



Sharp Industries, Inc.

3501 Challenger Street
Torrance, CA 90503

Tel 310-370-5990 Fax 310-542-6162

Email: info@sharp-industries.com

Parts: parts@sharp-industries.com

Sales: sales@sharp-industries.com

Support: support@sharp-industries.com

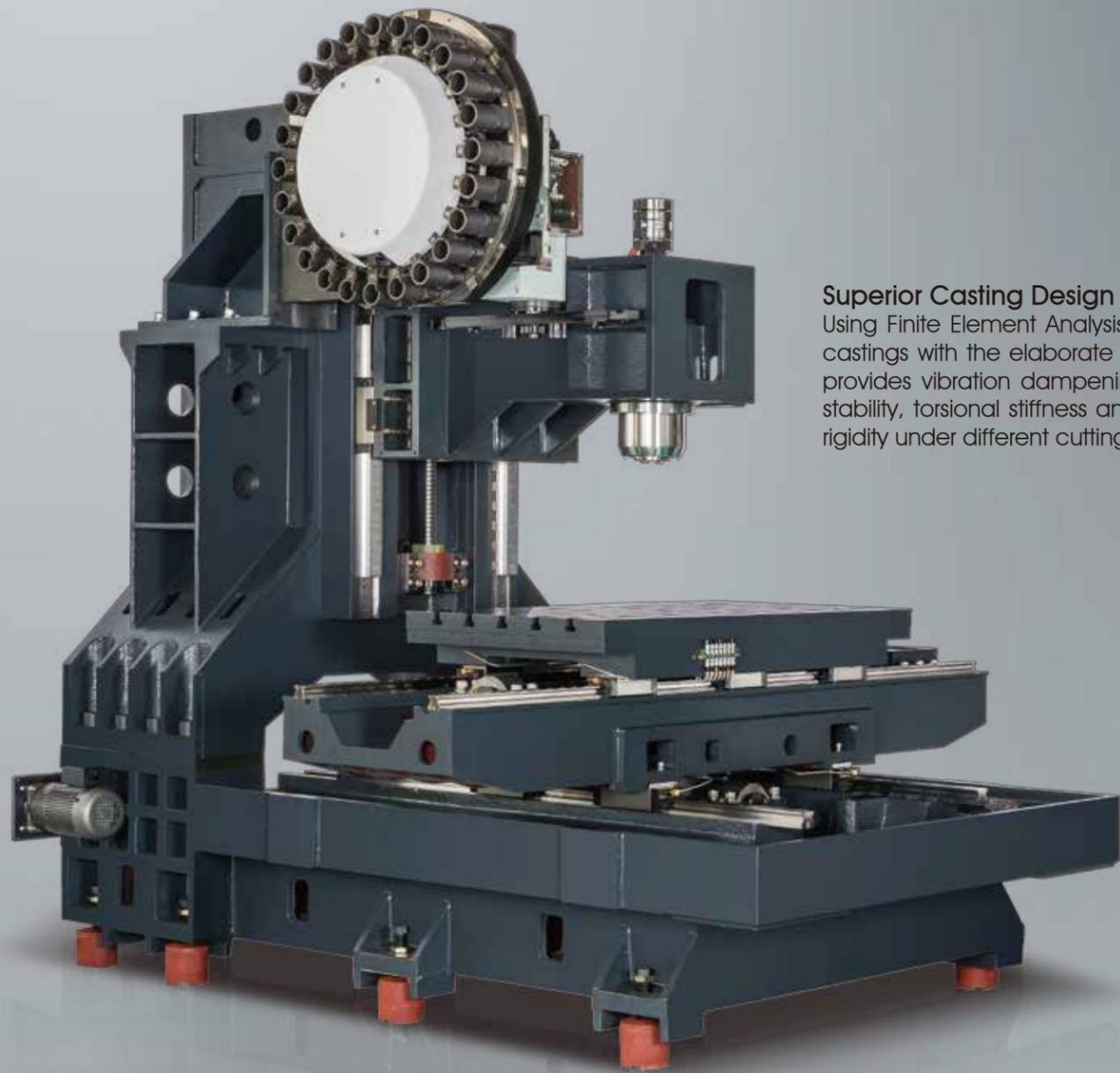
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VERTICAL MACHINING CENTER MODEL SVL-4023SX-F LINEAR ROLLER WAYS CONSTRUCTION





Superior Casting Design

Using Finite Element Analysis (FEA) , the castings with the elaborate ribs design provides vibration dampening, thermal stability, torsional stiffness and optimum rigidity under different cutting conditions.

