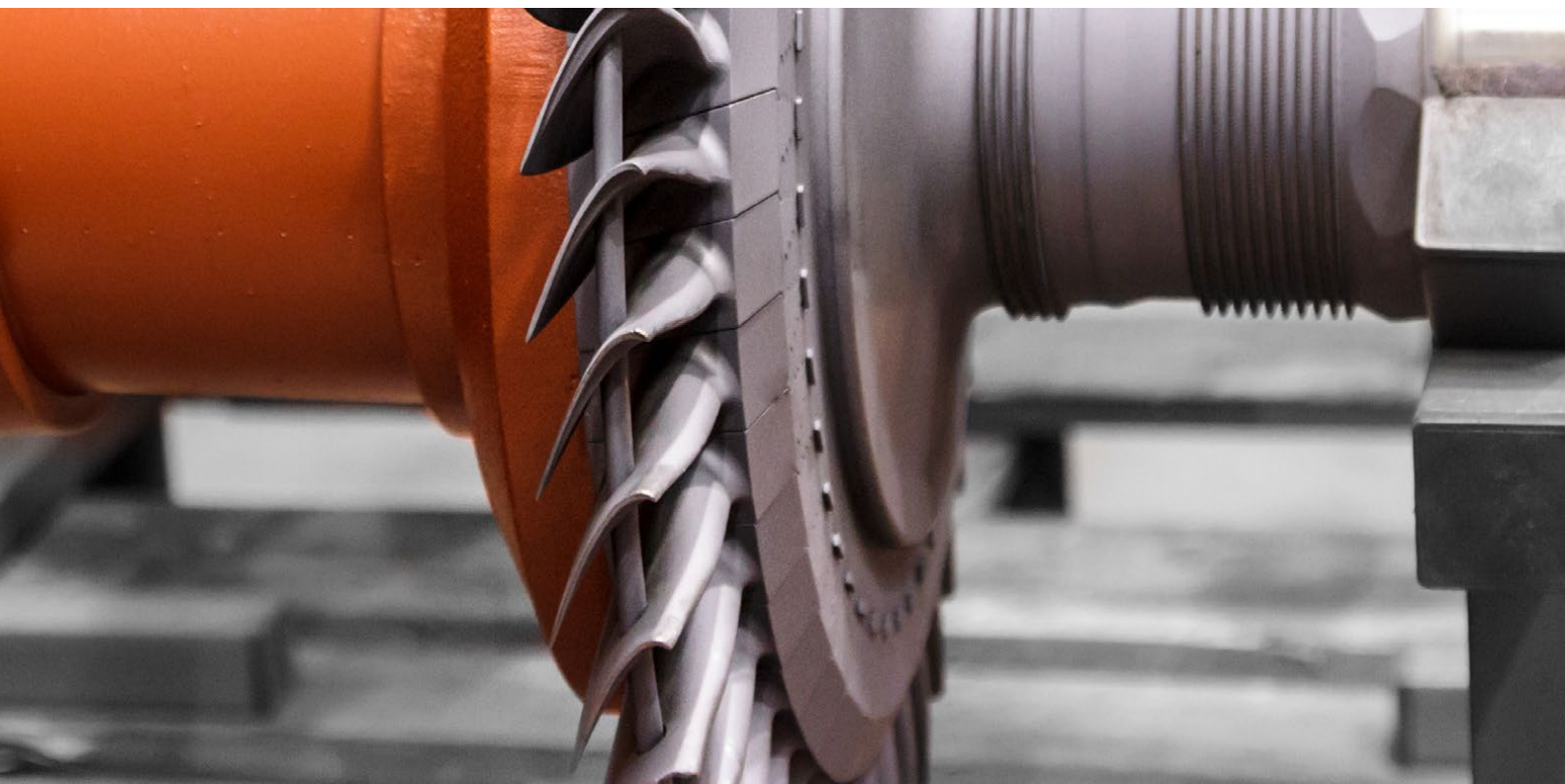




TURBOCHARGER PARTS, SERVICE & REPAIR



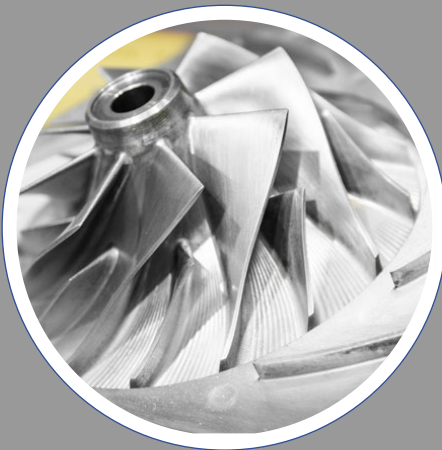
Turbo Internacional®

WHO WE ARE

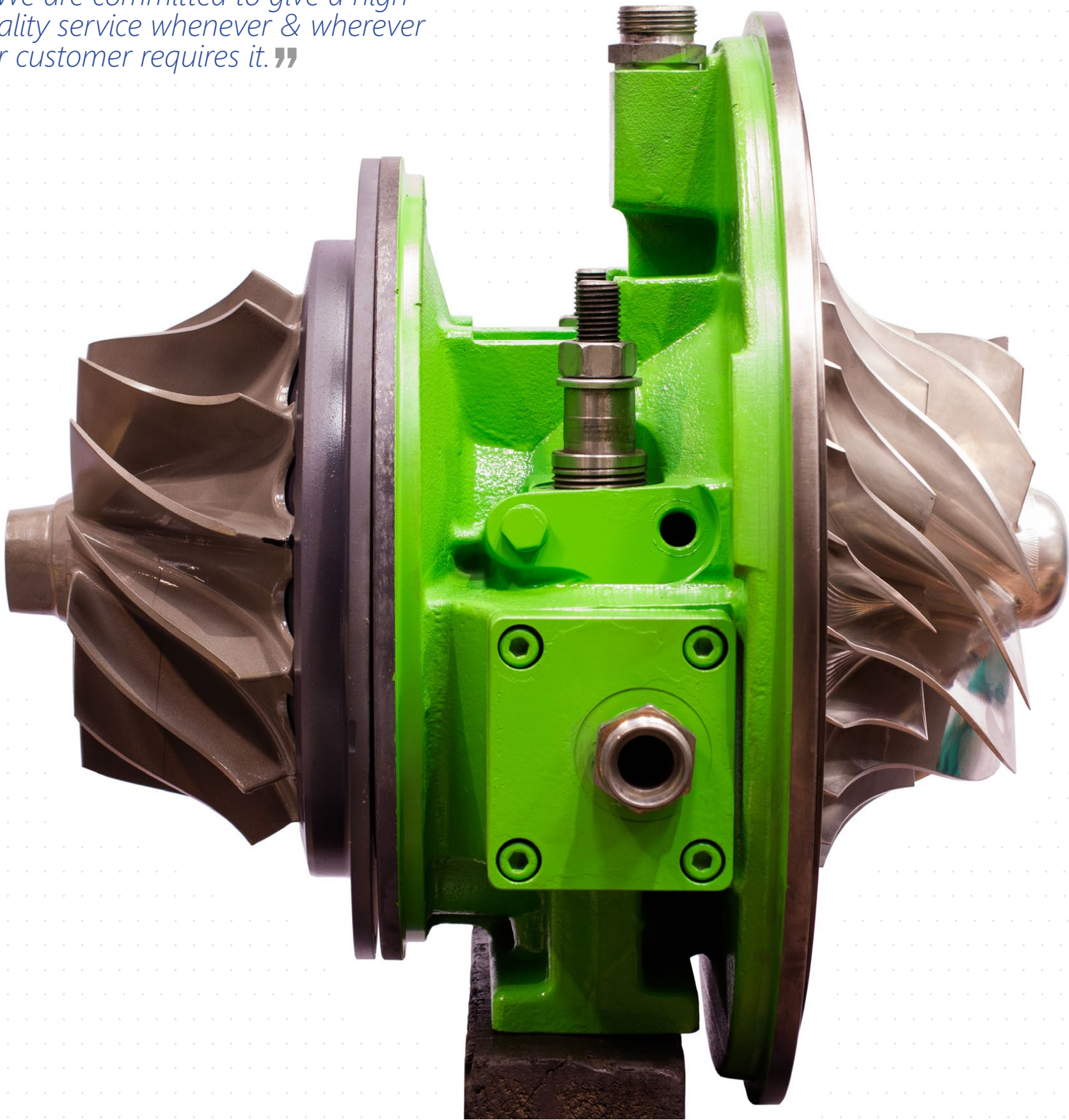
Turbo Internacional is an independent multi-brand turbocharger service company solely dedicated to the maintenance, repair & sale of exhaust gas turbochargers.

We are able to service the main turbocharger brands like **ABB, MAN, PBS, Mitsubishi, KBB, MTU & Napier**, both in our workshops & on site in power plants, offshore vessels & railways.

From scheduled overhauls, retrofits, precise reconditioning to onsite emergency repairs, our highly skilled, resourceful & certified service engineer workforce is able to carry out the most complex or routine tasks, which is always a guarantee of success & peace of mind for our customers.



“We are committed to give a high quality service whenever & wherever our customer requires it.”



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SUPPLY

SPARE PARTS

We value our customers, and know that when their engines fail, each second counts, that's why we maintain a growing stock of spare parts, allowing us to be ahead of our competition with speedy response times keeping those down times to the minimum.



