



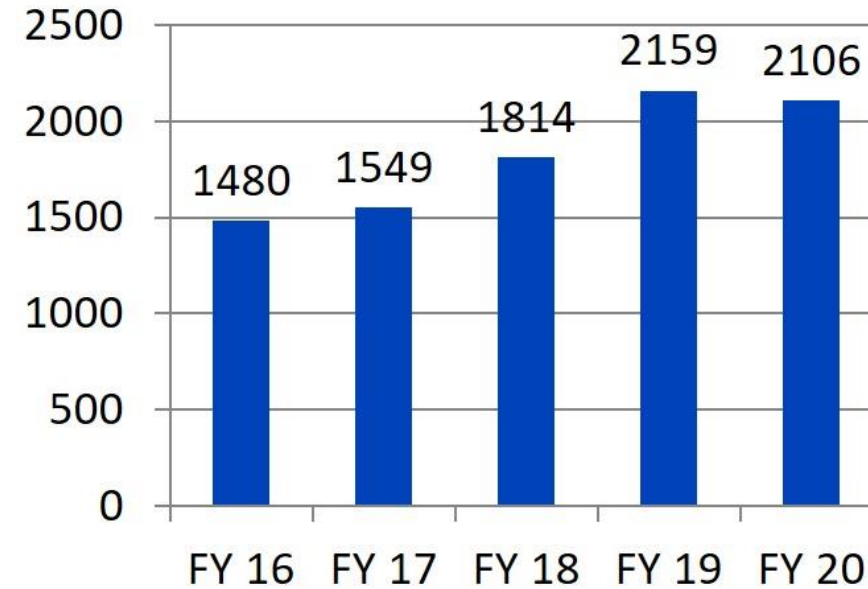
# **PENNAR AERO**

## **COMPONENTS AND SUB-ASSEMBLIES**



“Pennar Group is one of the fastest growing major Engineering players in India with diverse product portfolio and geographical spread”

## Gross Revenue (INR Crore.)

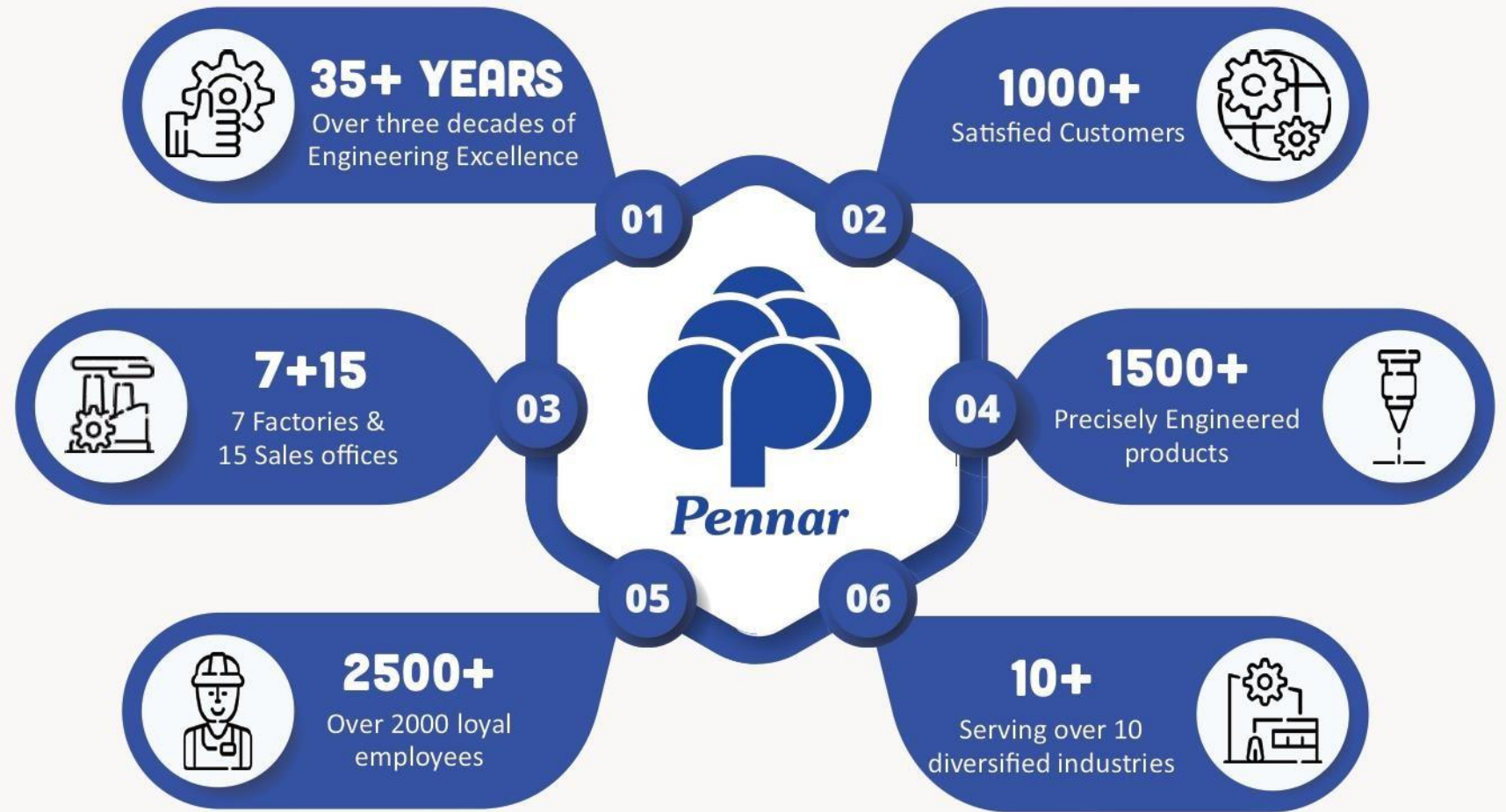


**PENNAR INDUSTRIES LIMITED**



Pennar Industries and Pebs Pennar are listed on Both NSE and BSE

# ABOUT PENNAR GROUP



# BUSINESS OVERVIEW

Diversified Product Portfolio



## STEEL PRODUCTS

- Narrow and special grade cold rolled strips
- Engineered profiles such as ESP electrodes
- Building products
- Road safety systems
- Sheet piles
- Automobile panels and profiles



## TUBES

- Precision tubes
- CDW/ERW Tubes
- GP Tubes



## INDUSTRIAL COMPONENTS

- Pressed steel precision components for auto, industrial and white goods segments
- Hydraulics manufacturing



