

The Distribution and Warehousing Series is intended to provide basic, intermediate, and advanced training on processes, procedures, and equipment for both new and experienced employees.

## Basic Courses

### Distribution Center Overview

- From Vendor to Market
- Distribution Center Layout

### Lockout/Tagout

- Basics of the Lockout/Tagout Program
- Principles of the Lockout/Tagout Program
- Responsibilities

### Electrical Safe Work Practices

- Hazards
- Qualifications
- Boundaries
- Personal Protective Equipment

### Crane Aisle Safety Awareness

- Safety Hazards, Safety Signs, and Safety Equipment
- Personal Protection Requirements and Procedural Requirements

### Piping, Tubing, and Hoses

- Piping
- Tubing
- Hoses

### Shop Equipment

- Test and Measurement Instruments
- The Welding Shop
- Basic Shop Equipment

### Conveyor Basics

- Gravity-Driven, Flat Belt, and Live Roller Conveyors
- Junctions and Curves, Sorters, and Other Specialty Devices

### Preventive Maintenance

- Preventive Maintenance Program
- Cleaning and Lubrication Practices
- Belt, Sprocket, Chain, and Pulley Inspection, Adjustment, and Alignment

### Basic Facilities Maintenance

- Facility Maintenance Overview and Electrical Systems
- Compressed Air System and Plumbing System
- Chilled Water System and Fire Main System

### Fork Trucks I

- Safety Considerations and General Fork Truck Work Practices
- Electrical Systems and Schematic Diagrams
- Diagnostic Tools

### Fork Trucks II

- Battery System
- Miscellaneous Electrical Control Components and Steering & Guidance Systems
- Hydraulic System and Brake System

### Seven-Step Troubleshooting

- Troubleshooting Fundamentals
- Divide and Conquer
- Seven-Step Process

## Intermediate Courses

### Gear Drives

- Gear Fundamentals
- Gear Definitions
- Gearbox

### Chain Drives

- Chain Drive Systems
- Sprockets
- Chain Drive Maintenance Practices

### Belt Drives

- Belt Drive Systems
- Belt Drive Principles
- Belt Drive Maintenance Practices

### Shaft Alignment I

- Alignment Fundamentals
- Causes of Misalignment
- Alignment Equipment

### Shaft Alignment II

- Alignment Methods
- Prealignment Checks
- Soft Foot

### HVAC

- HVAC Overview
- HVAC Systems
- HVAC Equipment

### Photoeye Types

- Photoeye Types
- Photoeye Connections

### Photoeye Installation

- Photoeye Characteristics
- Photoeye Alignment
- Photoeye Installation

### Battery Charging Systems I

- Batteries and Chargers
- Explosive Gases
- Spills and Spill Containment

### Battery Charging Systems II

- Battery Charging System
- Battery Charging System Components
- Troubleshooting Techniques
- Battery Recycling

### Motors and Motor Control

- AC Motor Construction
- Components in Motor Control and Motor Control Diagrams

### Fire Alarm and Suppression

- Fire Science
- Fire Alarm System
- Fire Suppression Systems
- Fire Suppression System Components

### Sorter Hardware

- Induction and Merge Conveyor Equipment
- Sortation Conveyor Equipment and Power and Control Apparatus

### Sorter Operations

- Induction
- Scanning
- Sortation

## Overview of Electrical Distribution

- Distribution of Electricity
- The Science Behind Electrical Distribution
- Distribution System Components

## Circuit Troubleshooting

- Basic Concepts of Circuit Troubleshooting and Circuit Troubleshooting Isolation Techniques
- Testing Electro-mechanical Devices and Common Failures

## Variable Frequency Drives

- Overview and Operational Theory
- VFD Function and Operation
- Human Interface Module

## PI-Touch Device

- PI-Touch Components and Connections
- Control Screens and Manual Operations

## 120V Electrical System

- Generation of 120V AC
- 120V AC Safety Precautions
- 120V AC Distribution Components

## Advanced Courses

### Predictive Maintenance Concepts

- Reliability
- Predictive Maintenance
- Condition Monitoring
- Technologies

## Servo Drive Fundamentals

- Overview
- Operation
- Servo Motors

## PLC Overview

- PLC Components
- Basic Operation
- Scan Cycle
- Ladder Logic

## PLC Hardware

- Power Supplies
- Processors
- Input/Output Modules

## PLC Addressing

- Number Systems
- Terminology
- Rack Addressing

## PLC Communications

- Communications Terminology
- Networks and Protocols
- Common PLC Communication Configurations

## PLC Software

- Software
- HMI
- Instructions

## Network Communications

- Communications Overview
- Protocol
- Network Media and Hardware

## **AGV Overview**

- AGV Overview
- Navigation and Guidance

## **AGV Operation**

- Manual Controls
- Operating Modes

## **AGV Preventive Maintenance**

- AGV Maintenance
- AGV Lift Operation

## **AGV Safety**

- Indications
- Sensors
- Vehicle Safety and Interface Module (VSIM)

## **Barcode Scanners**

- Functions and Operating Principles
- Installation and Maintenance Practices
- Setup and Programming

## **ASRS Cranes**

- ASRS Overview
- ASRS Load Storage and Retrieval
- ASRS Ancillary Equipment
- ASRS Crane Missions

## **AKL Cranes**

- Overview
- Components
- Operation
- Preventive Maintenance
- Fault Identification