

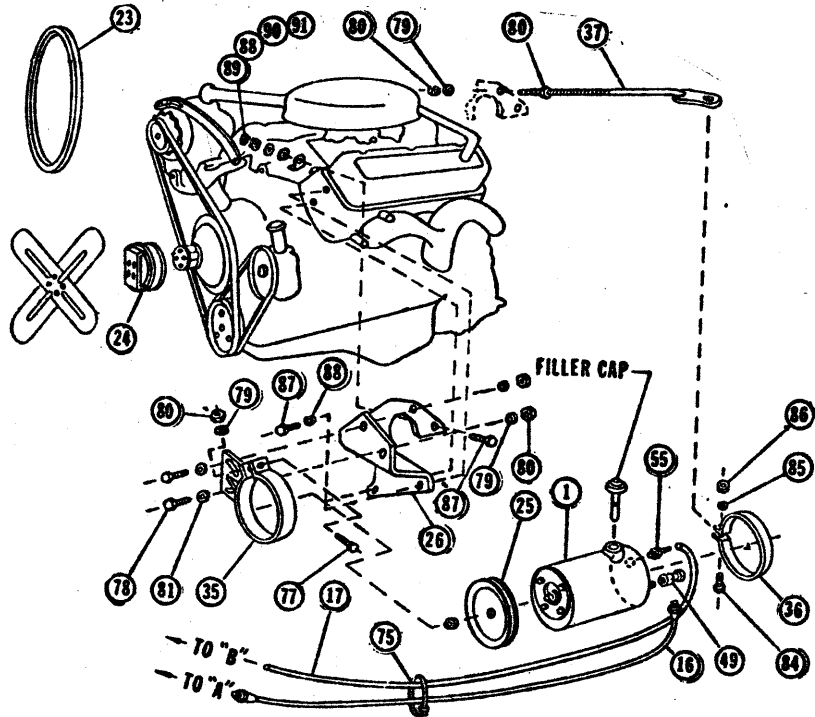
SERIES  
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CHEV/GMC V8-454  
V-BELT  
W/O AC

1981-1985

PECULIAR HYDRAULICS  
BELT DRIVE, SLC  
UNDERHOOD VALVE

HPS4530  
REV. C



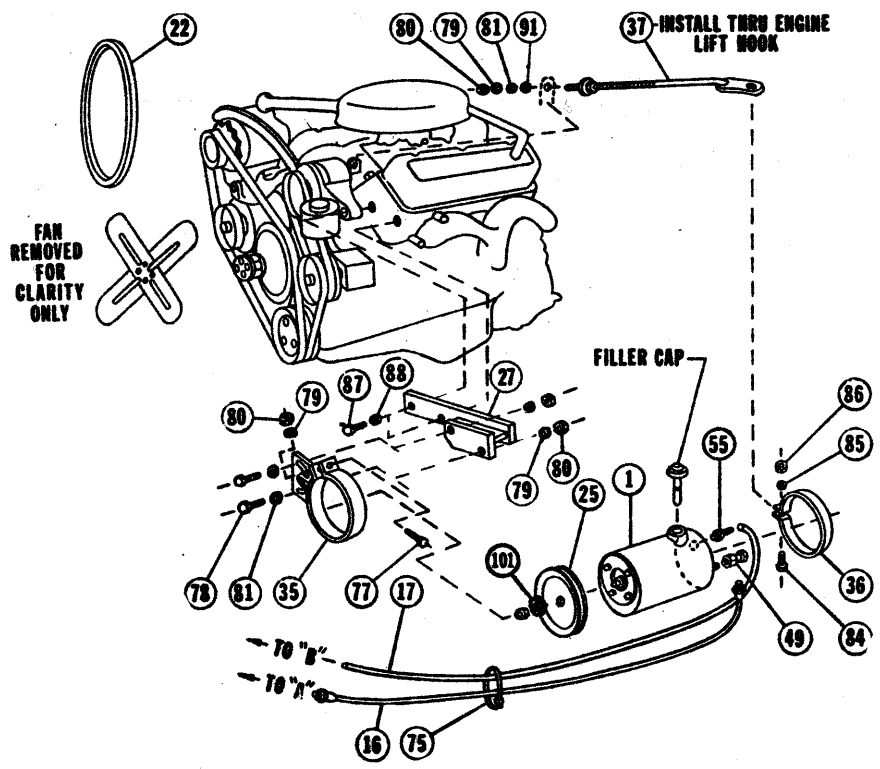
SERIES  
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CHEV/GMC V8-454  
W/ POWER STEERING  
W/ FREE FAN

