



24/7 - Worldwide Site Machining

We perform on-site machining and take care of all those interventions aimed at the restoring of the geometry of mechanical components. In addition to being first-users of a wide range of machine tools, we are resellers and consultants too. Our experience is mostly related to the Oil & Gas Industry, but we easily manage to apply our services in any kind of industry.

[web site](#)

Nuova Simat srl

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QUALITY MANAGEMENT



ISO 9001 – ISO 14001 – OHSAS 18001

This certificate is valid for the Trade of mechanical equipment for industrial maintenance; maintenance and revamping of hydraulic torque wrenches and hydraulic power packs; rental of equipment (with or without operator) for torque tightening and portable equipment for mechanical machining. Activity of applied research and experimental development in mechanical field for design and manufacture of portable machines used in services on site and prototypes of equipment for assembly and industrial applications (EA: 29, 18, 32)

REFERENCES



On-Site Machining since 1989

SITE MACHINING

[NC Turning](#)

[Turning](#)

[Line Boring](#)

[Drilling and tapping](#)

[Facing](#)

[Linear/Orbital Milling](#)

[Grinding and Lapping](#)

[Pipe Cutting and Beveling](#)

SERVICE PACK

[GV seat repair](#)

[Turbine casing alignment &
Re-dowelling](#)

[Valve pocket repair](#)

[Power Coupling repair](#)

[Shaft/Rotor repair](#)

[Stud removal](#)

[Moulding press activities](#)

[Heat exchangers services](#)

SUPPORT OPERATIONS

[Laser Tracking](#)

[Induction/Joule Bolting](#)

[Torque/Tension Bolting](#)

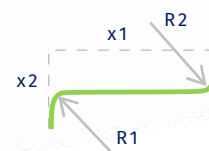
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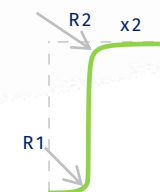
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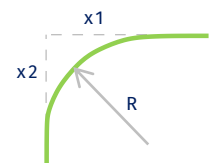
NC TERNINGS



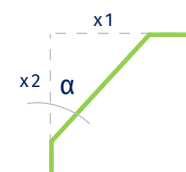
facing



turning



spherical -
toroidal



conical

Operation.

When higher levels of machining are required this machine comes into play. In order to reach the highest performance we apply a **laser tracker measurement** system to check the planarity preliminarily, during and after the milling process.

G-code.

Programmable remote control unit to achieve any kind of profile/shape.

Working Range.

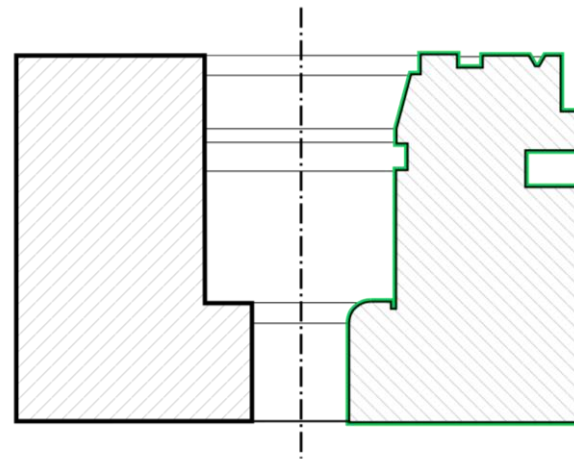
Up to Ø800 x length 800mm.

Customization.

Available dedicated anchor tools to work on several work piece.

TURNINGS

BEFORE | AFTER



Operation.

The classic on-site turning, unlike the one performed with a stationary lathe, is performed while the machine rotates around the damaged component to be repaired. It may be necessary to generate different types of profiles, for more complex ones a numerical control lathe is used.

Working Range.

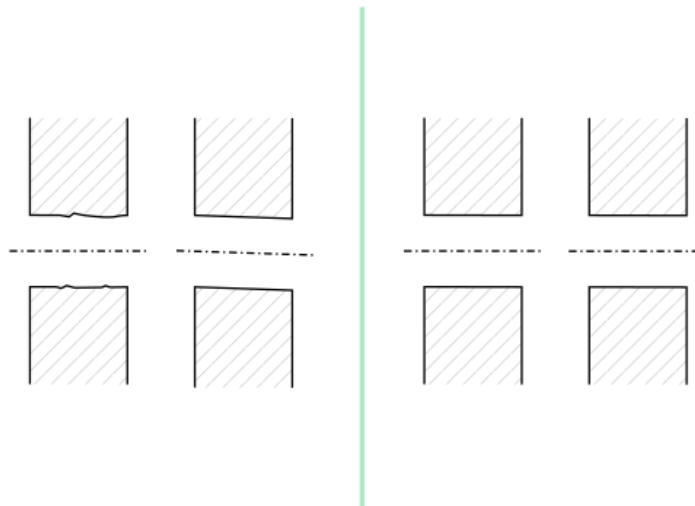
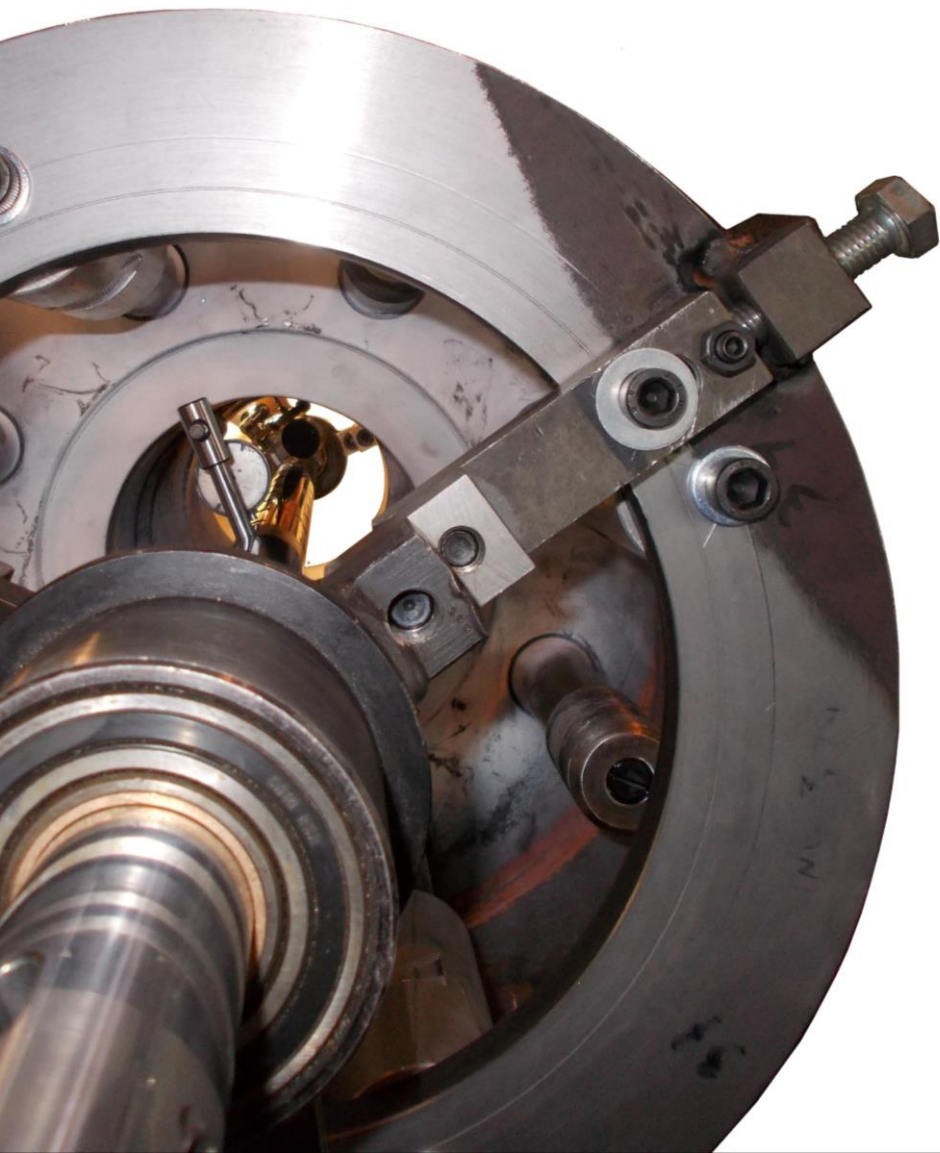
Available machine size up to $\varnothing 600$ x length 600mm in standard models.

