



Castolin Services



Experts in repair and maintenance at your SERVICE
Pioneering Industrial Sustainability

An offshore oil rig structure is visible in the background, extending into the ocean under a blue sky with light clouds. The rig has a yellow crane and various metal platforms. The text 'PENROD 85' is visible on a platform.

Your problems

Wear and corrosion phenomena cost the production industry millions and millions of Euros every year. At this very moment, your machinery probably has vital parts needing urgent attention, and leaving it too long in an insufficiently maintained condition will mean for you the need **to buy expensive new parts** or suffer prolonged **production shutdowns** for **urgent repairs**. Fortunately, worn or broken parts can be restored and protected against future wear through the appropriate wearfacing technology.

Maintenance and repair is a highly technological and specialized business, which should be done by experienced experts who always use state-of-the-art processes. Facing the daily **production problems** and the **shortage of skilled welders**, many companies have already made the decision: they prefer to focus on their core competences and **outsource maintenance & repair**, wearfacing or production of wearfaced parts to external partners.

A close-up view of industrial machinery, likely a large pipe or component, with a yellow crane arm visible in the background. The machinery is orange and yellow, and the background shows a blue sky and ocean.

These problems are common to many industries such as :

- Cement
- Power generation
- Oil and gas
- Automotive
- Pulp and paper
- Waste and recycling
- Steel and iron
- Glass manufacturing
- Mining
- Tool and die
- Agriculture
- and many more...

Our unique Castolin Services solutions

Our Castolin Services network of specialized workshops will bring you a unique approach to your needs in maintenance repair and all wearfacing solutions.

We offer:

- Outsourcing solutions to your problems
- Maintenance turnkey solutions
- State-of-the-art technologies for the best solution
- Flexibility
- Speed of response
- A partnership to lower your costs
- Cut your investments in welding and coating equipment
- High level of expertise, continuous innovation

Fully resourced workshops

Our Castolin Services develop advanced and innovative procedures to solve all your problems. Depending on your exact requirement, we can transfer this application knowledge to you or perform the work on your behalf in our exclusive Castolin Services workshops. Castolin Services can develop advanced procedures which also allow transfer of complete solutions to end users.



We are flexible Jobs on site or in our facilities

We have general purpose facilities in most countries, all fully equipped with “state-of-the-art” technology, diverse process technologies and highly skilled technical specialists. Depending on your request, the job can be undertaken in our own facilities as well as at your plant. When your machinery is too large to be moved - for example, a large and expensive boiler, a vertical roller mill, a large casting - our Castolin Services maintenance experts will visit your premises to solve the problem on-site.

Not only emergency repairs

Often the parts being repaired or protected need to be produced on a regular basis. In this case, here “wearfaced OEM parts” can be produced in a unique manufacturing environment, from tens of pieces to 100,000 pieces per year. We are also able to handle the repair of major parts, for example individual workpieces weighing up to 100 tons, we have often successfully completed the on-site repair of vertical roller mills and kiln tires in the cement industry, worldwide. Wearfacing projects like boiler coatings or large wear plate constructions are also part of our every day work.

Services we can provide

No matter what the **wear, corrosion or joining challenge** you are facing, our fully equipped and professionally staffed **Castolin Services workshops are able to help you**. Some of the many services we can provide include:

Emergency repairs

When an unforeseen emergency stops or limits your production, we have extensive experience to repair your parts in the shortest possible delay.

Standard repairs

Cracks, breakage and wear can also cause leakages and losses of efficiency. In such instances, well documented repair procedures can be applied in a planned intervention on your parts.

Rebuilding dimensions

Dimensional losses can cause vibration, noise and risk of damage to moving equipment. Our coating technologies are used to rebuild your equipment to original dimensions.

Wearfacing applications

Preventive coating technology can be used to protect your parts from abrasion, erosion, corrosion, cavitation and adhesive wear. Wearfaced parts offer significantly enhanced service lifetimes.

Production of wearfaced parts

Wearfaced coatings can often be incorporated directly into the design and production of parts for Original Equipment Manufacturers.

Special joining

Advances in metallurgical alloy development continuously offer improved performances but frequently with corresponding difficulty to join these metals. Our extensive applications knowledge can help you assemble these difficult to joint materials.

