TA SERIES

TA Z400 / TA Z640 / TA Z1100 MODELS

CMZ

Turning the world

MODEL RANGE

TA Z400 MODEL

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

PRECISION
RELIABILITY

MODEL RANGE

TA Z640 MODEL

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

HIGH
PERFORMANCE

TA Z640

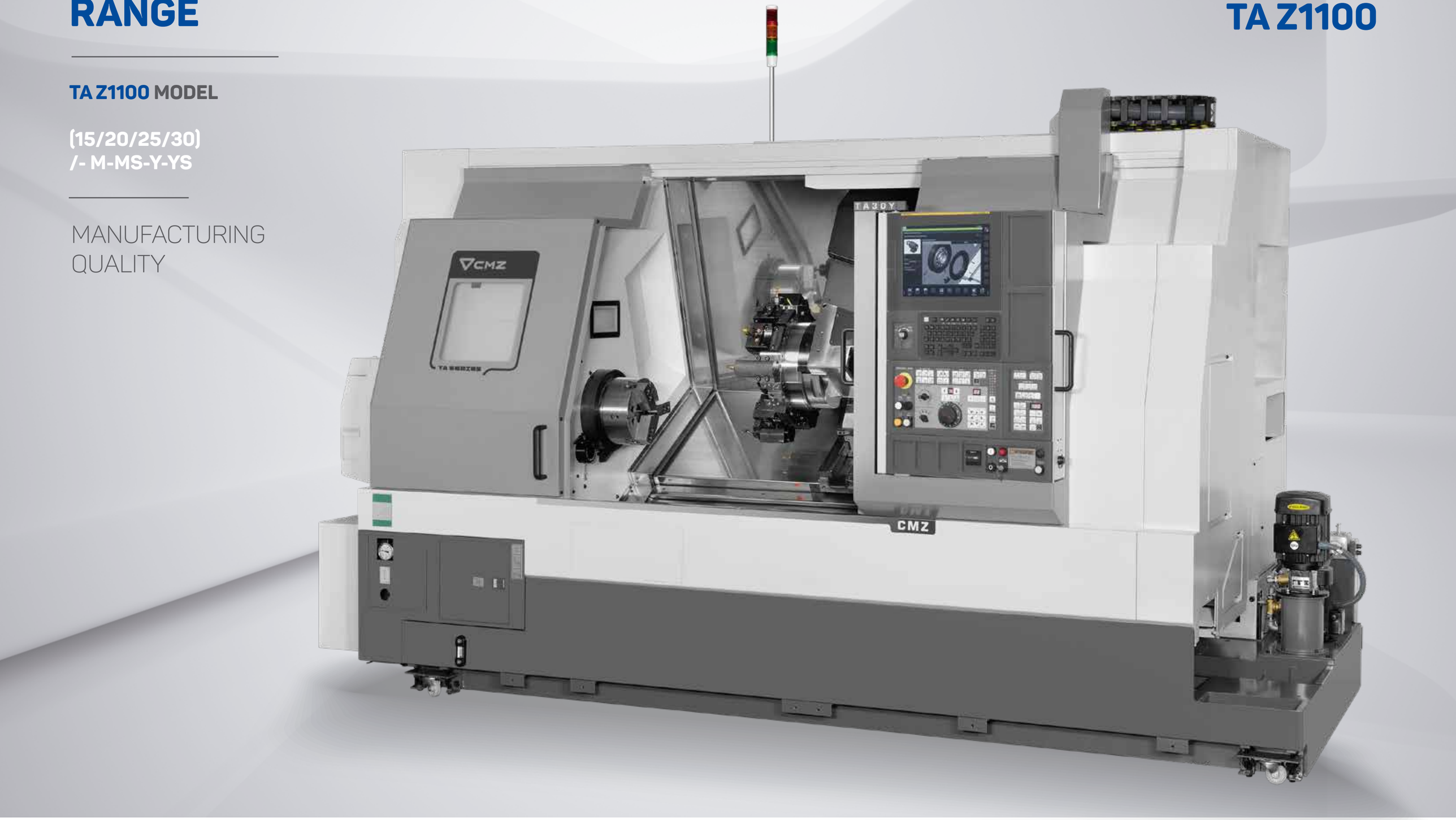
MODEL RANGE

TA Z1100 MODEL

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

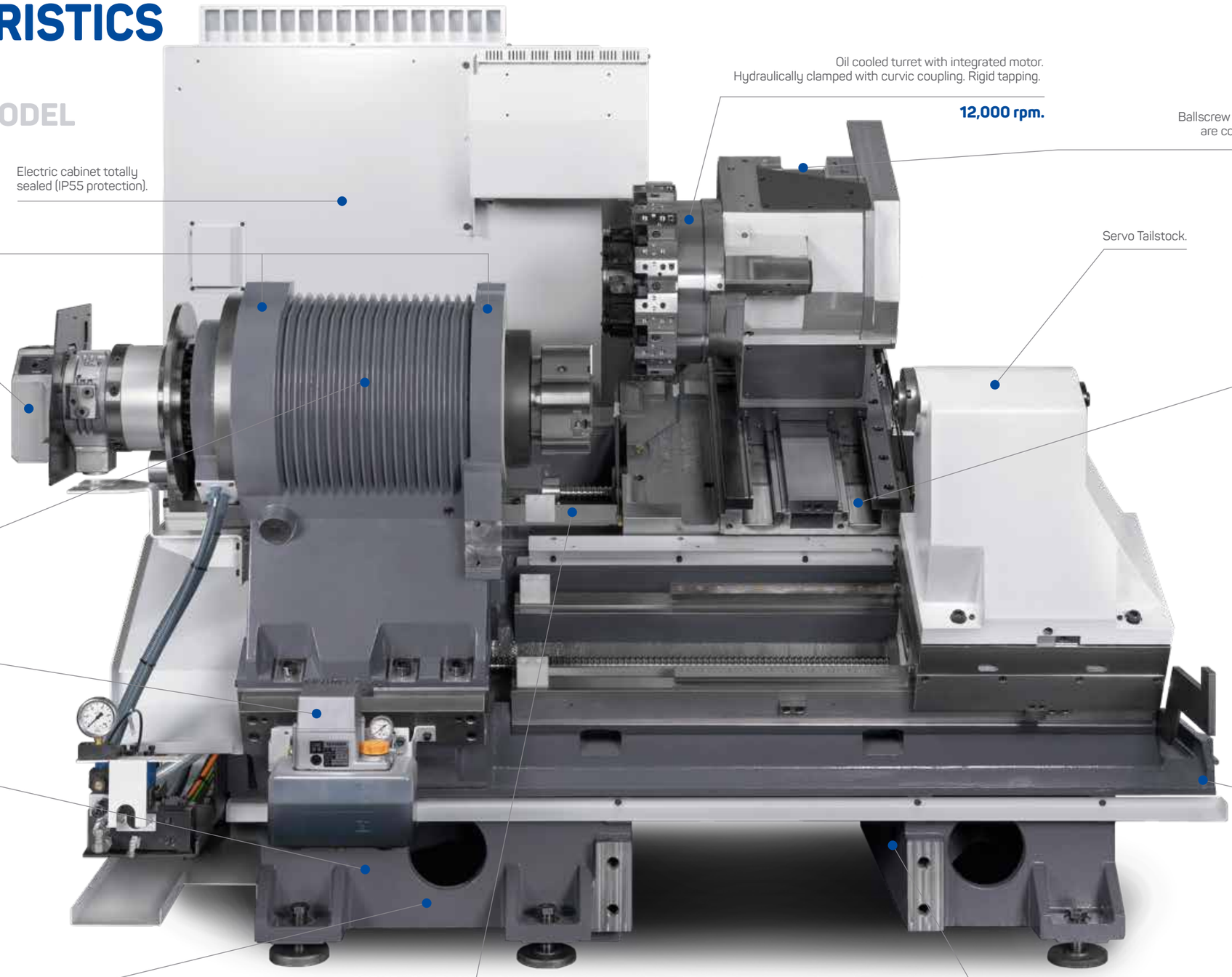
MANUFACTURING
QUALITY

TA SERIES
TA Z1100



TECHNICAL CHARACTERISTICS

1 TA Z400 MODEL



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

12,000 rpm.

Ballscrew mountings
are cooled by oil.

Electric cabinet totally
sealed (IP55 protection).

**Front and rear roller
spindle bearings cooled by oil.**

Servo Tailstock.

Hydraulic cylinder
operating at 45kg/cm²

**Laser compensation in all axes
including the C axis.**

**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.

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

Highly rigid cast iron
monobloc machine bed.

Prismatic guide ways.

Acceleration of 1g.
Rapid traverse rate of 30 m/min.

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.

TECHNICAL CHARACTERISTICS

TA Z640

2 TA Z640 MODEL

Prismatic guide ways.

