

Bettis Gas/Hydraulic Product Servicing

Course VA101 CEUs: 2.8

Overview

This 4-day course uses classroom style lectures and hands-on experience with working models to teach students on the following topics:

- assemble, install, operate and maintain a Bettis gas/hydraulic actuator
- use troubleshooting techniques and tests to identify problems in gas/hydraulic systems, and perform routine maintenance and emergency repairs on each component
- install any Bettis control component on the corresponding actuator, connect calibration equipment and carry out set-up and calibration procedures
- adapt and install control upgrade or modification kits including all tubing connections and final adjustments
- identify graphic fluid schematic symbols, match to actual control device and integrate the symbols into a functioning relationship

Prerequisites

Students should be involved with the application, service or maintenance of Bettis gas/hydraulic actuator systems.

Topics

- Gas/Hydraulic Actuators
- Gas/Hydraulic Control Systems
- Gas/Hydraulic Control System Accessories
- Control Applications
- Control Component Calibration

Price/Location/Start Date:

Mansfield, OH Call 419-529-4311 to Discuss



Bettis Rack & Pinion & Scotch-Yoke Product Services

Course VA103 CEUs: 2.8

Overview

This 4-day class provides comprehensive information concerning the installation, operation and maintenance of Emerson Bettis Houston WACC products.

Topics

- Valve Automation Center Contract Review
- Installation/Maintenance Instruction Manuals
- Product Serial Numbers Review
- Service Procedure Index Review
- General Operating/Maintenance Instructions
- General Servicing Information on RPB, RPC, D, RPE, CBB, CBAX30, HD, T, and G-Series Actuators Review
- Hands On Training - EG; Conversion of Fail-close Spring-return Rack & Pinon, CBB, CBAX30, G, T and HD Actuators to Fail-open Spring-return Type
- Field Service Work Performed by VAC's, Bettis Houston WACC Procedure Review
- Four days of Practical Exercises Involving the Disassembly and Reassembling of Bettis Crossridge Products

Price/Location/Start Date:

Houston, TX Call 281-477-4513 to Discuss
Visit: <http://www2.emersonprocess.com/en-US/brands/bettis/Pages/index.aspx>

Bettis Rack & Pinion & Scotch-Yoke Products

Course VA104 CEUs: 3.2

Overview This 5-day class provides an introduction to the range of pneumatic and hydraulic valve actuators manufactured by Emerson Bettis in their Houston, Texas WACC facility. In addition to discussing product features and benefits, students will be given a broad overview of the valve automation industry and provided with training of product selection and applications. Common pneumatic and hydraulic control components and systems will also be discussed; and a review of competitive products.

Topics

- RPE Series Actuators Overview
- CBA300 Series actuators review
- CBB Series actuators review
- G-Series Actuators Review
- Bettis Electronic Data Formats Overview
- Torque Mechanisms Overview
- Manual Overrides Overview
- Actuator Selection/Sizing
- Common Control Components/Control System
- Valve Mounting Hardware Overview
- Competitor Product Comparisons
- General Practical Work

Price/Location/Start Date:

Houston, TX Call 281-477-4513 to Discuss
Visit: <http://www2.emersonprocess.com/en-US/brands/bettis/Pages/index.aspx>

Dantorque Products

Course VA106 CEUs: 1.4

Overview

This 2-day product training course provides an overview of the valve automation products manufactured by Dantorque. Primarily focused on product features & benefits, sizing/selection and applications; service/ maintenance training can also be provided if requested in adv. of the class. Classes will be tailored to meet specific needs.

Prerequisites Students should be involved with the purchase, application, marketing, sales or service/maintenance of Dantorque products.

Topics

- Introduction
- Overview Dantorque Actuators
- Onshore, Offshore and Subsea Applications
- General Control Options
- Subsea Control Options
- ROV Overrides
- Actuator Sizing/Selection
- Question and Answer Session

Price/Location/Start Date:

This training can be tailored to a specific project application and is usually conducted at the customer's location. Mansfield, OH Call 419-529-4311 to Discuss

El-O-Matic Products

Course VA107 CEUs: 2.1

Overview

This 3-day class provides information on the ranges of pneumatic and electric actuators and accessories available from El-O-Matic. Detailed information on electric actuator module boards/ bus communication options will be addressed.

Prerequisites Students should be involved with the application, marketing, sales or service/ maintenance of El-O-Matic products.