1986-1988 1/2

PECULIAR HYDRAULICS  
BELT DRIVE, SLC  
UNDERHOOD VALVE

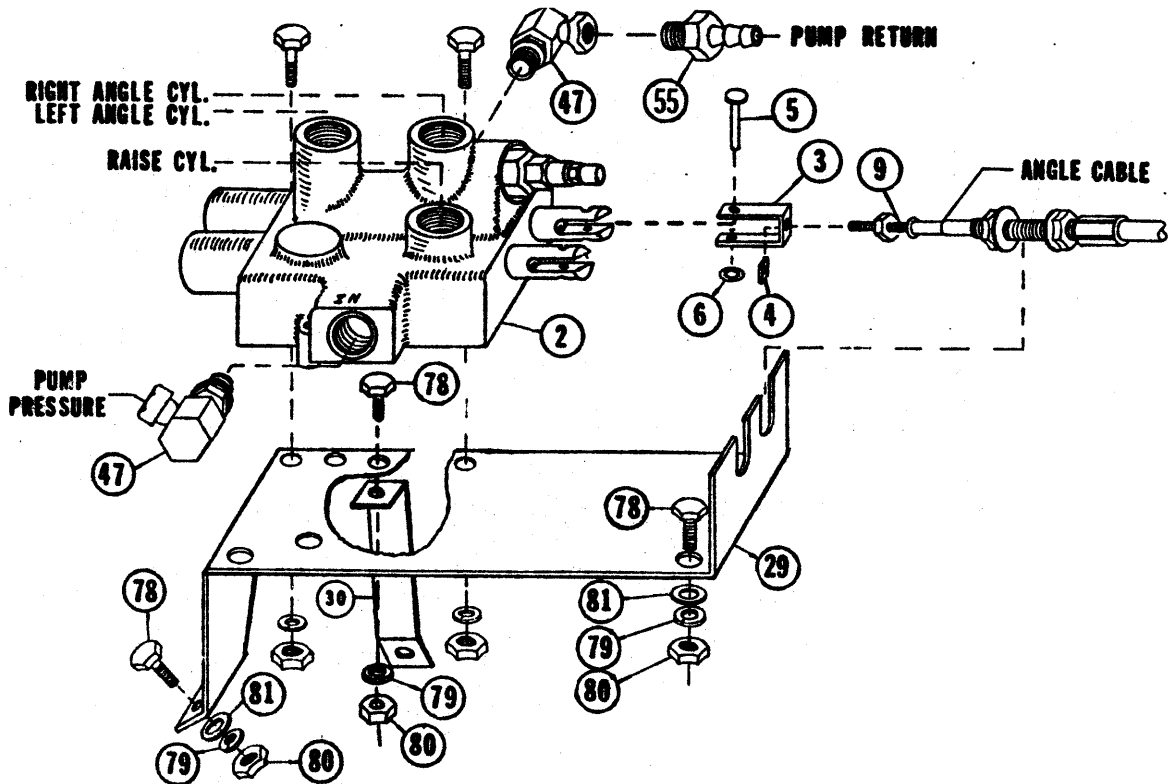
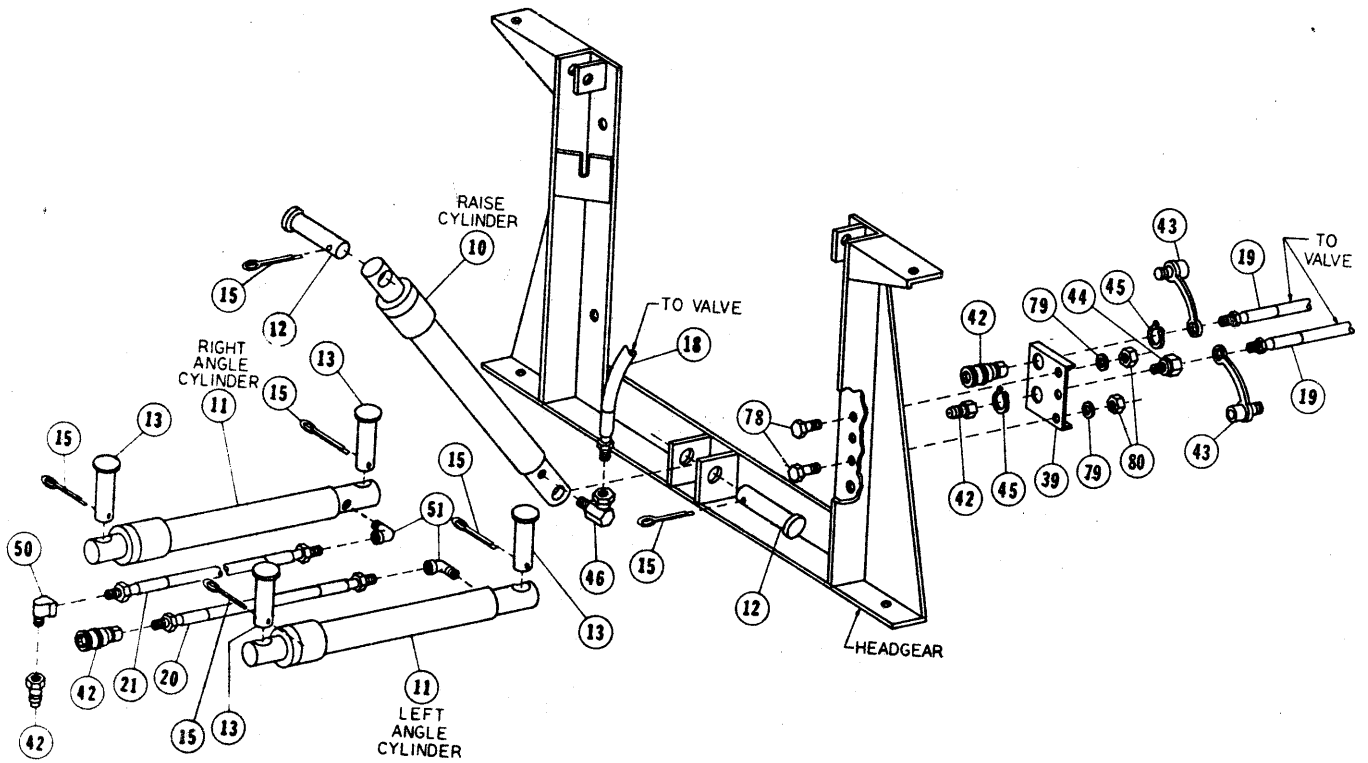
HPS4530  
REV. C



