

## Takumi SL 300

### Heavy Duty General Purpose Turning Center



Takumi SL 300 with FANUC 0i-TF Control	Standard Specifications
X, Z Axis Travel	254 x 700 mm (10" x 27.55")
Swing Over Bed	600 mm (23.62")
Maximum Turning Diameter	450 mm (17.71")
Maximum Turning Length	650 mm (25.6")
Chuck Size	305 mm (12")
Bore/Draw Tube Inner Diameter	102 / 91 mm (4" / 3.58")
Spindle RPM	3000 RPM
Spindle Motor power	18.5 k W (25 HP)
Spindle Motor Torque	288 Nm (212 ft. lbs.)
Turret Stations	10
Rapid Feed/Cutting Feed	787 IPM/393.7 IPM

At Takumi we implement stringent design and manufacturing practices to build rigid and reliable machining centers that will exceed your productivity expectations. From our meticulous manufacturing processes, such as hand scraping contact areas, to the use of premium components, we infuse quality into each of our products.

Since 1988 Takumi has been exceeding customers' expectations, in Europe, Asia and North America. Acquired by Hurco Companies in 2015, we are ready to exceed your expectation with our nationwide comprehensive support network, based in Indianapolis, Indiana.

Like you, we believe machine reliability and proven control technology yields the greatest benefit to your business.

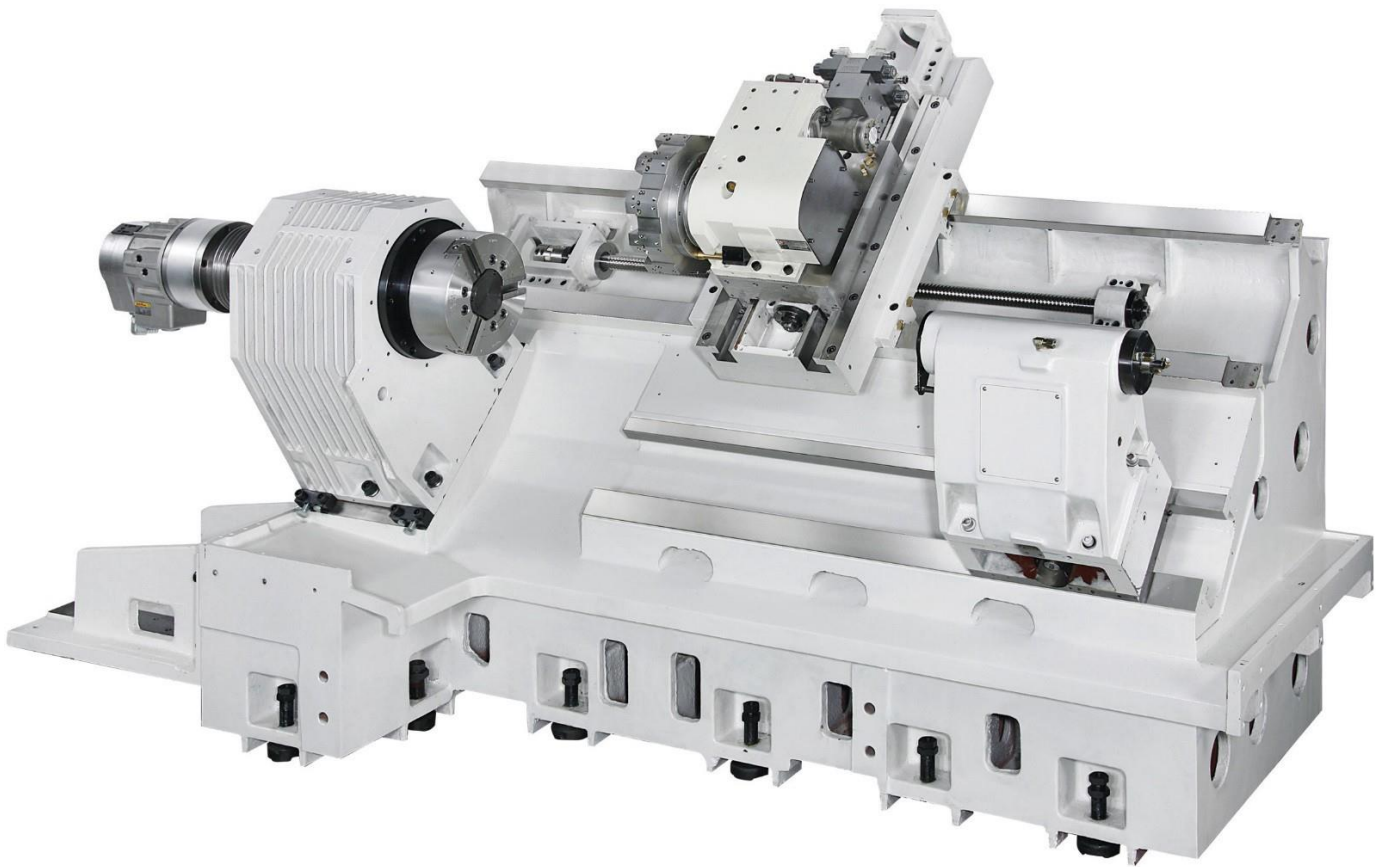
Takumi adapts the world's leading CNC controls to a rugged and durable machine to achieve higher productivity through speed, accuracy, and reliability.

