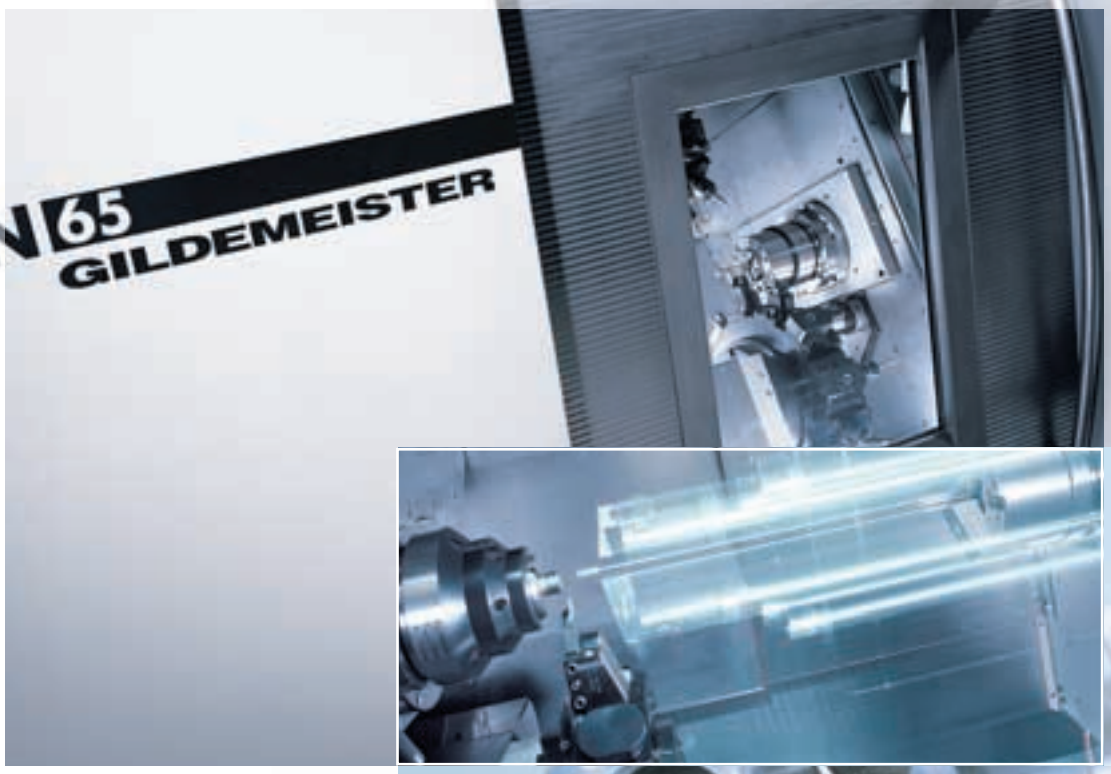
TWIN 32/42/65/102



GILDEMEISTER
Drehmaschinen GmbH

The new TWIN generation: The unique work-area concept as a basis for success

Due to its unique work-area concept, the TWIN 32 in particular has made two-spindle automatic lathes one of the most successful machine segments within the GILDEMEISTER group. With no less than three new models, GILDEMEISTER Drehmaschinen GmbH now makes this successful concept available for the segment of larger diameters of up to 4 in. (TWIN 102). These new models are also available with a Y-axis. The new TWIN 42 in frame size 2, as well as the TWIN 65 are also available with a controlled B-axis (realized through turret swivels), for the most complex milling operations. The TWIN concept can be assembled in modular fashion all the way up to automated production solutions.

Simple and high-tech workpieces machined at the highest degree of accuracy. Shortest cycle times for turn, drill and mill machining of chuck, bar or shaft components.

TWIN 32/42: Maximum output even in the small frame size

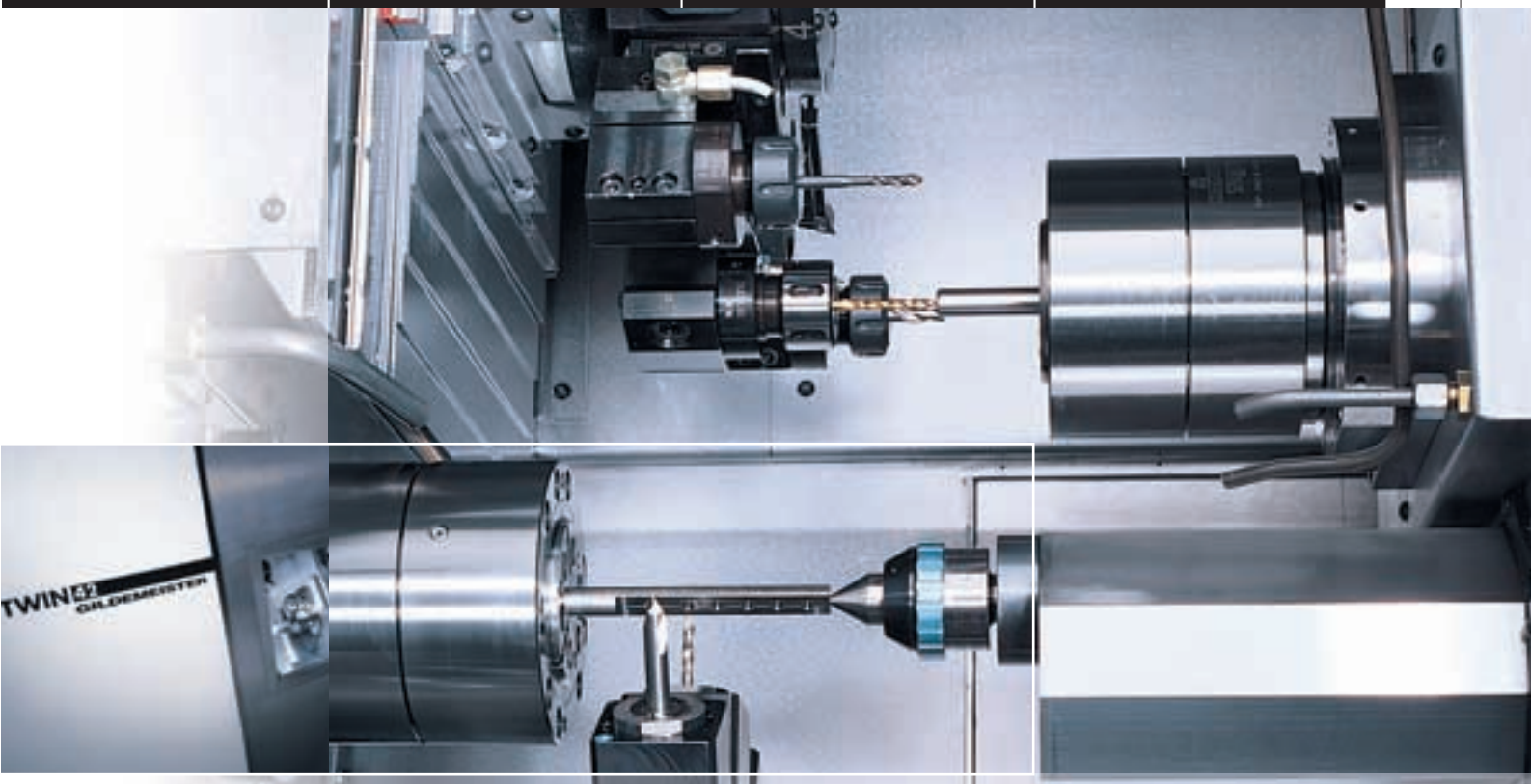
Whether in the automotive-, fittings-, hydraulic- or electronics industries, the comprehensive capabilities of the two-spindle automatic lathes of the TWIN series ensure optimum possibilities for demanding complete machining applications of bar, shaft or chuck components. Well proven features provide the required drive output and dynamics, such as the integrated synchronous spindle motors with a drive power of 35 hp (40% duty cycle) and acceleration values of 0 to 8,000 rpm in 1 second, rapidly shifting turrets, as well as rapid traverse speeds of 1,181 ipm.

To increase the spectrum of machining possibilities, the counter spindle slide can be equipped with a tailstock. If required, the upper turret then continues to work synchronously with the counter spindle. This unique work-area concept is the result of the CNC driven traverse stroke of 5.7 in. by the laterally traversing counter spindle slide, which also supports the tailstock. Through this additional CNC-axis, required eccentric turning applications become possible.