Acceleration of 1g.
Rapid traverse rate of 30 m/min.

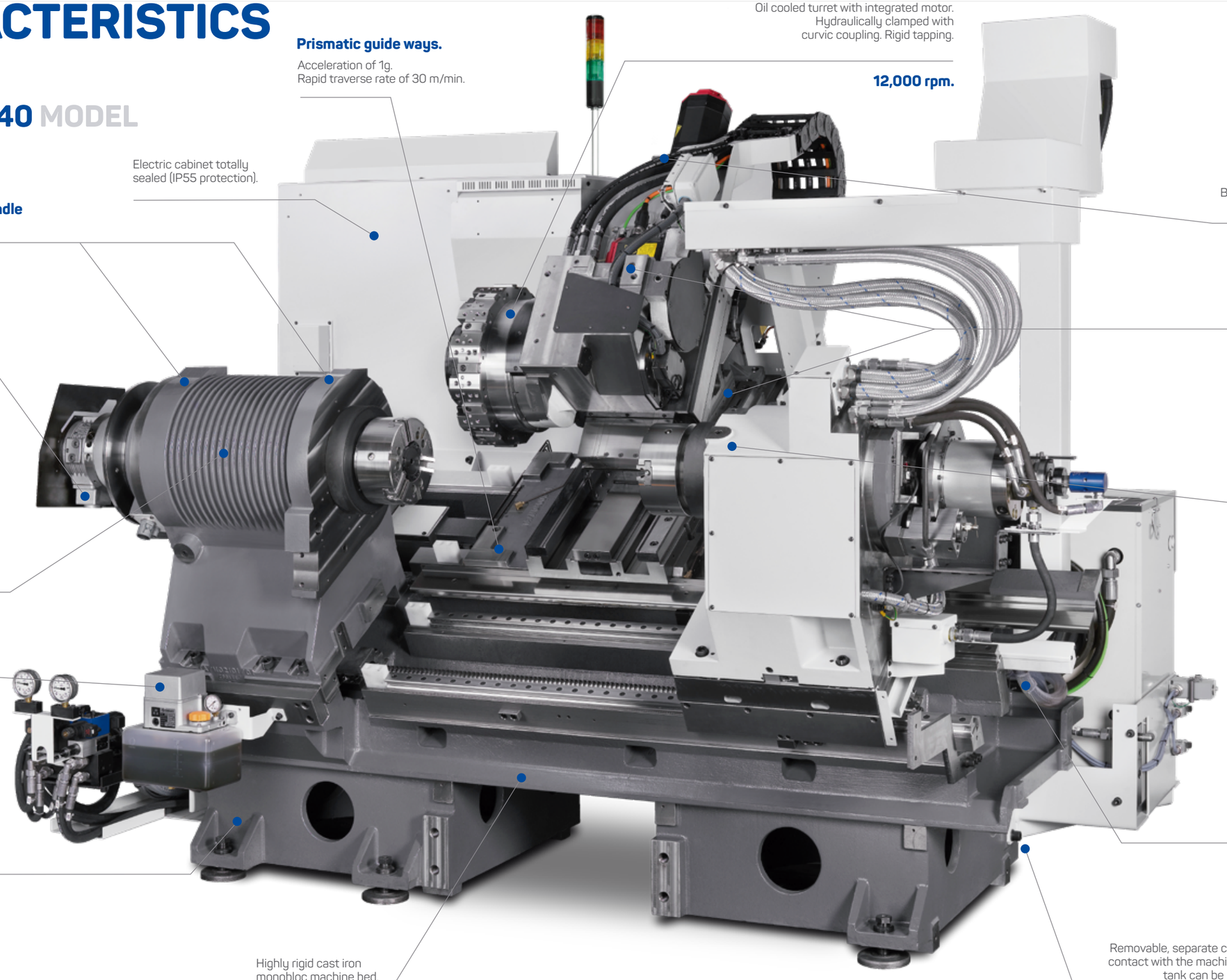
Oil cooled turret with integrated motor. Hydraulically clamped with curvic coupling. Rigid tapping.

12,000 rpm.

Electric cabinet totally sealed (IP55 protection).

Front and rear roller spindle bearings cooled by oil.

Hydraulic cylinder operating at 45kg/cm²



Ballscrew mountings are cooled by oil.

Laser compensation in all axes including the C axis.

Integral spindle motors with oil cooling.

Integral spindle motors with oil cooling.

Smart automatic lubrication system.

Savings and reliability.

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

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.

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.

TECHNICAL CHARACTERISTICS

3 TA Z1100 MODEL

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

12,000 rpm.

Ballscrew mountings are cooled by oil.

Electric cabinet totally sealed (IP55 protection).

Front and rear roller spindle bearings cooled by oil.

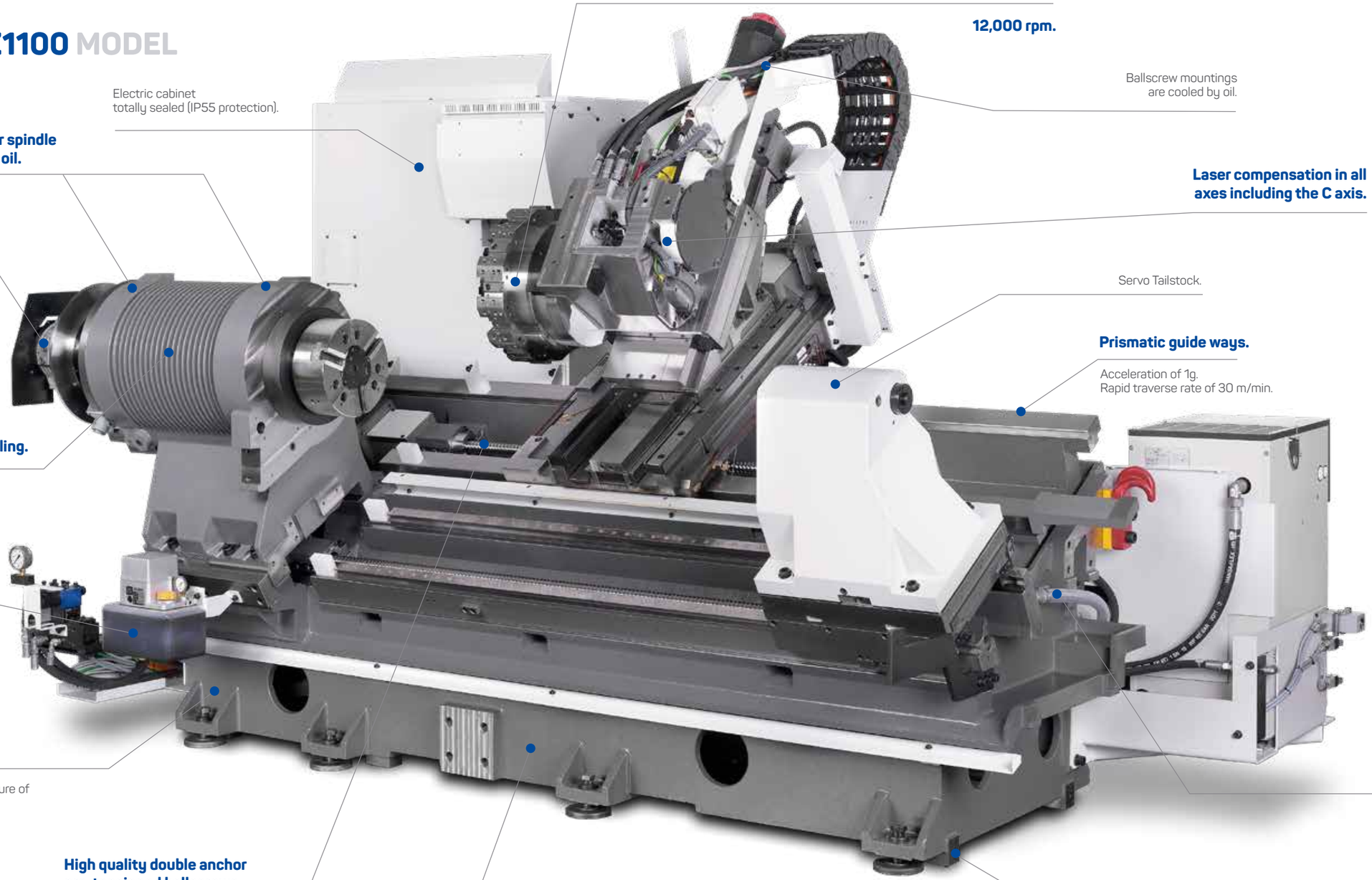
Laser compensation in all axes including the C axis.

Hydraulic cylinder operating at 45kg/cm^2

Servo Tailstock.

Prismatic guide ways.

Acceleration of 1g.
Rapid traverse rate of 30 m/min.



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.

High quality double anchor pre-tensioned ballscrews provide high thermal stability.

