

Refrigeration and Air Conditioning Mechanic (Commercial) NOA (2008) Subtask to Unit Comparison

NOA Subtask		Manitoba Unit(s)
Task 1 – Utilizes mechanical and architectural drawings, acts, codes, standards, legislation, and service and operating manuals.		
1.01	Interprets blueprints, drawings and schematics.	A13 Blueprint Reading and Drafting
1.02	Interprets service and operating manuals, technical bulletins and warranties.	A14 Trade Documents
1.03	Interprets tables, charts and diagrams.	A7 Refrigeration Fundamentals
		A14 Trade Documents
		A15 Pressure Enthalpy Diagrams
1.04	Interprets manufacturer's specifications.	A14 Trade Documents
1.05	Complies with government acts, codes, standards and regulations.	A3 Trade Safety Awareness
		A14 Trade Documents
Task 2 – Operates and maintains tools and equipment.		
2.01	Utilizes hand tools	A4 Tools and Equipment
2.02	Utilizes portable and stationary power tools.	A4 Tools and Equipment
2.03	Utilizes oxy-fuel and air-fuel equipment.	A9 Piping, Tubing, Soldering and Brazing
2.04	Utilizes recovery and recycle equipment.	A11 Leak Testing, Evacuation and Charging
2.05	Utilizes evacuation equipment and tools.	A11 Leak Testing, Evacuation and Charging
2.06	Utilizes charging equipment and tools.	A11 Leak Testing, Evacuation and Charging
2.07	Utilizes access/egress equipment.	A6 Hoisting, Lifting, Rigging and Access/Egress Equipment
2.08	Utilizes hoisting and rigging equipment.	A6 Hoisting, Lifting, Rigging and Access/Egress Equipment
2.09	Utilizes mechanical measuring equipment.	A4 Tools and Equipment
2.10	Utilizes electric and electronic diagnostic tools.	A4 Tools and Equipment
2.11	Utilizes computer equipment to interface with refrigeration and air conditioning systems.	F3 Troubleshooting Refrigeration and Air Conditioning Electronics
		F4 Control Systems
Task 3 –Demonstrates work practices and procedures.		
3.01	Installs fasteners, brackets and hangers.	A9 Piping, Tubing, Soldering and Brazing
3.02	Performs lock-out tagging and isolation procedures.	A3 Trade Safety Awareness
3.03	Installs piping and tubing.	A9 Piping, Tubing, Soldering and Brazing
3.04	Applies sealants and adhesives.	A9 Piping, Tubing, Soldering and Brazing
3.05	Cleans and lubricates parts and components.	A4 Tools and Equipment
3.06	Performs internal electrical wiring of systems.	A12 Electrical Fundamentals
		F2 Control Circuits and Wiring Diagrams

NOA Subtask		Manitoba Unit(s)
Task 4 –Coordinates refrigeration and air conditioning installation and maintenance.		
4.01	Estimates work requirements.	A16 Job Coordination
4.02	Conducts work area inspection.	A3 Trade Safety Awareness
		A16 Job Coordination
4.03	Coordinates work requirements.	A16 Job Coordination
4.04	Maintains customer relations.	A16 Job Coordination
4.05	Clarifies end user problems with refrigeration and air conditioning systems.	A16 Job Coordination
4.06	Completes work-related documentation.	A14 Trade Documents
4.07	Generates maintenance documentation.	A14 Trade Documents
Task 5 –Performs system components, accessories and materials acquisition and handling.		
5.01	Requisitions equipment.	A14 Trade Documents
		A14 Job Coordination
5.02	Receives materials/equipment. Transfers equipment to designated location.	A14 Trade Documents
		A16 Job Coordination
5.03	Transfers equipment to designated location.	A14 Trade Documents
		A16 Job Coordination
Task 6 –Plans installation of refrigeration and air cooling systems.		
6.01	Verifies refrigeration and air conditioning system parameters and requirements.	C1 Refrigeration and Air Conditioning Installation
		C2 Refrigeration Load Calculations
		C3 Refrigeration System Design
		C4 Commercial Refrigeration Systems
		C5 Industrial Refrigeration Systems
6.02	Selects refrigeration and air cooling components, equipment and accessories.	E1 Valves and Accessory Devices
		E2 Compressors I
		E3 Compressors II
		E4 Compressors III
		E5 Motors I
		E6 Motors II
		E7 Metering Devices
		E8 Fans, Mechanical Drives, Air Filters and Air Cleaners
		E9 Condensers
		E10 Evaporators
		E11 Fluid Dynamics and Circulating Pumps
		E12 Refrigerant Flow Controls
6.03	Prepares components, equipment and accessories layout.	E1 Valves and Accessory Devices
		E2 Compressors I
		E3 Compressors II
		E4 Compressors III
		E5 Motors I
		E6 Motors II
		E7 Metering Devices
		E8 Fans, Mechanical Drives, Air Filters and Air Cleaners
		E9 Condensers
		E10 Evaporators
		E11 Fluid Dynamics and Circulating Pumps
		E12 Refrigerant Flow Controls
6.04	Selects refrigerant.	A8 Refrigerants and Oils
6.05	Sizes pipe.	A9 Piping, Tubing, Soldering and Brazing
6.06	Lays out piping.	A9 Piping, Tubing, Soldering and Brazing
6.07	Selects insulation.	A9 Piping, Tubing, Soldering and Brazing

