

TD SERIES

TD Z2200 / TD Z3200 MODELS



 **CMZ**

Turning the world

MODEL RANGE

TD Z2200 MODEL

(15/20/25/30/35/45/55)
/- M-Y-



TD SERIES

TD Z2200



MODEL RANGE

TD Z3200 MODEL

(15/20/25/30/35/45/55)
/- M-Y



TD SERIES

TD Z3200



TECHNICAL CHARACTERISTICS

1 TD Z2200 MODEL

Ball screw steadies allow **30 m/min** rapid travels in Z axis.

Electric cabinet totally sealed (IP55 protection).

Front and rear roller spindle bearings cooled by oil

Hydraulic cylinder operating at 45kg/cm²

Integrated 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 Screw nuts.
- The ballscrew mounts.
- The turret.

Highly rigid cast iron monobloc machine bed.

Oil-cooled X and Y axes ballscrew nuts

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

Prismatic guide ways

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

TD SERIES

TD Z2200

12.000 rpm

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

Ballscrew mountings
are cooled by oil.

**Oil-cooled X and Y axes
ballscrew nuts**

**Bi-directional and interpolated laser
compensation in all axis, including C axis**

Live tailstock.

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.

TECHNICAL CHARACTERISTICS

2 TD Z3200 MODEL

Ball screw steadies allow **30 m/min** rapid travels in Z axis.

Electric cabinet totally sealed (IP55 protection).

Front and rear roller spindle bearings cooled by oil

Hydraulic cylinder operating at 45kg/cm²

Integral spindle motors with oil cooling

Smart automatic lubrication system.

Savings and reliability.

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contamination.

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**Prismatic
guide ways**

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

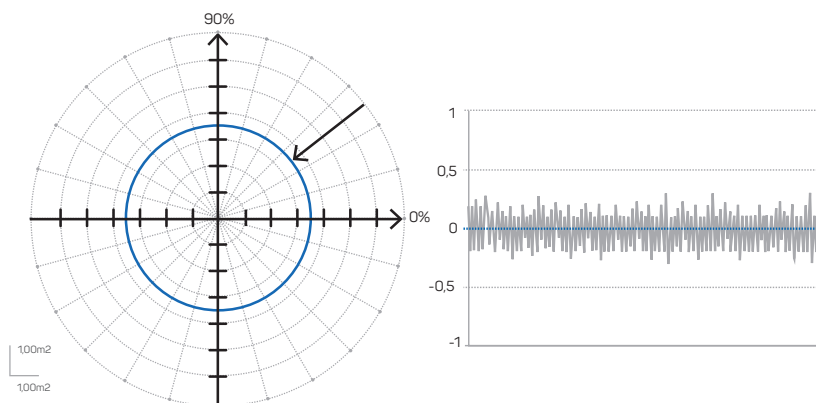
Removable, separate coolant tank, guarding design prevents
coolant contact with the machine bed ensuring thermal
stability. The coolant tank can be removed without removing
the chip conveyor.

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

- MACHINE: TD 15
- MATERIAL: ALUMINIUM
- Ø 60 mm.
- ROUNDNESS ACHIEVED: 0,3 µm
- FILTER: 150 P/R (50%)
- MEASUREMENT RANGE: 0,10°

Surface finish

- MACHINE: TD 15
- MATERIAL: ALUMINIUM
- Ø 60 mm.
- ROUGHNESS ACHIEVED: R_{max} 0,6 µm
- FILTER: 150 p/r (50%)

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

No pulleys or belts

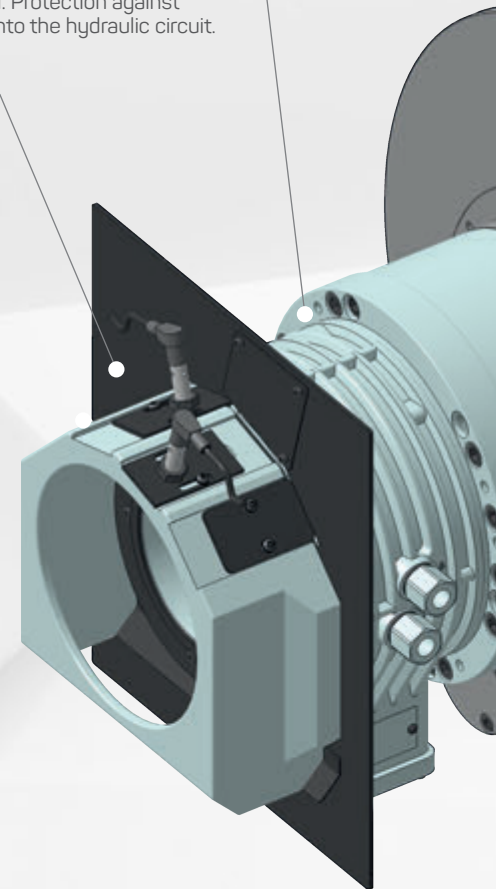
- No belt slipping.
- Better surface finish.
- Lower noise level.

Hydraulic cylinder at 45 Kg/cm²

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

Special coolant collection tray made by CMZ

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



TD SERIES

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

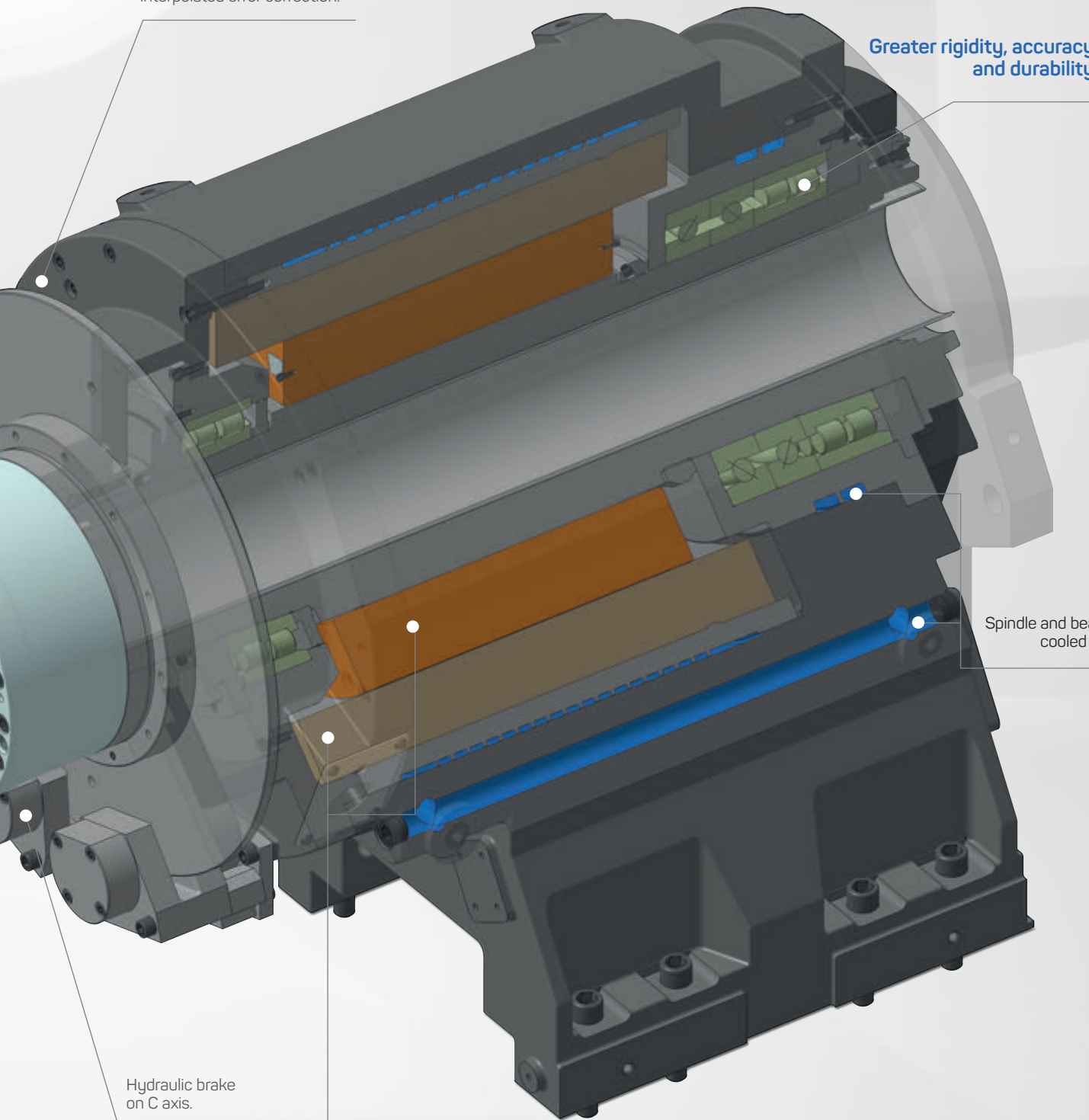
Double row roller bearings can withstand substantial impacts without damage.

Greater rigidity, accuracy and durability

Spindle and bearings cooled by oil.