Highly rigid cast iron monobloc machine bed.

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 60 mm.	· Ø 60 mm.
· 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 45kg/cm²

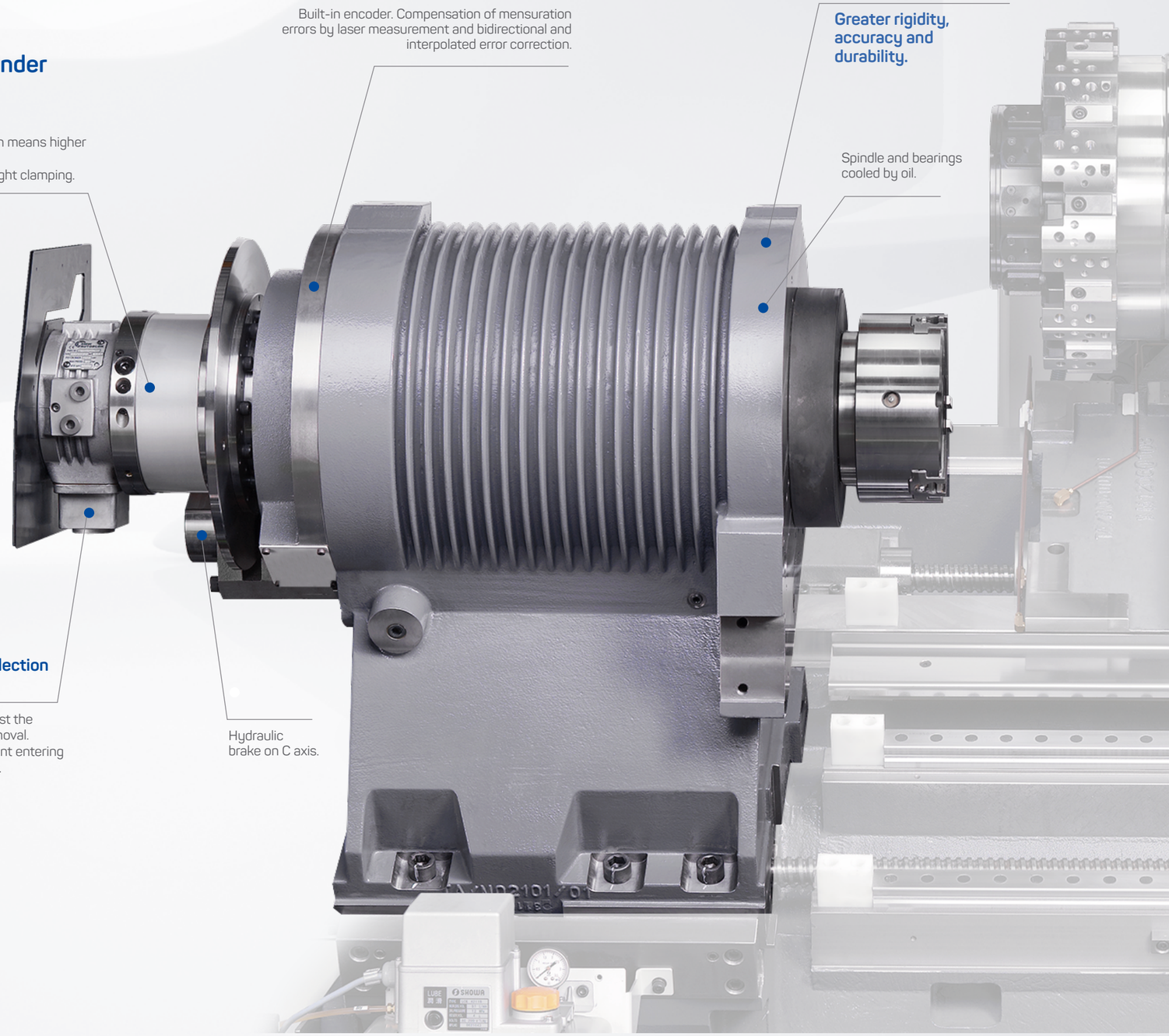
· More compact.
· Reduced cross-section means higher speed clamping.
· Higher sensitivity for light clamping.

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

Double row roller bearings can withstand substantial impacts without damage.

Greater rigidity, accuracy and durability.

Spindle and bearings cooled by oil.



Special coolant collection tray made by CMZ.

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

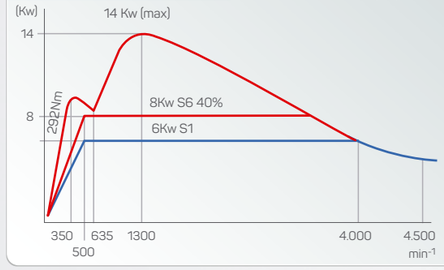
Hydraulic brake on C axis.

INTEGRATED SPINDLES

POWER AND TORQUE DIAGRAM OF SPINDLES

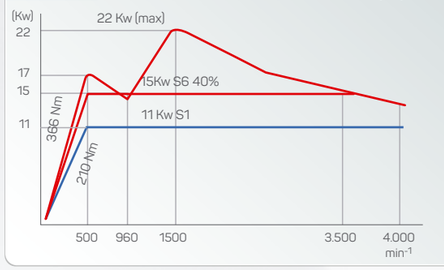
TA15-SUB SPINDLE

T= 292 Nm (max)
T= 153 Nm (S6 40%)
T= 115 Nm (S1)



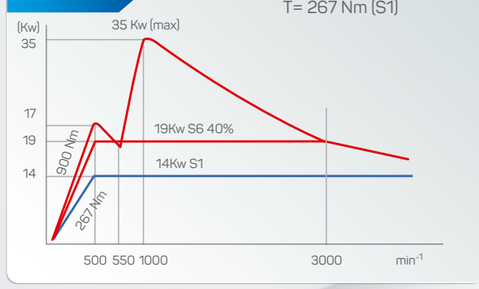
TA20

T= 366 Nm (max)
T= 286 Nm (S6 40%)
T= 210 Nm (S1)



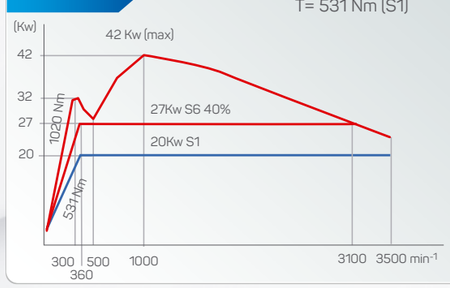
TA25

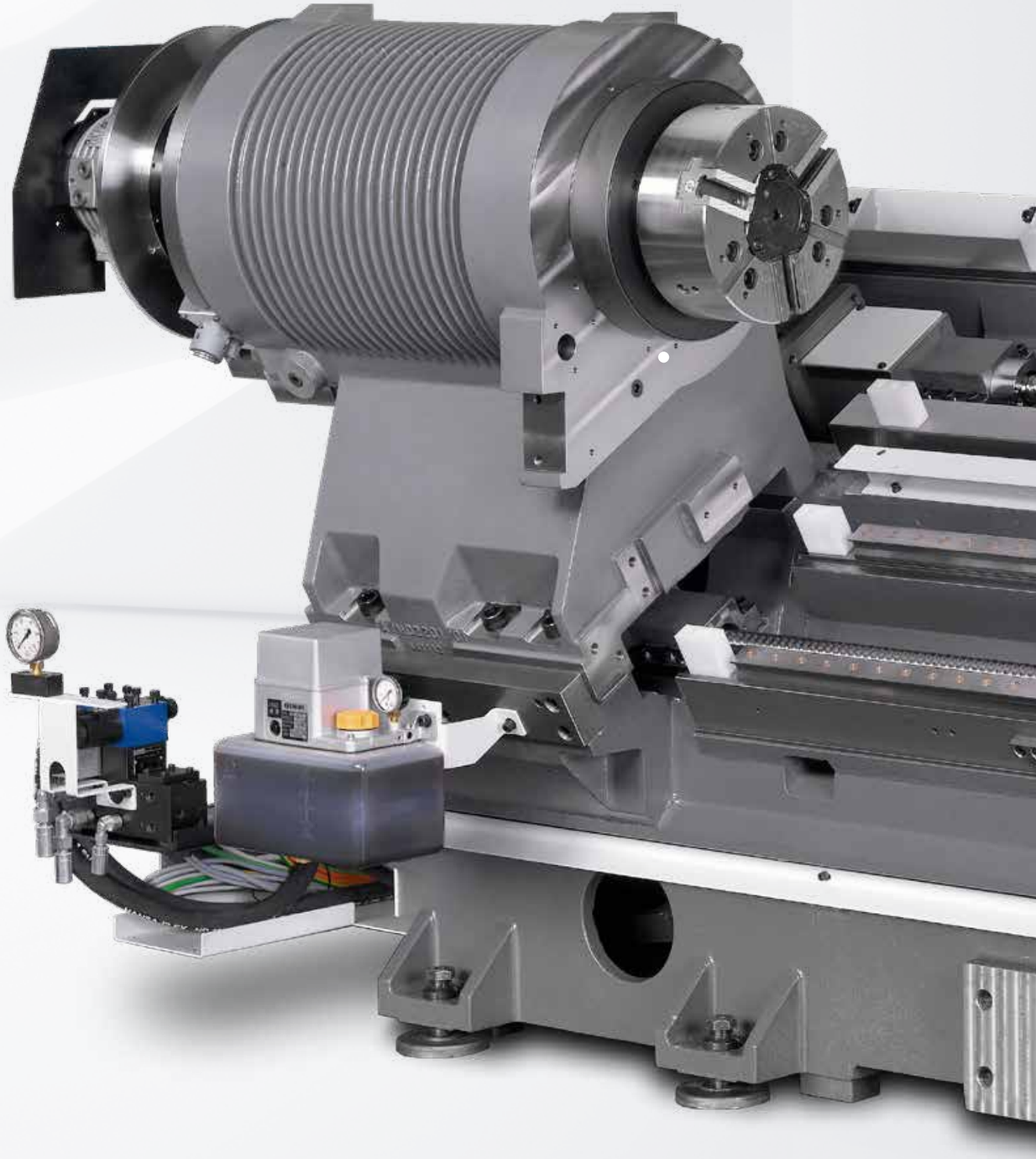
T= 900 Nm (max)
T= 363 Nm (S6 40%)
T= 267 Nm (S1)



