# **BID SPECIFICATIONS FOR QUINCY COMPRESSOR**

# QT – Two -Stage

### 1. Scope of Supply

1.1. This specification covers a self-contained fully splash lubricated reciprocating simplex piston air compressor package. The package consists of the compressor, a motor, V-belt drive, tank drain, and totally enclosed belt guard all mounted on an ASME National Board approved simplex air receiver, and shall include suitable piping between the compressor, control, and receiver. It shall be capable of maximum operating pressure of 175 PSIG.

#### 2. Basic Compressor

- 2.1. The basic compressor shall be of the single-acting, two-stage, splash lubricated, air-cooled reciprocating piston type.
- 2.2. Cylinders will be cast iron with deep cooling fins and shall be bolted to the crankcase for ease of maintenance and rebuild. Aluminum heads with deep cooling fins shall be provided for less weight and better heat dissipation.
- 2.3. Stainless steel reed valves shall be secured to the aluminum valve plates by steel screws. The movement of the valves will be limited to their most efficient lift by powdered metal bumpers.
- 2.4. The two piece automotive style connecting rods shall be aluminum with an oil dipper attached to the bottom of the rod for ample splash lubrication to the wrist pins.
- 2.5. Low pressure and high pressure pistons shall each have three automotive type compression rings and one automotive type oil ring.
- 2.6. Crankshaft shall have integral counterweights that will balance radial loads.
- 2.7. Industrial ball bearings shall provide precise shaft alignment and take both radial and thrust loads.
- 2.8. The fan type compressor flywheel shall be dynamically balanced.
- 2.9. An integral finned intercooler shall be located in the direct blast of air from the flywheel.
- 2.10. A 10 micron inlet air filter with a metal housing shall be standard.
- 3. Drive Motor
  - 3.1. The compressor package shall be driven by a nominal 1750 RPM (QT-5 through QT-15) electric motor suitable for continuous operation. Three phase motors shall be EISA rated.
  - 3.2. The motor shall be a NEMA "T" frame, squirrel cage induction-type with an open-drip proof enclosure and shall be rigidly bolted to the base plate assembly for simple and reliable manual belt adjustment.
  - 3.3. The service factor on the standard motors will be a minimum of 1.15.
- 4. Compressor Lubricant
  - 4.1. The Quin-Cip lubricant supplied in this compressor shall be a mineral based non-detergent petroleum product specially designed for compressor use.
  - 4.2. The lubricant shall contain no chemical substances that would require it to be treated as hazardous according to the appropriate laws in effect at the time of sale. Used lubricant shall be suitable for recycling along with other waste petroleum oil.
  - 4.3. Lubricant capacity by model: **QT-54** – 1.25 qts. **QT-5** – 1.62 qts **QT-7.5** – 1.62 qts **QT-10** – 2.50 qts **QT-15** – 3.75 qts

### 5. Compressor Controls

- 5.1. One of the following shall be chosen for each compressor:
  - Automatic start/stop control starting and stopping are accomplished by means of a pressure device, used when air demand is less frequent.
  - Dual Control This combines auto start/stop with constant speed control. The unit can operate on auto start/stop when air demand is light or on constant speed control when air demand is heavy.
- 6. Electrical
  - 6.1. All electrical controls shall be designed and constructed in accordance with the National Electrical Code (NEC) guidelines.
  - 6.2. All electrical components when supplied by factory shall be UL listed and CSA certified.
- 7. Safety System
  - 7.1. The compressor flywheel, motor pulley, and v-belts shall be totally enclosed within a metal belt guard which will provide protection on all sides in accordance to OSHA specifications.
  - 7.2. The compressor and motor shall be mounted on a National Board approved ASME U-stamp and CRN air receiver. The receiver shall include a pressure gauge, tank drain, manual shut-off valve at the outlet and ASME/CRN pressure relief valve sized to handle the full capacity of the compressor.

# Package Options:

- Base Mounted This specification covers a self-contained splash lubricated reciprocating piston air compressor base mounted package consisting of the compressor, a motor, V-belt drive, and totally enclosed belt guard.
- Duplex This specification covers a self-contained splash lubricated reciprocating piston air compressor duplex package consisting of two compressors, two motors, two V-belt drives, and two totally enclosed belt guards and shall deliver two times the CFM.
- Climate Control
  - Shall have lap-gap compression rings to assure factory certified 2 parts-per-million oil carryover.
  - Compression regulation shall be automatic start/stop with lead/lag for duplex package.
  - Shall be mounted on a simplex, duplex and base mounted package with ODP motors.

# **Optional Additional Accessories:**

- Air Cooled Aftercooler This shall be mounted on the compressor unit. Cooling air is provided by the fan type flywheel.
  - Additional moisture separator and trap may be included if specified.
- Low Oil Level Shutdown Switch An electronic low oil level shutdown switch shall be furnished to automatically shut down the unit when oil drops below a pre-set level.
- High Air Temperature Shutdown Switch An electronic high air temperature shutdown switch shall be furnished to protect the compressor against overheating.
- Integrated Dryer Refrigerated air dryer sized for 33% duty cycle shell be provided with climate control simplex or duplex packages.

# > Starter Control Panels –

- <u>Motor Starter</u> The starter control shall be an I.E.C. across-the-line magnetic contactor in a NEMA 1 enclosure, and equipped with properly sized thermal overload protection.
- <u>Simplex Control Panel</u> This shall include an I.E.C. magnetic starter with a 115 volt control circuit, remote monitoring capability, hour meter, test/off/run switch, operating lights, fault indication and thermal overload protection in NEMA 1 enclosure. Auto restart after power failure shall be included.
- <u>Duplex Control Panel</u> This shall include two I.E.C. magnetic starters, a 115 volt control circuit, remote monitoring capability, automatic alternation with lead/lag, test/off/run switches, lead select/auto switch, operating lights, fault indications, hour meters and thermal overload protection in a NEMA 1 enclosure. Dual power source available. Auto restart after power failure shall be included.
- TEFC Motor This shall be a totally enclosed fan cooled motor.

# > Tank Drains -

- <u>Pneumatic</u> This shall be an automatic type drain that operates on tank pressure differential.
- <u>Electronic</u> This shall be a solenoid type timer drain with adjustable purge and interval settings, test button and 6 foot 120VAC 1p power cord.