

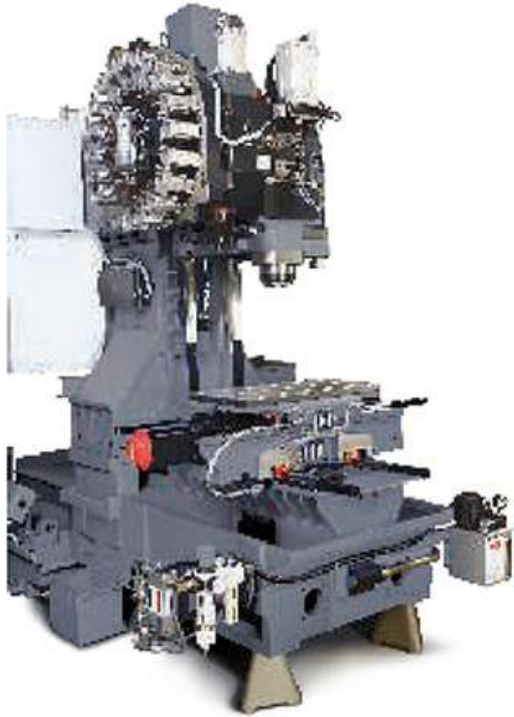
# HIGH PRODUCTIVITY

## Vertical Machining Centers



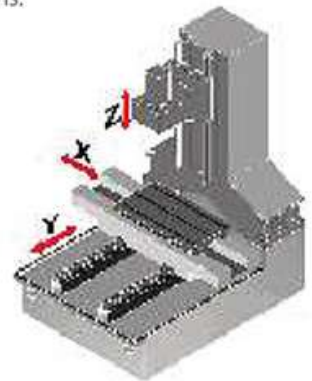
Super Winner  
MCV-400

# Vertical Machining Centers



MCV-400 & Super winner series are compact and rigid machines suitable for Automotive, general engineering, die Mould, Aerospace & energy sector. The machine models have continuously evolved to suit customer needs making AMS the most preferred vertical machining center manufacturer in the country. The Super winner & MCV-400 are the work-horses which provide high value for investment in-terms of the cost per component. Rich engineering experience at AMS has facilitated the development of machines with the most suitable parts for machining process. All machines have structural components made of cast iron which are machined to provide and retain high built in accuracies. The machines are designed, manufactured, assembled and tested to perform under very demanding working conditions.

## Axes Configuration



## High Speed Spindles

Spindles are considered as a heart of the machining center. AMS follows a stringent procedure in assembling and mounting the spindle on to the machine. Tool shank BT-40 is standard & HSK A63 is optional for MCV-400. These spindles are checked for run-out and vibrations before the machining test



BT-40

## Ease of Operation

In the design of our machines, in addition to the functional aspects, ergonomics are given equal priority. Optimum job loading height, easy access to the spindle, ease of chip removal, maintenance friendliness, are some of the key aspects considered. We also provide Total Productive Maintenance (TPM) features on the machines as options. It is our continuous endeavor to improve the existing products to cater to the needs and expectations of the customer.

## Quality & Inspection



The machine geometric accuracies are fully inspected to assure the highest accuracy standards. The high precision laser unit is applied for inspecting positioning accuracy & repeatability & ball bar tester to inspect the geometric error & ensures superior circular accuracy through parameter adjustment.



## Cutting inspection

Heavy cut & NAS test before shipment, each AMS machine is subject to cutting tests which are combined with proper parameter adjustments to guarantee the best possible cutting quality.



## Automatic tool changer



20 tool ATC is standard, 24 / 30 tool ATC is Optional

## Rotary table

NIKKEN



UCAM



Rotary table mainly increases productivity & reduces setups. AMS recommends UCAM URH 201 / 251 / 321 model or NIKKEN 180 LFA / 260 FA / 320 FA. Model for Super Winner & MCV-400. Fully synchronized 4th & 5th axis configurations are available on Super Winner & MCV-400 models.

## Coolant system



Std. Coolant tank



Grundfos or Wanner Pump

Through coolant increases tool life, allows higher cutting speeds, and clears chips during deep hole drilling. Two systems are available.

