S391/S616 Screw Compressor

Take advantage of the latest in bus compressor technology.
The screw compressor offers dramatically quiet and efficient operation with low vibration.

- Environmentally friendly HFC refrigerants
- Lower noise level for increased passenger comfort
- Fewer moving parts than reciprocating compressors
- Low-level vibration reduces the cost of mount and drive kits
- Programmable capacity control for fuel savings
- Exclusive oil management system for increased reliability
- Designed exclusively for bus transport applications

### Innovative features inside and out

- **Epoxy sealed clutch coil**
  - Reliable electromagnetic design
- **Gears**
  - Precision-ground helical gears for quiet, smooth operation
- **Metal bellows shaft seal**
  - Eliminates carbon graphite seal face
  - Eliminates rubber bellows
- **Rotors**
  - Precision manufactured by Thermo King to practically zero clearance between concave and convex rotors
- **Unique oil management system**
  - with no internal plumbing
  - All passages machined
- **Rotary screws**
  - Only two parts needed to compress gas
- **Body-mounted clutch**
  - Minimizes stress and wear from side loading
- **Rolling element antifriction bearings**
  - Withstands a wide range of lubrication conditions
  - No sleeve bearings
- **Oil separator**
  - Integrated, no external plumbing
- **Oil filter**
  - Low micron filtering
  - Full-flow oil filter with automatic bypass function
- **Unloaders**
  - Programmable two-stage unloading
  - True capacity control saves fuel

### Actual laboratory tests reveal dramatic Noise Reduction

<table>
<thead>
<tr>
<th>Compressor</th>
<th>Microphone position</th>
<th>Speed rpm</th>
<th>Noise Level dba</th>
</tr>
</thead>
<tbody>
<tr>
<td>Screw</td>
<td>A (39&quot;)</td>
<td>1400</td>
<td>79.0</td>
</tr>
<tr>
<td>6 Cyl. reciprocating</td>
<td>A (39&quot;)</td>
<td>1400</td>
<td>87.5</td>
</tr>
<tr>
<td>Screw</td>
<td>B (12&quot;)</td>
<td>1400</td>
<td>87.2</td>
</tr>
<tr>
<td>6 Cyl. reciprocating</td>
<td>B (12&quot;)</td>
<td>1400</td>
<td>89.5</td>
</tr>
<tr>
<td>Screw</td>
<td>A (39&quot;)</td>
<td>2200</td>
<td>87.9</td>
</tr>
<tr>
<td>6 Cyl. reciprocating</td>
<td>A (39&quot;)</td>
<td>2200</td>
<td>88.7</td>
</tr>
<tr>
<td>Screw</td>
<td>B (12&quot;)</td>
<td>2200</td>
<td>91.3</td>
</tr>
<tr>
<td>6 Cyl. reciprocating</td>
<td>B (12&quot;)</td>
<td>2200</td>
<td>92.7</td>
</tr>
</tbody>
</table>
Greater efficiency means more capacity with less horsepower and less fuel used.

Lower acceleration vibration and torque fluctuation than any other transport compressor.

Lower starting torque.

Uniform torque throughout operating speed range.
Screw Compressor Specifications

**S391**

- **Type**: Helical Lobed Screw
- **Displacement**: 23.86 cu. in./rev. (391 cu. cm/rev.)
- **Refrigerant**: HFC (R-134a or R-407C)
- **Oil separator**: Integrated
- **Oil sump**: Integrated on discharge side
- **Oil charge**: 70 fl. oz./1.8 liter
- **Oil type**: POE SOLEST 120
- **Oil filter**: Integrated full-flow
- **Max. discharge temperature**: 300°F
- **Maximum operating pressure**:
  - 350 psig (R-134a)
  - 450 psig (R-407C)
- **Max. speed**: 3000 rpm
- **Max tilt**: 10 degrees any direction
- **Drive Method**: Belt or direct
- **Max belt side loading**: 300 lbs. (136 kg)
- **Weight**: 147 lbs. (66.8 kg) (including oil, service valves and clutch)

**S616**

- **Type**: Helical Lobed Screw
- **Displacement**: 37.59 cu. in./rev. (616 cu. cm/rev.)
- **Refrigerant**: HFC (R-134a or R-407C)
- **Oil separator**: Integrated
- **Oil sump**: Integrated on discharge side
- **Oil charge**: 70 fl. oz./1.8 liter
- **Oil type**: POE SOLEST 120
- **Oil filter**: Integrated full-flow
- **Max. discharge temperature**: 300°F
- **Maximum operating pressure**:
  - 41 hp at 450 psi discharge and 100 psi suction @ 3000 rpm
  - 450 psig (R-407C)
- **Max. speed**: 3000 rpm
- **Max tilt**: 10 degrees any direction
- **Drive Method**: Belt or direct
- **Max belt side loading**: 300 lbs. (136 kg)
- **Weight**: 171 lbs. (77.2 kg) (including oil, service valves and clutch)

**Dimensions**: Inches (Millimeters)

**Worldwide Service Organization**

Thermo King backs its equipment and customers with a highly-trained, worldwide service organization. This assures you the support of factory authorized service facilities and a stock of factory parts and factory trained mechanics.

**Warranty Summary**

Terms of the Thermo King Warranty are available on request from your local Thermo King dealer. Please reference document TK50049 for the Thermo King Bus Unit Warranty.

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**Ingersoll Rand**

**Climate Control Technologies**

Providing equipment and services to manage controlled-temperature environments for food and other temperature-sensitive products, our Climate Control Technologies sector encompasses both transport and stationary refrigeration solutions. Our product brands include Thermo King®, a world leader in transport temperature control systems, and Hussmann®, a manufacturer of refrigeration and food merchandising equipment.