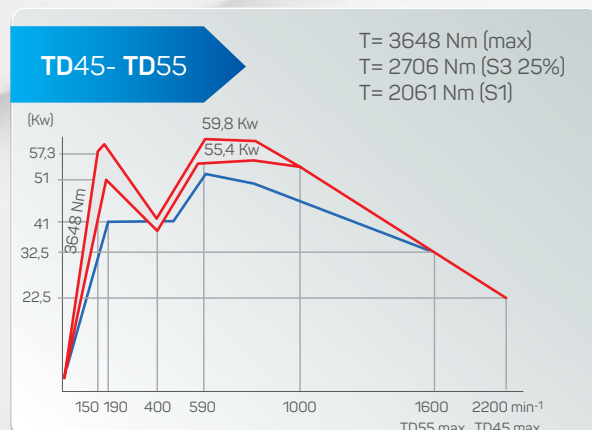
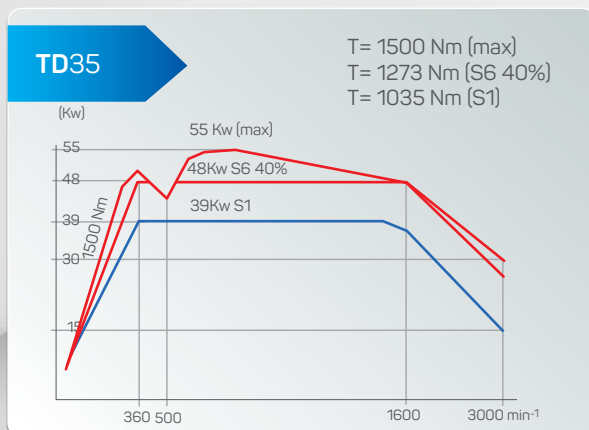
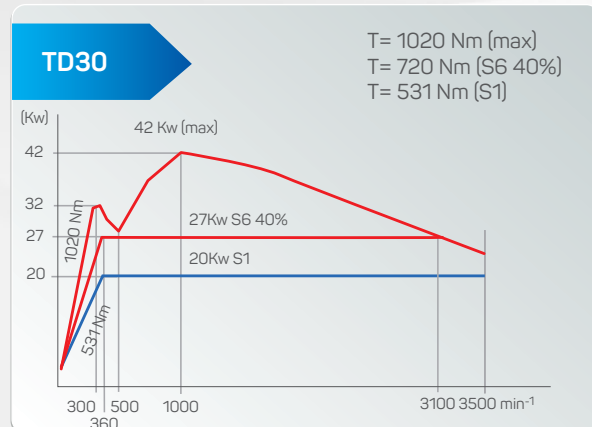
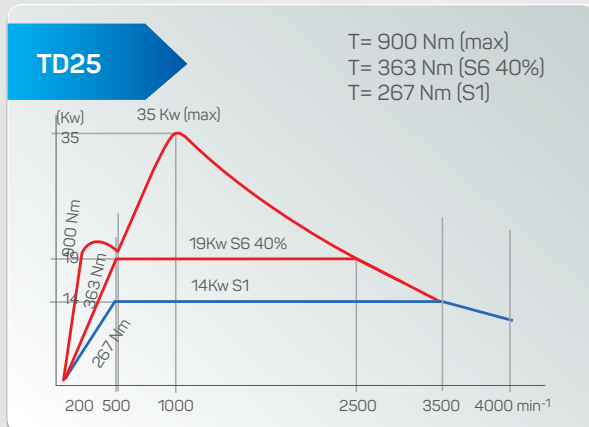
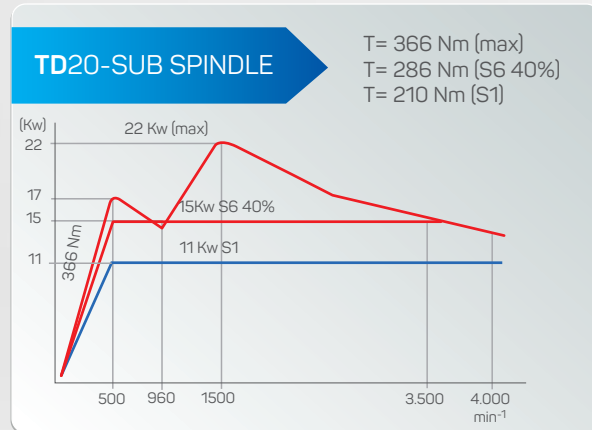
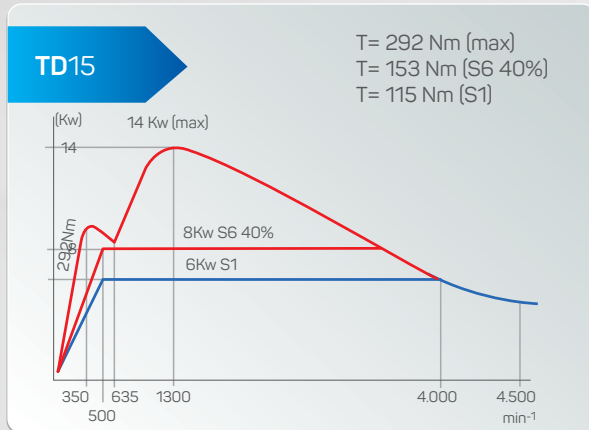
Hydraulic brake on C axis.

High performance
integrated motor.

