



Ample Mechsol
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Amplemech

Automation & Robotics Pvt. Ltd.

www.amplemech.com

GST No. - 24AASCA5201A1Z9, PAN No. - AASCA5201A, TAN No. - AHMA20266B, CIN No. - U31904GJ2019PTC109143

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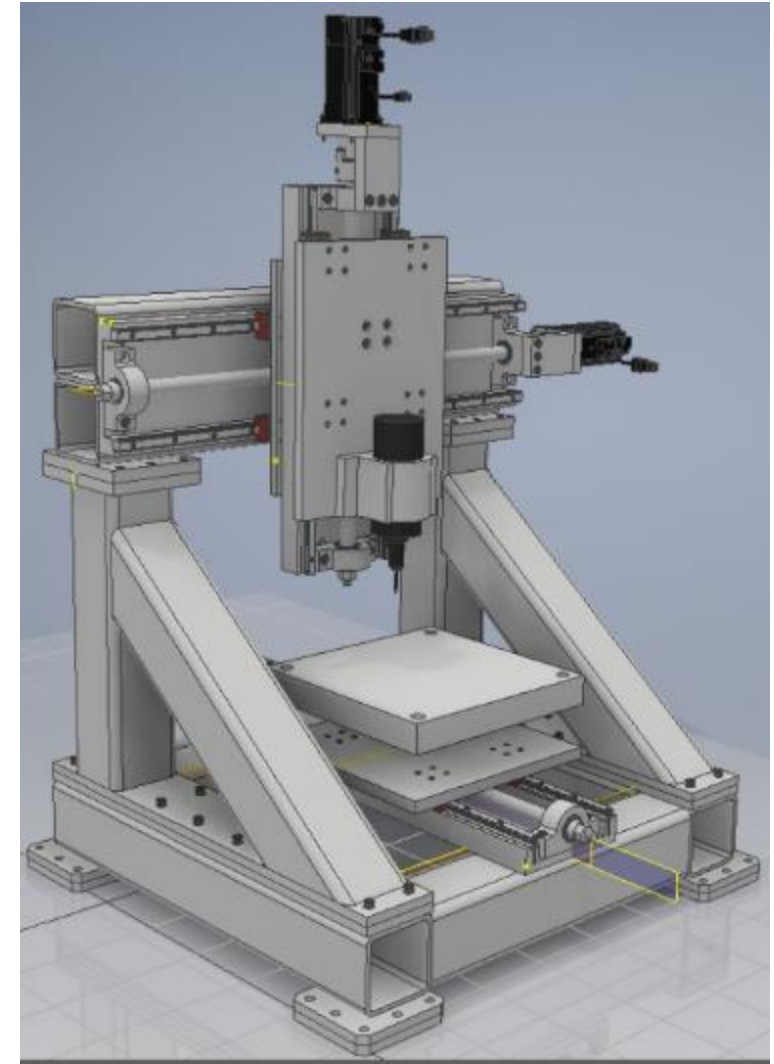
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Company Overview

- The company is situated at Vadodara, Gujarat and has been working in SPM (Special Purpose Machine) domain since 2015.
- Total Manpower - 08
 - Mechanical Engineer – 1
 - Design Engineer – 1
 - Electrical Engineer – 1
 - Electronics Engineer – 1
 - Technical Support – 2
 - Workshop Support – 2
- Average Experience > 10 Years

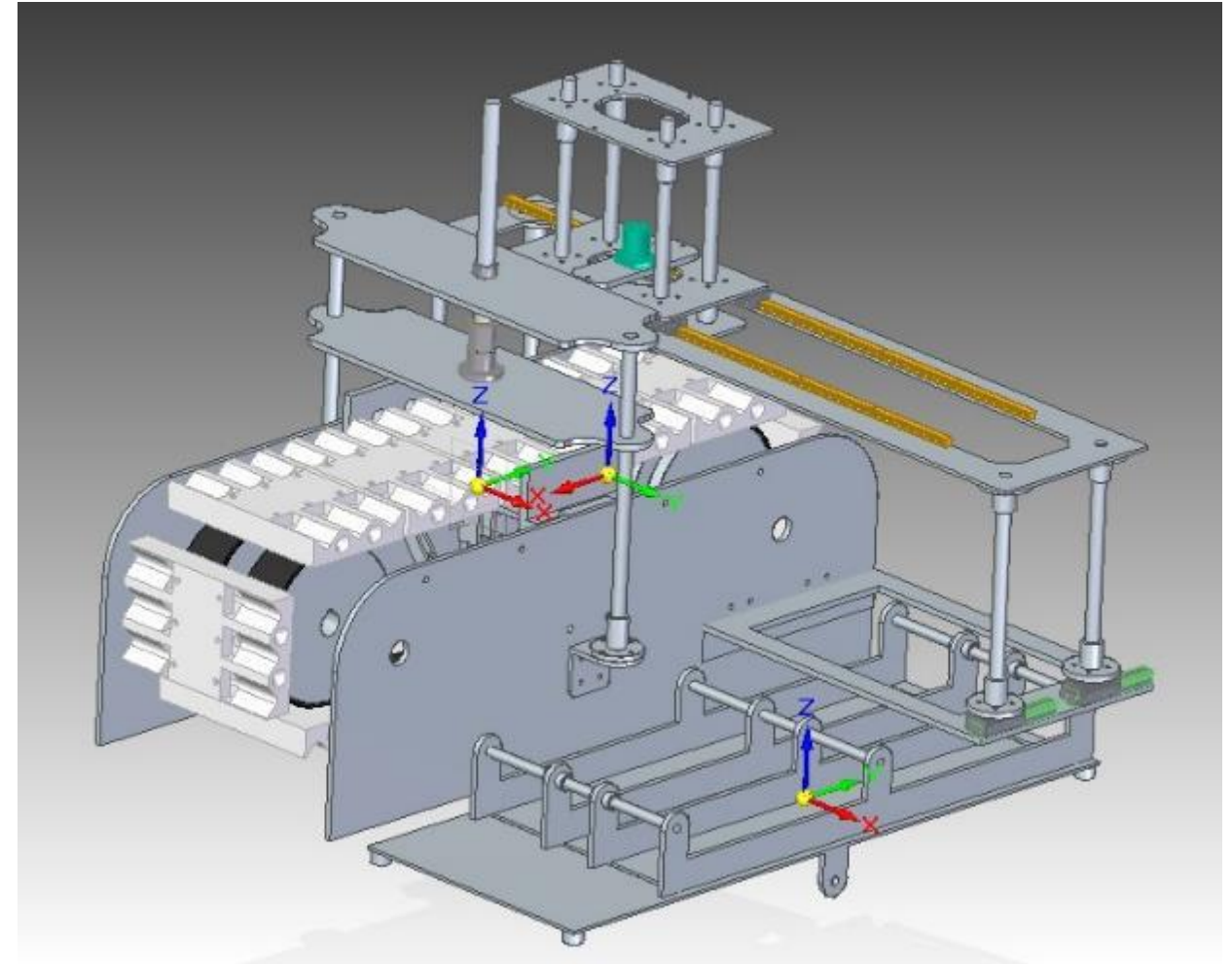




Vision

➤ Industrial Automation

- Special Purpose Machines
- Process Automation
- Process monitoring
- Multi axis arms (Pick and Place)
- Material Handling automation
- In line material cutter and stacker
- CNC base multi axis routers
- Karakuri Kaizen



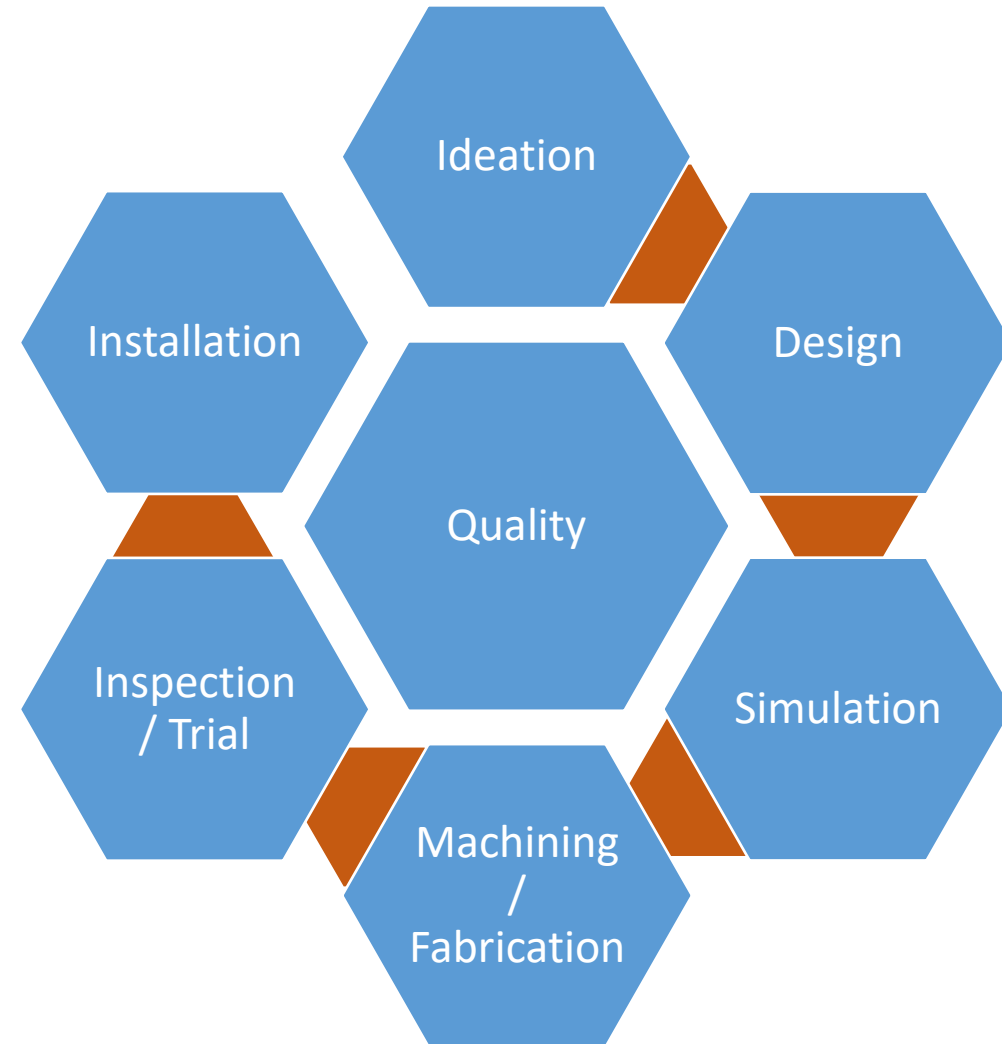
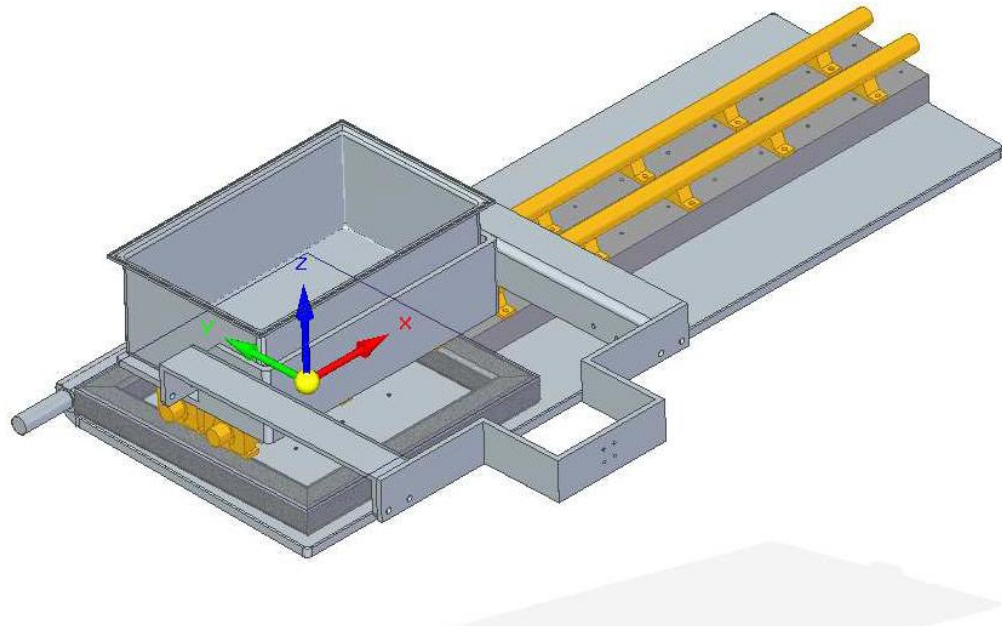


