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MECAT  
GROUP

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50 YEARS OF CONTINUOUS EVOLUTION

# THE GROUP

for **50** years



quality  
experience  
professionalism  
high precision

When the pursuit of quality and the force of experience are combined with flexibility and the ability to respond professionally and promptly to specific, non-standard needs, we can say we have achieved a high level of competence and success.

In the past fifty years ME.CA.T. has grown and developed, TreDViti was set up and has established itself and, in 2020, the Group was joined by CO.SPE. Costruzioni Speciali, a historic company specialising in the construction of complex mechanical components. The Mecat Group has thus been able to complete its offering, establish itself and make itself known as a structured, versatile and leading-edge company in mechanical machining, metal-working and turning.

The Group's strengths are its perfect operational synergy, the productive potential of its machinery, its advanced know-how and particularly flexible organisation chart with operators distributed over the various sectors, with a low average age but solid experience.

The proven collaboration between the three companies allows the creation of products on demand, involving complex planning and high technological content, supporting the customer in defining characteristics and technical aspects.

The Group's strength can be seen through how it comes up with dedicated solutions, capable of giving the finished product maximum efficiency and the highest functionality.

Thanks to its ability to adapt to the needs of the market and customers and to provide an attentive consultancy service and produce goods to order, the Mecat Group is today a guaranteed benchmark for the entire mechanical machining sector.

TRE DVITI







manufacturers of screws, twin screws and steel cylinders for the extrusion of plastics

# High quality comes from competence

Since 2006 TreDviti has been involved in the design and construction of single and double screw cylinders, co-rotating and counter-rotating screws up to 8 metres in length. Established with the main aim of responding effectively to the specific needs of

customers, it focuses on product quality, speed of supply and compliance with delivery terms. The versatile equipment, the widely tested and constantly updated software, and the ongoing training of personnel allow TreDviti to create high-precision mechan-

ical parts dedicated to any field of application (agri-food, construction, paper, iron and steel). Specifically, TreDviti is able to respond effectively to the needs of manufacturers and users of machines and plants for the extrusion of plastics.

## high quality standard

A high quality standard characterises the TreDviti twin-screw and single-screw systems. Particularly versatile numerical control machines and latest generation cad-cam systems guarantee a high degree of precision of the processes which are monitored, step by step, throughout the production process.

The quality standard is guaranteed by:

- 1) metallographic control of raw materials
- 2) dimensional control of semi-finished products
- 3) identification of single pieces with serial numbers to ensure traceability
- 4) dimensional control of the finished pieces
- 5) hardness control of the details after the heat treatment

## high precision manufacturing

### SINGLE SCREW SYSTEMS

TreDviti manufactures single screw systems for every application: injection, extrusion, mixing and transport.

Numerical control machines allow for high precision machining. Screws up to 300 mm in diameter and 9000 mm in length are made in one piece.

TreDviti offers, as construction standard, nitriding steels, hardening steels, stainless steels.

Standard treatments include gas and ionic nitriding, through hardening, surface hardening, chrome plating.

### COUNTER-ROTATING TWIN SCREW SYSTEMS

TreDviti produces counter-rotating twin screw systems. The twin screw cylinders are available in monolithic, block and modular constructions. Pairs of counter-rotating screws up to 250 mm in diameter and 9000 mm in length guaranteed, are made in a monolithic version.

### COATINGS

TreDviti is able to apply wear-resistant coatings to screws.