Preventive coatings

Preventive coatings are frequently applied on large surfaces in order to protect them from combinations of corrosion, erosion and abrasion.

Machine overhaul

Overhaul, (including rebuilding dimensional tolerances, assembly re-alignment, incorporation of wearfaced surfaces and exchange of spare parts) can be done in some of our specialized facilities.



Our technologies to best serve you

We have general purpose facilities in most countries, all fully equipped with “state-of-the-art” technology, diverse process technologies and highly skilled technical specialists. Depending on your request, the job can be undertaken in our own facilities as well as at your plant. When your machinery is too large to be moved - for example, a large and expensive boiler, a vertical roller mill, a large casting - our Castolin Services maintenance experts will visit your premises to solve the problem on-site.



Different processes

Tig welding (CastoTig)

High precision welding process MEANS for you perfect local repairs and special joining applications are easily achieved on a wide variety of ferrous and non ferrous materials.

Manual electrode welding (EutecTrode)

Low heat input formulations, wide range of compositions, ease of use known by all welders, self shielded welding pool MEANS for you safest alloys for reliable repairs on-site and in workshop, optimal for local rebuilding or wear protection.

Semi-automatic welding with shielding gas (EnDOtec® and CastoMag)

Widest range of alloys deposited using cored or solid wires MEANS for you increased productivity of jobs in the workshop.

PTA welding (EuTroLoy and GAP)

Minimal dilution of the base material, readily automated, easily controlled welding bead MEANS for you high quality coatings in a wide variety of alloys. Excellent for series production.

Semi-automatic welding with shielding gas (EnDOtec® and CastoMag)

Widest range of alloys deposited using cored or solid wires MEANS for you increased productivity of jobs in the workshop.

Semi-automatic welding without shielding gas (TeroMatec)

Flux cored welding wires, widest range of alloys MEANS for you composite wearfaced surfaces with maximum abrasion resistant alloys, fastest cost-effective deposition rates for on-site works.

Cold powder flame spraying (RotoTec, ProXon and CastoDyn)

Minimum thermal input, good bonding achieved with substrate material, wide range of alloys MEANS cost-effective coating solutions for a wide range of wear problems.

Services we can provide

Laser cladding

Maintaining a high power efficiency and quality, whilst reducing the cladding time and cost MEANS for you a coating with a uniform thickness, sharp edged and at a faster rate.

Twin arc wire spraying (EuTronic Arc)

High deposition rates achieved using electrical arc melting of two cored or solid wires simultaneously MEANS high-quality alloy coatings achieved at affordable prices. On-site spraying for large surfaces

HVOF powder spraying

Cold spray process at supersonic particle speed for maximum mechanical bonding MEANS aeronautic quality coatings available at industrial prices, variety of materials and superhard carbides can be applied in thin layers.

Oxy-acetylene flame deposition

Deposition of diverse alloys and composite materials, using readily available flame equipment MEANS most abrasion resistant coatings are applied with optimal metallurgical bonding and zero dilution with the base material.

Hot powder flame spraying (Eutalloy® and SuperJet)

Hot spraying with subsequent fusing gives true metallurgical bonding with no dilution of the substrate and a fully dense coating MEANS optimum coating quality, excellent for severe abrasion, corrosion and oxidation.

Wear plates and wearfaced tubes (CDP® plates and CastoTube®)

Wearfaced plates and internally welded tubes MEANS large surfaces can be protected in a cost-effective manner and maintenance shutdowns can be minimized with pre-fabricated parts.

Engineering services

Depending upon workshop location, our engineers are able to design wear facing protection into your parts which MEANS the easiest way for you to exploit life prolonging technology on your parts.

Machining

Depending upon workshop location, a variety of machining, milling, grinding, forming and shaping services are available.

A century at the forefront of protective materials technology has positioned Castolin Eutectic as the world's premier industrial partner. Our comprehensive know-how is unrivalled, and our industry partnerships continue to thrive. We provide solutions to all of the major companies operating in industry with global industrial programs for cement manufacturers, power generators, the oil and gas industry, waste and recycling industry, steel industry and more...

Cement Plant

From the quarry all the way to ready mix blenders, we have innovative solutions for many applications: roller press, kiln tyre, hammer crushers, fan blades, fan housing, buckets, drag chain beds, clinker breaker disks, raw mill fans...