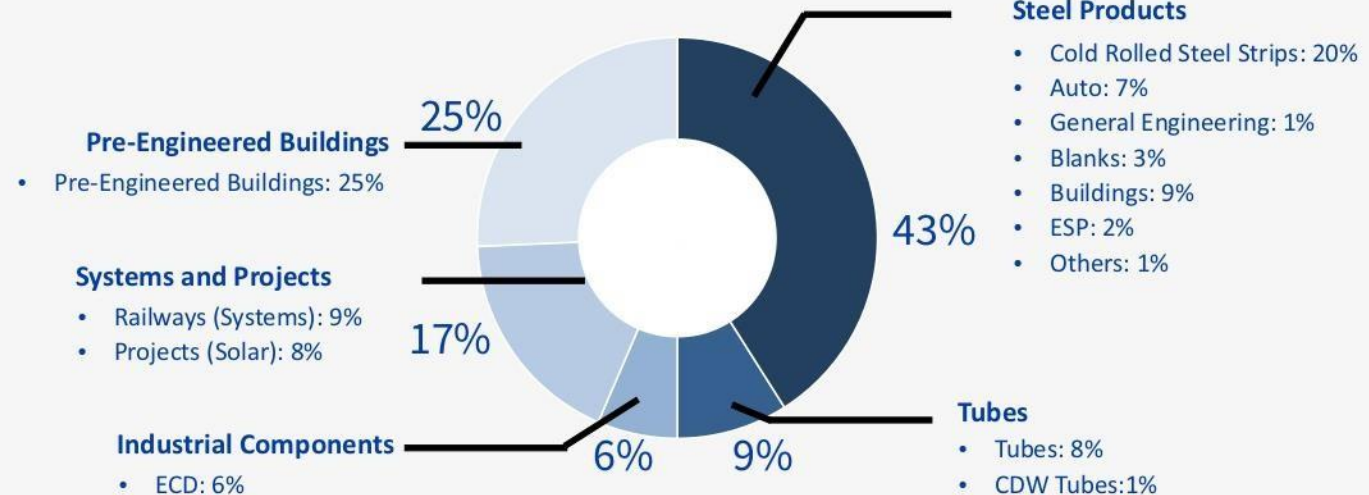
## SYSTEMS AND PROJECTS

- Systems for rail wagons and coaches (roof, furnishing, side wall assembly, coach body components, under frame and chassis members)
- Solar PV structural
- Security Solutions

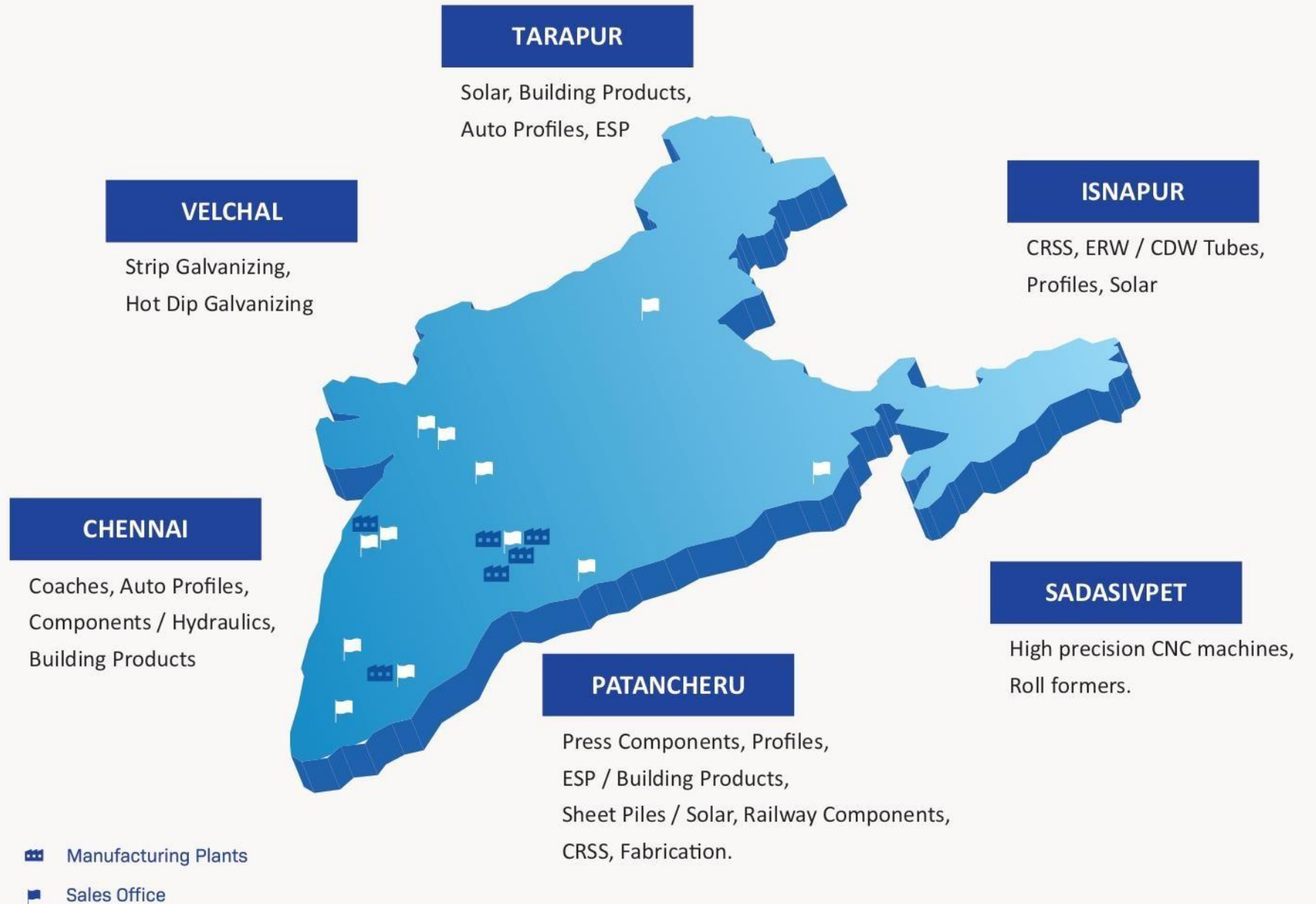


## PRE-ENGINEERED BUILDINGS

- Pre-engineered building structures
- Industrial buildings
- Warehouses
- Airports and aircraft hangers
- Turnkey buildings
- Leak proof roofing sheets



# PAN-INDIA WIDE PRESENCE



# PENNAR GLOBAL REACH



**Pennar Global Inc. headquartered in Houston, Texas**

**Product reach in more than 10 Countries**

# PROMOTERS



**Mr. Nrupender Rao** is the founder and Chairman of Pennar Industries Limited, Hyderabad. He has an illustrious career spanning over four decades in various organizations such as **National Cash Register (USA), Union Carbide India, Nagarjuna Steels Limited & Pennar Group.**

Some of the prestigious awards include **Dr. Nayudamma Gold Medal** for his contribution to the Industrial Development in the state of Andhra Pradesh, "**Entrepreneur of the year**" award by the Hyderabad Management Association, "**Outstanding Entrepreneur Award**" by the Council of State Industrial Development and Investment Corporations of India.

