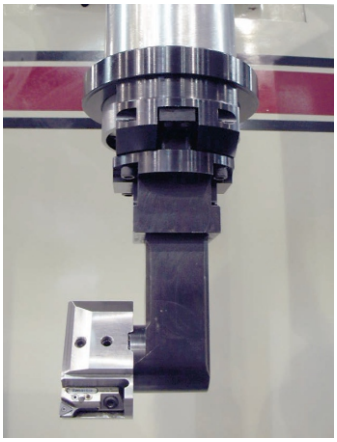
THL Machine
Since 2000

The Automatic Cycle software and production tooling allow a complete block to be machined without operator attention. Once the job is set up and the "Cycle Start" button is pressed, the operator is free to walk away and do other work while the machine completes its process – automatically and accurately.

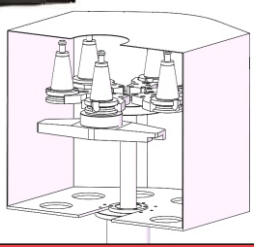
Model: TM79



Line Bore Tooling

Now with DIRECT DRIVE Ball Screws, High Torque Spindle Drive System and Linear Roller Bearing Slideways

Wireless Radio Probing



ATC Automatic Tool

Machine Operations

- ☑ *Cylinder Bore*
- ☑ *Mill Cycle*
- ☑ *Line Bore*
- ☑ *Thrust Cutting*
- ☑ *Cylinder Chamfer*
- ☑ Sleeve Top Bore

Specifications

Unit: Metric

Model	TM79	TM103	TM104
Maximum Height – Table to Spindle Taper	1060mm	1273mm	
Table Size – T Slots	500 x 2000mm – 5 T Slots	890 x 2185mm – 3 T Slots	890 x 2850mm – 3 T Slots
Maximum Distance – Spindle Center to Column	500mm	648mm	
Horizontal Column Travel (X Axis)	1850mm	2135mm	2770mm
Vertical Spindle Travel (Z Axis)	400mm	720mm	
Work Head Travel In/Out (Y Axis)	200mm	406mm	
Spindle Speeds Infinitely Variable	0 - 1500 RPM		
Cylinder Bore Range with Optional Cutter heads	20 - 400mm	19 - 508mm	
Line Bore Range with Optional Cutter heads	60 - 150mm	48.5 - 216mm	
Surfacing Cutter head Diameters	320, 400, 450mm		
Floor Space Requirements*	3.67 x 2.35 x 3.3m	4.5 x 2.44m	5.23 x 2.44m
Machine Weight	4000kgs	6,360kgs	7,270kgs
Electrical Requirement**	208-240V, 50A, 50/60Hz, 3Ph / 360-400V, 36A, 50/60Hz, 3Ph		
Air Requirement	28 L/min @ 6 Bar		
Paint Color Code	RAL9002 (Grey White) / Customizable		

Model	TM105	TM107	TM109
Maximum Height – Table to Spindle Taper	1273mm	1716mm	
Table Size – 4 T Slots	890 x 2850mm	1700 x 6100mm	
Maximum Distance – Spindle Center to Column	648mm	1100mm	
Horizontal Column Travel (X Axis)	3400mm	4166mm	6300mm
Vertical Spindle Travel (Z Axis)	720mm	915mm	
Work Head Travel In/Out (Y Axis)	406mm	600mm	
Spindle Speeds Infinitely Variable	0 - 1500 RPM		
Cylinder Bore Range with Optional Cutter heads	19 - 508mm	19 – 500mm	
Line Bore Range with Optional Cutter heads	48.5 - 216mm	50 – 300mm	
Surfacing Cutter head Diameters	320, 400, 450mm		
Floor Space Requirements*	5.87 x 2.44m	9.2 x 3.3m	
Machine Weight	8,180kgs	22,500kgs	
Electrical Requirement**	208-240V, 50A, 50/60Hz, 3Ph / 360-400V, 36A, 50/60Hz, 3Ph		
Air Requirement	28 L/min @ 6 Bar		
Paint Color Code	RAL9002 (Grey White) / Customizable		

*Does not allow for clearance to open electrical panel.
**Optional transformer required for voltage above or below range.

Specifications and design subject to change without notice.