## Standard Machine Features

- » True 45 Degree Slant Bed
- » Hardened and Ground Box Ways on All Axes
- » Hand-Scraped Contact Areas
- » 4,000 RPM 20 HP Heavy Duty Belt Drive Spindle
- » Hydraulic Actuated 8" 3 Jaw Chuck with Hard and Soft Jaws
- » Chuck Operation Foot Switch
- » Fast 20 M/min (787 IPM) Rapid Traverse Rate
- » 10 M/min (393.7 IPM) Cutting Feed Rate
- » 10 Station Bi Directional Hydraulic Turret
- » 19 Piece Basic Tooling Kit
- » Programmable Tailstock Body Mounted on Hardened Box Ways w/Hydraulic Quill
- » High Intensity Work Light
- » 3-Light Indicator Lamp
- » Manual Pulse Generator (MPG)
- » Bar Feeder Interface
- » 208 Liter (55 Gallon) Coolant Tank
- » Wash-Down Gun And Air gun
- » Lift Up Chain Style Chip Conveyor w/cart
- » FANUC 0i-TF Control With 2 Years Parts And Labor Warranty
- » Dynamic Graphic Display
- » Rigid Tapping
- » FANUC Manual Guide i
- » Compact Flash Port
- » USB Port
- » Ethernet Port
- » 1 Years Machine Parts, 1 Year Labor Warranty
- » Leveling Bolts and Pads
- » Operator Manuals

# **Takumi SL 300**

## **Heavy Duty General Purpose Turning Center**



## Design Features for an Extended Life Cycle and Increased Production

### A Heavy Duty Base

The heavily ribbed casting design prevents twisting and deformation.



The solid one-piece Meehanite casting with strategic rib reinforcement dampens vibration, and increases structural strength.

The 45 degree slant angle allows easy loading and better access to the turret for tooling inspection and changing.

The numbers:      7,035 kg Machine Weight,  
                         450 x 650 mm Total Part Size Capacity,  
                         20 M/min Rapids  
                         10 M/min Cutting Feedrate  
                         40 mm Maximum Boring Bar Size

## Design Features for an Extended Life Cycle and Increased Production

### Rugged Axis Power Transmission

Superior accuracy and finish at high feed rates are achieved by the reduction of lost motion, precise alignment and excellent quality control.



Great attention to detail is the key to reliability, accuracy and repeatability. At Takumi, every component is hand fitted and aligned to achieve the best possible build.

