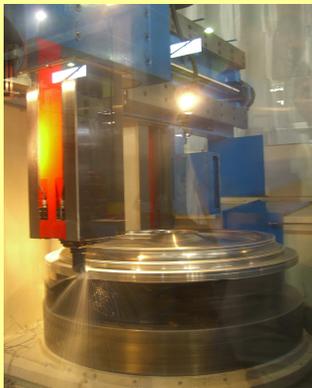




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**Where knowledge and experience  
lead to high performance machining!**



**CNC VERTICAL TURNING AND BORING MACHINES**



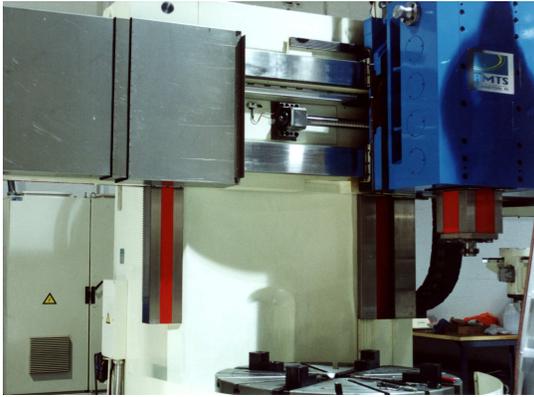
**CNC SINGLE COLUMN VERTICAL TURNING AND BORING MILLS  
TVL 1200/1400 CNC/ATC-12\*  
LS.TVB 1200/1400 CNC/ATC-12\***



The CNC Single Column Vertical Turning and Boring Mills with 12-seat Automatic Tool Changers ensures turning, threading by cutter, facing, annular grooving on revolution shape workpieces, while the LS.TVB-s ensures the same and in addition milling, drilling, boring, tapping operations. The machine has a monoblock column-bed with a crossrail movable along the column accurate guideways. The main drive is ensured by a performant VERTICAL POWER LINE that consists of an AC brushless main motor connected directly on shaft with an automatic, synchronic two-range gearbox with power transmission directly to the rotary table timing pulley by means of Carbon type timing belt. This power transmission ensures a lower level of noise and vibration free operation.

TECHNICAL FEATURES (STANDARD MACHINE)	MEASURE UNITS	TVL 1200/1400 CNC/ATC-12	LS.TVB 1200/1400 CNC/ATC-12
Table diameter	mm	1200	1200
Maximum machining diameter	mm	1400	1400
Maximum height of the part to be machined	mm	1000 1200/1400	1000 1200/1400
Maximum workpiece weight	kg	8000	8000
Main drive motor power	kW	37/45	37/45
Table speed range (by turning)	rpm	0.1÷300*	0.1÷300*
Live spindle driving motor	kW	n/a	22/27
Live spindle speed range	rpm	n/a	0.1 - 3000
Rail head travel:			
- ram (Z axis)	mm	800	800
- rail head (X axis) - from emergency stop to emergency stop)	mm	1950	1950
Working feeds	mm/min	0.1 - 4000	0.1 - 4000
Rapid feeds	mm/min	6000	6000
Crossrail travel (Y axis)	mm	600	600
Crossrail speed	mm/min	400	400
Linear positioning accuracy	mm/1000mm	0.015	0.015
Repeatability	mm	0.005	0.005
Circular positioning accuracy	sec	n/a	± 6
Repeatability	sec	n/a	± 4
Seats in the Automatic Tool Changer (ATC)		12*	12*
* standard endowment		* standard endowment	
Machine weight	kg	16500	16750

On request other specifications are available



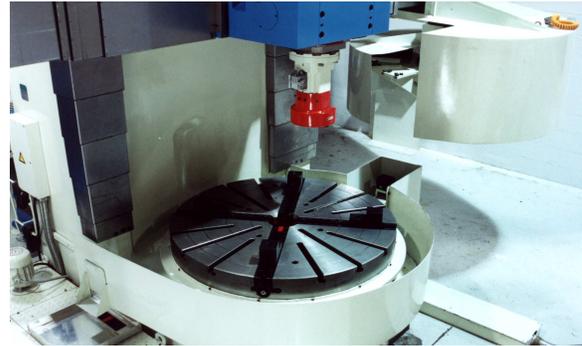
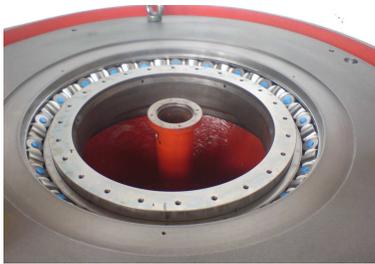
The design of the structural components - column-bed, crossrail - ensures a sturdy structure of the machine. The crossrail is provided with ground alloy steel inserted guideways. They are protected by metallic telescopic covers.

The Vertical Rail head is made of special cast iron for machine tools and accomodates the ram. The longitudinal and vertical movements of the Railhead are ensured by feed motors, timing belt reducer and a ball-screw-nut mechanism.

The railhead slide and ram housing are provided with lubricating system for the slideways.

The ram is hydraulically balanced.

