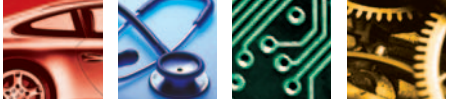
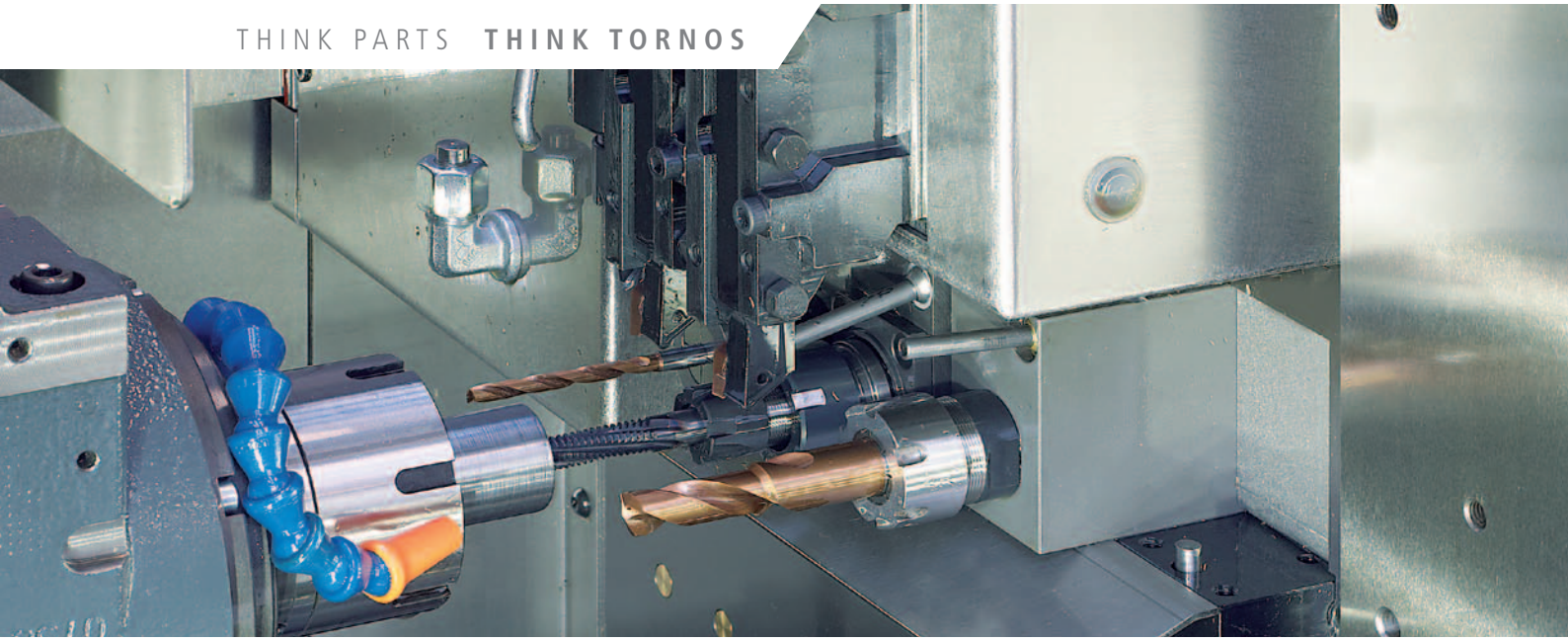


TORNOS

THINK PARTS **THINK TORNOS**



EvoDECO 20/EvoDECO 32

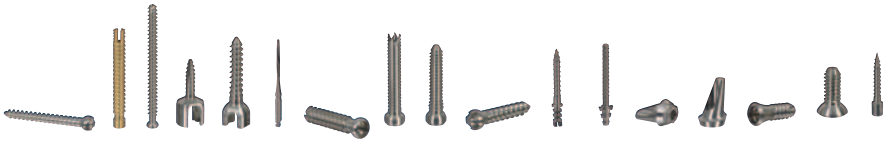
The evolution of a revolution

For bars from 4 to 32 mm

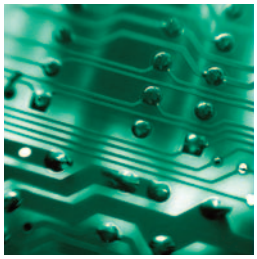
TORNOS PROVIDES SOLUTIONS TO HIGH-TECH INDUSTRIES SPECIALISING IN THE FOLLOWING SECTORS