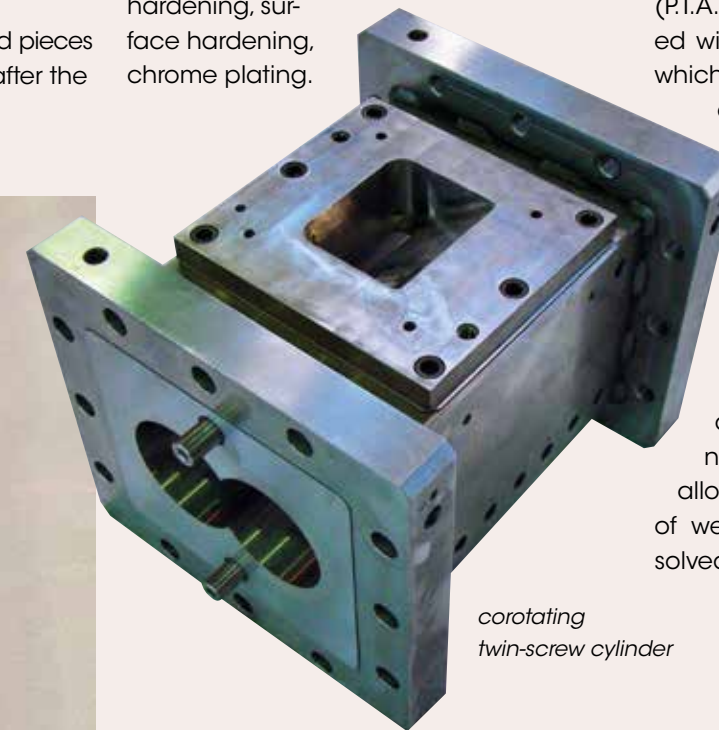
It uses plasma deposition technologies (P.T.A.) using a robotic system integrated with its own 3D programming systems which guarantees constant, highly reproducible features.

To guarantee high purity coatings with constant, reproducible features, we operate with plasma deposition technologies (P.T.A.), controlled and constantly evolving processes and a careful choice of basic materials.

With specific coatings - iron based alloys, cobalt based alloys (stellites), nickel based alloys and nickel based alloys with tungsten carbides - problems of wear, abrasion and corrosion are resolved.



continuous mixers



counter-rotating twin-screw cylinder



single screw



single screw



twin-screw cylinders



Weingärtner pick-up 7000



single-screw special profile



twin-screw



coatings



counter-rotating sectors



counter-rotating twin-screw



wire EDM



examples of single screw





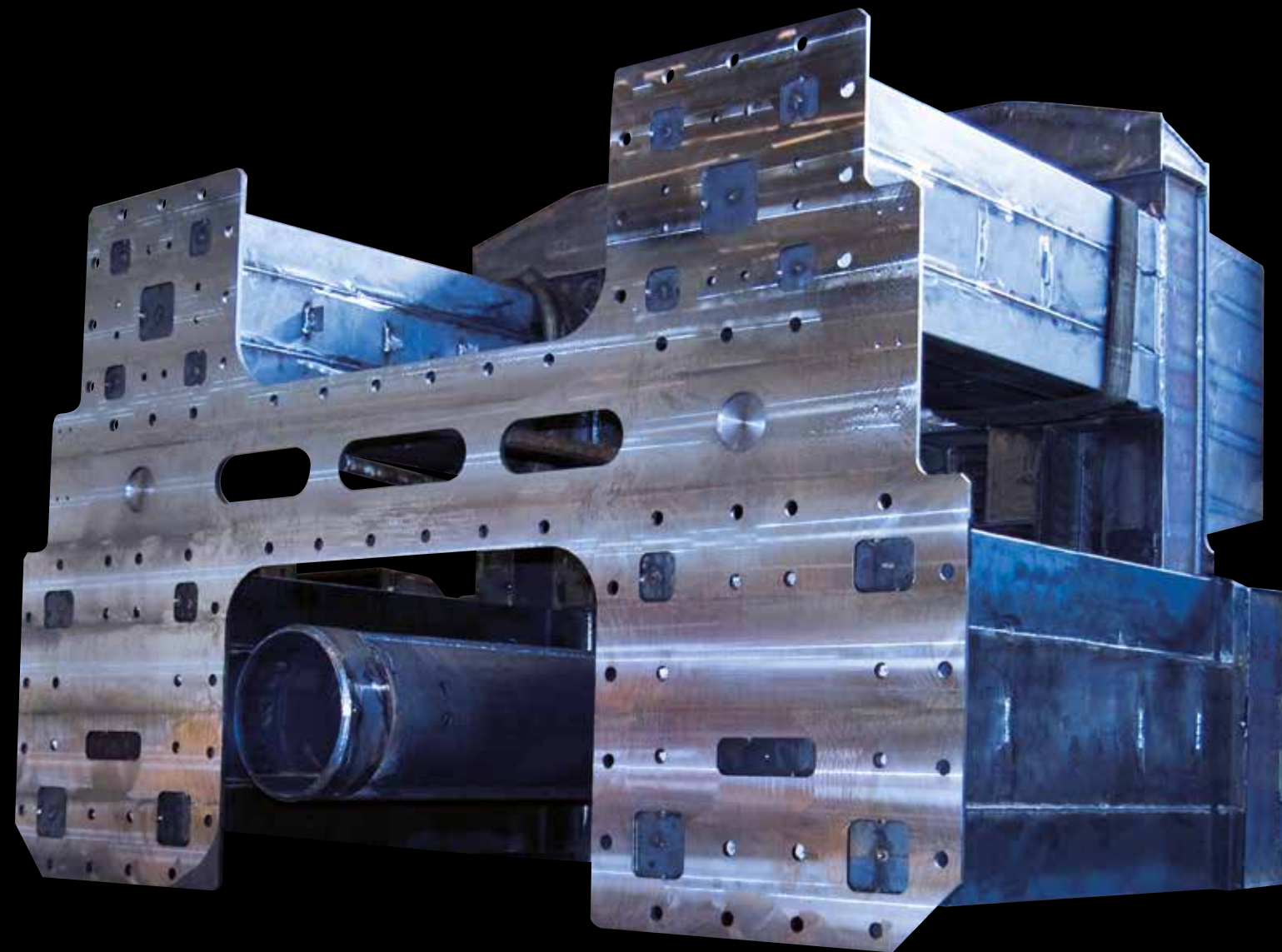
Mechanical engineering, metalworking, turning for medium to large finished products laser cutting

