



## *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 the optimal performance while using less fuel and making less noise.

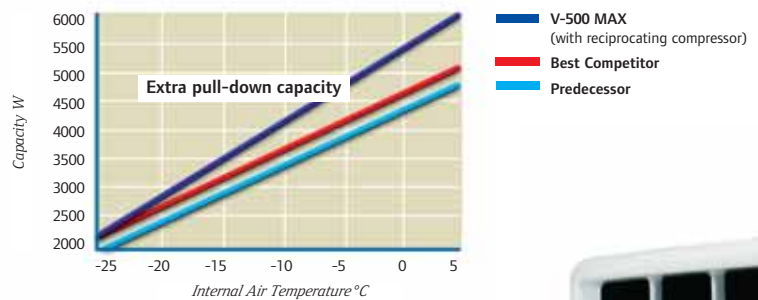
- Improved **capacity** and **airflow** to ensure a superior **temperature distribution** to protect the product load.
- **Shorter pull-down and recovery time** to guarantee product quality
- **Electric stand-by capacity is 85% to 95% of the road capacity** at any working conditions for maximum protection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

## New exclusive TCC (Triple Cooling Capacity) feature

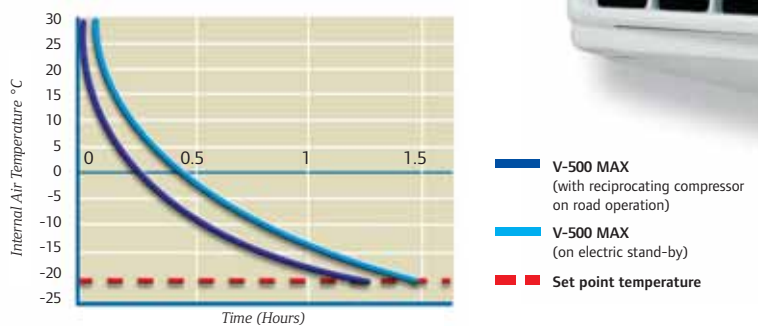
offers you three cooling capacities and fan speeds to automatically match cooling needs of varying intensity. The TCC level is adjusted according to the pressures read within the refrigeration circuit.



### Comparison between pull-down capacities



### V-500 MAX pull-down time with compartment size of 18m<sup>3</sup> and k=0.35 W/m<sup>2</sup>K



## 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 version available for 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 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 in 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, hence the noise from the unit is very small in comparison with that of a self-powered unit.

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



ES500 Ultra Slim Evaporator

## 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



## Guaranteed reliability

- Option of Thermo King exclusive reciprocating road compressor offers a 5 times longer life
- 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



Undermounted unit

Multi-temperature

## 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









Reciprocating Compressor

=



Swash Plate Compressors

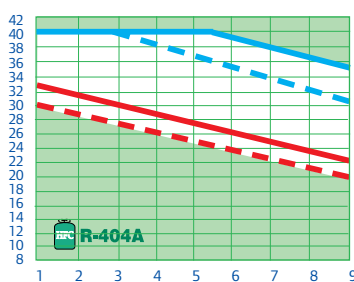
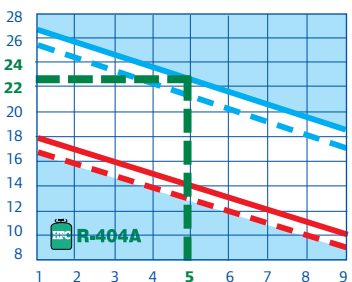
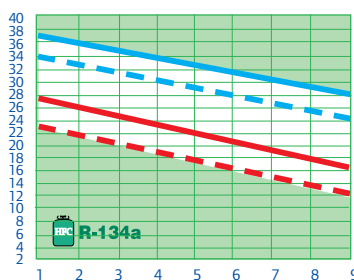
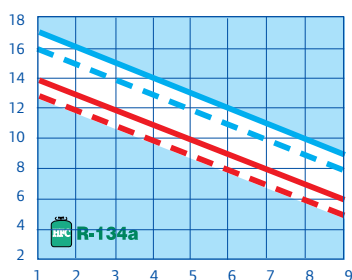
# V-500 Series: a complete range