TA30

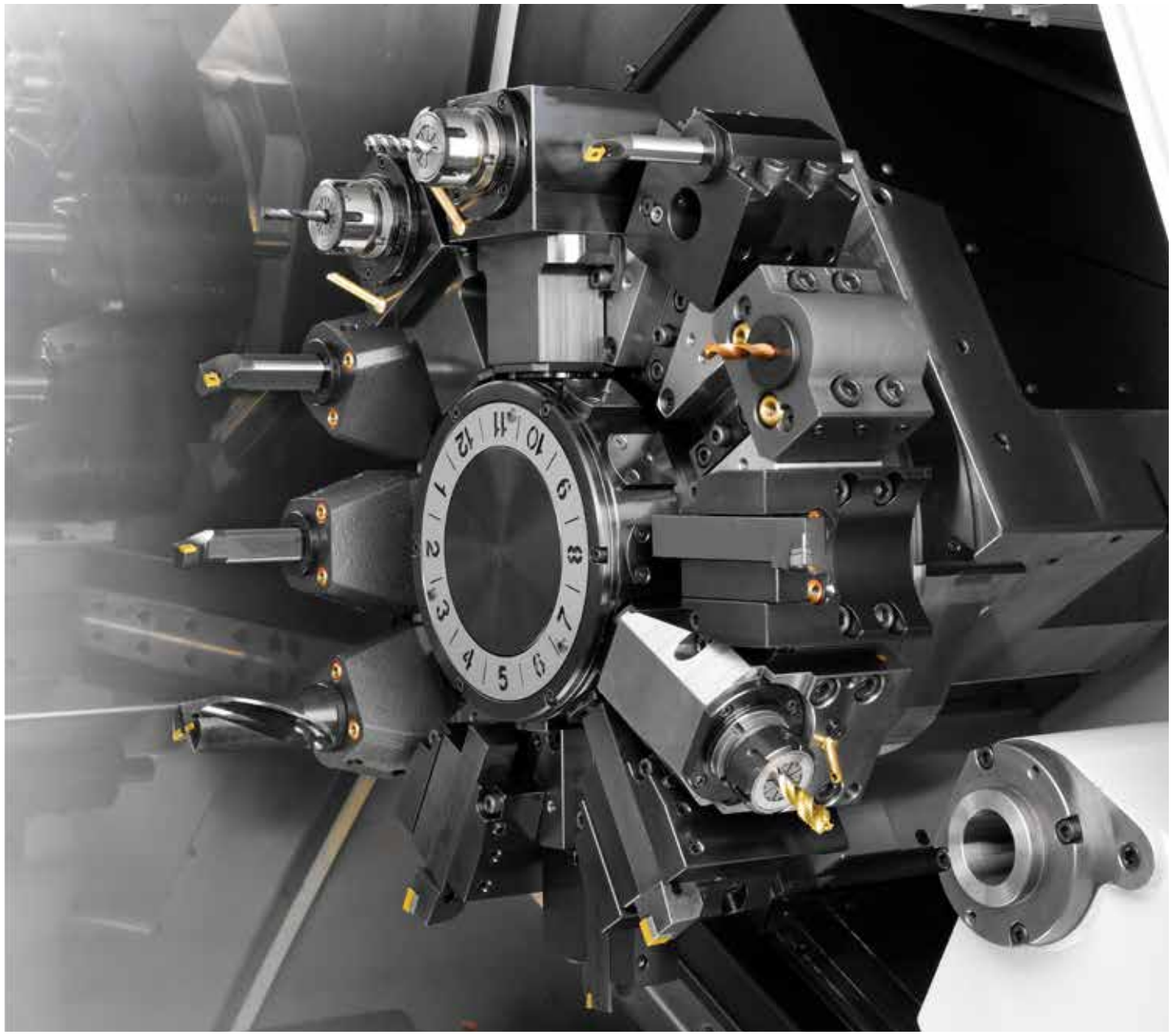
T= 1020 Nm (max)
T= 720 Nm (S6 40%)
T= 531 Nm (S1)





TURRET WITH A BUILT-IN MOTOR

AND HYDRAULIC CLAMPING



12,000 rpm /75 Nm

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 220 mm diameter and are a curvic coupling.

