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AMS[®]
In Pursuit of Excellence

HIGH SPEED

Vertical Machining Centers



CHALLENGER +
MCV-400 XL
MCV-450 XL
ACER XL

AceMicromatic
Group Company

High Speed Vertical Machining Center



The AMS High speed high performance vertical machining centers provide the high speed spindles, fast rapids and lower chip to chip time necessary for high volume production & reduced cycle times.

The High speed models 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.

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.

High Speed Spindles

AMS high speed machines equipped with high rigid, high speed spindle. Designed for a wide range of applications. AMS inline direct drive spindle is coupled directly to the motor to reduce heat, noise & Vibration. 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



BT-40

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.

Accuracy

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

Spindle Speed & Rapids

	Challenger+	MCV-400 XL	MCV-450XL	ACER XL
Spindle speed (rpm) - Std.	8000	8000	8000	8000
Spindle speed (rpm) - Opt.	10000 / 12000	10000	10000	10000 / 12000
Rapids (X/Y/Z) (m/min) - Std.	50/50/40	40/40/40	40/40/40	50/50/40

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



Front mounted ATC



Side mounted ATC

Model	Type	Tool storage capacity
Challenger+	Front mounted ATC	12
Super winner XL	Side mounted ATC	20
MCV-400 XL	Side mounted ATC	24/30 (Opt)
MCV-450 XL		
ACER XL		

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	Challenger +	MCV-400 XL	MCV-450 XL	ACER XL
Pallet size (mm)	650 x 430	650 x 430	800 x 435	800 x 485
Max. load on pallet (Kgf.)	200 / 450	300	350	400
Pallet changing time (Sec.)	18	16	17	20
Machine (width x depth)	2700 x 2950	3300 x 3300	3300 x 3600	3300 x 3700



Rotary APC

Rotary APC	MCV-400 XL	MCV-450 XL	ACER XL
Pallet size (mm)	700 x 450	800 x 450	800 x 500
Max. load on pallet (Kgf.)	300	350	300
Pallet changing time (Sec.)	10	10	10
Machine (width x depth)	2700 x 4200	3000 x 4300	3000 x 4400

Rotary table

NIKKEN



UCAM



Rotary table mainly increases productivity & reduces setups.

Model	Challenger+	Super winner XL	MCV-400 XL	MCV-450 XL	ACER XL
UCAM URH 201	✓	✓	✓		
UCAM URH 251	✓		✓		
UCAM URH 321				✓	✓
Nikken 180LFA	✓	✓	✓		
Nikken 260FA	✓		✓	✓	✓
Nikken 320FA				✓	✓

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

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 OiMF is standard for Challenger+, MCV-400 XL, MCV-450 XL & Acer XL



Fanuc OiMF



Siemens 828D

Control system	Challenger+	MCV-400 XL	MCV-450 XL	ACER XL
Fanuc 0iMATE MD	Std.			
Fanuc 0iMD		Std.	Std.	Std.
Siemens 828D		Opt.	Opt.	Opt.

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.

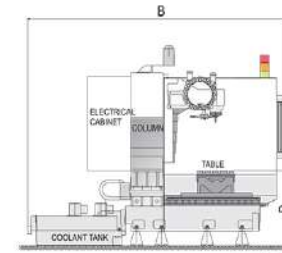
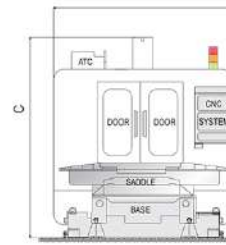


Automation Solutions

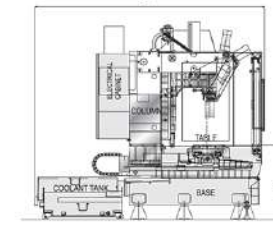
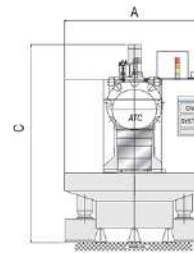
It is a constant endeavor to provide better productivity on our products. Our machines are made suitable for automation interface of different types. With the experience of providing machining solutions AMS is capable of augmenting the manufacturing process with integration of automation solutions. Either 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-400 XL, MCV-450 XL, ACER XL



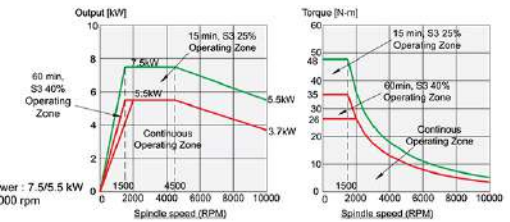
* For Challenger+

	A (Width)	B (Depth)	C (Height)	D
Challenger+	1900	3100	2650	925
MCV-400 XL	2200	3000	2650	925
MCV-450 XL	2200	3100	2650	925
ACER XL	2200	3200	2650	925

