




SERIES
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HYDRAULICS PARTS LIST

HPS4551 REV C
A4468

REF#	QTY	IN KIT	PART#	DESCRIPTION
	A4468-40	HPS4551		* PART OF 6906 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		4493	3/16 PUSH NUT
7				
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
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	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				
23		1	393	FAN BELT, 45"
24		1	5625	DRIVE SHEAVE
25		1	7909	PUMP SHEAVE
26		1	5624	PUMP BRACKET
27				
28				
29		1	5178	VALVE PLATE
30				
31				
32		2	6031	BACKING PLATES
33				
34				
35		1	5495	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		1	5101	BRACE TAB
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 SWVL ADPT
48				
49				

REF#	QUAN IN KIT	PART#	DESCRIPTION
	A4468-40 HPS4551		* PART OF 6906 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 * 9/16 O.R. TO 1/4P ADAPTER
55	2		1658 QUILL
56			
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72		1	5704 SAFETY DECAL
73	2		3042 GROMMET
74	1		4477 SPLIT HOSE GROMMET
75	3		3666 TIE WRAPS
76		4	90048 * 5/16 X 1-1/4 (NC) 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	4	90313 * 5/16 FLATWASHER
82			
83			
84	1		90614 1/4 X 1-1/4 (NC) GR.5 CAPSCREW
85	1		90359 1/4 LOCKWASHER
86	1		90330 1/4 (NC) NUT
87			
88		4	5042 * 5/16 X 1-1/4 (NF) GR.5 CS GROUND
89	2		90103 * 3/8 X 1 (NC) GR. 5 CAPSCREW
90	1		90624 * 3/8 X 1-1/4 (NC) GR.5 CAPSCREW
91	3		90361 * 3/8 LOCKWASHER
92	1		90608 * 1/2 X 1 (NC) GR.5 CAPSCREW
93	1		90364 * 1/2 LOCKWASHER
94			
101		1	90319 * 1/2 FLATWASHER

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 DISCONNECT ASSEMBLY (42) DIRECTLY TO HOSE. THEN, HOLDING 36" H.P. HOSE (21), INSTALL BRASS BAR STREET ELL (50) AND MALE HALF OF 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. ALIGN VALVE PLATE ON DRIVER'S SIDE FENDER LINER SO THAT CABLES RUN IN AS STRAIGHT AND SMOOTH A PATH AS POSSIBLE. USING MOUNTING HOLES AS GUIDES, DRILL (4) 11/32" HOLES THROUGH PLASTIC FENDER LINER. ATTACH VALVE PLATE TO FENDER LINER USING (4) 5/16 X 1 1-1/4 CAPSCREWS (76), BACKING PLATES (32), LOCKWASHERS (79) AND NUTS (80).

D. WITH VALVE PLATE FASTENED TO INNER FENDER, READJUST 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 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. REMOVE AND DISCARD FOUR BOLTS HOLDING FAN TO WATER PUMP. PLACE DRIVE SHEAVE (24) BETWEEN FAN AND WATER PUMP. FASTEN FAN AND DRIVE SHEAVE TO WATER PUMP WITH FOUR GROUND 5/16 X 1-1/4 (NF) CAPSCREWS (88) AND 5/16 LOCKWASHERS (79) TORQUED TO 18 FT. LBS.

5. PUMP TANK AND PUMP BRACKET

A. INSTALL THE PUMP BRACKET (26) TO THE TWO TAPPED HOLES ON FRONT OF THE WATER PUMP (DRIVER'S SIDE) USING ONE 3/8 X 1 (NC) GR.5 CAPSCREW (89), ONE 3/8 X 1-1/4 (NC) GR.5 CAPSCREW (90) AND LOCKWASHERS (91) AS SHOWN IN THE ILLUSTRATION.

B. ATTACH THE UNIVERSAL BRACE TAB (38) TO THE LOWER TAPPED HOLE ON THE FRONT OF THE DRIVERS SIDE CYLINDER HEAD WITH A 3/8 X 1 CAPSCREW (89) AND LOCKWASHER (91).

NOTE: ON 1985 VEHICLES WITH DUAL SMOG PUMPS REAM HOLE IN UNIVERSAL BRACE TAB TO 15/32 AND ATTACH WITH 1/2 X 1 (NC) CAPSCREW (92) AND LOCKWASHER (93).

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 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 SHAFT SHOULDER BEFORE TIGHTENING 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).

D. INSTALL 45" 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 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 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). DRILL A 1-7/8" HOLE THROUGH MIDDLE OF RADIATOR WEB ON DRIVERS SIDE, APPROXIMATELY 9-1/2" BELOW TOP OF RADIATOR. (SOME 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 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.