Strength

Team <ul style="list-style-type: none">• Skilled & professional team > 08 nos• Average experience > 10 years	Design Capabilities <ul style="list-style-type: none">• Mechanical Mechanisms• 2D – Auto CAD• 3D – Autodesk Fusion 360• Process Simulation, FEA• Graphics – Coral Draw
Machining Capabilities <ul style="list-style-type: none">• Turning, Milling & Drilling• Welding – Arc, Mig, Tig for SS & MS• Association with partners for VMC, Turning Centre, Laser cut, Wire Cut, Water jet cut, Grinding, Coating & plating and Material procurement.	Experience / Expertise <ul style="list-style-type: none">• Design & Simulation – Product, Process & Machine Assembly• Prototyping• Machining• Fabrication• Turnkey Projects• Process Automation



Design Approach





Special Purpose Machine

Design Basis

S. No.	Displacement Method	Design	Electrical	Electronics
1	Hydraulics	2D modelling	Servo Motor	PLC
2	Pneumatics	3D modelling	DC / BLDC Motor	Motion Control
3	Linear Guides	Load Analysis	Stepper Motor	CNC
4	Rack and Pinion	Thermal Analysis	Induction Motor	SCADA
5	Ball Screw	Stress Analysis	Relay and Contactor	
6	Timing Belt and Pulley	Fatigue Analysis		
7	Customized Gears			

Esteemed Customers...



MOFLEX
SUSPENSIONS
LLP

Welspun^W

BRENTWOOD[®]

Sterlite Tech



SIAMP

R.E PolyTechnologies Pvt. Ltd.
STEADFAST POLYMER EXPONENT

Hitachi Energy

GE VERNOVA

Crompton

Shreno Engineering Limited



Meril
More to Life

3M



TOTO

SCHURTER
ELECTRONIC COMPONENTS



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BSTO
Automotive Parts



Jewel
Consumer
Care



Raychem RPG



Sintex
SINCE 1975



Achievements...



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Customer Visit @ Ample Vadodara site
Nagane San from MKCI Sanand, Gujarat



Fully automated PLC controlled
Gamma Coating Machine for Autocatalytic
Convertor Coating - 2016



Achievements...



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Particulars	Details
Customer	Mitsui Kinzoku India Pvt Ltd (Japanese MNC)
Machine Type	Suction Machine (SPM)
Product	Auto catalytic convertor for Automobiles
Primary Function of Machine	Suction by Blower to remove excess coating material and recovery of the same, as coating contains Platinum metal
Machine Control	Pneumatic motions controlled by PLC and assisted through HMI with user friendly UI
MOC	SS 316 and SS 304
Number of machines made till date	4



Achievements...



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Particulars	Details
Customer	Mitsui Kinzoku India Pvt Ltd (Japanese MNC)
Machine Type	Gamma Coating Machine (SPM)
Product	Auto catalytic convertor
Primary Function of Machine	Coating of convertor by viscous slurry by suction method
Machine Control	Pneumatic motions controlled by PLC and assisted through HMI with user friendly UI
MOC	SS 316 and SS 304
Number of machines made till date	4



Achievements...



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Particulars	Details
Customer	Mitsui Kinzoku India Pvt Ltd (Japanese MNC)
Machine Type	Close loop heat exchanger (SPM)
Product	Viscous and Acidic Solution
Primary Function of Machine	Maintain uniform temperature @ 70 DegC
Machine Control	PLC Controlled circulation of hot water in the shell jacket by pump system having immersion heater
MOC	SS 316 and SS 304
Number of machines made till date	2



Achievements...



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Particulars	Details
Customer	Mitsui Kinzoku India Pvt Ltd (Japanese MNC)
Machine Type	Adhesive coating by Spray method
Product	Auto catalytic convertor
Primary Function of Machine	Uniform coating of highly viscous epoxy base adhesive on product ensuring complete drying without spillage of adhesive
Machine Control	PLC Controlled adhesive spray and pump system, drying of material by forced air and material feeding by automated chain conveyor system
MOC	SS 316 and SS 304
Number of machines made till date	1



**MITSUI
KINZOKU**

Achievements...



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Particulars	Details
Customer	Mitsui Kinzoku India Pvt Ltd (Japanese MNC)
Machine Type	20HP high speed agitator
Product	Highly viscous acidic slurry
Primary Function of Machine	Uniform mixing of highly viscous acidic slurry considering highest level safety standards
Machine Control	PLC Controlled mixing system having chain system to lift stirrer up and down. Heavy duty MS frame to provide vibration mixing @ 3000 rpm by 20HP Siemens motor controlled by Mitsubishi Drive
MOC	MS and SS 316
Number of machines made till date	6



Achievements...



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Particulars	Details
Customer	Sintex BAPL Ltd
Machine Type	3 axis CNC Router for FRP
Product	FRP junction box
Primary Function of Machine	Finishing and Drilling of FRP junction of Cummins USA
Machine Control	Machine was operated and controlled by 3 axis delta controller assisted by Absolute Servo motors on all 3 axis, drive mechanism was ball screw and linear guide based.
MOC	MS
Number of machines made till date	1



Sintex
SINCE 1975

Achievements...



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Particulars	Details
Customer	Sintex BAPL Ltd
Machine Type	4 axis CNC Router for FRP
Product	FRP junction box
Primary Function of Machine	Finishing and Drilling of FRP junction of Cummins USA
Machine Control	Machine was operated and controlled by 4 axis delta controller assisted by Absolute Servo motors on all 4 axis, drive mechanism was ball screw and linear guide based.
MOC	MS
Number of machines made till date	1



Sintex
SINCE 1975

Achievements...

Particulars	Details
Customer	Sintex BAPL Ltd
Machine Type	5 axis CNC Router for FRP
Product	FRP junction box
Primary Function of Machine	Finishing and Drilling of Big FRP junction Box (2 mtr x 1.5 mtr x 0.5 mtr)
Machine Control	Machine was operated and controlled by 5 axis delta controller assisted by Absolute Servo motors on all 5 axis, drive mechanism was ball screw and linear guide based.
MOC	MS
Number of machines made till date	1



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SINCE 1975



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Achievements...

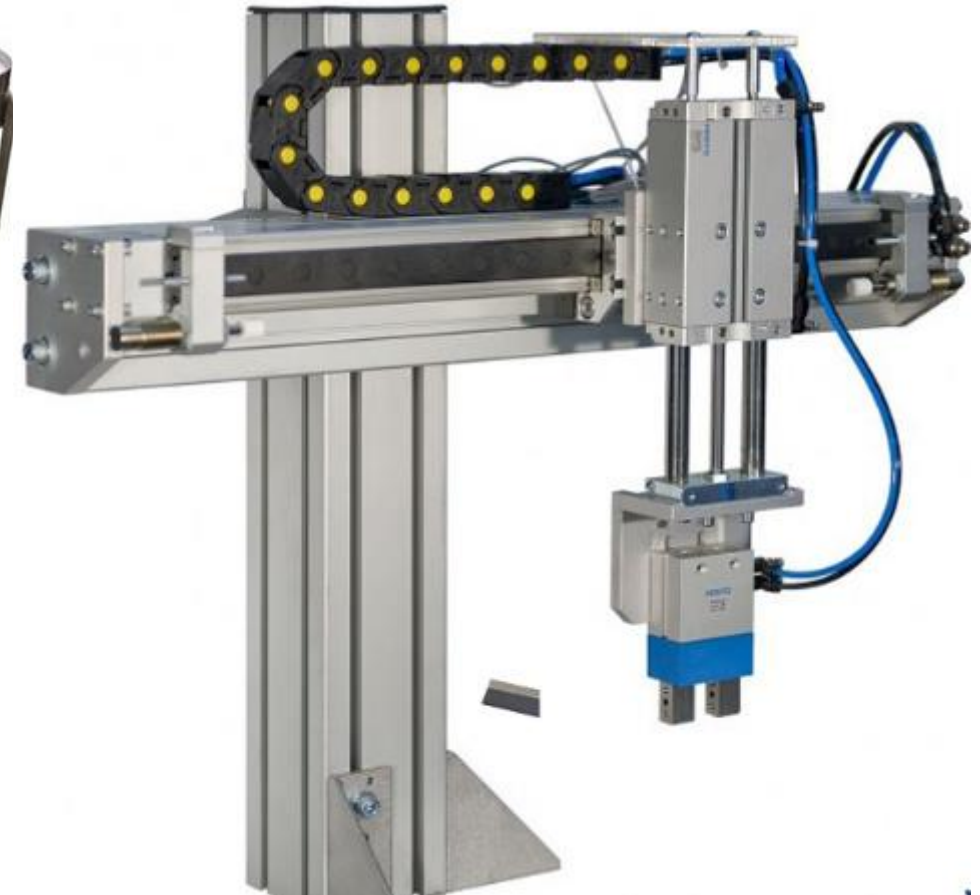
1. Flat belt and Slate Motorized Conveyors
2. Pick and Place robotic arm



LARSEN & TOUBRO



**MITSUMI
KINZOKU**



 **BRENTWOOD®**

Achievements...