The optional Y-axis completes the range of accessories for eccentric drilling and milling operations, to achieve sophisticated complete machining.

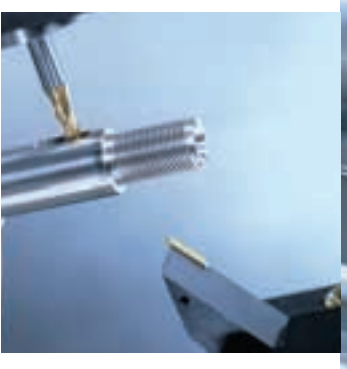
Machining with tailstock support.

Left: High-output drives for powerful metal removal.


TWIN
GILDEMEISTER

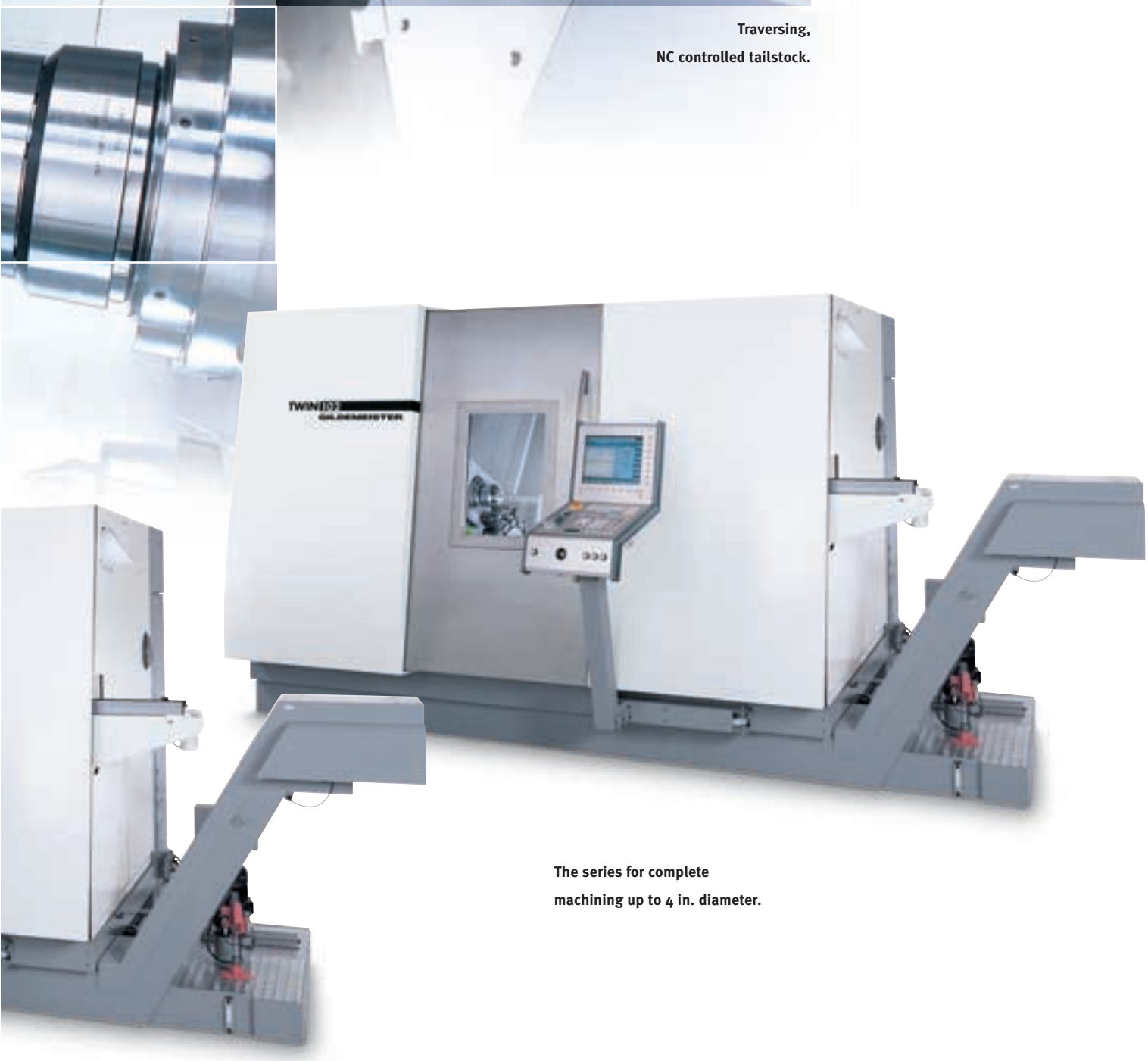
TWIN 42/65/102:
More space for increased productivity

The TWIN product line opens new production perspectives in the area of bar diameters up to 4 in., due to high machine rigidity and compact construction, and the most advanced synchronous spindle technology. The work area of the machines with frame size 2, built on a 60° cast-iron slanted bed, has been dimensioned such that, firstly, large bar diameters of 4 in. can be accommodated, and secondly, a CNC-controlled B-axis can be added to the TWIN 42 and TWIN 65. The B-axis enables a whole range of complex machining solutions through the swinging capacity of the upper turret in combination with the Y-axis. In this version, slanted bores, curved surfaces, as well as the most complicated milling contours can be machined. The TWIN machines with the frame size 2 also offer the unique work area concept of a combined counter-spindle with off-center travel capacity plus tailstock, mounted on the CNC axis, with a stroke of 6.9 in. In this set-up, the upper turret can simultaneously machine workpieces in the counter spindle without collisions. This saves time and increases productivity.

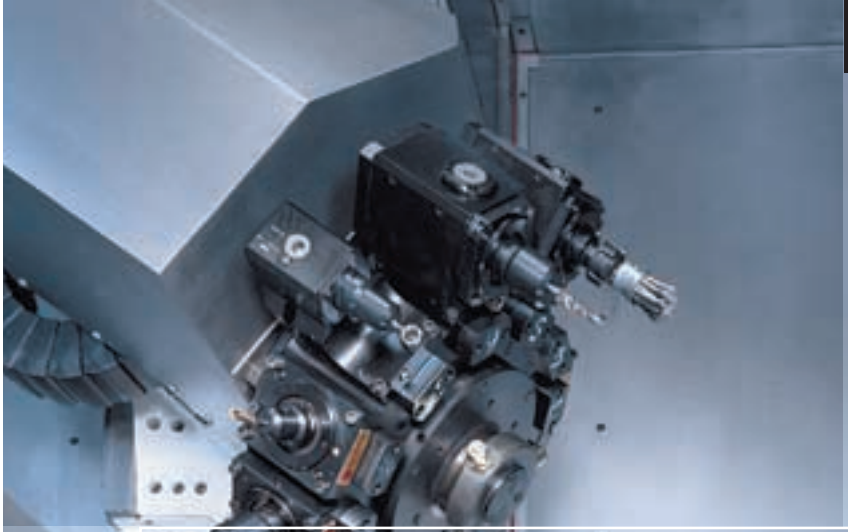


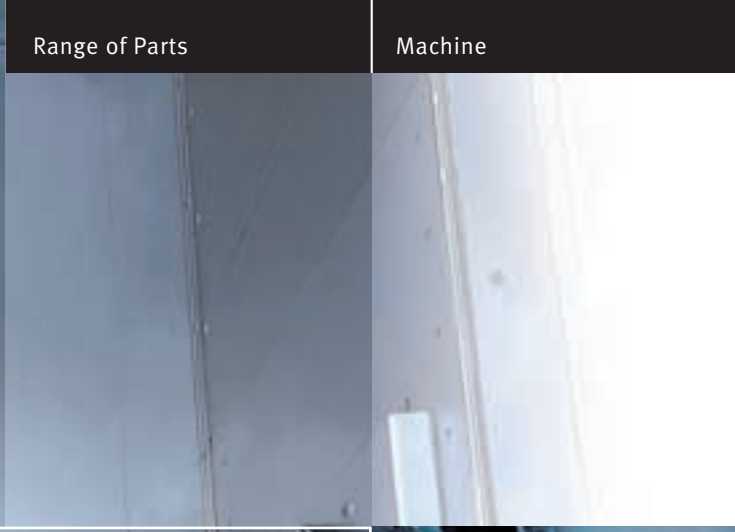
Machining with driven tools.

