



320XPC Blasthole Drill – Mechanical Systems Training

Course Duration

Three days, 24 hours (Additional day, 8 hours, for none English speaking customers)days

Target Audience

This training is targeted for Mechanical Maintenance and Supervisory personnel responsible for preventive and corrective maintenance and servicing of 320XPC blasthole drill.

Description

The course introduces the student to the operation and maintenance of 320XPC blasthole drill. It focuses on critical knowledge and skills required in supporting P&H electric mining blasthole drills. All structural, mechanical, air and hydraulic systems and adjustments are discussed. Recommended preventive and corrective maintenance procedures and practices are also discussed..

Prerequisites

Students should have a basic knowledge of mechanical, hydraulically and pneumatic terminology and practical experience with maintenance equipment.

Course Location

Field

Course Objectives

Upon completion of this course the student will be able to:

- Identify and explain the purpose of all the major components utilized.
- Identify controls in the cab.
- Locate information about the Preventive and Regular Maintenance procedures in the Mechanical Systems Manual.
- Explain the relationship between PLC and the rest of the Drill systems.
- Analyze schematics and control diagrams utilized for troubleshooting and repair.

Main Concepts

- Machine structural components (mast, main deck, crawler frame)
- Power unit
- Main Air and Auxiliary Air Systems
- Main, Auxiliary and Low Pressure Hydraulic Systems
- Water Injection System
- Rotary Carriage and Pipe Handling
- Automatic Lubrication
- Auxiliary Winch

Day 1

Course Introduction

- Instructor and participants introduction
- Course objectives
- General, on site safety
- Knowledge evaluation

Sources of Information

- Maintenance Manual
- LinkOne Parts Book
- Service Bulletins and Notices

Drill Safety and Systems Introduction

- General safety information, safety web sites
- Safe operating practices
- Safety decals and signs
- General drill's systems description

Preventive Maintenance

- Preventive maintenance intervals and procedures

Cab Controls

- Discuss every button, lever and display in the cab
- Touch panel and GUI

Power Unit

- Description, alignment

Cable Reel

- Description
- Hydraulics, transmission, wind, adjustments

Shovel Systems: Machinery House

- House Ventilation and Pressurization
- AirScrubPro

Day 2

Main air system and compressor lubrication

- All main air system components, including PLC controls, are covered/discussed.
- Air compressor lubrication
- Air inlet valves (GD only)
- Pump relief valve, oil cooler, T-tank
- Butterfly valve

Water Injection System

- Water tank, pump/motor, valves, plumbing

Main Hydraulic System

- Closed loop hydrostatic drive
- Main pumps propel motors, propel transmissions
- Propel brakes
- Optional tow package

Auxiliary Hydraulic System

- Auxiliary pump, valve banks
- PLC controls, unloader/diverter valves, Pipe racks, dust curtain, mast hoist, auxiliary winch, mast anchor pins, back brace locks, deck wrench, breakout wrench
- ID RUN overview
- Loading drive back-up package
- Creating drive back up
- Creating a parameter file
- Loading a parameter file
- Parameter file comparison
- Using drive monitor and data logger

Day 3

Auxiliary Hydraulic System Continued

- Leveling system, leveling jacks, operation and troubleshooting
- Miscellaneous auxiliary hydraulic circuits and systems.

Low Pressure Hydraulic System

- Motor/pump assembly, operation, adjustment

Automatic Lubrication

- Motor/pump assembly, relief valves, vent valve
- Pressure switches, zone solenoids
- SLV Injector description, adjustment, troubleshooting

Rotary Carriage Assembly

- Hoist/pulldown machinery description
- Pulldown brakes description, adjustment, troubleshooting,
- Rotary machinery description
- Rotary carriage assembly, roller adjustment

Course Evaluation and Wrap up

- Miscellaneous wrap up, Q and A as needed
- Transfer of knowledge questionnaire
- Reaction evaluation form