

TORNOS



*Taking performance
to new heights*

SwissDECO 36G

A range of machines fine-tuned to suit your needs

The SwissDECO range from Tornos offers no fewer than 3 machines, available in 36 mm diameter. All equipped with 3 independent tool systems, SwissDECO machines are designed to provide exceptional operating flexibility, while remaining extraordinarily user-friendly. The SwissDECO range distills more than 130 years of experience into a single machine: More than simply a machine range, the SwissDECO represents Tornos' vision of the future of bar turning.

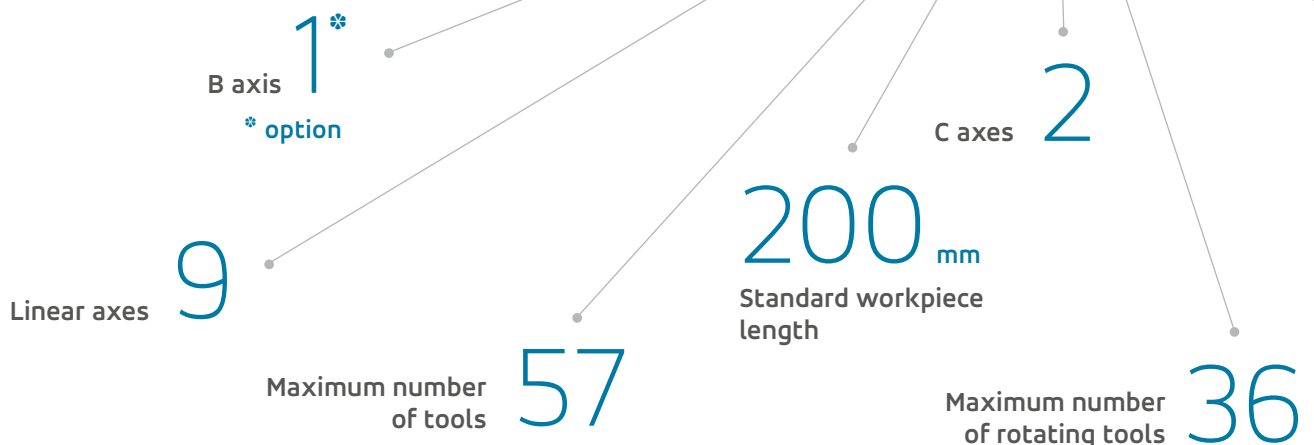
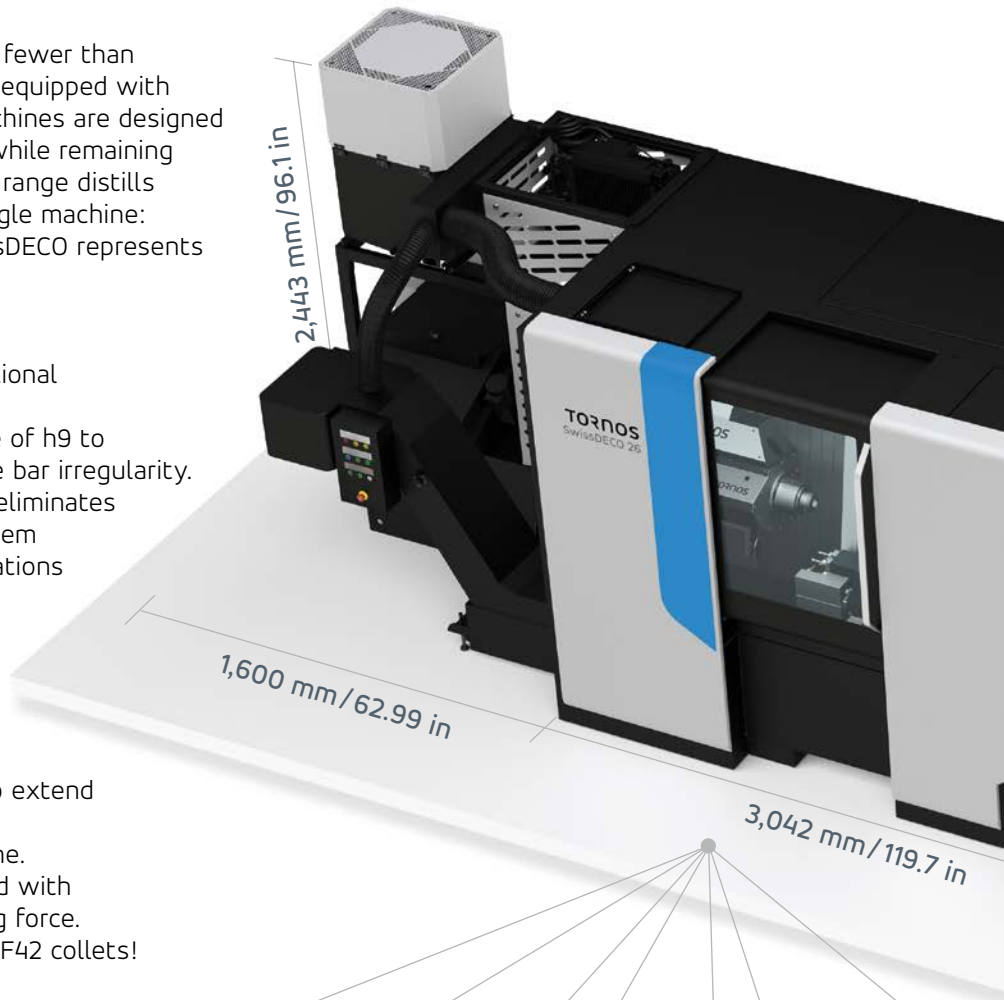
3-position guidebush

The SwissDECO can be equipped with an optional 3-position motorized guide bush.

The 3-position guide bush allows for the use of h9 to h11 grade bars, adjusting automatically to the bar irregularity. The substantial clamping length effectively eliminates bar marking problems; furthermore, this system also offers a real advantage for milling operations by significantly reducing vibration problems. The SwissDECO's 3-position guide bush enables significant material savings.

Also available in 42 mm

The SwissDECO adapts to any challenge. Thanks to the 42 mm option, it is possible to extend the range of parts that can be machined on the machine. In this configuration, the machine is equipped with a biconical collet which doubles the clamping force. The machine can also be adapted for F38 or F42 collets!





Tailored for you

Confidently conquer any machining challenge with Tornos' SwissDECO, built for you and adapted to your needs. Get the agility to master any challenge, with its **turret and B axis (option)**.