Mr Rao was the National President of the Indo American Chamber of Commerce and President of the Hyderabad Management Association. As a part of his services to the society, he is the Managing Trustee of Sri. Ramakrishna Vivekananda Service Foundation and Sri J.V. Narsing Rao



**Mr. Aditya Narsing Rao** is the vice chairman of Pennar Industries Limited (PIL), Pennar Enviro Limited (PEL) and Pennar Engineered Building Systems Limited (PEBS). He is also the Managing Director of our Promoter, Pennar Industries Limited.

He holds a bachelor's degree in geophysics and master's degree in engineering management from Cornell University, New York, USA.

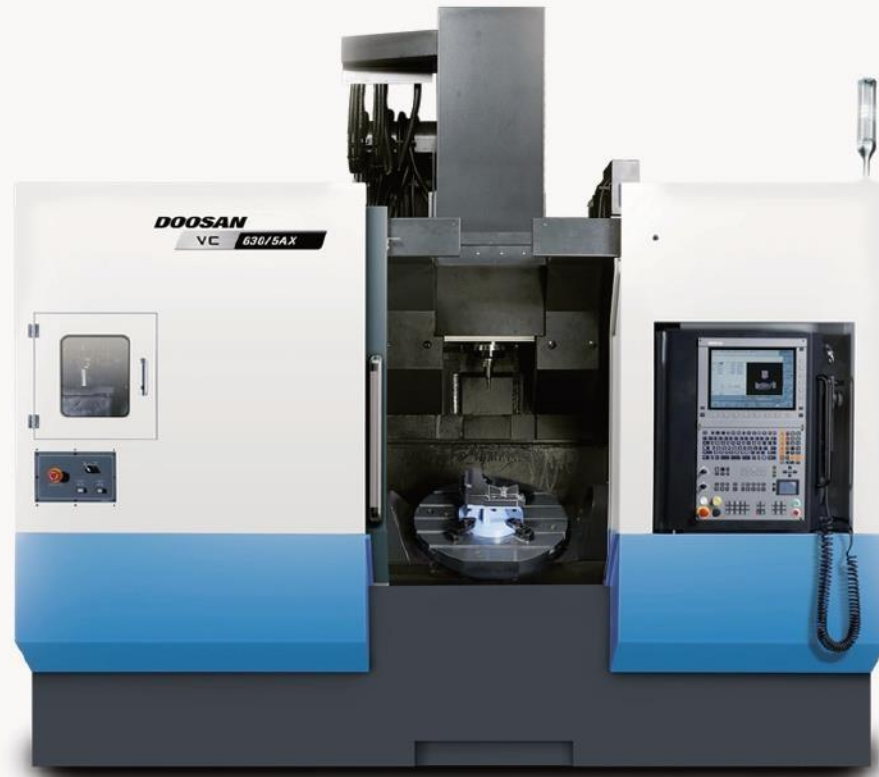
He has worked on new product development and the development of new revenue verticals including the solar power and environment treatment businesses across the group companies.

Prior to joining PIL he was associated with Karvy Stock Broking Limited in the corporate planning division. He has an experience of 12 years in corporate strategy and corporate planning.

Milling – 5 axis

# CAPITAL OUTLAY

PHASE 1  
(Current capability)



<b>Make</b>	Doosan Machine Tools
<b>Model</b>	VC 630 / 5AX
<b>Axis</b>	5 Axis
<b>Controller</b>	Siemens S840D
<b>Table size</b>	X650, Y765, Z520
<b>Max Spindle Speed</b>	12000
<b>Positioning Accuracy</b>	0.005mm
<b>Linear scales</b>	Available



Milling – 4 axis

# CAPITAL OUTLAY

PHASE 1  
(Current capability)



<b>Make</b>	Doosan Machine Tools
<b>Model</b>	DNM 4500
<b>Axis</b>	3+1
<b>Controller</b>	Siemens S828D
<b>Table size</b>	X800, Y450, Z510
<b>Max Spindle Speed</b>	12000
<b>Positioning Accuracy</b>	0.005mm
<b>Linear scales</b>	Available

Milling – 4 axis

# CAPITAL OUTLAY

PHASE 1  
(Current capability)



<b>Make &amp; Model</b>	<b>Jyoti VMC 1260 DM</b>
<b>Controller</b>	<b>SINUMERIK 828D</b>
<b>Table size</b>	<b>1260 x 700 x 600 mm</b>
<b>Max Wt. carrying CPTY</b>	<b>1200 kg</b>
<b>Max Spindle Speed</b>	<b>10000 rpm</b>
<b>Spindle type</b>	<b>BT - 40 Through coolant</b>
<b>ATC</b>	<b>20 Tools</b>
<b>Positioning Accuracy</b>	<b>0.005 mm</b>
<b>4th Axis</b>	<b>NIKKEN (Dia 210)</b>

Turnmill with Y axis

# CAPITAL OUTLAY

PHASE 1  
(Current capability)



<b>Make</b>	Doosan Machine Tools
<b>Model</b>	LYNX 2100LYB
<b>Axis</b>	3+Y Axis
<b>Controller</b>	Siemens S828D
<b>Table size</b>	Ø300X 510
<b>Max Spindle Speed</b>	4500
<b>Positioning Accuracy</b>	0.005mm
<b>Linear scales</b>	Available

Turning

# CAPITAL OUTLAY

PHASE 1  
(Current capability)



Make & Model	Jyoti DX 200 5A NVU
Controller	SINUMERIK 828D
Turning Length	500 mm
Turning Dia	350 mm
Max Spindle Speed	4000 rpm
Turret	8 station Bi-directional servo
Positioning Accuracy	0.005 mm

