

ABB Turbocharging

Imagination meets expertise

More power, less fuel, lower emissions



ABB Turbocharging is a global leader in the manufacture and maintenance of turbochargers for 500 kW to 80+ MW diesel and gas engines. Having produced the world's first industrial turbocharger, we have continued to push the turbocharging technology forward, providing engine builders and application operators with advanced turbocharging solutions for efficient and flexible application operations and compliance with the most stringent environmental requirements

Comprehensive turbocharger portfolio

ABB Turbocharging systems cover all major types of large engines used in all areas of application such as Marine, Oil & Gas offshore, Power generation, Earthmoving and mining equipment, Rail and include a full array of options:

- Low, medium and high speed two-and four strokes
- Diesel, gas and dual-fuel engines employing both the Diesel and Otto Cycle combustion processes
- Outputs from around 500 kW up to the very largest marine engines producing close to 90 MW.

In addition, ABB turbochargers boast some of the widest compressor maps in the large engine industry, allowing both flexible adaptation of compressor output to a maximum range of load profiles in a given engine application in a given engine power range, and ensuring excellent engine response to load impositions within that load profile. On the latest engine generations, these high pressure ratios are also a key enabler of Miller Cycles of varying intensities as a means of greatly reducing NOx emissions at source, in the combustion chamber.

Research and development

Imaginative design and an unparalleled grasp of aerodynamics and thermodynamics have enabled ABB Turbocharging engineers to produce turbocharging systems which combine highest levels of performance with lowest unit weights, most compact dimensional envelopes and best-in-class accessibility for ease-of-maintenance.

ABB Turbocharging develops its single and two-stage turbocharging systems with three major aims:

- Engine-friendly: to enable engine builders to offer best-in-class reliability, fuel efficiency and flexibility, power density and load acceptance.
- End-user-friendly: to assist engine owners and operators to minimize the Total Cost of Ownership of both their engines and their turbochargers.
- Environmentally-friendly: to reduce emissions of NOx and greenhouse gases safely beyond legal limits.

To achieve these aims, ABB Turbocharging maintains not only the most able and innovative R&D organization in the turbocharger business, but also the most extensive after-sales network in the large turbocharger sector with over 100 Service Stations in more than 50 countries.

ABB Turbocharging offers engine builders and end-users outstanding long-term benefits, in particular:

- Operational flexibility
- Low fuel consumption
- Low greenhouse gas and NOx emissions and compliance with the most stringent environmental regulations
- Highest power density for maximised payloads
- Excellent load acceptance and transient response for optimum tractability
- Highest quality construction for unparalleled robustness
- Low total cost of ownership thanks to long times between overhauls
- Easy and ready access for maintenance, repair and overhaul
- Highest operational safety levels

Service excellence - Protect your investment long-term with Original Service and Original Parts

ABB Turbocharging prides itself of service excellence to ensure customers make the most of their investment. The right service prevents repeat maintenance events and redundant spare

part purchases, reduces downtimes, increases your application's availability, and lengthens your application's lifetime. **That's why we're dedicated to providing all of our customers with Original Service and Original Parts that offer all those things.**

We offer a full range of services 24/7 365 days a year at any one of our 100+ ABB Service Stations in 50+ countries across the globe. We own all of our Service Stations, and we employ 600 qualified service engineers at them so that you get the support you need, when you need it, where you need it.

Our Service Agreements are designed to help you minimize the risk of production interruptions as well as increase the efficiency and reliability of your systems.

Why Original Service? The benefits of Original Service at a glance

- 24/7 availability
- OEM trained technicians at over 100+ Service Stations in 50+ countries
- 24-hour availability of 98% of all spare parts
- Rapid problem solving from the most reliable source
- Minimum downtime
- Maximum availability
- Direct, local access to the ABB Turbocharging technology and know-how
- Solutions based on intimate knowledge of your application and turbocharger

Which service agreement is right for you?