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Particulars	Details
Customer	L&T EBG Division Vadodara
Machine Type	Thermal Shock test machine for MCCB
Product	MCCB (Model Case Circuit Breaker)
Primary Function of Machine	Fully automated material transfer via conveyor belts with quenching at zero deg C by chiller
Machine Control	Fully automated PLC controlled machine with DC motors and chiller. Movement was assisted by flat belt conveyors having transfer mechanism at 90 degree from one conveyor to another.
MOC	Aluminum T slot section, MS, SS 304
Number of machines made till date	2

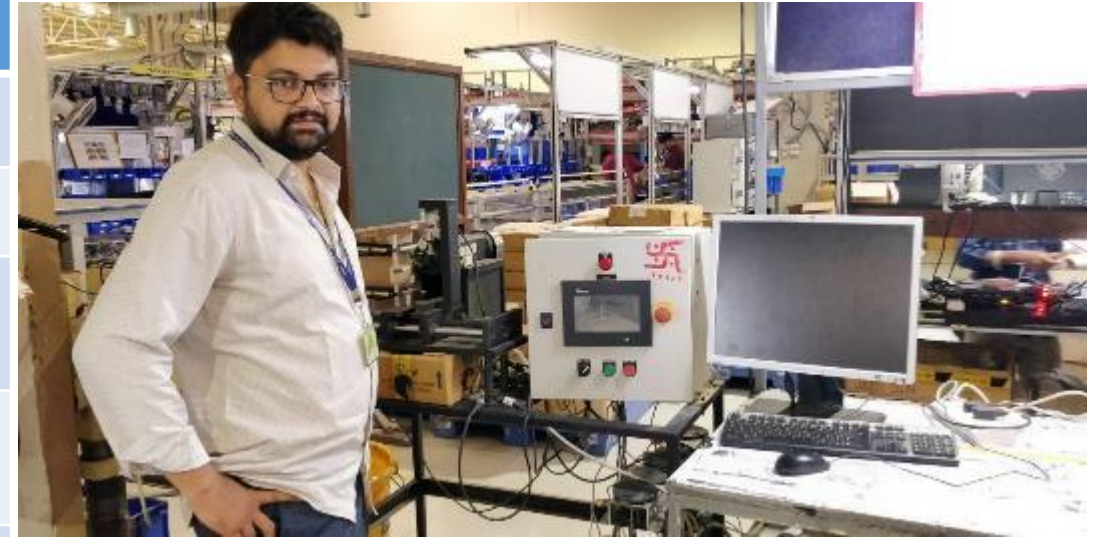


Achievements...



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Particulars	Details
Customer	L&T EBG Division Vadodara
Machine Type	Spring torque test machine for MCCB
Product	MCCB (Model Case Circuit Breaker) 6amp to 100 amp, 5 different ratings
Primary Function of Machine	MCCB spring torque testing by load cell and Proprietary software
Machine Control	Fully automated PLC controlled machine with absolute servo motors and load cell. Proprietary software used to check torque of spring in MCCB assembly with precise and pre-defined displacement.
MOC	Aluminum T slot section, MS, SS 304
Number of machines made till date	1



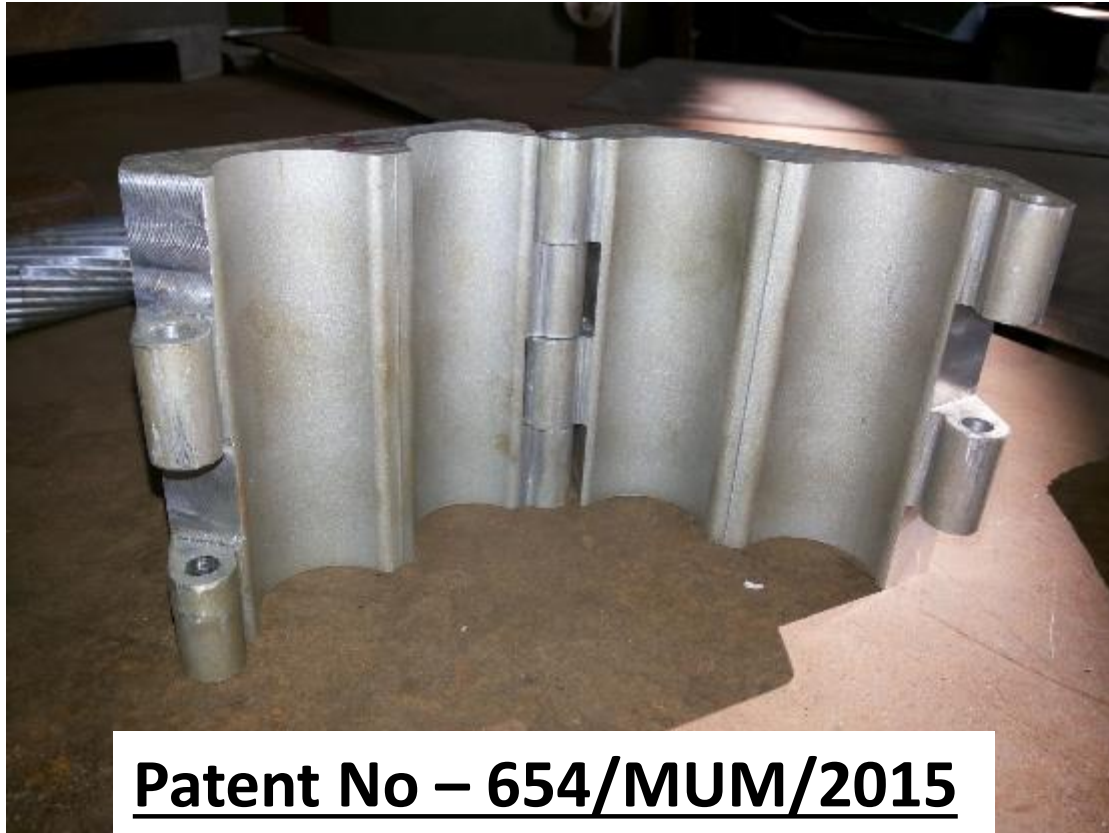
LARSEN & TOUBRO



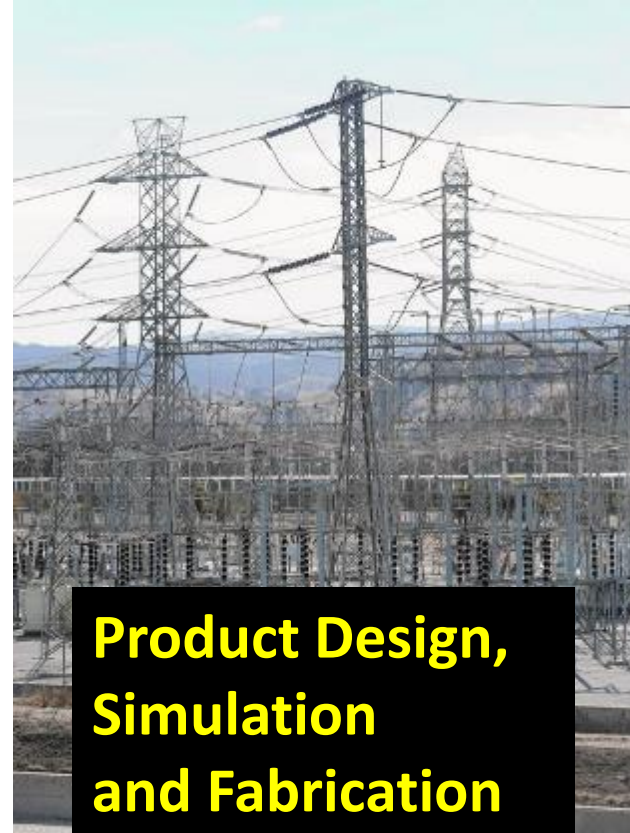
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Achievements...

Raychem RPG



Patent No – 654/MUM/2015



**Product Design,
Simulation
and Fabrication**





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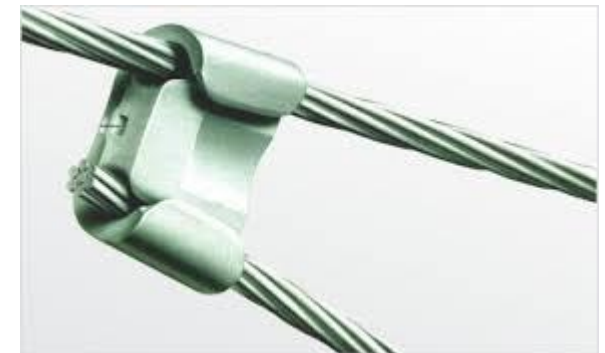
Achievements...

Raychem RPG

Tool Design, Simulation and Fabrication



Patent No – 559/MUM/2015





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Achievements...

Raychem RPG 

Spiral Insulator by fully automated extrusion process



**Process Design, Simulation and
Complete machine Fabrication**





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Achievements...

Raychem RPG

3 axis, CNC controlled milling and
Drilling machine R&D Lab (Prototyping)



Achievements...



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Particulars	Details
Customer	ABB PGTR Division Vadodara
Machine Type	Copper Conductor Winding
Product	Dry type transformer for Metro Train
Primary Function of Machine	Uniform winding of conductor with predefined tension parameters
Machine Control	Fully automated PLC controlled machine with Proprietary software assisted by 8 servo motors. 20HP AC motor for mandrel rotation. Machine works in regenerative mode to generate uniform tension to wind different sizes of conductor
MOC	Aluminium and MS
Number of new machines made till date	2
Number of machines Retrofitted	7



Achievements...



