CVM Series

High Performance Vertical Machining Centres

cosmos®

MADE IN INDIA
INDIA
FOR THE GLOBE

CVM 700G | CVM 700 | CVM 800 | CVM 1050 | CVM 1160 | CVM 1365 | CVM 1370 | CVM 1570 | CVM 1680 | UM 400

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.

About CVM Series

Our cutting-edge CVM series is designed to exceed global quality standards while maintaining exceptional affordability. Every detail is crafted with precision to enhance productivity and performance.

- ***Unity Structure & Robust Casting:*** *Ensures unmatched stability and durability.*
- ***Global Standard Spindle:*** *Delivers superior accuracy and reliability.*
- ***Customized Control with Zenez Inside:*** *Optimized for enhanced cutting performance and efficiency.*
- ***Ergonomic Design:*** *Engineered for a fatigue-free operator experience.*

Advanced Manufacturing Excellence

At Cosmos Group, we take pride in our world-class manufacturing infrastructure, ensuring precision, reliability, and innovation in every machine we build. With two state-of-the-art manufacturing units, we seamlessly integrate casting, machining, fabrication, powder coating, and final assembly, delivering high-performance machine tools for industries worldwide.

Cosmos Manufacturing Unit 1

Comprehensive Machining & Fabrication Hub

Total Area	Workforce
~75,500 SQM	~950 skilled professionals

Our flagship manufacturing facility is a vertically integrated unit designed to handle end-to-end machine tool production, from raw material processing to final dispatch. Equipped with cutting-edge machining, fabrication, and assembly facilities, this unit ensures unmatched precision and quality.

Key Facilities:

- ✔ **Casting Machining Facility**
- ✔ **Fabrication & Powder Coating Facility**
- ✔ **Assembly & Dispatch Facility**

This facility forms the backbone of our manufacturing excellence, producing high-performance CNC machines with industry-leading accuracy and reliability.

Cosmos Manufacturing Unit 2

Precision Assembly & Final Integration

Total Area	Workforce
~9,700 SQM	~150 skilled professionals

Our second manufacturing unit is a specialized assembly hub, dedicated to high-precision integration of machine tools. Here, we ensure every machine meets strict global quality standards through meticulous assembly and testing.

Key Facilities:

- ✔ **Frame & Sheet Metal Assembly**
- ✔ **Electrical & Controller Assembly**
- ✔ **Final Machine Assembly & Dispatch**

This unit plays a critical role in ensuring that every Cosmos machine delivers superior performance, longevity, and precision.

Engineered for Strength

Unity Structure and Robust Casting

We've extended the life of our machines through a simple yet effective approach: reducing the number of subassemblies. This means that we've integrated crucial components like the bearing housing mounting bracket, motor mounting brackets, and nut housing directly into the main casting. This not only enhances the machine's durability but also simplifies maintenance for a more reliable and hassle-free experience.

Integrated Motor And Bearing Mounts*

Enhanced Axis Alignment:

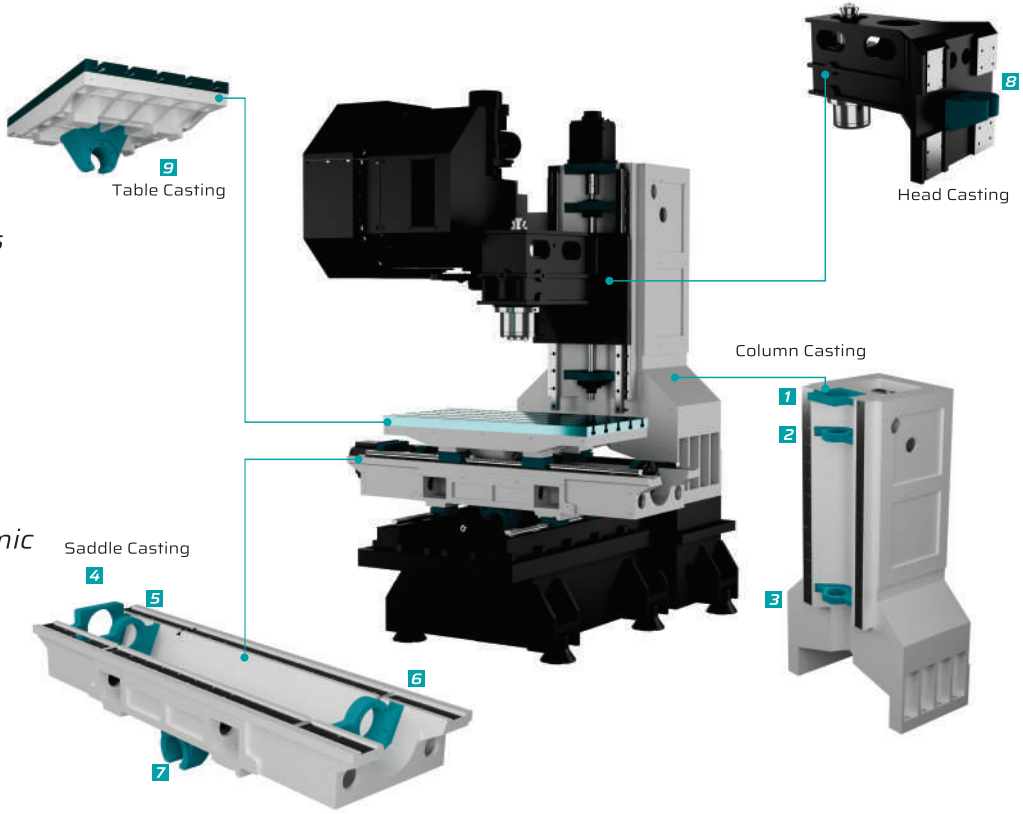
We've perfected the alignment of the axis drive motor and ball screw, ensuring smoother and more precise operation.

Exceptional Parallelism:

Achieving precise parallelism of the ballscrew with LM guideways ensures optimal machining precision, while integrated mounts double as strengthening ribs for added durability and stability - delivering a superior machining experience.

Integrated Ballnut Housing**

Our innovative design integrates ballscrew-nut housings into the machine's casting, forming a sturdy unit that enhances the dynamic stiffness of key components like the table, headstock, and saddle. This improves precision, stability, durability, and reliability for consistent, high-quality performance.



*Images 1-6 | **Images 7-9

Wide A-shaped Column

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

Golden Triangular Frame Design

By ensuring maximum bed width, we optimise kinematics for superior performance. This design also lowers the centre of gravity, enhancing stability during cutting, resulting in a chatter-free surface finish and prolonged tool life.

Extended Headstock Guides

The extended A:B ratio not only allows for larger components on the machine table but also enhances headstock rigidity during rapid high-feed cutting. This rigidity safeguards spindle accuracy by preventing headstock sag, ensuring precision in machining operations.

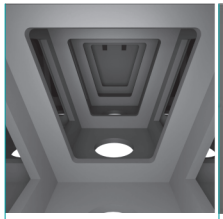
High Quality Imported Spindle

Our cartridge type spindle delivers exceptional performance, minimising runout while providing impressive cutting torque. Every spindle in our lineup undergoes rigorous dynamic balancing and thermal deformation testing, ensuring optimal precision and reliability in every machining operation.

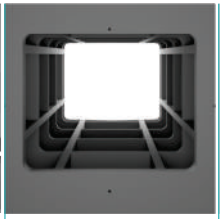
Machining Stability Ensured

Our machines are distinguished by the extraordinary power of our signature ribs, the cornerstone of strength and quality in our construction. These ribs are strategically positioned to fortify our machines, elevating their structural integrity and amplifying overall robustness.

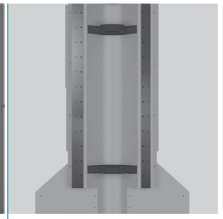
For heavy-duty cutting tasks, our ribs are the secret to success. They stand out in enhancing torsional rigidity, expertly reducing vibrations, and virtually eliminating deformation. The outcome is a level of machining precision and reliability that's second to none - a testament to the enduring quality and unwavering strength of our ribs. Place your trust in the bedrock of excellence; rely on our ribs to deliver.



