts (47). Place grille plate and bracket into large hole in driver's side of bumper as far towards the fender as possible. Using holes in angle as guides, drill two 1/4" holes in top inside lip of bumper. Use the two holes on the angle to angle the disconnect plate outwards on vehicle. Fasten bracket with two 1/4 x 3/4 cap screws (45), flat washers (49), lock washers (46), and nuts (48). Attach 78" angle hose (17) to swivel on disconnect and slide head light connector (with dust plug) into slot provided in the grille plate.

Install a female quick disconnect half (50) to one hole in the 2QD grille plate (62) with a snap ring (53) and a bulkhead adapter (52) to the other hole with another snap ring (53). Install a male quick disconnect half (50) to the bulkhead adapter and two 1/4 x 45 degree swivel adapters (64) with dust covers (51) to disconnects on back side of grille plate. Attach grille bracket (42) to grille plate as shown on illustration with two 1/4 x 1/2 cap screws (43) and lock nuts (47). Place grille plate and bracket into large hole in Passenger's side of bumper as far toward the fender as possible. Using the holes in the angle as guides, drill two 1/4" holes in the top inside lip of bumper. Use the two holes on the angle to angle the disconnects outward on vehicle. Fasten bracket with two 1/4 x 3/4 cap screws (45), flat washers (49), lock washers (46), and nuts (48) placing female disconnect to outside of vehicle. Attach lift hose to swivel with male disconnect and angle hose to female disconnect.

D. Install the cable boot bracket (67) on the driver's side headgear brace, between the brace and fasteners. Insert the cable boot (68) on over the bracket.

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

8. Operations

A. Check all fittings and fasteners for tightness. Secure hoses with nylon tie wraps (72). Place the caution label (94) on the dash beside the control head.

B. Fill reservoir (14) 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 angle hoses.** 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 hose 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.