NOA Subtask		Manitoba Unit(s)
Task 7 –Installs refrigeration and air cooling systems.		
7.01	Prepares site/location.	A16 Job Coordination C1 Refrigeration and Air Conditioning Installation
7.02	Assembles refrigeration and air cooling components, equipment and accessories.	E1 Valves and Accessory Devices
		E2 Compressors I
		E3 Compressors II
		E4 Compressors III
		E5 Motors I
		E6 Motors II
		E7 Metering Devices
		E8 Fans, Mechanical Drives, Air Filters and Air Cleaners
		E9 Condensers
		E10 Evaporators
		E11 Fluid Dynamics and Circulating Pumps
		E12 Refrigerant Flow Controls
7.03	Positions and secures refrigeration and air cooling components, equipment and accessories.	E1 Valves and Accessory Devices
		E2 Compressors I
		E3 Compressors II
		E4 Compressors III
		E5 Motors I
		E6 Motors II
		E7 Metering Devices
		E8 Fans, Mechanical Drives, Air Filters and Air Cleaners
		E9 Condensers
		E10 Evaporators
		E11 Fluid Dynamics and Circulating Pumps
		E12 Refrigerant Flow Controls
7.04	Routes and connects refrigerant piping.	A9 Piping, Tubing, Soldering and Brazing
7.05	Performs leak test on system.	A11 Leak Testing, Evacuation and Charging
7.06	Evacuates system.	A11 Leak Testing, Evacuation and Charging
7.07	Charges system.	A11 Leak Testing, Evacuation and Charging
Task 8 –Commissions refrigeration and air cooling systems.		
8.01	Performs pre-start-up checks.	C1 Refrigeration and Air Conditioning Installation
8.02	Starts up refrigeration and air conditioning system.	C1 Refrigeration and Air Conditioning Installation
8.03	Completes system charge.	A11 Leak Testing, Evacuation and Charging
8.04	Sets up primary and secondary refrigeration system adjustable switches, valves and regulators.	E1 Valves and Accessory Devices
Task 9 – Maintains refrigeration and air cooling systems.		
9.01	Inspects refrigeration and air cooling systems.	E1 Valves and Accessory Devices
		E2 Compressors I
		E3 Compressors II
		E4 Compressors III
		E5 Motors I
		E6 Motors II
		E7 Metering Devices
		E8 Fans, Mechanical Drives, Air Filters and Air Cleaners
		E9 Condensers
		E10 Evaporators
		E11 Fluid Dynamics and Circulating Pumps
		E12 Refrigerant Flow Controls

NOA Subtask		Manitoba Unit(s)
9.02	Tests electrical and electronic components.	A4 Tools and Equipment
		A12 Electrical Fundamentals
		F3 Troubleshooting Refrigeration and Air Conditioning Electronics
9.03	Tests mechanical components.	A4 Tools and Equipment
9.04	Recommends corrective action.	A16 Job Coordination
9.05	Selects refrigeration and air cooling equipment and components.	A14 Trade Documents
		A16 Job Coordination
9.06	Replaces defective components and equipment.	E1 Valves and Accessory Devices
		E2 Compressors I
		E3 Compressors II
		E4 Compressors III
		E5 Motors I
		E6 Motors II
		E7 Metering Devices
		E8 Fans, Mechanical Drives, Air Filters and Air Cleaners
		E9 Condensers
		E10 Evaporators
		E11 Fluid Dynamics and Circulating Pumps
		E12 Refrigerant Flow Controls
9.07	Repairs/overhauls defective components and equipment.	E1 Valves and Accessory Devices
		E2 Compressors I
		E3 Compressors II
		E4 Compressors III
		E5 Motors I
		E6 Motors II
		E7 Metering Devices
		E8 Fans, Mechanical Drives, Air Filters and Air Cleaners
		E9 Condensers
		E10 Evaporators
		E11 Fluid Dynamics and Circulating Pumps
		E12 Refrigerant Flow Controls
9.08	Verifies refrigeration and air cooling system component function.	E1 Valves and Accessory Devices
		E2 Compressors I
		E3 Compressors II
		E4 Compressors III
		E5 Motors I
		E6 Motors II
		E7 Metering Devices
		E8 Fans, Mechanical Drives, Air Filters and Air Cleaners
		E9 Condensers
		E10 Evaporators
		E11 Fluid Dynamics and Circulating Pumps
		E12 Refrigerant Flow Controls
9.09	Performs predictive maintenance.	E1 Valves and Accessory Devices
		E2 Compressors I
		E3 Compressors II
		E4 Compressors III
		E5 Motors I
		E6 Motors II
		E7 Metering Devices
		E8 Fans, Mechanical Drives, Air Filters and Air Cleaners
		E9 Condensers
		E10 Evaporators
		E11 Fluid Dynamics and Circulating Pumps
		E12 Refrigerant Flow Controls

