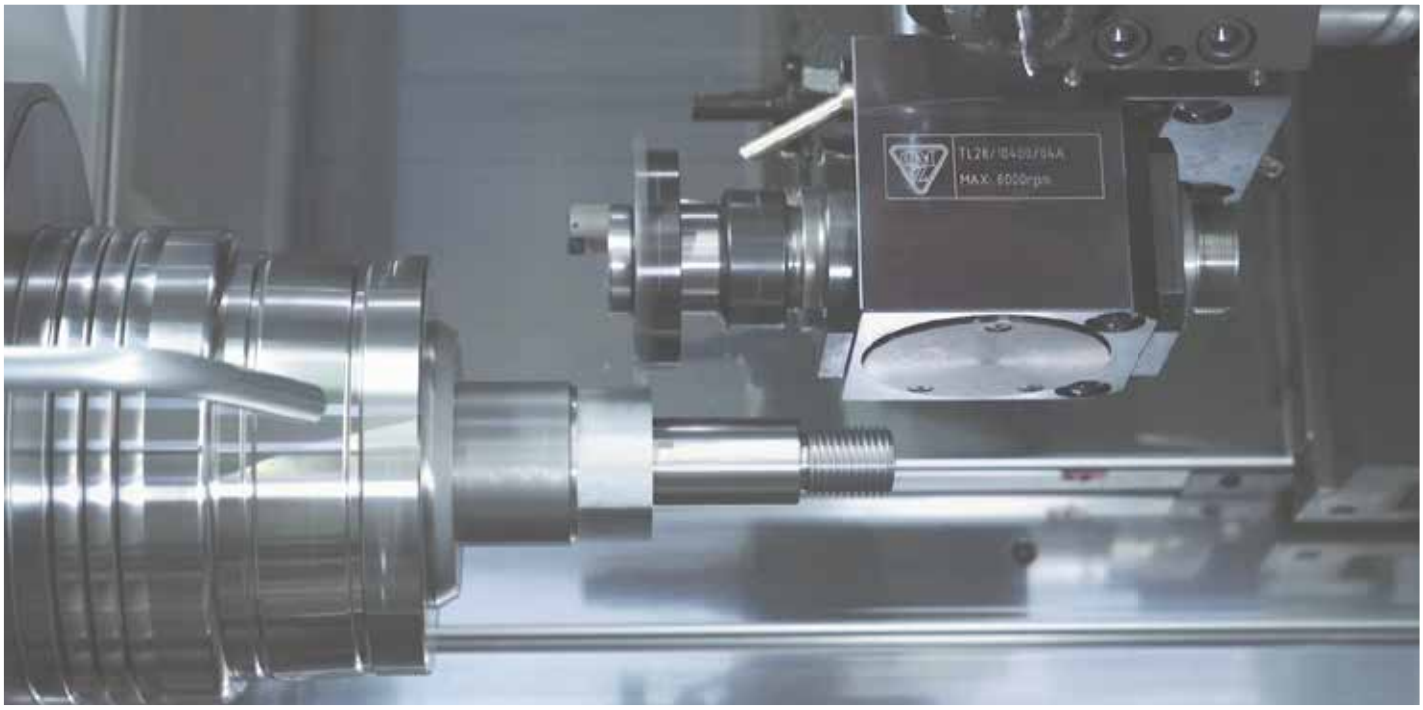
SINGLE TURRET HEAVY DUTY TURNING

FORZA

TA SERIES: Z400 Z640 Z1100 Models



Runs Faster,
Sleeps Less!

EUROTECH
Winning with Technology that Runs Faster, Sleeps Less!

MODEL RANGE

(15/20/25/30)
/- M-Y

PRECISION
RELIABILITY

EUROTECH
Runs Faster, Sleeps Less!

FORZA TA SERIES

TECHNICAL CHARACTERISTICS

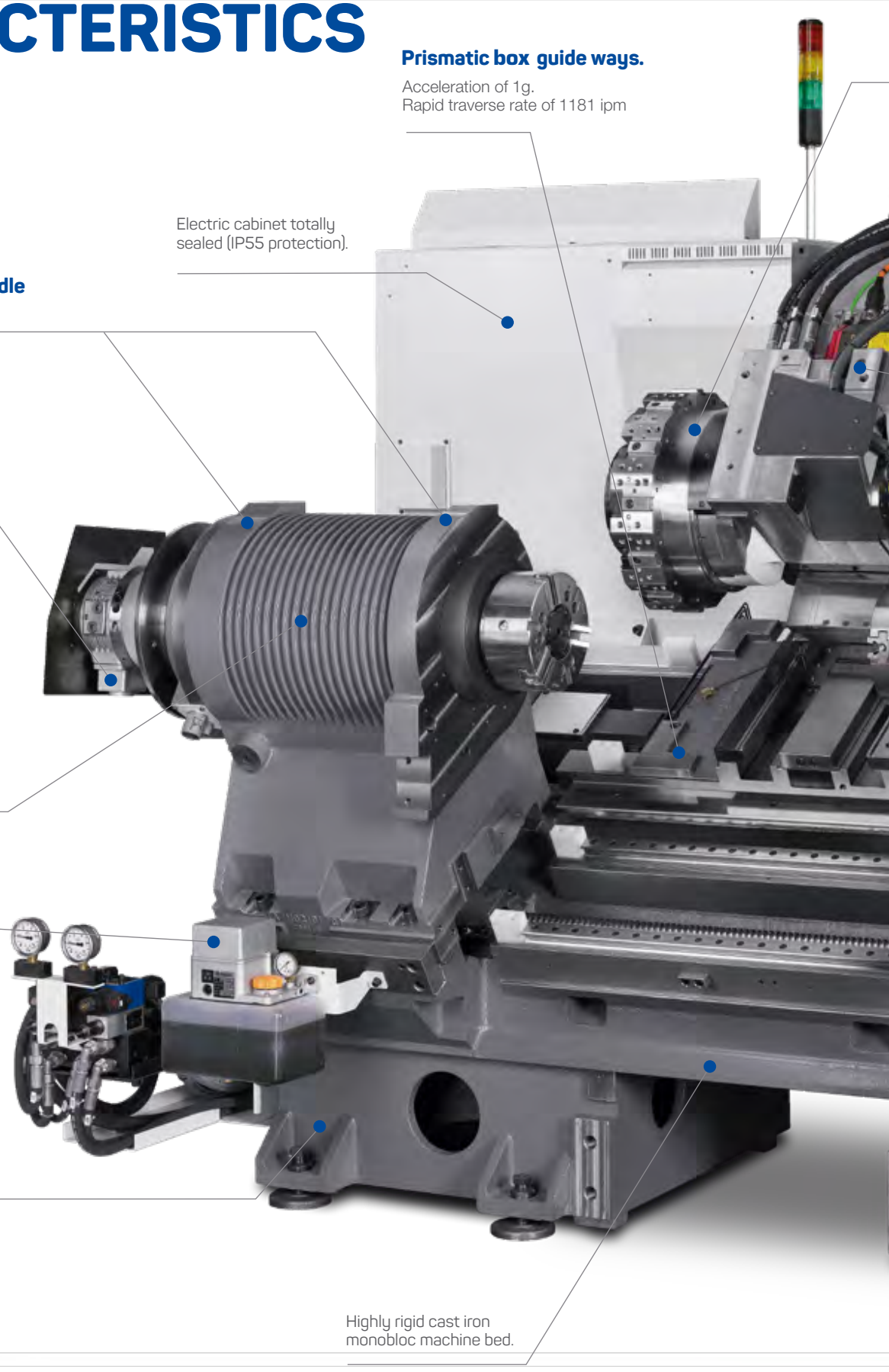
Prismatic box guide ways.

