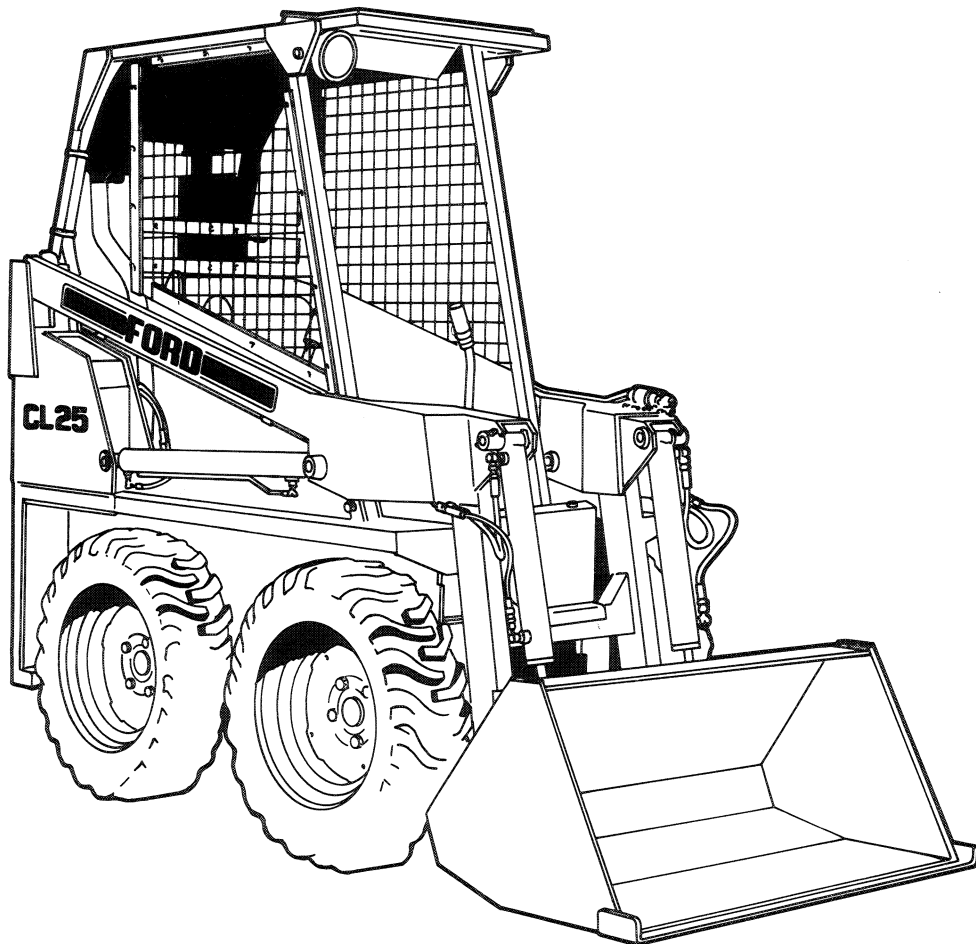




# **CL-25**

## **COMPACT LOADER**



# **REPAIR MANUAL**

40002510

Reprinted

# SECTION 1 HYDRAULICS

## 1.1.1 Specifications:

Pump type.....	Gear	
Capacity (Rated RPM and Pressure).....	6.3 GPM (23.9 l/m)	
Rated RPM.....	2800	
Rated Pressure .....	2150 PSI (148 BAR)	
Reservoir Capacity .....	12 gal. (45 l)	
Fluid type.....	10W30 API, SE/CD or Ford Oil No. 134	
Filtration.....	10 Micron	
Control valve .....	Series type with float on boom and detent on auxiliary	
Cylinders (double acting).....	Lift	Tilt
Qty. per machine .....	2	2
Bore dia. ....	2 in.	2 in.
Rod dia. ....	1.125 in.	1.125 in.
Stroke .....	26 in.	14 in.

## 1.1.2 General Information

### Operation (Refer to fig. 1.1.2)

Oil flows from the hydraulic reservoir (1) to the hydraulic gear pump (2).

