

A D V A N C E R

— built from ambition —



THE A-SERIES
OF TRAILER
REFRIGERATION UNITS

MONZONE®

A D V A N C E R

— built from ambition —

INNOVATION
WITH MEANING

**Advancer offers a true breakthrough
in the world of cold chain logistics.**

It's a refrigeration unit designed for transport fleets, retailers, and pharmaceutical companies. It's for every organization needing to move diverse loads at precise temperatures in the most efficient way possible. And it's technology that sets an astonishing new standard for performance, cost savings, uptime, and lowered emissions.

All combined, **Advancer represents the future of trailer refrigeration** and the ideal investment for ensuring your long-term business success.



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MONZONE®

Inspiring progress. Delivering results.

When we say the Advancer range is built from ambition, we really mean it.

The ambition to deliver a level of **performance** that's simply never been seen before. To push **innovation** to its very limit. To set a new standard for **efficiency**, quality, and reliability. To align our ambition for continued excellence with yours. And to offer the control and **interactivity** needed to take your operation to the next level – and beyond.



MAKE THE MOST OF EVERY JOURNEY
From an **incredible speed of pulldown** to uniquely controllable airflow, you can transport loads from precious vaccines to fresh foods with complete confidence (page 9)

PUT EFFICIENCY TO WORK
With unrivalled electrical & **fuel efficiency**, lower maintenance costs, and enhanced serviceability, Advancer helps you save money at every corner (page 6)

SET THE PERFECT TEMPERATURE FOR EVERY CARGO
Advancer introduces **fully variable airflow** to give you precise control over temperature ranges and fuel consumption (page 8)

ENJOY PEACE OF MIND – WHATEVER THE CONDITIONS
Whether your trailer is exposed to mild or extreme ambient conditions, Advancer fans run independently of unit engine speed to maintain consistent **performance** (page 9)

SPEND LESS TIME ON MAINTENANCE
With fewer components designed for quality and assembled for easier access, the time required for **maintenance** is dramatically **reduced** (page 10)

ENSURE THERE'S ALWAYS POWER AT YOUR FINGERTIPS
Advancer is fully **power agnostic** and can utilize diesel, hybrid, generator, or shore power sources with ease. Future compatibility with a generator or axle and battery combination is also guaranteed (page 7)

MAKE YOUR LIFE EASIER, SAFER, AND SMARTER
From proactive **telematics** to an intuitive, driver-friendly controller, Advancer turns the promise of an intelligent fleet into reality (pages 14-16)

KNOW YOU'RE INVESTING IN TOMORROW
Advancer's ground-breaking architecture is **compliant** with all of today's regulations, and designed to accommodate any new demands with ease (page 18)

— WITH ADVANCER, YOU CAN USE POWER
IN A FAR MORE EFFECTIVE WAY

Turning efficiency into a competitive advantage

Advancer is 30% more fuel-efficient than the market average and delivers 40% better system efficiency versus the market average – numbers verified in both full load and part-load testing. Such breakthrough performance is achieved through a range of complementary innovations that include:

Fully variable airflow that separates fan speed from engine speed to let you find the ideal balance between load protection and fuel consumption for every load.

The intrinsic advantage The intrinsic advantage of combining an engine to drive the compressor directly with a 48V DC fans drive makes Advancer 25% more energy efficient than conventional generator-driven architectures.

Faster pulldown where the unit's mild hybrid architecture drives powerful and highly controllable evaporator fans, thereby creating superior cooling capacity – as well as significant fuel savings.

Constant improvement is another factor designed into Advancer, with Connected Solutions integrated as standard to provide proactive insights for refining fuel usage and set-up.

NEW FEATURE: ELECTRONIC ENGINE SPEED CONTROL

Fitted as standard to Advancer A-400 and A-500 models, the electronic engine speed control (Eco Governor) provides **unrivalled insights into fuel efficiency**. This innovative capability enables you to monitor:

- Fuel consumption by trip
- Total consumed liters per hour
- Total consumption / remaining fuel

Utilizing optional sensors fitted to the fuel tank, the system can also send out **alarms** to notify you when fuel levels reach a pre-set threshold, thereby affording the driver time to locate the most suitable location to re-fuel.