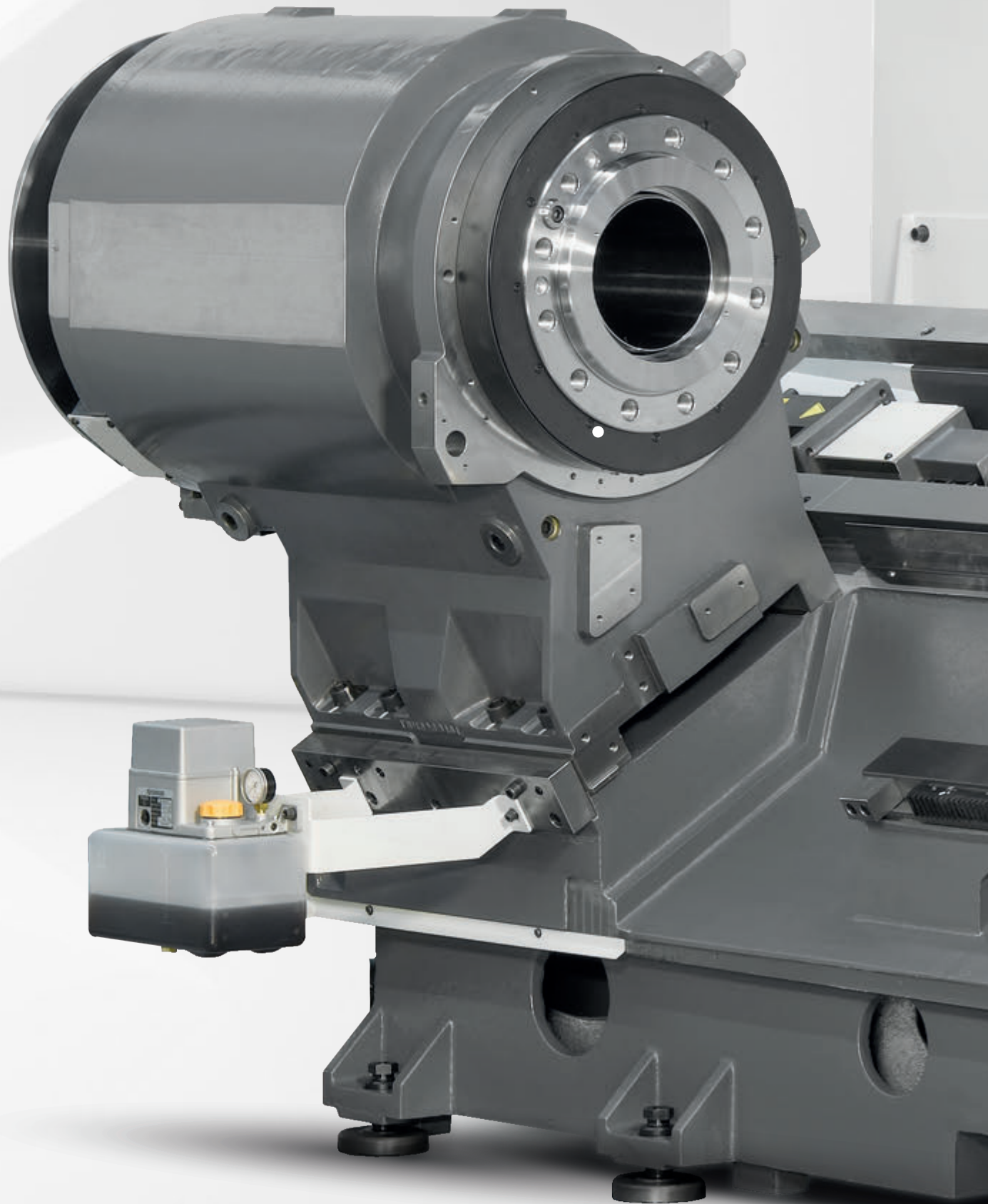


INTEGRATED SPINDLES

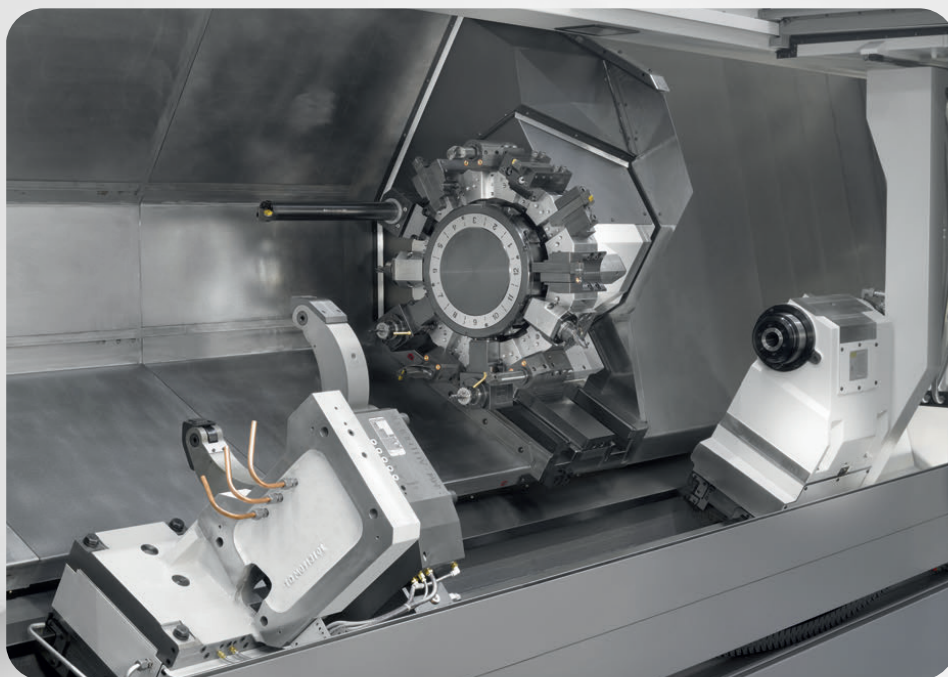
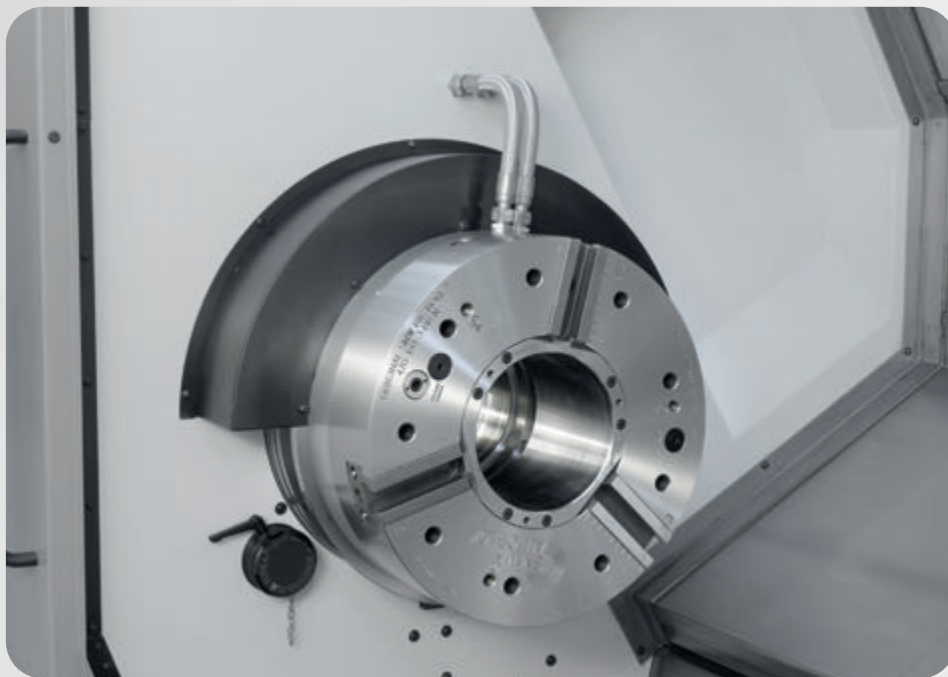
POWER AND TORQUE DIAGRAM OF SPINDLES



TD SERIES

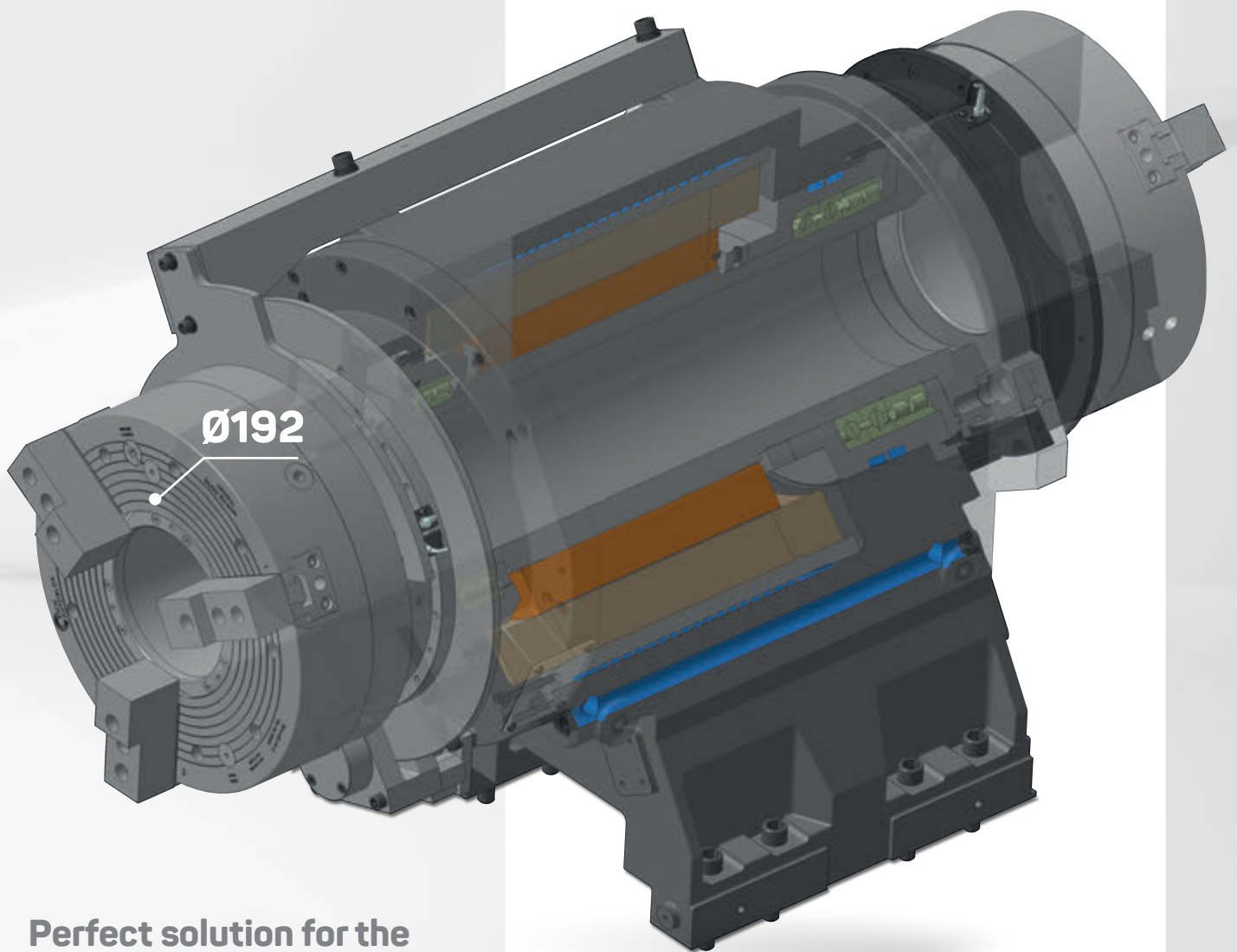


DOUBLE PNEUMATIC SPINDLE CHUCKS



TD SERIES

**Double pneumatic spindle
chucks with an inner
through hole of $\varnothing 192$**



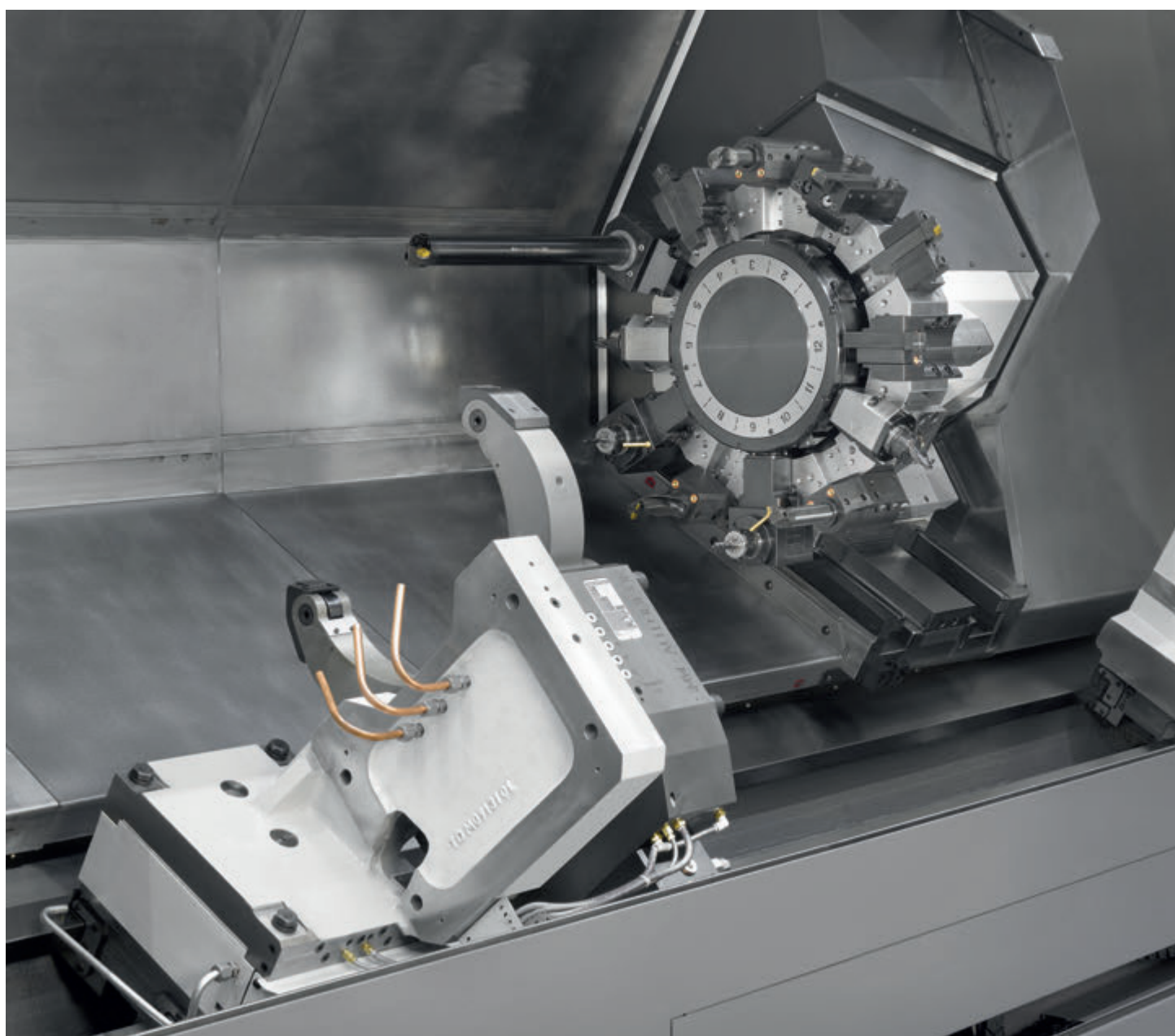
**Perfect solution for the
machining of large
diameter tubes**

