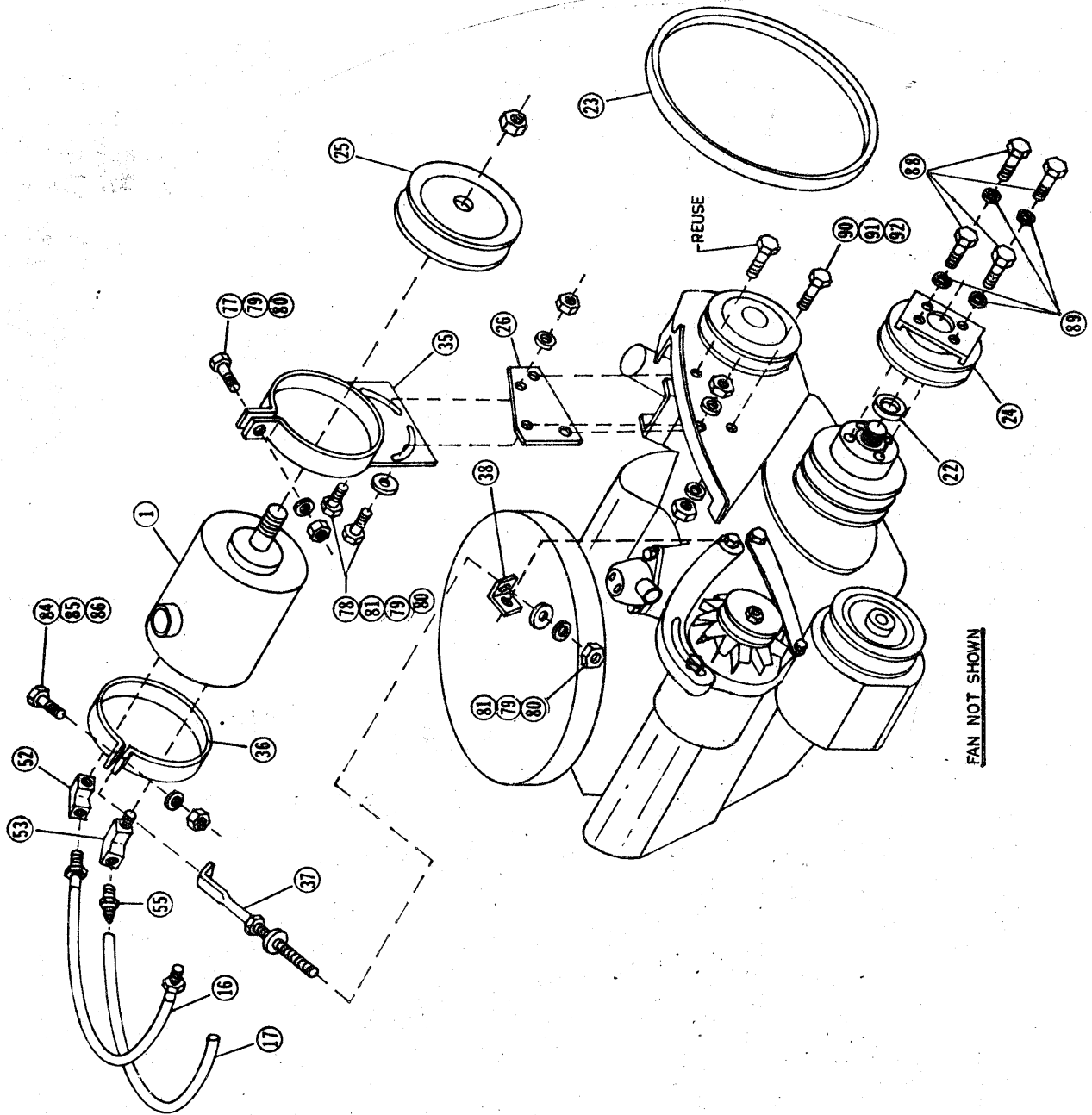


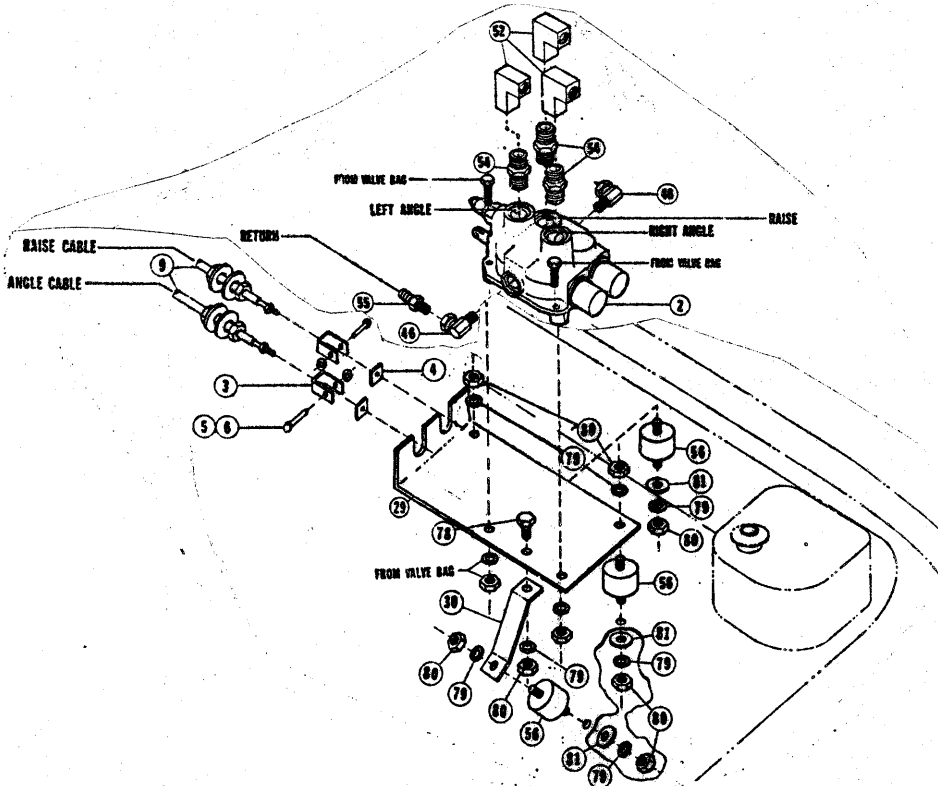
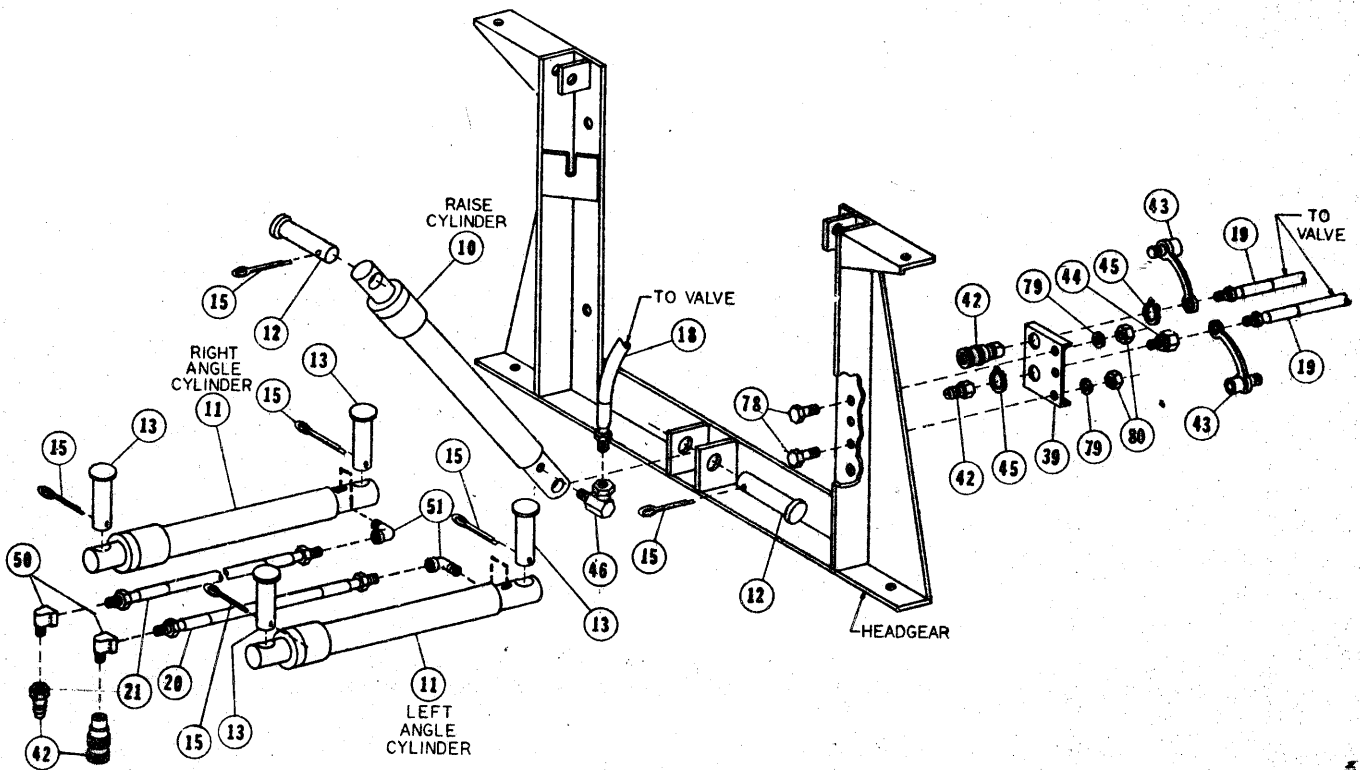
SERIES G	FORD RANGER V6-2.8LITER W/P.S. W/O AC	1983-1985	PECULIAR HYDRAULICS BELT DRIVE, SLC UNDERHOOD VALVE	HPS4555
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6314

