



SPM TOOLS

# *Safal Turn-6*

## CNC TURNING CENTER



High Precision & Highly Productive  
High Performance & Competitive Price



# Safal Turn - 6

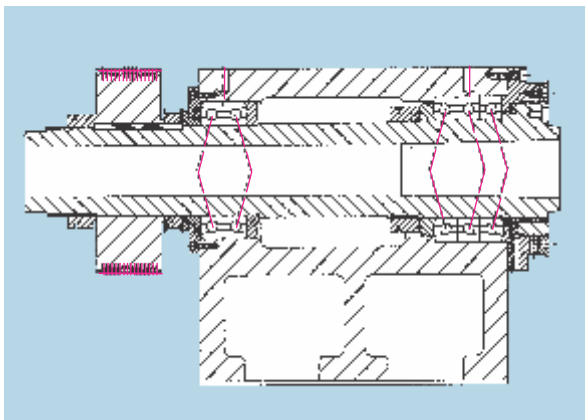
## CNC TURNING CENTER

The 'Safal Turn-6' is a high precision cost effective Slant Bed CNC Turning Centre for machining medium and heavy components. This machine has superior features like rigid spindle arrangement using precision preloaded angular contact ball bearings, programmable tailstock quill, 8-station bi-directional turret, absolute encoders for both axes.

### Structure

Rigid Slant Bed ergonomically designed for easy chip and coolant flow. It is logically ribbed to provide rigidity. Chip conveying facility is provided to the side of the machine.

The Saddle is well supported on 30 deg. slant bed instead of slant carriage, which ensures high rigidity as saddle guideways are closely spaced to bed guideways.



### Headstock

The headstock is assembled in a clean room environment. Instead of cartridge, direct quick driven gearless headstock is designed for high stiffness. The spindle is supported on precision pre-loaded angular contact ball bearings.

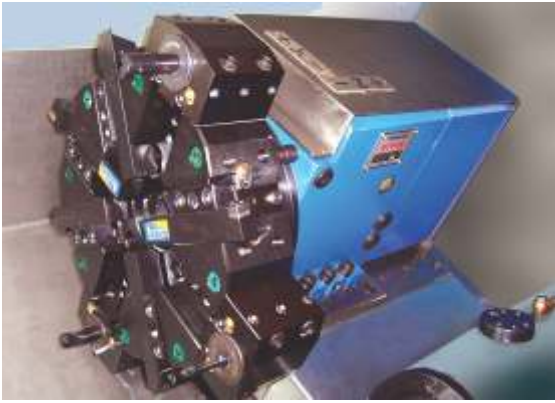
The front set is configured to have a pair of bearings mounted in "tandem" and the third bearing opposing the pair and rear set of bearings are mounted in back-to-back configuration, which gives high stiffness to the spindle assembly in both axial and radial directions.

This arrangement meets all types of precision requirements as well as heavy machining of components.

### Tailstock

Rigid tailstock consists of a hydraulically operated quill. The quill can be programmed by M-functions through the program or moved by foot pedal. The quill and the body are independently movable. The tailstock is mounted on V and flat guideways. Widely spaced guideways and heavy duty design of the tailstock ensures rigidity.





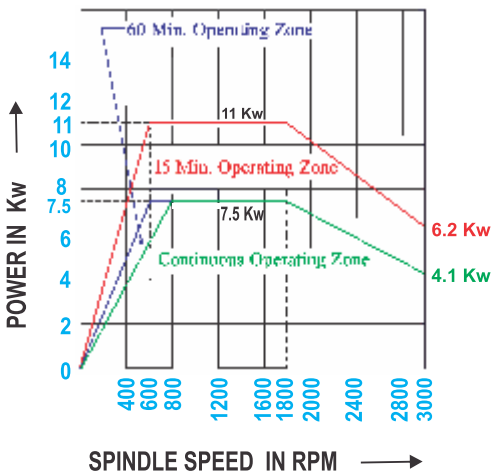
## Turret

Totally enclosed robust bi-directional tool turret offers fast and accurate indexing. The disc also provides coolant to the tool point. Electrical elements are conveniently located in a separate area, free from oil and coolant.

