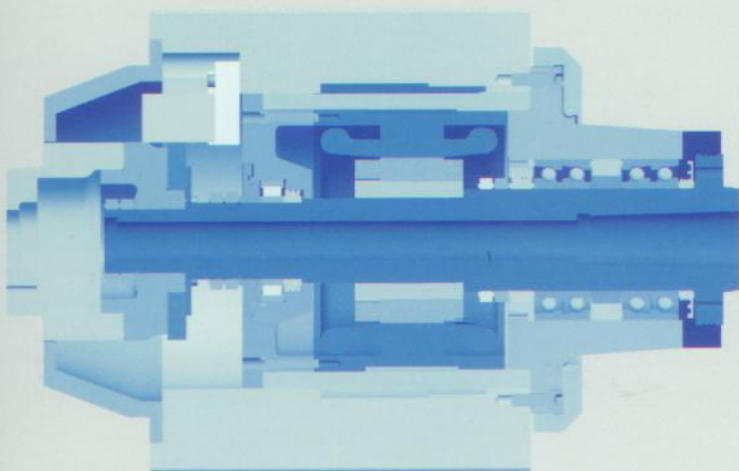
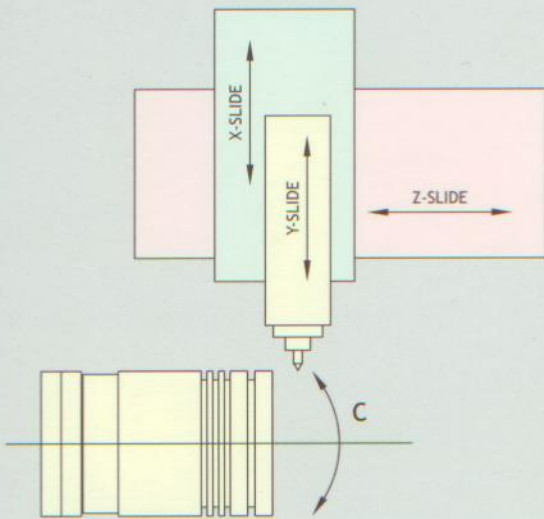


# Camless Oval Turning Machine



# Overview

With cutting edge technology and research, i-SECT the Non Circular Turning Machine has become the first Indian Machine, specially designed for Aluminium Piston Oval Turning. High dynamics of the machine is achieved by introducing the latest linear motor technology in tandem with SINUMERIK 840 D controller.

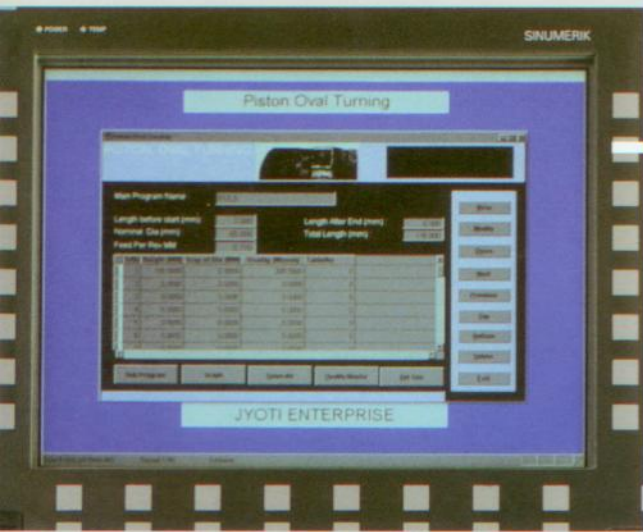


## Y Axis

The Y axis slide is built with special linear motor for maximum dynamics and accuracy. Since there are no mechanical transmission elements such as ball screw or couplings, natural oscillations and the effects of elasticity, backlash and friction are largely avoided and thus achieving acceleration up to  $100 \text{ m/s}^2$ . These slides are adequately protected from dust environment and maintained under controlled temperature with the help of a separate chiller unit to avoid very high temperatures while operating at high speeds which is required for Non Circular Cutting.

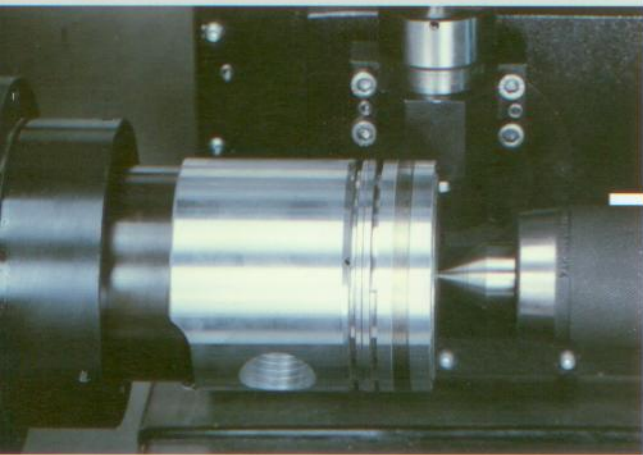
## C Axis

The spindle of the machine is a very powerful one with inbuilt Synchronized motor having high power rating and designed to provide quick acceleration and deceleration. The centrally arranged spindle within the super precision angular contact bearings ensure stability and rigidity with accuracy at high speeds. Perfect grease lubrication ensures increased spindle bearing life. Spindle growth due to temperature at very high speeds is controlled by using a specially designed chiller unit.