The lowest possible cost of ownership

With Advancer you don't just benefit from stunning fuel efficiency. The unit is also **designed for serviceability**, to extend uptime and to deliver a truly impressive maintenance interval of 3,000 hours – as well as a 30% reduction in maintenance TCO.

From an architecture that limits the need to keep the engine running in low speed for extended periods of time – thereby reducing wear and tear – to reducing the number of serviceable items, **Advancer keeps you running, earning, and saving.**

EXTENDING POWER EFFICIENCY INTO THE FUTURE

With its 48V mild hybrid architecture, Advancer is designed to be compatible with a **variety of power sources** including shore power, hybrid, holdover battery and axle generator. This arrangement ensures you're future-ready and able to adapt to any delivery environment, while maintaining a highly efficient and cost-effective operation.

The most precise temperature control available

Advancer helps you adopt a smarter approach to airflow depending on what you're transporting and where. To do that, the unit introduces fully variable airflow, a unique feature in the world of transport refrigeration. What this means in practice is greater choice, more control, and **the ability to set precise airflow conditions** for each load and delivery scenario:

SCENARIO #1
Cargo ventilation
Provide high airflow to your sensitive cargo (fruits & vegetables, flowers, etc.) even when the cooling demand is low, to protect its quality at all times.

SCENARIO #2
Efficient cooling
Keep it cool without wasting energy on airflow for goods that need refrigeration but reduced ventilation (dairy, frozen products, etc.).

SCENARIO #3
First & last mile speed
Reach a specific set point faster during initial pull-down or after multiple door openings by engaging high-speed airflow until the set point is reached.

SCENARIO #4
Longer trailers
Provide sufficient air throw to secure accurate temperature control as far as the rear door for trailers up to 15.6m* long.

* Achieved with optional air straightener for trailer loaded according to best practices



Flexible airspeed, faster pull-down

Fully variable airflow is made possible with Advancer's underlying architecture, where **fan performance is no longer tied to engine speed**. As a result, you'll be able to select from a wide range of airflow values (by steps of 100 m³/h) at any given engine speed.

With variable, constant airflow comes the ability to increase evaporator airflow for longer trailers up to 15.6* meters long. It also contributes to a significant increase in pull-down speed.

Advancer delivers **pull-down that is up to 40% faster** than leading competitor products and **requires up to 30% less fuel** per trip.

POWERING GREATER CAPACITY

By merging a 48V DC mild hybrid architecture with a direct drive on the compressor, Advancer combines the best of both electrical and mechanical worlds. This is done to reduce energy losses across the unit and maximize fuel savings.

When understanding the impact this has on performance, the headline is simple: **by being more efficient at transferring power to the compressor, more power from the engine is transformed into actual cooling capacity** – which in turn means lightning-fast recovery, and unbeatable pull-down.

— ADVANCER DELIVERS PRACTICAL IMPROVEMENTS AT EVERY OPPORTUNITY

Innovation for enhancing fleet operations

MAINTENANCE AND SERVICEABILITY

- 3,000 hours maintenance intervals for maximum asset dependability
- 30% reduction in servicing requirements

PROACTIVE DIAGNOSIS

Thermo King Connected Solutions are fitted as standard, and include data from the fuel tank and battery (on A-400 and A-500 models)

INTELLIGENT DESIGN

Compared to Thermo King's previous architecture:

- More than 700 design requests from customers
- 37 serviceable items removed
- 38% reduction in hardware
- 33% reduction in the number of refrigerant joints
- Designed for ease of service & maintenance
- Waterproofed electronics & connectors



Future-ready thinking

As well as being designed for simplified usage, servicing, and maintenance, Advancer also features a **modular design approach** that helps ensure the unit offers faster development cycles and time to innovation.

