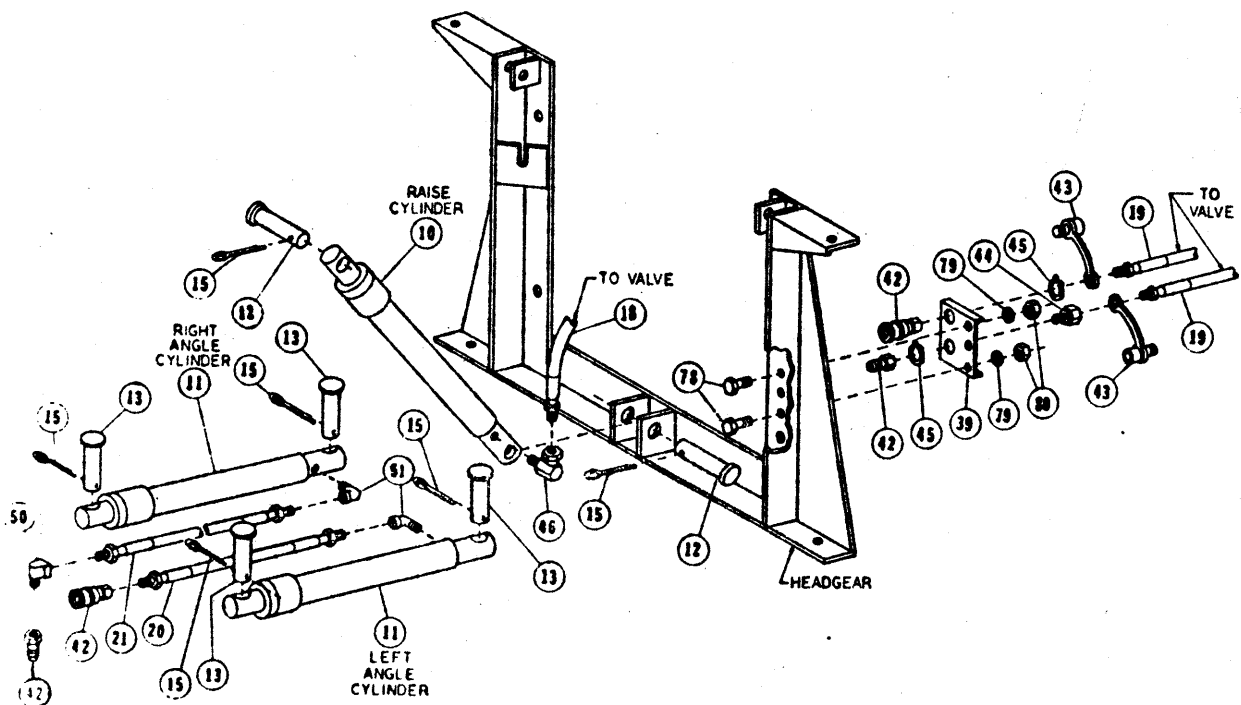
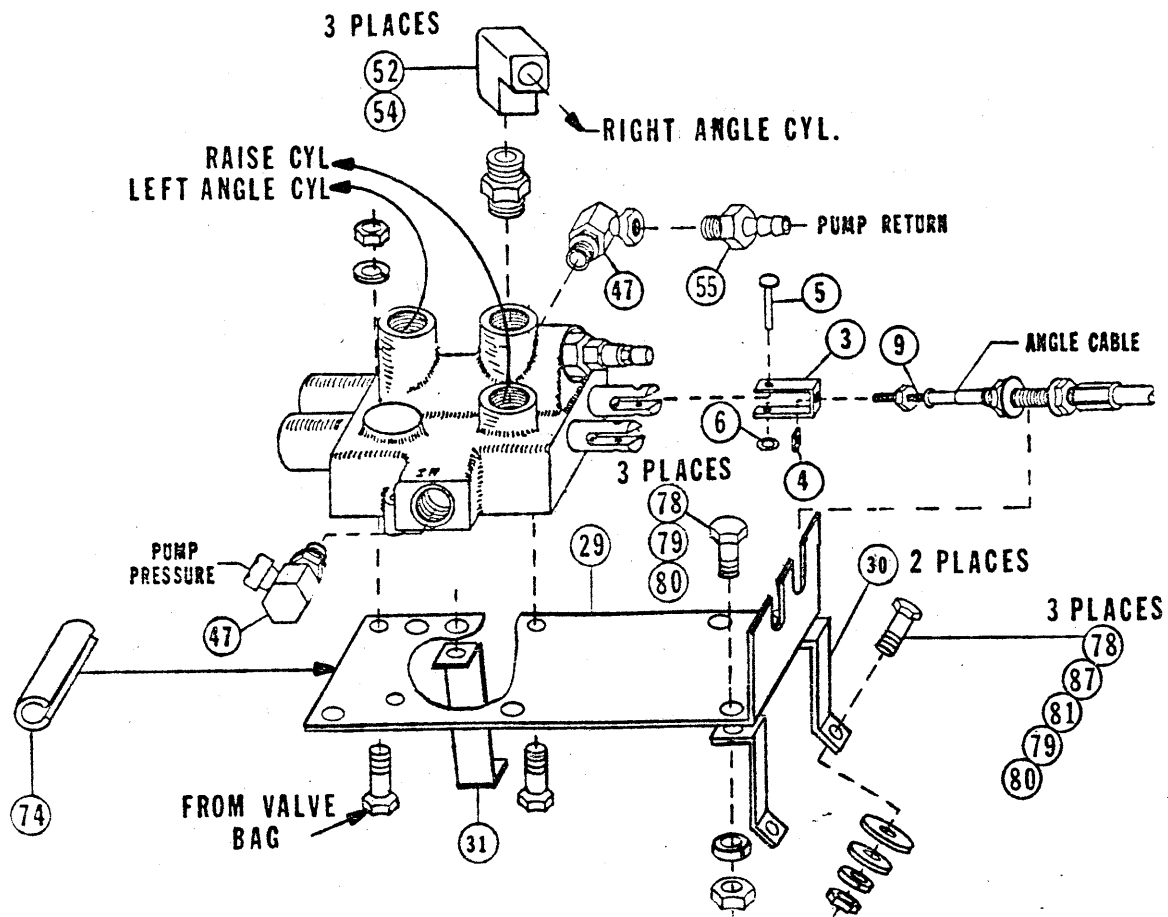