	 Refrigerant	 Stand-by	 Bi-temp.	 Heating	 Multi-temp.	 Nose/Undermount
V-500 10	R-134a	-	-	-	-	✓
V-500 20	R-134a	✓	-	-	-	✓
V-500 MAX 10	R-404A	-	-	-	-	✓
V-500 MAX 20	R-404A	✓	-	-	-	✓
V-500 MAX 30	R-404A	-	-	✓	-	✓
V-500 MAX 50	R-404A	✓	-	✓	-	✓
V-500 MAX TC 10	R-404A	-	✓	-	-	✓
V-500 MAX TC 20	R-404A	✓	✓	-	-	✓
V-500 MAX TC 50	R-404A	✓	✓	✓	-	✓
V-500 MAX TCI 10	R-404A	-	✓	-	✓	✓
V-500 MAX TCI 20	R-404A	✓	✓	-	✓	✓
V-500 MAX TCI 50	R-404A	✓	✓	✓	✓	✓

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

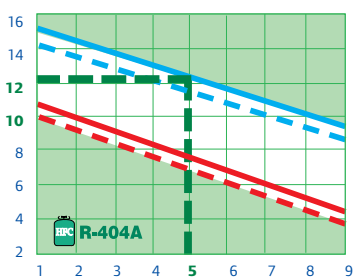
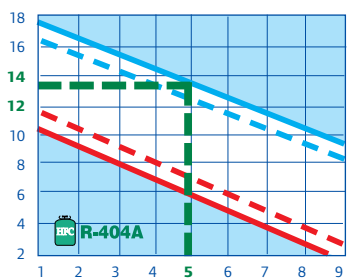
## V-500 Selection guide

### V-500/V-500 MAX



**Example:**  
 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.).

### V-500 MAX TC



**Example:**  
 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.

Solid line indicates models with a reciprocating compressor. Dashed line indicates models with a swash plate compressor

**Frozen compartment (k=0.35 W/m²K)**  
 — ambient: 30°C/86°F, compartment: -20°C/-4°F  
 — ambient: 100°F/38°C, compartment: 0°F/-18°C

**Chilled compartment (k=0.5 W/m²K)**  
 — ambient: 30°C/86°F, compartment: 6°C/43°F  
 — ambient: 100°F/38°C, compartment: 43°F/6°C

 Door openings per hour

Loadspace volume (m³)

# 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 one 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 between reciprocating and swash plate compressor
- Installation kit
- In-cab control box
- Slim evaporator ES 300 MAX for TC/models
- Vehicle drive kits (on request)

## Refrigerant

V-500: HFC R-134a (3.6 kg)  
Chlorine: Zero  
V-500 MAX: HFC R-404A (3.7 kg)  
Chlorine: Zero

## Compressor (engine driven)




### Reciprocating compressor (TK-312R)



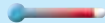
- Number of cylinders: 3
- Displacement: 186.7 cm<sup>3</sup> (11.4 cu in.)
- Maximum recommended speed: 3,000 rpm
- Jet Lube and Jet Cool (on MAX units) compressor lubrication and cooling systems

### Swash plate compressor (TM16)

- Number of cylinders: 6
- Displacement: 163 cm<sup>3</sup> (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

