

O.10
WORK PROCESS SCHEDULE
MILLWRIGHT
O*NET-SOC CODE: 47-9044.00 RAPIDS CODE: 0335

This trade schedule is attached to and a part of the Apprenticeship Standards for the above identified occupation. This sequence of Related Classroom Instruction is competency based and will be offered as traditional classroom training or independent study, which may include electronic media.

1. TERM OF APPRENTICESHIP

The term of the occupation shall be four (4) years with an OJL attainment of 8000 hours supplemented by the required hours of related technical instruction.

2. RATIO OF APPRENTICES TO JOURNEYPERSONS

One (1) Apprentice to five (5) Journeyman: one apprentice for the first skilled journeymen employed, and one additional apprentice for each five (5) additional skilled journeymen employed thereafter. A fraction-there-of will be adhered to.

3. APPRENTICE WAGE SCHEDULE

Apprentices shall be paid a progressively increasing schedule of wages based on a percentage of the current journeyman wage rate.

Term: 8000 Hours

- 1st 1000 hours = 50 % of journeyman's rate
- 2nd 1000 hours = 55 % of journeyman's rate
- 3rd 1000 hours = 60 % of journeyman's rate
- 4th 1000 hours = 65 % of journeyman's rate
- 5th 1000 hours = 70 % of journeyman's rate
- 6th 1000 hours = 75 % of journeyman's rate
- 7th 1000 hours = 80 % of journeyman's rate
- 8th 1000 hours = 85 % of journeyman's rate

4. SCHEDULE OF WORK EXPERIENCE (See attached Work Process Schedule)

Apprenticeship Oversight Committee may add to the work processes prior to submitting these Standards to the Division of Apprentice Training for approval.

5. SCHEDULE OF RELATED TECHNICAL INSTRUCTION (See attached Related Classroom Instruction Outline)

Instruction can incorporate elements of both electronic media and traditional classroom including online training, distance learning, or independent study of established curriculum.

Curricula modules are based on industry standardized applications of current construction practices. Modules are knowledge and skill based including a system for assessment. The assessment will include task objectives, procedures, review materials, and competency-based performance tests.

O.10 - WORK PROCESS SCHEDULE

HOURS

This instruction and experience shall include the following operations, but not necessarily in the listed sequence. Time spent on specific operations need not be continuous.

- | | |
|---|------|
| 1. General Trade | 1500 |
| a. Process Equipment | |
| b. Safe procedures, practices, personnel protective equipment, tool safety and work area safety | |
| c. Rigging and wire rope | |
| d. Use of and care of tools and equipment. | |
| e. Use of precision measuring tools | |
| f. Material handling | |
| g. Blueprints, Specifications & Layout | |
| h. Gaskets, Packing, Seals and Bearings | |
| i. Bend pipe and tubing | |
| j. Mechanical fasteners | |
| k. Fabrication | |
| 2. Related Equipment | 2000 |
| a. Pumps | |
| b. Motors | |
| c. Couplings and Clutches | |
| d. Gear Boxes | |
| e. Compressors | |
| f. Turbines | |
| g. Drive Systems | |
| 3. Installation | 2000 |
| a. Packing & Seals | |
| b. Bearings | |
| c. Lifting machinery | |
| d. Installation level and alignment of equipment and machinery | |
| e. Precision fitting | |
| 4. Repair and Maintenance | 2500 |
| a. Oxyacetylene Cutting | |
| b. Fabrication of parts | |
| c. Valves, traps and strainers | |
| d. Belt conveyors | |
| e. Chain conveyors | |
| f. Screw conveyors | |
| g. Vibration analysis | |
| h. Field balancing | |

TOTAL HOURS

8000

O.10 - MILLWRIGHT RELATED CLASSROOM INSTRUCTION

Note: Due to regional and local code differences and climate conditions, duration of instructional competencies/modules is suggested estimates only.

Modules	Hours
Module Level 1	147.5
Orientation to the trade	
Millwright Hand Tools	
Fasteners and Anchors	
Basic Layout	
Gaskets and O-Rings	
Oxyfuel Cutting	
Module Level 2	
150	
Intermediate Trade Math	
Field Sketching	
Intermediate Blueprint Reading	
Specialty Tools	
Millwright Power Tools	
Rigging	
Setting Base plates and Soleplates	
Lubrication	
Introduction to Bearings	
Module Level 3	160
Advanced Trade Math	
Precision Measuring Tools	
Installing Packing	
Installing Seals	
Installing Mechanical Seals	
Removing and Installing Bearings	
Couplings	
Fabricating Shims	
Alignment Fixtures and Specialty	
Prealignment for Equipment Installation	
Installing Belt and Chain Drives	
Installing Fans and Blowers	
Module Level 4	150
Conveyors	
Troubleshooting and Repairing Conveyors	
Conventional Alignment	
Pumps	
Troubleshooting and Repairing Pumps	
Compressors and Compressor Maintenance	
Basic Pneumatic Systems	
Troubleshooting and Repairing Pneumatic Equipment	
Basic Hydraulic Systems	
Troubleshooting and Repairing Hydraulic Equipment	
Troubleshooting and Repairing Gearboxes	

Total Hours

607.5

DAT apprenticeship program standards recommend 150 hours of related technical instruction per year. The Apprentice is required to cover a minimum of 600 hours over the four (4) year program).