





Parts List

Ref#	Qty		Part #	Description	Ref#	Qty		Part #	Description
	A4468	7541				A4468	7541		
	-40					-40			
1	1		A2311	Pump assembly	51	2		2780	1/4" NPT x 90 Deg. Elbow FRGD
2	1		A4466	Control Valve Assembly	52	1		*2318	1/4" Brass Bar Ell. (F/F)
3	2		4483	Clevis	53	1		3979	3/8" Brass Bar Street ELL
4	2		4494	10-32 Square Nut	54	3		*20316	9/16 O-ring to 1/4 NPT 90° Elbow
5	2		4491	Clevis Pin 3/16 x 1"	55	2		1658	Quill - 3/8" NPTM to 3/8" ID Hose
6	2		4493	3/16" Push Nut Zp	56	1		*8688	QD/Electric Grille Plate (Short)
7	1		8764	Filter Kit	57	1		*8686	2 QD Grille Plate (short)
8		1	4419	Single lever control	59	4		*8324	Hose Tie - 3/16" x 14"
9		2	A4949	30" Control Cable, SLC	60	2		*8127	1/4" x 45 degree Swivel
10	1		20116	1-1/2" x 10" Cylinder Assy - XL	61	1		*8476	1/4" x 45 degree Street Elbow
11	2		20117	1-1/2" x 12" Cylinder Assy - XL	65	1		*8741	Bracket - Cable Boot
12	2		6814	Clevis Pin - 1 x 3-5/16	66	1		*8284	Cable Boot
13	4		6816	Anchor Pin - 1 x 4	72	1		5704	Caution Label
15	6		90601	1/4" x 1-1/2" Cotter Pin	73	2		3042	Grommet - Rubber, Split
16		1	2516	72" HP Hose, 1/4P to 1/4P	74	1		4477	Grommet - Split Hose
17		1	2515	72" LP Hose	75	3	6	*3666	Hose Tie, Nylon - 3/16" x 8"
18		2	5192	60" HP Hose, 1/4P to 1/4P	76		3	*90666	5/16 x 3-1/2" (NC) Gr.5 Cap Scrw
19		1	375	42" HP Hose, 1/4p to 1/4p	77		1	90054	5/16 x 1-1/2" (NC) Gr.5 Cap Scrw
20		1	3074	22" HP Hose, 1/4P to 1/4P	78	4	6	*90042	5/16" x 1 (NC) Gr. 5 Cap Screw
21		2	4424	36" HP Hose, 1/4p to 1/4p	79	6	9	*90360	5/16" Lock Washer
22		1	*5588	3/16" Fan Spacer	80	7	6	*90332	5/16" (NC) Nut
23		1	691	Fan Belt, 60" (not shown)	81	4	2	*90313	5/16" Flat Washer
24		1	8040	Drive Sheave	82		1	*90067	5/16" x 2 (NC) Gr.5 Cap Screw
25		1	3696	Pump Sheave	84	1		90614	1/4" x 1-1/4" (NC) Gr. 5 Cap Scrw
26		1	9050	Pump Bracket	85	1		90359	1/4" Lock Washer
27		1	8638	Pump Bracket Brace	86	1		90330	1/4" (NC) Nut
29		1	5329	Valve Plate	89		1	*90534	3/4" x 4-1/2" (NF) Gr. 5 Cap Scrw
30		2	8552	Valve Plate Brace	90		3	*90570	3/8" x 5" (NC) Gr. 5 Cap Screw
31		2	8054	Valve Plate Brace	91		4	*90361	3/8" Lock Washer
35		1	5530	Saddle Bracket	92		1	*90103	3/8" x 1" (NC) Gr.5 Cap Screw
36	1		2036	Rear Tank Strap	93		1	*90334	3/8" (NC) Nut
37	1		2116	Universal Brace Rod					
38		1	*2115	Universal Brace Tab					
42	3		21096	Disconnect Assembly					
43	2		*1588	Dust Plug					
44		1	*4486	Adapter - Bulkhead 1/4" NPT					
45		3	*4485	7/8" Snap Ring					
46	1		319	1/4" x 90 Swivel Adapter					
47	2		2315	9/16"-18 w/o-Ringx3/8" F PI Swl					
48		2	*8011	Nyl mounting Tie Wraps w/hole					
49		2	*90659	#12 x 3/4 Phillips Pan Head Sheet Metal Screw					

NC FASTENER TORQUE (FT-LB)			
DIAMETER- THREADS PER INCH	GRADE		
	G2	G5	G8
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

NF FASTENER TORQUE (FT-LB)			
DIAMETER- THREADS PER INCH	GRADE		
	G2	G5	G8
1/4 - 28	6	10	14
5/16 - 24	12	19	27
3/8 - 24	23	35	50
7/16 - 20	38	55	80
1/2 - 20	55	85	120
9/16 - 18	80	120	170
5/8 - 18	110	170	240
3/4 - 16	200	300	420
7/8 - 14	180	470	670
1 - 12	270	700	980