Base Internal Ribbing



Column Internal Ribbing



Column Casting

Key Features

High Visibility Front Doors

The front doors are constructed using heavy-duty, shatterproof polycarbonate material. The generously sized window provides operators with clear and unobstructed visibility, making it effortless to monitor machining processes.

Secure Tool Storage: Enclosed Cabinet With Adjustable Rack

All CVM machines come equipped with endorsed cabinets featuring racks, providing a safe and organised space to store your valuable tools. The adjustable design ensures flexibility to accommodate tools of various sizes with ease.

Holster For Your Guns

The machines feature scuffless steel panels equipped with holsters for your coolant and air guns. This thoughtful design ensures your guns are securely stored, preventing paint scratches, accidental drops, and messy coolant drips, enhancing both efficiency and workplace safety.

Stainless Steel Protector

Front panels often bear the brunt of scratches and rust from operator handling of tools, tackle, and components. Our solution? Stainless steel protection to eliminate these issues, ensuring lasting durability and a pristine appearance. Say goodbye to scratches and rust concerns.

Brilliantly Illuminated for Optimal Visibility

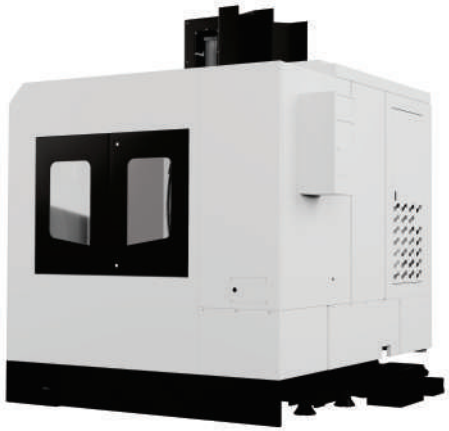
Designed for optimal visibility in low light, CVM machines include a dual work lamp with white LEDs, a three-colour tower lamp, ambient tool cabinet lighting, and an illuminated machine name, ensuring a well-lit workspace for operator ease.

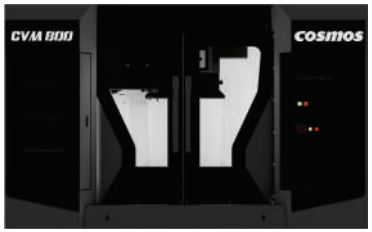
Seamless Access: Spacious Side Doors

Generously sized side doors are designed for easy access to the machine. These doors are strategically positioned below the table height, ensuring convenience during extended use. Work comfortably and efficiently with hassle-free access to your machine. (Except 700)

Versatile 360° Machine Design

Our machines feature a smooth, flush design on all four faces, offering you the freedom to position the machine in any orientation within your factory. Enjoy a sleek appearance from every angle.





Illuminated Design

All our machines are with LED lamps to create a well-lit working environment, ensuring optimal visibility and ease of operation. Built for durability and minimal maintenance.

Easy Access Maintenance

We've improved machine manageability with easy access windows to essential peripherals, streamlining maintenance and ensuring efficient operation.

Excellent Chip Disposal

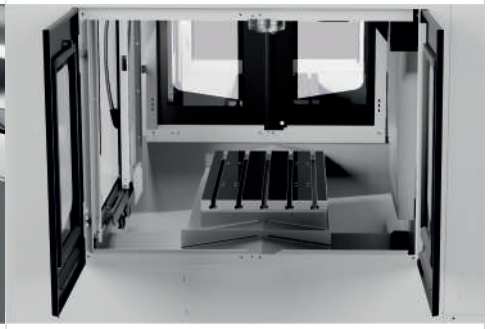
The machines feature steeply slanted telescopic sliding covers that excel in chip disposal performance, keeping your workspace clean and ensuring uninterrupted machining.

Ring Coolant

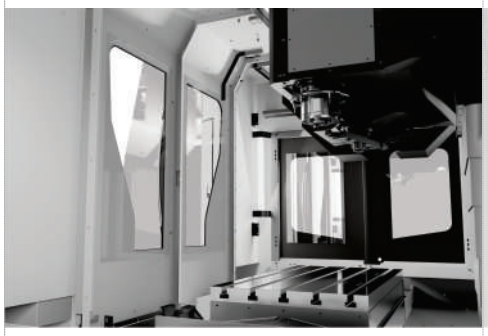
Our ring coolant nozzles, strategically positioned around the spindle, deliver coolant to the cutting area, ensuring performance, efficient heat dissipation, and an optimal machining experience.

