

Industrial Mechanic (Millwright) On-the-Job Checklist



	Level 1	Page 1/3
Red Seal Tasks	On-The-Job Duties	Completed
Performs safety-related functions	Organize PPE & safety equipment	☐
	Handle & store hazardous materials according to WHMIS	☐
	Follow due diligence procedures to avoid environmental contamination	☐
	Perform SOP for shut-down, lock-out & tag-out	☐
Performs routine trade tasks	Identify tools & equipment required for task	☐
	Identify fit & assembly requirements	☐
	Determine lubrication requirements & select lubricants	☐
	Select & use optical, laser & spirit levels	☐
	Select & use tools to install fastening & retaining devices	☐
	Perform magnet test to identify ferrous & non-ferrous metals	☐
	Clean metal to remove contaminants for heat treatment	☐
	Clean & prepare work area	☐
	Determine weight of load using manufacturers' manuals	☐
	Determine rigging equipment needed for lift	☐
	Determine hoisting/lifting & moving equipment requirements	☐
	Assess site conditions & plan route	☐
	Prepare for lift using rigging, hoisting/lifting & moving equipment	☐
	Use verbal communication before & during hoist/lift & move	☐
	Perform scheduled maintenance on equipment	☐
Uses drawings & schematics	Perform trade-related calculations to achieve job requirements	☐

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Industrial Mechanic (Millwright) On-the-Job Checklist



	Level 1	Page 2/3
Red Seal Tasks	On-The-Job Duties	Completed
Uses tools & equipment	Operate, maintain & store hand & portable power tools	☐
	Set up shop machines	☐
	Set up & use access equipment	☐
	Select & use tools according to job requirements	☐
	Clean, treat & maintain systems & components	☐
	Select & use leveling tools according to conditions	☐
	Select fastening & retaining devices	☐
	Set & verify calibration of precision measuring tools	☐
Uses communication & mentoring techniques	Demonstrate active listening practices & apply to tasks	☐
Performs measuring & layout	Identify fabrication requirements & materials	☐
	Select & use measuring tools	☐
	Clean & prepare work area, such as table, floor & wall	☐
	Transfer measurements to components, work area & material	☐
	Transfer measurements from benchmark & datum points to work area	☐
	Maintain & inspect for worn, damaged or defective tools	☐
Performs cutting & welding operations	Lays out work piece according to engineered drawings	☐
	Select & use tools & equipment, such as ovens & forges	☐
	Clean & prepare work area by removing obstructions	☐
	Perform OFC & PAC procedures	☐
	Perform OFW, brazing & soldering procedures	☐
	Perform scheduled maintenance on welding units	☐

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Industrial Mechanic (Millwright) On-the-Job Checklist



	Level 1	Page 3/3
Red Seal Tasks	On-The-Job Duties	Completed
Performs rigging, hoisting/lifting & moving	Identify & remove from service unsafe access equipment	☐
	Scale the load using measuring devices	☐
	Refer to load rating for sling arrangements	☐
	Confirm certification of hoisting/lifting & moving equipment	☐
	Assess ground conditions & plan route	☐
	Read & interpret load charts	☐
	Assess & make adjustments to stabilize load	☐
	Store rigging, hoisting/lifting & moving equipment	☐

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Industrial Mechanic (Millwright)

On-the-Job Checklist



	Level 2	Page 1/3
Red Seal Tasks	On-The-Job Duties	Completed
Performs safety-related functions	Select & use appropriate PPE & safety equipment	☐
	Identify & address hazards that could cause injury	☐
	Follow disposal procedures to avoid contamination of environment	☐
	Recognize & de-energize energy potential in machines	☐
Performs routine trade tasks	Identify required materials	☐
	Identify fabrication requirements & materials	☐
	Identify points of equipment requiring lubricants	☐
	Select & use leveling tools, such as plumb bob	☐
	Select & apply fasteners	☐
	Perform spark test to identify metal type	☐
	Heat metal to reach pre-determined temperature	☐
	Prepare material to be measured	☐
	Refer to manufacturers' manuals to determine lift procedures	☐
	Tag faulty or damaged rigging equipment & remove from service	☐
	Tag faulty or damaged moving equipment & remove from service	☐
	Assess site conditions & plan route	☐
	Install & set up rigging, hoisting/lifting & moving equipment	☐
	Use hand signals to perform hoist/lift & move	☐
	Perform visual inspection of rigging, hoisting/lifting & moving equipment	☐
Uses drawings & schematics	Identify symbols, such as hydraulic, welding, pneumatic, electrical & piping, according to standards	☐

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Industrial Mechanic (Millwright) On-the-Job Checklist