Hand scraping for alignment and fit is the oldest, and remains the best method for working with the types of iron used in machine tool construction. Over 15 components in the axis transmission and spindle assemblies are fitted using this process.

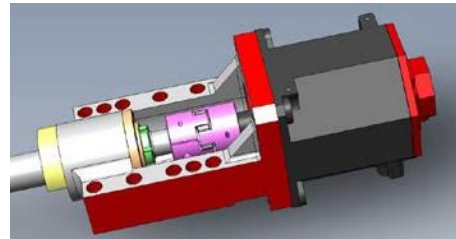


## Design Features for an Extended Life Cycle and Increased Production

### Accurate Motion Control



To eliminate lost motion, the ballscrews are double nut type, anchored on both ends and pre-tensioned. The motors are directly coupled to the ballscrews.

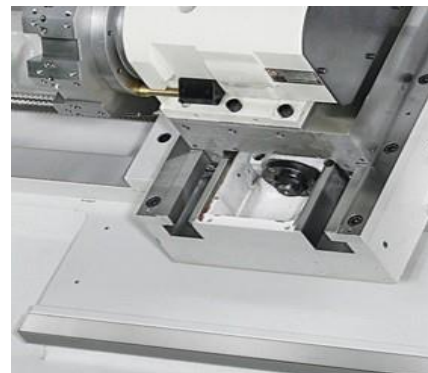


The ballscrews are large diameter for strength, and fine pitch for accuracy.

40mm/1.57" Diameter

10mm/.393" Per Revolution

Guideways are wide rectangular box design for long-term rigidity and accuracy. The ways are induction hardened, precision ground and widely spaced to ensure stability, and the Turcite B mating surfaces are hand scraped for perfect fit and smooth motion.



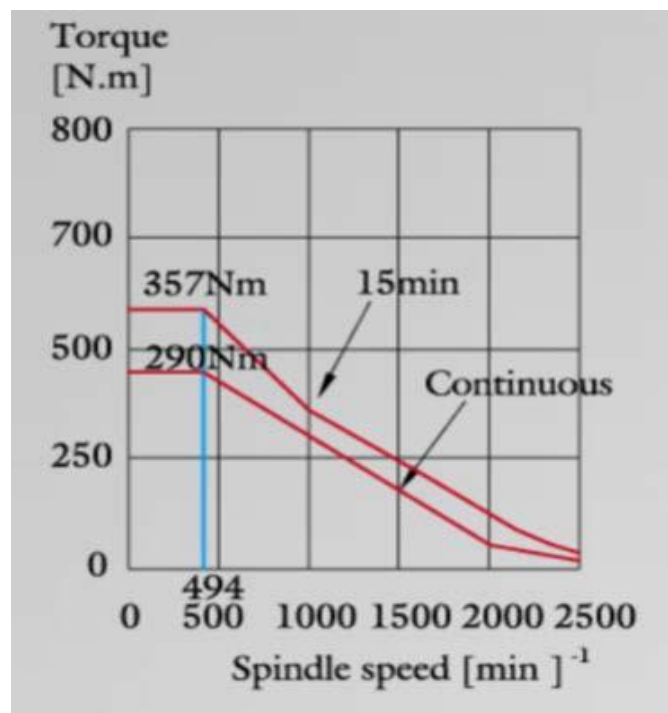
## Design Features for an Extended Life Cycle and Increased Production

### Rugged Headstock and Spindle



The headstock is of rugged construction to enable heavy cutting with maximum stability. The ribbed design provides excellent heat dissipation and helps reduce thermal deformation of the spindle

The spindle runs on double row roller bearings in combination with angular contact bearings and resists radial and thrust load when performing heavy cutting – excellent stability