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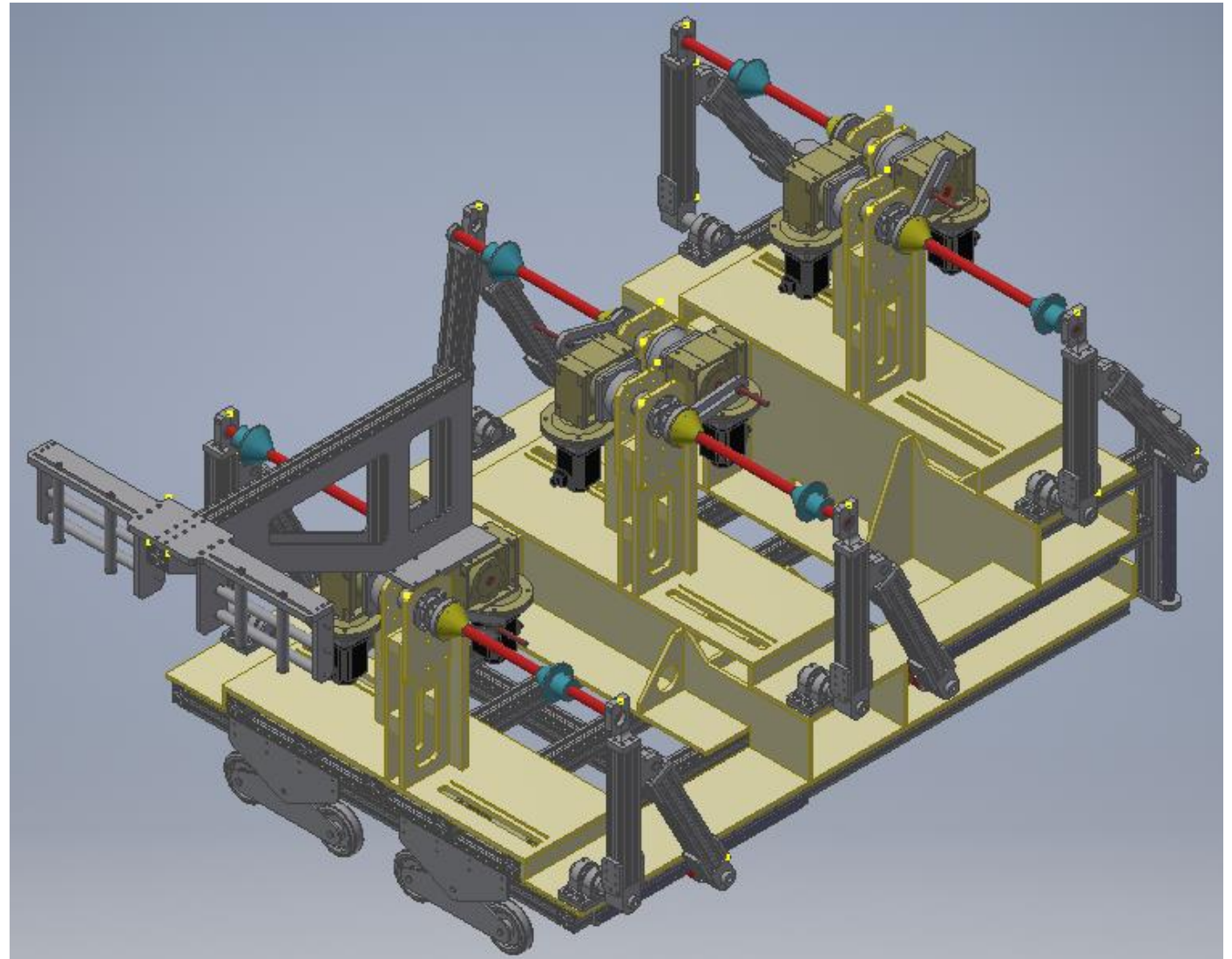


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Achievements...



Fully Automatic Dry type transformer
Coil Un-winder system



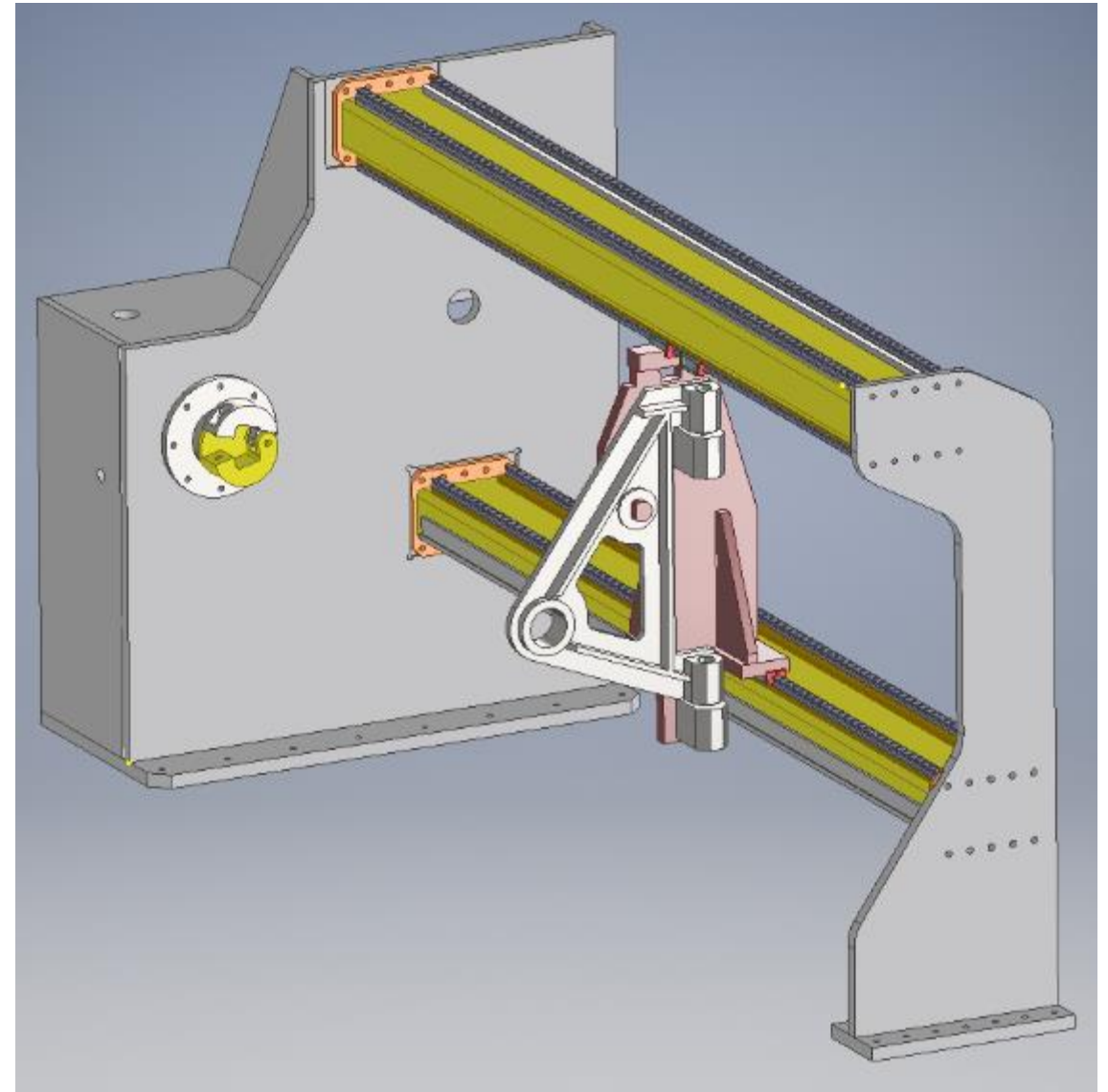


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Achievements...



Fully Automatic Dry type transformer
Coil Winding system



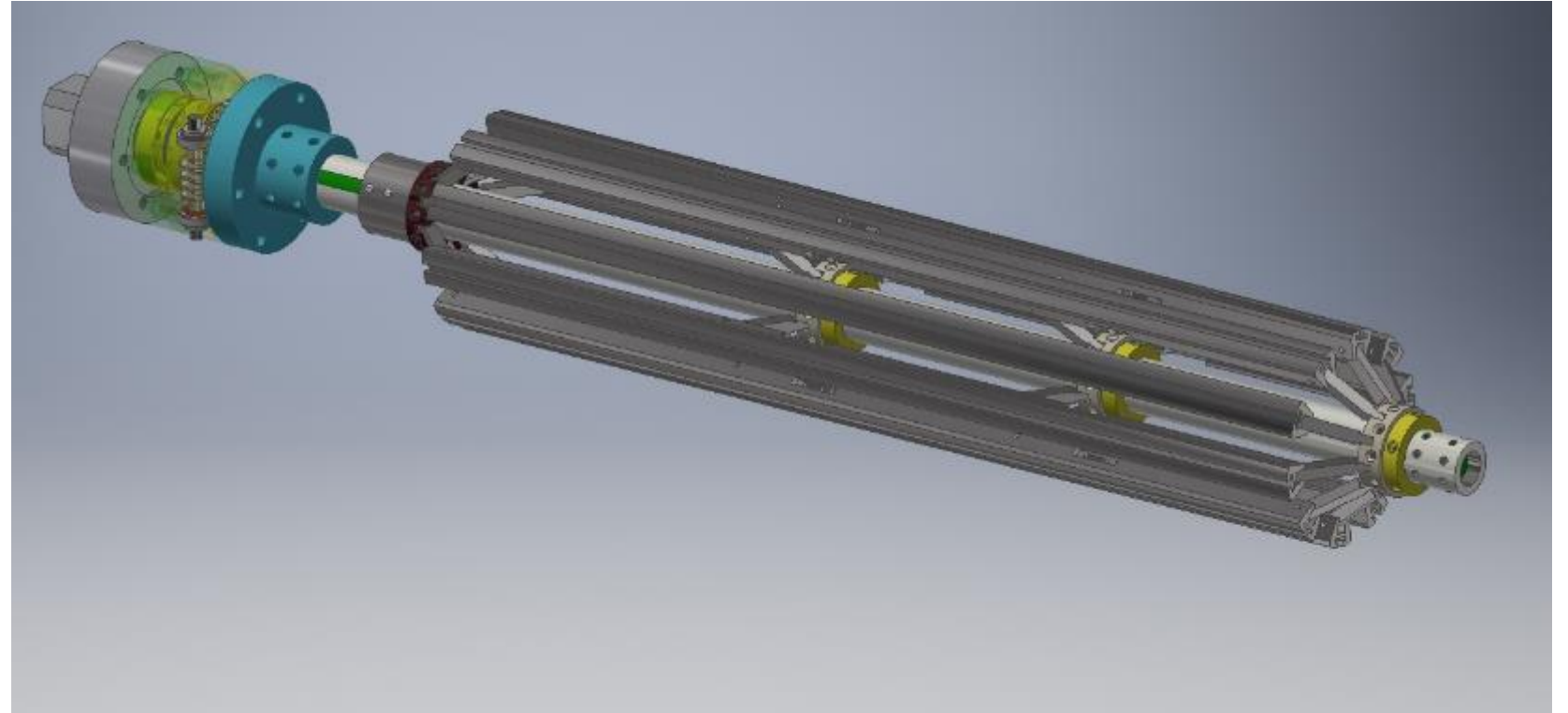


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Achievements...



Fully Automatic Dry type transformer
Collapsible Core system



Achievements...



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Particulars	Details
Customer	ABB PGTR Division Vadodara
Machine Type	Paper Punching Tool with 270 degree Movable Lifting arm
Product	Transformer core paper
Primary Function of Machine	Hole punching in Transformer core paper
Machine Control	Manually operated pneumatic machine assisted by lifting arm with 270 degree rotation & 3.5 mtr height
MOC	MS
Number of new machines made till date	1



Achievements...