6304

SERIES  
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HPS4530  
REV. C



SERIES  
G

HYDRAULICS PARTS LIST

HPS4530 REV. C  
A4468

REF#	QTY IN KIT		PART#	DESCRIPTION
	A4468-40	HPS4530		* PART OF 6934 BOLT BAG
1	1		A2311	PUMP TANK ASSEMBLY
2	1		A4466	CONTROL VALVE ASSEMBLY
3	2		4483	CLEVIS
4	2		4494	10-32 SQUARE NUT
5	2		4491	CLEVIS PIN
6	2		4491	3/16 PUSH NUT
7				
8		1	4419	SINGLE LEVER CONTROL HEAD
9		2	4488	40" CONTROL CABLE, SLC
10	1		A318	10" LIFT CYLINDER ASSEMBLY
11	2		A3660	12" ANGLE CYLINDER ASSEMBLY
12	2		6814	CLEVIS PIN
13	4		6816	ANCHOR PIN
14				
15	6		90601	1/4 X 1-1/2 COTTER PIN
16		1	2707	26" H.P. HOSE, 1/4P TO 3/8P
17		1	4471	26" L.P. HOSE
18		1	1665	60" H.P. HOSE, 9/16 O-RING TO 1/4P
19		2	1664	54" H.P. HOSE, 9/16 O-RING TO 1/4P
20		1	376	32" H.P. HOSE, 1/4P TO 1/4P
21		1	4424	36" H.P. HOSE, 1/4P TO 1/4P
22		1	691	FAN BELT, 60"
23		1	358	FAN BELT, 51"
24		1	4938	DRIVE SHEAVE
25		1	7909	PUMP SHEAVE
26		1	5393	PUMP BRACKET
27		1	5985	PUMP BRACKET
28				
29		1	5780	VALVE PLATE
30		1	5781	VALVE PLATE BRACE
31				
32				
33				
34				
35		1	4921	SADDLE BRACKET
36	1		2036	REAR TANK STRAP
37	1		2116	UNIVERSAL BRACE ROD
38				
39		1	4467	DISCONNECT MOUNTING PLATE
40				
41				
42	2		A1587	DISCONNECT ASSEMBLY
43	2		1588	DUST PLUG
44		1	* 4486	BULKHEAD ADAPTER
45		2	* 4485	7/8" SNAP RING
46	1		319	1/4" X 90 SWIVEL ADAPTER
47	2		2315	9/16 O.R. TO 3/8P X 90 SWL.ADPT.
48				
49		1	* 1659	ADAPTER UNION, 1/4 F.P.T. BOTH ENDS