Features

TM79/TM103/TM104/TM105 MULTI PURPOSE CNC MACHINING CENTER

The TM Series machines are designed for both the small- to medium-size diesel engine rebuilder and remanufacture as well as the performance racing engine builder. The large capacity of the EM79 allows dual work stations so two jobs can be set up at once. A block can be bored and surfaced on one side of the machine while another block can be set up on the other side of the machine for main line boring and thrust facing.

Special fixturing allows fast block loading and unloading as well as easy change over to different design blocks. Operators can change from V block to inline block in just a few minutes, and the CNC control stores all settings in memory for instant recall.

The TM Series machines are engineering marvels designed to quickly, easily, accurately and affordably machine engine blocks and vehicle parts.

Functioning as advanced CNC machining centers, Conversational Programming Technologymakes these gigantic machines as easy to operate as a smartphone. No programming knowledge is requiredand operators can be trained by factory technicians in just a few days to maximize machine capability at fullspeed.

Automatic Tool Changer (ATC) system, increasing productivity and allowing the operator to perform other functions cluding running additional machines at the same time.

The Automatic Cycle software and production tooling allow a complete block to be machined without operator attention. Once the job is set up and the “Cycle Start” button is pressed, the operator is free to walk away and do other work while the machine completes its process – automatically and accurately.

In addition, the machines offer Linear Roller Bearing Slideways, which are considerably lower in friction than conventional systems. The column is mounted on heavy-duty hardened steel linear roller bearing slideways and the X-axis horizontal movement is powered by Direct Drive ball screws allowing faster acceleration and improved positioning accuracy.

- CNC Touch Screen Control – Easy to learn and fast to operate.
- Extra height capacity for medium-size diesel blocks for increased versatility.
- Sliding quill spindle design for deep hole machining required for block work.
- World standard Bt50 Spindle for fast tool changing and worldwide versatility.
- 4-Axis Automatic Over Fixture for increased productivity.
- Linear Roller Bearing Slideways for improved accuracy and repeatability.

TM107/TM109 EXTRA HEAVY DUTY MULTI-PURPOSE CNC MACHINING CENTER

Extra large engine blocks weigh in excess of 20,000 lbs. (10,000 kg), so had to invent a completelynew concept in machine tool design. The TM100 Series machines are all capable of performing jobs on dieselengines, but the TM107 and TM109 machines are manufactured specifically to handle the world’s biggest andheaviest engine blocks. flagship machines, these massive engineering marvels are designed toquickly, easily, accurately and affordably eliminate the costly downtime that is the result of big engine failures.

Functioning as advanced CNC machining centers, Conversational Programming Technologymakes these gigantic machines as easy to operate as a smartphone. No programming knowledge is requiredand operators can be trained by factory technicians in just a few days to maximize machine capability at fullspeed.

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Features

CNC Operating System

Uses CNC OS and Touch Screen Technology through 15" touch panel. The CNC software has many advantages such as a common user interface that the whole world is familiar with.

Touch Screen Controls located on a flexible adjustable pendant arm for ease of operation from front or rear of the machine.

Wireless Radio Probing

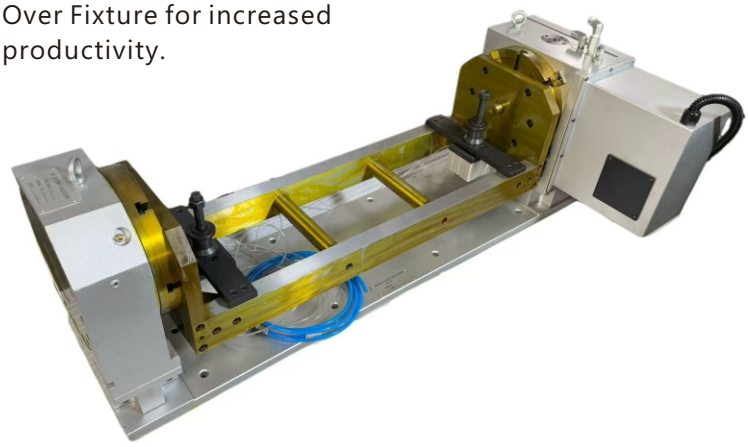
Computer controlled wireless probe automatically finds cylinder bore centers.
The deck (head gasket face) can be probed to check flatness and squareness to ensure accuracy and minimum metal removal when surfacing.

BT50 Tool holder

World standard BT50 Spindle for fast tool changing and worldwide versatility.