Doubled Anchored Ball Screws

Each axis is driven by a high precision double-nut ball screw that is centered between the guide ways. The ball screws are pretensioned and anchored at both ends with angular contact bearings. Such features eliminate backlash and plays that can lead to problems with chatter and accuracy.



Hand scraping on matching surfaces

All mating surfaces are precision hand scraped to increase the flatness and improve geometric accuracy (straightness and squareness) of the whole assembly.

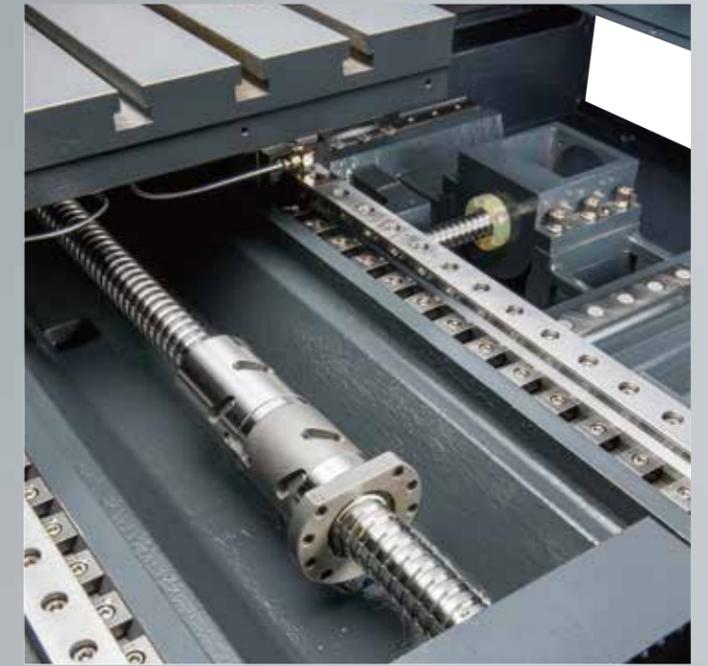


Fully supported Work table

The work table is fully supported by the saddle. It travels on 6 blocks of the Linear Roller Guideway that supports heavy loads and still offers quick table movements for high productivity.

Additional Side Column ribbings

The vertical column is designed for extra support for vertical head travel. The upper column width is 26", the lower column is 56" wide. Depth is 20". It is about 30% stronger than the column of similar size machines. Part of the extra casting at the side is designed to support the Automatic Tool Changer for quick and stable tool change motions.



Linear Roller Guideways Construction

The Linear Guideway System is made by THK, a leading manufacturer in this product. The Roller Rail is 1.77" wide for full support of the running blocks. The FANUC digital servo drive motors is connected to the ball screws via direct couplings and installed with front 3 and rear 2 sets of thrust bearings to support the axial thrust load during machining.



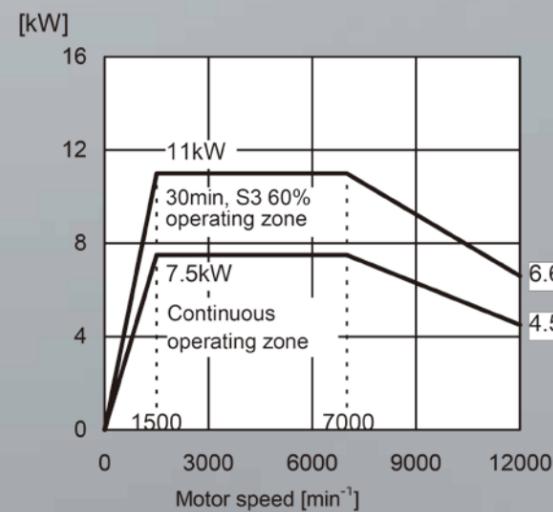


High Precision spindle

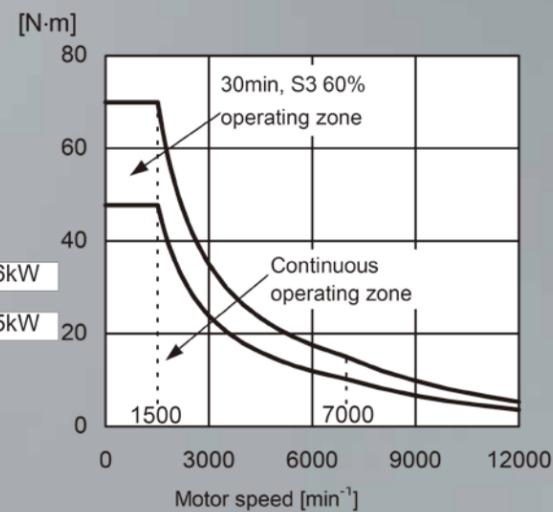
Direct Coupling high speed (12,000 rpm) spindle delivers speed with rigidity.