Acceleration of 1g.
Rapid traverse rate of 1181 ipm

Electric cabinet totally sealed (IP55 protection).

Front and rear roller spindle bearings cooled by oil.

Hydraulic cylinder operating at 640 psi



Integral spindle motors with oil cooling.

Smart automatic lubrication system.

Savings and reliability.

Thermal sensor in the bedplate.

It controls the temperature of the oil that cools:

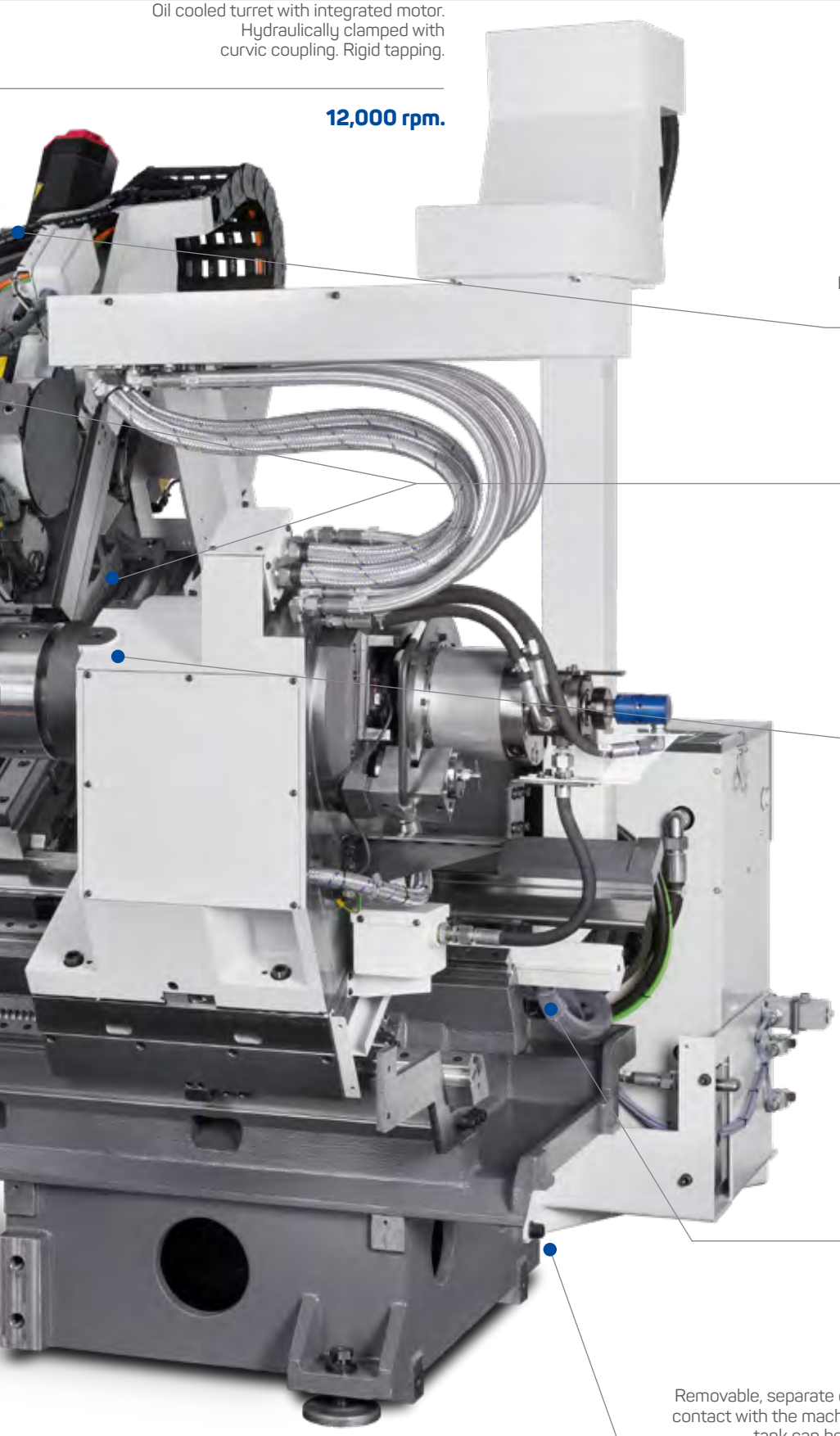
- The Spindles.
- The ballscrew mounts.
- The turret.

Highly rigid cast iron monobloc machine bed.

FORZA TA SERIES

Oil cooled turret with integrated motor. Hydraulically clamped with curvic coupling. Rigid tapping.

12,000 rpm.



Ballscrew mountings are cooled by oil.

Laser compensation in all axes including the C axis.

Integral spindle motors with oil cooling.

Waste lubrication oil piped to a separate tank preventing coolant contamination.

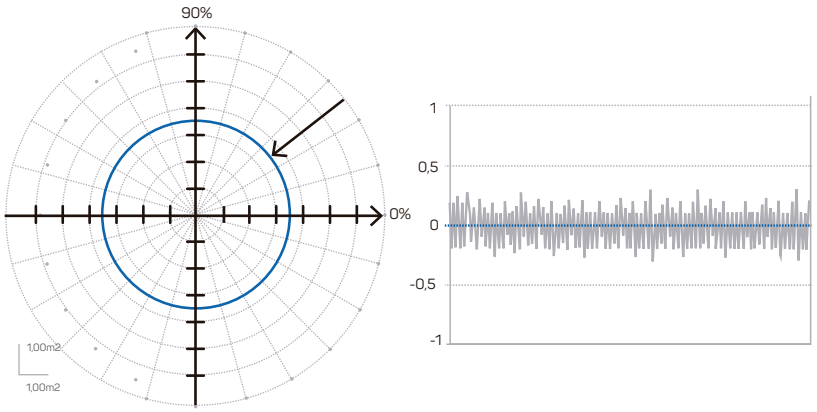
Removable, separate coolant tank, guarding design prevents coolant contact with the machine bed ensuring thermal stability. The coolant tank can be removed without removing the chip conveyor.

