

# Pump Systems | eBook Courseware

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Skill 1: Detect centrifugal pump cavitation

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Skill 4: Disassemble and inspect a centrifugal pump with a mechanical seal

Appendices

Appendix A: Vapor or Pressure of Water

Appendix B: Altitude Conversion Table

Appendix C: Friction Loss for Schedule Steel Pipe

B. Disconnect the centrifugal pump from the piping system by uncrewing the two unions shown in figure 11.

C. Use a Phillips screwdriver to unlock the piping that remains attached to the pump. This is also shown in figure 11.

Figure 11. Unlock the Piping

D. Disconnect any pressure gauge lines attached to the piping.

CAUTION

You may do disassembly work on the trainer. Be careful not to damage the piping system.

Figure 12. Cross-sectional View

5. Observe the cross-sectional view of the frame-mounted centrifugal pump. Use this as a guide when disassembling and reassembling the pump.

IMPELLER

BEARING

FRAME

SNAP RING

SHAFT

MECHANICAL SEAL

SPRING

CASING

DRAIN

WARNING

There will be some water still contained in the pump. Do not disassemble near electrical connections or outlets.

40 (40-41 of 55) (106%) Skill PDF

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The Pump Systems eLearning curriculum teaches skills related to centrifugal pumps, which are used in almost every industry to transfer non-hydraulic fluids of various types from one place to another. Students learn a comprehensive set of industry-relevant skills including how to operate, install, maintain, troubleshoot, analyze performance, and select centrifugal pumps as well as system design. (References [950-PM1](#))

## Teach Pump Systems

### Centrifugal Pump Operation

Learners begin with an introduction to pumps, pump safety and installation, and pump operation. Individual lessons focus on topics like functions of a pump, six rules of safe dress, and flow vs. pressure characteristics. Learners will also learn industry-relevant skills, such as how to identify pump systems, install a centrifugal pump with a foot mount, and start up a centrifugal pump.

### Centrifugal Pump Characteristics

Learners will study the characteristics of centrifugal pumps, including pump flow rate measurement and head concepts. Individual lessons focus on topics like three methods of measuring pump flow rate, converting between units of head and pressure, and how to use a throttle control valve to adjust flow rate. Learners will also study industry-relevant skills, such as converting mass and volumetric rate flow, using a flow meter, and measuring total head for a centrifugal pump.

## Interactive Multimedia

### In-Depth, Comprehensive Pump Systems Curriculum Connected to Real-World Skills

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.

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