The hydraulic gear pump (2) is driven by a shaft through the hydrostatic drive pumps (3) at engine speed. The hydraulic gear pump capacity is directly related to engine speed. Oil goes from the hydraulic gear pump (2) to the hydraulic control valve (4).

The hydraulic control valve has an adjustable relief valve (5) which is set at 2150 PSI (148 BAR).

The hydraulic control valve (4) is a 3 spool, mono block, series type valve.

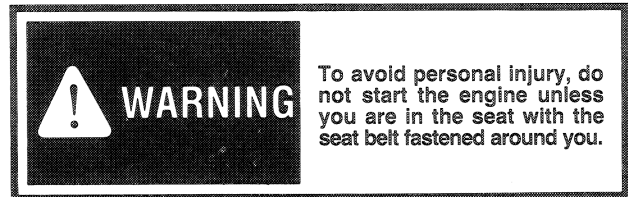
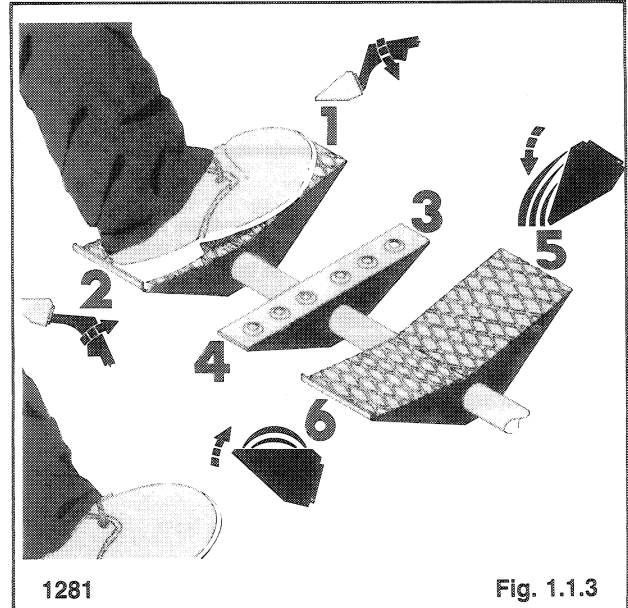
The first spool provides hydraulic flow to the two bucket cylinders (6). The center spool provides flow to the auxiliary hydraulic circuit (7) allowing operation of hydraulic attachments and tools. The center spool is equipped with a detent position to allow constant flow to the auxiliary hydraulic circuit (7). The third spool provides hydraulic flow to the two boom cylinders (8). The boom section is equipped with a float position.

Oil flows from the control valve to the hydraulic filter (9). The hydraulic filter has a replaceable spin on 10 micron filter element.

Oil flows from the hydraulic filter (9) to a tee (10) located at the hydraulic reservoir. Oil flows through the tee (10) into the hydraulic reservoir and also to the hydrostatic drive pump (3), charge pump inlet (11).

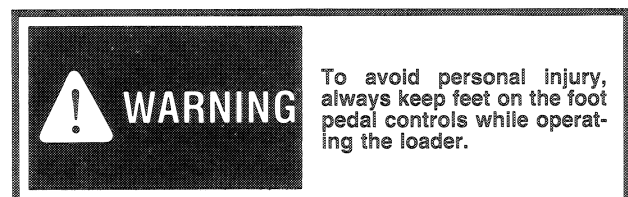
### 1.1.3 Control Functions:

The CL25 has a rated lift capacity of \*800 lbs. (363 kg) to full height. Operation of the hydraulic functions are controlled by three foot pedals (fig. 1.1.3).



**Boom Lift** — The L.H. pedal is the boom lift control (fig. 1.1.3). To raise the boom press on the heel (2) of the pedal. To lower the boom press on the toe (1) of the pedal. Firm pressure on the toe (1) of the pedal will lock the boom in float position. This allows the bucket to follow the ground as the loader moves backward.

**Auxiliary Hydraulics** — The center pedal is used to engage the auxiliary hydraulic circuit to power an attachment such as a back hoe. Pressing on the toe (3) of the pedal provides hydraulic pressure to the female quick-connect coupling located at the front of the boom arms. Firm pressure on the toe (3) of the pedal places the valve in detent position providing a continuous flow of hydraulic oil to the attachment. Pressing on the heel of the pedal (4) provides hydraulic pressure to the male quick-connect coupling reversing the flow of hydraulic oil. When the auxiliary circuit is not in use return the foot pedal to neutral position otherwise starting the loader may be difficult or impossible and damage to the starter may occur.