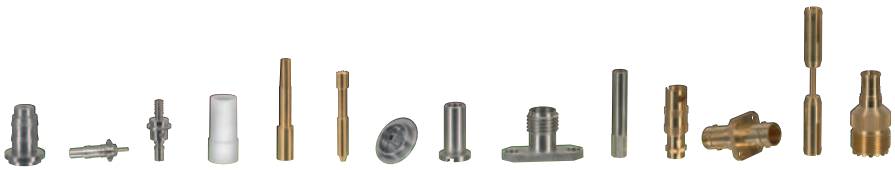
AUTOMOTIVE

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.
- Powered spindles offer high output and torque.

EvoDECO 20/EvoDECO 32

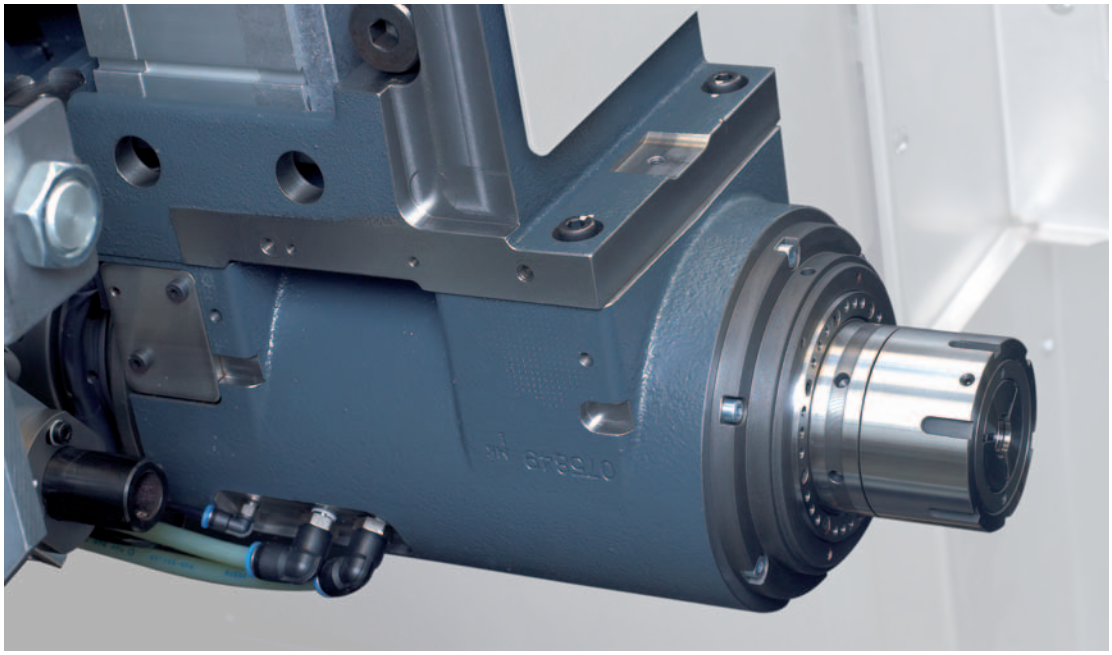
Accessibility

- 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.
- Integration of peripherals.
- Great machining autonomy without human intervention.
- Automatic cyclical lubrication.
- Integrated Tornos feeder (optional).

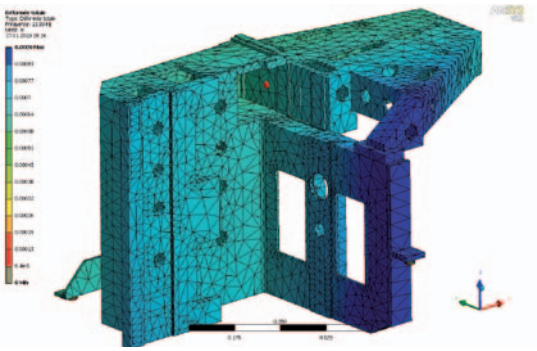
PERFORMANCE, AUTONOMY, RIGIDITY AND ACCESSIBILITY…



- 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 powered spindles 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; 11kW).

