



GANESH MACHINERY

CELEBRATING 26 YEARS IN BUSINESS – 1985 TO 2011

GANESH 5X-400

HEAVY DUTY 5-AXIS CNC MACHINING CENTER

**COMBINING STRENGTH WITH SPEED
FOR OPTIMUM PRODUCTIVITY**



**VMC-4924 with Tsudakoma Trunion Tilting Rotary
Table *(Made in Japan)***



Ganesh Machinery, Inc. - 20869 Plummer St. Chatsworth, CA 91311

Phone 818-349-9166 | Toll Free 888-542-6374 (US only) | FAX 818-349-7286 | www.ganeshmachinery.com

GANESH 5X-400

HEAVY-DUTY 5 AXIS CNC MACHINING CENTER

Robust High Tensile Meehanite Casting (18,000)



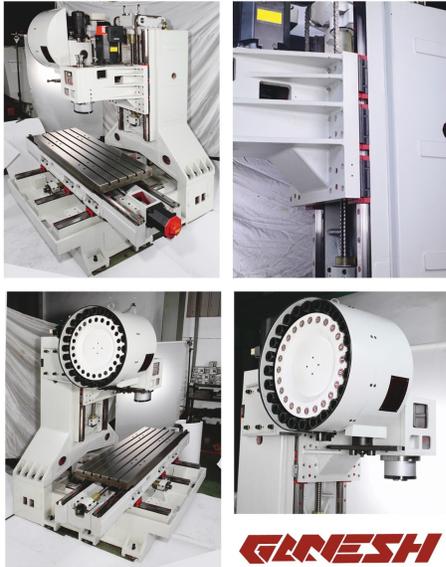
TRIPLE LINEAR WAYS IN THE Y-AXIS, 1,181 inch/minute rapids in both X & Y axis

The 5X-400 combines strength and speed for high productivity -

With a heavy-duty 18,000-pound frame the 5X-400 can handle all your tough materials like stainless steel and titanium. With a triple linear guideway system in the Y-axis, the table load capacity is 2,400 pounds and high-speed rapids are 1,181 inches/minute. This unique combination of strength and speed allows flexibility in processing your work. The speed makes the machine ideal for materials like aluminum and steel, and the strength allows efficient machining of Inconel and stainless.

Massive Cast Iron Construction –

The 5X-400 casting design was internally reinforced with numerous strategically placed heavy cast ribs to resist flex and dampen vibration for superior machining capability, extended tool life and fine surface finishes. The machine is constructed of all certified premium high tensile Meehanite castings. The wide spacing of the linear ways offers the optimal guide ratio and rigidity for the moving elements further enhancing the rugged design of the machine.

STANDARD GANESH 5X – 400 MACHINE FEATURES:**Machine Construction:**

- ⇒ *Fine grain and high density cast iron using the superior Meehanite process yields superior vibration dampening and improved surface finish and tool life*
- ⇒ *Double anchored and pre-tensioned ballscrews in all axes*
- ⇒ *Built-in leveling ledge makes it easy to level machine low to the ground*

Linear Guide Ways:

- ⇒ *Triple linear guide ways in the Y-Axis for high table load capacity*
- ⇒ *Linear Guide Ways on the Vertical Column and Longitudinal axis*
- ⇒ *Hardened and Ground Machine Table for enhanced wear resistance*

Spindle:

- 20-HP Spindle Motor for superior metal removal capability
- Rigid tapping for high-speed precision tapping performance
- CAT-40 taper spindle for the tool rigidity needed for tough materials
- 6-bearing thermal symmetrical dynamically balanced spindle
- 12,000-RPM Spindle with 0.00004" maximum spindle run out

Automatic Tool Changer - ATC:

- 24-tool high-speed twin-arm tool changer optional and in value package
- 2.5 second tool change with twin-arm.
- Bi-directional shortest path tool indexing to decrease tool change time

Coolant and Chip Management:

- Peripheral chip wash-down in chip enclosure to minimize machine maintenance
- Spindle air blast controlled by M-code
- Chips can be easily removed from the machine via a roller-mounted basket.
- The optional chip conveyor can be installed on either side of the machine.
- Hinged side-panel doors allow the operator easy access to the work area.
- A separate Grundfos coolant pump is provided for chip wash-down
- One-piece sliding coolant tank is mounted on rollers for easy cleaning access.
- Tramp way oil recovery system is provided to reduce coolant contamination