Additional Features

STAINLESS STEEL SILL PROTECTOR

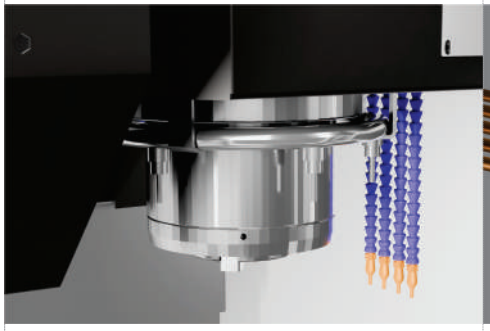


BIG DUAL SIDE WINDOWS

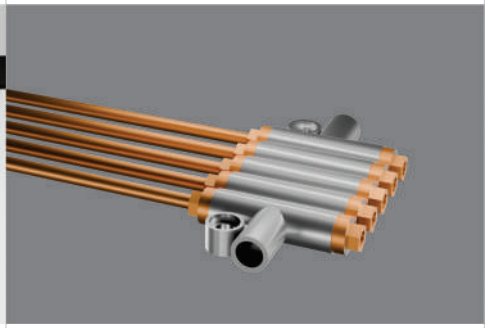


FULLY ENCLOSED GUARDING

INBUILT TOOL STORAGE CABINET



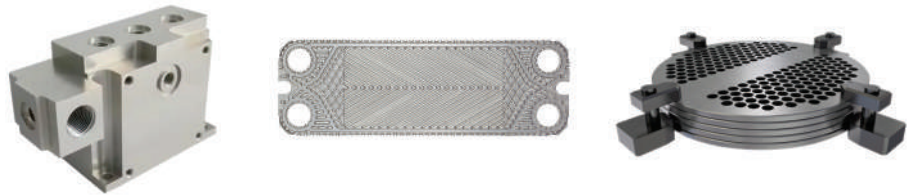
1 AIR AND 3 COOLANT NOZZLES



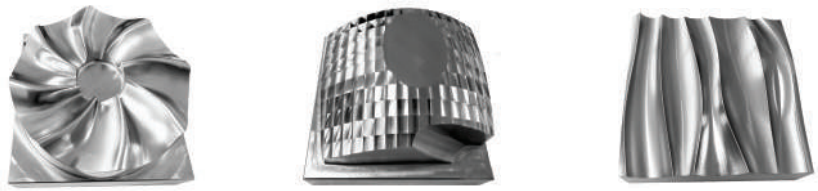
COPPER PIPE FOR LUBRICATION

Precision Across Industries

Graphite Machining Solutions



Precision Machining Solutions

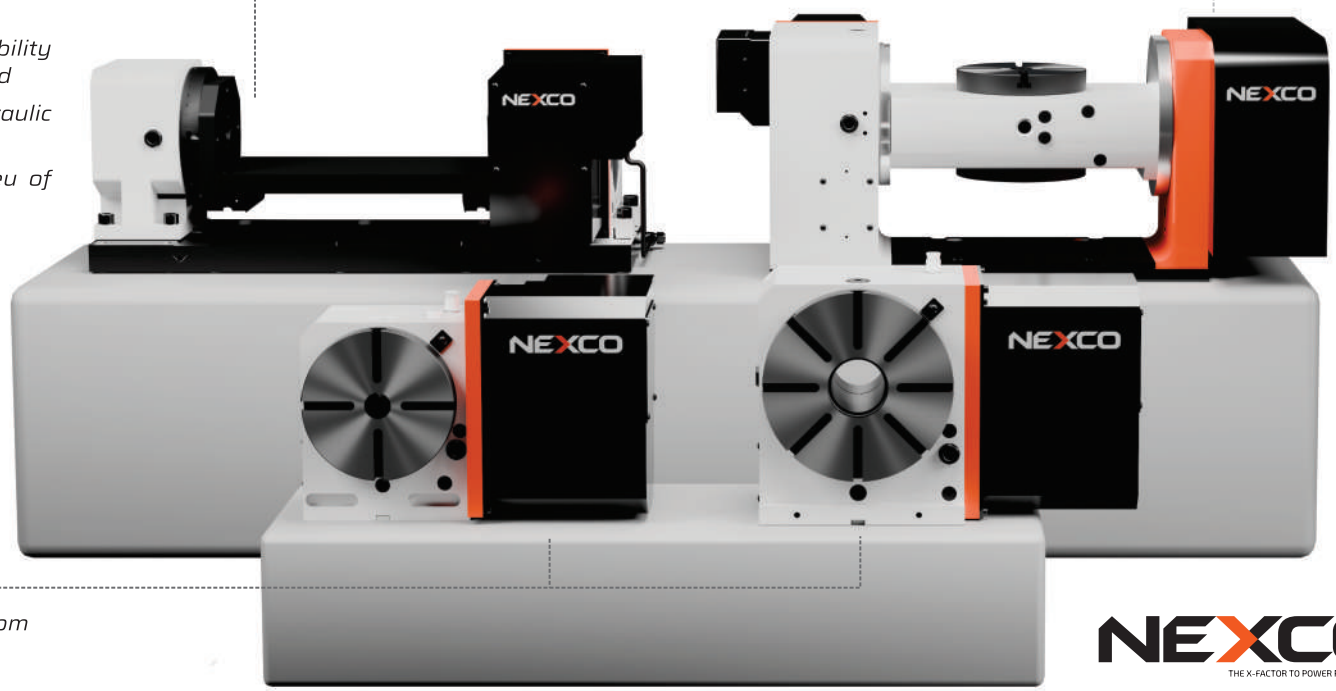


Die And Mold Machining Solutions

4th & 5th Axes Solutions

ROTARY MANUFACTURING SYSTEM

- *Ideal for multi face machining in single setup*
- *Rigid slave table ensures stability during machining at heavy load*
- *Option of rotary union for hydraulic and pneumatic fixtures*
- *Option of side support in lieu of Slave Table*



CNC TILTING ROTARY TABLE

- *Full flexibility with ±110° Tilting Angle*
- *Ideally suited for machining at compound angle for medical and aerospace industries*
- *Universal Base Plate for T-Slot pitches of 100mm, 125mm and 150mm*

CNC ROTARY TABLE

- *High Speed Rotation @ 33.3rpm*
- *Dual Lead Worm Drive*
- *Special Bearing Design.*

NEXCO
THE X-FACTOR TO POWER PRODUCTIVITY

WORM WHEEL CONFIGURATION:

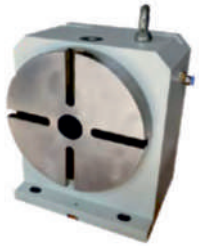
Worm Shaft: *Case hardened Alloy steel*

Worm Wheel: *Special high tensile brass alloy.*

Now Available STEEL WORM WHEEL option for DOUBLE LIFE AND SMOOTHER MACHINING!!

Tailstock

- *TSA-160/185 (Manual/Pneumatic/Hydraulic)*



End Support

Slave Table

- *SLT-200/250 (Pneumatic/Hydraulic)*

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.

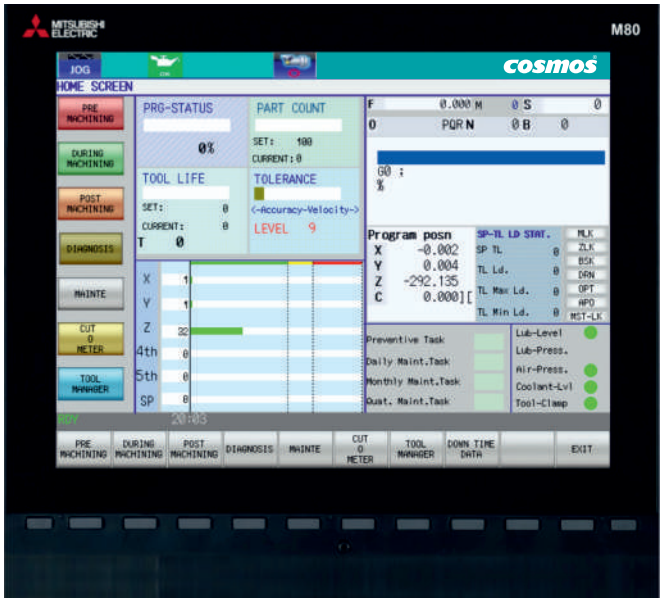
- *10.4-inch display or large 15-inch display*
- *Multi-touch User Interface*
- *Fully functional vertical and horizontal soft-keys for non-touch usage*
- *Crystal type*
- *Enhanced hardware to ensure reliability*

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



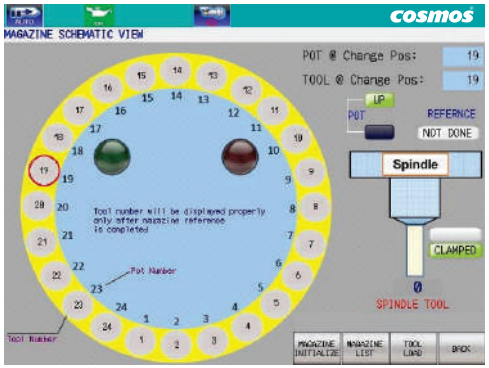
CNC View
Axis Feed Rate
Spindle rpm
Program Name
Sequence Number (N)
Block Number (B)
Program Buffer
Program Position
Spindle Load Stat

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 & Work offset list, Program, Gcode List Parameter.

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

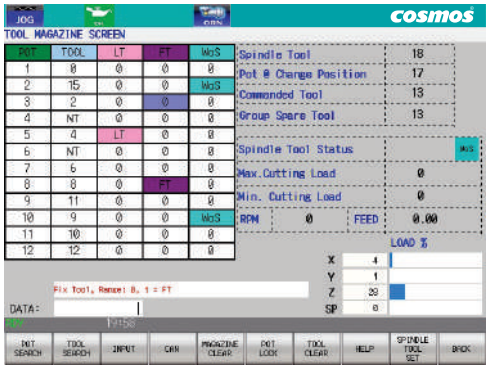
Pinch
Zoom in and out of graphic content during simulation mode.