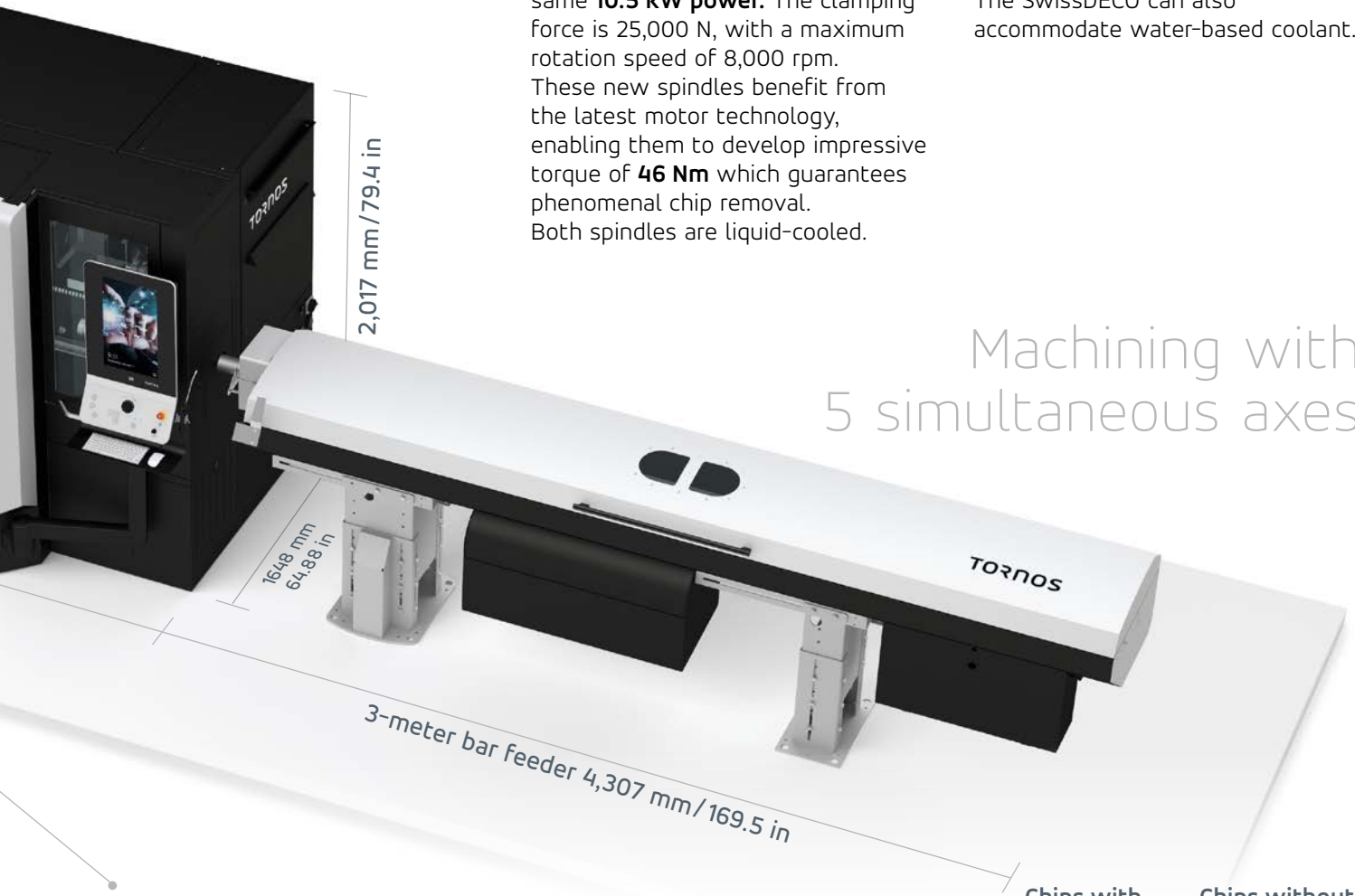
Power your profitability

Gain precious seconds to outperform your competitors and tackle any material, due to the SwissDECO's extremely powerful spindles. Equipped with **ceramic bearings**, the 2 spindles benefit from the same **10.5 kW power**. The clamping force is 25,000 N, with a maximum rotation speed of 8,000 rpm. These new spindles benefit from the latest motor technology, enabling them to develop impressive torque of **46 Nm** which guarantees phenomenal chip removal. Both spindles are liquid-cooled.



Enjoy the benefits of the most rigid machine in its class

Achieve better surface finishes and longer tool life, and get a quick return on your investment, thanks to this machine's sturdy, cast-iron base optimized by finite element analysis. The SwissDECO can also accommodate water-based coolant.



Machining with 5 simultaneous axes

36 mm / 42^{*} mm

Maximum diameter

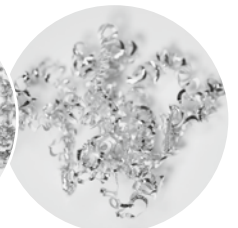
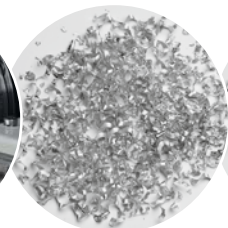
^{*} option

Improve and ensure self-sufficiency with Tornos' Active Chip Breaker Plus (ACB Plus) software

Improve and secure the autonomy of your process (option).

Chips with ACB Plus

Chips without ACB Plus



Stay ahead of the curve

Up to 500 mm deep-drilling capacity

Quick change

The SwissDECO can also be equipped with a quick-change system, allowing changes to be made in just a few seconds using a single screw. The system can also be adapted to the turret. Offering repeatability to 5 microns, the system guarantees quick setup times and enables the use of a presetting device if necessary.

Gear hobbing

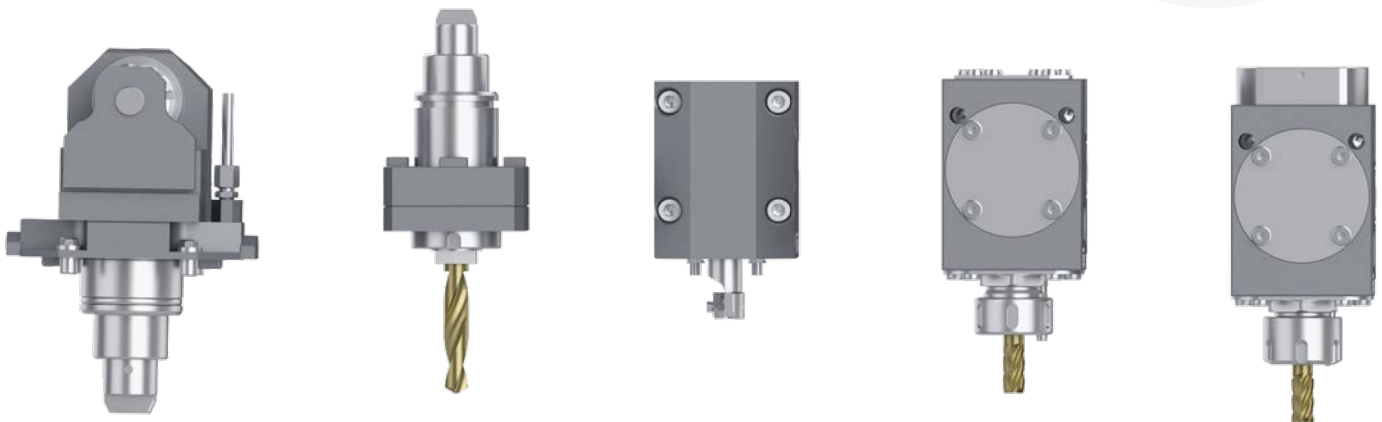
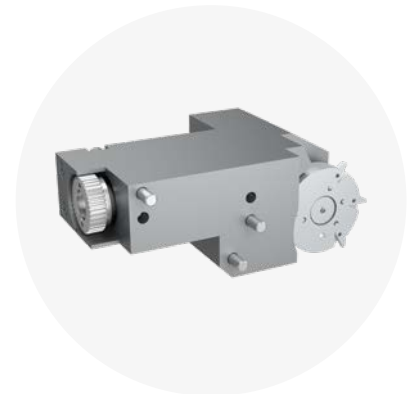
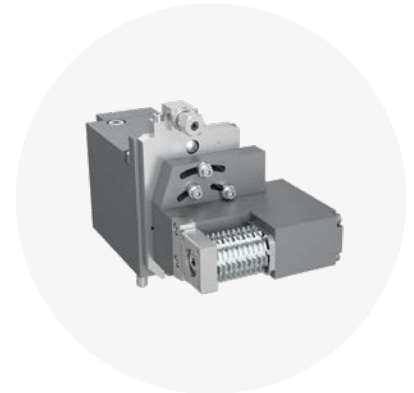
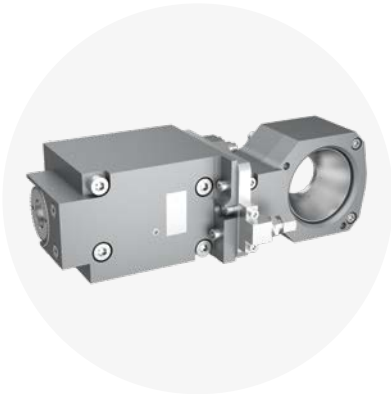
SwissDECO machines specialize in hobbing operations. To meet the needs of the automotive industry, the SwissDECO can be equipped with a hobbing device for both main and secondary operation.

