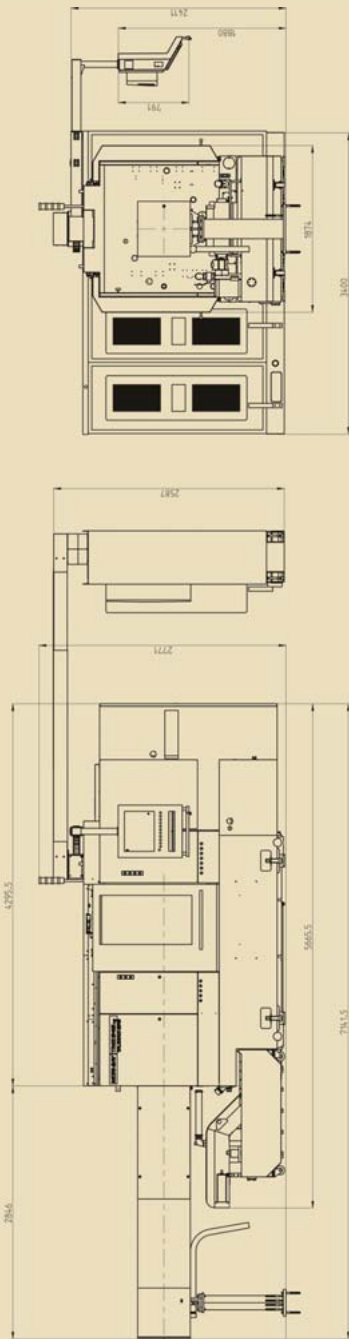


# TECHNICAL DATA

# MORI-SAY TMZ642CNC

new generation



<b>Number of CNC axes</b>			
Standard		24	
Optional		48	
<b>Bar stock capacity</b>			
Round cross section	mm	∅ 42	
Hexagonal cross section	mm	∅ 36	
Maximum length of material	mm	4 000	
Bar feed (max)	mm	180	
<b>Bar capacity with automatic bar loader</b>			
		<b>min</b>	<b>max</b>
for clamping collets SK52BZI HAINBUCH	mm	∅ 16	∅ 48
for clamping collets SCHÜTTE 42 type 9112E	mm	∅ 15	∅ 45
for clamping collets SCHÜTTE 32 type 9070E	mm	∅ 13	∅ 37
<b>Spindles (standard axes from SPI to SP6)</b>			
Number		6	
Pitch diameter of spindles	mm	340	
Speed	RPM	5 000	
Motor power (each motor), 100% duty cycle	kW	7	
Torque Mn at 1000 RPM	Nm	66.8	
Gear ratio motor / spindle		2	
Spindles drum indexing time (standard axis CM1)	sec	0.7-1	
<b>Frontal slides (standard axes from W1 to W6)</b>			
Number		6	
Fast traverse	m/min	30	
Force	N	3 400	
Stroke	mm	360	
Gear ratio motor / ballscrew		1	
Pitch of ball screw	mm	10	
<b>Compound slides (standard axes from X1 to X5 and from Z1 to Z5)</b>			
Number		5	
Radial and axial fast traverse	m/min	15	
Axial stroke (axes from Z1 to Z2)	mm	160	
Axial stroke (axes from Z3 to Z5)	mm	120	
Axial force (axes from Z1 to Z5)	N	3 700	
Radial stroke (axes from X1 to X5)	mm	80	
Radial force (axes X1 and X2)	N	3 700	
Radial force (axes X3, X4 and X5)	N	2 900	
Pitch of ball screw	mm	5	
<b>Cut-off slide (standard axis X6)</b>			
Fast traverse	m/min	15	
Force	N	2 900	
Stroke	mm	66	
Pitch of ball screw	mm	5	

Description, illustrations and numerical data may not always correspond with the machine latest version.

