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/ MILLING

/ PRECISION AND QUALITY



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/ TURNING

At Zorrotz, a company founded in 1953, we manufacture high quality blades for the steel industry: steel service centres, steel mills, recycling plants, etc.

At Zorrotz since own inception, and thanks to the development of knowledge in the fields of selection, transformation, heat treatment and precision grinding of the best tool steels, we have been a reference in the manufacture of Slitter Tooling and Shear Blades.

This effort in the search for new solutions, based on “continuous improvement” and investment in new technologies, allows us to continuously improve our production processes and in turn, achieve the tightest machinery tolerances.

This is our response to a market with an ever-increasing demand for better performing products, in order to achieve enhanced shearing quality and a reduction in the overall industrial costs.



/ HEATING TREATMENT



Our extensive experience in the selection and use of the most suitable tool steels, as well as our continuous research, make our metal cutting products, widely recognized for their high performances.

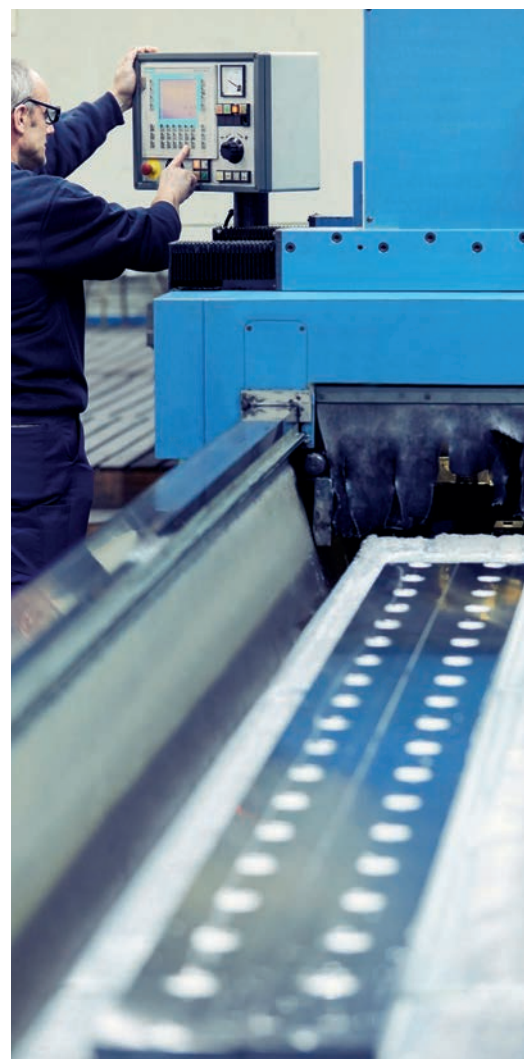
The complete manufacturing process of our knives and shears, is carried out in the Zorrotz facilities, including the Heat Treatment, for which we have at our disposal of several furnaces with a hardening capacity of great magnitude.



Where Zorrotz makes the difference, is in the precision grinding process. The availability of temperature-controlled rooms, allows us to achieve maximum precision in dimensional and geometric tolerances.

Both the product quality checks and the management of the production processes, help us to guarantee 100% traceability of Zorrotz blades, from the material procurement to the final manufacturing process and delivery to the customer.

At Zorrotz, apart from the quality of the products, we are also committed to the environment. Our quality and environmental management system is ISO 9001 and 14001 certified.



/ SURFACE GRINDING



/ RUBBER BONDING



/ CYLINDRICAL GRINDING

/ QUALITY CONTROL



/ IDENTIFICATION AND PACKAGING

Our highly qualified team and collaborating agents have the main purpose of satisfying the needs of our customers. This is the reason why Zorrotz is considered a leading supplier for all those companies that, apart from needing high quality products, positively value the level of service and support, something that is endorsed by the years of loyalty of the most important companies in the international market.



/ 01 SLITTER TOOLING



1.A SLITTER KNIVES

We manufacture all types of metal slitter knives. Depending on the required cutting specifications, we make our experience available to the customers, in order to define the knife's the most appropriate characteristics for each situation.

