

TURN

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TDZ Turn



Vertical lathes VSC

VSC 850S • VSC 950M • VSC 1250L

TDZ Turn

TDZ Turn is a Czech machining company based in Brno, specializing in the manufacture of its own series of both vertical and horizontal lathes. TDZ Turn is primarily active on the Czech and Slovak markets, but also has presence in other European countries.

Established in 2006, TDZ Turn initially focused exclusively on the manufacture of robust vertical **VLC lathes** with **swing diameters of up to 4,500 mm**.

10 years later, in 2016, its vertical lathe portfolio was expanded to also include **smaller VSC machines**. Suitable for machining smaller and mid-sized series **with swing diameters of up to 1,200 mm**, in addition to piece production, these machines can in many ways replace machining centres..

Before then, 2014 saw the introduction of **manually operated horizontal HML lathes** and **horizontal CNC-controlled HLC lathes**.



Vertical VSC Lathes

Available in basic (turning) configuration or with a rotary tool drive. Axis guideways can be linear or sliding; bespoke workpiece clamping uses either a hydraulic chuck or a manual clamping plate. The VSC machines feature a fully enclosed work area and can be equipped with high-pressure cooling. A great advantage of these machines is the automatic multi-tool turret and tool holders located outside the work area. The number of the turret positions, its location, as well as the tool change speed are just a few features than can be tailored to customer specifications.

VSC series machines are available in three versions, namely **S** (Small), **M** (Medium) a **L** (Large).

VSC S

The smallest machines of the VSC series. Suitable especially for smaller workpieces weighing up to 1,300 kg. The lathes come with an optional hydraulic chuck or a manual clamping plate with a diameter of up to 600 mm and a maximum swing diameter of up to 850 mm.



VSC M

Designed for workpieces weighing up to 2,000 kg with a swing diameter of up to 950 mm. In addition to the standard C-axis, the machines can also be equipped with the Y-axis. The multi-tool turret outside the work area can support up to 32 positions. VSC M machines are exceedingly robust and to maximize their rigidity during machining, we recommend that they be fitted with sliding axis guideways.



VSC L

Designed for workpieces weighing up to 5,000 kg with a swing diameter of up to 1,250 mm. allowing for the machining of components up to 1,000 mm in height. Compared to the **VSC S** and **VSC M** machines, VSC L lathes feature cross-roller bearings to maximise their service life whilst reducing their height.



Being universal machine tools, vertical VSC lathes can be configured for both piece and large-batch production.

Due to their robustness, these machines require no anchoring, further facilitating their relocation whenever needed.

The multi-tool turret outside the work area, tool holder clamping into the spindle using the SK50 taper, variable workpiece clamping, fully enclosed frame, optional high-pressure cooling, optional automation and robotization, Siemens/FANUC control - the machine can be configured to meet customer requirements.



Tool Holders

- Biaxel holders are clamped into the spindle cavity using the SK50 taper shank as standard.
- Triaxial holders are available in MAS BT 403 or DIN 69871 types
- A set of 5 standard holders is included in the basic machine package.