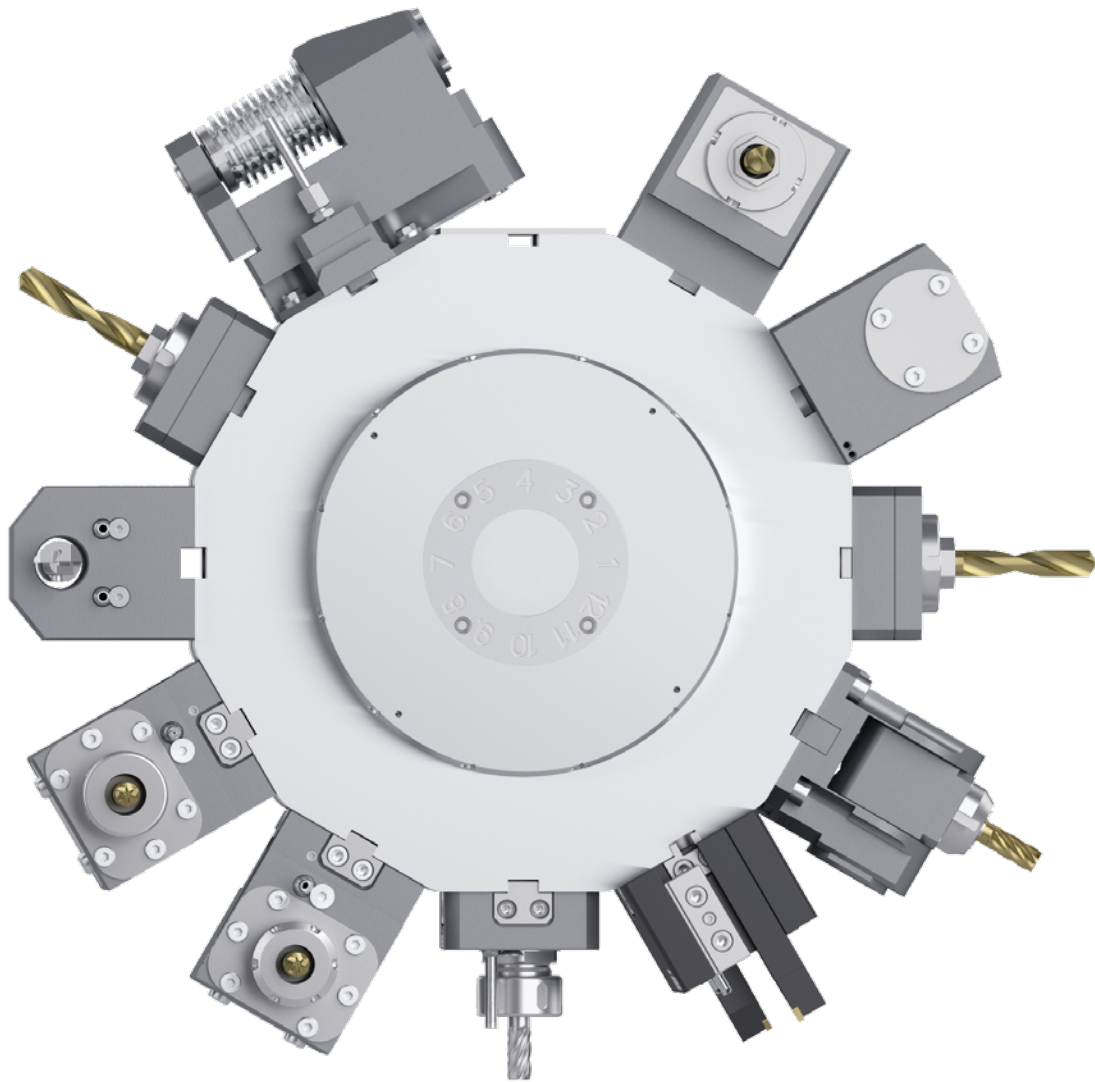
Thread whirling

Invented by Tornos, thread whirling is one of our specialities. Single, double, main operation or secondary operation: There is a Tornos solution for every need.

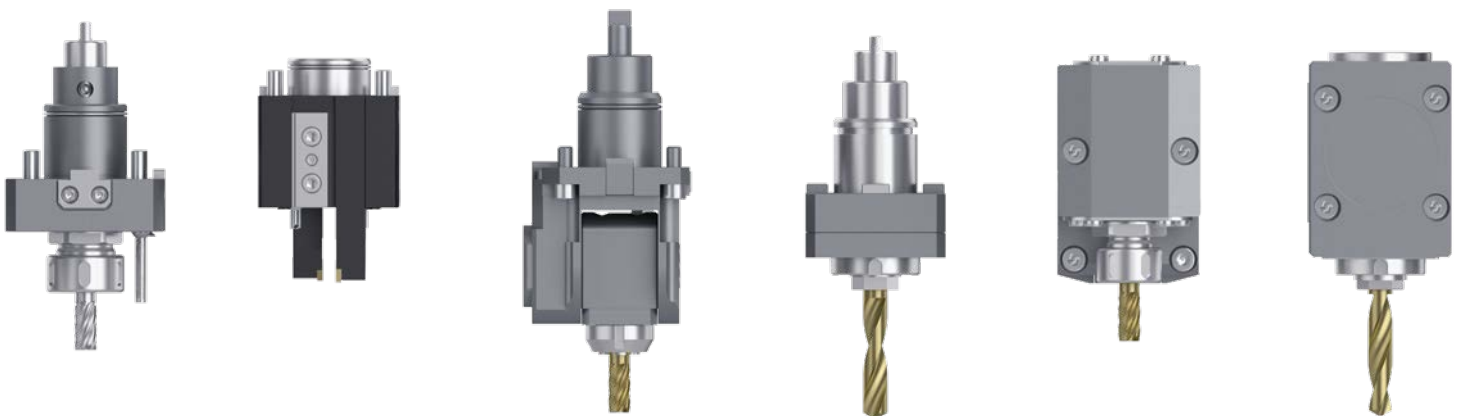
Polygon operations

Tulip or polygon operations as well as thread milling: All can be executed as main or secondary operations.