Topics

- Electric Actuator Series (ELS/EL/ELD & ELQ)
 - Identification of Components; - Basic Bench Testing; - Installation Options;
 - Actuator Sizing/Selection; - Control Options;
 - Hands-on Training Covering Installation of Module Boards for Different Control Functionality; - Bus Communication Options;
 - El-O-Matic Sizing Program
- Pneumatic Actuator F, E & P Series
 - History; - Identification of Components;
 - Comparison of F, E & P Series Actuator;
 - 180° Rotation Actuators; - Actuator Sizing/Selection; - Available Accessories
 - Hands-on Training Including; Spring Changes, Seal Changes, Travel Stop Adjustment and Mounting of Accessories;
 - El-O-Matic Sizing
- QA Systems, Functions, RMA's and Customer Complaint Handling

Price/Location/Start Date:

Houston, TX Call 281-477-4617 to Discuss

Hytork Products**Course VA108 CEUs: 2.1****Overview**

This 3-day class provides a solid grounding in valve automation solutions in general with detailed and specific information given on the range of actuators and control accessories available from Hytork. Classes are tailored to fit specific student requirements.

Prerequisites

Students should be involved with the purchase, application, marketing, sales or service/maintenance of Hytork products.

Topics

- Overview of Hytork
- Key Accounts and Markets
- Pneumatic Actuators, History, Theory and Different Types
- Comparison of Pneumatic Actuators to Electric, Hydraulic and Electro-Hydraulic Designs
- Advantages of the Rack & Pinion Design
- ISO Standards
- General Valve Automation Applications
- Hytork Actuator Variations and Evolution
- Valve Automation Accessories Including Limit Switches, Solenoid Valves, Speed Control Valves and Valve Mounting Options
- Mounting of Control Accessories
- Hytork Product Features and Benefits
- General Valve Types/Torque Characteristics
- Actuator Sizing Techniques, Test Questions
- Hytork Actuator Sizing Program
- Hytork Drawing Types and Procedures
- QA Systems, Functions, RMA's and Customer Complaint Handling
- Hytork Product Warranties
- Price Book Review
- Hands-on Review of Competitive Products
- Selling and Marketing Techniques
- Hands-on Actuator Assembly, Disassembly, Mounting and End-Stop Adjustment
- Question and Answer Session
- Final Test

Price/Location/Start Date:

Houston, TX Call 281-477-4617 to Discuss

Shafer Products**Course VA109 CEUs: 2.8****Overview**

This 4-day course uses classroom style lectures and hands-on experience with working models to teach students on the following topics:

- assemble, install, operate and maintain a Shafer, rotary vane gas-over-oil actuator
- use troubleshooting techniques and tests to identify problems in gas-over-oil systems, and perform routine maintenance and emergency repairs on each component
- install any Shafer control component on the corresponding actuator, connect calibration equipment and carry out set-up and calibration procedures
- adapt and install control upgrade or modification kits including all tubing connections and final adjustments
- identify graphic fluid schematic symbols, match to actual control device and integrate the symbols into a functioning relationship

Prerequisites

Students should be involved with the application, service or maintenance of Shafer, rotary vane gas-over-oil actuator systems.

Topics

- Gas-over-oil Actuators
- Gas-over-oil Control Systems
- Gas-over-oil Control System Accessories
- Control Applications
- Control Component Calibration

Price/Location/Start Date:

Mansfield, OH Call 419-529-4311 to Discuss

FieldQ Products**Course VA110 CEUs: 2.1****Overview**

This 3-day class provides the knowledge required for the student to understand, troubleshoot and even repair the Valve Automation FieldQ actuator and modules. The class covers the full range of the actuators and the modules used to interface to the actuator. Classes are held periodically but can be tailored to fit specific needs of the students in attendance.

Prerequisites

Students should be involved with the purchase, application, marketing, sales, or / service / maintenance of the FieldQ Actuation System

Topics

- Basic Product Overview
 - Actuator, Control Modules
- Introduction to Actuators
 - Rack & Pinion Operation, FieldQ Features/Benefits, Data Sheets
- Introduction to Modules
 - General Features and Benefits, Types, Construction, Functionality
 - Hands on
- Field Topics
 - Installation, Maintenance, and Troubleshooting
- Sales Training
 - Applications, Pricing, Configurations
- QA Systems, Functions, RMA's and Customer Complaint Handling

Training is set up to include hours of learning the FieldQ product family via hands on activities. In fact, students will often spend more time learning in the lab than being lectured

Price/Location/Start Date:

This training is offered in a standard training class or can be tailored to fit your specific needs. Houston, TX Call Houston, TX Call 281-477-4617 to Discuss

Service Training - Level I TEC2000 Maintenance and Operation

Course VA111 CEUs: 2.8

Overview

This 4-day course presents a fundamental overview of the construction, assembly, hardware, software and configuration of EIM actuators. Students attending this program will demonstrate an ability to identify actuator hardware, components and assemblies. All students will demonstrate the ability to setup, configure, check and verify operation of various actuator configurations using appropriate hardware or software.

