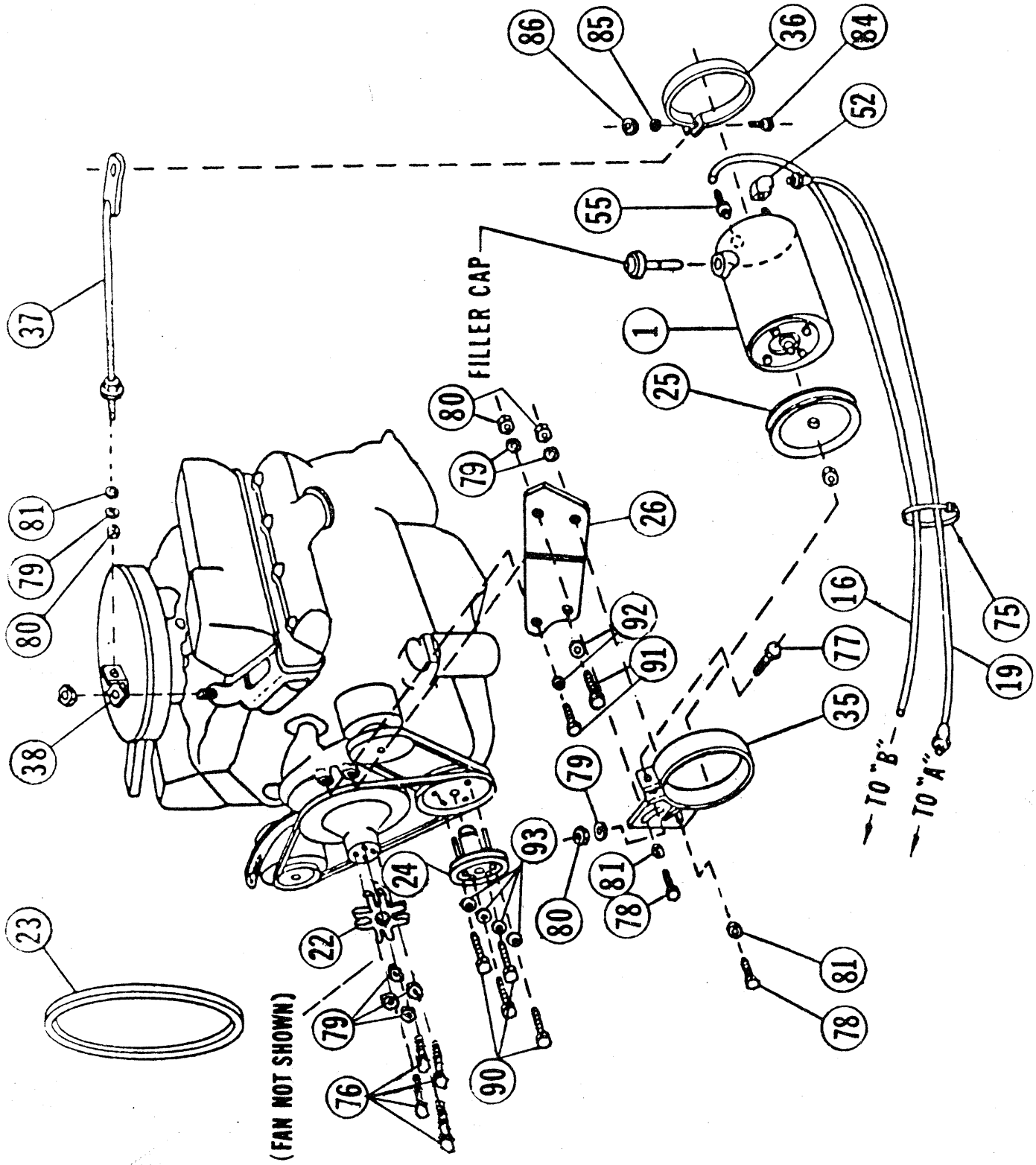
FORD V-8,351 W/O AC V-8,302 W-W/O AC	1983-87 1985-86	PECULIAR HYDRAULICS BELT DRIVE, SLC UNDERHOOD VALVE	HPS4583 REV B