Customization.

Available to work on bigger diameters and dedicated configuration.

LINE BORING

BEFORE | AFTER



Operation.

Line boring aims to perform one or more boring process in same machine placing, which results in perfectly aligned (bearing seats, other surfaces in general).

The boring machine is made up of 2 or more bearings (depending on the case), in which the boring bar rotates and slides. The boring machine with its electronic control unit is attached to one of these bearings.

Boring machines also have tool for automatic cylindrical welding overlay (in standard set).

Working Range..

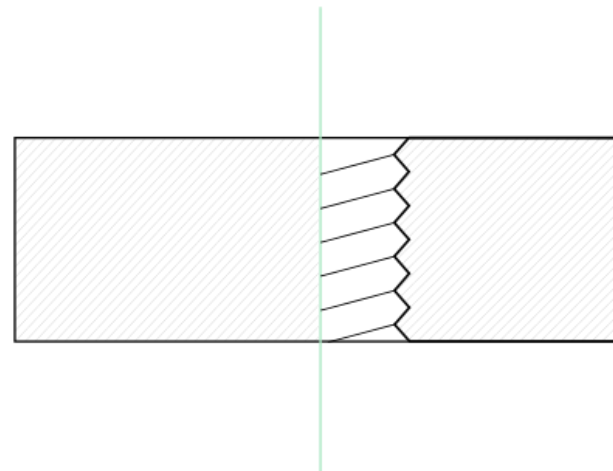
Up to Ø800 x length 12.000mm in standard configuration.

Customization..

Available to face diameters and length over size, or special situation of work.

DRILLING AND TAPPING

BEFORE | AFTER

**Operation.**

We perform drilling and tapping of non-innovative holes, and drilling and tapping of existing holes that need to be enlarged for repair, or factual design needs.

Add-on.

Drilling Masks. Another peculiarity of the holes and the masks is the possibility to perform them in any position and orientation, with reference to the surfaces defined by the project.

Working Range..

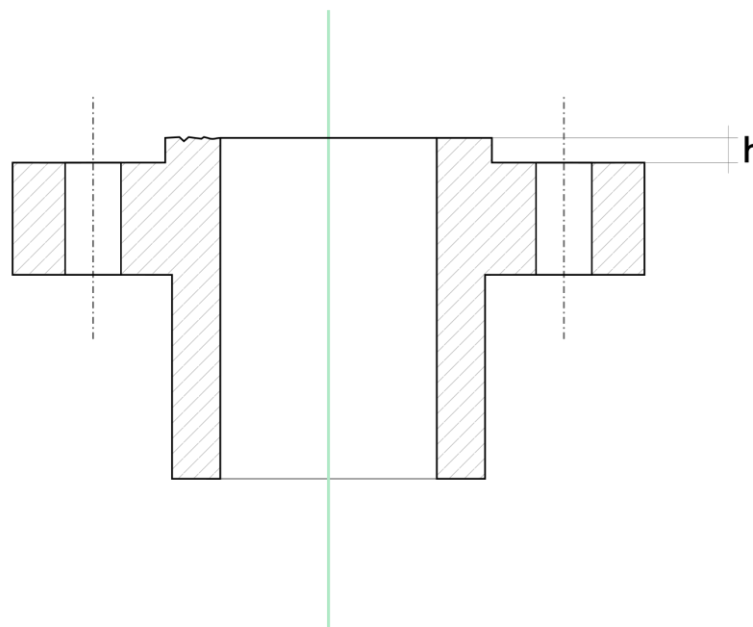
Up to Ø150 (6 inches) in any position.

Customization..

Available to face long distance between machine and surface, or over size.

FLANGE FACING

BEFORE | AFTER

**Operation.**

The most common types of seals are found on RF (Raised face) flanges with phonographic grooving and spiro-metallic gasket, RTJ (Ring Type Joint), with trapezoidal section circular groove, flat flanges with seats for O-rings, or other types of annular gaskets. In each of the cases mentioned above, a particular mechanical machining of leveling and profiling of sealing area is required.

Working Range..

