

| TRAINING OCCUPATION: INDUSTRIAL MAINTENANCE OPERATIONS | |
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| Competency Unit (CU) 7: MATERIAL HANDLING EQUIPMENTS MAINTENANCE (CONVEYOR) | Code : ME-010-3:2012-C07 |
| Work Activity 1: Select material handling (conveyor) equipment to be maintained | Duration : 14 Hour |
| <p><u>Learning Objectives</u></p> <p>At the end of learning session the apprentice will be able to:</p> <ol style="list-style-type: none"> 1. Define contents of automation system maintenance schedule such as <ol style="list-style-type: none"> 1.1. Format of maintenance schedule table (daily, weekly, monthly, quarterly, yearly) 1.2. Type of maintenance (corrective, preventive and predictive) 1.3. Type of machines 1.4. Time interval 1.5. Duration 1.6. Verification (prepare, check and approve) 1.7. Location 1.8. Etc. 2. Explain types and functions of material handling such as <ol style="list-style-type: none"> 2.1. Conveyor 2.2. Lifter 2.3. Elevator 2.4. Hoist 2.5. Etc. 3. Describe types and functions of conveyors <ol style="list-style-type: none"> 3.1. Chain conveyor 3.2. Roller conveyor 3.3. Belt conveyor 3.4. Etc. 4. Determine job order instructions/ maintenance checklist. <ol style="list-style-type: none"> 4.1. List of jobs 4.2. Person in charge 4.3. Type of job order 4.4. Type of maintenance list 4.5. Status of work 4.6. Department 4.7. Date and time start 4.8. Date and time completed 4.9. Etc. 5. Interpret material handling safety rules and regulation. <ol style="list-style-type: none"> 5.1. Occupational safety & health act (osha) 5.2. Manual operation 5.3. Manual installation 5.4. Standard operating procedure (sop) 5.5. Etc. | |

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| Work Activity 2 : Select maintenance requirement | Duration : 4 Hours |
| <p><u>Learning Objectives</u></p> <p>At the end of learning session the apprentice will be able to:</p> <ol style="list-style-type: none"> 1. Explain types of maintenance <ol style="list-style-type: none"> 1.1. Preventive 1.2. Corrective 1.3. Predictive 2. Identify spare part of maintenance <ol style="list-style-type: none"> 2.1. Chain Conveyor 2.2. Roller Conveyor 2.3. Belt Conveyor 2.4. Etc. | |

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| Work Activity 3 : Perform material handling (conveyor) maintenance | Duration : 48 Hours |
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Learning Objectives

At the end of learning session the apprentice will be able to:

1. Interpret safety procedures in accordance to standard operation
 - 1.1. Occupational Safety & Health Act (OSHA)
 - 1.2. Standard Operating Procedure (SOP)
 - 1.3. Etc.
2. Interpret conveyor material handling instruction manual
 - 2.1. Installation manual
 - 2.2. Operation manual
3. Interpret conveyor technical drawing (flow drawing)
 - 3.1. Symbols
 - 3.2. Schematic diagram
 - 3.3. Dimensions
 - 3.4. Projection view
 - 3.5. Assembly drawing
 - 3.6. Etc.
4. Describe types of conveyor maintenance tools
 - 4.1. Hand tools
 - 4.2. Power tools
 - 4.3. Special tools
 - 4.4. Etc.
5. Describe type of spare parts and conveyor maintenance
 - 5.1. Controller
 - 5.2. Alarm
 - 5.3. Induction motor
 - 5.4. Sensor
 - 5.5. Bearing
 - 5.6. Roller
 - 5.7. Chain / pulley / belting / roller sprocket
 - 5.8. Conveyor belt
 - 5.9. Etc.
6. Describe problem and causes of material handling
 - 6.1. Interlock system faulty
 - 6.2. Motor faulty
 - 6.3. Misalignment
 - 6.4. Conveyor belt jerking
 - 6.5. Etc.

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| Work Activity 4 : Perform material handling equipments functionality test | Duration : 12 Hours |
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Learning Objectives

At the end of learning session the apprentice will be able to:

1. Describe conveyor safety feature according to Standard Operation Procedure (SOP)
 - 1.1. Occupation Safety and Health Act (OSHA)
 - 1.2. Manual Operation
 - 1.3. Installation procedure
 - 1.4. Etc.
2. Explain test run method and procedures of the conveyor under condition without load and with load using
 - 2.1. Visual
 - 2.2. Vibration
 - 2.3. Noise
 - 2.4. Heat
 - 2.5. Etc.
3. Describe functionality conveyor
 - 3.1. Stability
 - 3.2. Vibration
 - 3.3. Alignment
 - 3.4. Tensional
 - 3.5. Rotation direction
 - 3.6. Etc.

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| Work Activity 5 : Produce material handling equipment report | Duration : 4 Hours |
| <p><u>Learning Objectives</u></p> <p>At the end of learning session the apprentice will be able to:</p> <ol style="list-style-type: none"> 1. Determine types of conveyor material handling maintenance data <ol style="list-style-type: none"> 1.1. Technical data 1.2. Material handling component data 1.3. Etc 2. Describe types of conveyor checklist <ol style="list-style-type: none"> 2.1. Work checklist 2.2. Test checklist 2.3. Etc. 3. Interpret types of report format <ol style="list-style-type: none"> 3.1. Manual 3.2. Computerize 3.3. Etc. | |
| TOTAL | 82 Hours |