

SMARTMILL Series
TAPMILL Series
AUTOMILL Series

High Productivity Machining Centres



SM 60 | SM 80 | SM 60 APC | TM 500 | TM 700 | AM 500 | AM 700 | AM 60 | AM 80

Crafting Machines of **Tomorrow**

Bringing precision and innovation to the forefront of industrial manufacturing, Cosmos has been a pioneer in the machine tool industry since 1987. Providing versatile and high-performance solutions, including vertical machining centres, drill tap centres, surface grinding machines, vertical lathes, and many more, Cosmos provides Indian and global industries with the latest technological advancements.

At Cosmos, growth is driven by more than just innovation; it's guided by a deeper purpose - bringing joy and meaning to people's lives. Every machine we create reflects this philosophy, blending precision with heart to ensure progress isn't just about staying ahead but about sparking happiness along the way. For us, every advancement is a step toward a future where innovation and fulfilment go hand in hand.



**India's Largest
Exporter of Vertical
Machining Centres**



**Leading Business
Enterprise of
Tomorrow**



**Best Metal
Cutting Brand of
2024-25**

**Industries
We Serve**



Die & Mould



Aerospace



Medical Implants & Equipments



Automotive Industry



Pumps & Valves



Steel & Energy



Electronics & Semiconductors



Oil & Gas Industry

Core Values

At Cosmos, our guiding principles are not just statements, they are promises. They define our aspirations, guide our path, and reflect our commitment to excellence. By aligning with these, we strive to make a positive and lasting impact.

At Cosmos, our values are the core of who we are.

SINCERITY

Drives our relationships, building trust with every interaction.

DISCIPLINE

Ensures precision and excellence in all we do.

INTEGRITY

Forms the backbone of our identity, as we stand by our commitments.

ETHICAL PRACTICES

Underpin every decision, reflecting our moral compass.

HARMONY

Guides our teamwork, fostering collaboration across boundaries and providing best customer experience.

SUSTAINABILITY

Fuels our responsibility towards future generations.

SMARTMILL Series

Built for high-speed precision, the BBT 40 Spindle machine offers a compact, energy-efficient design with increased power and advanced capabilities to maximise productivity and output.

Automatic Tool Changer

Arm Type (SM 60)

1.8 Seconds (Tool to Tool)

24 Tools Storage (Standard)

Arm Type (SM 80)

