





Parts List

| Ref# | Qty | | Part # | Description | Ref# | Qty | | Part # | Description |
|------|-------------|------|----------|---------------------------------|------|-------------|------|----------|------------------------------------|
| | 8500 -40 | 7540 | | | | 8500 -40 | 7540 | | |
| 1 | 1 | | 8356 | Pump assembly | 46 | 1 | | 319 | 1/4 x 90 Swivel Adapter |
| 2 | 1 | | A4466-40 | Control Valve Assembly | 47 | 2 | | 2315 | 9/16-18 w/O-Ring x 3/8 F Pi Swl |
| 3 | 2 | | 4483 | Clevis - VM | 51 | 2 | | 2780 | 1/4 Npt x 90 Deg Street Elbow Frgd |
| 4 | 2 | | 4494 | 10-32 Square Nut - VM | 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 - Short |
| 7 | 1 | | 8389 | Oil Reservoir | 57 | | 1 | *8686 | 2 QD - Short |
| 8 | | 1 | 4419 | SLC Head - Belt Drive | 58 | | | ***8914 | Grille Bracket |
| 9 | | 2 | A4490 | 90" SLC Cable | 59 | | | ***8324 | Tie Wrap 3/16 x 14 (not shown) |
| 10 | 1 | | 20116 | 1-1/2" x 10" Cylinder Assy - XL | 60 | | 2 | *8127 | 1/4" x 45 degree Street Swivel |
| 11 | 2 | | 20117 | 1-1/2" x 12" Cylinder Assy - XL | 61 | | 2 | *8391 | Quill - 3/8 Ntpm to 1/2 ID Hose |
| 12 | 2 | | 6814 | Clevis Pin - 1 x 3-5/16 | 62 | | 1 | *8476 | 1/4 NPT x 45 Deg Street Elbow |
| 13 | 4 | | 6816 | Anchor Pin - 1 x 4 | 65 | | 1 | *8741 | Bracket |
| 14 | 1 | | 8764 | Filter Kit | 66 | | 1 | *8284 | Boot |
| 15 | 6 | | 90601 | 1/4" x 1-1/2" Cotter Pin | 72 | | 1 | 5704 | Caution Label - Cab |
| 16 | | 1 | 2707 | Hose - 26" Hp 1/4P - 3/8P | 73 | 2 | | 3042 | Grommet - Rubber, Split |
| 17 | | 1 | 5653 | 3/8" Hose 28" Lp | 74 | 1 | | *4477 | Grommet - Split Hose |
| 18 | | 1 | 5192 | Hose - 60" Hp 1/4P - 1/4P | 75 | 3 | 6 | *3666 | Tie Wrap - 3/16 x 8 (not shown) |
| 19 | | 1 | 1681 | 3/8" Hose 24" LP | 77 | 1 | 3 | *90054 | 5/16 x 1-1/2 (NC) Gr. 5 Cap Scr |
| 20 | | 1 | 3074 | Hose - 22" HP 1/4P-1/4P | 78 | 4 | | 90042 | 5/16 x 1 (NC) Gr. 5 Cap Screw |
| 21 | | 4 | 4424 | Hose - 36" Hp 1/4P - 1/4P | 79 | 6 | | 90360 | 5/16 Sp Lk Washer |
| 22 | | 1 | 8477 | 1/2" Hose 24" LP | 80 | 7 | | 90332 | 5/16 (NC) Nut |
| 23 | | 1 | 1714 | 57" V-Belt 4L 570 (not shown) | 81 | 4 | | 90313 | 5/16 Flat Washer |
| 24 | | 1 | 20249 | Drive Sheave | 83 | | | ***90615 | 1/4 x 1/2 (NC) Gr. 5 Cap Screw |
| 25 | | 1 | 3696 | Pump Sheave | 84 | | | ***90350 | 1/4 Lock Nut |
| 26 | | 1 | 20250 | Pump Bracket | 85 | | | ***90461 | 1/4 x 3/4 (NC) Gr. 5 Cap Screw |
| 27 | | 1 | 20256 | Pump Bracket Spacer | 86 | | | ***90359 | 1/4 Lock Washer |
| 28 | | 1 | 20259 | Pump Bracket Brace | 87 | | | ***90330 | 1/4 (NC) Nut |
| 29 | | 1 | 5329 | Valve Plate | 88 | | | ***90311 | 1/4 Flat Washer |
| 30 | | 1 | 8380 | Pump Plate | 89 | 2 | | *90124 | 3/8" x 2 (NC) Gr. 5 Cap Screw |
| 32 | | 1 | 20257 | Valve Plate Brace | 90 | 1 | | *90534 | 3/4 x 4-1/2 (NF) Gr. 5 Cap Screw |
| 33 | | 1 | 20258 | Reservoir Brace | 91 | 2 | | *90580 | 3/8 x 5-1/2 (NC) Gr. 8 Cap Screw |
| 34 | | 1 | 7966 | Brace | 92 | 1 | | *90103 | 3/8 x 1 (NC) Gr. 5 Cap Screw |
| 36 | | 1 | *20251 | Fan Adapter | 94 | 3 | | *90334 | 3/8" (NC) Nut |
| 42 | 3 | | 21096 | Hose Disconnect Assembly | 95 | 4 | | *90638 | 3/8 x 5/8 (NC) NY Gr. 5 Cap Scr |
| 43 | 2 | 2 | *1588 | Dust Plug - Closure/Male | 96 | 5 | | *90361 | 3/8 Lock Washer |
| 44 | | 1 | * 4486 | Adapter - Bulkhead 1/4" Npt | 98 | 6 | | *90315 | 3/8 Flat Washer |
| 45 | | 3 | * 4485 | Snap Ring - 7/8" Extnl Bowed | | | | | |