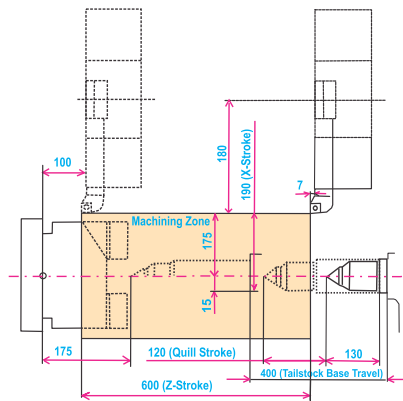
## Axes

X and Z axes features high precision C1 & C3 class pre-loaded ball screws supported by precision-class ball screw support bearings. Widely spaced, rectangular, hardened and ground steel guideways for both axes. Mating surfaces are coated with turcite for wear resistance and stick-slip free motion. Ball screws are protected by steel covers. Automatic centralized metered lubrication is provided to guideways and ball screws. Absolute encoders for both axes eliminates limit switches and setting dogs.

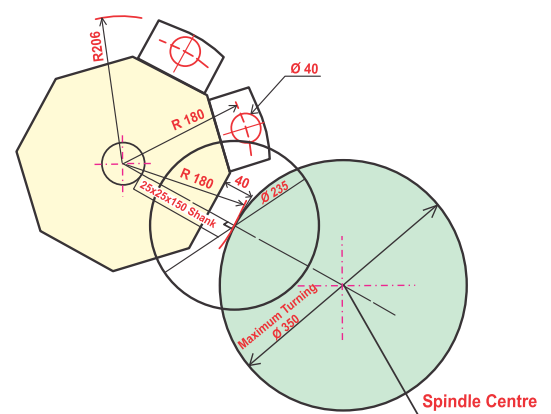
SPINDLE POWER-SPEED DIAGRAM



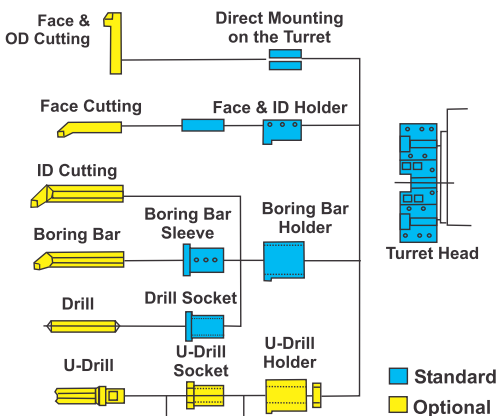
MACHINING ZONE



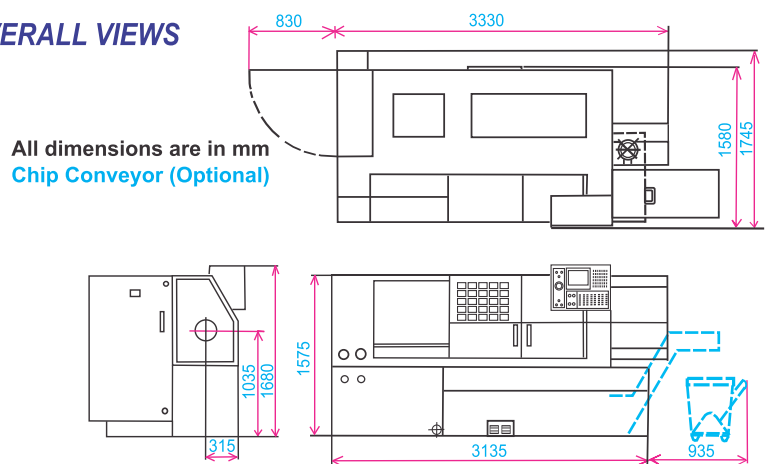
TURNING CAPACITY



TOOLING DIAGRAM



OVERALL VIEWS



# Specifications (Safal Turn 6)

## Capacity

|                       |    |     |
|-----------------------|----|-----|
| Swing over bed        | mm | 550 |
| Swing over carriage   | mm | 350 |
| Admit between centres | mm | 650 |
| Max. turning dia.     | mm | 350 |
| Max. turning length   | mm | 600 |

## Main Spindle

|  |     |          |
|--|-----|----------|
| Spindle nose   |     | A2-6     |
| Bore through spindle   | mm  | 62       |
| Bar capacity through spindle                                   | mm  | 37       |
| Chuck size   | mm  | 200      |
| Front bearing bore   | mm  | 120      |
| Spindle motor rated power<br>(Continuous rating/15 min rating) | KW  | 7.5/11   |
| Speed range  | rpm | 50-3000  |
| Full power range ( 15 min rating )                             | rpm | 600-1800 |

## Axes Slides

|                         |        |          |
|-------------------------|--------|----------|
| X-axis stroke           | mm     | 190      |
| Z-axis stroke           | mm     | 600      |
| Feed rate               | mm/min | 0-10,000 |
| Rapid traverse rate     | m/min  | 15       |
| X & Z axes              |        |          |
| Ball screw dia. x pitch | mm     | 40x10    |
| X & Z axes              |        |          |
| Rated torque X & Z axes | Nm     | 11       |