Standard biaxial*				
S2BB	S2BT	S2ST		
				
CAPTO biaxial*				
S2VH	S2VW	S2 HOLE	S2LV	S2PV
				
Standard triaxial*				
S3BB	S3BT	S3ST		
				
CAPTO triaxial*				
S3HH	S3VW	S3VH	S3LV	S3PV
				

* Design examples; for more details see the holder catalogue

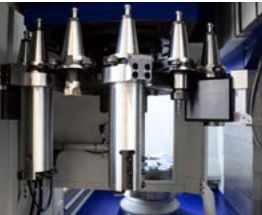
Clamping, Machining



Equipment and Options

Machine design	
Standard	Optional
Control system	Sinumerik 828D / Sinumerik ONE / FANUC Control System
SHOPTURN (Siemens) / Manual guide I (Fanuc)	
10" control system panel	15" / 19" control system touch panel, height adjustable
Additional small control panel - dial	
System reports in the customer's language	
Main spindle drive	Increased main spindle drive performance
Main spindle drive two-speed gearbox	
Rotary tool spindle drive (triaxial units)	Increased rotary tool spindle drive performance
2-speed rotary tool drive gearbox (triaxial units)	
Axial feed drives	
Main spindle frequency converter	
4 jaw hydraulic chuck	Larger chuck diameter, manual clamping plate including a vice set
Set of hard and soft jaws	More clamping jaws, greater jaw height
12 position multi-tool turret	Greater turret capacity; turrets on both sides
Chip removal conveyor including a chip box	
Fully enclosed design	
Manually operated work area doors	Automated work area door operation
Cooling system, coolant tank	
6 bar tool cooling pressure	Greater cooling pressure, cooling pressure control, mist extraction
Manual workpiece rinsing - rinse gun	
Automated lubrication of sliding surfaces and ball screws	
Automated cooling of the main bed and main bed bearing	
Linear X-axis measurement (ruler)	
Linear Z-axis measurement (ruler)	
X and Z axis linear guideways	X and Z axis sliding guideways
Switchboard air conditioning	
Oil separator - oil skimmer	
Cooling emulsion paper filtration	
Network connection set-up	Remote diagnostics
High performance work area led lighting	
Work area light signalling (stop-go)	
Anchoring and installation material	Anchor hole drilling
RAL grey/RAL blue combination coating	
Manuals and technical documentation in the customer's language	
Machine pre-acceptance prior to shipment to the installation site	
Basic operation and maintenance training (8 hours)	Additional operator and maintenance training
Packaging, packaging material	
24-Month warranty	Warranty extension, service contract
Service response within 24 to 48 hours after notification	Earlier service response
	Transport to the place of use
	Machine installation at the place of use
	Delivery and commissioning at the place of use

Tooling	
Standard	Optional
Set of 5 standard tool holders	More tool holders, CAPTO tool holders
	Workpiece probe
	Tool probe
	Angle head (triaxial units)
	Auxiliary grinding equipment (triaxial units)



Technical Specifications

		VSC 850S	VSC 850SC	VSC 950M	VSC 950MC	VSC 1250L	VSC 1250LC
Number of controlled axes		2	3	2	3	2	3
Machine design							
Control system		Siemens/Fanuc control system					
Workpiece clamping		3 jaw hydraulic chuck, including a clamping jaw set					
Multi-tool turret		Automated tool change, off the work area					
Operating range							
Max. swing diameter	mm	850		950		1,250	
Clamping surface diameter	mm	380 (460, 600)		600 (800)		600 (800; 1,000)	
Max. workpiece weight	kg	1,300		2,000		4,000	
Max. workpiece height	mm	700		800		900	
Travels							
X-axis travel	mm	-55, +425		-50, +475		-50, +600	
Z-axis travel	mm	620		800		850	
Travels							
X-axis fast feed	mm/min	12,000		12,000		12,000	
Z-axis fast feed	mm/min	12,000		12,000		12,000	
Main spindle (SP1)							
RPM range - 1st gear	rpm	20-500		20-340		10-120	
RPM range - 2nd gear	rpm	500-2,000		340-1,500		120-600	
S1/S6 rating - 40% *	kW	16/24		16/24		16/24	
Max. torque	Nm	4,195		4,886		14,114	
Rotary tool spindle (SP2)							
RPM range - 1st gear	rpm	xxx	1-1,200	xxx	1-1,200	xxx	1-1,200
RPM range - 2nd gear	rpm	xxx	1,200-2,500	xxx	1,200-2,500	xxx	1,200-2,500
S1/S6 rating - 40% *	kW	xxx	6.3/9.5	xxx	6.3/9.5	xxx	6.3/9.5
Max. torque (with gearbox)	Nm	xxx	456	xxx	456	xxx	456
Multi-tool turret							
Type of clamping taper		SK50	BT50/DIN69871	SK50	BT50/DIN69871	SK50	BT50/DIN69871
Turret capacity		12		12		12	
Max. tool holder weight	kg	30		30		30	
Maximum tool size	mm	32 × 32		32 × 32		32 × 32	
Max. tool holder height	mm	400		400		400	
Tool holder replacement time	sec	30		30		30	
Other specifications							
Coolant tank	L	250		300		350	
Machine power supply		3 × 400 V, 50 Hz		3 × 400 V, 50 Hz		3 × 400 V, 50 Hz	
Total power consumption	KVA	50	55	50	60	50	60
Approximate machine dimensions	mm	3,205 depth × 2,330 width		3,650 depth × 2,650 width		3,850 depth × 2,540 width	
Approximate height	mm	3,300	3,500	3,400 (4,100)**	3,800 (4,400)**	3,100 (3,700)**	3,500 (4,200)**
Machine net weight	kg	13,000	14,000	18,000	19,000	18,000	19,000

* Optional extension

** The bracket values indicate the maximum height of the extended metal plate as it travels up in the Z-axis; this value can be adjusted.



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