

### Objective

Interpret the components, concept of intermittent level industrial machine and learn about the advanced Fanuc/Siemens/Syntec controller handling & programming skills for a turning machine to produce different kinds of components with optimized cycles and execute different kinds of practical applications simulated as exercises.

### Learning Objectives:

Having successfully completed this lab, the student will demonstrate knowledge in –

- Learn about techniques to optimize the cutting parameters
- Advanced programming techniques matching industrial standards.
- Advanced machining cycles & control techniques.
- Knowledge on centralized Lubrication and re-circulating coolant system
- Learn about Intricate Tool changers system.
- Maintenance of CNC machineries and Trouble shooting



CNC Flat Bed Bench Turning Centre with Linear Tools SIEMENS 828D/ FANUC 0i TF control Programming and Industrial Control Panel With colour monitor with closed loop servo motor control with further option of linking to CAD/CAM.

### SPECIFICATIONS

<b>AXES</b>		
X- axis travel	mm	230
Z - axis Travel	mm	270
Ball Screw X / Z	mm	Ø25 x 10 - C3 Class
Programmable feed rate	mm/min	0 - 10000
Rapid feed rate	mm/min	30000
Axis motor X / Z Type		AC Servo motor
Slides		Linear motion guide ways
<b>CAPACITY</b>		
Chuck Size	mm	135
Chuck Type		Hydraulic
Swing over bed	mm	300
Swing over cross slide	mm	120
Maximum turning Diameter	mm	100
Maximum turning Length	mm	100
Bed	type	Flatbed Lathe
No. of axes	no	2
Distance between centers	mm	NA
<b>ACCURACY</b>		
Positioning Accuracy	mm	0.01
Repeatability	mm	+/- 0.005
<b>SPINDLE</b>		
Spindle nose taper		A2-4
Bore through spindle	mm	40
Programmable spindle speed	rpm	150-4000
Spindle Motor Power S1 (15 minute rating in parenthesis)	kW	"Fanuc: 3.7 (5); Siemens: 3.7 (5)"
<b>CNC detail</b>		
Control system		"FANUC 0i TF; SIEMENS 828D"

Note: Specifications are subject to change.

### Tesca Technologies Pvt. Ltd.

IT-2013, Ramchandrapura Industrial Area, Sitapura Extension,  
Near Bombay Hospital, Vidhani Circle, Jaipur-302022, Rajasthan, India,  
Tel: +91-141-2771791 / 2771792; Email: info@tesca.in, tesca.technologies@gmail.com  
Website: www.tesca.in

<b>Linear Tooling</b>		
Tool cross section		20 x 20/ 25 x 25
No. of Station	no	4 or 5
Boring bar size(capacity)	mm	25
<b>Coolant / Lubrication</b>		
Capacity	L	80/ 40 LPM
Coolant motor	kW	0.1
Lubrication	-	Automatic
<b>Power source</b>		
Main supply ( $\pm 10\%$ )		415V, 3 Ph., 50/60 Hz
Stabilizer		3 phase servo type
<b>Machine dimensions</b>		
L x W x H	mm	1700 x 1650 x 1900
Weight (approx)	Kgs	1100

**Standard Lathe Operations and Maintenance Tools:**

Allen Key 1.0,2.0,2.5,3.0,4.0,5.0,6.0,8.0mm	Set	1
Double Ended Spanner - 8x9, 10x11, 12x13,16x17 mm	Set	1
Screwdriver (No: 600)	No.	1
Oil can	No.	1
63mm Brush	No.	1
Billets	No.	2
Dead Center	No.	1
Side door / control box Key	No.	1
RS 232 cable	No.	1
Limit switch for door for emergency stop.	No.	1
Lathe Chuck Key	No.	1
Vibration Pad	No.	4

**NOTE: Oil and coolant to be purchased locally by the user, as international shipment is being restricted by customs rules**

**OPTIONAL: TOOLING PACKAGE**

Turning & Facing Tool holder with Insert	No.	1
Copy Turning LH, N, RH Tool Holder with Insert	Set	1
External Threading Tool Holder with Insert	No.	1
External Grooving Tool Holder with Insert (Parting up to dia38mm), 3mm Width	No.	1
Boring bar tool holder with inserts (12 mm, 16 mm)	No.	1
Internal threading Tool holder with inserts (Shank Dia 16mm)	No.	1
Spirex Tap( ISO) M6(For Live Tool only )	No.	1
Tap Collet (ISO) RD16 suitable for M6(For Live Tool only )	No.	1
Centre drill shank dia 8mm Tip Dia 2mm	No.	1
Twist Drill 5,6,8,10,12,16mm	Set	1
RD16 Collets 3,4,5,6mm (For Live Tool only )	Set	1
HSS End Mills 3,4,5,6mm (For Live Tool only )	Set	1
HSS Slot Drills 3,4,5,6mm (For Live Tool only )	Set	1

**OPTIONAL: SET OF STANDARD OPERATION AND MAINTENANCE SPARES FOR ONE YEAR**

Spindle Belt	No.	1
Encoder Belt	No.	1
Flexible Coolant Hose	Meters	3
Soft Jaw	Set	1
0.18 SQMM 6 PAIR TWISTED PAIR CABLE (10 CORE)SHIELDED, OUTSIDE DIA OF THE CABLE : 6 MM	Meters	1
ASF4(L) 2A,24VDC	No.	1

Note: Specifications are subject to change.