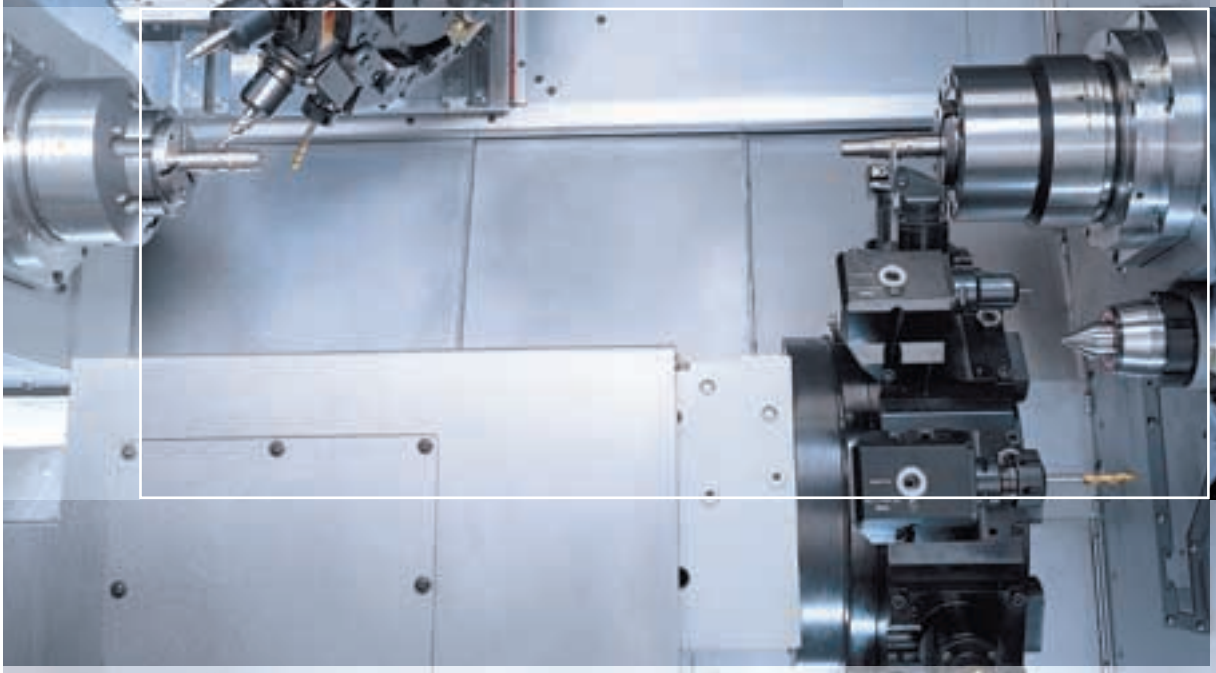
Traversing,
NC controlled tailstock.

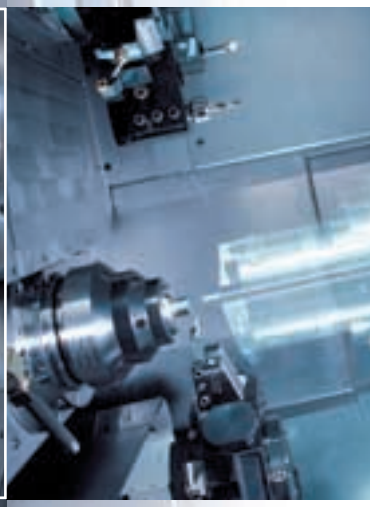


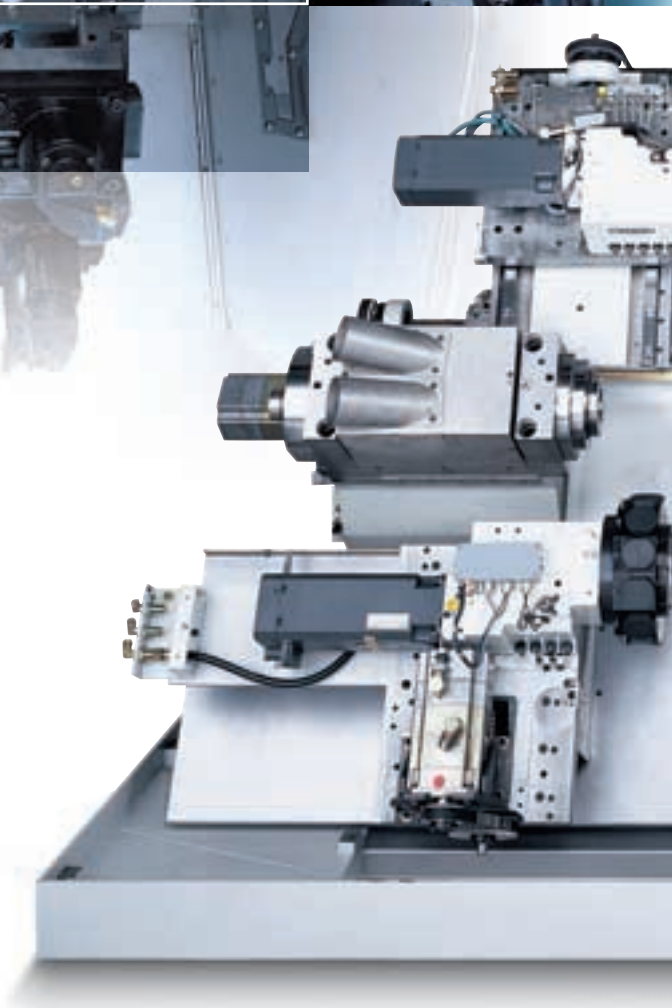
The series for complete
machining up to 4 in. diameter.





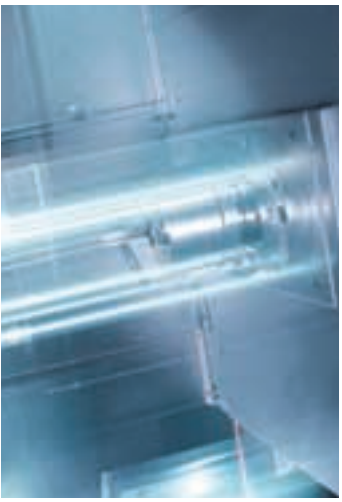


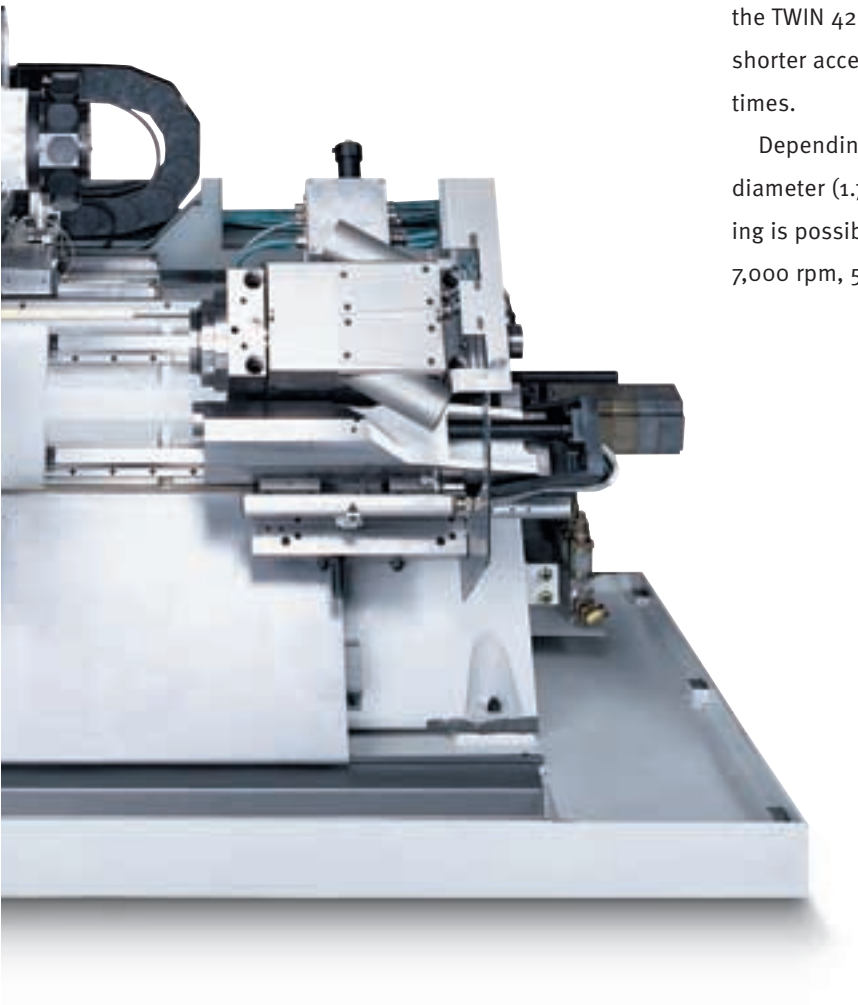




Generous workspace and counter-spindle/tailstock combination with off-center traveling capacity for the most demanding complete machining applications.