Machine Features:

- A work-light with a swivel joint is provided so the operator can view critical work areas.
- A spindle load meter is located on the front of the control panel for easy viewing.
- A MPG (manual pulse generator) is provided w/ X1, X10, and X100 feedrate multipliers.
- A tri-color machine condition signal lamp broadcasts the machine operating condition.
- The electronics cabinet is cooled by a heat exchanger for enhanced machine reliability.
- Stainless steel doorsill guard is provided to keep the doorsill from being chipped.
- Stainless steel way covers in all three axis.
- T-slots ground to 0.625" to fit standard workholding T-nuts
- Automatic Metered Lubrication for slideways and ball screws
- Water resistant halogen lamp is included
- Inspection Report on accuracy, Instruction Manual, Tools and Tool Box all included
- Large compliment of parts and accessories in stock to ensure continued operation

High Reliable Fanuc Servo's and Drives

Premium control (upgradeable to 2MB memory) is capable of high-speed machining and has the ability to add a 4th axis. Highly accurate Digital Servo motors with look-ahead features, Graphic Display, Tool Life Management and a data server with a memory card are just a few features on this powerful control. All of this is production capability is backed by the dependable 2-year warranty.

Double Anchored Balls Screws -

Premium quality ball screws are double-anchored and pre-tensioned, and then 100% inspected for parallelism to the axis guideways. The rotational torque of each ballscrew is inspected over the entire length of travel to guarantee a true smooth non-binding alignment to ensure maximum service life and the highest possible machining accuracy. The geometric ball-bar test conducted on each machine checks for servo gain synchronization, backlash, lateral play, squareness, and straightness to ensure your machine will perform to our rigid accuracy and performance standards. Laser technology is employed to measure linear and pitch error accuracy and repeatability to ensure high quality machine performance.

Auto Shut Off –

You can set up the auto shut off mode on the control to automatically shut off once your long program is finished. This capability enhances your ability to let the machine run lights out.

Pneumatic Counter Balance (in case of power failure) –

The machine comes with an air counter balance standard. In case of a power failure this feature will prevent the "Z" axis from dropping down to save expensive fixtures and tools.

Chip Wash-Down –

The machine comes standard with a separate coolant pump for chip wash on all sides. This allows the machine to flush all the chips easily to the front of the tank simplifying maintenance.



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VMC 5X-400 TECHNICAL SPECIFICATIONS

TABLE

| | | |
|------------------------------|-------------------|-----------------|
| Table Size | 50.39" x 23.62" | 1,280mm X 600mm |
| T-slots (#, width, distance) | 5 @ 0.709", 3.93" | 5 x 18 x 100mm |
| Maximum Table Load | 2,400 lbs | 1,091 kg |

AXIS TRAVEL

| | | |
|---------------------------------|----------|-------------|
| X-Travel | 49.2" | 1,250mm |
| Y-Travel | 24.4" | 620mm |
| Z-Travel | 27.16" | 690mm |
| Spindle Nose to Table Surface | 10 – 37" | 254 – 940mm |
| Spindle Center to Z-axis covers | 27.56" | 700 mm |

HEADSTOCK

| | | |
|---------------------------------------|---|--|
| Spindle Motor | 20 HP Peak / 15HP (30-minute duty rating) | |
| Spindle Speed | 12,000 rpm spindle packages | |
| Spindle Taper | #40 (CAT or BT) | |
| Spindle Taper Material / Hardness | SCM415 / HRC58-61 | |
| Retention System / Holding Capability | Beveled Spring Stack / 1650-1760 lbs | |
| Counterbalance System | Counterweight -- pneumatic | |
| Spindle Orientation | By sensor | |
| Spindle Bearings, Front | HS7013C, 4 pcs. P4 class-7 bearings | |
| Spindle Bearings, Rear | B7011C, 2 pcs. P4 class-7 bearings | |
| Spindle Bearing Diameter, Front | 2.56" | |
| Spindle Bearing Diameter, Rear | 2.165" | |

