







Parts List

Ref#	Qty		Part #	Description	Ref#	Qty		Part #	Description	
	A4468	7529B				A4468	7529B			
1		1	A2311	Pump tank assembly	47		2	2315	9/16-18 w/O-Ring x 3/8 F Pi Swivel	
2		1	A4466-40	Control Valve Assembly	51		2	2780	1/4 Npt x 90 Deg Street Elbow Frgd	
3		2	4483	Clevis - VM	52		1	* 2318	1/4 Npt x 90 Deg Union Elbow	
4		2	4494	10-32 Square Nut - VM	55		2	1658	Quill - 3/8 Nptm to 3/8 ID Hose	
5		2	4491	Clevis Pin - 3/16" x 1	56		1	*8688	QD/Electric Plate -Short	
6		2	4493	3/16" Push Nut Zp	57		1	*8686	2 QD Plate- Short	
7		1	8764	Filter Kit	58		4	*8687	Standoff Leg	
8		1	4419	SLC Head - Belt Drive	59		4	*8324	Hose Tie	
9		2	6027	45" SLC Cable	60		1	*8127	1/4 x 45 Deg Swivel	
10		1	20116	1-1/2" x 10" Cylinder Assy - XL	61		8	*90687	1/4" x 1/2 (NC) Button Head Socket Swivel	
11		2	20117	1-1/2" x 12" Cylinder Assy - XL	62		8	*90350	1/4 (NC) Lock Nut	
12		2	6814	Clevis Pin - 1 x 3-5/16	63		1	*8476	1/4 x 45 Deg Street Elbow	
13		4	6816	Anchor Pin - 1 x 4	65		1	*8741	Bracket - Cable Boot	
15		6	90601	1/4" x 1-1/2" Cotter Pin	66		1	*8284	Cable Boot	
16		1	4934	Hose - 18" HP 1/4P - 3/8P	71		3	*5529	Shock Mount	
17		1	4471	3/8" Hose 26" Lp	72		1	5704	Caution Label - Cab	
18		1	1711	42" Hp Hose, 9/16 O-Ring to 1/4P	73		2	3042	Grommet - Rubber, Split	
19		2	5262	66" Hp Hose, 9/16 O-Ring to 1/4P	74		1	4477	Grommet - Split Hose	
20		1	3074	Hose - 22" Hp 1/4P - 1/4P	75		3	*3666	Hose Tie, nylon 3/16 x 8	
21		2	4424	Hose - 36" Hp 1/4P - 1/4P	76		1	*8992	3" Fitting Protector	
23		1	418	52" V-belt 4L 520	77		1	90054	5/16 x 1-1/2 (NC) Gr.5 Cap Screw	
24		1	20056	Drive Sheave	78		4	*90042	5/16 x 1 (NC) Gr. 5 Cap Screw	
25		1	3696	Pump Sheave	79		6	5	* 90360	5/16 Sp Lk Washer
26		1	6073	Pump Bracket	80		7	5	*90332	5/16 (NC) Nut
28		1	*20057	Drive Sheave Bushing .750	81		4	3	*90313	5/16 Plain Washer
29		1	5329	Valve Plate	84		1	90614	1/4 x 1-1/4 (NC) Gr.5 Cap Scrw	
30		1	5975	Valve Plate Brace	85		1	90359	1/4 Sp Lk Washer	
35		1	4921	Saddle Bracket	86		1	90330	1/4 (NC) Nut	
36		1	2036	Rear Tank Strap	87		1	*90202	7/16 x 5-1/4 (NF) Gr.5 Cap Screw	
37		1	2116	Universal Brace Rod	88		1	*90317	7/16 Flat Washer	
38		1	*2115	Universal Brace Tab	89		3	*90154	3/8" x 4" (NC) Gr. 5 Cap Screw	
42		3	21096	Hose Disconnect Assembly	90		2	*90111	3/8 x 1-1/2 (NC) Gr.5 Cap Scrw	
43		2	1588	Dust Plug - Closure/Male	91		2	*90361	3/8 Lock Washer	
44		1	* 4486	Adapter - Bulkhead 1/4" Npt	92		1	*90436	3/8 x 1-3/4 (NC) Gr.5 NY IS CS	
45		3	* 4485	Snap Ring - 7/8" External Bowed	93		3	*4268	5/8" Spacer Washer	
46		1	319	1/4" x 90 Swivel Adapter	94		1	*90315	3/8 Flat Washer	

