



CORA

ENGINEERING & TESTING

The best solution for **design,**
manufacturing and testing
of powertrain components.

COMPANY BROCHURE





OUR HISTORY

Since 1984 cora has developed a compelling and creative approach to projects through dedication and teamwork.

Today, the company has two divisions: CORA POWERTRAIN and CORA ENGINEERING & TESTING.

CORA POWERTRAIN is a leading specialist in design, manufacturing and testing of patented and award-winning automotive parts: torsional vibration dampers, drive shaft couplings and exhaust manifolds.

CORA ENGINEERING & TESTING is our multi-disciplined division for engineering and validation with a customer-centric approach. We provide timely and complete consulting, material and product analyses and a fast and solid product development. Our commitment is backed by the constant effort to implement and update our metrological & testing laboratories over the years.





POWERTRAIN

CORA POWERTRAIN is a leading specialist in design, manufacturing and testing of patented and award-winning automotive parts:

- ✓ Driveline Couplings
- ✓ Torsional Vibration Dampers
- ✓ Exhaust Manifolds

Our products meet the highest quality standards, from the selection of raw materials to the validation of the finished product.

As OEM supplier and trusted partner over the years, we provide even our aftermarket customers with a quality product equivalent to the original.



THE DRIVELINE

Our innovative and patented solution for driveline couplings.

We applied the extraordinary technology of steel and polymers to our couplings matching it with the properties of our rubber compounds, specifically tuned on each application. Result is a chain-linked structure of high-resistant metallic and polymeric elements. Extremely flexible.

DRIVELINE COUPLINGS AND DAMPERS fit on vehicle driveline at gearbox output and their main functions are to:

- ✓ transmit torque between the two connected shafts
- ✓ absorb torque variations, torque peaks and shock loads
- ✓ compensate radial, angular and axial misalignments





THE ENGINE

Torsional Vibration Dampers (TVD)

TORSIONAL VIBRATION DAMPERS (TVD) reduce torsional vibrations of the crankshaft. Consequently, there is a significant noise emission reduction and the life of the engine can increase. CORA TVDs stand high loads as our premium quality rubber compounds maximize their damping properties.

Decoupled Dampers or DDS (Double Damping System Dampers)

Decouplers are made up of a TVD assembled with a torsional coupling, so-called "isolator". DDS special design helps to eliminate crankshaft vibrations at low frequency through the crankshaft isolator rubber while the TVD reduces the torsional vibrations at high frequency inside the crankshaft.

Viscous Dampers

In VISCOUS dampers, the viscous oil layer placed between inertia ring and pulley body runs the energy dissipation and converts it into heat. This technology can dampen a wide range of crankshaft natural frequencies from different orders. We hold two patents on innovative construction solutions for viscous dampers.





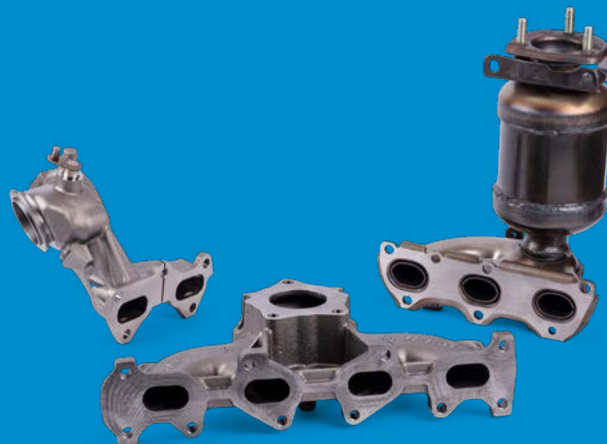
THE EXHAUST

Exhaust manifolds and ECE 103R TYPE APPROVED maniverters.

Casting and steel manifolds connect exhaust output from engine head to exhaust pipe channeling the exhaust gases towards the emissions reduction and silencing systems.

We manufacture our products with the highest quality and certified types of cast iron and steel to guarantee the best performance in heat resistance and thermal stock. Our latest range extension is for turbocharger applications that require top quality materials and machining.

We provide our quality products complete with fitting kit to guarantee the proper assembly and an excellent performance of the exhaust system. Catalysts design is specific for each application and all our maniverters are ECE 103R type approved according to European emissions standards and regulations.