**2 equal chucks SMW Autoblok
model BB-N 470 $\varnothing 192$**

Distance between chuck faces: 1401 mm

TURRET WITH A BUILT-IN MOTOR

AND HYDRAULIC
CLAMPING



TD SERIES

12.000 rpm /105 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

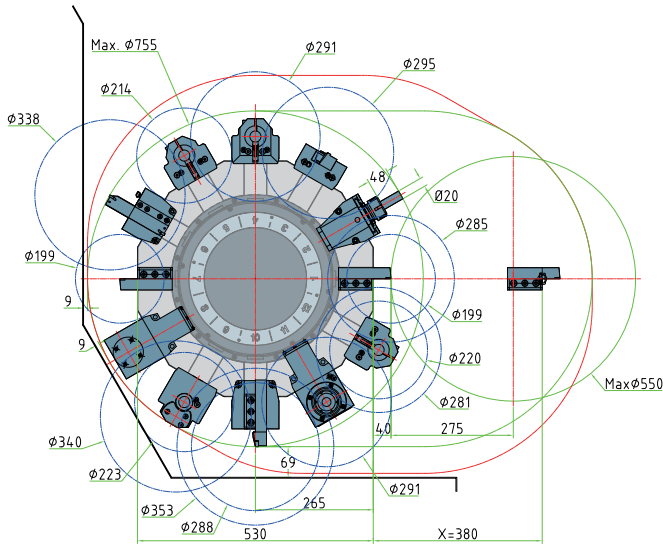
The clamping is done by means of a hydraulic system. The locking rings are 220 mm diameter and are a curvic coupling.

Transmission

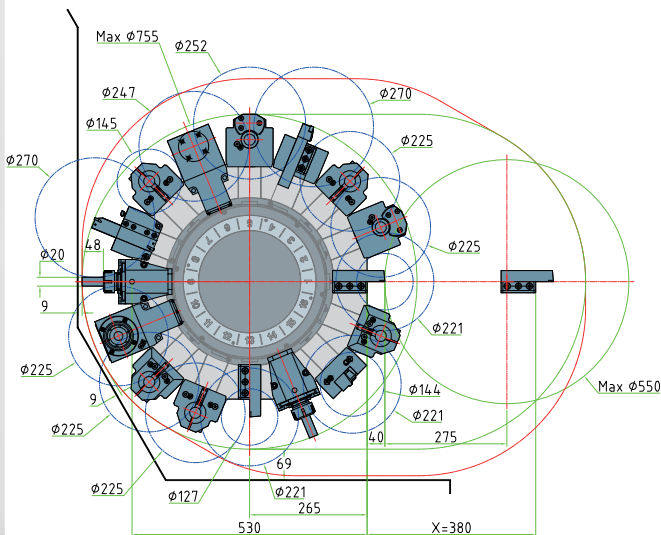
The transmission of driven tools is fitted with Gleason type conical spiral gears, hardened and ground giving high accuracy when rigid tapping.

TURRET WITH A BUILT-IN MOTOR AND HYDRAULIC CLAMPING

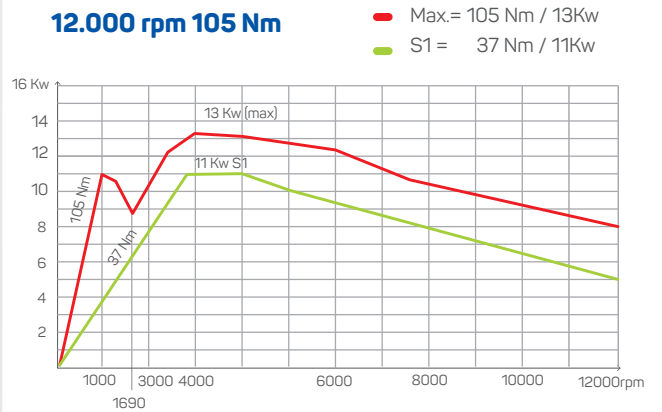
Interference diagram of driven tool motor. Turret with 12 positions



Interference diagram of driven tool motor. Turret with 16 positions



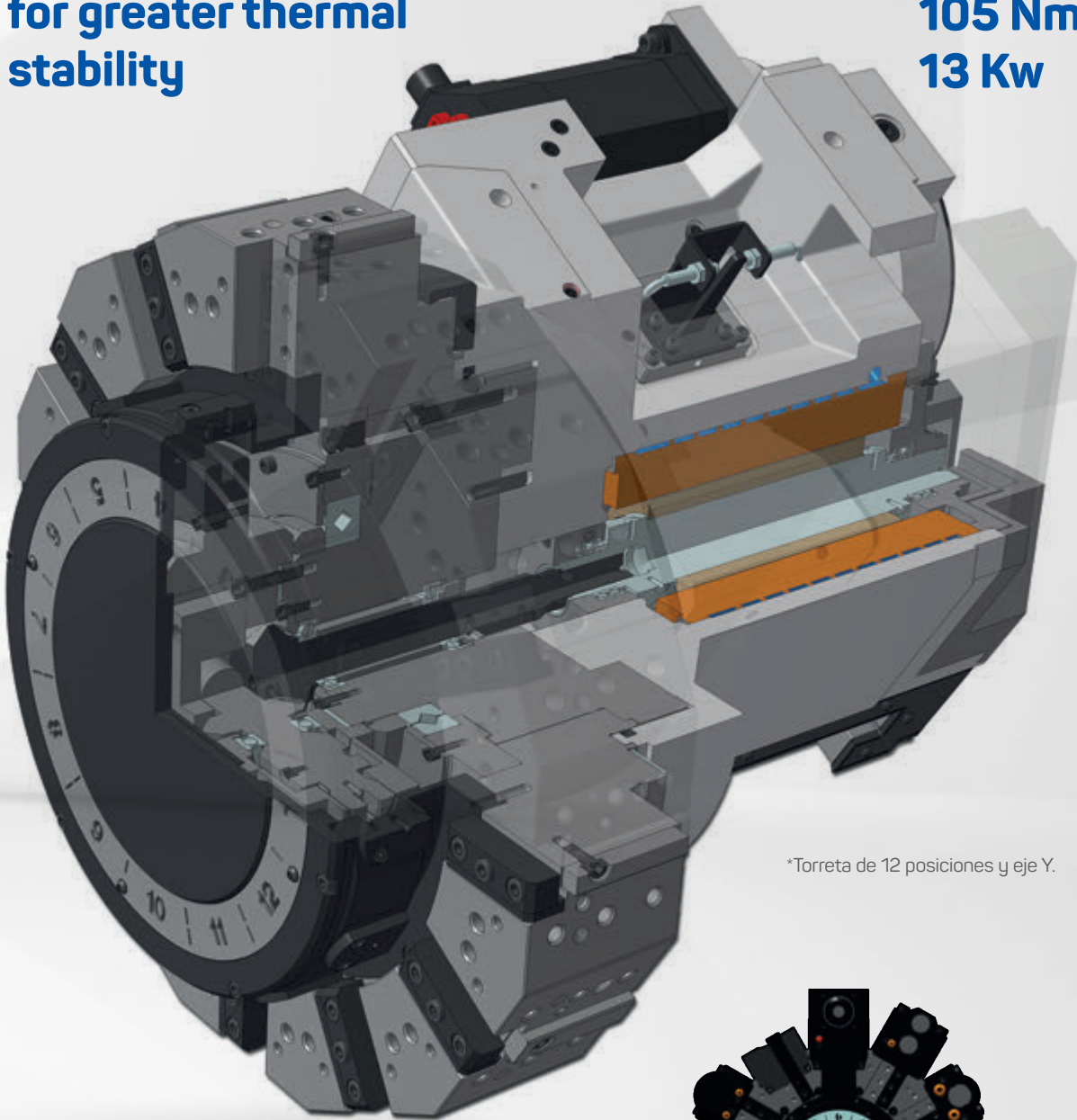
Power and torque diagram of driven tool motor



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**Turret cooled with oil
for greater thermal
stability**

**12,000 rpm
105 Nm
13 Kw**

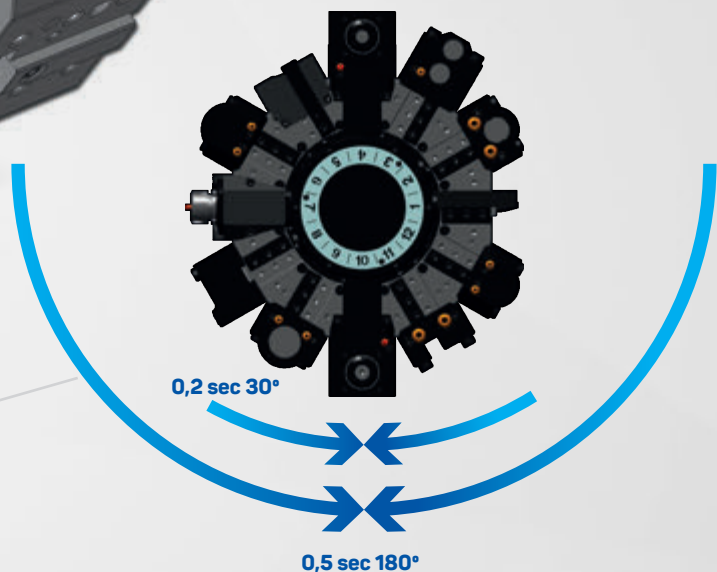


*Torreta de 12 posiciones y eje Y.

