

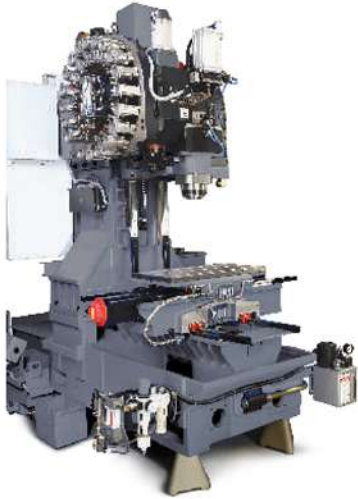
HIGH PRODUCTIVITY

Vertical Machining Centers



MCV-450
ACER
ACER-50

Vertical Machining Centers



Our tradition of listening closely to the demands of customers has led to the development of a wide range of vertical machining centers. The machine models have continuously evolved to suit customer needs making AMS the most preferred vertical machining center manufacturer in the country. The MCV-450 & Acer 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



BT-40/BT-50

High Speed Spindles

MCV-450 & Acer is equipped with a high rigid, high speed spindle. Designed for a wide range of applications. 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. These machines can be equipped with either BT-40 or HSK A63. These spindles are checked for run-out and vibrations before the machining test

HSK A63 Spindle

HSK shanks were developed to address performance problems associated with the traditional interfaces, particularly in high speed machining applications. The HSK tooling systems offer advantages in terms of accuracy, repeatability, weight and fast tool changing cycles.

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 for MCV-450 & ACER

Rotary table

NIKKEN



UCAM



Rotary table mainly increases productivity & reduces setups. AMS recommends UCAM URH 251 / 321 model or NIKKEN 260 FA / 320 FA. Model for MCV-450 & Acer. Fully synchronized 4th & 5th axis configurations are available on MCV-450 & Acer 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	MCV-450	Acer/Acer-50
Pallet size (mm)	800 x 435	800 x 485
Max. load on pallet (Kgf.)	350/500	400
Pallet changing time (Sec.)	17	20
Machine (width x depth)	3300 x 3600	3300 x 3700



Rotary APC

Rotary APC	MCV-450	Acer/Acer-50
Pallet size (mm)	800 x 450	800 x 500
Max. load on pallet (Kgf.)	350	350
Pallet changing time (Sec.)	10	10
Machine (width x depth)	3000 x 4300	3000 x 4400

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 Options

Operator friendly control system with 8.4" Colour LCD

FANUC 0iMF is standard for MCV-450 & Acer/Acer-50

Siemens 828D is optional

Mitsubishi M80AVJ / M80BVU can also be offered



FANUC 0iMF



Siemens 828D



Mitsubishi M80AVJ/
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.

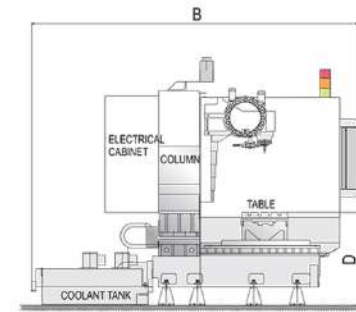
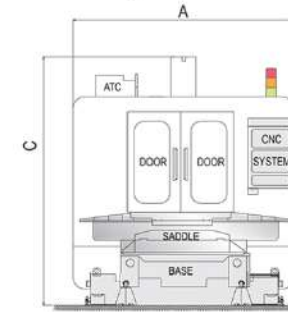


Automation Solutions

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



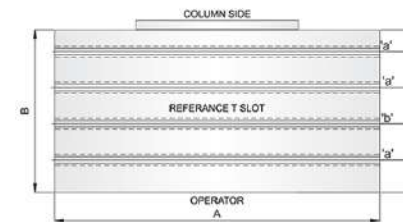
* For MCV-450, Acer

	A (Width)	B (Depth)	C (Height)	D
MCV-450	2200	3100	2550	925
Acer	2200	3200	2650	925
Acer-50	2400	3300	2750	940

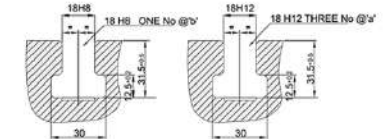
* All dimensions in mm

Table Details

MCV-450 & Acer/Acer-50

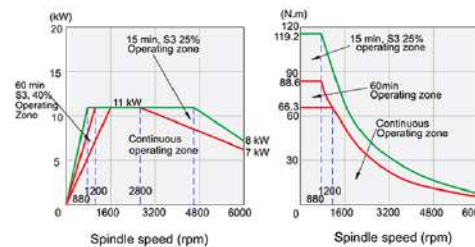


Model	Clamping Area		T-Slots		
	A	B	S	N	Pitch
MCV-450	1000	450	18	4	100
Acer/Acer-50	1000	510	18	5	100

