Computer Aided Manufacturing(CAM) Lab

CNC VERTICAL MACHINING CENTER

Make : BRIDGEPORT (HARDINGE)

Model : GX 600

Control system : Fanuc 0i MD

Specifications:

Travels: X,Y,Z		600x540x540mm
Working Surface		750mm x 540mm
Control Type		Fanuc *i*-Series GX
Spindle Taper		No. 40
Spindle power		15kw
Spindle Speed		8,000 rpm
Tool Changer capacity		20
Accuracy	Positioning	0.01mm
	Repeatability	0.005mm
Feed rates max.	Cutting	12m/min
	Rapid &Jog	30m/min

CNC VERTICAL MACHINING CENTRE

Make : BFW

Model : CHANDRA+

Control System : Fanuc OiMF +

Specifications:

Travel: X,Y,Z		800 x 350 x 380 mm
Working Surface		1060 x 315 mm
Spindle Power		5.5 kW
Spindle Speed		60 - 6000 rpm
Tool Changer Capacity		20
Accuracy	Positioning	± 0.010 mm
	Repeatability	± 0.005 mm
Feed Rates Max.	Cutting	1-5000 mm/min.
	Rapid& Jog (X,Y)	10,000 mm/min.
	Rapid & Jog (Z)	5000 mm/min.

CNC LATHE MACHINE

Make : HMT-PRAGA

Model : PTC- 200

Control system : FANUC Oi-Mate

SPECIFICATIONS:

Swing diameter over Bed		ø250mm
Max.Turning Diameter		ø200mm
Max.Turning Length with Chuck		200mm
Max.Turning Length without Chuck		300mm
Spindle Speed		100 – 4000rpm
No. of Tools		8
Turning Tool Size		20x20mm
Type of Bed		Inclined 30° to vertical
Traverse	X-axis	110mm
	Z-axis	300mm
Feed Rates		1 – 5000mm/min
Rapid Feed Rates	X-Axis	18m/min
	Z-axis	30m/min
Positional	X-Axis	±0.003mm
	Z-axis	±0.004mm
Repeatability	X-Axis	±0.003mm
	Z-axis	±0.004mm

CNC TURNING CENTER –TRAINER

Make: MTAB Engineers Pvt. Ltd

Model: **XLTURN**

Specifications:

X- Axis Travel	80 mm
Z- Axis Travel	180 mm
Chuck Size	100 mm
Maximum Turning Diameter	32 mm
Maximum Turning Length	120 mm
Distance between Centers from Spindle	210 mm
Spindle Nose Taper	A2-3 / MT3
Spindle Speed Range	150 - 3000 RPM
Spindle Motor Capacity	1 HP
Number of Stations	8
Control	Fanuc
Main Supply	Single phase, 110V/230 V, 50/60 Hz

HIGH SPEED MICROMACHINING CENTER

Make: MicroMach, India

Model: PMC080

Specifications:

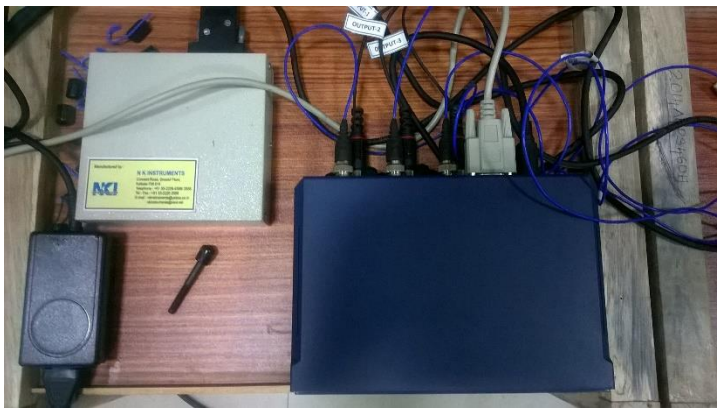
Stage Travel	X-axis	100 mm
	Y-axis	100 mm
	Z-axis	100 mm
Mode of Operation		CNC
Accuracy		± 2μm for stage
Resolution		0.15 μm
Load Capacity		15 kg on stage
Max. Spindle Speed		80,000 RPM
Travel Speed		0.01 – 20 mm/sec
Max. Torque		11.9 N-cm
Support		Granite

Lathe Cutting Force Dynamometer

Make: NK Instruments

Specifications:

3 Component Piezoelectric Based Cutting Force Measurement System(Fz, Fx, & Fy)	
Cutting force Dynamometer Size	109 x 80x 35 mm
Range: Fx , Fy & Fz direction	± 4 kN,
Sensitivity	Fx: 3.7 pC/N, Fy: 7.8 pC/N, Fz – 7.8 pC/N.
Cable:	Connecting cable for 3-component sensors with V3 neg. connector - 3xBNC pos- 3 to 5 meter length
Multi-Channel Charge Amplifier	Industrial type Charge Amplifier, 3 channel , BNC, Range 15PC to 1,00,000 PC, Voltage Output:+/-10 V, Max Current Output+/- 5 mA, Output Impedance: 10 ohm
Data Acquisition System	Data Acquisition Hardware supporting 4 Channel Simultaneous Sampling, Input Range: ±1.25,±2.5,±5,±10 V, Sample Rate: 50.0/100 kS/s per Channel, Input BNC neg. Resolution: 24-Bit Anti-aliasing Filter, Interface: USB 2.0
Data Acquisition Software Data Acquisition & Analysis Software	Customized Standalone configuration based on Channel selection. Graphics Functions Measured data represented on one or more graphs Display as y(t), Display of numeric values Cursor function, Zoom function, Data Export with storing facility. Display of average value of data Min, Max value of data.

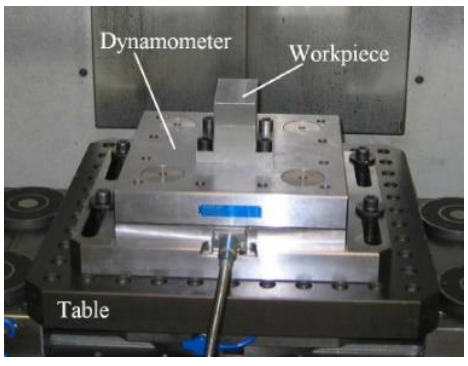


CNC Milling, Lathe & Drilling Tool Dynamometers

Make: EMI Technologies

Specifications:

Drilling Tool Dynamometer (2 Forces – Thrust & Torque) With Signal conditioner for XY axis.	
Sensor-	Strain gauge based two axis force sensor
Accuracy(Approx.)	± 1 of full scale
Linearity(Approx.)	± 1 of full scale
Excitation Voltage (Approx.)	10V DC MAX
Display Type	Independent for each axis.
Range	500 kg force in Thrust 20.0kgm force in Torque
USB data acquisition system (2 Channel)	Resolution: 12-bit ADC, No of samples: 10K samples per sec. No of channels:8(single ended),4(differential ended)
Lathe Tool Dynamometer with Signal Conditioner for XYZ	
Accuracy(Approx.)	± 1 of full scale
Linearity(Approx.)	± 1 of full scale
Excitation Voltage (Approx.)	10V DC MAX
Display Type	Independent for each axis.
Range	500 kg force in three direction
USB data acquisition system (3 Channel)	Resolution:12 bit ADC, No of samples: 10K samples per sec. No of channels:8(single ended),4(differential ended)
Milling Tool Dynamometer With Signal conditioner for XYZ axis.	
Sensor Size(Top)	300mm X 300mm
Sensor	Stain gauge based three axis force sensor
Accuracy(Approx	± 1 of full scale
Linearity(Approx)	:-:- ± 1 of full scale
Excitation Voltage (Approx)	10V DC MAX
Display Type	Independent for each axis
Range	500 kg force in three direction
USB data acquisition system (3 Channel)	Resolution:12 bit ADC, No of samples: 10K samples per sec. No of channels:8(single ended),4(differential ended)



Tool Vibration Measurement Device

Make: PCB Piezotronics

Model: 356B21&482C05

Specifications:

Platinum Stock Products: Triaxial ICP® ACCELEROMETER	
Sensitivity	(±10%)10 mV/g (1.02 mV/(m/s²))
Measurement Range	±500 g pk (±4905 m/s² pk)
Electrical Connector	8-36 4-Pin
Frequency Range (±5 %) (y or z axis)	2 to 10000 Hz
Frequency Range (±5 %) (x axis)	2 to 70 00 Hz
Resonant Frequency	≥55 kHz
Broadband Resolution (1)	0.004 g rms **(0.04 m/s² rms)**
Platinum Stock Products; 4-channel, line-powered, ICP® sensor signal conditioner	
Channels	4
Sensor Input Type(s)	ICP®
Output Range (Maximum)	±10 V
Low Frequency Response (-5 %)	<0.1 Hz
High Frequency Response (-5 %)	>1000 kHz
Phase Response (at 1 kHz)	±1 °
Cross Talk (maximum)	-72 dB
Fault/Bias Monitor/Meter (LED)	Open/Short/Overload