

# V-TURN Series

Vertical Turning Lathe



YCL 600 | YCL 700 | YCL 850 | YCL 1000

# Shaping The Future By Shaping Metal

Cosmos is a CNC machine tool manufacturer established in 1987, focused on developing practical machining solutions for production environments. The company began with the supply of advanced vertical machining centres and later expanded into the **manufacturing of surface grinding machines, drill tap centres, vertical machining centres, vertical lathes, and other CNC solutions.**

Today, Cosmos provides machining solutions ranging from entry-level production machines to advanced technology platforms. Machine development focuses on rigidity, accuracy, and long-term stability to support consistent performance in production environments.

With manufacturing rooted in India's industrial strength and aligned with global standards, Cosmos focuses on delivering machining solutions that support long-term customer relationships. As India's manufacturing sector continues to expand, Cosmos remains focused on enabling reliable and efficient machining through practical engineering and consistent manufacturing practices. This approach is guided by the company's core values of

**Integrity, Respect for Individuals, Dynamic Thinking, Creativity & Innovation, and Social Responsibility.**

## Cosmos Manufacturing Unit 1

### Comprehensive Machining, Fabrication & Assembly Hub

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

**Manufacturing Footprint**  
~15 acres

**Workforce**  
~1200  
Skilled Professionals



## Cosmos Manufacturing Unit 2

### Heavy Machinery Manufacturing & Final Integration

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

**Manufacturing Footprint**  
~2.5 acres

**Upcoming Manufacturing Facility**  
~25 acres

**Workforce**  
~250 Skilled Professionals



Casting



Machining



Fabrication



Powder Coating



Machine Assembly



Sheet Metal Assembly



Electrical & Controller Assembly



Final Quality Assurance & Dispatch



# YCL 600 / 700 / 850 / 1000



Backed by over 40 years, this collaboration aims to bring International technology to the Indian market by merging YOU JI expertise with Cosmos's local presence.

The YCL series features robustly designed structure. The transmission includes rigid roller guideways and C3 class precision ball screws. The extremely rigid Hydraulic Turrets provide ultimate stability to ensure heavy cutting and obtain best surface finish.

These machines deliver reliability and exceptional performance.



## Components on YCL



Hub



Motor Housing



Motor Base



Housing



Fly Wheel



Elevator Part



Pump



Brake Drum (Truck)



Press Plate



Brake Disc



Brake Drum



Stub Axle



Aluminum Wheel



Valve

# Key Features



## Base

YCL base is specially designed to withstand heavy loads and absorb vibrations during severe machining conditions.

Robust mono-block base made of cast iron.

For efficient chip disposal of high volume of chips the base is designed with steep slope and high capacity flushing system.

## Precision Spindle

YCL series spindles are built to provide unsurpassed performance in turning tough steels as well as difficult materials like Titanium, Inconel and Nickel-base and superalloys and other challenging material. Incorporated with rigid cylindrical roller bearings and angular contact ball bearings which are used to withstand higher radial and axial loads during machining, precision and performance are assured.



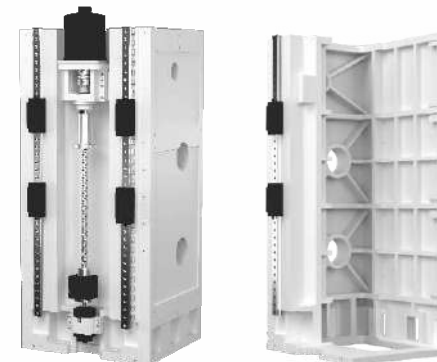
## Strong Saddle

Robust Saddle design ensures high cutting performance and rigid mounting for the heavy duty hydraulic turret. This ensures high durability and accuracy.

## Column

The column is heavily ribbed to provide a balanced strong structure for heavier cutting.

Roller Guideway along with the integrated motor mounting bracket design on saddle provides vibration free performance and ensures high precision with long life.