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Particulars	Details
Customer	Schurter India Pvt Ltd
Machine Type	Hand Injection Moulding Machine
Product	Electronic Components
Primary Function of Machine	Injection Moulding of PP
Machine Control	Manually operated hydraulic injection moulding machine
MOC	MS
Number of new machines made till date	2



SCHURTER
ELECTRONIC COMPONENTS

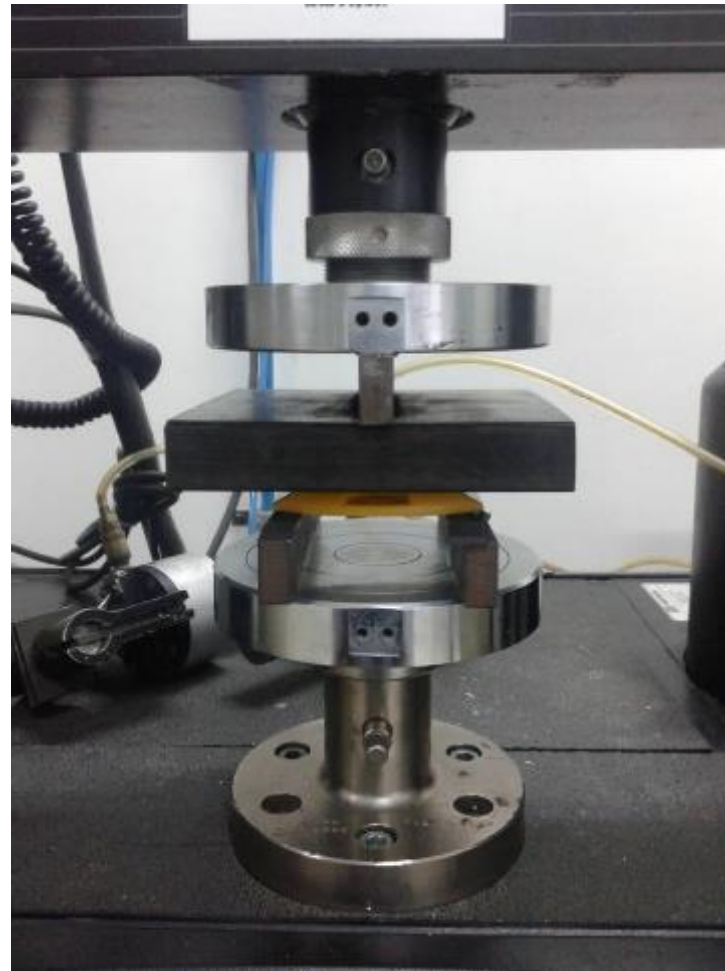


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Achievements...



UTM machine – 5Ton load capacity
Tensile & Compression mode testing
Servo motor driven
1mm – 250 mm/min linear speed
Software for real time data analysis



Achievements...



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Particulars	Details
Customer	Sterlite Technologies Ltd, Aurangabad
Machine Type	Glass Deposition by Silica Vapor
Product	Optical Fibre Glass
Primary Function of Machine	Glass deposition by to and fro motion on glass rod
Fixture Control	Mechanical movement in reverse direction, considering ush from the machine in forward direction
MOC	Hastelloy
Number of Prototypes tried	3



Achievements...



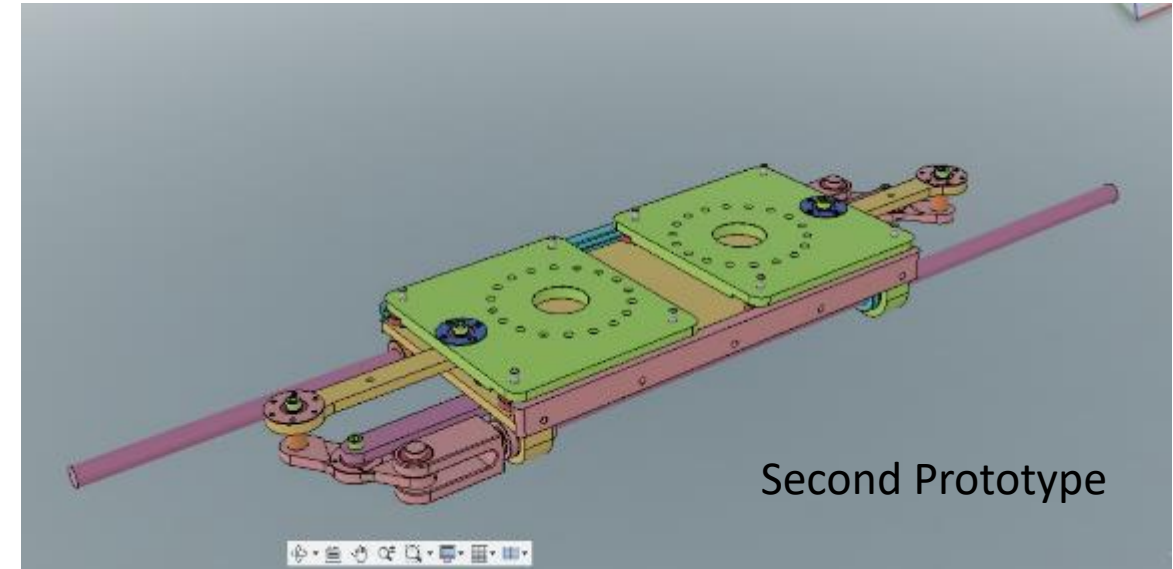
First Prototype



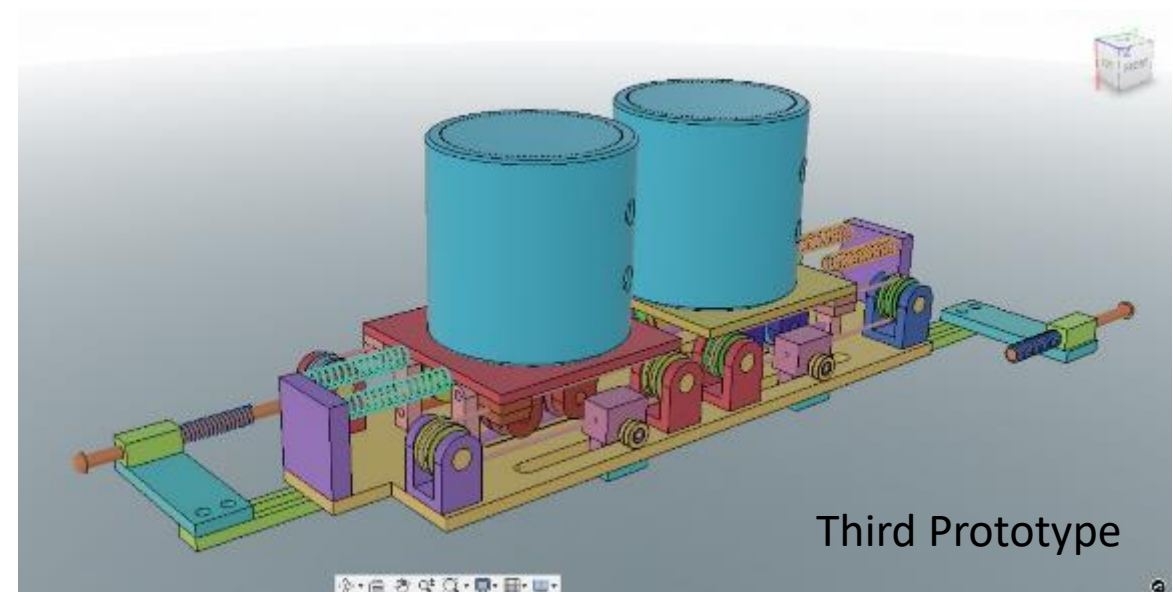
Third Prototype



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Second Prototype

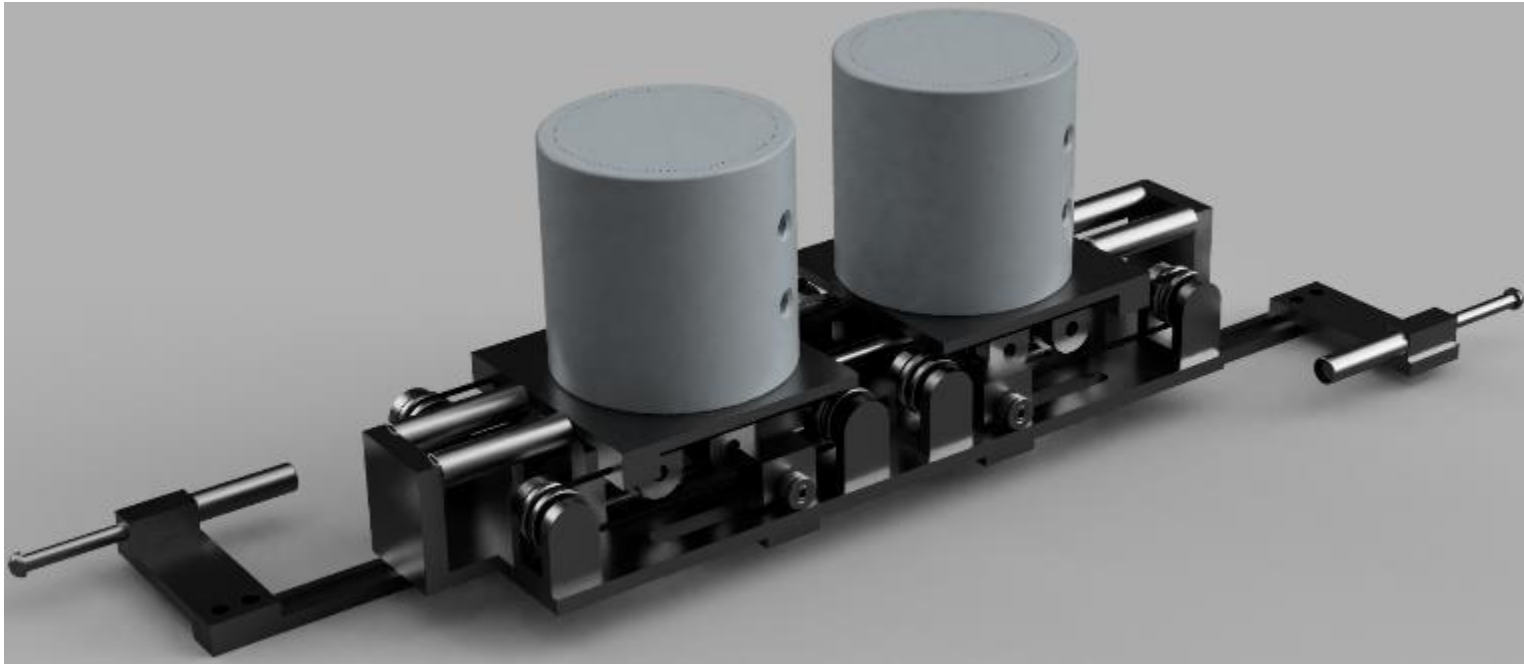


Third Prototype

Achievements...