REF# QTY IN KIT PART# DESCRIPTION  
 A4468-40 HPS4530 \* PART OF 6934 BOLT BAG




50 1 \* 765 1/4" BRASS BAR STREET ELL  
 51 2 2 2780 1/4" BRASS BAR STREET ELL (FORGED)

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1658

QUILL

FASTENER TORQUE (FT-LB)			
DIAMETER- THREADS PER INCH	GRADE DESIGNATION		
	 GRADE 2	 GRADE 5	 GRADE 8
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

1

5704

SAFETY DECAL

3042

GROMMET

4477

SPLIT HOSE GROMMET

3666

TIE WRAPS

90054

5/16 X 1-1/2 (NC) GR. 5 CAPSCREW

\* 90042

5/16 X 1 (NC) GR.5 CAPSCREW

\* 90360

5/16 LOCKWASHER

\* 90332

5/16 (NC) NUT

\* 90313

5/16 FLATWASHER

90614

1/4 X 1-1/4 (NC) GR.5 CAPSCREW

90359

1/4 LOCKWASHER

90330

1/4 (NC) NUT

\* 90103

3/8 X 1 (NC) GR.5 CAPSCREW

\* 90361

3/8 LOCKWASHER

\* 90334

3/8 (NC) NUT

\* 90315

3/8 FLATWASHER

\* 90317

7/16 FLATWASHER

\* 90319

1/2 FLATWASHER

**1. CYLINDER AND 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" H.P. HOSE (20), INSTALL FEMALE HALF OF HOSE DISCONNECT ASSEMBLY (42) DIRECTLY TO HOSE. THEN, HOLDING 36" H.P. HOSE (21), INSTALL BRASS BAR STREET ELL (50) AND MALE HALF OF HOSE DISCONNECT ASSEMBLY (42) ON THE SAME HOSE END.

C. USING 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" H.P. HOSE WITH FEMALE DISCONNECT HALF TO DRIVE SIDE ANGLE CYLINDER STREET ELL. INSTALL OTHER H.P. 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 AND CONTROL CABLES**

**NOTE: DASH BRACKET, HARDWARE, DRILLING GUIDE AND MOUNTING INSTRUCTIONS WILL BE FOUND IN PECULIAR ATTACHING BOX.**

A. DRILL THREE 5/8" HOLES IN FIREWALL FOR CONTROL CABLES AND WIRING HARNESS USING DRILLING GUIDE AS A REFERENCE ONLY. BE SURE BOTH SIDES OF FIREWALL ARE CLEAR OF OBSTRUCTIONS BEFORE DRILLING. DRILL 1/2" HOLE IN UNDERSIDE OF DASH AS SHOWN IN DASH ILLUSTRATION.

B. INSTALL DASH BRACKET AS PER DASH BRACKET INSTRUCTIONS.

C. LOOSEN 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 THE TOP OF THE DRIVER SIDE FENDERWELL. ATTACH CONTROL HEAD TO DASH BRACKET AS PER DASH BRACKET INSTRUCTIONS. INSTALL RUBBER GROMMETS (73) AROUND CABLES WHERE THEY PASS THROUGH FIREWALL.

**3. VALVE AND VALVE PLATE**

A. USING BENCH VISE TO HOLD CONTROL VALVE ASSEMBLY (2) REMOVE CLOSURES FROM VALVE PORTS. SCREW 90 DEGREE SWIVEL ADAPTER UNIONS (47) INTO "IN" AND "OUT" PORTS. SCREW QUILL (55) INTO INSTALLED ADAPTER IN "OUT PORT. NOTE: VALVE FITTINGS ARE INSTALLED AS DESCRIBED TO INSURE PROPER INSTALLATION. FIRST INDICATION OF INCORRECT INSTALLATIONS IS FAILURE OF PLOW TO LIFT ALTHOUGH PLOW WILL ANGLE.

