

# Suba Plastics Pvt. Ltd.

Since 1983



IATF- 16949:2016, VDA 6.3, SQ Mark & MACE **Green** certified

# Our Expertise



Manufacturing Injection molded Engineering components ranging from 0.04g to 1600g

➤ Specialized in High precision Plastic Injection Moulding components

➤ Manufacturing parts for Power window motor, Wiper gears, Starter motor Gears, Belt tensioner guides, Pulleys, etc in Automotive and various other industries requires solutions in Injection Moulding since 1983.



Renowned for expertise in Gears, Tensioner Pulleys, Insulator Pads and Gear Housing, dealing with any number of critical dimensions and quality standard requirements



Support clients from Concept to Manufacture i.e., Product Proposal, Tool Design, Development to Injection Molding





# Our Expertise & Services



2K or 2-shot molding



Gears range from **0.7 - 3.0** module, **5-150** mm Outer Dia with profile accuracy of DIN class **8 – 12**.



Technical and Manufacturing capability to produce helical gears up to 20 Deg with a profile accuracy of DIN class 8



Thermoset Injection Moulding



Consulting



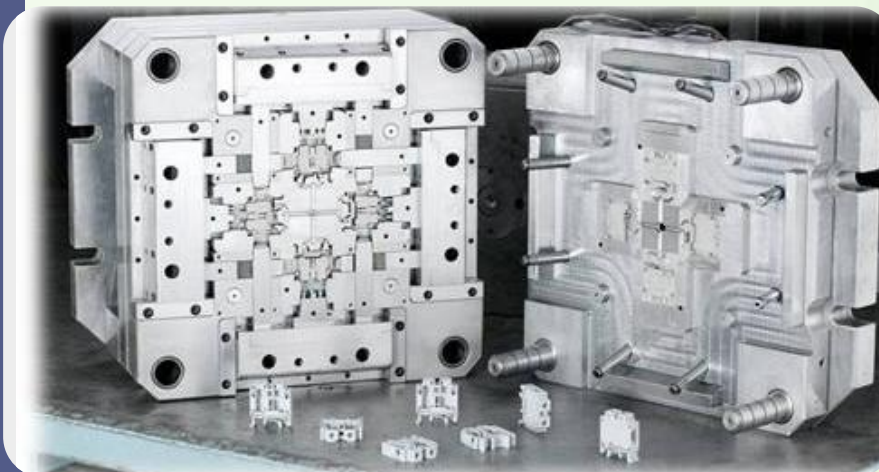
Modeling



Prototype & Tooling



Product Development & Manufacturing



# Our Certifications



## MACE Certified



MACE required for vendors who supplies to Maruti Suzuki

## SQ Certified



SQ required for vendors who supplies to Hyundai & Kia

## VDA 6.3 Certified



For German Automotive organization supplies

## IATF Certified



IATF Certified company

## Greenko Certified



Greenko for conservation of Natural Resources



SMETA Award for the workplace conditions Assessment



ISO 14001 certified company



ISO 45001 certified company

# Industry we supply,

**Automotive – IC Engines**



**Automotive- Electric Vehicle**



**FMCG**



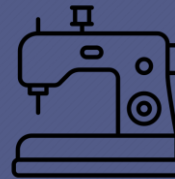
**Energy Sector**



**Electrical & Electronics**



**Media**



**Textiles**



**Aerospace**



# Vision & Mission



## Vision

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Suba Plastics will be the first choice of Customers in the Industry by being innovative Product manufacturing, proactive and complete value-added Plastic solutions provider.



## Mission

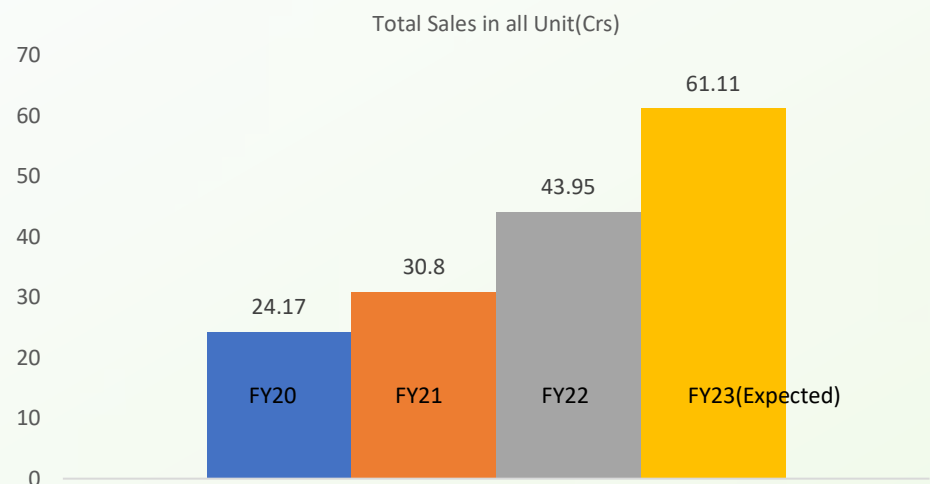
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Suba Plastics is committed achieving Rs.200 crores sales by providing polymer solutions to the Indian Automotive and Non Automotive industries by 2028.

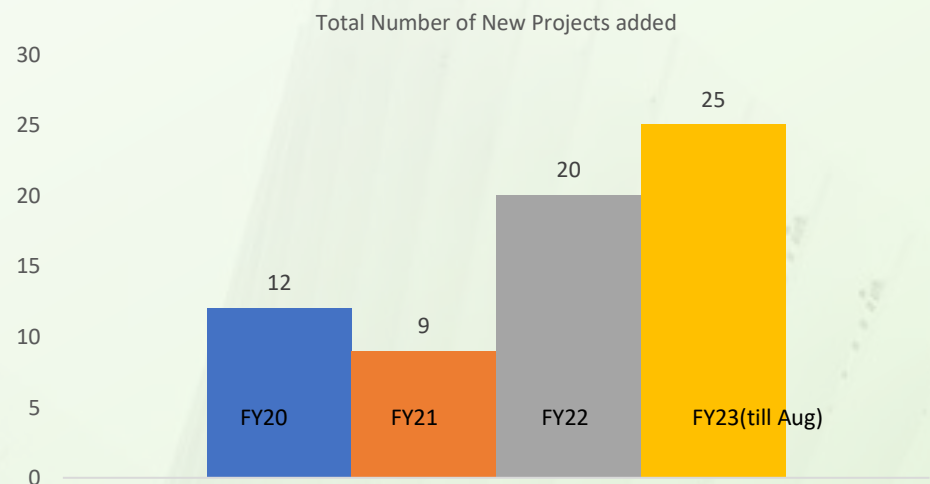
Suba Plastics will produce zero-defect parts by adopting manufacturing excellence with the new technologies

Suba Plastics will Partner with customers and suppliers to co-develop innovative products with 100% system adherence by effective QMS implementation and to provide Prosperity and fulfillment for Employees and suppliers.