We've done this to inspire a more fluid and responsive approach to meeting tomorrow's performance and regulatory compliance challenges.

With Advancer you can meet all your operational requirements today with groundbreaking technology, cover all the bases when it comes to power supply, and **be ready to deploy new capabilities** when they're needed to keep you running.

— WE'VE LISTENED, WE'VE ACTED

Central to Advancer's revolutionary architecture has been an extensive '**voice of customer**' engagement program. This was conducted with a large number of organizations from across the globe and included trailer and tractor manufacturers. The result was more than 700 design requests that guided our every decision.

You can be sure that with Advancer, every component and design decision has been taken from a customer's perspective – to deliver technology that's **purpose-built to drive your future success.**

MONZONE®

Meet the A-Series

ALL 3 MODELS IN THE ADVANCER RANGE:

- are the most fuel-efficient on the market
- are the greenest units on the market
- are the quietest units on the market
- have the highest cooling and heating capacity on the market
- provide the highest airflow
- provide fully variable airflow independent of unit engine speed
- include a 2-year telematics contract



A - 3 6 0

ALL-ROUND
REFRIGERATION
EXCELLENCE

A **powerful engine**, engine-independent airflow and precise temperature control.



A - 4 0 0

THE NEW STANDARD
IN TRAILER
REFRIGERATION

Comes with electronic engine speed control and with extra features to **boost fuel efficiency**.



A - 5 0 0

WHEN YOUR CARGO
DESERVES THE BEST
OF THE BEST

Flagship model that offers the highest level of fuel efficiency, refrigeration capacity and temperature management.

MONZONE®

Introducing the all-new A-Series Controller

With Advancer, you can get your hands on the smartest, most intuitive and easy-to-use controller on the market:

DRIVER-FRIENDLY

Enjoy our biggest ever screen, as well as full color and high-resolution display with backlit keys

USER INTERFACE

Any information can be accessed via a maximum of five button presses and menu navigation is icon-based

FASTER BOOT TIME

The new controller is significantly faster to boot up, and includes a progress bar to inform the operator

ACCESSIBLE INSIGHT

Advancer is the first in the industry to provide insight on fuel consumption, including average liters per hour consumed by the unit and fuel level (if an optional fuel tank sensor is fitted)

HIGHLY DURABLE

The controller has been rated IP69K. It is fully dust-proof, resistant to vibrations and can withstand water under high-pressure.

EASE OF USE

The position and ergonomic viewing angle of the controller have been fully optimized for driver convenience

PROACTIVE ALARMS

Details of triggered alarms are clearly displayed and grouped logically, alongside recommendations for 'next best action' to boost uptime

DATA LOGGING

The A-series controller comes with a more frequent data logging capability, and over 1 year of data logging capacity – fully compliant with EN12830 regulation

MEMORY STORAGE

The A-Series controller can be used in 14 languages on a single software package, and offers a variety of functionality and applications in one, future-proofed unit

Intelligence you can rely on

Advancer is designed to be the most intelligent transport refrigeration unit ever built. To make this a reality, we've included a number of industry firsts into the list of features and benefits:

1 **Advancer is the first ever unit on the market to come with full connectivity as standard, with a 2-year contract included in the purchase price**

2 **The electronic engine speed control on all A-400 and A-500 models is another industry first that brings with it in-depth fuel consumption data**

3 **All Advancer units are also supported by proactive alarm recommendations, where 'next best action' accompanies any alert notification**

ELECTRONIC ENGINE SPEED CONTROL

This brand-new capability is available on the A-400 and A-500 models and provides a host of critical insights into fuel costs and usage.

With this feature, you can monitor:

- Average fuel rate
- Average fuel rate from last trip
- Average fuel rate for last 5 minutes and last 15 minutes

Electronic engine speed control helps you significantly cut fuel usage levels. With the optional fuel level sensor, you can also track the fuel levels of individual vehicles and notify drivers if they allow these to breach pre-arranged thresholds.