\*with equipment specified in section 8

# SECTION 1 HYDRAULICS

**Bucket Tilt** — The R.H. pedal is the bucket tilt (dump) control. Pressing on the toe (5) of the pedal will dump the bucket. Pressing on the heel (6) of the pedal will roll the bucket back.

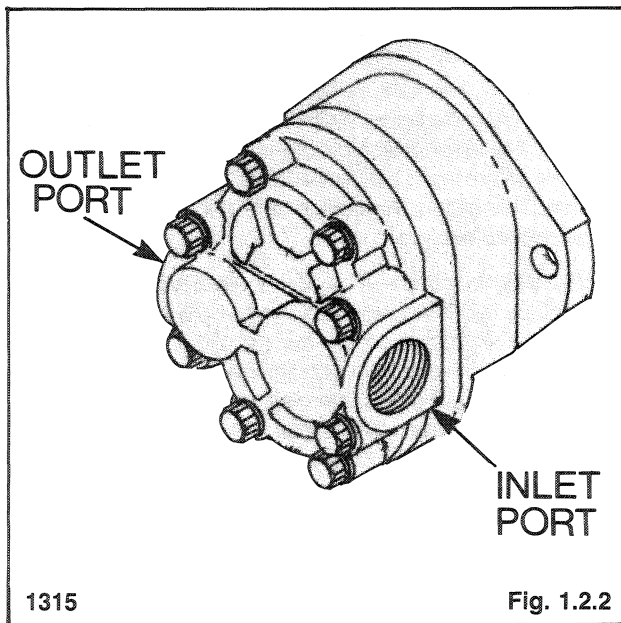
IMPORTANT

Return auxiliary hydraulic foot pedal to neutral position when not in use.

### 1.1.4 Hydraulic System — Maintenance Schedule:

	First (Hours)	Every (Hours)
Oil level, check .....	8	8
Oil filter, change.....	50	200
General check (leaks etc.) .....	8	8
Cylinders, lubricate .....	8	8
Hydraulic oil, change .....	1000	1000

## 1.2 GEAR PUMP



### 1.2.1 Gear Pump — Specifications:

Pump, type.....	Gear
Displacement .....	.58 cu. in. (9.5 cc)
Capacity (rated speed & press) .....	6.3 GPM (23.9 l/m)
Rated speed (RPM) .....	2800
Rated pressure .....	2150 PSI (148 BAR)
Rotation .....	R.H. (viewed from shaft end)
Tie bolt torque.....	25-28 ft. lbs. (34-38 N.M.)

### 1.2.2 General Information:

The hydraulic gear pump (fig. 1.2.2) is mounted at the end of the two hydrostatic piston drive pumps. The splined shaft of the hydraulic gear pump is driven by the internal splined shaft of the front hydrostatic pump at engine crankshaft speed. The output flow of the gear pump is directly related to engine speed. Maximum output will be at full rated engine speed.

Oil is drawn from the hydraulic oil reservoir and enters the hydraulic gear pump at the inlet port. The oil is pressurized and is directed through the outlet port to the hydraulic control valve for boom, bucket and auxiliary hydraulic functions.

### 1.2.3 Testing — Hydraulic Pump Flow:

Use test equipment which will meet the following performance figures when performing the test:

**Flow Meter** — Capable of reading up to 30 GPM (114 l/m) and equipped with a flow control valve.

**Pressure Gauge** — Capable of reading up to 3000 PSI (206.9 BAR).

**NOTE:** This test must be performed with the engine running. Ensure the loader is blocked securely with all 4 wheels clear of the ground.