B. MOUNT VALVE TO VALVE PLATE (29) USING TWO 1/4 X 1-1/4 CAP-SCREWS, LOCKWASHERS AND NUTS FROM VALVE BAG. CONNECT CONTROL CABLES 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 PUSHNUT (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 FENDERWELL SO THAT VALVE IS NEAR LEVEL AND CABLES RUN IN AS SMOOTH A PATH AS POSSIBLE. USING THE HOLES IN EACH END OF VALVE PLATE AS A GUIDE, DRILL TWO 11/32" HOLES THROUGH THE FENDERWELL. FASTEN THE VALVE PLATE TO THE FENDERWELL WITH TWO 5/16 X 1 CAPSCREWS (78), FLATWASHERS (81), LOCKWASHERS (79) AND NUTS (80). ATTACH 90 DEGREE BENT END OF VALVE PLATE BRACE (30) TO VALVE PLATE AS SHOWN IN ILLUSTRATION WITH A 5/16 X 1 CAPSCREW (78), LOCKWASHER (79) AND NUT (80). USING HOLE IN OTHER END OF BRACE AS A GUIDE, DRILL ANOTHER 11/32" HOLE THROUGH THE FENDERWELL AND FASTEN WITH A 5/16 X 1 CAPSCREW (78), FLATWASHER (81), LOCKWASHER (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

1981-85: A. LOOSEN ALTERNATOR AND POWER STEERING BELTS. REMOVE FREE FAN NUTS, LOCK WASHERS, AND FAN. INSTALL DRIVE SHEAVE (24) TO FAN STUDS. REPLACE FAN AND REFASTEN WITH ORIGINAL LOCKWASHERS AND NUTS. (CONSULT TORQUE CHART FOR PROPER TORQUE FOR THESE FASTENERS).

#### 5. PUMP TANK AND PUMP BRACKET

A. 1981-85: INSTALL PUMP BRACKET (26) TO FRONT END OF DRIVERS SIDE CYLINDER HEAD USING TWO 3/8 X 1 CAPSCREWS (87) AND LOCKWASHERS (88). ATTACH THE BRACE ARM OF THE BRACKET TO THE OUTSIDE OF THE ENGINE

LIFTING TAB USING ONE 3/8 X 1 CAPSCREW (87), 7/16 FLATWASHER (91), 3/8 FLATWASHER (90), 3/8 LOCKWASHER (88) AND NUT (89).

1986: REMOVE AND DISCARD BOLT HOLDING SMOG PUMP BRACKET TO DRIVER'S SIDE CYLINDER HEAD. REMOVE AND DISCARD SPACER LOCATED BETWEEN SMOG PUMP BRACKET AND CYLINDER HEAD. PLACE LONG BAR OF PUMP BRACKET (27) BETWEEN SMOG PUMP BRACKET AND CYLINDER HEAD. ALIGN OUTER HOLE IN PUMP BRACKET WITH HOLE IN SMOG PUMP BRACKET AND TAPPED HOLE IN CYLINDER HEAD. FASTEN WITH ONE 3/8 X 1 (NC) GR. 5 CAPSCREW (89) AND LOCKWASHER (88). ALIGN REMAINING HOLE IN PUMP BRACKET WITH VACANT TAPPED HOLE IN CYLINDER HEAD AND FASTEN WITH ONE 3/8 X 1 (NC) GR. 5 CAPSCREW (87) AND LOCKWASHER (88).

B. HOLDING PUMP TANK (1) IN BENCH VISE, SCREW 1/4" SWIVEL ADAPTER UNION (49) ONTO TO PRESSURE PORT AND SCREW QUILL (55) INTO RETURN PORT. INSTALL PUMP SHEAVE (25) ON TO PUMP SHAFT USING LOCKNUT SUPPLIED WITH PUMP. WHEN INSTALLING LOCKNUT MAKE SURE THAT THE LOCKNUT TIGHTENS AGAINST THE PUMP SHEAVE, AND NOT AGAINST THE PUMP SHAFT SHOULDER. AN OPTIONAL 1/2 PLAIN WASHER (101) SHOULD BE INSTALLED ONLY IF THE LOCKNUT TIGHTENS AGAINST THE PUMP SHAFT SHOULDER AND NOT THE SHEAVE. CAUTION: TO AVOID DAMAGE TO THE PUMP SHAFT, MAKE SURE THAT THE 1/2 FLATWASHER FITS ON OVER THE SHAFT SHOULDER BEFORE TIGHTENING THE LOCKNUT. 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 CAPSCREW (77), LOCKWASHER (79) AND NUT (80). ATTACH SADDLE BRACKET AND PUMP TO PUMP BRACKET USING TWO 5/16 X 1 CAPSCREWS (78), FLATWASHER (81), LOCKWASHERS (79) AND NUTS (80).