INTEGRATED SPINDLES

INTEGRATED SPINDLE MOTORS INCREASE ACCURACY AND REDUCE MACHINING TIMES

The spindle is driven through a motor integrated in the headstock body itself. This construction ensures an outstanding spindle robustness and vibration dampening that significantly improves surface finish and roundness.

Additionally, spindle acceleration and braking times are shortened by about 20-50% because of the reduced inertia and higher loading capacity of oil-cooled headstocks.



ROUNDNESS	SURFACE FINISH
· MACHINE: TA 15	· MACHINE: TA 15
· MATERIAL: ALUMINIUM	· MATERIAL: ALUMINIUM
· Ø 2.36 in.	· Ø 2.36 in.
· ROUNDNESS ACHIEVED: 0,3 µm	· ROUGHNESS ACHIEVED: Rmax 0,6 µm
· FILTER: 150 p/r (50%)	· FILTER: 150 p/r (50%)
· MEASUREMENT RANGE: 0,10°	

* The results obtained herein may not be attainable due to environmental and measuring differences.

No pulleys or belts

· No belt slipping.
· Better surface finish.
· Lower noise level.

Hydraulic cylinder at 640 psi

· More compact.
· Reduced cross-section means higher speed clamping.
· Higher sensitivity for light clamping.

Special coolant collection tray made by **Eurotech**

Excellent access to adjust the detectors. Easy chip removal. Protection against coolant entering into the hydraulic circuit.

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Runs Faster, Sleeps Less!

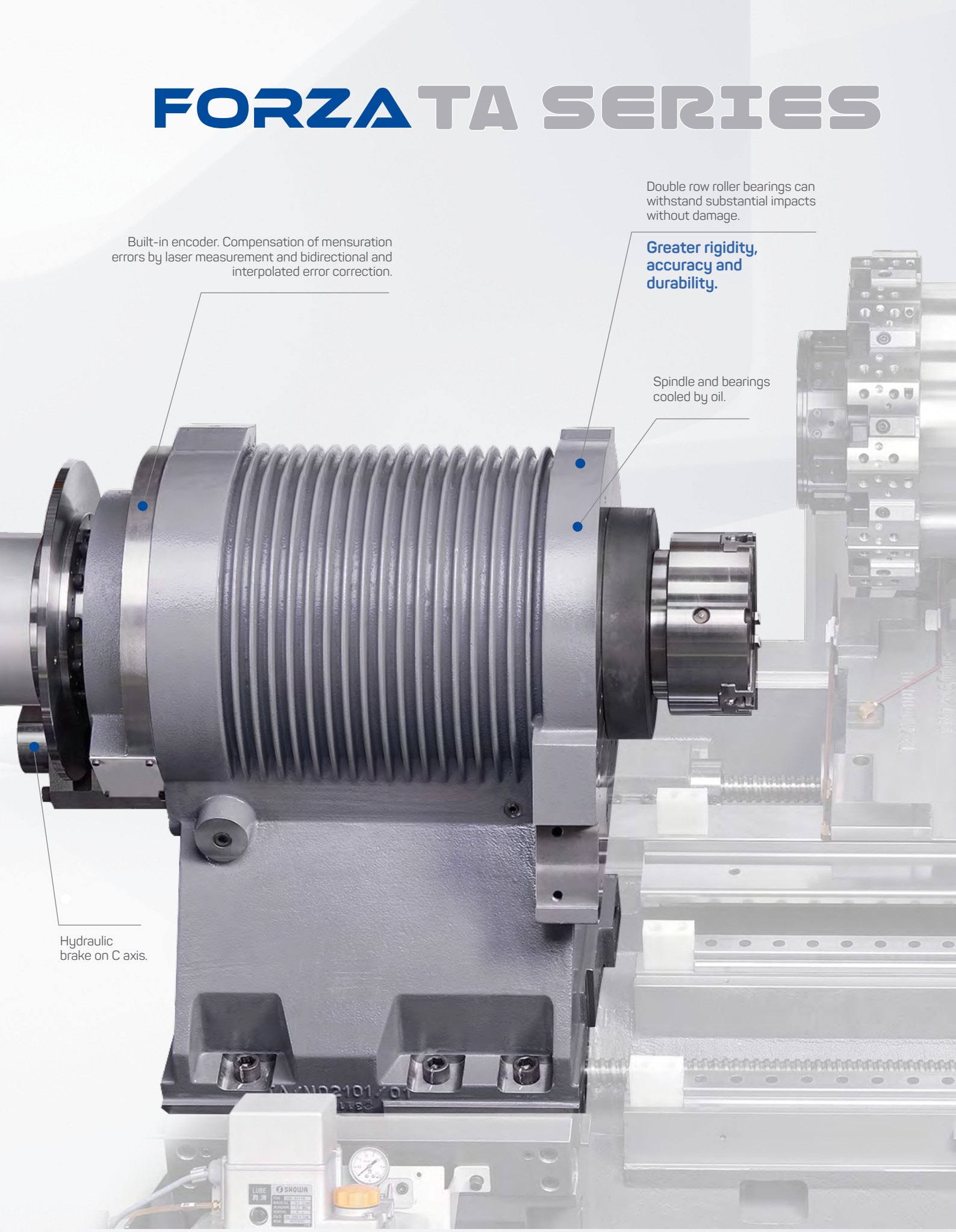
FORZA TA SERIES

Double row roller bearings can withstand substantial impacts without damage.

Greater rigidity, accuracy and durability.

Built-in encoder. Compensation of mensuration errors by laser measurement and bidirectional and interpolated error correction.

Spindle and bearings cooled by oil.