1.8 Seconds (Tool to Tool)

30 Tools Storage (Standard)



Spindle Characteristics

Belt Drive

Dual Contact - BBT 40 Taper

8,000 rpm - Standard

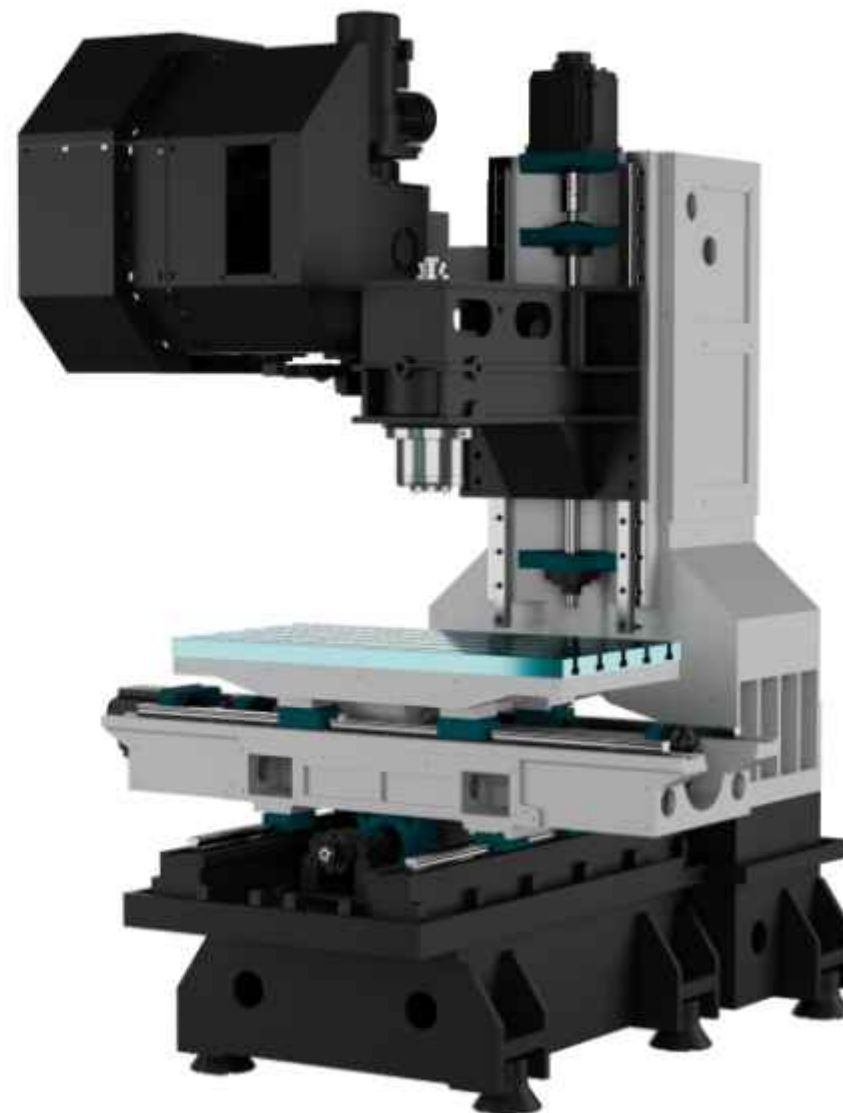
10,000 rpm - Optional

Direct Drive (Optional)

10,000 rpm

12,000 rpm

Acceleration 1G



SM 80 STRUCTURE

Structural Benefits

The structure is designed to ensure high acceleration while maintaining rigidity, preventing deflection or flex under operational forces, ensuring precision and reliability.



The extra-wide base of the column provides superior stability and effectively absorbs cutting forces, preventing any deflection and leading to improved cutting dynamics.

SM 80 STRUCTURE



Inbuilt tank mounted CTS system

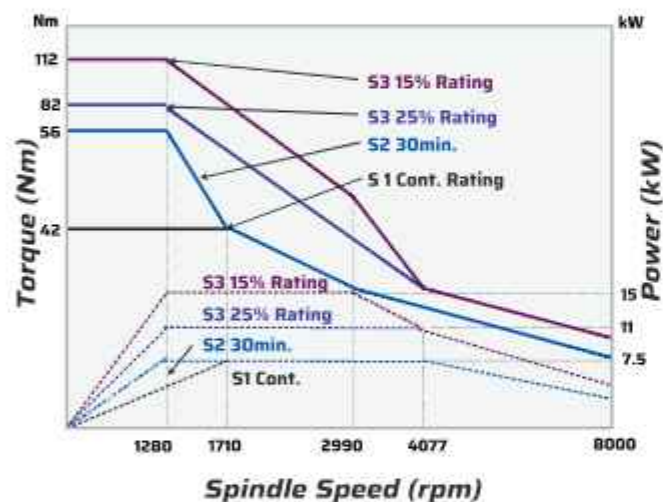
Through coolant increases tool life, allows higher cutting speed and clears chips during deep hole drilling.

CTS system with max. 20 bar pressure

Torque Power Diagrams

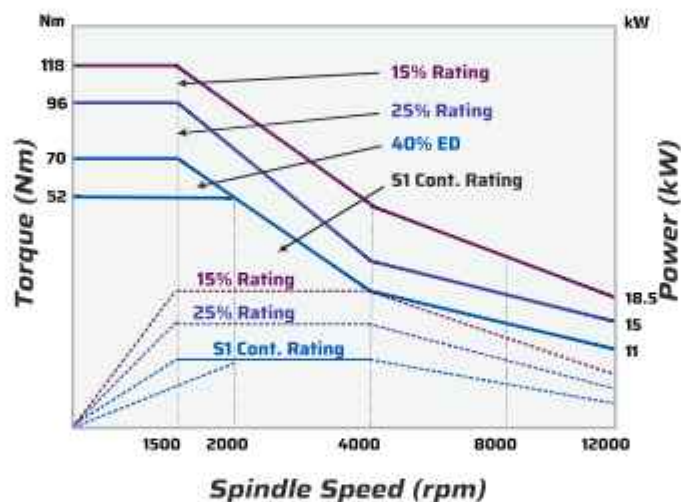
Mitsubishi Controller

SM 60



Power 7.5/11/15 kW | 112 Nm
Belt 8000 rpm (STD)