We avail of a wide range of tool steel with diverse characteristics, which allows us to cover all customer needs.

In order to guarantee the customer's trust, it is worth highlighting our commitment to the quality and traceability of all our products.

We source raw materials from the main European suppliers of tool steel and 100% of all production processes are carried out internally.

Processing materials

- › Carbon Steel (Hot / Cold Rolled / Galvanized...)
- › Stainless Steel (Ferritic / Austenitic / Duplex)
- › High-strength steel (HSS / AHSS)
- › Magnetic steel (CRGO / CRNGO)
- › Aluminium
- › Copper
- › Brass

Main characteristics

- › High wear resistance
- › High toughness
- › The most demanding dimensional and geometrical tolerances
- › Coating and surface finishing

1.B RUBBER BONDED SPACERS



Rubber-bonded spacers are an important element for the slitting process.

In order to solve problems and overcome limitations of the slitting process, the correct choice and configuration of the dragging elements (\emptyset male and \emptyset female) are essential.

These elements are needed to:

- › Drag and eject the strips
- › Protect the strips from unwanted marks
- › Prevent bending / deformation of strips
- › Help achieve an overall best quality of the strip

The metal core is made of hardened tool steel, which guarantees a long lifetime.

The rubber ring perfectly bonded to the core and manufactured with the best compounds guarantees high elasticity and durability. (Polyurethane or rubber depending on the application).

A wide range of colours is available to easily differentiate each element.

Main characteristics

- › Core hardened body
- › Selection of bounding compounds / hardness
- › High grip and oil resistance
- › Wide range of colours
- › Male and female cutting system
- › Lightweight design of spacers

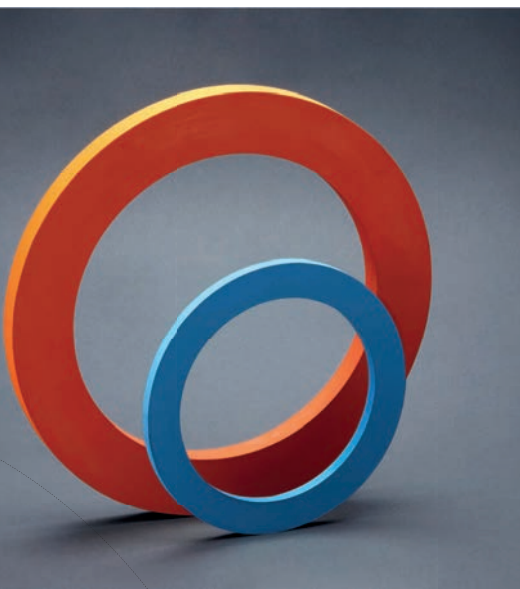
1.C RUBBER STRIPPER RINGS

As for the rubber bonded spacers, we can provide rubber stripper rings that can be fitted on the outer diameter of the metal spacers. Rubber stripper rings perform the same functions as rubber bonded spacers. They can be manufactured to be adjusted to the metal spacers' OD, with different fit (Snug / Loose).

Available in a wide range of colours and at different hardnesses, depending on the required application.

Main characteristics

- › Good grip and oil resistant / Multiple hardnesses available
- › Selection of fit to the metal spacer
- › Wide range of colours





1.D METAL SHIMLESS SPACERS

We offer core hardened metal spacers, made from conventional alloy and stainless steels.

Our metal spacers are manufactured with "shimless" tolerances and meet the same requirements, in terms of geometry and precision, as the knives.

Metal spacers are used together with rubber bonded spacers, for the precise positioning of the knives on the slitting head.