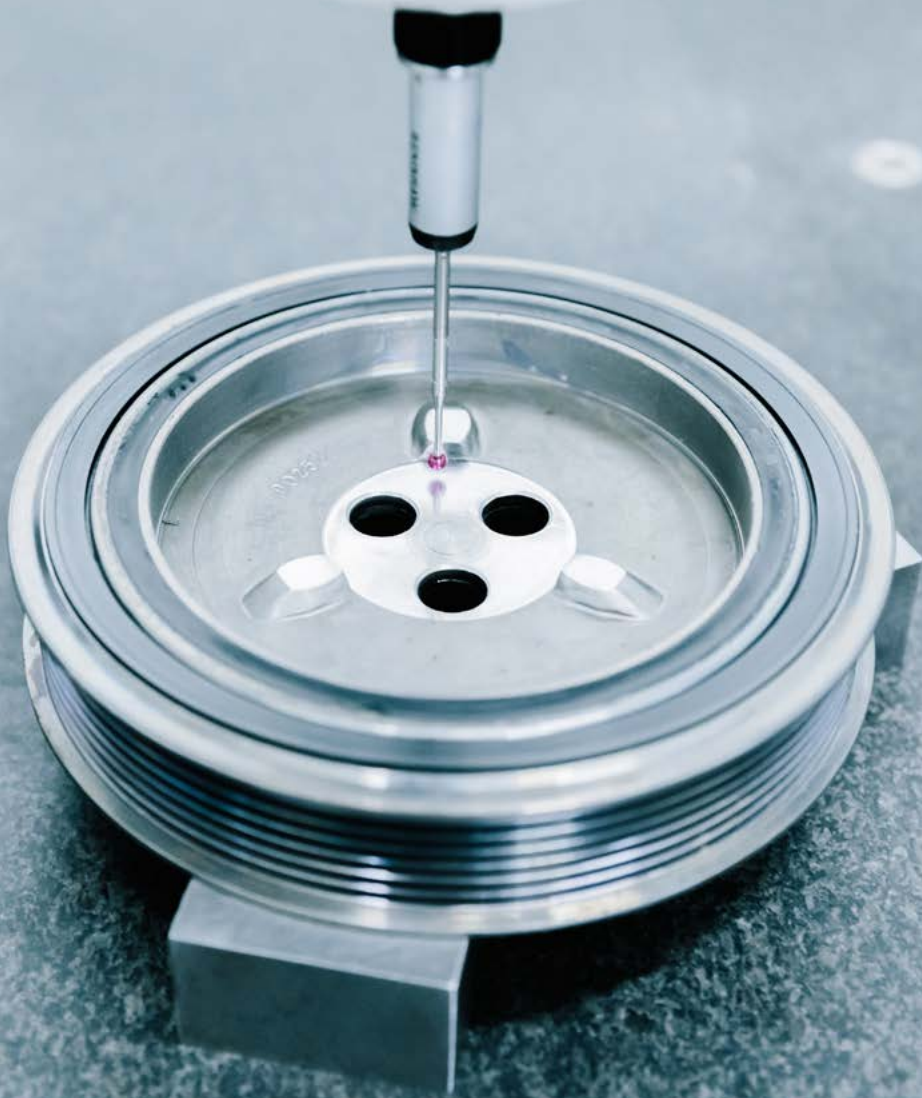


FROM R&D TO PRODUCTION

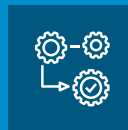
**In-house research and product development
are our strong points.**

Our R&D department boasts state-of-the-art design software and specialized personnel. The study of materials and technologies is in cooperation with specialized Research Centers, Universities and high-skilled consultants.

IN-HOUSE manufacturing lines run CNC machining, rubber injection, precision mechanical assembly, welding, balancing. We have equipped a full-fledged surface treatment department with automatic lines for grit-blasting, washing and degreasing, rubber-to-metal bonding adhesive coating and surface painting.



**UNI EN ISO
9001:2015**



**IATF
16949: 2016**



**UNI EN ISO
14001:2015**



**BS OHSAS
18001:2007**

VALIDATION, TESTING & QUALITY ASSURANCE.

We have a complete control of the processes with full traceability of raw materials, components and the finished product.

We constantly monitor the dimensional characteristics and validate the functional performance of CORA products in our «Industry 4.0 oriented» metrological rooms with 3D measuring instruments, torsionmeters, roundometers, optical profilometers, durometers and microscopes. We keep under control hysteresis, stiffness, natural frequency and any additional specific property of the product on every single batch of production.

Our team runs a complete set of tests to evaluate the dynamic performance of our products and their life durability.

We test fatigue, flex-torsion, ageing and thermal shock on all our rubber-to-metal products at CORA in-house fully equipped laboratories.





ENGINEERING & TESTING

CORA ENGINEERING & TESTING is our multi-disciplined division for engineering and validation with a customer-centric approach.

We provide timely and complete consulting, detailed material and product analyses up to a fast and top-quality product development.

Our commitment is backed by the constant effort to implement and update our metrological laboratories and testing facilities over the years together with high-skilled experts who make us an excellent, solid and reliable team.





R&D AND PROTOTYPING

For our partner customers, we run feasibility analysis, design development, FEA (Finite Element Analysis) simulation, prototyping and we process the full product validation.

Among our projects: flex plates, idlers and tensioners for passenger cars, heavy duty and public transportation, engine mounting, seal gaskets, complete driveshaft, multiple repairing kits, wheel hubs, customized applications for machinery, tractors and equipment.

Flexibility and just-in-time reactivity are the keys to successful prototyping activities. We are proud of taking part to new projects run by our customers, sharing together the engaging path to a new product or process set-up.

We have experience with aluminum casting and die-casting, steel hot and cold forging, plastic and rubber injection, welding technologies, mechanical machining and assembly processes, laser cutting and more.

DWG MORI

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TOOLING ENGINEERING & TOOLMAKING

Our team is skilled experts with a longtime experience and knowledge of mechanical technologies.

In-house we DEVELOP tooling for:

- ✓ Rubber injection
- ✓ Plastic injection
- ✓ Steel stamping
- ✓ Precision machinery
- ✓ Oil & grease filling stations
- ✓ Mechanical precision assembly

3-axis and 5-axis CNC machining centers that we interface with our CAD-CAM design and simulation software guarantee the reliability and quality level of our activities. Our team performs dynamic, thermal and filling simulations to ensure the best performance during the processes the tooling will undergo.





TESTING

Our laboratories are equipped with advanced testing and diagnosis equipment, analysis and data processing and can conduct both static both dynamic tests.

We support our partner customers offering multiple assistance services from set-up of test procedures up to final official reporting.

Our multipurpose activities can validate the conformity of products with multiple specifications: from endurance to rotating bending fatigue, imposed load, imposed deflection, ageing, leakage, traction, torsional and hysteresis response, flexibility, positive and negative heat resistance, thermal shock, breakage, end-of-life under load durability of bearings, and other analytic destructive and non-destructive tests.



CORA

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