# Key Features

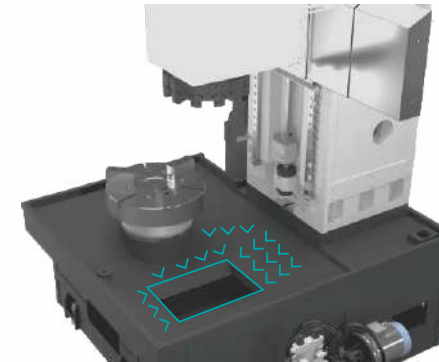


## Turret

- 8/12 Station Bi Direction hydraulic turret.
- Clamping, unclamping, and rotational movement operated by hydraulics.
- Tool disc is symmetrical with turret body, mostly suitable for VTL.

## Effective Chip Evacuation

- The hollow-center layout and coolant-flush system facilitate natural chip flow by gravity, delivering optimized and clean chip evacuation from the machine's rear.



## User-Centric Design

- The full enclosure (without the top cover) keeps the workspace safe and clean. The optional top cover can be added for CE compliance or specific machining needs.
- The swivel operation panel allows easy operation from any angle.
- The wide door makes loading and unloading workpieces easier, and the large windows provide excellent visibility.

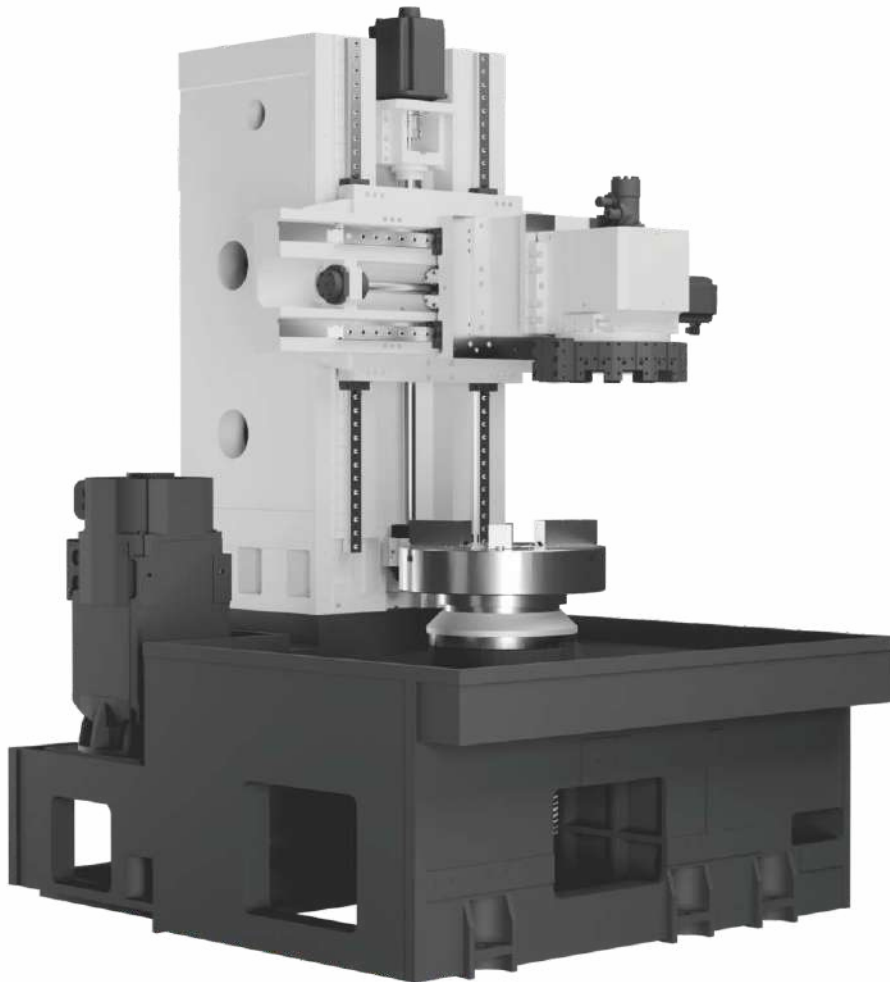
## Customized Automation Solution

- We offer customized automation solutions for production industries to help make manufacturing smoother, faster, and more reliable.
- Our systems are designed to reduce manual work, improve efficiency, and ensure a steady production flow.



# Design Features

- Vertical Lathe is designed for heavy duty turning.
- The combination of robust structure and roller LM Guideways ensures the highest level of rigidity and stability for highly accurate turning.
- Hydraulic Turret with powerful spindle motor allows great cutting performance.