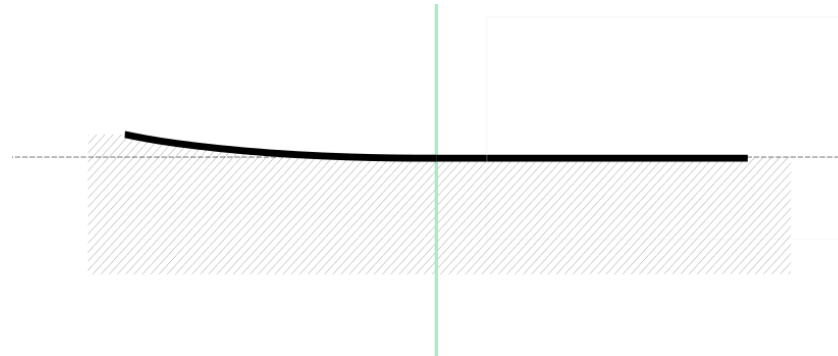
Up to $\varnothing 3000$ (120 inches) in facing and around 100mm in boring.

Customization..

Available for a anchoring/machining over range and by dedicated tooling.

LINEAR/ORBITAL MILLING

BEFORE | AFTER



Operation.

We are first Users of a wide range of portable milling machine, to restore several kind of surface or kind of groove.

Add-on.

In order to reach the highest performance it is possible to apply a laser tracker measurement system to check the planarity preliminarily, during and after the milling process.

Available gantry configuration for square milling.

Working Range..

Linear: up to 6000 mm

Orbital: up to 3000mm

Customization..

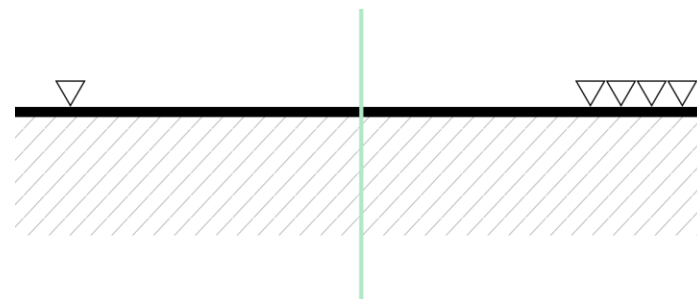
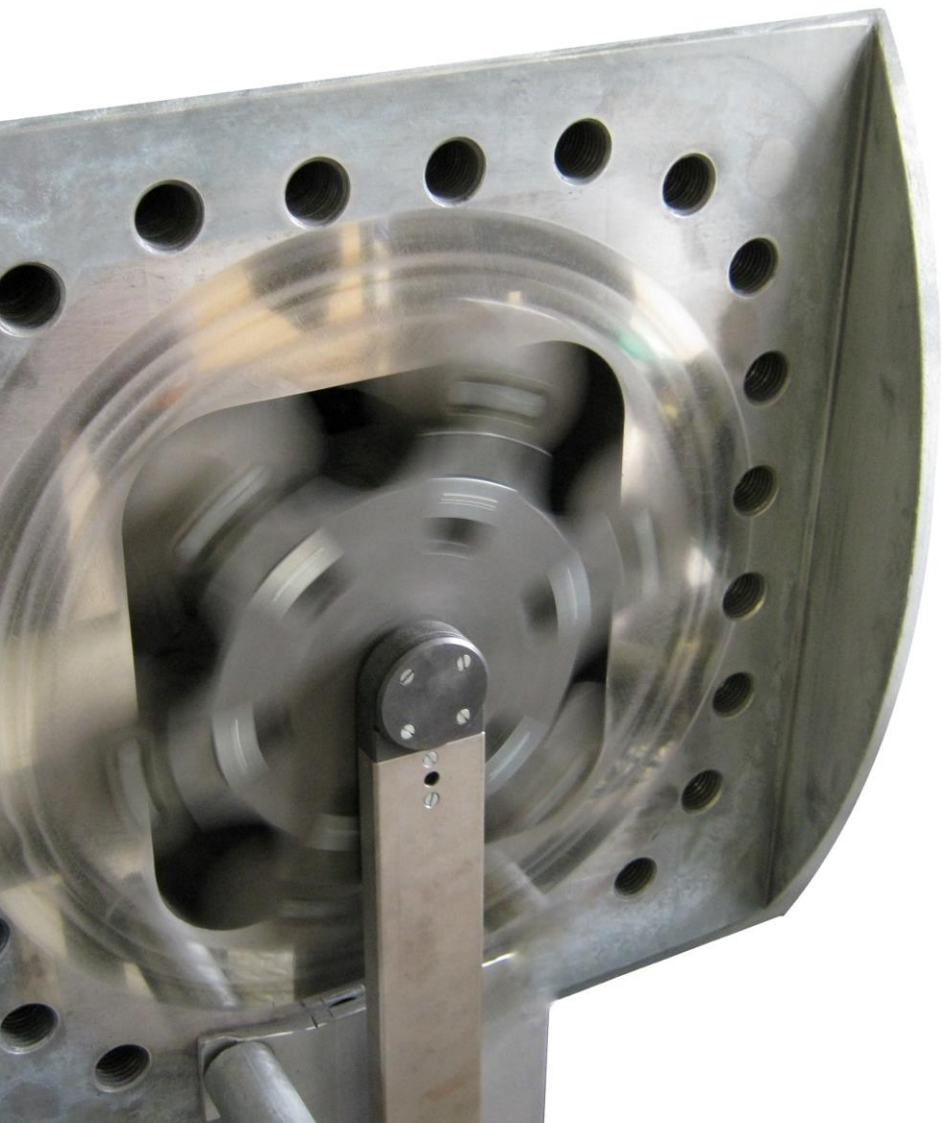
Available.

Any application, which covers longer distances, or particular conditions, can be analyzed by our R&D Dpt. for a feasibility check.



GRINDING AND LAPPING

BEFORE | AFTER



Operation.

Machining performed to achieve smooth and accurate surface for different application such as valve seats (flat, conical, ...), seal seat, or, in general, surfaces which require very low roughness in term of Ra (or AARH).

Working Range.

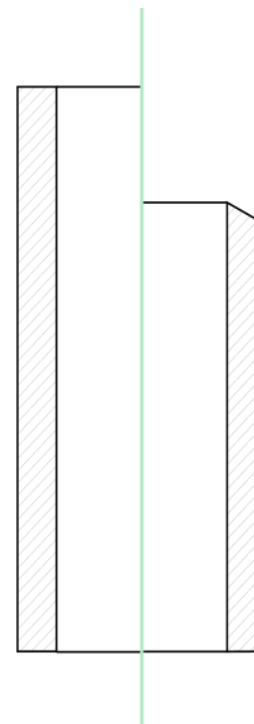
Different for any kind of application and to be defined matching dimension-roughness.

Customization.

Available for engineering of dedicated solution.