To ensure the correct clearance between knives is achieved, we can provide thin spacers in a variety of decimal and centesimal sizes, and calibrated to a tolerance of $\pm 1 \mu\text{m}$. (0,00004")

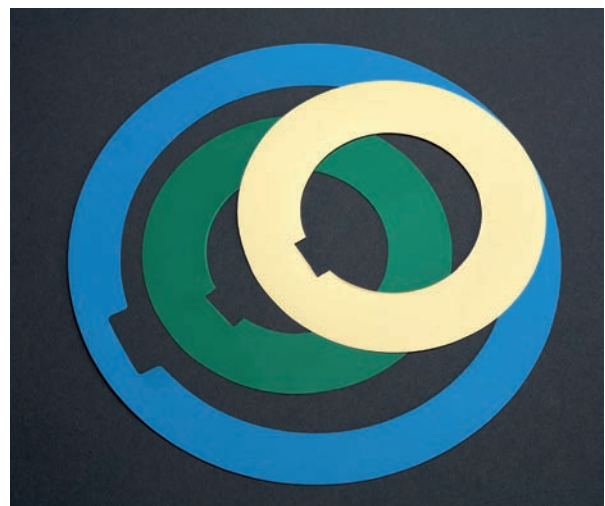
Main characteristics

- › Thickness tolerance $\pm 0.001 \text{ mm}$ (0,00004")
- › Core hardened
- › Available in stainless steels



1.E PLASTIC SHIMS

For slitters without shimless spacers, we can supply plastic shims of different thicknesses and colours for manual adjustment in order to achieve the correct gap between the knives.