## Tailstock

|                       |    |     |
|-----------------------|----|-----|
| Quill diameter        | mm | 80  |
| Quill stroke          | mm | 120 |
| Taper in quill        |    | MT5 |
| Tailstock base travel | mm | 400 |

## Turret

|                      |      |       |
|----------------------|------|-------|
| No. of stations      | Nos. | 8     |
| Max. boring bar dia. | mm   | 40    |
| Tool cross section   | mm   | 25x25 |

## Accuracy

|               |    |         |
|---------------|----|---------|
| Positioning   | mm | 0.010   |
| Repeatability | mm | ± 0.003 |

## Installation Data

|                                |     |                |
|--------------------------------|-----|----------------|
| Basic M/c weight (approx.)     | kg. | 4500           |
| Basic M/c Dimensions (approx.) | mm  | 3330x1745x1680 |
| Power Requirement              | KVA | 20             |

Due to continuous improvement of the product, SPM reserves all rights to change the above specifications without any prior notice.

## CNC System : FANUC OiMATE TD

### Features

- 7.2" LCD monochrome display
- Direct drawing dimension programming including angles and insertion of chamfers and radius
- Tool nose radius and length compensation
- Absolute / Incremental programming
- Linear and circular interpolation
- Background editing
- Multiprogram storage with program identification
- Self-diagnostics and alarm display
- Constant surface speed
- Rigid tapping cycles
- Thread cutting cycles
- Face grooving cycles
- Multiple repetitive cycles
- Backlash compensation
- Metric/Inch programming
- Program memory of 640 meters (256 K)
- External interface PCMCIA card, RS232 port
- Simultaneously controlled 2 axes
- Manual data input
- Hardware and software locking for program protection
- Servo HRV2 control

### Standard Machine Features

- Rigid direct spindle assembly without cartridge
- AC spindle and axes drives
- Hardened and ground guideway strips
- Turcite coated slideway surfaces
- Programmable tailstock quill
- High speed bi-directional 8-station tool turret
- Automatic centralized lubrication system
- Coolant system
- Machine lighting system
- Turning tool holders (8 Nos.)
- Boring bar holders (3 Nos.)
- Axial tool holder (1 No.)
- Set of sleeves
- Service tool kit

### Optional Machine Features

- 250mm dia. chuck
- Chip conveyor
- Panel cooler
- Patolight for programme end and alarms
- A2-8 Spindle with 2500rpm
- BTP-100 Turret with 8 stations
- Program simulation & graphics



**SPM TOOLS**

### Corporate Office :

Sector A, Plot No. 4,5,6,7, Parvati Co-op. Ind. Estate,  
YADRAV-416 145, Dist : Kolhapur, Maharashtra (INDIA)

T : +91 2322 252590  
F : +91 2322 252592  
E : marketing@spmttools.in  
spmttools.ichal@gmail.com  
U : www.spmttools.co.in

**FIE Group Company**

### M/s. Sree Engineers

#11, 3rd Main, 4th Cross, 4th Phase, 7th Block,  
Banashankari 3rd Stage, BANGALORE -560085.  
T : +91 80 26695857, F : +91 80 26797895  
C : +91 9448385857, E : sreeeng@vsnl.net

### M/s. RGK Engineering Enterprises (P) Ltd.

No. 218, Karthik Krupa, saraswati Nagar,  
Vijay Nagar, BANGALORE -560040.  
T : +91 80 23381641, 23303110  
F : +91 80 23147882  
C : +91 9845018313  
E : narayanan\_rgk@yahoo.co.in

### M/s. Quality Sales & Service

68/3/1A, Bidhan Nagar Road, KOLKATTA -700 007  
T : +91 33 23566199, Telefax : +91 33 23566202  
C : +91 9433111218  
E : quality\_org@yahoo.co.in, quality\_org@rediffmail.com

### M/s. Precimech India (P) Ltd.

A-402, Priyadarshini Society, Plot No. 17,  
Patpar Ganj, DELHI-110 092  
T : +91 11 65266171, 22611292  
C : +91 9810195966, E : pmikuk@gmail.com

### M/s. Amey Engineers & Traders

B-23/27, Jeevan Pushpa, Behind Ambika Darshan,  
Nana Shankar Seth Road,  
DOMBIVLI (W)-421 202, Dist. : Thane  
T : +91 251 2480490, F : +91 251 2490918  
C : +91 9324803266  
E : aet@vsnl.com, ameyengineers@hotmail.com

### Pune Region Contact :

+91 9881236403  
+91 9822519373