



AMS[®]
In Pursuit of Excellence

HIGH PERFORMANCE

Vertical Machining Centers



MCV-550 L
MCV-650

AceMicromatic
Group Company

Vertical Machining Centers



MCV-550 L & MCV-650 machines are rigid & high performance machines suitable for Automotive, general engineering, die Mould, Aerospace, defence & energy sector.

These 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.

MCV-550L series machine structure & operation ensure its capability to get the best performance regardless of any conditions & complexities

High Speed Spindles

MCV-550 L series machines equipped with high rigid spindle designed for wide range of applications. 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 BT-50.

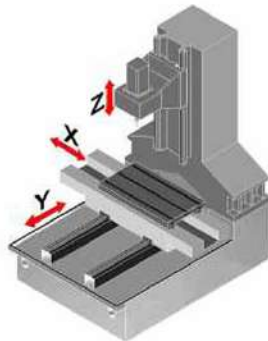


BT-40



BT-50

Axes Configuration



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



Side mounted ATC

Std: 24 tool ATC for BT-40 models,
20 tool ATC for BT-50 models

Opt: 30 tool ATC for BT-40 & BT-50 models

Accuracy

| | VDI DQG 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.).

Linear pallet changer Option available

| Linear APC | MCV-550L/MCV-550L-50 | MCV-650/MCV-650-50 |
|-----------------------------|----------------------|--------------------|
| Pallet size (mm) | 1000 x 535 | 1000 x 635 |
| Max. load on pallet (Kgf.) | 500 | 600 |
| Pallet changing time (Sec.) | 22 | 50 |
| Machine (w x d) | 3950x4000 | 4100x4000 |

Rotary table

NIKKEN



UCAM



Rotary table mainly increases productivity & reduces setups.

AMS recommends UCAM URH 321 model or NIKKEN 320 FA model for MCV-550L & MCV-650. Fully synchronized 4th & 5th axis configurations are available on MCV-550 L & MCV-650

Coolant system



Std. Coolant tank



Grundfos or Warner 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 Warner 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



FANUC OiMF



Siemens 828D



Mitsubishi M80AVU/
BVU

Fanuc OiMF is standard, Siemens 828D / Mitsubishi M80AVU/M80 BVU is optional

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.

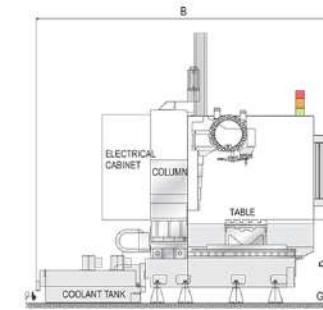
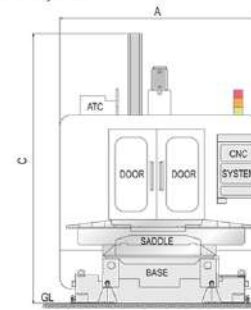


Automation Solutions

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



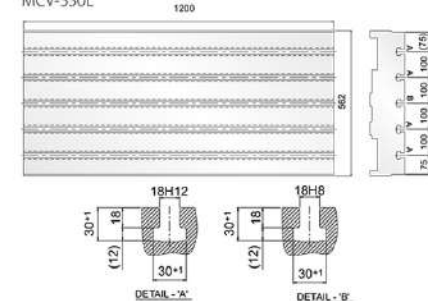
*Counter balance is applicable for BT-50 models

| | A (Width) | B (Depth) | C (Height) | D |
|-------------------------|-----------|-----------|-------------|-----|
| MCV-550 L / MCV-550L-50 | 3110 | 4000 | 2800 / 3350 | 985 |
| MCV-650 / MCV-650-50 | 3110 | 4000 | 2800 / 3350 | 960 |

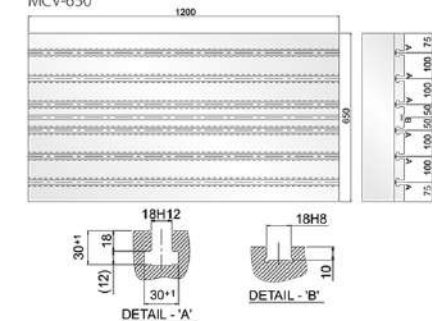
* All dimensions in mm

Table Details

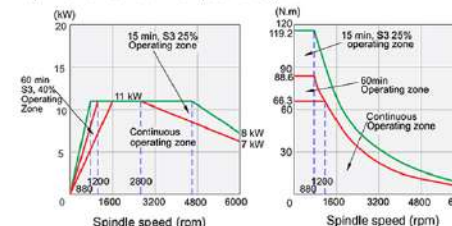
MCV-550L



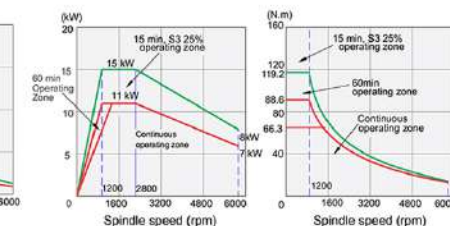
MCV-650



Spindle Power Torque Diagram



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

Standard Features

- Rigid tapping
- Operation manual
- Tool shank: BT-40
- Spindle power: 11 / 7.5 kW
- Three tier indication lamp
- Work light
- Full guarding
- Coolant tank & Chip tray