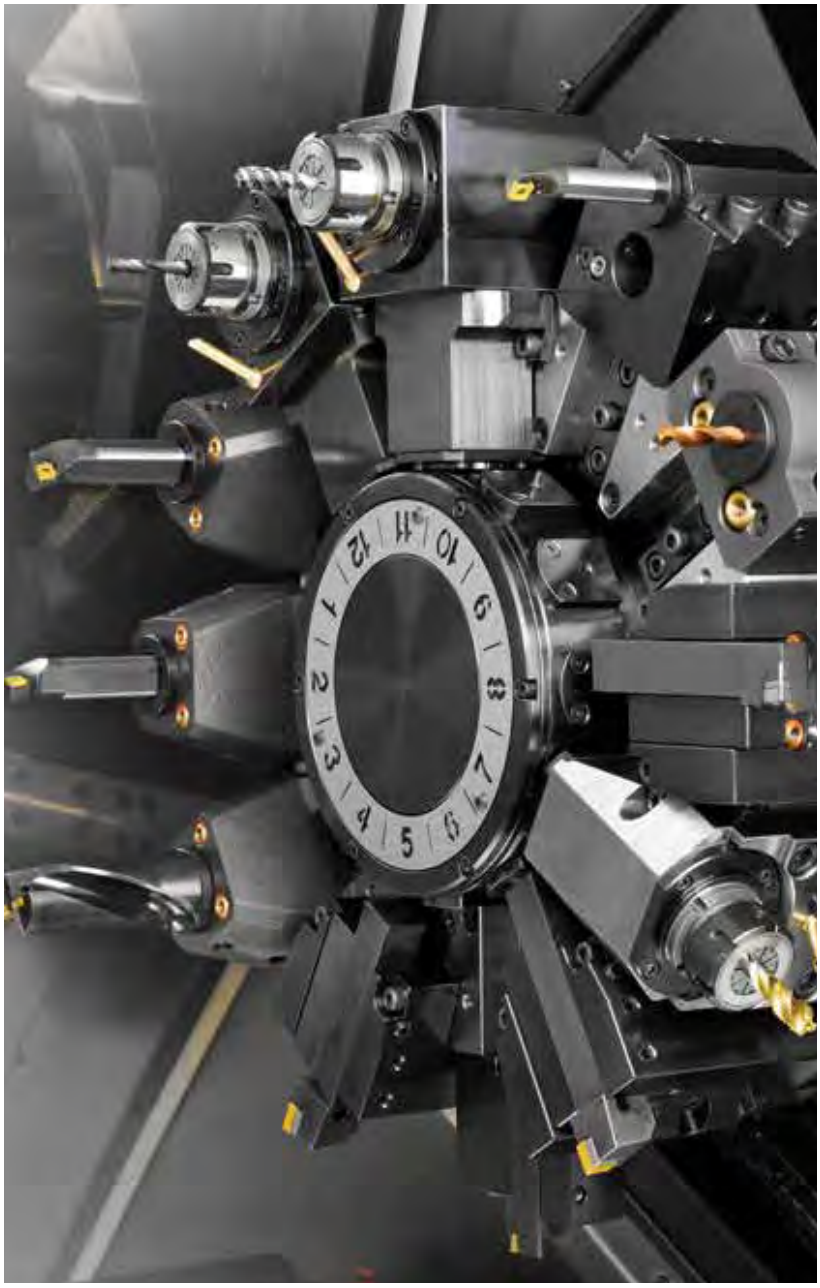
Hydraulic brake on C axis.

FORZA TA SERIES

TURRET WITH A BUILT-IN MOTOR

AND HYDRAULIC CLAMPING

12,000 rpm /55 lb.ft



Turret

Sturdily-built turret, incorporating a large diameter turret disk which enables the interferences between tools and chuck to be reduced.

Indexing

Bi-directional high-speed indexing is driven by a servomotor. The motor used for turret rotation is similar to motors used for axis movement, thus achieving high rotation rigidity and smoothness.

Indexing time

The indexing time is 0.2 seconds for adjacent turret positions and 0.5 seconds for 180 degrees.

Unclamping

The turret is unclamped on retract and clamped on approach, thus ensuring an effective tool changing time of 0.2 s.

Clamping

The clamping is done by means of a hydraulic system. The locking rings are 8.6 in diameter and are a curvic coupling.

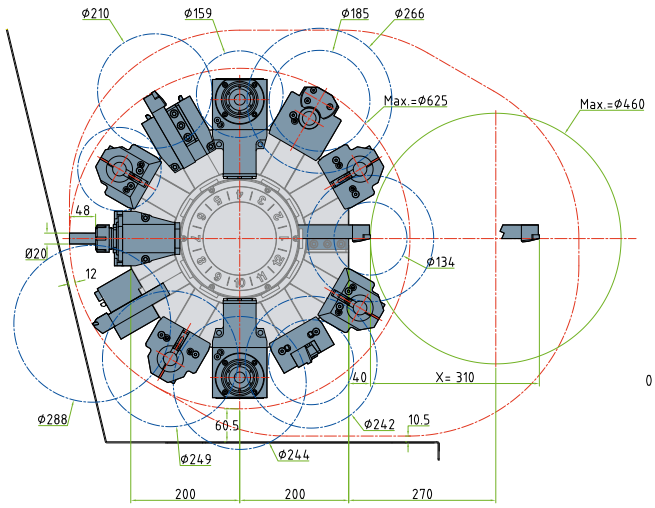
Transmission

The transmission of driven tools is fitted with Gleason type conical spiral gears, hardened and ground giving high accuracy when rigid tapping.

FORZA TA SERIES

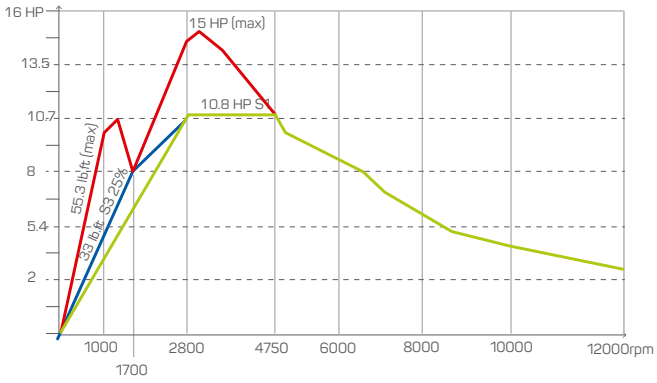
TURRET WITH A BUILT-IN MOTOR

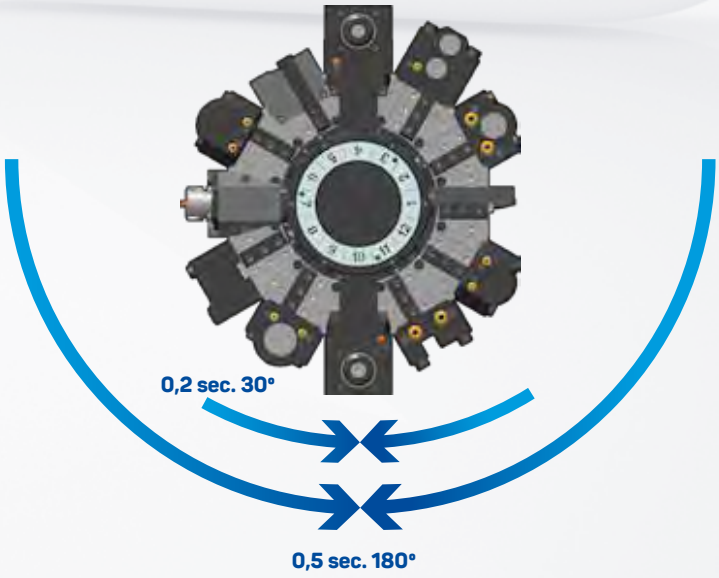
Interference diagram of driven tool motor. 12,000 rpm /55.3 lb.ft