Turret disk

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.

16 positions disc. 0.2 seconds 22.5°



TOOL HOLDERS

Boring & Drilling holders Ø40



TD/10300/40
(Ø40mm)



TD/10300/41
(Ø40mm)



TD/10300/42
(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)



TL20/10000/36
(Ø10mm)



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)



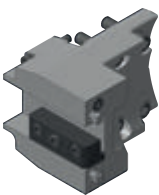
TD/10300/50
(Ø50mm)



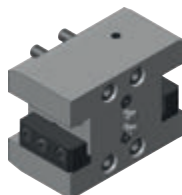
TD20/10300/80
(Ø80mm)

Boring holders Ø80

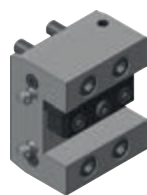
Turning holders □ 25



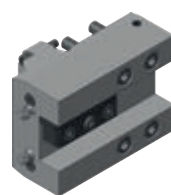
TD/10300/45



TD/10300/46



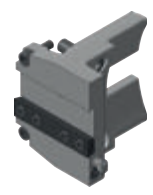
TD/10300/48



TD/10300/47

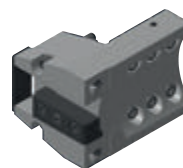


TD/10300/49



TD/10300/44

Turning holders □ 32



TD/10300/59

TD SERIES

Live tool holders



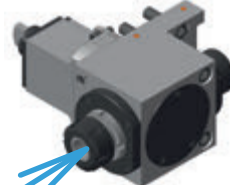
TL20/10400/10
Max: 4000 rpm