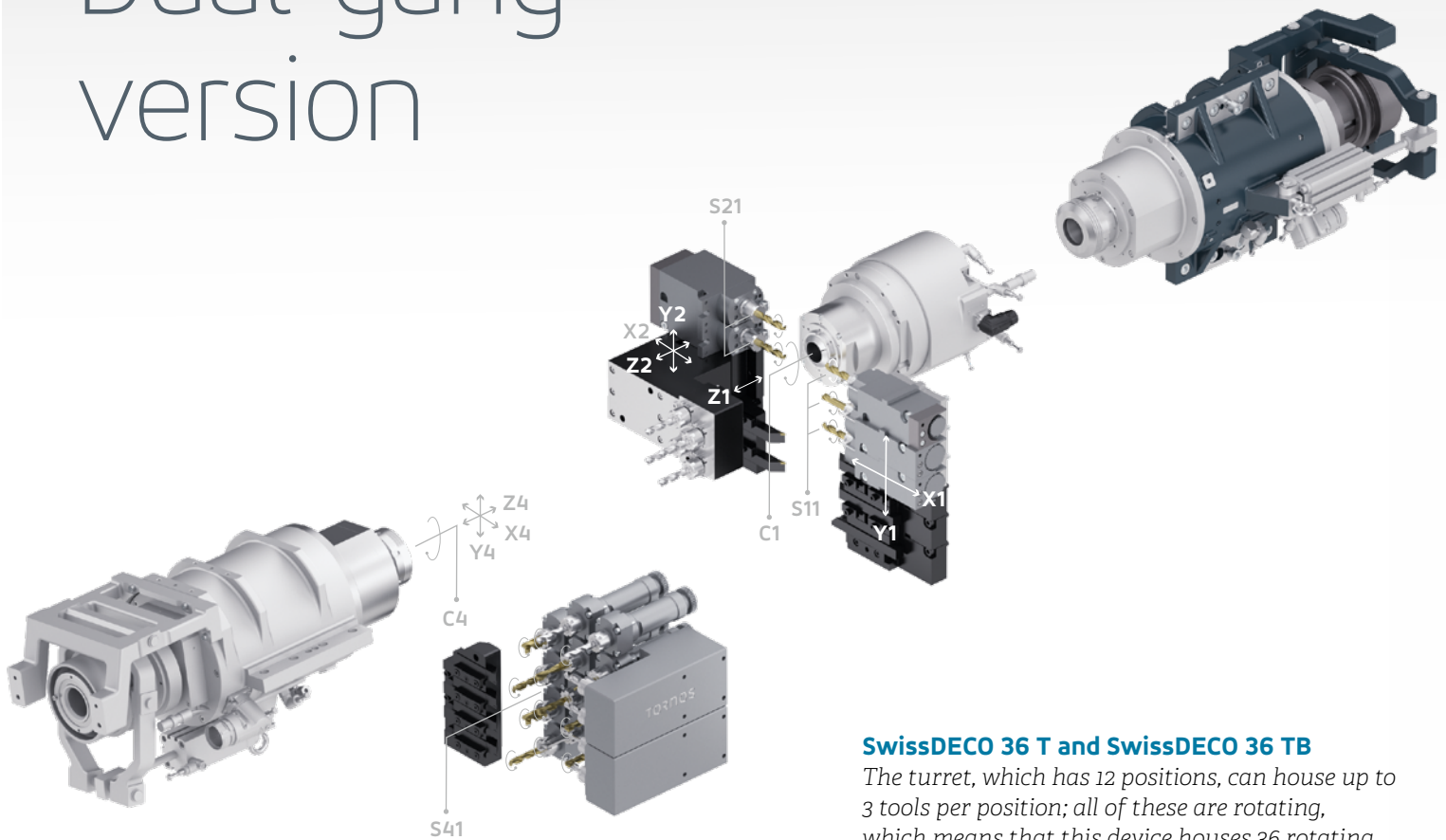




The 12-position turret on the SwissDECO can accommodate up to 3 tools per position. It is easy to use and multiplies the machine's tool storage capacity. Indexing is performed using a torque motor, which guarantees very short chip-to-chip times. Only the tool in the machining position is driven. It operates quietly, and benefits from integral cooling, ensuring perfect thermal stability.



Dual-gang version



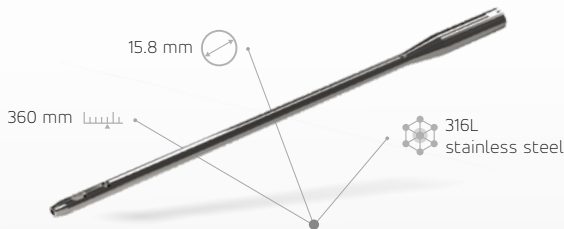
SwissDECO 36 G

A total of 38 tools, 27 of which are rotating, can be fitted to the machine in its dual gang configuration. Like the turret, the platen is equipped with a Z axis.

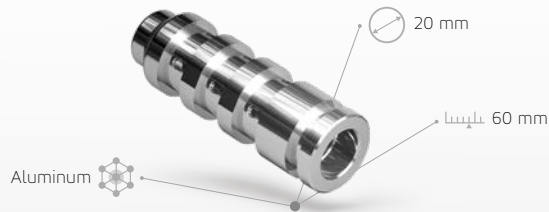
SwissDECO 36 T and SwissDECO 36 TB

The turret, which has 12 positions, can house up to 3 tools per position; all of these are rotating, which means that this device houses 36 rotating tools in total. The turret can be indexed quickly and extremely quietly, thanks to the torque motor. Indexing and locking are immediate, thereby reducing the chip-to-chip time.

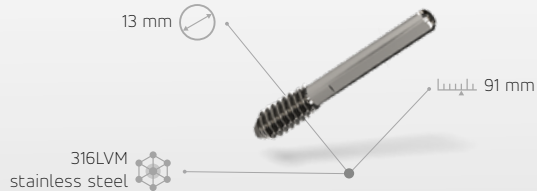
The turret can be complemented by a B axis (SwissDECO 36 TB), either as a positioning axis, or as a version with 5 simultaneous axes to enable complex shapes to be created.



