E-01: Install Dyno

SAFETY FIRST

- ☐ Follow all Caterpillar facility safety standards when performing this task.
- ☐ Caterpillar lockout/tagout requires a personal lock as well as the Electrician's lock when locking and tagging.
- ☐ Electrical hazard exists primarily when removing the Dynamometer (Dyno).
- ☐ Test cell area is cramped and has many tripping and overhead hazards.
- ☐ Observe all hoist safety requirements when moving the 4000 pound Dyno.
- ☐ Diesel fuel is potentially a carcinogen, observe safety requirements.

EQUIPMENT

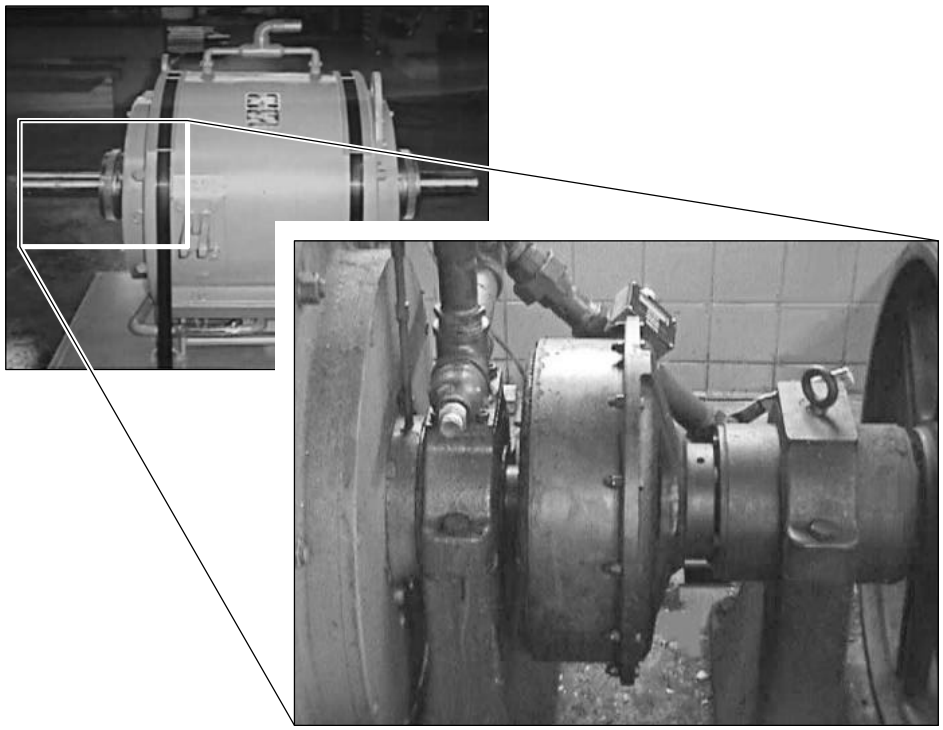
- ☐ hoist (required when moving the 4000 pound Dyno)
- ☐ basic Maintenance Mechanic hand tools
- ☐ 1/2" and 3/4" impact wrenches
- ☐ Allen wrench (to install the rpm gear cover)