## Milling – 5 axis

# CAPITAL OUTLAY

## PHASE 1 (Current capability)



<b>Make</b>	Yong Ju Precision Technology
<b>Model</b>	5 AXIS MACHINE MODEL SD3690
<b>Axis</b>	5 Axis
<b>Controller</b>	Fanuc Oi-MF
<b>Travel</b>	X-Axis 9000mm
	Y-Axis 3600mm
	Z-Axis 1400mm
<b>Table Capacity</b>	3000 KG
<b>Max Spindel Speed</b>	10000 Rpm
<b>Position Accuracy</b>	15un Full length

Wire Cut

# CAPITAL OUTLAY

PHASE 1  
(Current capability)



<b>Make</b>	Electronica Hitech
<b>Model</b>	WEDM Tool master 5S
<b>Axis</b>	3+2
<b>Travel</b>	X500, Y300, Z300
<b>WDR</b>	Ø0.15 to Ø0.3
<b>Max Spindle Speed</b>	0.6µ Ra
<b>Positioning Accuracy</b>	200mm <sup>2</sup> /min

EDM ZNC

# CAPITAL OUTLAY

PHASE 1  
(Current capability)



<b>Make</b>	Electronica Hitech
<b>Model</b>	ELTECH D550
<b>Axis</b>	3
<b>Travel</b>	X550, Y450, Z250
<b>Max Spindle Speed</b>	0.6 $\mu$ Ra

## Measuring System

# CAPITAL OUTLAY

**PHASE 1  
(Current capability)**



<b>Make &amp; Model</b>	<b>Ziess Contura G2</b>
<b>CAD software</b>	<b>Calypso</b>
<b>Table size</b>	<b>1000 x 1200 x 600 mm</b>
<b>Max Wt. carrying CPTY</b>	<b>1150 kg</b>
<b>ATC</b>	<b>4 Tools</b>
<b>Positioning Accuracy</b>	<b>1.9 + L/300</b>



## Measuring System

# CAPITAL OUTLAY

## PHASE 1 (Current capability)



<b>Make &amp; Model</b>	<b>OPTIMECH &amp; VPPME3020</b>
<b>Magnification Range</b>	<b>20x to 140x</b>
<b>Travel Distance</b>	<b>300 x 200 x 150 mm</b>
<b>Accuracy</b>	<b>1 micron</b>
<b>Load Capacity</b>	<b>25 Kgs</b>

# QUALITY INSTRUMENTS

Sl no	Description	Range	least count	Make	Qty
<b>ANALOG VC</b>					
1	ANALOG VC	150 MM	0.02 MM	Mitutoyo	1
2	ANALOG VC	200 MM	0.02 MM	Mitutoyo	1
3	ANALOG VC	300 MM	0.02 MM	Mitutoyo	1
4	ANALOG VHG	600 MM	0.02 MM	Mitutoyo	1
<b>DEGITAL VC</b>					
5	DEGITAL VC	150 MM	0.01 MM	Mitutoyo	1
6	DEGITAL VC	200 MM	0.01 MM	Mitutoyo	1
7	DEGITAL VC	200 MM	0.01 MM	Mitutoyo	1
8	DEGITAL VC	200 MM	0.01 MM	Mitutoyo	1
9	DEGITAL VC	200 MM	0.01 MM	Mitutoyo	1
10	DEGITAL VC	300 MM	0.01 MM	Mitutoyo	1
11	DEGITAL VC	300 MM	0.01 MM	Mitutoyo	1
<b>ANALOG OMM</b>					
12	ANALOG OMM	0 - 25 MM	0.01 MM	Mitutoyo	1
13	ANALOG OMM	0 - 25 MM	0.01 MM	Mitutoyo	1
14	ANALOG OMM	25 - 50 MM	0.01 MM	Mitutoyo	1
15	ANALOG OMM	25 - 50 MM	0.01 MM	Mitutoyo	1
16	ANALOG OMM	50- 75 MM	0.01 MM	Mitutoyo	1
17	ANALOG OMM	75 - 100 MM	0.01 MM	Mitutoyo	1
18	ANALOG OMM	100 - 125 MM	0.01 MM	Mitutoyo	1
19	ANALOG OMM	125 - 150 MM	0.01 MM	Mitutoyo	1
20	ANALOG OMM	150 - 300 MM	0.01 MM	Mitutoyo	1

# QUALITY INSTRUMENTS

Sl no	Description	Range	least count	Make	Qty
<b>DEGITAL OMM</b>					
21	DEGITAL OMM	0 - 25 MM	0.001 MM	Mitutoyo	1
22	DEGITAL OMM	0 - 25 MM	0.001 MM	Mitutoyo	1
23	DEGITAL OMM	25 - 50 MM	0.001 MM	Mitutoyo	1
24	DEGITAL OMM	25 - 50 MM	0.001 MM	Mitutoyo	1
25	DEGITAL OMM	50- 75 MM	0.001 MM	Mitutoyo	1
26	DEGITAL OMM	75 - 100 MM	0.001 MM	Mitutoyo	1
27	DEGITAL OMM	100 - 125 MM	0.001 MM	Mitutoyo	1
28	DEGITAL OMM	125 - 150 MM	0.001 MM	Mitutoyo	1
29	DEGITAL OMM	150 - 300 MM	0.001 MM	Mitutoyo	1
<b>ANALOG IMM 3 PIN</b>					
30	ANALOG IMM 3 PIN	12 - 16 MM	0.005 MM	Mitutoyo	1
31	ANALOG IMM 3 PIN	16 - 20 MM	0.005 MM	Mitutoyo	1
32	ANALOG IMM 3 PIN	20 - 25 MM	0.005 MM	Mitutoyo	1
<b>DIGITAL IMM 3 PIN</b>					
33	DIGITAL IMM 3 PIN	12 - 16 MM	0.001 MM	Mitutoyo	1
34	DIGITAL IMM 3 PIN	16 - 20 MM	0.001 MM	Mitutoyo	1
35	DIGITAL IMM 3 PIN	20 - 25 MM	0.001 MM	Mitutoyo	1
<b>BORE GAUGES</b>					
36	BORE GAUGE without dial	10-18.5 MM	-	Mitutoyo	1
37	BORE GAUGE without dial	18 - 35 MM	-	Mitutoyo	1
38	BORE GAUGE without dial	35 - 60 MM	-	Mitutoyo	1
39	BORE GAUGE without dial	50 - 150 MM	-	Mitutoyo	1
40	BORE GAUGE without dial	160 - 250 MM	-	Mitutoyo	1

