

## INSTALLATION AND OPERATION MANUAL FOR

### WM-4 WAGNER LOADER APPLICABLE TO FORD MODELS 9N - 8N - NAA TRACTORS

#### 1. PREPARATION OF LOADER

A. Loaders under normal conditions are shipped ready to mount. In cases where valves are not mounted or must be replaced, use the following procedure (See Fig. #1).

1. Mount duplex valve-to-valve mounting bracket on right hand side of loader frame using (4) 5/16" x 1" capscrews and nuts furnished.
2. Duplex valve is shipped with levers disassembled. To assemble valve levers, insert 1/4" link screw into faced side of both levers end turn in tight. With long lever on left hand side, place both levers between the ears on the duplex valve, place links over link screws and insert cotter keys. Insert lever pin through valve ears and levers, fastening with two cotter keys.
3. Connect bypass line to loader reservoir with 1" hose and clamps furnished.
4. Connect one end of 3/8" x 24" hose to top rear port of duplex valve. Other end of hose must be connected to the adapter union on the 3/8" pipeline fastened to the dipperstick leading to front port of third cylinder,
5. Connect one end of 3/8" x 24" hose to top front port of duplex valve. Other end of hose must be connected to the adapter union on the 3/8" pipeline fastened to the dipperstick leading to the rear port of third cylinder.
6. Connect 3/8" x 24" hose to center port of duplex valve. Connect other end to pump pressure line (3/8" adapter union on 3/8" pipe line fastened to horizontal cross member of main frame).
7. Connect one end of 3/8" x 20" hose to lower right hand port of duplex valve. Connect other end to equalizer pipeline tee at right hand side of main frame.