1. Remove any attachment, raise the boom arms and engage the boom locks. Shut off the engine.

**WARNING**

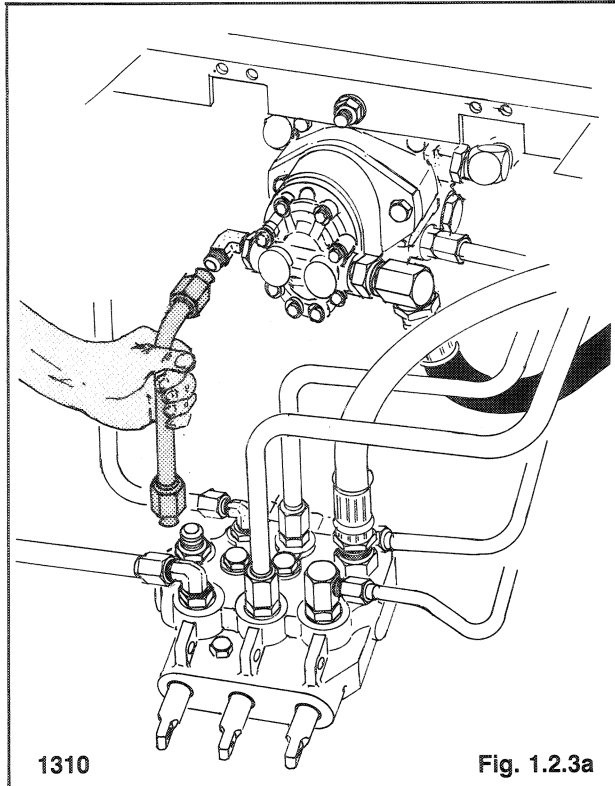
To avoid personal injury do not work on a loader with the boom arms in a raised position unless the boom locks are engaged.

2. Block the loader securely with all four wheels clear of the ground.
3. Remove the seat, hydrostatic shield and toe guard.
4. Disconnect the line between the hydraulic gear pump and control valve (fig. 1.2.3a).

**WARNING**

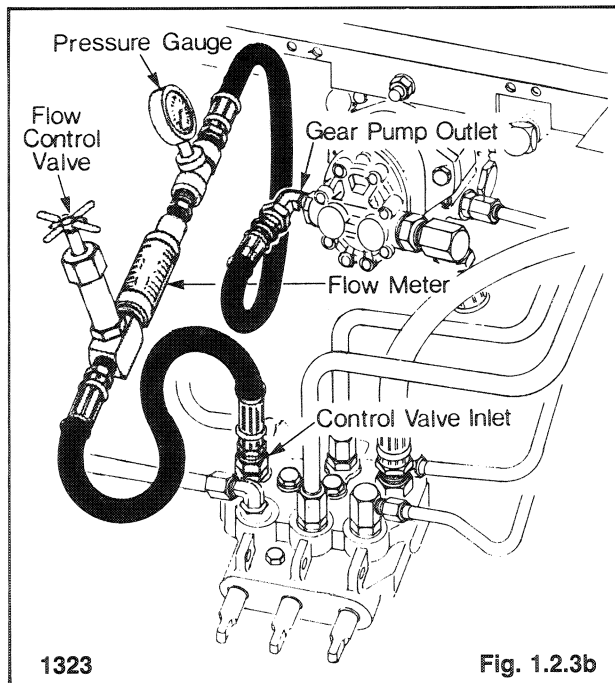
To avoid personal injury never repair or tighten hydraulic hoses or fittings with the engine running or the system under pressure.

## SECTION 1 HYDRAULICS



### IMPORTANT

When making repairs to the hydraulic system, keep all parts clean and remove dirt from the work area. Use caps and plugs on all lines and openings.



5. Connect the hydraulic tester between the gear pump outlet port and the control valve inlet port (fig. 1.2.3B).

The inlet hose from the hydraulic tester connects to the outlet port of the hydraulic gear pump.

The outlet hose from the hydraulic tester connects to the control valve inlet port.

6. Ensure the flow control on the hydraulic tester is fully open before starting the engine to prevent damage to the gear pump.

### IMPORTANT

There is no relief valve protecting the pump when the tester is connected. To prevent pump damage do not close the valve on the tester all the way or exceed 2150 PSI (148 BAR).

7. With the flow control on the tester fully open, start the engine and run it until it reaches normal operating temperature.
8. Set the engine speed to 1700 RPM and record the flow meter reading under no load conditions. Refer to section 4.4 on setting the engine speed.
9. Apply load gradually to 2150 PSI (148 BAR). Correct the engine speed to 1700 RPM by increasing the throttle setting. Record the flow meter reading under load.