TWIN Technology:
The basis for economic advantage

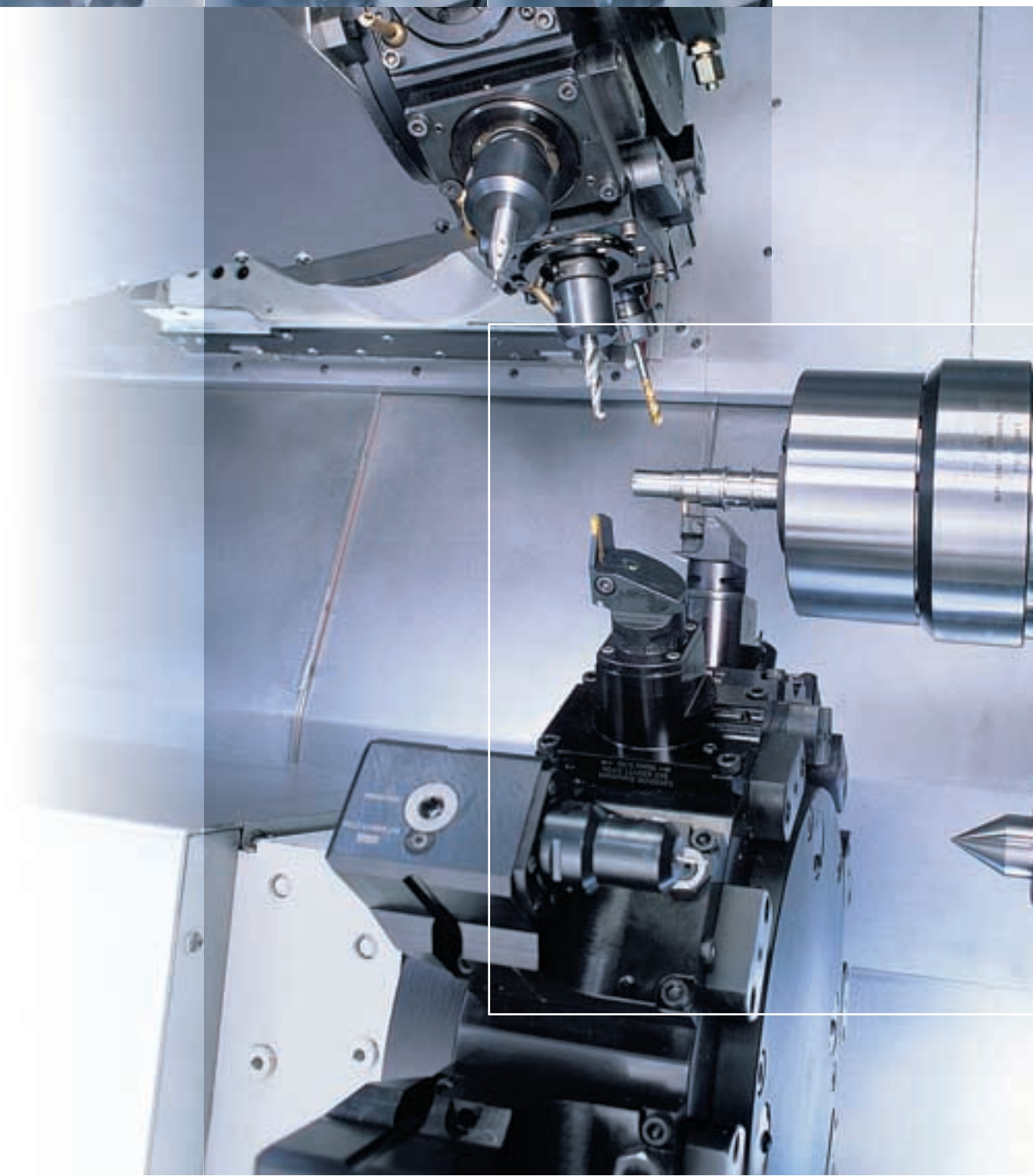




The integrated synchronous spindle motors, for example, offer 60% higher output in the same dimension as their counterparts in asynchronous technology. Similarly, larger machining forces are achieved, beyond the enormous acceleration values and braking performance. To reach their maximum speed, the new spindle motors of the TWIN 65 and the TWIN 102 only require 1 second. And the TWIN 42 achieves even shorter acceleration and braking times.

Depending on the spindle diameter (1.7/2.6/4 in.) machining is possible at speeds of 7,000 rpm, 5,000 rpm and 3,200 rpm, and this at torque values between 109.5 ft/lbs (TWIN 42), 197.1 ft/lbs (TWIN 65) and 350 ft/lbs (TWIN 102). This leads to high metal removal rates and to higher productivity. In addition, the upper and lower turrets accommodate a total of 12 driven tools and feature extreme dynamics. The turret index-time from one station to the next is only 0.14 seconds.

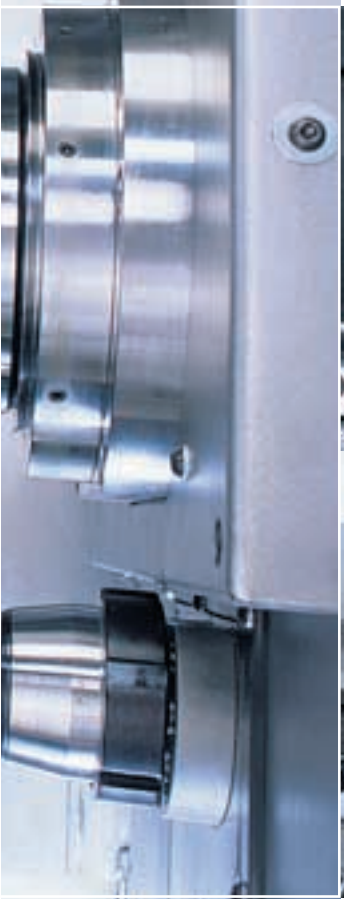
From left to right:
Damage-free part unloading
for SPC-compliant production.



The optimal enhancement of TWIN universality

Due to the different expansion options with a Y-axis, or a Y- and B-axis, the TWIN family is now growing into a complete machine series, whose variants can all be equipped with modular workpiece handling options. Consequently, perfect handling of simple chuck pieces as well as storage and palletizing of completely machined workpieces are possible without damage, because of the impact-free workpiece treatment.

The sum of advantages and the diameter spectrum from bar diameter of 1.3 to 4 in. the TWIN series present themselves as a modular as well as an unbeatable team.

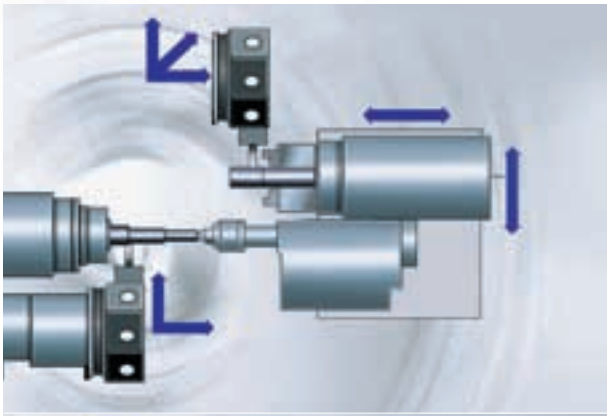


Automated workpiece loading and storage.

B-axis, Y-axis realized above a wedge slide.