| DIAMETER- THREADS | 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 |

| DIAMETER- THREADS | 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 |

* Part of 20247 Bolt Bag

*** Packed in Peculiar Attachment Kit Bolt Bag -- available for both EHP and Belt Drive options.

1. Cylinder and Cylinder Hose Assembly

- A. Attach female half of disconnect (42) and a 1/4" Npt 45 degree elbow (62) to the 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 another 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 with the dust cover and male disconnect half. The passenger side uses the 36" Hp hose with the male disconnect end and **no dust cover**. Install cylinders to their respective sides so that the 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. Remove 2" rubber plug from engine side of fire wall beside brake master cylinder. Vehicles with standard transmission will have to have two 5/8" holes drilled as per the dash bracket instructions.
- 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 nuts and washers from the valve end of the cables. Route the cables from dash through hole created when rubber plug was removed from fire wall. Attach control head to dash bracket as per dash bracket instructions. Cut out previously remove rubber plug to accommodate control cables and reinstall.
For standard transmission: install rubber grommets (73) around cables where they pass through the fire wall.

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

3. Drive Sheave Installation

- A. Remove fan. Remove center bolt of crankshaft. Discard fastener. Install drive sheave (24) with 3/4 x 4-1/2 (NF) cap screw Gr. 5 (90). Apply Lock-tite, or equivalent product, on cap screw before installing drive sheave. Torque 3/4 x 4-1/2 cap screw to 135 ft-lbs.
- B. Attach fan adapter (36) to end of water pump and reinstall fan. **NOTE: At this point measure the clearance between fan tips and shroud at its closest point (top and bottom usually). If this distance is less than 1/2", FISHER HIGHLY RECOMMENDS that the fan be spaced back away from the radiator using PN 21022 "Fan Spacer Kit". This kit is not included in the peculiar hydraulic kit and must be ordered separately.**

4. Pump Bracket and Pump Assembly

- A. Remove serpentine belt. Remove the two 3/8 fasteners, one on each side of the serpentine idler tensioner. Discard fasteners. Place pump bracket with spacers (26) in front of holes from previously removed fasteners and install with two 3/8x5-1/2" cap screws Gr. 8 (91) and lock washers (96). Do not tighten at this time. Remove rear nut from outer alternator bolt. Install bent end of pump bracket brace (28). Reinstall nut. Do not tighten. Placing brace on back of pump bracket tab, install 3/8 x 1 cap screw (92), lock washer (96) and nut (94). Tighten fasteners beginning with two pipe spacer bolts.

- B. Place pump (1) in vise with relief quill facing front jaw of vise. Place pump plate (30) with adjustment slots to rights and install with four 3/8 x 5/8 (NC) Gr. 5 Nylon patched cap screws (95) with flat washers (98) to pump face plate and tighten. Install pump sheave (25) onto pump shaft using lock nut and key supplied with pump.
- C. Place pump bracket spacer (27) then pump face plate on front of pump bracket. Install with two 3/8 x 2 cap screws (NC) Gr. 5 (89) and flat washers (98). Secure with two 3/8 lock washers (96) and nuts (94). Place 57" V-belt (23) over drive sheave and pump sheave. Tighten belt pulling pump toward fender and tighten fasteners. If hose on air pump going to canister is close to pump, cut off 1-1/2" from end of hose on air pump and rotate away from hydraulic pump.

5. Oil Reservoir

Caution: Pump tank fill must be vertical to engine.

- A. Place oil reservoir (7) between radiator coolant container and firewall. Install reservoir brace (33) on firewall side of reservoir with 5/16 x 1 cap screws (78), lock washers (79), and nuts (80). Level tank and position so tank is not rubbing or interfering in any area. Using holes in reservoir leg and brace, mark and drill two 11/32 holes through the fender well. Install with two 5/16 x 1-1/2 cap screws (77), flat washers (81), lock washers (79) and nut (80). Tighten.
- B. Install 1/2" quill (61) into the threaded hole on the oil reservoir.