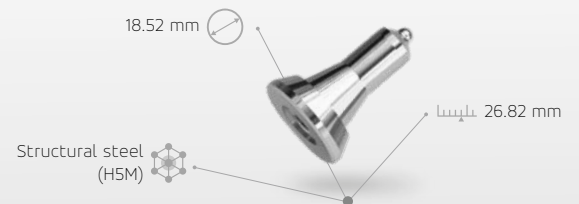
Medical & Dental



Automotive

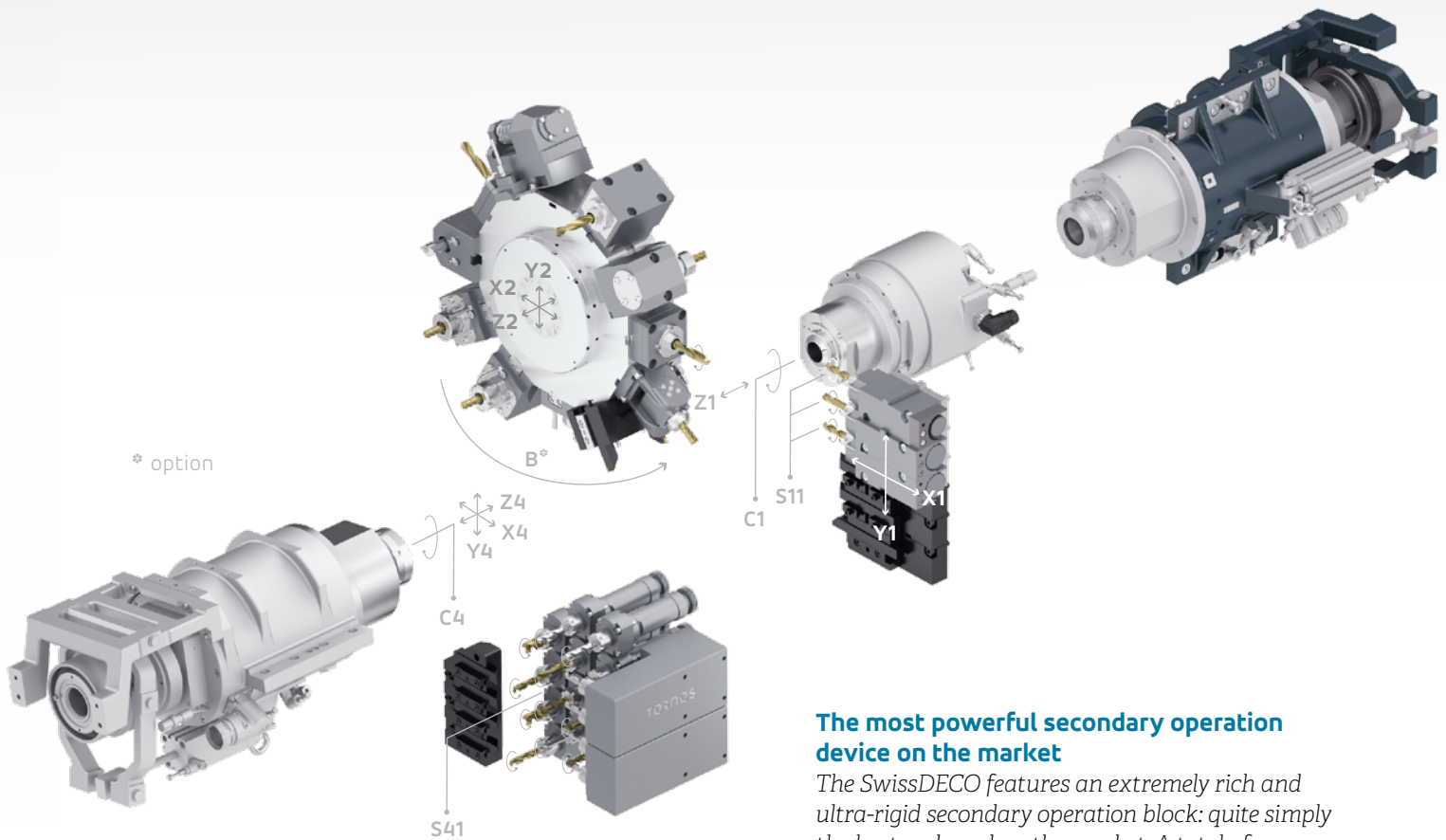


Medical & Dental



Automotive

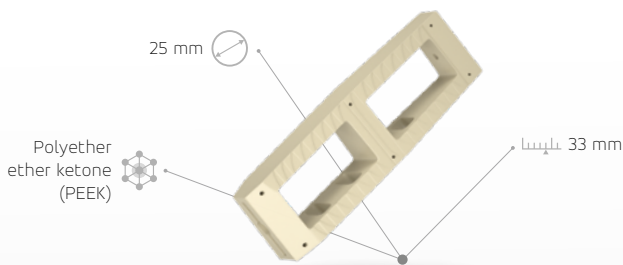
Turret version



The most powerful secondary operation device on the market

The SwissDECO features an extremely rich and ultra-rigid secondary operation block: quite simply the best endowed on the market. A total of 16 tools, 12 of which are rotating, can be fitted to the machine. In order to form a coherent assembly, the secondary operation block has extremely high drive power.

The tool drive alone features torque of 8.2 Nm, providing a maximum rotation speed of 10,000 rpm.