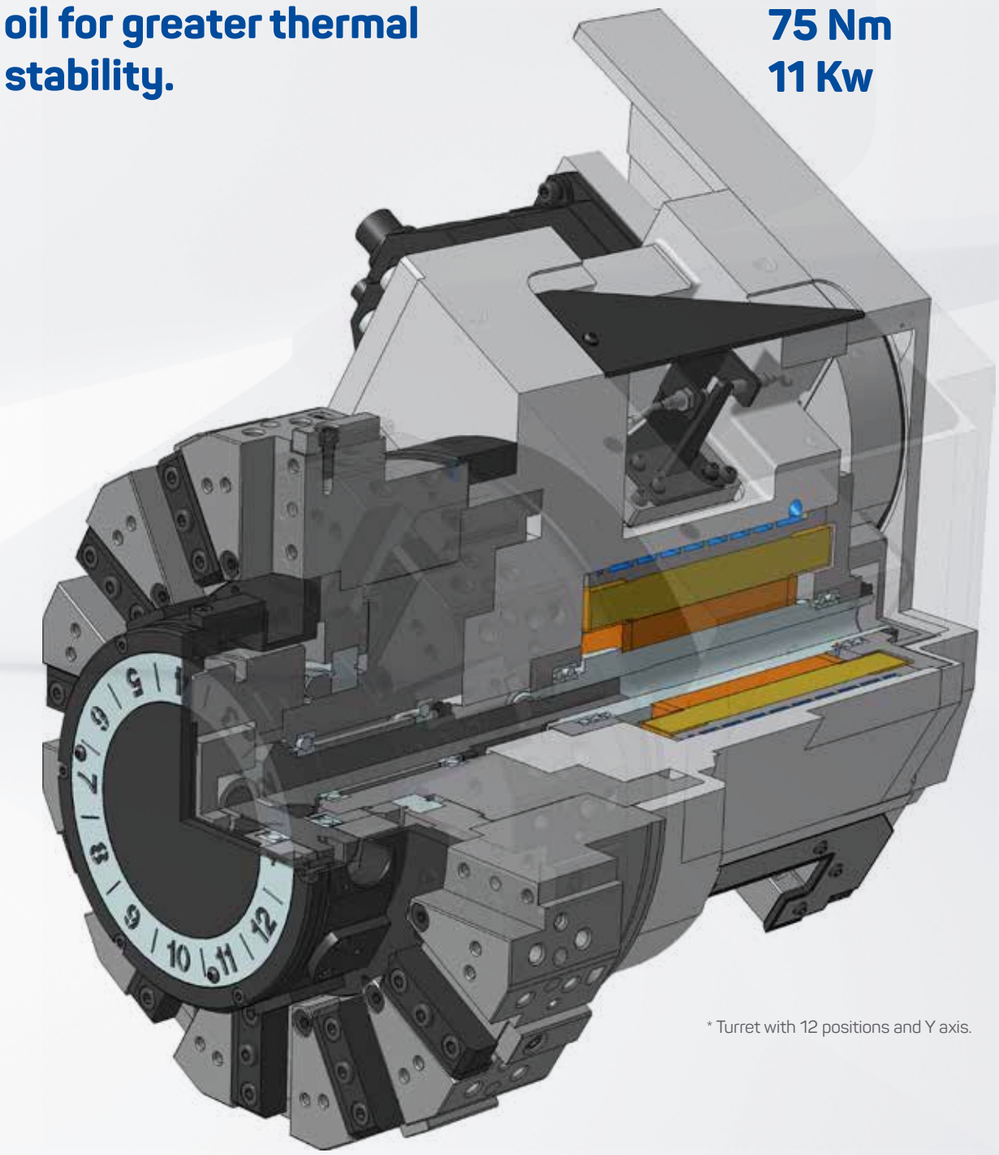
Transmission

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

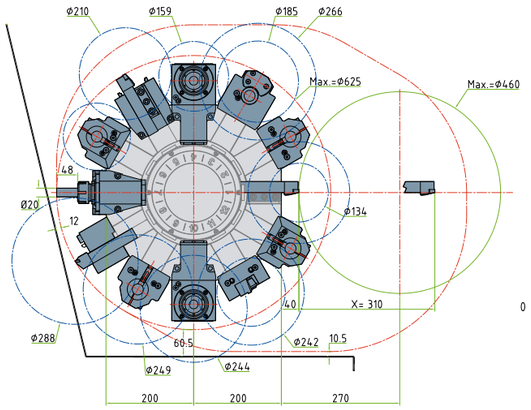
TURRET WITH A BUILT-IN MOTOR

Turret cooled with oil for greater thermal stability.

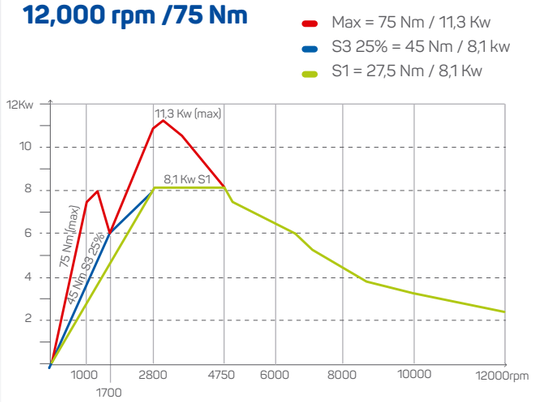
12,000 rpm/min
75 Nm
11 Kw



Interference diagram of driven tool motor. 12,000 rpm /75 Nm



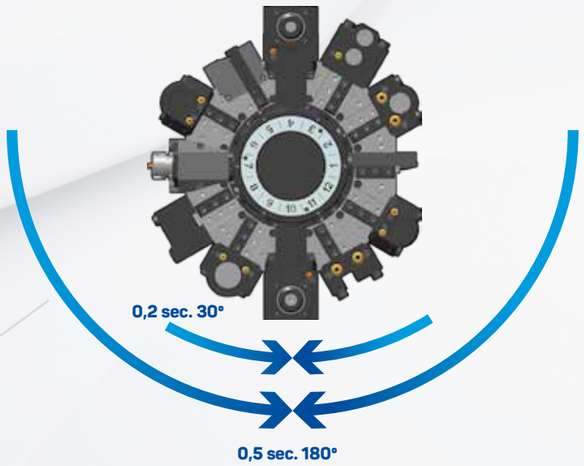
Power and torque diagram of driven tool motor. 12,000 rpm /75 Nm



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°



* Turret with 12 positions and Y axis.

TOOL HOLDERS

Boring & drilling holders Ø40

TD/10300/40
(Ø40mm)

TD/10300/41
(Ø40mm)

TL20/10000/14 (Ø8mm)
TL20/10000/15 (Ø10mm)
TL20/10000/16 (Ø12mm)
TD/10300/16 (Ø16mm)
TD/10300/20 (Ø20mm)
TD/10300/25 (Ø25mm)
TD/10300/32 (Ø32mm)

Double boring holders Ø32

TD/10300/43
(Ø32mm)

TD/10300/42
(Ø32mm)

TL20/10000/27 (Ø8mm)
TL20/10000/28 (Ø10mm)
TL20/10000/29 (Ø12mm)
TL20/10000/30 (Ø16mm)
TL20/10000/31 (Ø20mm)
TL20/10000/43 (Ø25mm)

Boring holders Ø60

TD/10300/60
(Ø60mm)

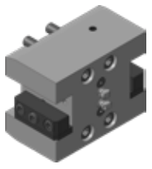
TD/10300/50
(Ø50mm)

Boring holders Ø80

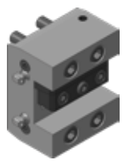
TD/10300/80
(Ø80mm)
*Not suitable for 16 station turret.

Turning holders □25

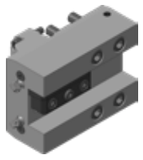
TD/10300/45



TD/10300/46



TD/10300/48



TD/10300/47

TD/10300/49

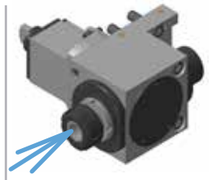
TD/10300/44

Turning holders □32

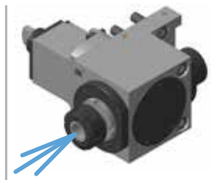
TD/10300/59

Live tool holders

TL20/10400/01B
Max: 6000 rpm



TL20/10400/05B
Max: 6000 rpm



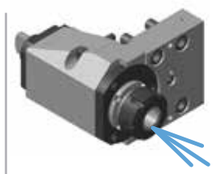
TL20/10400/06
Max: 12000 rpm

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

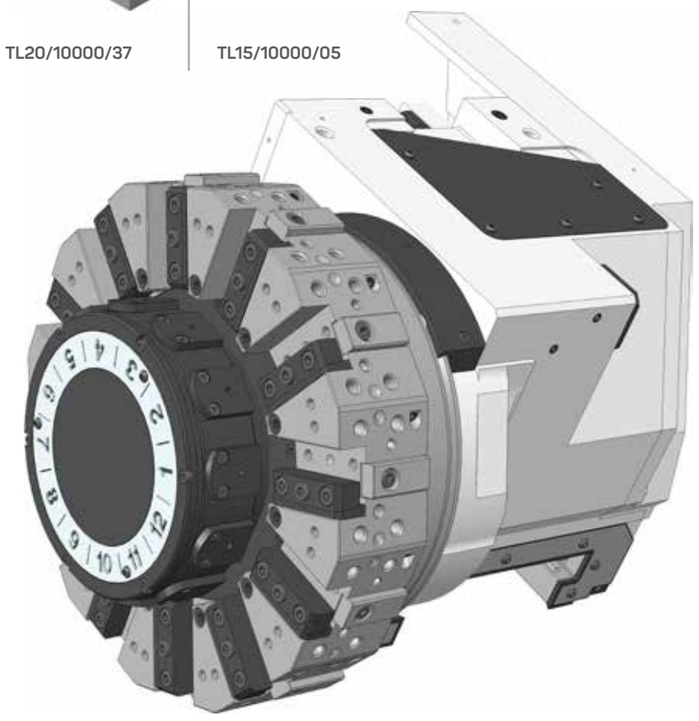
TL20/10000/03

TL20/10000/36
(Ø10mm)

TL20/10000/37

TL15/10000/05

TL20/10051
TL20/10054



ROBOT GL20 II

AUTOMATE SHORT AND LONG BATCHES

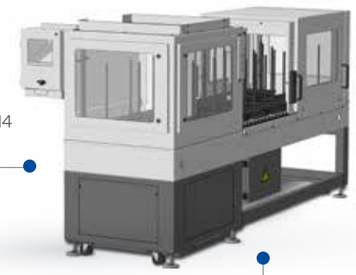
A range of gripper heads with 2 x 10 kg capacity to suit your needs (GL20 II)

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

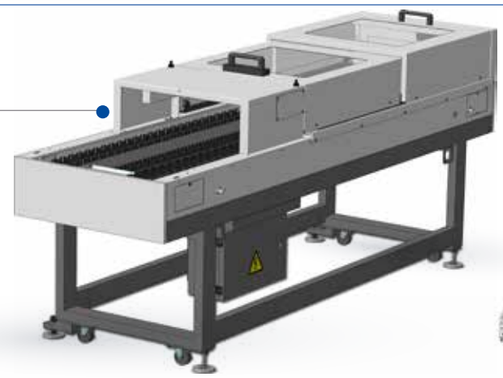
Easy to use and to program. CMZ have developed a conversational programming system that makes it very easy to set and use the GL20 II and GL6 Gantry robots.

Workstocker WS-280x400x14 with 14 pallets.



Workstocker WS-700 for shafts:

Workstocker to stock shafts from 80 mm to 700mm long and from 10 mm to 80mm diameter. (Contact CMZ for other sizes).