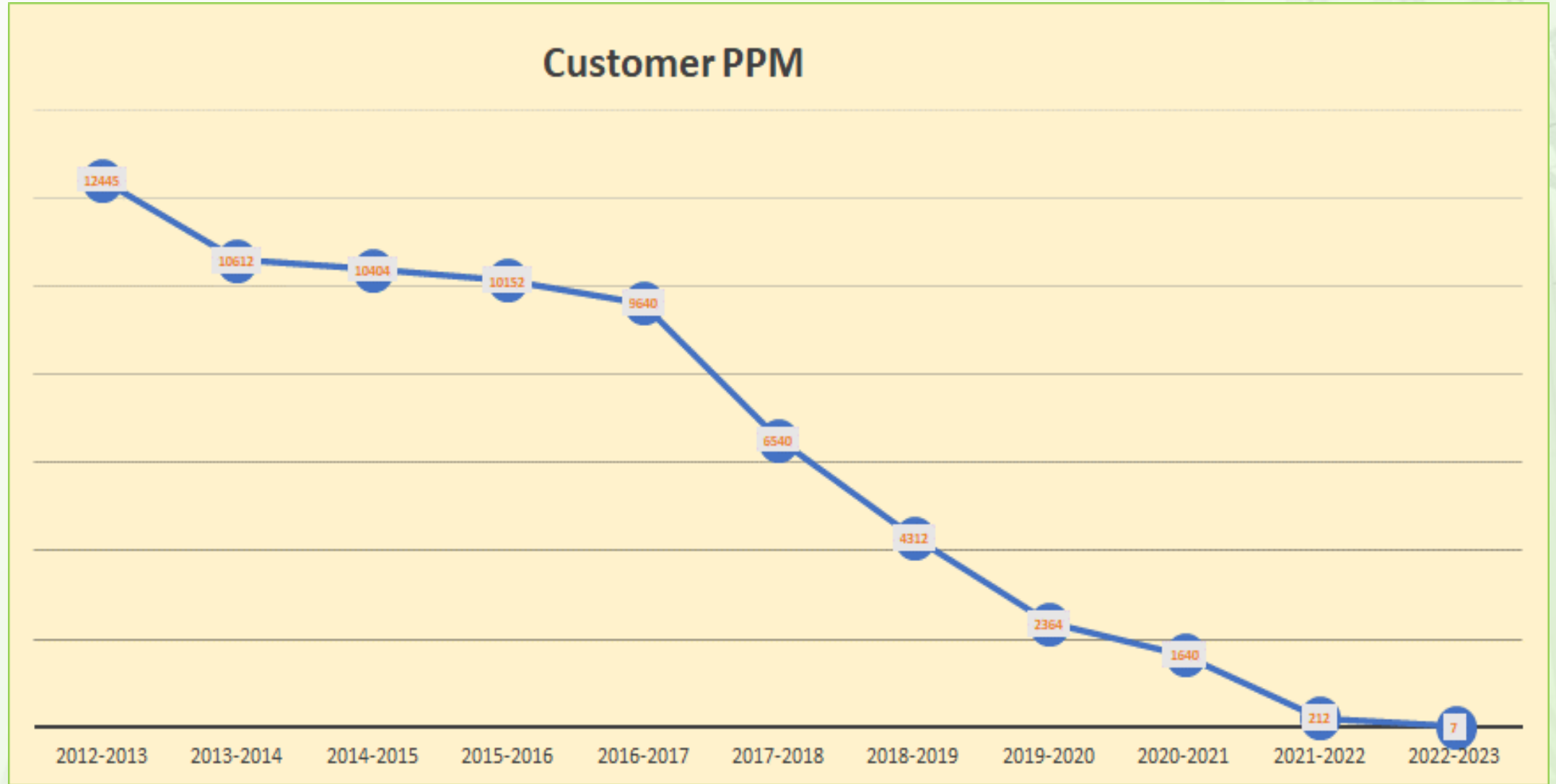
# Our Business Growth



Segment	Our Business %
Aero Space	0.50%
Automotive	61.50%
Electric	8.50%
Energy	7.00%
FMCG	13.50%
Jewellery	5.50%
Textile	3.50%



