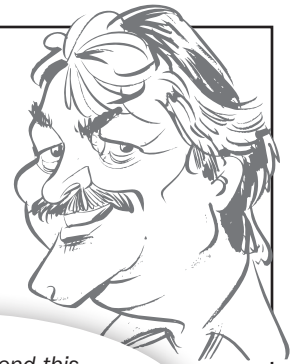


Got **Pump** Problems?



GET ANSWERS at the **Pump Guy Seminar**

Attend the Pump Guy Seminar in 2016:
January 12-14, 2016 – Houston
June 7-9, 2016 – Indianapolis

Visit FlowControlNetwork.com/PumpGuy
for more details and to register.

Who Is the **Pump Guy**?

Larry Bachus (a.k.a. “Pump Guy”) is a regular contributor to *Flow Control* magazine and FlowControlNetwork.com and has nearly 40 years’ experience working with industrial pumps. Larry began his career as a pump mechanic apprentice in a southern steel mill, and he continued working on pumps while serving in the US Navy. Larry has spent time selling and installing pumps and running his own pump rebuild shop. His training course, the Pump Guy Seminar, provides practical solutions learned through many years of hands-on experience working with pumping systems.

“I Would recommend this course for any and all process engineers, operators, maintenance and even engineering purchasing.”

– attendee feedback, 2015

“This is an excellent course. I spent three years in maintenance not knowing how to troubleshoot pumps. Now I feel confident being able to help troubleshoot pumps and can confidently challenge operations and maintenance to return the pump to the zone of best efficiency.”

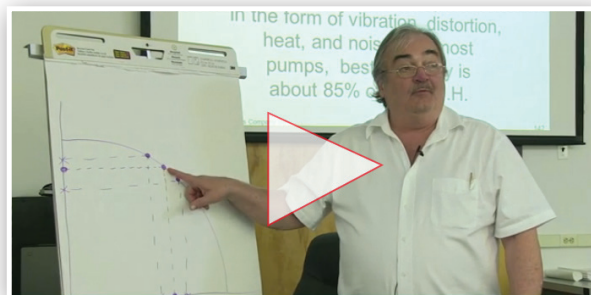
– attendee feedback, 2015

“Worth the investment (and I am talking in dollars). I knew a bit how to use pump curves, though I never thought there would be so much operating/design data that I could wiggle out of the curves. Definitely a must for anybody whose involve with pumps.”

– attendee feedback, 2015

Wondering Whether the **Pump Guy Seminar** Is for You?

Check out the “**Pump Guy Insights**” video series @ flwctrl.com/pginsights



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For more information and to register, please contact:
Ashley Davidson | P: 205.995.1593 | M: 205.807.3772
adavidson@grandviewmedia.com

FlowControlNetwork.com/PumpGuy

See Page 2 for a Full Course Outline

Pump Guy Seminar

COURSE OUTLINE

DAY ONE

1. Basic Pump Principles

- How Pumps Work
- Head vs. Pressure
- Pressure Measurement
- Absolute and Gauge Pressures
- Vacuum

2. NPSH

- NPSH required
- NPSH available

3. Cavitation

- Vapor Pressure
- Types of Cavitation
- Effects & Prevention

4. Affinity Laws

- The Laws
- Speed & Diameter
- Practical Applications

DAY TWO

5. Work & Efficiency

- Flow & Head
- Efficiency formula / application
- Energy & Work
- Power formula / application

6. Pump Classification

- PD types
- Centrifugal types
- Impellers
- Specific Speed
- Suction Specific Speed

7. Pump Curves

- H-Q, Eff., BHp & NPSHr
- Curve types
- Curve Interpretation

8. System Curves

- TDH
- Elevation, Pressure & Losses
- Dynamic systems & pump behavior
- System changes
- Pumps in Series & Parallel

9. Shaft Deflection

- Interpreting the Evidence
- Maintenance Operation & Design

DAY THREE

10. Pump-Motor Alignment

- Types of Misalignment
- Alignment Techniques

11. Bearings

- Types & Services
- Lubrication
- Maintenance & Seals

12. Pump Packing

- Components
- Packing Procedures
- Failure & Leakage

13. Mechanical Seals

- Components
- Single & Double Seals
- Support Systems

14. Seal Failure Analysis

- Causes & Prevention
- Environmental Controls

15. Practical Maintenance

16. Avoiding Wear

17. Pump Piping

- Draining Tanks & Vessels
- Suction pipe arrangement
- Discharge pipe arrangement