A4468-40 uses 5425 Bolt Bag

*Part of 20062 Bolt Bag

1. Cylinder & Cylinder Hose Assembly

- A. Attach female half of disconnect (42) and a 1/4" NPT 45 degree street ell (61) to the 22" Hp hose (20). Using bench vise to hold lift cylinder (10), remove closure from port & screw the other end of the hose directly into this port. Place the lift cylinder with hose pointing towards passenger side into ears on lift arm & upper gear. Secure with the clevis pins (12) & cotter pins (15).
- B. Attach a male quick disconnect half (42) to one end of a 36" Hp hose (21). Place a dust cover (43) & male quick disconnect half (42) on the end of another 36" HP hose (21).
- C. Using bench vise to hold angle cylinders (11), remove closures from ports. Screw brass forged street ells (51) into ports. Ells should point forward toward live end of cylinder & slightly upward as they will be installed on the A-frame. The driver's side cylinder uses the 36" Hp hose with the dust cover & male disconnect half. The passenger's side cylinder uses the 36" hose with the male disconnect half and **no dust cover**. Install cylinders to their respective sides so that ells are between the cylinders & A-frame. Secure cylinders with anchor pins (13) and cotter pins (15) at each end.

2. Drive Sheave Installation

Note: Apply a removable loosening prevention compound (such as "Lock-tite") to all drive sheave fasteners prior to installation.

- A. Remove fan from water pump & install 3/16" fan spacer (22) & reinstall fan.
- B. Remove & discard 3/4" cap screw & washer from center of crankshaft pulley. Remove & discard every other 5/16" cap screw from inside of crankshaft pulley (total of three cap screws).
- C. Install drive sheave (24) with a 3/4 x 4-1/2" (NF) grade 5 cap screw (89) through center hole into center of crankshaft pulley. Install three 5/16 x 3-1/2" (NC) grade 5 cap screws (76) with 5/16 lock washers (79) through remaining holes in drive sheave & crankshaft pulley. Snug up the 3/4 x 4-1/2" cap screw first then snug up the three 5/16 fasteners & torque them to 18 foot pounds. Last, torque the 3/4 x 4-1/2" cap screw to 100 foot pounds on V8 engines.

3. Pump Tank & Pump Bracket

Caution: Pump tank fill must be vertical to engine.

- A. Loosen serpentine belt from engine. Remove the two water pump bolts between the idler tensioner pulley and fan. Save one fastener. Remove & discard bolt beside lower alternator bolt. Place pump bracket (26) behind serpentine belt and install three 3/8 x 5 cap screws (NC) Gr. 5 (90) with lock washers (91), and Lock-tite on threads. **Do not tighten fasteners at this time.** Remove lower alternator bolt. Save nut. Install the bolt previously removed from water pump. On back of alternator install pump bracket brace (27) and universal brace tab (38) over bolt and reinstall previously removed nut. Install a 3/8 x 1 cap screw (NC) Gr. 5 (92) with lock washer (91) and nut (93) through pump bracket and brace. Reinstall serpentine belt and **tighten all fasteners.**
- B. Holding pump tank (1) in bench vise, place a 1/4" brass bar ell (52) onto the 1/4" pipe nipple of pump tank & a brass bar street ell (53) with quill (55) in the other threaded hole in pump tank. Install the pump sheave (25) onto the pump shaft using the lock nut & key supplied with the pump. Remove pump from vise & install saddle bracket (35) on over front of pump. Secure with a 5/16" x 2" cap screw (82), lock washer (79), and nut (80). Attach the saddle bracket and pump to the pump bracket using two 5/16" x 1" cap screws (78), flat washers (81), lock washers (79), & nuts (80).
- C. Install a 60" V-belt (23) on over drive & pump sheaves. Using the top fastener as a pivot, align sheaves & tighten fasteners. Adjust for the proper tension. Install rear tank strap (36) on over rear of pump tank. Align universal brace rod (37) to universal brace tab. Cut shorter if required. Install one 5/16 nut (80) & flat washer (81) onto universal brace rod & insert brace rod through universal brace tab. Connect brace rod to tank strap with one 1/4 x 1-1/4 cap screw (84), lock washer (85), & nut (86). Fasten the other end of brace rod to brace tab with a 5/16" flat washer (81), 5/16" lock washer (79), & nut (80). Use the brace rod to adjust the alignment of the drive & pump sheaves. Check belt for proper tension.

4. Control Head & Control Cables

Note: Dash bracket, hardware, drilling guide, and mounting instructions will be found in the peculiar attachments box.

- A. Drill three 5/8" holes in fire wall 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 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 nut and washers from the valve end of the cables. Route the cables out through the fire wall up to the top of the driver side fender well. Attach control head to dash bracket as per dash bracket instructions. Install rubber grommets (73) around cables where they pass through fire wall.