PIPE CUTTING AND BEVELLING

BEFORE | AFTER



Operation.

We perform the cutting and beveling of pipes (bigger diameters included), both on new components or during overhaul. It's possible to create an edge, which is ready for following welding, according to the most common angles required by the technical standards (37.5°, 30°, 45°, Y, J) or with special angles using dedicated tools we can provide.

Available "split frame type" for cutting and beveling of continuous pipe, or "end pipe type" for beveling.

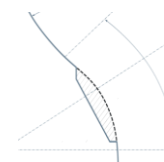
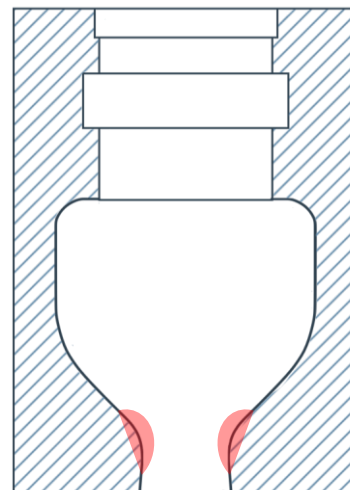
Working Range.

Up to 4500mm (177") in split frame type

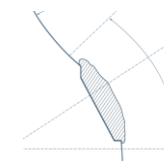
Customization.

Available.

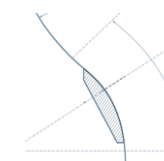
GV SEAT REPAIR



1



2



3

User.

Any end User., overhaul service provider, or OEM of steam turbine which needs to repair governor valves with toroidal seat included in valve body.

Operation.

Activities carried out using of NC machine, composed of following steps:

1. Stripping

Removal of the damaged overlay material (sometime including all overlay and HAZ).

2. Welding

Welding of new base material and/or overlay material.

3. Shaping

Machining of the welded overlay to reach the desired **custom profile**. If required it is possible to reach the highest level of finishing by lapping.

Working Range.

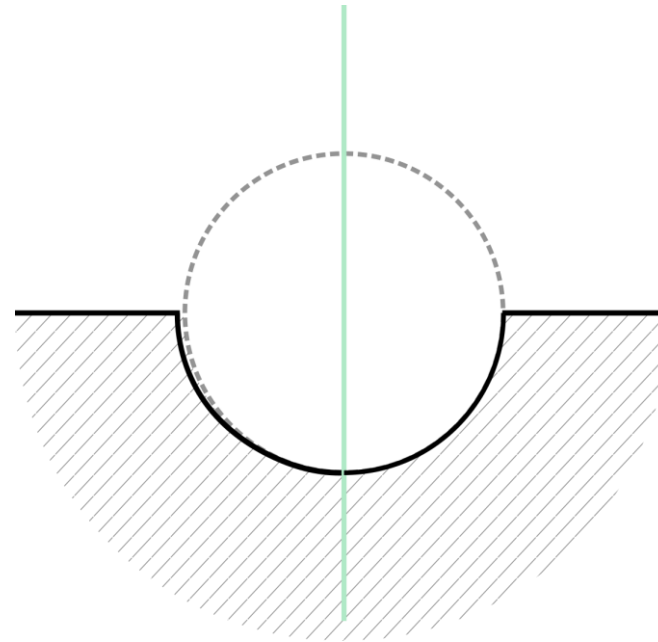
Up to Ø335 x Depth 945mm
Oversize on request.

Customization.

Activities always engineered based on valve type and size.

TURBINE CASE ALIGNMENT & RE-DOWELLING

BEFORE | AFTER



Operation.

Critical activities to check alignment of all casing, from inlet to exhaust, movement of elements out of correct position and re-dowelling (by boring to diameter greater than original).

Engineering Team provides supervision of all activities of manpower and comprehensive technical report of each step of check.

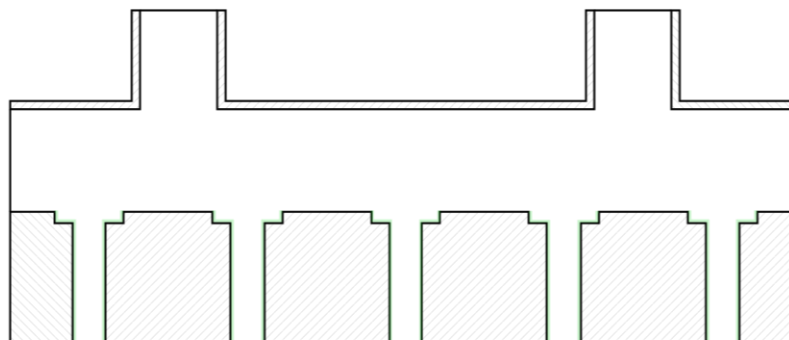
Working Range.

No limit, activity possible on any model of turbine or other similar machines.

Customization.

Any alignment check requires high Customization. of support tools and technical procedure

VALVE POCKET REPAIR



User..

Any end User., overhaul service provider, or OEM of steam turbine which needs to repair control valves inside steam chest.

Operation.

Pack provides various activities, including valve seat removal, pocket re-machining, new valve seats and plug assembly, or any kind of modification required from turbine engineering dpt.

