MCV-720
Vertical
Machining Center

DMV-800
Traveling Column
Vertical Machining
Center

MCV-2100
Vertical Machining
Center

MCH-630
Horizontal
Machining Center

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DAHLIH®
The Latest and Best Quality Machinery.

DCM-series

DCM-4225

DOUBLE COLUMN MACHINING CENTER

Extra Large, Extremely Stable Machine Structure, Maximum Rigidity and Deformation-Free

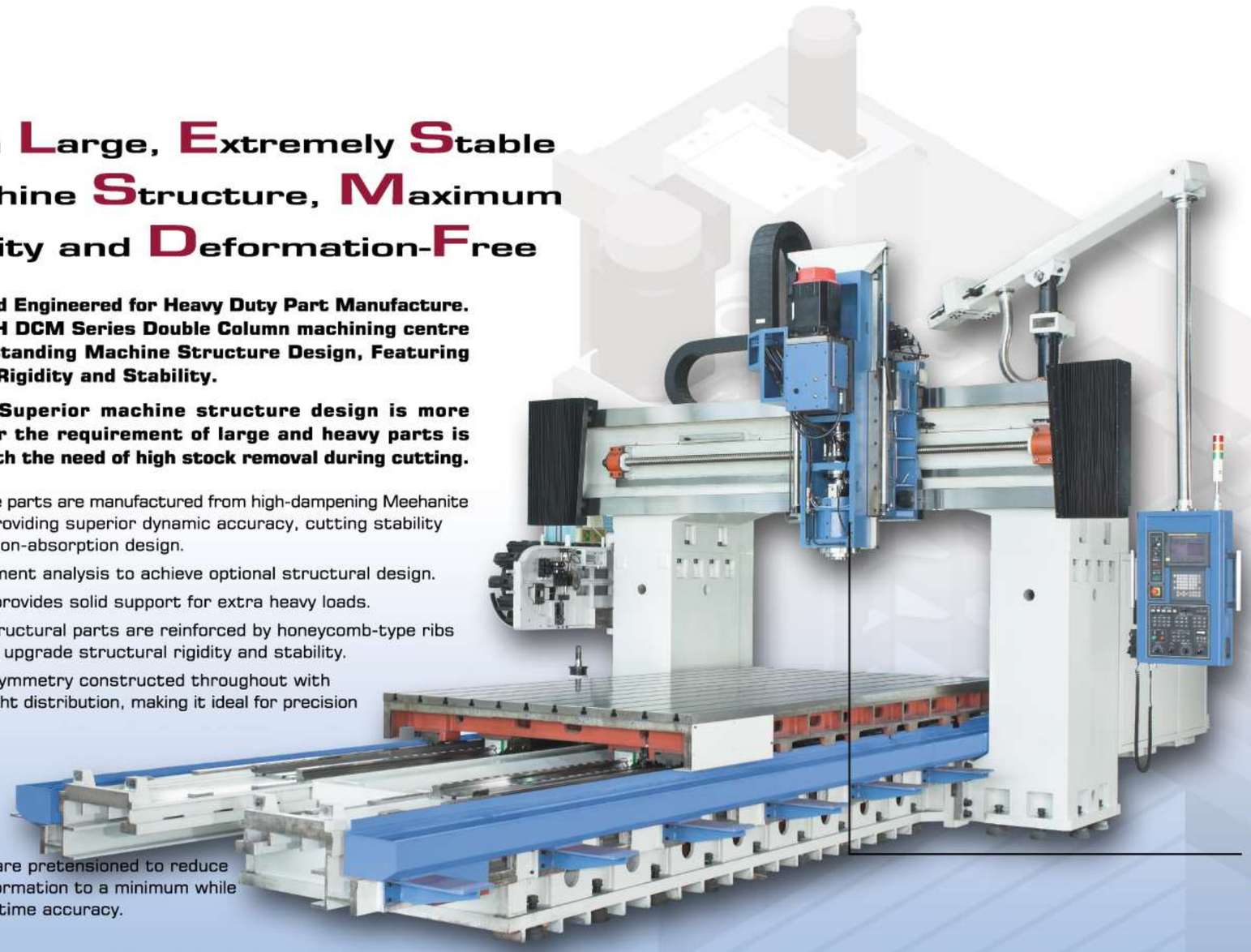
Designed and Engineered for Heavy Duty Part Manufacture. The DAH LIH DCM Series Double Column machining centre has an Outstanding Machine Structure Design, Featuring Extra High Rigidity and Stability.

DAH LIH's Superior machine structure design is more apparent for the requirement of large and heavy parts is combined with the need of high stock removal during cutting.