## Hydraulics Parts List

| Ref.            | Qty | In | Kit | Part   | Description                        | Ref.             | Qty | In | Kit | Part    | Description                         |
|-----------------|-----|----|-----|--------|------------------------------------|------------------|-----|----|-----|---------|-------------------------------------|
| # A4468-40 7508 | #   |    |     |        | * Part of 8016 Bolt Bag            | # A4468-40 75048 | #   |    |     |         | * Part of 8016 Bolt Bag             |
| 1               | 1   |    |     | A2311  | Pump tank assembly                 | 50               | 1   |    |     | * 765   | 1/4 Npt x 90 Deg Street Elbow       |
| 2               | 1   |    |     | A4466  | Control Valve Assembly             | 51               | 2   |    |     | 2780    | 1/4 Npt x 90 Deg Street Elbow Frgd  |
| 3               | 2   |    |     | 4483   | Clevis - VM                        | 52               | 4   |    |     | * 2318  | 1/4 Npt x 90 Deg Union Elbow        |
| 4               | 2   |    |     | 4494   | 10-32 Square Nut - VM              | 53               |     |    |     |         |                                     |
| 5               | 2   |    |     | 4491   | Clevis Pin - 3/16" x 1             | 54               | 3   |    |     | *3058   | 9/16" O.R. to 1/4P Adapter          |
| 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               | 2   |    |     | *6595   | 3/4" Split Hose Grommet             |
| 8               |     |    | 1   | 4419   | SLC Head - Belt Drive              | 71               |     |    |     |         |                                     |
| 9               |     |    | 2   | A4490  | 90" Control Cable, SLC             | 72               | 1   |    |     | 5704    | Caution Label - Cab                 |
| 10              | 1   |    |     | A318   | 1-1/2" x 10" Cylinder Assembly     | 73               | 2   |    |     | 3042    | Grommet - Rubber, Split             |
| 11              | 2   |    |     | A3660  | 1-1/2" x 12" Cylinder Assembly     | 74               | 1   | 3  |     | 4477    | Grommet - Split Hose                |
| 12              | 2   |    |     | 6814   | Clevis Pin - 1 x 3-5/16            | 75               | 3   | 8  |     | 3666    | Hose Tie, nylon 3/16 x 8            |
| 13              | 4   |    |     | 6816   | Anchor Pin - 1 x 4                 | 76               |     | 5  |     | *90048  | 5/16" x 1-1/4" (NC) Gr. 5 Cap Screw |
| 14              |     |    |     |        |                                    | 77               | 1   |    |     | 90054   | 5/16 x 1-1/2 (NC) Gr. 5 Cap Screw   |
| 15              | 6   |    |     | 90601  | 1/4" x 1-1/2" Cotter Pin           | 78               | 4   | 7  |     | *90042  | 5/16 x 1 (NC) Gr. 5 Cap Screw       |
| 16              |     |    | 1   | 2707   | 26" HP Hose - 3/8P - 1/4P          | 79               | 6   | 15 |     | * 90360 | 5/16 Sp Lk Washer                   |
| 17              |     |    | 1   | 4471   | 26" LP Hose                        | 80               | 7   | 15 |     | *90332  | 5/16 (NC) Nut                       |
| 18              |     |    | 1   | 5192   | 60" HP Hose 1/4P to 1/4P           | 81               | 4   | 4  |     | *90313  | 5/16 Plain Washer                   |
| 19              |     |    | 2   | 5193   | 54" HP Hose, 1/4P to 1/4P          | 82               |     | 4  |     | *5743   | Stud                                |
| 20              |     |    | 1   | 376    | 32" HP Hose, 1/4P to 1/4P          | 83               |     | 4  |     | *90461  | 1/4 x 3/4 (NC) Gr. 5 Cap Screw      |
| 21              |     |    | 2   | 4424   | 36" HP Hose, 1/4P to 1/4P          | 84               | 1   |    |     | 90614   | 1/4 x 1-1/4 (NC) Gr. 5 Cap Screw    |
| 22              |     |    | 1   | *8457  | Fan Spacer, 1/2"                   | 85               | 1   | 4  |     | *90359  | 1/4 Sp Lk Washer                    |
| 23              |     |    | 1   | 1723   | Fan Belt, 41"                      | 86               | 1   | 4  |     | *90330  | 1/4 (NC) Nut                        |
| 24              |     |    | 1   | 8458   | Drive Sheave                       | 87               |     | 3  |     | *4433   | 1/2" Special Washer                 |