Superior Rigidity



Superior Efficiency



Superior Accuracy



Superior Performance

	YCL 600	YCL 700	YCL 850	YCL 1000
Chuck Size : std (opt)	15" (18")	18" (21")	21" (24")	24" (32")
Spindle	A2-8	A2-11	A2-11	A2-11
Spindle Motor - Fanuc/Mitsubishi	18.5/22 kW	18.5/22 kW	18.5/22 kW	18.5/22 kW
Spindle Motor - Siemens	16/28 kW	16/28 kW	16/28 kW	16/28 kW
Max. Spindle Speed*	2500 rpm	2500 rpm	2500 rpm	2000 rpm
Max. Weight capacity of spindle (with chuck)	500 kgs	1000 kgs	1000 kgs	1200 kgs

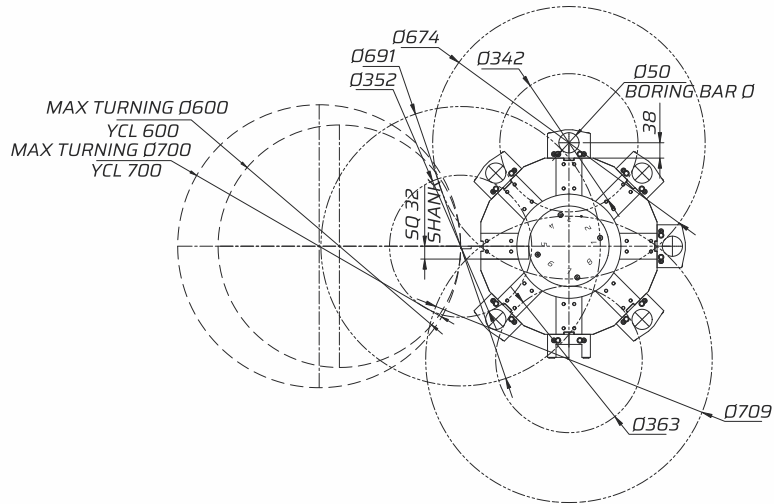
\*Spindle maximum rpm will be limited in operation based on chuck selection.

