

# Basic Hydraulic Troubleshooting 3 Day Hands-On Workshop



March 20<sup>th</sup> – 22<sup>nd</sup>

Presented By:



## Included in the Workshop

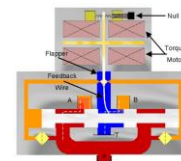
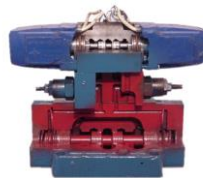
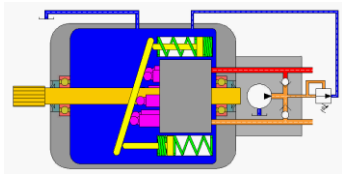
- Professional Instruction from our consultants who have years of experience solving hydraulic problems through hands-on experience.
- Our Full Color Basic Hydraulic Troubleshooting Manual (over 200 pages) that has become the standard of excellence in hundreds of plants across the Country and in Canada.
- GPM's Training Kit that includes the Fluid Power Data Book (63 pages), a calculator, hydraulic safety stickers and course utensils.
- Superior computerized animation of pumps, valves and complete systems.
- Hands On Exercises on GPM's real world industrial style hydraulic trainer.
- A Basic Hydraulic Troubleshooting Certificate to prove that you have successfully completed the nation's most respected hydraulic troubleshooting workshop.
- Refreshments provided each day of the workshop.
- Each student will be able to ask questions while observing pump and accumulator repair.

## Workshop Learning Objectives

- ❑ The *three* tests that can be performed to determine if any pump is bad within 15 minutes or less.
- ❑ Our *four*-step pressure setting procedure developed exclusively to reduce heat, shock and leakage in *any* system.
- ❑ How to be certain that, when a valve is replaced, the spool, pilot and drain lines are exactly the same as the original.
- ❑ How to repair and pre-charge accumulators for maximum speed and shock absorption and the two quick checks that can be made to verify that it is operating properly.
- ❑ The *four safety* procedures that *must* be followed before charging, discharging and removing an accumulator prior to working on the system.
- ❑ How to troubleshoot the machine from the hydraulic schematic.
- ❑ The right and wrong methods of increasing the speed of the machine.
- ❑ The three factors that determine the flow through a flow control and how they affect the speed of the cylinder or motor.
- ❑ How to troubleshoot and adjust servo and proportional valves without contaminating the system.
- ❑ The *four* ways that contamination enters the system, how to control it – PLUS how to maintain the filters for extended component life and reduced machine wear.
- ❑ How to verify that a cylinder or motor is bad *before* it is changed.
- ❑ The ten most common causes of leaks and how to prevent them.

**Registration Fee - \$995 per person**

2017 Workshop Agenda		
Day 1	8:00 AM – 11:30 AM	Hydraulic Fundamentals
	11:30 AM – 12:15 PM	Lunch
	12:15 PM – 4:00 PM	Hydraulic Pumps
	4:00 PM – 5:00 PM	Cline Facility Tour – Pump Rebuild
Day 2	8:00 AM – 10:30 AM	Directional Valves
	10:30 AM – 11:30 AM	Check and Logic Valves
	11:30 AM – 12:15 PM	LAB
	12:15 PM – 1:15 PM	Lunch
	1:15 PM – 4:00 PM	Pressure Controls & Accumulators
	4:00 PM – 5:00 PM	Cline Facility Tour – Accumulator Rebuild
Day 3	8:00 AM – 10:30 AM	Flow Controls & Hydraulic Motors
	10:30 AM – 11:30 AM	LAB
	11:30 AM – 12:15 PM	Lunch
	12:15 PM – 2:00 PM	Servo and Proportional Valves
	2:00 PM – 3:00 PM	Hydrostatic Drives
	3:00 PM – 4:00 PM	Fluid Maintenance



**Location: Cline Hose 155 Verdin, Rd.  
Greenville, SC**

**To Register, Call Robin Haywood @ GPM Hydraulic Consulting, Inc. (770) 267-3787  
or email: [gpm@gpmhydraulic.com](mailto:gpm@gpmhydraulic.com)**