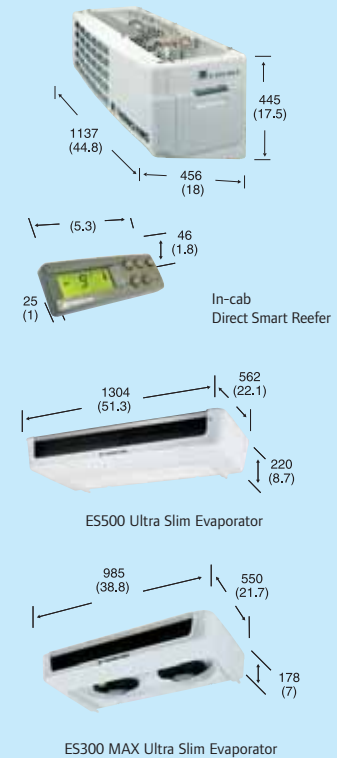
 <b>R-134a</b>			
 30°C ambient, European standard.		 100°F ambient, U.S. standard.	
<b>System net cooling capacity under ATP conditions including 30°C (86°F) ambient.</b>			
<b>V-500 (HFC R-134a Refrigerant)</b>			
<b>Air return / On the road</b>			
	<b>Watts</b>	<b>BTU/hr</b>	
<b>Reciprocating compressor</b>			
0°C (32°F)	4150	14165	
-20°C (-4°F)	1685	5750	
<b>Swash plate compressor</b>			
0°C (32°F)	3700	12630	
-20°C (-4°F)	1535	5240	
<b>Electric stand-by 50Hz</b>			
0°C (32°F)	3350	11435	
-20°C (-4°F)	1430	4880	
<b>System net cooling capacity at 100°F (38°C) ambient and 2400 compressor rpm.</b>			
<b>V-500 (HFC R-134a Refrigerant)</b>			
<b>Air return / On the road</b>			
	<b>BTU/hr</b>	<b>Watts</b>	
<b>Reciprocating compressor</b>			
35°F (2°C)	14130	4140	
0°F (-18°C)	5715	1675	
<b>Swash plate compressor</b>			
35°F (2°C)	12595	3690	
0°F (-18°C)	5205	1525	
<b>Electric stand-by 60Hz</b>			
35°F (2°C)	11350	3325	
0°F (-18°C)	4575	1340	

 <b>R-404A</b>			
 30°C ambient, European standard.		 100°F ambient, U.S. standard.	
<b>System net cooling capacity under ATP conditions including 30°C (86°F) ambient.</b>			
<b>V-500 MAX (HFC R-404A Refrigerant)</b>			
<b>Air return / On the road</b>			
	<b>Watts</b>	<b>BTU/hr</b>	
<b>Reciprocating compressor</b>			
0°C (32°F)	5345	18240	
-20°C (-4°F)	2775	9470	
-25°C (-13°F)	2175	7425	
<b>Swash plate compressor</b>			
0°C (32°F)	4950	16895	
-20°C (-4°F)	2600	8875	
-25°C (-13°F)	2025	6910	
<b>Electric stand-by 50Hz</b>			
0°C (32°F)	4150	14165	
-20°C (-4°F)	2285	7800	
-25°C (-13°F)	1790	6110	
<b>System net cooling capacity at 100°F (38°C) ambient and 2400 compressor rpm.</b>			
<b>V-500 MAX (HFC R-404A Refrigerant)</b>			
<b>Air return / On the road</b>			
	<b>BTU/hr</b>	<b>Watts</b>	
<b>Reciprocating compressor</b>			
35°F (2°C)	15595	4570	
0°F (-18°C)	7135	2090	
-20°F (-29°C)	4055	1190	
<b>Swash plate compressor</b>			
35°F (2°C)	14365	4210	
0°F (-18°C)	6655	1950	
-20°F (-29°C)	3770	1105	
<b>Electric stand-by 60Hz</b>			
35°F (2°C)	12425	3640	
0°F (-18°C)	6620	1940	
-20°F (-29°C)	1940	1005	

## Standard Features

- 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	68 kg (150 lb)
With electric stand-by	140 kg (309 lb)
ES500 MAX (Ultra Slim Evaporator)	
	25.5 kg (56 lb)
ES300 MAX (Ultra Slim Evaporator)	
	18 kg (40 lb)
Reciprocating Compressor	13 kg (29 lb)
Swash plate Compressor	7.5 kg (16 lb)

## Warranty Summary

Specific terms of the Thermo King Ireland Ltd. 24 month limited warranty (TK 52506-9-CH) are available on request. Thermo King excludes liability in contract and tort (including strict liability and negligence) for any special, indirect or consequential damages by reason of the installation or use of any covered product or its mechanical failure.

Specifications are subject to change without notice.



Providing equipment and services to manage controlled-temperature environments for food and other perishables, 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 system and Hussmann®, a manufacturer of refrigeration and food merchandising equipment.

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