Maintenance Management Agreement (MMA) - Profit more by doing less



A Maintenance Management Agreement (MMA) is a service agreement for maintaining your ABB turbocharging solutions in your fleet. The Maintenance Management Agreement is part of ABB's Turbocharging well-structured offering of proactive service solutions for customer's turbocharger. MMA specifically targets end users of turbochargers on marine and stationary engines wanting close

support of their turbocharger servicing activities rather than complete delegation. Under an MMA, ABB Turbocharging takes over responsibility for planning and organizing service and spare parts logistics, relieving the customer of both the technical and administrative workload.

It optimizes your maintenance management and reduces your workload. You get an annual budget plan, advance service recommendations, discounts on new original spare parts, and a single point of contact who will work with you in your language and on your time.

If you're looking for a full-service support system that gives you a proactive role and full transparency, then an MMA is right for you. 150 of our customers are already convinced. They have chosen to cover some 7,000 turbochargers under an ABB MMA, and that's not just because you can save up to 30% on service cost.

Cut your costs

- Streamline your maintenance processes
- Get the best discounts on new original parts
- Get comprehensive recommendations well before they're needed
- Reduce your downtime through global access to original OEM service
- Simplify service order processing through pre-defined rates for all your key service areas.
- Plan your needs proactively using our annual maintenance budget plan. The earlier you buy, the more you save.

Operation Performance Package (OPAC) Meets your exact needs everywhere, every time

With ABB's Operation Performance Package, or OPAC for short, you get a fully customizable, fully delegable OEM service package paid by the actual number of turbocharger running hours. Designed with and for our customers, the OPAC is a more flexible, cost-effective approach to turbocharger servicing that is made to meet your exact needs everywhere, every time, with Original Parts and Original Service.

You can go with an OPAC BASE, which offers the fundamentals of good service and lets you upgrade at any time. Or you can build on that solid foundation with an OPAC premium and prepare for unforeseeable incidents well in advance.

ABB takes full responsibility for customer's turbochargers, including the risk of excessive wear and tear. Every OPAC agreement is developed individually, based on a detailed analysis of customer's application and operating conditions. Customers enjoy a safe and reliable turbocharger operation, no hidden costs, access to ABB's know how and technical expertise, highest spare parts availability, transparent cost management and a worldwide service network.

Customer Part Exchange Program (CPEX) Maximize availability through exchange

CPEX offers ABB service customers a globally standardized range of high-quality reconditioned parts. CPEX enables you to minimize engine downtime by offering the possibility of exchanging your ABB turbocharger parts for original ABB re-conditioned parts. You benefit from faster service, proven OEM quality and a global standard parts warranty.

The CPEX program is based on providing our customers easy access to turbocharger parts whenever they need it. When you need a CPEX part for your ABB turbocharger, your local ABB

Turbocharging Service Station can exchange your part or assembly for a reconditioned replacement from local stocks or from the ABB global warehouse in Switzerland.

CPEX products

- TPS shaft
- TPS bearing casing
- TPS and TPL VTG module
- VTR bearing
- VTR pumps
- VTR and TPL blades



Upgrades: The smart move for higher efficiency and savings

An upgrade enables customers to maximize the full potential of their engines to achieve higher power output and higher operational efficiency, resulting in higher revenue and cost savings.

Available types of upgrades

- Upgrading thermodynamic components: Replacing turbocharger components with new and advanced versions.
- Upgrading the entire turbocharger: Replacing the entire turbocharger with a new one.
- Retrofits: Replacing a non-ABB turbocharger with an ABB turbocharger for better efficiency and savings.

Big improvements with short payback times

The math around calculating whether or not an upgrade makes sense for you is simple:

With an overhaul, you stand to **improve fuel consumption by about 0.5%**. With an ABB turbocharging upgrade package, you improve your installation with new parts made specifically for your machine and you **save up to 3% in fuel** so that the upgrade essentially pays for itself.

The return on investment for an upgrade is typically three years and may even be less. That's a comparatively short time, especially when you consider that your equipment will be able to run economically for another ten or fifteen years thanks to the upgrade. And if you choose to do an upgrade together with an ABB Turbocharging **SIKO exchange, then your payback can be as little as 12 months.**

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