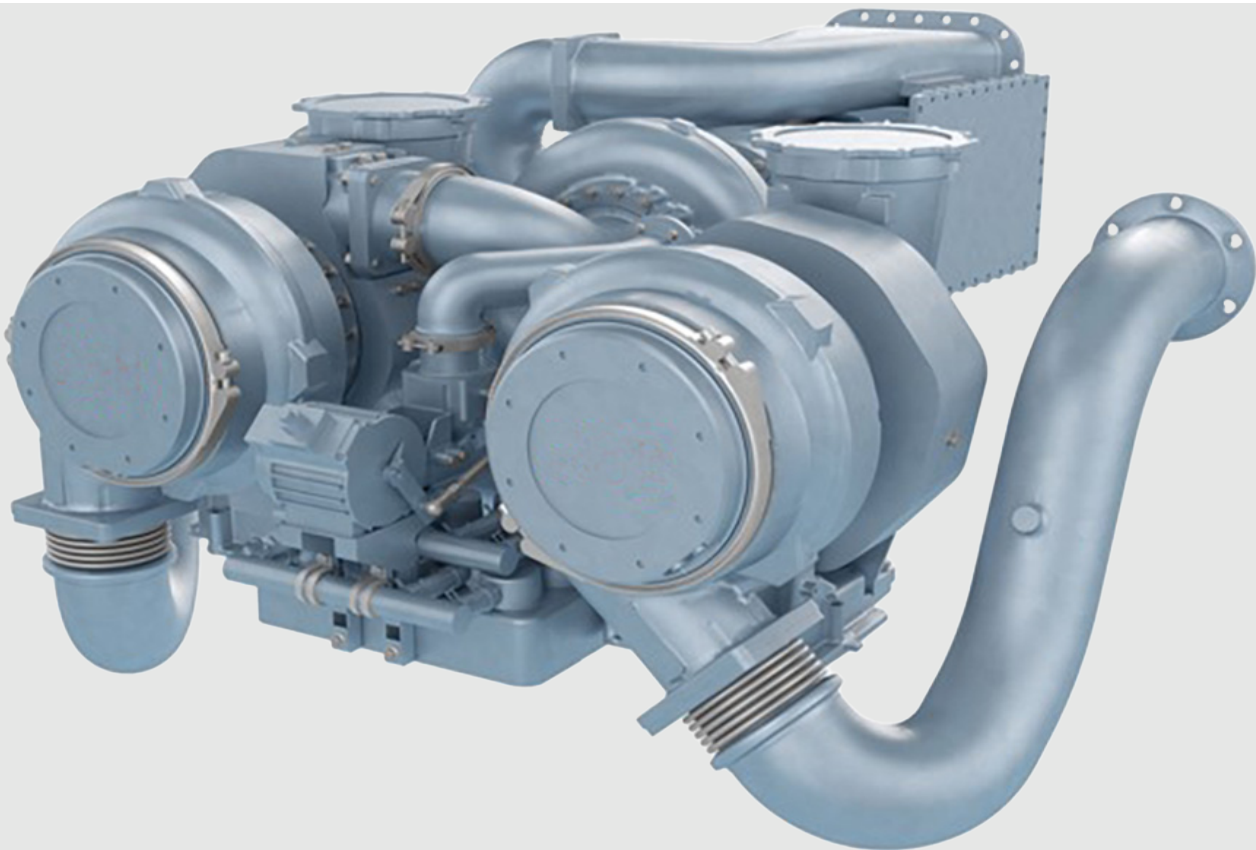


Multi-purpose turbocharger for high-speed and rail applications

TPR Turbocharger Range



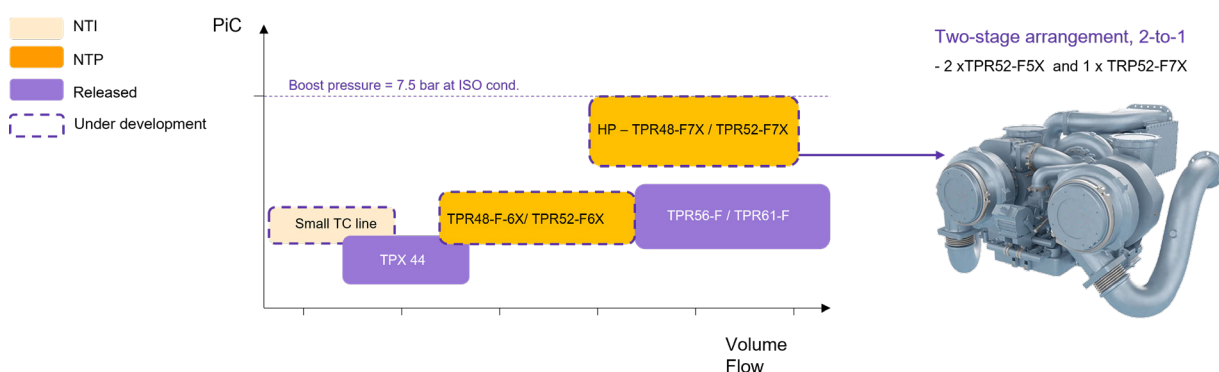
The TPR turbocharger range consists of frame sizes based on a common core with different packages to suit a wide range of applications. From rail to electrical power generation, marine and off-highway equipment.

TPR turbochargers
in two-stage
configuration

The TPR range comprises of a common core with one turbine design and a flexible compressor side covering five different compressor stages to optimize pressure ratio, volume flow capacity and efficiency to the specific need of the application. From high flow capacity to the highest single-stage pressure ratios of up to 6.0.

Both frame sizes offer a two-stage option for pressure ratios up to 7.5 at sea level and up to 12.0 for altitude operations. The high flexibility and versatility of the TPR range enables various combinations of Low-Pressure (LP) units and High-Pressure (HP) units to provide the best support and allow compact packaging on an engine. For example:

1 LP and 1 HP of different frame size, or 2 LP and 1 HP, or 4 LP and 2 HP and more.



TPR turbocharger portfolio

Features

Multi-purpose

- One design that is applicable for a wide range of applications, from constant load to cyclical operations
- Complexity reduction for customers. One turbocharger for all applications

High performance

- Sustained performance, with longer intervals between overhauls

Tier IV compliant

- Designed to comply with Tier IV emissions standards

Compact

- Compact three turbocharger configuration weighs up to 25% less and occupies 25% less space than conventional four turbocharger two-stage solutions

Reduced downtime

- Alignment of turbocharger maintenance interval with the engine maintenance interval due to the extended time between overhaul

Economical

- Lower Total Cost of Ownership (TCO) due to improved reliability
- Lower capital expenditure due to its smaller size

Robust

- Operates in extreme conditions without the need for de-rating
- New features for demanding application such as wear protection ring, gas tight C-ring seals, enlarged thrust bearings and improved bolted joint (turbine side)

Optimized

- Components are optimized for high-cyclical applications

Adaptable

- Able to be installed in standard locomotives

Power density

- New turbine design with improved Low Cycle Fatigue (LCF) capabilities and transient response
- Higher speeds, higher charging pressure, higher power density

Two-stage option

- One turbocharger design that is applicable for single-stage, low pressure or high pressure operations