

**COMPETENCY ANALYSIS PROFILE
Industrial Mechanic (Millwright) – 433A**

(All unshaded skill sets must be demonstrated/completed.)

SKILL SETS

SKILLS

PROTECT SELF AND OTHERS U4600.0	Practise safe work habits 4600.01	Apply machinery and equipment lockout and de-energizing procedures 4600.02	Wear, adjust, and maintain personal protective equipment and clothing 4600.03	Comply with established confined space safety procedures 4600.04	Follow company procedures for applying first aid 4600.05
	Apply fire-prevention techniques 4600.06	Perform all work in compliance with company safety and housekeeping standards 4600.07			

COMMUNICATE U4601.0	Communicate with fellow workers, company representatives, and other trades 4601.01	Write maintenance and job-specific technical reports 4601.02			

USE DRAWINGS AND SCHEMATICS U4602.0	Use engineering, machine, and component drawings and symbols 4602.01	Draw or sketch assembly and component parts 4602.02	Use reports and technical and manufacturers' manuals 4602.03	Use schematics and diagrams 4602.04	

INDUSTRIAL MECHANIC (MILLWRIGHT)

USE HAND AND POWER TOOLS U4603.0	Use fastening tools	Use hand tools	Use metal cutting tools	Use measurement tools	Use portable power tools
	4603.01	4603.02	4603.03	4603.04	4603.05
	Use impact tools and/or powder-actuated tools				
	4603.06				

USE MACHINE TOOLS U4604.0	Use feed, speed, thread cutting, drill, and tap chart information and specifications	Apply specific trade calculations and formulas	Operate pedestal or radial drilling machines	Operate cut-off and band saws	Perform lathe operations
	4604.01	4604.02	4604.03	4604.04	4604.05
	Perform milling operations	Use machine tool accessories	Operate fabrication equipment		
	4604.06	4604.07	4604.08		

USE PRECISION MEASURING EQUIPMENT U4605.0	Use internal and external micrometers	Use verniers	Use precision alignment instruments	Use precision measuring devices	Use measuring and testing instruments and equipment
	4605.01	4605.02	4605.03	4605.04	4605.05
	Use bench marks and turning points				
	4605.06				

INDUSTRIAL MECHANIC (MILLWRIGHT)

USE MATERIALS AND FASTENERS	Use ferrous, non-ferrous, and specialty alloy materials	Use non-metallic materials	Apply the screw thread system	Install fastening devices	
U4606.0	4606.01	4606.02	4606.03	4606.04	

APPLY LUBRICANTS	Identify the characteristics and composition of lubricants	Apply oils and greases	Apply special-purpose lubricants	Install, maintain, and repair machinery and plant lubrication systems	Handle and store all lubricants and greases
U4607.0	4607.01	4607.02	4607.03	4607.04	4607.05

RIG AND HOIST	Plan lifts	Use rigging and hoisting equipment	Inspect rigging and hoisting equipment	Use standard hand signals and/or radio signal procedures	Use manual or power hoisting equipment
U4608.0	4608.01	4608.02	4608.03	4608.04	4608.05

INSTALL AND MAINTAIN MATERIAL-HANDLING SYSTEMS	Install, align, and maintain conveyor systems	Install and maintain conveyor components	Splice conveyor belts	Inspect tracking at idlers and pulleys	Inspect and maintain overhead cranes and hoists and monorail systems
U4609.0	4609.01	4609.02	4609.03	4609.04	4609.05
	Install and maintain material-handling valves	Install and maintain material-handling piping and duct work			
	4609.06	4609.07			

INDUSTRIAL MECHANIC (MILLWRIGHT)

INSTALL AND MAINTAIN POWER TRANSMISSION SYSTEMS	Calculate gear ratios, horsepower requirements, and final speeds	Install, align, and maintain power transmission belts	Install, align and maintain power transmission components	Install, align, and maintain couplings	Install and maintain keys, splines, bushes, and tapered bushings
	4610.01	4610.02	4610.03	4610.04	4610.05
U4610.0					

INSTALL AND MAINTAIN COMPRESSORS	Install and maintain rotary and reciprocating compressors	Install and maintain primary filters and coolers	Install and maintain separators and receivers	Install, maintain, and repair unloading, distribution, and lube systems	Install, maintain, and inspect dryers and coolers
	4611.01	4611.02	4611.03	4611.04	4611.05
U4611.0					

INSTALL AND MAINTAIN PUMPS	Install and maintain hydrodynamic pumps	Install, maintain, and replace hydrodynamic pump components	Install, maintain, and repair hydrostatic pumps	Inspect, maintain, and replace hydrostatic pump components	
	4612.01	4612.02	4612.03	4612.04	
U4612.0					

INSTALL, COMMISSION, AND MAINTAIN PRIME MOVERS AND MACHINERY	Lay out and prepare base or foundation	Install prime movers	Level and align machinery	Secure machinery	Conduct final checks on prime movers and machinery
	4613.01	4613.02	4613.03	4613.04	4613.05
U4613.0	Start up and run-in prime mover and ancillary equipment	Record footprint/signature of machinery	Maintain and repair prime movers		
	4613.06	4613.07	4613.08		

INDUSTRIAL MECHANIC (MILLWRIGHT)

WELD, BRAZE, AND SOLDER U4614.0	Prepare for welding 4614.01	Set up and operate electric arc welding equipment 4614.02	Set up and operate gas welding, coating and cutting equipment 4614.03	Apply welding symbols and instructions 4614.04	Fabricate materials 4614.05
	Heat-treat and stress-relieve metal and alloys 4614.06				

INSTALL AND MAINTAIN BEARINGS, SEALS, AND PACKING U4615.0	Install and maintain plain and journal bearings 4615.01	Install and maintain bearing housings 4615.02	Install and maintain bearings 4615.03	Inspect bearings 4615.04	Install static, dynamic, and rotary seals 4615.05
	Apply chemical sealants 4615.06	Install and remove packing 4615.07			

INSTALL AND MAINTAIN FANS AND BLOWERS U4616.0	Install and maintain single- and multi-stage fan and blower systems 4616.01	Maintain and troubleshoot single- and multi-stage fan and blower components 4616.02	Troubleshoot and balance airflow in the system 4616.03	Troubleshoot, inspect and replace worn or defective controls 4616.04	

INDUSTRIAL MECHANIC (MILLWRIGHT)

INSTALL AND MAINTAIN FLUID POWER SYSTEMS U4617.0	Apply fluid power formulas and principles 4617.01	Install and maintain control valves 4617.02	Install and maintain regulators 4617.03	Select and replace fluids 4617.04	Install, start up, maintain, and repair power units and associated fluid power circuitry 4617.05
	Install and maintain filters, strainers, and related contamination-control equipment 4617.06	Lay out, install, and maintain fluid conductors 4617.07	Install and maintain linear and rotary actuators 4617.08	Set up and adjust variable proportional control valves 4617.09	Set up, maintain, and adjust logic servo-proportional control systems 4617.10
	Troubleshoot fluid power systems 4617.11				

PERFORM PREVENTIVE AND PREDICTIVE MAINTENANCE U4618.0	Use and maintain fixed and portable vibration and balancing equipment 4618.01	Select and use various types of non-destructive test equipment 4618.02	Use computer and maintenance software packages 4618.03	Use and maintain noise-monitoring instruments 4618.04	Use and maintain temperature, pressure, and fibre optic monitoring instruments 4618.05
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