# Customer PPM status





# Our Markets

We have customer footprints across 8 countries



## Our Export Customers

VALEO

COMSTEL

Parker Hannifin

Gates

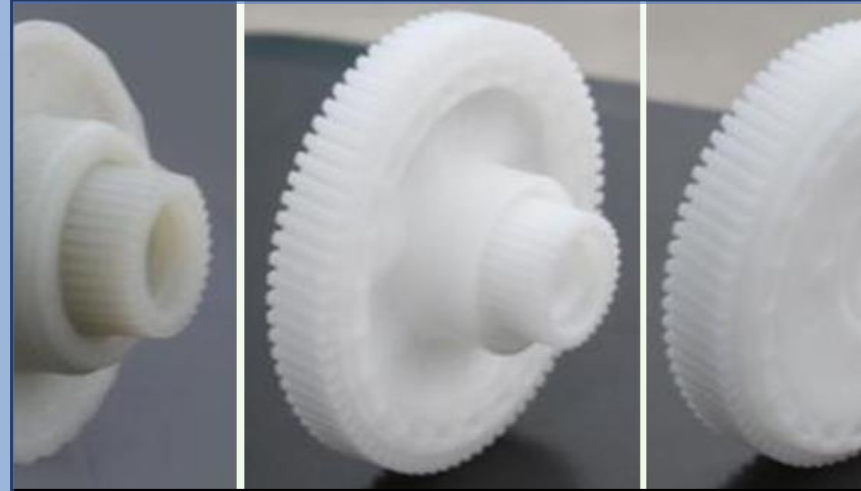
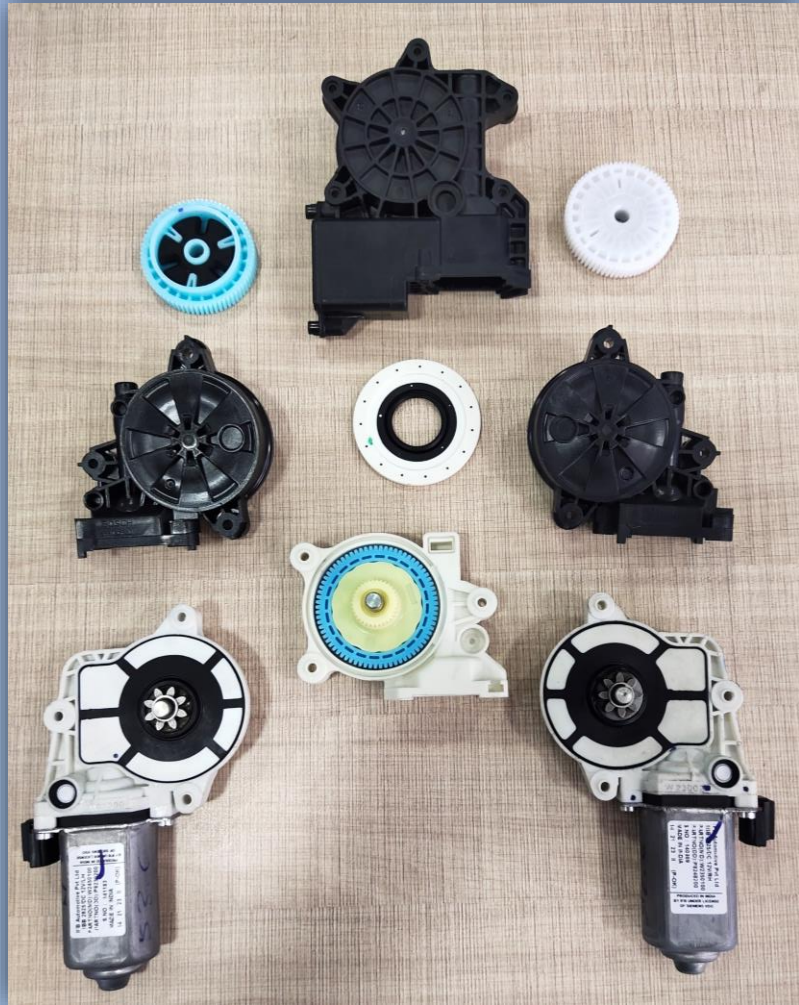
# Key Product Portfolio





# Automotive Segment

## Power Window Motor Assembly Parts



Our Power window lifter Gear boxes are manufactured in highly controlled atmosphere with robotic handling. Around 350 critical parameters are maintained within a range of 20 microns with robust process setting, Process poka-yoke and excellent cooling and material processing systems. Also sustaining the fit and function dimensions with Cp and Cpk >5.

Our Gears are produced with the aim of achieving zero backlash, wobbling and very low noise level that is at par with customers expectations.

**Customers : Bosch, Johnson Electricals ,IFB and Inteva Automotive**

## Starter Motor Assembly Starter Gears



Stationary gears used for starter motors are manufactured to meet DIN class 10 accuracy with PA 66 & PA 46 with 50% Glass filled material.

Tools are manufactured with wear resistant steels to augment their life

To maintain consistent Gear Parameters, we use hot runner system with latest technology

Hot runner system also eliminates the wastage due to runner generation.

**Customers : Sona BLW, Valeo, Lucas TVS**



# Wiper Gear Assembly Parts



Wiper motor gears are manufactured with minimal wobbling with zero noise by making optimum designing with mould flow analysis tools



Robotic attachments are used for loading and unloading to avoid inconsistency due to manual intervention



Over 1 lakh wiper gears being supplied to **Lucas TVS** for every month by having more than 90% SOB.

## Belt Tensioner Pulleys – Engine Assembly



- Pulleys are molded with optimum melting temperatures using Nylon - 35% glass filled material with zero effect on bearing
- The Cooling circuit designs are so robust that we have a monopoly share in pulley manufacturing
- Major customers: **Gates Unitta India, Dayco, Mubea.**
- Catering to the needs of Pulleys for all OEMs across India and overseas too





## Tensioners & Guides – Engine Assembly Parts

- Our Highly precision Tensioners and Guides used for various 4Wh & 2Wh Engine Assembly to adjust chain elongation.
- Our parts withstand in high temperature inside the Engine assembly.
- We supply more than 1.5 lakh Tensioner and guides to various Customers such as **Borgwarner, TVS**



# Oil Pump Gears and Assembly

- Suba is renowned for Oil pump gears and its accuracy and consistency of Quality assured in each Gear.
- Being molded with high heat resistant material such as PA 66 & PA 46
- Supplying to **TVS, Pricol, Pavana Automotive, Hero Motors, Prabha Engg.**