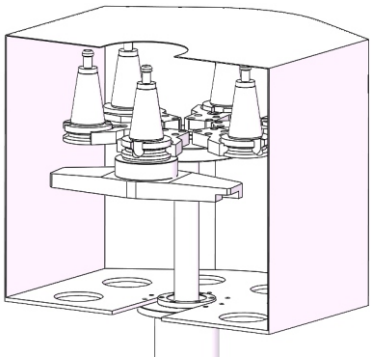
4th-Axis

4th-Axis Automatic 360-Degree Roll Over Fixture for increased productivity.



ATC Automatic Tool Changer

Automatic Tool Changer (ATC) system, increasing productivity and allowing the operator to perform other functions cluding running additional machines at the same time..



Talbe of standard Acc. and optional Acc.

Model	Standard	Optional
TM79	1, 2, 20	3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14, 15, 16, 17, 18, 19, 21
TM103	1, 2, 20	3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14, 15, 16, 17, 18, 19, 21
TM104	1, 2, 20	3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14, 15, 16, 17, 18, 19, 21
TM105	1, 2, 20	3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14, 15, 16, 17, 18, 19, 21
TM107	1, 2, 20	3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14, 15, 16, 17, 18, 19, 21
TM109	1, 2, 20	3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14, 15, 16, 17, 18, 19, 21

Accessories

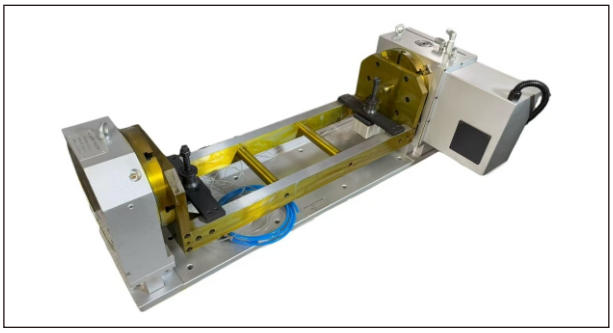
1 CNC operation box

2 Wireless Radio Probing

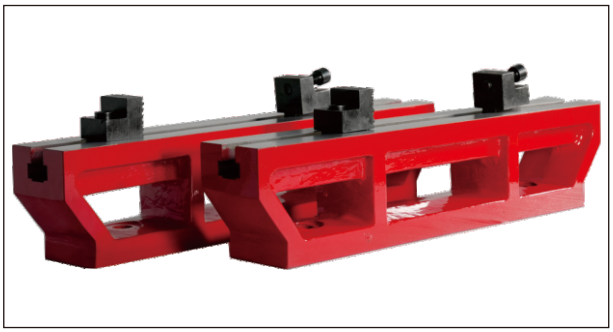
3 Displacement sensor

4 Bore gauge

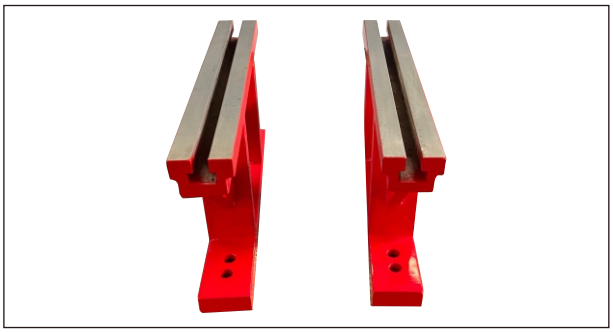
5 *4th-Axis*



6 Universal fixture



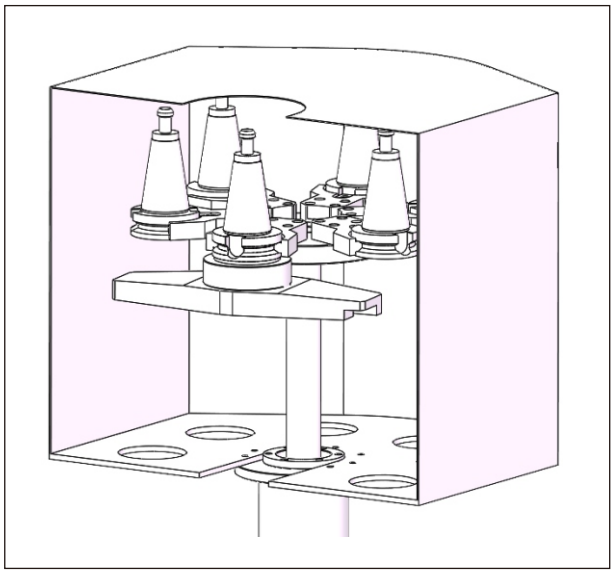
7 parallel block



8 Quick acting fixture

9 Drilling and reaming chuck (Φ1~Φ16mm)

10 ATC Automatic Tool



11 Φ20 boring bar (Φ20~Φ36mm depth 84mm)