The table is supported by means of high capacity TIMKEN type crossed roller bearing.



#### **STANDARD EQUIPMENT AND ACCESSORIES**

- CNC equipment Siemens or FANUC
- Hydraulic installation
- Lubrication system
- Electric installation
- External tool cooling unit
- Metallic telescopic covers on the crossrail
- Chip and coolant collector
- One set of four table clamping jaws for workpiece
- One set of leveling blocks
- Working space lighting
- Operator manual

#### **SPECIAL ACCESSORIES (EXTRA COST)**

- turning tool holders
- chip conveyor
- 2300-mm height housing around the machine or 400-mm height around the table
- other as per client's request

### **GPM TITAN INTERNATIONAL**

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**CNC SINGLE COLUMN VERTICAL TURNING AND BORING MILLS  
TVL 1450/1650 CNC/ATC-12\*;  
LS.TVB 1450/1650 CNC/ATC-12\***



The CNC Single Column Vertical Turning and Boring Mills with 12-seat Automatic Tool Changers are intended for turning, threading and facing operations, while the LS.TVB-s and CB.LS.TVB-s ensures the same and in addition milling, drilling, boring, tapping operations.

The main drive is ensured by a performant VERTICAL POWER LINE that consists of an AC brushless main motor connected directly on shaft with an automatic, synchronic two-range gearbox with power transmission directly to the rotary table timing pulley by means of Carbon type timing belt. This power transmission ensures a lower level of noise and vibration free operation.

TECHNICAL FEATURES (STANDARD MACHINE)	MEASURE UNITS	TVL 1450/1650 CNC/ATC-12		TVB.LS 1450/1650 CNC/ATC-12	
Table diameter	mm	1450		1450	
Maximum machining diameter	mm	1650		1650	
Maximum height of the part to be machined:					
- under ram	mm	1200		1200	
- under toolholder	mm	1000		1000	
Maximum load on the table	kg	12000		12000	
Main drive motor power (AC brushless)	kW	37/45 or 50/65		37/45 or 50/65	
Table speed range (by turning)	rpm	0.1÷300		0.1÷300	
Live spindle driving motor	kW	n/a		30/37	
Live spindle speed range	rpm	n/a		0.1 - 3000	
Rail head travel:					
- ram (Z axis)	mm	800		800	
- rail head (X axis) - the whole length of the crossrail or crossbeam	mm	1900		1900	
Working feeds	mm/min	0.1÷ 6000		0.1÷ 6000	
Rapid feeds	mm/min	8000		8000	
Crossrail travel (Y axis)	mm	800		800	
Crossrail speed	mm/min	400		400	
Seats in the Automatic Tool Changer (ATC)		12*	12*	12*	12*
		* standard endowment			
Machine weight	kg	22000	20000	22000	20000

On request other specifications are available  
ISO/DIN accuracy norms

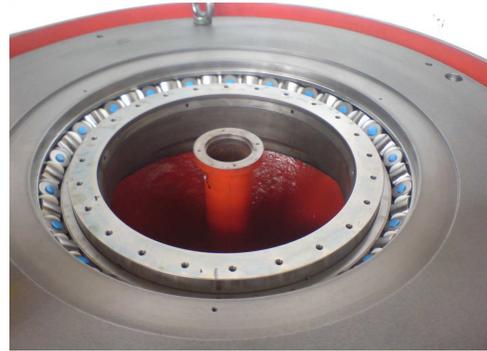


The design of the structural components - column-bed, crossrail/crossbeam - ensures a sturdy structure of the machine. The crossrail is provided with ground alloy steel inserted guideways. They are protected by metallic telescopic covers.

The Vertical Rail head is made of special cast iron for machine tools and accomodates the ram. The longitudinal and vertical movements of the Railhead are ensured by feed motors, timing belt reducer and a ball-screw-nut mechanism.

The railhead slide and ram housing are provided with lubrication for the slideways.

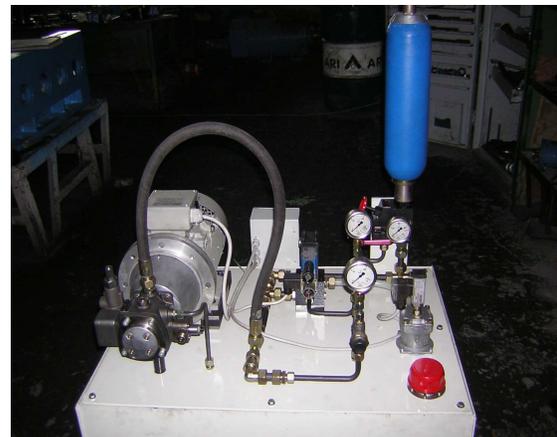
The ram is hydraulically balanced.



The table is supported by means of high capacity TIMKEN type crossed roller bearing.

