

PART 1 - GENERAL

1.1 RELATED REQUIREMENTS

- .1 Section 23 05 00 - Common Work Results for HVAC.
- .2 Section 23 05 05 - Installation of Pipework.
- .3 Section 23 05 13 - Common Motor Requirements for HVAC Equipment.
- .4 Section 23 05 93 - Testing, Adjusting and Balancing for HVAC.
- .5 Section 23 11 13 - Facility Fuel Oil Piping.
- .6 Section 23 34 00 - HVAC Fans.
- .7 Section 23 51 00 - Breeching, Chimneys and Stacks.

1.2 REFERENCE STANDARDS

- .1 American Society of Heating, Refrigeration and Air Conditioning Engineers (ASHRAE)
 - .1 ASHRAE Standard 90.1-2019 (SI), Energy Standard for Buildings Except Low-Rise Residential Buildings (ANSI Approved; IESNA Co-sponsored).
 - .2 CSA Group (CSA)
 - .1 CSA B139:19, Installation Code for Oil Burning Equipment.
 - .2 CSA B140.2.1-10(R2019), Atomizing- Type Oil Burners.
 - .3 CAN/CSA-B140.4-04(R2019), Oil-Fired Warm Air Furnaces.
 - .4 CSA B140.14-M1979 (R2001), Automatic Flue-Pipe Dampers for Use with Oil Fired Appliances.
 - .5 CSA C22.1-18, Canadian Electrical Code, Part 1 (22nd Edition), Safety Standard for Electrical Installations.
 - .6 CSA C22.2 No.24-2015(R2019), Temperature-Indicating and Regulating Equipment.
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1.3 ACTION AND INFORMATIONAL SUBMITTALS .1 Shop Drawings:
.1 Submit manufacturer's instructions, printed product literature and data sheets for furnace units and parts and include product characteristics, performance criteria, physical size, finish and limitations.

1.4 CLOSEOUT SUBMITTALS .1 Submit operation and maintenance data for incorporation into manual.
.2 Extra Stock Parts:
.1 Spare filters: in addition to filters installed immediately prior to acceptance by Parks Canada, supply 1 complete set of filters for each filter unit or filter bank.

PART 2 - PRODUCTS

2.1 GENERAL .1 Provide CSA approved, packaged factory assembled unit consisting of cabinet, fan, fan motor, intake/exhaust assembly, heat exchanger, combustion chamber, burner, controls, and air filter.
.2 Mid Annual Fuel Utilization efficiency level range: 83.0%.
.3 Certification of components and construction of factory assembled oil-fired unit: to CAN/CSA-B140.4.

2.2 CAPACITY .1 Output: 25.8 KW W sea level rating.
.2 Air flow rate: 470 L/s standard air.
.3 External static pressure: 125 Pa.
.4 Input:
.1 2.84 L/hr (oil).
.5 Electrical characteristics: 120 V, 1 phase, 60 Hz.

- 2.3 TYPE .1 Upflow high boy type with oil burner and top-front flue connection to minimize space requirements for installation.
- 2.4 CABINET .1 1.0 mm thick minimum steel with baked enamel finish.
.2 Welded steel base for floor type.
.3 Easily removed and secured access doors for components requiring service.
.4 Thermally insulated cabinet.
- 2.5 HEAT EXCHANGER .1 Primary: Type 409 stainless steel drum.
.2 Secondary: aluminized steel tube with stainless steel fins.
- 2.6 COMBUSTION CHAMBER .1 Atmospheric vent: to manufacturers standard.
- 2.7 CIRCULATION BLOWER MOTOR ASSEMBLY .1 Blower: centrifugal type:
.1 Statically and dynamically balanced.
.2 Rubber mounted.
.3 Speed adjustment: multi-speed direct drive.
.2 Motor: 1/2 hp motor, 1750 r/min multi-speed settings, overload protection, adjustable mounts.
- 2.8 AIR FILTER(S) .1 Filter(s): 25 mm thick, glass fiber, disposable type MERV 8.
- 2.9 HEATER BURNER .1 General: to bear CSA and ULC labels.
.2 Oil burner:
.1 High pressure atomizing type, certified to CSA B140.2.1.
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2.9 HEATER BURNER .2 (Cont'd)
(Cont'd)

- .2 Pressure atomizing oil burner nozzle, certified to CSA B140.2.2 and flame retention head.
- .3 Single stage fuel pump.

2.10 CONTROLS .1 General: conform to CSA C22.2 No.24.

.2 Oil firing;

- .1 Operating controls: thermostat, fan operating control switch with continuous operating switch, solenoid oil delay valve, burner, draft control.
- .2 Safety controls; flame safeguard-cadmium sulphide sensor, fan high limit control switch.
- .3 Automatic flue-pipe damper: to CSA B140.14.

PART 3 - EXECUTION

3.1 EXAMINATION .1 Verification of Conditions: verify that conditions of substrate previously installed under other Sections or Contracts are acceptable for fuel-fired furnaces installation in accordance with manufacturer's written instructions.

- .1 Visually inspect substrate in presence of Parks Canada .
- .2 Inform Parks Canada Representative of unacceptable conditions immediately upon discovery.
- .3 Proceed with installation only after unacceptable conditions have been remedied and after receipt of written approval to proceed from Parks Canada Representative.

3.2 INSTALLATION .1 Install in accordance with manufacturer's instructions, regulations of authorities having jurisdiction and to CSA B139 and Canadian Electric Code.

- .2 Provide Parks Canada written report of test results.
- .3 Bacharach smoke density number not to exceed #1.

- 3.3 CLEANING
- .1 Progress Cleaning: clean in accordance with Section 01 74 00 - Cleaning.
 - .1 Leave Work area clean at end of each day.
 - .2 Final Cleaning: upon completion remove surplus materials, rubbish, tools and equipment in accordance with Section 01 74 00 - Cleaning.