- The structure parts are manufactured from high-dampening Meehanite cast iron, providing superior dynamic accuracy, cutting stability and a vibration-absorption design.

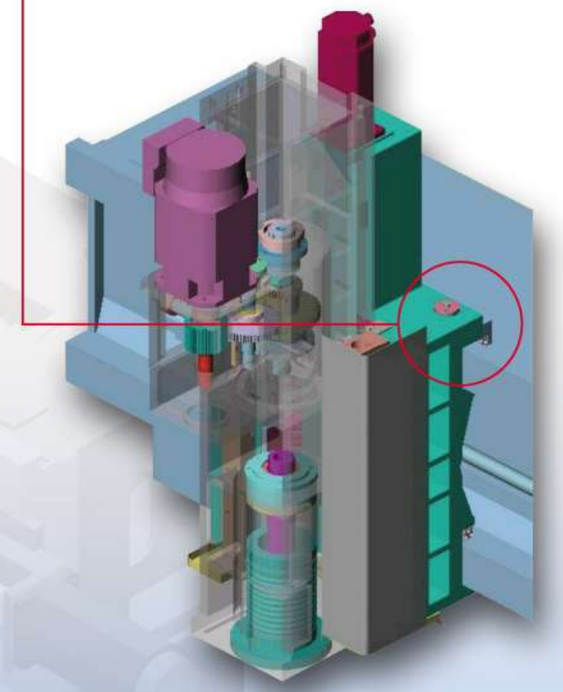
  by finite element analysis to achieve optional structural design.
- 4-way base provides solid support for extra heavy loads.
- The major structural parts are reinforced by honeycomb-type ribs that greatly upgrade structural rigidity and stability.

  is thermal symmetry constructed throughout with uniform weight distribution, making it ideal for precision machining.
- Ball screws are pretensioned to reduce thermal deformation to a minimum while ensuring lifetime accuracy.



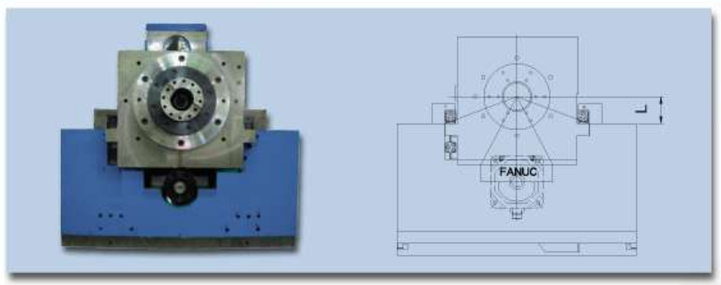
Gearbox for Spindle

- The gearbox provides high/low speed ranges. The wide range of speed allows for heavy low speed cutting and fine finishing at high speeds.
- All gears are precision ground for silent running.
- The gearbox employs an oil-bath lubrication system.



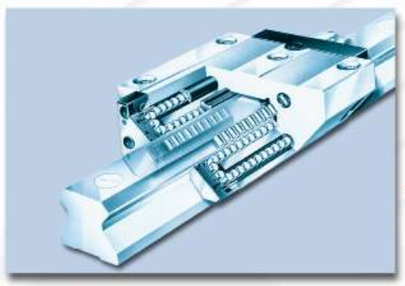
Rigid Spindle Head

- Box type structure design provides high machining accuracy.
- The spindle head temperature is controlled by a cooling system, which effectively reduces thermal deformation. It also ensures constant temperature on the spindle head, and maintains an outstanding geometric accuracy.
- Double hydraulic cylinders counter-balance on Z-axis to ensure high accuracy movement of Z-axis.



Optimal Z-axis Support Guarantees the Best Possible Stability

- Z-axis support is specially designed to be located at the inner side, thereby shortening the distance between the spindle center and Z-axis slideways for increased stability.
- The Z-axis center is correctly located at the center between two slideways assuring maximum structural rigidity, cutting stability and accuracy.



High Rigidity, High Loading Capability, Roller Type Linear Ways.

- The roller type linear ways are especially ideal for extra heavy loading with maximum uniformity of load distribution.
- High dampening, superior vibration absorption.
- High sensitivity of feed without stalling.
- Excellent sealing design ensures normal operation even under a harsh emironment.
- Easy to remove and install.

4-way Slideway Base

- The base is designed with 2 extra heavy-duty roller type linear ways combined with two additional slideways, which provide maximum support for heavy loads.

Extra Large, Stable Base

- The base is manufactured from high quality Meehanite cast iron, tempered and stress relieved, and honeycomb type rib reinforcement.

