THERMO KING

V-700 Series
First-class performance

Key features:

- Powerful unit in both heating and cooling modes
- Electric stand-by capacity at 80% to 90% of the road capacity under any working conditions
- Unique Reverse Cycle operation to provide superior heating capacity and ultra-quick defrost
- Low life cycle operating costs
- Environmentally friendly
- Low noise
- Easy access for servicing and maintenance
- Exclusive TCC (Triple Cooling Capacity) feature
- Modern design with Ultra slim evaporator

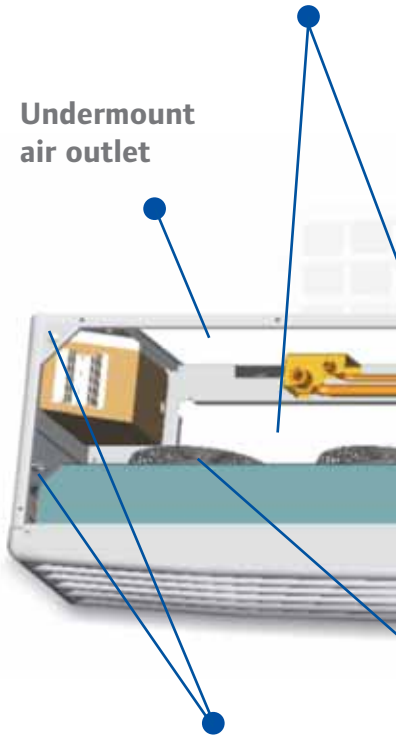
Reciprocating Compressor

Ingersoll Rand
Climate Control Technologies

V-700 Series: Most powerful unit on the mark

The V-700 series offers the maximum capacity, in both heating and cooling modes, of any direct-drive compressor unit available on the market today.

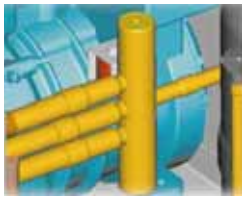
- **No unit gives greater capacity** to make possible a shorter pull-down and recovery time from door openings
- **Superior airflow volume with 8m/s face velocity** to ensure that the temperature controlled air encircles the product load to provide the ultimate in protection
- **Reversing the refrigeration cycle** provides excellent heating capacity and ultra-quick defrost
- **Electric stand-by capacity is 80% to 90% of the road capacity** under any working conditions for maximum protection of the load at any time



New Exclusive Reverse Cycle Operation

In a reverse cycle, the condenser fully exchanges functions with the evaporator. This is done by reversing the refrigerant flow using a reverse valve (4-way valve). This provides:

- **High heating capacity** in a similar order to the refrigeration capacity
- **Ultra-quick defrost cycle** of both condenser and evaporator



Reverse valve

Comparable heating and cooling capacity

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.

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

With TCC you receive the following benefits:

- **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
- **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

et in both heating and cooling modes.

ES700 Ultra Slim Evaporator

Modern design

- Styled with rounded angles
- Smooth curvature of the front panel
- Chic design of the electric box panel
- Ultra Slim Evaporator (only 220mm in height) to maximise payload

Electric stand-by capacity at 80% to 90% of road capacity

Total Flexibility

The V-700 series provides many standard features and options to meet all requirements:

- heating
- defrost by reverse cycle
- electric stand-by
- option of nose or undermount
- option of multi-temperature management with 2 fully independent refrigerant systems for each compartment

Reverse Valve (4-Way Valve)

- Reverse cycle
- Powerful heating capacity
- Ultra-quick evaporator and condenser defrost

Brushless Fans

- Long life - absolute minimum of 40,000 hours
- Speed controlled (TCC)
- Speed ramp up

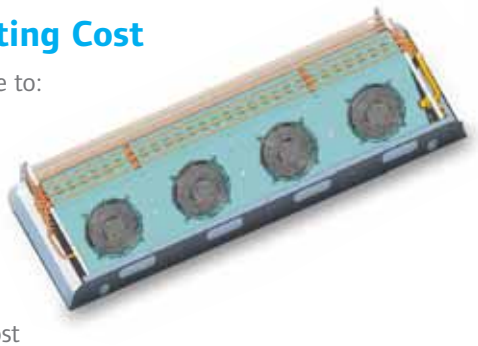
Undermounted unit

Multi-temperature

Low Life Cycle Operating Cost

Low life cycle operating costs due to:

- **Reduced fuel consumption**
- **Lower maintenance costs**



Lower maintenance costs

- **Brushless d.c. fans** in both the condenser and the evaporator offer under the most extreme of working conditions **a minimum life of 40,000 hours**
- Thermo King exclusive reciprocating road compressor and semi-hermetic reciprocating electric stand-by compressor offer long work lives
- Electrical components protected from water and humidity inside a hermetic box
- TCC control system reduces the working time of the fans

Environmentally Friendly

A direct drive system is driven by the vehicle engine therefore there are:

- **No direct emissions**
- **Less noise**
- **Economical fuel consumption**

The TCC system reduces the working time of the fans to a minimum-decreasing noise even further

V-700 Series range

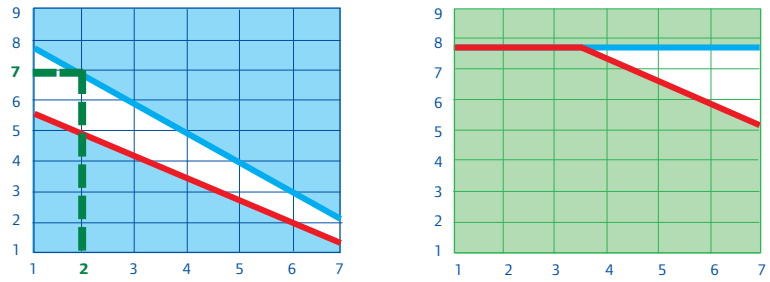
	Refrigerant	Stand-by	Heating	Multii-temp.	Nose/Undermount
V-700 MAX 50	R-404A	✓	✓	–	+
V-700 MAX TCI 50	R-404A	✓	✓	✓	+

Easy Access for Servicing and Maintenance

The various doors on the unit allow for rapid access for servicing even in the undermount version. The clip-on electric cover makes for quick and easy access to the electrics of the unit.
There are two hourmeters to count the working hours on road and electric stand-by operation.

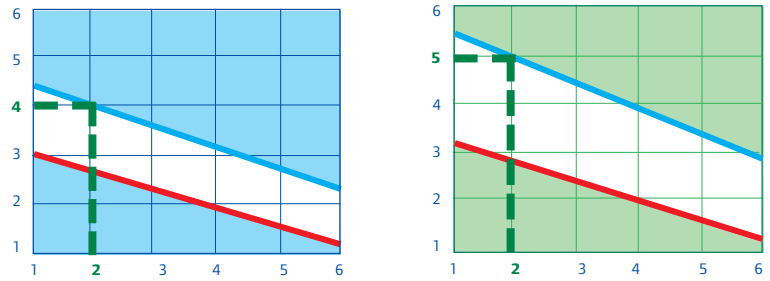
V-700 Selection guide

V-700 MAX



Example:
30°C (86°F) maximum ambient, frozen compartment, 2 door openings per hour: V-700 MAX suits vehicles up to 7m (23ft.) in length

V-700 MAX TCI



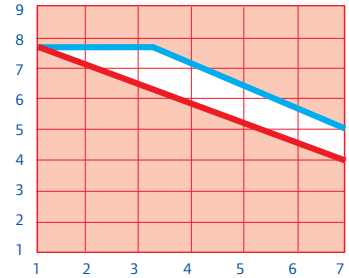
Example:
30°C (86°F) maximum ambient, frozen compartment, 2 door openings per hour in each compartment, V-700 MAX TCI suits vehicles with frozen compartments up to 4m (13ft.) in length and chilled compartments up to 5m (16.4ft.) in length.

Loadspace volume (m³)

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

V-700 MAX



Heated compartment (k=0.5 W/m²K)
ambient: -20°C/4°F, compartment: 5°C/41°F
ambient: -20°F/-29°C, compartment: 36°F/2°C

Note: The length stated are based on a compartment with a heigth of 2,35m (7,7 ft.) and a width of 2,48m (8,1ft.)
Calculations are according to DIN 8959

Door openings per hour

V-700 Series: specifications

Description
The V-700 Series from Thermo King comprises two-piece split units designed for fresh, frozen and deep frozen applications on trucks.
The road compressor is powered by the vehicle's engine and the electric stand-by compressor is powered by an electric motor.

