V-500 Series
Enhanced performance with optimal control

You choose:
- Superior performance
- Electric stand-by capacity at 85% to 95% of the road capacity
- Guaranteed reliability
- New design
- Ultra slim evaporator
- Easy to service and install
- Flexibility
- Low noise
- Exclusive TCC (Triple Cooling Capacity) feature
V-500 Series: taking care of all your needs.

The V-500 series offers you optimal performance while using less fuel and making less noise.

- Improved capacity and airflow to ensure a superior temperature distribution to protect the product load.
- Shorter pull-down and recovery time to guarantee product quality.
- Electric stand-by capacity is 85% to 95% of the road capacity under any working conditions for maximum protection of the load at any time.

New exclusive TCC (Triple Cooling Capacity) feature

offers you three cooling capacities and fan speeds to automatically match cooling needs of varying intensity levels. The TCC level is adjusted according to the pressures read within the refrigeration circuit.

<table>
<thead>
<tr>
<th>Level</th>
<th>Performance of the unit</th>
<th>Operation</th>
</tr>
</thead>
<tbody>
<tr>
<td>TCC 1</td>
<td>Large pull down capacity, capability to work under extreme tropical conditions</td>
<td>2 condenser fans at high speed</td>
</tr>
<tr>
<td>TCC 2</td>
<td>Low noise and fuel consumption under steady conditions</td>
<td>Fans at low speed</td>
</tr>
<tr>
<td>TCC 3</td>
<td>Minimum noise and fuel consumption under low demanding conditions</td>
<td>Fans stopped</td>
</tr>
</tbody>
</table>

Optimised performance with exclusive technology

- Outstanding Pulldown Capacity with TCC1
  The unit is working at its highest capacity level with both condenser fans running at maximum speed.
- Ideal for Tropical Conditions
  The maximum capacity level makes it possible to function in ambient temperatures up to 50°C with the R-134A and R-404A versions available for both fresh and frozen applications.
- Low Fuel Consumption and Running Costs
  Performance is optimised according to the capacity demand, thereby reducing the fuel consumption of the truck. For this reason, the capacity delivered is matched to the demand. When working in steady or low demanding conditions, the condenser fans will run at low speed or stop as required.
- Low Noise Level
  Noise is kept to a minimum level under any operating conditions, particularly in steady state conditions, where there is virtually no noise. In electric stand-by operation, the sound power level varies by 6dbA according to the TCC level. On road operation, the compressor is driven by the engine of the vehicle. As such, the noise from the unit is less than that of a self-powered unit.
**Guaranteed reliability**
- Option of Thermo King offers a 5x increase in life-span
- Semi-hermetic reciprocating stand-by compressor
- Electrical components protected from water and humidity inside a hermetic box
- New control system (TCC) reduces the working time of the condenser fans

**New design**
- Styled with rounded angles
- Smooth curvature of the front panel
- No visible screws
- Chic design of the electric box panel
- Completely white appearance
- Ultra Slim Evaporator (only 220mm in height) to maximise payload

**Total Flexibility**
The V-500 series provides many standard features and options to meet all requirements:
- R-134a or R-404A
- Electric stand-by
- Heating
- Bi- or multi-temperature
- Nose or undermount

**Easy Installation and Easy to Service**
- Front cover fixed to the structure by the means of plastic clips
- Clip-on electric cover
- Speedy clip system for hoses and connections
### V-500 Series: a complete range