Power Generation

Castolin Services have a detailed understanding of the major wear problems within the power generation industry and can provide you with industry-tested application on: screws, boiler nozzles, coated preheater tubes, breaker arms, conveyor bed, coal mill, water panel, ignition umbrella for the oil burner, boiler tubes, fans...



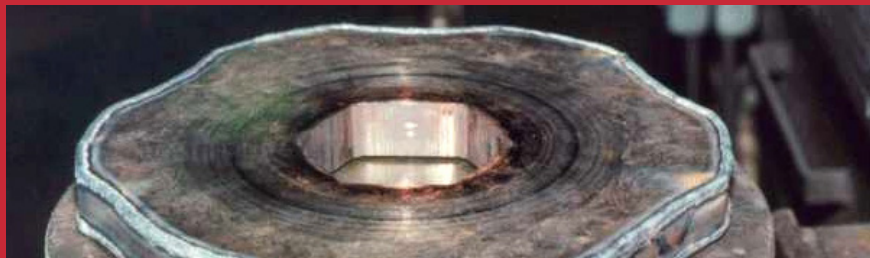
Oil and Gas Industry

Even stronger thanks to a major acquisition in Norway, we are developing new applications every day for: rod liners, stabilizers, drill pipe hardbanding, couplings, shoes, drillbits, oil-sand separators, carbide inlays, spline mandrels, rotors...



Waste and Recycling Industry

From waste incineration, automobile and tyre shredding, glass recycling, to construction debris elimination, we have innovative solutions for: shredders, feeding hoppers, crushers, screws, hammers, conveyor bed, transport belts, knives...



Steel Industry

From raw material processing through the blast furnace and to steel forming, we have innovative solutions for: cooling roller trains, pumps, run-out table rollers, rolling mills, rolling cones, manipulator jaws, hot shear blades, mandrel shafts, guide rollers, sinter crushers...



Examples of special solutions for your industry

EuTronic Arc spraying in power and cement plants

The wearfacing protective coating can withstand dry or wet erosion, erosion by mud, ash or dust-laden gases, corrosion by oxidizing acids or alkaline solutions and surface ablation in hot, chemical atmospheres. Large areas can be quickly and cost-effectively coated. The components lifetime will be significantly increased thereby, ongoing maintenance cost decreased and production uptime maximized.

CastoTube® Inner surface is coated!

The solution against abrasion and erosion inside pipes. Cost-effective, lightweight, easy to connect and extremely wear resistant. Inner diameters from 82 to 300 mm are possible. Elbow branches, Y-joints or any other complete shapes can be assembled with special flanges and our unique joining solutions which maintain a fully protected inner surface.

EnDOtec® & TeroMatec for wearfacing productivity

Using cored wire technology for protective wearfacing offers maximum cost savings thanks to higher deposition rates, arc duty cycles and metal recovery. The pictures on the left show a worn out forging press piston and a big crusher cone both rebuilt & wearfaced using EnDOtec® & TeroMatec welding systems.