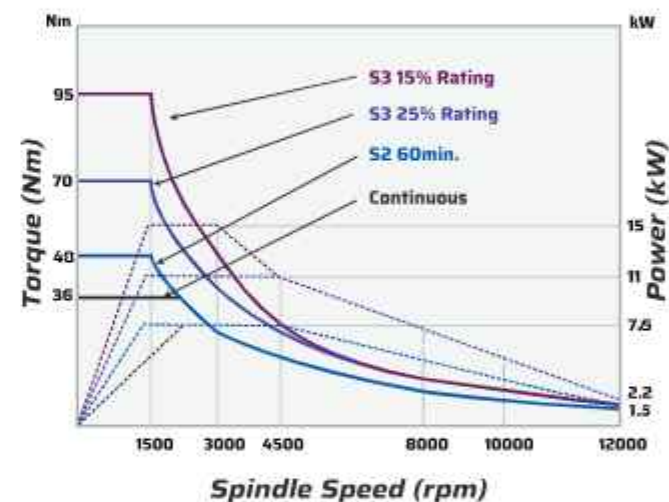
SM 80



Power 11/15/18.5 kW | 118 Nm
Belt 8000 rpm (STD) | 10000 rpm (OPT)
DDS (OPT) - 10000 rpm | 12000 rpm

Fanuc Controller

SM 60 | SM 80



Power 7.5/11/15 kW | 95 Nm
Belt 8000 rpm (STD) | 10000 rpm (OPT)
DDS (OPT) - 10000 rpm | 12000 rpm

Machine Specifications

Description	Units	SM 60	SM 80
Travel			
X-Axis	mm	600	800
Y-Axis	mm	450	450
Z-Axis	mm	500	500
Table			
Spindle Nose to Table Surface	mm	100-600	100-600
Table Size	mm	750 x 450	1000 X 500
No/Width/CD of T-Slots	mm	5 x 18 x 80	5 x 18 x 100
Max. Loading Capacity	kg	300	600
Spindle			
Spindle Motor Output	kW	7.5/11/15	11/15/18.5
Spindle Max Speed	rpm	8000	8000
Spindle Taper		BBT40	BBT40
Feed			
Rapid Feed of X/Y/Z	m/min	48/48/48	48/48/48
Accuracy			
Positioning	mm	0.010	0.010
Repeatability (+/-)	mm	± 0.003	± 0.003
ATC			
Tool Storage	-	24 T	30 T
Max. Tool Diameter	mm	80	80
Max. Tool Length	mm	250	250
Max. Tool Weight	kg	8	8
Tool Change Time (Tool-to-Tool)	sec.	1.8	1.8
General			
Floor Space	mm	2200 X 2550	2200 X 2550
Weight	kg	-3400	-4800
Power Capacity	kVA	25	30

Note: Specifications and features are subjected to change without prior notice.
Please refer the offer document, offer document as precedence.

Standard Features

- Mitsubishi M80 BV Controller with 10.4" Display / Fanuc OiMF Controller
- BBT-40 8,000 rpm Belt Drive Spindle
- Arm Type High Speed Automatic Tool Changer
- Rigid Tapping
- Inbuilt tank mounted CTS system with max. 20 bar pressure
- Automatic Lubrication System
- Oil Coolant Separator
- Chip Flushing System
- Ring Coolant & Coolant Nozzles
- Rear Side Chip Outlet
- Spindle Air Blast
- Heat Exchanger For Electrical Cabinet
- Manual Pulse Generator
- Air Gun & Coolant Gun
- Machine Operation & Maintenance Manuals

Optional Features

- 4th Axis Enabling
- 4th Axis interface with Drive
- CNC Rotary Table Model: CNC-200R
- Spindle Oil Cooler
- Spindle Speed 10,000 rpm with Belt Drive
- Direct Drive Spindle with 10,000 / 12,000 rpm
- Air Conditioner for Electrical Cabinet
- Renishaw LTS
- Renishaw Primo Kit
- Contact sales team for more accessories

SMARTMILL APC

SM 60 with Automatic Pallet Changer (Optional)

This BBT 40 Spindle machine is built for high-speed precision, featuring a compact design with advanced capabilities to maximise productivity and output. Paired with the Automatic Pallet Changer, it reduces downtime, enhances efficiency, and ensures continuous, seamless operation, enabling higher throughput and minimising manual intervention for optimised performance.