Increased rigidity

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

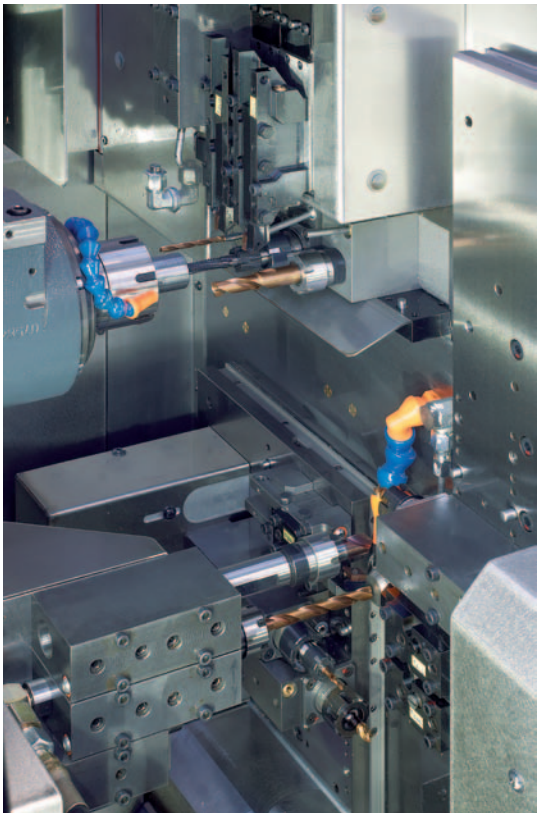


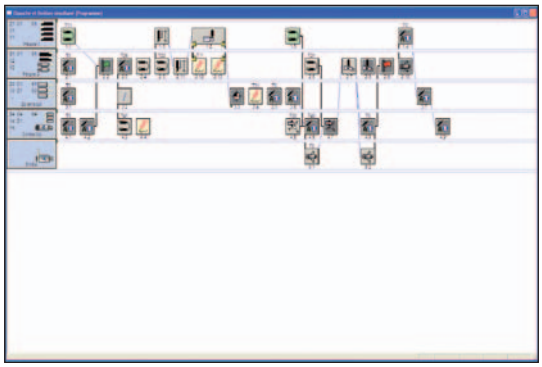
A GOOD RATE OF RETURN GUARANTEED

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 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

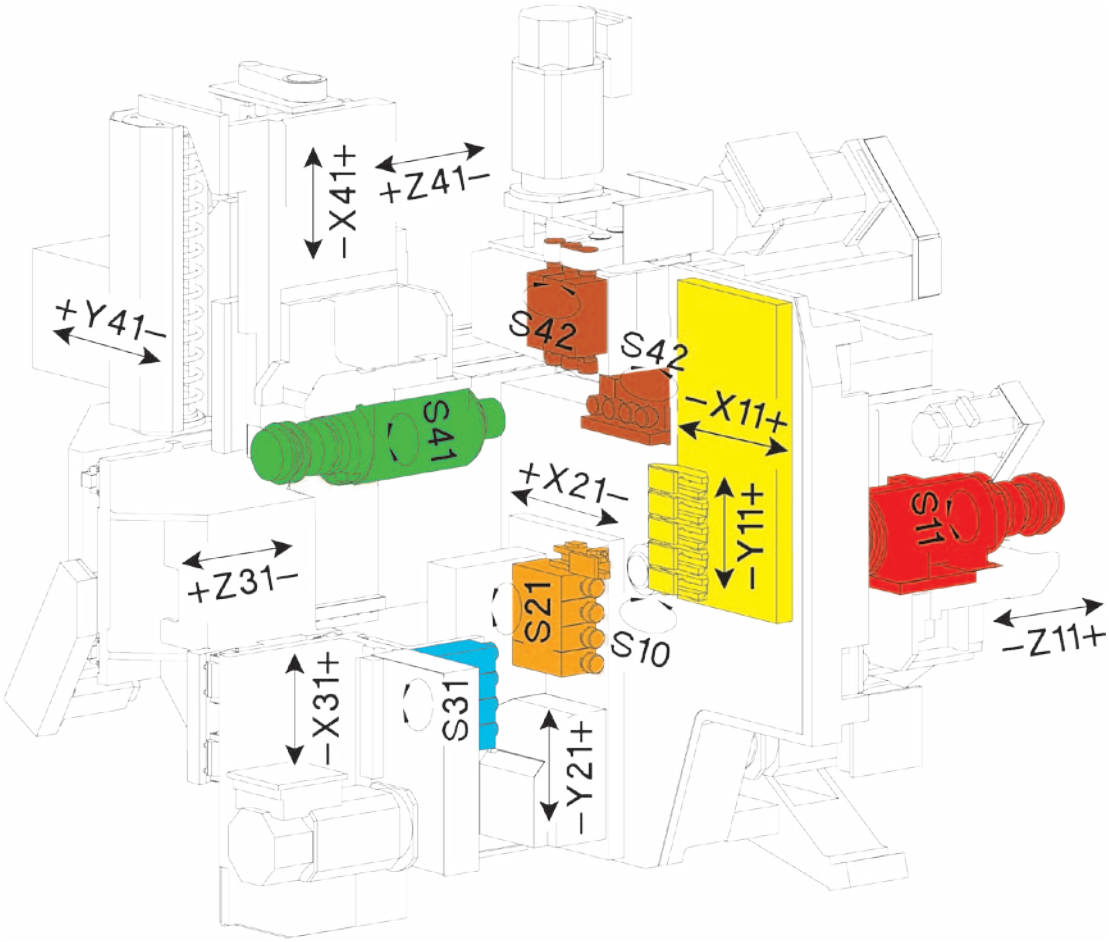
- Program editing on the machine.
- Service instructions available on the machine.
- Remote maintenance.
- Possibility to control various peripheral units.
- Large colour touch screen.
- USB.