# Turret Interference Diagrams

Refer standard | optional

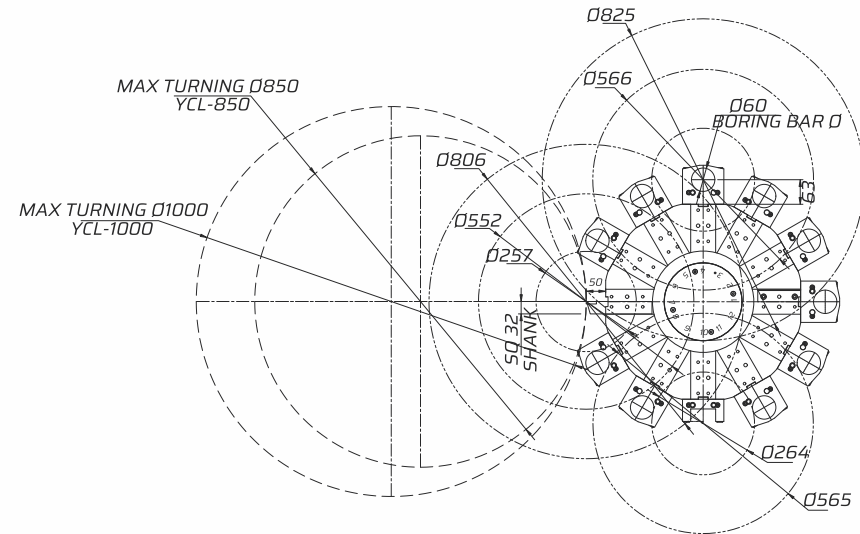
**YCL - 600 / YCL - 700**

8 Station (Standard) Turret



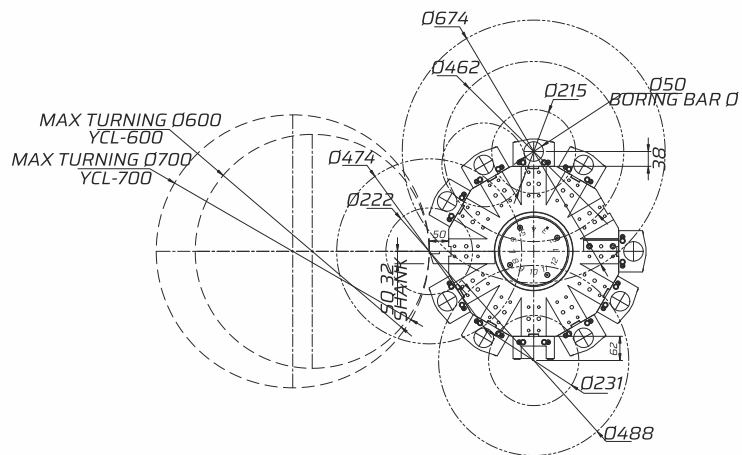
**YCL - 850 / YCL - 1000**

12 Station (Standard) Turret



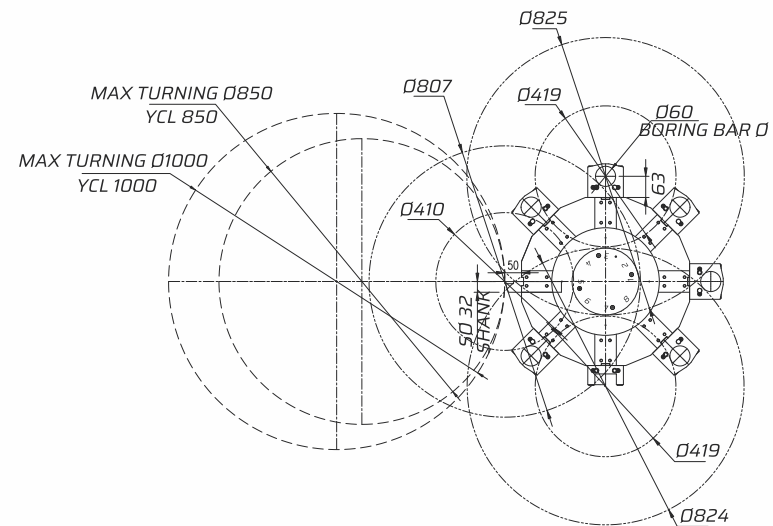
**YCL - 600 / YCL - 700**

12 Station (Optional) Turret



**YCL - 850 / YCL - 1000**

8 Station (Optional) Turret



**\*Kindly Note:** The interference diagram is subject to change as part of continuous upgrades. If this aspect is critical for the component then please discuss it with the Cosmos application team at the time of order finalization.

# Machine Specifications

Specifications	Units	YCL 600	YCL 700	YCL 850	YCL 1000
<b>Capacity</b>					
Max. Swing Diameter	mm	650	800	1000	1200
Swing Over Saddle	mm	500	600	750	850
Max. Turning diameter	mm	Ø 600 / L 120	Ø 700 / L 120	Ø 850 / L 120	Ø 1000 / L 120
Max. Turning Height	mm	500	700	800	800
Chuck Size Std. (Opt)	inch	15" (18")	18" (21")	21"(24")	24" (32")
<b>Traverse</b>					
X-Axis	mm	-10/+305	-10/+355	-35/+430	-35/+530
Z-Axis	mm	500	700	820	820
<b>Main Spindle</b>					
Max. Spindle Speed*	rpm	2500	2500	2500	2000
Spindle Nose Taper		A2-8	A2-11	A2-11	A2-11
Max. weight capacity of Spindle (with chuck)	kg	500	1000	1000	1200
<b>Turret</b>					
Type	-	Hydraulic	Hydraulic	Hydraulic	Hydraulic
No. of Stations STD. (OPT.)	-	8 (12)	8 (12)	12 (8)	12 (8)
OD Tool Size	mm	32	32	32	32
Boring Bar Diameter	mm	50	50	60	60
<b>Axis Drive</b>					
Rapid Traverse X - Axis	m/min	12	12	20	20
Rapid Traverse Z - Axis	m/min	24	24	20	20
<b>Accuracy (ISO-13041-2)</b>					
Positioning Accuracy Full Stroke	mm	0.010	0.010	0.010	0.010
Positioning Repeatability	mm	0.006	0.006	0.006	0.006
<b>Motor</b>					
Spindle Motor - Fanuc/Mitsubishi	kW	18.5 / 22	18.5 / 22	18.5 / 22	18.5 / 22
Spindle Power - Siemens without GB	kW	16 / 28	16 / 28	16 / 28	16 / 28
Spindle Power - Siemens with GB	kW	-	-	13 / 19	13 / 19
<b>Coolant</b>					
Cutting Coolant Pump		30 LPM@5 Bar	30 LPM@5 Bar	30 LPM@5 Bar	30 LPM@5 Bar
Base Flush Pump		120 LPM@1 Bar	120 LPM@1 Bar	120 LPM@1 Bar	120 LPM@1 Bar
<b>Others</b>					
Machine Weight	kgs	6000	7000	9500	10500
Power Supply	kVA	40	40	40	40

