

L-08

TOOLMAKER TRAINING

TRAINER'S GUIDE

Duty L: External Grinder
L-08: Set Up External Grinder

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Instructions To The Trainer

1. The Learner will contact you when ready to practice setting up the external grinder.
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 an external grinder, a workpiece (part) to be ground, and appropriate accessories (work centers, arbors, drive dogs, etc.), set up the external grinder.

Task Standards

1. The part must be mounted so that it can be ground to the specified dimensions without damage to the part or the grinder.
2. All safety requirements must be demonstrated.

What The Learner Will Need

This section contains the safety information, tools, and resources you will need before setting up the external grinder.



- Follow all Caterpillar facility safety standards when performing this task.
- Be aware of rotating equipment and pinch points.



- external grinder
- part (workpiece to be ground)
- fixtures and/or tooling to adapt the part to the external grinder
- dial indicator
- copper/brass knocker
- lubricating grease
- shop towels
- tools to tighten drive dogs



- part dimensional print
- process sheet
- external grinder documentation



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:

Ask the Learner to install a long part between centers, and support it with a steady rest.

Tools and equipment for Practice 1:

- external grinder
- part, of sufficient length, with a center recess at both ends and a finished OD near the middle
- work centers and steady rest

Practice Objective 1:

The part must rotate smoothly and securely on the headstock-tailstock centerline, without radial or axial movement.

Practice 2:

Ask the Learner to install a part on a tapered arbor or a nut arbor.

Tools and equipment for Practice 2:

- Tapered arbor or nut arbor
- Part with suitable ID to work on a tapered arbor or nut arbor
- Work centers

Practice Objective 2:

The part must be securely held on the tapered arbor and must rotate without radial or axial runout on the headstock-tailstock centerline.

Practice 3:

Turn the piece between center by hand to ensure there is not too much tension.

Tools and equipment for Practice 3:

- Tailstock
- Work centers

Practice Objective 3:

The piece must turn without binding or too much tension.

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.