RESOURCES

- ☐ print, if available
- ☐ Dynamometer Repair Manual

Install Dyno

1. Install the brake drum.

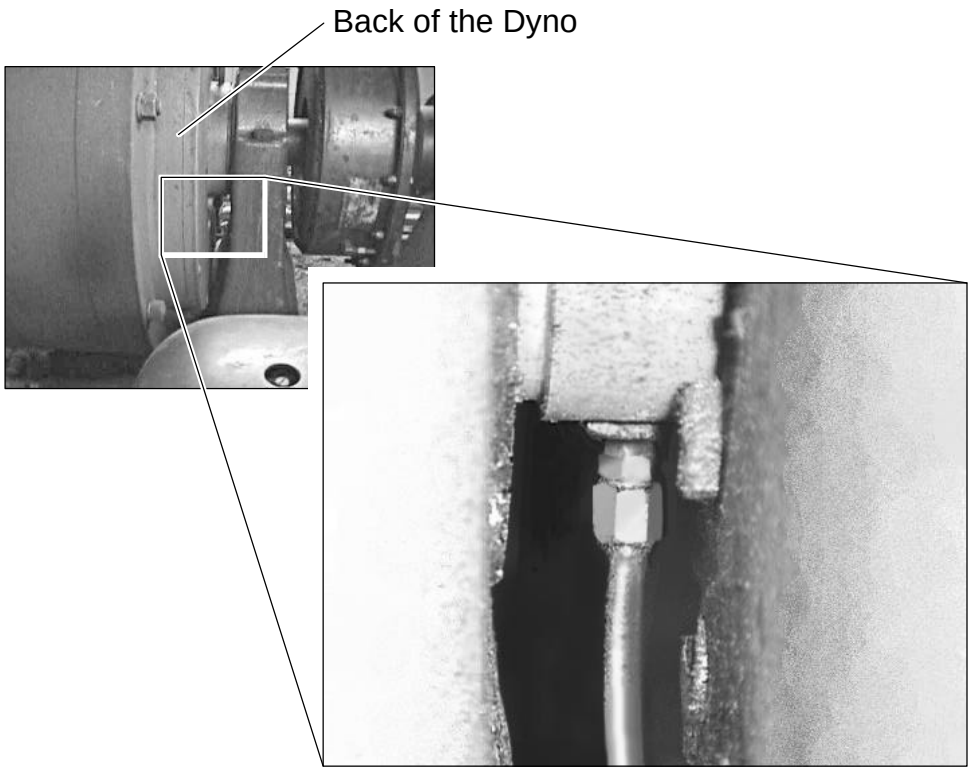


Brake Drum Placement

- ☐ Slide the drum onto the rear of the dynamometer (Dyno) shaft.
- ☐ Attach the brake drum with the taper lock bushing.
- ☐ Fasten the brake drum to the Dyno with the 1/2” impact wrench.

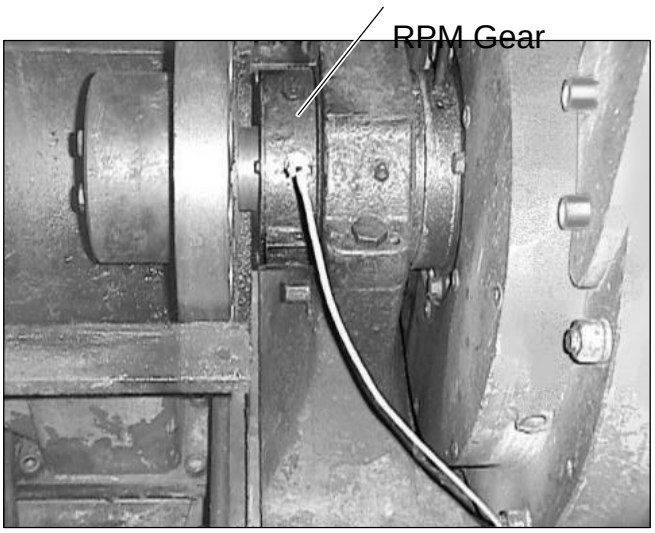
2. Install the lubrication drain lines.

☐ Attach the drain lines to the drain nipples on both ends of the Dyno.



Lubrication Lines

3. Install the RPM (tach) gear.



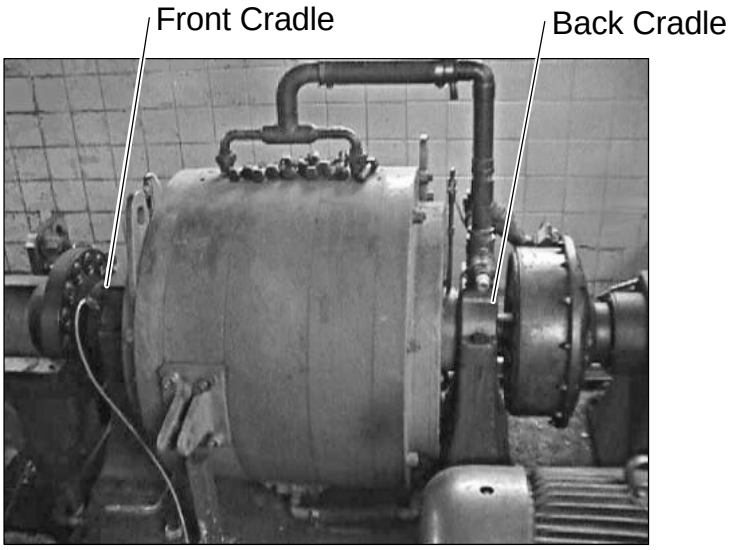
- ☐ Install the gear on the front end of the Dyno.
- ☐ Align the gear with the keyway, if applicable.
- ☐ Use the 1/2” impact wrench to wrench-tighten the two installation mounting bolts for the gear.