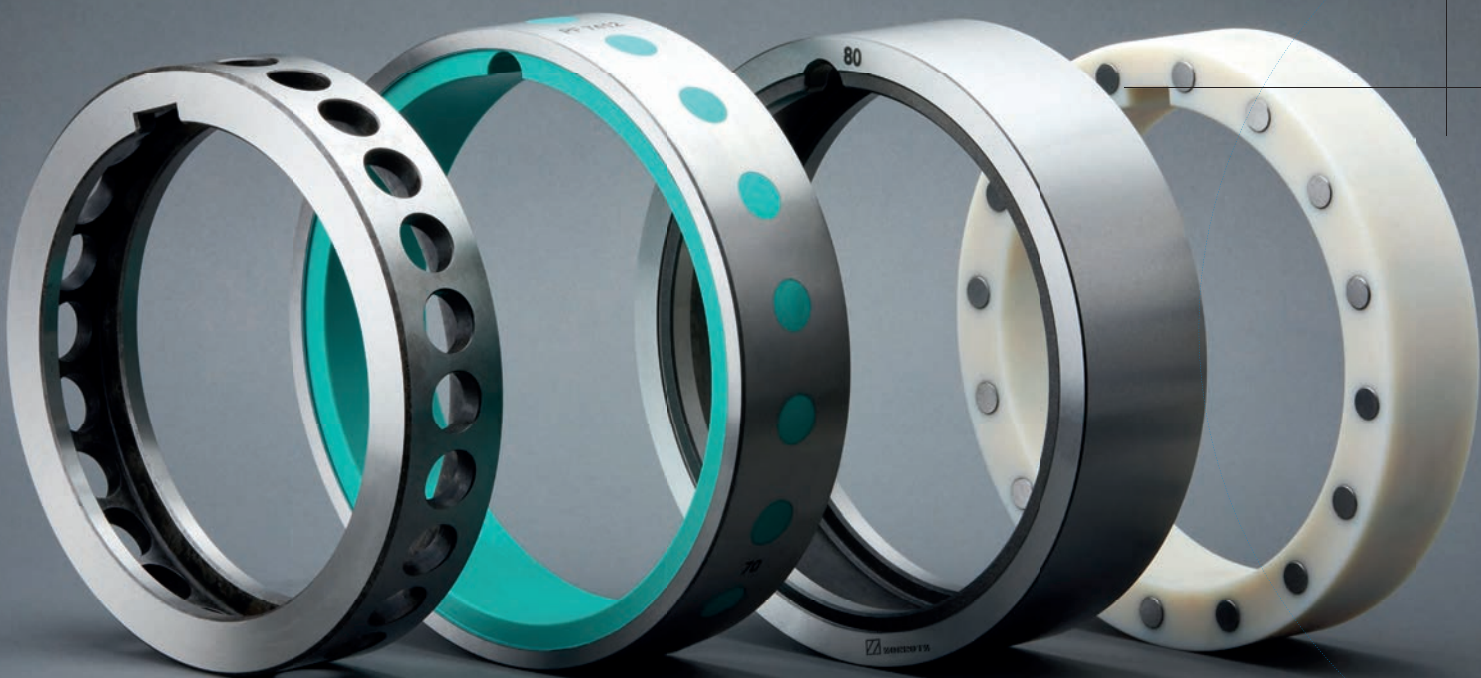


1.F LIGHTWEIGHT DESIGN SPACERS

In order to optimise handling during setup preparation, we at Zorrotz have designed multiple lightweight spacers solutions, with the goal of improving ergonomics and complying with current safety regulations in the workplace.

Main characteristics

- Thickness tolerance +/- 0.001 mm (0,00004")
- Customised reliable solutions
- Weight reduction up to 70%





1.6 SEPARATOR DISCS / OVERARM SPACERS

Separator discs and spacers, allows to maintain precisely separated strips during the slitting process and a perfectly aligned and smooth recoiling.

Main characteristics

- › Made of wear-resistant alloy tool steel
- › Coatings available
- › Overarm spacers available in a variety of materials and colours