Spindle Power And Torque Chart (Fanuc α i8)

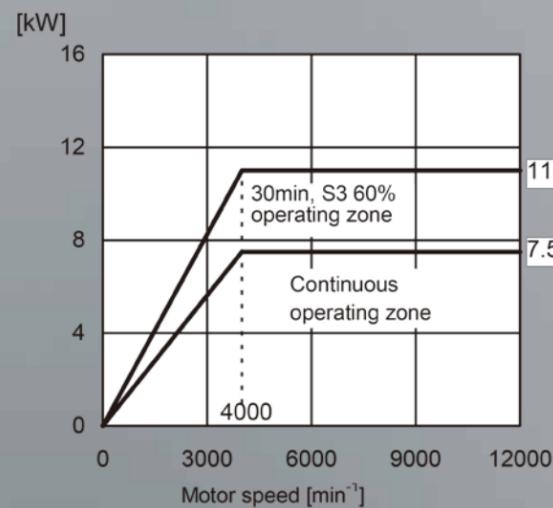
Low-speed winding output (Y connection)



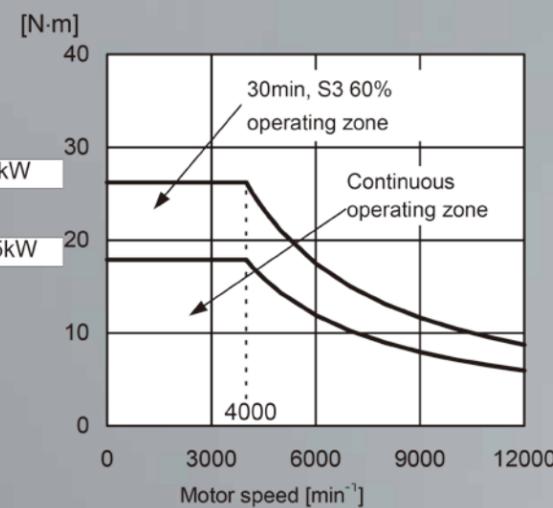
Low-speed winding torque (Y connection)



High-speed winding output (Δ connection)



High-speed winding torque (Δ connection)



Spindle Chiller

Refrigerated oil is circulated around the Spindle to draw heat from it. This helps to control thermal expansion which can effect accuracy and also the preload on the spindle bearings. Since the temperature is better controlled, a tighter bearing preload can be used. This makes for a stiffer and more rigid spindle assembly that can take heavier cuts and maintain better accuracy throughout the day



Reservoir Tank

The reservoir tank with alarm is used to stabilize the incoming air pressure and volume. It ensures safe and reliable operation of the tool change system, the draw bar and the air gun.



