

# Power Circuit Breakers

## Hydraulic Tank Hoist for CG-38, CG-48, and CF-56A Breakers Installation and Maintenance Instructions

Service Information

**S290-15-1**

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### GENERAL

The McGraw-Edison hydraulic tank hoist for CG-38, CG-48 and CF-56A power circuit breakers consists of:

1. A power unit with
  - A. A motor-driven pump;
  - B. A control valve;
  - C. An oil sump.
2. Two cylinder assemblies.
3. Two hose assemblies.

Quick-disconnect couplings are provided for separating the hose assemblies and cylinders from the power unit.

The motor operates on 115 volts ac, 60-hertz, single-phase power.

NOTE: Power units for CG-38 and CG-48 breakers are furnished with 1/2-horsepower motors. For CF-56A breakers, power units are equipped with one-horsepower motors and higher relief-valve pressure settings.

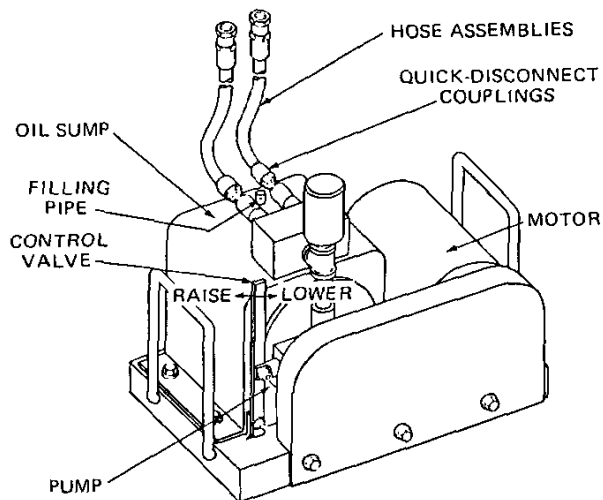


Figure 1  
Power unit for hydraulic tank hoist.

### SHIPPING

The hydraulic tank hoist is shipped in two separate wooden boxes. One box contains the power unit with seven quarts of oil, six quarts of which are in the sump. The other box contains the two cylinder-and-hose assemblies.

### INSTALLATION

Install the hydraulic tank hoist on the breaker with the cylinders suspended vertically and connected to the breaker tank and tank top.

#### CAUTION

When installing the hydraulic tank hoist, make sure the piston-rod adapter rings are properly positioned to prevent the tank support angle from scoring the piston rod and causing a leak that will prevent future operation.

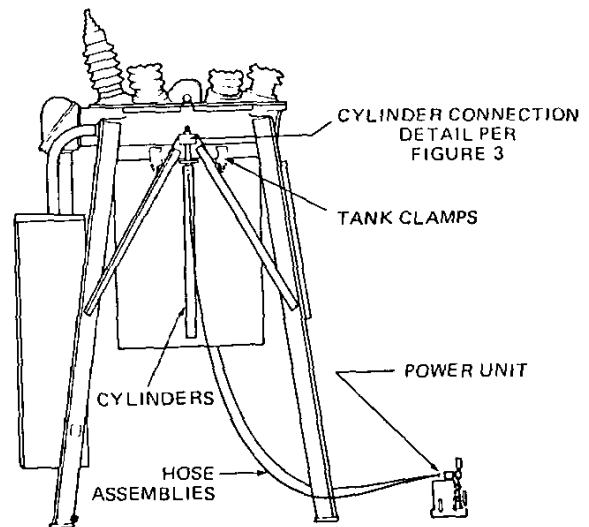


Figure 2  
Hydraulic tank hoist installation—CG-38 and CG-48 breakers.

### PROCEDURE

1. Connect the hose assemblies from the cylinders to the quick-disconnect couplings on the power unit.
2. Move the control valve to the LOWER position to release oil (Figure 1).
3. Pull out the piston rod approximately 8 inches.
4. Remove all hardware from the exposed piston rod.
5. Clean all dirt and grit from the piston rod to prevent damaging the oil seals in the cylinders.

*These instructions do not claim to cover all details or variations in the equipment, procedure, or process described, nor to provide directions for meeting every possible contingency during installation, operation, or maintenance. When additional information is desired to satisfy a problem not covered sufficiently for the user's purpose, please contact your McGraw-Edison Power Systems Division sales engineer.*



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6. CG-38 and CG-48 Breakers (Figures 2 and 3):

- A. Place an adapter ring and seat two spherical washers on the piston rod.
- B. Remove the cylinders one at a time from the container.
- C. Insert each piston rod through the support angle on the tank and the lug on the tank top.
- D. Place a spacer and two more spherical washers and a flat washer on each piston rod.
- E. Secure the piston rod with nut and jamnut.
- F. Tighten the jamnut.