12 Φ30 boring bar (Φ32~Φ60mm depth 159mm)

13 Φ50 boring bar (Φ53~Φ82mm depth 260mm)

14 Φ65 boring spindle (Φ68~Φ203mm depth 300mm)

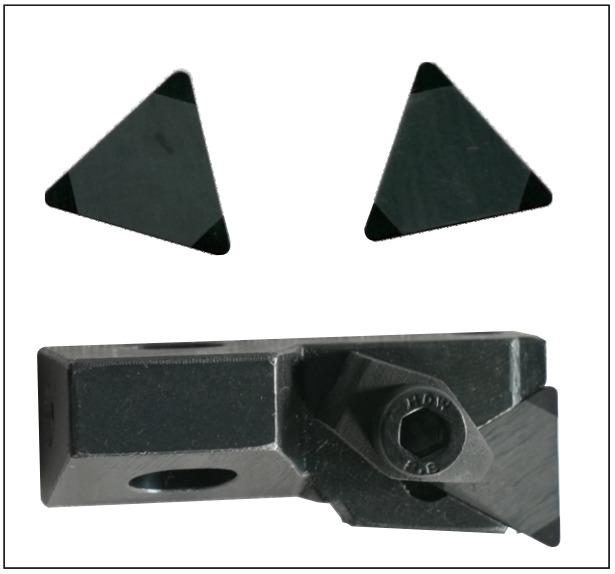
15 Φ200 boring bar (Φ200~Φ310mm depth 300mm)

16 Face mill (Φ50mm)

17 Surfacing cutterhead (Φ350mm)

18 Right angle spindle

19 Triangular inserts (CBN/PCD) and holder



20 Packing tool

21 Tool management vehicle

Our company is known as a professional factory that mainly manufactures Precision Surface Grinding Machine and Vertical Fine Boring Machine.Our company owns a team of qualified staffs with professional knowledgeand expertise as well experiences. At the same time our technology combinewith more experts of Kunming Science and Engineering University andYunnan Machinery Design Academe, etc. We can promise the high qualityand punctual delivery service of our products depending on the powerful technology, scientific management, flexible marketing organization and perfect sales network.....
Now our products are not only sold to Guangdong, Shanghai Zhejiang and Shandong etc, but also exported to Europe, the East-South Asia, the Middle East and the South America, etc

Our company has two series of machines:
Series Grinding Machine:

TH-M2550 Precision Surface Grinding Machine
TH-M3270 Precision Surface Grinding Machine
TH-M50100 Precision Surface Grinding Machine
TH170D Vertical Fine Honing Machine Series
SV3000 Vertical Fine Honing Machine Series

Boring Machine:

T170A/T200A/T250A Vertical Fine Boring Machine
TX170A/TX200A/TX250A Vertical Fine Boring-milling Machine
TXM170A/TXM200A/TXM250A Vertical Fine Boring &milling-Grinding Machine
T170D/T200D/T250D Vertical Fine Boring Machine
TX170D/TX200D/TX250D Vertical Fine Boring-milling Machine
TXM170D/TXM200D/TXM250D Vertical Fine Boring & milling-Grinding Machine
TX2500/TX2150/TX1600 Vertical Fine Boring-milling Machine
B150/B160 Cylinder Boring Machine
BM150/BM160 Cylinder Boring-Milling Machine
TPT1600/TPT1600L/TPT1700XL Cylinder head pressure tester
SM1500/SMG1500 Cylinder Milling-Grinding Machine
TX200CNC VERTICAL CNC BORING - MILLING MACHINE
TM79/TM103/TM104/TM105/TM107/TM109 CNC Boring-Milling Machine
TRV 516 CENTERLESS VALVE REFACER
WORKING STATION MODEL TWS1100