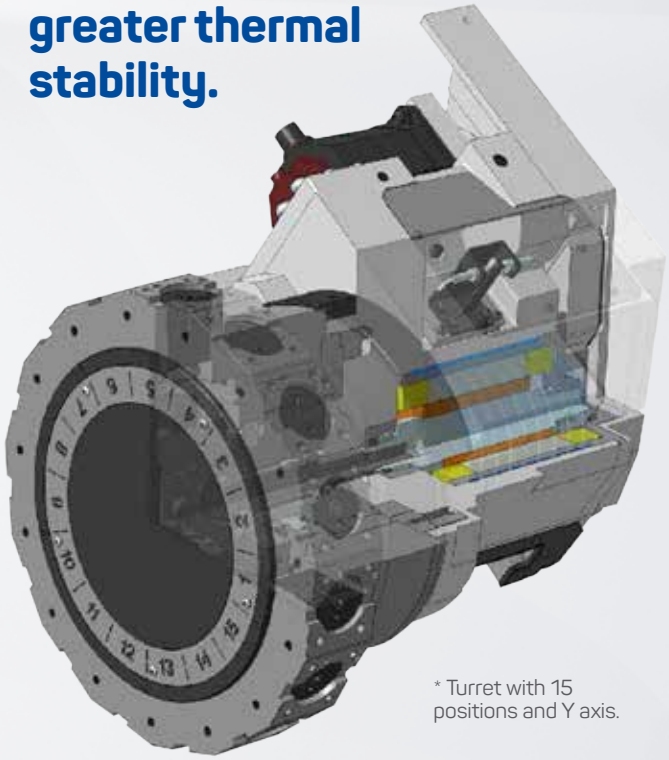
Power and torque diagram of driven tool motor. 12,000 rpm /55.3 lb.ft

Max = 55.3 lb.ft / 15.2 HP
S3 25% = 33.2 lb.ft/ 10.8 HP
S1 = 36.3 lb.ft / 10.8 HP





Turret cooled with oil for greater thermal stability.



* Turret with 15 positions and Y axis.

Tool Turret

The robust turret disk does not lift while indexing. The turret is unclamped on retract and clamped on approach, thus ensuring an effective tool changing time of 0.2 s.

12 positions disc. 0.2 seconds 30°

12,000 rpm/min 55.3 lb.ft 15 HP

FORZA TA SERIES
TOOL HOLDERS

Boring & drilling holders Ø40

TD/10300/40
(Ø1.57 in)

TD/10300/41
(Ø1.57 in)

TL20/10000/14 (Ø0.31in)
TL20/10000/15 (Ø0.39 in)
TL20/10000/16 (Ø0.47 in)
TD/10300/16 (Ø0.63 in)
TD/10300/20 (Ø0.79 in)
TD/10300/25 (Ø0.98 in)
TD/10300/32 (Ø1.26 in)

Double boring holders Ø32

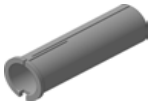
TD/10300/43
(Ø1.26 in)

TD/10300/42
(Ø1.26 in)

TL20/10000/27 (Ø0.31in)
TL20/10000/28 (Ø0.39 in)
TL20/10000/29 (Ø0.47 in)
TL20/10000/30 (Ø0.63 in)
TL20/10000/31 (Ø0.79 in)
TL20/10000/43 (Ø0.98 in)

Boring holders Ø60

TD/10300/60
(Ø2.36 in)



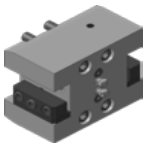
TD/10300/50
(Ø1.97 in)

Boring holders Ø80

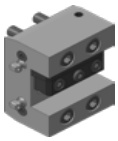
TD/10300/80
(Ø3.15 in
*Not suitable for 16 station turret.

Turning holders □25

TD/10300/45



TD/10300/46



TD/10300/48

TD/10300/47

TD/10300/49

TD/10300/44

Turning holders □32

TD/10300/59

Live tool holders

TL20/10400/01B
Max: 6000 rpm

TL20/10400/05B
Max: 6000 rpm

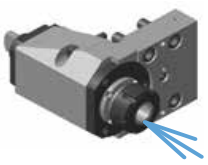
TL20/10400/06
Max: 12000 rpm

TL20/10400/07B
Max: 6000 rpm

TL20/10400/08
Max: 12000 rpm

TL20/10400/04A
Max: 8000 rpm

TL20/10400/03A
Max: 8000 rpm



TL20/10400/09
Max: 12000 rpm

TL20/10400/10
Max: 4000 rpm

Others

TL20/10000/03

TL20/10000/36
(Ø10mm)

TL20/10000/37

TL15/10000/05

TL20/10051
TL20/10054

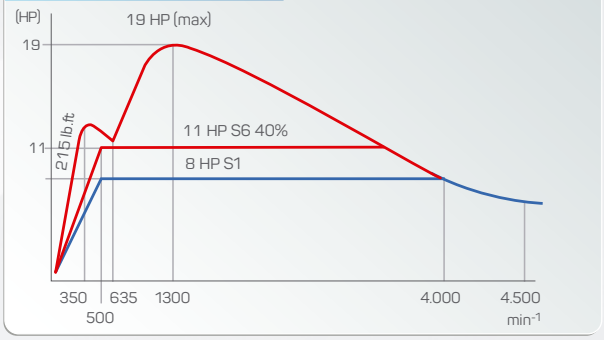
FORZA TA SERIES

INTEGRATED SPINDLES

POWER AND TORQUE DIAGRAM OF SPINDLES

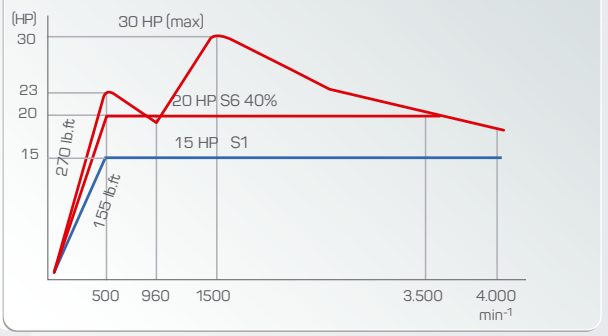
TA15-SUB SPINDLE

T= 215 lb.ft (max)
T= 113 lb.ft (S6 40%)
T= 85 lb.ft (S1)



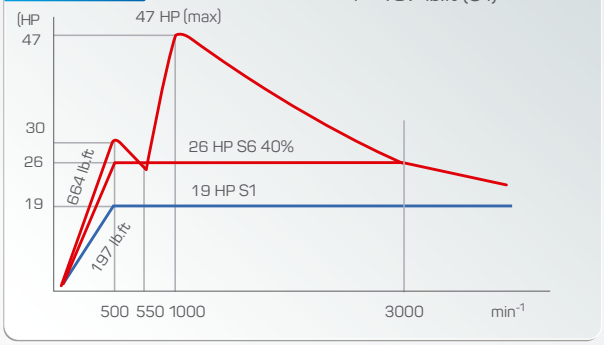
TA20

T= 270 lb.ft (max)
T= 211 lb.ft (S6 40%)
T= 155 lb.ft (S1)