5. Valve & Valve Plate

- A. Using a bench vise to hold control valve assembly (2), remove closures from valve ports. Screw the 90 degree swivel adapter unions (47) into the "in" and "out" ports. Screw quill (55) into installed adapter in the "out" port. Install three 9/16" O-ring to 1/4" NPT 90° elbows (54) in lift & angle ports. When tight, elbows should point toward rear of valve at approximately 7 o'clock, as illustrated.
- B. Mount valve to valve plate (29) using two 1/4 x 1-3/4 cap screws, lock washers, & nuts located in the valve bag. Install valve plate braces (30), (31) (see illustration) to valve plate with 5/16 x 1 cap screws (78), lock washers (79), & nuts (80). Do not fully tighten braces at this time. Connect control cables to valve plate before fastening valve plate to vehicle. Begin by reinstalling jam nuts & washers on cables. Place control cables in respective slots of valve plate bulkhead with one nut & washer on each side of bulkhead. Center cables in slots so that they are exactly in line with valve spool centers. Attach cable clevises (3) to cables using square nuts (4). Slip cable clevises over spools. Install clevis pins (5) through clevis & spools & secure with push nuts (6). Temporarily adjust cables so that control lever is near being centered in the control head.
- C. Locate valve plate with cables attached, on top of driver's side fender well straddling wiring and connector. Be sure valve is straight and level, and cables run as straight as possible with no sharp kinks. Make sure braces do not rub against any wiring. Using holes in braces as a guide, drill four 11/32" holes in fender well. Attach braces with four 5/16 x 1 cap screws Gr. 5 (NC) (78), flat washers (81), lock washers (79) and nuts (NC) (80). Tighten.
- D. With valve plate fastened to inner fender, re-adjust control cables so that control head lever is centered between both angle & raise/lower positions. If the cable clevis does not allow enough adjustment, reposition the cable at the valve plate bulkhead. After checking to see that the valve spools are in the centered position, tighten cable clevis nuts.

CAUTION: The valve spools must be free and self centering when the cables and the control head are attached. Failure to center the spools will restrict the fluid flow through the 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.

6. Hydraulic Hose Installation

CAUTION: Keep hoses away from hot or moving engine components. Failure to do so may cause hoses to burst resulting in a possible engine fire.

- A. Attach 1/4" end of the 72" HP hose (16) to the 1/4" brass bar ell on the pump tank and push one end of the 72" LP hose (17) onto the quill on pump tank. Route these hoses to the control valve via fire wall.

Push LP hose (17) onto quill on the valve (2). Attach the 72" HP hose (16) into 90 degree swivel adapter (47) on the valve. Remove sheet metal screw above windshield wiper motor and one above heater on firewall. Install two nylon mounting tie wraps (48) and screws (49). Tie hoses up with ties. Install 60" HP hose (18) onto angle elbow (the port on valve closest to fire wall and cables) place a 42" HP hose (19) into other angle port of valve. Place the other 60" HP hose (18) into lift port of valve. Tighten all three hoses and route them over radiator and under plastic cover, down to grille. Both 60" hoses should route low and about 14" off center on passenger's side of grille. The 42" hose should route low and about 14" off center on driver's side grille. On driver's side install a female half of a quick disconnect (42) to the QD/electric grille plate (56) with a snap ring (45). Attach a 1/4" x 90 degree swivel adapter (46) to the disconnect (42). Put a dust plug (43) on angle hose and tighten it onto the 90 degree swivel (46). Slide the headlight connector (with dust cover) in the slot provided on plate. Attach plate to grille with two 3/16 x 1 (14 ") tie wraps (59).

- B. Attach a female half of a quick disconnect to one hole in the 2 QD grille plate (57) with a snap ring (45). Attach a 1/4" x 45 degree swivel (60) to the quick disconnect. Attach a bulkhead adapter (44) with snap ring (45) to the other hole in the plate. Attach a male half of a quick disconnect (42) to this adapter and attach a 1/4" x 45 degree swivel (60) to the bulkhead adapter (44). Place a dust plug (43) on each hose and attach the hoses to the 45 degree swivels (the lift hose fitting should be on the inboard side). Slide hoses back into grille and attach plate to grille with two 3/16 x 14 tie wraps (59).
- C. Install the cable boot bracket (65) on the driver's side headgear brace, between the brace and fasteners. Insert the cable boot (66) on over the bracket.
- D. Install in line oil filter as per filter kit (7) instructions located in the common hydraulics kit.

7. Operations

- A. Check all fittings and fasteners for tightness. Secure hoses with nylon tie wraps (75). Place the caution label (72) on the dash beside the control head.
- B. Fill reservoir with FISHER® High Performance Hydraulic Fluid (recommended for superior cold-weather performance) or type "A" automatic transmission fluid. Start the engine, lift and angle the blade. **If the blade angles opposite from the control lever position, reverse the two Hp angle hoses.** Raise the front end of the vehicle until the plow is clear of the ground with the lift cylinder fully retracted. Check the reservoir oil level. Angle the blade (with the lift cylinder retracted) to remove air from the system. Recheck the reservoir oil level.

Note: The installer must inform the end user of the proper procedure for removing any residual hydraulic pressure that may be trapped in the raise or angle hoses. The plow will be much easier to install or remove if the proper procedures are followed.

Before coupling or uncoupling the hydraulic disconnects you must first turn off the ignition. Move the control to all four plowing positions and return the control to lower. You may then remove or install the plow.