C. 1981-85: INSTALL 51" 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 BOLT. INSTALL REAR TANK STRAP (36) ON OVER REAR OF PUMP. INSTALL ONE 5/16 NUT (80) ONTO UNIVERSAL BRACE ROD (37). INSTALL BENT END OF BRACE ROD BETWEEN EARS OF TANK STRAP WHILE INSERTING OTHER END OF BRACE ROD THROUGH HOLE IN PUMP BRACKET. FASTEN BRACE ROD TO EARS OF TANK STRAP WITH A 1/4 X 1-1/4 CAPSCREW (84), LOCKWASHER (85) AND NUT (86). FASTEN OTHER END OF BRACE ROD TO PUMP BRACKET WITH A 5/16 LOCKWASHER (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.

1986-87: LOOSEN AND REMOVE UPPER SMOG PUMP BELT, ALTERNATOR BELT, AND POWER STEERING BELT. INSTALL 60" BELT (22) ONTO VACANT GROOVE OF CRANKSHAFT PULLEY, POWER STEERING PULLEY AND FISHER PUMP SHEAVE. REINSTALL AND TIGHTEN PREVIOUSLY REMOVED BELTS. ALIGN SHEAVES AND TIGHTEN 1-1/2" SADDLE BRACKET FASTENER. ADJUST FOR PROPER TENSION BY PIVOTING SADDLE BRACKET ON TOP BOLT. INSTALL REAR TANK STRAP (36) ON OVER REAR OF PUMP. INSTALL ONE 5/16 NUT (80), 5/16 FLATWASHER AND 7/16 FLATWASHER ONTO UNIVERSAL BRACE ROD (37). INSTALL BENT END OF BRACE ROD BETWEEN EARS OF TANK STRAP WHILE INSERTING OTHER END OF BRACE ROD THROUGH HOLE IN ENGINE LIFT BRACKET. FASTEN BRACE ROD TO EARS OF TANK STRAP WITH A 1/4 X 1-1/4 CAPSCREW (84), LOCKWASHER (85) AND NUT (86). FASTEN OTHER END OF BRACE ROD TO ENGINE LIFTING BRACKET ON DRIVERS SIDE INTAKE MANIFOLD

WITH A 7/16 FLATWASHER (91), 5/16 FLATWASHER (81), LOCKWASHER (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" H.P. HOSE (16) TO 1/4" SWIVEL ADAPTER ON PUMP TANK AND PUSH 26" L.P. HOSE (17) ONTO QUILL ON PUMP TANK. ROUTE THESE HOSES TO THE CONTROL VALVE.

**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.**

PUSH L.P. HOSE ONTO QUILL AND SCREW H.P. HOSE INTO 90 DEGREE SWIVEL ADAPTER. INSTALL 9/16 O-RING END OF 60" H.P. HOSE (18) TO LIFT CYLINDER PORT OF VALVE (SPOOL #1). INSTALL 9/16 O-RING END OF TWO 54" HOSES (19) TO ANGLE PORTS OF VALVE (SPOOL #2). DRILL A 1-7/8" HOLE THROUGH MIDDLE OF RADIATOR WEB ON DRIVERS SIDE, APPROXIMATELY 9-1/2" BELOW TOP OF RADIATOR. (NEWER VEHICLES MAY NOT REQUIRE DRILLING.) INSTALL SPLIT HOSE GROMMET (74) AROUND HOLE. ROUTE 60" AND 54" HOSES OUT THROUGH THIS HOLE AND THROUGH GRILL NEAR CENTER OF VEHICLE. ATTACH 60" HOSE TO PREVIOUSLY INSTALLED 90 DEGREE SWIVEL ADAPTER ON LIFT CYLINDER.

## 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 CAPSCREWS (78), LOCKWASHERS (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 SAFETY DECAL (72) ON DASH BESIDE CONTROL HEAD.

B. FILL RESERVOIR WITH TYPE "A" AUTOMATIC TRANSMISSION FLUID. START ENGINE, LIFT AND ANGLE BLADE. NOTE: IF BLADE ANGLES OPPOSITE FROM CONTROL LEVER POSITION, REVERSE THE TWO H.P. HOSE CONNECTIONS ON THE BACK OF THE DISCONNECT BRACKET. RAISE FRONT END OF VEHICLE UNTIL FLOW IS CLEAR OF GROUND WITH THE LIFT CYLINDER FULLY RETRACTED. CHECK RESERVOIR OIL LEVEL. ANGLE BLADE (WITH LIFT CYLINDER RETRACTED) TO REMOVE AIR FROM SYSTEM. RECHECK RESERVOIR OIL LEVEL.