


Inspection and Maintenance of Switches and Derails

### Inspection & Maintenance of Hydraulic Switches and Derails



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Inspection and Maintenance of Switches and Derails

### Riders Depend on Us



What do you recall about electro-hydraulic switches?

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Inspection and Maintenance of Switches and Derails

### Outline

- Inspect and maintain hydraulic switches

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Inspection and Maintenance of Switches and Derails

### Key Terms

**Activity:** In your course book, circle any key terms you feel you need to learn better.

Example:

- Restrictors

INSPECTION AND MAINTENANCE OF SWITCHES  
MODULE 7: INSPECTION AND MAINTENANCE OF ELECTRO-HYDRAULIC SWITCHES AND DERAILS

**Module 7**  
**INSPECTION AND MAINTENANCE OF HYDRAULIC SWITCHES AND DERAILS**

Outline

- 7-1 Overview
- 7-2 General Inspection
- 7-3 Lubrication
- 7-4 Testing
- 7-5 Summary

Purpose and Objectives:

The purpose of this module is to provide an overview of the inspection and preventive maintenance to be performed on electro-hydraulic switches.

Following the completion of this module, the participant should be able to complete the exercises with an accuracy of 70% or greater.

- Inspect and maintain hydraulic switches.

Key Terms

A	Adjustment	C	Checklist	H	Hydraulic
B	Ball Valve	D	Displacement	I	Inspection
C	Cartridge Valve	E	Electro-Hydraulic	J	Joint
D	Check Valve	F	Flow Control	K	Knob
E	Control Valve	G	Gate Valve	L	Lubrication
F	Directional Control Valve	H	Gate Valve	M	Manometer
G	Flow Control Valve	I	Gate Valve	N	Manometer
H	Gate Valve	J	Gate Valve	O	Manometer
I	Gate Valve	K	Gate Valve	P	Manometer
J	Gate Valve	L	Gate Valve	Q	Manometer
K	Gate Valve	M	Gate Valve	R	Manometer
L	Gate Valve	N	Gate Valve	S	Manometer
M	Gate Valve	O	Gate Valve	T	Manometer
N	Gate Valve	P	Gate Valve	U	Manometer
O	Gate Valve	Q	Gate Valve	V	Manometer
P	Gate Valve	R	Gate Valve	W	Manometer
Q	Gate Valve	S	Gate Valve	X	Manometer
R	Gate Valve	T	Gate Valve	Y	Manometer
S	Gate Valve	U	Gate Valve	Z	Manometer
T	Gate Valve	V	Gate Valve		
U	Gate Valve	W	Gate Valve		
V	Gate Valve	X	Gate Valve		
W	Gate Valve	Y	Gate Valve		
X	Gate Valve	Z	Gate Valve		
Y	Gate Valve				
Z	Gate Valve				

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Inspection and Maintenance of Switches and Derails

### Recall

Thinking back to previous knowledge or course work, what do you already know about inspection and maintenance for hydraulic switches and derails?

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Inspection and Maintenance of Switches and Derails

### Overview

- Example: Hanning and Kahl (H&K)
  - Installed between rails & in pavement
- Major maintenance differences
  - Look for hydraulic fluid leaks throughout but most common are at connection points like at the hoses and the ram/cylinder.
  - The switch is installed below grade, therefore it is imperative that the drainage system be installed and maintained properly.

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Inspection and Maintenance of Switches and Derails

## Overview



Always take appropriate actions to secure the work area before performing any inspections/maintenance. This includes: requesting time on the line, securing points with switch block and spike, disconnecting electricity and shutting off appropriate valves. More information on preparing for inspection and maintenance, refer to Course 202 Module 1: Overview and Safety.

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Inspection and Maintenance of Switches and Derails

## Sensory Inspection

Sense	Example Problems
	Debris, dirt, clutter, rust, worn insulation, cracks in rubber components (bellows, hoses, etc.), <b>earth case and covers are secure and in good condition*</b> , <b>hydraulic fluid leaks*</b> , <b>poor drainage*</b>
	Hydraulic fluid, burning (motor, etc.)
	Loose hardware, etc

\*Specific to electro-hydraulic switches/derails

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Inspection and Maintenance of Switches and Derails

## Sensory Inspection

- Ensure switch is clean
- Inspect Electro-Hydraulic specific hardware:
  - Earth Case
  - Proximity Sensors
  - Bellows
  - Hydraulic Pump
  - Hydraulic Fluid
  - Hydraulic Tank
  - Hydraulic Hoses
  - Electrical Connections
  - Directional Control Valve
  - Restrictors
  - Hydraulic Ram/Cylinder
  - Inlet/Outlet Connections



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