**NOTE:** The flow reading taken at no load and at 2150 PSI (148 BAR) must be at a constant 1700 RPM. If the RPM is not kept constant, the flow readings will be incorrect and pump efficiency will not be determined correctly.

10. Determine pump efficiency by dividing the no-load reading into the 2150 PSI (148 BAR) reading.

If the efficiency is less than 75% the pump should be repaired or if necessary replaced.

11. Disconnect the tester. If the pump is not to be removed, reconnect the hydraulic line between the pump and control valve.

### 1.2.4 Gear Pump — Removal:

1. Remove any attachment, raise the boom arms and engage the boom locks. Shut off the engine.

### WARNING

To avoid personal injury do not work on a loader with the boom arms in a raised position unless the boom locks are engaged.

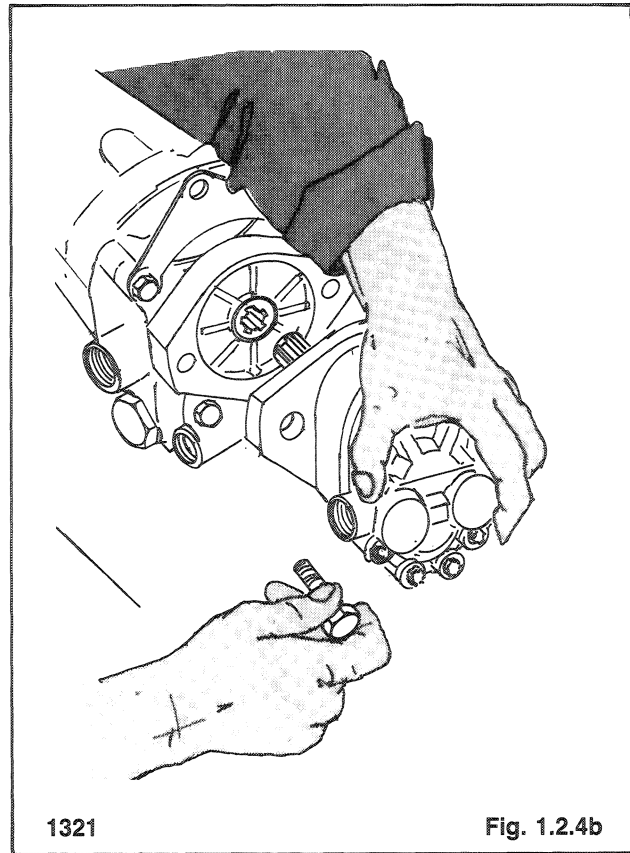
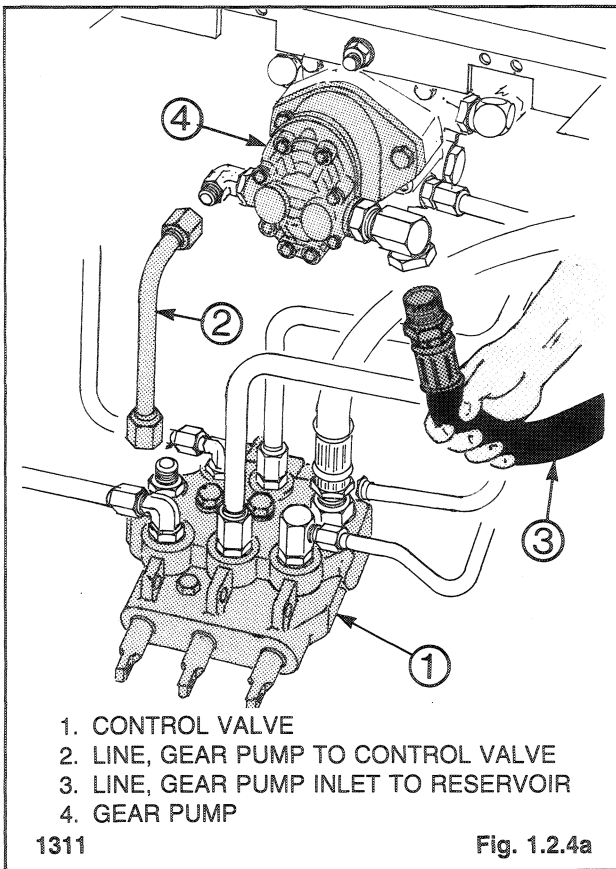
## SECTION 1 HYDRAULICS

