

Pump Training System

Category: Home & Building Automation · Model reference: MZM-1006



SPECIFICATIONS

Description:

Maintenance is an essential part of the manufacturing process, and requires specific skills. To help acquire these skills, the MZM-1006-Pumps Training System familiarizes students with maintenance tasks such as pump installation, lubrication, shaft alignment, inspection, and component replacement. Students will also learn how to start-up, operate, and troubleshoot industrial pumps in different configurations. Furthermore, during the hands-on activities they will discover the impact of valve restriction, air injection and NPSH on pumps efficiency by using a cavitation valve, a load valve, and two different water reservoirs.

To vary the speed of motor-driven pumps, the latest 3-phase AC drive is included with the trainer. Easy electrical connections between the drive and the motor can be achieved using the banana jacks on the front panel. If wiring skills must be acquired, terminal blocks are also provided for a more realistic wiring method. The control and configuration of the drive can be accomplished directly on the drive itself or using a computer software (option).

The modularity of the system permits the selection of models required to meet the training objectives. The accompanying MZM-1006 courseware correlates to the maintenance objectives to maximize educational efficiency.

Models part of the Lab-Volt Pumps Industrial Training System consist of:

- Centrifugal Pumps: Pedestal, C-Face and Stuffing-Box Type
- Gear Pump
- Vane Pump
- Flexible Impeller Pump
- Progressing Cavity pump
- Peristaltic Pump
- Diaphragm Pump
- Metering Pump
- Multi-Stage Vertical Pump
- Magnetic-Drive Pump
- Piston Pump
- Digital Flow Meter
- Digital Pressure Gauges
- Work Bench with Monitor Shelf
- Top Reservoir and Bottom Reservoir
- 3-phase AC Drives
- Air Compressor, Conditioning Unit, Air Flow Meter

Installation

- Perform pump shaft alignment and mo
- Learn to wire pumps and drives using jacks for a fast setup or use terminal bl more realistic wiring method.
- Configure Variable Speed Drives using local panels or remotely using a software program.
- Create a serial network between the drives.

Performance

- Discover the effect of restriction, tubing size, air and medium type on the flow, pressure and power consumption.
- Discover the impact of the tank position on the pump performance by working on two different setups.
- Analyze data obtained from digital flow meters, digital pressure gauges and drives display.

Industrial Pumps

- Discover different types of pumps us and learn their characteristics.
- Learn the fundamentals of fluid mechanics and pump operating principles.
- Perform parallel and series pump configuration

Inspection

- Follow a verification check list on parameters such as: temperature, vibration, oil level, noise, and seal leakage.
- Verify if the system operates at nominal conditions

Troubleshooting

- Establish diagnostic regarding abnormal operating condition using the competences acquired during the inspection activities

Maintenance

- Practice mechanical seal, diaphragm, valve, and packing replacement
- Learn the specific maintenance tasks required for once type of pump

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