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 connect 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 22 fixed tool positions including 21 turning positions on the EvoDECO 32.

EvoDECO 20 / EvoDECO 32

Z11	C11	S11
Sliding headstock	Sliding headstock C axis	Main spindle
X11 / Y11		S61
Platen 1		Rotating spindle on guide bush
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
		S51
		Rotating spindle and secondary operation (transverse 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:

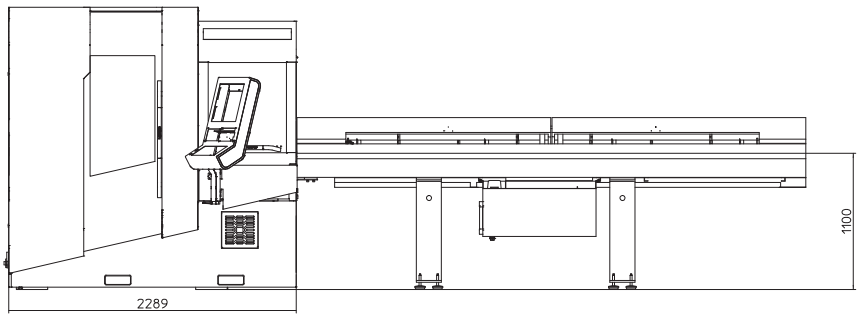
Tools	For use on platen 1	For use on platen 2	For use on end attachment	For counter-operations
Turning toolholder		X	X	X
Revolving spindle unit	–	X	X	X
Stationary spindleunit	–	–	X	X

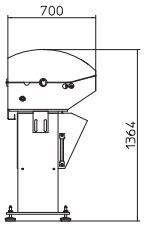
EvoDECO 20 / EvoDECO 32

TECHNICAL SPECIFICATIONS		EvoDECO 20	EvoDECO 32
		10 linear axes + 2 C axes	10 linear axes + 2 C axes
		4 independent tool systems	4 independent tool systems
Main spindle (Z11 / 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 / S41	kW	9,5 (12,8)	9,5 (12,8)
Max. constant torque	Nm	15,1 (20,4)	15,1 (20,4)
Spindle stoppage time (8 000 rpm to 0)	sec	1	0,8
Mild steel drilling capacity	mm	14	14
Mild steel tapping capacity		M12	M12
Guide bush holder (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		6 (4 + 2)	6 (4 + 2)
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
Spindle output	kW	9,5 (12,8)	9,5 (12,8)
Max. constant torque	Nm	15,1 (20,4)	15,1 (20,4)
Stoppage time (8 000 rpm to 0)	sec	1	0,8
Mild steel drilling capacity	mm	14	14
Mild steel tapping capacity		M12	M12
Secondary operation (X41 / S42)			
Number of tool positions		4	4
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. total number of tools		27	27
Distribution of tool operations / secondary operations		19 / 8	19 / 8