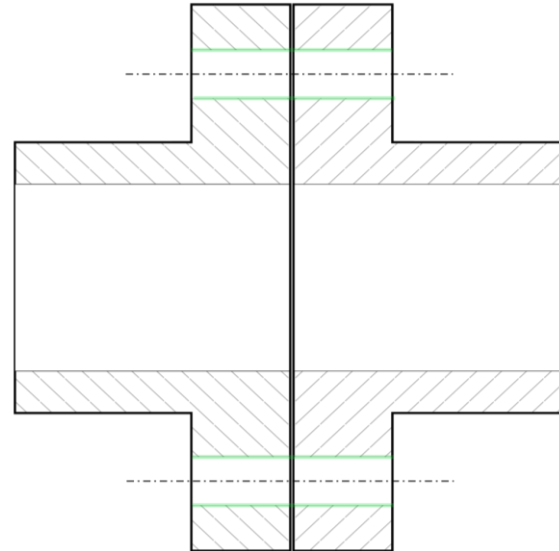
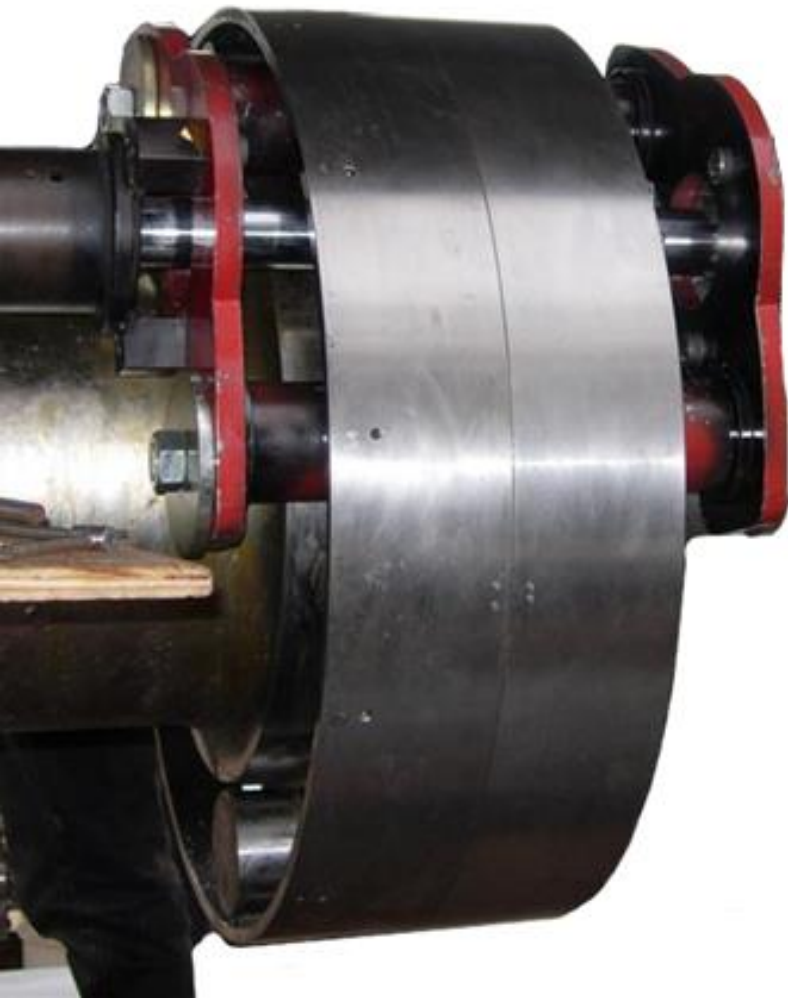
Working Range.

Valves of any size.

Customization.

Activities always customized based on Customer requirement.

POWER COUPLING REPAIR

**Operation.**

Power couplings are a critical part of a rotating machine. Coupling flange joint is achieved by calibrated bolts working on shear stress.

For this reason it is important to perform machining on each hole on both flanges together, to get a perfect result in terms of diameter precision and roughness.

This process is carried out by special low clearance boring machine and finishing by honing stones.

Working Range.

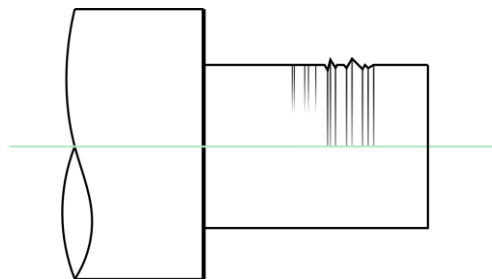
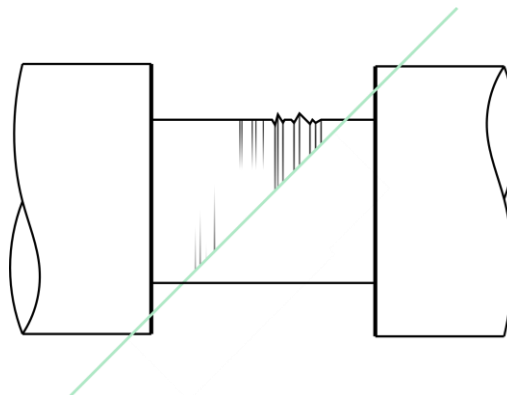
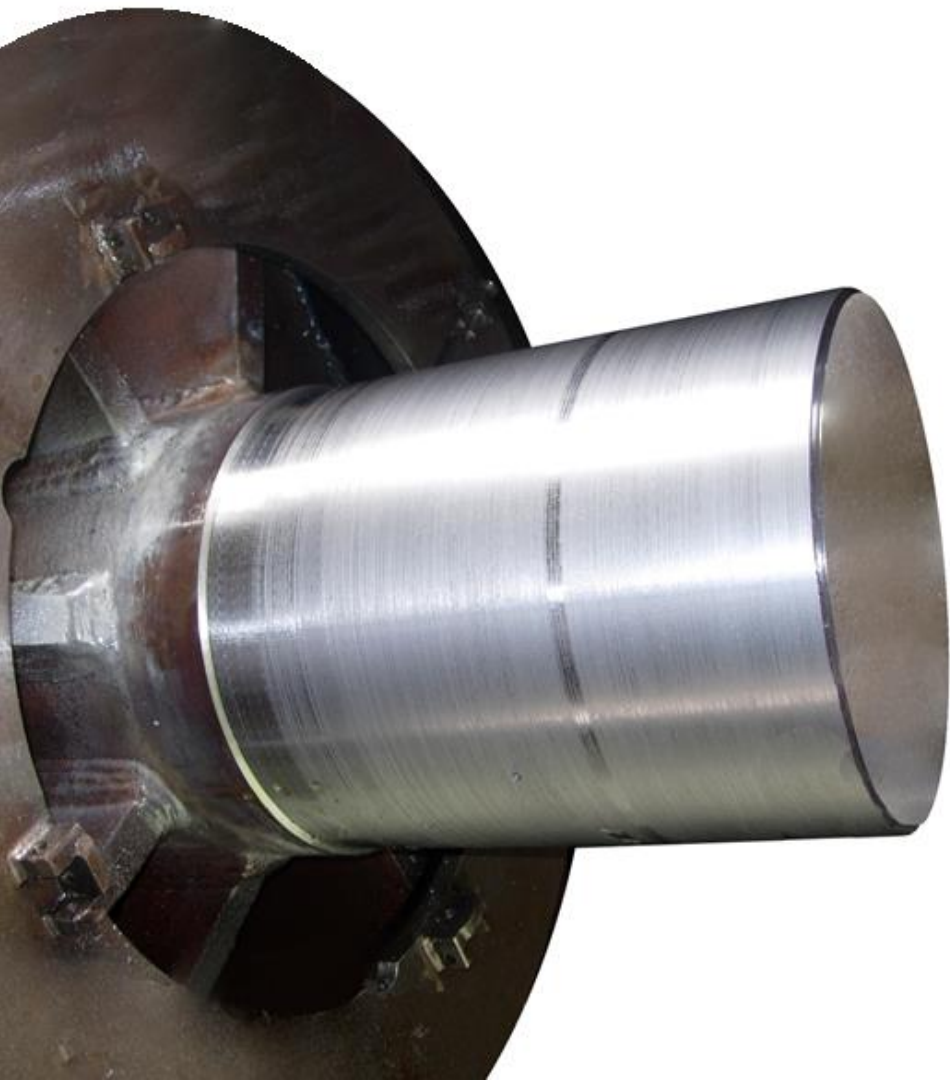
Available to work on diameter up to 200mm.