Air Gun, Coolant Gun

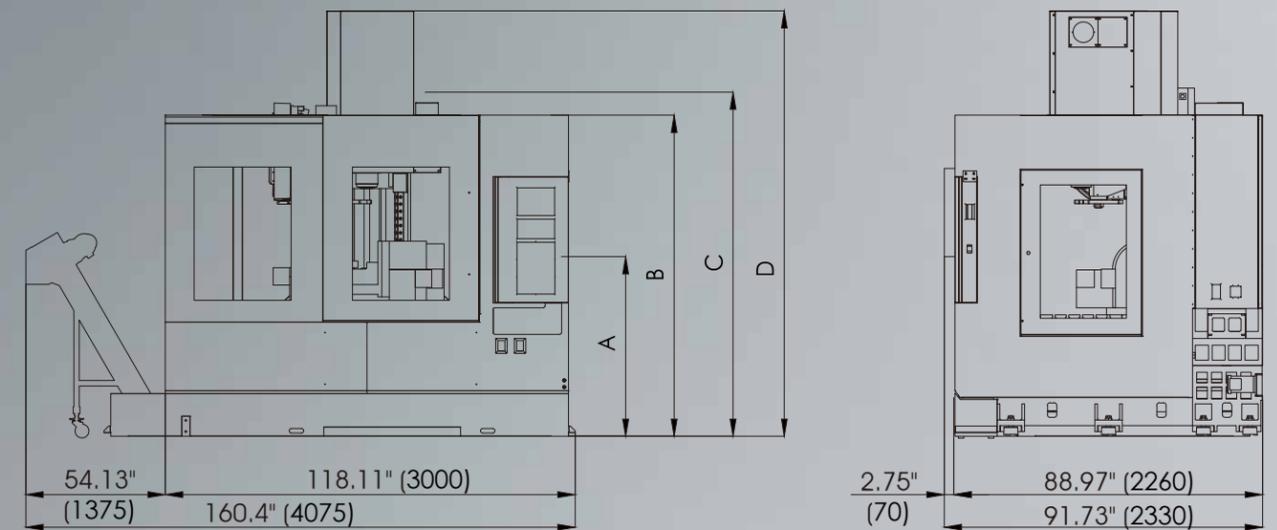
Conveniently located just below the control panel are the Air and Coolant Gun for cleaning the work piece and the machine enclosure.

Specifications

| Model | | SVL-4023SX-F |
|----------------------------------|--------------|------------------------------------|
| Work Capacity | | Fanuc 0iMF(1) |
| X axis travel | inch (mm) | 40.16" (1020) |
| Y axis travel | inch (mm) | 23.62" (600) |
| Z axis travel | inch (mm) | 23.62" (600) |
| Spindle nose to table | inch (mm) | 3.93" - 27.56" (100 - 700) |
| Spindle center to column | inch (mm) | 26.77" (680) |
| Worktable | | |
| Table area | inch (mm) | 45.27" x 23.62" (1150 x 600) |
| Max. work piece weight | lb. (kg) | 1102 (500) |
| T-Slot (Number x Width x pitch) | | 5 x 0.70" x 3.93" (5 x 18 x 100) |
| Spindle | | |
| Spindle taper | | Big plus CAT-40 |
| Spindle speed | rpm | 12,000 |
| Spindle motor: cont. / 30 min | hp (kw) | 10/15 (7.5/11) |
| Transmission | | Direct Coupling |
| Automatic Tool Changer | | |
| ATC type | | Arm type |
| Tool capacity | | 24 |
| Max. tool diameter | inch (mm) | 2.95" (75) |
| Without adjacent tool | inch (mm) | 5.90" (150) |
| Max. tool length | inch (mm) | 11.81" (300) |
| Max. tool weight | lb. (kg) | 15.4 lbs (7) |
| Tool change time (tool to tool) | | 3 sec |
| Tool change time (chip to chip) | | 7 sec |
| Method of tool selection | | Random |
| Motion | | |
| Rapid traverse | ipm (mm/min) | 1417 in / min (X / Y / Z 36,000) |
| Cutting feed rate | ipm (mm/min) | 0.04 - 393.70 (1 - 10,000) |
| Transmission | | Direct drive |
| Positioning accuracy* | inch (mm) | +/- 0.0002" (0.005) |
| Repeatability accuracy* | inch (mm) | +/- 0.0001" (0.003) |
| Linear guide width, X/Y/Z | inch (mm) | 1.38" x 1.77" x 1.77" (35/45/45) |
| Ball screw diameter, X/Y/Z | inch (mm) | 1.57" (40) |
| Coolant System | | |
| Coolant tank capacity | gal (L) | 63 (240) |
| Number of Coolant Nozzles | | 6 |
| Machine Size | | |
| Floor space (w/o chip conveyor) | inch (mm) | W:118.11" (3000) x D:91.73" (2330) |
| Height | inch (mm) | 116.53" (2960) |
| Weight | lb. (kg) | 15,840 lbs. (7200) |
| Door opening | inch (mm) | 43.30" (1100) |
| Power Requirements | | |
| Electrical | 60 Hz | 220 V / 3 Phase / 35 KVA |
| Air | | 6 CFM @ 88 psi |

* Power Foundation and environmental controls are required.

SVL-4023SX-F



| | inch (mm) | | | |
|--------------|---------------|---------------|---------------|----------------|
| | A | B | C | D |
| SVL-4023SX-F | 64.96" (1650) | 92.91" (2360) | 99.60" (2530) | 123.22" (3130) |