1. CTS with Grundfos Pump (21 bar pressure)
2. CTS with Wanner Pump (50 bar pressure).

Coolant Tank:

Large capacity chip tray, reliable & trouble free, convenient & easy to maintain

## Accuracy

	VDI DGQ 3441	ISO 230-2
Positioning	0.015 mm	0.010 mm
Repeatability	± 0.005 mm	± 0.003 mm

## Automatic pallet changer

The automatic pallet changer system on the machine reduces unproductive time during machining. Machining can be carried out on one pallet, while the other can be used for preparation (seating and clamping of work-pieces etc.).

Two options available 1. Linear pallet changer 2. Rotary pallet changer

Linear APC	Super Winner	MCV-400
Pallet size (mm)	600 x 385	650 x 430
Max. load on pallet (Kgf.)	300	300
Pallet changing time (Sec.)	18	18
Machine (width x depth)	2700 x 2900	3300 x 3300



Rotary APC

Rotary APC	Super Winner	MCV-400
Pallet size (mm)	600 x 400	700 x 450
Max. load on pallet (Kgf.)	300	300
Pallet changing time (Sec.)	12	12
Machine (width x depth)	2700 x 4200	2700 x 4200

## Chip Conveyor



Removing chips is very important in terms of productivity & environmental protection. AMS provides various chip handling systems for better work environment. Coil conveyor & screw conveyor also offered for cast iron and steel applications.

	Al Chips	Cast Iron Chips	Steel (Short Chips)
Scraper	✓	✓	
Slat cum scraper	✓	✓	✓
Magnetic		✓	✓

## Tool Management



Work & Tool offset



Touch probe



Tool setter



Tool breakage detection

## CNC Control System

Operator friendly control system with 8.4" Colour LCD

FANUC 0iMATE MD is standard for MCV-450 & Acer

FANUC 0iMD/Siemens 828D is optional

Mitsubishi M70 AVU / BVU can be offered



FANUC 0iMATE MD/  
0iMD



Siemens 828D



Mitsubishi M70AVU /  
M70 BVU

## Tooled up Solutions

The application engineering team of AMS has wide experience in identifying the process for machining and providing suitable work holding and tooling solutions. This ranges across the markets from high speed & productivity solutions for the automotive industry to the high precision and accuracy solutions for the aerospace or mould making industry. This not only includes support in selection of the most suitable machines but also designing the fixtures and identification of the ideal cutting tool for the selected process. The entire prove out of the components to meet the desired cycle time can be undertaken when solutions are opted for.