**Tesca Technologies Pvt. Ltd.**

IT-2013, Ramchandrapura Industrial Area, Sitapura Extension,  
Near Bombay Hospital, Vidhani Circle, Jaipur-302022, Rajasthan, India,  
Tel: +91-141-2771791 / 2771792; Email: info@tesca.in, tesca.technologies@gmail.com  
Website: www.tesca.in

ACMCB, 3POLE ,415VAC, 32 A PTR A 10 3P B32	No.	1
MPCB 0.63-1 A WITH 1NO AND 1 NC GV2 -ME05	No.	1
CONTACTOR +24 VDC , COIL VG, WITH COIL SUPPRESSOR, 6A LP1KO6 10BD	No.	1
DCMCB , 1 POLE, 1A PTR A031DC01	No.	1
ACMCB , 1 POLE, 3A PTR A101PC03	No.	1
DCMCB , 1POLE, 4A PTR A031DC04	No.	1
DCMCB , 1POLE, 2A PTR A031DC02	No.	1
AC MCB ,2 POLE,4 A PTR A101PC04	No.	1
DC MCB , 1 POLE 6A PTR A031DC06	No.	1
AC MCB ,3POLE,2 A PTR A103PC02	No.	1
12V DC POWER SUPPLY INPUT : 85-285 V OUTPUT: 12VDC, 5 A DIN RAIL MOUNTING TYPE	No.	1
Relay board 8 relay 1 CHANGEOVER	No.	1
RB81-TT-G2R1DC24	No.	1
INTERFACE MODULE 50PIN	No.	1
FR-50 50 CORE RIBBON CABLE FOR THE INTERFACE MODULE	Meters	2
50 PIN FRC FEMALE CONNECTOR	No.	1
Mushroom head pushbutton latch type for Emergency with 1NO+1NC	No.	1
Work light with inbuilt choke smc fluorescent 11w/24vdc LAMPS:1x11 W PL-L	No.	1
ILLUMINATED PUSH BUTTON 18X18 FLUSH TYPE, SQUARE 24VDC OPERATED GREEN with 1 NO D16LMS1abHG	No.	1
ILLUMINATED PUSH BUTTON 18X18 FLUSH TYPE, SQUARE 24VDC OPERATED RED with 1 NC D16LMS1abHR	No.	1
COMPACT TURN Belts	No.	1
Spindle Belt	No.	1
Z axis	No.	1
X axis	No.	1
Encoder	No.	1

Order Code	Description
<b>54007I</b>	Compact Turn - CNC Turning Machine with FANUC 0i TF Control with Linear Gang Tool
<b>54007II</b>	Compact Turn - CNC Turning Machine with FANUC 0i TF Control with 2 driven tools

### Training Skills

- |                                                                                                                                                                                                                                                                                                                          |                                                                                                                                                                                                                                                                                        |
|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <ul style="list-style-type: none"> <li>• Study on Process Planning</li> <li>• User friendly and graphically assisted different canned cycles</li> <li>• Discussion on Program Zero and Offset definition</li> <li>• Discussion on Programming Elements</li> <li>• Discussion on Industry Standard ISO G and M</li> </ul> | <ul style="list-style-type: none"> <li>• Codes</li> <li>• Discussion on Various Tools to be used in a CNC Turning Operation</li> <li>• Discussion on Various Machining Cycles used in CNC Turning Programming</li> <li>• Identification of the Components of the CNC System</li> </ul> |
|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|

**Note:** As part of continuous improvement, Tesca reserves the right to alter machine design and specification without prior notice.

Ordering Details					
SN.	Order Code	Details	SN.	Order Code	Details
1.	<b>54007I to 54007II</b>	Included in the package: Hydraulic Chuck and powerpack (135mm) Panel cooler for controller Set of Operation and Maintenance Manuals Chip Tray			Coolant Motor
					Linear Gang Tool (4 positions) <b>(for 54007I)</b>
					2 driven tools <b>(for 54007II)</b>
			2.	54007A	Tooling Package
			3.	54007B	OPTION: Automatic Door
			4.	54007C	Export Packing

Note: Specifications are subject to change.

### Tesca Technologies Pvt. Ltd.

IT-2013, Ramchandrapura Industrial Area, Sitapura Extension,  
Near Bombay Hospital, Vidhani Circle, Jaipur-302022, Rajasthan, India,  
Tel: +91-141-2771791 / 2771792; Email: info@tesca.in, tesca.technologies@gmail.com  
Website: www.tesca.in