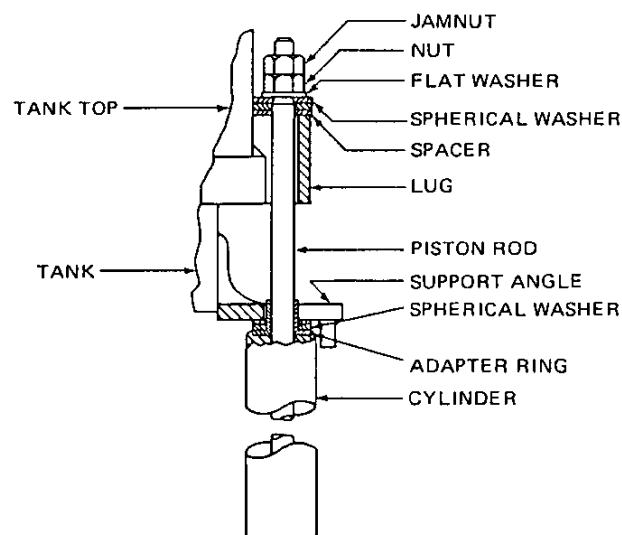


Figure 3

Connection of cylinders to tank—CG-38 and CG-48 breakers.

7. CF-56A Breakers (Figures 4 and 5):

- A. Place the rod guide, the spring, and the adapter ring on the piston rod.
- B. Remove the cylinders one at a time from the container.
- C. Insert each piston rod through the tank flange, making sure the adapter ring is properly seated.
- D. Screw the piston rod into the tank top and tighten securely.

**CAUTION**

Make sure the power unit used on CF-56A breakers is furnished with a one-horsepower motor. A 1/2-horsepower motor does not have the capacity to lift a CF-56A tank.

8. Start the pump motor.
9. Move the control valve to the RAISE position.
10. Place the control valve in the center position.
11. CG-38 and CG-48 Breakers: Remove the tank support clamps.

CF-56A Breakers: Remove the tank-retaining nuts.

NOTE: The cylinders will support the weight of the tank with oil.

12. To lower the tank, move the control valve to the LOWER position (Figure 1).
13. To hold the tank at an intermediate level, return the control valve to the center position.
14. To lift the tank, move the control valve to the RAISE position.
15. CG-38 and CG-48 Breakers: Replace the tank support clamps.

CF-56A Breakers: Secure the tank-retaining nuts.

16. If the tank hoist is to be removed when the tank is lowered, loosen the piston rods and remove the cylinder assemblies from the tank.

*Do not allow the cylinder assemblies to drop.*

- A. Draw the piston rods into the cylinders by operating the control valve.
- B. Replace all hardware on the piston rods to avoid loss of parts and damage to the piston rods.

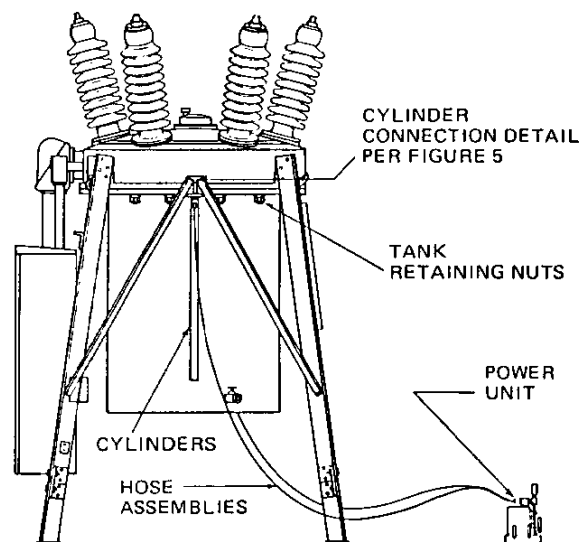


Figure 4

Hydraulic tank hoist installation—CF-56A breakers.

