## Apprenticeship Manitoba

## Refrigeration and Air Conditioning Mechanic RSOS (2019) Subtask to Unit Comparison

RSOS Subtask		Manitoba Unit(s)
Task A1 – Performs safety-related functions		
1.01	Maintains safe work environment	A2 Trade Safety Awareness
		A8 HVAC/R Activities I
		In-context all units
1.02	Performs lock-out, tag-out and isolation	A2 Trade Safety Awareness
1.02	procedures	C5 Control Systems Service II
1.03	Uses personal protective equipment	A2 Trade Safety Awareness
	(PPE) and safety equipment	A3 Tools and Equipment
	()	In-context all units
Task /	A2 – Uses tools and equipment	
2.01	Uses hand tools	A3 Tools and Equipment
		C7 Duct Systems
2.02	Uses portable and stationary power	A3 Tools and Equipment
	tools	C7 Duct Systems
2.03	Uses brazing and soldering equipment	A3 Tools and Equipment
		A8 HVAC/R Activities I
2.04	Uses recovery and recycling tools and	A3 Tools and Equipment
	equipment	A8 HVAC/R Activities I
2.05	Uses evacuation tools and equipment	A3 Tools and Equipment
		A8 HVAC/R Activities I
2.06	Uses charging tools and equipment	A3 Tools and Equipment
		A8 HVAC/R Activities I
2.07	Uses diagnostic and measuring tools	A3 Tools and Equipment
	and equipment	A8 HVAC/R Activities I
		A9 HVAC/R System Fundamentals
		A10 Electrical and Control Fundamentals
		B5 HVAC/R Systems Service
		C7 Duct Systems
2.08	Uses access equipment	A3 Tools and Equipment
2.09	Uses rigging, hoisting and lifting	A3 Tools and Equipment
	equipment	
2.10	Uses digital technology	A3 Tools and Equipment
		A5 Trade Related Communications
Task /	A3 – Organizes work	
3.01	Interprets drawings and specifications	A4 Equipment and Service Documents
		B1 Drawings, Blueprints and Specifications
		C1 HVAC Estimation and Coordination
		C3 Control Systems Installation II
		C5 Control Systems Service II
		C7 Duct Systems
		D1 Refrigeration Estimation and Coordination
3.02	Uses documentation and reference	A4 Equipment and Service Documents
	material	A7 Thermodynamic and Heat Fundamentals
		B1 Drawings, Blueprints and Specifications
		B3 HVAC/R Systems Installation
		C1 HVAC Estimation and Coordination
		C3 Control Systems Installation II

	RSOS Subtask	Manitoba Unit(s)
		C5 Control Systems Service II
		C7 Duct Systems
		D1 Refrigeration Estimation and Coordination
3.03	Plans job tasks and procedures	A2 Trade Safety Awareness
		B3 HVAC/R Systems Installation
		C1 HVAC Estimation and Coordination
		C3 Control Systems Installation II
		C5 Control Systems Service II
		C7 Duct Systems
		D1 Refrigeration Estimation and Coordination
Tack	A4 – Uses communication and mentori	ng tochniquos
4.01	Uses communication techniques	A1 Learning About Work
4.01	baca communication teeninques	A5 Trade Related Communications
		C3 Control Systems Installation II
		D7 Journeyperson Trainer
4.02	Lisos montoring tochniquos	D7 Journeyperson Trainer
4.02	Uses mentoring techniques	
Task I	B5 – Performs worksite preparation	
5.01	Prepares work site	A8 HVAC/R Activities I
5.02	Handles materials and supplies	A8 HVAC/R Activities I
0.02		B2 HVAC/R Activities II
		C7 Duct Systems
		In-context all units
Task I	B6 – Performs trade activities	
6.01	Performs brazing and soldering	A8 HVAC/R Activities I
6.02	Performs leak and pressure tests on	A7 Thermodynamic and Heat Fundamentals
	system	A8 HVAC/R Activities I
		B2 HVAC/R Activities II
6.03	Evacuates systems	A8 HVAC/R Activities I
	, ,	B2 HVAC/R Activities II
6.04	Uses refrigerants, gases and oils	A7 Thermodynamic and Heat Fundamentals
		A8 HVAC/R Activities I
		B2 HVAC/R Activities II
6.05	Performs field wiring of systems	B2 HVAC/R Activities II
	· · · · · · · · · · · · · · · · · · ·	C3 Control Systems Installation II
6.06	Applies sealants and adhesives	A8 HVAC/R Activities I
0.00		C7 Duct Systems
	C7 – Plans installation of HVAC/R syste	
7.01	Verifies HVAC/R system parameters	A10 Electrical and Control Fundamentals