Magazine View

QUICK SETUP

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

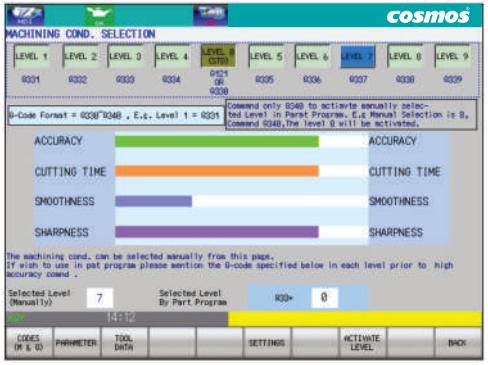


Tool Manager

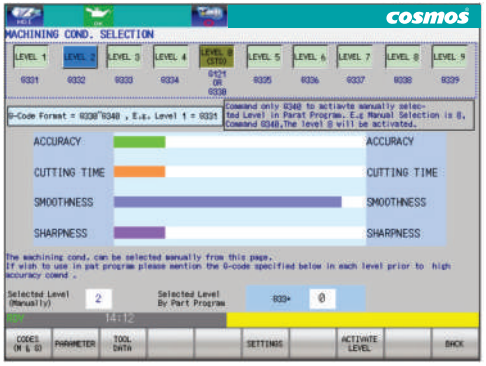
QUICK SETUP

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



Finish Machining Condition Selection

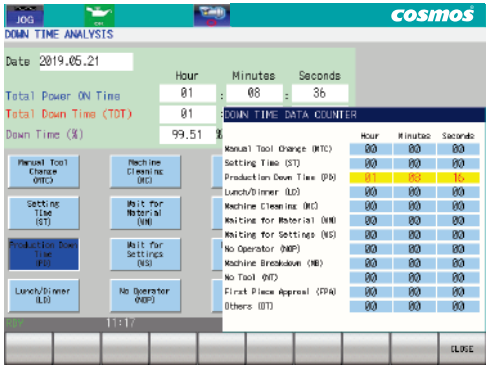


Rough Machining Condition Selection

ADVANCE CONTROL

Machining Condition Selection – Settings Level 1-9 offers the user control over the servo tuning calibrated by Cosmos and Mitsubishi Japan tech team to offer users the servo control in a more user-friendly manner that offers customization over roughing, semi-roughing, and finishing parameters to maximize profits

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

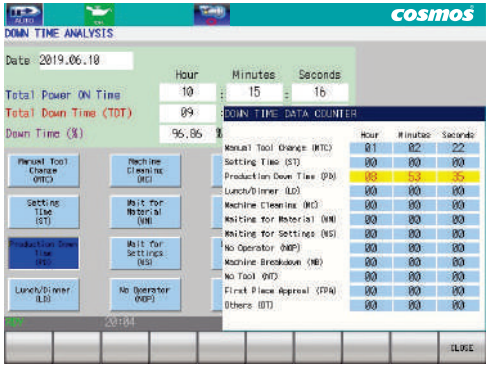


Downtime Analysis

ADVANCE CONTROL

Downtime (DTE) Entry Popup

Whenever machine stops , the DTE pops up for classification for interruption in machining



Downtime Analysis Report

Complete report on why machine was idle.

Now you know where the issue is.

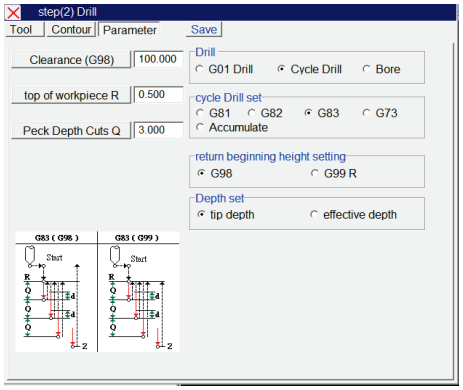
Productivity Softwares

Cam Solution *Easy I Smart I Economic I Versatile*

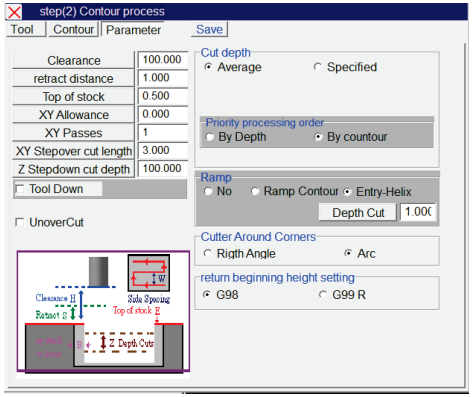
Key Features:

- *2.5D machining*
- *Toolpath for engraving*
- *Pocket Milling*
- *Contour Milling*
- *Facing*
- *All drilling, boring, and tapping cycles*
- *Treadmill cycle*
- *Spiral machining*
- *Rest machining*
- *Tool library creator*
- *4th Axis program (Only Positioning)*

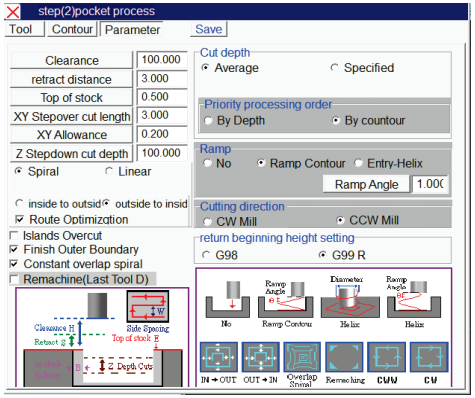
Drill (Drilling Cycles)



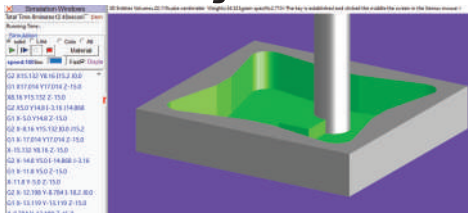
Contour



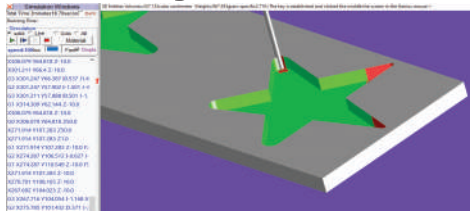
Pocket



Pocket Machining



Pre-Machining



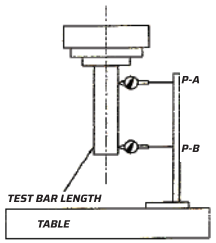
ZENCAM

Quality & Accuracy

Laser & Ball-bar Calibration as per
VDI-3441 Standard
Geometrical Test as per
ISO 10791 Standard

Our key highlights

- *For Laser calibration we do 5 PASS TEST in all axes*
- *Our positional accuracies are achieve within **10 µm***
- *For Ballbar tests our Volumetric circularity is achieved within 8 µm*

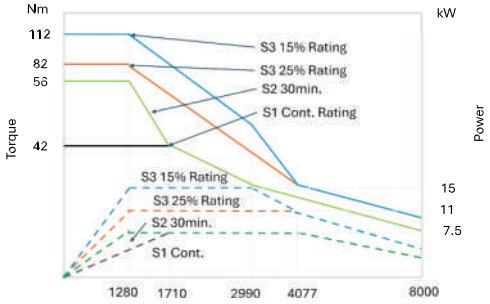


SPINDLE RUNOUT @ 300MM is < 8 µm
ISO 10791
Runout of The Spindle Taper Hold

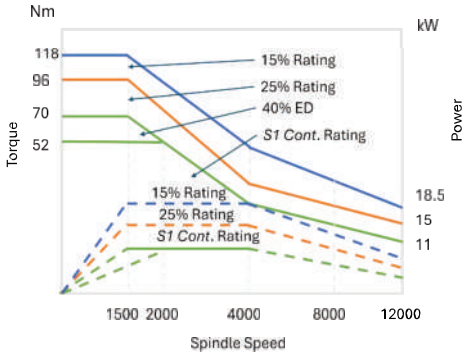
Torque Power Diagram

Mitsubishi Controller

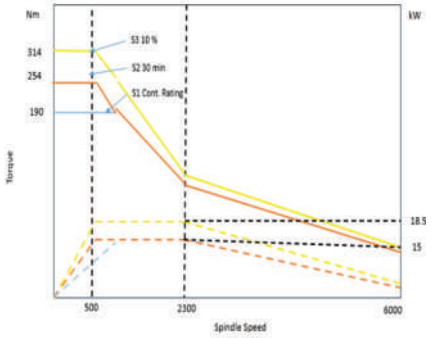
CVM 700 (BBT40)
Power 7.5/11/15 kw | Torque 112 Nm
Belt 8000 rpm (STD)