Optional Features

- Increased day light area
- Tool shank: BT-50
- Wider guarding
- Through spindle coolant system
- Flood coolant, chip flushing & Coolant gun
- Spindle power: 15/11 kW
- Spindle power: 18.5/15 kW (BT-50)
- Chip conveyor
- Higher spindle speed & Spindle power
- Automatic pallet changer – Linear type
- 24 / 30 tool ATC for BT-40 models
- 30 tool ATC for BT-50 models
- Front Auto door
- CNC Rotary table / Index table
- TPM Friendly machine
- Tooled up solutions & Automation

Specifications

| | Unit | MCV-550L | MCV-550 L / 50 | MCV-650 | MCV-650 / 50 |
|--|-------------------|-------------------|-------------------|-------------------|-------------------|
| CAPACITY | | | | | |
| Table longitudinal travel (X - Axis) | mm | 1000 | 1000 | 1020 | 1020 |
| Table cross travel (Y - Axis) | mm | 550 | 550 | 650 | 650 |
| Headstock travel (Z - Axis) | mm | 550 | 550 | 600 | 600 |
| Distance from Spindle nose face to table top | mm | 125 - 675 | 125 - 675 | 105 - 705 | 105 - 705 |
| TABLE | | | | | |
| Table size | mm x mm | 1200 x 550 | 1200 x 550 | 1200 x 650 | 1200 x 650 |
| Max. load on table | kgf | 800/1200 | 800/1200 | 800/1200 | 800/1200 |
| SPINDLE | | | | | |
| Spindle taper | | 7 / 24 No.40 | 7 / 24 No.40 | 7 / 24 No.40 | 7 / 24 No.50 |
| Spindle speed - | Std. | rpm | 60-6000 | 40-4000 | 60-6000 |
| | Opt. | rpm | 80-8000 | 50-5000 | 80-8000 |
| Spindle power - Std. / Opt. | kW | 11/7.5 / 15/11 | 11/7.5 / 15/11 | 11/7.5 / 15/11 | 11/7.5 / 15/11 |
| Feed | | | | | |
| Feed rate | mm / min | 1-10000 | 1-10000 | 1-10000 | 1-10000 |
| Rapid traverse - X / Y / Z -Std. | m / min | 32/32/24 | 32/32/24 | 32/32/24 | 32/32/24 |
| Guideways Type | | X & Y - LM, Z-Box | X & Y - LM, Z-Box | X & Y - LM, Z-Box | X & Y - LM, Z-Box |
| AUTOMATIC TOOL CHANGER | | | | | |
| Tool change system | | Twin Arm | Twin Arm | Twin Arm | Twin Arm |
| Tool storage capacity - Std. / Opt. | Nos. | 24/30 | 20/30 | 24/30 | 20/30 |
| Max. tool dia with all pockets full | mm | 80/75 | 125 | 80/75 | 125 |
| Max. tool dia with adjacent pockets empty | mm | 155/125 | 250 | 155/125 | 250 |
| Max. tool length | mm | 250 | 350 | 250 | 350 |
| Max. tool weight | kgf | 8 | 20 | 8 | 20 |
| Chip to chip time** | sec. | 5.5 | 8.5 | 5.9 | 9 |
| Tool shank type | | BT-40 | BT-50 | BT-40 | BT-50 |
| Pull Stud | | MAS-403 | DIN 69872 | MAS-403 | DIN 69872 |
| CNC System | FANUC - Std. | 0IMF | 0IMF | 0IMF | 0IMF |
| | Siemens - Opt. | 828 D | | 828 D | |
| | Mitsubishi - Opt. | M80AVU / BVU | M80AVU / BVU | M80AVU / BVU | M80AVU / BVU |
| Power supply (Basic Machine) | kVA | 25 | 40 | 25 | 40 |
| MACHINE WEIGHT - NET | Kgf | 7500 | 7800 | 8200 | 8700 |

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

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
- Smart probing solutions
- Programming assistance
- On screen energy meter (Std.)
- Remote diagnosis

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