| 25              |     |    | 1   | 7909   | Pump Sheave                        | 88               |     | 1  |     | *90612  | 1/4 x 1 (NC) Gr. 5 Cap Screw        |
| 26              |     |    | 1   | 6525   | Pump Bracket                       | 89               |     | 1  |     | *90106  | 3/8 x 1-1/4 (NC) Gr. 5 cap screw    |
| 27              |     |    | 1   | 6526   | Pump Bracket Brace                 | 90               |     | 1  |     | *90619  | 3/8 x 2-1/2 (NC) Gr. 5 Cap Screw    |
| 28              |     |    |     |        |                                    | 91               |     | 2  |     | *90361  | 3/8 SP LK Washer                    |
| 29              |     |    | 1   | 5329   | Valve Plate                        | 92               |     | 1  |     | *90334  | 3/8" (NC) Nut                       |
| 30              |     |    | 2   | 7965   | Brace                              | 93               |     | 1  |     | *90315  | 3/8" Flat Washer                    |
| 31              |     |    | 1   | 7966   | Brace                              | 94               |     |    |     |         |                                     |
| 32              |     |    |     |        |                                    | 95               |     |    |     |         |                                     |
| 33              |     |    | 1   | *6018  | Bolting Bar                        | 96               |     |    |     |         |                                     |
| 34              |     |    |     |        |                                    | 97               |     |    |     |         |                                     |
| 35              |     |    | 1   | 4921   | Saddle Bracket                     | 98               |     |    |     |         |                                     |
| 36              | 1   |    |     | 2036   | Rear Tank Strap                    | 101              |     | 1  |     | *90319  | 1/2 Flat Washer PL                  |
| 37              | 1   |    |     | 2116   | Universal Brace Rod                |                  |     |    |     |         |                                     |
| 38              |     |    | 1   | *2115  | Universal Brace Tab                |                  |     |    |     |         |                                     |
| 39              |     |    | 1   | 4467   | Disconnect Mounting Plate          |                  |     |    |     |         |                                     |
| 40              |     |    |     |        |                                    |                  |     |    |     |         |                                     |
| 41              |     |    |     |        |                                    |                  |     |    |     |         |                                     |
| 42              | 2   |    |     | A1587  | Hose Disconnect Assembly           |                  |     |    |     |         |                                     |
| 43              | 2   |    |     | 1588   | Dust Plug - Closure/Male           |                  |     |    |     |         |                                     |
| 44              |     |    | 1   | * 4486 | Adapter - Bulkhead 1/4" Npt        |                  |     |    |     |         |                                     |
| 45              |     |    | 2   | * 4485 | Snap Ring - 7/8" External Bowed    |                  |     |    |     |         |                                     |
| 46              | 1   |    |     | 319    | 1/4" x 90 Swivel Adapter           |                  |     |    |     |         |                                     |
| 47              | 2   |    |     | 2315   | 9/16-18 w/O-Ring x 3/8 F Pi Swivel |                  |     |    |     |         |                                     |
| 48              |     |    |     |        |                                    |                  |     |    |     |         |                                     |
| 49              |     |    |     |        |                                    |                  |     |    |     |         |                                     |

