

# **G-19**

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## **MAINTENANCE MECHANIC TRAINING**

### **TRAINERS GUIDE**

**Duty G: Conveyors**

**G-19: Troubleshoot Chip Conveyor**

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## Instructions To The Trainer

1. The Learner will contact you when ready to practice troubleshooting a chip conveyor.
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 chip conveyor that is not working correctly or at all, troubleshoot the problem.

### Task Standards

1. The conveyor problem must be correctly identified as quickly as possible.
2. The most efficient procedures for correcting the problem must be proposed.
3. After the problem is corrected, the conveyor must operate normally.
4. All safety requirements must be demonstrated.

## What The Learner Will Need

This section contains the safety information, tools, and resources the learner will need before troubleshooting a chip conveyor.



- Follow all Caterpillar facility safety standards when performing this task.
- The pickup end of chip conveyors is usually in a confined space; a permit, harness, and special precautions are required.



- flashlight
- hand tools necessary for removing inspection covers
- wrenches necessary for adjusting conveyor, drive belt, and drive chain tension
- pry bar
- come-a-long



- conveyor documentation and prints
- the person who reported the conveyor problem or symptoms
- maintenance records on the conveyor
- the person responsible for Preventive Maintenance on the conveyor
- Electrician
- Welder



## 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 Learner to list the steps to follow if the red trouble indicator light is on. The Learner should refer to the troubleshooting chart and list the steps as follows:

- Ask an Electrician to reset the drive motor overload breaker.
- Restart the motor.
- If the conveyor does not run, check the accessible parts for a jammed condition.
- If the motor runs, monitor operation for an extended period, checking for conditions that could have been responsible for an intermittent jam or overload.
- If there is no evidence of a jam or overload, ask the Electrician to check the motor for excessive current, shorts, grounds, overheating, bad bearings, etc.

### Practice Objective 1

The Learner must list the steps that will identify possible causes of a tripped conveyor drive motor.

### Practice 2

Ask the Learner to list the possible causes of a jammed conveyor. The Learner should refer to the troubleshooting chart and list the causes as follows:

- material or parts wedged between the sprockets and the conveyor chain links, between the conveyor links and the guides, or between the conveyor links and the conveyor structure.
- broken links or missing link cotter pins and washers
- links caught on worn link guides

- link hinge pins shifted out of position far enough to catch on the conveyor structure
- severely worn sprockets or chain rollers
- conveyor chain so loose that it has wedged high on a sprocket

### Practice Objective 2

The Learner must list all typical causes of a conveyor jammed in both forward and reverse.

### Practice 3

Practice 3 requires a malfunctioning conveyor, or one that you have prepared with a fault or problem of some kind. Choose a conveyor that is out of service, or that can be temporarily shut down. Sample faults you might prepare include:

- manually tripping the drive motor overload breaker or the branch circuit breaker
- loosening the drive belt or chain
- removing a conveyor link cotter pin and partially withdrawing a hinge rod
- jamming a pipe or piece of tooling between the conveyor links and a sprocket

Ask the Learner to troubleshoot the conveyor, identifying the problem and planning how to correct it.

### Practice Objective 3

The Learner must identify the actual problem and suggest measures to correct it in the most efficient way.

## Next Step

Allow the Learner to continue practicing and developing the 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.