SINGLE LEVER CONTROL - UNDERHOOD VALVE

HPS4555



1983-85 FORD RANGER 4 X 4

HYDRAULIC PARTS LIST

VEHICLE EQUIP. V6 2.8L, W/PS

HPS4555
A5092-25

REF #	QUAN IN KIT A5092-25 HPS4555	P/N * PART OF 6948 BOLT BAG	DESCRIPTION
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	4493	3/16 PUSH NUT
7			
8		4419	SINGLE LEVER CONTROL HEAD
9		5701	36" CONTROL CABLE, SLC
10	1	A5096	6" LIFT CYLINDER ASSEMBLY
11	2	A318	10" 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		2707	26" H.P. HOSE, 3/8P TO 1/4P
17		4471	26" L.P. HOSE
18		5215	48" H.P. HOSE, 1/4P TO 1/4P
19		375	42" H.P. HOSE, 1/4P TO 1/4P
20		3074	22" H.P. HOSE, 1/4P TO 1/4P
21		376	32" H.P. HOSE, 1/4P TO 1/4P
22		* 5682	FAN SPACER
23		1723	FAN BELT 41" V
24		5680	DRIVE SHEAVE
25		2297	PUMP SHEAVE
26		5681	PUMP BRACKET
27			
28			
29		5329	VALVE PLATE
30		5683	VALVE PLATE BRACE
31			
32			
33			
34			
35		5495	SADDLE BRACKET
36	1	2036	REAR TANK STRAP
37	1	2116	UNIVERSAL BRACE ROD
38		* 2115	UNIVERSAL BRACE TAB
39		4467	DISCONNECT MOUNTING PLATE
40			
41			
42	2	A1587	DISCONNECT ASSEMBLY
43	2	1588	DUST PLUG
44		* 4486	BULKHEAD ADAPTER
45		* 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			

PARTS LIST, HPS4555 CON'T

REF #	QUAN IN KIT A5092-25 HPS4555	P/N * PART OF 6948 BOLT BAG	DESCRIPTION
50		* 765	1/4" BRASS BAR STREET ELL
51	2	2780	1/4" BRASS BAR STREET ELL (FORGED)
52		* 2318	1/4 BRASS BAR ELL (F/F)
53		* 3979	3/8 BRASS BAR STREET ELL (M/F)
54		* 3058	ADAPTER (9/16 O-RING TO 1/4P)
55	2	1658	QUILL
56		* 5529	RUBBER SHOCK MOUNT
57			
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72		1	SAFETY DECAL
73	2	3042	GROMMET
74	1	4477	SPLIT HOSE GROMMET
75	3	* 3666	TIE WRAPS
76			
77	1	90056	5/16 X 1-1/2 (NC) GR. 5 CAPSCREW
78	3	* 90041	5/16 X 1 (NC) CAPSCREW
79	6	* 90360	5/16 LOCKWASHER
80	7	* 90332	5/16 (NC) NUT
81	4	* 90313	5/16 FLATWASHER
82			
83			
84	1	90021	1/4 X 1-1/4 (NC) CAPSCREW)
85	1	90359	1/4 LOCKWASHER
86	1	90339	1/4 (NC) NUT
87			
88		4	* 90486
89		4	* 90428
90		1	* 90208
91		1	* 90364
92		1	* 90337
93			