# High technology for customer service

ME.CA.T. was founded in 1972 on the initiative of three partners who, on the strength of their work experience, set up a business focused on piping for petrochemical plants. Since then the company has expanded and metalworking has been joined by mechanical processing. Since 1996, it has been owned by the Di Giorgio family who administer it in the persons of Mario, Luca and Paolo. Since 2000, the acquisition of turning machinery with working lengths up to 10 me-

tres has allowed the offer to be expanded and new production sectors to be entered. ME.CA.T. operates principally in the sector relating to the construction of machinery for the processing of plastics and in the steel, paper and printing machinery sectors, dedicating itself almost exclusively to medium-large finished products.

It is also able to provide quality services in the steel and packaging machinery sectors. The vast experience gained in over fifty years of activity and constant technological evolution have allowed the company to position itself on the market as a supplier specialising in made-to-order products.



## strengths

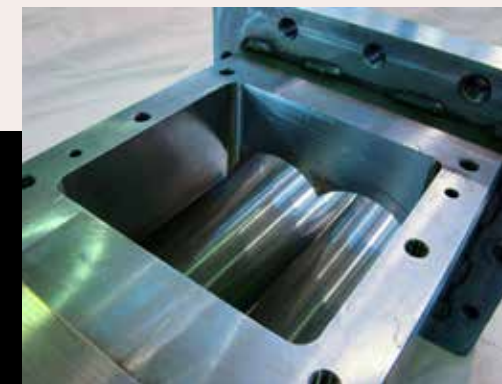
The strong points of the ME.CA.T. plant are the perfect synergy between the large dimensions and the production potential of the machinery, and the particularly versatile organisation chart.

Continuous attention is paid to in-house training with the consequent enhancement of human resources.

Inside the plant, the organisation is divided into five main departments: boring, milling, turning, sheet metal, assembly.

The production chain is completely computerised and an advanced production data collection system contributes significantly to the optimisation of the production cycle.

This guarantees the best monitoring of activities and effective management of emergencies.



## order management

In ME.CA.T. work planning is a weekly matter. The production management programme makes it possible to check work advancement and order completion in real time.

At the business end of the process it is possible to verify all the information relating to the order, including personnel management and hours/operator reporting.