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Third Prototype



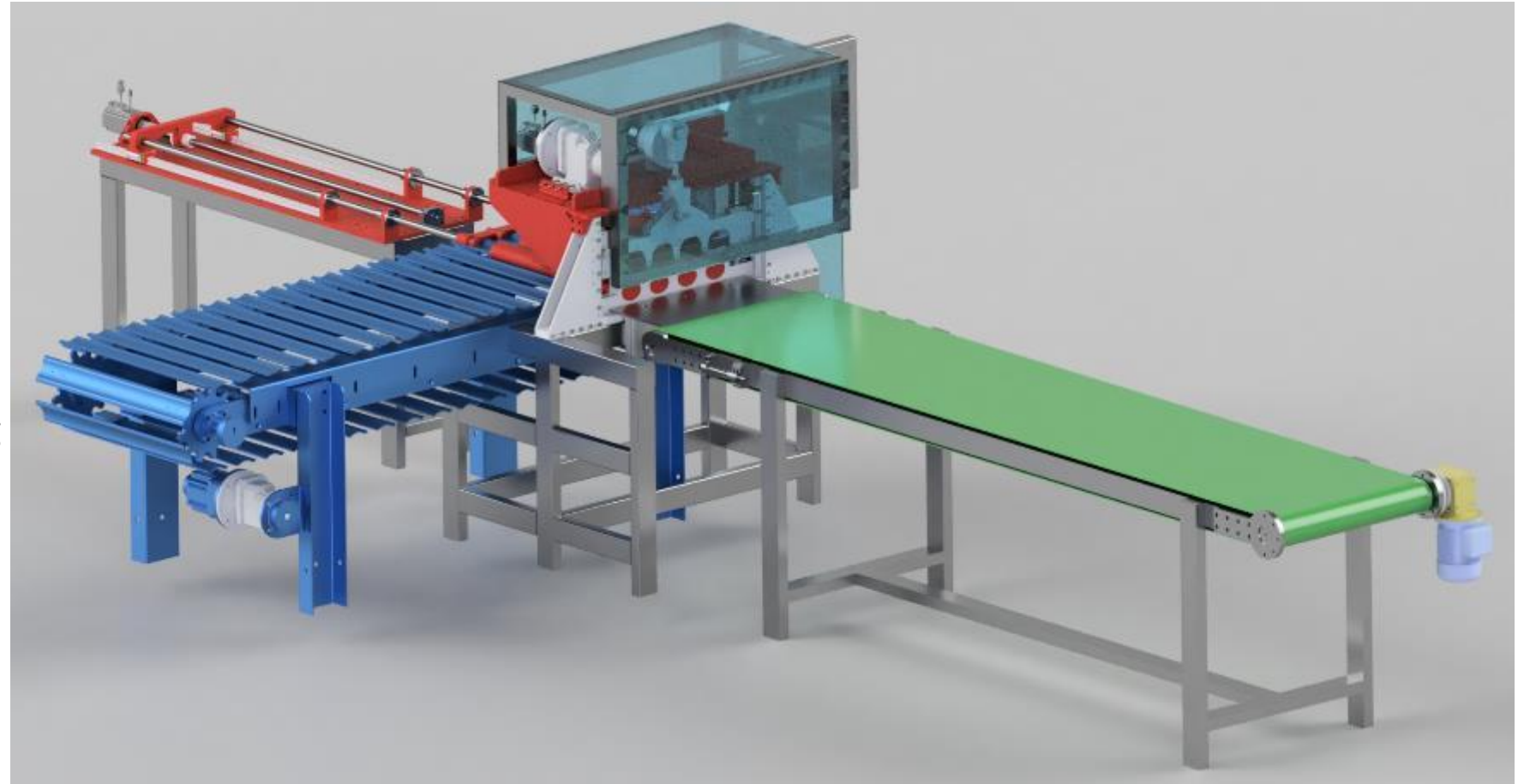
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Achievements...



Fully Automatic Soap Bar Cutting
Machine for Pears
(Glycerin base soap)

4 Track Machine





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Achievements...



Fully Automatic Soap Cutting
and Packing Machine
**Project – Successfully
Commissioned at HUL Hamirpur
Plant**



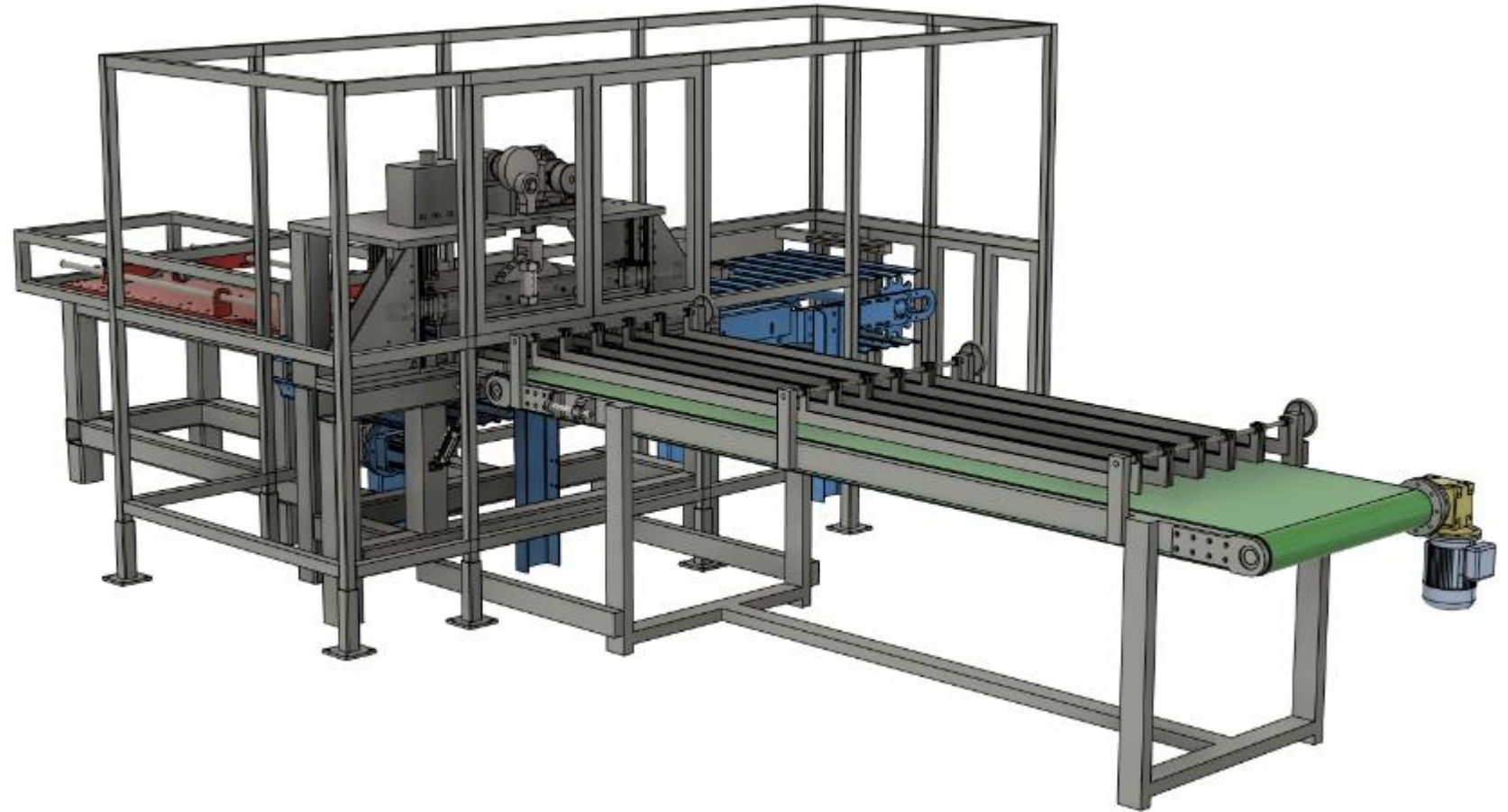


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Achievements...



Fully Automatic Soap Bar Cutting
Machine for Pears
(Glycerin base soap)
6 Track Machine





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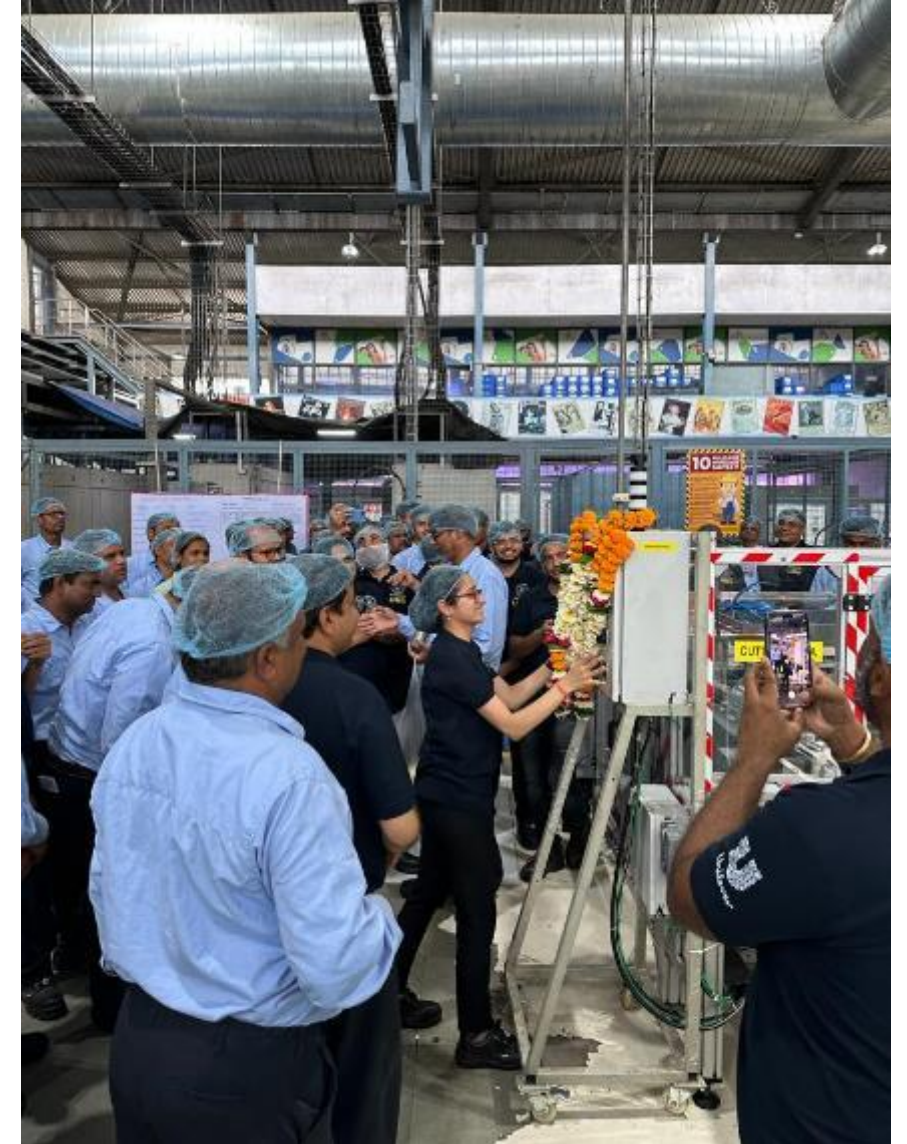
Achievements...