AXIS FEEDS

| | | |
|----------------------------------|---------------|-----------------------|
| Rapid Traverse X/Y/Z | 1,181 ipm | 30,000 mm / minute |
| Cutting Feedrate | 0.04 - 393ipm | 1 – 10,000 mm/ minute |
| Maximum Thrust Force | 4700 lbs | 2,136 kg |
| Constant Thrust Force | 1600 lbs | 62.99 kg |
| Linear Positioning Accuracy | ±0.0002", | 0.005 mm |
| Linear Positioning Repeatability | ±0.0001" | 0.0025 mm |

TOOL CHANGER

| | | |
|---|--------------------------------|--------|
| Tool Capacity | 24-Tool Twin-Arm Type Optional | |
| Tool Shank | CT40 (BT#40 Optional) | |
| Maximum Tool Diameter w/ adjacent tool | 3" | 76 mm |
| Maximum Tool Diameter w/o adjacent tool | 4.7" | 120 mm |
| Maximum Tool Length | 11.81" | 300 mm |
| Maximum Tool Weight | 15 lbs | 7 KG |
| Tool Selection / Tool Access | Random access / Bi-directional | |
| Min Air Requirement | 75 psi @ 5-cfm | |

COMMUNICATION DEVICES

Flash Memory Card, Ethernet and RS-232 port

DIMMENSIONS

| | |
|-----------------------------|--|
| Machine Footprint (WxDxH) | 72.6" x 86.6" x 74.6" (3200 x 2200 x 3250mm) |
| Operator Door Opening Width | 43.3" (1100mm) |

Machine warranty 2-year control warranty and one-year machine warranty

The Ganesh 5X-400 provides a low cost solution for:

- Multi-sided machining capability with reduced setups for greater efficiency
- Easy access to all part surfaces for machining.
- Optimized cutting tool use to avoid zero-cutting situations with ball nose end mills.
- The machining of parts, such as impellers, blades, and dental and medical components that can't be machined efficiently on three axis machines.

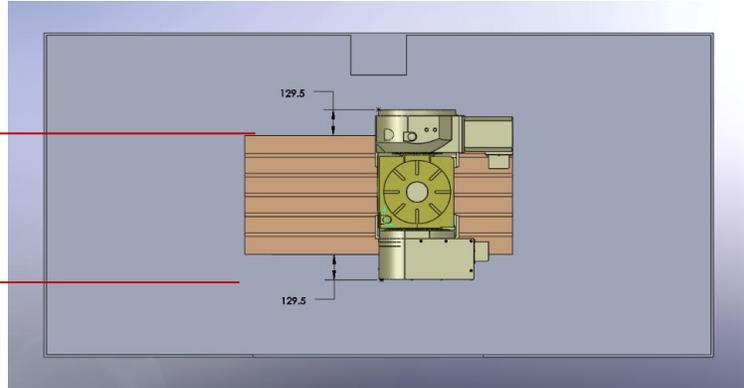


TSUDAKOMA TN-320 Tilting Rotary Table *(Made in Japan)*
With Hydraulic Clamping System

Tsudakoma TN-Series rotary tables are high speed, ultra compact tilting rotary tables. The new TN-Series rotary tables utilize a dual taper, double disc braking mechanism that generates massive clamp torque – an increase of up to 320% over previous models. These new TN-Series models feature one-piece cast Monoblock frame construction for maximum rigidity. Tsudakoma TN-Series tables guarantee indexing repeatability of ± 2 arc seconds and are available with a full range of options including rotary scales, various chucks, collets, and automation accessories.