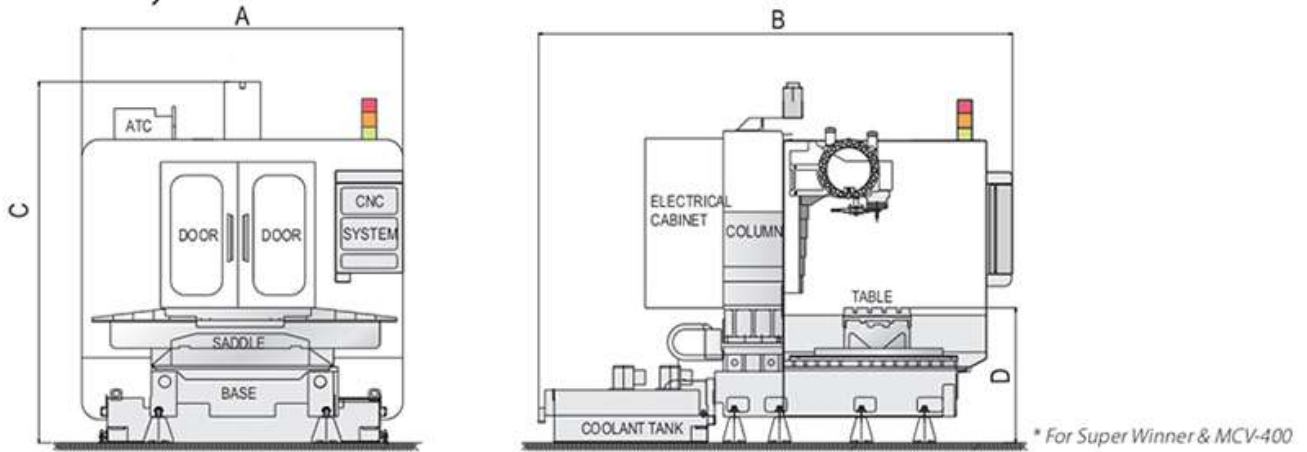


## Automation Solutions

It is a constant endeavor to provide better productivity on our products. Our machines are made suitable for automation interface of different types. With the experience of providing machining solutions AMS is capable of augmenting the manufacturing process with integration of automation solutions. Either semi-automated with auto-unloading or fully automated with unmanned operations there are myriad of options to choose from suiting the machining process and layout. Our automation solutions provide enhanced productivity, output consistency and minimized dependency on man power.



## Machine Layout

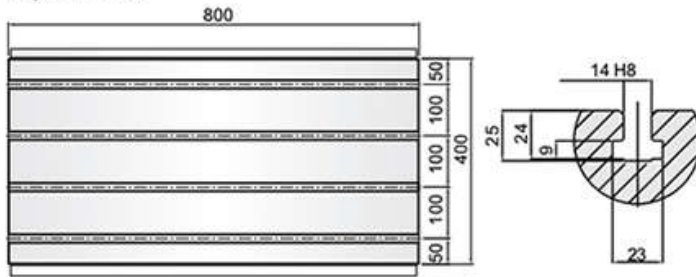


	A (Width)	B (Depth)	C (Height)	D
Super Winner	1900	3000	2550	960
MCV-400	1900	3100	2550	925

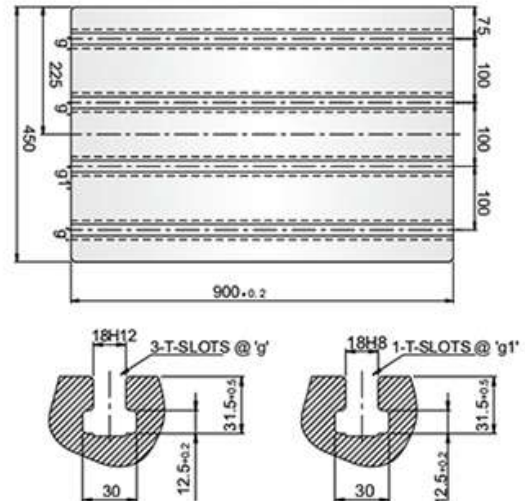
\* All dimensions in mm

## Table Details

### Super Winner



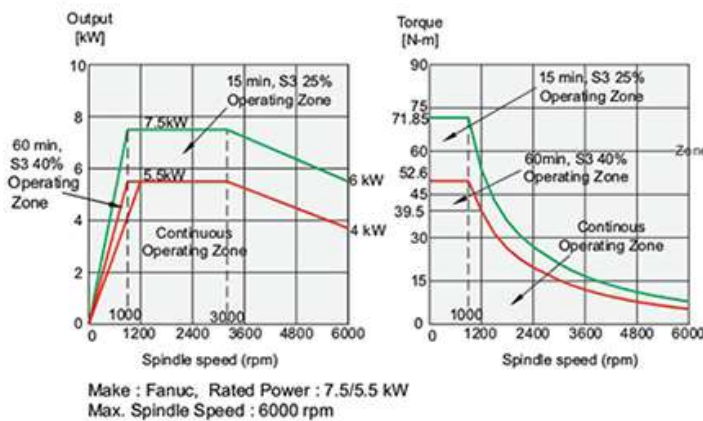
### MCV-400



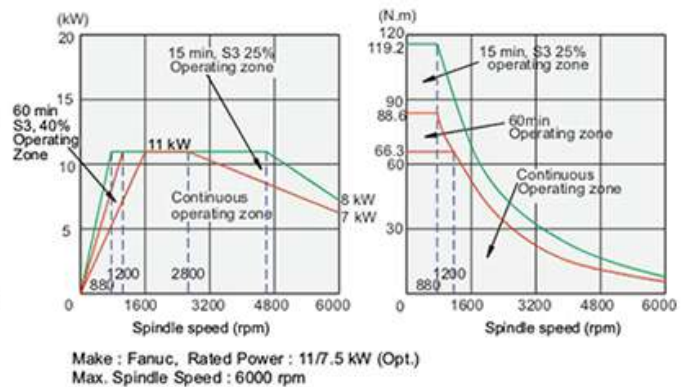
Model	Clamping Area		T-Slots		
	A	B	S	N	Pitch
Super Winner	800	400	14	4	100
MCV-400	900	450	18	4	100

