

ENERGY SOLUTIONS

HIGH-PRECISION, PROFITABLE MANUFACTURING SOLUTIONS FOR THE ENERGY SECTOR



RELY ON EXPERIENCE AND EXPERTISE

In a world increasingly reliant on sustainable energy sources, CNC machine tools play a crucial role in manufacturing high-precision components for a wide range of energy technologies.

With INDEX automatic production lathes, swiss/fixed-headstock automatic lathes and turn-mill centers, you can not only produce complex geometrical shapes with micron-level precision, but also work with a wide variety of materials—from aluminum alloys and high-strength steels to titanium.

The advanced technology of our products, combined with the ongoing digitization and networking of machine tools, boosts your production efficiency, reduces downtime, and enhances flexibility.

Step into the world of INDEX machine tools and discover the possibilities that pave the way to a cleaner, more reliable, and more efficient energy supply.

FIND THE BEST MANUFACTURING SOLUTION FOR PEAK PERFORMANCE

- Comprehensive product range for many energy solutions applications
- Innovative turn-mill technologies
- Effective Swiss turning technologies
- High-output multi-spindle technology
- Integrated automation solutions
- Custom complete solutions
- Comprehensive iXservices
- "Made in Germany" engineering excellence



WIND ENERGY

[p. 04 – 05]

Manufacturing of drive and gear components for wind turbines, such as:

- Bearing bushings and hubs
- Shafts
- Large gears



GAS POWER

[p. 06 – 07]

Manufacturing of components for gas power generation and exploration, such as:

- Turbine disks
- Injector nozzles
- Drill heads

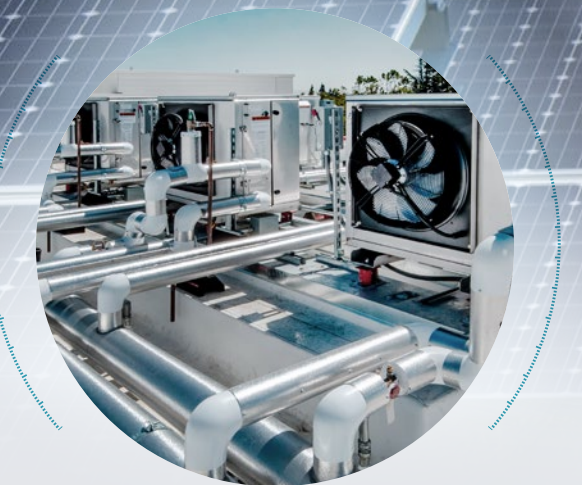


SOLAR AND HYDROPOWER

[p. 08 – 09]

Manufacturing of components for solar and hydropower use, such as:

- Slot nuts
- Connectors
- Compressor pistons



VALVES, PUMPS, COMPRESSORS

[p. 10 – 11]

Manufacturing of components for pumps and valves, such as:

- Fittings
- Valve technology
- Radial compressors

BEST PERFORMANCE FOR LARGE-SCALE TASKS IN WIND ENERGY TECHNOLOGY



High-precision and profitable manufacturing solutions

The production of components for wind turbines requires high-precision machining technologies. Learn more about the innovative lathes and processes that allow you to produce components with exceptional accuracy and efficiency, and find out how our solutions help you achieve optimal results.

Your advantage: high precision and process reliability thanks to flexible complete machining

INDEX turn-mill technology

- Highly dynamic INDEX motor milling spindles for high-performance turn-mill machining
- Short cycle times thanks to multifunctional complete machining
- Fast tool changeover and large tool capacity
- High rigidity and thermal stability for maximum precision and surface accuracy
- Various automation solutions
- “Made in Germany” engineering excellence



5-axis milling

- INDEX motor milling spindle for the highest requirements
- Maximum flexibility, even for small batches
- INDEX CAD/CAM solutions for various gearing methods, from single-piece to volume production
- Complete process design, e.g., for large-module gearing solutions



Power skiving/gear hobbing

Due to their high rigidity and excellent damping properties, INDEX machines are ideal for power skiving or hobbing gears. Specially developed INDEX gear-cutting cycles make operation particularly simple. User-guided input screens for workpiece, tool, process, and correction data quickly lead to an optimal workpiece.