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<b>Back-machining slide with radial U6 and vertical movements (optional V6)</b>		
Fast traverse	m/min	15
Radial force U6	N	2 900
Radial stroke U6	mm	80
Vertical stroke V6	mm	106
Max number of tools		3
Max number of static tool-holders		3
Max number of driven tool-holders		2
Pitch of ball screw	mm	5
<b>CNC tool slides XY axes X2-X5, Y2-Y5 (optional axes)</b>		
At station (II., III., IV., V. station)		7
Fast traverse	m/min	15
Stroke (axes X2 – X5)	mm	80
Max. force (axes X2 – X5)	N	500
Stroke (axes Y2 – Y5)	mm	108
Max. force (axes Y2 – Y5)	N	500
Pitch of ball screw	mm	5
<b>Frontal driven attachments (optional axes from S01 to S06)</b>		
At station (stations)		6
Max speed (drilling)	RPM	6 000
Relative torque (drilling, reaming)	Nm	9
Relative torque (threading, PICK-UP spindle)	Nm	20
Gear ratio motor / axial tool		1
<b>Driven attachments for compound slides (optional axes from STO1 to STO6)</b>		
At station (stations)		6
Max speed with 1:1 ratio	RPM	4 500
Nominal torque	Nm	5
<b>Manipulator for removing of parts</b>		
Angle of arm rotation	°	138
Feed in the longitudinal direction	mm	225
Gripper ejecting	mm	125
Opening angle of the gripper jaws	°	36
Max. workpiece weight	kg	0.5
<b>Machine dimensions</b>		
The height of the axis of the spindle drum from the floor	mm	1 369
Length – with bar stock guide	mm	7 142
– without bar stock guide	mm	4 296
Height	mm	2 771
Width	mm	2 024
Machine weight	kg	10 750
<b>Electric cabinet dimensions</b>		
Length	mm	3 400
Height	mm	2 260
Width	mm	600
Electric cabinet weight	kg	1 000
Weight of sedimentation tank	kg	270
Weight of chip transporter	kg	480

TIGRIS, s. r. o., Zlín 9/2016



- High accuracy at mass and series production
- High thermal stability
- Rigidity comparable to cam-operated machines
- 6 independent AC drives for spindles
- Altogether 26 CNC controlled axes (standard version)
- Up to 22 additional CNC axes for optional equipment
- Twin CNC control systems SINUMERIK 840D solution line
- Own technological TMis software
- Large and flexible selection of quickchange tool holder
- Pneumatically controlled auxiliary functions
- New hydraulic control of locking rims for spindle drum locking
- Machine conforms to the EU 89/392 EEC directive

# SIX-SPINDLE AUTOMATIC LATHE

# MORI-SAY **TMZ642CNC** new generation

Up to 48 CNC controlled axes

Each spindle is driven by an external AC drive and therefore it is not necessary:

- to reverse spindle drum indexing after each machining cycle
- to connect and disconnect the AC drives with each indexing of the spindle drum
- to cool the spindle drum to dissipate the heat generated by the electrospindles
- to supply power to the electrospindles through rotating brush connectors

The innovative technical solution developed by our engineers and protected by provisions of law, allows to independently control the speed of each spindle and to calibrate the power of each AC spindle motor in accordance with the requirements of the specific machining operations performed by each customer. At the same time, the absolute independence of each spindle makes it possible to perform any type of machining, including machining operations requiring spindle stopping or C-axis spindle orienting, thus making of the TMZ a real and complete turning and milling centre. In order to make the programming easier, ZPS' own technological software TMis has been created.