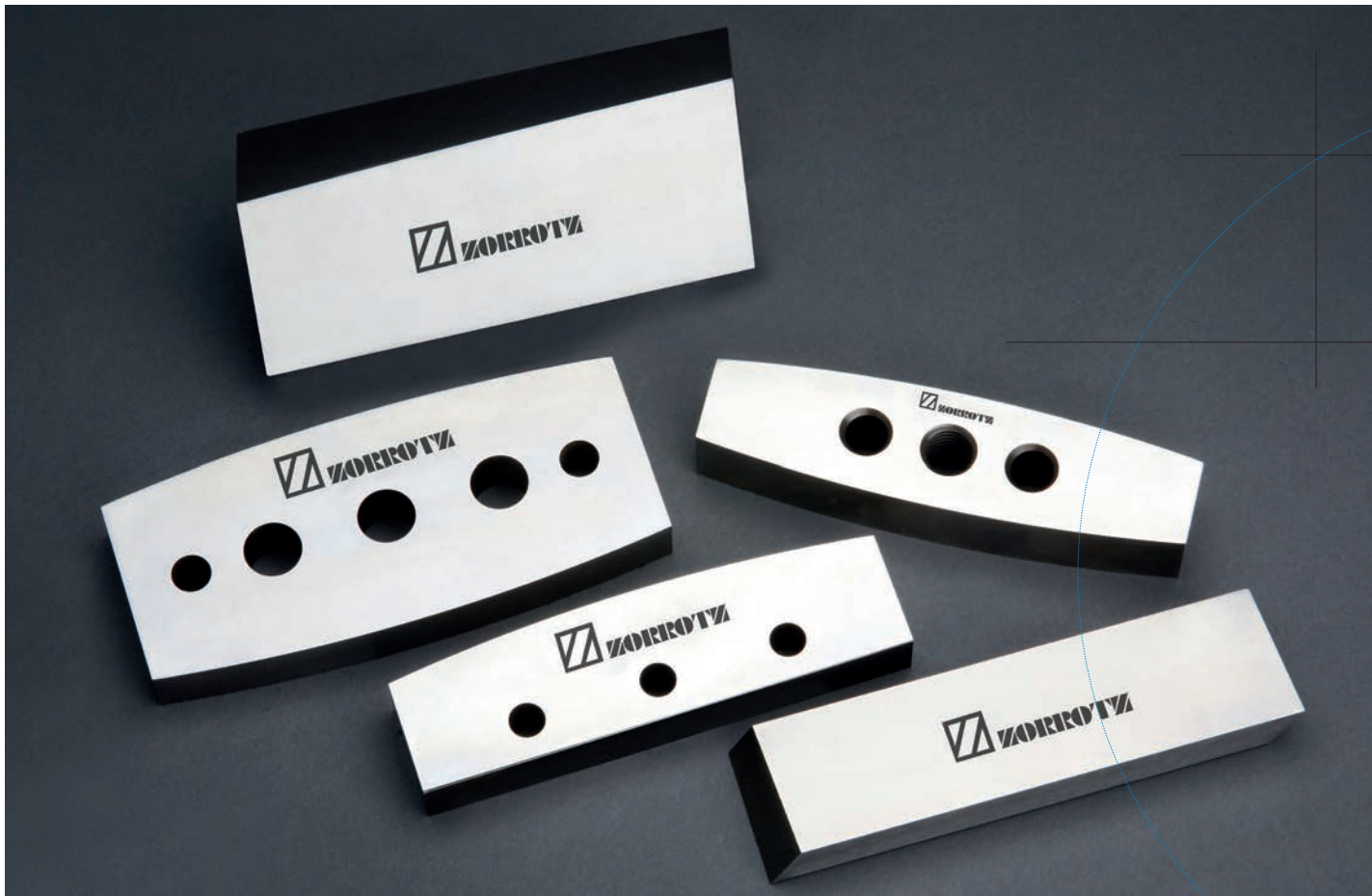


1.H CHOPPER KNIVES

In order to correctly extract the edges of the coils trimmed during the slitting process, chopper knives are used. We manufacture these knives in several different geometries and dimensions according to the slitter manufacturer design.

Main characteristics

- › Wide variety of tool steel, depending on the application
- › Wide variety of geometries (radius, helix...)



/ 02 SHEAR BLADES



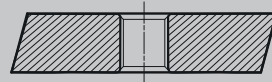
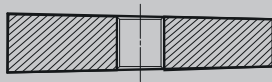
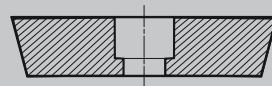
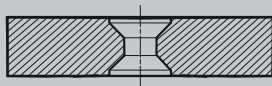
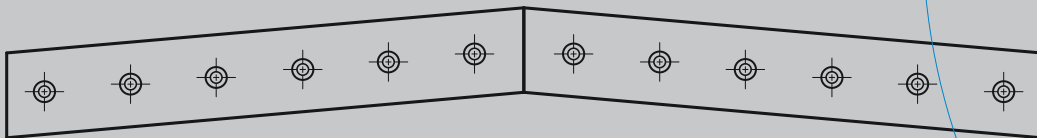
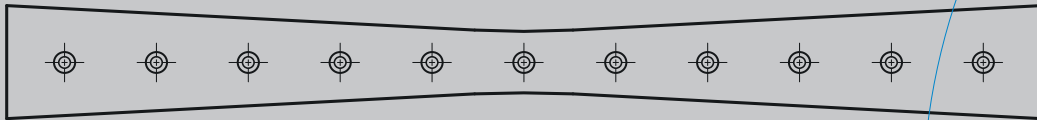
We manufacture shear blades for cut to length machines, for sheet metal format cutting and guillotine for general use.

We avail of the most advanced production tools and machines, and we have the capacity to manufacture blades in different formats, profiles and sizes, depending on the application requirements.

We place our experience in the selection, transformation and hardening treatment of the best tool steel, at the service of our customers, in order to choose the best technical/economic solution for each case.

It should be noted that, as a leading shear blade manufacturer, we avail of our own heating treatment furnaces in our own facilities, and we can manufacture shear blades with lengths of over 4 Mt.

In order to guarantee the customer's trust, it is worth highlighting our commitment to the quality and traceability of all our products. We source raw materials from the main European suppliers of tool steel and 100% of all production processes are carried out internally.