Fully Automatic Soap Bar Cutting
Machine for Pears
(Glycerin base soap)

6 Track Machine

Project – Successfully Commissioned at HUL Khamgaon Plant



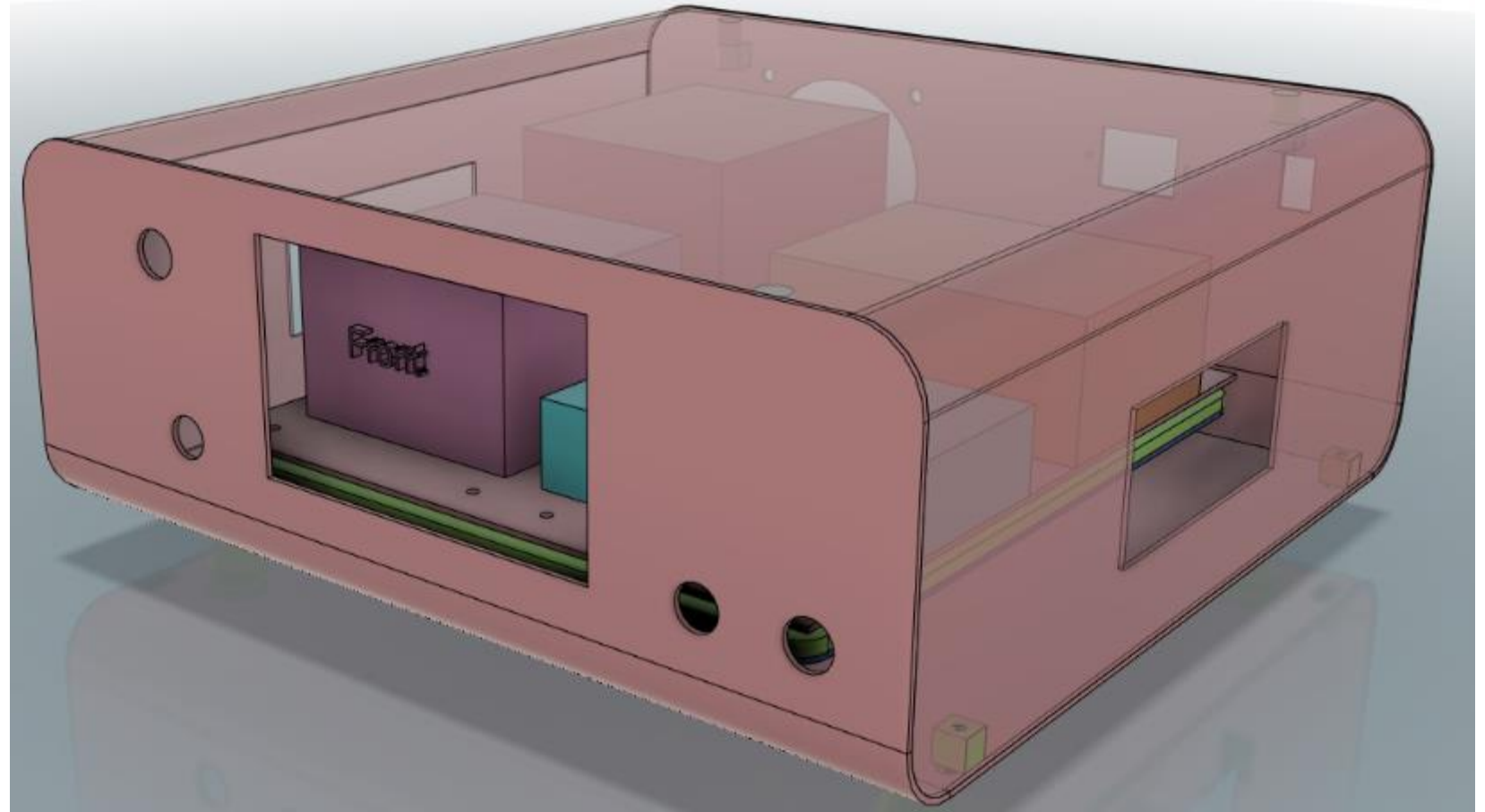


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Achievements...



Design and Prototyping
For Myrac Generator



Achievements...



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Particulars	Details
Customer	Brentwood India Pvt Ltd
Machine Type	Up ender with hydraulic assist
Product	PVC sheet roll tilt system
Primary Function of Machine	Tilting of roll by hydraulic system
Machine Control	Manually Controlled hydraulic system with 1HP hydraulic pump
MOC	MS
Number of machines made till date	1



Achievements...



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Particulars	Details
Customer	Brentwood India Pvt Ltd
Machine Type	Ball screw assisted plastic sheet cutting machine
Product	Thermoformed PVC sheet
Primary Function of Machine	Servo driven ball screw base machine controlled by PLC to cut sheet by Diamond shape blade having both sharp ends
Machine Control	Machine directly controlled by UI through HMI from both ends of machine. Clamping of sheet is assisted by Pneumatic cylinders precisely and movement of blade by servo driven ball screw system
MOC	Aluminum T slot section, Aluminum solid HE 30 grade, MS and SS
Number of machines made till date	2



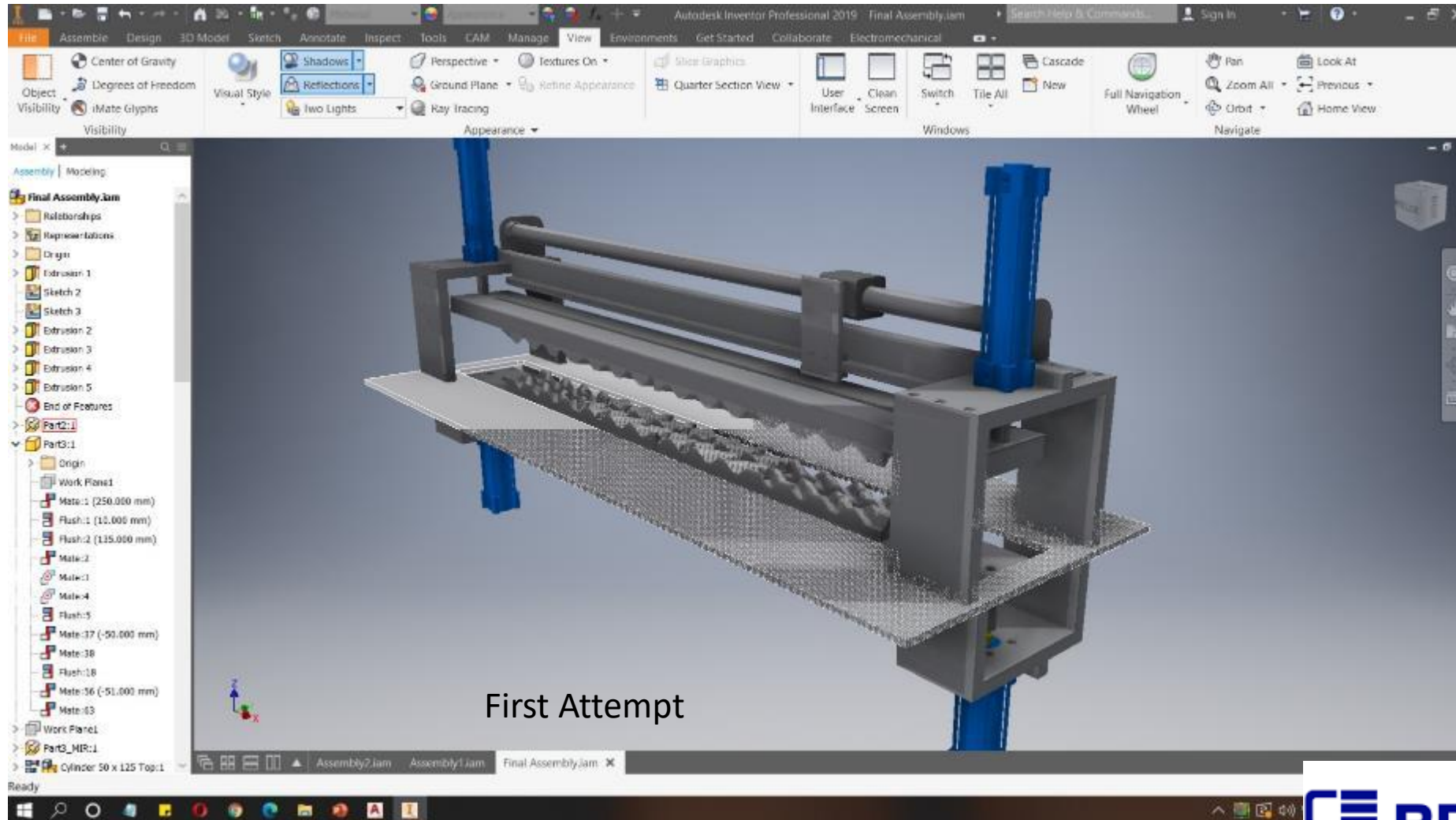
Final Attempt

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Achievements...