MECHANISM OF BAR CLAMPING AND FEEDING AND SPINDLE DRUM INDEXING

SPINDLE DRUM

MACHINE WORK SPACE

MOTORS OF LONGITUDINAL SLIDES

MOTORS OF DRIVES OF SPINDLES

PNEUMATIC EQUIPMENT

SEDIMENTATION TANK WITH SWARF CONVEYOR

SPINDLE HOUSING

DRIVES OF COMPOUND SLIDES

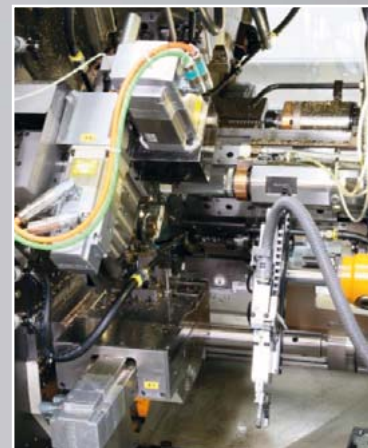
BASE

HOUSING OF DRIVES

CONTROL PANEL



■ Control panel



■ Work space

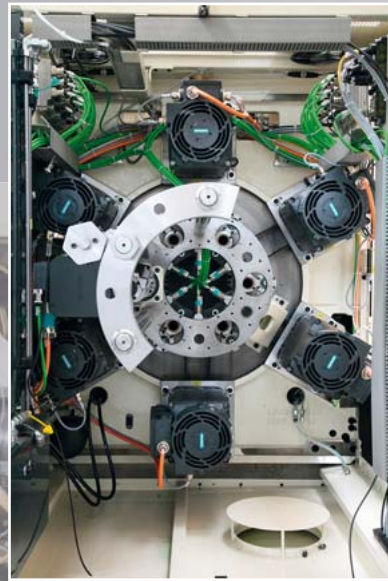


■ Drive control unit SIEMENS





- Mobile sedimentation tank inserted into the machine base – traditional solution by the TAJMAC-ZPS



- Motorization of drives of spindles and axial tools

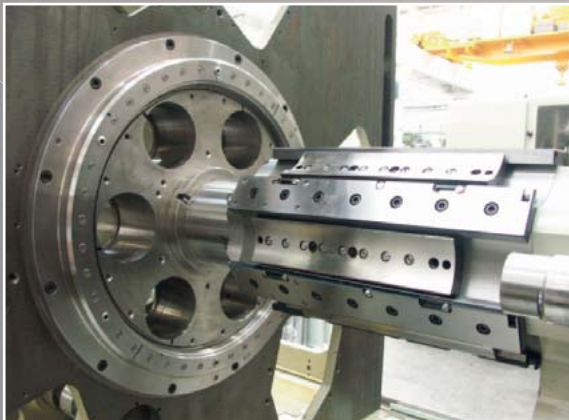


### STANDARD VERSION

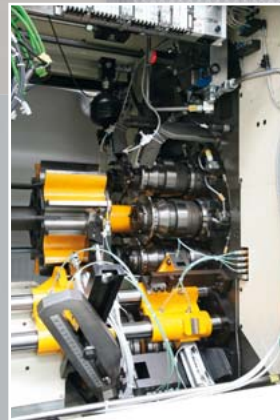
Spindle drum locking by a triad of rims with spur gearing  
 Two SINUMERIK 840D solution line CNC control systems  
 6 spindle motors  
 6 frontal slides  
 5 compound slides  
 1 cutt-off slide  
 1 axis for spindle drum indexing with bar stock feeding in the 1st working position  
 Altogether 26 CNC controlled axes and 22 additional CNC controlled axes for optional equipment control  
 SIMODRIVE motors and drives with continuous speed range of SIEMENS manufacture  
 Auxiliary functions pneumatically and hydraulic controlled

### OPTIONAL EQUIPMENT

Pick-up spindle with CNC controlled speed and hydraulically controlled collet clamping  
 2-axes (U6 and V6) back-working slide with lodgments for 3 tool-holders  
 CNC driven tools for radial and axial back-machining operations  
 Compound slide with vertical movement (Y axis) at stations 2, 3, 4 or 5  
 CNC driven tools for frontal operations  
 CNC driven tools for I.D. machining and thread chasing  
 CNC driven tools for radial and longitudinal machining from compound slides  
 Manipulator for withdrawing of parts from pick-up spindle  
 Parts conveyor  
 Bar stock feeding in the 4th station  
 Large selection of swarf conveyor systems  
 Large selection of high-pressure and cooling systems  
 Large selection of attachments for drilling, reaming, milling, thread cutting, shaving and polygon machining



- Machine heart: spindle drum body of longitudinal slides



- Spindle housing with spindle drum and clamping devices



- Tandem arrangement of drive sections:
  - section of drives of axial tools
  - section of drives of longitudinal slides
  - section of drives of spindles