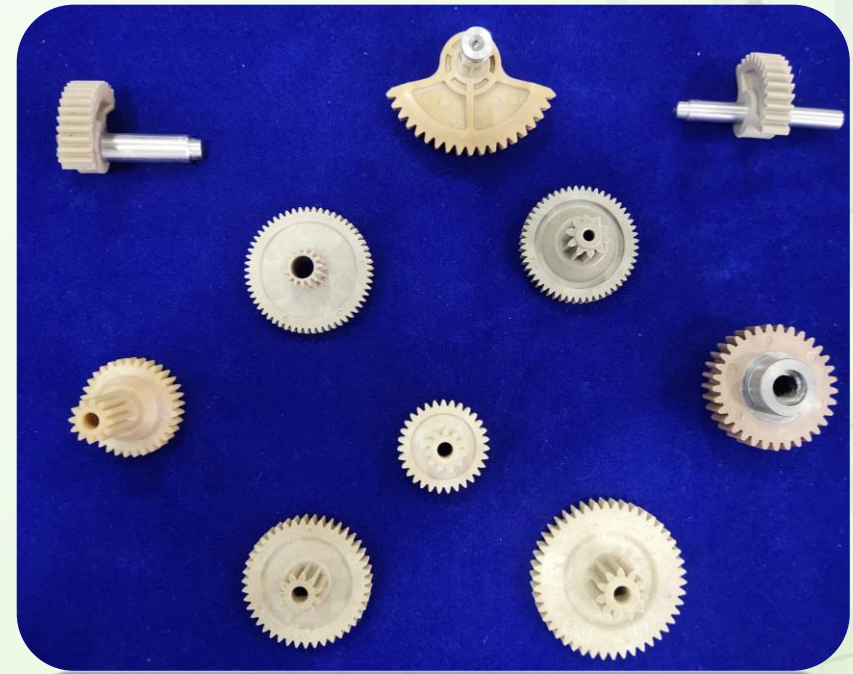




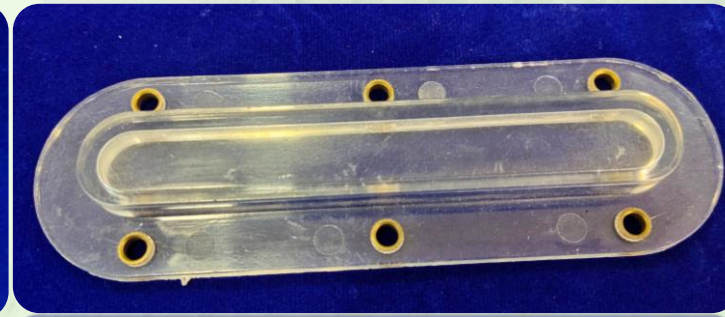
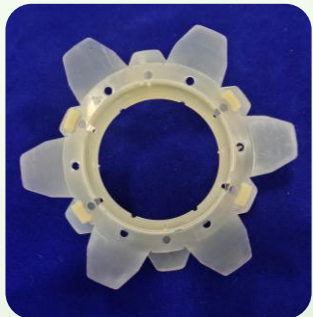
## Thermoset Injection Moulding



## Worm Gears



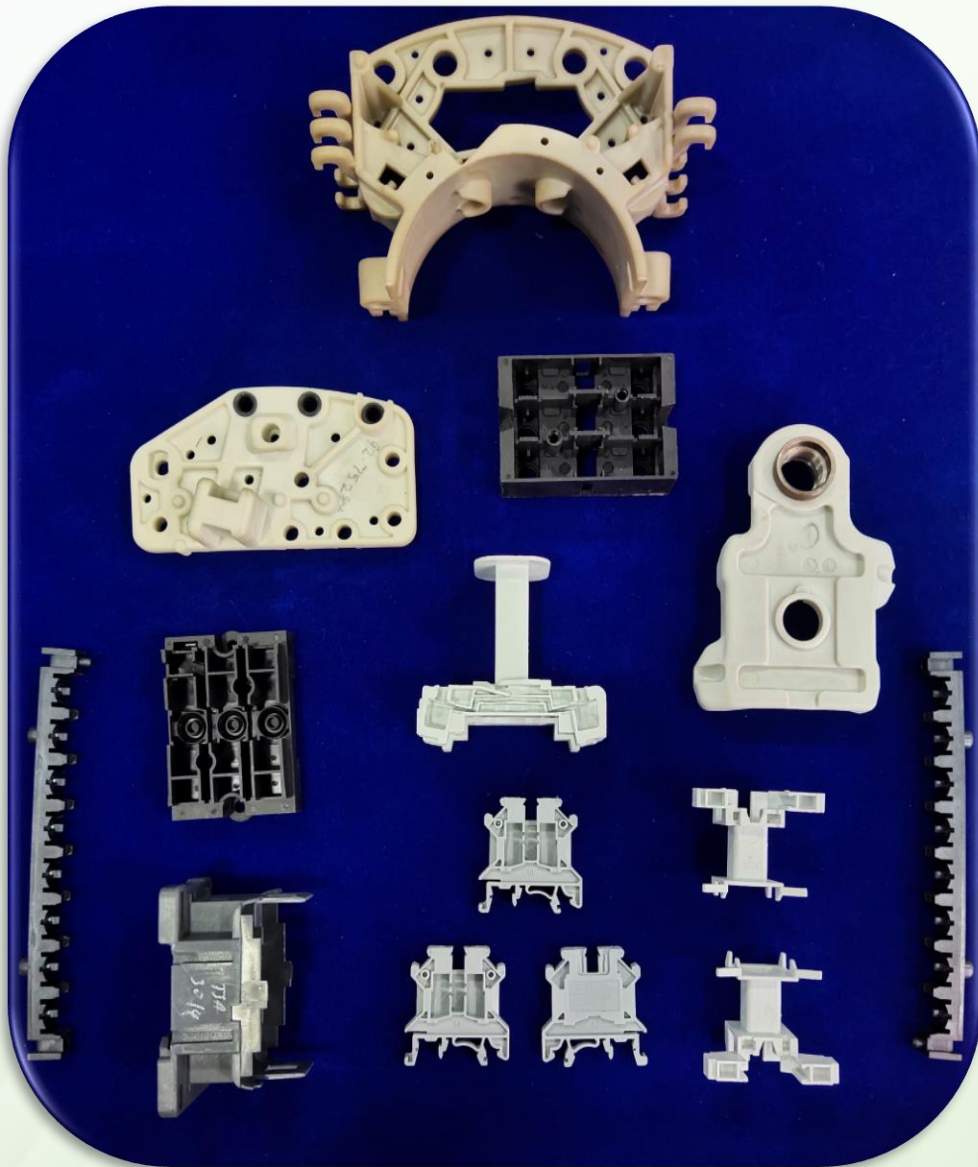
## Interior & Exterior Parts





# Non-Auto Products

## Electrical and Electronics



## Jewellery Boxes



## Airforce



## Textile Parts







## Personal Hygiene – Oral Care



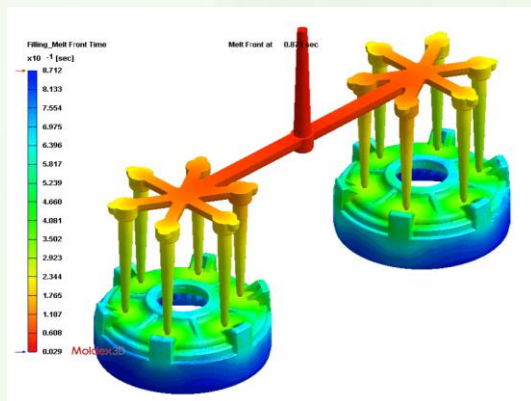
- We supply multiple types of toothbrush handles for P&G's Oral- B Brand
- These brushes are bristled and dispatched to about 200 countries
- An exclusive and dedicated unit for these products