CONNECTIVITY FITTED AS STANDARD

Included in the purchase price is all the hardware and software needed to get the service up and running from day one, alongside a 2-year contract that includes:

- Access to the TrackKing telematics platform
- Access to Connected Solutions Mobile Apps (TK Reefer and TK Notify)
- Data sharing with external platforms
- All SMS and roaming costs
- Two-way command capabilities (A-400 and A-500)

PROACTIVE ALARM RECOMMENDATIONS

Each alarm generated by an A-Series unit now includes a recommended 'next best action' that is available to view at the Smart Reefer control unit, as well as via the TrackKing platform, email notification, and the TK Notify app.



MONZONE®

Demonstrate your commitment to green

When it comes to sustainability and compliance, Advancer offers unparalleled performance in terms of emissions, fuel efficiency, and exceeding regulatory expectations:

A STUNNING DECLINE
IN EMISSIONS

30%

By being **30% more fuel efficient**, Advancer delivers a corresponding 30% decrease in CO₂ emissions.

65%

Thanks to its efficient and cleaner GreenTech engine, Advancer's combined **environmental impact is 65% lower** than the market benchmark.

MEETING ALL EUROPEAN
REGULATIONS

- **NRMM Stage V** – Advancer delivers particulate emissions that are 50% lower than the maximum allowed by NRMM Stage V standards.
- **LEZs** – Advancer easily meets requirements for Low Emission Zones (LEZs) and Ultra-low Emission Zones (ULEZs).
- **GDP** – the unit is also rated as compliant with Good Distribution Practices (GDP) guidelines for pharmaceutical transport.

RESPONSIBLE MANUFACTURING

- **60% less energy** is required to manufacture Advancer than previous Thermo King models and 100% green energy is used.

INTEGRATED SOLAR
PANELS:
INCREASE YOUR
BATTERY RELIABILITY

- Ensure your units can **restart at any time**, irrespective of gaps in operation
- **Power telematics 24/7** to guarantee your ability to locate individual units
- Benefit from our **Intelligent Charging System**, where the solar panel simply keeps the battery topped up
- Instantly see if the battery is charging, is fully charged, or in poor condition, with visible **LEDs** built into the charge controller

Fitted during the manufacturing process, each solar panel is attached on top of the Advancer unit and delivers 25% more wattage than previous Thermo King panels. The result is a neat, aerodynamic fit that doesn't contribute additional height to the unit or require drilling holes in the trailer roof.

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Technical specifications

DIMENSIONS



A - SERIES MODELS

A - 3 6 0

A - 4 0 0

A - 5 0 0

REFRIGERATION CAPACITY: SYSTEM NET COOLING CAPACITY AT 30°C AMBIENT TEMPERATURE UNDER A.T.P. CONDITIONS

| Return air temperature to evaporator | | °C | 0 | -20 | 0 | -20 | 0 | -20 |
|--------------------------------------|---|----|-------|------|-------|------|-------|-------|
| Capacity on engine power | @ Nominal Airflow (Default @ Pull Down) | W | 15600 | 8100 | 16200 | 8300 | 19500 | 10400 |
| Capacity on electric standby | @ Nominal Airflow (Default @ Pull Down) | W | 12700 | 6600 | 13000 | 6700 | 14600 | 8400 |

HEATING CAPACITY: BOX TEMPERATURE +2°C

| Capacity on engine power (Outside air temperature: -20°C) | @ Nominal Airflow (Default @ Pull Down) | W | 10750 | 10750 | 15900 |
|---|---|---|-------|-------|-------|
| | | | | | |

AIRFLOW: INDEPENDENT FROM UNIT ENGINE SPEED SELECTABLE WITHIN RANGE @ SET POINT & PULL DOWN

| Airflow volume @ 0 Pa static pressure | Default @ Pull Down | m³/hr | 5000 | 5000 | 5500 |
|---------------------------------------|---------------------|-------|------|------|------|
| | Max @ Pull Down | m³/hr | 5500 | 5500 | 6000 |
| | Default @ Set Point | m³/hr | 3400 | 3400 | 3400 |
| | Max @ Set Point | m³/hr | 5000 | 5000 | 5500 |

