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About Us:

Development, Manufacturing & Supply of ferrous & non ferrous materials components by Casting, Forging and Precision machining.

Raj Engineering Solution at a glance:

- We are Manufacturers & Exporters of Casting, Forging and precision machine components used in various industries like automotive, agriculture & tractor, pumps & valves, oil & gas industries, industrial engineering components, railways, earthmovers vehicles, food processing machine and customize engineering components.
- In-House Precision Machining: Our fully integrated machining facility delivers finished, ready-to-use components, providing greater value and convenience for our clients.
- We are manufacturing casting, forging parts and bar/billet raw materials in all kinds of materials like Stainless Steel, Mild Steel, Carbon Steel, alloy steel, duplex Steel, Cast Iron, Sponge Iron, Brass and aluminum.
- By integrating automation, stringent process controls, and rigorous quality inspections, We ensures superior casting accuracy, dimensional precision, and flawless surface finishes in every component.
- **ISO 9001:2015 TUV SUD** Certified Manufacturing firm.

OUR SERVICES:

Machining capabilities : CNC,VMC,VTL& HMC machines for all types of critical components

CNC Machine-20 nos,

VMC machine-12 nos,

VTL-3 nos HMC-3 nos

also conventional machines, Tapping machine and Tower drilling machine

Forging Sources: Drop forging- Up to 150 kg

Press forging- Up to 80 kg

Ring rolling forging

Casting Sources: Precision Investment casting up to 200 kg

Sand casting/Shell mould casting up to 250 kg

Pressure die casting

Machining Shop

We serve one stop solution for all type of machined parts with quality and quantity to our global customers. The company aims to meet customers quality bench- marks at an outstanding value.

We supply Custom Designed Parts & Assemblies for Engineering Applications. We supplies Machined Castings, Machined Forgings and Finished Components from Bar-Stock as per client's designs. We also provide secondary operations such as heat treating, plating, grinding, semi-assembly, etc.

The machine-shop is supported by manual programming and various software programs to aid manufacturing. Qualified and Well-Trained Technical Staffs are appointed to ensure the Quality. Considering to tight schedules of some industrial projects, we can produce and dis- patch custom designed parts within 3 to 8 weeks after receiving the order; depending upon material availability.

Investment Casting

Investment casting is also known as lost wax casting. We are recognized as one of the prime precision investment casting manufacturers as we use only certified and tested material to make the investment. We are a super team of well experienced people and we provide super quality.

Features of Premium Investment Castings

We use a wide range of high-quality metals to make investment castings.

We manufacture precision engineered investment casting in various grades like stainless steel, alloy steel, carbon steel, duplex steel, super duplex, high nickel-based alloys, high cobalt-based alloys, brass etc.

We also have wide selection of weight range as we manufacture products starting from 7 grams to 200 kgs.

Sand Casting

- Sand casting also well-known as Sand Molded Casting, It is a Ferrous Metal Casting process defined by using sand as the mold material. Sand casting is cast-off to manufacture a wide variety of metal components with complex geometries.

- We offer broad range of casting services with international standards. Our status is testimony of our precision of system. We have developed well planned system to fulfill huge requirement of our enormous customer base from varied industries.

- We have our customers from the industries like electrical, defense, oil, aviation, steel, automotive, sugar, cement, mining, and power, marine and aerospace and other industries.

- We also have wide selection of weight range as we manufacture products starting from 7 grams to 250 kgs

Shell Mould Casting is a metal casting process similar to sand casting, in that molten metal is poured into an expendable sand-based mould..

- Compared to sand casting, this process has better dimensional accuracy, a higher productivity rate, and lower labour requirements.
- It is often used for small to medium parts that require high precision. Shell mould casting is used for both ferrous and non-ferrous metals.
- The most commonly used are cast iron, carbon steel, alloy steel, stainless steel, aluminum alloys, and copper alloys. Typical parts cast using this process are small-to-medium in size and require high accuracy, such as gear housings, cylinder heads, connecting rods, and lever arms.

Forging

Forging is manufacturing process where metal is pressed, pounded or squeezed under great pressure into high strength parts known as forgings

- It is important to note that the forging process is entirely different from the casting (or foundry) process, as metal used to make forged parts is never melted and poured (as in the casting process). Automobile industry directly impact forging industry, because the forging components form the backbone of the automobile industry. Since the automobile industry is the main customer for forgings the industry's continuous efforts in upgrading technologies and diversifying product range has enabled it to expand its base of customers to foreign markets. The forgings industry has made rapid strides and currently, not only meets almost all the domestic demand, but has also emerged as a large exporter of forgings.
- Drop or Hammer, Press forging and Ring rolling wheel are the forging process which we have applied for manufacturing components

Raw Materials

- **Bar Stock**
 - Round Bar
 - Flat Bar
 - Hexagonal Bar
 - Profiled Bar
- **Castings**
 - Investment Casting – 0.010 to 200 kg
 - Shell Mold / Sand Casting – 0.250 to 750 kg
 - SG Iron / Cast Iron Casting – 0.250 to 750 kg
 - Pressure Die Casting
 - Gravity Casting
- **Forgings**
 - Drop forging
 - Press forging
 - Ring Rolling

- **Material Grades:**

Low & Medium carbon steel (AISI 1018, 1020, 1040, 1045, 1050 etc.), Alloy steel (AISI 4140, 4340, 8620, 1541, 8620, 20MnCr5 etc.), Stainless steel (AISI 304, 303, 316, 400 Series & 17-4 Ph. etc.), Non Ferrous Metal (Aluminum, Brass, etc.), INCONEL 825, Hast Alloy, etc.

- **Raw Material Certification**

Certificates from NABL Approved Lab or Mill are provided.