4. Install the coupling attachment.

- ☐ Slide the coupling attachment on the front shaft.
- ☐ Tighten the mounting bolts using the 3/4” impact wrench.

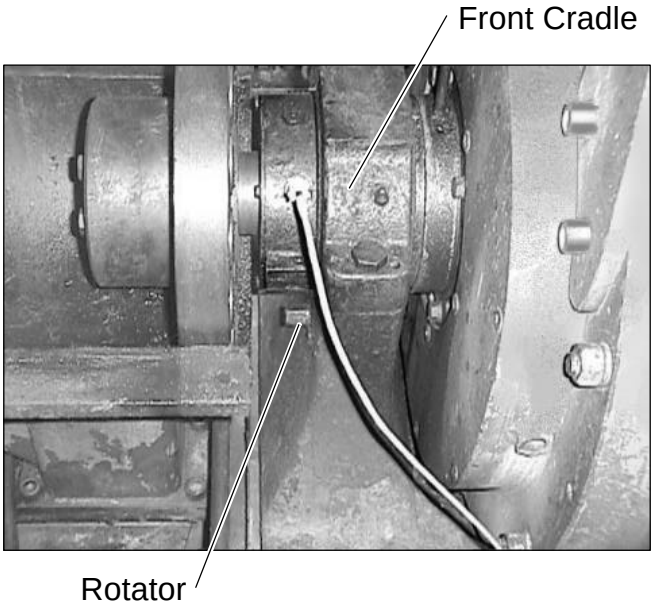
5. Ask an Electrician to check the Dyno for polarity.

6. Install the Dyno in the cradles.



- ☐ Verify secure rigging and move the Dyno with the hoist.
- ☐ Check the drain cap. Be sure the Dyno clears the drain cap before you set the Dyno on the cradles.

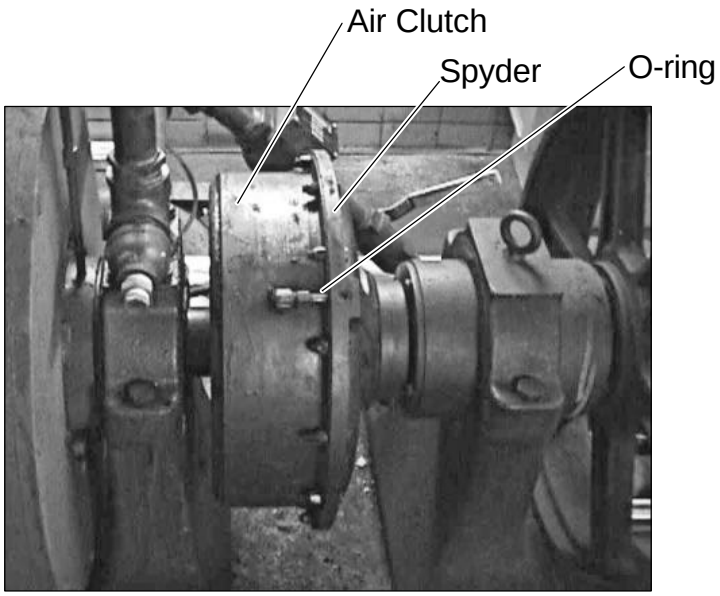
7. Turn the rotators to properly seat the Dyno.



- ☐ Use a 3/4” wrench and turn the rotators back and forth until the gears mesh, allowing the Dyno to sit properly on the cradles.

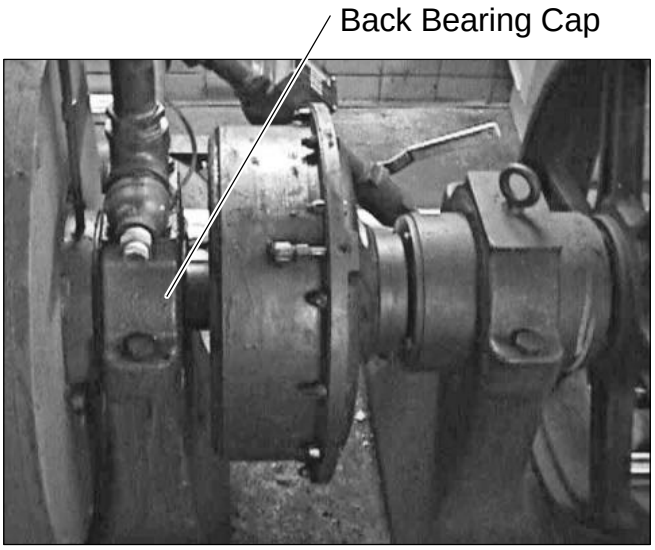
8. Bolt the air clutch to the spyder assembly.

