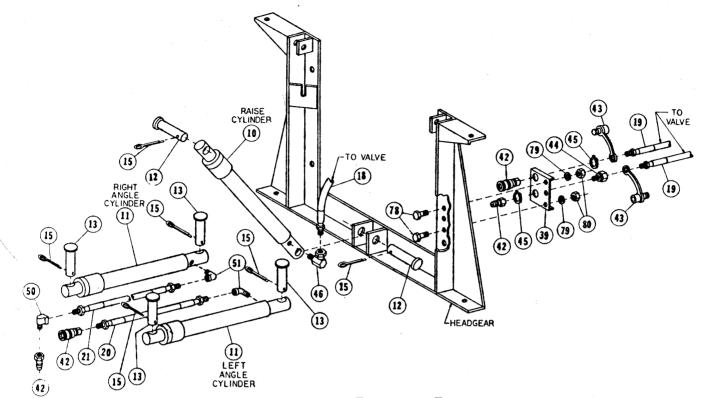
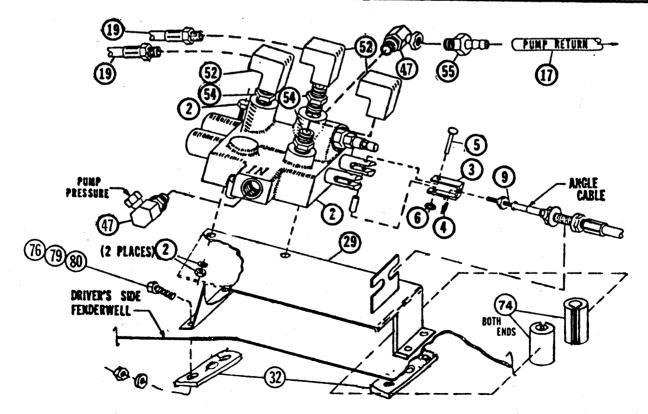


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REF#	QTY IN A4468-40		PART#	DESCRIPTION * PART OF 6905 BOLT BAG
1	1		A2311	PUMP TANK ASSEMBLY
2	1		A4466	CONTROL VALVE ASSEMBLY
3 4	2		4483	CLEVIS
4	2		4494	10-32 SQUARE NUT
5 6	2		4491	
6 7	2		4493	3/16 PUSH NUT
7		1	4419	SINGLE LEVER CONTROL HEAD
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 14	4		6816	ANCHOR PIN
15	6		90601	1/4 X 1-1/2 COTTER PIN
16		1	5223	32" H.P. HOSE, 1/4P TO 3/8P
17		1	5224	32" 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 21		1	376	32" H.P. HOSE, 1/4P TO 1/4P
22		1	4424 <b>*</b> 5588 ■	36" H.P. HOSE, 1/4P TO 1/4P FAN SPACER
23	W	<b>/</b>	stogk	(Spłows.com
24	• • • • • • • • • • • • • • • • • • • •	T T	3307	DREVE SHEAVE
25		1	3696	PUMP SHEAVE
26 27		1	6040	PUMP BRACKET
28		1	7093	E.E.C. BRACKET
29		1	5178	VALVE PLATE
30				
31 32		2	6021	DAGETNO DI AMP
33		2	6031	BACKING PLATE
34				
35		1	1549	SADDLE BRACKET
36	1		2036	REAR TANK STRAP
37	1		2116	UNIVERSAL BRACE ROD
38		1	* 5375	BRACE TAB
39		1	4467	DISCONNECT MOUNTING PLATE
40 41				
41 42	2		A1587	DISCONNECT ASSEMBLY
43	2 2		1588	DUST PLUG
44		1	* 4486	BULKHEAD ADAPTER
45		1 2	* 4485	7/8" SNAP RING
46	. 1		319	1/4" X 90 SWIVEL ADAPTER
47 48	2		2315	9/16 O.R. TO 3/8P X 90 SWL.ADPT.
48 49		1	* 2318	1/4" NPT X 90 DEGREE UNION ELBOW