Customization.

Always needed to match machine and work situation. Also available to work on bigger diameters.

SHAFT REPAIR

BEFORE | AFTER

**Operation.**

Pack studied to face case of external turning of shaft, middle position or end position.

Machining is performed by rotating machine around the shaft/rotor, also inside its machine (e.g. turbine).

This kind of portable machine tools are designed to achieve high precision in terms of run out and roughness.

Add-on.

Grinding head to reach very low Ra roughness.

Working Range.

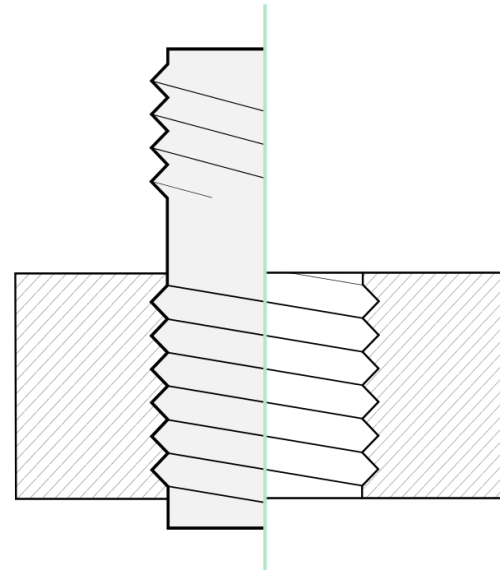
Available machine size up to $\varnothing 600$ x length 600mm in standard models.

Customization.

Available to work on bigger diameters and dedicated configuration for each case.

STUD REMOVAL

BEFORE | AFTER

**Operation.**

Typical problem of mechanical coupling with stud bolt seized can be solved only by destruction of stud, without any damage to threaded hole. Destruction can be carried out by mechanical progressive drilling, or by spark erosion (EDM).

Add-on.

NC feed applied to reach high precision and low execution time.

Working Range.

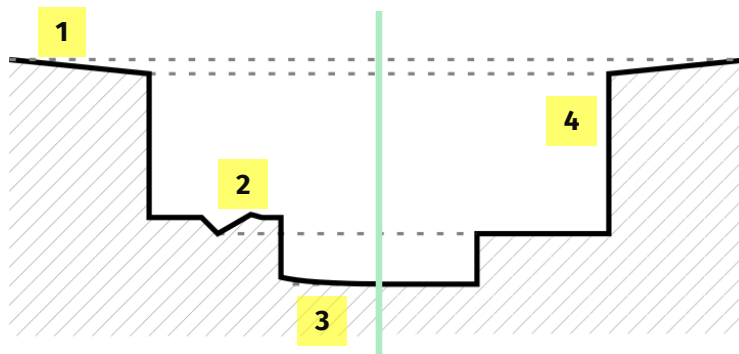
No limit by progressive cut.

Customization.

Available for anchor / positioning system and shape of cut.

MOULDING PRESS ACTIVITIES

BEFORE | AFTER

**Operation.**

Moulding presses (or similar industrial equipment) are used in very heavy activities, so periodically need the repair of some parts stressed over their possibilities.

1. Inclined surfaces.

Milling of flat surfaces arranged in direction other than bubble level.

2. Deep damages.

Milling of surface to remove damages by milling of minimum allowance.

3. Deformation.

Milling of surface to restore flatness required.

4. Cylindrical surfaces.

Repair by boring machine of nut screw seat (e.g on friction screw press) and similar surfaces.

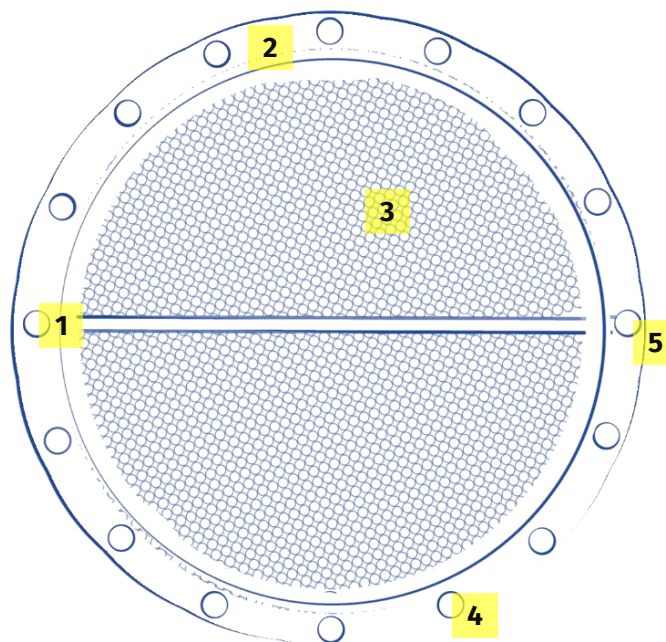
Working Range.

No limit.

Customization.

Available for anchoring and support of activities by Laser Tracker tolerance check.

HEAT EXCHANGERS | SERVICE PACK

**Operation.**

Pack of activities for complete mechanical repair

1.Key Slot Milling.

Restoration of the key slot by using portable milling machines.

2. Flange Facing.

Restore of seal seat (phonographic or concentric grooves, RTJ, ...) by using portable flange facers.