| FASTENER TORQUE<br>(FT-LB)        |                                                                                       |                                                                                       |                                                                                       |
|-----------------------------------|---------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------|
| DIAMETER--<br>THREADS<br>PER INCH | GRADE                                                                                 |                                                                                       |                                                                                       |
|                                   |  |  |  |
| 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                                                                                   |
| 9/16 - 12                         | 150                                                                                   | 250                                                                                   | 370                                                                                   |
| 7/8 - 9                           | 150                                                                                   | 378                                                                                   | 591                                                                                   |
| 1 - 8                             | 220                                                                                   | 583                                                                                   | 893                                                                                   |

## 1. Cylinder & Cylinder Hose Assembly

- A. Using bench vise to hold lift cylinder (10), remove closure from port. Screw 90 degree swivel adapter (46) into port. Place lift cylinder with installed adapter 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" HP hose (20), install female half of hose disconnect assembly (42) directly to hose. Then, holding 36" HP hose (21), install brass bar street ell (50) and male half of hose disconnect assembly (42) on the same hose end.
- C. Using a bench vise to hold angle cylinders (11), remove closures from ports and screw brass forged street ells (51) into ports so that ells are parallel with cylinder and point toward live end. Install 32" HP hose with female disconnect half to driver's side angle cylinder street ell. Install other HP 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).

## 2. Control Head & 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.**
- 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.

**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 three 9/16" O-ring to 1/4" pipe adapters (54) in lift and angle ports. Install one 1/4" brass bar ell (52) to each adapter. When tight, ells should point at 2 o'clock, away from cable end of valve.

- B. Disconnect canister above smog vacuum. Place bottom hole on bracket to top screw on smog vacuum. Lean canister toward firewall and tighten both fasteners. Mount valve to valve plate (29) using two 1/4" x 1-1/4" cap screws (83), lock washers (85) and nuts (86) located in the valve bag. Install cap screws from bottom of valve plate, with lock washer and nut on top of valve. Attach the two long valve leg braces (30) to the two holes in the cable attaching end of valve plate. Attach with two 5/16" x 1" cap screws Gr. 5 (NC) (78), lock washers (79) and nut (80). Attach rear leg brace (31) to hole in rear of valve plate on "out" side with one 5/16" x 1" cap screw Gr. 5 (NC) (78), lock washer (79) and nut (80). Attach split hose (74) to end of valve plate and two split hoses (56) to inside of both front braces. Place valve plate and legs over smog control vacuum on passenger's side of vehicle. Position so split hoses are keeping vacuum hoses from chafing. Drill three 11/32" holes in fender. Attach with three 5/16" x 1" cap screws Gr. 5 (NC) (78), large 1/2" flat washers (87), 5/16" flat washers (81), lock washers (87) and nuts (80).
- C. Install control cables to valve plate by reinstalling jam nuts and washer son 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 clevis clevises over spools. Install clevis pin. Adjust cables so that 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.

**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. Use three nylon ties to run cables along air intake hoses.

#### 4. Drive Sheave Installation

- A. Remove fan from water pump and discard cap screws. Install the fine thread end of four 5/16 x 1-3/4 studs (82) into water pump flange. Studs should be flush with back of flange. Install drive sheave (24), fan spacer (22) and fan on over new studs and fasten with lock washers (79) and nuts (80) torqued to 18 ft-lbs.