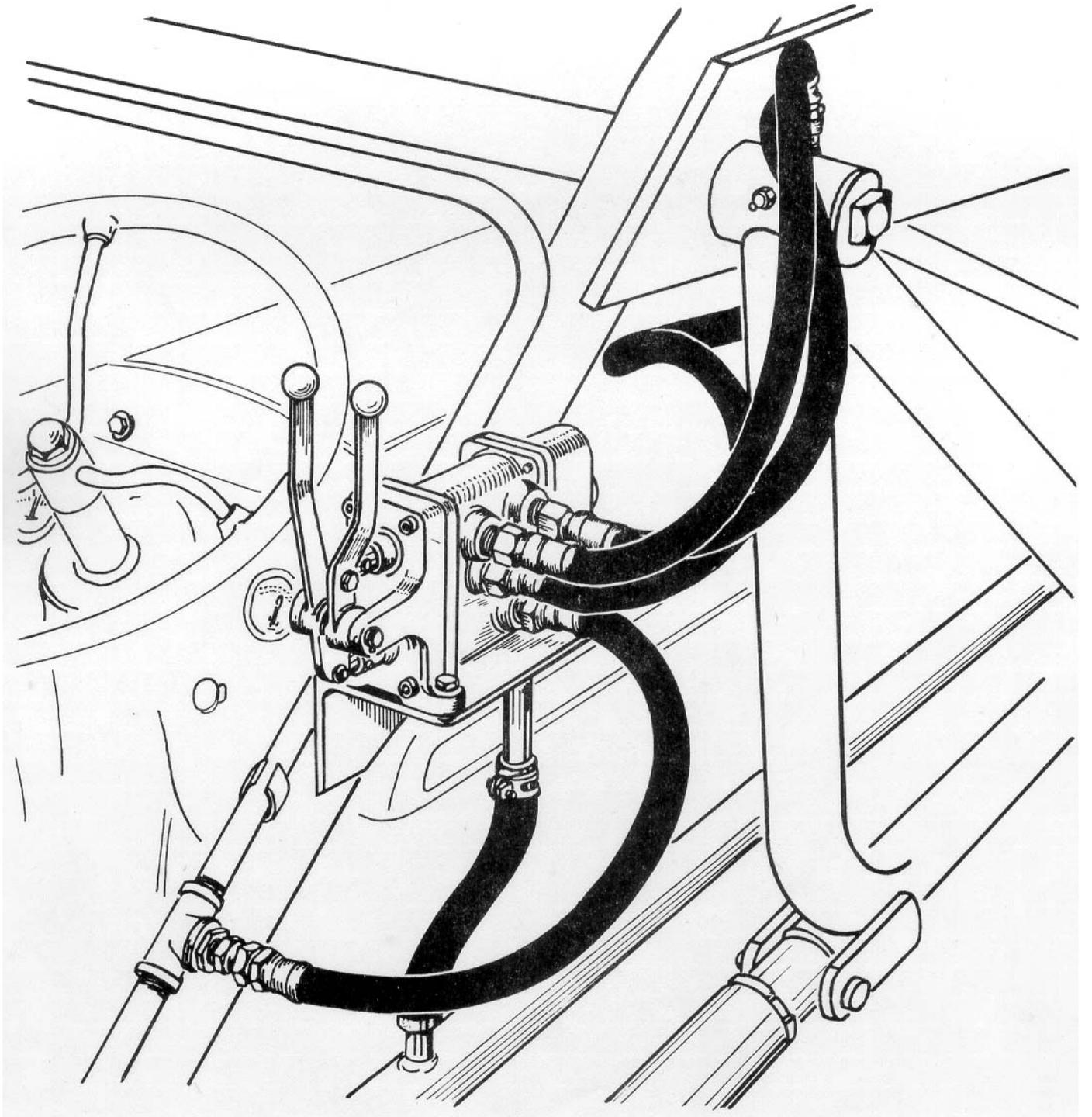


Figure 1, Valve Installation

## 2. PREPARATION OF TRACTOR

### A. Model NAA

1. Remove tractor front grill.
2. Cut out bottom of grill as shown in Fig, #2. **NOTE:** This is not necessary if user desires to eliminate tractor grill entirely.
3. Remove fenders from tractor.
4. Remove crank ratchet and plain washer from end of crankshaft. Insert 5/8" slotted-head capscrews, internal lock washer and plain washer furnished to secure tractor's splined crankshaft pulley hub to crankshaft. (Do not use plain washer removed from tractor).
5. Remove four pulley capscrews. With pulley/on-hub, secure adapter furnished with existing lock washers and four capscrews furnished (7/16" x 7/8") (See Fig.#2). Place hub and pin assembly in front of adapter and screw drive shaft into the hub and pin assembly. **(NOTE: The shaft has a left hand thread)**. Assemble flexible coupling to opposite end of drive shaft. Shaft should be inserted into coupling flange flush with the inside face. Tighten setscrew. Force pins of hub and pin assembly into rubber grommets of adapter.
6. Remove capscrew in front axle pin. Through top center hole of hanger plate place 1/2" x 1-3/4" fine-thread capscrew with 1/16" flat washer and lock washer to the outside. Place a 3/16" flat washer over capscrew on inside of hanger plate. In a level position against the tractor front axle support, place hanger assembly, after positioning 5/8" x 1-1/2" course-thread capscrew in bottom center hole, head of capscrew towards tractor. Through the two remaining top holes in hanger plate, drill through the front axle support of tractor. Use two 1/2" x 1-1/4" long fine-thread hex head capscrews with lock washers and nuts to secure hanger plate to axle support (see Fig. #2).
7. In order to remove battery for wiring, cut out portion of battery bracket as shown on sketch illustrated in (Fig. #2).