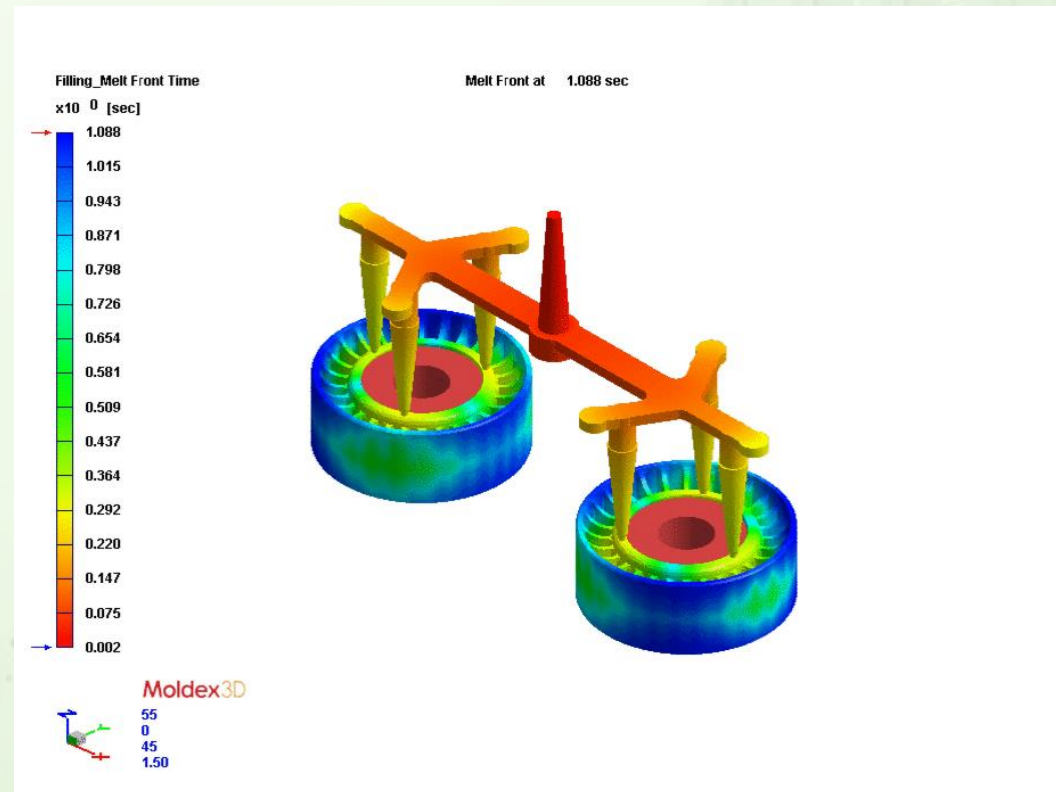
# Design Capabilities

## Manufacturing-Melt Flow Animation

- The advancement of melt flow at different time is displayed by different color
- From the melt flow advancement, we can examine the filling/packing pattern of the melt
- Incomplete filling/short shot, over-pack flash, weld line, and air trap problems can be detected and avoided by modifying design or processing variables



Filling is almost balanced





# Design & New Product Development



- Our Design & NPD team support our Customers with actual Part design and Development, Including RM selection for Precision injection molded parts based on the application
- Our lineup of Engineering Professionals has the range and gravity of skills and experience required to provide turnkey solutions for design , engineering, manufacture of Precision Engineered parts and components.

Available Software	Number of License
Pro E	5
Auto CAD	3
Solid Works & Areas each	3
Mold Flow	2
Mold X 3D	1
Piweb	1
Master CAM (CNC milling CAM programming)	
FF CAM (Makino)	

We are equipped with Software like Pro E, AutoCAD, Solidworks, Ares, Moldex 3D, Moldflow 3D, Pi Web

# Tool Room Capabilities

## Tool Room

- State of the art in house precision Tool & Die manufacturing facility comprising CNC high speed milling machines
- Tools are designed and developed in house for regular as well as new product development work with strict adherence to quality
- High precision CNC, EDM, wire cut and high-speed machines for machining of Tool and Dies which ensure high quality Tools & Dies in terms of consistency and repeatability





## MAKINO – VMC F3



### SPECIFICATIONS

- Table: 850 x 500 mm
- X-650mm Y- 500mm Z- 450 mm
- Spindle RPM
- 20,000
- Spindle Taper
- HSK - A63
- Rapid Traverse
- 20,000 mm/min
- Cutting Federate
- 20,000 mm/min
- Maximum Work piece
- 650 x 500 x 450 mm
- Maximum Payload
- 800 kg
- ATC Capacity
- 30
- Maximum Tool Diameter
- 120 mm
- Maximum Tool Weight

## MAKINO – VMC F3 - BLUM SYSTEM



BLUM touch probes are used for fast and automatic work piece measurement and work piece zero-point measurement in machine tools



Blum probe systems are an effective solution for improving the accuracy of work pieces and the productivity of manufacturing

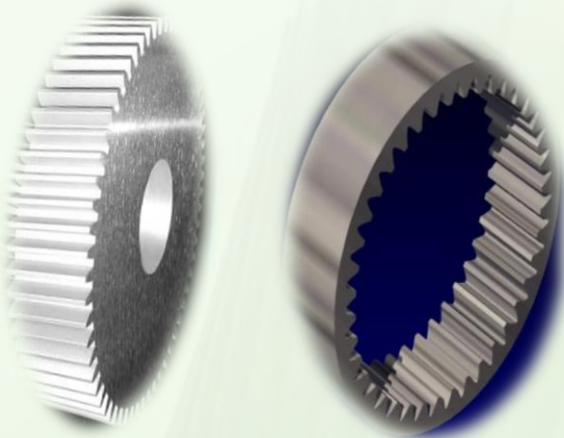
## FANUC –Robocut WIRE EDM – Machining Capability



