MERCURY

Screw Air Compressors Troubleshooting Training

30 May – 3 June 2027
Dubai (UAE)



Dubai - UAE: +971 4 450 5697
Istanbul - Türkiye: +90 539 599 1206
Amman - Jordan: +962 79 712 3347

MERCURY

Screw Air Compressors Troubleshooting Training

Ref: 16349_1016910 **Date:** 30 May – 3 June 2027 **Location:** Dubai (UAE) **Fees:** 4900 Euro

Introduction:

The Screw Air Compressors Troubleshooting training course builds a strong foundation in understanding how screw air compressors operate and how to maintain them effectively. Screw compressors in industrial environments, and their reliable performance is crucial for continuous operations. It provides participants with in-depth knowledge of compressor components, functions, and interrelated systems.

This Screw Air Compressors Troubleshooting program emphasizes how to identify common problems and apply systematic troubleshooting approaches. It balances theory with real-world problem-solving scenarios. Participants will learn preventive maintenance practices to extend equipment life and reduce costly downtime. They will confidently manage, troubleshoot, and maintain screw air compressors.

Targeted Groups:

This Screw Air Compressors Troubleshooting training targets professionals seeking specialized knowledge and skills:

- Maintenance engineers are responsible for compressed air systems.
- Technicians conducting repairs and servicing of compressors.
- Operations staff are monitoring compressor performance.
- Facility and plant managers ensure the reliability of equipment.
- Safety and compliance officers in industrial plants.
- Project managers handling compressor installation and operation.
- Consultants and trainers in compressor maintenance.
- Quality control specialists monitor system efficiency.

Course Objectives:

Participants will achieve the following objectives by completing the Screw Air Compressors Troubleshooting course:

Dubai - UAE: +971 4 450 5697
Istanbul - Türkiye: +90 539 599 1206
Amman - Jordan: +962 79 712 3347

- Understand the fundamentals of screw compressor operation.
- Recognize components such as rotors, bearings, seals, and valves.
- Analyze lubrication, oil systems, dryers, and cooling systems.
- Identify symptoms of performance decline and mechanical issues.
- Diagnose common oil contamination and filtration problems.
- Apply structured troubleshooting techniques effectively.
- Interpret data and conduct visual inspections with accuracy.
- Use appropriate testing tools for compressor fault detection.
- Implement regular maintenance, cleaning, and filter replacement.
- Develop accurate records for preventive maintenance programs.
- Strengthen decision-making in troubleshooting complex faults.
- Enhance workplace safety while performing maintenance tasks.
- Support cost savings by reducing compressor downtime.
- Build long-term strategies to optimize compressor reliability.

Targeted Competencies:

Participants will gain the following competencies during the Screw Air Compressors Troubleshooting program:

- Technical understanding of screw compressor principles.
- Ability to analyze compressor system diagrams and flow.
- Skill in diagnosing mechanical, lubrication, and cooling issues.
- Proficiency in conducting inspections and functional tests.
- Competence in preventive maintenance scheduling.
- Strong ability to interpret fault signals and operating data.
- Practical capability in oil and filter management.
- Confidence in handling safety protocols during operations.
- Skills in recording and documenting maintenance activities.
- Capacity to improve efficiency through systematic methods.

Studying Scenarios:

In this Screw Air Compressors Troubleshooting training, participants will develop their skills through the analysis of the following scenarios:

- Identifying air-end rotor wear leading to low pressure.
- Diagnosing overheating caused by lubrication system failure.
- Troubleshooting oil contamination affecting system performance.
- Evaluating unusual noise indicating bearing or seal damage.
- Detecting performance loss due to cooling system blockages.
- Investigating vibration issues caused by misalignment.
- Resolving pressure drops linked to filter obstructions.
- Analyzing shutdowns triggered by electrical malfunctions.
- Developing maintenance strategies to prevent repetitive faults.
- Assessing efficiency loss due to neglected routine inspections.

Dubai - UAE: +971 4 450 5697
Istanbul - Türkiye: +90 539 599 1206
Amman - Jordan: +962 79 712 3347

MERCURY

Course Content:

Unit 1: Fundamentals of Screw Air Compressors:

- Introduction to compressed air and industrial applications.
- Principles of screw compressor operation.
- The difference between rotary screw and other compressor types.
- Key roles of the air end and rotors in compression.
- Relationship between efficiency, capacity, and design.
- Impact of oil-injected vs. oil-free systems.
- Role of lubrication and cooling in operation.
- Introduction to Safety Considerations and Basic Standards.
- Common terminology used in compressor troubleshooting.

Unit 2: Component Knowledge and Functions:

- Detailed study of the air end and rotor assemblies.
- Functions of bearings and how they support rotors.
- Importance of seals in preventing leaks and contamination.
- Role of inlet and discharge valves in pressure regulation.
- Overview of the oil system and lubrication flow.
- Functions of air dryers in ensuring compressed air quality.
- Cooling system components and their maintenance.
- Interconnection of systems for overall compressor performance.
- Failure points within critical components.

Unit 3: Common Problems and Fault Recognition:

- Symptoms of performance decline and inefficiency.
- Identifying mechanical failures in rotors and bearings.
- Detecting air leaks and their operational impact.
- Oil system contamination and its indicators.
- Overheating problems due to poor lubrication or cooling.
- Noisy operation and vibration signals.
- Pressure drops linked to clogged filters.
- Control panel alarms and fault messages.
- Environmental causes of compressor inefficiencies.

Dubai - UAE: +971 4 450 5697
Istanbul - Türkiye: +90 539 599 1206
Amman - Jordan: +962 79 712 3347

Unit 4: Troubleshooting Techniques:

- Structured troubleshooting approach for compressors.
- Using inspection checklists during operation.
- Data interpretation from system sensors and readings.
- Visual inspection of rotors, seals, and valves.
- Testing lubrication and cooling systems.
- Electrical troubleshooting for motor and control faults.
- Tools for vibration and noise analysis.
- Recording findings for accurate root cause analysis.
- Corrective measures and verification after repairs.

Unit 5: Maintenance and Preventive Practices:

- Importance of planned maintenance schedules.
- Regular oil and filter changes for system reliability.
- Cleaning procedures for cooling systems and dryers.
- Best practices for rotor and bearing inspection.
- Record keeping and maintenance documentation.
- Monitoring and replacing worn seals and valves.
- Safety measures during maintenance operations.
- Energy efficiency through preventive care.
- Strategies for long-term system optimization.

Final Insights & Key Takeaways:

This training equips participants with a solid knowledge of screw compressor fundamentals, component functions, and troubleshooting practices. It emphasizes preventive maintenance to improve system reliability and reduce downtime. By applying structured methods, participants will ensure efficient and safe compressor operation in industrial environments.