	Level 2	Page 2/3
Red Seal Tasks	On-The-Job Duties	Completed
Performs cutting & welding operations	Perform fabrication of work piece	☐
	Select & use oxy-fuel torches, temperature sticks & thermal imaging	☐
	Clean & prepare components, both inside & outside	☐
	Perform welding procedures & adjust amperage & polarity	☐
	Select types of gases & wire according to job requirements	☐
	Adjust amperage, shielding gas flow & feed rate	☐
Services shafts, bearings & seals	Remove & replace lubricants for systems & components	☐
	Position shafts, bearings & seals manually or with equipment	☐
	Perform condition-based monitoring methods & analysis	☐
	Remove & replace safety guards & safety devices	☐
	Rebuild or replace faulty shafts, bearings & seals	☐
Services couplings, clutches & brakes	Assemble couplings, clutches & brakes with mating equipment	☐
	Perform sensory inspection of couplings, clutches & brakes	☐
	Document & replace faulty components, as required	☐
	Diagnose, repair & align couplings, clutches & brakes	☐
Services chain & belt drive systems	Select chain & belt drive according to engineered drawings	☐
	Assess & detect faulty or damaged components to determine next steps	☐
	Clean, inspect, modify & adjust systems	☐
	Dismantle, remove, reassemble & align systems	☐

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Industrial Mechanic (Millwright) On-the-Job Checklist



	Level 2	Page 3/3
Red Seal Tasks	On-The-Job Duties	Completed
Services gear systems	Align gear systems with driven & driver equipment	☐
	Measure clearance, backlash & tooth contact of gear systems	☐
	Check vents, lubricants & seals according to maintenance schedule	☐
	Rebuild & replace faulty gear systems	☐
Performs shaft alignment procedures (rough alignment; rim & face dial alignment)	Correct vertical, horizontal & angular misalignment	☐
	Select & use dial alignment tools	☐

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Industrial Mechanic (Millwright) On-the-Job Checklist



	Level 3	Page 1/3
Red Seal Tasks	On-The-Job Duties	Completed
Performs safety-related functions	Clean & store PPE & safety equipment	☐
	Follow safe work practices working around cranes	☐
	Recognize environmental hazards	☐
	Recognize & de-energize energy potential in process systems	☐
Performs routine trade tasks	Estimate time required to complete job	☐
	Lay out & perform fabrication of work piece	☐
	Maintain lubricant levels & remove & replace lubricants	☐
	Level machinery & components	☐
	Restore threads using thread restoration methods	☐
	Perform file, chisel & punch test	☐
	Quench metal to achieve required metal properties	☐
	Acclimatize optical, precision, measuring, layout & measuring tools	☐
	Calculate load taking into consideration weight of load & rigging hardware	☐
	Assess inspect & document rigging equipment condition	☐
	Inspect & document condition of hoisting/lifting & moving equipment	☐
	Determine & secure lift radius using barricades & tape	☐
	Perform pre-use inspection of equipment to verify conditions	☐
	Use alternate communication methods when there is no direct line of sight	☐
	Identify & replace damaged hardware & remove from service	☐
Uses drawings & schematics	Interpret & cross-reference specifications, technical manuals & drawings to visualize outcome	☐

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Industrial Mechanic (Millwright) On-the-Job Checklist



	Level 3	Page 2/3
Red Seal Tasks	On-The-Job Duties	Completed
Performs shaft alignment procedures (cross-dial & reverse [double] dial; laser)	Record alignment data to demonstrate compliance	☐
	Select & use laser alignment tools & identify cause of misalignment	☐
Services fans & blowers	Clean & rough up base for fan or blower	☐
	Perform test/evaluation procedures using specialized equipment	☐
	Document & replace faulty components	☐
	Recondition, rebuild or replace fans & blowers	☐
Services pumps	Prepare base, base plates & structure for pump installation	☐
	Test & evaluate pumps using specialized equipment	☐
	Check temperatures, vacuum, pressure & flow rates	☐
	Restore or replace pump components & monitor	☐
Services compressors	Level, align & secure compressor	☐
	Detect faulty or damaged components to repair or replace	☐
	Clean or replace filters, check fluid levels, temperatures & pressures	☐
	Ensure operation of relief, check & auto drain valves	☐

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Industrial Mechanic (Millwright) On-the-Job Checklist