The spare parts we supply are best in class and up to the highest quality standards, proving to be a solid and smart alternative to the OEM, at a reasonable cost. This is why we are confident in offering a 12 month warranty for all our spare parts.



PBS TURBO / RETROFIT

Turbo Internacional carries the full range of PBS Turbochargers, their latest range is renowned for their **reliability, high performance**, cutting edge technology & clever build for easy & **cost effective maintenance**. PBS turbochargers can be found as first choice mainly on a range of modern gas engines delivering robust performance.

Here at Turbo Internacional your PBS turbochargers will be serviced by highly skilled factory trained technicians who can assess you with the latest improvements & updates that will keep your turbochargers running at full performance.

Retrofit

However one of the key strengths of the PBS PTR/NR/TCR range of turbochargers is that they also serve as a direct replacement of other brands of turbochargers, most times as a direct bolt-on replacement. These turbochargers are suitable for a wide range of engines & fuels including diesel, heavy fuel, natural gas, biogas, land fill gas, etc.

These retrofits are highly beneficial in replacing actual units which may be obsolete, underperforming, problematic, unreliable or costly.

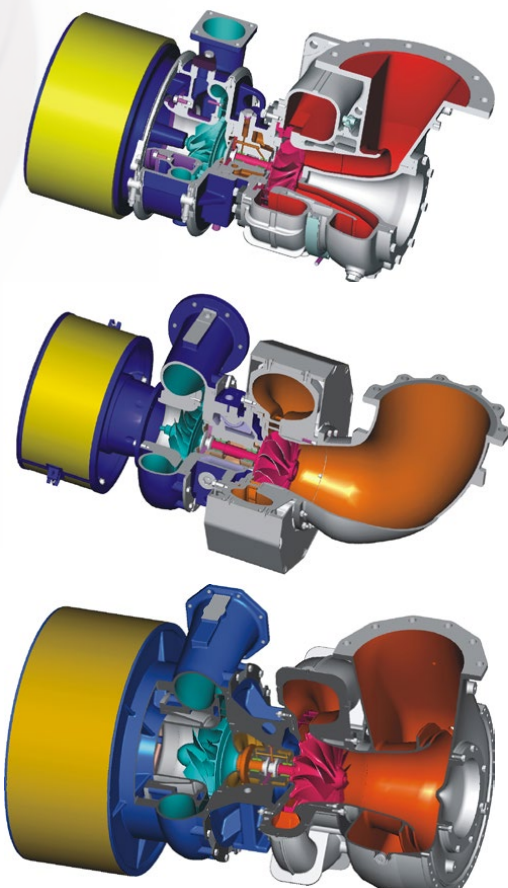
We have successfully carried out an important number of retrofits on diesel, gas & biogas engines during the last few years giving us an invaluable wealth of field data & experience that allows us to reliably recommend & find a solution for your particular engine

We are at your disposal to offer a tailor made solution whenever possible.



Retrofit examples:

| Engine | Turbocharger |
|-------------------------|------------------|
| Jenbacher J312 | TCR-12 |
| Jenbacher J316 | PTR-154 / TCR-14 |
| Jenbacher J320 | PTR-154 / TCR-14 |
| Jenbacher J320 | NR-17SR / TCR-16 |
| Jenbacher J416 | TCR-16 |
| Jenbacher J420 | NR-17SR / TCR-16 |
| Jenbacher J420 Miller | NR-17SR |
| Jenbacher J612 | NR-17SR |
| Jenbacher J616 | PTR-154 / TCR-14 |
| Jenbacher J616 | NR-17SR / TCR-16 |
| Jenbacher J620 | NR-20SR |
| Jenbacher J620 | TCR-18 |
| Jenbacher J624 | TCR-18 |
| Deutz TBD620V8/12/16/20 | PTR-154 / TCR-14 |
| Deutz TBG620V12 | NR-17SR / TCR-16 |
| Deutz TCG2020V12/16 | TCR-16 |
| Deutz TBG620V12K | TCR-16 |
| Deutz TBG632V16 | NR-20SR |
| Sulzer 8S20U | PTR-184 |
| CAT3516 | PTR-154 |
| YANMAR 6N21 PBS | PTR-154 |



RECONDITIONING

BEARINGS

In our special bearing room free of dust, which meets strict standards of hygiene and cleanliness, we carry out the reconditioning of bearing assemblies & gear oil pumps for turbochargers types such as VTR, VTC and PDH.



The bearings are completely dismantled; the components are cleaned & measured. In every case the naked bearings are replaced & the rest of the components such as damping springs & bearing bushes are carefully inspected for reuse, in other case they are replaced.



Once the bearings are reassembled with new naked bearings & inspected/replaced parts, the complete units pass through the test benches where their final tolerances are measured & adjusted if needed.