Automatic Pallet Changer

Machine Specifications

Description	Units	SM 60/4PC
Travel		
X-Axis	mm	600
Y-Axis	mm	450
Z-Axis	mm	500
Spindle Nose to Table Surface	mm	100 - 600
Spindle Centre to Column Surface	mm	470
Feed		
Rapid Traverse X/Y/Z	m/min	48/48/48
Cutting Feed Rate X/Y/Z	m/min	10/10/10
APC		
Pallet Dimension	mm	720 x 400
Max. Load on Pallet	kg	200 x 2
Table T-slot	-	Table is tapped hole type with M10 tapping
APC Type	-	Swing Type Rotary
Pallet Change Time	sec.	11-13
Pallet Change Mechanism	-	Hydraulic
Pallet Clamping Mechanism	-	Hydraulic
Pallet Positioning	-	Taper Cone
ATC		
Tool Storage Capacity	Nos.	24
Max Tool Length	mm	250
Max Tool Weight	kg	8
Max Tool Diameter	mm	80
Max Tool Diameter without Adj. Tool	mm	150
Tool Change Time	sec.	1.8
Measurement		
Floor space (W X D X H)	mm	2475 x 3420 x 2490
Power Capacity	kVA	25

Standard Features

- Mitsubishi M80 BV Controller with 10.4" Display / Fanuc OiMF Controller
- BBT-40 8,000 rpm Belt Drive Spindle
- Arm Type High Speed Automatic Tool Changer
- Rigid Tapping
- Inbuilt Tank Mounted CTS System with max. 20 Bar Pressure
- Automatic Lubrication System
- Oil Coolant Separator
- Chip Flushing System
- Ring Coolant & Coolant Nozzles
- Rear Side Chip Outlet
- Spindle Air Blast
- Heat Exchanger for Electrical Cabinet
- Manual Pulse Generator
- Air Gun & Coolant Gun
- Machine Operation & Maintenance Manuals

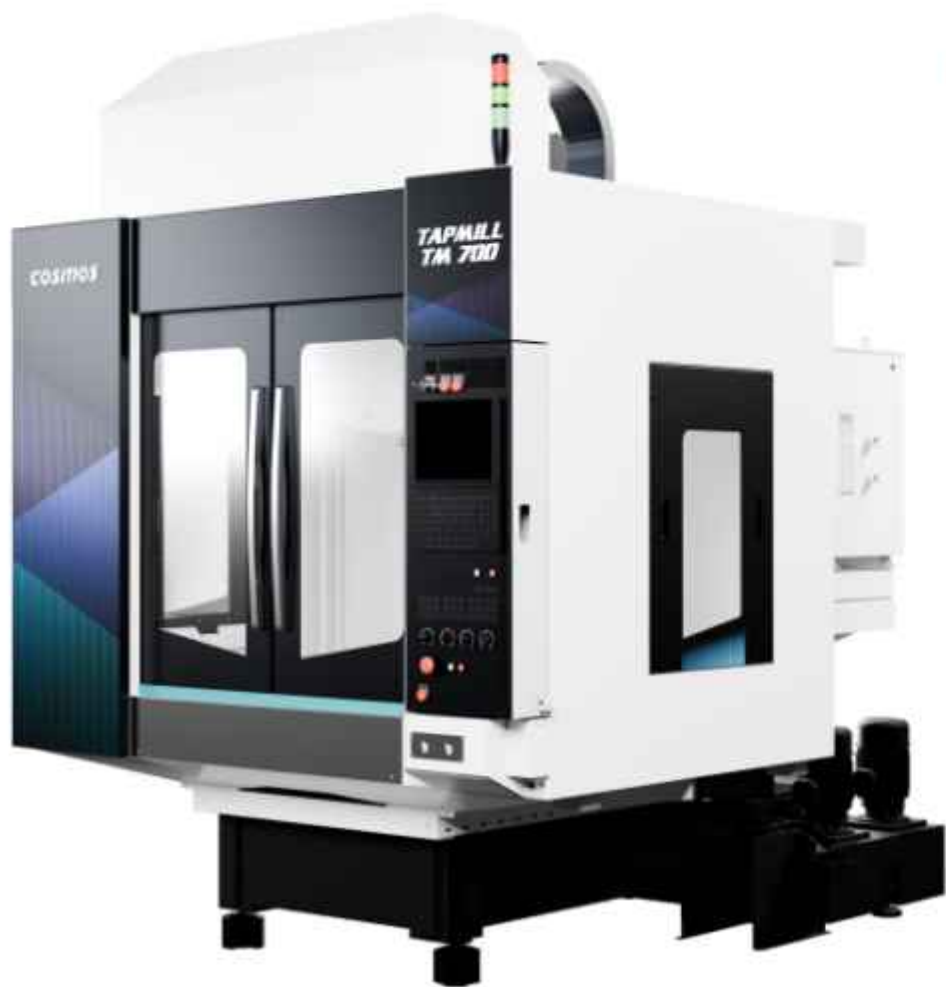
Optional Features

- 4th Axis Enabling
- 4th Axis Interface with Drive
- CNC Rotary Table Model: CNC-200R
- Spindle Oil Cooler
- Spindle Speed 10,000 rpm with Belt Drive
- Direct Drive Spindle with 10,000/12,000 rpm
- Air Conditioner for Electrical Cabinet
- Renishaw LTS
- Renishaw Prima Kit
- Contact sales team for more accessories

Note: Specifications and features are subjected to change without prior notice. Please refer the offer document, offer document as precedence.