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First Attempt

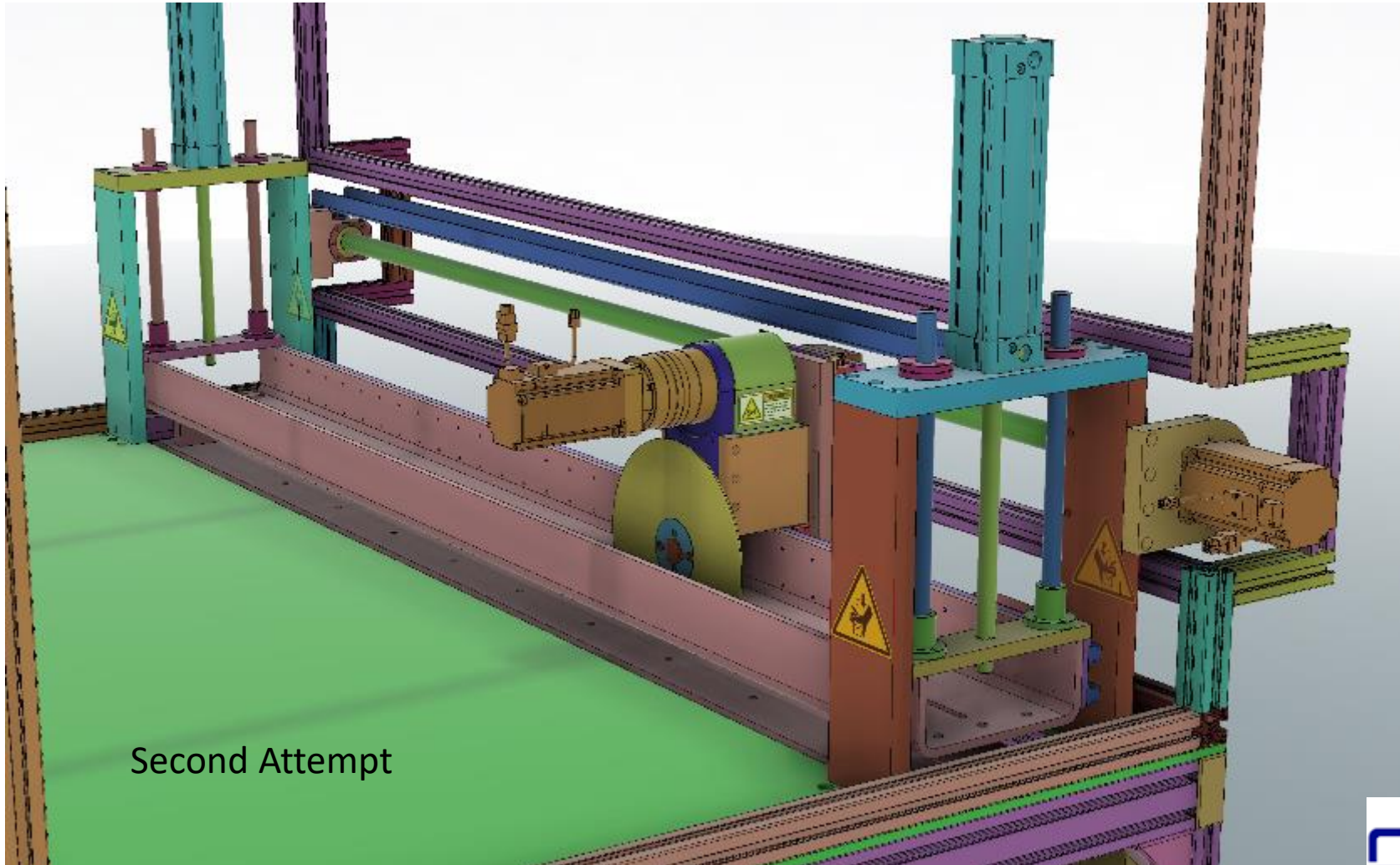
First Attempt –

Thin and very sharp blade with 25 mm width, Linear guides at top and bottom end to give firm support, driven by rod less pneumatic cylinder

Achievements...



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Second Attempt

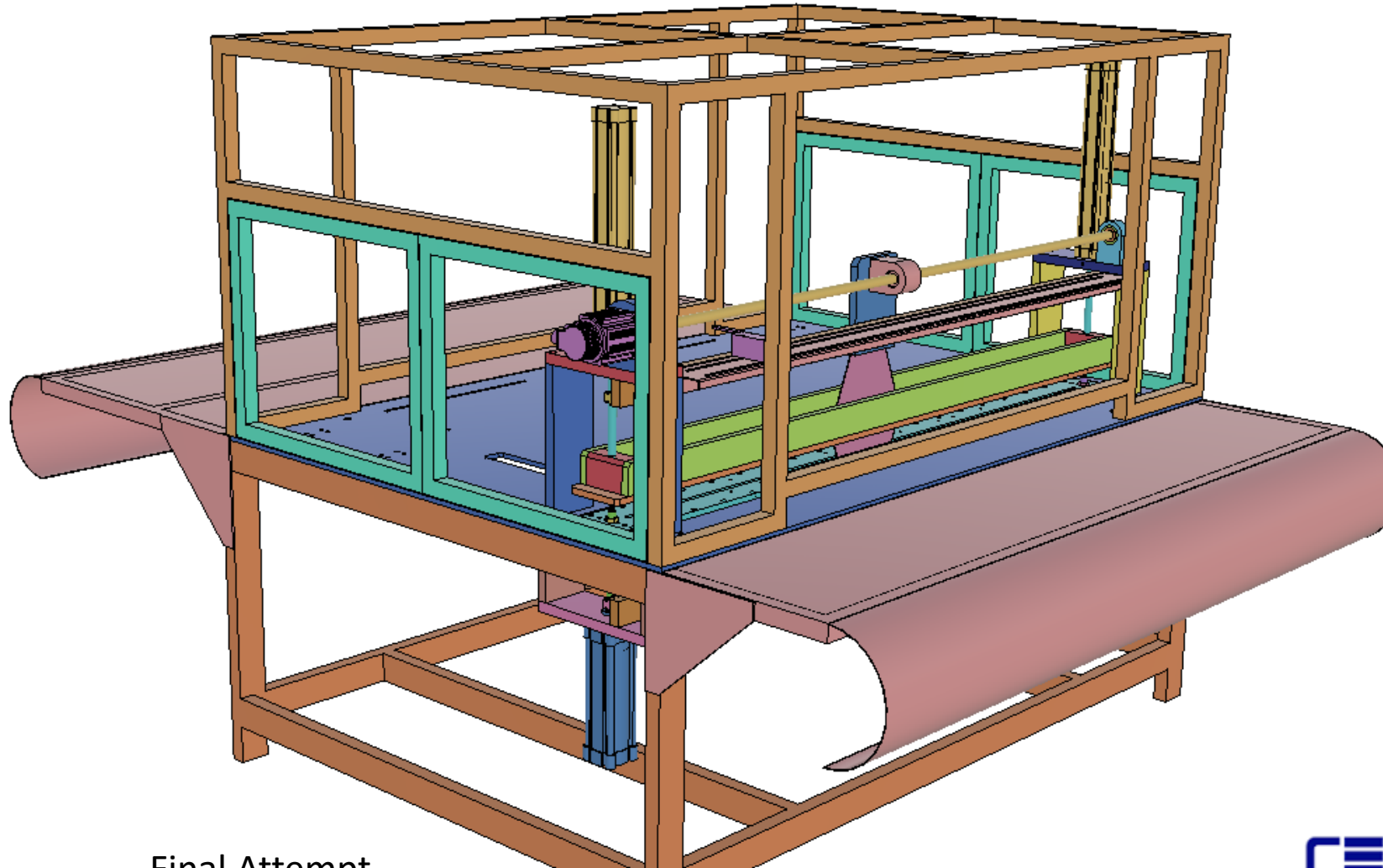
Second Attempt –

Servo driven ball
screw assisted
Circular Blade

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Final Attempt

Final Attempt –

Flat Diamond shape
heavy blade has
been used
considering all
previous learnings

Achievements...



Automatic sealant
dispensing machine
for front wheel
inner ring assembly
– MG Motors



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Achievements...



Automatic turning
machine for Teflon
coated bearing with
vibro-feeder



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Achievements...



GE VERNOVA

Automatic Gantry
base multi axis glass
fibre spool loading
and unloading system



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Achievements...

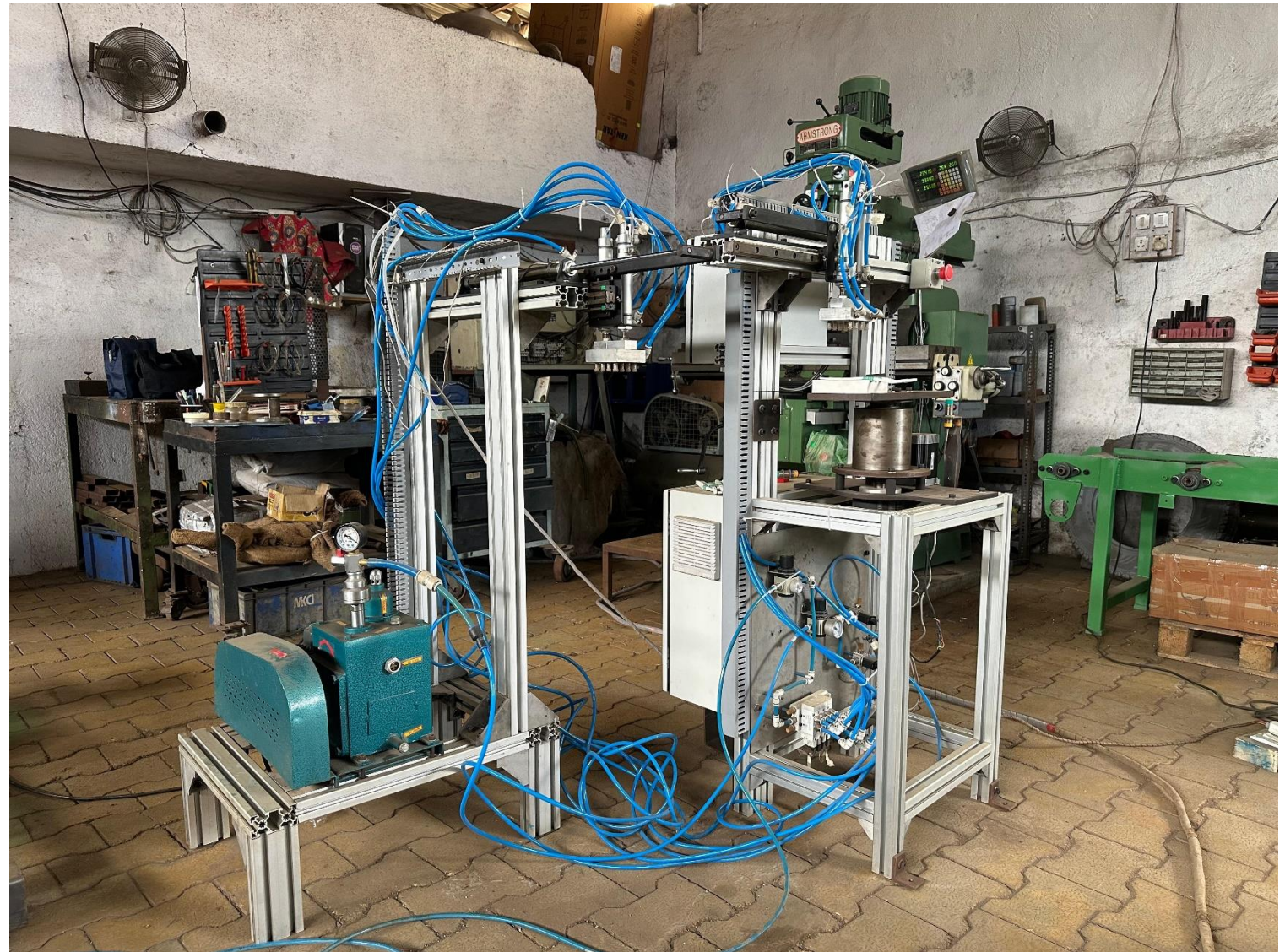


**Jewel
Consumer
Care**

Automatic Pick
and Place
machine for tooth
brush printing



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Partnership



Thank You...