TL20/10400/01B
Max: 6000 rpm



TL20/10400/04A
Max: 8000 rpm



TL20/10400/06
Max: 12000 rpm



TL20/10400/08
Max: 12000 rpm

End Mill Holder



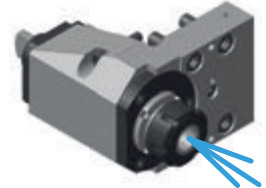
TL20/10400/03A
Max: 8000 rpm



TL20/10400/05B
Max: 6000 rpm



TL20/10400/07B
Max: 6000 rpm



TL20/10400/09
Max: 12000 rpm

Others



TL20/10000/03



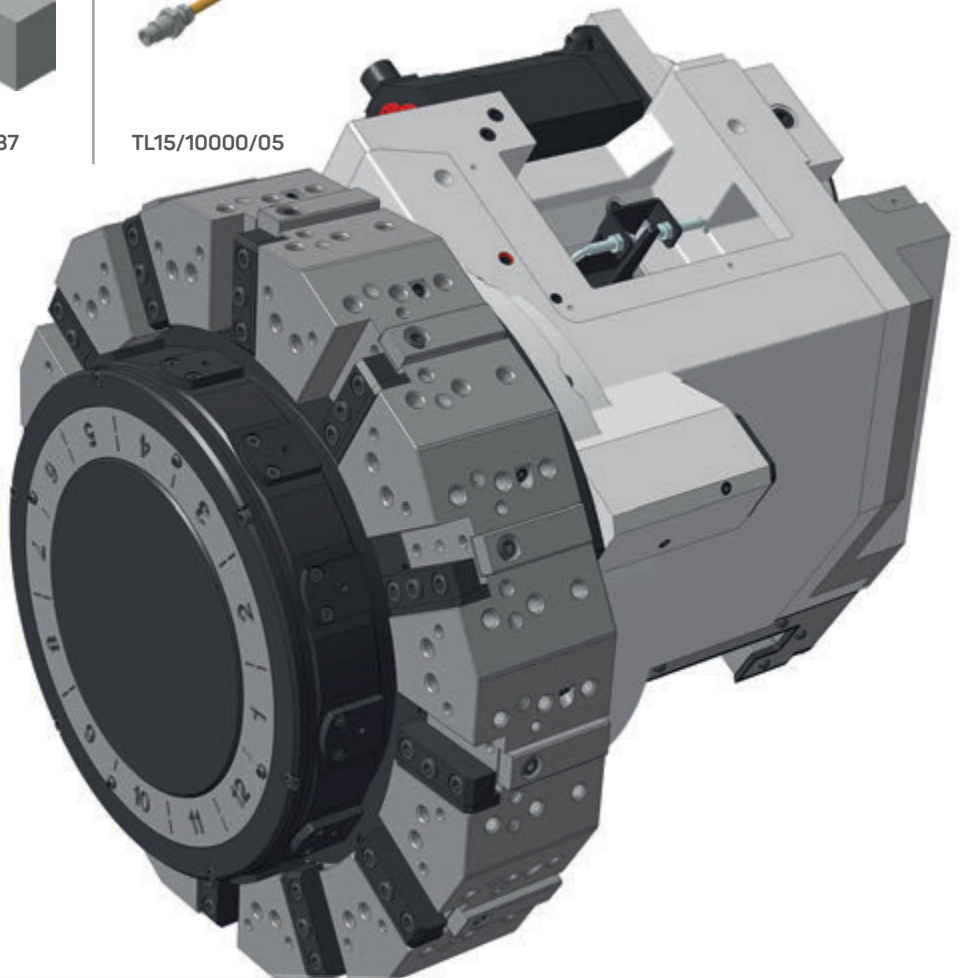
TL20/10000/37



TL15/10000/05

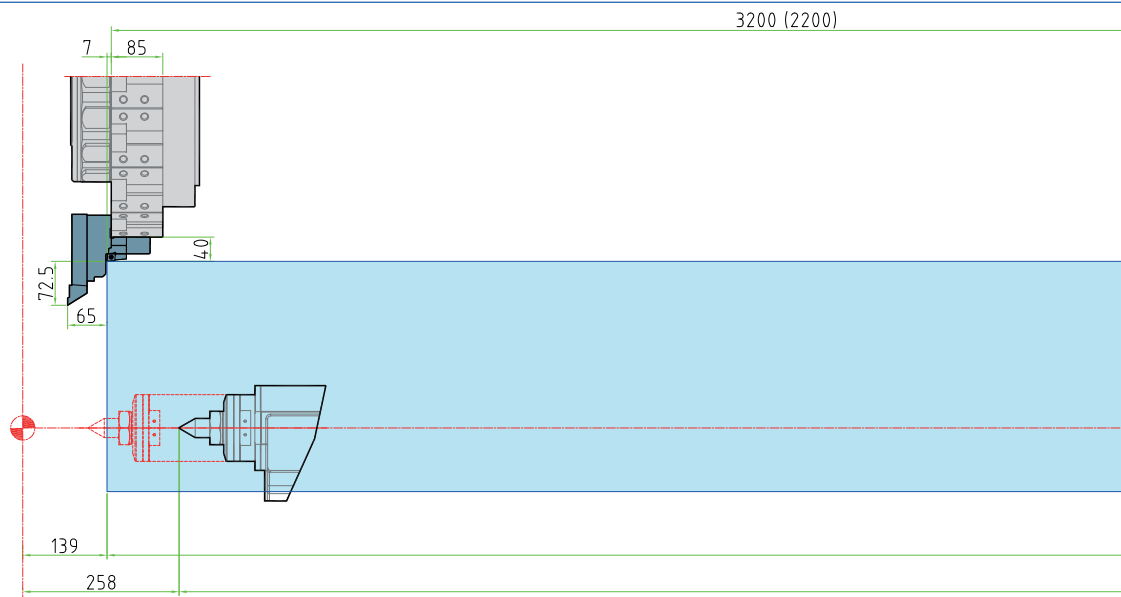


TL20/10051
TL20/10054

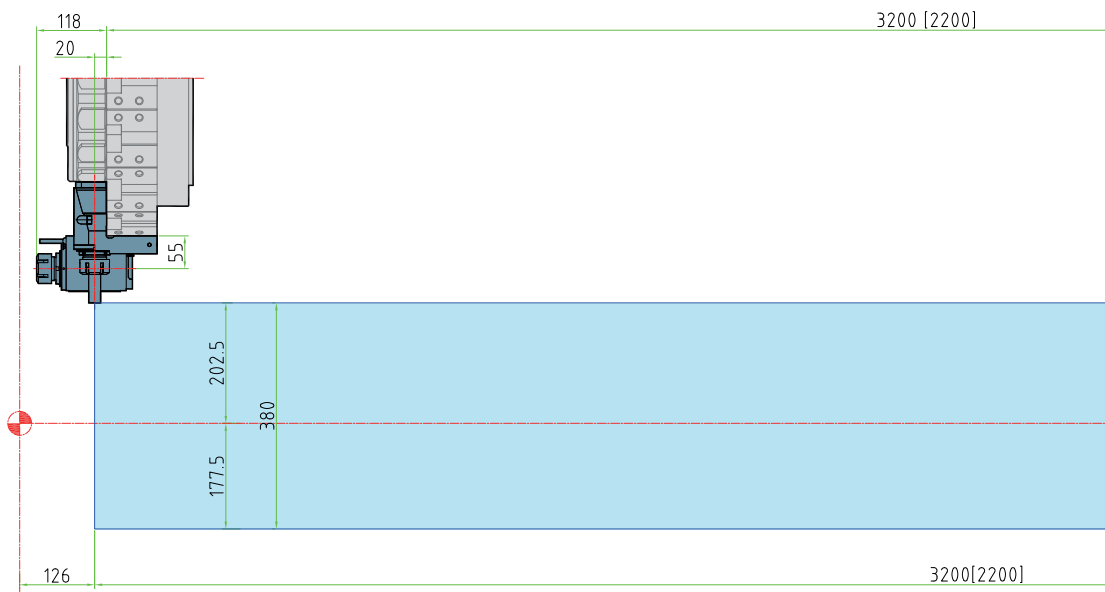


TRAVELS

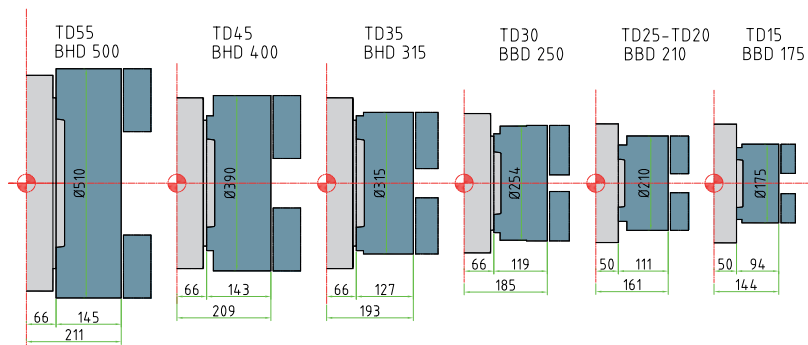
Travels with tailstock



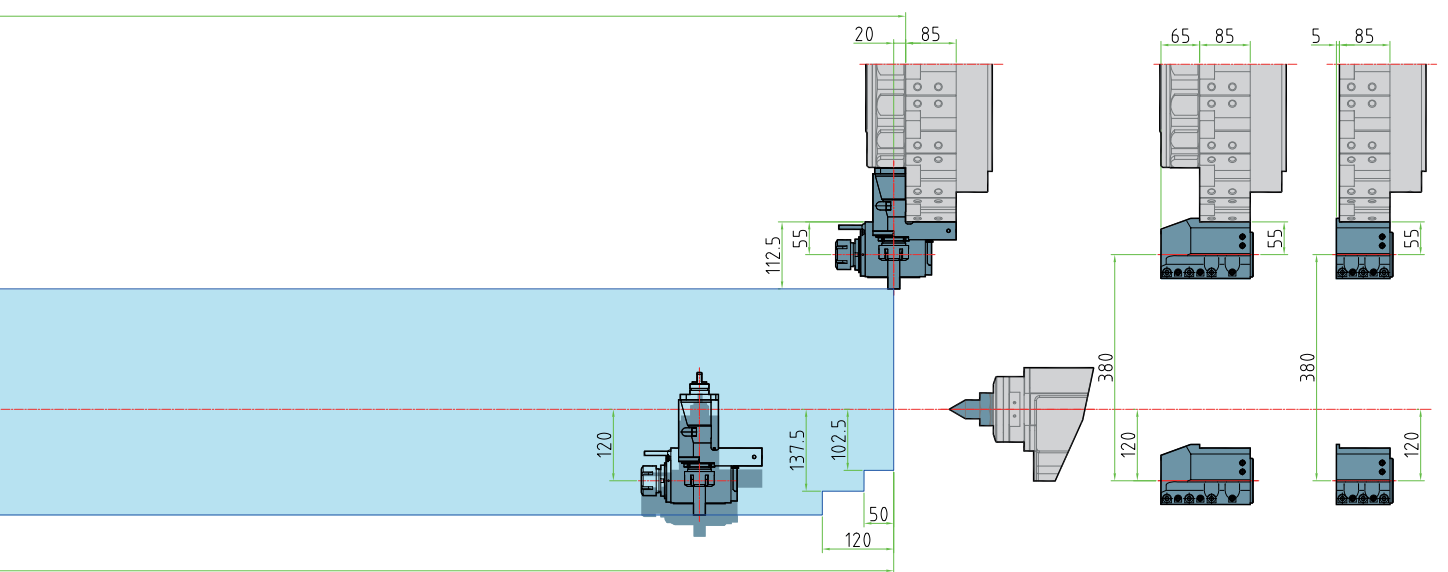
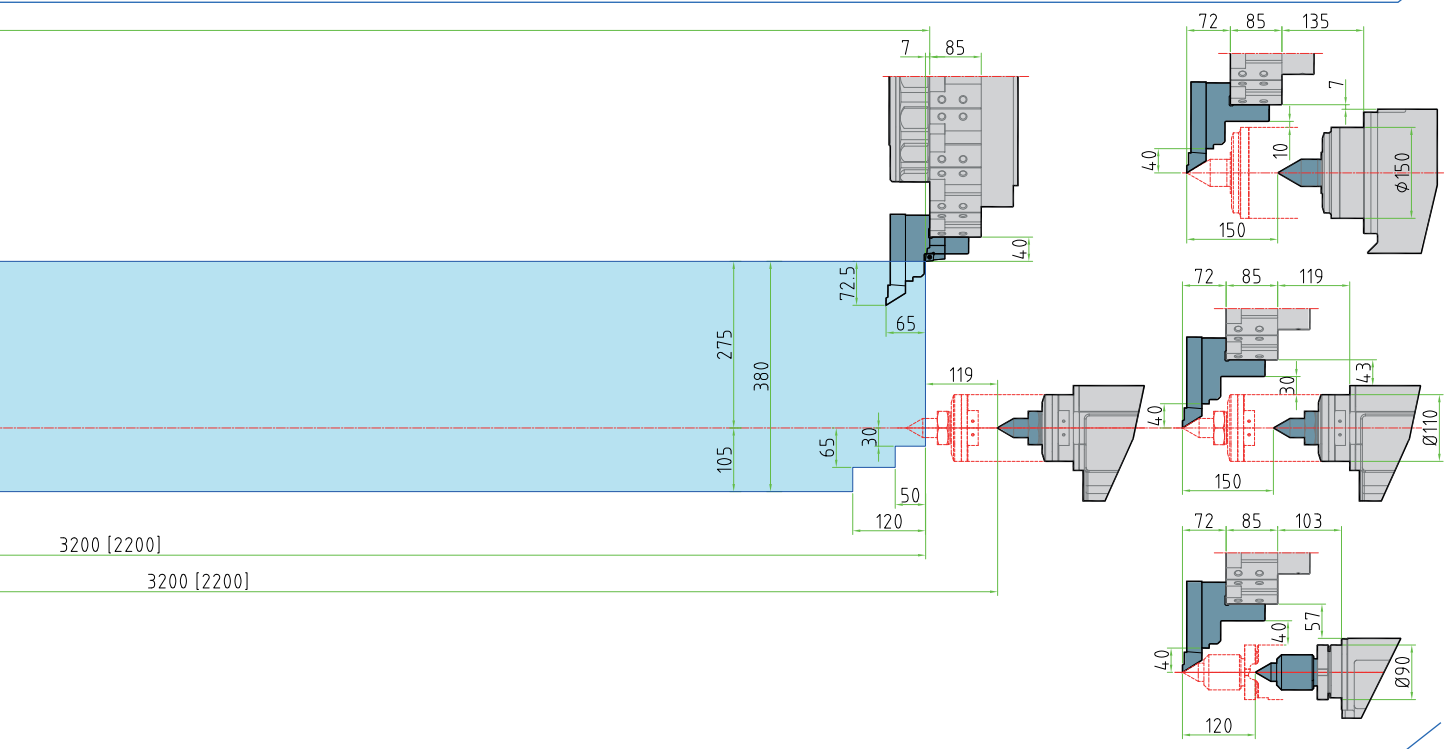
Travels with tailstock and live tooling



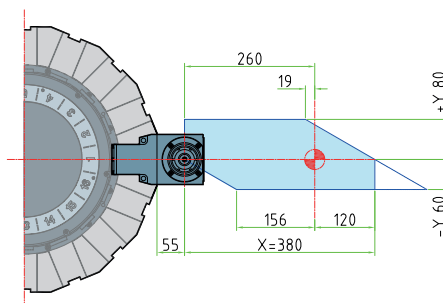
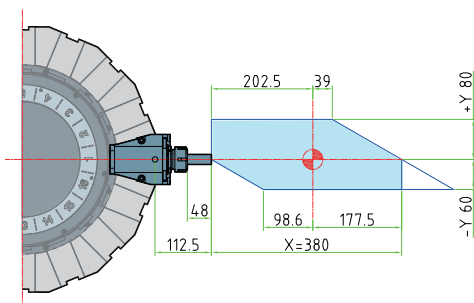
Standard chucks dimensions



TD SERIES



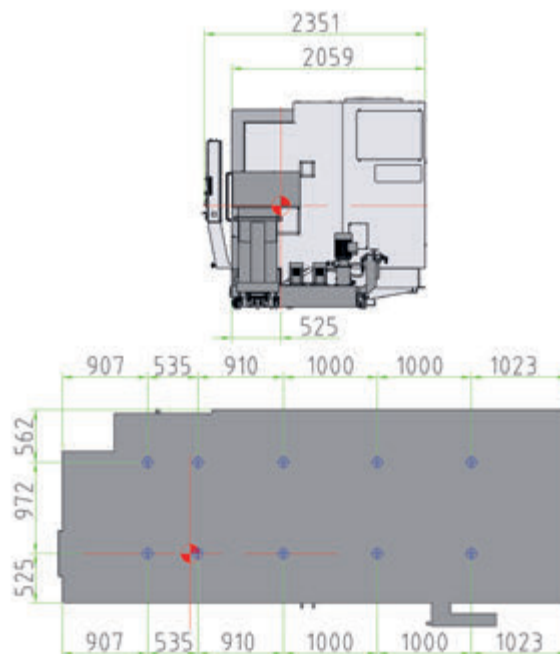
Y axis travel.