<table>
<thead>
<tr>
<th>Refrigerant</th>
<th>Stand-by</th>
<th>Bi-temp.</th>
<th>Heating</th>
<th>Multi-temp.</th>
<th>Nose/Undermount</th>
</tr>
</thead>
<tbody>
<tr>
<td>V-500 10</td>
<td>R-134a</td>
<td>—</td>
<td>—</td>
<td>—</td>
<td>—</td>
</tr>
<tr>
<td>V-500 20</td>
<td>R-134a</td>
<td>✓</td>
<td>—</td>
<td>—</td>
<td>—</td>
</tr>
<tr>
<td>V-500 MAX 10</td>
<td>R-404A</td>
<td>—</td>
<td>—</td>
<td>—</td>
<td>—</td>
</tr>
<tr>
<td>V-500 MAX 20</td>
<td>R-404A</td>
<td>✓</td>
<td>—</td>
<td>—</td>
<td>—</td>
</tr>
<tr>
<td>V-500 MAX 30</td>
<td>R-404A</td>
<td>✓</td>
<td>—</td>
<td>✓</td>
<td>—</td>
</tr>
<tr>
<td>V-500 MAX 50</td>
<td>R-404A</td>
<td>✓</td>
<td>—</td>
<td>✓</td>
<td>—</td>
</tr>
<tr>
<td>V-500 MAX TC 10</td>
<td>R-404A</td>
<td>—</td>
<td>✓</td>
<td>—</td>
<td>—</td>
</tr>
<tr>
<td>V-500 MAX TC 20</td>
<td>R-404A</td>
<td>✓</td>
<td>✓</td>
<td>—</td>
<td>—</td>
</tr>
<tr>
<td>V-500 MAX TC 50</td>
<td>R-404A</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>—</td>
</tr>
<tr>
<td>V-500 MAX TCI 10</td>
<td>R-404A</td>
<td>—</td>
<td>✓</td>
<td>✓</td>
<td>—</td>
</tr>
<tr>
<td>V-500 MAX TCI 20</td>
<td>R-404A</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>V-500 MAX TCI 50</td>
<td>R-404A</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
</tbody>
</table>

Each model offers a choice of road compressor: a reciprocating or a swash plate compressor.

### V-500 Selection guide

#### V-500/V-500 MAX

<table>
<thead>
<tr>
<th>Loadspace volume (m³)</th>
<th>Solid line indicates models with a reciprocating compressor. Dashed line indicates models with a swash plate compressor</th>
</tr>
</thead>
<tbody>
<tr>
<td>Example:</td>
<td>30°C (86°F) maximum ambient, frozen compartment, 5 door openings per hour: V-500 MAX (with reciprocating compressor) suits vehicles up to 22.5m³ (795 cu.ft.). V-500 MAX (with swash plate compressor) suits vehicles up to 21m³ (740 cu.ft.).</td>
</tr>
</tbody>
</table>

#### V-500 MAX TC

<table>
<thead>
<tr>
<th>Loadspace volume (m³)</th>
<th>Solid line indicates models with a reciprocating compressor. Dashed line indicates models with a swash plate compressor</th>
</tr>
</thead>
<tbody>
<tr>
<td>Example:</td>
<td>30°C (86°F) maximum ambient, frozen compartment, 5 door openings per hour in each compartment: V-500 MAX TC (with reciprocating compressor) suits vehicles with frozen and chilled compartments up to 13m³ (460 cu.ft.) each. V-500 MAX TC (with swash plate compressor) suits vehicles with frozen and chilled compartments up to 12m³ (425 cu.ft.) each.</td>
</tr>
</tbody>
</table>
V-500 Series: specifications

Description
The V-500 Series from Thermo King comprises two-piece split units designed for fresh, frozen and deep frozen applications on medium-sized trucks and vans. The road compressor is powered by the vehicle's engine. In models with electric stand-by, the second compressor is powered by an electric motor.

The V-500 MAX TC can manage two evaporators to provide temperature control for two compartments. Models with hot gas heating are also available.

System components
- Condenser
- ES500/ES500 MAX evaporator (except TC model)
- Engine driven compressor choice of either a reciprocating or swash plate compressor
- Installation kit (hoses to evaporators not supplied for 3 or 4 evaporator configuration in V-500 MAX TC/models)
- In-cab control box
- Slim evaporators ES300 MAX and ES150 MAX for TC/models
- Vehicle drive kits (on request)

Refrigerant
- V-500 10 2.2 kg R-134a
- V-500 20 2.4 kg Chlorine: Zero
- V-500 MAX 10/30 2.3 kg R-404A
- V-500 MAX 20/50 3PH 2.2 kg
- V-500 MAX 20/50 1PH 2.4 kg
- V-500 MAX TC 10/30 2.6 kg
- V-500 MAX TC 20/50 2.6 kg Chlorine: Zero

Compressor (engine driven)
- Reciprocating compressor (TK-312R)
  - Number of cylinders: 3
  - Displacement: 186.7 cm³ (11.4 cu in.)
  - Maximum recommended speed: 3,000 rpm
  - Jet Lube and Jet Cool (on MAX units) compressor lubrication and cooling systems

Swash plate compressor (TM16)
- Number of cylinders: 6
- Displacement: 163 cm³ (9.9 cu in.)
- Maximum recommended speed: 3,000 rpm
- Jet Lube and Jet Cool (on MAX units) compressor lubrication and cooling systems

Refrigeration capacity

30°C ambient, European standard.

