HORIZONTAL MACHINING CENTER

SINGLE Pallet OR Pallet CHANGER

24, 28, 33, 41, and 48” Cube Sizes

LARGE PARTS MACHINING

WORLD CLASS CINCINNATI QUALITY
UNIQUE STRUCTURE DESIGN PROVIDES ROCK SOLID MACHINING THROUGHOUT THE ENTIRE MACHINE RANGE

CAST IRON CASTINGS ARE STRESS RELIEVED USING STATE-OF-THE ART ANNEALING METHODS

FEATURES
High quality castings are designed to provide maximum rigidity and strength, while using the optimum amount of cast iron to produce rock solid machining. Extensive Advanced Finite Element Analysis Software is utilized to develop and test through CAD simulations to ensure maximum machine rigidity, stability, and damping while making heavy cuts.

WORLD-CLASS CINCINNATI QUALITY

COLUMN

Extra strong column construction greatly increases column rigidity. The special structure effectively solves the rigidity displacement problems caused by spindle head vibration.

The flaring surfaces between the column and the base are especially designed with "root low flange high." This combines with its reinforcement in the structure to enhance structural strength and damping capability.

CAT/BT 50 GEAR HEAD SPINDLE
(HMC-630/800/1000 50 MD.)

The spindle is directly transmitted by gears, featuring extraordinary rigidity that provides high torque during low-speed engagement, suitable for heavy-duty cutting, low noise and low vibration.

CAT/RT 40-50 DIRECT DRIVE SPINDLE
(HMC-400/560 50 MD.)

The spindle is directly driven by a servo motor that upgrades spindle rigidity ensures precise vibration and increases machining accuracy.

The spindle is equipped with air blast through spindle to prevent the accumulation of dust.

Coolant curtains,

Iron-reinforced, built-in type or built-in type spindle is available.

RIGID ROLLER TYPE LINEAR WAY

Mounted with the highly rigid roller type linear guide ways, combined with the use of roller retainer. These special linear guide ways feature low friction coefficient, smooth movement and maintenance-free performance for long periods of operation.

VOLUMETRIC OIL DISTRIBUTOR

The machine is equipped with an 8 liter large capacity volumetric oil distributor, combined with uniform lubrication pads to ensure uniformity of lubrication. Pumps specific part lubrication for saving oil.

100mm request, pressure sensor feedback is available.

EXTRA POWERFUL CHIP FLUSHING EFFECT

The chip flushing system has 3 flushing areas with 10 nozzles to provide extra powerful flushing effect. With his specially designed chip flushing system, the thermal deformation on the workpiece is minimal.

CTS COOLANT THROUGH SPINDLE DEVICE

(CT6-20 / 30 / 50 bar Opt.)

30 bar coolant through spindle. When used with coolant it features mighty performance that the cutting efficiency is increased, and the tool life is extended. The 50 bar coolant through spindle is option.
HORIZONTAL MACHINING CENTER

**HMC-400**
- X/Y/Z Travel: 630 / 630 / 630 mm
- Work Table: 400 x 400 mm
- BT-40 Spindle speed: 10,000 rpm
- Direct Drive Spindle
- ATC: 40T (60 / 90 / 120 opt.)
- Rotary APC

**HMC-500**
- X/Y/Z Travel: 800 / 725 / 725 mm
- Work Table: 500 x 500 mm
- BT-40 Spindle: 8,000 rpm or BT-50 Spindle: 6,000 rpm
- Direct Drive Spindle
- ATC: 40T (60 / 90 / 120 opt.)
- Rotary APC

**HMC-630**
- X/Y/Z Travel: 1,020 / 850 / 850 mm
- Work Table: 630 x 630 mm
- BT-50 Spindle: 6,000 rpm
- Gear Driven Spindle
- ATC: 40T (60 / 90 / 120 opt.)
- Rotary APC

**HMC-800**
- X/Y/Z Travel: 1,270 / 1,050 / 1,050 mm
- Work Table: 800 x 800 mm
- BT-50 Spindle: 6,000 rpm
- Gear Driven Spindle
- ATC: 40T (60 / 90 / 120 opt.)
- Rotary APC

**FEATURES**
- Traveling column construction
- Reciprocating automatic pallet change
- Roller type linear ways on X, Y, Z axes
- Full HMC performance by servo motor package
- BT-40 / BT-50 spindle taper
- 60 / 90 / 120 tool chain-type magazine (Opt.)
- Table divide angle: 0.001° / 5° (Opt.)
- High torque performance.
- Ball Screw Coolant System (630 / 800 std.)

WORLD-CLASS CINCINNATI QUALITY
AUTOMATIC TOOL CHANGER

Fast and stable tool change motions save non-cutting time and increase efficiency. The spindle features floating tool release to extend the service life of the spindle bearings.

