CyTurn

NC SWIVEL ROTARY TABLES

CYTEC SYSTEMS

COMPONENTS EXCELLENCE

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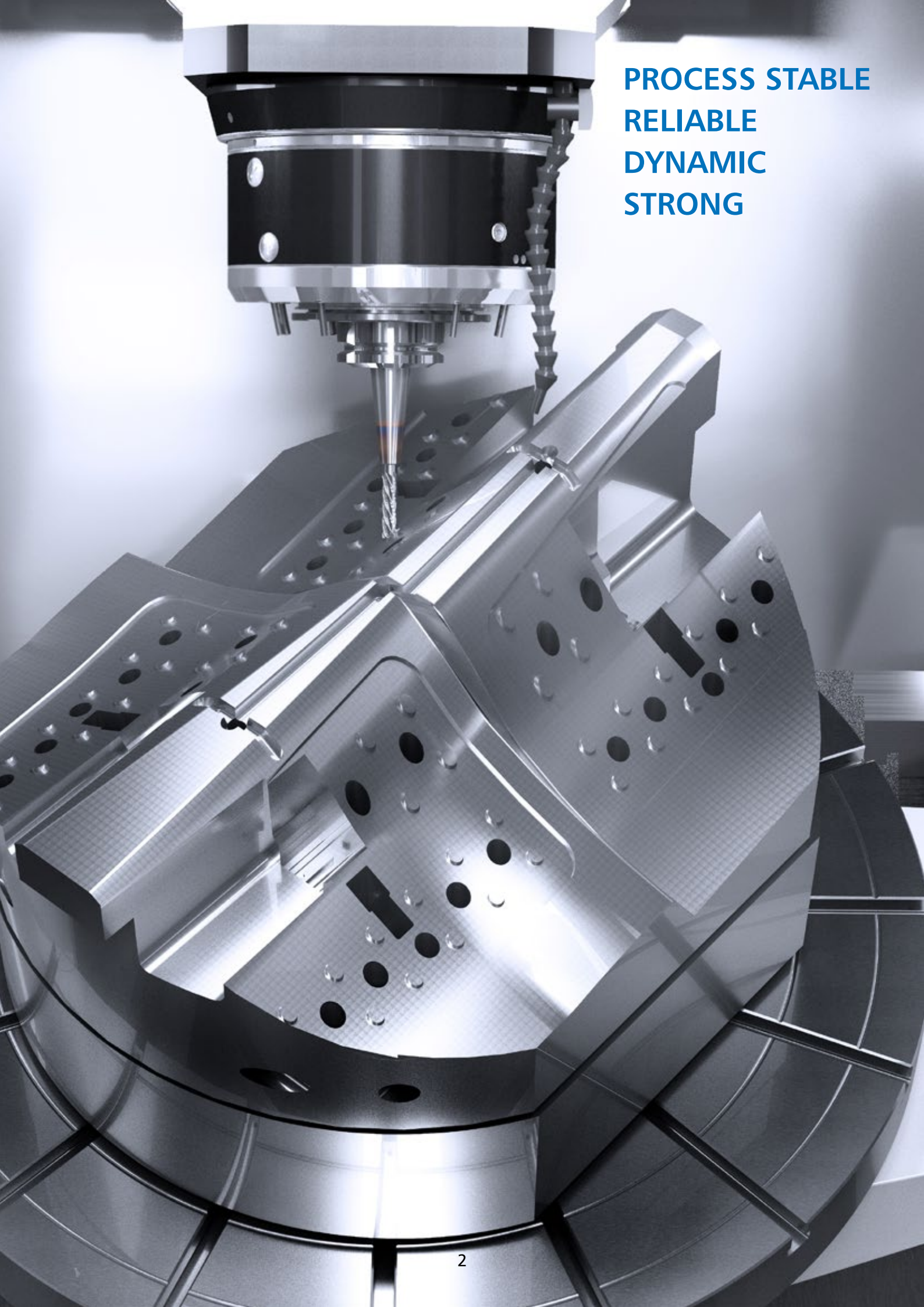
TECHNOLOGY INSIDE
COMPONENTS EXCELLENCE

MADE IN GERMANY



PROCESS STABLE
RELIABLE
DYNAMIC
STRONG

DYNAMIC MEETS PRECISION

The new two axis rotary tables with synchronous drives for high dynamic applications are the result of long-term experience gained in the conception and design of torque motors produced by CYTEC Zylindertechnik GmbH.

CYTEC optimized them once more as latest generation of direct drives for rotating and swivel axes.

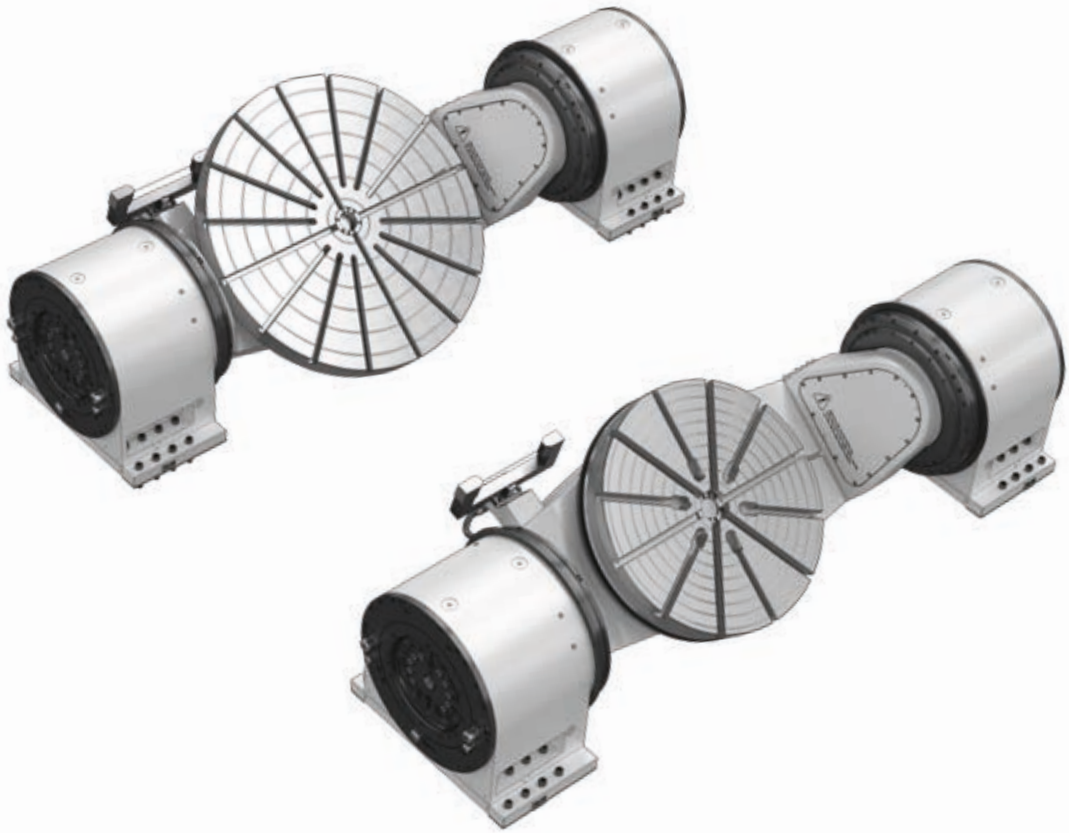
Destinctive chracteristics of the series are performance, precision and a high amount of reliability together with enormous power and dynamic. The advantages benefit not only ambitious machining operation, but especially the high speed-turning up to 1.000 rpm.

The drives are characterized by optimal control properties, a high overload capacity and so adapt ideally to most application requirements.

The powerful drive clamping device supports high precise positioning even for rough machining and high workpiece loads.

CYTEC Zylindertechnik GmbH is a proven system partner for the mechanical engineering experience, technical know-how and creativity gained over decades working in the machine tool industry.

The range of products comprises hydraulic and pneumatic clamping systems with positive lock, motor spindles, multiple axis NC milling heads and not least one- or two-axis rotary tables with ultra-high dynamic, patented direct drives. CYTEC Zylindertechnik GmbH is developer and producer of tool machine components, that meet highest technical demands. Its in-house production depth and flexibility guarantee highest product quality.



AT A GLANCE

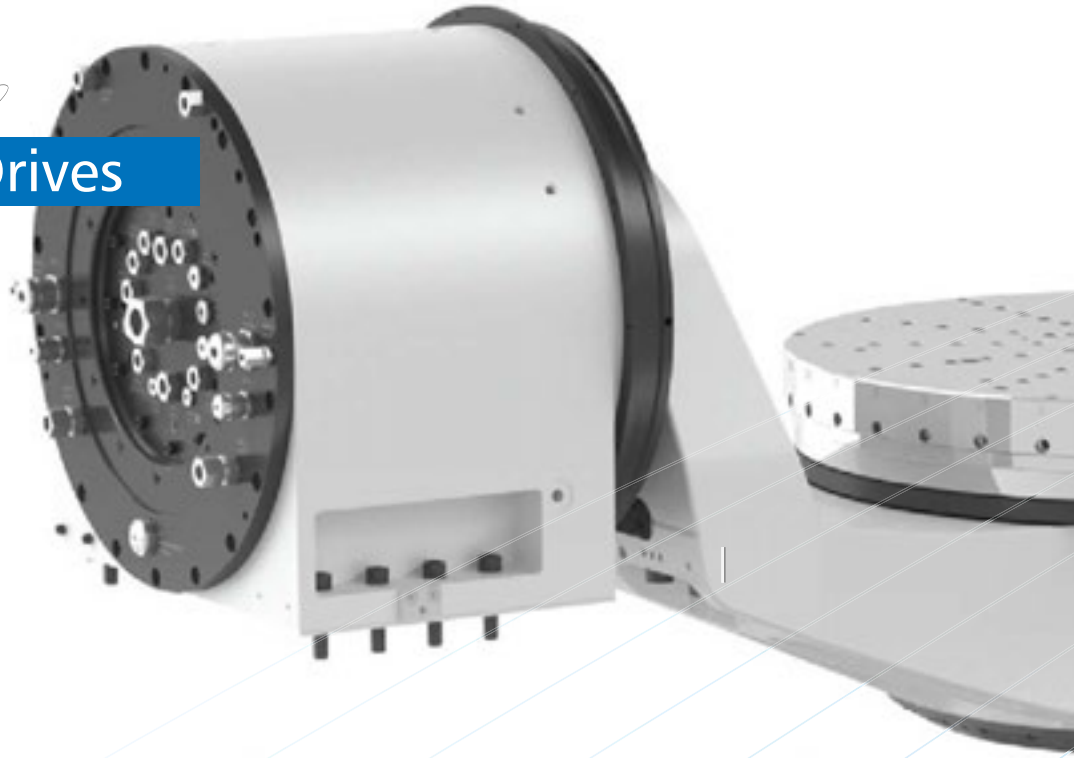
- **Motor configuration**
  - 3 different HighTorque drives in the swivel axis for various workpiece weights
  - 2 different HighTorque/HighSpeed drives in the rotative axis, for high precise positioning tasks or optionally for turn-mill purposes.

- **Integrated security pack**
  in terms of a complete sensor system for total monitoring of all functions during the operational process

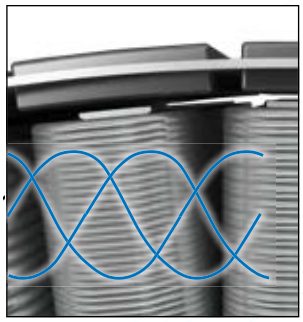
- **UltraHighTorque direct drives of the latest generation for maximised performance and dynamic**
  Sophisticated coil arrangement and curved magnets - provide performance concentration with best acceleration values and dynamic.

- **Highest possible precision**
  by means of
  - radial/axial roller bearings
  - state-of-the-art measuring systems
  - torsional stiffness of the structure

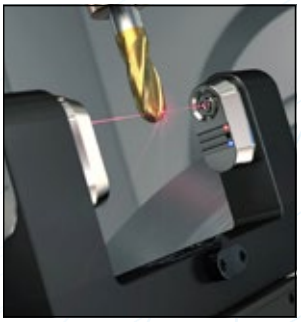
UHT DirectDrives



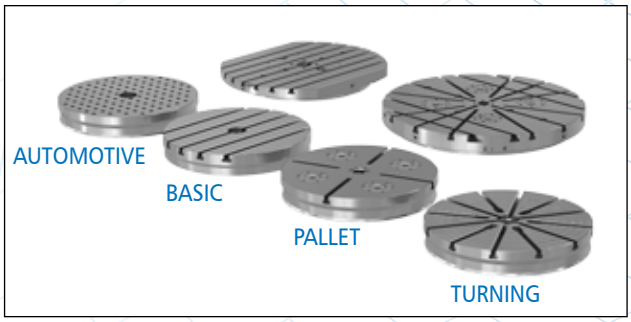
New coil concept, curved magnets



Option tool measuring



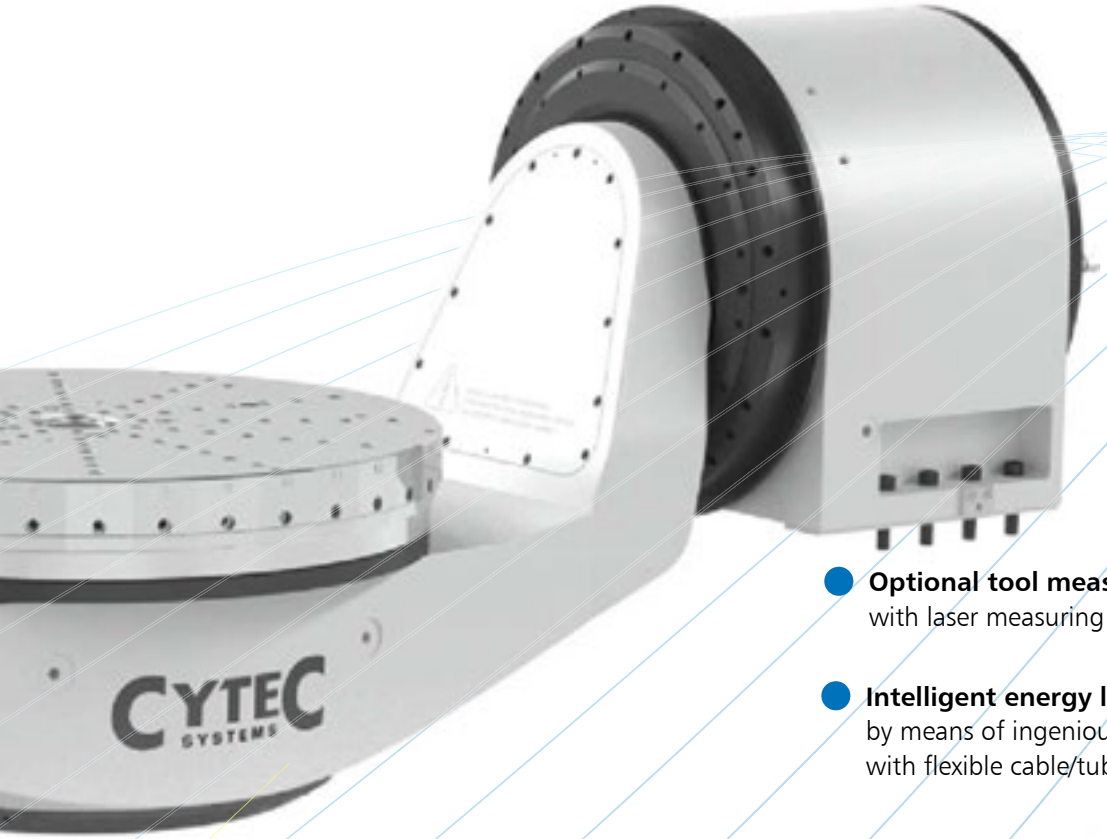
Standard and optional face plates



- **Capsuled motor housings**
  as reliable protection device from harmful external influences and dirt

- **High system rigidity**
  as a result of extensive FEM calculation:
  - simulation of various stress situations caused by different loads and machining processes
  - optimised weight-reduced structure
  - for best machining quality and trouble free operation

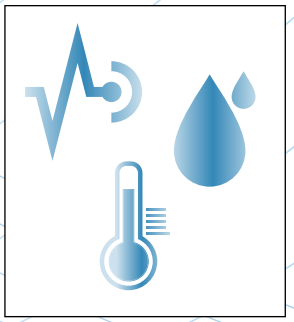
- **Optional table face plates**
  for various requirements;
  sizes/adaption/design available according to customer demands, possible with:
  - integrated pallet/zero point clamping systems
  - central rotary junction for transmission of clamping hydraulics



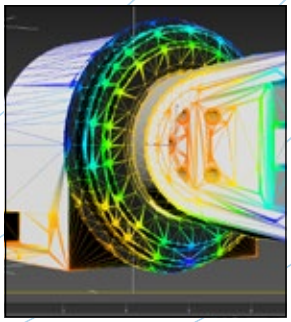
- **Optional tool measuring**
  with laser measuring module

- **Intelligent energy line concept**
  by means of ingenious revolving supply system with flexible cable/tube arrangement

Integrated monitoring/security pack

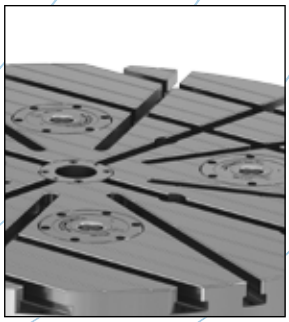


FEM optimised overall structure



Protected motor housing

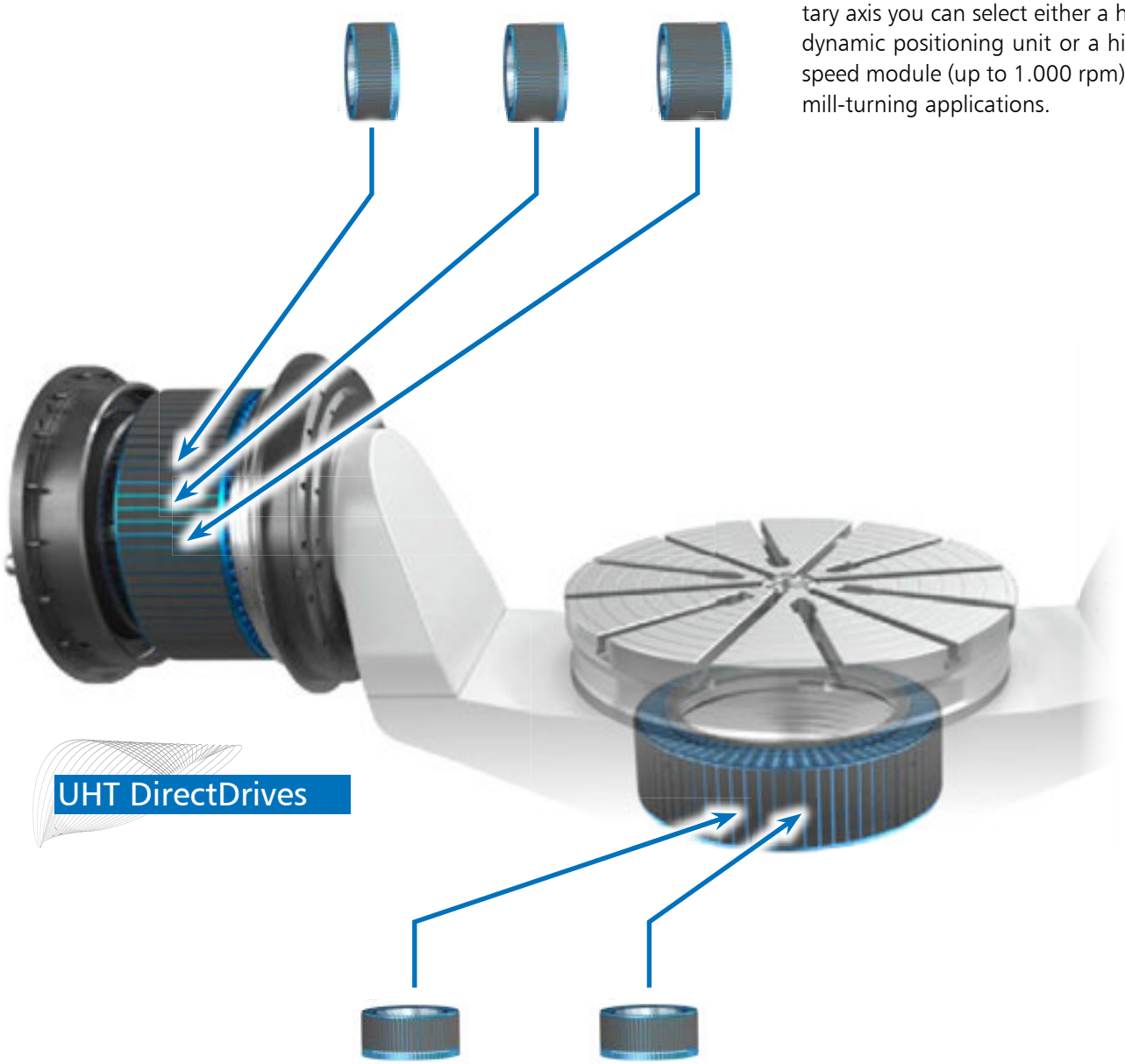
Option: integrated zero point-/ pallet clamping system



MODULAR DRIVE PACKAGE

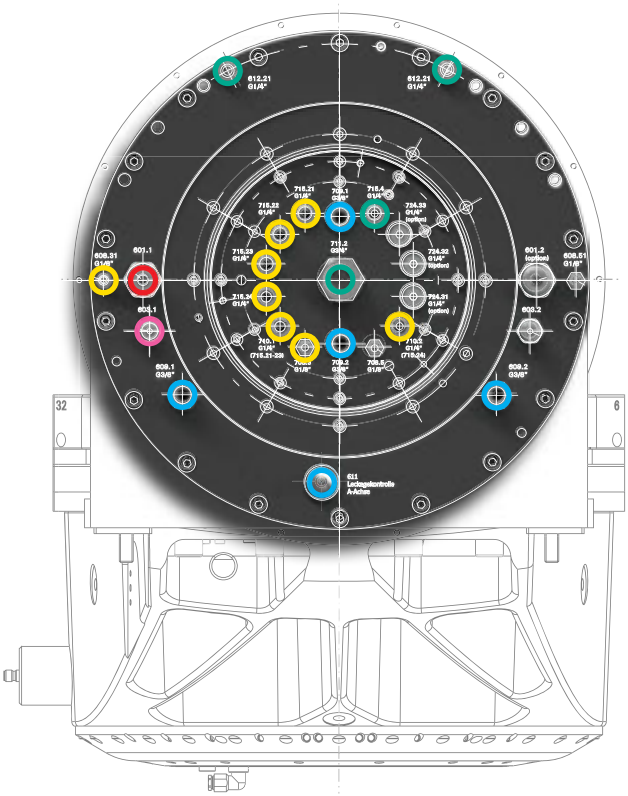
Swivel axis A	Option "light"	Option "medium"	Option "heavy"
Torque S1 [Nm]:	2.290	3.620	4.246
Torque max. [Nm]:	4.780	5.720	6.654
Speed max. [min^{-1}]:	80	80	80
Max. load weight [kg]:	500	750	1.000

For each application the appropriate drive concept can be configured: for the swivel axis three strong HighTorque drives are available (light, medium, heavy for load weights from 500 up to 1.000 kg), and two rotary drives for various machining purposes. For the rotary axis you can select either a high dynamic positioning unit or a high-speed module (up to 1.000 rpm) for mill-turning applications.

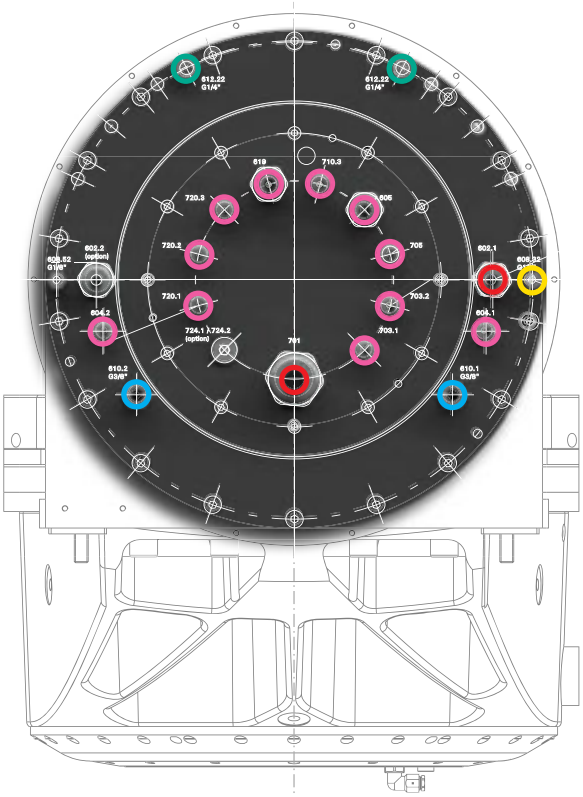


Rotary axis C	Option "mill"	Option "mill-turn"
Torque S1 [Nm]:	1.180	860
Torque max. [Nm]:	1.930	1.390
Speed max. [min^{-1}]:	105	1.000

INTERFACES



Supply connections on the left drive of the swivel axis (A axis)



Supply connections on the right drive of the swivel axis (A axis)

Power connections:
- Motors swivel axis (A axis)
- Motor rotary axis (C axis)

Sensor ports:
- Temperature monitoring
- Vibration monitoring
- Angular measuring devices
- Tool measuring unit
- Leakage

Hydraulic ports:
- Tool clamping system
- Axis clamping

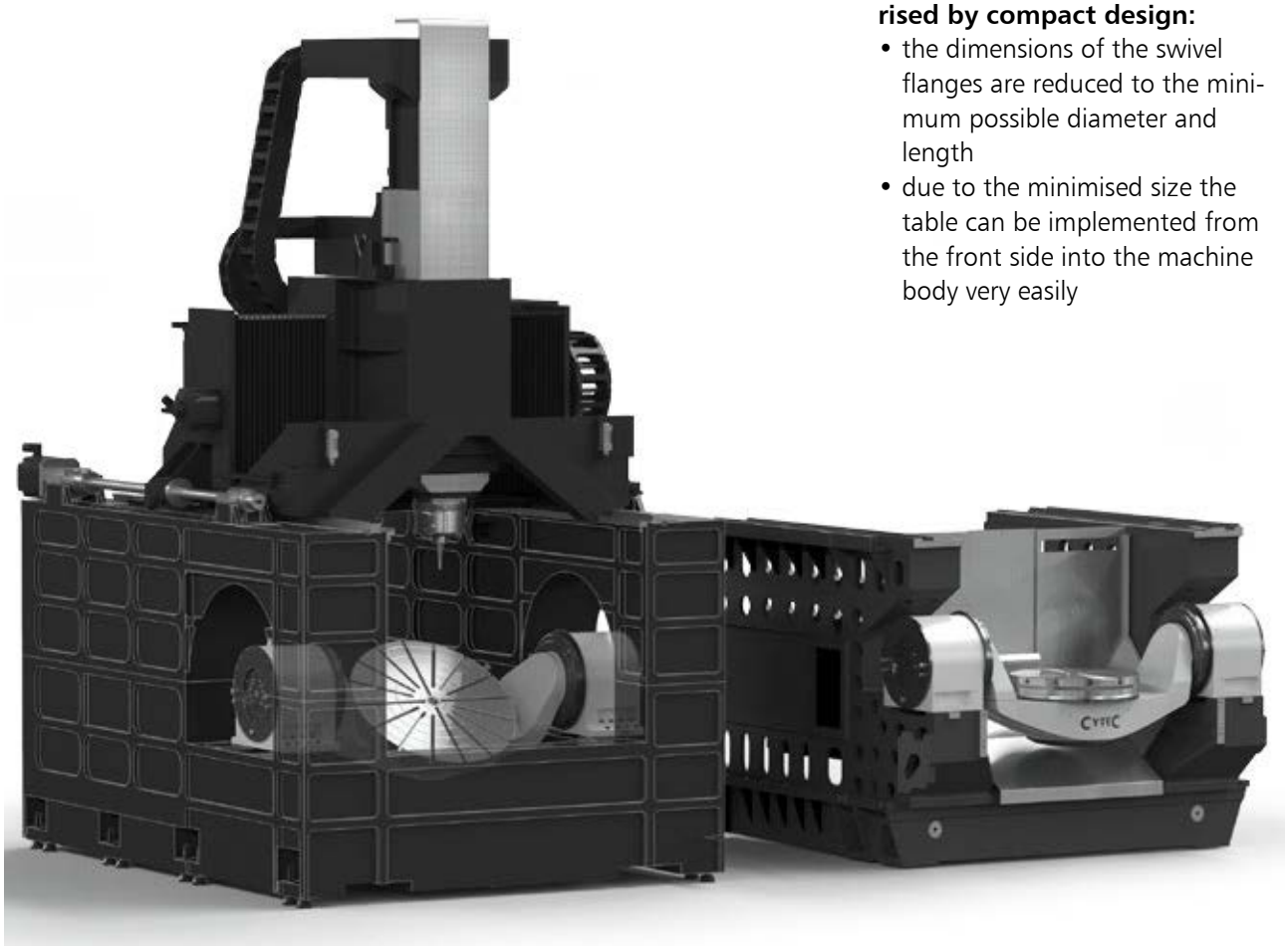
Pneumatic ports:
- Blocking air axes
- Blocking air/compressed air tool measuring

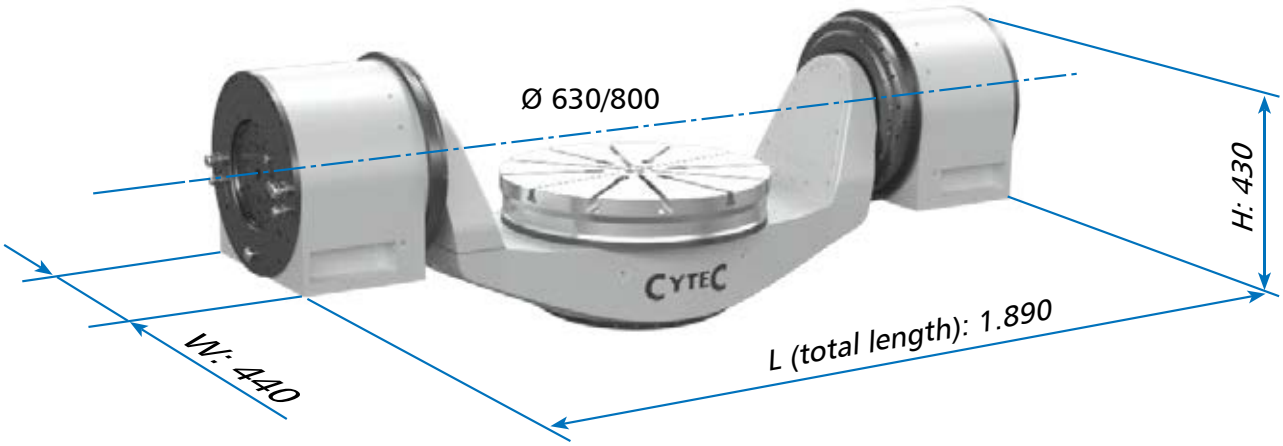
Cooling ports:
- Motors swivel axis (A axis)
- Motor rotary axis (C axis)

COMPACT DESIGN

The rotary table is characterised by compact design:

- the dimensions of the swivel flanges are reduced to the minimum possible diameter and length
- due to the minimised size the table can be implemented from the front side into the machine body very easily



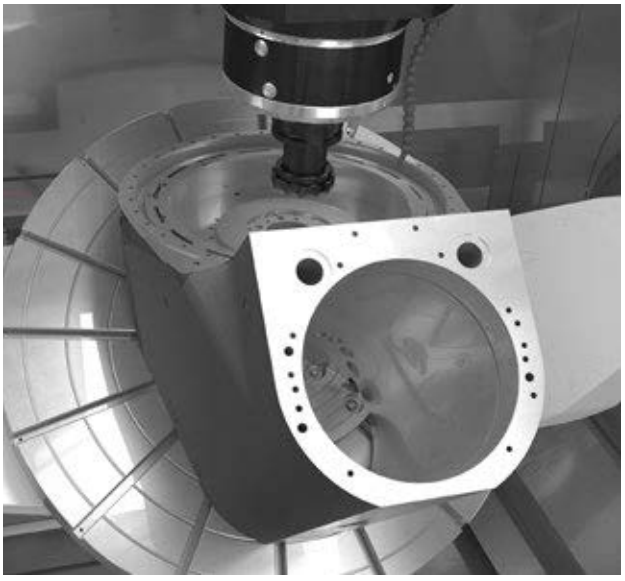


APPLICATION EXAMPLES

High speed mill/turning operation

The high dynamic rigidity, combined with compact design and high capacity drives enable various dynamic high speed cutting processes. Heavy cutting and rough machining under high loads is an important feature of this new generation of rotary tables.

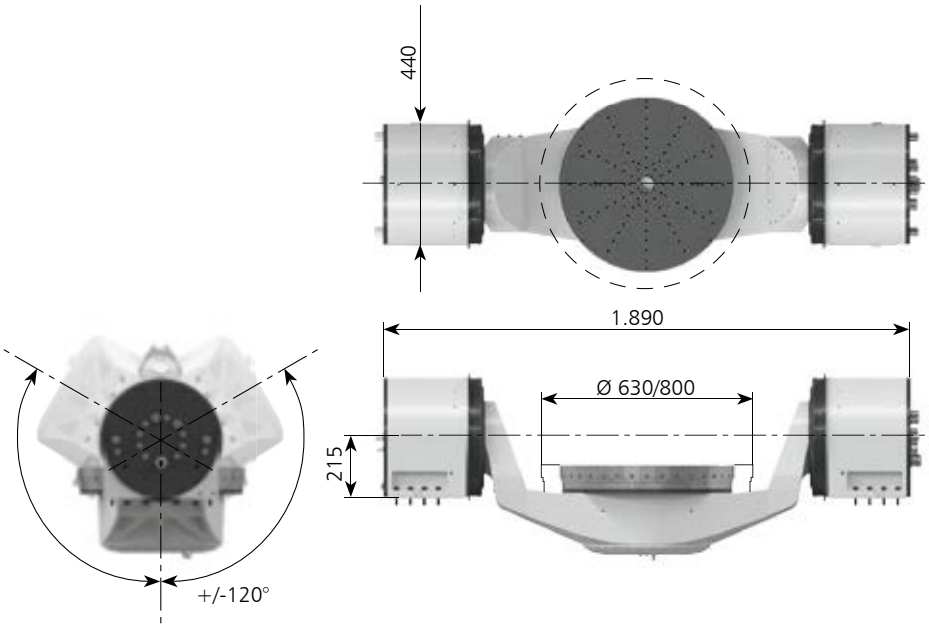
Dynamic positioning: Machining of aircraft turbine element



Heavy cutting example

High speed surface finishing (aluminium car rim)

The Allrounder: CRT/630/800 HV

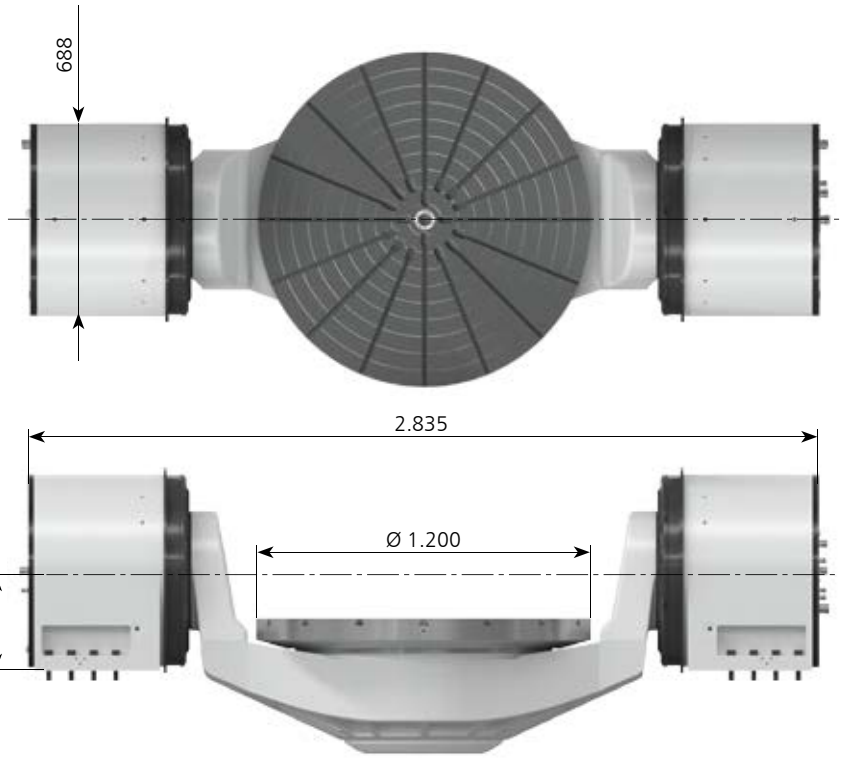


Series	CRT/630/800 HV

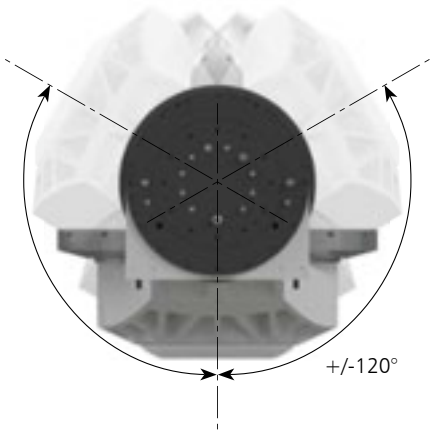
	Rotary axis C		Swivel axis A		
Motor type*:	UHT "Mill"	HS "MillTurn"	UHT "light"	UHT "medium"	UHT "heavy"
Cont. torque S1 [Nm]:	1.180	860	2.990	3.620	4.246
Pulse torque [Nm]:	1.930	1.390	4.780	5.720	6.654
Clamping torque [Nm]:	2.800 (6 bar)		5.640		
Speed max. [min^{-1}]:	105	1.000	80		
Ang. measuring system:	Heidenhain RCN 2380				
Positioning accuracy:	± 5"				
Ø Face plate [mm]:	630 / 800		-		
Max. load [kg]:	(500 - 1.000)		500	750	1.000
Power dissipation [kW]:	2,8	2,6	7,0	8,4	9,7
Total weight [kg]:	-		1.280	1.305	1.330

*: **UHT**: ultra high torque, for positioning function; **HS**: high speed for fast rotation function

The Alternative in XL: CRT/1200 HV



Max. load weight 2,5 t



Series	CRT/1200 HV	
	Rotary axis C	**Swivel axis A**
Motor type*:	UHT	UHT
Cont. torque S1 [Nm]:	2.830	8.744
Pulse torque [Nm]:	5.235	16.288
Clamping torque [Nm]:	10.000 (60 bar)	26.000 (60 bar)
Speed max. [min^{-1}]:	66	40
Ang. measuring system:	Heidenhain RCN 2380	
Positioning accuracy:	± 5“	
Ø Face plate [mm]:	1.200	-
Max. load [kg]:	2.500	
Power dissipation [kW]:	12,5	
Total weight [kg]:	4.300	

*: **UHT**: ultra high torque, for positioning function; **HS**: high speed for fast rotation function