TSUDAKOMA TN-320 Tilting Rotary Table Specifications

| | |
|---|-----------------------------|
| Tilt Angle | -30 to + 110 degrees |
| Table Diameter | 320 mm (12.60) |
| Tilting Center Height | 355 mm (13.98") |
| Rotary Axis Clamp Torque | 2200 Nm |
| Tilting Axis Clamp Torque | 2200 Nm |
| Motor Speed for rotary axis | 3,000 RPM |
| Motor speed for tilt axis | 3,000 RPM |
| Minimum input increment | 0.001 Degrees |
| Table Rotation Speed (Rotary) | 83.3 RPM |
| Table Rotation Speed (Tilt) | 41.7 RPM |
| Indexing Accuracy of Rotary Axis | + - 10.0 Arc Seconds |
| Indexing Accuracy of Tilt Axis | + - 22.5 Arc Seconds |
| Rotary Axis Repeatability | + - 2 Arc Seconds |
| Tilting Axis Repeatability | + - 2 Arc Seconds |
| Allowable wheel torque (Rotary Axis) | 931 Nm |
| Allowable work weight | 150 Kg (330 lbs) |
| Allowable work movement | 163.3 Nm |
| Allowable load when table clamped | 2,200 Nm |



129.50 mm
(5.10")
Overhang on
each side

GANESH 5X-400

SAVE WITH VALUE PACKAGE:
5X-400 5-Axis MILL VALUE PACKAGE

Includes:
24-Tool Twin – Arm Type ATC,
12,000 – RPM Spindle with Spindle Chiller

*FANUC OiMC-5 Axis CNC Control with 4-Axis Simultaneous capability
With all FANUC Motors and Drives with Easy Removal of Trunion to use
VMC for 3 axis work*

THESE FEATURES COME STANDARD WITH EACH MACHINE

| |
|---|
| Look-Head (High Speed Contour Programming) |
| Chip Air Blast by M-Code |
| Chip Wash-Down Coolant System |
| Remote Operator MPG Hand wheel |
| Rigid Tapping |
| Machine Work Light |
| Ethernet and Flash Card Capability |
| Machine Condition Signal Lamp |

Machine Options

Upgrade to 5 Axis simultaneous Fanuc 30i CNC control
Riser Plate

Machine Productivity Enhancement Options

| | |
|-----------|--|
| 400-RNPRB | Renishaw TS-27 Tool Offset Probe (includes interface, & software) for tool length & tool diameter offsets, and broken tool detection <i>Increases your productivity with quicker setups</i> |
| 400-RNPRT | Renishaw OP-700 Optical Part Probe (includes interface, & software) <i>Use it for digitizing and tracing complicated parts. Eases setups For irregular parts, especially castings</i> |
| 400-HPCS | 300 PSI High-Pressure Thru The Coolant System <i>Ideal for deep hole drilling, using insert drills and other parts where chip control is a problem. Allows you to use machine power to its fullest</i> |
| 400-SCMMP | Programmable coolant nozzle with sweep control feature <i>Increases your tool life by having the coolant pointed in the correct direction</i> |
| 400-HSS | IBAG High Speed 20,000 RPM CAT-40 Spindle |

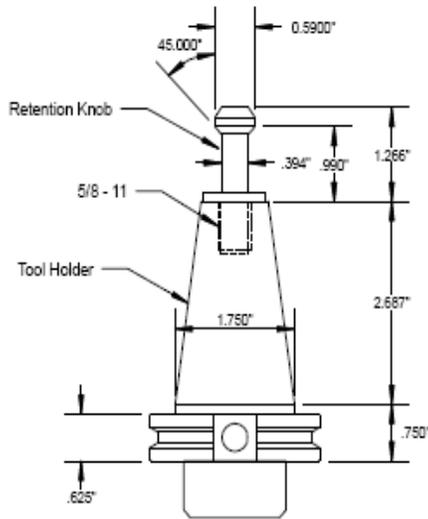
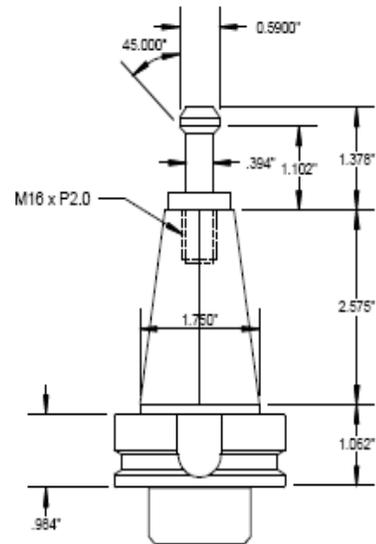
Tooling & Work Holding