CVM 800 | 1050 | 1160 | 1365 | 1370 | 1570 (BBT40)
Power 11/15/18.5 kw | Torque 118 Nm
Belt 8000 rpm (STD) | 10000 rpm (OPT)
DDS (OPT) - 10000 rpm | 12000 rpm

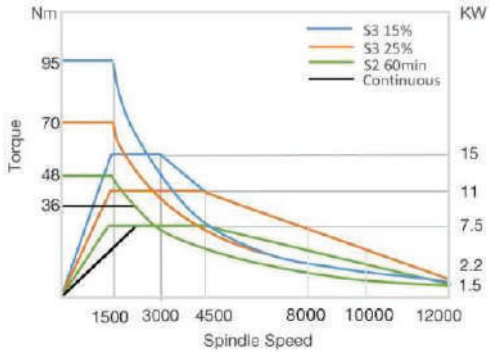


CVM 1680 (BT50)
Power 15/18.5 kW | Torque 314 Nm
Belt - 6000 rpm (STD)

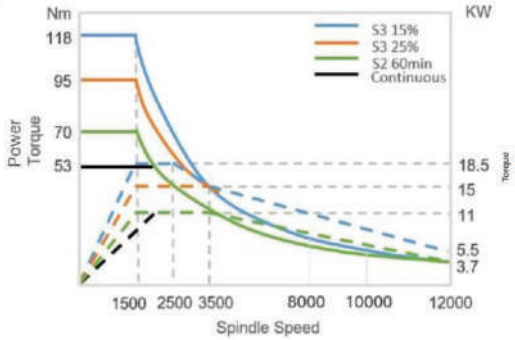


Fanuc Controller

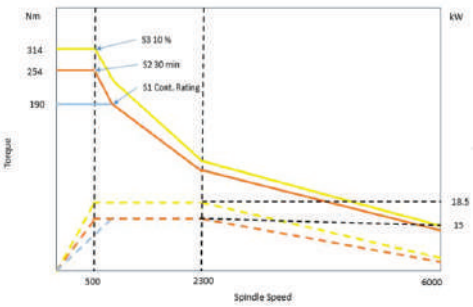
CVM 700 | 800 | 1050 | 1160 | 1365 (BBT40)
Power 7.5/11/15 kw | Torque 95 Nm
Belt 8000 rpm (STD) | 10000 rpm (OPT)
DDS (OPT) - 10000 rpm | 12000 rpm



CVM 1370 | 1570 (BBT40)
Power 11/15/18.5 kw | Torque 118 Nm
Belt 8000 rpm (STD) | 10000 rpm (OPT)
DDS (OPT) - 10000 rpm | 12000 rpm

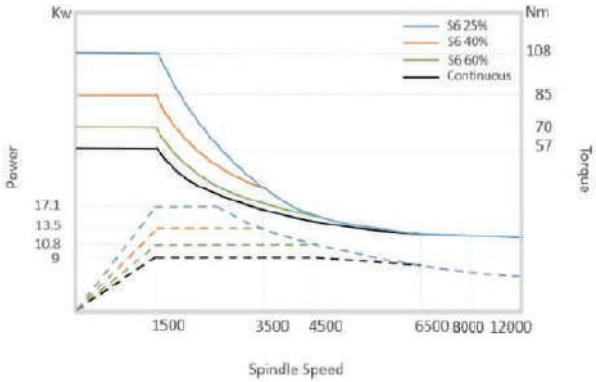


CVM 1680 (BT50)
Power 15/18.5 kW | Torque 314 Nm
Belt - 6000 rpm (STD)

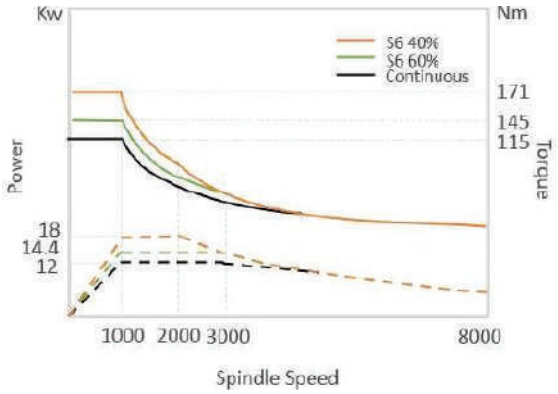


Siemens Controller

CVM 700 | 800 | 1050 | 1160 | 1365 (BBT40)
Power 9/17 kw | Torque 108 Nm
Belt 8000 rpm (STD) | 10000 rpm (OPT)
DDS (OPT) - 10000 rpm | 12000 rpm



CVM 1370 | 1570 (BBT40)
Power 12/18 kw | Torque 171 Nm
Belt 8000 rpm (STD)



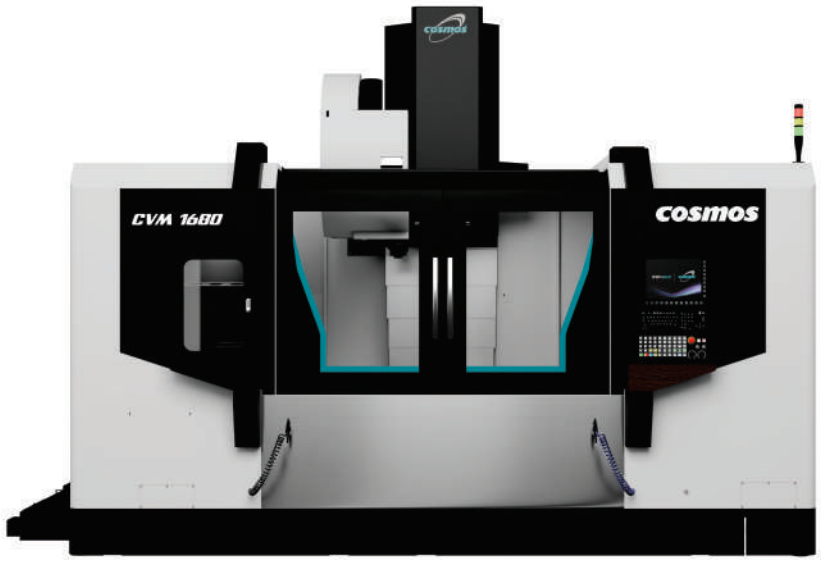
CVM - 1680

Engineered for Heavy-Duty Excellence

Rugged Heavy-Duty Spindle for Heavy Cutting

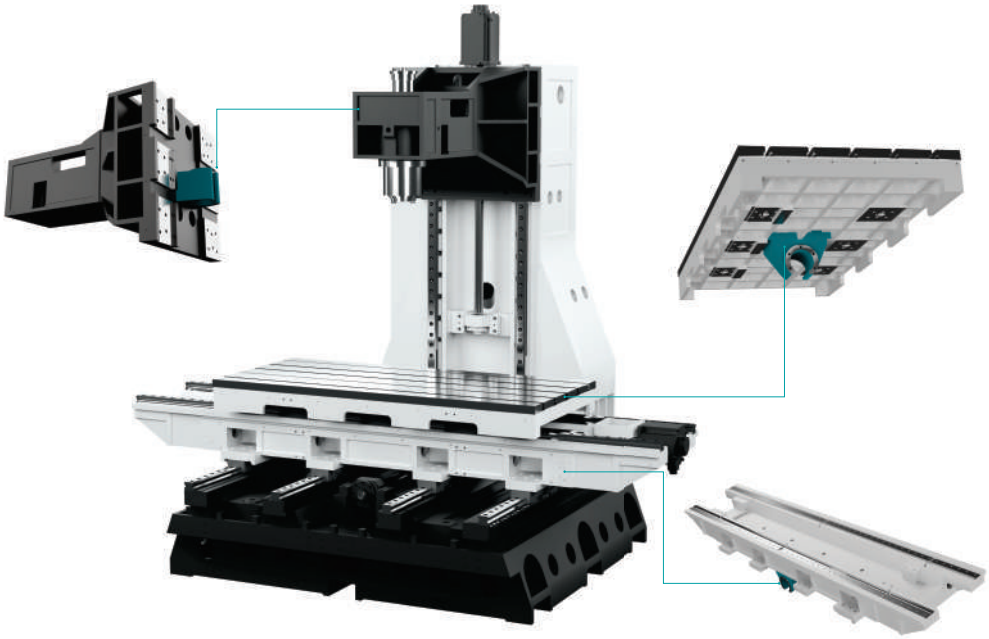
4 LM Guideways to support the massive saddle with 1600mm travel

Heavy-duty Z-axis motor for high dynamic performance



Machine Structure

Unity Structure and Robust Casting



Heavy Duty Cutting

For Large Workpieces (#BT50)

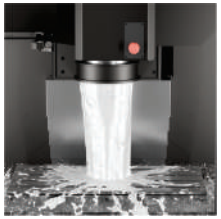
CVM BT50 is recommended for powerful cutting based on the stable structure. The heavy structure in these machining centres can cut down your machining process and make your work more precise and productive.