This system of organisation of the production unit translates into better service for our customers.

## customer service

Technological innovation and organisational capacity make ME.CA.T. and the companies in the Group, a sure point of reference for the entire mechanical processing sector.

The ability to adapt to the needs of the market and customers means we can provide a focused consultancy service and production on demand.



calender for steel plants





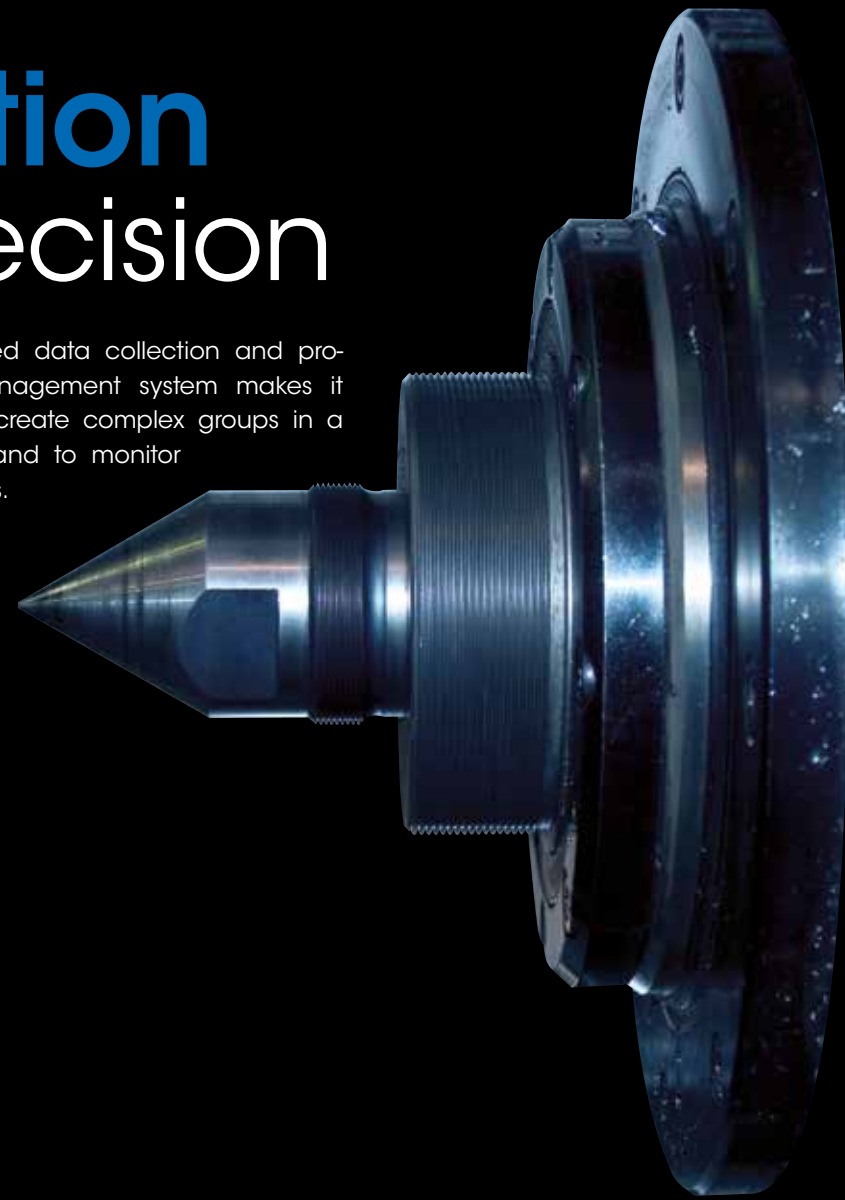


complex components for the plastics processing and the oil & gas sectors

# Specialisation and high precision

CO.SPE. has been involved for 40 years in the manufacture of complex components for the plastics processing and the oil & gas sectors. Its particular specialisation is the production of pipes and inlet feeds (liquid or air cooled), collars and blocks for the passage of molten polymer, and high precision mechanical components. With the entry of CO.SPE. into the Mecat Group, the 4- and 5-axle milling department has come on stream with the integration of the grinding department.

