HMTI

HALES MACHINE TOOL, INC.

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USED MACHINE TOOL PROPOSAL

DAEWOO DMV-400

Traveling Column Vertical Machining Center
With Integral Automatic Indexing Table

The Daewoo DMV-400 is designed for precision high speed and heavy duty machining in a production environment. Rigid construction ensures cutting superior surface finishes and extended tool life. The unique traveling column design with integral pallet changer allows simultaneous cutting and part loading for high productivity. The completely enclosed work area guarantees no coolant splashing from the top of the machine.

FEATURES

* Traveling column design
* 115 PSI through the spindle coolant
* Automatic 5 second table indexing
* Fast 1.5 second tool change
* One piece Meehanite cast iron bed
* High speed 10,000 RPM precision spindle
* Fast 1,181 IPM rapid traverse
* 90 degree pivoting operator's console
* Double Pre-Tensioned Ballscrews
* Resettable flexible couplings protect the ball screws
* Completely enclosed work area (including top)
* 48 fixture offsets
* Compact design
* Separate coolant tank

SPECIFICATIONS

CAPACITY:

X axis travel	22.0 inches

Y axis travel	15.7 inches
Z axis travel	22.4 inches
Table type	Dual type pallet changer
Table indexing	180 degrees
Table Size	25.6” x 17.7” per side
Allowable table load	660 pounds per pallet
Table T - slots	(4) - 3.94” x .71”

SPINDLE:

Spindle nose to table top	5.9 - 28.3 inches
Spindle center to column	18.9 inches
Spindle taper	ISO No. 40
Spindle speed	10,000 RPM
AC spindle motor (30 minutes)	15
Spindle torque (30 minutes)	83 ft.lb s.

AUTOMATIC TOOL CHANGER:

Number of tools	30
Tool shank	CAT 40
Maximum tool diameter	3.5 inches
with empty adjacent pockets	5.9 inches
Maximum tool length	11.8 inches
Maximum tool weight	17.6 pounds
Tool to tool change time	1.5 secs.
Chip to chip change time	4.5 secs.

MOTION:

X and Y axis rapid traverse rate	1181 IPM
Z axis rapid traverse rate	945 IPM
Maximum cutting feed rate	315 IPM
Least command increment	.0001”
X, Y & Z axis servo motors H.P.	5.1 (Fanuc), 4.7 (Mits)
X, Y & Z axis Ballscrew Diameter x Pitch	1.575 x 0.630

GENERAL:

Machine height	116”
Machine length & width	105.2" x 86.6"
Machine net weight	13,230 pounds
Machine Shipping weight	16,940 pounds
Voltage required	220 volt / 3 phase
Amperage required	90 Amps

CONSTRUCTION

- **BED, COLUMN & SADDLE:**

The bed is a rigid, heavily ribbed one piece casting that remains stable under the heaviest cutting conditions. Fine grained Meehanite cast iron is used for its excellent vibration absorbing characteristics. This machine features a superior traveling column design, the table and workpieces remains stationary except during table indexing. The load on the guideways, ball screws, and motors remains uniform.

- **SPINDLE, HEADSTOCK & COLUMN:**

The high speed, 10,000 RPM precision spindle is a true cartridge type unit supported by 6 precision class P4 (AFBMA B7) ceramic bearings which are permanently grease lubricated. The spindle is driven by a 15 H.P. A.C. motor (MTDR). A wide cogged belt delivers high RPM & high torque to the spindle without vibration. The spindle chiller maintains a even spindle operating temperature resulting in minimal growth and greater accuracy

- **GUIDEWAYS:**

Hardened & ground box ways are used on the Z axis for long term rigidity & accuracy. A low friction, wear free guideway surface is provided via the combined use of Reulon & forced way lubrication. Both the X & Y axis feature heavy duty THK linear motion guideways. These guideways are widely spaced for optimal weight distribution.

- **AUTOMATIC TOOL CHANGER:**

The 30 tool double arm ATC provides quick, reliable tool changes. Using random access this tool changer delivers instant waiting tool availability even during short cutting cycle times. The cam actuated exchange arm provides a fast, reliable 1.5 second tool - tool and 4.5 second chip to chip cycle time.

- **AUTOMATIC INDEXING TABLE:**

The automatic index table is incorporated into the standard design of the machine. Maximum workpiece weight is 660 lbs. per table side. Both sides are completely separated by a heavy duty guard. The table mechanism is mounted directly to the bed of the machine on a horizontal plane enhancing table rigidity. Because the table remains stationary during cutting, work can be safely set up on the table side not being machined on. The table itself rotates 180 degrees via a hydraulic rack & pinion gear and clamps with 10,000 lbs. of hydraulic force. The pallet rotation time (including unclamp/clamp) is 5 seconds. Index table cables can be run up through the pallet center.

- **BALL SCREWS AND AXIS DRIVES:**

Each axis is driven by the highest quality, high precision, double nut ballscrew with integral wiper assembly. Each ball screw is centered between its respective guideway. The X & Y axis ball screws are double pretensioned in design and supported on both ends by high precision angular contact thrust bearings. This design provides outstanding positioning repeatability with virtually no thermal growth. A flexible coupling on each axis protects the ball screws in the event of a sudden impact (crash) and are quickly reset.

- **CHIP REMOVAL & COOLANT SYSTEM:**

The standard full enclosure with top cover virtually guarantees chip and coolant confinement to the inside of the machining area. Chips fall downward into the forward mounted chip pan. The large capacity coolant tank (52 gallons) is located on rollers isolated from the machine bed to prevent heat transfer. Through the spindle coolant & high volume flood coolant are both standard and are provided through a 3 H.P. Multiple stage pump.

- **LUBRICATION**

Automatic lubrication is provided to the guideways and ball screws. Way lubrication oil is delivered by piston distributors which precisely meter the oil volume. A low level alarm will prevent the machine from restarting when the oil level gets too low.

- **CONTROL PANEL**

The control panel swings out 90° for greater operator convenience in setting up and operating the machine and swings back into its own recess in the sheet metal cover when not in use.

- **ENCLOSURE**

The full sheet metal enclosure keeps both chips & coolant spray from getting into the shop's environment. Large doors at both the front and side of the machine allow easy operator access to both sides of the table for setting up and changing workpieces.

STANDARD EQUIPMENT

- FANUC 18M
- Automatic indexing dual sided table
- Automatic 30 pocket tool changer
- Through the spindle coolant
- Spindle chiller
- Full chip enclosure with top cover
- Automatic VOGEL metered lubrication system
- 115 PSI coolant pump
- Spindle orientation
- Spindle taper air blow
- High precision recirculating ball screws
- High precision P4 class angular contact thrust bearings
- High precision P4 class spindle bearings
- Cycle stop and alarm signal light
- 90 degree swiveling operator's console
- 48 additional workpiece offsets
- 600 PSI hydraulic unit
- Rigid tapping
- Spindle load meter
- Stainless steel guideway covers
- Work light
- Tool box with basic tools
- Leveling bolts & plates
- Foundation bolts & anchors
- Operation and maintenance manuals
- Parts book with electrical schematics

Price for machine as described:

DMV-400 with MITSUBISHI M 520 CONTROL **$ 49,900.00**

SERIAL # AV3S 0012

VINTAGE 1997 / MAY
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It is the customer's (user's) responsibility to provide guards, devices, tools, and to comply with all local electrical codes and standards to protect personnel from injury which may otherwise occur as a result of any machine use. Prices quoted do not include these uncertain extra costs.

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