DIMENSIONS

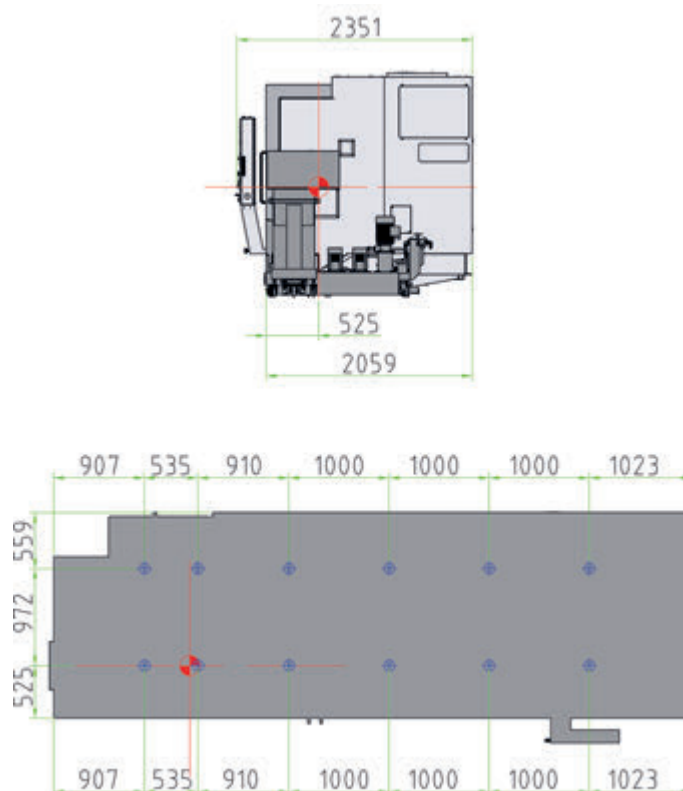
TD Z2200

MODEL



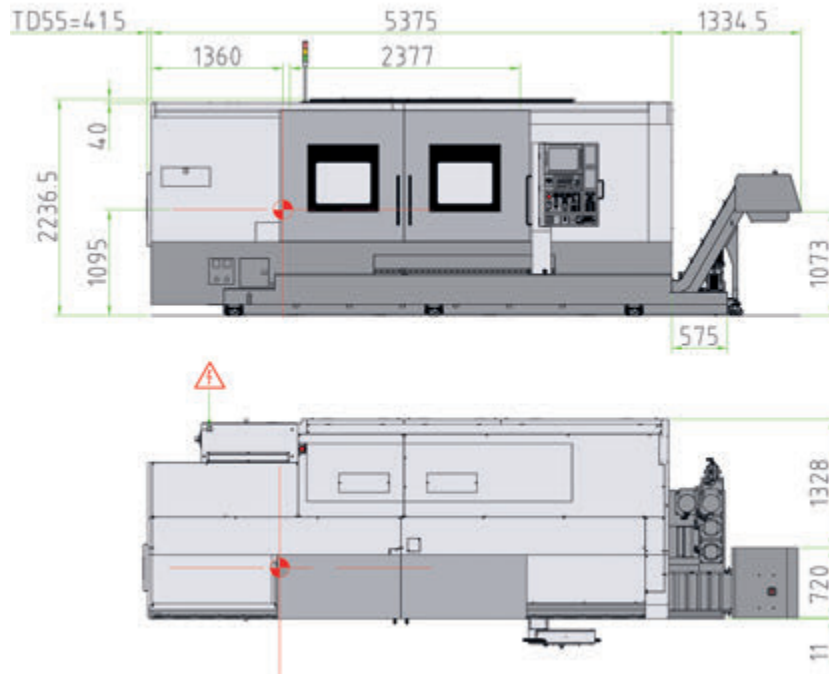
TD Z3200

MODEL

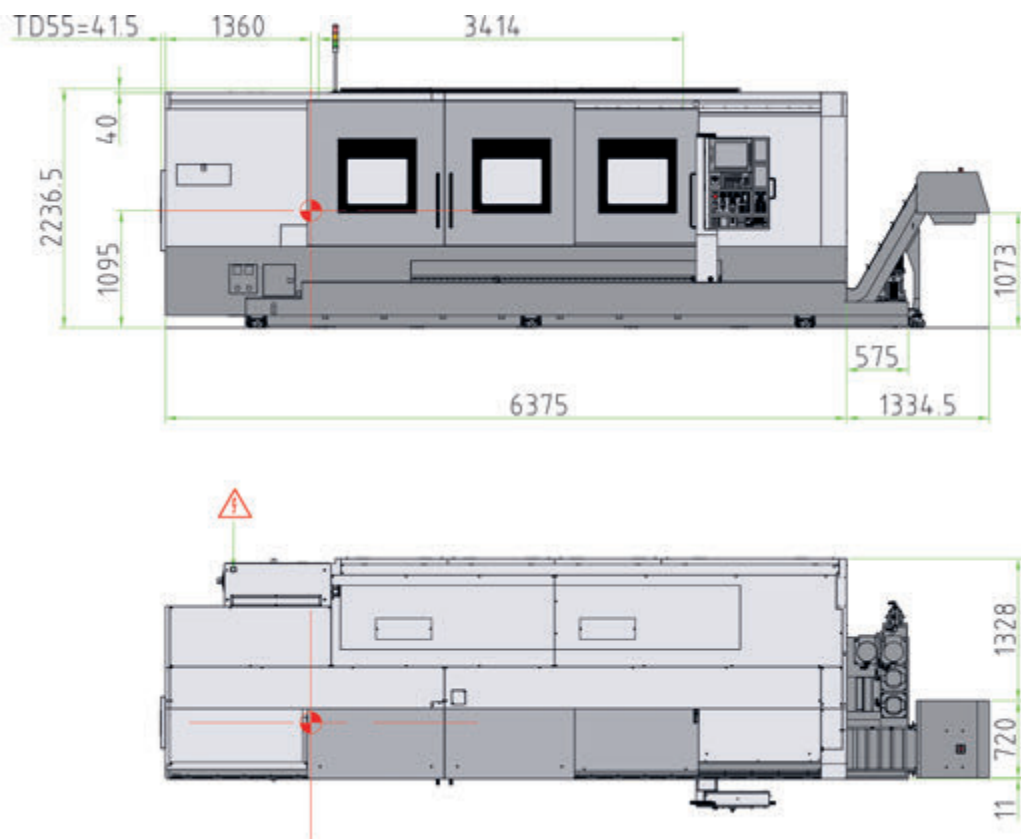


TD SERIES

TD Z2200 MODEL



TD Z3200 MODEL



TECHNICAL SPECIFICATIONS

TECHNICAL DATA		TD15					TD20					TD25					TD30					TD35					TD45					TD55									
		TD15	TD15M	TD15Y	TD15S	TD15MS	TD15YS	TD20	TD20M	TD20Y	TD20S	TD20MS	TD20YS	TD25	TD25M	TD25Y	TD25S	TD25MS	TD25YS	TD30	TD30M	TD30Y	TD30S	TD30MS	TD30YS	TD35	TD35M	TD35Y	TD35S	TD35MS	TD35YS	TD45	TD45M	TD45Y	TD45S	TD45MS	TD45YS	TD55	TD55M	TD55Y	TD55S
GENERAL DATA	Maximum diameter of swinging over bed (mm)	950					950					950					950					950					950														
	Maximum diameter of swinging over slides (mm)	715					715					715					715					715					715														
	Maximum turning diameter (mm)	550					550					550					550					550					550														
	Distance between spindle an tailstock center (mm)	Z2200	2315	-	-	-	-	2298	-	-	-	-	2298	-	-	-	-	2274	-	-	-	-	2250	-	-	-	-	2250	-	-	-	-	2248	-	-	-	-				
		Z3200	3315	-	-	-	-	3298	-	-	-	-	3298	-	-	-	-	3274	-	-	-	-	3250	-	-	-	-	3250	-	-	-	-	3248	-	-	-	-				
	Distance between center of spindles (mm)	-	-	826	-	-	-	-	792	-	-	-	-	792	-	-	-	-	768	-	-	-	-	760	-	-	-	-	744	-	-	-	-	742	-	-					
	X-axis travel (mm)	380					380					380					380					380					380														
	Z-axis travel (mm)	Z2200	2200					2200					2200					2200					2200					2200													
		Z3200	3200					3200					3200					3200					3200					3200													
	Y-axis travel (mm)	-	-	+80	-	-	+80	-	-	+80	-	-	+80	-	-	+80	-	-	+80	-	-	+80	-	-	+80	-	-	+80	-	-	+80	-	-	+80	-	-	+80				
	B-axis travel (mm)	Z2200	2200					2200					2200					2200					2200					800													
		Z3200	3200					3200					3200					3200					3200					1350													
	Fast feedrate X (m/min)	30					30					30					30					30					30														
	Fast feedrate Z (m/min)	30					30					30					30					30					30														
	Fast feedrate Y (m/min)	15					15					15					15					15					15														
	Fast feedrate B (m/min)	11	-	30	-	-	11	-	30	-	-	11	-	30	-	-	11	-	30	-	-	11	-	30	-	-	11	-	30	-	-	11	-	30	-	-					
Axis acceleration	1g=9,8 m/s ²					1g=9,8 m/s ²					1g=9,8 m/s ²					1g=9,8 m/s ²					1g=9,8 m/s ²					1g=9,8 m/s ²															
SPINDLE	Maximum speed (rpm)	4500					4000					4000					3500					3000					2200					1600									
	Bearing outside diameter (mm)	150					170					170					200					240					310					320									
	Bearing inside diameter (mm)	100					110					110					130					160					200					240									
	Spindle nose	ASA 6"A2					ASA 6"A2					ASA 6"A2					ASA 8"A2					ASA 11"A2					ASA 11"A2					ASA 15"A2									
	Spindle inside diameter	61					73					73					86					106					136					192									
	Bar diameter	52					66					66					78					95					127					180									
	Chuck diameter	175/210					210					250/ 210					250/ 315					315					315/400					500									
	Chuck bore	56/52					66					66					77					95					122/118					180									
	Spindle power (kW) (max./S6 40%)	14/8					22/15					35/19					40/25					48 (S3 25%) /39 (S1)					51 (S3 25%) /39 (S1)					51 (S3 25%) /39 (S1)									
	Turning torque (Nm)	292 (max.)					366 (max.)					900 (max.)					1020 (max.)					1500 (max.)					3600 (max.)					3600 (max.)									
153 (S6 40%)					286 (S6 40%)					363 (S6 40%)					720 (S6 40%)					1273 (S3 25%) 1035 (S1)					3000 (S3 25%) 2000 (S1)					3000 (S3 25%) 2000 (S1)											
TAILSTOCK	Morse cone	Ø150x150 rotary quill	CM5	-	-	-	CM5	-	-	-	-	CM5	-	-	-	-	CM5	-	-	-	-	CM5	-	-	-	-	CM5	-	-	-	-	CM5	-	-	-	-					
		Ø110x150 rotary quill	CM4	-	-	-	CM4	-	-	-	-	CM4	-	-	-	-	CM4	-	-	-	-	CM4	-	-	-	-	CM4	-	-	-	-	CM4	-	-	-	-					
		Ø90x120 live centre	CM5	-	-	-	CM5	-	-	-	-	CM5	-	-	-	-	CM5	-	-	-	-	CM5	-	-	-	-	CM5	-	-	-	-	CM5	-	-	-	-					
		Ø90x120 rotary quill	CM3	-	-	-	CM3	-	-	-	-	CM3	-	-	-	-	CM3	-	-	-	-	CM3	-	-	-	-	CM3	-	-	-	-	CM3	-	-	-	-					
	Tailstock travel (mm)	Z2200	2200	-	-	-	2200	-	-	-	-	2200	-	-	-	-	2200	-	-	-	-	2200	-	-	-	-	2200	-	-	-	-	2200	-	-	-	-					
Z3200		3200	-	-	-	3200	-	-	-	-	3200	-	-	-	-	3200	-	-	-	-	3200	-	-	-	-	3200	-	-	-	-	3200	-	-	-	-						
Max. force (kgf)	900	-	-	-	-	900	-	-	-	-	900	-	-	-	-	1500(Ø150) 1500(Ø110) 900(Ø90)	-	-	-	-	1500(Ø150) 1500(Ø110) 900(Ø90)	-	-	-	-	3000(Ø150) 1500(Ø110) 900(Ø90)	-	-	-	-	2000(Ø150) 1500(Ø110) 900(Ø90)	-	-	-	-						