Finally the bearing units are submerged in a preserving agent, packed & closed in tin cans for optimal storage conditions.



“Turbo Internacional guarantees the same lifetime for the reconditioned bearings & pumps as for new units.”



AIR FILTERS / SILENCERS

Air filters / silencers are reconditioned by completely dismantling them, microblasting the supports, body & filter panel, replacing the felt layers & securing tabs, & renewing the filtering elements. This is a cost effective solution that renders the silencer to as new condition.



MANTAINENCE & REPAIR

SERVICE

We pride ourselves in having the best in class service team available 24h to carry out maintenance, inspections & emergency repairs.

Once our service is requested a skilled service man will depart to the power station or vessel to diagnose & put your turbocharger back into operation. In cases where the extent of supply is previously known our service man will bring along with him the necessary spares.



On-site balancing

We can also perform dynamic balancing on-site with our portable balancing system. For occasions where taking the rotor to our shop for full maintenance is not feasible we will bring our portable balancing machine right to your installation to carry out the balancing on the spot.

GLOBAL PRESENCE

Our global presence consists of our main offices and workshop located in Madrid, a fully equipped branch workshop in the Canary Islands and cooperation agreements and partnerships for the Asian and North American markets, allowing us to provide a swift and prompt response in emergency situations wherever required.

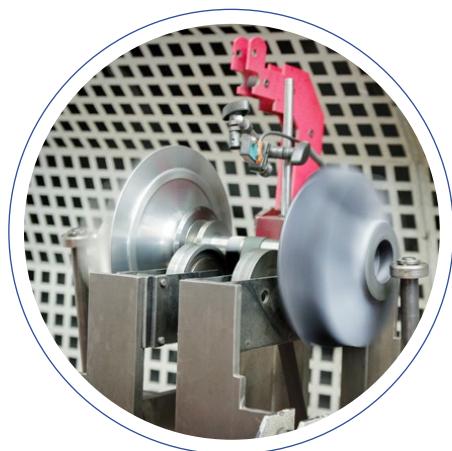
WORKSHOP

We have a modern fully equipped workshop that enables us to perform with a very high quality level all work, inspection & repairs for all brands of turbochargers.

Some of the main jobs done in our workshop are:

- Blade repair
- Ultraviolet Crack Detection
- Hardness testing
- Hydrostatic Testing
- Wall thickness test of gas casings
- Dynamic Balancing
- Micro Blasting
- Metal Spraying
- Hydraulic tests
- Machining
- Complete overhauls
- Balancing from 100 g. up to 2.000 Kg.





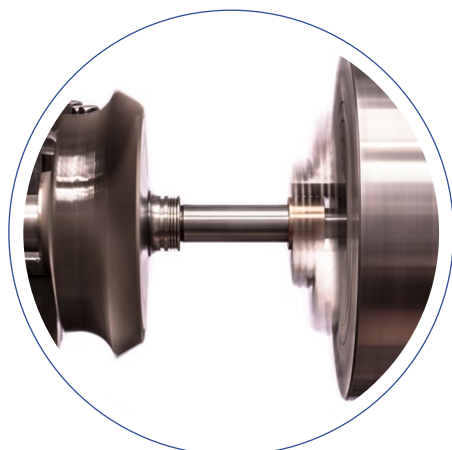
Balancing

Our balancing machines are capable of balancing rotors from 100g up to 2000Kg. All rotors going out of our workshop, either as new supply units, reconditioned units, or assembled inside a complete turbocharger are balance checked & if necessary corrected according to manufacturer specifications.

Our balancing machines are calibrated & certified on a yearly basis by an independent firm ensuring their precision according to ISO norms.

Hardness test

We carry out hardness test according to OEM specification with certified equipment on all the compressor wheels coming & leaving our workshop. With this test we can diagnose & prevent failure during operation & also assess on the state of a particular wheel.



Rotor shaft repair

Rotor shafts can be rebuilt back to OEM specification, depending on the extent of the wear, on the bearing journals, sealing areas & pump spigots.

Ultrasonic wall thickness test

Wall thickness test is carried out with a certified tester to measure the thickness of the gas casings walls in order find weak points that will lead cracks & water leaks during operation.



Welding repairs

Our welding department can perform many types of standard & special welding suitable for each particular component & material.

QUALITY ASSURANCE

ISO 9001:2008 CERTIFICATION

We are proud to announce that since 2008 all our supplies, repairs, sales & maintenance are carried out according to ISO9001 standards under the certification of Bureau Veritas. All our incoming and outgoing supplies are inspected for their compliance with the required standards.

We also form part of the prestigious Repro group:



CONTACT

Please contact us so we can give you an honest and independent assessment and provide you with a quotation adapted to your specific needs:

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