\* Part of 8763 Bolt Bag

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

## 1. Cylinder and Cylinder Hose Assembly

- A. Attach female half of disconnect (42) and a 1/4" Npt 45 degree elbow (63) to 22" Hp Hose (20). Using bench vise to hold lift cylinder (10), remove closure from port and screw the other end of hose directly into this port. Place lift cylinder with hose pointing to passenger side into ears on lift arm and upper gear. Secure with clevis pins (12) and cotter pins (15).
- B. Attach male half of quick disconnect (42) to one end of a 36" Hp hose (21). Place a dust cover (43) on the end of the other 36" Hp Hose (21) and put another male half of a disconnect (42) on this hose.
- C. Using a bench vise to hold angle cylinders (11), remove closures from ports and screw brass forged street ells (51) into ports. Point forward toward live end of cylinder and slightly upward as they will be installed on the A-Frame. The driver side cylinder uses the 36" Hp hose (21) with the dust cover and male disconnect half. The passenger side uses the 36" Hp hose (21) with the male disconnect end and **no dust cover**. Install cylinders to their respective sides so that ells are between the cylinders and the A-frame. Secure cylinder with anchor pins (13) at both ends, with cotter pins (15) in each anchor.

## 2. Control Head and Control Cables

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

- A. Drill three 5/8" holes in the firewall for the control cables and wiring harness using drilling guide as a reference only. **Be sure both sides of the firewall are clear of obstructions before drilling.** Drill 1/2" hole in underside of dash as shown in dash illustration.
- B. Install the dash bracket as per dash bracket instructions.
- C. Loosen the "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 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 the fire wall.

## 3. Valve and 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.
- B. Mount valve to valve plate (29) using two 1/4" x 1-3/4" cap screws, lock washers and nuts located in the valve bag. Install a rubber shock mount (71) into the center and rearmost holes on the driver's side of the valve plate. Fasten each with one 5/16 lock washer (79) and nut (80). 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 push nut (6) on clevis pin. Temporarily adjust cables so that control lever is somewhere near centered in control head.
- C. Locate valve plate, with valve and cables attached, on top of driver's side inner fender well so that valve is near level and cables run in as smooth as path as possible (be sure swivel adapter does not rub against windshield water bottle). Using the two previously installed shock mounts as guides, mark and drill two 11/32" holes through the fender well. Fasten each shock mount to the fender well with one 5/16 flat washer (81), lock washer (79) and nut (80). Attach 90 degree bent end of valve plate brace (30) to valve plate as shown in illustration with a 5/16 x 1 cap screw (78), lock washer (79) and nut (80). Attach a rubber shock mount (71) to hole in other end of brace with a 5/16 lock washer (79) and nut (80). Using the shock mount as a guide, drill another 11/32" hole through the fender well and fasten shock mount to the fender well with a 5/16 flat washer (81), lock washer (79) and nut (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 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 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

**Caution: Before inserting bushing, check center of crankshaft for rust or foreign material and remove.**

- A. Remove fan shroud and serpentine belt. Remove and discard three cap screws holding vehicle crank pulley to vibration damper. Remove and discard cap screw and flat washer holding vibration damper to crankshaft, if vehicle is so equipped. Check vehicle crank pulley and remove any burrs around the holes that the cap screws were removed from.

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

- B. Install drive sheave bushing (28) into center of crank shaft, reinstall vehicle sheave. Place the drive sheave (24) center hub through the vehicle sheave and bushing. Place a 7/16 x 5-1/4 (NF) Gr. 5 cap screw (87) and flat washer (88) in center of sheave, plus three 3/8 x 4 (NF) Gr. 5 cap screws (89) with spacer washers (93) through sheave spacers. **Tighten 7/16 x 5-1/4 cap screw (torque to 50 ft-lbs) before tightening the three 3/8 x 4 cap screws (torque to 31 ft-lbs).**