- External and internal gears
- Straight and helical gears
- Sprocket gears
- Spline shafts DIN 5480
- Max. module 2.5 – 3.0 mm
- Gear quality up to IT7



Bearing bushing

- CuAl10Fe5Ni5
- Ø 440 mm x 620 mm
- 160 minutes
- INDEX G520 [Turn-mill center]



Azimuth drive

- 18CrNiMo7-6+HH
- Ø 240 mm x 90 mm
- 60 minutes
- INDEX G420 [Turn-mill center]



Complete machining with special tools

Proprietary custom-developed tool holder solutions enable optimal implementation of special applications, such as special tool holders for internal machining of tubular workpieces.

PRECISION MACHINING OF GAS POWER COMPONENTS



Powerful complete machining

INDEX machines enable efficient and precise machining of components like turbine blades and disks, rotors, and other parts critical to the performance and reliability of gas power plants.

By combining various machining technologies, INDEX machines are the ideal choice for producing complex workpieces that meet the industry's high standards.

Your advantage: maximum efficiency through economic complete machining of complex parts



Drill head

- 45CrMnMo
- Ø 66 mm x 158 mm
- 9 minutes
- INDEX R200
[Turn-mill center]



Automation with iXcenter robot cell

The modular INDEX iXcenter robot cells are ideal for loading and unloading large and heavy components. Thanks to their high level of flexibility, they can also integrate downstream processes such as measuring, cleaning, deburring, marking, and more.



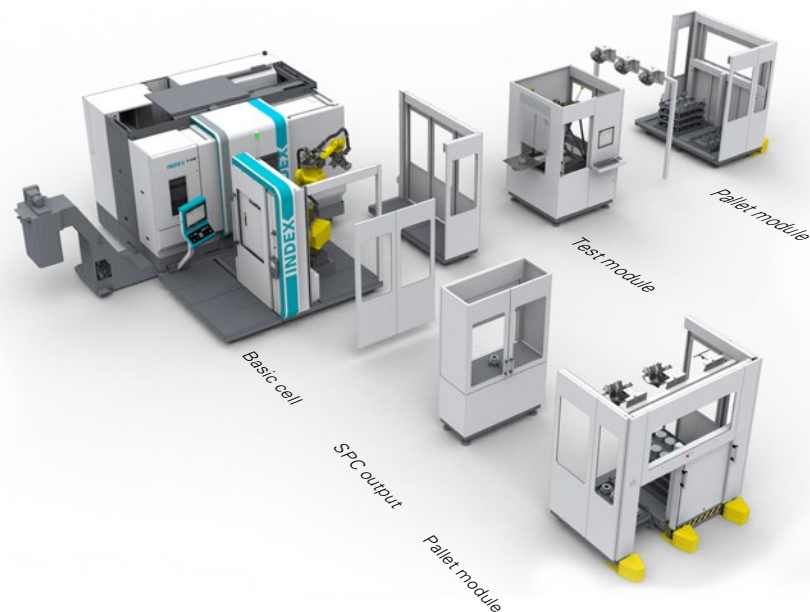
Turbine disks

- X8CrNi18-9
- Ø 175 mm x 70.5 mm
- 64 minutes
- INDEX G220 [Turn-mill center]

INDEX automation solutions

ensure intelligent handling of your workpieces. We offer a wide range of options for our complete machine range, from bar loading magazines to machine-integrated or robot automation, all the way to customized, application-specific solutions.