## Spindle Power Torque Diagram

### Super Winner & MCV-400



### MCV-400 (Opt.)



## Components



Cater to Automotive, General engineering, Die mold, Aerospace & Energy sector

## Specifications

	Unit	Super Winner	MCV-400
<b>CAPACITY</b>			
Table longitudinal travel ( X - Axis)	mm	500	600
Table cross travel ( Y - Axis)	mm	400	450
Headstock travel ( Z - Axis)	mm	500	500
Spindle nose face to table top	mm	190 - 690	175 - 675
Table height from floor	mm	960	925
<b>TABLE</b>			
Table size	mm x mm	800 x 400	900 x 450
T - slot ( No. x size x pitch)		4 x 14 x 100	4 x 18 x 100
Max. load on table Standard / Option	kgf	400	400
<b>SPINDLE &amp; AXES</b>			
Spindle taper		7 / 24 No.40	7 / 24 No.40
Spindle speed - Std.	rpm	60 - 6000	60 - 6000
Spindle speed - Opt. 1	rpm	80 - 8000	80 - 8000
Spindle speed - Opt. 2	rpm	100 - 10000	100 - 10000
Spindle power - Std.	kW	7.5/5.5	7.5/5.5
Spindle power - Opt.	kW	11/7.5	11/7.5
Rapid traverse - X / Y / Z	m / min	40 / 40 / 40	30 / 30 / 30
Feed rate	mm / min	1 - 10000	1 - 10000
Guideways Type		LM	LM
<b>AUTOMATIC TOOL CHANGER</b>			
Tool change system		Twin Arm	Twin Arm
Tool storage capacity - Std. / Opt.	Nos.	20 / 24 / (30)	20 / 24 / (30)
Pull stud		DIN 69872 / MAS - 403	DIN 69872 / MAS - 403
Max. tool dia with all pockets full	mm	80 / (75)	80 / (75)
Max. tool dia with adjacent pockets empty	mm	155 / (125)	155 / (125)
Max. tool length	mm	250	250
Max. tool weight	kgf	8	8
Chip to chip time**	sec.	4.5	4.8
Tool shank type		BT - 40	BT - 40
<b>CNC System Std-FANUC</b>			
Opt.- Siemens		0iMate MD / 0iMD	0iMate MD / 0iMD
Opt.- Mitsubishi		828D	828D
Opt.- Mitsubishi		M70 AVU / BVU	M70 AVU / BVU
Basic machine weight	kgf	4700	5100
Power supply (Basic Machine)	kVA	15	15

\*\* Valid for Standard machine \*All specifications are subject to change without prior notice

## Standard Features

- Rigid tapping
- Tool shank: BT-40
- Spindle power: 7.5 / 5.5 kW
- Three tier indication lamp
- Work light
- Full guarding
- Coolant tank & Chip tray
- Laser calibration & ball bar test
- 20 tool side mounted ATC
- Panel cooler for electrical cabinet

## Optional Features

- Increased day light area
- Tool shank: HSK A63 (MCV-400) / BBT-40
- Wider guarding
- Through spindle coolant system
- Flood coolant, chip flushing & Coolant gun
- Chip conveyor
- Higher spindle speed & Spindle power - 11/7.5 kW
- Automatic pallet changer-Linear/Rotary
- 24 / 30 tool ATC
- Front Auto door
- CNC Rotary table / Index table
- TPM Friendly machine
- Tooling up solutions & Automation

## Operator Friendly Features (Optional)

- AMS - Tool load monitoring system
- AMS - Intelligent controller Interface environment
- AMS - Machine intelligent monitor
- AMS - On screen user assistance
- AMS - Thermal error compensation
- AMS - Power backup system
- Programming assistance
- On screen energy meter (Std.)
- Remote diagnosis

## AMS<sup>®</sup> ACE MANUFACTURING SYSTEMS LTD.

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