An advanced data collection and production management system makes it possible to create complex groups in a short time, and to monitor emergencies.



special grooved bush



grooved bush with cooling groove



joint and spline shaft assembly



water-cooled bush and compass holder



insert in nitrided steel



angled block for polymer passage

# the departments

The following production processes are carried out within the Mecat Group plants:

**MILLING:** with machining up to 12 metres

**DIMENSIONAL CHECK:** Laser Tracker Faro

**DRILLING AND DEEP SANDING FOR THIRD PARTIES:** ME.CA.T. is able to perform deep drilling from  $\varnothing$  30 mm to  $\varnothing$  160 mm for single and double holes 3000 mm long and 5000 mm smoothing

**BORING:** numerically controlled up to 3000x3000x3000 mm

**ASSEMBLY:** ME.CA.T. is able to meet customer demands by also assisting in the assembly stages and testing of the finished product, on the indications and specifications received

**SHEET METAL:** sheet metal processing -cutting, bending, punching and assembly operations, including finished machinery assembly-

**TURNING:** working dimensions  $\varnothing$  900x10000 mm; CNC turning operations  $\varnothing$  up to 800x2000 mm



laser tracker Faro



gantry milling cutter 6.000x3.000x1.500



assembly department



washing and recycling plant for plastics



milling cutter moving pillar 6.000x1.500x2.500



# machinery fleet

Mecat Group companies operate a fleet of machines with the latest technology.

## MILLING

-JUARISTI J2000 BORING MACHINE, rotary table, strokes 4000x3500x1800 mm

-MAUT MOVING COLUMN MILLING MACHINE, rotary head, strokes 12000x2800x1200 mm, for milling crosspieces

-MANDELLI M5 HORIZONTAL MACHINING CENTRE, strokes 800x650x800, double pallet and turntable

-MANDELLI THUNDER 630 HORIZONTAL MACHINING CENTRE, revolving table, strokes 1000x850x850 mm

-MANDELLI M7 MULTIPALLET HORIZONTAL MACHINING CENTRE, with rotary head OVER 4000 rpm iso50, revolving table, strokes 1000x800x1050 mm

-MAUT MILLING MACHINE, strokes 6000x1600x2000 mm, equipped for shoulder milling

-CPA FAP 3000 PORTAL MILLING MACHINE, mobile table, 6000x2000x1000 mm strokes, rotary head, magnetic tables for levelling operations

-AWEA P-4021 YZ MILLING MACHINE, rotary head, strokes 4000x2100x760 mm, spindle 6000 rpm

-CNC FIL MILLING MACHINE, vertical and horizontal head, strokes 2500x2000x1500 mm

-MAZAK VCN 530 C VERTICAL MACHINING CENTRE, strokes 1050x530x530 mm spindle 12000 rpm 4 axes

-MAZAK VTC20B VERTICAL MACHINING CENTRE, strokes 1020x510x510 mm, spindle 7000 rpm

-VANTAGE JHV 1500 VERTICAL MACHINING CENTRE, strokes 1500x750x500 mm, spindle 12000 rpm

-TOOL PRESETTING MICROSET UNO 20/40

## TURNING

-DMG CTX 510eco LATHE, bar passage 75 mm, maximum turning diameter 465 mm, turning length 1050 mm, driven tools, 33 kW spindle, 3250 rpm

-WROKLAW TUR 560 MN CNC LATHE, maximum turning diameter 560 mm, on the carriage 300 mm, turning length 2000 mm

-PBR T500 L CNC LATHE, turning diameter 1050 mm, on carriage 650 mm, bar passage 130 mm, turning length 5000 mm

-MOMAC TA-38 EVOLUTION CNC LATHE, centre height on the bench 380 mm distance between centres 3000 mm

-ZANOLETTI OMG PARALLEL LATHES, centre height 300 and 325 mm, turning length up to 3000 mm

-Padovani Labor 300 Electronic CNC LATHE, centre height 300 mm, turning length 1500 mm