2. Block the load securely with all four wheels clear of the ground.
3. Remove the seat, hydrostatic shield and toe guard.
4. Disconnect the line between the hydraulic oil reservoir and the hydraulic gear pump inlet port (fig. 1.2.4a). Cap the hose to prevent loss of hydraulic fluid.



### WARNING

To avoid personal injury never repair or tighten hydraulic hoses or fittings with the engine running or the system under pressure.

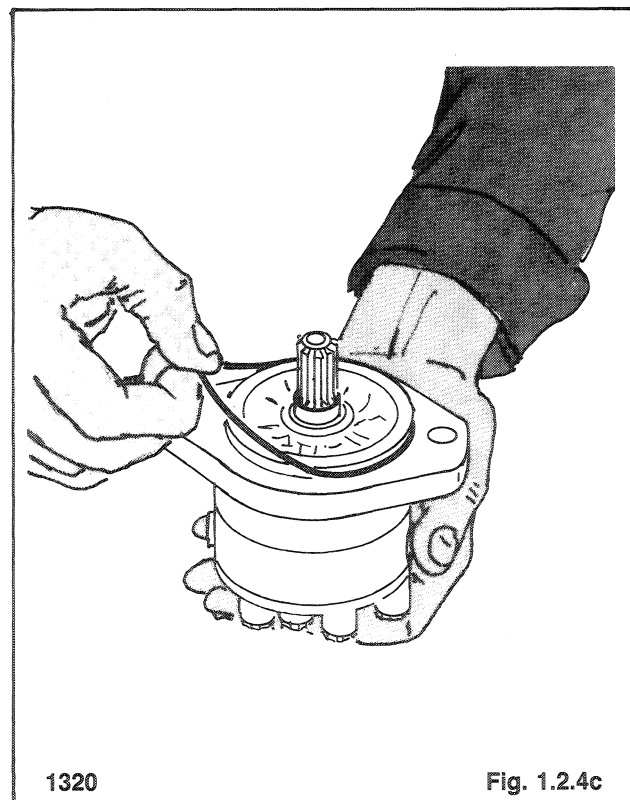


5. Disconnect the line between the hydraulic gear pump outlet port and the control valve (fig. 1.2.4a).
6. Remove the two bolts which hold the hydraulic gear pump to the front hydrostatic drive pump (fig. 1.2.4b).

On reassembly torque the two mounting bolts 27-31 lbs. ft. (37-42 N.M.).