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

\*Spindle maximum rpm will be limited in operation based on chuck selection.

## Standard Features

- " CNC System with 10.4" colour Monitor Fanuc OiMF /Mitsubishi M80V LA/ Siemens 828D "
- Heavy-duty Roller LM Guide-ways on X & Z axes
- Precision Ballscrews directly coupled with Axes Motors
- 8/12 Station Bi-directional Hydraulic Turret
- 3 Jaw Hydraulic Chuck with 1 set Hard & Soft Jaw (metric serration)
- HI-LOW (Dual) Pressure Clamping
- Hydraulic Powerpack
- Stepdown Transformer for Fanuc/Mitsubishi
- Std Coolant system for cutting and bed flushing
- Chip Conveyor with Chip Bin
- Coolant Gun & Air Gun
- Oil Skimmer
- A. C. Unit for electrical cabinet: panel mounted type
- Automatic Centralized Oil Lubrication System
- Portable MPG
- LED Work Lamp & 3-tier Lamp
- 4 nos. of Boring Holders & 1 Facing Holders (32x32)
- Fully Enclosed M/C Guard top open
- Tool Kit
- Levelling Pad
- PCMCIA card or equivalent

## Optional Features

- 2 Speed Gear Box (YCL 850 & 1000)
- Auto Door Pneumatic
- Industry 4.0 Features ( Cosmos Digifac )
- Voltage stabilizer
- Additional boring tool holder with Through coolant facility
- Additional Axial tool holder
- High pressure cutting coolant
- Extra set of boring bar sleeves
- Extra set of Taper Shank Sleeves
- 30/37kw Spindle Power for 850/1000
- 22/30kw spindle power for 600/700
- Customized Automation Solution
- Linear Scale for X Axis | Z Axis or Both
- Contact Sales Team for More accessories
- Chuck upgrade to next size / 4 jaws / 6 jaws
- Proximity for chuck clamp detection