- ☐ Align the O-ring assembly so that the bladder will expand inside the air clutch.
- ☐ Use a diagonal bolt installation to ensure square assembly of the air clutch to the spyder assembly.



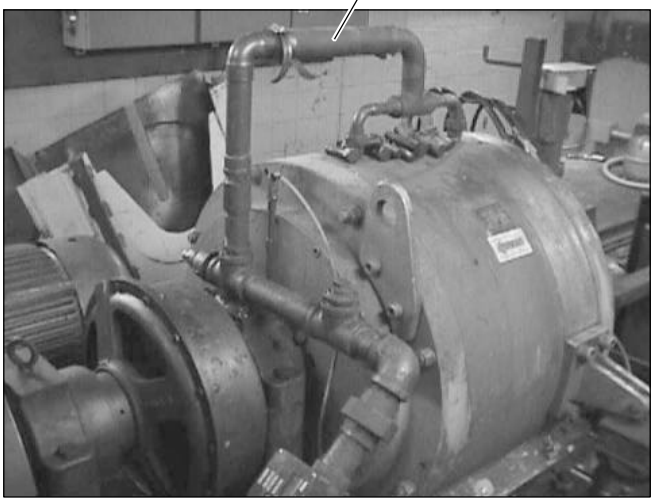
- ☐ Tighten the bolts wrench-tight with a socket wrench.

9. Install the back bearing caps.



- ☐ Tighten the bearing caps wrench-tight.

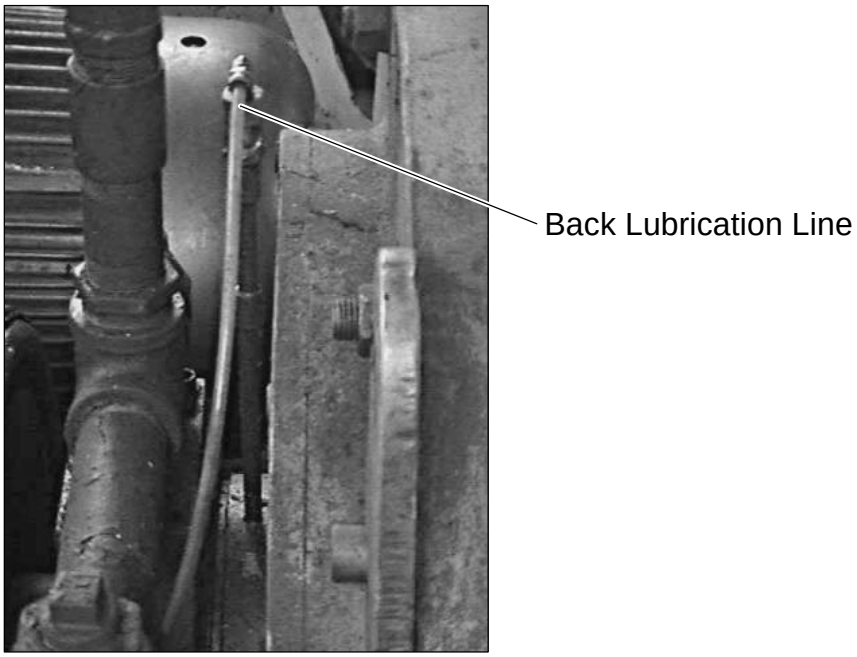
10. Install the water lines.



☐ Attach the hose and pipes, as required.