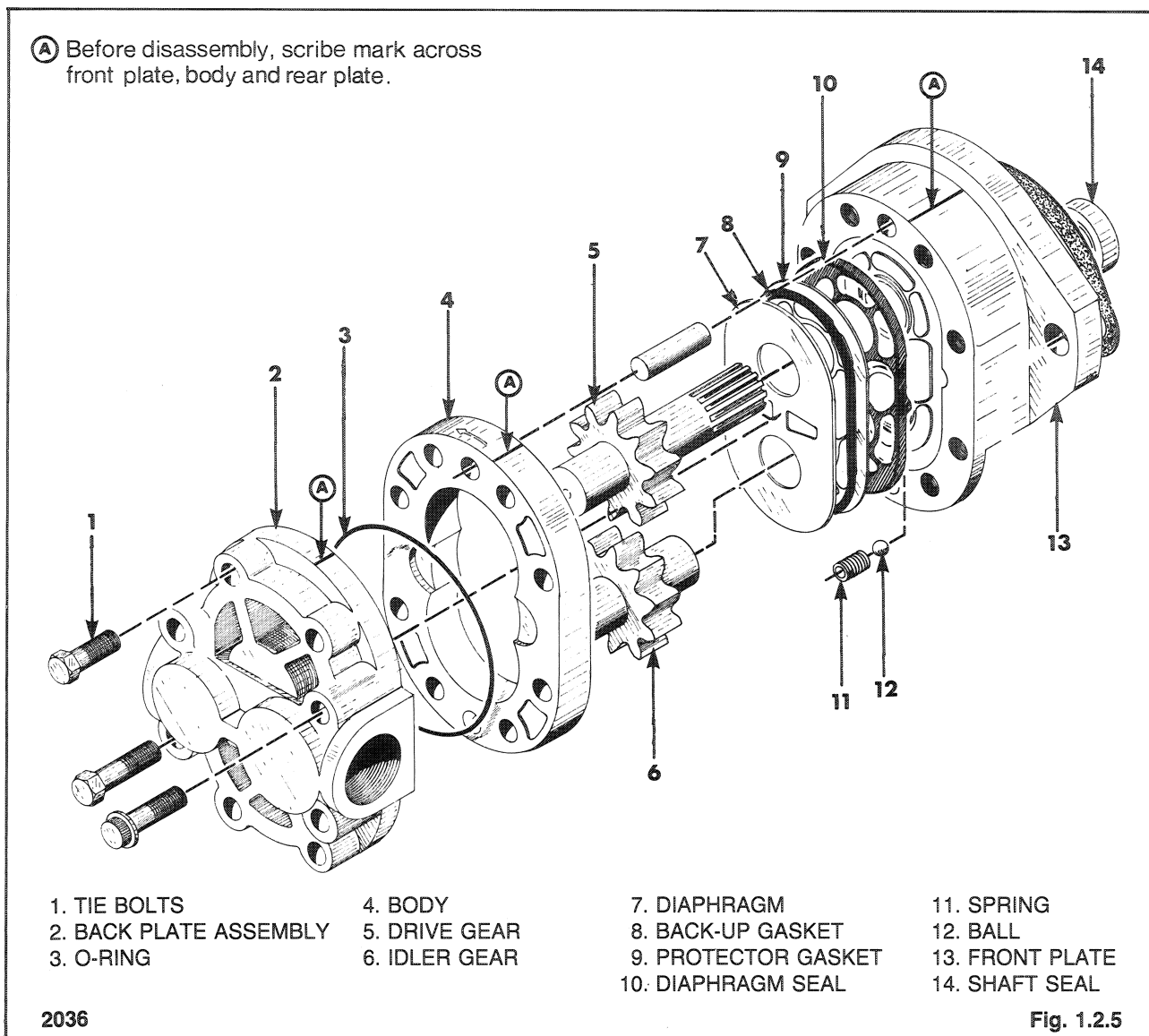
7. Remove the pump from the loader. Remove the O-ring from the mounting flange (fig. 1.2.4c).

On reassembly install a new O-ring.

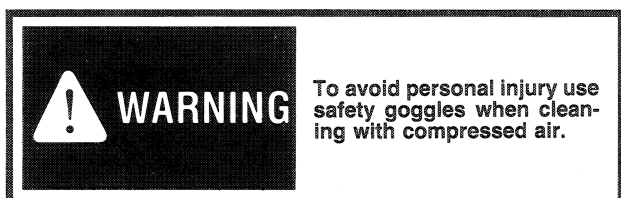


# SECTION 1 HYDRAULICS

## 1.2.5 Disassembly and Inspection:



Before disassembling the pump, clean the body with a suitable solvent and dry with compressed air. Ensure all openings are plugged to prevent solvent entering the pump. Mark the pump across the front plate, body and back plate to assist reassembly (fig. 1.2.5).



DISASSEMBLY — (Refer to fig. 1.2.5)

1. Remove the eight tie bolts (1).

2. Hold the pump in both hands and tap the drive shaft against a wooden block to separate the front plate (13) from the back plate (2). The body (4) will remain with either the front plate or back plate.

3. To separate the body from the section it remains with, place the drive gear (5) in the body and tap the protruding end of the gear shaft with a plastic mallet.

4. Remove O-ring (3) from the back plate and discard.

Thank you so much for reading.  
Please click the “Buy Now!”  
button below to download the  
complete manual.



After you pay.

You can download the most  
perfect and complete manual in  
the world immediately.

Our support email:

[ebooklibonline@outlook.com](mailto:ebooklibonline@outlook.com)