FINITE ELEMENT ANALYSIS

To ensure the best structural rigidity, design and long machine service life, the major parts are analyzed by advanced "Finite Element Analysis."

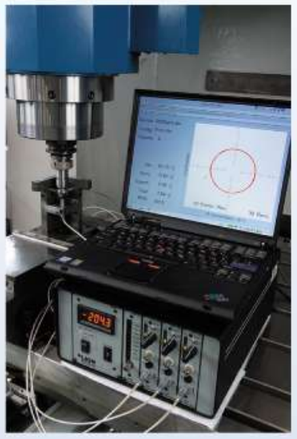
Separately Mounted Chain-type Magazine

32-tool Standard
40 or 60-tool (Options)

- The tool magazine is separately mounted from the machining area to prevent contamination from chips or coolant.
- The tool magazine is BT50 standard, others available as options.
- Bi-directional random tool selection with fast tool change can be accomplished in only 6 seconds.
- Tool magazine is cam-driven for fast and reliable motion.
- Slide mounted magazine allows for maximum size work pieces with no tool interference.

SOPHISTICATED INSPECTION INSTRUMENTS ALLOW HIGH PRECISION TESTING

Grid Encoder Test
To assure outstanding two-dimensional contour accuracy.



Spindle Dynamic Running Accuracy Test
Latest technology spindle testing equipment allows DAH LIH to inspect the spindle to the highest accuracy.

Automatic Tool Length Measuring Device (optional)

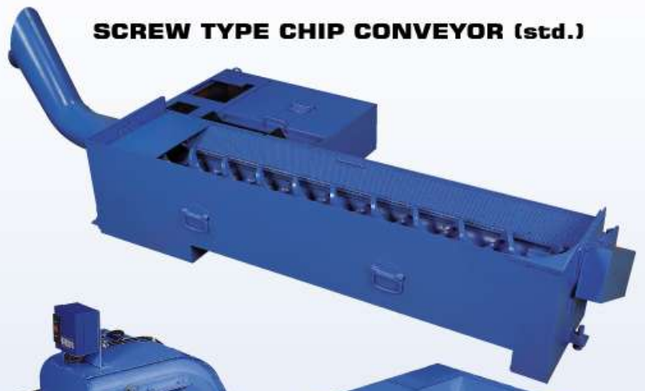
Contact Type
The tool length measuring device is used for detecting the tool wear condition while assuring machining accuracy at all times.

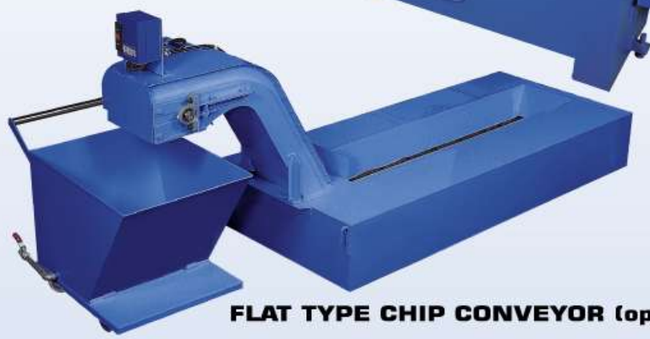
Non-Contact Type
The laser tool length measuring device is used for detecting the tool wear condition while assuring machining accuracy at all times.

90° Angular Head (Optional)
Designed for converting vertical machining to horizontal machining, this 90° angular head accommodates NT#50 tool shank.

RECOMMENDED TYPES OF CHIP CONVEYORS

SCREW TYPE CHIP CONVEYOR (std.)





FLAT TYPE CHIP CONVEYOR (opt.)

Cutting Shape	Material	Steelbelt Chip Conveyor	Screw Type Conveyor
Metallic Chip		O	O
Cast Chip		O	
Curly Aluminum Chip		O	O
Aluminum Chip		O	O
Non-Metallic Chip		O	