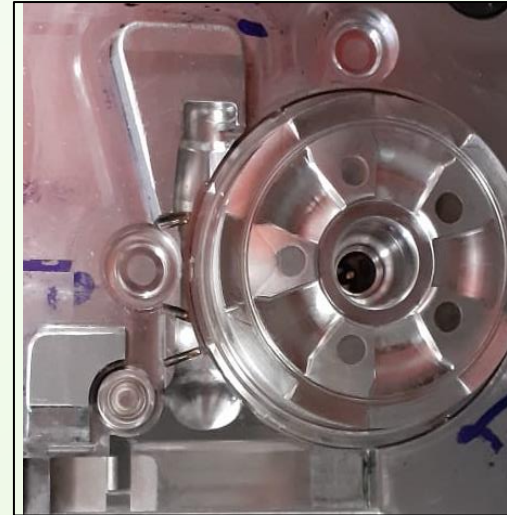
### Fast, Accurate Electrical Discharge Machining

- Capable of cutting thick, stepped and tapered parts
- multi-workpiece machining
- Easy-to-use Core Stitch function for even longer unmanned machining
- Wire threading in just 10 seconds
- Accurate twin servo wire tension control

### External & Internal Gears



### Tooling finishes...





# Manufacturing Capabilities

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**Machine Floor**

# Materials Processed

- Polyamide 6 (unfilled –natural & colors)
- Polyamide 6 glass filled 30%, 15% and mineral filled
- Polyamide 66
- Polyamide 66 glass filled 30%
- Polyamide 46 (STANYL)
- Polyamide 46 GLASS FILLED 50%,30%,15% and carbon filled
- Polyamide 6 12
- Poly acetals ( homopolymer & copolymer)
- Polycarbonate (clear and colored)
- Polymethylmethacrylate(clear and colored)
- Ultramid A3R
- Hytrel
- ABS
- PPO
- PBT (unfilled and glass filled)
- Polyurethane
- Polysulfone
- STANYL (PA-4,6) 15% Carbon fiber filled
- Peek
- Polystyrene HIPS,HDPE & LDPE
- ETPV Rubber
- PolyPropylene
- PPS
- Polyaryl Amide

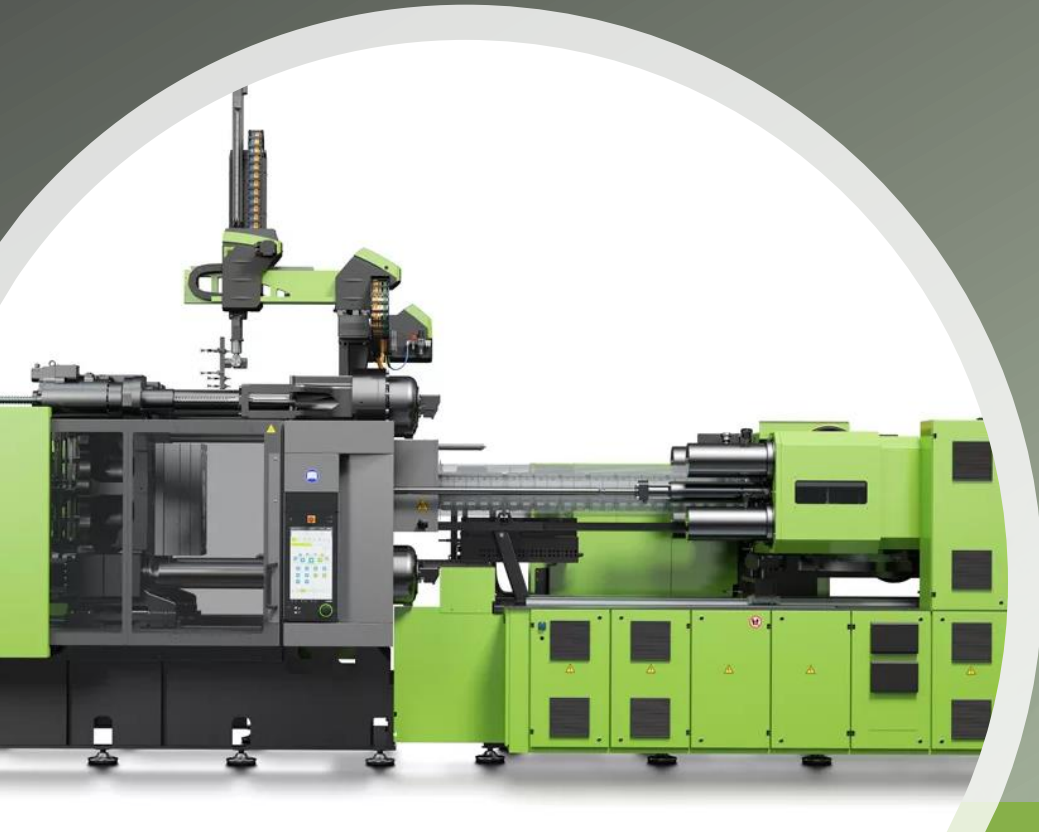
Raw material suppliers include **DSM, DuPont, Sabic, BASF,etc.**





# Injection Moulding Machines

## Engel Machines with Open/ Closed Loop Controls



- Our ENGEL injection moulding machines can produce components to the level of 10 microns accuracy.
- Following are the special features:
  - Tie bar less – Facilitates for bigger mould setting
  - We have both Toggle and Ram type
  - We have totally 4 versions of Engel machines having unique features according to clients requirement
  - Poka-yoke for material identification through Flow number



## Fanuc All Electric Machines



Our FANUC all electric machines can produce high precision gears  
All electric features helps in producing components with high injection speed there by making it easier for components with thin-walled sections

Pre-injection facility in these machines greatly reduces warpage in the component there by improving the component function

## Milacron All Electric Machines



- Adjustable moving platen supports.
- MOLDGUARD Full Stroke Mold Protection
- Precision Control Technology For All Applications
- Ejector retract override for faster cycles
- SPI knockout pattern with drilled ejector plate
- Low pressure mold protect with try-again circuit
- Automated adjustable clamp tonnage set-up