CHOOSE UP TO 120 TOOLS

WIDE VARIETY OF TOOL CHANGER OPTIONS AND CAPACITIES

HMC-500/630/800
TOOL STORAGE CAPACITY:
60 #40 Taper Tools

TOOL STORAGE CAPACITY:
40 #40 Taper Tools

WORLD-CLASS CINCINNATI QUALITY

SMART-TEC

CINCINNATI MACHINES
THE COMBINATION OF FLEXIBILITY, HIGH PRODUCTIVITY AND PROFITABILITY

ROTARY TYPE - APC

> One-to-one synchronized pallet change permits workpiece loading and unloading during machining.
> The pallet change system will save waiting time for loading and unloading workpieces, achieving 100% machining operation efficiency.
> Upon request, customers may order extra pallets.
> Fast pallet change time is 6 - 12 seconds.
> The pallet is positioned on 4 tapped cones for high positioning accuracy.

APC SPECIFICATIONS - Excellent Working Space

**1" INDEXING TABLE BIRTH COUPLING**
- **Model**
  - Pallet size: 500 x 500 mm, 630 x 630 mm, 800 x 800 mm
  - Accuracy: ± 5 sec, ± 5 sec, ± 5 sec
  - Repeatability: ± 1.5 sec, ± 1.5 sec, ± 1.5 sec
  - High clamping force: 5,500 N, 8,000 N, 10,000 N

**0.001" NC ROTARY TABLE**
- **Model**
  - Pallet size: 500 x 500 mm, 630 x 630 mm, 800 x 800 mm
  - Indexing accuracy: ± 15 sec, ± 15 sec, ± 15 sec
  - Repeatability: ± 3 sec, ± 3 sec, ± 3 sec
  - touchdown: 4,000 Nm, 4,000 Nm, 9,000 Nm
  - High clamping force: 2,500 N, 3,000 N, 5,000 N, 8,000 N

**INTERFERENCE AREA POINT:**

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- JA-A 600 four cones clamping system clamping force at 20,000 N
- JA-A 400/600 four cones clamping force at 70,000 N
- Dual-axis 0.001" worm shaft worm wheel set (high positioning & repeatability accuracy)
<table>
<thead>
<tr>
<th>SPECIFICATIONS (INCH DIMENSIONS SHOWN IN BLUE)</th>
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<tbody>
<tr>
<td><strong>MODEL</strong></td>
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<tr>
<td>X- axis travel (mm)</td>
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<td>Y- axis travel (mm)</td>
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<td>Z- axis travel (mm)</td>
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<td>Spindle center to work table surface (mm)</td>
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<td>Table size (mm)</td>
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<td>T-slot / Bsk. Spec.</td>
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<td>Max. loading (kg)</td>
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<td>Div. angle (deg)</td>
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<td>Spindle taper</td>
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<td>Spindle drive</td>
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<td>Spindle diameter (mm)</td>
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<td>Spindle speed (rpm)</td>
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<td>Max. tool diameter x length</td>
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<td>Max. tool weight (lbs)</td>
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<td>Tool shank type</td>
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<td>Tool change time (sec)</td>
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<td>Number of pallets</td>
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<td>Method of pallet change</td>
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<td>Pallet change time (sec)</td>
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<td>Floor space (sq m)</td>
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<td>Machine weight (N.W.)</td>
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**STANDARD ACCESSORIES**
- Rotary type automatic pallet changer
- 1” indexing rotary table (HMC-400 Std., 0.001”)
- Chain type chip conveyor with oil
- 40 slots chain type ATC
- BT-40, HMC-400 (4000 rpm direct drive)
- BT-50, HMC-500 (6000 rpm direct drive)
- BT-50, HMC-500 (8000 rpm direct drive)
- AP-10, HMC-500 (10000 rpm direct drive)
- AP-10, HMC-500 (10000 rpm direct drive)
- Jpn-style Tilt screw coolant system (HMC-H300, HMC-400 Std.)
- Spindle coolant curtain
- Spindle oil cooler
- Heat exchanger to electrical cabinet
- 3 axes coolant chip flushing system
- Automatic lubrication system
- Fully enclosed splash guard
- Mitsubishi or Fanuc control
- Leveling tools and pads
- Tool box with tools
- Operation and maintenance manual
- Transformer

**OPTIONAL ACCESSORIES**
- 0.001” or 0.05” indexing rotary tables
- 40, 50 or 120 tools chain type automatic
- BT-40, 10,000 – 24,000 rpm direct drive (HMC-400 / HMC-500)
- BT-50, 8,000 – 12,000 rpm direct drive (HMC-500)
- Coolant through spindle (CTS-200/250 bar)
- 3 axes linear scales
- C-axis
- Air conditioner for electrical cabinet
- Automatic tool length measuring device
- Automatic workpiece measuring device
- Coolant through tool holder (20/50 bar without tool holder)
- CE standards
- SIEMENS, HEIDENHAIN, FAGOR controller
- Robot automation system
- JT gear box (HMC-400 / HMC-500)
- Rollin ball screw coolant system (HMC-A30/HMC-600 Std.)