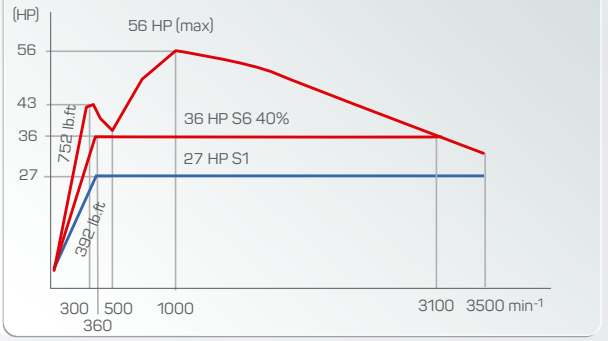
TA25

T= 664 lb.ft (max)
T= 268 lb.ft (S6 40%)
T= 197 lb.ft (S1)



TA30

T= 752 lb.ft (max)
T= 531 lb.ft (S6 40%)
T= 392 lb.ft (S1)



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ROBOT GL20 II

AUTOMATE SHORT AND LONG BATCHES

A range of gripper heads with 2 x 22lb capacity to suit your needs (GL20 II)

1_3-jaw servo gripper with 2 x 180° indexing.
2_2-jaw servo gripper with 2 x 180° indexing.
3_3-jaw pneumatic gripper with 2 x 90° indexing.
4_Pneumatic gripper for shafts with 2 x 90° indexing.
5_Servo gripper for shafts with 2 x 90° indexing.

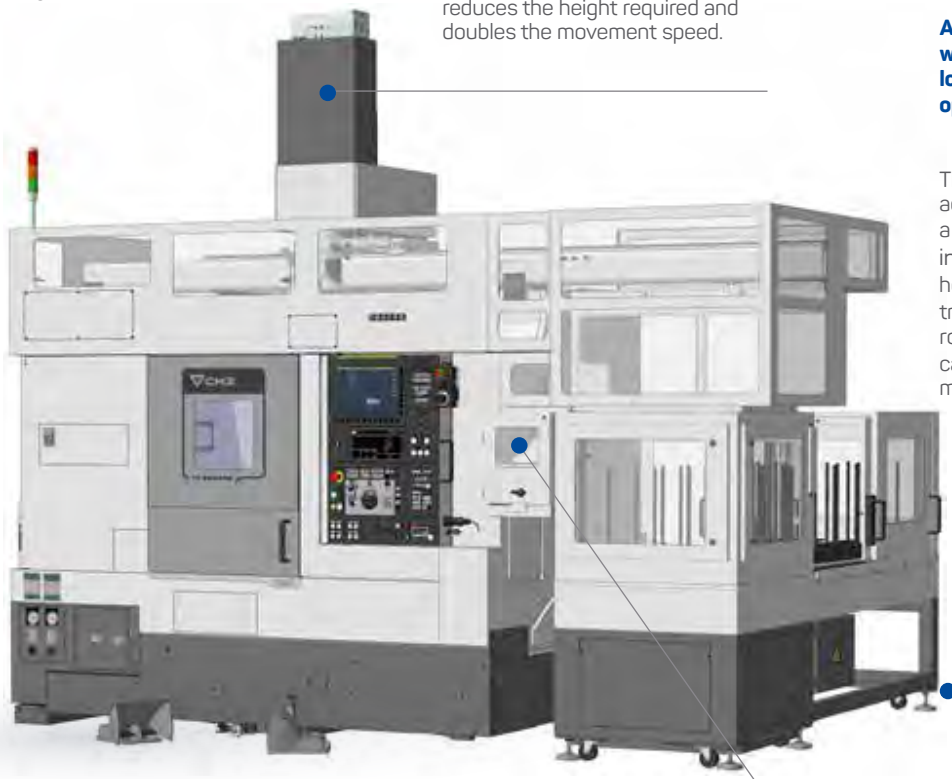
Very easy to use

Easy to use and to program. Eurotech have developed a conversational programming system that makes it very easy to set and use the GL20 II and GL6 Gantry robots.

Workstocker WS-280x400x14 with 14 pallets.

A wide range of workstockers with large capacity permits long periods of unmanned operation.

The Vertical movement of the wrist reduces the height required and doubles the movement speed.



This workstocker can accommodate components to a maximum diameter of 11.2 in and maximum stacked height of 19.7 in (maximum travel of 15.8 in). The 14 rotary pallets each have a carrying capacity of 165 lb maximum.

WS280

Checking station.

EUROTECH
Runs Faster, Sleeps Less!

FORZA TA SERIES

Workstocker
WS-700 for shafts:

Workstocker to stock shafts from 3.15 in to 27.6 in long and from 0.39 in to 3.15 in diameter. (Contact Eurotech for other sizes).

Z axis speed
(Longitudinal): 7086 ipm

Y axis speed
(Transverse): 4724 ipm

X axis speed
(Vertical): 7806 ipm

Pneumatic roof shutter gives access for the robot.

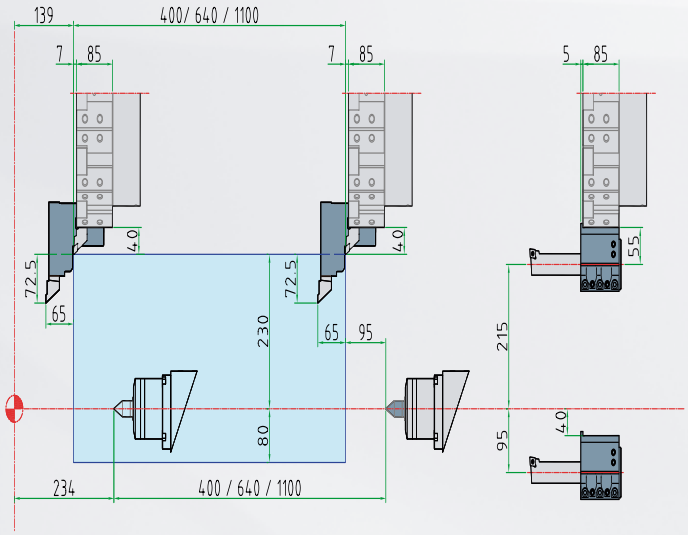
CNC controlled axes.
· Rack and pinion drive.
· Automatic lubrication controlled by the CNC.

Checking station.

