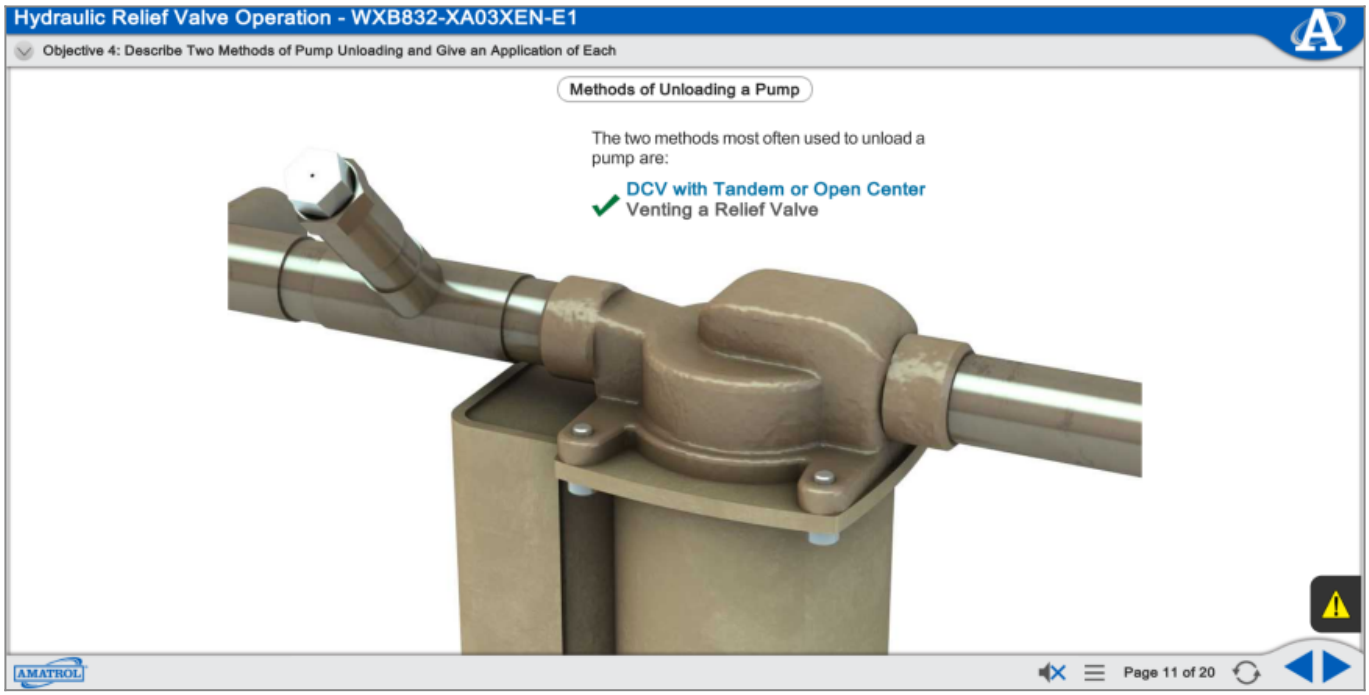
Intermediate Hydraulics | eLearning Course



eLearning Course: MB832

Hydraulic power is used in everything from automotive brakes to industrial robots. Amatrol's Multimedia Courseware – Intermediate Hydraulics (MB832) teaches learners about essential intermediate hydraulics concepts applicable across a variety of modern industries, such as manufacturing, transportation, agriculture, and construction. Learners using Amatrol's intermediate hydraulics eLearning course study a wide variety of intermediate hydraulics concepts and skills, such as the operation and applications of hydraulic directional control valves, hydraulic cylinders, hydraulic relief and check valves, and accumulators.

Teach Intermediate Hydraulics

Amatrol's eLearning curriculum uniquely, and thoughtfully combines in-depth theoretical knowledge with practical, hands-on skills. This powerful combination of knowledge and skills solidifies understanding and creates a strong foundation for pursuing more advanced skills.

Hydraulic DCV Applications
Learners begin with an introduction to hydraulic directional control valves (DCVs), including two-position, pilot-operated, and cam-operated DCVs. Individual lessons focus on topics like the function and applications of a hydraulic 4/2 DCV, the function and applications of a hydraulic pilot-operated DCV, and the types of hydraulic cam-operated valves. Learners will also practice skills, such as connecting and operating a hydraulic DCV with a tandem center, connecting and operating a 4/2 DCV to function as a 3/2 DCV, and designing a rapid traverse-slow feed hydraulic circuit using a cam-operated valve.

Hydraulic Cylinder Applications
Learners will study the components and operation of hydraulic cylinders, including cylinder types, regeneration circuits, pressure-compensated flow control valves, and synchronization circuits. Individual lessons focus on topics like cylinder mounting styles, applications of the principle of cylinder regeneration, upstream and downstream effects on flow control valve operation, and methods used to synchronize cylinders. Learners will also practice skills, such as calculating the extend speed of a cylinder in regeneration, connecting and adjusting a pressure-compensated flow control valve, and setting up, adjusting, and operating a cylinder synchronization circuit using flow control valves.

Build Virtual Hydraulic Systems

Amatrol’s eLearning curriculum is unique in that it thoughtfully combines in-depth theoretical knowledge with practical, hands-on skills. This powerful combination of knowledge and skills solidifies understanding and creates a strong foundation for pursuing more advanced skills.

Hydraulic Relief Valve Operation

Learners using Amatrol’s intermediate hydraulics eLearning course will study basic principles of hydraulic relief valve operation, including pump unloading applications and remote pressure control. Individual lessons focus on topics like the operation of a pilot-operated relief valve, methods of pump unloading, and multiple pressure relief valve operation. Learners will also practice skills, such as connecting a pilot-operated relief valve to unload a pump by venting, connecting and operating a remotely controlled pilot-operated relief valve circuit, and designing a circuit to provide a two-pressure control with unloading.

Hydraulic Check Valve Applications

Learners will study various aspects and components of hydraulic check valves, including pressure port check valve circuits, pilot-operated check valve applications, and check valve circuit design. Individual lessons focus on topics like how actuator relaxation occurs in a multi-actuator circuit, the operation of load-lock circuits using one POC valve, and the importance of pressure intensification. Learners will also practice skills, such as connecting and operating a P-port check valve circuit, calculating the pilot pressure required to open a POC valve, and designing a POC valve circuit.

Accumulator Applications

Learners using Amatrol’s intermediate hydraulics eLearning course will study various aspects and components of accumulators, including accumulator operation, applications, circuits, and sizing. Individual lessons focus on topics like the operation of the four types of gas-loaded accumulators, the function and operation of two types of safety bleed-down circuits, and the operation of a circuit that uses an accumulator for fluid dispensing. Learners will also practice skills, such as connecting and operating an accumulator bleed-down circuit, connecting and operating an accumulator to safely provide auxiliary and/or emergency power, and designing an accumulator circuit to compensate for leakage.

Virtual Simulator

Hydraulics Virtual Simulator | Preview

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