# QUALITY INSTRUMENTS

Sl no	Description	Range	least count	Make	Qty
<b>LEVER DIALGAUGE</b>					
41	LEVER DIALGAUGE		0.001 MM	Mitutoyo	1
42	LEVER DIALGAUGE		0.001 MM	Mitutoyo	1
43	LEVER DIALGAUGE		0.01 MM	Mitutoyo	1
44	LEVER DIALGAUGE		0.01 MM	Mitutoyo	1
<b>PLUNGER DIAL INDICATOR</b>					
45	PLUNGER DIAL INDICATOR		0.001 MM	Mitutoyo	1
46	PLUNGER DIAL INDICATOR		0.001 MM	Mitutoyo	1
47	PLUNGER DIAL INDICATOR		0.01 MM	Mitutoyo	1
48	PLUNGER DIAL INDICATOR		0.01 MM	Mitutoyo	1
<b>SLIP GAUGE BOX</b>					
49	SLIP GAUGE BOX	87 pieces	grade '0'	Mitutoyo	1
<b>MEASURING PIN BOX</b>					
50	MEASURING PIN BOX Micro Gauges Indian make	0.5-1.00mm	0.01mm	Micro gauges	1
51		1.01-2.50mm	0.01mm	Micro gauges	1
52		2.51-4.00mm	0.01mm	Micro gauges	1
53		4.01-5.50mm	0.01mm	Micro gauges	1
54		5.51-7.00mm	0.01mm	Micro gauges	1
55		7.01-8.50mm	0.01mm	Micro gauges	1
56		8.51-10.00mm	0.01mm	Micro gauges	1
57		10.01-11.00mm	0.01mm	Micro gauges	1
58		11.01-12.00mm	0.01mm	Micro gauges	1
59		12.01-13.00mm	0.01mm	Micro gauges	1
60		13.01-14.00mm	0.01mm	Micro gauges	1
61		14.01-15.00mm	0.01mm	Micro gauges	1

# QUALITY INSTRUMENTS

Sl no	Description	Range	least count	Make	Qty
<b>SURFACE COMPARATOR</b>					
62	SURFACE COMPARATOR FOR SP.			Rubert and co	1
63	SURFACE COMPARATOR FOR SP.			Rubert and co	1
<b>GUAGES</b>					
64	Feeler Gauge Set	0.05 - 1.00mm	20 blades	Mitutoyo	1
65	Radius Guage	1-7mm		Mitutoyo	1
66	Radius Guage	1-7mm		Mitutoyo	1
67	Radius Guage	7.5-15mm		Mitutoyo	1
68	Radius Guage	7.5-15mm		Mitutoyo	1
69	Radius Guage	15.5-25mm		Mitutoyo	1
70	Radius Guage	15.5-25mm		Mitutoyo	1
<b>V-BLOCK</b>					
71	STEEL V-BLOCK	100 X 80 X 80 mm		Jafuji	1
72	STEEL V-BLOCK	100 X 80 X 80 mm		Jafuji	1
73	MAGNETIC V-BLOCK			Mitutoyo	1
74	MAGNETIC V-BLOCK			Mitutoyo	1
<b>Dial MAGNETIC STAND</b>					
75	Dial Magnetic Stand			Mitutoyo	1
<b>COMBINATION SET</b>					
76	COMBINATION SET	0 -180°		Insize	1
77	ANGLE PLATE			Jafuji	1
78	TRY SQUARE			Jafuji	1
79	Universal bevel protractor			Mitutoyo	1
<b>MICRO HITE GAUGE</b>					
80	MICRO HITE GAUGE	700 MM	0.001 MM	Trimos	1

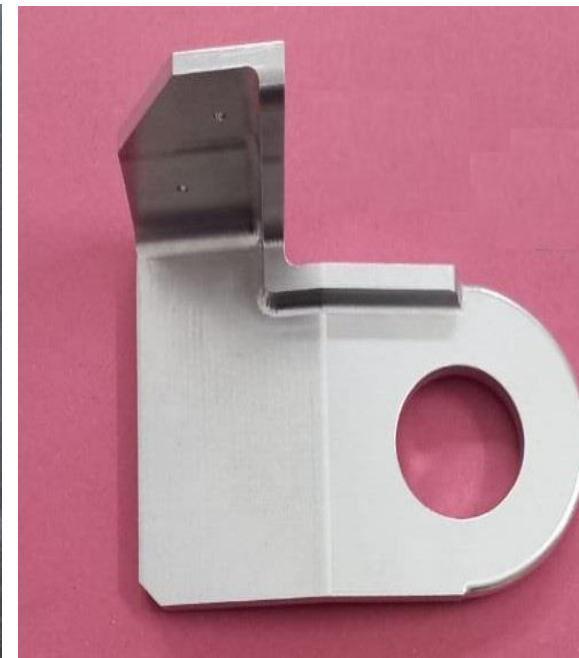
# MACHINERY

## PHASE 2 (Future expansion)

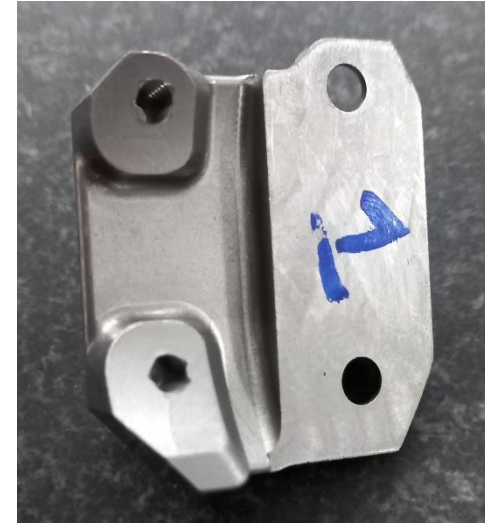
Phase 2			
Sno	Description	Qty	UOM
1	3 A Router	1	Nos
2	Hydraulic Press	1	Nos
3	Press Break	1	Nos
4	3 A VMC upto 1 mt	3	Nos
5	3 A VMC upto 2 mt	2	Nos
6	4 A VMC upto 1mt	3	Nos
7	4 A VMC upto 2mt	2	Nos
8	5 A VMC upto 1mt	3	Nos
9	5 A VMC upto 1mt (DMG)	2	Nos
10	3 A VMC upto 2mt	1	Nos
11	3 A VMC upto 3mt	1	Nos
12	3A turn mill	3	Nos
13	CMM upto 3 mtr	1	Nos

