

OPERATE PNEUMATIC SYSTEMS

UNIT CODE: ENG/OS/IPO/CR/O4/4/A

UNIT DESCRIPTION

This unit describes competencies required to operate pneumatic systems. It involves applying industrial pneumatic system safety procedures, identifying industrial pneumatic system parts, running and monitoring industrial pneumatic system, performing industrial pneumatic system basic maintenance and generating industrial pneumatic system operation report.

ELEMENTS AND PERFORMANCE CRITERIA

Element These describe the key outcomes which make up workplace function	Performance Criteria These are assessable statements which specify the required level of performance for each of the elements. <i>Bold and italicized terms are elaborated in the Range</i>
1. Apply Industrial Pneumatic System Safety Procedures	1.1 Prescribed personal safety gear is worn as per rules and regulations of the <i>Occupational Safety and Health Act (OSHA)</i> 1.2 Safety measures for the operation of the hydraulic systems are applied as per the rules and regulations of the <i>Occupational Safety and Health Act (OSHA)</i> 1.3 Work environment safety rules and regulations are observed as per the <i>Occupational Safety Act</i> 1.4 <i>Potential, workplace employee and equipment hazards</i> , and their <i>risk</i> control measures are identified as per OSHA to ensure the safety of personnel and equipment
2. Identify Industrial Pneumatic System Parts	2.1 Operation manuals are obtained and interpreted as per manufacturer's specification and SOPs 2.2 The model of the industrial pneumatic system is identified as per manufacturer's specification 2.3 Different components of the industrial pneumatic system are identified
3. Run and Monitor Industrial Pneumatic System	3.1 Pneumatic System <i>application</i> is identified, and its advantages and limitations defined 3.2 <i>Tools and equipment</i> for the operation of pneumatic systems are identified 3.3 Pneumatic system is operated as per the SOPs 3.4 Pneumatic system operation is monitored, and daily check chart is updated

Element	Performance Criteria
These describe the key outcomes which make up workplace function	These are assessable statements which specify the required level of performance for each of the elements. <i>Bold and italicized terms are elaborated in the Range</i>
4. Perform Industrial Pneumatic System Basic Maintenance	4.1 Basic Maintenance requirements are identified according to SOPs 4.2 Ruptured seals, fittings and pipes identified are replaced as per SOPs 4.3 Directional valves, non-return valves are replaced and serviced
5. Generate Industrial Pneumatic System Operation Report	5.1 Updated <i>documentation</i> and plant problems, movements, abnormalities and status reported and logged in accordance with enterprise procedures

RANGE

This section provides work environments and conditions to which the performance criteria apply. It allows for different work environments and situations that will affect performance.

Variable	Range
<ul style="list-style-type: none"> <i>Pneumatic components</i> may include but not limited to: 	<ul style="list-style-type: none"> Rams Linear and Rotary Actuators Relays Pneumatic operated tools Directional/Control valves Seals Piping Manifold
<ul style="list-style-type: none"> <i>Types of Compressors</i> may include but not limited to: 	<ul style="list-style-type: none"> Positive displacement Reciprocating Compressors Rotary Compressors Dynamic flow compressor Axial flow compressors Radial flow compressors
<ul style="list-style-type: none"> <i>Compressor Accessories</i> may include but not limited to: 	<ul style="list-style-type: none"> Intercoolers and after-coolers Intake filters Compressor controls Compressor drives
<ul style="list-style-type: none"> <i>Isolations</i> may include but not limited to: 	<ul style="list-style-type: none"> Electrical/mechanical or other associated processes

Variable	Range
<ul style="list-style-type: none"> • <i>Regulations, Policies and Standards</i> may include but not limited to: 	<ul style="list-style-type: none"> • Occupational Safety and Health Act • Company policies • Manufacturers' specifications
<ul style="list-style-type: none"> • <i>Potential failures /Indication of failures</i> may include but not limited to: 	<ul style="list-style-type: none"> • Noise • Vibration • Odour • Cracks • Leaks • Loss of performance • Unintended motion • Color of lubricant
<ul style="list-style-type: none"> • <i>Safety equipment</i> may include but not limited to: 	<ul style="list-style-type: none"> • Pressure relief valve • Safety valve • Non return valve
<ul style="list-style-type: none"> • <i>Hazards</i> may include but not limited to: 	<ul style="list-style-type: none"> • Burns from high-pressure fluid • Injection of fluid into the skin • Fire Hazards • Bruises, cuts or abrasions from failing pneumatic lines • Injury of people due to unguarded rotating part • During maintenance of equipment and their parts. • Injury due to sudden release of residual pressurized air. • Slippage due to oily floor area. • Electric shock from electrical motors/ A.C. Solenoids

REQUIRED KNOWLEDGE AND SKILLS

This section describes the skills and knowledge required for this unit of competency

Required Knowledge

- Relevant environmental, occupational health and safety legislation and regulations
- Personal protective equipment (PPE) and safety equipment.
- Types of compressor

- Compressor parts and accessories
- Hand and portable power tools
- Assess potential hazards.
- Scheduled and preventative maintenance on the system.
- Technical Drawing, pneumatic circuit diagrams and data
- Uses documentation.
- Pneumatic principles
- Pre- and post-operational inspections.
- Completes daily equipment logbook.
- Emergency procedures.
- Identification and selection of tools and materials
- Communicate effectively
- Basic First aid

Required Skills

The trainee needs to demonstrate the following fundamental skills

- Communication skills
- Numeracy skills
- Digital literacy skills
- Occupational health safety and Practices
- Environmental Literacy
- Employability skills
- Entrepreneurship skills

EVIDENCE GUIDE

This provides advice on assessment and must be read in conjunction with the performance criteria, required skills and knowledge and range.

1. Critical Aspects of Competency	1.1 Observed safety at workplace and sound housekeeping 1.2 Identified different types of oil used in hydraulics 1.3 Identified pneumatic components and attachments 1.4 Selected and correctly used tools and equipment 1.5 Operated and monitored pneumatic system 1.6 Performed pre- and post-operational tests 1.7 Conducted basic First Aid and Emergency evacuation
2. Resource Implications	2.1 Air Compressor 2.2 Pneumatic system/model 2.3 Pneumatic simulation 2.4 Relevant legislations, e.g. OSHA, Environmental Act; and

	<p>regulations</p> <p>2.5 Workshop tools and equipment</p> <p>2.6 Pneumatic manuals</p>
3. Methods of Assessment	<p>Competency may be assessed through:</p> <p>3.1 Observed behavior of the learners at workplace</p> <p>3.2 Inspection of written operation procedures</p> <p>3.3 Inspection of log books</p>
4. Context of Assessment	<p>Competency will be assessed individually in the actual workplace or through accredited institution</p>
5. Guidance information for Assessment	<p>Holistic assessment of other units relevant to the industry sector, workplace and job role is recommended</p>

easytvvet.com