Medical & Dental

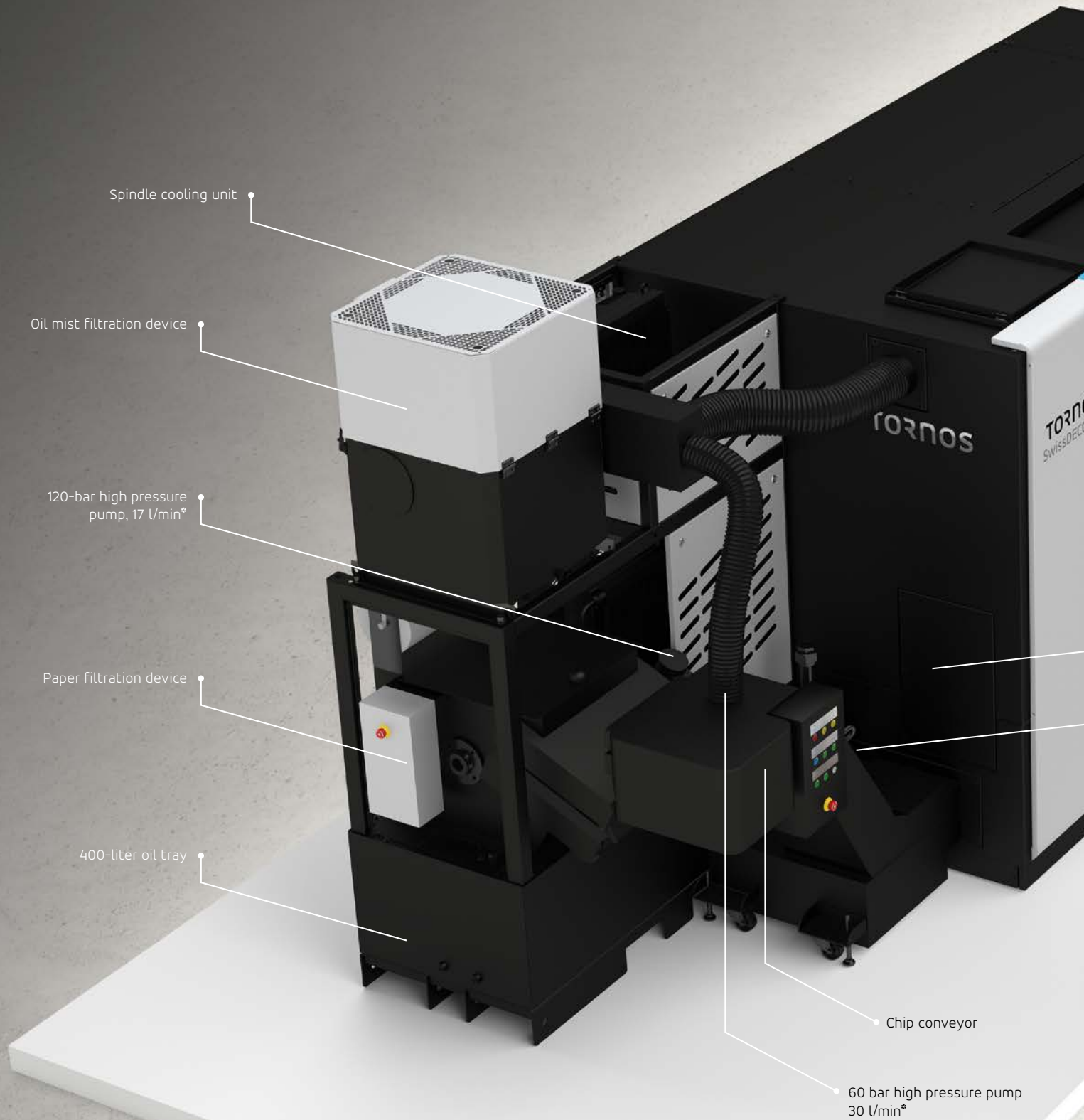


Medical & Dental



Medical & Dental

Seamless integration



Spindle cooling unit

Oil mist filtration device

120-bar high pressure pump, 17 l/min*

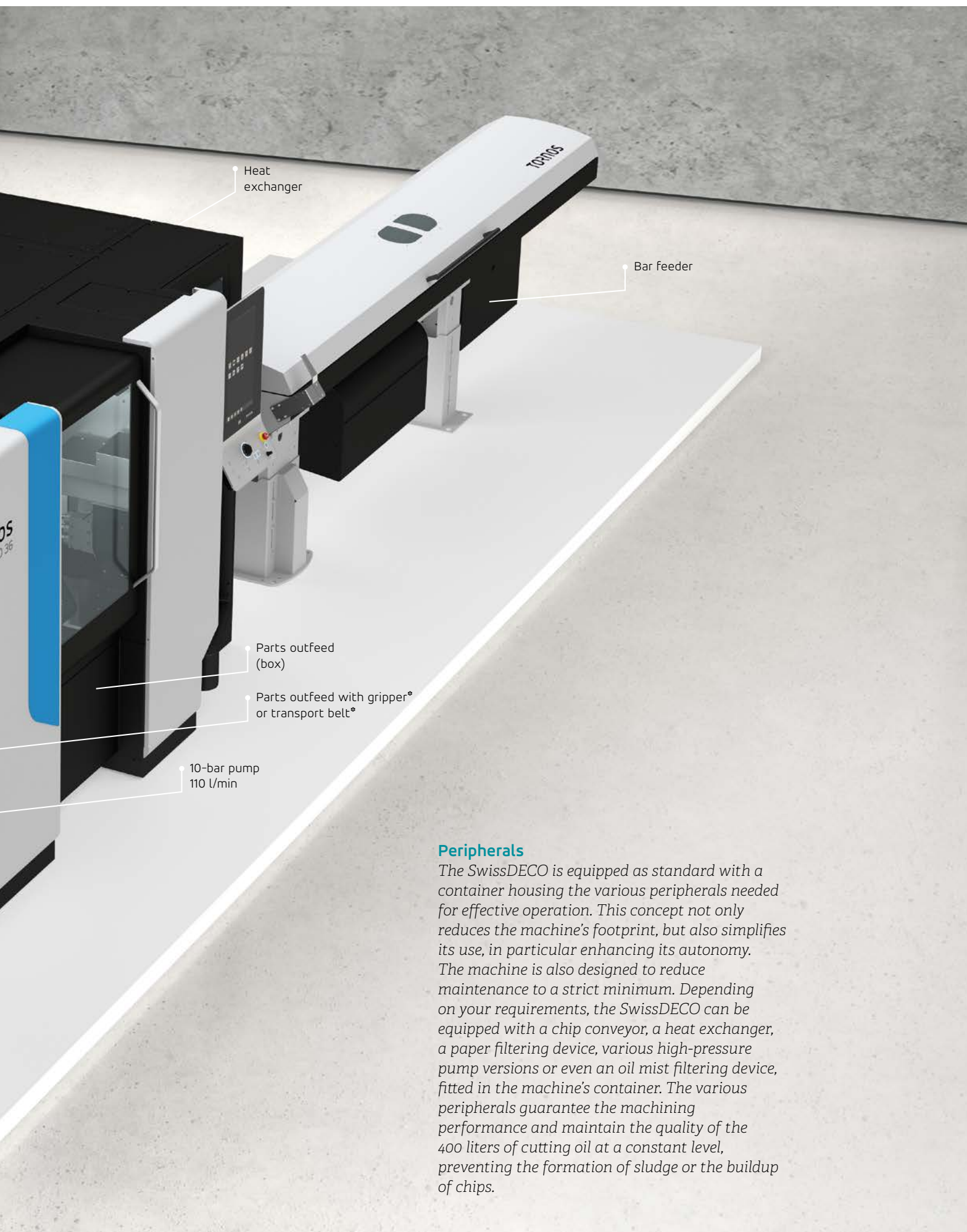
Paper filtration device

400-liter oil tray

Chip conveyor

60 bar high pressure pump
30 l/min*

* Option



Heat exchanger

Bar feeder

Parts outfeed (box)

Parts outfeed with gripper* or transport belt*

10-bar pump 110 l/min

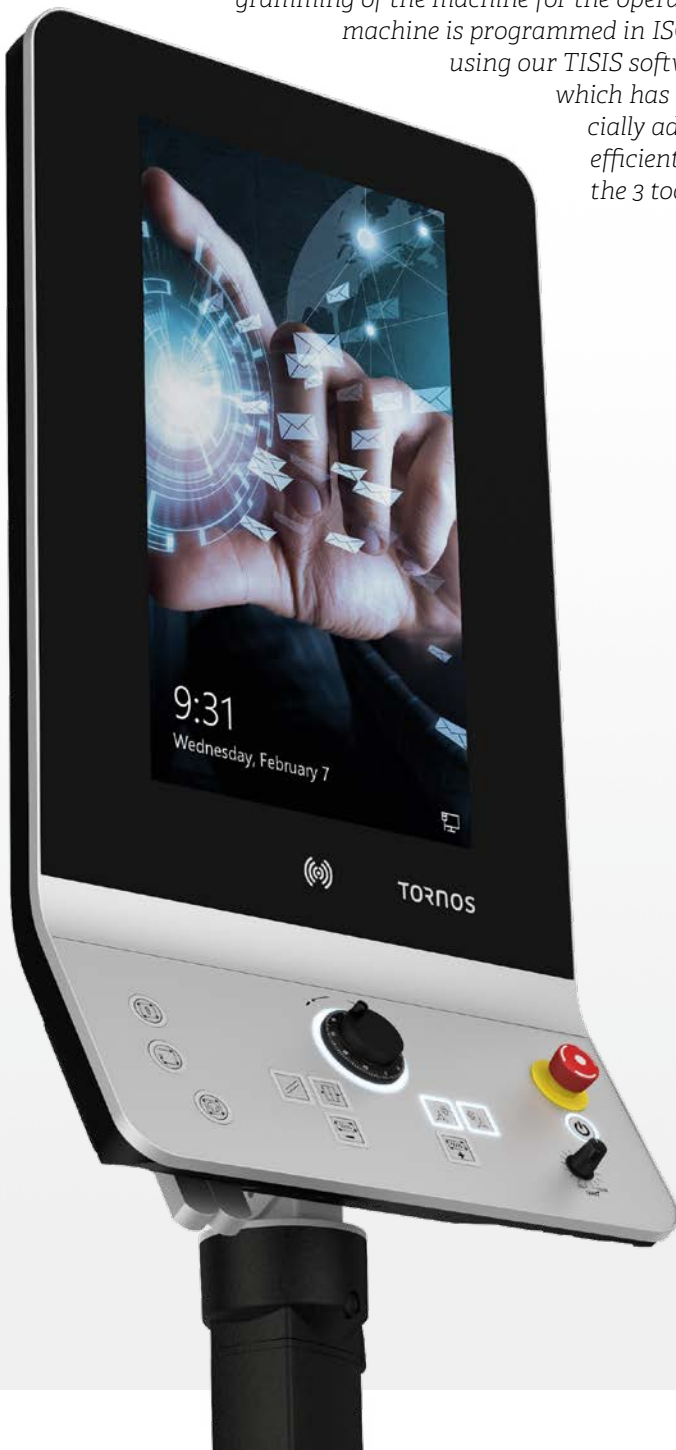
Peripherals

The SwissDECO is equipped as standard with a container housing the various peripherals needed for effective operation. This concept not only reduces the machine's footprint, but also simplifies its use, in particular enhancing its autonomy. The machine is also designed to reduce maintenance to a strict minimum. Depending on your requirements, the SwissDECO can be equipped with a chip conveyor, a heat exchanger, a paper filtering device, various high-pressure pump versions or even an oil mist filtering device, fitted in the machine's container. The various peripherals guarantee the machining performance and maintain the quality of the 400 liters of cutting oil at a constant level, preventing the formation of sludge or the buildup of chips.