System net cooling capacity under ATP conditions including 30°C (86°F) ambient.

<table>
<thead>
<tr>
<th>Refrigerant Type</th>
<th>Condenser Watts</th>
<th>Condenser BTU/hr</th>
</tr>
</thead>
<tbody>
<tr>
<td>V-500 (HFC R-134a)</td>
<td>4025</td>
<td>13740</td>
</tr>
<tr>
<td>V-500 MAX TC (Ultra Slim Evaporator)</td>
<td>365</td>
<td>15150</td>
</tr>
</tbody>
</table>

Defrost
- Automatic hot gas defrost

Evaporator fans performance
- Airflow volume:
  - Host evaporator (ESS300):
    - 2400 m³/h (1415 cu ft/min)
  - Bi-temp evaporator (ESS500):
    - 1150 m³/h (675 cu ft/min)

Heating capacity (models 30/50)
- Hot gas heating system
- On the road Reciprocating compressor:
  - 3200 W (10930 BTU/hr)
- Swash compressor:
  - 3000 W (10245 BTU/hr)
- Electric:
  - 2750 W (9390 BTU/hr)

Electric motors
- Electric standby options:
  - 230V/1 Phase/50Hz
  - 230V/1 Phase/60Hz
  - 400V/3 Phase/50Hz
  - 400V/3 Phase/60Hz
- Total current consumption on the road:
  - V-500/V-500 MAX 2.9 A
  - V-500 MAX TC 2.5 A

Electrical stand-by consumption on the road:

<table>
<thead>
<tr>
<th>Air return / On the road Watts</th>
<th>BTU/hr</th>
</tr>
</thead>
<tbody>
<tr>
<td>0°C</td>
<td>5427</td>
</tr>
<tr>
<td>-20°C</td>
<td>2753</td>
</tr>
<tr>
<td>-25°C</td>
<td>2088</td>
</tr>
<tr>
<td>0°C</td>
<td>4925</td>
</tr>
<tr>
<td>-20°C</td>
<td>2515</td>
</tr>
<tr>
<td>-25°C</td>
<td>1960</td>
</tr>
<tr>
<td>Electric stand-by 50Hz</td>
<td>4520</td>
</tr>
<tr>
<td>-20°C</td>
<td>2245</td>
</tr>
<tr>
<td>-25°C</td>
<td>1600</td>
</tr>
</tbody>
</table>

Standard Features ATP 540, M662, 673, 674
- Jet Lube™ compressor lubrication
- Jet Cool™ compressor injection cooling (MAX models)
- In-cab controls with back lid LCD display thermometer
- Automatic hot gas defrost
- Electronic thermostat

Dimensions: Millimetres (inches)

Weights (approximate)
- Condenser Without electric stand-by 60 kg (132 lb)
- With electric stand-by 132 kg (291 lb)
- ES500 MAX (Ultra Slim Evaporator) 25.5 kg (56 lb)
- ES300 MAX (Ultra Slim Evaporator) 18 kg (40 lb)
- ES150 MAX (Ultra Slim Evaporator) 12.5 kg (27.5 lb)
- Reciprocating Compressor 13 kg (29 lb)
- Swash plate Compressor 7.5 kg (16 lb)

Warranty Summary
Terms of the Thermo King Warranty are available on request.

The unit and its components are warranted to be free from defects in material and workmanship from date in service according to the terms (in months) as specified in the Thermo King Warranty. Manufacturer is not responsible and will not be held liable in contract or tort (including strict liability and negligence) for any special, indirect or consequential damages including but not limited to injury or damage caused to vehicles, contents or persons, by reason of the installation or use of any Thermo King product or its mechanical failure.

Specifications are subject to change without notice.
Thermo King Corporation, a business of Ingersoll Rand - the world leader in creating and sustaining safe, comfortable and energy efficient environments - was founded in 1938 and manufactures transport temperature control systems for a variety of mobile applications, including trailers, truck bodies, buses, shipboard containers and railway cars. The company operates 10 manufacturing facilities and 17 parts distribution centers worldwide. Sales and service is provided by a global dealer network of 865 independently owned companies in 75 countries.

For further information please contact: