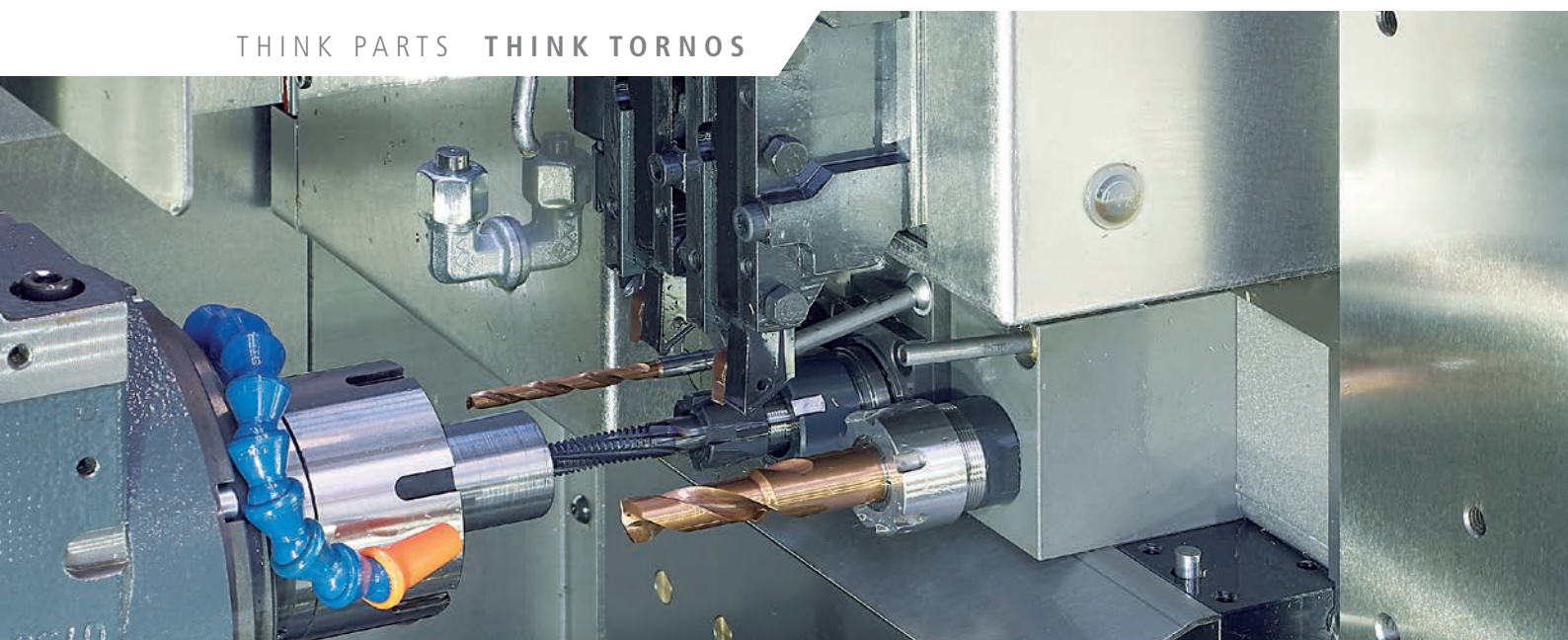




THINK PARTS THINK TORNOS



EvoDECO 20/EvoDECO 32

The evolution of a revolution

For bars from 4 to 32 mm

TORNOS PROVIDES SOLUTIONS TO HIGH-TECH INDUSTRIES SPECIALISING IN THE FOLLOWING SECTORS

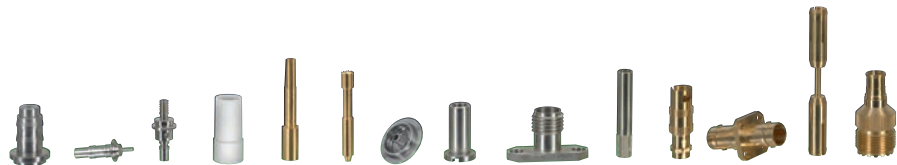
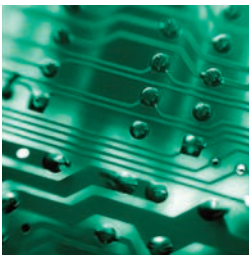
AUTOMOTIVE



MEDICAL



ELECTRONICS



MICROMECHANICS



MAJOR TECHNOLOGICAL DEVELOPMENT OF THE DECO PLATFORM

EvoDECO 20 and EvoDECO 32 high-end machining solutions designed to maximise productivity, performance, autonomy and accessibility.



Productivity

- 4 completely independent tool systems.
- 10 numerical axes and 2 C axes which are perfectly interpolable.
- Ultra-dynamic powered spindles with synchronous motors.

Performance

- Wide selection of devices and peripherals (DECO line compatibility).
- Continuous temperature stabilisation.
- Motorspindle offer high output and torque.

EvoDECO 20/EvoDECO 32



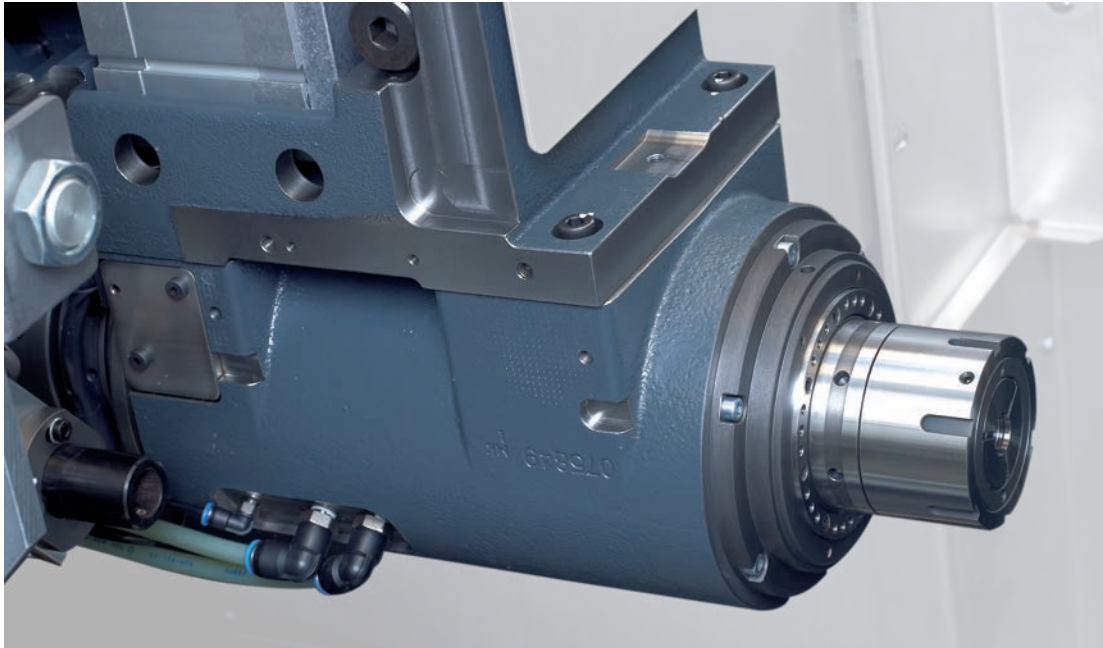
Accessibility

- Easy to program thanks to TB-DECO software (DECO line compatibility).
- Huge machining area.
- Integration of peripherals.
- Ergonomics designed with the operator in mind.

Autonomy

- Excellent removal of swarf and cutting oil.
- Great machining autonomy without human intervention.
- Automatic cyclical lubrication.
- Integrated Tornos feeder (optional).

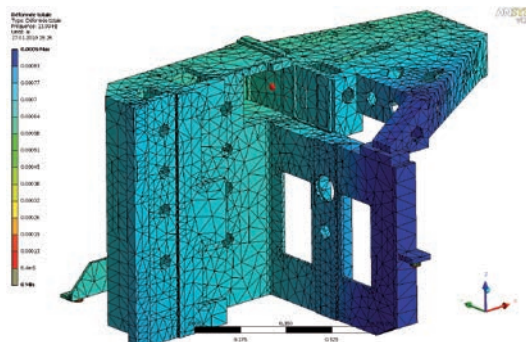
PERFORMANCE, AUTONOMY, RIGIDITY AND ACCESSIBILITY...



- New powered spindle technology.
- Entirely designed and manufactured by Tornos in Moutier, Switzerland.
- Identical main spindle and counter spindle with very powerful synchronous motors.
- Heat exchanger guarantees stable temperature and high precision of the spindles.
- The motorspindle offer high output and torque.
- Reduction in downtime (stoppages, indexing, acceleration, deceleration) 0 to 10,000 rpm in 0.9 seconds.
- Low noise and low maintenance.
- The most powerful spindles ever integrated on a sliding headstock lathe (9.5 kW/18.1 kW).

Increased rigidity

- Optimised machining performance (speed and feeds) for increased productivity.
- Higher quality finishes.
- Increased machining precision.
- Increased tool service life.

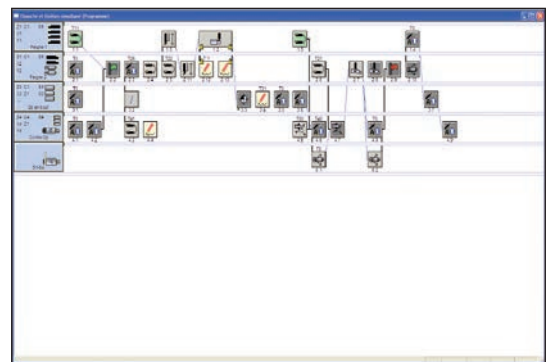


A GOOD RATE OF RETURN GUARANTEED

Programming

TB-DECO ADV programming software can be used to create programs for all single spindle products in the EvoDECO family.

- Easy to program, with icons for productive and non-productive operations.
- Tool library.
- Graphic synchronisation of simultaneous operations.
- Calculation of actual machining time (Gantt chart).
- Check the program and tool trajectories using graphic simulation.
- PC programming and transfer of programs via Ethernet or PCMCIA/USB card.
- Various machining macros for specific operations (thread chasing, drilling/unblocking cycles, machining of complex shapes, torx, etc.).
- Free update.
- Tornos Software Hotline.
- Program compatible with others in the DECO range.



Integrated PC

- Program editing on the machine.
- Service instructions available on the machine.
- Remote maintenance.
- Possibility to control various peripheral units.
- Large colour touch screen.
- USB.

EvoDECO 20/EvoDECO 32



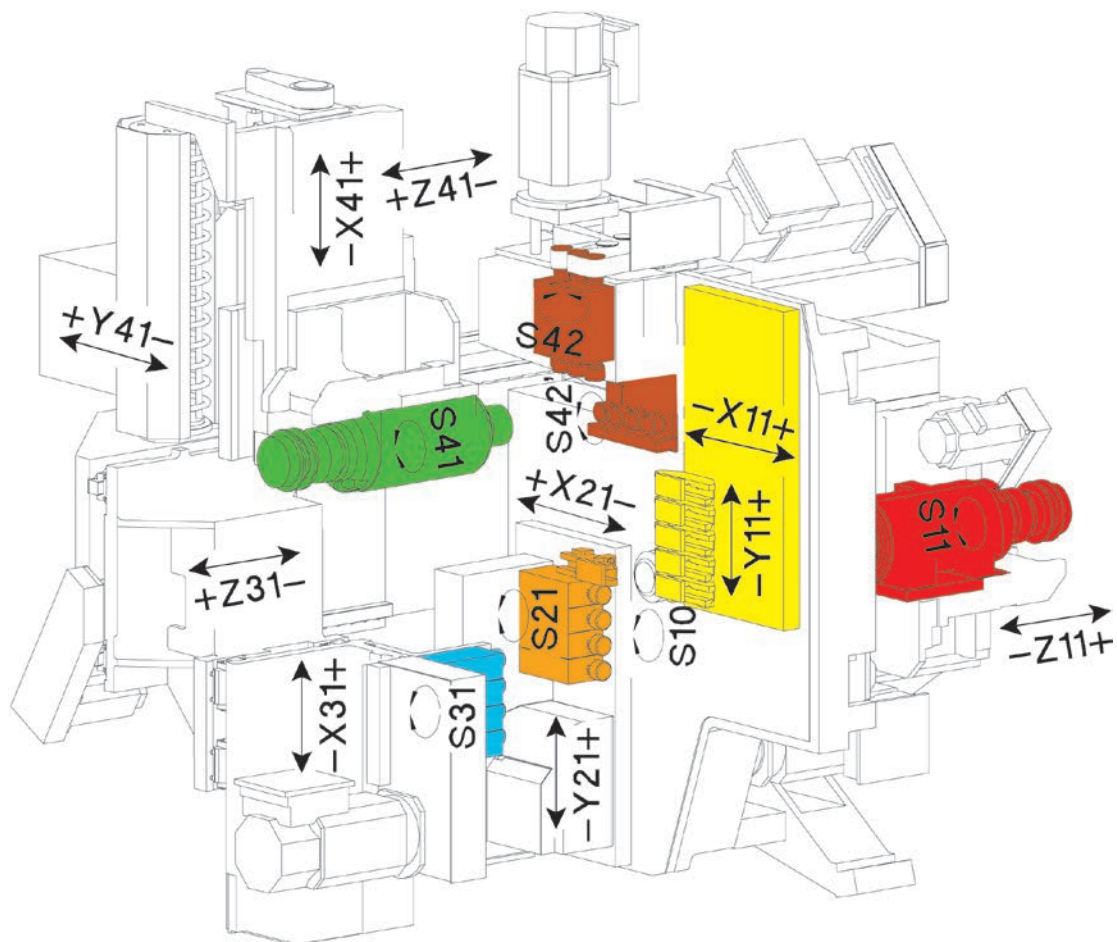
Ergonomics

The wide machining area enables the operator to access the tools easily and guarantees effective removal of swarf. The integration of the SBF feeder control directly on the machine's NC facilitates programming and the use of the EvoDECO.

Autonomy

To improve the machine's profitability, the EvoDECO has been designed to enable long periods of operation without human intervention. The preheating system, the independent spindle cooling circuit, the automatic filtration of swarf and the automatic cyclical lubrication – many systems which ensure the EvoDECO's autonomy.

KINEMATICS



Most powerful drivetrain ever designed
The EvoDECO platform relies on the drivetrain which was the key to the DECO platform's success:

- 4 independent tool systems.
- Maximum modularity.
- Possible to work with 4 tools simultaneously (3 for operation and 1 for counter-operation).
- Blank turning and finishing using the guide bush.
- Possible to operate in differential mode (stroke progression) for simultaneous turning and drilling using the guide bush.
- Counter-operations can be carried out completely during concurrent operation time.
- 10 linear axes and 2 simultaneous C axes.
- Up to 27 positions of which 17 can be rotating.

EvoDECO 20/EvoDECO 32

Z11	C11	S11
Sliding headstock	Sliding headstock C axis	Main spindle
X11 / Y11		S12
Platen 1		Rotating spindle on guide bush (Option)
X21 / Y21		S21
Platen 2		Rotating spindle on guide bush
X31 / Z31		S31
End attachment		Rotating spindle on combined unit
X41 / Y41 / Z41	C41	S41
Counter spindle	Counter spindle C axis	Counter spindle
		S42
		Rotating spindle and secondary operation (transversal and longitudinal)

A version available for every application, from the simplest to the most complex

The interchangeable and modular tool system for the four versions is very user-friendly:

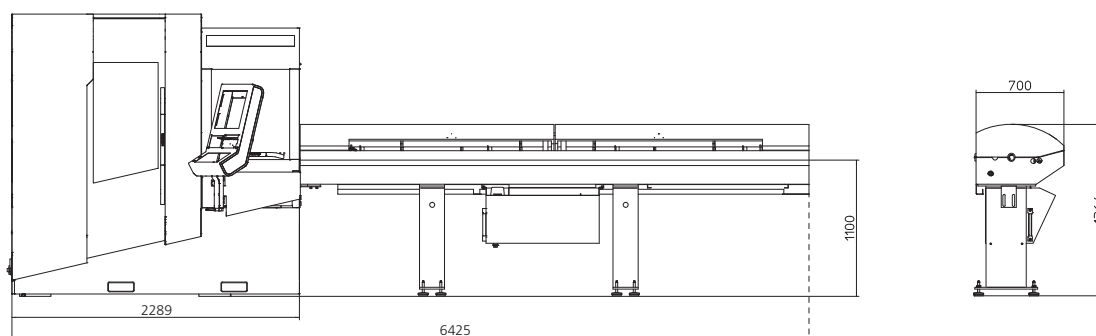
Tools	For use on platen 1	For use on platen 2	For use on end attachment	For counter-operations
Turning toolholder		X	X	X
Revolving spindle unit	–	X	X	X
Stationary spindle unit	–	–	X	X