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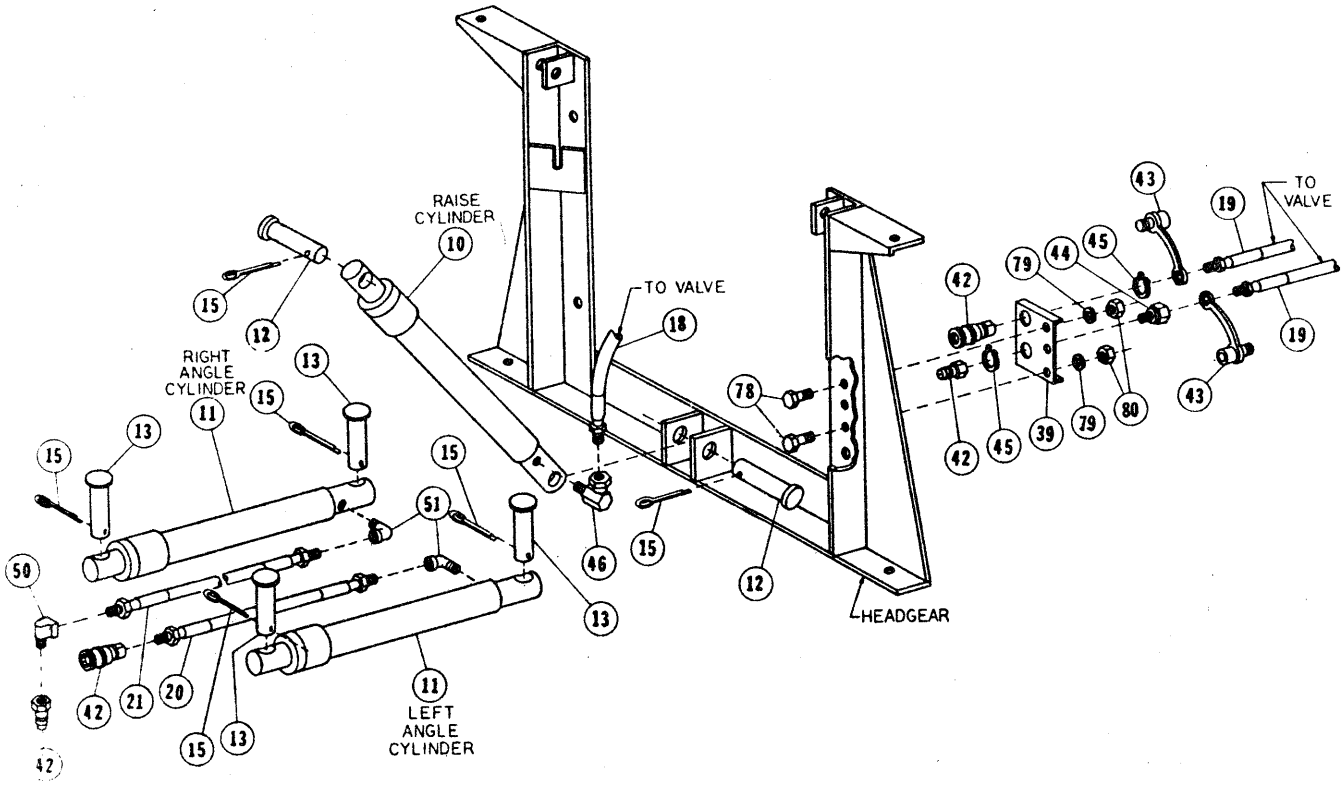
RAISE CYLINDER
10
TO VALVE
18
RIGHT ANGLE CYLINDER
11
LEFT ANGLE CYLINDER
11
HEADGEAR
TO VALVE
15
12
13
51
46
50
42
21
20
78
43
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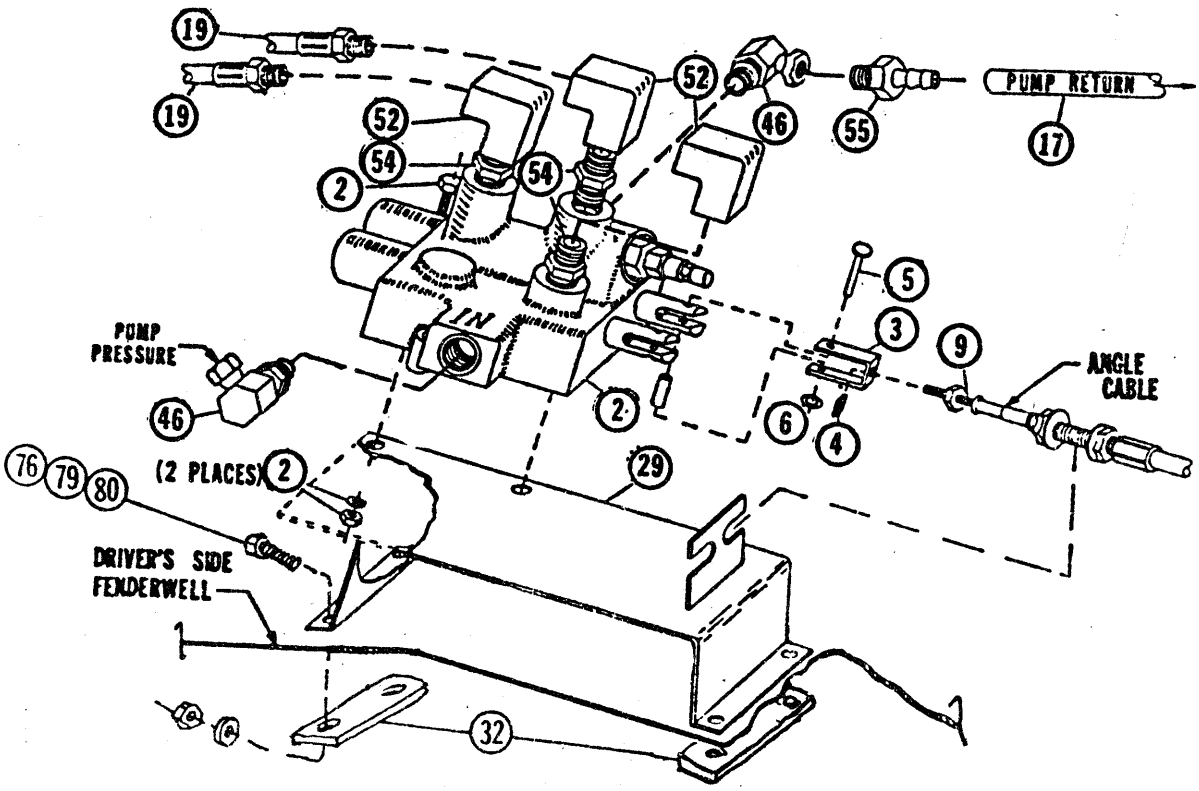
79
80
39