## Design Features for an Extended Life Cycle and Increased Production

### Reliable Turret and Hydraulic Tailstock



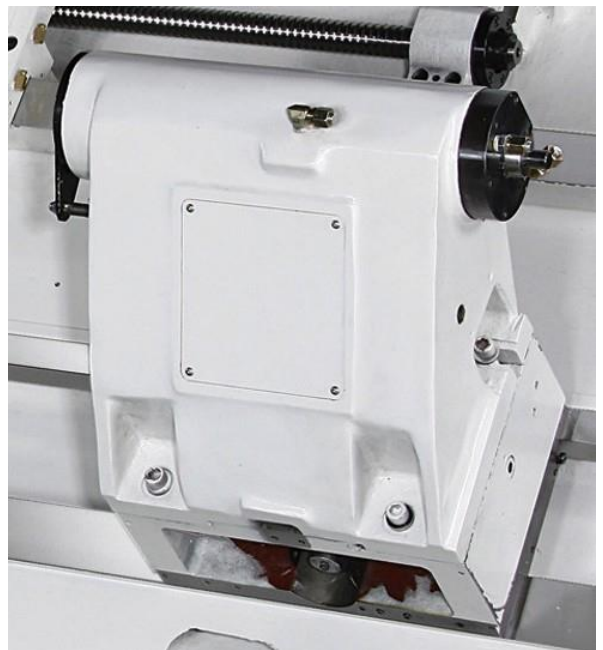
The 10 station slotted disk turret takes conventional “stick” tooling with wedge clamps

Hydraulically driven with bi-directional rotation and heavy clamping force on the curvic coupling ensures solid tool holding to match the solid box way design.

Each lathe comes with a 19 piece tooling kit (wedge blocks, holders, etc.)

The programmable drag and drop tail stock is mounted on hardened and ground box ways.

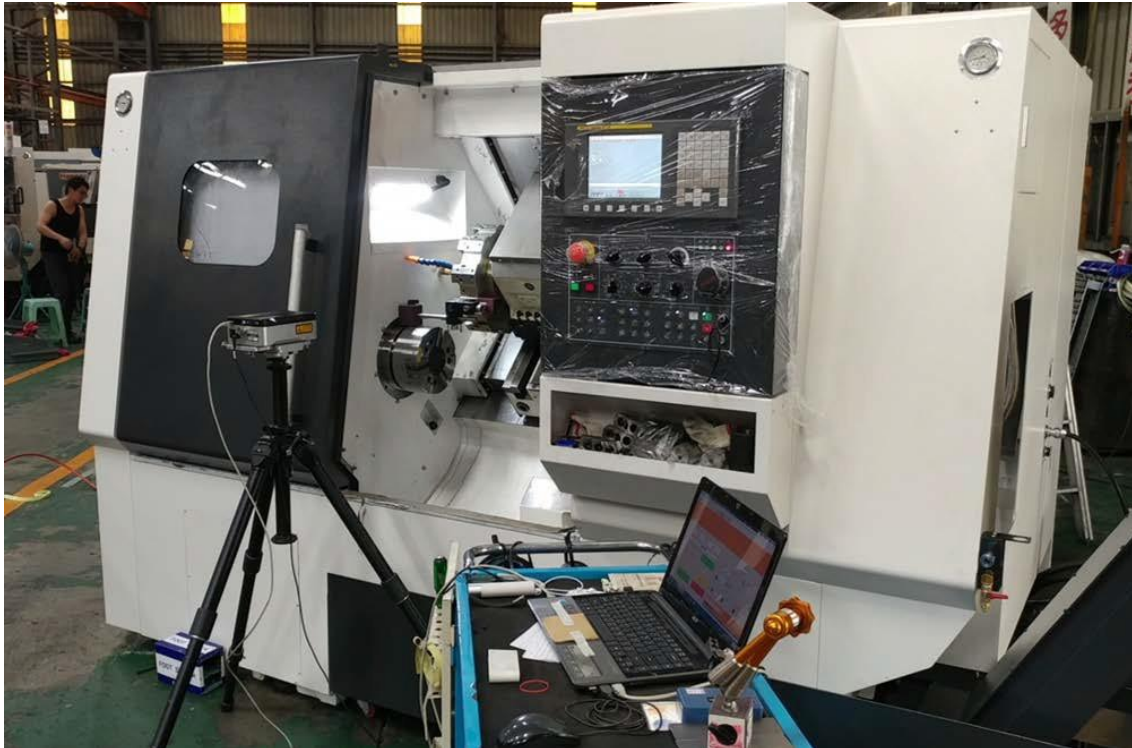
The Morris Taper #5 quill extends and retracts via hydraulics and has adjustable pressure settings for different applications.