- Everything from a single source
- Flexible standard modular system
- Custom expansion options



Injector nozzle

- NiCr19Fe19Nb5Mo3
- Ø 60 mm x 110 mm
- 16 minutes
- INDEX G220
[Turn-mill center]



INDEX turn-mill centers

- Ideally suited for machining a wide range of technologies and materials
- Wear-resistant and high-temperature-resistant materials
- High machine rigidity and excellent damping properties
- Application expertise
- Highly dynamic milling and turning of complex workpieces

ECONOMICAL MANUFACTURING IN THE SOLAR AND HYDROPOWER SECTORS



Precise, fast, and efficient

INDEX and TRAUB lathes enable precise machining of parts like mounting systems, brackets, rotor shafts, and other critical components essential for the functionality and efficiency of solar and hydropower systems. Their versatility allows them to handle a wide range of materials, including metals, plastics, and composites. The machines' efficiency and accuracy help reduce production costs while maximizing the quality of the parts produced.

Your advantage: fast and precise part production using Swiss and fixed-headstock turning, with up to 4 tools simultaneously

TRAUB sliding headstock technology

- Simultaneous machining with 2, 3, or 4 tools
- High tool capacity for setup-friendly production and easy changeover between Swiss and fixed-headstock operation
- Short tool change times thanks to CNC indexing axes in the tool turrets and the front working unit
- Generously dimensioned work area configured for high process reliability
- Intelligent automation through the integration of the iXcenter robot cell
- "Made in Germany" engineering excellence



Plug pin for multilayer circuit board

- CuZn39Pb3
- Ø 4 mm x 24 mm
- 83 seconds
- TRAUB TNL12 [Sliding headstock automatic lathe]

Technology application

INDEX machines meet diverse challenges across various application fields, such as:

- Cubic machining of profile parts
- Manufacturing of even the smallest electrical components starting from Ø 4 mm
- Integration of grinding technologies
- Precise surface technologies (rolling, grinding, smoothing, etc.)



Slot nut for solar panel mounting

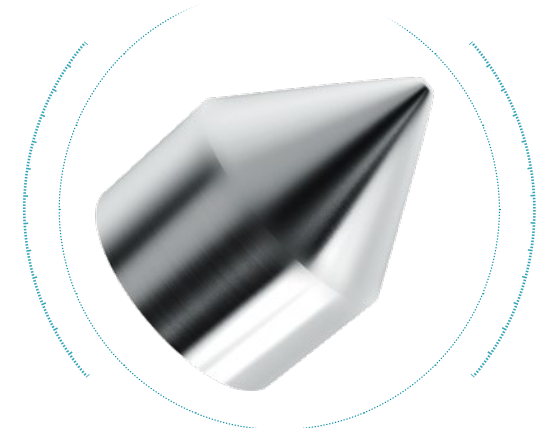
- EN AW-6063
- Ø 42 mm x 16 mm
- 2 seconds
- INDEX MS40-8 [Multi-spindle automatic lathe]

Piston rod guide for hydrogen compressors

- 16MnCr5
- Ø 150 mm x 35 mm
- 9 minutes
- INDEX G320 [Turn-mill center]

Control body for Pelton turbine

- X8CrNi18-9
- Ø 200 mm x 245 mm
- 12 minutes
- INDEX R300 [Turn-mill center]



HIGH PRECISION AND FLEXIBILITY IN VALVES, PUMPS, AND COMPRESSORS

Tight tolerances and absolutely no burrs

In fluid technology, hydraulics, and pneumatics, precision parts are required that involve not only turning and milling but also cross-drilling, deep-hole drilling, and multi-edge contours. The corresponding components are often designed for flow optimization and must meet the highest standards of tightness. The tasks to be performed require execution of demanding drive and control operations with fluids and gases.

Your advantage: low unit costs for versatile machining and high-volume production

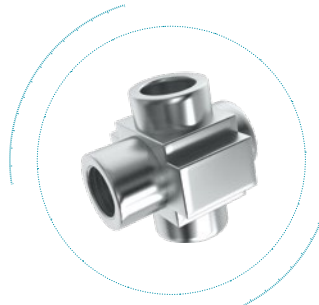
Valve spool shaft

- 11 SMn30
- Ø 22 mm x 150 mm
- 6 minutes
- INDEX G200
[Turn-mill center]



Fitting for fluidic systems

- X8CrNi18-9
- Ø 42 mm x 52 mm
- 216 seconds
- INDEX C100
[Production turning machine]



Screw compressor

- 16MnCr5
- Ø 90 mm x 300 mm
- 180 minutes
- INDEX G320
[Turn-mill center]



Scroll compressor

- EN AW-4032
- Ø 80 mm x 33 mm
- 72 seconds for 2 parts
- INDEX MS40-8
[Multi-spindle automatic lathe]



INDEX production turning machines

- Economical complete machining on main spindle and counter spindle
- Simultaneous machining with up to 3 tools
- Up to 42 tool stations for front and rear-end machining
- Various automation solutions
- "Made in Germany" engineering excellence

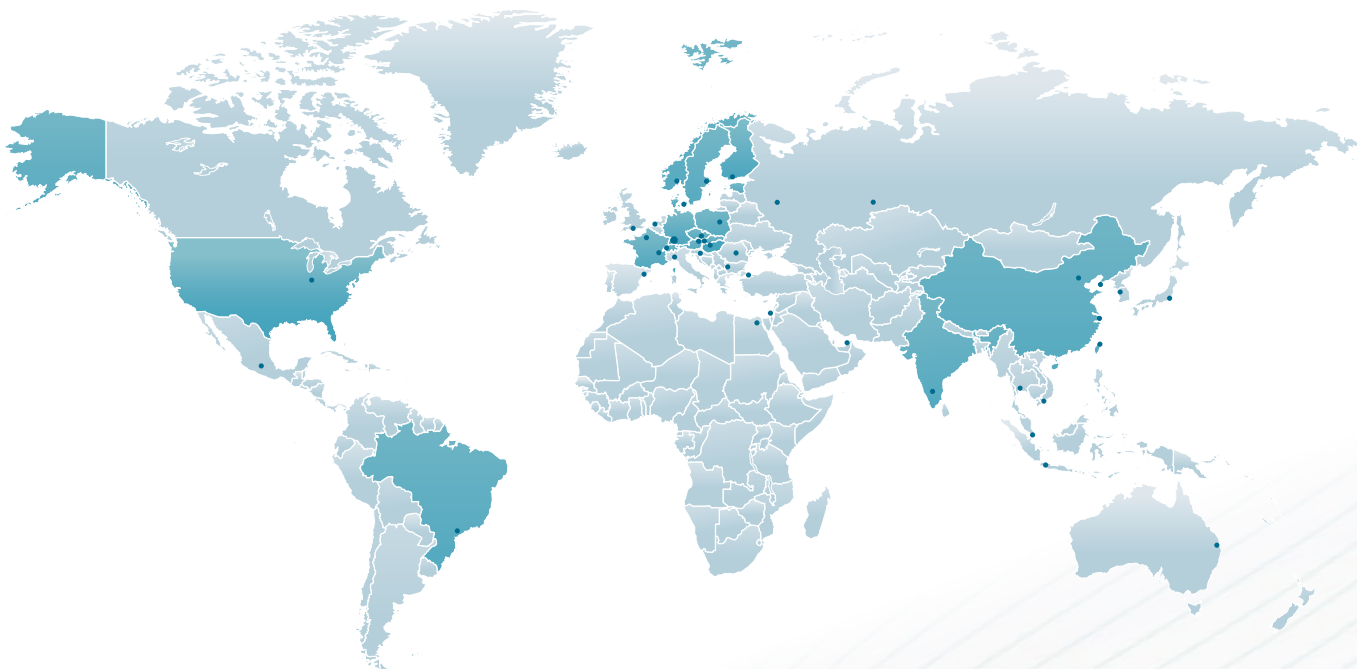


INDEX multi-spindle technology

- High-output multi-spindle technology
- Maximum efficiency through the parallel use of up to 8 spindles and 16 tool slides
- Low resource consumption in terms of personnel, equipment, and energy requirements
- "Made in Germany" engineering excellence



Scroll compressors are increasingly important in refrigeration systems, air conditioning, and heat pumps. Our developers have found a way to leverage the strengths of the multi-spindle automatic lathe for the production of these highly precise components.



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