3. Tubes.

Expansion | Beveling | Cleaning

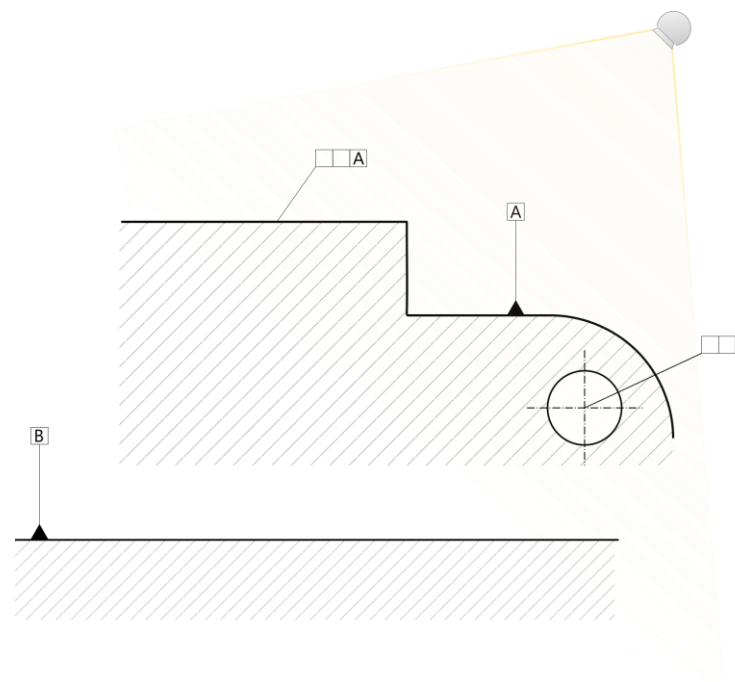
1. Stuck Bolts Removal.

Removal by either drilling or spark erosion without any damage of threaded holes.

2. Controlled bolting.

By torque wrenches, hydraulic tensioners or induction bolting (in case of hollow bolts), according to configuration.

LASER TRACKER

**Operation.**

Laser tracker is high technological measurement system born to check dimension and tolerance. System is equipped by CAD software connected "real time" to make any kind of geometrical check.

Add-on.

Feature to compare nominal 3D drawing to real measured. Possibility to assist portable machine tools in set up stage and check of results.

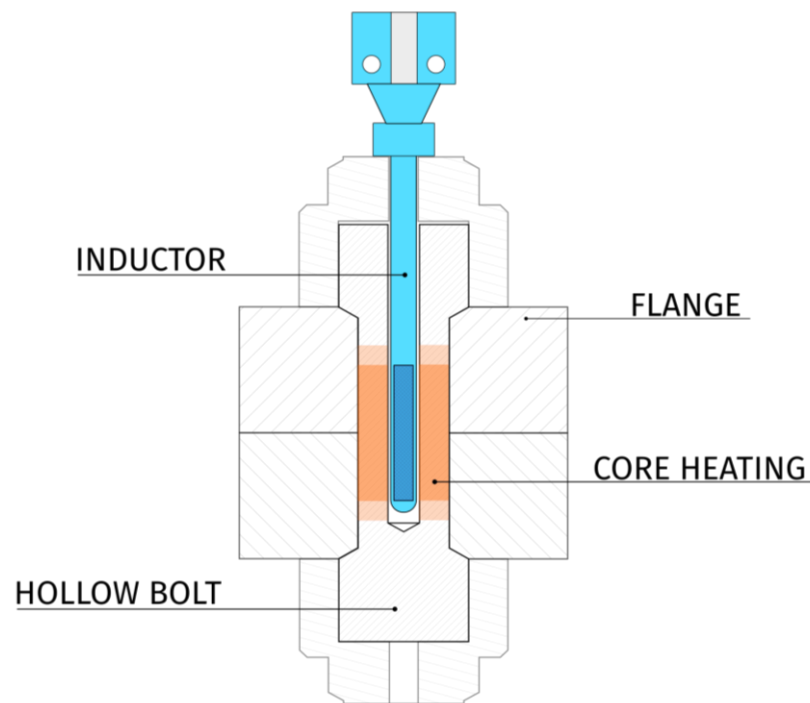
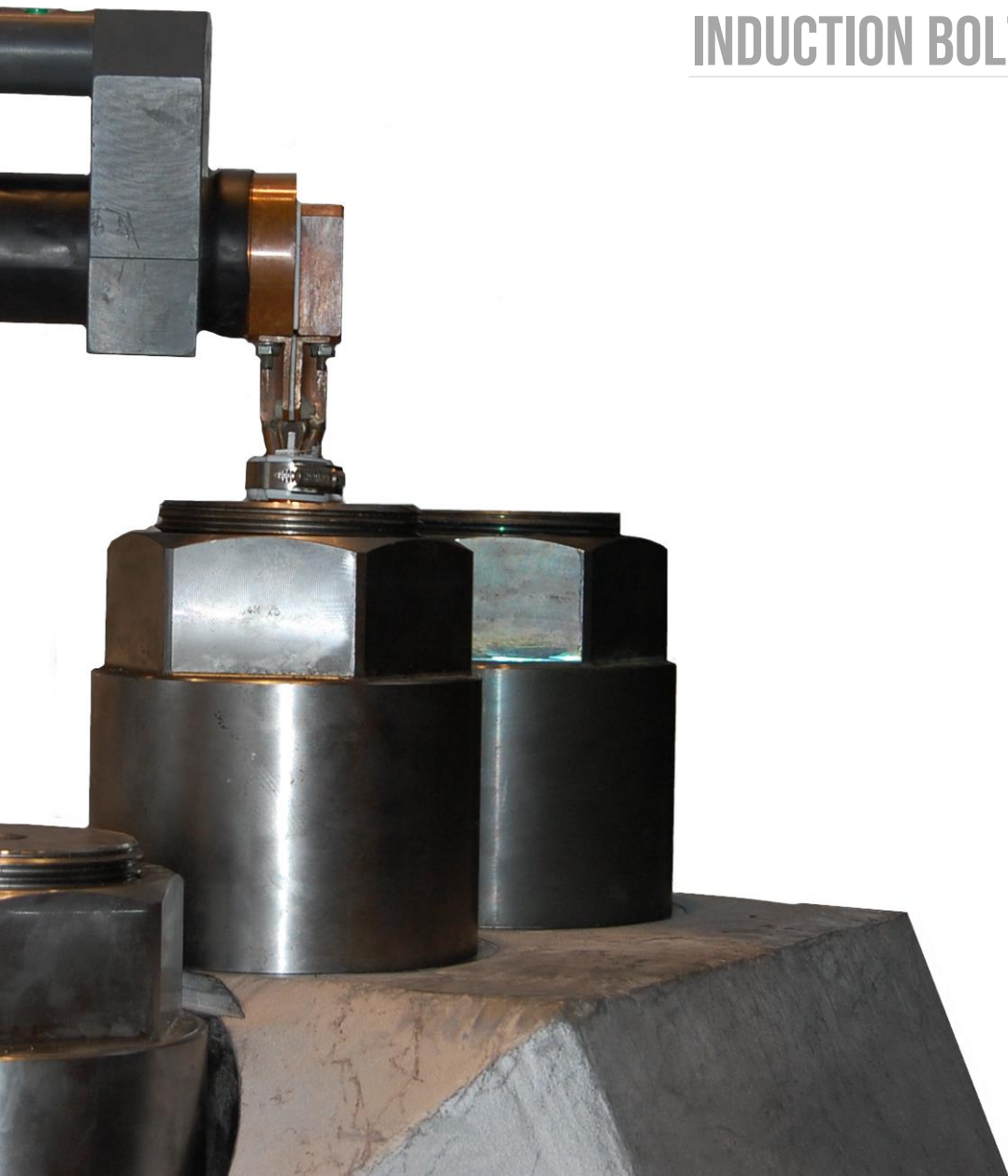
Working Range.