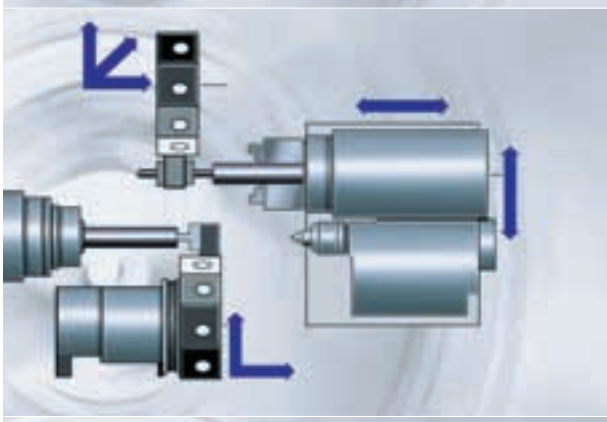
Application option 1:

- **collision-free machining with two turrets and tailstock**
- **2 x 2 axis machining with support of the tailstock for thin shafts**
- **Y-axis for demanding complete machining applications**



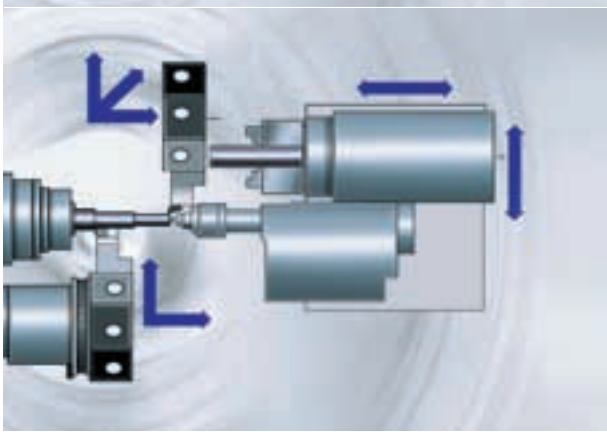
Application option 2:

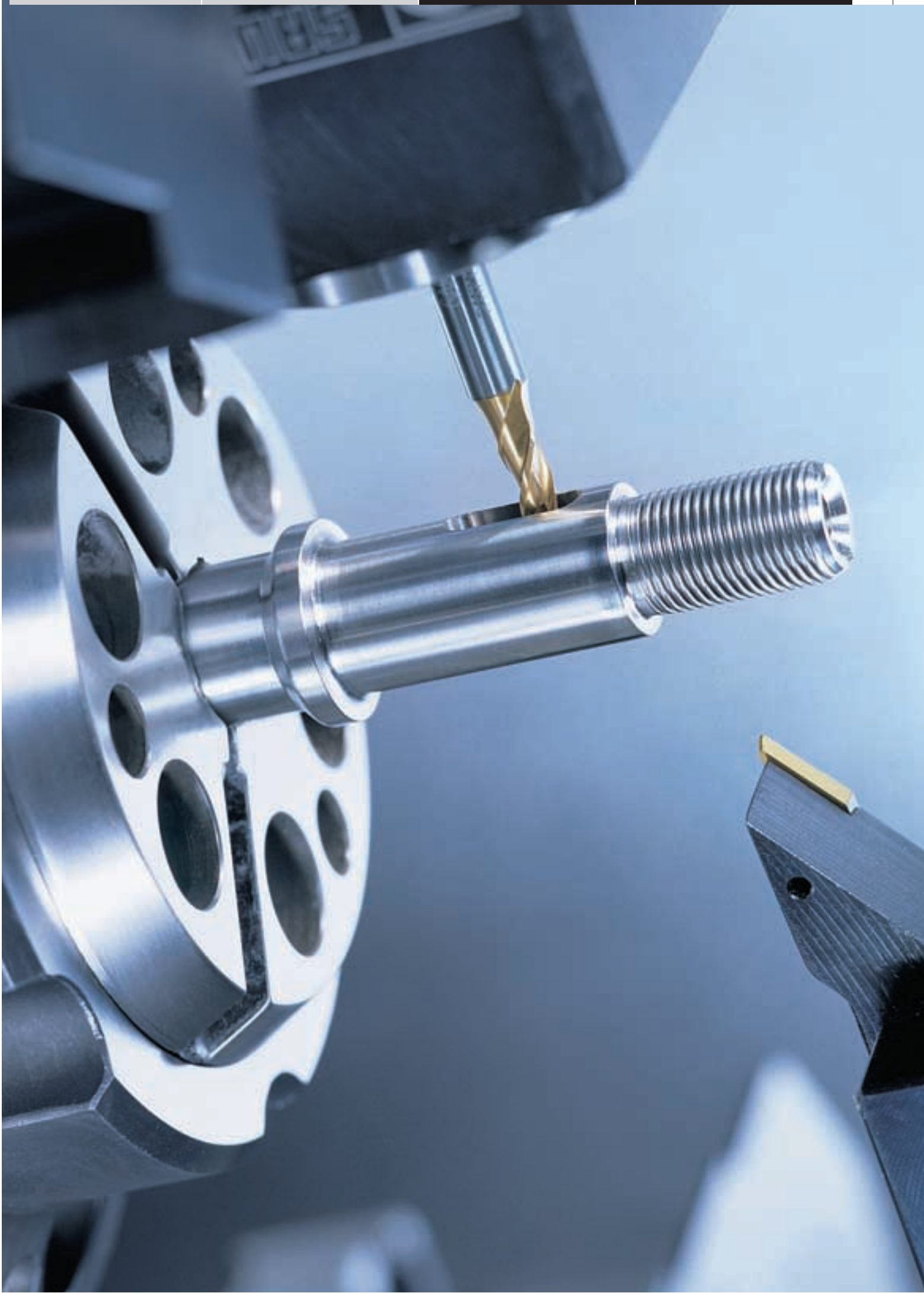
- **Through a laterally traveling counter spindle the ends of long pieces can be machined by the main or the counter spindle**
- **Collision-free machining with 2 tool turrets**
- **2 x 2 axis machining**



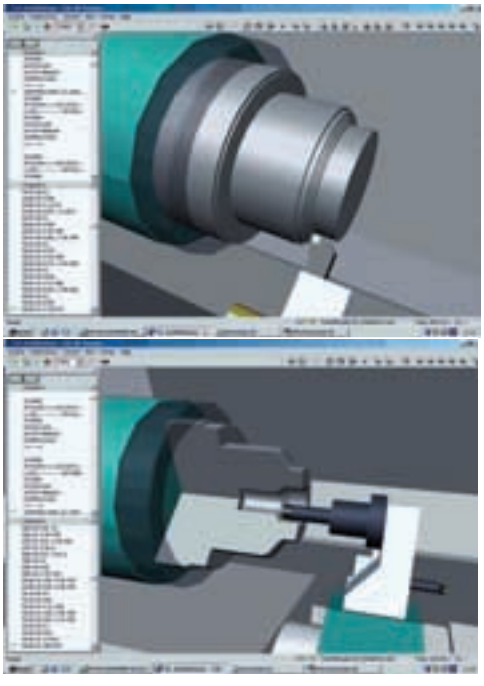
Application option 3:

- **Collision-free machining with 4 axes and 2 turrets, and a tail stock on one workpiece for thin, long shafts**
- **Deployment of three tools, when the tailstock head is exchanged for a drilling tool.**





The TWIN series meets the demands of modern production technology also in regard to its control options, because of the Siemens 840D powerline control. «Powerline» means access to faster processors of the Intel Pentium class, and therefore a performance increase of more than 100% in the CNC- and PLC sectors. On the basis of Windows NT with Ethernet Interface, this Turbo-CNC also meets all the requirements for the communication with master networks and the powerful DMG-Net-service. Additionally, the new powerline generation convinces through improved diagnostic functions: expanded error messages and online machine documentation are only two examples. Simultaneously, GILDEMEISTER offers the new MF Programmer 3D as an external programming tool on Windows basis. The work area of the TWIN machines is pre-programmed into the system in three dimensions. After the geometry of the desired workpiece has been entered, it is also available to be viewed as a 3D model. Subsequently, aided by a menu, the consecutive machining steps are entered into the program as pre-programmed cycles. After the real-time simulation with collision control, a single push of the button finally generates a time-optimized CNC program.