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

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

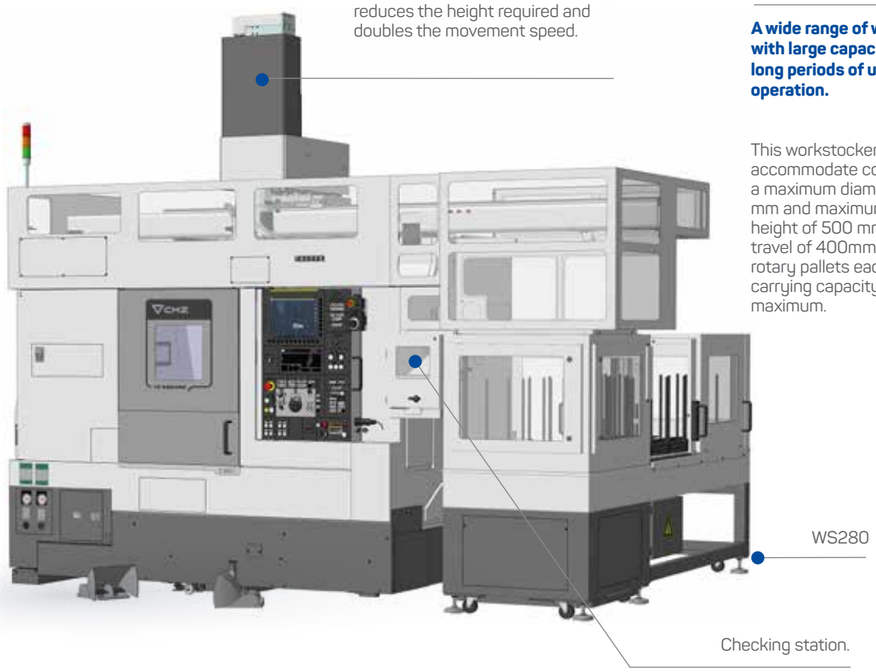
This workstocker can accommodate components to a maximum diameter of 280 mm and maximum stacked height of 500 mm (maximum travel of 400mm). The 14 rotary pallets each have a carrying capacity of 75 kg maximum.

Z axis speed (Longitudinal):180 m/min.

Y axis speed (Transverse):120 m/min.

X axis speed (Vertical):180 m/min.

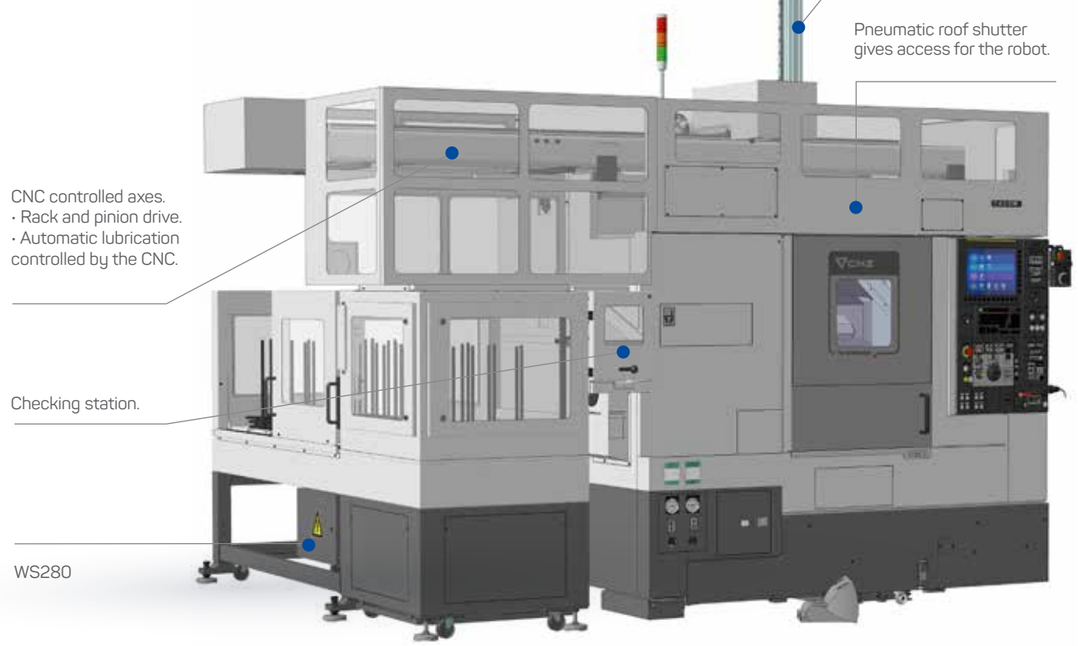
Pneumatic roof shutter gives access for the robot.



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

Checking station.

WS280

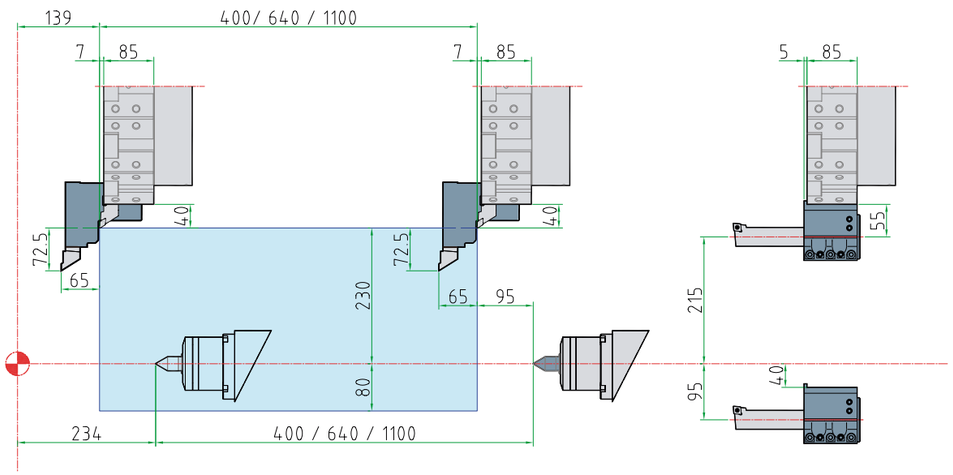


WS280

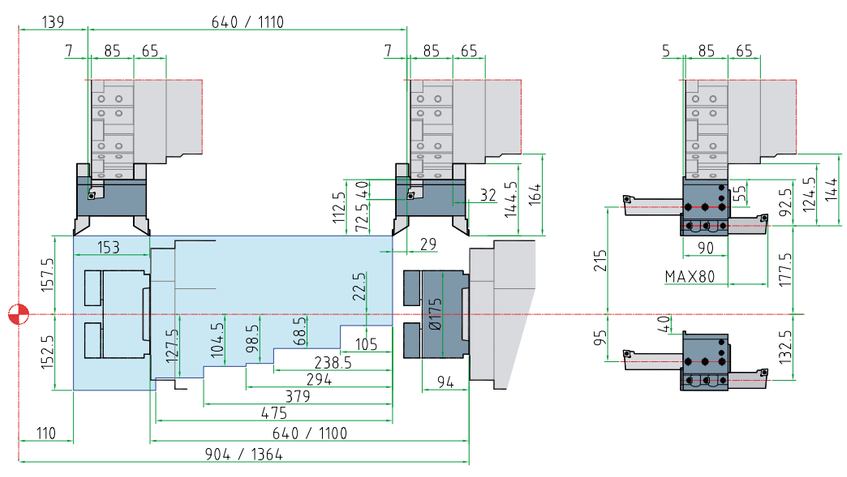
Checking station.