	and requirements	COLIVIAC Custome Installation
	and requirements	C2 HVAC Systems Installation
		C7 Duct Systems
	and requirements	C7 Duct Systems B4 Control Systems Installation I
	and requirements	C7 Duct Systems B4 Control Systems Installation I C8 HVAC Heat Pump Retrofit
	and requirements	C7 Duct Systems B4 Control Systems Installation I
	and requirements	C7 Duct Systems B4 Control Systems Installation I C8 HVAC Heat Pump Retrofit D1 Refrigeration Estimation and Coordination D2 Refrigeration Systems Installation
		C7 Duct Systems B4 Control Systems Installation I C8 HVAC Heat Pump Retrofit D1 Refrigeration Estimation and Coordination
7.02	Selects HVAC/R equipment,	C7 Duct Systems B4 Control Systems Installation I C8 HVAC Heat Pump Retrofit D1 Refrigeration Estimation and Coordination D2 Refrigeration Systems Installation
7.02		C7 Duct Systems B4 Control Systems Installation I C8 HVAC Heat Pump Retrofit D1 Refrigeration Estimation and Coordination D2 Refrigeration Systems Installation D6 Industrial Refrigeration Systems D1 Refrigeration Estimation and Coordination D2 Refrigeration Systems Installation
7.02	Selects HVAC/R equipment,	C7 Duct Systems B4 Control Systems Installation I C8 HVAC Heat Pump Retrofit D1 Refrigeration Estimation and Coordination D2 Refrigeration Systems Installation D6 Industrial Refrigeration Systems D1 Refrigeration Estimation and Coordination D2 Refrigeration Systems Installation
7.02	Selects HVAC/R equipment,	C7 Duct Systems B4 Control Systems Installation I C8 HVAC Heat Pump Retrofit D1 Refrigeration Estimation and Coordination D2 Refrigeration Systems Installation D6 Industrial Refrigeration Systems D1 Refrigeration Estimation and Coordination D2 Refrigeration Systems Installation B3 HVAC/R Systems Installation
	Selects HVAC/R equipment,	C7 Duct Systems B4 Control Systems Installation I C8 HVAC Heat Pump Retrofit D1 Refrigeration Estimation and Coordination D2 Refrigeration Systems Installation D6 Industrial Refrigeration Systems D1 Refrigeration Estimation and Coordination D2 Refrigeration Systems Installation B3 HVAC/R Systems Installation C8 HVAC Heat Pump Retrofit
	Selects HVAC/R equipment, components and accessories	C7 Duct SystemsB4 Control Systems Installation IC8 HVAC Heat Pump RetrofitD1 Refrigeration Estimation and CoordinationD2 Refrigeration Systems InstallationD6 Industrial Refrigeration SystemsD1 Refrigeration Estimation and CoordinationD2 Refrigeration Systems InstallationB3 HVAC/R Systems InstallationC8 HVAC Heat Pump RetrofitB3 HVAC/R Systems Installation
	Selects HVAC/R equipment, components and accessories Determines placement of HVAC/R	C7 Duct Systems B4 Control Systems Installation I C8 HVAC Heat Pump Retrofit D1 Refrigeration Estimation and Coordination D2 Refrigeration Systems Installation D6 Industrial Refrigeration Systems D1 Refrigeration Estimation and Coordination D2 Refrigeration Systems Installation B3 HVAC/R Systems Installation C8 HVAC Heat Pump Retrofit B3 HVAC/R Systems Installation C2 HVAC Systems Installation
	Selects HVAC/R equipment, components and accessories Determines placement of HVAC/R equipment, components and	C7 Duct SystemsB4 Control Systems Installation IC8 HVAC Heat Pump RetrofitD1 Refrigeration Estimation and CoordinationD2 Refrigeration Systems InstallationD6 Industrial Refrigeration SystemsD1 Refrigeration Estimation and CoordinationD2 Refrigeration Systems InstallationD3 Refrigeration Systems InstallationD4 Refrigeration Systems InstallationD5 Refrigeration Systems InstallationD6 Refrigeration Systems InstallationD7 Refrigeration Systems InstallationD8 HVAC/R Systems InstallationC8 HVAC Heat Pump RetrofitB3 HVAC/R Systems InstallationC2 HVAC Systems InstallationC7 Duct Systems