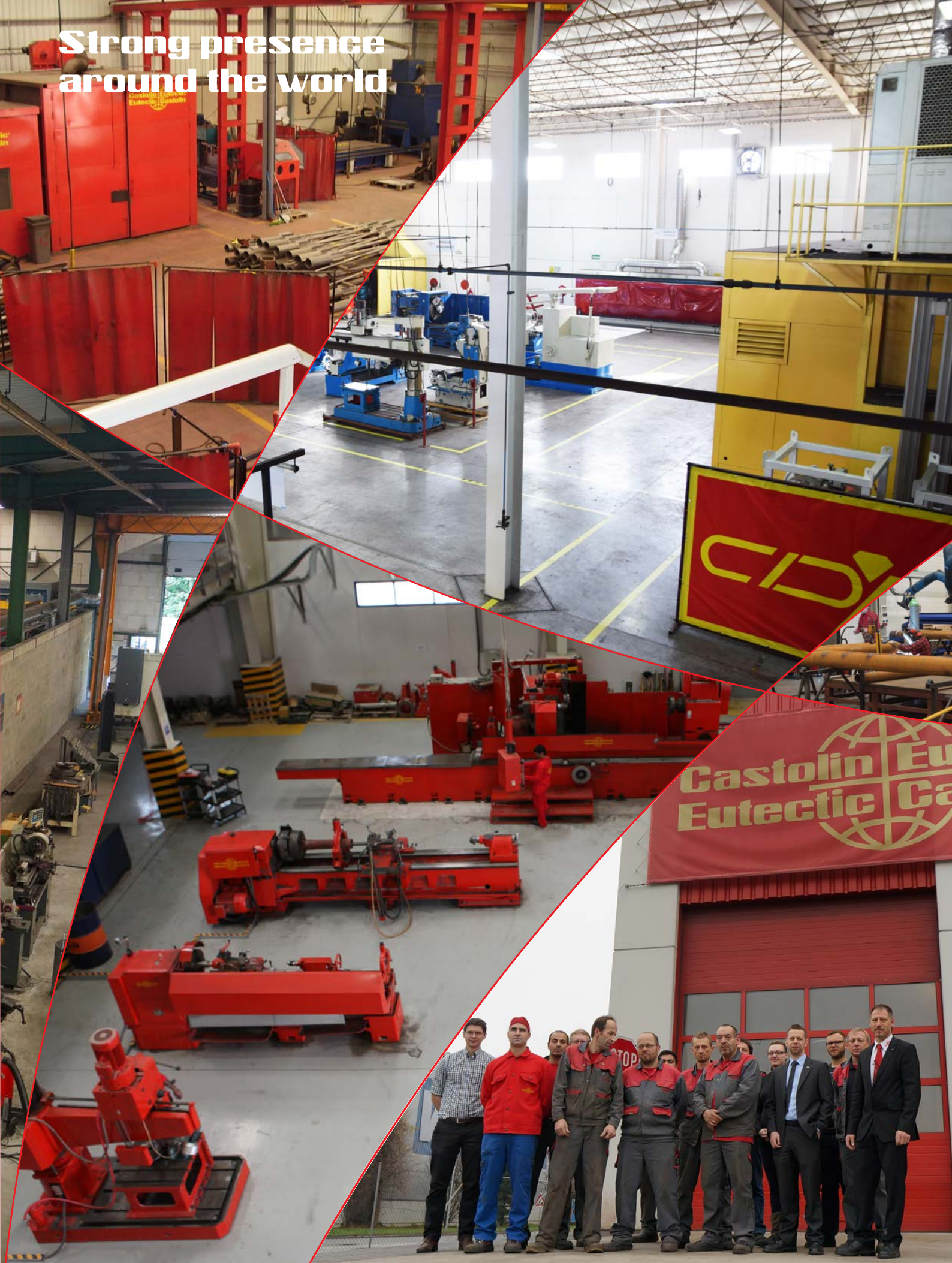
EutecTrodes for repair & maintenance

Low heat-input, flux-coated manual electrodes are specially developed, tested and approved for critical crack repairs or machine part breakages. These are typically made from unidentified cast steels, difficult to weld tool and die steels, contaminated cast irons, non-ferrous castings etc. Harmful effects like dilution, deformation, residual stresses are minimized to assure Maximum Safety Margin repairs.

NanoAlloy® for extreme wear resistance

The NanoAlloy® welding range is just one example of state-of-the-art technology and quality developed to protect your capital equipment investments against extreme wear by abrasion and erosion. These cost-effective ferrous alloy formulations reach 71 HRC and outperform even expensive Nickel / Tungsten Carbide composite alloys on a wide range of industrial applications.

**Strong presence
around the world**



Part of the Castolin Eutectic World



As a fully integrated unit of Castolin Eutectic, the Castolin Services are supported by the group's full range of manufacturing, R&D, training and other resources that have made Castolin Eutectic a long-established leader worldwide in fighting wear and providing specialist joining solutions. They also benefit from the knowledge of thousands of specialists throughout the world with their unique application database TeroLink containing over 9,000 fully documented applications.