# Controller Features

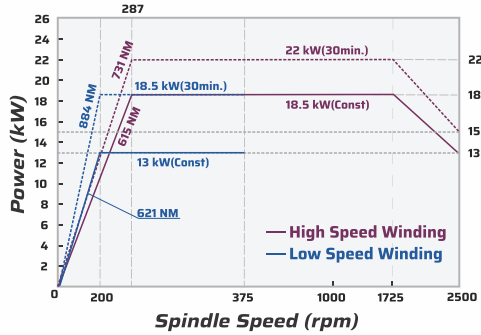
CNC Features	Fanuc Oi-TF Plus	Mitsubishi-M80V LA	828D Basic T (Option)
Display & Keyboard	10.4" Colour LCD	10.4" colour LCD touch	10.4" Colour TFT with full QWERTY
Max feed axes	3	3	3
Simultaneously controllable axes	3	3	3
Minimum input increment	0.001 mm	0.001 mm	0.001 mm
Spindle speed function	4-Digit S Code	4-Digit S Code	4-Digit S Code
Spindle speed override	50% ~ 120% (In steps of 10%)	50% ~ 120% (In steps of 10%)	50% ~ 120% (In steps of 10%)
Feed rate command	4-Digit F Code	4-Digit F Code	4-Digit F Code
Inch/ mm conversion	Yes	Yes	Yes
Part program storage length	2 MB	2.5 MB	3 MB
Number of Part Programs	1000	1000	750
Sub Program call	10 Levels	10 Levels	11 Levels
Number of tool offsets	128	256	256
Program number / Sequence number search	Yes	Yes	Search with TEXT is STD, with line, block number, interrupt etc is option
Single block	Yes	Yes	Yes
Optional stop	Yes	Yes	Yes
Dry run	Yes	Yes	Yes
PCMCIA memory CARD	Yes	Yes with SD Card	Yes with CF Card
DNC operations	Yes with PCMCIA Card	Yes with SD Card	Yes with CF Card
Run hour & part count	Yes	Yes	Yes
Online Help function	Yes	Yes	Yes
Graphic display	Yes	Yes	Yes
Embedded Ethernet	Yes	Yes	Yes for diagnosis and service (Option for part program execution/ DNC)
Front USB Interface	Yes	Yes	Yes
Fast Ethernet/ Data Server	Option	Yes	Option
Remote diagnosis	Yes	Yes	Yes (Option)
High speed skip (Probe function)	Yes	Yes	Yes
Animated Cycle support	Option with Manual Guide Oi	Yes with ISO	Yes with ISO Program guide
Manual Guide i	Option	with NAVI LATHE	Shopturn is Option
3D Simulation & Real time simulation	Option (Dynamic Graphics)	Yes	Option
Machine Maintenance planner	Yes (Periodic maintenance)	Yes (Custom Screen)	Yes
2D Simulation	Yes	Yes	Yes
Tool Life Management	Option	NA	Option
Operation History function	Yes	Yes	Alarm History
8 level data protection with password	Yes (4 level standard 8 level option)	Yes 8 level standard	Yes (Lower 4 level by PLC, Upper 3 by password)
Max no of tools cutting edges	128	400	128 / 256
Eccentric turning	Option	Yes	-
Chip braking	Option	Yes	Option
Chatter suppression	Yes	Yes	Option

CNC Functions	
Linear Interpolation	Yes
Circular Interpolation	Yes
Cylindrical Interpolation	Yes
Absolute / Incremental Programing	Yes
Canned Cycle	Yes
Work piece co-ordinate system	Yes
Background editing	Yes
Backlash compensation (Uni Directional)	Yes
Polar co-ordinate	Yes
Rigid Tapping	Yes
Rigid Tapping Retraction	Yes
Program no search	Yes
Sequence no search	Yes
Program Restart / Block Search	Yes

# Torque Power Diagrams

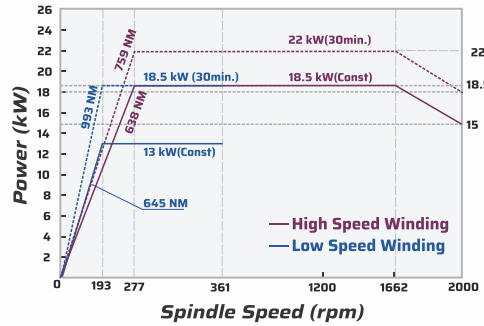
Refer standard | optional

## YCL 600 | YCL 700



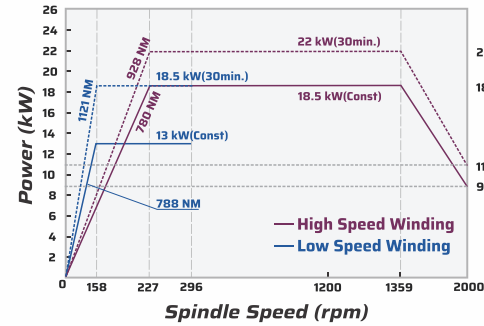
(Mitsubishi Vk22 | Fanuc Alpha P40 with belt drive ratio: 2)

## YCL 850



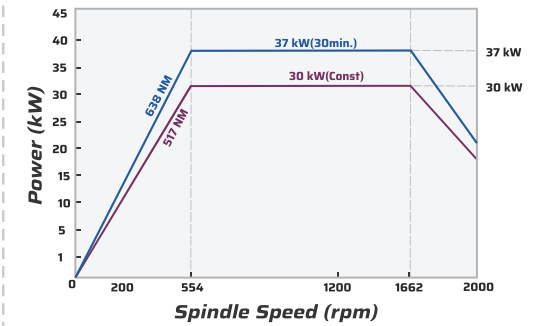
(Mitsubishi Vk22 | Fanuc Alpha P40 with belt drive ratio: 2.076)