| | |
|-----------|---|
| 100-KD675 | KURT [®] D-675 AngLock vise (6" x 7.5") |
| 100-KD688 | KURT [®] D-688 AngLock vise (6" x 8.8") |
| 100-DL430 | KURT [®] DL-430 DoubleLock vise (2-clamping stations 4" x 3") |

| | |
|-----------|---|
| 400-SC40P | Basic Start-Up Tooling Package Includes 2 CAT40ER16, 2CAT40ER32, 6 – CAT-40 Holders, 10 Retention Knobs |
| 400-SC40D | Deluxe Start-Up Tooling Package Basic Start up set plus ER16 collets, ER32 Collets, ER16 Wrench, ER32 Wrench |
| 400-VAL2K | Sandvick Tooling Package |
| 400-MMSRK | Spare Retention Knobs |



**CALL US FOR PACKAGES WITH
20,000 & 30,000 RPM CAT-40 HOLDERS**

**CAT 40****BT 40**

UNBEATABLE VMC VALUE & PERFORMANCE!



**Standard with Advanced
Preview Machining and
High Speed Look-Ahead**



NEED AUTOMATION?

- **PALLET CHANGERS AND FANUC ROBOTS OPTIONS AVAILABLE**
 - **CALL OUR APPLICATIONS DEPARTMENT FOR DETAILS**
 - **UL & TÜV ELECTRICAL APPROVAL IS AN AVAILABLE OPTION**



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Training & Travel Package

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|---|
| Training: Ganesh Machinery Offers 3-day in-house training for all Production CNC machines. The intense training includes programming, machine setup, Maintenance for your new machine. There is no charge for the training program for all new customers. |
| Travel Package For Training at Ganesh: Includes Air fare, 3 nights hotel shuttle (back & forth to Ganesh), and lunch during training \$1,495.00 |
| On-Site Training: \$975 per day plus expenses |
| Warranty: 1-year Full Parts and Labor Warranty. Your local authorized Ganesh Machinery servicing dealer provides warranty labor. |
| Local Service: Your authorized dealer offers local installation, service & training included in price of machine. |
| F.O.B: Machines ship F.O.B. Ganesh Machinery, Chatsworth, CA 91311 |
| Payment Terms: 20% down Payment with Purchase Order, Balance due upon receipt, Net 30 days upon approved credit, Leases with \$1.00 buyback upon approved credit |
| Delivery Schedule: Stock to 8-weeks delivery. Subject to prior sale. |

Terms of Sale

Machine specifications and pricing are subject to change without notice. Quotes are valid for a period of 30-days and are quoted subject to prior sale. The tooling and accessory pricing listed in this price list is applicable when included on the same purchase order with the machine at the time of initial purchase.

Machine brochures and promotional materials may show Ganesh machines with options not included as standard equipment with the basic machine.

Machine sales are subject to the Ganesh Machinery terms and conditions of sale

SERVING INDUSTRY SINCE 1985



IN-HOUSE TRAINING CENTER

4000 SQ, FT SHOWROOM DEMO READY

STOCKED SPARE PARTS

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TERMS & CONDITIONS OF SALE

General

Products and service furnished by us are sold only on the terms and conditions stated herein. Notwithstanding any terms or conditions on Customer's orders, our performance of any contract is expressly made conditional on Customer's agreement to these terms and conditions of sale. All contracts for the sale of products shall be construed under and governed by the laws of the State of California. All orders shall be subject to our acceptance.

Prices & Specifications

All published prices and specifications are subject to change without notice. Unless otherwise specified in writing, all quotations are firm and expire thirty days after date thereof. Unless otherwise stated, all prices, published or quoted, shall be exclusive of transportation, insurance and taxes.

Transportation & Acceptance

We reserve the right to select the means of transportation and routing when Customer's instructions are deemed unsuitable. Risk of loss and/or damage shall pass to Customer upon delivery of the products to the transportation company at the FOB point. Title shall pass to the Customer when products are delivered to the transportation company at the FOB point. All products must be inspected upon receipt and claims should be filed with the transportation company when there is evidence of shipping damage, either concealed or external. The furnishing of a product to the Customer shall constitute acceptance of that product by the Customer unless notice of defect or nonconformity is received by us within ten-days of receipt of the product at Customer's designated receiving address. We may repair or, at our option, replace defective or nonconforming parts after receipt of notice of defect or nonconformity.