NOA Subtask		Manitoba Unit(s)		
9.10	Performs preventative maintenance.	E1 Valves and Accessory Devices		
		E2 Compressors I		
		E3 Compressors II		
		E4 Compressors III		
		E5 Motors I		
		E6 Motors II		
		E7 Metering Devices		
		E8 Fans, Mechanical Drives, Air Filters and Air Cleaners		
		E9 Condensers		
		E10 Evaporators		
		E11 Fluid Dynamics and Circulating Pumps		
		E12 Refrigerant Flow Controls		
Task 10 – Plans installation of heating, ventilating and air conditioning systems.				
10.01	Verifies heating, ventilating and air conditioning systems, parameters and requirements.	C1 Refrigeration and Air Conditioning Installation		
		D1 Air Conditioning Fundamentals		
		D2 Air Conditioning Systems		
		D3 Packaged Air Conditioning Units		
		D4 Heat Pump Systems		
		D5 Air Conditioning Load Calculations		
		D6 Air Conditioning System Design		
		D7 Duct Systems and Design		
		D8 Heating Systems		
		D10 Chillers and Chiller Systems		
10.02	Selects heating, ventilating and air conditioning components and equipment.	E1 Valves and Accessory Devices		
		E2 Compressors I		
		E3 Compressors II		
		E4 Compressors III		
		E5 Motors I		
		E6 Motors II		
		E7 Metering Devices		
		E8 Fans, Mechanical Drives, Air Filters and Air Cleaners		
		E9 Condensers		
		E10 Evaporators		
		E13 Evaporative Condensers and Cooling Towers		
		10.03	Confirms heating, ventilating and air conditioning requirements.	D6 Air Conditioning System Design
				D8 Heating Systems
Task 11 – Installs heating, ventilating and air conditioning systems.				
11.01	Prepares heating, ventilating and air conditioning equipment site/location.	A16 Job Coordination		
11.02	Assembles heating, ventilating and air conditioning equipment.	C1 Refrigeration and Air Conditioning Installation		
		E1 Valves and Accessory Devices		
		E2 Compressors I		
		E3 Compressors II		
		E4 Compressors III		
		E5 Motors I		
		E6 Motors II		
		E7 Metering Devices		
		E8 Fans, Mechanical Drives, Air Filters and Air Cleaners		
		E9 Condensers		
		E10 Evaporators		
E13 Evaporative Condensers and Cooling Towers				

NOA Subtask		Manitoba Unit(s)
11.03	Positions and secures heating, ventilating and air conditioning equipment.	E1 Valves and Accessory Devices
		E2 Compressors I
		E3 Compressors II
		E4 Compressors III
		E5 Motors I
		E6 Motors II
		E7 Metering Devices
		E8 Fans, Mechanical Drives, Air Filters and Air Cleaners
		E9 Condensers
		E10 Evaporators
		E13 Evaporative Condensers and Cooling Towers
Task 12 – Commissions heating, ventilating and air conditioning systems.		
12.01	Performs pre-start-up checks.	C1 Refrigeration and Air Conditioning Installation
		D1 Air Conditioning Fundamentals
		D2 Air Conditioning Systems
		D3 Packaged Air Conditioning Units
		D4 Heat Pump Systems
		D5 Air Conditioning Load Calculations
		D6 Air Conditioning System Design
		D8 Heating Systems
		D10 Chillers and Chiller Systems
		12.02
D1 Air Conditioning Fundamentals		
D2 Air Conditioning Systems		
D3 Packaged Air Conditioning Units		
D4 Heat Pump Systems		
D5 Air Conditioning Load Calculations		
D6 Air Conditioning System Design		
D8 Heating Systems		
D10 Chillers and Chiller Systems		
Task 13 – Maintains heating, ventilating and air conditioning systems.		
13.01	Inspects heating, ventilating and air conditioning systems.	E1 Valves and Accessory Devices
		E2 Compressors I
		E3 Compressors II
		E4 Compressors III
		E5 Motors I
		E6 Motors II
		E7 Metering Devices
		E8 Fans, Mechanical Drives, Air Filters and Air Cleaners
		E9 Condensers
		E10 Evaporators
		E13 Evaporative Condensers and Cooling Towers
13.02	Tests electrical/electronic components in heating, ventilating and air conditioning systems.	A4 Tools and Equipment
		A12 Electrical Fundamentals
13.03	Tests mechanical components in heating, ventilating and air conditioning systems.	A4 Tools and Equipment
13.04	Recommends corrective action.	A16 Job Coordination
13.05	Selects heating, ventilating and air conditioning equipment and components.	A14 Trade Documents
		A16 Job Coordination