- Keeping in view of Pennar's current strengths, would like to invest in sheetmetal activities as well in coming years.
- In addition to the current assets for Aero, above will be deployed for capacity scale up and also for Sub-Assemblies fabrication as a part of new capability.
- This set of investments are planned to be deployed in the Fy2022

# Exotic Materials

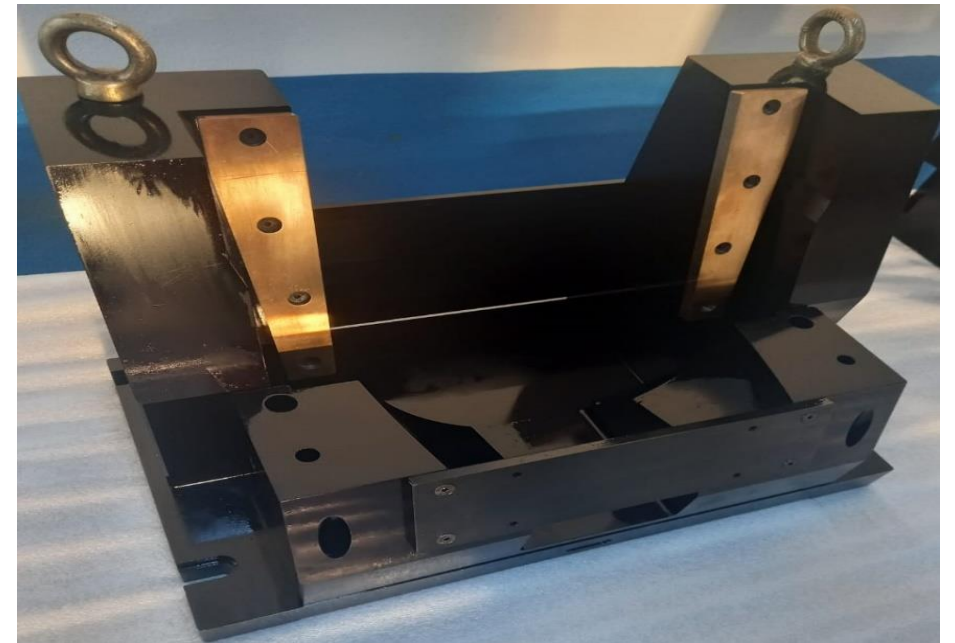
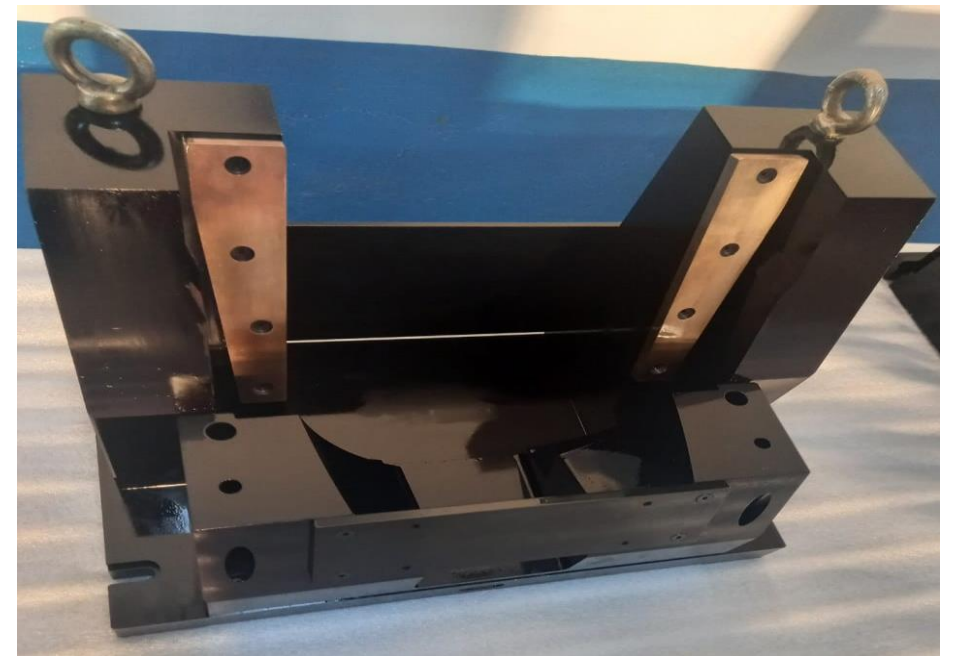
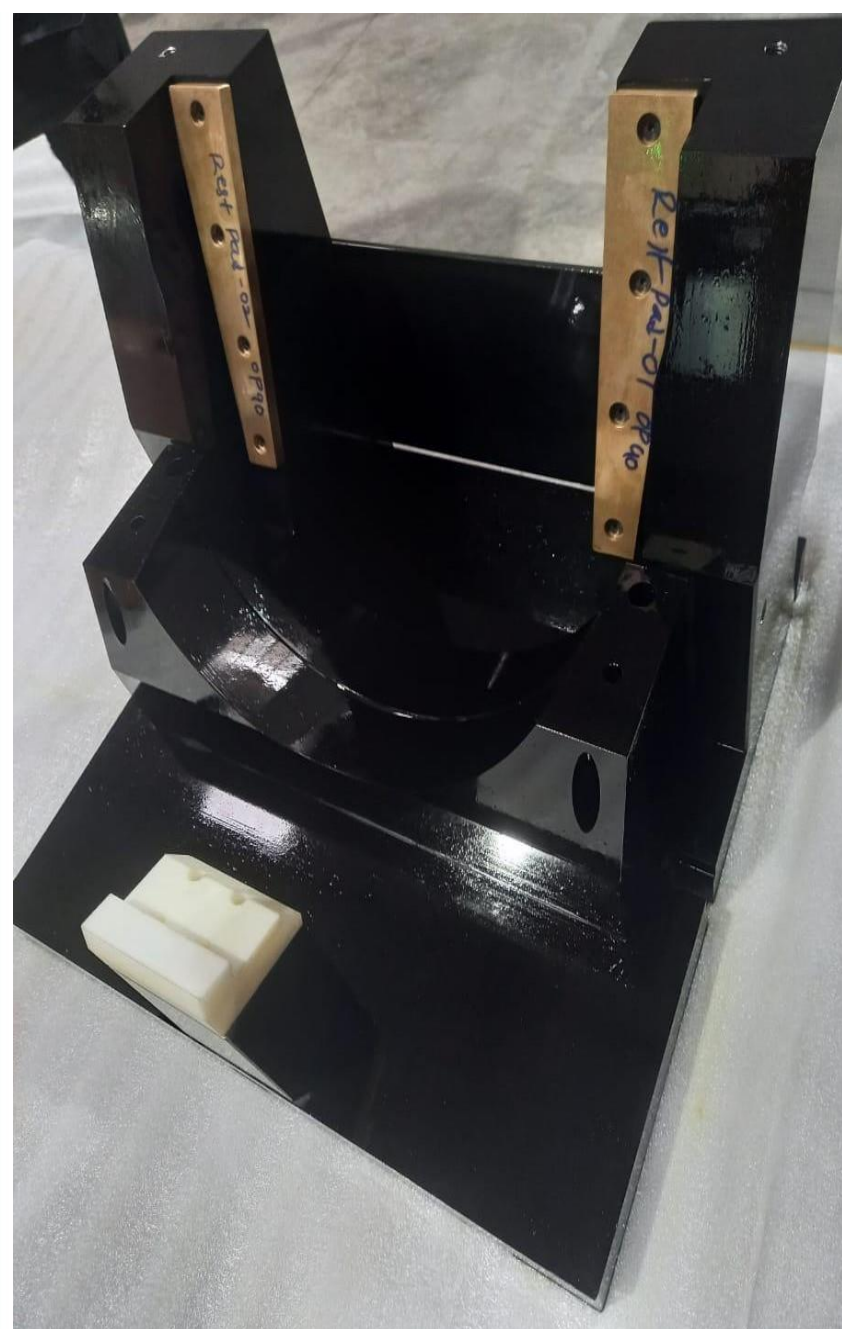