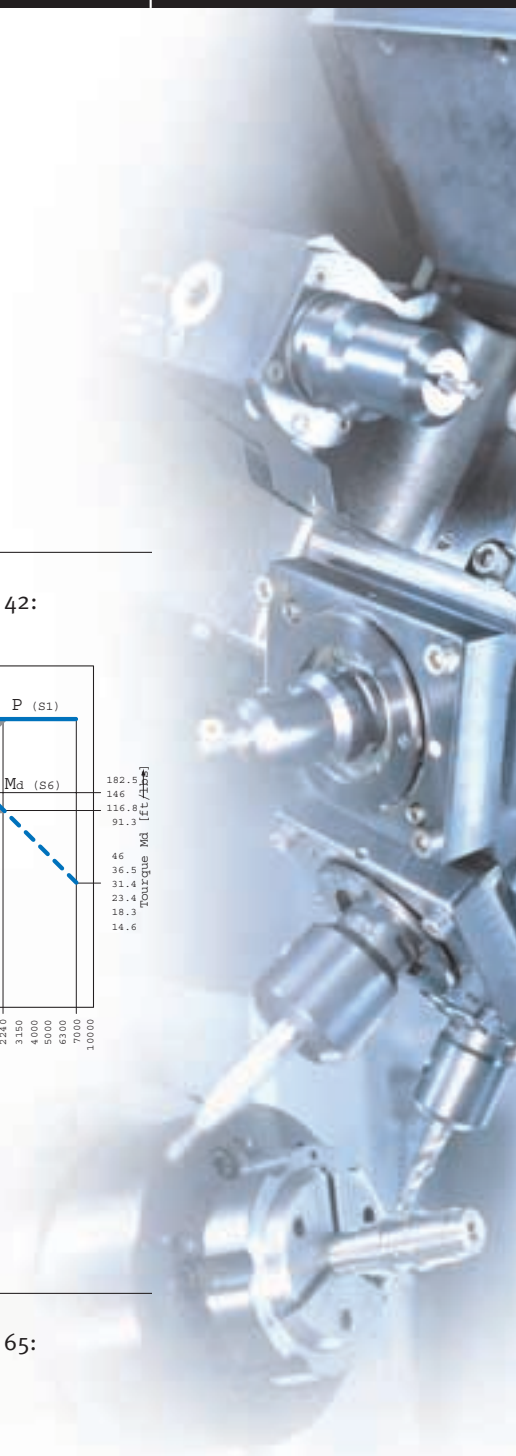


MF Programmer:
The programming tool for interactive graphical programming with 3D simulation.

Programmed for output: TWIN controls

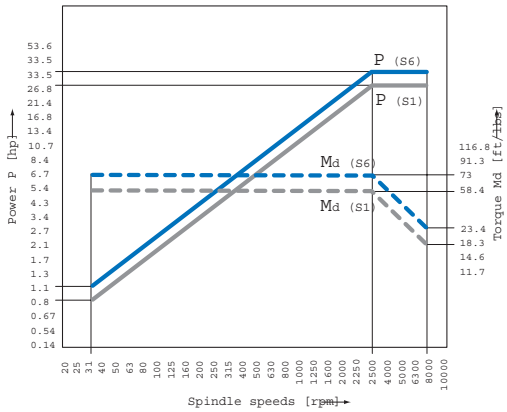
Windows™ on site

Siemens 840 D powerline guarantees fast processing of materials and superior reliability.

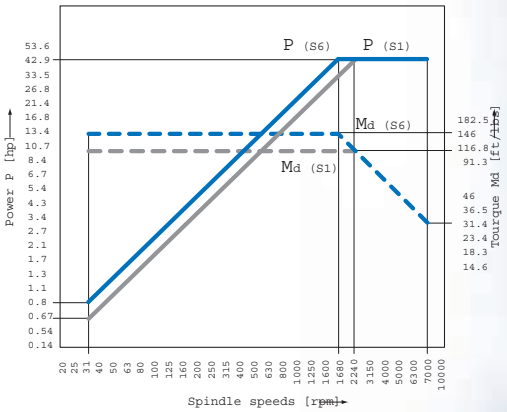


Output diagrams:

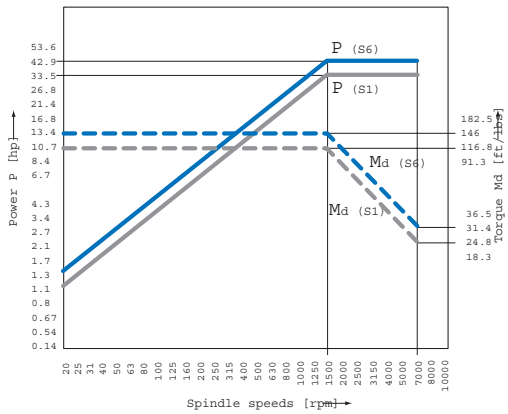
Main- and counter-spindle TWIN 32:



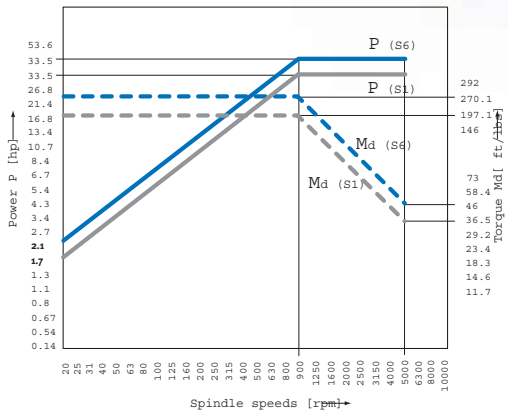
Main- and counter-spindle TWIN 42:



Main- and counter-spindle
TWIN 42 (frame size 2):



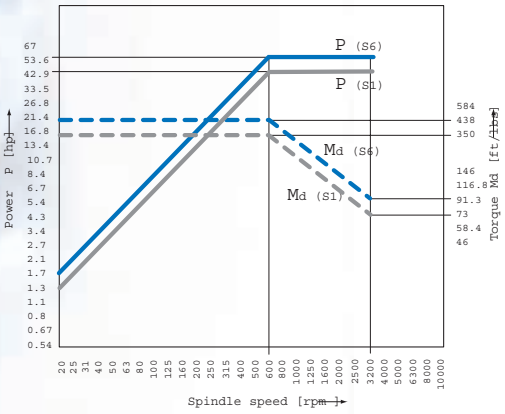
Main- and counter-spindle TWIN 65:



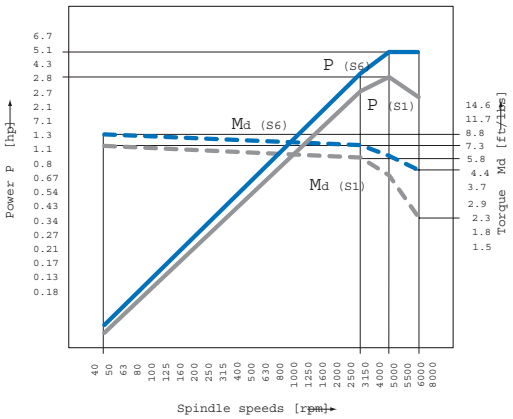
TWIN series technology

Output diagrams:

Main spindle TWIN 102:

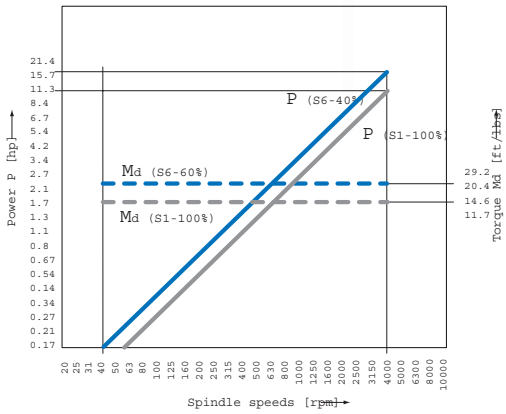


Driven tools TWIN 32/42:



