

AA-02

MAINTENANCE MECHANIC TRAINING

TRAINER'S GUIDE

Duty AA: Pumps (Fluid Power)

AA-02: Overhaul Piston Pumps

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Instructions To The Trainer

1. The Learner will contact you when ready to practice overhauling a piston pump.
2. Be prepared to demonstrate the steps for this task.
3. Ask the Learner to contact the Evaluator when ready for the Skill Check.



Skill Objective

Given a repair ticket, overhaul the piston pump.

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.

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
- screw driver (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



Practice Set-Up

The Learner may perform the following practice to help prepare for the Skill Check. Set up the practice for the Learner. Assist the Learner during the practice, if necessary; answer any questions concerning the task; and be prepared to demonstrate the task to the Learner. Make sure the Learner follows safe work practices while practicing the task.

Practice 1

Designate a piston pump for the overhauling activity. Make sure that the Learner selects the required repair kit. During this practice the Learner will:

- disassemble the piston pump.
- clean and inspect the pump components.
- reassemble the piston pump.

Observe as the Learner reassemble the piston pump to ensure that the piston pump is assembled properly. The Learner is required to follow all the recommended safe practices associated with handling cleaning solvents. All cleaning solutions must be disposed of per HAZMAT regulations.

Practice Objective 1

The piston pump must be overhauled using the specified rebuild kit. 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.

Next Step

Allow the Learner to continue practicing and developing skills needed to demonstrate the task. The Learner should ask the Evaluator to schedule a Skill Check when ready to demonstrate the task unaided and meet all the task standards and safe work practices.