	Selects HVAC/R equipment, components and accessories Determines placement of HVAC/R equipment, components and	C7 Duct SystemsB4 Control Systems Installation IC8 HVAC Heat Pump RetrofitD1 Refrigeration Estimation and CoordinationD2 Refrigeration Systems InstallationD6 Industrial Refrigeration SystemsD1 Refrigeration Estimation and CoordinationD2 Refrigeration Systems InstallationB3 HVAC/R Systems InstallationC8 HVAC Heat Pump RetrofitB3 HVAC/R Systems InstallationC2 HVAC Systems InstallationC3 HVAC Systems InstallationC3 HVAC Systems InstallationC4 HVAC Systems InstallationC5 HVAC Heat Pump RetrofitC6 HVAC Heat Pump Retrofit
7.02	Selects HVAC/R equipment, components and accessories Determines placement of HVAC/R equipment, components and	C7 Duct SystemsB4 Control Systems Installation IC8 HVAC Heat Pump RetrofitD1 Refrigeration Estimation and CoordinationD2 Refrigeration Systems InstallationD6 Industrial Refrigeration SystemsD1 Refrigeration Estimation and CoordinationD2 Refrigeration Systems InstallationD3 Refrigeration Systems InstallationD4 Refrigeration Systems InstallationD5 Refrigeration Systems InstallationD6 Refrigeration Systems InstallationD7 Refrigeration Systems InstallationD8 HVAC/R Systems InstallationC8 HVAC Heat Pump RetrofitB3 HVAC/R Systems InstallationC2 HVAC Systems InstallationC7 Duct Systems

	RSOS Subtask	Manitoba Unit(s)
		C2 HVAC Systems Installation
		C8 HVAC Heat Pump Retrofit
		D1 Refrigeration Estimation and Coordination
		D3 Control Systems Installation III
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8.01	C8 – Plans installation of control system Verifies control system parameters and	s A10 Electrical and Control Fundamentals
0.01	requirements	B3 HVAC/R Systems Installation
	requirements	C3 Control Systems Installation II
		C8 HVAC Heat Pump Retrofit
		D1 Refrigeration Estimation and Coordination
		D3 Control Systems Installation III
8.02	Selects control system components and	A10 Electrical and Control Fundamentals
0.02	accessories	B3 HVAC/R Systems Installation
		C3 Control Systems Installation II
		C6 Motors II
		C8 HVAC Heat Pump Retrofit
		D1 Refrigeration Estimation and Coordination
		D3 Control Systems Installation III
8.03	Determines placement of control	A10 Electrical and Control Fundamentals
0.00	system components and accessories	B3 HVAC/R Systems Installation
	system compenents and accessories	C3 Control Systems Installation II
		C8 HVAC Heat Pump Retrofit
		D1 Refrigeration Estimation and Coordination
		D3 Control Systems Installation III
8.04	Performs control system material take-	A10 Electrical and Control Fundamentals
0.04	off	B3 HVAC/R Systems Installation
		B4 Control Systems Installation I
		C1 HVAC Estimation and Coordination
		C3 Control Systems Installation II
		C8 HVAC Heat Pump Retrofit
		D1 Refrigeration Estimation and Coordination
		D3 Control Systems Installation III
	D9 – Installs HVAC/R systems	T
9.01	Confirms system layout	A9 HVAC/R System Fundamentals
		B3 HVAC/R Systems Installation
		C2 HVAC Systems Installation
		C7 Duct Systems
		C8 HVAC Heat Pump Retrofit
		D2 Refrigeration Systems Installation
		D6 Industrial Refrigeration Systems
9.02	Assembles HVAC/R equipment,	B3 HVAC/R Systems Installation
	components and accessories	C2 HVAC Systems Installation
		C7 Duct Systems
		C8 HVAC Heat Pump Retrofit
		D2 Refrigeration Systems Installation
9.03	Places HVAC/R equipment,	B3 HVAC/R Systems Installation
	components and accessories	C2 HVAC Systems Installation
		C7 Duct Systems
		C8 HVAC Heat Pump Retrofit
<u> </u>		D2 Refrigeration Systems Installation
9.04	Installs fasteners, brackets and hangers	A9 HVAC/R System Fundamentals
0.0		C7 Duct Systems
9.05	Installs HVAC/R piping and tubing	A8 HVAC/R Activities I
		B8 Pipe Threading and Assembly
		C8 HVAC Heat Pump Retrofit
9.06	Applies HVAC/R holding charge	B2 HVAC/R Activities II
		B3 HVAC/R Systems Installation