# Exotic Materials

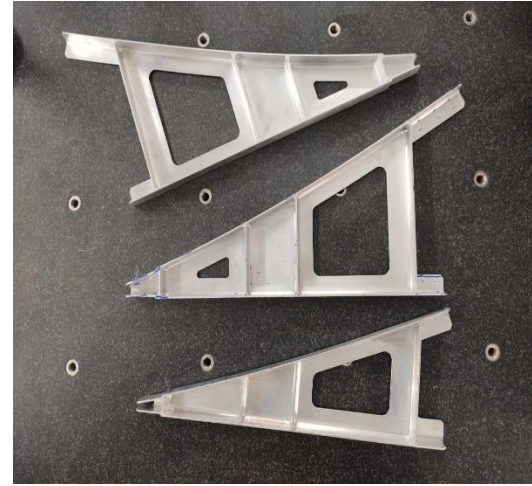




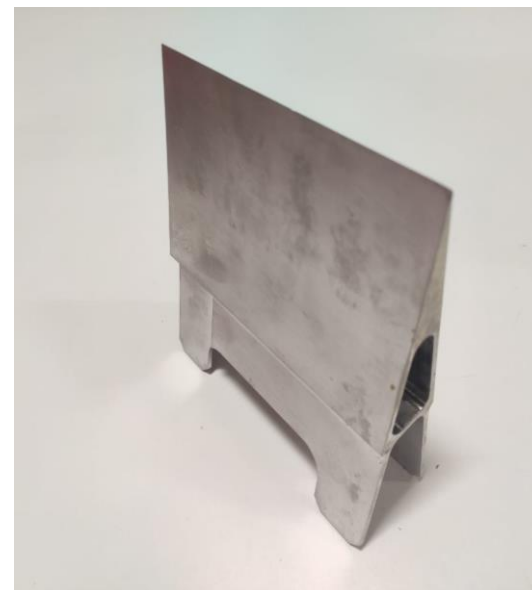
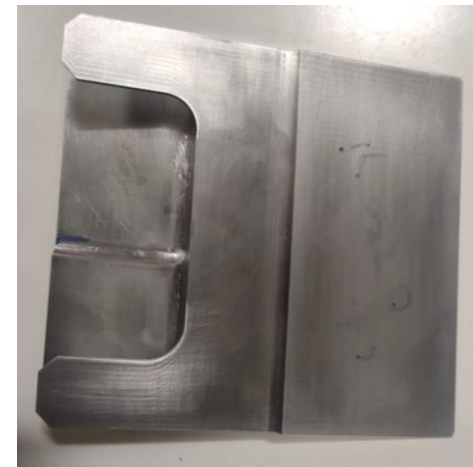
# Aircraft Engine Fixtures



# Structural Parts



# Structural Parts



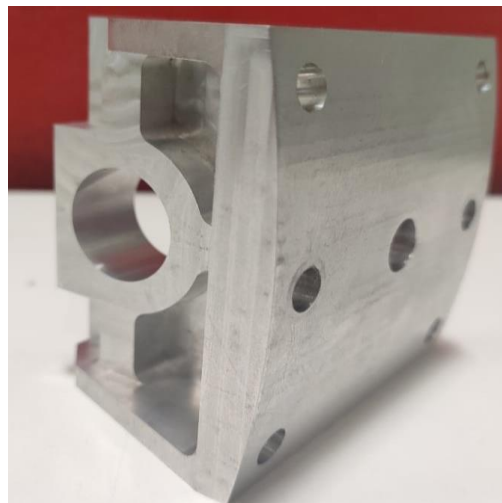
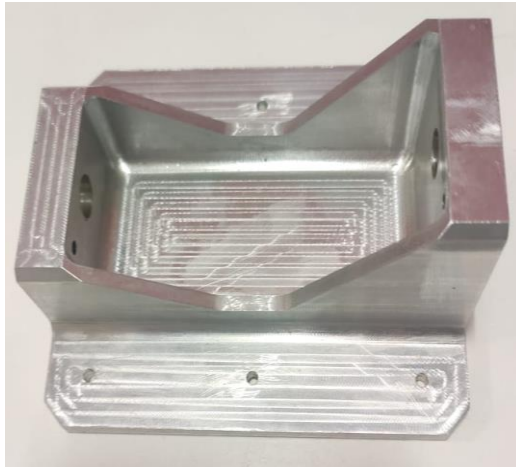
# Structural Parts