6. Valve and Valve Plate

- A. Using a bench vise to hold control 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-rings to 1/4" NPT 90° elbows (54) in lift and angle ports. When tight, elbows should point to 2 o'clock with cables referenced at 12 o'clock.
- B. Mount valve to valve plate (29) using two 1/4" x 1-1/4" cap screws, lock washers and nuts located in the valve bag. Install cap screws from bottom of valve plate with lock washer and nut on top of valve. Attach long valve brace (32) to second hole back on the "out" port side of valve with one 5/16" x 1" cap screw (78) lock washer (79) and nut (80). Install short valve brace (34) to rear hole on the "out" port side of valve with one 5/16 x 1" cap screw (78), lock washer (79) and nut (80). Place valve in front of the radiator fluid container and over the top of the vacuum container. Position with cable bulkhead upward. Using holes in braces as guides, mark and drill two 11/32 holes through inner fender. Attach braces to inner fender with two 5/16 x 1-1/2 cap screws (77), flat washers (81), lock washers (79) and nuts (80). Tighten.
- C. Install control cables to valve plate 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 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. Adjust cables so control 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. Use three nylon ties (75) to run cables along air intake hoses.

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.

7. Hydraulic Hose Installation

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

- A. Install 28" LP hose (17) to relief quill on pump and attach other end to lower quill on reservoir tank. Attach a 1/2" quill (61) to 3/8" Npt hole on rear of pump and attach 1/2" LP hose 24" long (22) to quill and reattach to 1/2" quill on reservoir. **Do not shorten hose. Bends in all hoses must have sufficient radius to prevent crimping.** Install 3/8 x 24" LP hose (19) to quill on "out" port on valve and attach other end to upper quill of reservoir. **Attach filter to this line after installation is complete - see Step 7E.**
- B. Install 3/8 x 26" HP hose (16) 1/4" end to rear of pump and loop around the top of valve to "in" port of valve. Attach one 1/4 x 60" HP hose (18) to driver's side angle port of valve. Attach one 1/4 x 36" hose (21) to the passenger side angle port and the other 1/4 x 36" hose (21) to lift port of valve. Route the hoses between the radiator and the headlight, and out to where grille plates will be attached to bumper (see step C). Tie all hoses away from chaffing parts with tie wraps (75).
- C. **Grille brackets and fasteners are in the Peculiar Attachment Kit bolt bag to be available for both Electric Hydraulic Pak and Belt Drive options.** Attach a female quick disconnect half (42) to the QD/Electric grille plate (56) with a snap ring (45). Install a dust plug (43) and 1/4 x 90 degree swivel adapter (46) to disconnect. Place a grille bracket (58) on back of grille plate as shown on illustration, and attach with two 1/4 x 1/2 cap screws (83) and lock nuts (84). Place grille plate and bracket into large hole in driver side of bumper as far towards the fender as possible. Using holes in angle as guides, drill two 1/4" holes in top inside lip of bumper. Use the two holes on the angle to angle the disconnect plate outwards on vehicle. Fasten bracket with two 1/4 x 3/4 cap screws (85), flat washers (88), lock washers (86), and nuts (87). Attach 60" angle hose (18) to swivel on disconnect and slide head light connector (with dust plug) into slot provided in the grille plate.
- Install a female quick disconnect half (42) to one hole in the 2QD grille plate (57) with a snap ring (45), and a bulkhead adapter (44) to the other hole with another snap ring (45). Install a male quick disconnect half (42) to the bulkhead adapter and two 1/4 x 45 degree swivel adapters (60) with dust covers (43) to the disconnects on the back side of grille plate. Attach grille bracket (58) to grille plate as shown on illustration with two 1/4 x 1/2 cap screws (83) and lock nuts (84). Place grille plate and bracket into large hole in passenger side of bumper as far toward the fender as possible. Using the holes in the angle as guides, drill two 1/4" holes in the top inside lip of bumper. Use the two holes on the angle to angle the disconnects outward on vehicle. Fasten bracket with two 1/4 x 3/4 cap screws (85), lock washers (86), and nuts (87) placing female disconnect to outside of vehicle. Attach lift hose to swivel with male disconnect and angle hose to female disconnect.
- D. Install cable boot bracket (65) on driver side headgear brace, between brace and fasteners. Insert cable boot (66) on over bracket.
- E. Install in line oil filter kit as per filter kit (14) instructions located in the common hydraulics kit.

8. Operations

- A. Check all fittings and fasteners for tightness. Secure hoses with nylon tie wraps (75). Place Caution Label (72) on dash beside control head.

- B. Attach hose disconnects, push lift arm all the way down and fill reservoir with FISHER® High Performance Hydraulic Fluid (recommended for superior cold-weather performance) or type "A" automatic transmission fluid. Start engine. Lift and angle blade several times. **If blade angles opposite from control lever position, reverse the two angle hoses at the valve.** Raise front end of vehicle until plow is clear of ground with lift cylinder fully retracted. Check reservoir oil level. Angle blade (with lift cylinder retracted) to remove air from system. Recheck 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.