

AA-02

MAINTENANCE MECHANIC TRAINING

SKILL CHECK GUIDE

Duty AA: Pumps (Fluid Power)

AA-02: Overhaul Piston Pump

Issued 01/01/99

Rationale

This Skill Development Guide provides the knowledge a Learner needs to overhaul a piston pump. The Learner must be able to disassemble, clean and inspect the pump components, reassemble, and prepare the piston pump for testing.

Skill Check Set-Up

Designate a piston pump that needs to be overhauled. Check to ensure that the parts required for overhauling the piston pump are in stock.

Observe as the Learner overhauls the pump. Check to ensure that all defective parts are replaced. All polished surfaces must be free from wear or scoring. The tolerance between the piston and shoe must not exceed 0.003 inch. The shoe must swivel smoothly on the ball end of the piston. The swash plate must be aligned according to the model code. All safe practices must be demonstrated.

Provide the tools, materials, and resources needed to demonstrate the task.

What The Learner Will Need

This section contains the safety information, tools, and resources you will need before overhauling a piston pump.

SAFETY FIRST

**DON'T TAKE
CHANCES**

- Follow all Caterpillar facility safety standards when performing this task.
- Wear heavy industrial gloves for protection against the hazards associated with the cleaning solvents.
- An explosion hazard exists with cleaning solvents. Smoking is not permitted in the cleaning area.
- Know the location of the MSDS for the cleaning solutions.
- Solvents must be disposed of according to the HAZMAT regulations.



- hammer and punch
- external snap ring pliers
- screwdriver (flat blade)
- Allen wrenches
- air impact wrench with 15/16, 1 1/4, and 9/16 inch socket
- wiping rags, paper towels
- Maintenance Mechanic hand tools
- rebuild kit



- Service and Maintenance Instructions, Fixed and Variable Displacement in-line piston pumps and motors
- work order printout
- repair ticket
- crib parts printout



Skill Check

Given a repair ticket, overhaul the piston pump.

Needs
Mastered Practice

Safe Work Practices

- | | | |
|-------|-------|---|
| _____ | _____ | 1. Follow all Caterpillar facility safety standards when performing this task. |
| _____ | _____ | 2. Wear heavy industrial gloves for protection against the hazards associated with the cleaning solvents. |
| _____ | _____ | 3. An explosion hazard exists with cleaning solvents. Smoking is not permitted in the cleaning area. |
| _____ | _____ | 4. Know the location of the MSDS for the cleaning solutions. |
| _____ | _____ | 5. Solvents must be disposed of according to the HAZMAT regulations. |

Task Standards

- | | | |
|-------|-------|--|
| _____ | _____ | 1. All polished surfaces must be free from wear or scoring. |
| _____ | _____ | 2. The tolerance between the piston and shoe must not exceed 0.003 inch. |
| _____ | _____ | 3. The swash plate must be aligned according to the model code. |
| _____ | _____ | 4. The shoe must swivel smoothly on the ball end of the piston. |
| _____ | _____ | 5. All safe practices must be demonstrated. |



Evaluator's Sign-Off

The Learner has demonstrated safe work practices and competent performance of the task.

Evaluator: _____ Date: _____

Learner: _____ Clock No: _____