Additional Feature on BT50 Series
▶ *Roller LM Guide ways on All Axis*
▶ *Higher Spindle Torque Updates*
▶ *Hydraulic Counterbalance*
▶ *Ring Coolant Around Spindle*
▶ *Optionally, BBT50 Direct Drive Spindle also available*

CVM 700G

Graphite Wet Cutting / Dry Cutting

The CVM 700G uses special graphite-graded linear motion guideways with ultra dust protection seals to provide protection against the graphite dust. All axes and utilise special telescopic covers to minimise the graphite entering into the casting.



Coolant ring

Graphite wet cutting employs a coolant curtain around the spindle to control the graphite dust from spreading.

Coolant Tank Design

Top Side Multisegmented graphite settling tank. Here coolant falls into this system in Segment S1 and flows all the way to S3, from where it goes into the main tank.

Complete Coolant Tank

Dirty Coolant Float Here

Main Coolant Tank

Special Feature on CVM 700G
▶ *Direct Drive Spindle with 12,000 rpm* ▶ *Ball type LM guide ways on X, Y & Z axes with dust protection*

CVM Model Range

Specifications	Unit	CVM-700/G	CVM-800	CVM-1050	CVM-1160	CVM-1365	CVM-1370	CVM-1570	CVM-1680
X - Axis Travel	mm	700	800	1050	1100	1300	1300	1500	1600
Y - Axis Travel	mm	450	500	520	650	650	700	700	800
Z - Axis Travel	mm	500	500	520	600	600	700	700	800
Spindle Nose to Table Surface	mm	100-600	100-600	125-645	150-750 100-700	140-740 90-690	150-850 100-800	150-850 100-800	150-950 100-900
Spindle Center to Sliding Cover Face	mm	500	520	520	652	652	716	716	830
Table Size	mm	800X450	1000X500	1150X500	1250X600	1450X600	1450X650	1650X650	1750X800
Maximum Table Load	kg	400	600	800	1000	1000	1500	1500	2000
Table T-slot	mm	18X4X100	18X5X100	18X5X100	18X5X100	18X5X125	18X5X125	18X5X125	18X5X150
Spindle Speed	rpm	8000 12000	8000	8000	8000 6000	8000 6000	8000 6000	8000 6000	8000 6000
Mitsubishi Motor Power (OPT)	Kw	7.5/11/15	11/15/18.5	11/15/18.5	11/15/18.5	11/15/18.5	11/15/18.5	11/15/18.5	15/18.5
Fanuc Motor Power (OPT)	Kw	7.5/11/15	7.5/11/15	7.5/11/15	7.5/11/15	7.5/11/15	11/15/18.5	11/15/18.5	15/18.5
Siemens Motor Power (OPT)	Kw	9/17	9/17	9/17	9/17	9/17	12/18	12/18	-
Spindle Taper	-	BBT 40	BBT 40	BBT 40	BBT 40/BT 50	BBT 40/BT 50	BBT 40/BT 50	BBT 40/BT 50	BBT 40/BT 50
Rapid Traverse Rate (OPT)	m/min	36	36(48)	36	30	30	24	24	24/24/20
Cutting Feed Rate	m/min	10	10	10	10	10	10	10	10
Tool Nos. Capacity (OPT)	nos	24	30	30	30 24	30 24	30 24	30 24	24 24
Max. Tool Length	mm	250	250	250	250 350	250 350	250 350	250 350	250 350
Max. Tool Weight	Kg	8	8	8	8 18	8 18	8 18	8 18	8 18
Tool Dia. (with adjacent tool)	mm	80	80	80	80 110	80 110	80 110	80 110	80 110
Tool Dia. (without adjacent tool)	mm	150	150	150	150 220	150 220	150 220	150 220	150 220
Tool Changing Time (tool to tool) (OPT)	sec	2	2	2	2 4.5	2 4.5	2 4.5	2 4.5	2.5 4.5
Positioning Accuracy	mm	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.015
Positioning Repeatability	mm	±0.003	±0.003	±0.003	±0.003	±0.003	±0.003	±0.003	±0.004
Machine Weight with ATC (STD M/C)	kg	~3950	~4450	~4900	~6400	~6975	~8075	~8875	~12300
Power Requirement	Kva	25	30	30	30	30	35	35	35 40

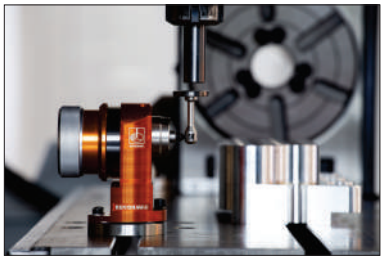
Standard / Optional Features

Standard Features (CVM 700-1680)

- *10.4" Display*
- *Mitsubishi M80, Fanuc OiMF Plus, Siemens 828D Controller (any one)*
- *Ethernet for program transfer*
- *24 Tool Arm Type Tool Changer (CVM 700,CVM 1680-BT40)*
- *30 Tool Arm Type Tool Changer (CVM 800 to CVM 1570-BT40)*
- *Belt drive spindle*
- *C3 Class Ball screws in all axes*
- *Z-axis servo brake*
- *LM Guideways on all axes*
- *Full splash guard*
- *Rigid tapping*
- *Heat Exchanger for Electrical panel*
- *Air and Coolant gun*
- *Automatic lubrication system*
- *Oil coolant separator*
- *Adjustable Coolant Nozzle x 3 and Air Nozzle x I*
- *Dual White LED Lamp inside the machine*

Optional Features (CVM 700 - 1680)

- *15" Touch Screen Display*
- *Scraper Conveyor with Drum filter*
- *Slat type Conveyor*
- *Spindle Oil Cooler*
- *20 Bar Coolant through Spindle (CTS) with 90 Liter Separate Tank*
- *Chip Flushing*
- *Air Conditioning for Electrical Panel*
- *10000 rpm Belt Spindle (BBT40)*
- *10000 rpm Direct Drive Spindle (BBT40) with Spindle Oil Cooler*
- *12000 rpm Direct Drive Spindle (BBT40) with Spindle Oil Cooler*
- *15000 rpm Direct Drive Spindle (BBT40) with Spindle Oil Cooler*
- *18000 rpm inbuilt spindle (HSK A63) (CVM 800 to CVM 1570) with Water Cooler*
- *20000 rpm inbuilt spindle (HSK A63) (CVM 800 to CVM 1570) with Water Cooler*
- *8000 rpm Direct Drive Spindle (BBT 50)*
- *4th Axis Rotary Table (4+1 Also Available)*
- *4th Axis Enable (4+1 Also Available)*
- *4th Axis Interface (4+1 Also Available)*
- *Roller LM Guideways*
- *Linear Scale on all axes (CVM 700 to CVM 1570)*
- *Renishaw Primo (3DTS kit)*
- *Renishaw LTS*
- *Auto Door*
- *Safety Door Interlock*
- *Oil Schemer*