#### 5. Pump and Pump Bracket

**Caution: Pump tank fill must be vertical to engine.**

- A. Remove and discard the top power steering bracket bolt. Remove and discard the bolt just above and to the left of the power steering bracket bolt. If this second bolt also attaches a brace for the serpentine belt idler pulley, temporarily remove the brace. Drill out the hole in the lower end of the brace to 9/16". Use a tie wrap (75) to loosely hold the power steering hose away from the area where the pump bracket will be installed. **Do not tie the hose to any brake lines.** Place the pump bracket (26) in front of the power steering bracket and insert one 3/8 x 1-1/2 (NC) Gr. 5 cap screw (90) with the lock washer (91) through the pump bracket and into the top hole in the power steering bracket. If the vehicle does not have a serpentine idler pulley brace, use an additional 3/8 x 1-1/2 (NC) Gr. 5 cap screw (90) and lock washer (91) to secure the pump bracket. If the vehicle does have an idler pulley brace, reinstall the brace using a 3/8 x 1-3/4 (NC) Gr. 5 nylon insert cap screw (92) with flat washer (94) through the brace and the pump bracket. The fastener on the upper end of the brace is reused.
- B. Holding pump tank (1) in bench vise, screw 1/4" brass bar elbow (52) onto pressure port quill (55) into return port. Install pump sheave (25) onto pump shaft using lock nut 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 cap screw (77), lock washer (79) and nuts (80). Attach saddle bracket and pump to pump bracket using two 5/16 x 1 cap screws (78), flat washers (81), lock washers (79) and nuts (80).
- C. Install 52" 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 brace tab (38) onto rear of alternator brace bolt using existing fastener.

**Caution: Position power steering hoses so there is at least 1-1/2" clearance from the pump "V" belt. Under brace coming out from pump bracket. Wrap with a 3/4" split hose grommet and thread tie wrap through holes to keep hose secure.**

Install rear tank strap (36) on over rear of pump. Install one 5/16 nut (80) and 5/16 flat washer (81) onto universal brace rod (37). Install bent end of brace rod between ears of tank strap while inserting other end through universal brace tab. Fasten brace rod to ears of tank strap with a 1/4 x 1-1/4 cap screw (84), lock washer (85) and nut (86). Fasten other end of brace rod to tab with a 5/16 flat washer (81), 5/16 lock washer (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 18" HP hose (16) to 1/4" brass bar elbow on pump tank and push 26" LP hose (17) onto 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 fire.**

Push LP hose onto quill and screw HP hose into 90 degree swivel adapter. Drill a 1-7/8" hole in the radiator core support just outboard of the radiator on the driver's side, about 9-1/2" down from the top. Install a split hose grommet (74) around the hole. **Some vehicle with extra heavy duty cooling may require hoses to be passed out through core support near driver's side headlight.** Install the O-ring end of the 42" angle hose (18) to the rear angle port of the valve. Pass it out through the core support and through the grille low and about 14" off center on the driver's side. Attach female half of QD to the QD/electric grille plate (56) with a snap ring (45). Put a dust plug (43) on the angle hose and tighten into the QD.

**Note: On trucks with extra heavy duty cooling, a 1/4 NPT 45 degree swivel (60) may be used in the back of QD to accommodate the re-routed hose. Slide the headlight connector (with dust cover) in the slot provided.**

**Some GMC models with a fine mesh grille may have to use two standoff legs (58) fastened with four 1/4 x 1/2 socket head cap screws (61) and lock nuts (62) on each grille plate. The grille plate should be oriented with headlight connector to the inside.**

- B. Install the O-ring end of a 66" angle hose (19) to the front angle port of the valve. Pass it out through core support and route it out through the grille low and about 14" off center on passenger side. Attach a female half of a QD to one hole in the 2 QD grille plate (57) with snap ring (45). Attach a bulkhead adapter (44) with snap ring (45) to the other hole in plate. Attach a male half of a QD to this adapter.

**Note: For GMC's with fine mesh grill, no further adapters are needed. The hoses may be installed directly to the back of the QD's after sliding dust plugs over the hose fittings. Install the standoff legs after hoses are tightened.**

On trucks without standoffs, attach a 1/4 NPT 90 degree swivel (46) and dust cover to the female disconnect half which will be the outside fitting when the plate is attached to the grille. Tighten the already installed angle head to the 90 degree swivel. Install the O-ring end of the other 66" hose to the raise port of the valve. Pass it through the grille on the passenger side into the same opening as the already installed angle hose. On trucks without grille plate standoffs attach a 1/4 NPT 45 degree swivel and a dust plug to the rear of the male QD half. On grilles with standoff legs, the 45 degree fitting is not necessary. Attach plate with two long tie wraps (59). (Vehicles with heavy duty cooling and air conditioning will need the 3" fitting protector (76) on hoses rubbing edge of coils between radiator and grille. Attach fitting protector with tie wrap (75))

- C. Install cable boot bracket (65) on drivers' side headgear brace, between brace and fasteners. Insert cable boot (66) on over bracket.
- D. Install the in-line oil filter (7) as per instructions located in the common hydraulics kit.

## 7. Operations

- A. Check all fittings and fasteners for tightness. Secure hoses with nylon tie wraps (75). Be sure hoses clear battery post. Place 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 hose connections on valve.** 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.