HYDRAULIC INSTALLATION INSTRUCTIONS**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 22" H.P. HOSE (20), INSTALL BRASS BAR STREET ELL (50) AND FEMALE HALF OF HOSE DISCONNECT ASSEMBLY (42) ON SAME HOSE END. THEN, HOLDING 32" 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 22" 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 ON TOP SIDE OF CYLINDERS. 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.

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 IGNITION COIL AREA. 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 FLOW TO LIFT ALTHOUGH FLOW 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. ATTACH THE VALVE PLATE BRACE (30) TO CENTER HOLE ON PASSENGER SIDE OF VALVE PLATE (29) WITH A 5/16 X 1 (NC) CAPSCREW (78), LOCKWASHER (79) AND NUT (80). MOUNT VALVE TO VALVE PLATE USING TWO 1/4 X 1-1/4 CAPSCREWS, LOCKWASHERS AND NUTS FROM VALVE BAG. CONNECT CONTROL CABLES TO VALVE PLATE AND VALVE. 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 EITHER 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 PIN. ADJUST CABLES SO THAT CONTROL LEVER IS CENTERED IN CONTROL HEAD.

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.

C. WITH VALVE, BRACE AND CABLES ATTACHED, POSITION VALVE PLATE ON SHEET METAL FLANGE OF DRIVERS SIDE INNER FENDER, CLEAR OF ANY OBSTRUCTIONS. MARK THE LOCATIONS OF TWO MOUNTING HOLES ON THE INNER FENDER FLANGE AND ONE ON THE PLASTIC FENDERWELL AT THE END OF THE VALVE PLATE BRACE. DRILL AN 11/32" HOLE AT EACH MARK. NOTE THAT THE PLASTIC FENDERWELL RUNS UNDER THE METAL FLANGE THAT IS BEING DRILLED. TO SECURE THE VALVE PLATE TO THE FLANGE, CLEARANCE HOLES IN THE PLASTIC LINER ARE NEEDED TO ACCESS THE FASTENERS. WHEN INSTALLATION IS COMPLETE, ACCESS HOLES SHOULD BE FILLED WITH SILICONE SEALER OR SIMILAR MATERIAL.

D. PLACE A RUBBER SHOCK MOUNT (56) BETWEEN VALVE PLATE, BRACE AND VEHICLE AT EACH MOUNTING HOLE. ON THE VALVE PLATE SIDE OF SHOCK MOUNT, FASTEN WITH 5/16 LOCKWASHERS (79) AND NUTS (80). ON THE FENDERWELL SIDE, FASTEN WITH 5/16 FLATWASHERS (81), LOCKWASHERS (79) AND NUTS (80).

4. DRIVE SHEAVE INSTALLATION

A. REMOVE THE FAN BY UNTHREADING THE FAN CLUTCH HUB FROM THE WATER PUMP SHAFT (THIS IS A LEFT HANDED THREAD AND A SPECIAL WRENCH IS NEEDED). LOOSEN ALTERNATOR BELT AND REMOVE POWER STEERING BELT. REMOVE AND DISCARD THE FOUR CAPSCREWS HOLDING THE WATER PUMP PULLY TO THE WATER PUMP SHAFT FLANGE. INSTALL FAN SPACER (22) ONTO THE WATER PUMP SHAFT AND INTO THE BORE OF THE WATER PUMP PULLY. INSTALL THE DRIVE SHEAVE (24) ONTO THE WATER PUMP SHAFT AND ONTO THE SPACER. THE DRIVE SHEAVE SHOULD ENGAGE WITH BOTH THE WATER PUMP PULLY AND THE SPACER. FASTEN WITH FOUR M8 X 1.25 X 20 CAPSCREWS (88) AND LOCKWASHERS (89) TORQUED TO 18 FT. LBS.