TAPMILL Series

Designed for efficiency and precision, the BBT 30 Spindle machine features a compact, energy-efficient build with a small footprint, delivering exceptional speed and reliable performance to boost productivity.



Automatic Tool Changer

Servo Type Tilting Pocket Design

1.5 Seconds (Tool to Tool)

21 Tools Storage (Standard)

36 Tools Storage (Optional - TM 700)



Spindle Characteristics

For TM 500 & TM 700

Direct Drive

Dual Contact - BBT 30 Taper

12,000 rpm - Standard

24,000 rpm - Optional

High Torque Spindle with 101 Nm Torque

For TM 500 HSC & TM 700 HSC

Direct Drive

Dual Contact - BBT 30 Taper

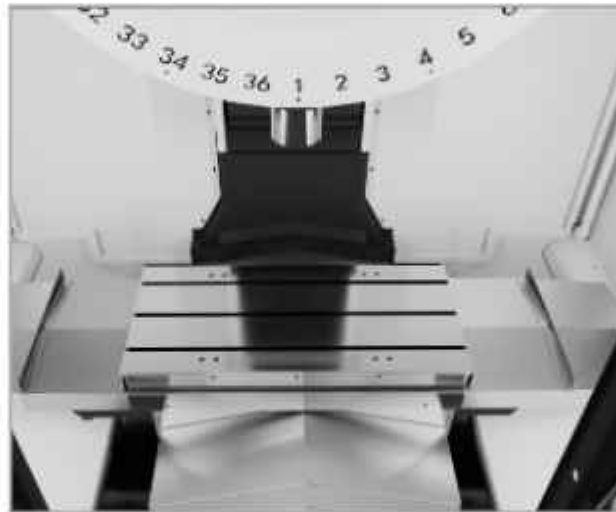
15,000 rpm - Standard

Acceleration 1.5G



Structural Benefits

The structure is designed to ensure high acceleration while maintaining rigidity, preventing deflection or flex under operational forces, ensuring precision and reliability.



Flexible working Area

Capable of fitting 4th Axis rotary or fixture to satisfy different jobs requirement.

Excellent Chip Disposal

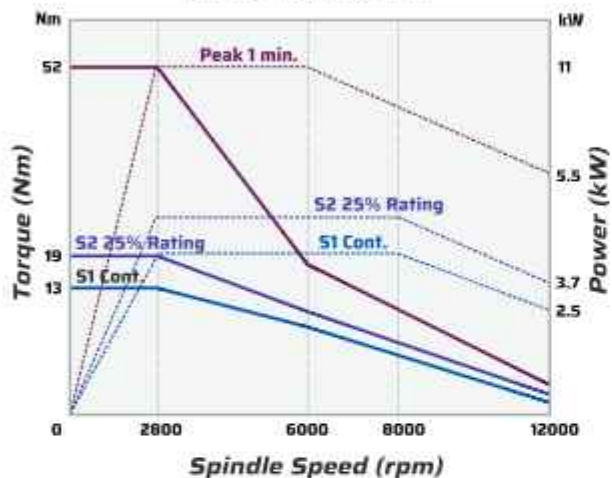
The machines feature steeply slanted telescopic sliding covers that excel in chip disposal performance, keeping your workspace clean and ensuring uninterrupted machining.



Torque Power Diagrams

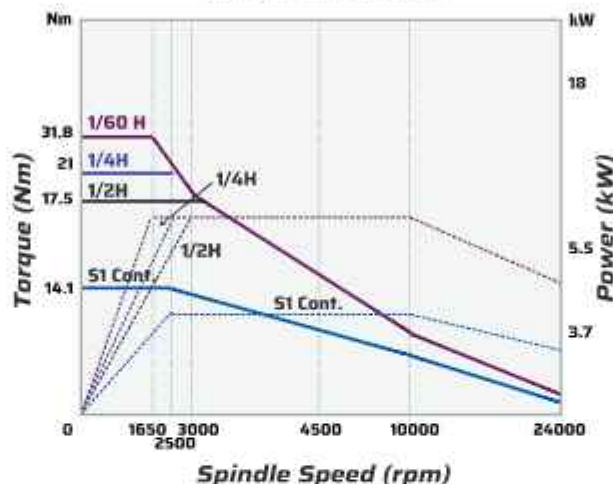
Mitsubishi Controller

Standard Spindle
TM 500 | TM 700



Power 3.7/5.5 kW | Torque 52 Nm
DDS 12,000 rpm (STD)