Together with our sister companies including the Messer Gas Group, we can offer our customers a very powerful range of products and services:

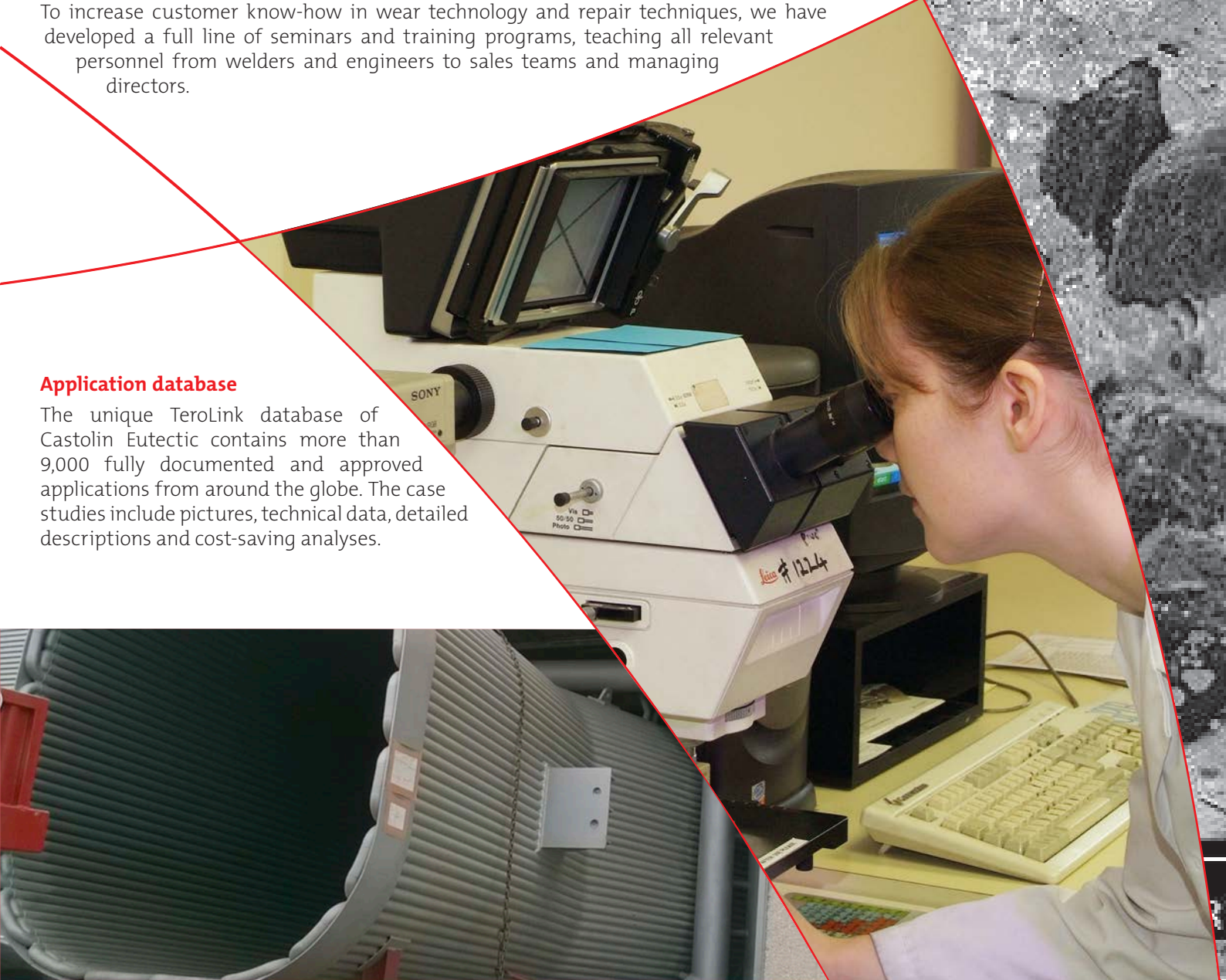
- More than 6,000 motivated employees
- Over 100 factories to meet customer needs
- Technical sales support in over 120 countries
- 700 technical sales people in the field with our customers every day

Training

To increase customer know-how in wear technology and repair techniques, we have developed a full line of seminars and training programs, teaching all relevant personnel from welders and engineers to sales teams and managing directors.

Application database

The unique TeroLink database of Castolin Eutectic contains more than 9,000 fully documented and approved applications from around the globe. The case studies include pictures, technical data, detailed descriptions and cost-saving analyses.



*Pioneering Industrial
Sustainability*

Castolin Services



Your resource for protection, repair and joining solutions

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