EvoDECO 20/EvoDECO 32

TECHNICAL SPECIFICATIONS		EvoDECO 20	EvoDECO 32
		10 linear axes + 2 C axes 4 independent tool systems	10 linear axes + 2 C axes 4 independent tool systems
Main spindle (Z11/S10/S11/C11)			
Max. bar capacity	mm	25,4	32
Standard workpiece length with rotating guide bush	mm	200	240
Spindle speed of rotation	rpm	0 to 10 000	0 to 8 000
Spindle output S11	kW	12,3 (18,1)	12,3 (18,1)
Max. constant torque	Nm	19,6 (28,8)	19,6 (28,8)
Spindle stoppage time (8 000 rpm to 0)	s	1	0,8
Mild steel drilling capacity	mm	14	14
Mild steel tapping capacity		M12	M12
Independent tool platens (X11/Y11/S12) (X21/Y21/S21)			
Number of tool positions on guide bush		10 (5 + 5)	10 (5 + 5)
Cross section of rotating tools		16 x 16	16 x 16
Positions for rotating tools		Max 6 (4 with S21 + 2 with S12)	Max 6 (4 white S21 + 2 white S12)
Rotating tools speed of rotation	rpm	100 to 8 000	100 to 8 000
Rotating tools output	kW	1,5 - 2,2	1,5 - 2,2
Steel drilling / rotating tool capacity	mm	8	8
Rotating tool / steel tapping		M6 - M8	M6 - M8
End attachment (X31/Y31/S31)			
Number of tool positions		4	4
Positions for rotating tools		3	3
Speed of rotation of rotating tools	rpm	100 to 6 000	100 to 6 000
Output of rotating tools	kW	1,5 - 2,2	1,5 - 2,2
Steel drilling / rotating tool capacity	mm	8	8
Rotating tool / steel tapping capacity		M6	M6
Counter spindle (Z41/Y41/S41/C41)			
Max. bar capacity	mm	25,4	32
Insertion length of workpiece into spindle	mm	150	150
Spindle speed of rotation	rpm	0 to 10 000	0 to 8 000
Counter spindle output S41	kW	9,5 (12,3)	9,5 (12,3)
Max. constant torque	Nm	15,1 (19,6)	15,1 (19,6)
Stoppage time (8 000 rpm to 0)	s	1	0,8
Mild steel drilling capacity	mm	14	14
Mild steel tapping capacity		M12	M12
Secondary operation (X41/S42)			
Number of tool positions (steady or rotating)		7	7
Positions for rotating tools		3	3
Rotating tools speed of rotation	rpm	100 to 8 000	100 to 8 000
Rotating tools output	kW	1,5 - 2,2	1,5 - 2,2
Steel drilling / rotating tool capacity	mm	8	8
Rotating tool / steel tapping capacity		M6	M6
Max. number of tools (with adaptors)		27	27
Distribution of tools in main / counter operations		19 / 8	19 / 8

EvoDECO 20/EvoDECO 32

Numerical control	EvoDECO 20	EvoDECO 32
Control type	Fanuc 31i-B5	Fanuc 31i-B5
Number of simultaneous axes	all axes	all axes
Number of interpolable axes	all axes	all axes
Motor axis encoder type	absolute serial	absolute serial
Motor type (axes and spindles)	synchronous (AC)	synchronous (AC)
Resolution of the axes	0,1 μ m	0,1 μ m
19" color touch screen and moveable operator's pendant		
Programming software		
Programming software, TB-DECO (ISO language)	TB DECO ADV	TB DECO ADV
Calculation of the real machining time		
Graphic simulation of the part program		
Basic machine equipment		
Rotating guide bush	X	X
S21 rear platen rotating tool motor	X	X
S31 end attachment rotating tool motor	X	-
S42 rotating tool motor in secondary operation	X	X
C11 + C41 axes	X	X
Interpolation in polar coordinates	X	X
Automatic centralised lubrication cycle	X	X
Beacon (3 colours)	X	X
Cooling pump	X	X
Timer for preheating cutting oil	X	X
Fire extinguisher interface	X	X
TB DECO ADV programming software	X	X



GENERAL SPECIFICATIONS

Max. length (machine only)	mm	2289
Max. width	mm	2070
Max. height (without light tower)	mm	2250
Maximum height (with light tower), without air filter	mm	2580
Weight	kg	3800
Cutting oil pan capacity	l	220
Cooling pump output	kW	1,1
Max. pressure	bar	5
Cooling pump output	l/min	43
Colours : white aluminum RAL 9006, graphite black RAL 9011		
CE / CEM certified		

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