System components
- Condenser
- ES700 MAX evaporator
- Reciprocating road compressor
- Installation kit
- In-cab control box
- Vehicle drive kits (on request)

Refrigerant
V-700 MAX: HFC R-404A (5.1 kg)
Chlorine: Zero

Compressor (engine driven)
Reciprocating compressor (TK-312R)
- Number of cylinders: 3
- Displacement: 226 cm^3 (13.8 cu in.)
- Maximum recommended speed: 3,000 rpm
- Jet Lube and Jet Cool (on MAX units) compressor lubrication and cooling systems

Defrost
- Reverse cycle ultra-quick defrost

Evaporator fans performance
Airflow volume:
Host evaporator (ES700 MAX):
2750 m^3/h (1620 cu ft/min)

Electric motors
- dc voltage options:
  24 Vdc
- Electric standby options:
  400V/3 Phase/50Hz
  230V/3 Phase/60Hz
- Total current consumption on the road:

	24 Vdc
V-700 MAX	22A

- Total standby current consumption:

	V-700 MAX
400V/3 Phase/50Hz	11A
230V/3 Phase/60Hz	21A

Refrigeration capacity

R-404A

30°C ambient, European standard.

System net cooling capacity under ATP conditions including 30˚C (86˚F) ambient and 2400 compressor rpm

V-700 MAX (HFC R-404A Refrigerant)

Air return / On the road	Watts	BTU/hr
0°C (32°F)	6800	23200
-20°C (-4° F)	3700	12600
-25°C (-13° F)	2955	10100
Electric stand-by 50Hz		
0°C (32°F)	5700	19500
-20°C (-4° F)	3060	10500
-25°C (-13° F)	2425	8300

100°F ambient, U.S. standard.

System net cooling capacity at 100˚F (38˚C) ambient and 2400 compressor rpm

V-700 MAX (HFC R-404A Refrigerant)

Air return / On the road	BTU/hr	Watts
35°F (2°C)	20500	6010
0° F (-18°C)	11500	3370
-20° F (-29°C)	9200	2690
Electric stand-by 60Hz		
35°F (2°C)	17700	5190
0° F (-18°C)	9500	2780
-20° F (-29°C)	7500	2210

Capacities stated according to ATP certificate M548

Heating capacity

R-404A

Heating capacity with -20˚C (-4˚F) ambient temperature and 2400 compressor rpm

V-700 MAX (HFC R-404A Refrigerant)

Air return / On the road	Watts	BTU/hr
5°C (41°F)	4625	14800
Electric stand-by 50Hz		
5°C (41°F)	3930	13400

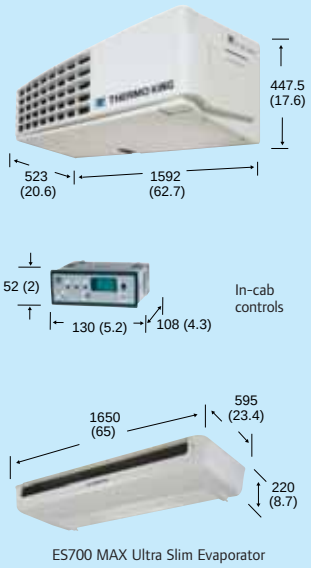
Heating capacity with -20˚F (-29˚C) ambient temperature and 2400 compressor rpm

V-700 MAX (HFC R-404A Refrigerant)

Air return / On the road	Watts	BTU/hr
36°C (2°F)	3390	11600
Electric stand-by 60Hz		
36°C (2°F)	2885	9850

Standard Features
- Jet Lube™ compressor lubrication
- Jet Cool™ compressor injection cooling
- In-cab controls with digital LED thermometer
- Reverse cycle defrost
- Electronic thermostat

Dimensions: Millimetres (inches)



ES700 MAX Ultra Slim Evaporator

Weights (approximate)

Condenser	160 kg (353 lb)
ES700 MAX (Ultra Slim Evaporator)	35 kg (77 lb)
Reciprocating Compressor	15 kg (33 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.

Ingersoll Rand
Climate Control Technologies

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.

www.thermoking.com www.hussmann.com www.ingersollrand.com

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 TK 51633-18-PL EN (Rev. 3, 9-06)