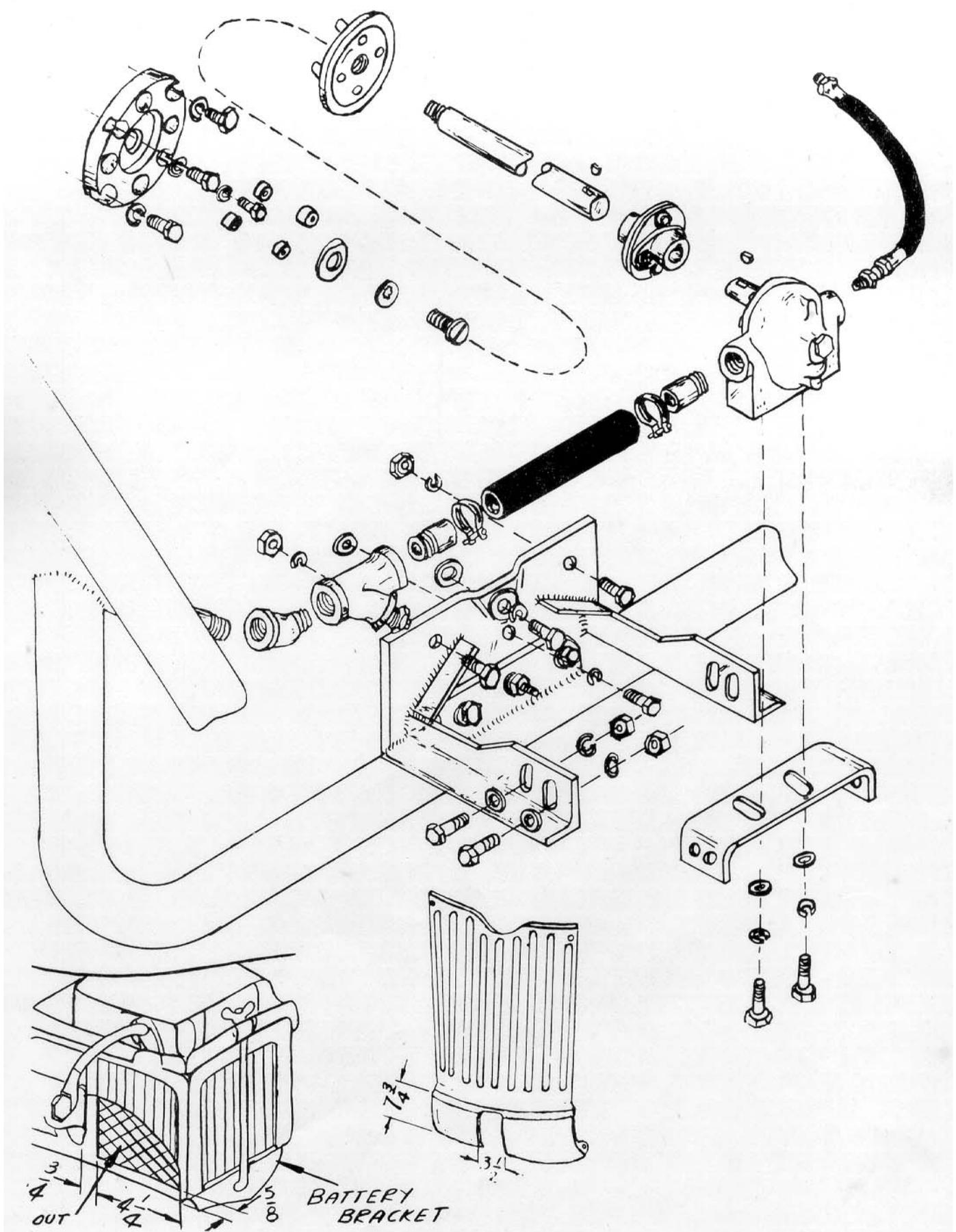


Figure 2, Front Installation, Ford Model NAA

## **B. Model 8N and 9N**

1. Remove tractor front grill.
2. Cut out bottom grill in accordance with Fig. #3. This is not necessary if user desires to eliminate tractor grill\_entirely.
3. Use clamps furnished with nuts, bolts and lock washers to secure bottom of vertical grillwork (see Fig. #3).
4. Remove fenders from tractor,
5. Set tractor brakes and jack up front end of tractor under crankcase until weight\_is taken off front wheels.
6. Remove radius rods from front axle by removing radius rod pins.
7. Remove capscrew in front axle pin.
8. Remove capscrew securing front axle support assembly to tractor so that radiator assembly can be raised.
9. Remove capscrews from crankcase securing front axle support and remove support.
10. Remove axle pin from axle support assembly,
11. Remove fan belt from belt pulley.
12. Remove crankshaft ratchet from end of crankshaft and take off crankshaft pulley.
13. Secure sheave (furnished) to crankshaft with 5/8" slotted head capscrew, internal lock washer and plain washer furnished. Insert hub and pin assembly furnished into sheave (see Fig. #3)
14. Place fan belt on sheave.
15. Enlarge hole in front axle pin 7/8" to 1" in diameter. Anneal if necessary.
16. Re-assemble front of tractor, except for grill.
17. Assemble flexible coupling to drive shaft. Shaft should be inserted into coupling flange flush with inside face. Tighten setscrew. Screw drive shaft into hub and pin assembly. **(NOTE: This is left hand thread)**.
18. Through top center hole of hanger plate, place 1/2" x 1-3/4" fine-thread capscrew with 1/16" flat, washer and lock washer to the outside. Place the 3/16" flat washer over capscrew, on inside of hanger plate. In level position against front axle support, after placing a 5/8" x 1-1/2" course-thread capscrew in bottom center hole with head towards tractor, position entire hanger assembly and fasten in place with capscrew inserted in hanger plate, Through the two remaining top holes in hanger plate, drill through the front axle support of tractor. Use two 1/2" x 1-1/4" long fine-thread hex head bolts with lock washers and nuts furnished to secure hanger plate to axle support (see Fig. #3).
19. Replace tractor grill.