Cycle time optimization

The SwissDECO is the first Tornos solution to feature a new human/machine interface (HMI) console, which greatly simplifies use and programming of the machine for the operator. The machine is programmed in ISO code using our TISIS software,

which has been especially adapted to efficiently manage the 3 tool systems.



Tool settings and adjustments are entirely numerical (all the tools are mounted on 3 axes). TISIS optimove is also unveiled on the SwissDECO: This patented system allows the ideal tool path to be precalculated to optimize the cycle time. In today's competitive global marketplace, there's not a moment to waste in meeting customers' demands.

TISIS optimove can reduce the cycle time by up to 30 percent while minimizing mechanical effort, heating and wear.

All paths are created "just in time." Why accelerate and brake sharply if a smooth, fluid movement that preserves energy and protects the mechanism is possible?

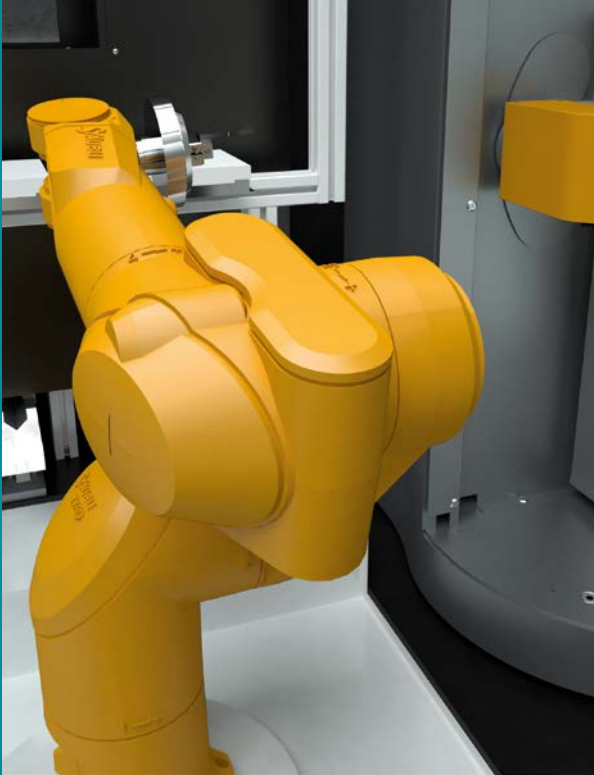
This optimization software does not require any prior knowledge: It is managed automatically when a program is started. In addition, TISIS optimove optimizes the axis travel and eliminates unnecessary checks depending on the cycle operation and machine equipment.

The process also offers energy savings of up to 10 percent, enabling optimal use of the SwissDECO in your workshop. The energy savings can be even greater when the following modes are used:

- Machine sleep mode
- Machine sleep mode and preheating
- Machine shutdown

Sleep mode offers energy savings of up to 75 percent, while programmed shutdown completely cuts the machine's power consumption.

Automation



Part gripping device

The part pickup device (linear axis in Z direction) is used to pick up finished parts using a gripper on a parts conveyor. It then discharges the parts outside the machining area on the left side of the machine. The finished part can then be picked up by another device.

Classic automation

The SwissDECO is Industry 4.0-ready, in particular thanks to the TISIS software. However, the machine has been designed from the outset to integrate automation solutions, a key element of serial production. Each machine can be equipped with a standardized solution or a specific automation solution, for a modular production system:

- Standard automation
- Handling of parts and pallets
- Easy adaptation to the different part shapes
- Optimal, pretested adaptation

We can also help if you're looking for more than the standard solution: Our specialists can recommend customized solutions to support you in your projects.

- Customized solutions and cell automation
- Turnkey solutions
- Integration of process-related peripheral equipment (measuring, cleaning, etc.)
- Optimized solutions tailored to your needs



Handling



Cleaning



Recognition



In-process
correction



Palletization
and storage

Industry 4.0-ready





TISIS: Communicate with your machine

Programming

Able to manage up to 3 channels, the ISO editor automatically synchronizes the code between the channels. Programming your machine becomes very easy. You can see in real time the tool displacement and the cycle time of each operation. Furthermore you can easily optimize your program thanks to the patented Gant diagram provided by TISIS.

Selecting your tools

The TISIS database contains all of the tool resources; for example chisel holder plates, thread-whirling tools, polygon tools or milling tools are all integrated. TISIS manages incompatibilities between the various tools and the user is guided intuitively.

Transfer

Transfer virtual programs to your bank of machines. Modify the program on the machine and transfer it again to your computer, maintaining full traceability.

Monitoring

Monitor your machine inventory in detail. See the status of the machines in the workshop and an overview of current production; the workpiece counter, remaining production time and the name and drawing of the workpiece are available at any time.



Discover the
TISIS video

Tornos Service



Backed by both geographical proximity to customers and an in-depth understanding of their processes, applications and market challenges, Tornos Service delivers an unparalleled continuum of support: start-up assistance, expert training and coaching, free hotline, on-site operations support and preventive maintenance, original spare parts seamlessly delivered worldwide, complete overhauls to extend the service life of Tornos machines, and a range of operations and X-change modules to expand customers' application capabilities and profitability.

Buying a Tornos machine is much more than a business transaction. It is your investment in the future. Tornos Service thrives worldwide by guaranteeing the superior production capabilities of products carrying the Tornos name.

Situated close to its customers, as demonstrated by the 12 Tornos Service Centers strategically located across Europe, Asia, and the Americas, Tornos Service offers a comprehensive range of leading support services for Tornos machines, and encompasses the innovation, reliability and attention to detail expected of a premier Swiss brand. And it is all backed by more than 130 years legacy of expertise and in-depth understanding of customers' processes, applications and challenges across a wide range of industrial segments, including Automotive, Micromechanics, Electronics, and Medical & Dental.

Start-up assistance

From the first feasibility tests prior to purchase, you are in good hands with Tornos Service. In our state-of-the-art Techno Centers, expert application engineers support you with tests to gauge the feasibility of machining processes and applications. With start-up assistance, you are secure in the knowledge that you will never be left alone to deal with a brand new machine.

Expert training and coaching

Engineered for intuitive and easy use, Tornos machines offer a vast range of options and enable myriad processes. Expert training and coaching help your employees become specialists proficient in programming, handling and maintenance, adding more value to your processes, applications and products.

Free Hotline support

Wherever you are in the world, highly qualified specialists who speak your language and understand your processes are just a phone call away to quickly support you with handling and programming solutions.

On-site support

Fast, efficient on-site operations and preventive maintenance ensure the continuous high performance of your Tornos machines. Regularly scheduled preventive maintenance can help you avoid 70 percent of machine breakdowns and keep you on the path to productivity.

Certified original spare parts

Rapid, reliable, worldwide delivery of certified original spare parts is a speciality of Tornos Service. Regardless of the age of your Tornos machine, we stock the essential certified spare parts to keep the machine running at peak performance.

Machine overhauls

Tornos machines inspire confidence. It's no surprise, therefore, that many customers turn to Tornos for a complete overhaul of their machines. The Tornos overhaul service returns the machines in good-as-new condition, significantly extending their service life.

Options, upgrades and X-change modules

To help you achieve your manufacturing, productivity and quality objectives, our experts collaborate with you to manage complex machining processes, develop software features for machining complex shapes, design special equipment, and tailor peripherals to your needs. Tornos' X-change modules expand your application capabilities and profitability.