TRAVELS

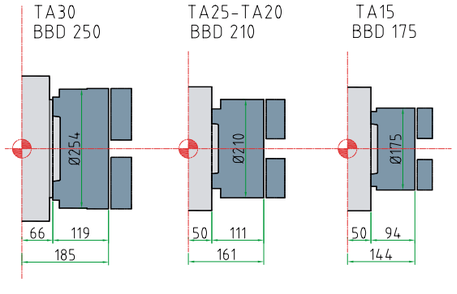
Travels with tailstock



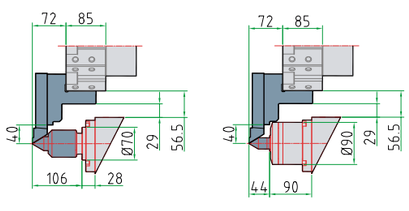
Travels with sub spindle



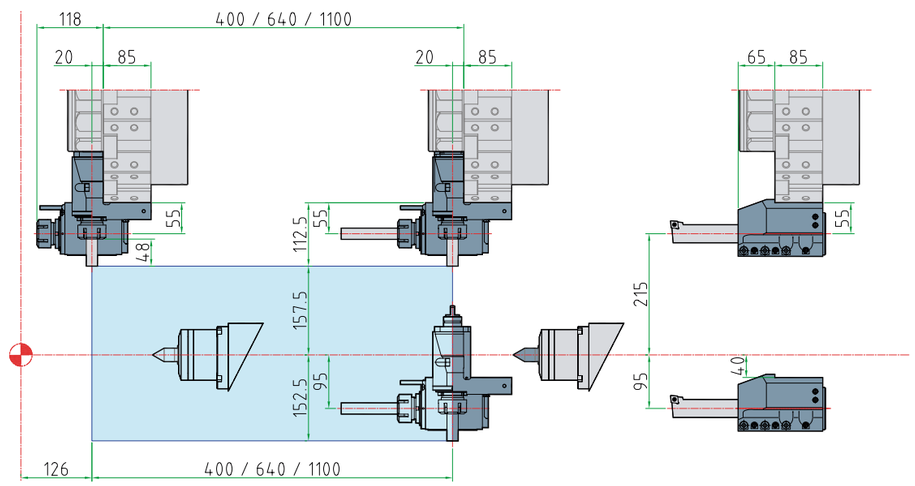
Standard chucks dimensions



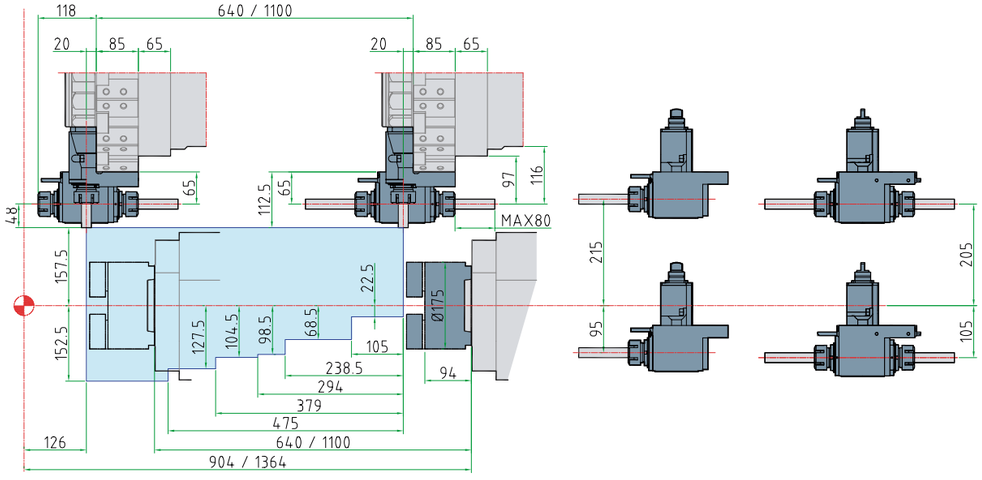
Interference with tailstock centre point