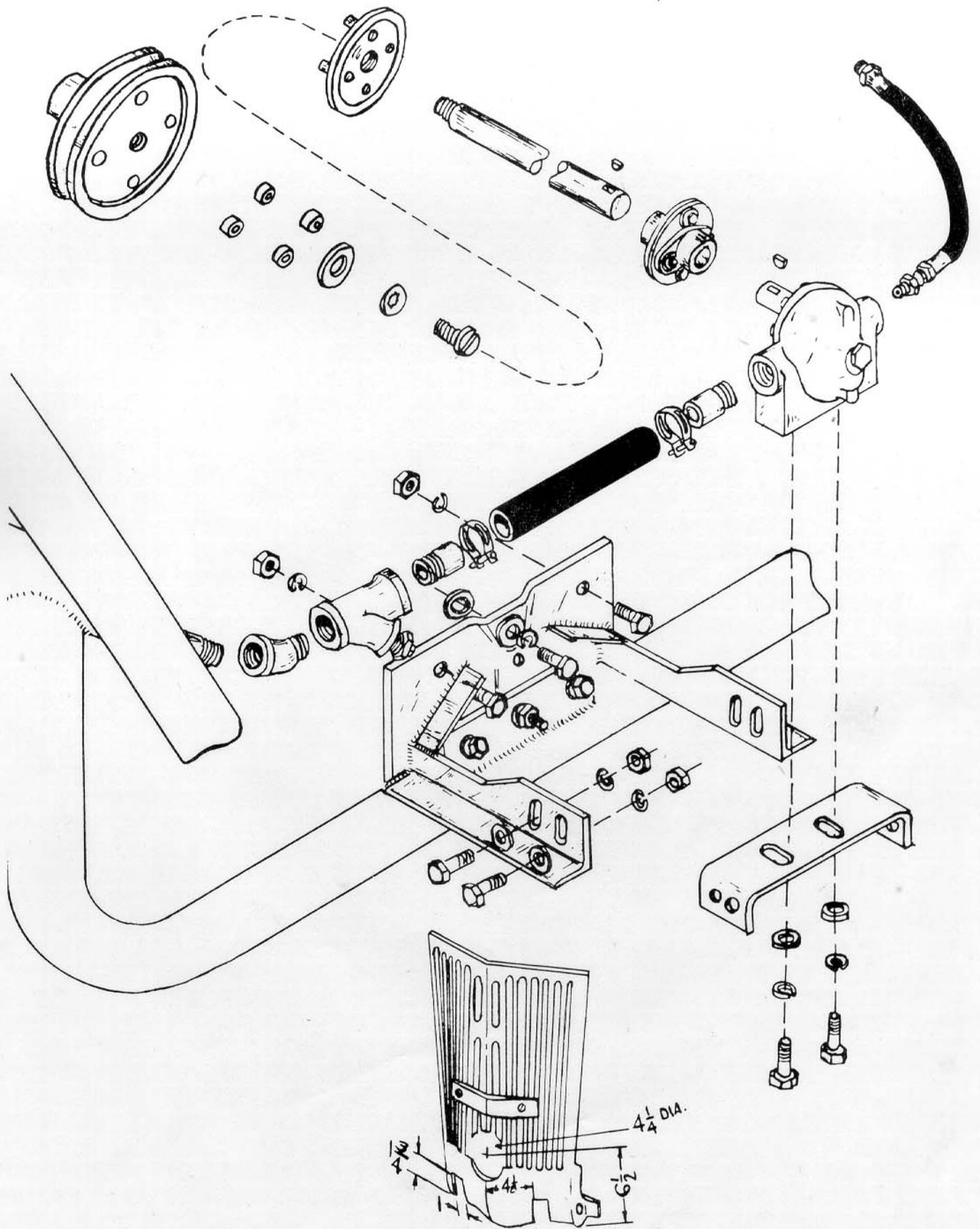


Figure 3, Front Installation, Ford Model 8N and 9N

### **3. INSTALLATION OF LOADER**

#### **A. Pump Mounting**

1. Fasten the pump support bracket to hanger plate, **loosely**. Install on tractor with four 1/2" x 1-1/2" hex head bolts, nuts, plain washers and lock washers furnished. Assemble with top slots of pump support bracket away from tractor.
2. Engage pump shaft into flexible coupling and secure by means of hollow head setscrew.  
**NOTE: Allow 1/8" clearance between the coupling flange and the pump seal.**
3. Place pump in position on pump support-bracket and secure loosely with 1/2" x 1-1/4" coarse-thread capscrews, 3/16" plain washers and lock washers (see Fig. #2).
4. **NOTE: It is absolutely essential that perfect alignment be made before tightening pump in position**, Slotted holes in brackets and support enable vertical and horizontal positioning of pump. Be sure hub and pin assembly is engaged fully with adapter, and drive shaft is engaged into hub and pin assembly the entire length of the threads to shaft-shoulder before tightening all pump mounting and pump bracket capscrews.

### **4. LOADER MOUNTING**

- A. Remove 3/8" pipe caps (3) from hydraulic lines on loader end connect adapter unions in their place, crimped half of union towards hose, solid side to 3/8" pipe.
- B. Place loader on tractor and secure rear footpads **loosely** to tractor rear axle, using carriage bolts originally supplied with tractor fenders.
- C. Secure front of loader to hanger plate with (3) 5/8" x 1-1/2" coarse-thread hex head capscrews, lock washers and nuts. One capscrew should already be in position. Tighten rear footpad carriage bolts and front hanger plate capscrews,
- D. Connect suction side of pump to strainer, mounted on loader frame, by means of 1" hose and clamps supplied (see Fig. #2).
- E. Connect pressure side of pump to pressure feed line using 3/8" x 16-3/4" hose. 1/2" male thread end is connected to pump.