	Level 3	Page 3/3
Red Seal Tasks	On-The-Job Duties	Completed
Services process piping, tanks & containers	Prepare & rough up foundation then position tanks & containers	☐
	Connect process piping & components	☐
	Identify conditions that led to failure or breakdown	☐
	Determine if NDT or condition-based monitoring is required	☐
	Check liners, clear ventilation & verify operation of valves	☐
	Clean or replace filters & strainers	☐
	Repair leaks in tanks & containers	☐
	Clean process piping to prevent flow restrictions	☐
Services hydraulic systems	Select system components & hydraulic fluids	☐
	Interpret specification from technical manuals	☐
	Validate overall performance of hydraulic systems	☐
	Prevent contamination during repairs	☐
Services pneumatic & vacuum systems	Measure, cut, bend & assemble piping, hoses & tubing	☐
	Perform condition-based monitoring methods & analysis	☐
	Check & change gauges, filters & dryers	☐
	Lock-out, release pressure & remove & replace components	☐

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Industrial Mechanic (Millwright) On-the-Job Checklist



	Level 4	Page 1/2
Red Seal Tasks	On-The-Job Duties	Completed
Performs safety-related functions	Identify worn, damaged or defective PPE & safety equipment	☐
	Identify & implement ventilation in workspace	☐
	Report potential environmental hazards	☐
	Confirm zero-energy state in machines, systems & components	☐
Performs routine trade tasks	Coordinate work & consult with other tradespersons & personnel	☐
	Inspect fabricated work piece	☐
	Clean, treat & maintain systems & components	☐
	Record leveling data to demonstrate compliance to site	☐
	Achieve pre-determined torque or tensioning	☐
	Perform hardness test using specialized tools	☐
	Temper metal to achieve required metal properties	☐
	Verify optical precision, measuring, layout & leveling tools	☐
	Determine lifting points & centre of gravity	☐
	Confirm rigging capacity & certification of rigging equipment	☐
	Refer to load chart for boom angles & distance	☐
	Confirm location of personnel during rigging & hoisting/lifting	☐
	Adjust the schedule of a lift to address environmental conditions	☐
	Perform post-lift inspection of hoisting/lifting equipment	☐
	Use NDT techniques to detect rigging equipment defects	☐
Uses drawings & schematics	Produce field drawings & sketches & request updates to drawings to reflect the as-built drawings	☐
Uses communication & mentoring techniques	Demonstrate performance of a skill to a learner	☐

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Industrial Mechanic (Millwright) On-the-Job Checklist



	Level 4	Page 2/2
Red Seal Tasks	On-The-Job Duties	Completed
Services conveying systems	Prepare base, assemble & install conveying systems	☐
	Determine type of repair required according to inspection	☐
	Monitor & maintain power transmission using various methods	☐
	Size, replace & align components	☐
Services prime movers	Secure, level & align prime mover with driven equipment	☐
	Perform sensory inspection of prime movers	☐
	Check coolant, lubricant levels, packing & seals	☐
	Replace faulty components & auxiliary equipment	☐
Performs preventative & predictive maintenance	Record information for future equipment evaluation & repair	☐
	Collect readings at consistent points on rotating & non-rotating equipment	☐
	Identify type of imbalance in equipment	☐
	Select NDT method based on component characteristics	☐
	Interpret test report information	☐
	Review collected data to determine suitable maintenance	☐
Commissions & decommissions equipment	Perform & record baseline readings	☐
	Dismantle, remove or replace equipment	☐
Services robotics & automated equipment	Position, secure, level & align robotics & automated equipment	☐
	Detect & assess faulty or damaged equipment	☐
	Tag & report faulty or damaged equipment & repair or replace	☐
	Size & replace seals, bearings & power transmission devices	☐

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Information Regarding the Checklist

Saskatchewan Apprenticeship and Trade Certification Commission's (SATCCs) On-The-Job Checklist provides a complete list of trade-specific Red Seal tasks for apprentices to complete under the supervision of a journeyman. This work should be completed prior to attending the technical training level under which the duties are listed (e.g. Level 1 completed prior to attending Level 1 technical training).

Completing this checklist will ensure that apprentices are exposed to the full scope of a particular Red Seal trade throughout their apprenticeship program. It will also help prepare apprentices for each level of technical training by performing work on-the-job relating specifically to topics covered later on. The trade-specific tasks listed have been reviewed by certified journeymen in Saskatchewan for their accuracy and have been set to an appropriate skill level.

An apprentice spends approximately 85% of their apprenticeship term training on-the-job. It is the both the apprentice and the employer's or journeyman's responsibility to supervise an apprentice's practical skills development during their program.

To promote transparency and consistency, this document aligns with the 2017 Industrial Mechanic (Millwright) Red Seal Occupational Standard (Employment and Social Development Canada).

A complete version of the Occupational Standard can be found at www.red-seal.ca

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