TD SERIES

TECHNICAL DATA		TD15					TD20					TD25					TD30					TD35					TD45					TD55											
		TD15		TD15		TD15S	TD20		TD20		TD20S	TD25		TD25		TD25S	TD30		TD30		TD30S	TD35		TD35		TD35S	TD45		TD45		TD45S	TD55		TD55		TD55S							
		TD15	TD15M	TD15Y	TD15S	TD15MS	TD15YS	TD20M	TD20Y	TD20S	TD20MS	TD20YS	TD25M	TD25Y	TD25S	TD25MS	TD25YS	TD30M	TD30Y	TD30S	TD30MS	TD30YS	TD35M	TD35Y	TD35S	TD35MS	TD35YS	TD45M	TD45Y	TD45S	TD45MS	TD45YS	TD55M	TD55Y	TD55S	TD55MS	TD55YS						
TURRET	Number of positions	16 (12)					16 (12)					16 (12)					12 (16)					12 (16)					12 (16)					12 (16)											
	Section of tools (mm)	25x25 (Ø50)					25x25 (Ø50)					25x25 (Ø50)					25x25 (Ø50)					25x25 (Ø50)					25x25 (Ø50)					25x25 (Ø50)											
	Changing time	22,5° 0,2s-180° 0,5s					22,5° 0,2s-180° 0,5s					22,5° 0,2s-180° 0,5s					22,5° 0,2s-180° 0,5s					22,5° 0,2s-180° 0,5s					22,5° 0,2s-180° 0,5s					22,5° 0,2s-180° 0,5s											
	Interlocking force at 45 bar (kgf)	8000					8000					8000					8000					8000					8000					8000											
DRIVEN TOOLS	Number of driven tools	-	16(12)	-	16(12)	-	16(12)	-	16(12)	-	16(12)	-	16(12)	-	16(12)	-	12(16)	-	12(16)	-	12(16)	-	12(16)	-	12(16)	-	12(16)	-	12(16)	-	12(16)	-	12(16)	-	12(16)	-	12(16)						
	Turning speed (rpm)	-	12000	-	12000	-	12000	-	12000	-	12000	-	12000	-	12000	-	12000	-	12000	-	12000	-	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	-	13,7/11	-	13,7/11	-	13,7/11	-	13,7/11	-	13,7/11	-	13,7/11	-	13,7/11	-	13,7/11	-	13,7/11	-	13,7/11	-	13,7/11						
	Maximum torque (Nm)	-	75(105)	-	75(105)	-	75(105)	-	75(105)	-	75(105)	-	75(105)	-	75(105)	-	105(75)	-	105(75)	-	105(75)	-	105(75)	-	105(75)	-	105(75)	-	105(75)	-	105(75)	-	105(75)	-	105(75)	-	105(75)						
SUBSPINDLE	Maximum speed (rpm)	-	4000	-	4000	-	4000	-	4000	-	4000	-	4000	-	4000	-	4000	-	4000	-	4000	-	4000	-	4000	-	4000	-	4000	-	4000	-	4000	-	4000	-	4000						
	Bearing outside diameter (mm)	-	170	-	170	-	170	-	170	-	170	-	170	-	170	-	170	-	170	-	170	-	170	-	170	-	170	-	170	-	170	-	170	-	170	-	170						
	Bearing inside diameter (mm)	-	110	-	110	-	110	-	110	-	110	-	110	-	110	-	110	-	110	-	110	-	110	-	110	-	110	-	110	-	110	-	110	-	110	-	110						
	Spindle nose	-	ASA 6"A2	-	ASA 6"A2	-	ASA 6"A2	-	ASA 6"A2	-	ASA 6"A2	-	ASA 6"A2	-	ASA 6"A2	-	ASA 6"A2	-	ASA 6"A2	-	ASA 6"A2	-	ASA 6"A2	-	ASA 6"A2	-	ASA 6"A2	-	ASA 6"A2	-	ASA 6"A2	-	ASA 6"A2	-	ASA 6"A2	-	ASA 6"A2						
	Spindle inside diameter (mm)	-	73	-	73	-	73	-	73	-	73	-	73	-	73	-	73	-	73	-	73	-	73	-	73	-	73	-	73	-	73	-	73	-	73	-	73						
	Bar diameter (mm)	-	66	-	66	-	66	-	66	-	66	-	66	-	66	-	66	-	66	-	66	-	66	-	66	-	66	-	66	-	66	-	66	-	66	-	66						
	Chuck diameter (mm)	-	210	-	210	-	210	-	210	-	210	-	210	-	210	-	210	-	210	-	210	-	210	-	210	-	210	-	210	-	210	-	210	-	210	-	210						
	Chuck bore (mm)	-	66	-	66	-	66	-	66	-	66	-	66	-	66	-	66	-	66	-	66	-	66	-	66	-	66	-	66	-	66	-	66	-	66	-	66						
	Power (kW) (max./ S6 40%)	-	22/15	-	22/15	-	22/15	-	22/15	-	22/15	-	22/15	-	22/15	-	22/15	-	22/15	-	22/15	-	22/15	-	22/15	-	22/15	-	22/15	-	22/15	-	22/15	-	22/15	-	22/15						
	Turning torque (Nm) (max./S6 40%)	-	366/286	-	366/286	-	366/286	-	366/286	-	366/286	-	366/286	-	366/286	-	366/286	-	366/286	-	366/286	-	366/286	-	366/286	-	366/286	-	366/286	-	366/286	-	366/286	-	366/286	-	366/286						
MISCELLANEOUS	Coolant tank (litres)	Z2200	415					415					415					415					415					415					415										
		Z3200	470					470					470					470					470					470					470										
	Hydraulic oil tank (litres)	10					10					10					10					10					10					10											
	Lubrication oil tank (litres)	4					4					4					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	65	65	65	100	100	100	65	65	65	100	100	100	65	65	65	100	100	100
	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%)					400V 50Hz ±5% (230V 50Hz ±5%)					400V 50Hz ±5% (230V 50Hz ±5%)																
	Environmental temperature	35°C					35°C					35°C					35°C					35°C					35°C																
	Total weight (kg)	Z2200	9000(+)					9200(+)					9200(+)					9500(+)					10000(+)					10500(+)					10500(+)										
		Z3200	10700(+)					10700(+)					10700(+)					11000(+)					11500(+)					12000(+)					12000(+)										
	Dimensions (mm)	TD	Z2200	5375x2361x2236					5375x2361x2236					5375x2361x2236					5375x2361x2236					5375x2361x2236					5375x2361x2236					5375x2361x2236									
		TD	Z3200	6375x2361x2236					6375x2361x2236					6375x2361x2236					6375x2361x2236					6375x2361x2236					6375x2361x2236					6375x2361x2236									
	Inner volume (m³)	TD	Z2200	5,3					5,3					5,3					5,3					5,3					5,3					5,3									
TD		Z3200	7,1					7,1					7,1					7,1					7,1					7,1					7,1										

(*) Approximate weights.

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

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