## TKC Vertical Injection Moulding Machines



We have TKC vertical moulding machines which can be used for producing components with metallic inserts and plastic with rubber combination

## Ultrasonic Welding Machines



Our Ultrasonic welding machines can work upto a frequency of 20000 Hz. We make Filter assemblies for ATVs, Horn assemblies for two / four wheelers using this machine



# Injection Moulding Machines Details

S.No	Machine Details	Tons	Machine Photo	Number of machines
1	Engel Closed Loop machines	45-150		36
2	FANUC - All Electric Machine	125		2
3	Battenfield - All Electric Machine	110		1
4	Tkc vertical cum Horizontal	120		11
5	Kestrel Horizontal	150		2
6	Milacron Horizontal cum vertical	350		3
7	JSW - All Electric Machine	35		1
8	TKC VERITICAL MC	50-85		5
9	Sincinati	50-85		3
	Total machines			64

- We have various Injection Moulding Machines & tonnage varies from 45 tons to 350 tons
- We have top notch Injection Moulding machines such as Engel, Fanuc, Battenfield, TKC, Milacron, Kestrel, JSW, etc.

# SPMs for Sub Assembly Manufacturing



We have SPMs for various sub assembly requirement with inbuilt poka-yoke systems for measuring and controlling critical parameters as well.



# Quality Capabilities

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# Our Journey towards Quality Improvement

## CMM – ZEISS CONTURA

Our Zeiss Contura CMM can be used for measuring deep features, self-centring, displaced conditions such as reference systems or position errors.

Customized Programming features for gear parameters and other measurements



## SIPCON – VMS



- Magnification range from 9X-500X
- Measuring range from 100x100x100mm to 500x400x300mm
- Full 3D software with least count – 1/0.5/0.1 micron
- Fully integration with CAD for reverse engineering application
- Autofocus
- Thread less worktable – Zero Backlash



# Quality Facilities

**UTM**



**MFI**



**Shore Hardness Tester**



**Moisture Analyzer**



**Busen Burner**



## Testing Facilities available

- Melt Flow Tester- (0-400°C / 59:59 Min : Secs)
- Moisture Analyzer- (0-120 G & 30°C TO 105°C)
- Bunsen Burner- (0 – 100 ° C)
- Universal Testing Machine for Pull & Push load- (0.0 TO 500 Kg)
- Shore A Tester for Rubber hardness- (0 – 100 deg shore A)
- Rock well Hardness tester for HRC testing

# Our Journey towards Quality Improvement



## Robo Controlled Engel Machines

Robo fitted machines being used for avoiding manual interruption, Improved product quality, Consistent performance, Auto reject facility for NG products, Avoiding handling damages and uniform cycle times

Our next generation machines are having IQ controller for maintaining constant weight of component there by optimizing RM usage

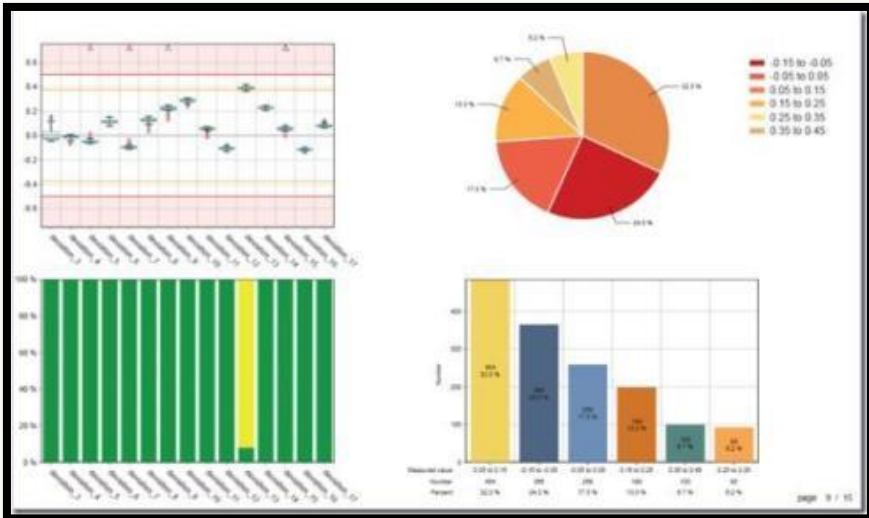
Also viscosity of RM can be monitored to have premium quality of component





# Our Journey towards Quality Improvement

## Pi Web Software Introduction



Pi-web – SPC software for online monitoring of product performance so as to control / adjust the process and for improved process capability

## Blum Software



BLUM software for online measurements of profiles and compensation in process



Bad part segregator – Poka-yoke for process control -Parts produced out of process limits are sent to Bad Part Bin