**NOTE:** To prevent potential fan wobble, this bolted joint must be drawn up tight. Rotate fan to check for wobble during installation. Be sure to torque fasteners to 18 ft-lbs.

#### 5. Pump and Pump Bracket

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

- A. Remove front fastener from thermostat housing. Place straight end of pump bracket brace (27) over hole and reinstall fastener. Do not tighten any fasteners until pump bracket is fully installed. Position lower end of pump bracket (26) (end of bracket without pipe spacer) behind the lower end of adjusting slot in alternator bracket. (Vehicles with small alternator use upper hole on pump bracket to install fastener into slot of alternator bracket.) Insert one 3/8 x 1-1/4 Gr. 5 cap screw (89) and flat washer (93) through alternator bracket and pump bracket. Fasten with a 3/8 lock washer (91) and nut (92). Position pipe spacer on opposite end of pump bracket over open hole on top of water pump. Fasten with a 3/8 x 2-1/2 Gr. 5 cap screw (90) and lock washer (91). Tighten all fasteners.
- B. Holding pump tank (1) in bench vise, screw 1/4" brass bar ell (52) onto pressure port of pump tank and screw quill (55) into return port of pump. Install pump sheave (25) onto pump shaft using lock nut supplied with pump. When installing lock nut, make sure that the lock nut tightens against the pump sheave, and not against the pump shaft shoulder. An optional 1/2 plain washer (101) should be installed only if the lock nut tightens against the pump shaft shoulder and not the sheave.

**Caution:** To avoid damage to the pump shaft, make sure that the 1/2 flat washer fits over the shaft shoulder before tightening the lock nut.

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 a 5/16 x 1-1/4 Gr. 5 cap screw (76) with flat washer (81) through the driver's side hole in saddle bracket and pump bracket and also through pump bracket brace. Fasten with a lock washer (79) and nut (80). Install a 5/16 x 1 cap screw (78) with flat washer (81) through the other side and fasten with a lock washer (79) and nut (80). Place bolting bar (33) behind engine lift bracket with stud projecting through hole. Install universal brace tab (38) on over stud and fasten with a 5/16 lock washer (79) and nut (80).

- C. Install 41" 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 top bolt. Install rear tank strap (36) on over rear of pump tank. Install one 5/16 nut (80) and flat washer (81) onto universal brace rod (37) and insert brace rod through previously installed universal brace tab. Install brace rod to tank strap with one 1/4 x 1-1/4 cap screw (84), lock washer (85) and nut (86). Fasten other end of brace rod to brace 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 one end of 26" HP hose (16) to 1/4" brass bar ell on pump tank and push one end of 26" LP hose (17) onto quill on pump tank. Route these hoses under the air intake 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.

LP hose may be cut off to adjust for travel with HP hose. Push LP hose onto quill and screw HP hose into 90 degree swivel adapter. Install 54" HP hose (19) to brass ell in lift cylinder port of valve (Spool #1). Install two 60" hoses (18) to brass ells in angle ports of valve (Spool #2). On vehicles without air conditioning, hoses may be routed out between radiator and radiator web, then through the grill near the center of vehicle. If vehicle is equipped with air conditioning, a 1-7/8" hole must be drilled through the radiator web on passenger's side inboard of battery. Install split hose grommet (74) around hole. Route 60" and 54" hoses out through this hole and through grill near center of vehicle. Attach 54" hose (19) to previously installed 90 degree swivel adapter on lift cylinder.

- B. Install the in-line oil filter (7) as per instructions located in the common hydraulics kit.

## 7. Disconnect Assembly

- A. With disconnect mounting plate (39) held in bench vise, install disconnect halves as shown in illustration. Bulkhead adapter (44) and male disconnect half (42) go in bottom hole. Female disconnect half (42) goes in the top hole. Secure both with 7/8" snap rings (45). Attach mounting plate to back of driver's side headgear post with two 5/16 x 1 cap screws (78), lock washers (79) and nuts (80). Install dust plugs (43) over ends of hoses routed to front of vehicle in the previous step. Connect 60" right angle hose (spool #2, Cyl. B) to back of female disconnect installed in top hole of disconnect bracket. Connect 60" 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 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 the back of the disconnect bracket.** 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.