## POTS (Piston Oval Turning Software)

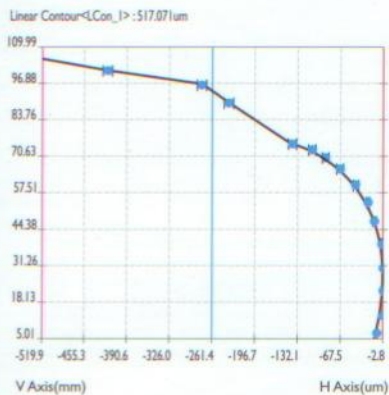
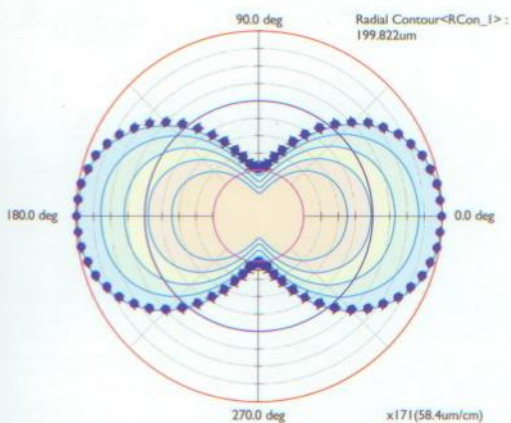
Pots is a programming software exclusively used for programming Piston Oval Turning. This software can be used to create almost all type of Piston Profiles. Pots has been developed by JYOTI to simplify visibly complicated Non Circular Turning Programming in G-Codes. The programs created in POTS can be verified by the graphic display of Piston Profiles.



## Turret (Opt.)

The i-SECT is available with optional 4 station tool turret. Tool turret is specially provided for jobs like Diesel Engine Pistons with Cast Iron Piston Rings. Changing of tools allows an option of using different tools for different surfaces and thus saving tool life.

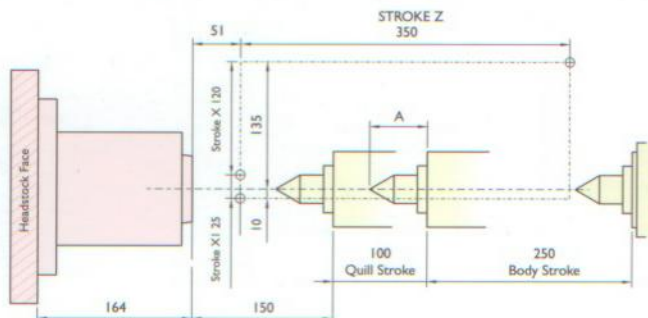
## Sample Profile



## Tailstock

i-SECT is equipped with standard Tailstock having a quill stroke of 100mm with a Taper MT-3. The quill is pneumatically operated.

## Interference Diagram



Note :Tip Dimension 'A' For Revolving Center May Vary as Per Manufacturer

## Overall Specification

### Capacity

Swing over bed	300 mm
Maximum Turning Length	300 mm
Maximum Turning Dia.	200 mm

### Slides

Cross (x-axes) Travel	120 mm
Longitudinal(z-axes) Travel	350 mm
Y axis (linear) Travel	25mm
Rapid(X&Z)	20m/min

### Main Spindle

Motor Power (Cont/30min.)	10/13kw
Spindle Bore	45mm
Spindle Nose	A2-5
Speed Range	50-3000rpm
Min. C axis increment	0.001 deg.

### Turret (Opt.)

No. of stations	4
Tool size	8 mm

### Tailstock

Quill Diameter	75 mm
Quill stroke	100 mm
Thrust (Adjustable) max.	300kgf.

### Dimension

(Approx.) 2200 x 1800 x 1550mm

## Standard Features

• AC inbuilt motor spindle • Linear Guideways for all axes • Chiller for Y axis and Spindle • Auto & Manual Coolant System • Centralized & Programmable Lubrication • Electric Cabinet with Air Conditioning unit • POTS software for PISTON OVALTURNING

Note : •All above information is subject to change arising out of continuous product improvement. • The description 'standard accessories / feature' conforms to its list; not the photo of machine shown in the catalogue.

## Control System

• SIEMENS SINUMERIK 840D

• Simultaneous 4 axes control • Multiple repetitive cycles • Look ahead • Helical interpolation • Direct drawing dimension Programming • Pitch Error compensation • Contour spindle monitoring • Oriented Spindle stop • Auto Referencing • Tangential and Analogue speed control • Constant Surface Speed Control • RS-232C serial interface Port • 1.0 GB memory • Background editing • Online help • Macro services • Inch /metric switchable • Tool radius compensation • Backlash compensation • Electronic handwheel • Dynamic block buffer • In process synchronization • Programmable rounding clearance • NURBS • High level CNC programming • Graphic Simulation • Polar coordinates

## Possible Options

• 4 Position Tool Turret • Chip Conveyor • Hyd./Pneumatic Clamping • Pneumatic Auto Door • Filtered & Chilled Coolant System



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