REF#	QTY IN A4468-40 H		PART#			DESCRIPTION * PART OF 6905 BOLT BAG						
50 51 52 53	2	1	*	765 2780 2318	1/4"	1/4" BRASS BAR STREET ELL 1/4" BRASS BAR STREET ELL (FORGED) 1/4" BRASS BAR ELBOW						
54 55	2	3	*	3058 1658		9/16 O.R. TO 1/4 P. ADAPTER QUILL						
56 57							FASTENER TORQUE (FT-LB)					
							DIAMETER-	GRADE DESIGNATION				
58 59 60							THREADS PER INCH	GRADE 2	GRADE 5	GRADE 8		
. 61							1/4 - 20	6	9	13		
62						·	5/16 - 18	11	18	28		
63						.*	3/8 - 16	19	31	46		
64 65							7/16 - 14	30	50	75		
66							1/2 - 13	45	75	115		
67							9/16 - 12	66	110	165		
68							5/8 - 11	93	150	225		
69 70							3/4 - 10	150	250	370		
71						1	7/8 - 9	150	378	591		
72		1		5704 ■	SAFET	W DECAL	1 - 8	220	583	893		
73 74 75 77 78 88 88 88 88 89 99 99 99 99 99 99 99 99	1 3 1 4 6 7 4 1 1 1	4 4 4 4 1 1 3 1 1 1	* * * * * * * * * * * * * * * * * * * *	4477 3666 90048 90054 90042 90360 90332 90313 90461 90614 90359 90612 90391 90436 90429 90378 90419	TIE W 5/16 5/16 5/16 5/16 5/16 5/16 1/4 X 1/4 X 1/4 I 1/4 ( 1/4 X M10 X 3/8 X M10 L M8 X	SPLIT HOSE GROMMET TIE WRAPS 5/16 X 1-1/4 (NC) GR.5 CAPSCREW 5/16 X 1-1/2 (NC) GR. 5 CAPSCREW 5/16 X 1 (NC) GR.5 CAPSCREW 5/16 LOCKWASHER 5/16 (NC) NUT 5/16 FLATWASHER  1/4 X 3/4 (NC) GR.5 CAPSCREW 1/4 X 1-1/4 (NC) GR.5 CAPSCREW 1/4 LOCKWASHER 1/4 (NC) NUT 1/4 X 1 (NC) GR.5 CAPSCREW M10 X 1.5 X 30 GR 8.8 CAPSCREW 3/8 X 1-3/4 (NC) GR. 5 SELF LOCK M10 LOCKWASHER M8 X 1.25 X 25 GR. 8.8 CAPSCREW M8 FLATWASHER						

### CYLINDER AND CYLINDER HOSE ASSEMBLY

- A. USING BENCH VISE TO HOLD LIFT CYLINDER (10), REMOVE CLOSURE FROM SCREW 90 DEGREE SWIVEL ADAPTOR (46) INTO PORT. PLACE LIFT PORT. CYLINDER WITH INSTALLED ADAPTOR 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 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'S SIDE ANGLE CYLINDER STREET 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).

#### CONTROL HEAD AND CONTROL CABLES

# NOTE: WHATAYT SAME FOUND IN PECULIAR ATTACHING BOX.

- 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

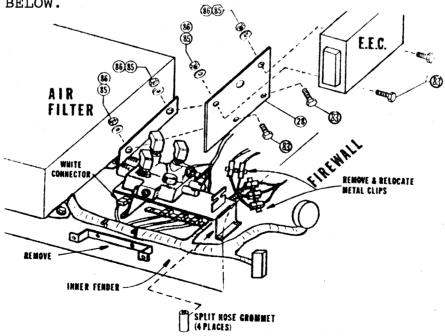
A. USING BENCH VISE TO HOLD CONTROL VALVE ASSEMBLY (2), REMOVE CLOSURES FROM VALVE PORTS. SCREW 90 DEGREE SWIVEL ADAPTOR UNIONS (47) INTO "IN" AND "OUT" PORTS. SCREW QUILL (55) INTO INSTALLED ADAPTOR IN "OUT PORT.

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 ADAPTORS (54) IN LIFT AND ANGLE PORTS. INSTALL ONE 1/4" BRASS BAR ELL (52) TO EACH ADAPTOR. WHEN TIGHT, ELLS SHOULD POINT AWAY FROM CABLE END OF VALVE.

NOTE: IF VEHICLE IS EQUIPPED WITH CRUISE CONTROL, TEMPORARILY REMOVE UNIT FROM FENDERWELL. WHEN VALVE INSTALLATION IS COMPLETE, RETURN CRUISE CONTROL UNIT TO ITS ORIGINAL LOCATION.