## Design Features for an Extended Life Cycle and Increased Production

### Rigorous Testing and Certification



**After assembly, Takumi lathes are thoroughly tested – including the use of a laser interferometer. This provides comprehensive accuracy assessment of machine alignment and any roll-pitch-yaw errors in machine**

## Design Features for an Extended Life Cycle and Increased Production

### Time Saving CNC Control Features

Easy setup operation and program input features needed to get to making chips faster.



We work closely with FANUC to deliver the best features and options for the customer, with the 0i-TF control.

Dynamic Graphic Display and Manual Guide *i* are included for easy programming and tool path verification.

#### Standard Features:

**8.4" LCD Display**

**FANUC MPG**

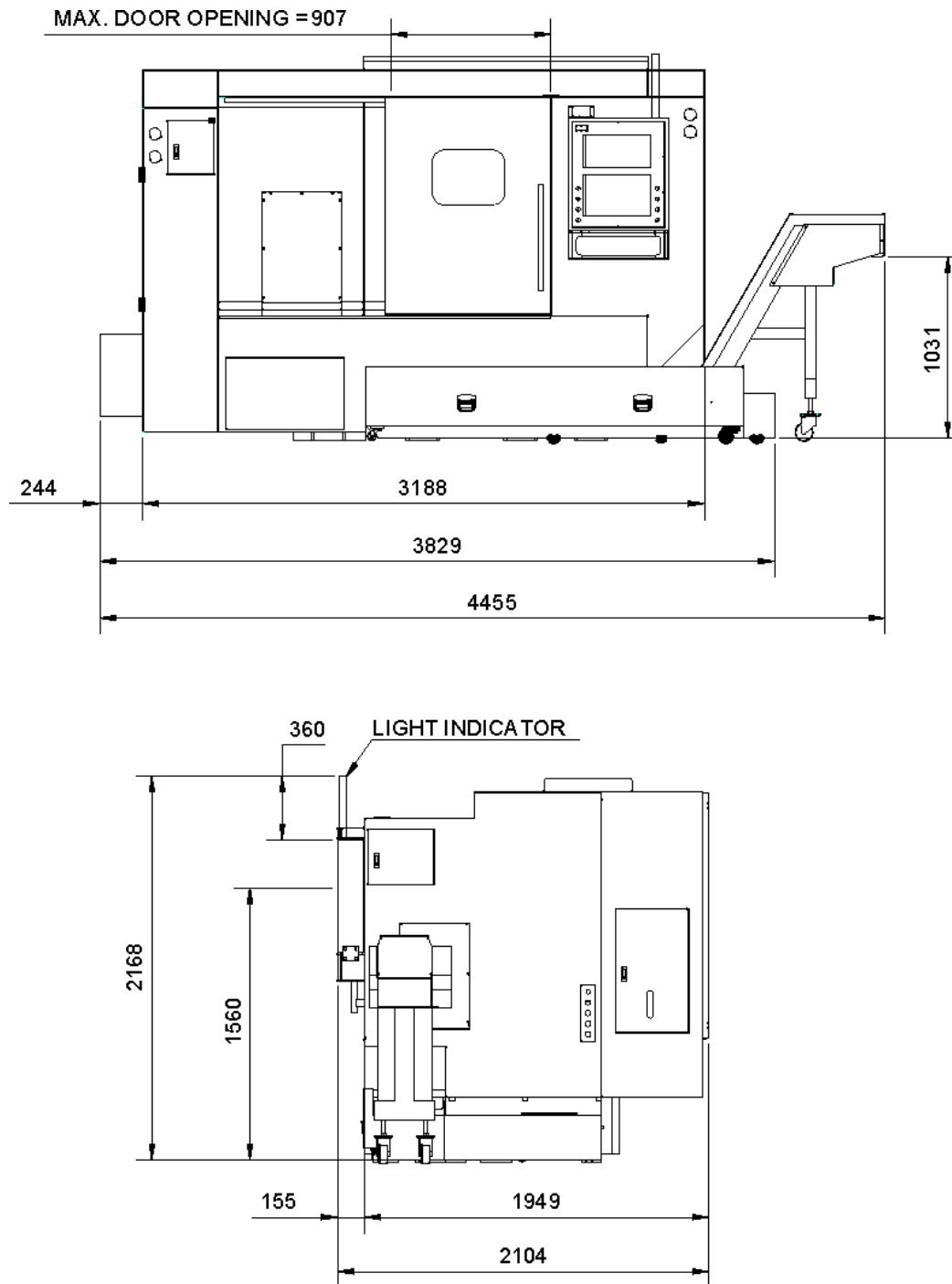
**Manual Guide *i***

**Least Input Increment .001mm/.0001"**

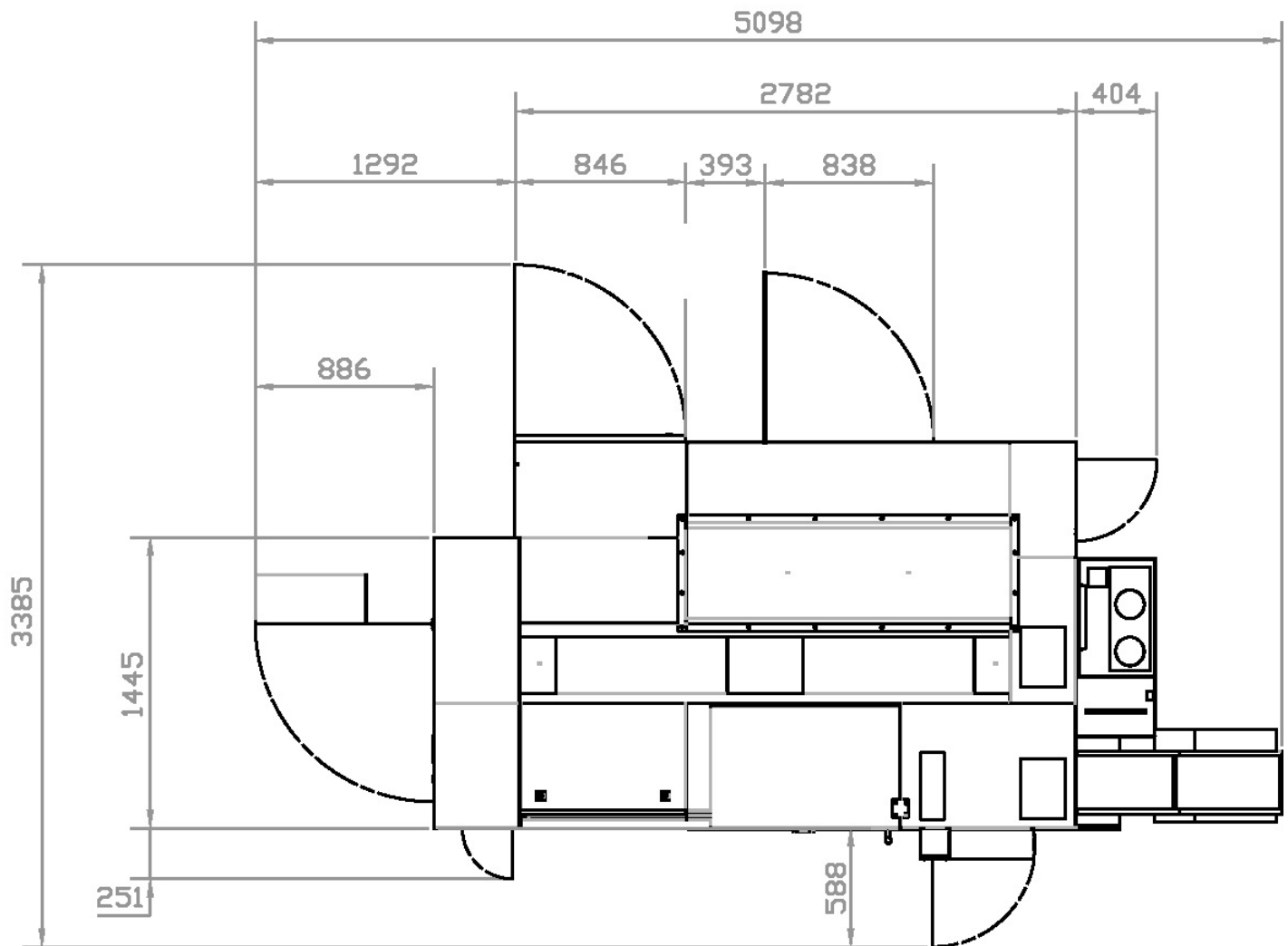
**Inch/Metric Conversion**

**NANO Interpolation**

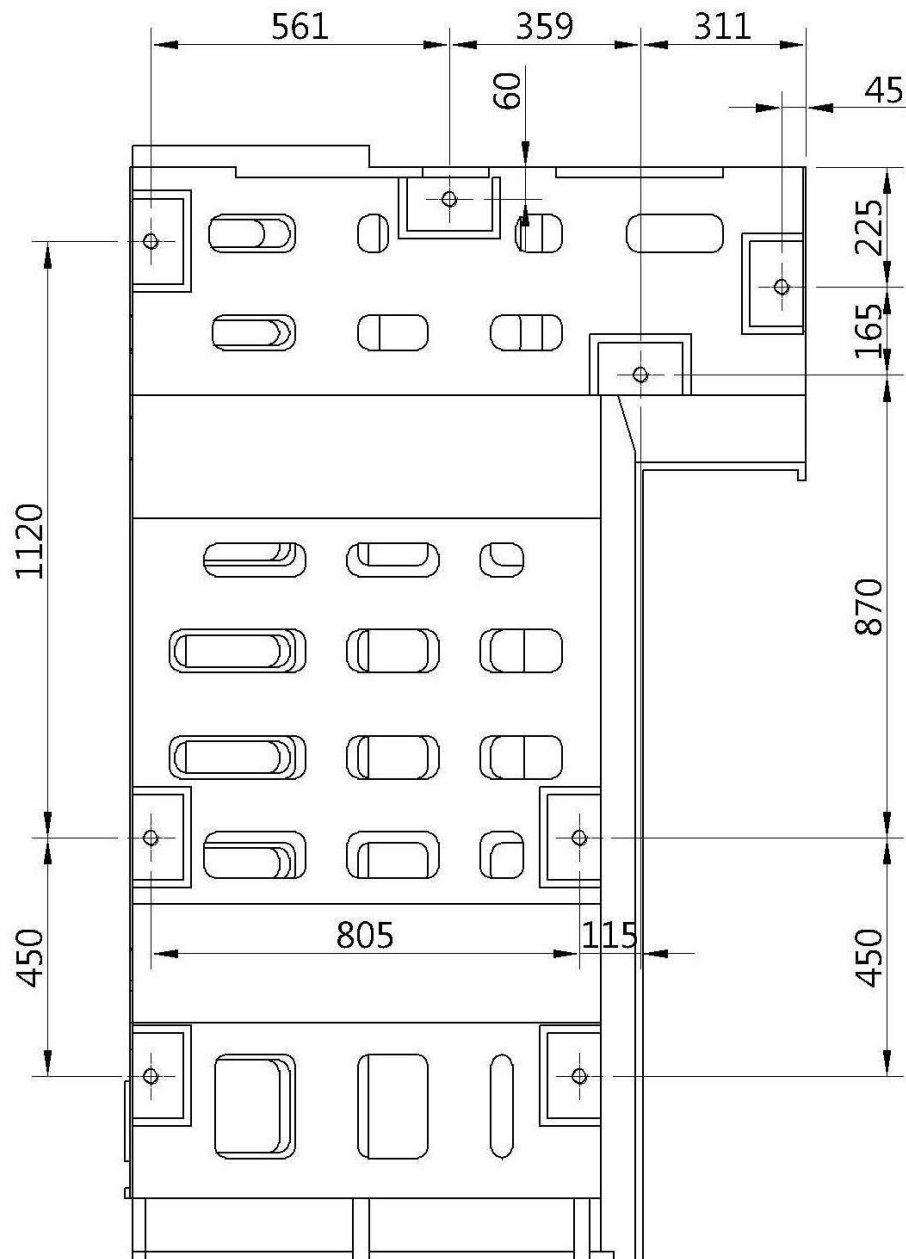
## SL 300 Dimensional Drawing



## SL 300 Operational Dimensions



## SL 300 Foundation







## Foundation Guidelines

1. FLATNESS ALLOWANCE OF THE FLOOR LEVEL SHOULD BE WITHIN  $\pm 10\text{mm}$  (0.39")
2. TAKE PRECAUTIONS SO THAT THERE ARE NO CRACKS IN THE CONCRETE.