19
52
54
2
46
55
PUMP RETURN
17
IN
PUMP PRESSURE
5
3
9
ANGLE CABLE
6
4
29
(2 PLACES)
76
79
80
DRIVER'S SIDE FENDERWELL
32

REF#	QTY IN KIT A4468-40	QTY IN KIT HPS4583		PART#	DESCRIPTION * PART OF 6897 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 - 3/16 X 1
6	2			4493	3/16 PUSH NUT
7	1			8764	FILTER KIT (AT END OF INSTRUCT.)
8		1		4419	SINGLE LEVER CONTROL HEAD
9		2		4949	30" CONTROL CABLE, SLC
10	1			A318	10" LIFT CYLINDER ASSEMBLY
11	2			A3660	12" ANGLE CYLINDER ASSEMBLY
12	2			6814	CLEVIS PIN - 1 X 3-5/16
13	4			6816	ANCHOR PIN - 1 X 4
14					
15	6			90601	1/4 X 1-1/2 COTTER PIN
16		1		5652	28" H.P. HOSE, 1/4P TO 3/8P
17		1		5653	28" L.P. HOSE
18		1		5192	60" H.P. HOSE, 1/4P TO 1/4P
19		2		5193	54" H.P. HOSE, 1/4P 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	*	5026	FAN SPACER
23		1		419	FAN BELT, 53"
24		1		5786	DRIVE SHEAVE
25		1		3696	PUMP SHEAVE
26		1		5785	PUMP BRACKET
27					
28					
29		1		5178	VALVE PLATE
30					
31					
32		2		6031	BACKING PLATE
33					
34					
35		1		4921	SADDLE BRACKET
36	1			2036	REAR TANK STRAP
37	1			2116	UNIVERSAL BRACE ROD
38		1		2115	UNIVERSAL BRACE TAB
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					