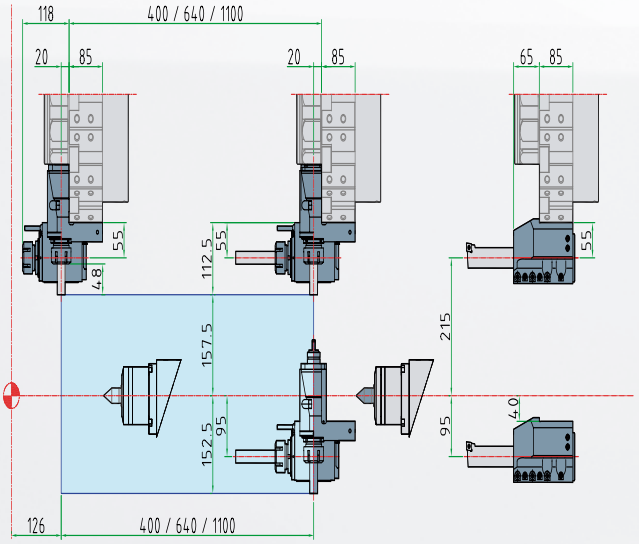
WS280

FORZA TA SERIES
TRAVELS

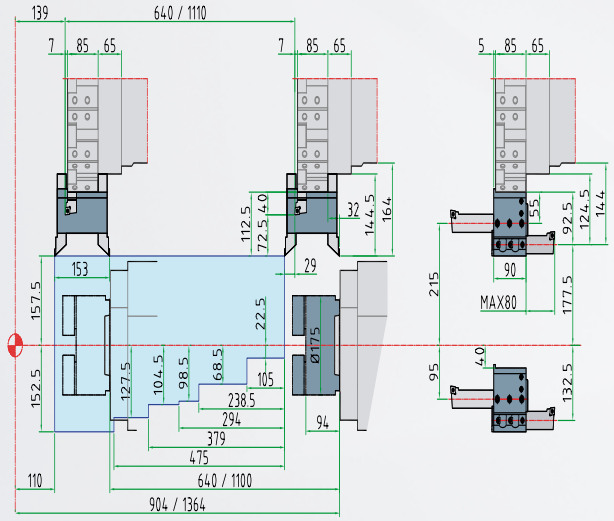
Travels with tailstock



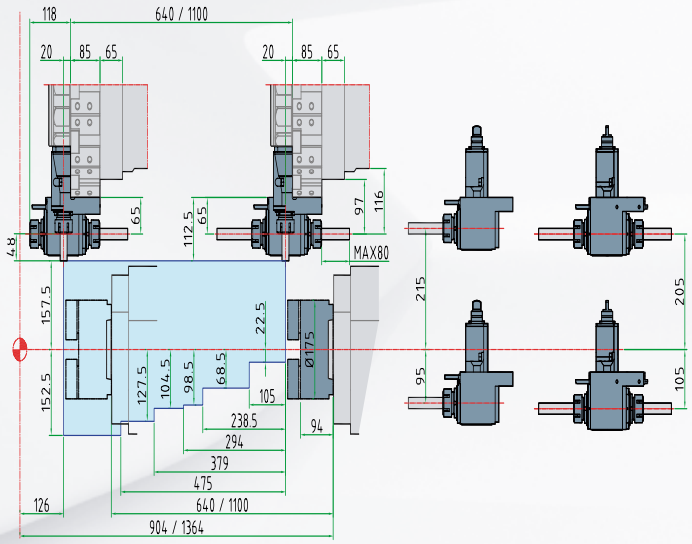
Travels with tailstock and live tooling



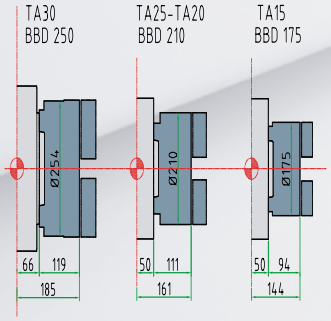
Travels with sub spindle



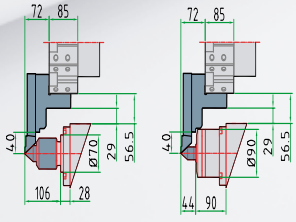
Travels with sub spindle and live tooling



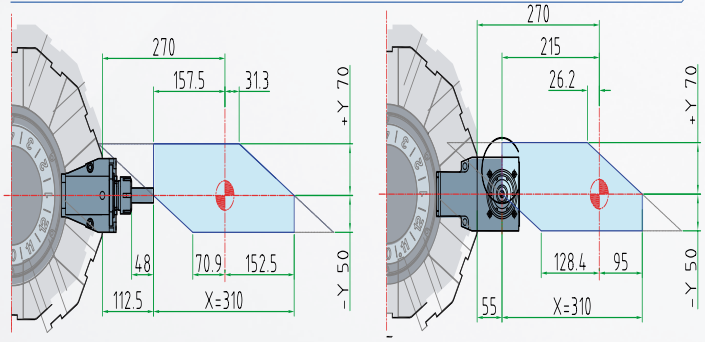
Standard chucks dimensions



Interference with tailstock centre point



Y axis travel



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FORZA TA SERIES

TECHNICAL SPECIFICATIONS

	TECHNICAL DATA		TA15					TA20					TA25					TA30				
			TA15M	TA15Y	TA15S	TA15MS	TA15YS	TA20	TA20M	TA20Y	TA20S	TA20MS	TA25	TA25M	TA25Y	TA25S	TA25MS	TA30	TA30M	TA30Y	TA30S	TA30MS
GENERAL DATA	Maximum diam. swing over bed (inch)		29.92					29.92					29.92					29.92				
	Maximum diam. swing over slides (inch)		23.62					23.62					23.62					23.62				
	Maximum turning diameter (inch)		18.11					18.11					18.11					18.11				
	Distance between spindle and tailstock center (inch)	Z400	19.29	-				18.62	-				18.62	-				17.68	-			
		Z640	28.74	-				28.07	-				28.07	-				27.12	-			
		Z1100	46.85	-				46.18	-				46.18	-				45.24	-			
	Distance between center of spindles (inch)	Z640	-	26.22				-	25.55				-	25.55				-	24.61			
		Z1100	-	44.33				-	42.66				-	43.66				-	42.72			
	X-axis travel (inch)		12.2					12.2					12.2					12.2				
	Z-axis travel (inch)	Z400	15.75					15.75					15.75					15.75				
		Z640	25.2					25.2					25.2					25.2				
		Z1100	43.31					43.31					43.31					43.31				
	Y-axis travel (inch)		-	-	+2/6 -1.97	-	-	+2/6 -1.97	-	-	+2/6 -1.97	-	-	+2/6 -1.97	-	-	+2/6 -1.97	-	-	+2/6 -1.97	-	-	+2/6 -1.97
	B-axis travel (inch)	Z400	15.75	-				15.75	-				15.75	-				15.75	-			
		Z640	25.2	25.2				25.2	25.2				25.2	25.2				25.2	25.2			
		Z1100	43.31	43.31				43.31	43.31				43.31	43.31				43.31	43.31			
	Fast feedrate X (m/min)		30					30					30					30				
	Fast feedrate Z (m/min)		30					30					30					30				
	Fast feedrate Y (m/min)		-	-	15	-	-	-	-	15	-	-	-	-	15	-	-	-	-	15	-	-
	Fast feedrate B (m/min)		11	30				11	30				11	30				11	30			
	Axis acceleration		1g=9,8 m/s2					1g=9,8 m/s2					1g=9,8 m/s2					1g=9,8 m/s2				
SPINDLE	Maximum speed (rpm)		4500					4000					4000					3500				
	Bearing outside diameter (inch)		5.9					6.69					6.69					7.87				
	Bearing inside diameter (inch)		3.94					4.33					4.33					5.12				
	Spindle nose		ASA 6"A2					ASA 6"A2					ASA 6"A2					ASA 8"A2				
	Spindle inside diameter (inch)		2.4					2.87					2.87					3.58				
	Maximum bar diameter (inch)		2.05					2.6					2.6					3.23				
	Chuck diameter (inch)		6.89/8.27					8.27					9.84/8.27					10/12.4				
	Chuck bore (inch)		2.2/2.05					2.6					2.6					3.23				
	Spindle power (HP (max./S6 40%)		18.8/10.7					29.5/20.1					46.9/25.5					56.3/36.2				
	Turning torque (lb.ft)		215.4 (max) 112.8 (S6 40%)					269.9 (max) 210.9 (S6 40%)					663.8 (max) 267.7 (S6 40%)					752.3 (max) 531 (S6 40%)				
TAILSTOCK	Morse cone	Ø90x120 live center	CM5	-				CM5	-				CM5	-				CM5	-			
		Ø90x120 rotary quill	CM3	-				CM3	-				CM3	-				CM3	-			
	Tailstock travel (inch)	Z400	15.75	-				15.75	-				15.75	-				15.75	-			
		Z640	25.2	-				25.2	-				25.2	-				25.2	-			
		Z1100	43.31	-				43.31	-				43.31	-				43.31	-			
	Max. force (lbf)		930	-				980	-				980	-				1350	-			