# OUR ACTIONS TOWARDS ACHIEVING ZERO DEFECT

**CUSTOMER SATISFACTION**

**ACHIEVE ZERO PPM**

NEW PART  
DEVELOPMENT

SUPPLIER  
MANAGEMENT

PRODUCTION  
CONTROL

INSPECTION &  
TESTING

CONTINUOUS  
IMPROVMENT

MANAGEMENT  
REVIEW

PERIODIC  
AUDIT

INBUILT  
PROCESS  
CONTROL

ADEQUATE  
TESTING  
FACILITY

FREQUENT  
TRAINING

MOLD FLOW  
ANALYSIS

PROPER  
INITIAL  
CAPABILITY

POKA-YOKE  
SYSTEMS

FIREWALL  
INSPECTION

SUGGESTION  
SCHEME

TGW / TGR

INSISTING FOR  
CERTIFICATIO  
NS

REDUCING  
VARIATIONS

TOOL  
QUALIFICATIO  
N

EVERYDAY  
WASTE  
ANALYSIS

DFM

CONTINUOUS  
COACHING

4M  
MANAGEMENT

SPC  
MONITORING

PATROL AUDIT

LESSONS  
LEARNT  
REVIEW

IMPLEMENTATI  
ON OF 5S

OPTIMUM  
LAYOUT

STRINGENT  
CALIBRATION

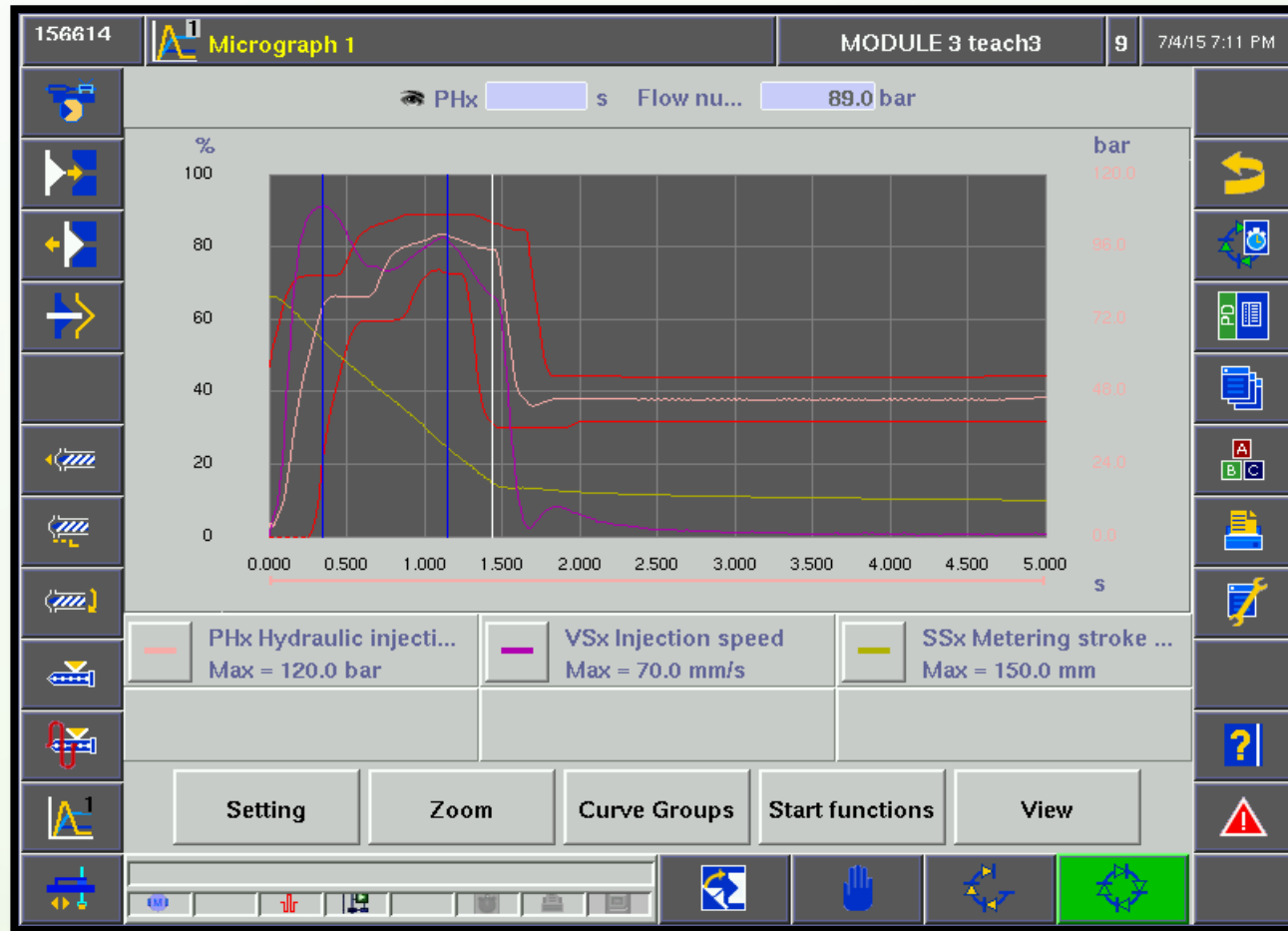
SYSTEM,PROD  
UCT ,PROCESS  
AUDIT

**ISO / IATF 16949 / QMS REQUIREMENTS**



# Steps to achieve ZERO PPM

## Poka-Yoke for Process Control – Bad part segregator



# Steps to achieve ZERO PPM

## Improvement in Employee Training Systems

### Daily Quality Review with CFT



To witness Rejection Components, Brain storming and possible causes for the Defect if any and Implementation of Corrective action to eliminate the Rejections



Training on abnormal conditions and NC parts handling & Evaluation



**Dedicated team  
and Firewall  
inspection**



# Steps to achieve ZERO PPM

## Strengthening Employee Suggestion Scheme



Award for best Suggestions are given out regularly  
Strengthened suggestions scheme through  
motivating employees and awards for the best teams  
Various competitions are conducted during quality  
month to kindle the quality awareness of the  
employees

## Indicative Solutions provided



**Custom Tooling for a client - Cone**

- **Reduction in Noise Levels**  
Supported Bosch in reducing the Noise Levels of Power Windows and Wiper motors through support from Design to manufacturing stages
- **Leak Proof Jewelry Box**  
Supported a Jewelry Manufacturer to design, develop and produce Packaging boxes, that can be used to send inert gases into the idol casing, seal by ensuring no leak of the gas, all while reducing the manpower cost and time by over 25% with improved Customer appeal
- **Oil pump Gear**  
Competitor's manufacturing Process unable to meet customer requirement. Tool shifted to Suba and Quality class as per std with Tooling modification and Processing support.



# Accolades



Best in Quality Excellence  
Award from M/S Gates- Jun 22



Best Supplier Award – from M/s  
Inteva Jul 22



Best Supplier Award for  
Development by Comstar -17th  
Mar 16

# Key Clientele



# Automotive



# Our End Customers - 4WH





# Other Customers...





Suba Plastics Pvt Ltd. - Confidential

## About Us



Founded by Mr. Baskaran, Managing Director of Suba Plastics Pvt Ltd., Mrs. Geetha Baskaran, Director and Mr. Sudhakar Technical Director in the year 1983

Suba's expertise has been built over 36 years of its presence in the Injection Molding segment serving various sectors like Automotive, Healthcare, Textile, Medical and Industrial applications

Suba is currently a 44+ Cr organization, having 3 Units, Two focused on Automotive and another focused -on Healthcare





# Contact us

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