NOA Subtask		Manitoba Unit(s)
13.06	Replaces defective heating, ventilating and air conditioning components and equipment.	E1 Valves and Accessory Devices
		E2 Compressors I
		E3 Compressors II
		E4 Compressors III
		E5 Motors I
		E6 Motors II
		E7 Metering Devices
		E8 Fans, Mechanical Drives, Air Filters and Air Cleaners
		E9 Condensers
		E10 Evaporators
		E13 Evaporative Condensers and Cooling Towers
13.07	Repairs/overhauls defective components and equipment for heating, ventilating and air conditioning systems.	E1 Valves and Accessory Devices
		E2 Compressors I
		E3 Compressors II
		E4 Compressors III
		E5 Motors I
		E6 Motors II
		E7 Metering Devices
		E8 Fans, Mechanical Drives, Air Filters and Air Cleaners
		E9 Condensers
		E10 Evaporators
		E13 Evaporative Condensers and Cooling Towers
13.08	Verifies heating, ventilating and air conditioning systems and component function.	D9 Air Measuring Instruments and System Air Balancing
		E1 Valves and Accessory Devices
		E2 Compressors I
		E3 Compressors II
		E4 Compressors III
		E5 Motors I
		E6 Motors II
		E7 Metering Devices
		E8 Fans, Mechanical Drives, Air Filters and Air Cleaners
		E9 Condensers
		E10 Evaporators
E13 Evaporative Condensers and Cooling Towers		
13.09	Performs predictive maintenance on heating systems.	E1 Valves and Accessory Devices
		E2 Compressors I
		E3 Compressors II
		E4 Compressors III
		E5 Motors I
		E6 Motors II
		E7 Metering Devices
		E8 Fans, Mechanical Drives, Air Filters and Air Cleaners
		E9 Condensers
		E10 Evaporators
		E13 Evaporative Condensers and Cooling Towers
13.10	Performs preventative maintenance on heating, ventilating and air conditioning systems	E1 Valves and Accessory Devices
		E2 Compressors I
		E3 Compressors II
		E4 Compressors III
		E5 Motors I
		E6 Motors II
		E7 Metering Devices
		E8 Fans, Mechanical Drives, Air Filters and Air Cleaners
		E9 Condensers
		E10 Evaporators
		E13 Evaporative Condensers and Cooling Towers

NOA Subtask		Manitoba Unit(s)
Task 14 – Plans installation of control systems.		
14.01	Selects controls.	F1 Control Fundamentals F4 Control Systems
14.02	Lays out control system components and wiring.	F2 Control Circuits and Wiring Diagrams F4 Control Systems
Task 15 – Installs control systems.		
15.01	Prepares site/location for control system.	F4 Control Systems
15.02	Positions and secures control system components.	F4 Control Systems
15.03	Connects system wiring and tubing.	A9 Piping, Tubing, Soldering and Brazing F2 Control Circuits and Wiring Diagrams
Task 16 – Commissions control systems.		
16.01	Performs pre-start-up checks.	F4 Control Systems
16.02	Sets operating parameters.	F4 Control Systems
16.03	Starts up control system.	F4 Control Systems
Task 17 – Maintains control systems.		
17.01	Inspects control system.	F4 Control Systems
17.02	Verifies and resets operating parameters.	F4 Control Systems
17.03	Tests electrical/electronic components in control system.	A12 Electrical Fundamentals F3 Troubleshooting Refrigeration and Air Conditioning Electronics F5 Troubleshooting with Schematics and Wiring Diagrams
17.04	Tests mechanical components in control system.	F4 Control Systems
17.05	Recommends corrective action.	A16 Job Coordination
17.06	Selects control system equipment and components.	A14 Trade Documents A16 Job Coordination
17.07	Replaces defective control components and equipment.	F4 Control Systems
17.08	Repairs/overhauls defective components and equipment for control system.	F4 Control Systems
17.09	Verifies control system component function.	F4 Control Systems
17.10	Performs preventative maintenance on control system.	F4 Control Systems
17.11	Calibrates operating and safety controls.	F4 Control Systems