REF#	QTY IN KIT A4468-40	QTY IN KIT HPS4583		PART#	DESCRIPTION * PART OF 6897 BOLT BAG
50		1	*	765	1/4" BRASS BAR STREET ELL
51	2			2780	1/4" BRASS BAR STREET ELL (FORGED)
52		4	*	2318	1/4" BRASS BAR ELL
53					
54		3	*	3058	1/4 P TO 9/16 O.R. ST.ADPT.
55	2			1658	QUILL
56					
57					
58					
59					
60					
61					
62					
63					
64					
65					
66					
67					
68					
69					
70					
71					
72		1		5704	SAFETY DECAL
73	2			3042	GROMMET
74	1			4477	SPLIT HOSE GROMMET
75	3			3666	TIE WRAPS 3/16 X 8
76		4	*	90051	5/16 X 1-1/4 (NF) GR. 5 CAPSCREW
77	1			90054	5/16 X 1-1/2 (NC) GR. 5 CAPSCREW
78	4			90042	5/16 X 1 (NC) GR.5 CAPSCREW
79	6	7	*	90360	5/16 LOCKWASHER
80	7	3	*	90332	5/16 (NC) NUT
81	4			90313	5/16 FLATWASHER
84	1			90614	1/4 X 1-1/4 (NC) GR.5 CAPSCREW
85	1	3	*	90359	1/4 LOCKWASHER
86	1	3	*	90330	1/4 (NC) NUT
87		3	*	90311	1/4 FLATWASHER
88		3	*	90461	1/4 X 3/4 (NC) GR.5 CAPSCREW
89					
90		4	*	90156	3/8 X 4-1/4 (NC) GR.5 CAPSCREW
91		2	*	90097	3/8 X 3/4 (NC) GR.5 CAPSCREW
92		2	*	90361	3/8" LOCKWASHER
93		4	*	4268	SPACER WASHER
94		4	*	90048	5/16 X 1-1/4 (NC) GR.5 CAPSCREW

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. 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 DRIVER SIDE ANGLE CYLINDER STREET ELL. INSTALL OTHER H.P. HOSE WITH MALE DISCONNECT HALF TO PASSENGER SIDE ANGLE CYLINDER STREET ELL. 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 INSTALLATION IS FAILURE OF PLOW TO LIFT ALTHOUGH PLOW WILL ANGLE.

INSTALL (3) 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 AWAY FROM CABLE END OF VALVE.

B. MOUNT VALVE TO VALVE PLATE (29) USING TWO 1/4 X 1-1/4 CAPSCREWS, 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. IF YOUR VEHICLE HAS A BRACKET OVER THE TOP OF THE IGNITION BOX (DRIVER'S SIDE FENDERWELL) IT MUST BE RELOCATED. REMOVE BRACKET, ROTATE 90 DEGREES AND PLACE IT ON THE FENDERWELL. USING MOUNTING HOLES IN BRACKET AS A GUIDE, MARK AND DRILL THREE 9/32" HOLES. FASTEN BRACKET TO INNER FENDER WITH THREE 1/4 X 3/4 CAPSCREWS (88), FLATWASHERS (87), LOCKWASHERS (85) AND NUTS (86). IF YOUR VEHICLE IS EQUIPPED WITH CRUISE CONTROL, TEMPORARILY REMOVE UNIT TO ALLOW INSTALLATION OF VALVE. RETURN UNIT TO ITS ORIGINAL LOCATION AFTER VALVE HAS BEEN INSTALLED.

D. ALIGN VALVE PLATE ON PLASTIC INNER FENDER SO THAT CABLES RUN IN AS STRAIGHT AND SMOOTH A PATH AS POSSIBLE. USING THE MOUNTING HOLES IN THE VALVE PLATE AS GUIDES, DRILL (4) 11/32" HOLES THROUGH INNER FENDER. FASTEN VALVE PLATE TO INNER FENDER WITH (4) 5/16 X 1-1/4 (NC) CAPSCREWS (94), (2) BACKING PLATES (32), LOCKWASHERS (79) AND NUTS (80).