EvoDECO 20 / EvoDECO 32

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
C1 + C4 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	mm	2289
Max. width	mm	2070
Max. height	mm	2300
Weight	kg	3500
Cutting oil pan capacity	l	220
Cooling pump output	kW	1,1
Max. pressure	bar	5
Cooling pump output	l / min	44,3
Colours : RAL 9006 grey, RAL 9011 black		
CE / CEM certified		

TORNOS S.A.
Rue Industrielle 111
CH - 2740 Moutier
Tél. +41 (0)32 494 44 44
Fax +41 (0)32 494 49 03
contact@tornos.com
www.tornos.com

TORNOS TECHNOLOGIES
DEUTSCHLAND GmbH
Karlsruher Str. 38
D - 75179 Pforzheim
Tél. +49 (0)7231 / 910 70
Fax +49 (0)7231 / 910 750
contact@tornos.de

TORNOS TECHNOLOGIES
FRANCE
Boîte postale 330
St-Pierre en Faucigny
F - 74807 La Roche
s / Foron Cedex
Tél. +33 (0)4 50 038 333
Fax +33 (0)4 50 038 907
contact@tornos.fr

TORNOS TECHNOLOGIES
IBÉRICA
Pol. Ind. El Congost
Avda. St Julià, 206 Nave 8
E - 08403 Granollers
Tél. +34 93 846 59 43
Fax +34 93 849 66 00
comercial.tti@tornos.com

TORNOS TECHNOLOGIES
ITALIA SRL
Via Cesare Pavese 21
I - 20090 Opera / MI
Tél. +39 02 57 68 15 01
Fax +39 02 57 68 15 230
italia.contact@tornos.com

TORNOS TECHNOLOGIES
US CORPORATION
840 Parkview Boulevard
US - Lombard, IL 60148
Tél. +1 630 812 2040
Fax +1 630 812 2039
info-us@tornos.com
www.tornos.us

TORNOS TECHNOLOGIES
UK LTD
Tornos House
Whitwick Business Park
Coalville
UK - Leicestershire LE67 4JQ
Tél. +44 (0) 1530 513100
Fax +44 (0) 1530 814212
sales@tornos.co.uk

TORNOS TECHNOLOGIES
POLAND Sp. z o.o.
Ul. Spółdzielcza 37-39
55-080 Kąty Wrocławskie
Poland
Tél. +48 71 33 85 618
Fax +48 71 33 85 617
poland.contact@tornos.com

TORNOS DO BRASIL, Ltda
Av. Dourado, no 587,
Bairro Aquário, Vinhedo - SP
CEP 13280-000 - Brasil
Tél. +55 19 38861182
brazil.contact@tornos.com

TORNOS TECHNOLOGIES
(Shanghai) LTD
Hui Feng Creativity Garden
Feng Yu Building, 1-2F
No. 239, Xitai Rd, Xu Hui District
CN - Shanghai 200232
Tél. +86 21 6235 1235
Fax +86 21 6235 1938
china.contact@tornos.com

TORNOS BEIJING OFFICE
Rm.1706, Tower A
Dongyu Office Building
Jia #1 Shuguang Xili
Chaoyang District
CN - Beijing 100028
Tél. +86 10 5979 8583
Fax +86 10 5822 0483
beijing.contact@tornos.com

TORNOS TECHNOLOGIES
ASIA LIMITED
Rm 1803-06, Corporation Park,
11 On Lai Street, Shek Mun,
Shatin, N.T., Hong Kong
Tél. +852 2691 2633
Fax +852 2691 2133
asiapacific.contact@tornos.com

TORNOS S.A. THAILAND
REPRESENTATIVE OFFICE
7th Floor, 19, Bangna -Trad Soi 34,
Bangna -Trad KM. 3 Road.
Bangna, Bangkok, 10260
Thailand
Tél. +66 2746 8840-1
Fax +66 2746 8842
thailand.contact@tornos.com

TORNOS TECHNOLOGIES ASIA LTD
MALAYSIA
REPRESENTATIVE OFFICE
No. 1-1-11, Ground Floor & 1-2-11,
First Floor, One Terrace Plus,
Tingkat Mahsuri 4,
11900 Bayan Lepas,
PENANG, MALAYSIA
Tél. +60 4 642 6562 / 4 642 6563
Fax +60 4 642 6561
malaysia.contact@tornos.com

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