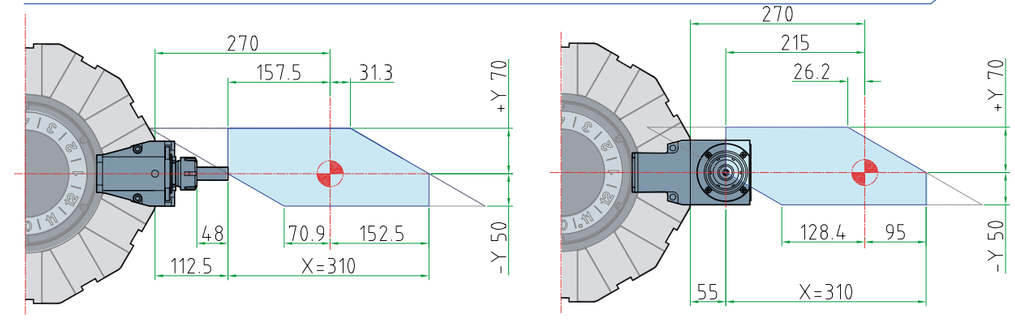
Travels with tailstock and live tooling



Travels with sub spindle and live tooling

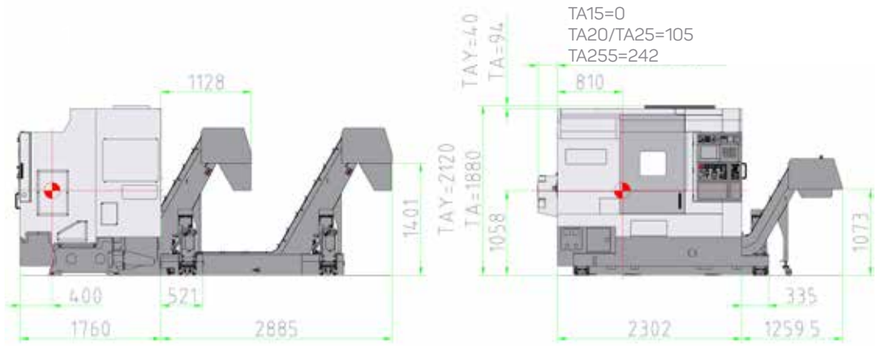


Y axis travel

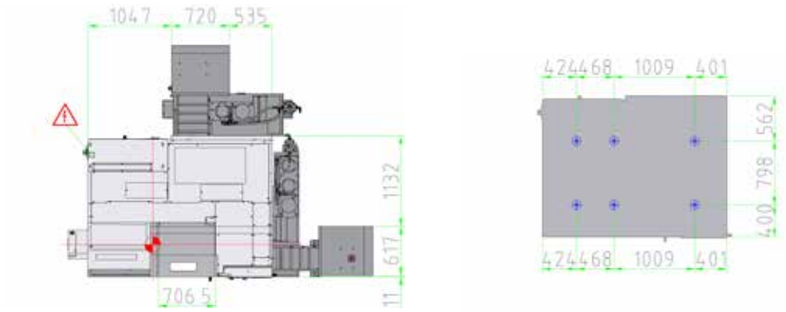


DIMENSIONS

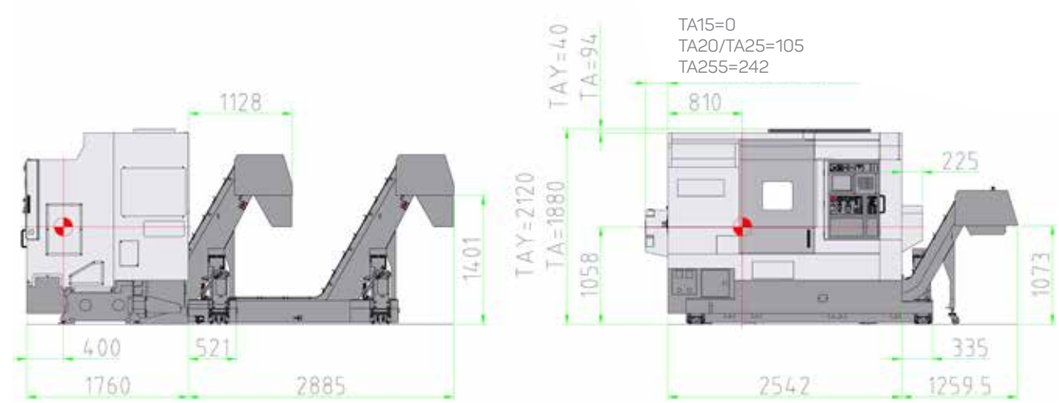
TA Z400 MODEL



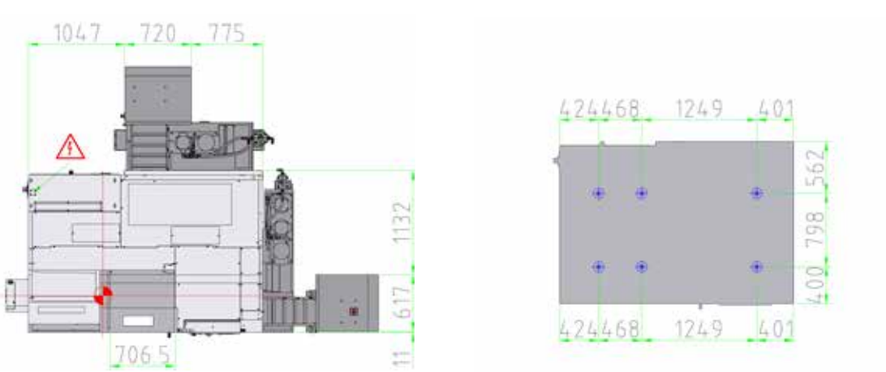
TA Z400 MODEL



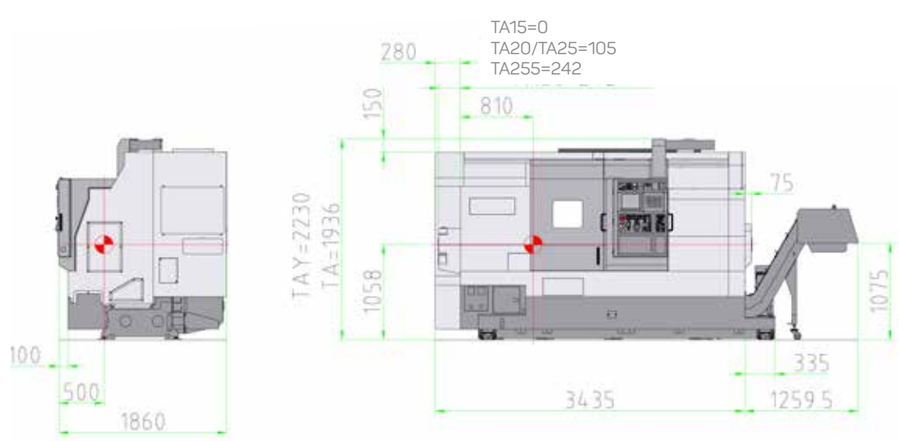
TA Z640 MODEL



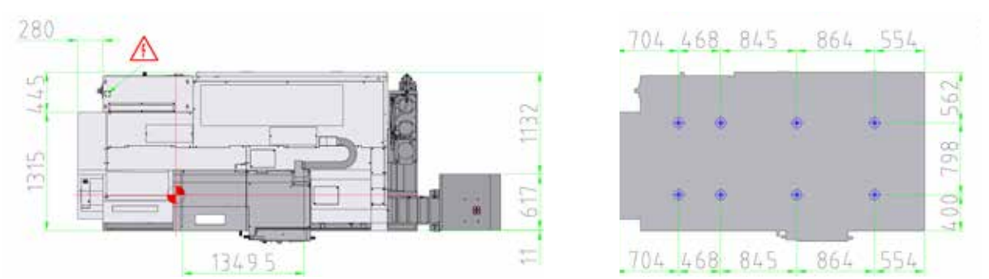
TA Z640 MODEL



TA Z1100 MODEL



TA Z1100 MODEL



TECHNICAL SPECIFICATIONS

	TECHNICAL DATA		TA15						TA20						TA25						TA30					
			TA15	TA15M	TA15Y	TA15S	TA15MS	TA15YS	TA20	TA20M	TA20Y	TA20S	TA20MS	TA20YS	TA25	TA25M	TA25Y	TA25S	TA25MS	TA25YS	TA30	TA30M	TA30Y	TA30S	TA30MS	TA30YS
GENERAL DATA	Maximum diameter of swinging over bed (mm)		760						760						760						760					
	Maximum diameter of swinging over slides (mm)		600						600						600						600					
	Maximum turning diameter (mm)		460						460						460						460					
	Distance between spindle an tailstock center (mm)	**Z400**	490		-				473		-				473		-				449		-			
		Z640	730		-				713		-				713		-				689		-			
		Z1100	1190		-				1173		-				1173		-				1149		-			
	Distance between center of spindles (mm)	**Z640**	-		666				-		649				-		649				-		625			
		Z1100	-		1126				-		1109				-		1109				-		1085			
	X-axis travel (mm)		310						310						310						310					
	Z-axis travel (mm)	**Z400**	400						400						400						400					
		Z640	640						640						640						640					
		Z1100	1100						1100						1100						1100					
	Y-axis travel (mm)		-	-	+70 -50	-	-	+70 -50	-	-	+70 -50	-	-	+70 -50	-	-	+70 -50	-	-	+70 -50	-	-	+70 -50	-	-	+70 -50
	B-axis travel (mm)	**Z400**	400		-				400		-				400		-				400		-			
		Z640	640		640				640		640				640		640				640		640			
		Z1100	1100		1100				1100		1100				1100		1100				1100		1100			
	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	-	-	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 (mm)		150						170						170						200					
	Bearing inside diameter		100						110						110						130					
	Spindle nose		ASA 6"A2						ASA 6"A2						ASA 6"A2						ASA 8"A2					
	Spindle inside diameter		61						73						73						91					
	Maximum bar diameter		52						66						66						82					
	Chuck diameter		175/210						210						250/210						254/315					
	Chuck bore		56/52						66						66						82					
	Spindle power (kW) (max./S6 40%)		14/8						22/15						35/19						42/27					
	Turning torque (Nm)		292 (max) 153 (S6 40%)						366 (max) 286 (S6 40%)						900 (max) 363 (S6 40%)						1020 (max) 720 (S6 40%)					
TAILSTOCK	Morse cone	Ø90x120 live centre	CM5		-				CM5		-				CM5		-				CM5		-			
		Ø90x120 rotary quill	CM3		-				CM3		-				CM3		-				CM3		-			
	Tailstock travel (mm)	**Z400**	400		-				400		-				400		-				400		-			
		Z640	640		-				640		-				640		-				640		-			
		Z1100	1100		-				1100		-				1100		-				1100		-			
	Max. force (kgf)		930		-				980		-				980		-				1350		-			

	TECHNICAL DATA		TA15						TA20						TA25						TA30					
			TA15	TA15M	TA15Y	TA15S	TA15MS	TA15YS	TA20	TA20M	TA20Y	TA20S	TA20MS	TA20YS	TA25	TA25M	TA25Y	TA25S	TA25MS	TA25YS	TA30	TA30M	TA30Y	TA30S	TA30MS	TA30YS
TURRET	Number of positions		12						12						12						12					
	Section of tools (mm)		25x25 (Ø50)						25x25 (Ø50)						25x25 (Ø50)						25x25 (Ø50)					
	Changing time		30º 0,2s-180º 0,5s						30º 0,2s-180º 0,5s						30º 0,2s-180º 0,5s						30º 0,2s-180º 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 (kW) (max./S1)		-	11,3/8,1	-	11,3/8,1			-	11,3/8,1	-	11,3/8,1			-	11,3/8,1	-	11,3/8,1			-	11,3/8,1	-	11,3/8,1		
	Maximum torque (Nm)		-	75	-	75			-	75	-	75			-	75	-	75			-	75	-	75		
SUBSPINDLE	Maximum speed (rpm)		-		4500				-		4500				-		4500				-		4500			
	Bearing outside diameter (mm)		-		150				-		150				-		150				-		150			
	Bearing inside diameter (mm)		-		100				-		100				-		100				-		100			
	Spindle nose		-		ASA 6"A2				-		ASA 6"A2				-		ASA 6"A2				-		ASA 6"A2			
	Spindle inside diameter (mm)		-		61				-		61				-		61				-		61			
	Bar diameter (mm)		-		52				-		52				-		52				-		52			
	Chuck diameter (mm)		-		175				-		175				-		175				-		175			
	Chuck bore (mm)		-		56				-		56				-		56				-		56			
	Power (kW) (max./ S6 40%)		-		14/8				-		14/8				-		14/8				-		14/8			
	Turning torque (Nm) (max./S6 40%)		-		292/153				-		292/153				-		292/153				-		292/153			
MISCELANEOUS	Coolant tank (litres)	**Z400 Lateral**	220						220						220						220					
		Z400 Rear	200						200						200						200					
		Z640 Lateral	230						230						230						230					
		Z640 Rear	200						200						200						200					
		Z1100	260						260						260						260					
	Hydraulic oil tank (litres)		10						10						10						10					
	Lubrication oil tank (litres)		4						4						4						4					
	Installed power (KVA)		30	30	30	45	45	45	30	30	30	45	45	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		35ºC						35ºC						35ºC						35ºC					
	Total weight (kg)	**Z400**	6600(*)		-				6800(*)		-				6800(*)		-				7000(*)		-			
		Z640	7000(*)		7400(*)				7100(*)		7500(*)				7100(*)		7500(*)				7300(*)		7800(*)			
		Z1100	7800(*)		8200(*)				7900(*)		8300(*)				7900(*)		8300(*)				8000(*)		8700(*)			
	Dimensions (mm)	**TA** **Z400**	2302x1760x1880						2302x1760x1880						2302x1760x1880						2302x1760x1880					
		TA Y **Z400**	2302x1760x2120						2302x1760x2120						2302x1760x2120						2302x1760x2120					
		TA **Z640**	2542x1760x1880						2542x1760x1880						2542x1760x1880						2542x1760x1880					
		TA Y **Z640**	2542x1760x2120						2542x1760x2120						2542x1760x2120						2542x1760x2120					
		TA **Z1100**	3435x1860x1936						3435x1860x1936						3435x1860x1936						3435x1860x1936					
		TA Y **Z1100**	3435x1860x2230						3435x1860x2230						3435x1860x2230						3435x1860x2230					
	Inner volume (m3)	**TA** **Z400**	1						1						1						1					
		TA Y **Z400**	1,15						1,15						1,15						1,15					
		TA **Z640**	1,3						1,3						1,3						1,3					
		TA Y **Z640**	1,5						1,5						1,5						1,5					
		TA **Z1100**	1,8						1,8						1,8						1,8					
		TA Y **Z1100**	2,1						2,1						2,1						2,1					

(*) Approximate weights.

Due to constant development of our products all specifications given here in are subject to change without notice.

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