## YCL 1000



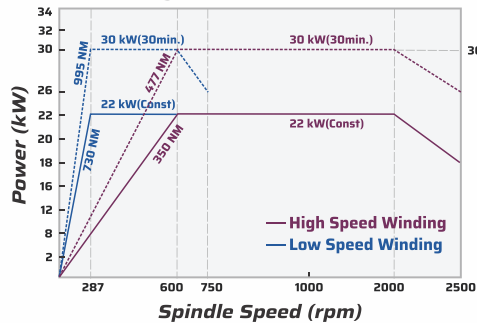
(Mitsubishi Vk22 | Fanuc Alpha P40 with belt drive ratio: 2.538)

## YCL 850 With high power motor 30/37kW

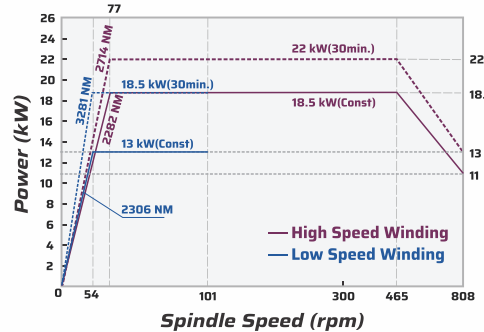


Mitsubishi With Pulley Ratio: 2.076

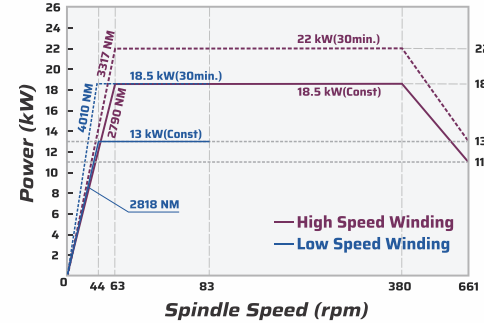
## With High Power Motor 22/30 Kw



Mitsubishi with Pulley ratio: 2

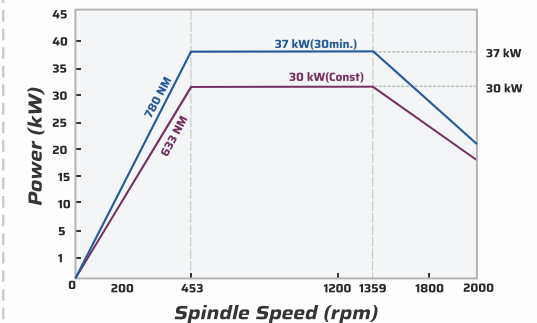


(Mitsubishi Vk22 | Fanuc Alpha P40 with gear box drive ratio: 7.425)



(Mitsubishi Vk22 | Fanuc Alpha P40 with gear box drive ratio: 9.075)

## YCL 1000 With high power motor



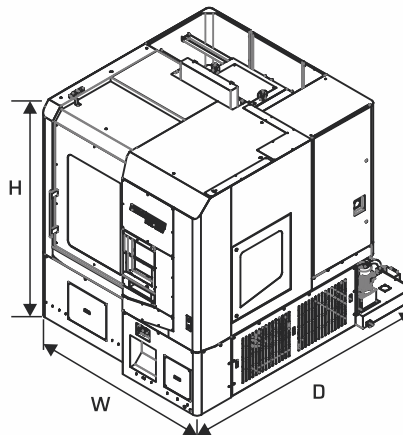
Mitsubishi With Pulley Ratio: 2.538

## Machine Layout

Model	YCL 600	YCL 700	YCL 850	YCL 1000
Width (W)	2030	2030	2700	2700
Depth (D)	4250	4250	4900	4900
Height (H)	2800	2800	3180	3200

\*Dimension with coolant tank & chip tray

\*All Dimension are in mm



# Other Product Range

**digifac**

**SMARTCONNECT+**

**CVM SERIES**



*High Performance Machining Centres*

**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*

**GRINDING SERIES**



*Precision Surface Grinding Machines*

*\*Kindly Note: Product development is a continuous process. Please visit [www.cosmos.in](http://www.cosmos.in) to get our latest product range.*



**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

📞 63582 47046 ✉ india@cosmos.in 🌐 cosmos.in 📱 📧 📺



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