5. PUMP TANK AND PUMP BRACKET

A. REMOVE CAPSCREW FROM POWER STEERING PUMP BRACKET AND ENGINE BRACKET. REMOVE AND DISCARD THE SPACER FROM BETWEEN THESE BRACKETS AND INSTALL PUMP BRACKET (26) IN ITS PLACE. ALIGN SMALL HOLE IN PUMP BRACKET WITH HOLES IN VEHICLE BRACKETS WHICH WERE ALIGNED WITH SPACER. FASTEN WITH PREVIOUSLY REMOVED CAPSCREW. ALIGN LARGE HOLE IN PUMP BRACKET WITH LARGE HOLE IN POWER STEERING PUMP BRACKET. FASTEN WITH A 1/2 X 1-1/4 (NC) CAPSCREW (90), LOCKWASHER (91) AND NUT (92). REINSTALL AND TIGHTEN POWER STEERING BELT AND TIGHTEN ALTERNATOR BELT BEFORE REINSTALLING FAN.

B. HOLDING PUMP TANK (1) IN BENCH VISE, REMOVE PORT CLOSURES AND INSTALL 3/8" STREET ELL (53) AND QUILL (55) INTO 3/8" FEMALE RETURN PORT AND 1/4" ELL (52) ONTO 1/4" PRESSURE PORT. WHEN LOOKING AT BACK END OF PUMP, ELLS SHOULD POINT TO THE 1 O'CLOCK POSITION WHEN TIGHT. INSTALL PUMP SHEAVE (25) ONTO PUMP SHAFT USING KEY AND NUT SUPPLIED WITH PUMP ASSEMBLY. INSTALL PUMP WITH FITTINGS AND SHEAVE INTO SADDLE BRACKET (35) USING A 5/16 X 1-1/2 GR.5 CAPSCREW (77), LOCKWASHER (79) AND NUT (80).

C. INSTALL SADDLE BRACKET AND PUMP TANK ONTO PUMP BRACKET USING TWO 5/16 X 1 (NC) CAPSCREW (78), FLATWASHERS (81), LOCKWASHERS (79) AND NUTS (80). ALIGN PUMP SHEAVE WITH PREVIOUSLY INSTALLED DRIVE SHEAVE. INSTALL 4L 440 BELT (23) AROUND DRIVE SHEAVE AND FISHER PUMP.

E. ADJUST BELT TO PROPER TENSION BY PIVOTING SADDLE AND SUPPORT BRACKETS ON TOP BOLT. INSTALL REAR TANK STRAP (36) ON OVER REAR OF PUMP TANK. REMOVE CAPSCREW HOLDING ALTERNATOR ADJUSTING BRACE TO ENGINE AND INSTALL BRACE TAB (38). FASTEN WITH PREVIOUSLY REMOVED CAPSCREW. MEASURE OR GAUGE NEEDED LENGTH OF UNIVERSAL BRACE ROD (37) AND CUT TO NEEDED LENGTH AND INSTALL ONE 5/16 NUT (80) AND FLATWASHER (81). INSERT BRACE ROD THROUGH PREVIOUSLY INSTALLED UNIVERSAL BRACE TAB. CONNECT 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.

6. HYDRAULIC HOSE INSTALLATION

A. ATTACH ONE END OF 26" H.P. HOSE (16) TO THE 1/4" BRASS BAR ELL ON PUMP TANK AND PUSH ONE END OF 26" L.P. HOSE (17) ONTO THE 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 48" H.P. HOSE (18) TO BRASS ELL IN LIFT CYLINDER PORT OF VALVE (SPOOL #1). INSTALL TWO 42" H.P. HOSES (19) TO BRASS ELLS IN ANGLE PORTS OF VALVE (SPOOL #2). ROUTE HOSES DOWN UNDER CORNER OF RADIATOR SHROUD AND OUT THROUGH GRILL TO LOCATION OF DISCONNECT BRACKET. ATTACH 48" HOSE TO 90 DEGREE SWIVEL ADAPTER INSTALLED ON LIFT CYLINDER.




Y. 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 42" RIGHT ANGLE HOSE (SPOOL #2, CYL. B) TO BACK OF FEMALE DISCONNECT INSTALLED IN TOP HOLE OF DISCONNECT BRACKET. CONNECT 42" LEFT ANGLE HOSE (SPOOL #2, CYL. A) TO BOTTOM (MALE) DISCONNECT. TIGHTEN BY HOLDING HOSES AND ROTATING THE DISCONNECT HALVES IN THE BRACKET.

Z. 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.

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