WIRELESS TOOL SETTER AND PART SETTER

Tool Setter Benefits

- *The tool setter also detects a number of defects, including:*
  - *Wear*
  - *Broken Tools*
  - *Thermal Growth*

Part Setter Benefits

- *Enables simple, automated part set up and Inspection.*

COOLANT THROUGH SPINDLE

TOOL LENGTH MEASUREMENT (LTS)

Tool breakage *Thermal effect*

Contact sales team for more accessories and tooled-up proposal

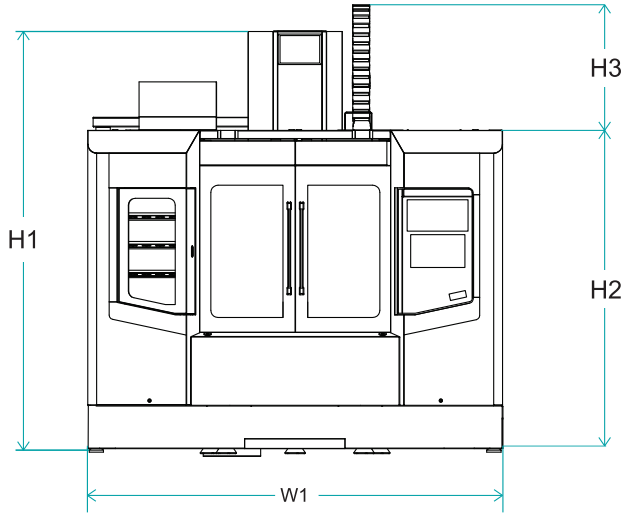
Note: Specifications and features are subjected to change without prior notice. Please refer the offer document, offer document as precedence.

Layout & Dimension

Machine Layout

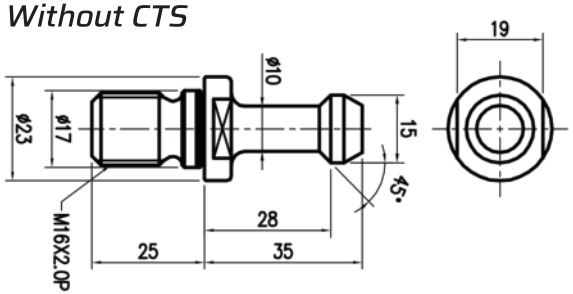
Machine	W1	H1	H2	H3	Depth-FD	Depth-BD
CVM700	2215	2625	2025	670	2390	2730
CVM800	2430	2790	2160	630	2810	2510
CVM1050	2780	2900	2150	750	2500	2860
CVM1160	2910	2955	2265	690	2740	3050
UM400	2910	3155	2265	690	2740	3050
CVM1365	3440	3025	2325	700	2820	NA
CVM1370	3495	3185	2335	850	3050	NA
CVM1570	4000	3030	2180	850	2925	NA
CVM1680	4970	3150	2315	800	3930	NA

*All dimensions are in mm and for H2, height is including level pad.

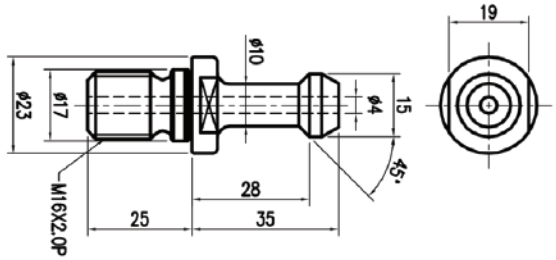


Pull Stud Drawing

Without CTS

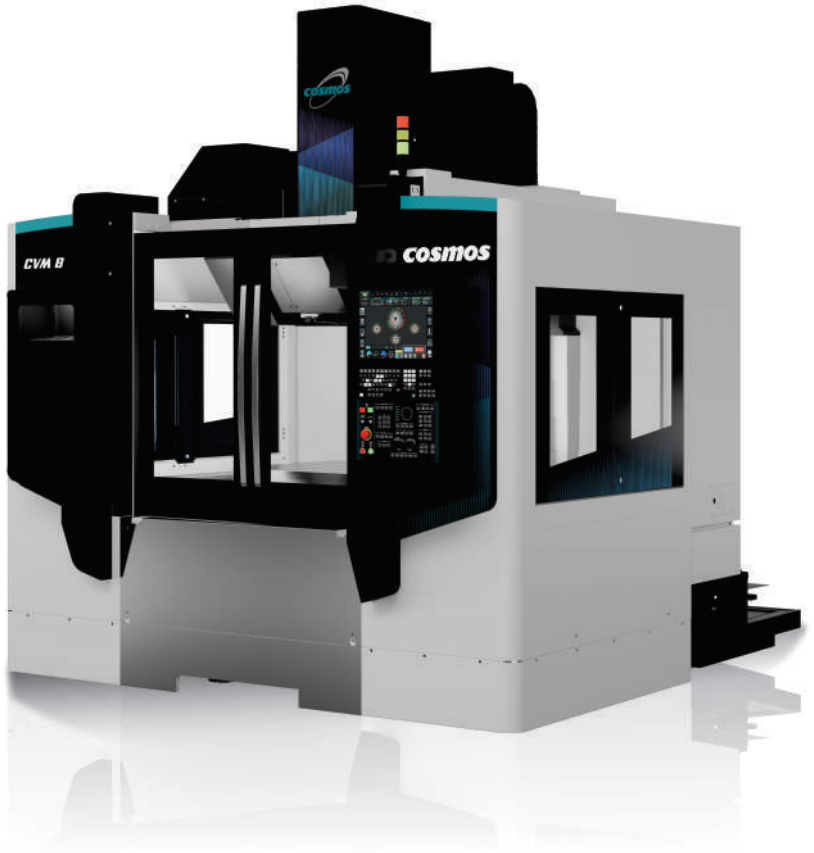


With CTS



CVM Next-Gen

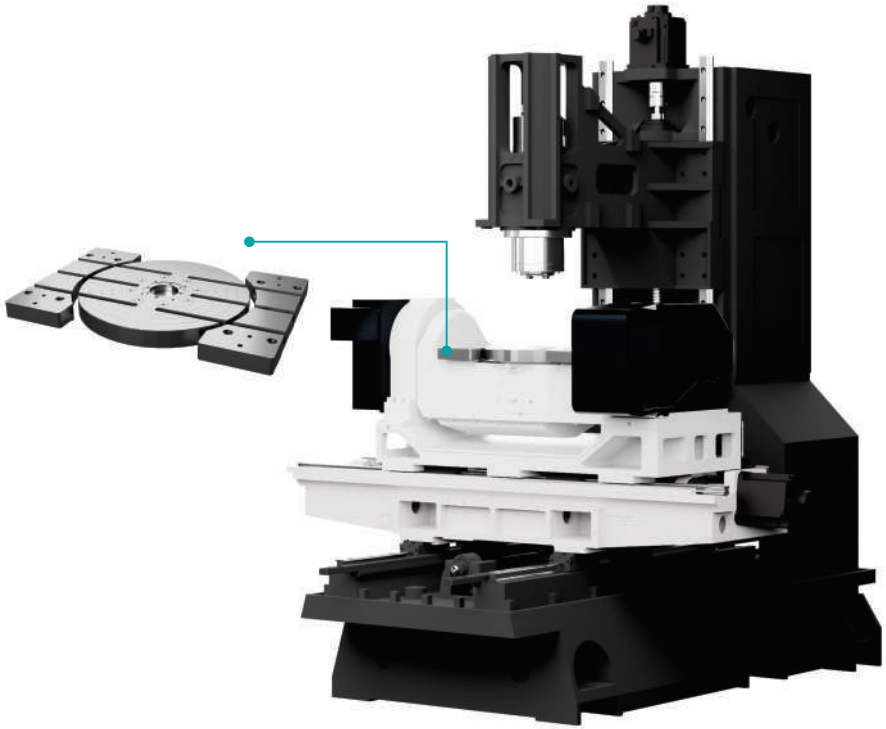
A radiant new hue with enhanced performance,
features and user experience launching soon for a global market.



