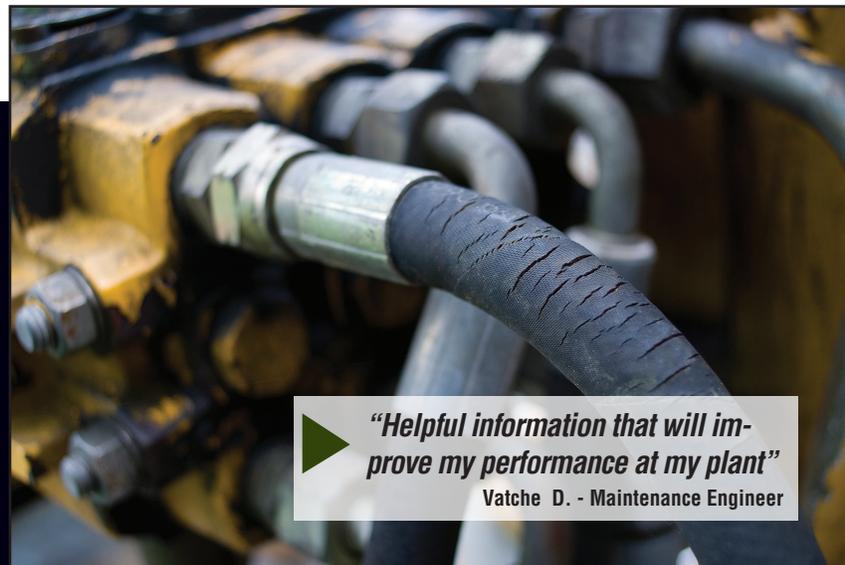


Learn About:

- Identify hydraulic components by their symbols
- Understand the applications of both primary & auxiliary components
- Select the correct valves, motors and actuators
- Design simple hydraulic circuits using schematics
- Diagnose & avoid common problems
- Understand the differences & commonalities of mobile & industrial hydraulics
- Determine applications for, install & charge an accumulator
- Select, size, seal and route hydraulic pipes & hoses
- Control heat, filtration & contamination in hydraulic systems
- Work with hydraulic fluids and components in a safe and environmentally friendly manner
- Properly test & inspect hydraulic systems
- Diagnose system versus component problems
- Evaluate the cause and effect of changing or re-sizing system component

Understanding & Troubleshooting Hydraulics™



▶ *“Helpful information that will improve my performance at my plant”*

Vatche D. - Maintenance Engineer

A 2-Day Training Course on Maintaining Hydraulic Systems in Any Facility

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SEMINAR OVERVIEW

Troubleshooting hydraulic systems, and operating and maintaining your own hydraulic equipment starts with simply understanding how and why all the various components work. This hydraulic repair and troubleshooting seminar provides the basic building blocks and knowledge needed to be proficient working with industrial hydraulics and fluid power.

WHAT YOU WILL TAKE HOME

- A laminated, full-color TPC Training Reference Guide detailing all the “must-know” information covered in the class. Keep this with you while on the job for immediate knowledge recall.
- Comprehensive classroom materials
- A Personalized Training Certificate with 0.8 TPC Training Continuing Education Units for each day attended, 1.6 for both days.
- All the information you need from asking our instructors specific questions about your own unique equipment or facility.

CONTINUING EDUCATION

Upon completion of this seminar, the student will receive a Certification of Completion and .8 TPC Training CEUs per day attended. Most employers and many government agencies accept TPC Training CEUs to fulfill their continuing education requirements. If the student needs CEUs to renew a state license, please contact us at 303-867-5039 to ensure the state licensing board has approved the seminar. If we are currently not approved by your state licensing board, we are happy to begin the process as long as we receive your request at least one month before the training date.

TRAINING PHILOSOPHY

TPC Training’s curriculum is designed to provide complete coverage of essential industrial maintenance skills, across a full range of electrical training, HVAC, plant management, and mechanical & industrial topics. Our “see, touch, do” instructional approach allows us to impart practical skills in an intensive format.

The most vital part of our seminar format is the coverage that goes beyond the course outline. Our small class sizes allow each instructor to tailor the course to address students’ individual needs, concerns, and experience levels. Our instructors deliver content with hands-on exercises, demonstrations role-playing, visuals, and case study discussions.

► **“Very easy to comprehend”**

Joe R. - Director

DISCUSSION TOPICS

Hydraulic Systems & Components: What They Are and How They Work

The first day of this course begins with an overview of hydraulic principles and progresses through hydraulic system components including pumps, valves, cylinders, motors, rotary actuators, accumulators and filters with emphasis placed on component structure and the identification of the components by the proper symbol as standardized by ANSI and ISO.

Methods of instruction include lecture, discussion, audio-visual material including power point presentation, and lab exercises with real world hydraulic components.

Discussion Topics Include:

- Hydraulic Principles
- Positive-Displacement Pumps
- Flow Control Valves
- Directional Control Valves
- Check Valves
- Hydraulic Cylinders
- Hydraulic Motors
- Hydraulic Rotary Actuators
- Pressure Control Valves
- Pilot Operated Pressure Control Valves
- Accumulators
- Fluid Conductors
- Reservoirs, Heat Exchangers and Filters

Troubleshooting: How to Identify and Fix Common Problems

After gaining a basic “working knowledge” of industrial hydraulic components and their function within an operational system. This course builds on that knowledge and is designed to help the student become aware of the decision making process that is part of a good troubleshooting procedure.

Using simulating software and hands -on exercises, the instructor focuses the class on the hydraulic troubleshooting process and the inspection and testing tasks that are part of a systematic approach to locating malfunctions and their underlying causes.

The lab exercises require the students to troubleshoot real world system problems.

Discussion Topics Include.

- Application of Hydraulics
- Troubleshooting
 - Hydraulic Safety
 - Basic Troubleshooting Requirements
 - Generalization on Hydraulic Troubleshooting
 - Noisy and Cavitating Pumps
 - No System Pressure
 - Low or Erratic System Pressure
 - No Movement, Slow or Erratic Actuator
 - System Running Hot
 - Common Cylinder Problems
 - Solenoid Failure
 - Internal and External Leaking Control
 - Troubleshooting Hydrostatic Transmission

SEMINAR FEE & AGENDA

This 2-day course is just \$1195 (Earn 1.6 CEUs)

7:30 am	Registration
8:00 am	Class Begins
12:00 -1:00 pm	Lunch (on your own)
4:30 pm	Class Ends

NO RISK REGISTRATION & MONEY-BACK GUARANTEE

You can reserve your space in the class at any time and cancel without penalty. Cancellations made more than 14 days prior to the seminar may be refunded or rescheduled. Cancellations made within 14 days may be rescheduled for any future topic and/or date. If you’re not satisfied with the course, we’ll promptly refund your payment.

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