Quick-Acceleration Spindle
TM 500 | TM 700



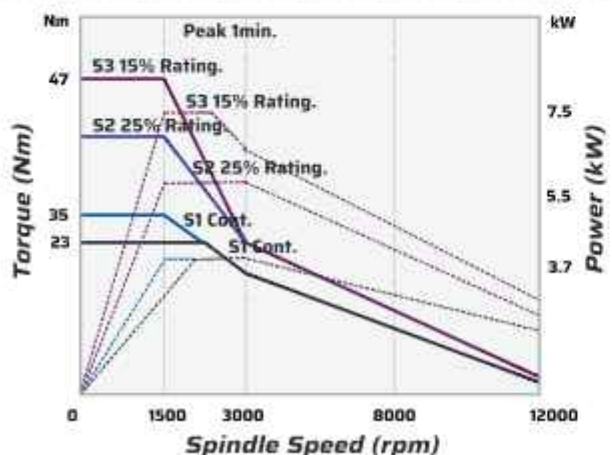
Power 3.7/5.5 kW | Torque 31.8 Nm
DDS 24,000 rpm (opt)

High-Torque Spindle
TM 500 HSC | TM 700 HSC

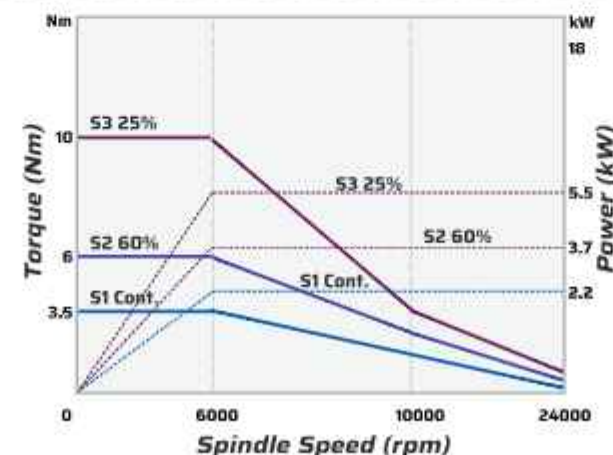


Power 5.5/18 kW | Torque 101 Nm
DDS 15,000 rpm (opt)

Fanuc Controller



Power 3.7/5.5 kW | Torque 47 Nm
DDS 12,000 rpm (STD)



Power 3.7/5.5 kW | Torque 10 Nm
DDS 24,000 rpm (opt)

Spindle Options Tailored to Specific Applications

- **Standard Spindle:** Suitable for a wide range of machining needs.
- **High-Torque Spindle:** Ideal for heavy-duty machining of steel components.
- **Quick-Acceleration Spindle:** Designed for high-speed, high-efficiency machining of aluminium parts.

Machine Specifications

Description	Units	TM 500	TM 700
Travel			
X-Axis	mm	500	700
Y-Axis	mm	400	400
Z-Axis	mm	330	330
Table			
Spindle Nose to Table Surface	mm	150-480	150-480
Table Size	mm	650 x 400	850 x 400
No/Width/CD of T-Slots	mm	3 x 14 x 125	3 x 14 x 125
Max. Loading Capacity	kg	250	250
Spindle			
Spindle Motor Output	kW	3.7/5.5	3.7/5.5
Spindle Max. Speed	rpm	12000	12,000
Spindle Taper		BBT-30	BBT-30
Feed			
Rapid Feed of X/Y/Z	m/min	60/60/60	60/60/60
Accuracy			
Positioning	mm	0.010	0.010
Repeatability (+/-)	mm	± 0.003	± 0.003
ATC			
Tool Storage	-	21 (30)	21 (30)
Max. Tool Diameter	mm	80	80
Max. Tool Length	mm	200	200
Max Tool Weight	kg	3	3
Tool Change Time (Tool-to-Tool)	sec.	T-T: 1.5	T-T: 1.5
General			
Floor Space	mm	1600 x 2350	2050 x 2350
Weight	kg	2400	2550
Power Capacity	kVA	10	10

Note: Specifications and features are subjected to change without prior notice.
Please refer the offer document, offer document as precedence.