B. 1987-88 VEHICLES: LOCATE AND REMOVE E.E.C. TEST WIRING AND LARGER BOX BESIDE IT FROM BRACKET BEHIND AIR CLEANER. THESE PARTS WILL BE REATTACHED LATER.

1989 VEHICLES: FIND THE LARGE WIRING HARNESS LOCATED ON THE DRIVER'S SIDE INNER FENDER AFT OF THE AIR CLEANER. UNFASTEN HARNESS FROM SUPPORT BRACKET AND REMOVE BRACKET. REMOVE E.E.C. (ELECTRONIC ENGINE CONTROL) BAR FROM BRACKET. REAM EXISTING HOLES ON BRACKET TO 9/32". INSTALL E.E.C. BRACKET (28) TO BACK OF ORIGINAL BRACKET MAKING SURE THAT THE TOP THREE HOLES ARE LOCATED TOWARD THE DRIVERS SIDE FENDERWELL. FASTEN BRACKET WITH TWO 1/4 X3/4 CAPSCREWS (83), LOCKWASHERS (85), AND NUTS (86). ATTACH E.E.C. BAR TO TOP HOLES OF E.E.C. BRACKET USING TWO 1/4 X 3/4 CAPSCREWS (83), LOCKWASHERS (85), AND NUTS (86). REMOVE FORWARD-MOST WHITE WIRE CONNECTOR FROM ROW OF CONNECTORS VALABLED MESAL CORNECTOR FROM ROW OF FORWARD OF VALVE PLATE WHEN INSTALLED. DISCONNECT THE TWO AFT ELECTRICAL CONNECTOR MOUNTING STRIPS FROM INNER FENDER NEAR FIREWALL. THE CLIPS WILL BE REPOSITIONED AND/OR REATTACHED LATER. SEE ILLUSTRATION BELOW.



- 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.
- NOTE: BEFORE INSTALLING VALVE PLATE, CUT TWO PIECES OF 3/8" SPLIT HOSE GROMMET (74) IN HALF AND INSTALL ON ALL FOUR EDGES OF VALVE PLATE TO PROTECT VEHICLE WIRING FROM CHAFFING. CAUTION! USE EXTREME CARE IN DRILLING ALL HOLES. MAKE SURE NO WIRING OR ASSEMBLIES ARE DAMAGED.

ALIGN VALVE PLATE ON PLASTIC INNER FENDER. CABLES SHOULD RUN IN AS STRAIGHT AND SMOOTH A PATH AS POSSIBLE WITH ADEQUATE CLEARANCE OF ALL VEHICLE WIRING OR OTHER COMPONENTS. USING THE MOUNTING HOLES IN VALVE PLATE AS GUIDES, DRILL FOUR 11/32" HOLES THROUGH INNER FENDER. FASTEN VALVE PLATE TO INNER FENDER WITH FOUR 5/16 X 1-1/4 CAPSCREWS (76), TWO

- BACKING PLATES (32), LOCKWASHERS (79) AND NUTS (80).

  E. 1988 VEHICLES: ENLARGE HOLE IN E.E.P. BRACKET TO 9/32" DIAM FASTEN TO LARGER BOX WITH A 1/4 X 1 (NC) CAPSCREW (87), LOCKWASHER (85), AND NUT (86). RELOCATE THIS ASSEMLY TO INNER HOLE IN BRACKET THAT THEY WERE ORIGINALLY ATTACHED TO AND REFASTEN WITH PREVIOUSLY REMOVED SHEET METAL SCREW.
- 1989 VEHICLES: POSITION PREVIOUSLY REMOVED ELECTRICAL CONNECTOR MOUNTING STRIPS TO PREVENT ANY POSSIBLE CHAFFING. REATTACH TO EXISTING FENDER HOLES OR DRILL NEW 9/32" HOLES AS NECESSARY.
- 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. REMOVE VEHICLE FAN BY UNSCREWING RIGHT HAND THREADED HUB FROM END OF WATER PUMP SHAFT (IT MAY BE NECESSARY TO OBTAIN SPECIAL TOOLS FROM VEHICLE MANUFACTURER TO REMOVE FAN). PLACE 3/16 SPACER (22) OVER THREADED WATER PUMP SHAFT THEN REPLACE AND TIGHTEN FAN.
- **B.** INSTALL FISHER DRIVE SHEAVE (24) INTO CRANKSHAFT PULLEY WITH MACHINED END OF PIPE SPACER AGAINST CRANKSHAFT PULLEY AND OVER THE THREE 3/8" TAPPED HOLES. SECURE THE DRIVE SHEAVE WITH (3) 3/8 X 1-3/4 (NC) GR. 5 NYLOC CAPSCREWS (89) TORQUED TO 31 FT. LBS.

