



HVAC for Rail

Proven performance



- Lowest weight and dimensions for capacity
- Industry leading reliability
- Life Cycle Cost (total cost of ownership)
- Best in class dealer network and aftermarket support



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 centres worldwide. Sales and service is provided by a global dealer network of 865 independently owned companies in 75 countries.

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State-of-the-art Research & Development Centre and Manufacturing Plant



Total land area: 18,300 m²
Total headcount: 60+
Construction start: 6/2006
Operation start: Q1/2007

Introduction

Thermo King designs and tests products that deliver solutions to even the most changing of customer specifications. We have a range of standard platforms for lower volume businesses but have considerable experience in designing bespoke units to suit specific applications.

The designs are developed by a dedicated group of rail engineers and supported by our industry leading experts in the R&D centre. In this centre we have the ability to do predicative modelling and a range of testing that ensure our product's performance before the first unit is even delivered.

The R&D centre represents a significant investment with unique facility of test equipment as well as some of the best know-how in the business. In addition to this we manufacture the units in-house at our facilities ensuring that we can control every aspect. Thermo King is arguably the world leader in Transport Temperature Control and we bundle our considerable experience of design and manufacture into our rail products.

Key Values:

- Lowest weight and dimensions for capacity
- Industry leading reliability
- Life Cycle Cost (total cost of ownership)
- Best-in-class dealer network and aftermarket support
- Innovative bespoke design for OEM applications:
 - Efficiency improvement (smart solutions, heat pumps, compressor designs, etc.)
 - Reduced noise emission (Fan designs)
 - Volume optimization (compressor designs)
 - Reduced weight units (New material, smart design, etc.)
 - Air sanitation and VoC innovation
- Global partner with local presence

State-of-the-art Research & Development Centre

Ingersoll Rand's R&D centre near Prague, Czech Republic, is a state-of-the-art facility using the latest technology to perform a wide range of tests on Thermo King equipment.

Competencies and capabilities

- Refrigeration analysis
- Reliability-centred culture
- FEA analysis - Pro/M, ANSYS, MSC (Nastran, Mark)
- Noise and vibration analysis
- Material analysis
- In-house high accelerated life testing
- In-house Kaizen inspections
- Reliability analyses of components and final products
- Field data acquisition and analysis
- Testing of components and products (HVAC units, refrigeration units, retail products, finished solutions)
- In-house MAST vibration testing
- Design for retail businesses
- Design and development of new applications for commercial and industrial refrigeration
- Design of new applications for industrial technology business groups

R&D projects in Prague

- Green solutions
- HFC-free refrigerants
- Sanitation
- Electric drives
- Technical support for local manufacturing facilities to help enhance production efficiency