#### STANDARD EQUIPMENT AND ACCESSORIES

- CNC equipment Siemens or FANUC
- Hydraulic installation
- Lubrication system
- Electric installation
- External tool cooling unit
- Metallic telescopic covers on the crossrail
- Chip and coolant collector
- One set of four table clamping jaws for workpiece
- One set of leveling blocks
- Working space lighting
- Operator manual



#### SPECIAL ACCESSORIES (EXTRA COST)

- turning tool holders
  - chip conveyor
  - 2300-mm height housing around the machine or 400-mm height around the table
- Note: other special accessories suitable for such machines on client's request

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**CNC DOUBLE-COLUMN VERTICAL TURNING AND BORING MILLS  
TVL 2000/2150 CNC/ATC; LS.TVB 2000/2150 CNC/ATC  
TVL 2500/2650 CNC/ATC; LS.TVB 2500/2650 CNC/ATC**



The CNC Double-Column Vertical Turning and Boring Mills with one Live Spindle are designed for machining medium size work pieces by rough and finishing operations: internal and external turning, facing with constant cutting speed, threading, milling, drilling, tapping and, with a special device also grinding. The Automatic Tool Changer is offered in several variants, with different number of seats, subject to Client's request.

TECHNICAL FEATURES (STANDARD MACHINE)	MEASURE UNITS	TVL 2000/2150 CNC	LS.TVB 2000/2150 CNC	TVL 2500/2650 CNC	LS.TVB 2500/2650 CNC
Table diameter	mm	2000	2000	2500	2500
Maximum machining diameter	mm	2150	2150	2650	2650
Maximum height of the part to be machined under crossrail without toolholder tools	mm	1500	1500	1800	1800
Maximum load on the table	kg	12000/25000	12000/25000	12000/25000	12000/25000
Main drive motor power (AC brushless)	kW	50/65	50/65	50/65	50/65
Maximum table speed range (by turning)	rpm	140		112	
Live spindle driving motor	kW	n/a	20/27	n/a	20/27
Live spindle speed range	rpm	n/a	up to 2200	n/a	up to 2200
Rail head travel:					
- ram (Z axis)	mm	1200	1200	1500	1500
- rail head (X axis)	mm	1350	1350	1600	1600
Working feeds	mm/min	0.1-6000	0.1-6000	0.1-6000	0.1-6000
Rapid feeds	mm/min	6000	6000	6000	6000
Crossrail speed	mm/min	400	400	400	400
Seats in the Automatic Tool Changer		12	12	12	12
Machine weight	kg	35000	35500	42000	42500

On request other specifications are available

All these types of machines can be fitted with 2 vertical heads and 2 Automatic Tool Changers.



The milling spindle located inside the ram and it is driven by 20/27 or 30/37 kW AC brushless motor. The tool locking inside the milling spindle is ensured by a special device made by Hydroservice Italy.

#### STANDARD EQUIPMENT AND ACCESSORIES

- CNC equipment Siemens or FANUC
- Hydraulic installation
- Lubrication system
- Electric installation
- External tool cooling unit
- Metallic telescopic covers on the crossrail
- Chip and coolant collector
- One set of four table clamping jaws for workpiece
- One set of leveling blocks
- Working space lighting
- Operator manual

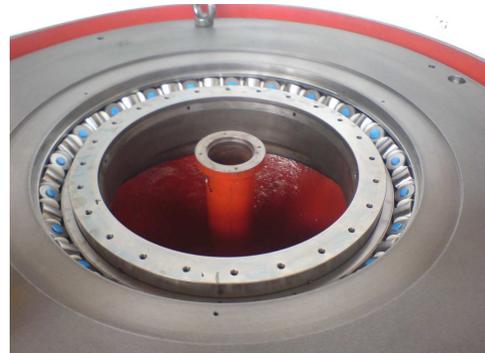


The design of the structural components - columns, bed, table and crossrail - ensures a sturdy structure of the machine. The crossrail is provided with ground alloy steel inserted guideways. They are protected by metallic telescopic covers.

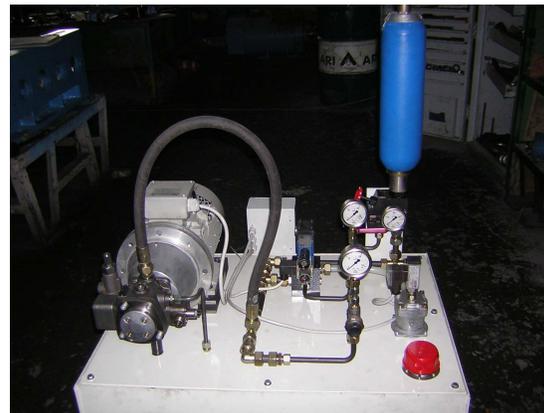
The Vertical Rail head is made of special cast iron for machine tools and accommodates the ram. The longitudinal and vertical movements of the Railhead are ensured by feed motors, timing belt reducer and a ball-screw-nut mechanism.

The railhead slide and ram housing are provided with lubrication systems on the linear axes.

The ram is hydraulically balanced.



For high loads, the table is supported by means of high capacity TIMKEN type crossed roller bearing.



#### SPECIAL ACCESSORIES (EXTRA COST)

- turning tool holders
  - thru-tool cooling
  - chip conveyor
  - 2300-mm height housing around the machine or 400-mm height around the table
- Note: other special accessories suitable for such machines on client's request

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