3. IF AN EQUIVALENT ANCHOR BOLT IS USED, THE FOLLOWING CONDITIONS MUST BE MET:
  - a. CORE DRILLED HOLES MUST BE PREPARED TO ENSURE PROPER ADHESION OF GROUT TO THE FOUNDATION CONCRETE.
  - b. THE GROUT AND ANCHOR BOLT MANUFACTURERS' RECOMMENDATIONS MUST BE FOLLOWED TO ENSURE FULL STRENGTH OF THE FOUNDATION.
  - c. AFTER PROPER CURE TIME, ANCHOR BOLT MUST BE CAPABLE OF ALLOWING A MINIMUM TORQUE TRANSMISSION OF 542N-m (400 FT-LB.)
4. BASED ON THE SOIL CONDITIONS, THE STIFFNESS OF THE FOUNDATION SHALL BE DETERMINED, SO THAT THE MACHINE BASE DOES NOT DEFLECT MORE THAN 0.012mm (0.0005") INCHES TO MAINTAIN THE MACHINE ACCURACY AND PERFORMANCE
5. THIS DRAWING SHOWS THE GENERAL ARRANGEMENT REQUIRED FOR THE MACHINE FOUNDATION. LOCAL MASONRY CONTRACTOR AND/OR CIVIL ENGINEERS MUST BE CONSULTED FOR ADDITIONAL RECOMMENDATIONS, E.G. DEPTH, REINFORCING STEEL BASED ON THE LOAD BEARING CHARACTERISTICS OF THE SOIL, TO ACHIEVE SPECIFIED PERFORMANCE OF THE MACHINE.
6. FOUNDATION CONTRACTOR MUST PAINT FOUNDATION WITH A LIQUID PROOF PAINT PRIOR TO THE INSTALLATION OF THE MACHINE TO PREVENT THE FOUNDATION FROM ABSORBING MOISTURE.

FAILURE TO FOLLOW RECOMMENDED FOUNDATION GUIDELINES OR MANUFACTURERS' SPECIFICATIONS FOR ANCHORS MAY VOID GUARANTEES OF QUOTED MACHINE ACCURACY. IF PROPER ANCHORS HAVE NOT BEEN PROVIDED, THE MACHINE MAY NOT BE INSTALLED, UNLESS PRIOR ARRANGEMENTS HAVE BEEN MADE.