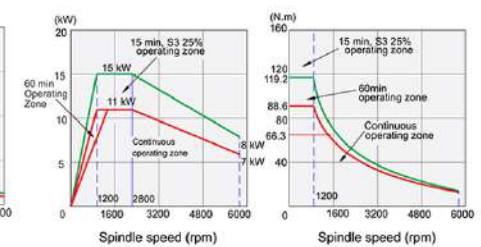


Spindle Power Torque Diagram

MCV-450 & Acer



Make : Fanuc, Rated Power : 11/7.5 kW (Std.)
Max. Spindle Speed : 6000 rpm



Make : Fanuc, Rated Power : 15/11 kW (Opt.)
Max. Spindle Speed : 6000 rpm

Components



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

Specifications

	Unit	MCV - 450	ACER	ACER-50
CAPACITY				
Table longitudinal travel (X - Axis)	mm	800	800	800
Table cross travel (Y - Axis)	mm	450	510	510
Headstock travel (Z - Axis)	mm	500	500	500
Spindle nose face to table top	mm	175 - 675	175 - 675	160 - 660
Table height from floor	mm	925	925	940
TABLE				
Table size	mm x mm	1000 x 450	1000 x 510	1000 x 510
T - slot (No. x size x pitch)		4 x 18 x 100	5 x 18 x 100	5 x 18 x 100
Max. load on table Standard / Option	kgf	400 / 700	500	500
SPINDLE & AXES				
Spindle taper		7 / 24 No.40	7 / 24 No.40	7 / 24 No.50
Spindle speed - Std.	rpm	60 - 6000	60 - 6000	40 - 4000
Spindle speed - Opt. 1	rpm	80 - 8000	80 - 8000	50 - 5000
Spindle power - Std.	kW	11 / 7.5	11 / 7.5	11 / 7.5
Spindle power - Opt.	kW	15 / 11	15 / 11	15 / 11
Rapid traverse - X / Y / Z	m / min	30 / 30 / 30	40 / 40 / 32	40 / 40 / 24
Option with higher axes motor	m / min	24 / 24 / 24		
Feed rate	mm / min	1 - 10000	1 - 10000	1 - 10000
Guideways Type		LM	LM	LM
AUTOMATIC TOOL CHANGER				
Tool change system		Twin Arm	Twin Arm	Twin Arm
Tool storage capacity - Std. / Opt.	Nos.	20 / 24 / (30)	20 / 24 / (30)	20
Pull stud		DIN 69872 / MAS - 403	DIN 69872 / MAS - 403	DIN 69872
Max. tool dia with all pockets full	mm	80 / (75)	80 / (75)	125
Max. tool dia with adjacent pockets empty	mm	155 / (125)	155 / (125)	250
Max. tool length	mm	250	250	350
Max. tool weight	kgf	8	8	20
Chip to chip time**	sec.	4,8	5	8
Tool shank type - Std. / Opt.		BT - 40 / HSK A63	BT - 40 / HSK A63	BT - 50
CNC System Std-FANUC				
		0iMF	0iMF	0iMF
Opt. - Siemens		828D	828D	-
Opt. - Mitsubishi		M80AVU / M80BVU	M80AVU / M80BVU	-
Basic machine weight	kgf	5300	6000	6750
Power supply (Basic Machine)	kVA	25	25	25

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

Standard Features

- Rigid tapping
- Tool shank: BT-40 for MCV-450 & ACER
BT-50 for ACER-50
- Spindle power: 11 / 7.5 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 / BBT-40
for MCV-450 & ACER
- Wider guarding
- Through spindle coolant system
- Flood coolant, chip flushing & Coolant gun
- Chip conveyor
- Higher spindle speed & Spindle power
- Automatic pallet changer
- 24 / 30 / 40 tool ATC for MCV-450 & ACER
30 tool ATC for ACER-50
- 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
- AMS - Custom screen development (Basic / Advanced)
- Programming assistance
- On screen energy meter (Std.)
- Remote diagnosis

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In Pursuit of Excellence

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