#### 5. PUMP TANK AND PUMP BRACKET

- A. REMOVE AND SAVE CAPSCREW AND FLATWASHER HOLDING UPPER END OF THE POWER STEERING BRACKET BRACE TO THE POWER STEERING BRACKET. REMOVE AND SAVE THE REMAINING TWO CAPSCREWS AND FLATWASHERS FROM THE LOWER END OF THE BRACE. DISCARD BRACE.
- B. INSTALL PUMP BRACKET (26) BY ALIGNING HOLES IN UPPER TAB, LOWER TAB AND BRACE OF PUMP BRACKET WITH THE POWER STEERING BRACKET BRACE MOUNTING HOLAY. WALAYN UST DEFINISHED WITH TWO HELD.
- C. HOLDING PUMP TANK (1) IN BENCH VISE, SCREW 1/4" NPT X 90 DEGREE UNION ELBOW (49) 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 WITH FLUSH FACE OF BRACKET TO THE BACK OF PUMP. SECURE WITH A 5/16 X 1-1/2 GR. 5 CAPSCREW (77), LOCKWASHER (79) AND NUT (80). INSTALL SADDLE BRACKET AND PUMP TO PUMP BRACKET BY PLACING LOWER SLOT IN SADDLE BRACKET OVER TACKED CAPSCREW IN SADDLE BRACKET. FASTEN WITH A 5/16 FLATWASHER (81), LOCKWASHER (79) AND NUT (80). ALIGN UPPER SLOT OF SADDLE BRACKET WITH REMAINING HOLE IN PUMP BRACKET. SLIDE A 5/16 X 1 (NC) CAPSCREW (78) WITH FLATWASHER (81) IN THROUGH BOTH BRACKETS AND FASTEN WITH A 5/16 LOCKWASHER (79) AND NUT (80).

NOTE: MAKE SURE SADDLE BRACKET IS CLEAR FROM VEHICLE SERPENTINE BELT.

D. INSTALL 47" 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 BOTTOM BOLT. INSTALL REAR TANK STRAP (36) ON OVER REAR OF PUMP TANK. INSTALL UNIVERSAL BRACE TAB (38) OVER TAPPED HOLE IN POWER STEERING PUMP BRACKET ABOVE HOLE IN PUMP BRACKET BRACE.

NOTE: 1990-19 MODELS: FASTEN WITH AN M8 X 1.25 X 25 CAPSCREW (91) AND FLATWASHER (92).

1987-1989 MODELS: FASTEN WITH AN M10 X 1.5 X 30 CAPSCREW

(88) AND LOCKWASHER (90).

MEASURE OR GAGE NEEDED LENGTH OF UNIVERSAL BRACE ROD (37) AND CUT TO INSTALL ONE 5/16 NUT (80) AND FLATWASHER (81) ONTO UNIVERSAL BRACE ROD AND INSERT BRACE ROD THROUGH PREVIOUSLY INSTALLED UNIVERSAL INSTALL BRACE ROD TO TANK STRAP WITH ONE BRACE TAB.  $1/4 \times 1-1/4$ CAPSCREW (84), LOCKWASHER (85) AND NUT (86). FASTEN OTHER END OF BRACE ROD TO BRACE TAB WITH A 5/16 FLATWASHER (81), 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

ATTACH ONE END OF 32" H.P. HOSE (16) TO THE 1/4" BRASS BAR ELL ON PUMP TANK AND PUSH ONE END OF 32" 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. HAV WOWLISIDG: EKS DESIMS IEGE WELL ADAPTOR. 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 BETWEEN RADIATOR AND RADIATOR WEB AND THROUGH GRILL NEAR CENTER OF ATTACH 60" HOSE TO PREVIOUSLY INSTALLED 90 DEGREE SWIVEL ADAPTOR ON LIFT CYLINDER.

### 7. DISCONNECT ASSEMBLY

WITH DISCONNECT MOUNTING PLATE (39) HELD IN BENCH VISE, INSTALL DISCONNECT HALVES AS SHOWN IN ILLUSTRATION. BULKHEAD ADAPTOR (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.

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