







Hydraulics Parts List

Ref	Qty	In Kit	Part	Description	Ref	Qty	In Kit	Part	Description	
#	A4468-40	7516	#	* Part of 8634 Bolt Bag	#	A4468-40	7516	#	* Part of 8634 Bolt Bag	
1	1		A2311	Pump tank assembly	50					
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	53	3	*	3979	3/8" Brass Bar Street Ell	
5	2		4491	Clevis Pin - 3/16" x 1"	54	3	*	20316	9/16 O-ring to 1/4 NPT 90° elbow	
6	2		4493	3/16" Push Nut Zp	55	2		1658	Quill - 3/8 Nptm to 3/8 ID Hose	
7	1		8764	Filter Kit	56	1	*	8688	QD/Electric Plate -Short	
8	1		4419	SLC Head - Belt Drive	57	1	*	8686	2 QD Plate- Short	
9	2		A4922	32" SLC Cable	58	4	*	8687	Standoff Leg	
10	1		A318	1-1/2" x 10" Cylinder Assembly	59	4	*	8324	Hose Tie	
11	2		A3660	1-1/2" x 12" Cylinder Assembly	60	2	*	8127	1/4 x 45° Swivel	
12	2		6814	Clevis Pin - 1" x 3-5/16"	61	8	*	90687	1/4" x 1/2" (NC) Button Head Socket	
13	4		6816	Anchor Pin - 1" x 4"	62	8	*	90350	1/4" (NC) Locknut	
14					63					
15	6		90601	1/4" x 1-1/2" Cotter Pin	64					
16	1		21214	26" Hose--Hp 1/4P-3/8P Flat Crimp	65	1	*	8741	Bracket - Cable Boot	
17	1		1681	24" LP Hose	66	1	*	8284	Cable Boot	
18	1		6066	66" Hp Hose, 1/4P to 1/4P	67	1	*	8992	3" Fitting Protector	
19	2		8632	78" Hp Hose, 1/4P to 1/4P 20	68					
20	1		3074	Hose - 22" Hp 1/4P - 1/4P	69					
21	2		4424	Hose - 36" Hp 1/4P - 1/4P	70					
22					71	3	*	5529	Shock Mount	
23	1		358	51" V-Belt	72	1		5704	Caution Label - Cab	
24	1		20056	Drive Sheave **	73	2		3042	Grommet - Rubber, Split	
25	1		3696	Pump Sheave	74	1		4477	Grommet - Split Hose	
26	1		8215	Pump Bracket	75	3	2	*	3666	Hose Tie, nylon 3/16" x 8"
27	1		7009	Pump Bracket Brace	76	2	*	90048	5/16" x 1-1/4" (NC) Gr. 5 Cap Screw	
28	1		*20057	Drive Sheave Bushing .750 **	77	1		90054	5/16" x 1-1/2" (NC) Gr. 5 Cap Screw	
29	1		5329	Valve Plate	78	4		90042	5/16" x 1" (NC) Gr. 5 Cap Screw	
30	1		8203	Valve Plate Brace	79	6	7	*	90360	5/16" Sp Lk Washer
31	1		8204	Valve Plate Brace	80	7	7	*	90332	5/16" (NC) Nut
32	1		8205	Valve Plate Brace	81	4	5	*	90313	5/16" Plain Washer
33					82					
34					83					
35	1		8210	Saddle Bracket	84	1		90614	1/4" x 1-1/4" (NC) Gr. 5 Cap Screw	
36	1		2036	Rear Tank Strap	85	1		90359	1/4" Sp Lk Washer	
37	1		2116	Universal Brace Rod	86	1		90330	1/4" (NC) Nut	
38					87	1	*	90202	7/16" x 5-1/4" (NF) Gr. 5 Cap Screw	
39					88	1	*	90317	7/16" Flat Washer	
40					89	3	*	90154	3/8" x 4" (NF) Gr. 5 Cap Screw	
41					90	1	*	90103	3/8" x 1" (NC) Cap Screw	
42	2	1	*A1587	Hose Disconnect Assembly	91	1	*	90361	3/8" Lock Washer	
43	2	2	*1588	Dust Plug - Closure/Male	92	1	*	90334	3/8" (NC) Nut	
44	1		*4486	Adaptor - Bulkhead 1/4" Npt	93	5	*	4268	5/8" Spacer Washer	
45	3		*4485	Snap Ring - 7/8" Ext Bowed	94	1	*	90605	M8 x 1.25 x 35 Gr 8.8 Cap Screw	
46	1		319	1/4" x 90 Swivel Adapter	95	1	*	90428	M8 Lock Washer	
47	2		2315	9/16 w/O-Ring x 3/8 F Pi Swv	96	1	*	90315	3/8" Flat Washer	
48					97					
49					98					
					99					

** Order PN 20058 for Drive Sheave w/Bushing for Service
A4468-40 uses bolt bag 5425

1. Cylinder & Cylinder Hose Assembly

- A. Attach female half of disconnect (42) and a 1/4" Npt 45 degree swivel (60) to 22" Hp Hose (20). Using bench vise to hold lift cylinder (10), remove closure from port and screw the other end of the 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 (4) with the male disconnect half and **no dust cover**. Install cylinders to their respective sides so that ells are between the cylinders and the A-frame. Secure cylinders with anchor pins (13) at both ends, with cotter pins (15) in each anchor.