	TECHNICAL DATA		TA15					TA20					TA25					TA30				
			TA15M	TA15Y	TA15S	TA15MS	TA15YS	TA20	TA20M	TA20Y	TA20S	TA20MS	TA25	TA25M	TA25Y	TA25S	TA25MS	TA30	TA30M	TA30Y	TA30S	TA30MS
TURRET	Number of positions		12					12					12					12				
	Section of tools (mm)		25x25 (Ø50)					25x25 (Ø50)					25x25 (Ø50)					25x25 (Ø50)				
	Changing time		30° 0,2s-180° 0,5s					30° 0,2s-180° 0,5s					30° 0,2s-180° 0,5s					30° 0,2s-180° 0,5s				
	Interlocking force at 45 bar (kgf)		5090					5090					5090					5090				
DRIVEN TOOLS	Number of driven tools		-	12	-	12		-	12	-	12		-	12	-	12		-	12	-	12	
	Turning speed (rpm)		-	12000	-	12000		-	12000	-	12000		-	12000	-	12000		-	12000	-	12000	
	Power (HP) (max./S1)		-	15.2/10.9	-	15.2/10.9		-	15.2/10.9	-	15.2/10.9		-	15.2/10.9	-	15.2/10.9		-	15.2/10.9	-	15.2/10.9	
	Maximum torque (lb.ft		-	55.3	-	55.3		-	55.3	-	55.3		-	55.3	-	55.3		-	55.3	-	55.3	
SUBSPINDLE	Maxdmum speed (rpm)		-	4500				-	4500				-	4500				-	4500			
	Bearing outside diameter (inch)		-	5.9				-	5.9				-	5.9				-	5.9			
	Bearing inside diameter (inch)		-	3.94				-	3.94				-	3.94				-	3.94			
	Spindle nose		-	ASA 6"A2				-	ASA 6"A2				-	ASA 6"A2				-	ASA 6"A2			
	Spindle inside diameter (inch		-	2.4				-	2.4				-	2.4				-	2.4			
	Bar diameter (inch		-	2.05				-	2.05				-	2.05				-	2.05			
	Chuck diameter (inch)		-	6.89				-	6.89				-	6.89				-	6.89			
	Chuck bore (inch)		-	2.2				-	2.2				-	2.2				-	2.2			
	Power (HP) (max./ S6 40%		-	18.8/10.7				-	18.8/10.7				-	18.8/10.7				-	18.8/10.7			
	Turning torque (lb.ft) (max./S6 40%		-	215/113				-	215/113				-	215/113				-	215/113			
MISCELANEOUS	Coolant tank (gal)	Z400 Lateral	57.2					57.2					57.2					57.2				
		Z400 Rear	52.0					52.0					52.0					52.0				
		Z640 Lateral	59.8					59.8					59.8					59.8				
		Z640 Rear	52.0					52.0					52.0					52.0				
		Z1100	67.6					67.6					67.6					67.6				
	Hydraulic oil tank (liters)		2.6					2.6					2.6					2.6				
	Lubrication oil tank (liters)		1.0					1.0					1.0					1.0				
	Installed power KVA		30	30	30	45	45	45	30	30	30	45	45	45	45	45	45	65	45	45	45	45	45	65
	Functioning voltage		400V 50Hz +5% (230V 50Hz +5%)					400V 50Hz +5% (230V 50Hz +5%)					400V 50Hz +5% (230V 50Hz +5%)					400V 50Hz +5% (230V 50Hz +5%)				
	Environmental temperature		35°C					35°C					35°C					35°C				
	Total weight (lb)	Z400	14550(*)	-				14991(*)	-				14991(*)	-				15432(*)	-			
		Z640	15432(*)	16314(*)				15652(*)	16534(*)				15652(*)	16534(*)				16093(*)	17195(*)			
		Z1100	17195(*)	18077(*)				17416(*)	18298(*)				17416(*)	18298(*)				17636(*)	19180(*)			
	Dimensions (inch)	TA Z400	91x70x74					91x70x74					91x70x74					91x70x74				
		TAY Z400	91x70x83					91x70x83					91x70x83					91x70x83				
		TA Z640	100x69x74					100x69x74					100x69x74					100x69x74				
		TAY Z640	100x69x83					100x69x83					100x69x83					100x69x83				
		TA Z1100	135x73x76					135x73x76					135x73x76					135x73x76				
		TAY Z1100	135x73x88					135x73x88					135x73x88					135x73x88				
	Inner volume (ft3)	TA Z400	35.31					35.31					35.31					35.31				
		TAY Z400	40.61					40.61					40.61					40.61				
		TA Z640	45.91					45.91					45.91					45.91				
		TAY Z640	52.97					52.97					52.97					52.97				
		TA Z1100	63.56					63.56					63.56					63.56				
		TAY Z1100	74.16					74.16					74.16					74.16				

(*) Approximate weights. Due to constant development of our products all specifications given here in are subject to change without notice.

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Eurotech has nationwide distributors with over 100 service technicians. Eurotech's USA headquarters trains and supports our distributors and customers.

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– Geoff Giner, Model Screw Products

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