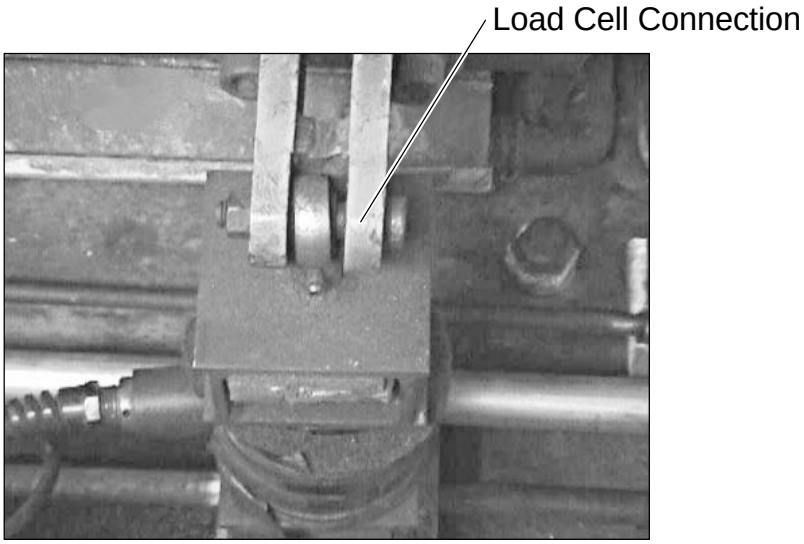
11. Install the back lube lines.

☐ Connect the line to the back lubrication input lines.



☐ Connect the pre-installed drain line to the test cell drainage tube.

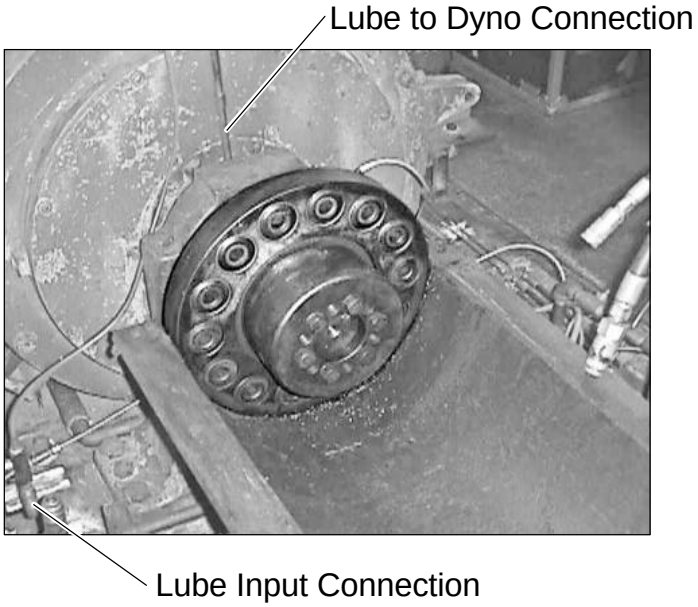
12. Install the load cell.



☐ Tighten the load cell wrench-tight.

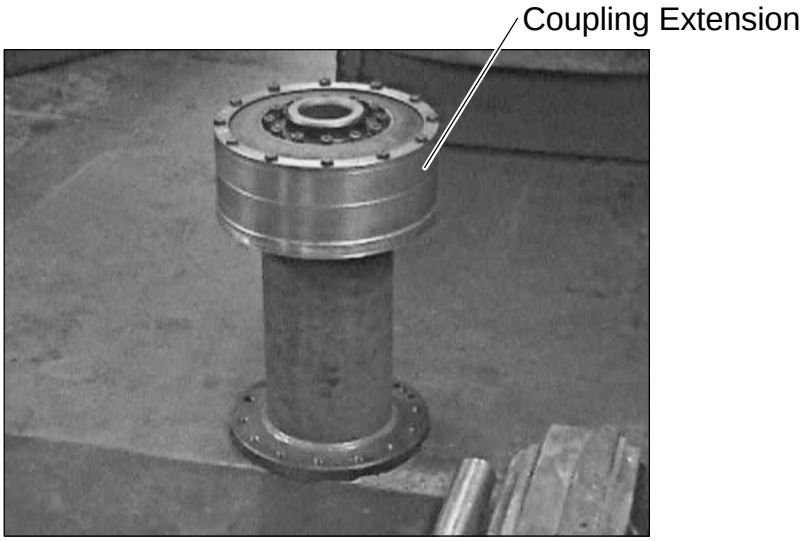
13. Install the front lube lines.

☐ Connect the front lube line to the front lube input.



☐ Connect the pre-installed drain line to the front test cell drainage tube.