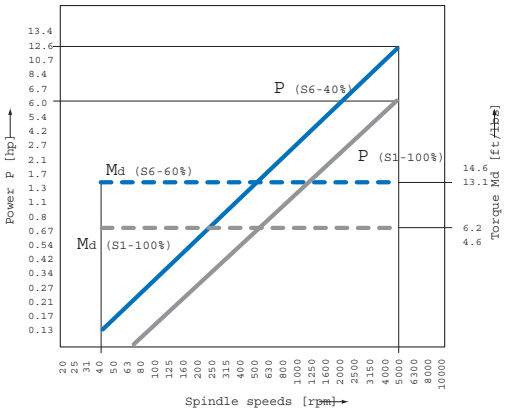
Driven tools

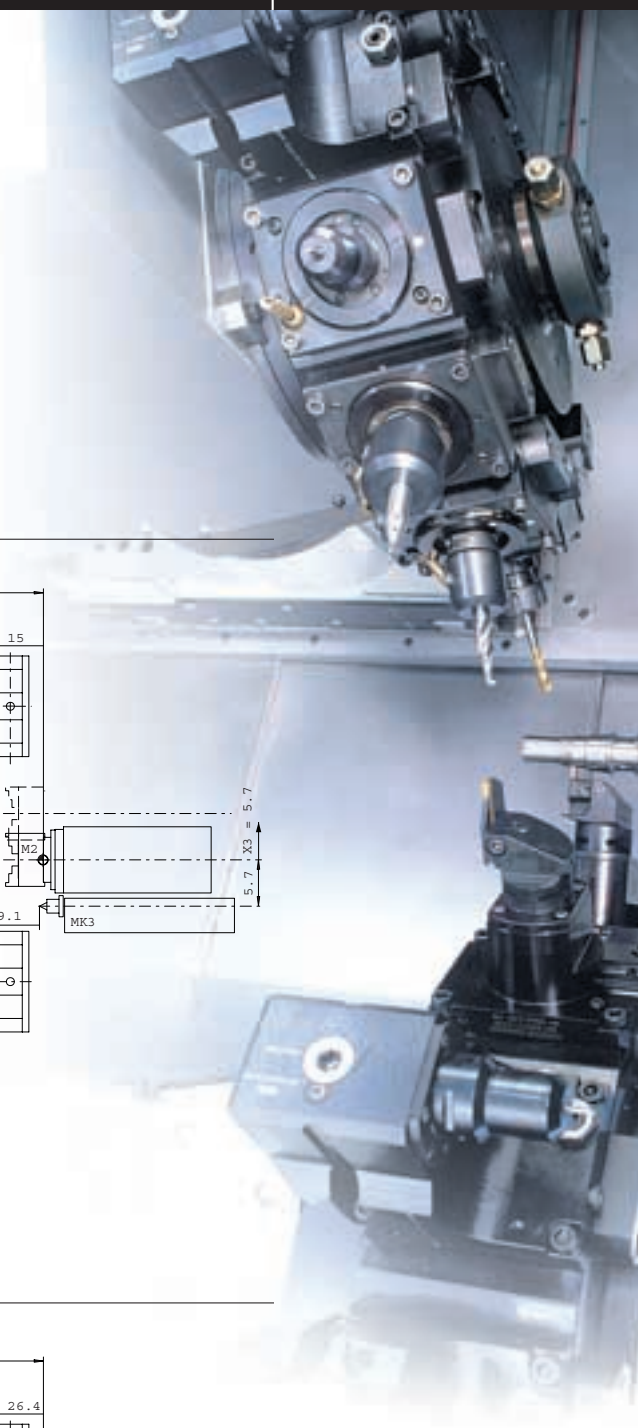
TWIN 42 (frame size 2)/65/102



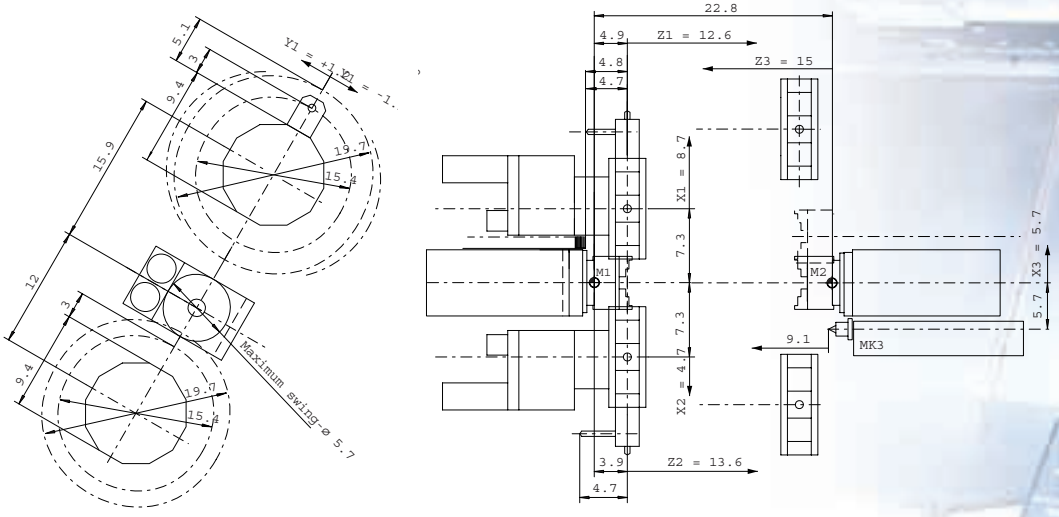
Driven tools

TWIN 42 (frame size 2)/65, B-axis:

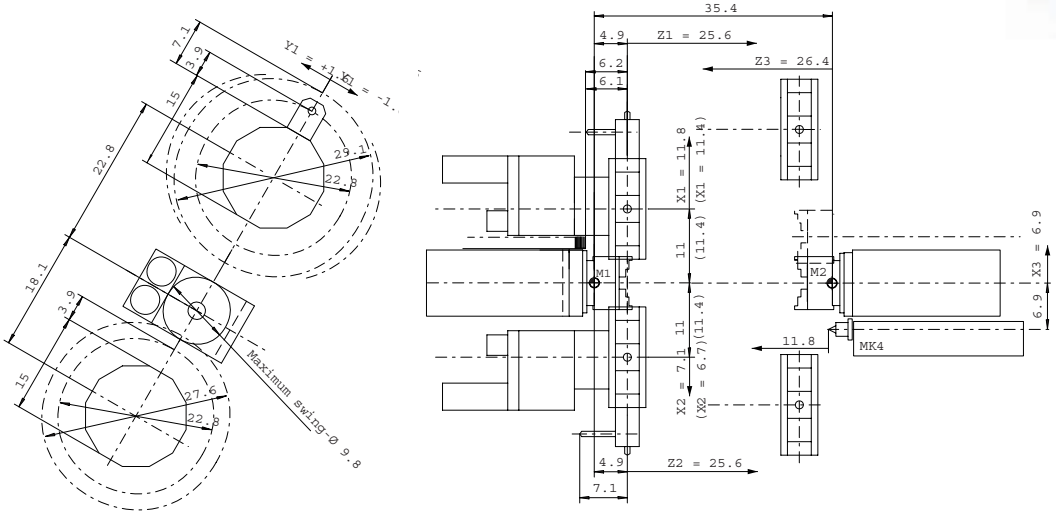


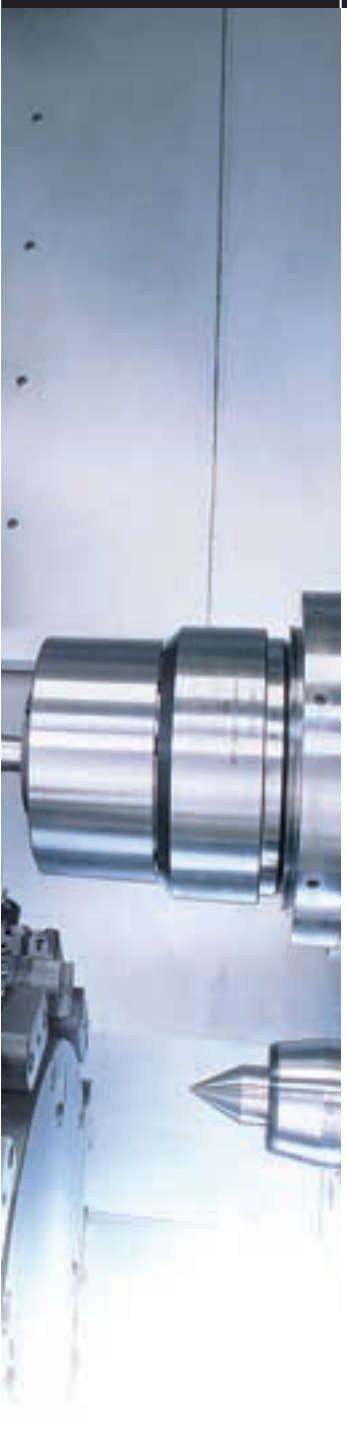


Work area TWIN 32/42:



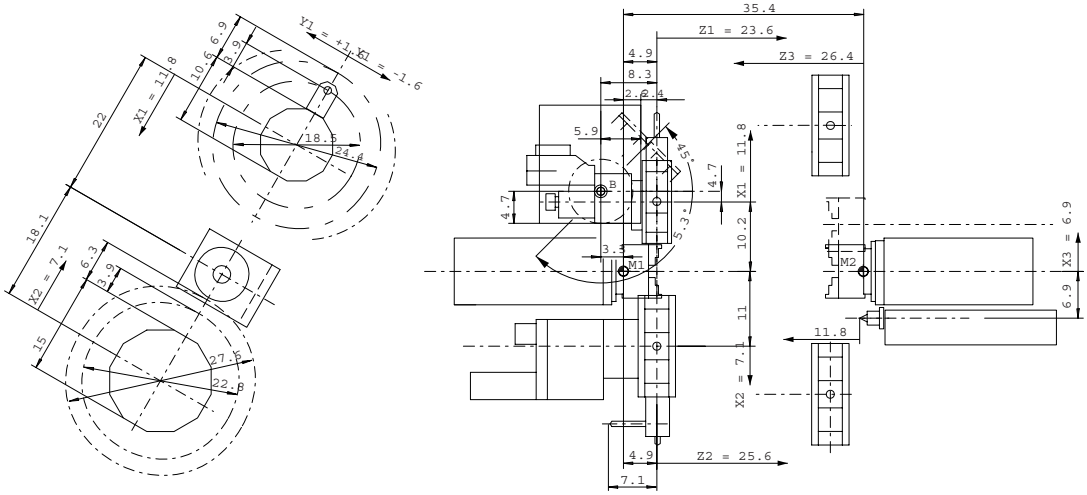
Work area TWIN 42 (frame size 2)/65/102:





TWIN series technology

Work area TWIN 42 (frame size 2)/65 B-axis:



B = rotation point B-axis

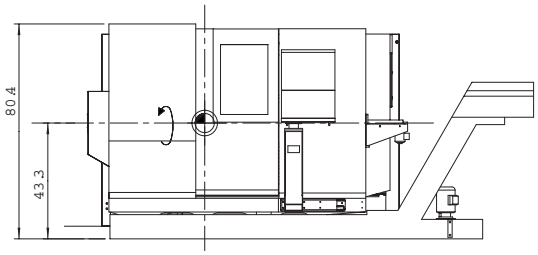
Technical Data:

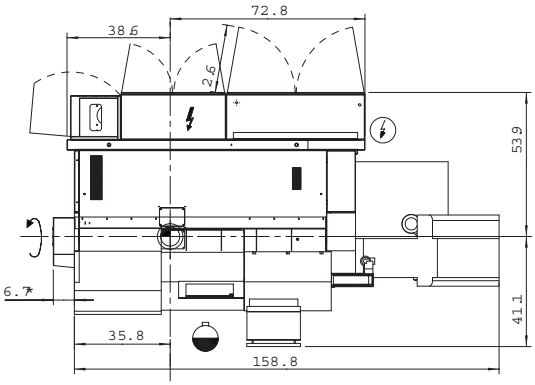
Machine type		TWIN 32	TWIN 42	TWIN 42	TWIN 65	TWIN 102
Frame size		Frame size 1	Frame size 1	Frame size 2	Frame size 2	Frame size 2
Design		60° inclined bed	60° inclined bed	60° inclined bed	60° inclined bed	60° inclined bed
Type of guides		roller guides			roller guides	
Operating range						
Swing-Ø	in.	5.7	5.7	9.8	9.8	9.8
Turning-Ø	in.	3.9	3.9	3.9	7.9	7.9
Spindle distance	in.	22.8	22.8	35.4	35.4	35.4
Spindle 1						
Spindle nose-Ø, (flat flange)	mm	120h5	120h5	140h5	170h5	220h5
Bar-Ø max.	in.	1.4	1.8	1.8	2.6	4
Chuck-Ø	in.	5.1/5.5	5.1/5.5	6.7	7.9 (9.8)	9.8
Spindle 2						
Spindle head Ø (flat flange)	mm	120h5	120h5	140h5	170h5	170h5
Bar-Ø max.	in.	1.4	1.7	1.7	2.6	2.6
Chuck-Ø	in.	5.1/5.5	5.1/5.5	6.7	7.9 (9.8)	7.9 (98)
Main drive 1		integrated spindle motor with C-axis		integrated spindle motor with C-axis		
Input power 40%/100% duty cycle	hp	34.8/28.1	46.9/46.9	42.9/43.5	46.9/42.9	54.9/33.5
Speed range	1/min	40 - 8,000	35-7,000	35-7,000	25-5,000	20-3,200
Torque 40%/100% duty cycle	ft/lbs	73/58.4	146/109.5	146/116.8	270.1/197.1	438/350.4
Main drive 2		integrated spindle motor with C-axis		integrated spindle motor with C-axis		
Input power 40%/100% duty cycle	hp	34.8/28.1	46.9/46.9	42.9/43.5	46.9/42.9	46.9/42.9
Speed range	1/min	40 - 8,000	35-7,000	35-7,000	25-5,000	25-5,000
Torque 40%/100% duty cycle	ft/lbs	73/58.4	146/109.5	146/116.8	270.1/197.1	270.1/197.1
Slide 1 (top)						
Cross travel X / longitudinal travel Z	in.	8.7/12.6	8.7/12.6	11.8/25.6 (23.6*)	11.8/25.6 (23.6*)	11.4/25.6
Vertical travel Y (optional)	in.	±1.2	±1.2	±1.6	±1.6	±1.6
Rapid traverse speed X/Y/Z	ipm	1181/590/1181	1181/590/1181	1181/590/1181	1181/590/1181	1181/590/1181
Slide 2 (bottom)						
Cross travel X / longitudinal travel Z	in.	4.7/13.6	4.7/13.6	7.1/25.6	7.1/25.6	6.7/25.6
Rapid traverse speed X/Z	ipm	1181/1181	1181/1181	1181/1181	1181/1181	1181/1181
Slide 3 (Spindle 2)						
Cross travel X / longitudinal travel Z	in.	5.7/15	5.7/15	6.9/26.4	6.9/26.4	6.9/26.4
Rapid traverse speed X/Z	ipm	1181/590	1181/590	1181/590	1181/590	1181/590
Tool carriers 1 and 2						
Number of tool stations		12	12	12	12	12
Shaft-Ø acc. to VDI (DIN) 69880	in.	.98	.98	1.2	1.2	1.6
Number of driven tool stations		12	12	12	12	12
Power 40%/100% duty cycle	hp	5.1	5.1	15.7 (12.6*)	15.7 (12.6)	15.7
Torque 40%/100% duty cycle	ft/lbs	7.3	7.3	20.4 (13.1*)	20.4 (13.1*)	20.4
Speed range	1/min	30-6,000	30-6,000	20-4,000 (25-5,000*)	20-4,000 (25-5,000*)	20-4,000
B-axis (optional)						
Swing angle B-axis	Degrees	-	-	135/-45	135/-45	-
Tailstock (optional)						
Tailstock	in.	9.1	9.1	11.8	11.8	11.8
Tailstock power	kN	3.0	3.0	6.0	6.0	6.0
Center punch head	MK	3	3	4	4	4
Weight						
Weight, including control cabinet	lbs	ca. 12,100	ca. 12.100	ca. 22,000	ca. 22,000	ca. 22,000
Controls		Siemens 840 D	Siemens 840 D	Siemens 840 D powerline		

* tool carrier 1 with B-axis

The performance characteristics and the space requirements for the TWIN series

Space requirements TWIN 32/42:



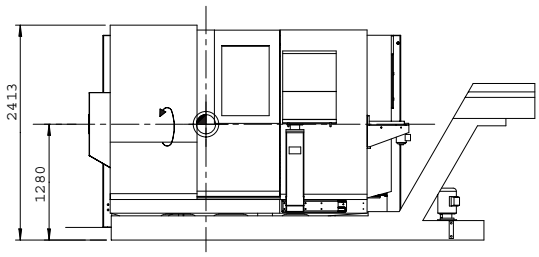


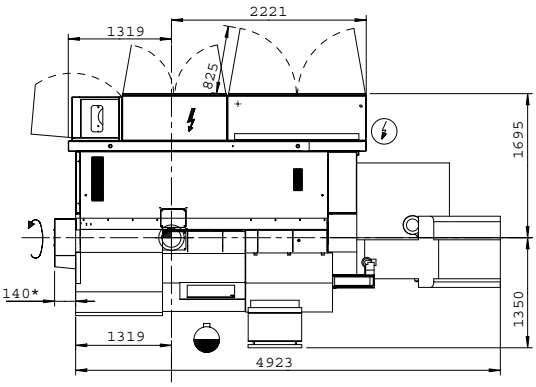
Machine zero-point

Operating side

* TWIN 42

Space requirements for TWIN 42 (frame size 2) /65/102:





Machine zero-point

Operating side

* TWIN 102

Your Representative

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