Processing materials

- › Carbon steel (hot and cold rolled)
- › Stainless steel (Ferritic / Austenitic / Duplex)
- › High strength steels (HSS - AHSS)
- › Silicon Steel "Magnetic Plate" (CRGO and CRNGO)
- › Aluminium
- › Copper
- › Brass

Main characteristics

- › High wear resistance and right hardness selection
- › High toughness
- › Fine geometric and dimensional tolerances
- › Fine surface finish, according to application

/ 03 STEEL MILL AND FORGING PLANTS KNIVES

The wide variety of shearing applications in the steel industry, requires a specific technical solution in each case.

Our advanced production means and the flexibility of our manufacturing processes, allow us to manufacture all types of blades, covering a wide range of solutions.

- › Side trimmers
- › Chopper knives
- › Notchers
- › Hot work shears
- › Cold work shears
- › Flying shear knives
- › Recycling and scrap shears



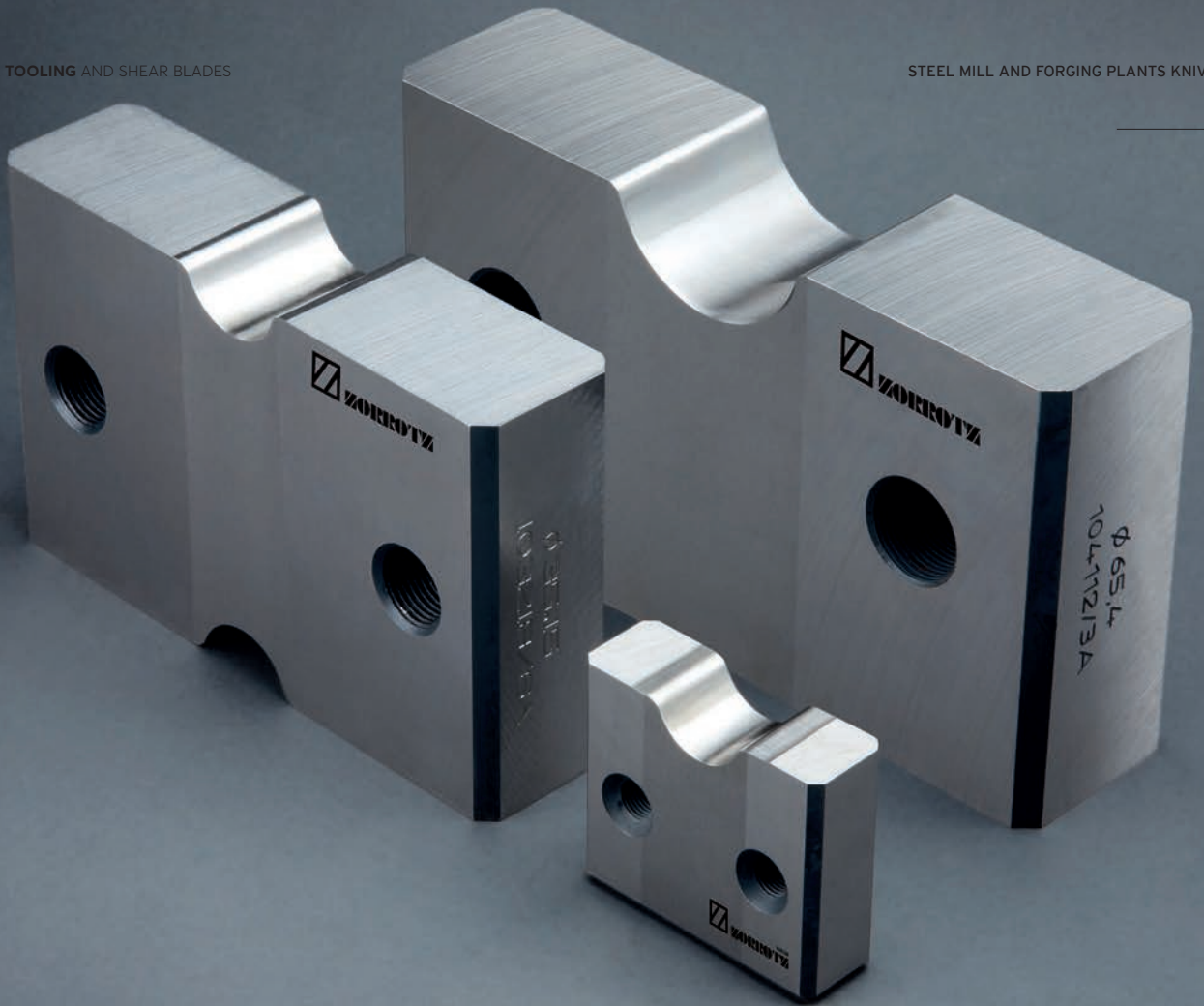
/ CHOPPER KNIVES



/ NOTCHER



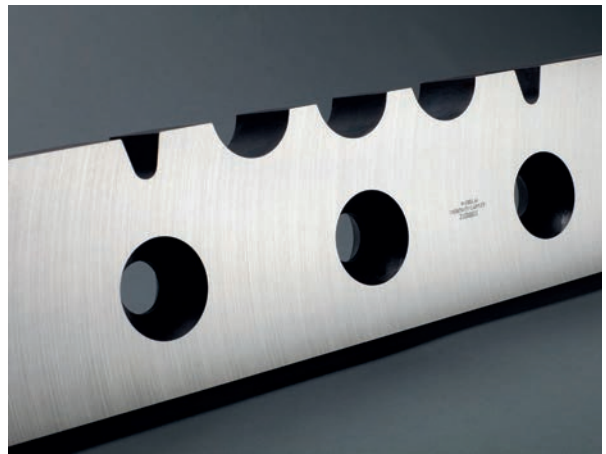
/ SIDE TRIMMER



/ HOT WORK KNIFE



/ FLYING SHEAR KNIFE



/ HOT WORK KNIFE



/ HEAVY PLATES SHEAR

/ 04 SERVICES

4.A KNIFE GRINDING SERVICE

Every cutting element is subject to wear, due to friction and the nature of the application.

Depending on the type of knife and its use, it is possible to regenerate it by means of a sharpening/re-grinding process. From the main plant of Zorrotz and through our network of associates, we are able to offer a re-grinding service to all customers.

- Slitter tooling
- Shear blades



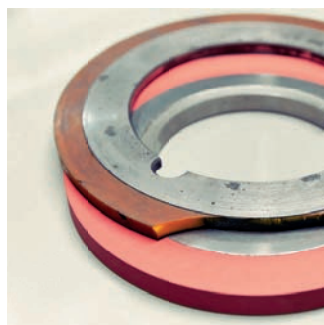
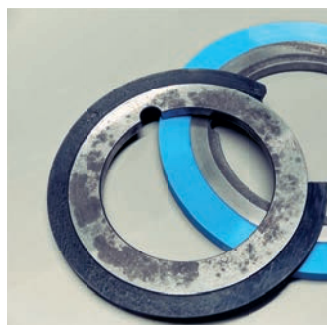
/ SHEAR BLADE GRINDING SERVICE