Coming Soon...

UNIMILL 5 Axes Machining Center

UM 400 (5AF/5AX)



- *Single Setup*
- *Increased Efficiency*
- *Quicker Lead Time*
- *Shorter Tools*
- *Higher Accuracy*
- *Single Fixtures*

- *With 5-axis machining allows the use of shorter, more rigid cutting tool that can be angled.*
- *Toward the workpiece surface for faster feed and speeds.*

Also Available High Precision 5 Face Machining Center (UM 400 5AF)

Controller Features

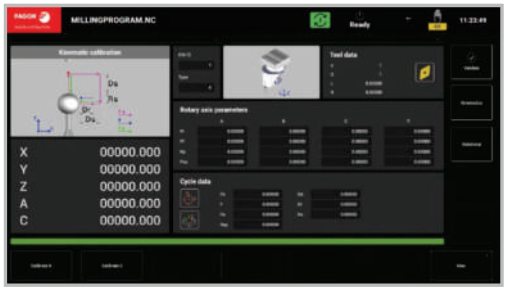
Automatic Kinematic Calibration

During the start-up of the machine or due to its continuous use or due to some incident, if recalibration is required, this controller can automatically do it.

HSSA (High Speed Surface Accuracy)

You can easily select the type of machining you want to obtain:

- *As fast as possible (roughing)*
- *As accurate as possible*
- *The best surface quality*



DMC (Dynamic Machining Control)

With this feature, the CNC automatically adapts the machining feed rate according to the tool force (load).

3+2 and 5-axis Machining

- *Library of kinematics. Work in inclined planes, 3+2, 4+1 and continuous 5-axis RTCP machining.*

Visual and Modern Navigation

Drop-down Menus

Customisation

Ergonomic Keyboard

Works with a Mouse

Built-in Calculator

Machine Specifications

			Simultaneous 5 Axes
Specifications	Units	UM 400 (5AF)	UM 400 (5AX)
X-axis	mm	700	700
Y-axis	mm	510	510
Z-axis	mm	600	600
A-axis	degree	+ 30 / -120	+ 30 / -120
C-axis	degree	360	360
Spindle Nose to Table Surface	mm	71-671	71-671
Table Size	mm	Rectangle 620 x 410, Table with 410 Dia Rotating Table	Rectangle 620 x 410, Table with 410 Dia Rotating Table
Maximum Loading Capacity	kg	200 / 150	200 / 150
Spindle Speed	rpm	10,000 (12,000)	12,000
Spindle Type	-	Belt Drive (Direct Drive)	Direct Drive
Motor Power	kW	11 / 15 / 18.5	11 / 15 / 18.5
Spindle Taper	-	BBT 40	BBT 40
Controller	-	Mitsubishi, Fanuc	Fagor
Rapid Traverse Rate	m/min	30	30
Cutting Feed Rate	m/min	10	10
Tool Nos. Capacity	Nos	30	30
Max. Tool Length	mm	250	250
Max. Tool Weight	kg	8	8
Tool Dia. (with Adjacent Tool)	mm	80	80
Tool Dia. (without Adjacent Tool)	mm	150	150
Tool Changing Time (Tool to Tool)	sec	2	2
Positioning Accuracy	mm	0.01	0.01
Positioning Repeatability	mm	+/- 0.003	+/- 0.003
Indexing Accuracy (Rotary/Tilting)	sec	15" / 20"	15" / 20"
Machine Weight	kg	7200	7200
Power Requirement	kVA	35	35

Standard Accessories (5AF)

- Mitsubishi M80 Controller
- Spindle Speed:10,000 rpm BBT-40 Belt Drive
- Builtin 4th & 5th Axis Trunnion Table
- ATC30 Tools
- Automatic Lubrication System
- Rollout Chip Tray
- Chip Flushing
- Ring Coolant
- Inbuilt Coolant System
- Coolant Gun & Air Gun

Standard Accessories (5AX)

- Fagor Controller
- Spindle Speed: 12,000 rpm BBT-40 Direct Drive
- Builtin 4th & 5th Axis Trunnion Table
- Linear Scales for all Axes
- ATC30 Tools
- Automatic Lubrication System
- Rollout Chip Tray
- Chip Flushing
- Ring Coolant
- Inbuilt Coolant System
- Coolant Gun & Air Gun

Optional Features

- Coolant through Spindle
- Slat Type Chip Conveyor & Bucket
- Air Conditioner for Electrical Cabinet
- Auto Power Off
- Linear Scales for all Axes

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

Industry 4.0 IOT Solution

All-in-One Digital Data Monitoring Solution for Manufacturing Industries

What is digiFAC?

The digiFAC is an IIoT (industrial IoT) platform that can integrate various signals from all kinds of controller-based machines, including CNCs, Injection Moulding Machines, and Press Machines, and analyze them automatically to generate accurate real-time reports. With the least human intervention, it collects the information directly from the machines and helps you get the maximum benefit from your assets and enhance productivity.

Why is digiFAC?

• Industry-Leading: Production efficiencies and agility. • Highly expert team members. • Phenomenal solutions to take your company to the next level. • User-friendly Interface; use features as per dedicated roles/users. • Transparent, quick, and real-time data availability that can help you make fast decisions • To improve OEE. • Increase your productivity by 20%. • ROI within 3-4 months. • To maintain your OTD. • To reduce lead time, setting time, and deliver on time.

How can the digiFAC improve OEE?

Overall Equipment Effectiveness (OEE) is a measure of machine performance that provides visibility to options for progress. OEE is used by manufacturers to specify, monitor, and then reduce production failures. Knowing the OEE value is important for one particular reason: it allows you to find out about your losses and identify the bottlenecks in your value stream. If you know exactly where you are wasting time on your assets and why this is happening, you can take the necessary actions to improve your overall performance.

10~25%

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

digiFAC | dF+

An OEE increase is achievable by digitizing production & planning, asset monitoring (cycle-times), reducing losses (program transfer, downtimes, breakdowns), etc.

Digifac Software 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 Underride Report

- *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.*

SMARTCONNECT

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

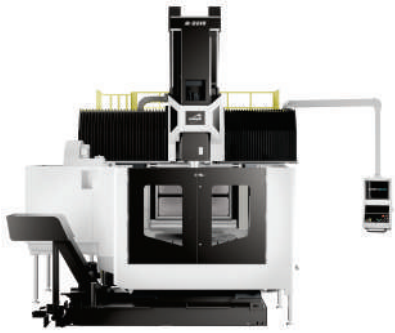
- *Automate data collection and reporting.*
- *Imagine and display real-time OEE on the shop floor.*
- *Execute cross-functional daily reviews and conversation sessions.*
- *Use Root-Cause Analysis.*

Other Product Range

SURFGRING SERIES

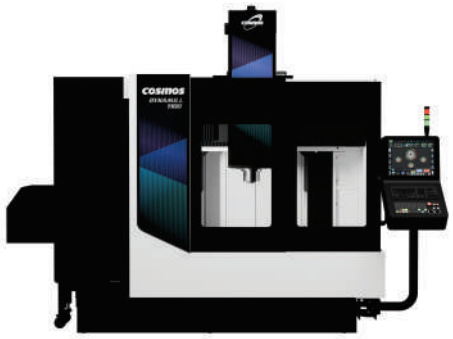
Surface Grinding Machines

MEGAMILL SERIES



Double Column Machining Center

DYNAMILL SERIES



Monoblock Machining Center

SMARTMILL & TAPMILL SERIES

High Speed Milling & Taping Center

AUTOMILL SERIES

Auto Tending Machining Center

V-TURN SERIES

Vertical Turning Lathe

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Plant - II

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**__Kindly Note__: These products are under revision for specifications upgrades. Request to kindly visit cosmos.in to get all the latest information about our complete product range.*