Prerequisites

Students planning on attending this program should have a minimum of 1 years field service experience and have a working knowledge of MS Windows. Each student should have a strong background in the mechanical operation and electrical operation of EIM products.

Topics

- MCP:
 - Set Limit Switch and Torque Stop
 - Mechanical Disassembly (Basic)
 - Change Torque Springs
 - Identify Components in Package and in Wiring Diagram
- M2CP:
 - Set Limit Switch and Torque Stop
 - Mechanical Disassembly (Basic)
 - Change Torque Springs
 - Identify Components in Package and in Wiring Diagram
- Tec2/Model500:
 - Set Limit Switch and Torque Stop
 - Mechanical Disassembly (Basic)
 - Change Torque Springs
 - Identify Components in Package and in Wiring Diagram
 - Set Configuration Files
- TecLinkDCMLink:
 - Troubleshoot Settings via the Software
- Identify the Basic Components and Assemblies of EIM Actuators
- Disassemble and Reassemble of EIM Actuators
- Application
- Troubleshoot Start-up Problems Associated with Installation, Configuration and Operation of Various Control and Actuator Combinations

Price/Location/Start Date:

Missouri City, TX Call 281-499-1561 to Discuss

Service Training - Level II TEC2000 Maintenance and Operation

Course VA112 CEUs: 1.4

Overview

This 2-day course presents a fundamental overview of the construction, assembly, hardware, software and configuration of a Tec2/Model500 actuator. Students attending this program will demonstrate an ability to identify actuator hardware, components and assemblies. Students will interconnect various control configurations for the Tec2/Model500 units and prove actuator operation. All students will demonstrate the ability to setup, configure, check and verify operation of various actuator configurations using appropriate hardware or software.

Prerequisites

Students planning on attending this program should have a minimum of 3 years field service experience and have previously attended the Service Training Program – Level 1 and have a working knowledge of MS Windows. Each student MUST have a strong background in the mechanical operation and electrical operation of EIM products. Other attendees with a solid background in electrical controls [including microprocessor basics] are encouraged to attend.

Topics

- Identify the Basic Components and Assemblies of a Tec2/Model500 Non-Intrusive Actuator by Function, Configuration and Operation
- Disassemble and Reassemble a Tec2/Model500 Actuator
- Customize the Configuration of a Tec2/Model500 Actuator
- Wiring Options
- Application
- Troubleshoot Start-up Problems Associated with Installation, Configuration and Operation of Various Control and Actuator Combinations
- Demonstrate How to Upgrade the Service Pack for a Tec2/Model500 Actuator

Price/Location/Start Date:

Missouri City, TX Call 281-499-1561 to Discuss

EIM Products

Course VA113 CEUs: 2.8

Overview

This 4-day course presents the fundamental aspects of Series 2000 actuator maintenance. Attendees are presented with the basics of actuators and how they operate valves. Basic components and assemblies are studied through actual disassembly and reassembly of an actuator. In that mechanical operation is learned. Each student will learn how to set travel limits, torque limits and operate an actuator on a variety of valves. Model number interpretation, how to order parts from local distributors, Control Package wiring diagram interpretation and basic maintenance are all presented in a combination hands-on / instructor led lecture format. At the end of the program all students complete a written performance based evaluation prior to leaving. Any original course documentation and certificates are provided to all attendees for company records at the end of the program.

Prerequisites

Students interested in attending this program should have a background or equivalent work experience in basic mechanical and electrical practices and principles. No previous service experience necessary.

Topics

- Identify the Basic Components and Assemblies of a Tec2/Model500 Actuator by Function and Operation
- Disassemble and Reassemble a Tec2/Model500 Actuator with Installed Controls:
 - Multi-Turn Valve and Part Turn Valve
- Identify EIM Control Packages by Function with the Aide of a Control-Wiring Diagram
- Demonstrate the Correct Method to Set Position and Torque Limits:
 - Multi-Turn Valve and Part Turn Valve
- Demonstrate the Operation of a Modulating Unit with Futronic II
- Perform Basic Maintenance Associated with the Operation of an Actuator

Price/Location/Start Date:

Missouri City, TX Call 281-499-1561 to Discuss

For Valve Automation training information please refer to the appropriate contact on page 118. For regional training center contacts refer to pages 116-117. Visit: www.emersonprocess.com/education for current dates, locations and enrollments.