Standard Features

- Mitsubishi M80 BV Controller with 10.4" Display / Fanuc DiMF Controller
- BBT-30 12,000 rpm Direct Drive Spindle
- Spindle Oil Cooler
- Tilting Pocket High Speed Servo ATC
- Rigid Tapping
- Automatic Lubrication System
- Oil Coolant Separator
- Chip Flushing System
- Rear Side Chip Outlet
- Spindle Air Blast
- Heat Exchanger for Electrical Cabinet
- Manual Pulse Generator
- Air Gun & Coolant Gun
- Machine Operation & Maintenance Manuals

Optional Features

- 30 Tools ATC
- Direct Drive Spindle 15,000/ 20,000/24,000 rpm
- 4th Axis Enabling
- 4th Axis Interface with Drive
- CNC Rotary Table Model: CNC-200R
- Chip Conveyor
- Auto Door
- Air Conditioner for Electrical Cabinet
- Renishaw LTS
- Renishaw Primo Kit
- CTS System from 20 bar to 70 Bar Pressure
- Contact sales team for more accessories

AUTOMILL Series

AutoMill: Machining With Automation Made Simple

The **AutoMill Series** is a revolutionary self-loading machine, designed to deliver fully automated, high-performance solutions for a wide range of production needs. Whether it's **High-Volume, Low Variety** or **Low-Volume, High Variety production**, the AutoMill enhances consistency, speed, and overall output, ensuring peak efficiency across all operations.

With internally linked software for seamless setup and operation, the AutoMill simplifies the automation process, minimising human intervention while maintaining exceptional precision and reliability. This cutting-edge solution empowers manufacturers to achieve faster, more efficient workflow, making it the ideal choice for modern, high-productivity environments.



Effortless Loading with the Easy Management Screen



Key Features

- No Programming Required
- Quick Part Changeovers
- 3D Visualisation
- Fast and Accurate Calibration
- Smart Task Automation
- Collision Avoidance

Machine Specifications

Description	Units	AM 500	AM 700	AM 60	AM 80
Travel					
X-Axis	mm	500	700	600	800
Y-Axis	mm	400	400	450	450
Z-Axis	mm	330	330	500	500
Spindle Nose to Table Surface (Daylight)	mm	150-480	150-480	100-600	100-600
Table					
Table Dimension	mm	650 x 400	850 x 400	750x450	1000 X 500
Max. Safe Load on Table	kg	250	250	300	600
Spindle					
Spindle Taper	-	BBT 30	BBT 30	BBT40	BBT40
Spindle Speed	rpm	12000 DDS	12000 DDS	8000 Belt	8000 Belt
Spindle Motor Output (Mitsubishi)	kW	3.7/11	3.7/11	7.5/11/15	11/15/18.5
Feed					
Rapid Traverse X/Y/Z Axes (Mitsubishi)	m/min.	60/60/60	60/60/60	48/48/48	48/48/48
Cutting Feedrates	m/min.	20	20	10	10
ATC					
ATC Type	-	Servo Drum Type	Servo Drum Type	Arm Type	Arm Type
No. of Tools	Nos	21 (30)	21 (30)	24	30
Max. Tool Length	mm	200	200	250	250
Max. Tool Weight	kg	3	3	8	7
Tool Diameter (with adjacent Tool)	mm	80	80	80	150
Tool Changing Time (Tool to Tool)	sec.	1.5	1.5	1.8	1.8

Note: Specifications and features are subjected to change without prior notice. Please refer the offer document, offer document as precedence.

Standard Features

- 6 Axis Robot 10kg
- 5 drawer (600mm x 400mm x 80mm)
- Addon Touch Screen Display Screen with EasySoft Software Package
- Interactive Auto Calibration Package by Touch Probe

Optional Features

- 6 Axis 12kg Robot
- Option features can be configured depending upon customer application

Machine User Interface

Boost Your Profitability by Achieving the Maximum with Ease

ZENEZ Control

It focuses on customised dashboards and tools that help the operator to simplify his daily activity. The overall feature and package can reduce the time lost due to the complexity of the controller GUI; as a result, Zenez can significantly increase the machine output and profitability.

- 10.4-inch display or large 15-inch display
- Multi-touch User Interface
- Fully functional vertical and horizontal soft-keys for non-touch usage
- Crystal Type
- Enhanced hardware to ensure reliability

THE HOME SCREEN

Status View

Program Status
Show Tool Life Status
Active Machining Condition
Part Count vs Total Required

ZENEZ Menu

Pre-Machining APP
During Machining APP
Post Machining APP
Diagnosis APP
Maintenance APP
Tool Manager APP

Axis Load Meter



CNC View

Axis Feed Rate
Spindle rpm
Program Name
Sequence Number (N)
Block Number (B)
Program Buffer
Program Position
Spindle Load Stat

Maintenance Alert

An alert shows up if maintenance tasks are pending or one of the following is not normal:
Lubrication Level
Air Pressure
Coolant Level
Tool Clamp



Scroll
Scroll in lists - Tool and Work offset list, Program, Gcode List Parameter.