Performance

We shall not be liable in any way because of any delay in performance hereunder due to unforeseen circumstance or to causes beyond our control such as, but not limited to, strike, lockout, riot, war, fire, act of God, accident, and subcontractor or supplier delays. We reserve the right to substitute suitable products, when in our opinion such substitution is necessary due to such circumstance or causes. No order may be terminated by Customer except by mutual agreement in writing. Machines are not designed to conform to UL or OSHA Standards. It is the customer's responsibility to verify the electrical standards in their county.

Warranty & Liability for Machine Sales

Our machines, including accessories and spare parts purchased and/or included with the machine sale, are guaranteed to be free from defects in workmanship for twelve months after date of purchase, unless specified otherwise- This warranty is effective only if the necessary information is provided, serial number of machine and nature of defect, and any part claimed defective is returned prepaid to us. No such return will be accepted unless we are first notified of the part to be returned. Upon its proper return to us, we shall repair or replace, at our option, the defective part. This warranty applies only if the products have been operated in accordance with normal procedure, and if no unauthorized repairs have been attempted. This warranty is expressly in lieu of and excludes all other express or implied warranties including, but not limited to, warranties of merchantability and fitness for particular purpose, use or application and all other obligations or liabilities on our part. The remedy of repair or replacement, as provided herein, shall be the buyer's exclusive remedy and will satisfy all our liabilities whether based upon contract, negligence, or otherwise. In no event shall we be liable for incidental, consequential or special damages. Liability to third parties for bodily injury including death relating to our performance or products delivered hereunder shall be determined in accordance with applicable law and shall not exceed the payment, if any, received by us for the product or service furnished.

Warranty & Liability for Accessory & Spare Part Sales

Accessories and spare parts purchased after a machine sale and/or out of the machine warranty period are guaranteed to be free from defects in workmanship for 90-days after date of purchase, unless specified otherwise. This warranty is effective only if the necessary information is provided; original date of purchase and nature of defect, and any part claimed defective is returned prepaid to us. No such return will be accepted unless we are first notified of the part to be returned. Upon its proper return to us, we shall repair or replace, at our option, the defective part. This warranty applies only if the products have been operated in accordance with normal procedure, and if no unauthorized repairs have been attempted. This warranty is expressly in lieu of and excludes all other express or implied warranties including, but not limited to, warranties of merchantability and fitness for particular purpose, use or application and all other obligations or liabilities on our part. The remedy of repair or replacement, as provided herein, shall be the buyer's exclusive remedy and will satisfy all our liabilities whether based upon contract, negligence, or otherwise. In no event shall we be liable for incidental, consequential or special damages. Liability to third parties for bodily injury including death relating to our performance or products delivered hereunder shall be determined in accordance with applicable law and shall not exceed the payment, if any, received by us for the product or service furnished.

Indemnity and Hold Harmless

Customer agrees to indemnify and hold Seller harmless for any and all claims or demands or liability, whether or not Seller has yet to become liable thereon, for any potential, threatened or actual liability, costs, or expenses, arising out of or relating to the sale or use of the equipment which is subject of this sale.

Terms of Payment

All payments for products released and shipped on approved credit accounts shall be due in full thirty days from date of invoice therefore Past Due balances shall be subject to a service charge of 1-1/2% per month. Partial shipments will be billed as made and payments therefore are subject to the above terms. We may cancel or delay delivery of products in the event Customer fails to make prompt payment therefore or in the event of arrearage in Customer's account with us.

Disputes

All disputes under any contract concerning products not otherwise resolved between Customer and we shall be resolved in a court of competent jurisdiction of Los Angeles, California.

Attorneys Fees

Should any legal action or arbitration be brought for the enforcement of this Agreement or any term hereof, or due to any alleged dispute, breach, default or misrepresentation in connection with any provisions herein contained, the prevailing party shall be entitled to its reasonable attorneys' fees, expert witness fees and other costs and expenses, as well as recoverable court costs, incurred in any such action or proceeding and any action to enforce a judgment (including bankruptcy representation) and any appeal, in addition to such other relief, as may be granted by the court.