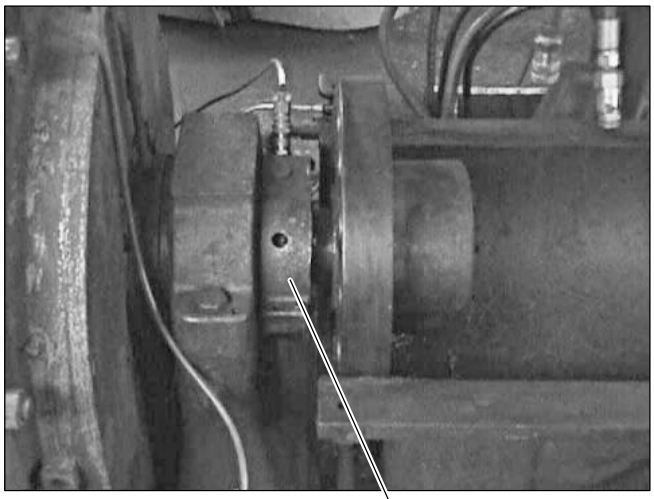
14. Install the coupling extension.



- ☐ Use the hoist to position and hold the coupling extension in place.
- ☐ Thread the mounting bolts from inside the mounted coupling into the coupling extension.
- ☐ Rotate the coupling to access the mounting bolt holes.
- ☐ Wrench-tighten the bolts using a wrench and a cheater bar.

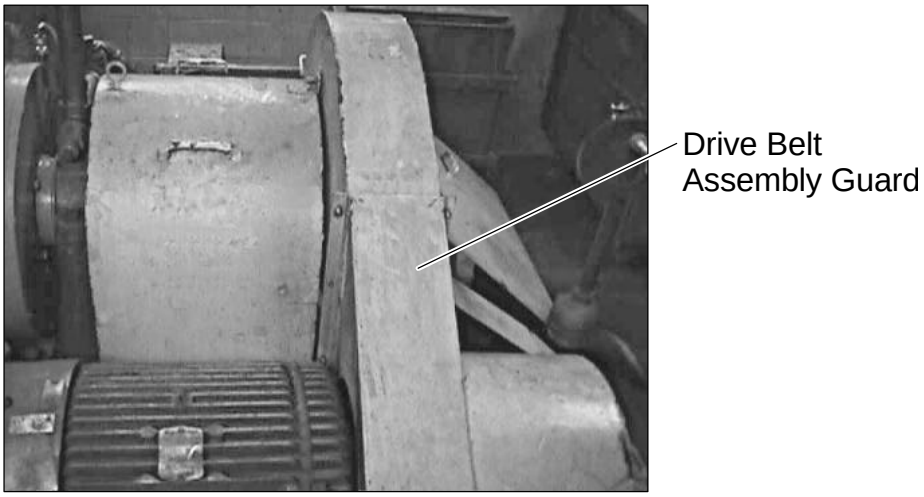
15. Install the front bearing cap.

16. Install the RPM gear housing.

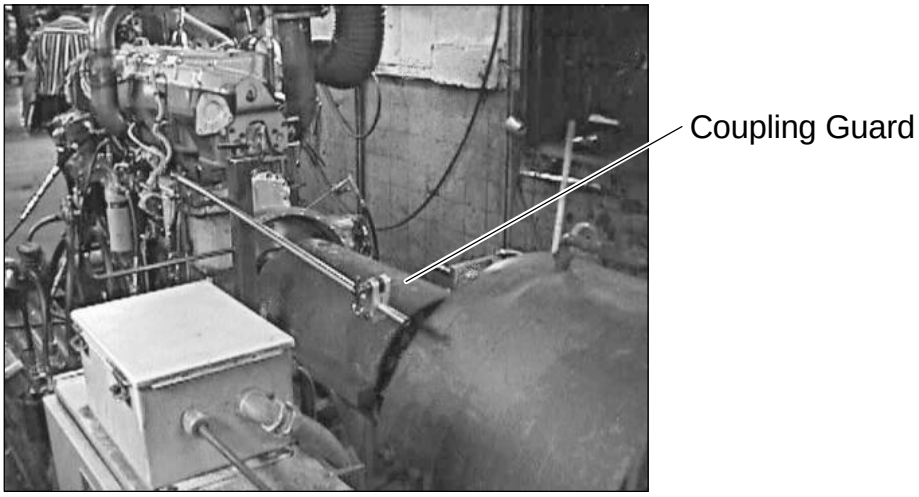


☐ Tighten the housing cover with appropriately sized Allen wrenches.

17. Install the drive belt assembly guard.



18. Install the coupling guard.



19. Verify the Dyno connection.

- ☐ Operate the Dyno according to the Maintenance Mechanic procedures.
- ☐ Observe the Dyno and correct any installation problems.