Tap
Tap to move the cursor or navigate through the menus.



Pinch
Zoom in and out of graphic content during simulation mode.



QUICK SETUP Magazine View

Users can assign large tools, fixed tools, locked tools, and maximum and minimum loads with tool type. Load Teaching is a value-added feature.



QUICK SETUP Tool Manager

User Can assign Large Tools, Fixed Tools, Locked Tools, Maximum and Minimum Load with Tool Type. Load Teaching is a value added feature.
*LT - Large Tool | FT - Fixed Tool | WoS - Tool without Spindle Rotation



ADVANCE CONTROL Machining Condition Selection

Machining Condition Selection - Settings Level 1-9 offers the user control over the servo tuning. 1-9 represents tuning presets calibrated by the Cosmos and Mitsubishi Japan tech team to offer users the servo tuning control in a more understandable manner to maximise their profits by gaining customised control over roughing, semi-roughing, and finishing parameters.



ADVANCE CONTROL Downtime Analysis

Downtime (DTE) Entry Popup
Whenever machine stops, the DTE pops up for classification for interruption in machining



*Can be activated by G-Code G331-339 - or Manually. This option can be password protected for restricted access.



Downtime Analysis Report
Complete report on why machine was idle.
Now you know where the issue is.

Product Range

SMARTMILL BBT 40 Spindle



SM 60



SM 80



SM 60 APC

TAPMILL BBT 30 Spindle

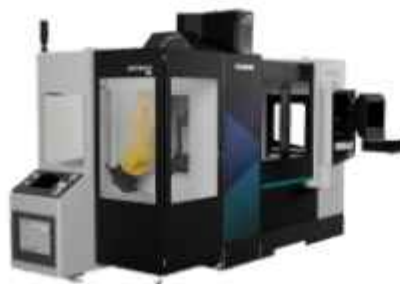


TM 500



TM 700

AUTOMILL BBT 30/40 Spindle



AM 500 | AM 700



AM 60 | AM 80

digifac FEATURES



Dashboard Monitoring

- ▶ Live information of the entire factory.
- ▶ Categorise machines (Unit-wise).
- ▶ View regular utilisation of the machine.



Program Transfer

- ▶ Upload programs from the computer to machines directly.
- ▶ Download programs and edit them from anywhere around the globe.



Alarm Analysis

- ▶ Alarm history by code or machine.
- ▶ Time and duration of all alarms generated by a separate machine.



Tool Cutting Time Information

- ▶ No more unidentified dry-runs.
- ▶ Program path optimisation in-sight.
- ▶ Tool usage clarity.
- ▶ Shorter cycle-times (if modified).
- ▶ Eliminate NVA air time and improve your process.



Feed-rate Override and Underreport

- ▶ Monitor adjustments in real-time.
- ▶ Understand impact on cycle times, output & efficiency.
- ▶ Records to speed up production or breaks ensures transparency and control.
- ▶ Ensuring faster production doesn't sacrifice precision.



Production Information (Utilisation)

- ▶ Detailed production information report.
- ▶ An automated daily production report.
- ▶ All reports are available in Excel format.



Downtime Analysis

- ▶ See total machine downtime.
- ▶ Monitor downtime and the reasons for it (Macro Downtime Feature).
- ▶ Focus and can easily get the classified major losses/downtimes and work on optimisation.



Email Alerts

- ▶ Set a time for machines' idle condition and receive or get alarm notification on email.
- ▶ Management Reporting: Receive daily production report and downtime analysis report by email on daily basis.



Live OEE Monitoring

- ▶ Automate data collection and reporting.
- ▶ Imagine and display real-time OEE on the shop floor.
- ▶ Execute cross-functional daily reviews and conversation sessions.
- ▶ Use Root-Cause Analysis.

SMARTCONNECT+



Corporate Office

Cosmos House, Plot No. 85/2, Padra Road, Atladara, Vadodara, Gujarat - 390 012

Manufacturing Facilities

Plant - I

Cosmos Impex India Pvt. Ltd., Plot No. 847, 848 Village Ranu, Ta. Padra, Vadodara, Gujarat - 391 445

Plant - II

Plot No. 68-B, Sigil Compound, Padra Road, Atladara, Vadodara, Gujarat - 390 012

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