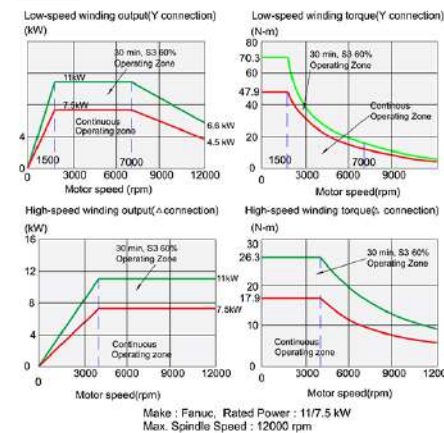
* All dimensions in mm

Spindle Power Torque Diagram

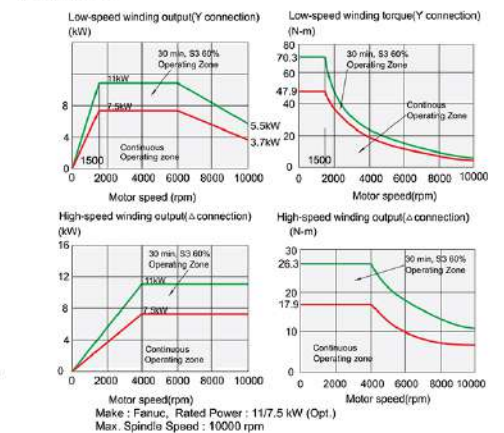
Challenger+



ACER XL



MCV-400 XL



Specifications

	Unit	CHALLENGER +	MCV - 400 XL	MCV - 450 XL	ACER XL
CAPACITY					
Table longitudinal travel (X - Axis)	mm	600	600	800	800
Table cross travel (Y - Axis)	mm	450	450	450	510
Headstock travel (Z - Axis)	mm	350	350	500	500
Spindle nose face to table top	mm	195 - 545	175 - 675	175 - 675	175 - 675
Table height from floor	mm	925	925	925	925
TABLE					
Table size	mm x mm	900 x 450	900 x 450	1000 x 450	1000 x 510
T - slot (No. x size x pitch)		3 x 14 x 125	4 x 18 x 100	4 x 18 x 100	5 x 18 x 100
Max. load on table Std./Opt.	kgf	250 / 500	500	500	600
SPINDLE & AXES					
Spindle taper		7 / 24 No.40	7 / 24 No.40	7 / 24 No.40	7 / 24 No.40
Spindle speed - Std.	rpm	80 - 8000	80 - 8000	80 - 8000	80 - 8000
Spindle speed - Opt. 1	rpm	100 - 10000	100 - 10000	100 - 10000	100 - 10000
Spindle speed - Opt. 2	rpm	120 - 12000			120 - 12000
Spindle power - Std.	kW	7.5 / 5.5	11 / 7.5	11 / 7.5	11 / 7.5
Spindle power - Opt.	kW	11 / 7.5	15 / 11	15 / 11	15 / 11
Rapid traverse - X / Y / Z - Std.	m / min	50 / 50 / 40	40 / 40 / 40	40 / 40 / 40	50 / 50 / 40
- Opt.	m / min	40 / 40 / 40			
Feed rate	mm / min	1 - 10000	1 - 10000	1 - 10000	1 - 10000
Guideways Type		LM	LM	LM	LM
ACCURACY - As per ISO - 230-2					
Positioning accuracy	mm	0.01	0.007	0.01	0.007
Repeatability	mm	± 0.003	± 0.002	± 0.003	± 0.002
AUTOMATIC TOOL CHANGER					
Tool change system		Disc Armless	Twin Arm	Twin Arm	Twin Arm
Tool storage capacity - Std. / Opt.	Nos.	12	24 / 30	24 / 30	24 / 30
Pull stud		MAS - 403	DIN 69872 / MAS - 403	DIN 69872 / MAS - 403	DIN 69872 / MAS - 403
Max. tool dia with all pockets full	mm	80	80 / 75	80 / 75	80 / 75
Max. tool dia with adjacent pockets empty	mm	125	155 / 125	155 / 125	155 / 125
Max. tool length	mm	250	250	250	250
Max. tool weight	kgf	6	8	8	8
Chip to chip time **	sec.	3.3	4	4.1	4.6
Tool shank type		BT - 40	BT - 40	BT - 40	BT - 40
CNC System - Std FANUC		0IMF	0IMF	0IMF	0IMF
- Opt. Siemens			828 D	828 D	828 D
INSTALLATION DATA					
Floor space	mm x mm	1900 x 3100	2200 x 3100	2200 x 3100	2200 x 3200
Machine height	mm	2650	2650	2650	2650
Basic machine weight	kgf	4800	5200	5400	6000
Power supply (Basic Machine)	kVA	14	18	25	25

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

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In Pursuit of Excellence

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