-MAS TURN 1500 CNC LATHE, centre height 350 mm, turning length 1500 mm



# machinery fleet

## LATHE-MILL

-WEINGÄRTNER PICK-UP 7000 THREADING MACHINE, Continuous 5-axis CNC threading machine with whirling milling system, max diameter 250 mm, working length 7500 mm. Milling head ISO 50 5000 rpm

-CONTINUOUS 5-AXIS LATHE-MILL WEINGÄRTNER ROTOMILL MPMC 11000, maximum turning length 11000 mm, maximum turning diameter 1200 mm

-WEINGÄRTNER 4000 CNC THREADING MACHINE 5 continuous axes with whirling milling system max diameter 250 mm working length 7500 mm

-CNC 5 AXIS continuous  $\varnothing$  250 mm - working width 750 mm

## DEEP DRILLING

-DRILLING MACHINE for the production of single and twin screw cylinders, with push and pull drilling technologies from  $\varnothing$  30 mm to  $\varnothing$  160 mm for single-double holes maximum length 3500 mm

-SANDER for sanding holes and double holes up to 5000 mm with manual and semi-automatic equipment for polishing and surface finishing of screws

## WIRE EDM

**SLOTING MACHINES**, for making slots and keyways

## GRINDING

-CAMUT TANGENTIAL GRINDING MACHINE, strokes 1500x400x800 mm

-ALPA 550 TANGENTIAL GRINDING MACHINE, strokes 550x300x350 mm

-SANSEI ORBITAL GRINDING MACHINE, table diameter 400 mm, grinding height 300 mm

-GIORIA RUS 7000 EXTERNAL GRINDING MACHINE, centre height 590 mm, grinding distance 7000 mm

-TACCHELLA EXTERNAL GRINDING MACHINE M-1518 UA, centre height 355 mm, grinding length 1500 mm

-GRINDING FOR EXTERNALS AND FOR COUPLING PLANS OF PLASTICISING CYLINDERS

## SHEET METAL DEPARTMENT

-LASER CUTTING AND BENDING MACHINES INTEGRATED AND MANAGED BY THE TECHNICAL OFFICE

-AUTOMATED DEPARTMENT WITH FOLDING ROBOT AND SHEET METAL HANDLING, FOR THE CREATION OF BOTH UNIQUE PIECES AND LARGE LOTS

-TRUMPF TRUMATIC L3030 LASER CUT

-TRUMPF 6000L COMBINED PUNCHING MACHINE, complete with Trumalift Sheet-master unit and Trumagrip for sheet metal handling

-TRUMPF TruBend 3170 BENDING MACHINE, force 170 ton, bending length 4080 mm

-ANTIL APR120 BENDING ROBOT

-DEBURRING MACHINE COSTA M06 width 1350 mm

## 3D PRINTER

-STRATASYS FORTUS 380MC for printing nylon with carbon fibre additive



Weingärtner Pick-Up 7000 threading machine



lathe-milling machine 5 axes



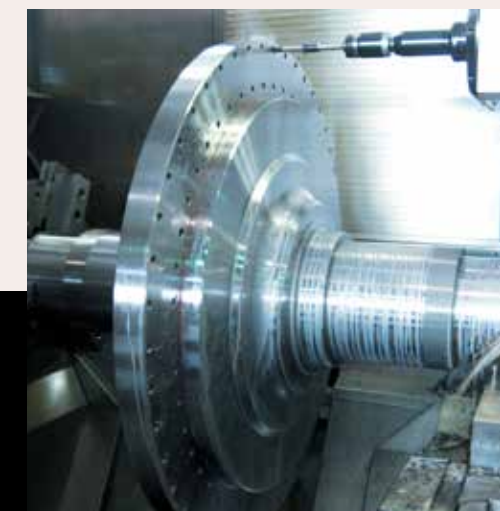
boring machine on Juaristi T-column 4000x3000 table 2500x2000



positioner press



Mandelli M7 reaming cutter



flywheel railway sector



milling machine Awea



milling cutter mobile upright 12.000x1.250x3.200



friction washer

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