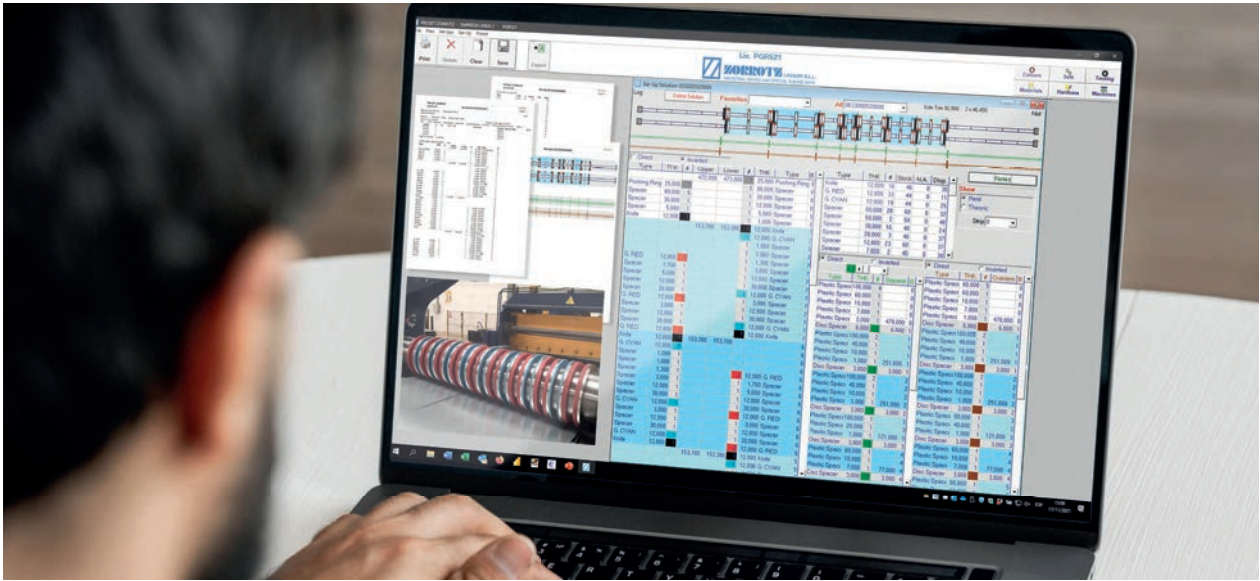


/ SLITTER KNIFE GRINDING SERVICE

4.B RE-BOUNDING SERVICE

We renew rubber bonded spacers by completely stripping them and replacing the bonding compound, adapting them to the customer requirements.





4.C PROSET

Thanks to the experience accumulated in the manufacture of slitter tooling, we have developed the PROSET application for the calculation of the tooling setups.

The application has been created to optimise the number of spacers used, with the aim of reducing assembly times and, at the same time, ensuring that setups calculations are prepared with the maximum accuracy preventing possible errors.

It allows for an exhaustive configuration of cutting parameters and tooling characteristics (thicknesses, colours, clearances, etc.) which allows the results to be customised according to the working habits of each customer.

Allows data exchange with both ERP Software and assembling automated systems.

Thanks to the “tooling reserved” option, it is possible to simulate the simultaneous assembly of several setups and, as a consequence, find the best solution taking into account the elements “not available”.

The result of the calculation can be printed or displayed in different formats.

We offer installation and training services, both on-site and online.

PROSET is continuously updated and is compatible with Microsoft Windows operating systems. It is available in several languages and can be configured for use in different units (metric or imperial).

4.D STORAGE SOLUTIONS

In order to avoid premature deterioration of the tooling and to guarantee its correct maintenance, it is advisable to ensure a appropriate protection and storage.

At Zorrotz, we offer different solutions adapted to customer needs.





4.E CONSULTANCY AND TRAINING

We make our experience in metal shearing and slitting process, available to customers. We deliver customised consultancy sessions, in the form of on-site courses, where we train customer workforce on specific topics, covering a wide range of scenarios.

We can also share our knowledge in the analysis and resolution of real day to day issues, hand in hand with the customer.

- › PROSET Software Training
- › Slitter tooling optimization
- › Knives / Blades wear analysis
- › Use and optimization of rubber bonded system
- › Slitting and shearing problem analysis



4.F CUTTING PARAMETERS ANALYSIS (CPA)

We carry out an extensive Cutting Parameters Analysis (CPA) at the customer's site prior to the start-up of the tooling. We can also help the customer to search for the origin of specific cutting issues.

We carry out several measurements to check:

- › Measurement and inspection of tools used
- › Shaft measurement
- › Starting "zero point" alignment
- › Knife general dimensions and tolerances

We cooperate with the slitter machine manufacturer at tooling star-up. (Slitting line and shearing machine, tooling commissioning...).





Zorrotz LEGAZPI, S.L.L.
INDUSTRIAL KNIVES AND SPECIAL SLIDING WAYS

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