WEIGHT: INCLUDES BATTERY

| Model Standard | | kg | 830 | 830 | 830 |
|----------------|--|----|-----|-----|-----|
| | | | | | |

DIMENSIONS

| Height | | mm | 2270 | 2270 | 2270 |
|--------|--|----|------|------|------|
| Width | | mm | 2076 | 2076 | 2076 |
| Depth | | mm | 440 | 440 | 440 |

SOUND PRESSURE LEVEL

| High Speed Diesel | | dB(A) | 65 | 65 | 67 |
|-------------------|--|-------|----|----|----|
| Electric Standby | | dB(A) | 64 | 64 | 64 |

24/7 support wherever you need us

THERMO KING'S DEALER NETWORK -
WHERE COMPLETE COVERAGE
MEETS EXPERT INSIGHT:

- Over 500 authorized service points in 75 countries
- 1,400 fully trained and certified technicians with Gold, Silver and Bronze Certi-Tech expertise certifications
- Open and available every day of the year

Find the support that's closest to you with
our online dealer locator: dealers.thermoking.com

More dealer services

- Emergency assistance
- Service contracts
- Genuine Thermo King parts
- Options and Accessories
- Mobile service
- Calibration and leak testing



EXTEND THE VALUE OF YOUR INVESTMENT WITH GENUINE THERMO KING SERVICE PARTS

With Advancer you're equipping your fleet with the cutting edge of transport refrigeration equipment. Having made the investment, you're next step is keeping the unit out on the road and earning money. That's why you need confidence that every replacement part has been exhaustively tested to the same world-class standards as the manufactured original. With Thermo King genuine parts you can be sure that reliability and dependability come as standard.

Advanced fleet solutions

ALL-IN-ONE SOLUTION
FOR ONE MONTHLY RATE

Appreciating the importance of cost and convenience for small to medium sized customers looking to source the right combination of trailer and refrigeration unit, Thermo King offers premier+.

CHOOSE PREMIER+ FOR

- All-in-one solution** – with refrigeration unit, trailer, service and maintenance contract and telematics subscription
- Complete choice** – including single- and multi-temperature refrigeration solutions
- Budget optimization** – with one monthly lease rate over a fixed term
- Improved uptime** – with quality components and 24/7 support
- End-to-end financing** – where we take care of the details
- Full service coverage** – covers both refrigeration unit and trailer



For more information on premier+
visit europe.thermoking.com

PROVEN IMPACT
ON YOUR UPTIME

With uptime and reliability at the forefront of your mind, the Thermo King Blue Track program enables a host of value-adding capabilities for running a smart, responsive operation:

- Real time watch - 24/7 fleet alarm monitoring
- Proactive issue resolution
- Recommendations for addressing alarm codes
- Remote triage and express service
- Faster diagnosis, faster repairs and first time solution
- Preventive maintenance and repair, both mobile and in- dealership
- Smart, remote workshop routing to avoid wait time



For more information on the Blue Track Program, visit europe.thermoking.com

Let the experts service your fleet with Thermo King service contracts

Thermo King offers a complete selection of service contract solutions designed to optimize fleet efficiency, minimize operating costs and maximize equipment resale values. Let us take care of maintenance planning, scheduling, invoice interpretation, general fleet administration or a multilingual telephone service putting you in contact with an authorized Thermo King service Dealer. Our service solutions are available across Europe 24/7/365 so you can focus on what matters most: your business.



MONZONE®

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Thermo King – by Trane Technologies (NYSE: TT), a global climate innovator – is a worldwide leader in sustainable transport temperature control solutions. Thermo King has been providing transport temperature control solutions for a variety of applications, including trailers, truck bodies, buses, air, shipboard containers and railway cars since 1938.

For further information:
europe.thermoking.com
tkadvancer.com

Find your nearest dealer on
dealers.thermoking.com

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TECHNOLOGIES