Machine Specifications

MODEL	DCM-4225
TABLE	
Working surface	4000 x 2200 mm
T slot (size x number x distance)	22 x 11 x 200 mm
Max. table load	12000 kgw
Distance between table top and ground	1000 mm
TRAVEL	
Longitudinal travel (X)	4200mm
Cross travel (Y)	2500 mm
Headstock travel (Z)	800 mm
Distance between spindle nose and table top	200 ~ 1000 mm
Distance between columns	2540 mm
FEED	
Cutting feed	10 / 10 / 10 m/min
Rapid traverse	1~5000 mm/min
Minimum input increment	0.001 mm
SPINDLE	
Spindle taper	NO. 50
Spindle speeds	4500 r.p.m.
Spindle bearing diameter	Ø100 mm
Cooling / lubrication	oil cooling / grease
ATC (Auto. Tool Changer)	
Tool storage capacity	32 tools
Tool holder	BT50
Max. tool weight	18 kgw
Max. tool length	400 mm
Max. tool diameter	Ø125 mm
Max. tool dia. of adjacent pots are empty	Ø250 mm
Tool selection	Bi-direction
MOTORS	
Spindle motor (30 min. rating/continuous rating)	18.5 / 15 kw
Drive motors (X,Y,Z-axis)	11 / 5.5 / 5.5 kw
INSTALLATION REQUIREMENTS	
Power requirement	220V±10% ; 50/60 Hz ±2% ; 64 KVA
Air pressure	5-7 bar (kgf/cm²)
Air flowrate	100 ℓ/min
Floor space	5650 x 11120 mm
Net weight	40000 kgw
CNC CONTROLLER	
Controller	FANUC 0iMC

■ Design and specifications are subject to change without prior notice.

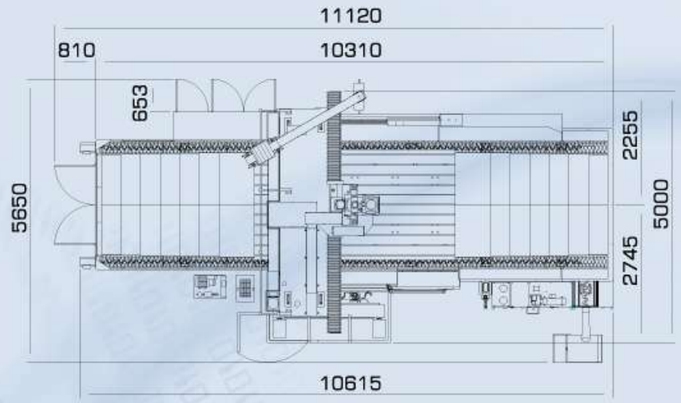
STANDARD ACCESSORIES:

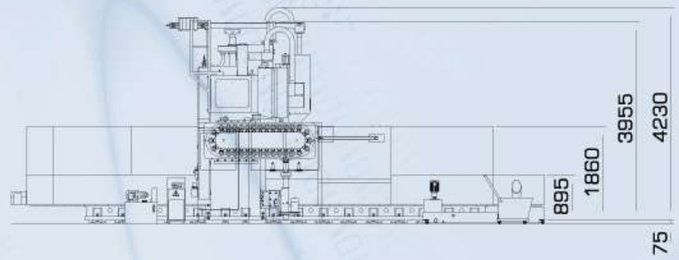
- Spindle cooling device
- Coolant around spindle
- Heat exchanger
- Removable manual pulse generator
- Screw type chip conveyor + chip wagon
- Screw chip auger
- Call light
- Work light
- Splash guard
- Tool kit
- Coolant and air gun

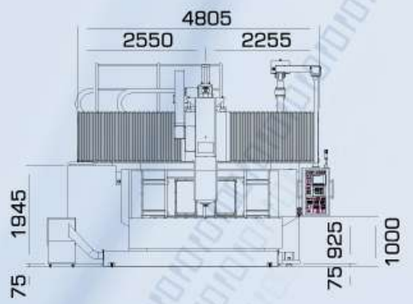
OPTION ACCESSORIES:

- BT50 6000 r.p.m. gear drive spindle
- BT50 10000 r.p.m. direct drive spindle
- BBT40 15000 r.p.m. built-in spindle
- Coolant through spindle with filter
- Oil mist device
- Flat type chip conveyor+chip wagon
- Oil skimmer
- 90° angular head
- X, Y, Z linear scale
- Automatic centering device
- Tool breakage detection device
- Tool length measuring device
- Tool presetter
- Buzzer device
- Air conditioner
- ATC tool storage:40 / 60 tools

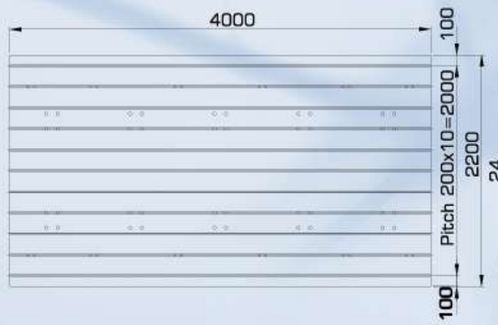
Machine Dimensions
DCM-4425







TABLE



T-SLOT

SPINDLE