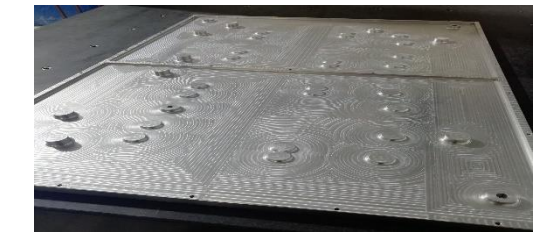
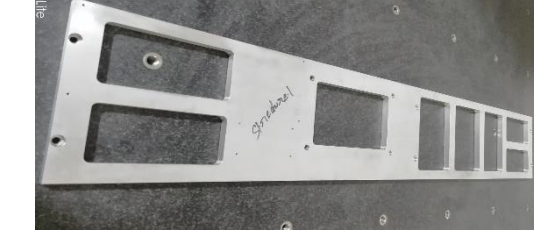
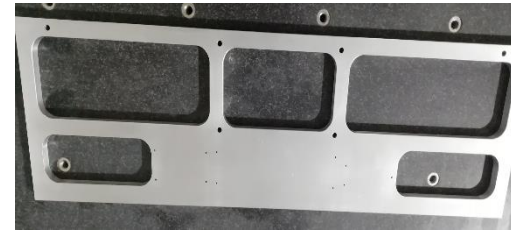
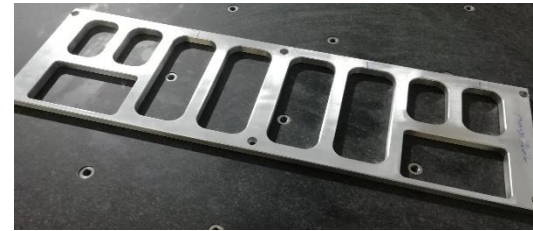
# Structural Parts



# Structural Parts



# Fixture main structure

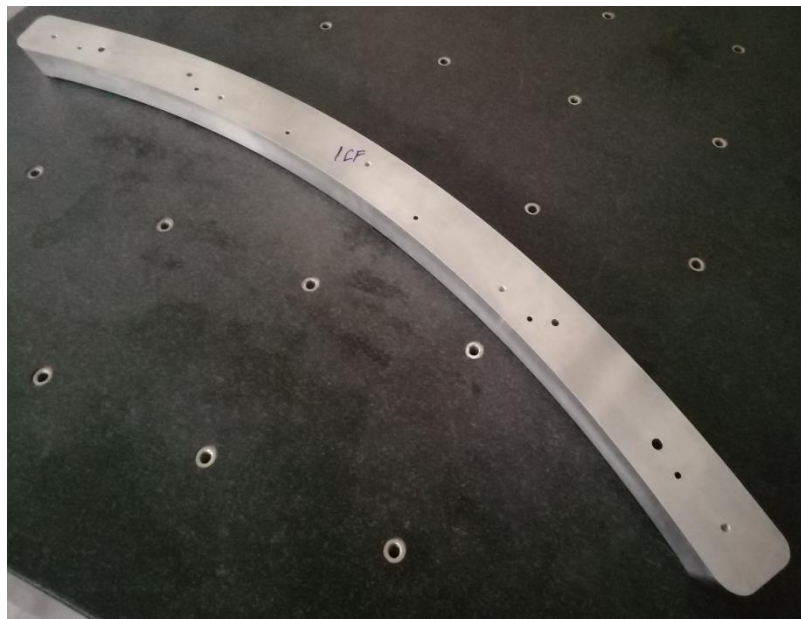


# Tooling & Pins

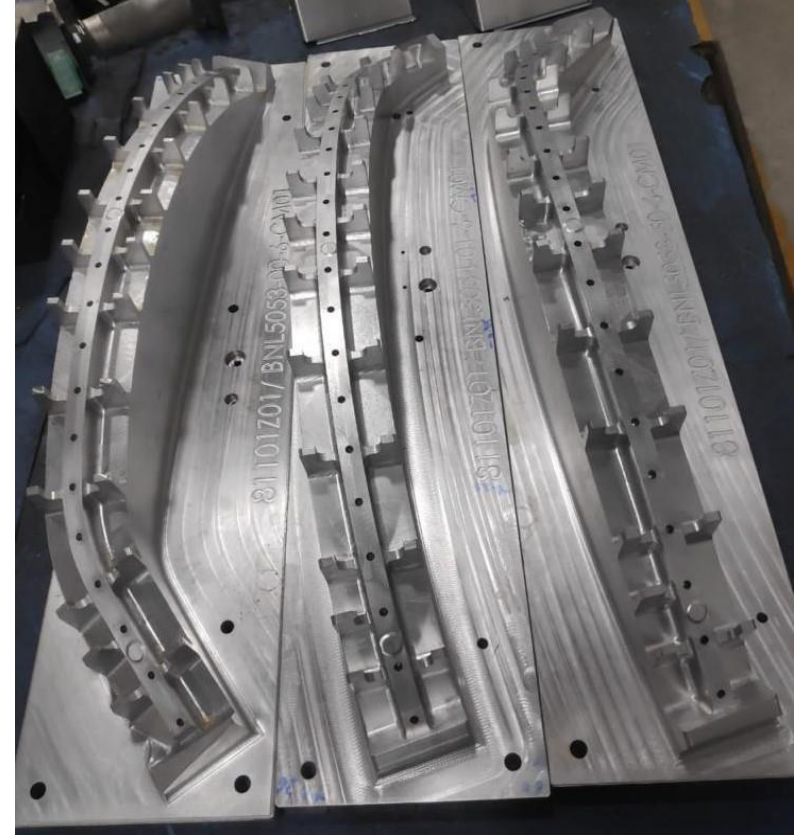




# Moulds



# Fixtures



# Hydraulic End Cap



# FUTURE CAPABILITIES

## Future Machine List

- 3 A Router
- Hydraulic Press
- Press Break
- 3 A VMC up to 1 mt
- 3 A VMC up to 2 mt
- 4 A VMC up to 1 mt
- 4 A VMC up to 2 mt
- 5 A VMC up to 1 mt
- 5 A VMC up to 1 mt (DMG)
- 3 A VMC up to 2 mt
- 3 A VMC up to 3 mt
- 3 A Turnmill
- CMM up to 3 mt

Clean room facilities for carrying out assemblies and sub assemblies

# PLANT PHOTOS





# THANK YOU

## **CORPORATE OFFICE**

PENNAR INDUSTRIES LIMITED.

3rd Floor, DHFLVC Silicon Towers, Kondapur, Hyderabad,  
Telangana – 500084.

## **PLANT ADDRESS**

M/S PENNAR INDUSTRIES LIMITED.

H No: 12-22, Shanthi Nagar Colony, Patancheru,  
SangaReddy Dist, Telangana, 502319.

Website: [www.pennaraero.com](http://www.pennaraero.com)