Up to 80mt from laser emitter (precision related to distance)

Customization.

Available for kind of probe and anchor system.

INDUCTION BOLTING



Operation.

A small unit, equipped with an internal cooling system, generates a magnetic field via an inductor. The generated magnetic field produces the heating effect. The heat is necessary in order to perform the detachment of the linkage easily without damaging the sensitive parts involved as shown in the adjacent diagram.

Add-on.

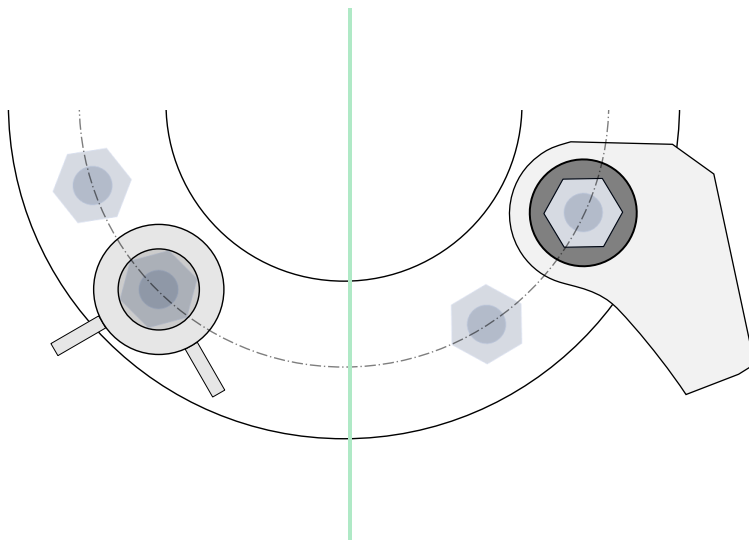
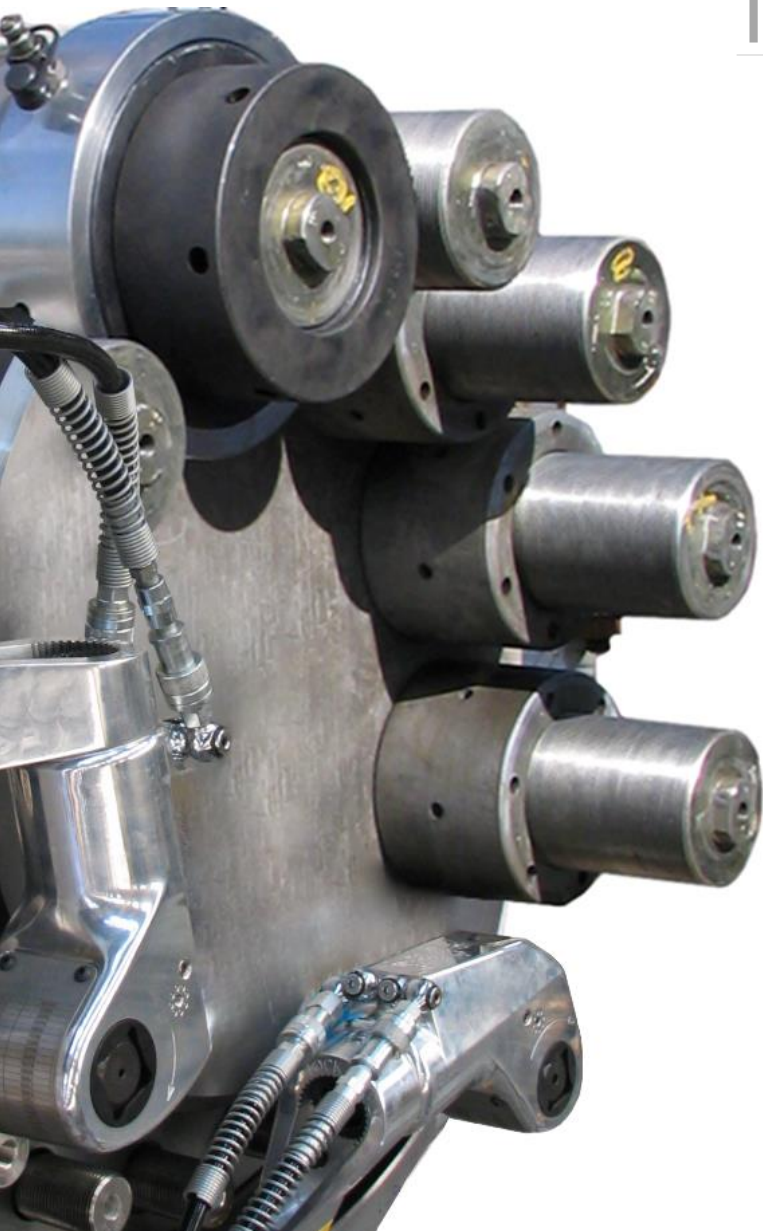
Remote connection, USB for system updating.

Customization.

Available.

TENSION/TORQUE BOLTING

TENSIONING | TORQUE BOLTING

**Operation.**

In all kinds of mechanical structures connected by bolts, it is important to perform tightening keeping the force applied on the bolt controlled; this way only ensures the correct mechanical stress inside bolts and so that the mechanical characteristics of the whole structure will be optimal. Moreover, when bolts are fastened with high forces, proper equipment is necessary to perform their loosening.

Standard Working Range.

Up to torque 150.000Nm and tension up to 3200kN

Customization.

Available to reach bigger load and shape dedicated to each case.

Contacts



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