Post Machining Process

Heat Treatment:

Through Hardening, Case Hardening, Induction Hardening, Hardening & Tempering
Solution Annealing, Salt Bath Annealing, Normalizing
Salt Bath Nitriding

Surface Treatment:

Glass Beading, Shot Blasting, Electro Polishing, Nickel Plating, Zinc Plating, Natural
Anodizing, Chrome Plating, Blackening, Phosphatizing

Extra Processes:

Welding (M.S. and S.S.), Grinding, Broaching, Thread Rolling, Laser Marking, Polishing, Wire
Cut, Coating.

Product Development

Raj engineering solution is equipped with modern equipment and Machines for product development. We offer design change and process solutions fully utilizing the benefit of local cost advantages and are able to provide best cost solutions. We can offer APQP, PPAP, FMEA, MSA as per customer requirement.

- In-house **Fixture Manufacturing Facility** helps us to reduce the set ups and change over time resulting into higher production and low machining cost.

Quality Testing and Inspection :

Being as an **ISO 9001:2015** accredited organization; we achieve high quality standards through in-house measuring systems with a well-equipped Standards Room

QC Tools followed by us

- 1. 8D
- 2. Why-Why Analysis
- 3. APQP
- 4. PFMEA 5. SPC 6. MSA 7. PARETO Analysis

Measuring Instruments

- Vernier Calipers – Up to 900 mm , Micrometer – Up to 450 mm
- Digital height gauge up to 600mm , Bore Dial Gauge – Up to 450 mm
- Slip Gauge Box '0' Grade 2 Boxes Consisting Of 122 Pcs
- Lever & Plunger Type Dial Indicators With Stand 10 mm , Pressure Gauges
- Thread Plug Gauges For Metric, UN, NPT, BSP, ACME, BSF, BSW Series
- Thread Ring Gauges For Metric, UN, NPT, BSP, ACME, BSF, BSW Series
- Plug Gauges , Snap Gauges , Surface Plate , Bench Center
- CMM and Contour facility

Facilities Outsourced

Product Testing

- Product Type Testing , Salt Spray Tests , IP 66 Tests , Vibration Testing , Endurance Tests , Static Load Tests , Radial Load Tests , Axial Load Tests
- CMM and Contour as per requirement.
- MPI test

Raw Material Testing

- Chemical Composition , Physical Properties , Ultrasound Testing , Microstructure Analysis , Magnetic Particle Inspection , Charpy Impact Test

Calibration Services

- Measuring Instrument Calibration
- Electrical Test Equipment Calibration
- Mechanical Test Equipment Calibration
- Pressure Gauges Calibration

Packaging And Storage

- Packaging is very much carefully handled and systematized. Moreover, we are doing our best to avoid mistakes, and we are using the best packaging material with designing the structure, so that there can be no issues before or after delivery.
- Moreover, we are planning ahead so that the shipment is delivered on time and we have already planned system for stocking, handling & Shipping.

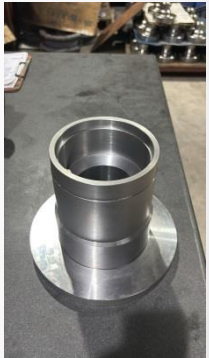
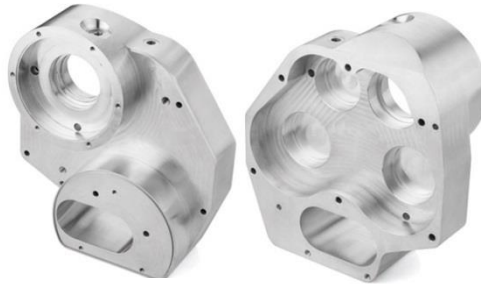
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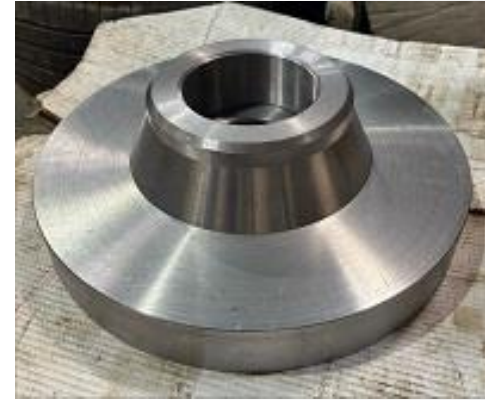
Various industries we are manufacturing components as given below

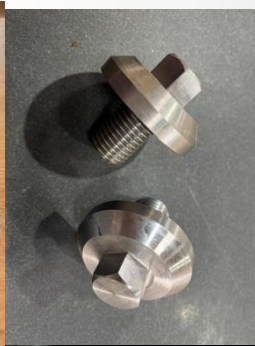
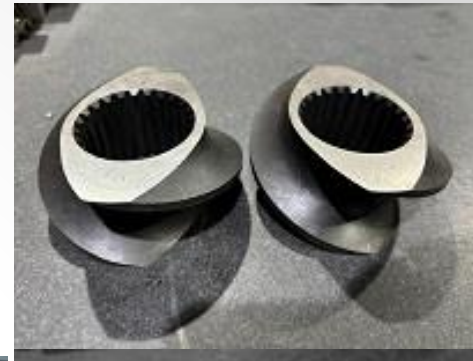
1. Automobile
2. Agriculture and Tractor
3. Oil and Gas industries
4. Food process machine and its components
5. Pumps and Valves
6. Railways components
7. Industrial engineering components
8. Customized engineering components
9. Aero space industries

Some photos / gallery precision components we are manufacturing for different sectors













OUR VALUABLE CLIENTS :



Thank you very much

From

RAJ ENGINEERING SOLUTION

All Types of Castings/Forgings/Precision Machining components