

SECTION 15535 - REFRIGERATION SPECIALTIES

PART 1 GENERAL:

1.1 WORK INCLUDED:

Indicate all work to be covered by this section. Edit portions of work indicated to suit job requirements.
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- A. Liquid indicators.
- B. Strainers.
- C. Refrigerant driers.
- D. Filter-driers.
- E. Solenoid valves.
- F. Expansion valves.
- G. Refrigerant charging valves.
- H. Flexible connections.

1.2 REQUIREMENTS OF REGULATORY AGENCIES:

- A. Comply with applicable regulations and mechanical refrigeration codes.

1.3 SUBMITTALS:

- A. Submit shop drawings and product data in accordance with Section 15010. [.]
- B. Submit manufacturer's installation instructions.

PART 2 - PRODUCTS

2.1 ACCEPTABLE MANUFACTURERS:

- A. Liquid Indicators
 - 1. ITT Fluid Handling Division
 - 2. Fisher and Porter
 - 3. Miriam Instrument Co.
- B. Strainers
 - 1. Automatic Switch Co.
 - 2. Mueller Brass Co.
- C. Refrigerant Dryers
 - 1. AMF Cuno Div.
 - 2. Mueller Brass Co.
- D. Filter Dryers
 - 1. AMF Cuno Div.
 - 2. Mueller Brass Co.
- E. Solenoid Valves

1. Automatic Switch Co.
2. Barber-Colman Co.
3. Honeywell Co.

F. Expansion Valves

1. Sporlan Valve Co.
2. The Singer Co.

G. Charging Valves

H. Flexible Connectors

1. Aeroquip Corp.
2. Flexonic Div.
3. Thermotech Corp.

I. Substitutions: Items of same function and performance are acceptable in conformance with Section 15010. []

2.2 LIQUID INDICATORS:

- A. Double port type with copper or brass body, and flared or solder ends.
- B. Provide removable seal caps on each port for inspection of refrigerant condition.
- C. Provide full size liquid indicators in main liquid line leaving condenser. If receiver is used, install in liquid line leaving receiver.

2.3 STRAINERS:

- A. Angle type with brass shell and replaceable cartridge.
- B. Suitable for refrigerant and piping material utilized in the system.
- C. Provide full size strainer ahead of each automatic valve. Where multiple expansion valves with integral strainers are used, install single main liquid line strainer.
- D. On steel piping systems provide strainer in suction line to remove scale and rust.
- E. Provide shut-off valve on each side of strainer to facilitate maintenance.

2.4 REFRIGERANT DRIERS:

- A. In-line or angle type with copper or brass shell.
- B. Provide replaceable desiccant drier material.
- C. Provide full flow permanent refrigerant drier in low temperature systems and systems utilizing hermetic compressors.
- D. Provide three-valve by pass assembly.

2.5 FILTER-DRIERS:

- A. Angle type, with brass shell and using combined straining and drying material.
- B. Employ replaceable desiccant material.
- C. Acceptable in lieu of separate strainers and driers.
- D. Provide three-valve by pass assembly.

2.6 SOLENOID VALVES:

- A. Copper or brass body with flared or threaded ends.
- B. Use replaceable coil assembly.
- C. Provide a manually operated stem to permit operation in case of coil failure.

- D. Provide solenoid valves in liquid line of systems operating with single pump-out or pump-down compressor control, in liquid line of single or multiple evaporator systems, and in oil bleeder lines from flooded evaporators to stop flow of oil and refrigerant into the suction line when system shuts down.

2.7 EXPANSION VALVES:

- A. Angle type or straight through design suitable for the refrigerant utilized in the system.
- B. Brass body, internal or external equalizer, and adjustable superheat setting, complete with capillary tube and remote sensing bulb.
- C. Size expansion valves to avoid being undersized at full load and excessively oversized at partial load.
- D. Evaluate refrigerant pressure drop through system to determine the available pressure drop across each valve.
- E. Select valves for maximum load at design operating pressure and minimum 43 degrees F (6 degrees C) of superheat.

2.8 CHARGING VALVES:

- A. General purpose type with brass body, flared or solder ends, and removable valve core.
- B. Provide valve inlet with quick coupling connection for ease of charging.
- C. Provide refrigerant charging connections in liquid line between receiver shut-off valve and expansion valve.

2.9 FLEXIBLE CONNECTORS:

- A. Close pitch corrugated bronze hose with single layer of exterior braiding.
- B. At least 9 inches (229 mm) long with bronze fittings.
- C. Utilize only at or near compressors where it is not physically possible to absorb vibration within piping configuration.

PART 3 EXECUTION

3.1 INSTALLATION:

- A. Install refrigeration specialties in accordance with manufacturer's instructions.

3.2 REFRIGERANT DRIERS:

- A. Mount drier vertically in liquid line adjacent to receiver with bypass assembly to permit isolation of drier for servicing.

3.3 FILTER DRIERS:

- A. Install with bypass assembly to permit isolation for servicing.

3.4 EXPANSION VALVES:

- A. Locate expansion valve sensing bulb immediately after evaporator outlet on suction line.

END OF SECTION 15535