

MAINTAIN INDUSTRIAL MATERIAL HANDLING EQUIPMENT

UNIT CODE: ENG/OS/IPO/CR/05/5/A

UNIT DESCRIPTION

This unit covers competencies required to maintain industrial material handling equipment. It involves applying industrial material handling equipment maintenance safety procedures, conducting routine/ preventative maintenance for material handling equipment, troubleshooting industrial material handling equipment for faults, performing industrial MHE repair and maintenance, MHE pretesting procedures, reporting and documentation.

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 material handling equipment maintenance safety Procedures	1.1 Personal safety gear is prescribed as per rules and regulations of the <i>Occupational Safety Act</i> 1.2 Safety measures for the maintenance of the hydraulic system is defined as per OSHA and SOPs 1.3 Work place safety measures are adhered to according to SOPs
2. Conduct routine/ preventative maintenance for material handling equipment	2.1 Regular inspection of the material handling equipment is done according to manufacturer's recommendation 2.2 Corrective/breakdown maintenance as per SOPs 2.3 Scheduled maintenance is done as per SOPs 2.4 Predictive maintenance is done on the MHE as per SOPs
3. Troubleshoot industrial material handling equipment for faults	3.1 Pre-operational checks are conducted on the material handling equipment in accordance to the manufacturers' recommendations and SOPs 3.2 The functionality of the components for the material handling equipment is checked as per manufacturer's specifications 3.3 Troubleshooting is done to identify faults on the material handling equipment components

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>
4. Carry out MHE maintenance	4.1 Perform <i>tests</i> in accordance with defined procedures 4.2 MHE auxiliaries are serviced and or replaced according to SOP 4.3 Loose bolts and fittings are tightened 4.4 Moving parts are lubricated 4.5 Filters are serviced and or replaced as per Manufacturers recommendations and SOPs 4.6 Seals, gaskets and Cotter pins are serviced and or replaced according to SOPs 4.7 Oil levels are checked and serviced as per Manufactures recommendation 4.8 Inventory is updated
5. Perform MHE operation test	5.1 The MHE is test run and monitored to detect deviation from the normal <i>operating procedures</i> 5.2 Corrective action is taken to rectify <i>abnormalities</i> when detected 5.3 Perform Housekeeping operations
6. Reporting and Documentation	6.1 MHE Inventory is updated 6.2 MHE maintenance records are updated

RANGE

Variable	Range
<i>Types of Material Handling Equipment</i> may include but not limited to:	<ul style="list-style-type: none"> • Hand tools and equipment • Hand tracks • Dolly • Flat Belt Conveyor • Troughed Belt Conveyor • Slat belt • Vibrating screeners • Chute Conveyor

Variable	Range
	<ul style="list-style-type: none"> • Chain Conveyor • Bucket Elevators • Screw Conveyor • Pallet truck and Pallet Jacks • Walkie Stackers • Gantry Cranes
<i>Material</i> may include but not limited to:	<ul style="list-style-type: none"> • Loose material • Packaged material • Palletized material
<i>Tests</i> may include but not limited to:	<ul style="list-style-type: none"> • Visual inspection • Audio inspection • Test run • Sling tests
<i>Correct Operational Response</i> may include but not limited to:	<ul style="list-style-type: none"> • Capacity rating • Type of material • Conveyor speed • Operating environment
<i>Abnormalities</i> may include but not limited to:	<ul style="list-style-type: none"> • Wobbling belts/Chains • Slackened belt/chain • Vibrations • Defective lifting equipment
<i>Appropriate Personnel</i> may include but not limited to:	<ul style="list-style-type: none"> • Maintenance personnel • Supervisors and managers • Operators • Off-loaders • Suppliers • Colleagues
<i>Appropriate Authority</i> may include but not limited to:	<ul style="list-style-type: none"> • International and local regulations
<i>Documentation</i> may include but not limited to:	<ul style="list-style-type: none"> • Test certificates and reports • Manufacturers documentation •
<i>PPE</i> may include but not limited to:	<ul style="list-style-type: none"> • Hand and forearm protection, such as gloves • Eye protection • Steel-toed safety shoes or boots • Metal, fiber, or plastic metatarsal guards • Ear muffs and Nose masks

Variable	Range
<i>Hazards</i> may include but not limited to:	<ul style="list-style-type: none"> • Falling objects • Improperly stacked materials • Twisting and turning • Bending • Strains and sprains from lifting loads improperly • Fractures and bruises caused by being struck by materials • Cuts and bruises caused by falling materials • Inhalations risks • Sight impairment

REQUIRED KNOWLEDGE AND UNDERSTANDING

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

Required Skills

- Relevant environmental, occupational health and safety legislation and regulations
- Personal protective equipment (PPE) and safety equipment.
- Types of material handling equipment
- Parts and accessories of material handling equipment
- Assess potential hazards.
- Scheduled and preventative maintenance of the equipment.
- Uses documentation.
- Completes daily equipment logbook.
- Troubleshooting and basic repairs on the equipment
- Identify and use relevant test equipment
- Testing techniques
- Dismantle and assemble components of the equipment
- Communicate effectively
- Basic First aid

Required Skills

The trainee needs to demonstrate the following fundamental skills

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

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	<ul style="list-style-type: none">1.1 Observed safety at workplace and sound housekeeping1.2 Identified different types of material handling equipment1.3 Identified components and attachments of material handling equipment1.4 Selected and correctly use material handling equipment1.5 Monitored the equipment1.6 Conducted scheduled and basic preventative maintenance1.7 Conducted basic First Aid and Emergency evacuation
2. Resource Implications	<ul style="list-style-type: none">2.1 Different types of material handling equipment2.2 Material handling simulation2.3 Relevant legislations, e.g. OSHA, Environmental Act; and regulations2.4 Workshop tools and equipment2.5 Material handling equipment manuals
3. Methods of Assessment	Competency may be assessed through: <ul style="list-style-type: none">3.1 Observed behavior of the learners at workplace3.2 Inspection of written maintenance procedures3.3 Analysis of log books
4. Context of Assessment	Competency will be assessed individually in the actual workplace or through accredited institution
5. Guidance information for Assessment	Holistic assessment of other units relevant to the industry sector, workplace and job role is recommended

MAINTAIN INDUSTRIAL PUMP

UNIT CODE: ENG/OS/IPO/CR/06/5/A

UNIT DESCRIPTION

This unit covers competencies required to maintain industrial pump. It involves applying industrial pump maintenance safety procedures, conducting routine/preventative maintenance for industrial pumps troubleshooting industrial pumps for faults, performing industrial pumps maintenance, industrial pump operation test and preparing industrial pump maintenance 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 pump maintenance safety Procedures	1.1 Personal safety gear is prescribed as per rules and regulations of the <i>Occupational Safety Act</i> 1.2 Safety measures for the maintenance of the Industrial pumps is defined as per OSHA and SOPs 1.3 Work place safety measures are adhered to according to SOPs
2. Conduct routine/preventative maintenance for industrial pumps	2.1 Monitoring of bearing temperature is done to avoid excessive vibration on the bearing as per manufacturers recommendations 2.2 Shaft seal condition is done regularly as per manufacturers recommendations 2.3 Annual maintenance is done on the pumps is done as per SOPs 2.4 Quarterly maintenance is done on the pumps is done as per SOPs
3. Troubleshoot industrial pumps for faults	3.1 Pre-operational checks are conducted on the pump in accordance to the manufacturers' recommendations and SOPs 3.2 The functionality of the components for the pump is checked as per manufacturer's specifications 3.3 Troubleshooting is done to identify faults on the pump components