		C4 HVAC Systems Service

	RSOS Subtask	Manitoba Unit(s)
		C8 HVAC Heat Pump Retrofit
		D2 Refrigeration Systems Installation
Task D	010 – Installs control systems	
10.01	Places control system components	A10 Electrical and Control Fundamentals
		B4 Control Systems Installation I
		C3 Control Systems Installation II
		C6 Motors II
		C8 HVAC Heat Pump Retrofit
		D3 Control Systems Installation III
10.02	Connects control systems	A10 Electrical and Control Fundamentals
	,	B4 Control Systems Installation I
		C3 Control Systems Installation II
		C6 Motors II
		C8 HVAC Heat Pump Retrofit
Task E	11 – Commissions HVAC/R systems	
11.01	Performs pre-start-up checks for	A9 HVAC/R System Fundamentals
	HVAC/R systems	C5 Control Systems Service II
		C8 HVAC Heat Pump Retrofit
		C4 HVAC Systems Service
		D4 Refrigeration Systems Service
		D6 Industrial Refrigeration Systems
11.02	Performs start-up of HVAC/R systems	A9 HVAC/R System Fundamentals
		B5 HVAC/R Systems Service
		C4 HVAC Systems Service
		C8 HVAC Heat Pump Retrofit
		D4 Refrigeration Systems Service
		D6 Industrial Refrigeration Systems
	Completes HVAC/R system charge	B5 HVAC/R Systems Service
11.03		C4 HVAC Systems Service
11.05		C8 HVAC Heat Pump Retrofit
		D4 Refrigeration Systems Service
	Sets up primary and secondary	B5 HVAC/R Systems Service
	HVAC/R system components	C4 HVAC Systems Service
11.04		C8 HVAC Heat Pump Retrofit
		D4 Refrigeration Systems Service
		D6 Industrial Refrigeration Systems
Task E	12 – Commissions control systems	
12.01	Performs start-up checks for control	A10 Electrical and Control Fundamentals
	systems	B6 Control Systems Service I
		C5 Control Systems Service II
		C6 Motors II
		C8 HVAC Heat Pump Retrofit
		D5 Control Systems Service III
12.02	Verifies/sets operating parameters	A10 Electrical and Control Fundamentals
		B6 Control Systems Service I
		C5 Control Systems Service II
		C6 Motors II
		C8 HVAC Heat Pump Retrofit
		D5 Control Systems Service III
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	13 – Maintains HVAC/R systems	
13.01	Inspects HVAC/R systems	B2 HVAC/R Activities II
		B5 HVAC/R Systems Service
		C4 HVAC Systems Service
		D4 Refrigeration Systems Service
		D6 Industrial Refrigeration Systems
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RSOS Subtask		Manitoba Unit(s)
13.02	Performs predictive and scheduled	B2 HVAC/R Activities II
	maintenance on HVAC/R systems	B5 HVAC/R Systems Service
		C4 HVAC Systems Service
		D4 Refrigeration Systems Service
		D6 Industrial Refrigeration Systems
13.03	Tests HVAC/R system components and	A9 HVAC/R System Fundamentals
	accessories	B2 HVAC/R Activities II
		B7 Motors I
		C4 HVAC Systems Service
		C6 Motors II
		D4 Refrigeration Systems Service
		D6 Industrial Refrigeration Systems
Task F	14 – Services HVAC/R systems	
14.01	Troubleshoots HVAC/R systems	A10 Electrical and Control Fundamentals
		B7 Motors I
		C4 HVAC Systems Service
		D4 Refrigeration Systems Service
		D6 Industrial Refrigeration Systems
14.02	Repairs HVAC/R systems	B5 HVAC/R Systems Service
		C4 HVAC Systems Service
		D4 Refrigeration Systems Service
		D6 Industrial Refrigeration Systems
	15 – Maintains and services control sys	
15.01	Performs maintenance and inspection on	A10 Electrical and Control Fundamentals
	control systems	B6 Control Systems Service I
		C5 Control Systems Service II
		D5 Industrial Refrigeration Systems
15.02	Troubleshoots control systems	A10 Electrical and Control Fundamentals
		B6 Control Systems Service I
		C5 Control Systems Service II
		D5 Industrial Refrigeration Systems
15.03	Calibrates operating and safety controls	B6 Control Systems Service I
		C5 Control Systems Service II
		D5 Industrial Refrigeration Systems
15.04	Repairs control systems	B6 Control Systems Service I
		C5 Control Systems Service II
		D5 Industrial Refrigeration Systems