E. 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

A. LOOSEN ALL VEHICLE BELTS. REMOVE FOUR 3/8 CAPSCREWS FROM CRANKSHAFT DRIVE PULLEY AND DISCARD.

B. INSTALL DRIVE SHEAVE (24) INTO CENTER OF CRANKSHAFT PULLEY BEING CERTAIN MACHINED PILOT OF DRIVE SHEAVE SEATS IN CRANKSHAFT PULLEY. FASTEN DRIVE SHEAVE TO CRANKSHAFT WITH FOUR 3/8 X 4-1/4" CAPSCREWS (90)

AND FOUR SPACER WASHERS (93) TORQUED TO 31 FT. LBS. TIGHTEN ALL LOOSENED BOLTS.

C. REMOVE AND DISCARD FOUR CAPSCREWS HOLDING FAN TO WATER PUMP SHAFT FLANGE, PLACE FAN SPACER (22) BETWEEN FAN AND PULLEY. REINSTALL FAN AND SECURE WITH FOUR 5/16 X 1-1/4 GR. 5 CAPSCREWS (76) AND LOCKWASHERS (79) TORQUED TO 18 FT. LBS.

5. PUMP TANK AND PUMP BRACKET

A. INSTALL PUMP BRACKET (26) TO THE TWO TAPPED HOLES ON FRONT OF THE WATER PUMP (DRIVER'S SIDE) USING TWO 3/8 X 3/4 CAPSCREWS (91) AND LOCKWASHERS (92).

B. BEND 3/4" OF LONG END OF UNIVERSAL BRACE TAB (38) UP ABOUT 45 DEGREES. INSTALL THIS BENT END TO THE INTAKE MANIFOLD STUD THAT HOLDS THE COIL BRACKET. USE THE EXISTING NUT.

C. HOLDING PUMP TANK (1) IN BENCH VISE, SCREW 1/4" BRASS BAR ELL (52) ONTO PRESSURE PORT OF PUMP AND SCREW QUILL (55) INTO RETURN PORT OF PUMP. INSTALL PUMP SHEAVE (25) ONTO PUMP SHAFT USING LOCKNUT 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 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).

D. INSTALL 53" 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 TANK. INSTALL ONE 5/16 NUT (80) AND FLATWASHER (81) ONTO UNIVERSAL BRACE ROD (37) AND INSERT BRACE ROD THROUGH PREVIOUSLY INSTALLED UNIVERSAL BRACE TAB. INSTALL BRACE ROD TO TANK STRAP WITH ONE 1/4 X 1-1/4 CAPSCREW (84), LOCKWASHER (85) AND NUT (86). FASTEN OTHER END OF BRACE ROD TO BRACE TAB WITH A 5/16 FLATWASHER (81), 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.

6. HYDRAULIC HOSE INSTALLATION

A. ATTACH ONE END OF 28" H.P. HOSE (16) TO THE 1/4" BRASS BAR ELL ON PUMP TANK AND PUSH ONE END OF 28" L.P. HOSE (17) ONTO THE QUILL ON PUMP TANK. ROUTE THESE HOSES TO THE CONTROL VALVE.

<u>CAUTION:</u> 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 60" H.P. HOSE (18) TO BRASS ELL IN LIFT CYLINDER PORT OF VALVE (SPOOL #1). INSTALL TWO 54" H.P. HOSES (19) TO BRASS ELLS IN ANGLE PORTS OF VALVE (SPOOL #2). ROUTE 60" AND 54" HOSES OUT THROUGH RADIATOR WEB AND THROUGH GRILL NEAR CENTER OF VEHICLE. INSTALL SPLIT HOSE GROMMET (74) AROUND HOLE TO PROTECT HOSES FROM ANY SHARP EDGES. ATTACH 60" HOSE TO PREVIOUSLY INSTALLED 90 DEGREE SWIVEL

ADAPTER ON LIFT CYLINDER.

INSTALL INLINE OIL FILTER AS PER FILTER KIT (7) INSTRUCTIONS FOUND AT END OF THIS DOCUMENT.

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 PLOW 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.