### **5. INITIAL SERVICING**

- A. Fill main frame reservoir with Wagner special hydraulic oil until approximately 1" from filler pipe. Raise end lower dipperstick and extend third cylinder several times. Check oil again and add if necessary to fill reservoir to approximately 1" from filler pipe. The capacity of the reservoir frame is approximately 4-1/2 to 5 gallons
- B. Lubricate all grease fittings and dipperstick pivot points and at each end of side cylinder.
- C. Idle tractor engine and double check pump drive alignment. Adjust if necessary.
- D. Raise dipperstick by pulling left hand lever of duplex valve to rear position. Lower by pushing forward. Levers automatically return to center position that is neutral. Continue this cycle several times with side cylinder gland nuts loosened approximately 1/2 turn to bleed the air from the cylinders. When oil begins to leak from packing, tighten gland nuts hand tight and **back off** approximately 1/4 turn. If oil continues to leak after 10 or 15 minutes of operation, tighten 1/4 turn **maximum**. If your loader is equipped with "O" ring type side cylinder construction rather than packing gland type, it is necessary to bleed the cylinders during the initial installation by loosening bleeder screws at rear end of cylinder until all air is expelled and tighten securely.
- E. Mount attachments by means of three pins and cotter pins using the two large pins for the hinge points at the end of the dipperstick. Do not force pins with hammers, sledges or heavy metal objects. Make alterations to the lugs of the implement instead.

F. After first eight hours of operation clean strainer. Thereafter, oil strainer must be cleaned periodically.

G. Oil must be drained after the first 100 hours of operation, strained and returned to reservoir, adding oil if necessary to the proper level, 1" from bottom of filler pipe.

H. Check and tighten setscrews of flexible coupling after several hours of initial operation and periodically thereafter.