Discover
Tornos Service

Technical specifications



TECHNICAL SPECIFICATIONS

SwissDECO 36

9 linear axes + 2 C axes + 1 B axe (SwissDECO 36 TB)

3 independent tool systems

Main spindle (Z1/S1/C1)

Max bar diameter (bushless)	mm/in	32 (36/42)/1.26 (1.42/1.65)
Standard workpiece length bushless (maxi 3xD)	mm/in	38 (100)/1.49 (3.93)
Standard workpiece length with guide bush (frontal ejection)		
Long part option: 600 mm	mm	300 (200)/11.8 (7.87)
Spindle rotation speed	rpm	8,000
Spindle power (S1/S6)	kW/hp	8.2 (10.5)/10.99 (14.08)
Max spindle torque	Nm	43 (46)
Max drilling diameter	mm/in	Ø 16/0.629
Max tapping diameter		M12

Gang (X11/Y11/S12) (X21/Y21/Z21/S21)

Tool positions (turning tool section 16x16)		18
Positions for rotating tools		15
Deep drilling capacity	mm/in	200/7.87
Max rotating tool speed	rpm	6,000
Max power of rotating tools (S6)	kW/hp	2.4/3.21
Max torque of rotating tools	Nm	15
Max drilling diameter rotating tools	mm/in	Ø 12/0.47
Max tapping diameter rotating tools	mm	M12x5 mm/M10x10 mm

* option



TECHNICAL SPECIFICATIONS

SwissDECO 36

Turret version (X21/Y21/Z21/S21)

Tool positions		12
Positions for rotating tools		12
Max number of tools		36
Max coolant pressure through the turret	bar	80 (120*)
Tool holder system	type	BMT45
Max rotating tool speed	rpm	12,000
Max drilling diameter rotating tools	mm/in	Ø 10/13.4
Max tapping diameter rotating tools		M8x1.25
Max power of rotating tools (S1/S6)	kW/hp	4.6 (8.8)/6.1 (11.8)
Max torque of rotating tools	Nm	11 (20)

Secondary operations (S41)

Tool positions		16
Positions for rotating (fixed) tools (rotating tool section 16x16)		4
Positions for rotating tools (transversal) (L max 55 mm)		4
Positions for rotating tools (frontal) (L max 55 mm)		8
Fixed frontal tools		4
Max power of rotating tool	kW/hp	1.3/1.74
Max rotating tool speed	rpm	10,000
Max drilling diameter rotating tools	mm/in	Ø 8/0.31
Max tapping diameter rotating tools	mm/in	M8x10

Counter spindle (X4/Y4/Z4/S4/C4)

Max bar diameter	mm/in	36 (42)/1.42 (1.65)
Max part length out of collet	mm/in	100/3.93
Part length inserted inside spindle with ejector (without ejector)	mm/in	220 (600)/8.66 (23.62)
Spindle rotation speed	rpm	8,000
Spindle power (S1/S6)	kW/hp	8.2 (10.5)/10.9 (14.08)
Max spindle torque	Nm	43 (46)

Axis feed rate

Rapid feed rate	m/min	30 (X1/Y1/X2/Y2/X4/Y4) 35 (Z1/Z2/Z4)
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BASIC MACHINE EQUIPMENT

Rotating guide bush with integrated motor

Machining without guide bush

S21 rear gang rotating tool motor

S11 front gang rotating tool motor

S51 rotating tool motor in counter-operation

10-bar/100 l/min coolant pump

Bar feeder interface

Fire extinguisher interface

B axis on turret

Machining with 5 simultaneous axes

Numerical control

CNC type

Colour screen and mobile operator console

Programming software

ISO language code C, TMI, TISIS

General specifications

Max width

Max length

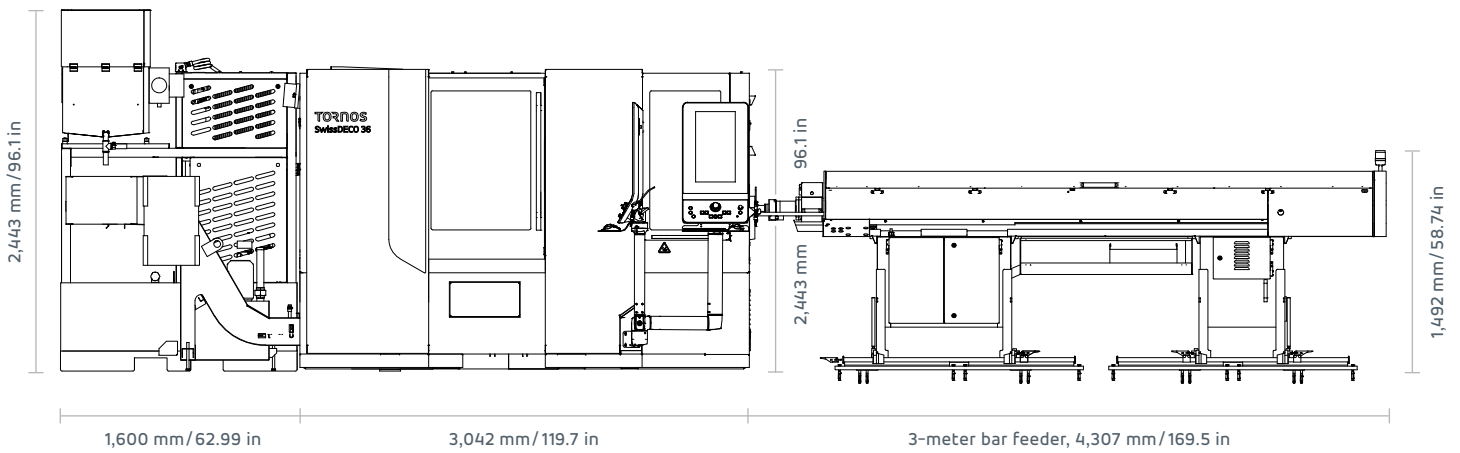
Height

Weight

Peripherals and options

Cutting oil tray capacity

Type of coolant



● Standard ○ Optional — Not available

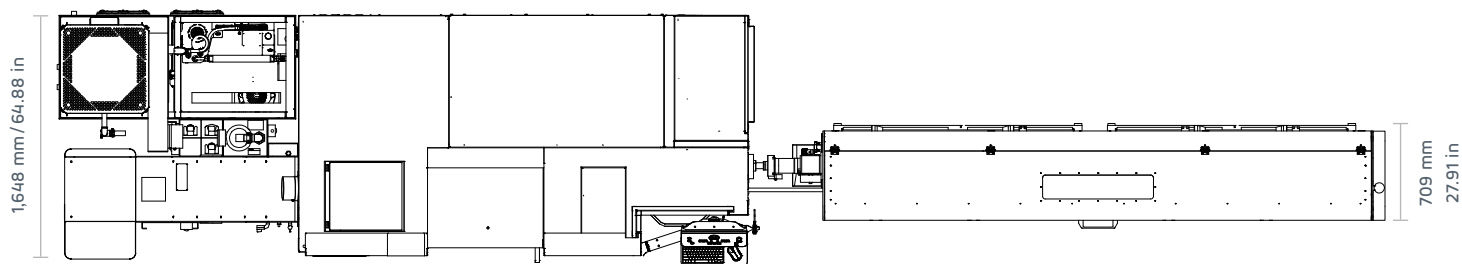
SwissDECO 36

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FANUC 31i-B5
 Touchscreen 21.5"

mm	1,648
mm	3,042
mm	2,443
kg	5,900

litres	400
Water based coolant/oil	



We keep you turning

[tornos.com](https://www.tornos.com)

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Tornos
throughout
the world



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