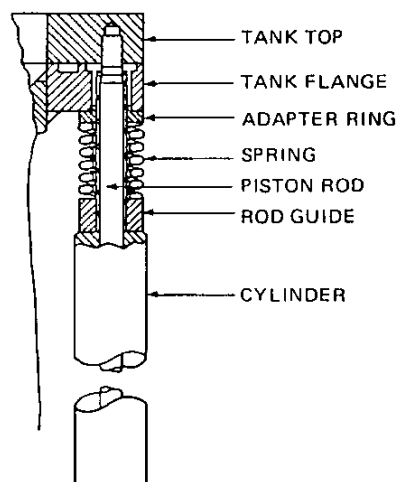


Figure 5

Connection of cylinders to tank—CF-56A breakers.

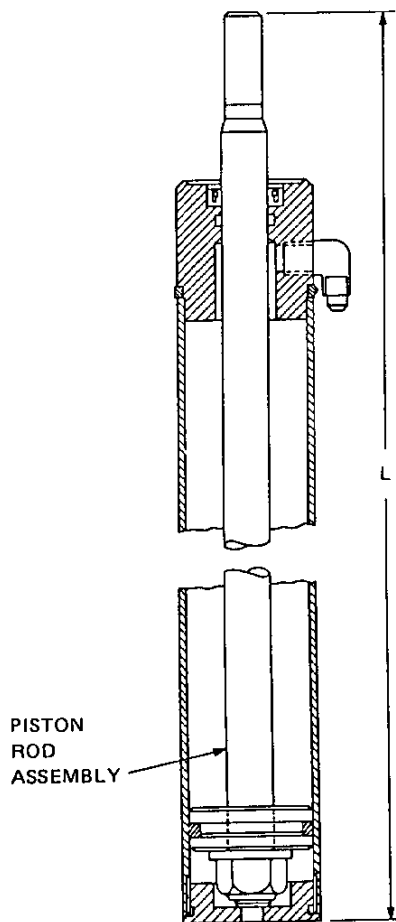


Figure 6  
Cylinder assembly for hydraulic tank hoist.

Breaker Type	Power Unit (Dwg No.)	Motor (hp)	Cylinder Assembly (Dwg No.)	Measurement L* (in.)
CF-56A	FB-8633-C	1	FC-8039-A	54
CF-37	FB-8633-B	1/2	FC-8039-C	57
CF-40	FB-8633-B	1/2	FC-8039-C	57
CG-38	FB-8633-B	1/2	FC-8039-C	57
CG-48	FB-8633-B	1/2	FC-8039-C	57
CF-48	FB-8633-B	1/2	FC-8039-B	65

\* Measurement L represents the total length of the cylinder assembly (including piston rod) when the piston is bottomed in the cylinder.

## MAINTENANCE

The McGraw-Edison hydraulic tank hoist should be kept clean at all times.

The pump and valve are self-lubricating; therefore, they require no maintenance.

Service the motor as indicated on the motor nameplate.

Use only SAE 10W motor oil in the pump and the cylinders.

1. The total oil capacity of the tank hoist is seven quarts.

*Do not add oil unless the hoses have been connected and the piston rods are extended to their full length.*

A. The oil level should be 1/2 to 1 inch below the screen in the filling pipe.

B. Periodically, check the oil level in the sump and, if necessary, add oil to maintain the prescribed level.

NOTE: With the cylinders and the hoses full of oil, less than 2 inches of oil will remain in the sump.

## STORAGE

1. Clean the piston rods to remove all dirt.
2. Place all hardware on the ends of the piston rods.
3. Pump oil into the cylinders until the piston rods bottom.

NOTE: The piston rod will extend 6 to 9 inches out of the cylinder assembly.

4. Move the control valve to LOWER position to release oil and pull the piston rod out 2 inches.

NOTE: This 2-inch extension of the piston rod will compensate for oil volume expansion due to temperature changes during storage.

5. Return the control valve to the center position.
6. Disconnect the hose assemblies from the power unit. The quick-disconnect couplings prevent excessive loss of oil; only a few drops will appear.

NOTE: Do not remove the hose assemblies from the cylinders.

7. Place the cylinders in the storage box, butting the cylinder bottoms against the box.
8. Fit the hose assemblies into the box carefully to avoid kinks in the hoses.

NOTE: For prolonged periods of storage, lightly coat the exposed piston rods and the accompanying hardware with grease.

9. Close and secure the box.
10. Place the power unit in its wooden box and cover the box properly.
11. Store the power unit and the cylinder-hose assembly boxes together.