2. Control Head & Control Cables

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

- A. Drill two 5/8" holes in the firewall for the control cables 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 & 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 and angle ports. When tight, elbows should point rear of valve at approximately 7 o'clock.
- 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 valve plate braces (30), (31), (32) and shock mounts (71) as per illustration. Leave braces loose on valve plate to allow movement. Remove and save bolt from anti-lock brake system in front of window washer container. Place valve plate between fire wall and anti-lock brake system. Connect control cables (9) 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 nut and 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 angled with cables coming through firewall. Fasten aft inner valve brace to previously removed bolt on anti-lock brake system. Check that valve plate is not rubbing against anything. Turn outer two valve plate braces (30, 31) to line up with fender. Mark and drill two 11/32" holes. Fasten with 5/16" flat washers (81), lock washers (79) and nuts (80). Tighten all fasteners.

- D. 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

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

- A. Remove 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 save both nuts from front exhaust manifold port. Remove and save bolt on back of alternator, above valve cover. Remove and discard bolt on front of alternator to left of fan. Install pump bracket (26) by placing slots onto manifold studs and reinstall previously removed nuts. **Do not fully tighten any fasteners until all fasteners and pump bracket brace (27) are installed.** Align tab on pump bracket with previously removed bolt. Reinstall bolt. Fasten pump bracket brace to remaining hole in front of alternator. Attach with one M8 x 1.25 x 35 Gr. 8.8 cap screw (94), M8 lock washer (95), and two spacer washers (93) between brace and alternator. **Cropped out portion of pump bracket brace should be positioned towards alternator cooling fins.** Attach other end of brace to lower hole in pump bracket with one 5/16 x 1 Gr. 5 (NC) cap screw (78), lock washer (79) and nut (80). Tighten all pump bracket fasteners. Using hole above manifold in pump bracket as a guide, drill a 13/32 hole through rear alternator bracket and fasten with a 3/8 x 1 cap screw (90), flat washer (96), lock washer (91) and nut (92). Tighten.
- B. Holding pump tank (1) in bench vise, screw 1/4" brass bar elbow (52) onto pressure port and 3/8" brass bar street ell (53) with quill (55) into return port. These fittings should point approximately 1 o'clock (slightly inward) looking at rear of pump tank. 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 nut (80). Attach saddle bracket and pump-to-pump bracket using two 5/16 x 1-1/4 cap screws (78), flat washers (81), lock washers (79) and nuts (80).
- C. Reinstall serpentine belt. Install 51" V-belt (23) on over installed drive and pump sheaves. (If belt will not go over pump sheave, rotate pump in saddle bracket again.) Align sheaves and tighten 1-1/2" saddle bracket fastener. Adjust for proper tension by pivoting saddle bracket on top bolt. (Make sure pump is clearing hydraulic lines going to anti-lock brake system.)

Caution: Position power steering hoses so there is at least 1-1/2" clearance from the pump "V" belt.

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 remaining hole on pump bracket. Cut universal brace rod to proper length. 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 26" HP hose (16) to 1/4" brass bar elbow on pump tank and push 24" LP hose (17) onto quill on pump tank. Route these hoses to the control valve. Cut 24" hose to proper length.

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

Screw HP hose into 90 degree swivel. Turn swivel so hose goes just over the top and not hitting window washer container. Route LP hose along HP hose and push onto quill on valve. Tie hoses together. Remove parking light and drill a 1-7/8 hole through web behind light. Install 6" split rubber grommet (74) around drilled hole. Install the O-ring end of the 66" angle hose (18) to the Cyl. "B" port of the valve. Pass it out through the core support and through the grille low and about 14" off center on the driver side. Attach a female half of a QD to the QD/electric grille plate (56) with a snap ring (45). Put a dust plug (43) on the angle hose and tighten it into the QD. Slide the head light connector (with dust cover) in the slot provided. (Vehicles with heavy duty cooling and air conditioning will need the 3" fitting protector (67) on hoses rubbing edge of coils between radiator and grille. Attach fitting protector with tie wrap (75).)

Note: Some GMC models with a fine mesh grille may have to use two standoff legs (58) fastened with four 1/4-20 x 1/2 button head socket 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 78" angle hose (19) to the Cyl. "A" 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. (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).)

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 fittings when plate is attached to the grille. Install O-ring end of the other 78" hose to raise port of valve. Pass it out through the grille on passenger side in the same opening as the already installed angle hose. On trucks without grille plate standoffs, attach a 1/4 Npt 45 degree swivel and dust plug to the rear of the male QD half. On grilles with standoff legs, the 45 degree fitting is not necessary. Attach each plate to the grille with two long tie wraps (58).

- 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). Place caution label (72) on the dash beside the control head.

- B. Fill reservoir with 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.