



**" Aluminium Gravity Castings Solutions at One Stop.."**



**Manufacturer, Supplier and Exporter of  
Aluminium Castings, Permanent Mold Castings,  
Low Pressure Mold Castings & Machined Aluminium Components.**

**[www.pavan.co.in](http://www.pavan.co.in)**



# About Us



Thank you for your indulgence and consideration in Pavan Pressure Cast for your all metal casting needs. We take pride in our family-owned business, with its proven history and excellent track record. Pavan Pressure Cast has been serving India and Worldwide since 1989 with the basic aim of meeting each customer's ongoing need for efficient, reliable service and quality products. We see projects from the design stage all the way through to the finished part.

At Pavan Pressure Cast, it is our goal to provide all of our clients with a personalized approach and furnish exceptional creations from as little as an idea or a sketch. We will help you design, cast, and bring finishing touches to your product with the additional services that we offer, including :

- Design and Engineering
- Core- making
- Mold making
- Heat Treating
- CNC Machining

Pavan Pressure Cast maintain traditional casting methods incorporated with the newest technology in Foundry to give best of both worlds. We have continually improved and expanding our facilities (extending to 19,800 sq. ft. today), giving us the ability to manufacture Aluminium Permanent Mold Castings and Aluminium Low Pressure Die Castings in capacities demanded by today's market. Pavan Pressure Cast are constantly striving to provide total Satisfaction to our Customers and establish ourselves as their preferred and reliable supplier by continually improving our product Quality through Technical Up-gradation and maintaining our process parameters. Our aim towards perfection shows in every piece we create, so give us an opportunities to have your visions casted into reality.

**Capabilities :** One Stop Partner for Complete Aluminium Casting Solutions. At Pavan Pressure Cast, we grow business partnerships with our customers. We look for ways to add value with the highest level of customer service and value-added services. Our customers know they only have to turn to one partner for complete Aluminium Casting Solutions.

We save our Customers money and time by serving as a one stop Aluminium Casting shop doing all of these IN-House

- Tool Design
- Cad/Cam Modeling
- CNC Machining
- Core Making
- Permanent mold Casting
- Low Pressure Die Casting
- Quality Control
- Heat Treatment
- SS Shot Blasting for surface finish
- Aluminium Welding & Assembly
- Brinell Hardness Testing
- Third Party Metal Composition testing
- CMM Inspection
- Leakage Testing

We also have great relationships with partner companies in our surrounding areas whom we are happy to assist in sourcing for you as your needs. These Companies have proven their ability to deliver quality services. They partner with us and provide following services including:

- Anodizing
- Painting / Powder Coating

We maintain the highest quality standards in our industry. As an ISO 9001:2008 manufacturer, we have proven our resolve to be the best and improve our processes every day. Every time we shorten a process, turn a quicker delivery, design a stronger casting and setting a higher standard.



## ALUMINIUM GRAVITY DIE CASTINGS

Here at Pavan Pressure we are specialists in Permanent Mold Castings. Though there are different types of Aluminium Casting methods available to customers today, permanent mold cast is an Ideal Solution when a Casting demands the following:

- Better Dimensional Accuracy • Significant Strength • Good Surface Finish • Higher Quantities

Permanent mold typically has a better finish than a sand casting and produces a casting with significantly stronger mechanical properties as well. This method of casting is achieved by gravity pour into one of the following applications: static or tilt-pour mold machines. Molten aluminum is poured into the mold, either by operator directly or by tilting the mold into a vertical position. In this process, the mold is made in two halves from cast iron or high strength steel. If cores are to be used, they can be metal inserts, which operate mechanically in the mold, or sand cores, which are placed in the molds before closing (semi-permanent molding).

The mold halves are preheated and the internal surfaces are coated with a refractory. If static pouring is to be used, the molds are closed and set into the vertical position for pouring; thus, the parting line is in the vertical position. In tilt pouring, the mold is closed and placed in the horizontal position at which point molten metal is poured into a cup(s) attached to the mold. The mold then is tilted to the vertical position, allowing the molten metal to flow out of the cup(s) into the mold cavity.

The various permanent mold techniques static pour and tilt pour offer a variety of advantages for a variety of metal forming applications.

Benefits in using Gravity die-casting:

Gravity and automated tilt gravity machines.

Able to create large scale castings - up to 20Kg casting capacity.

Ideal for small and larger products

Heat treatable alloys giving greater mechanical properties.

Capacity to produce Gravity die castings for medium to high volumes requirements.

Ideally suited for low & high production volume at the lower upfront capital cost.

Ideally suited for converting an existing sand cast product which is increasing in production volume resulting in per unit part price savings.

Sliding core or disposable sand core can be incorporated into the tooling to produce castings with undercuts.

## ALUMINIUM LOW PRESSURE DIE CASTINGS

The mold filling properties of low pressure die casting make it suitable for thin-wall, large surface parts. Low-pressure die casting produces a very fine grained and dense structure with attractive mechanical properties due to the controlled, low turbulence form filling process and the fast hardening of the Aluminium melt in the metal permanent mold.

Low pressure dies are commonly used for producing cylinder heads, cover, alloy wheels and foundry equipment such as valve body, pump body, cylinder head, etc.

With our years of experience in the die casting industry, we can help you to select the right casting method for your project and help you manage it through the entire process.

Benefits in using Low pressure die-casting:

Able to produce large scale castings - up to 50Kg casting capacity.

Fully automated PLC controlled allowing for repeatability and greater quality control.

Ideal for larger or higher strength castings.

Heat treatable alloys.

Capacity to produce low pressure die castings for medium to high volumes requirements.

Intricate cast shapes can be produced. Manufacture of complex net shapes

Sand core can be incorporated into the tooling to produce castings with undercuts.

## ALUMINIUM WELDING & ASSEMBLY

As aluminium is a reactive metal, great care needs to be taken when welding aluminium joints. As experts in all aspects of Aluminium extrusion design and production, we have highly skilled welders using Latest Technology TIG and MIG Welding Machines who will carefully prepare your Aluminium components by joining Aluminium Extrusion with Aluminium Casting or Extrusion so that they are not damaged by the welding process. While welded aluminium joints are the strongest type of joints and can be used in more extreme temperatures, they also require significant preparation and are more expensive. The welding process can also distort the properties of the aluminium, especially on thin and complex shapes.

We also offer a complete Aluminium assembly service where our engineers will carefully assemble your products prior to delivery. As we take care of your entire Aluminium project in-house, from design to manufacture, we understand exactly what you need in your end product. This hands-on knowledge of your Aluminium project means we can quickly assemble your Aluminium components to the highest standard, reducing the assembly time and cost.

Using our many years of experience in the Aluminium industry, we will help you implement the most cost-effective and practical types of joins into your design. This will result in Aluminium Extrusions and Assembly that are durable, suited to the intended purpose, and that can be assembled quickly.



# Plant Tour



## TOOLING

Pavan Pressure Cast designs and builds tooling and fixtures in our full service Pattern and Die Shop. A Casting is only as Good as the tool it is made from. At Pavan Pressure Cast we are driven to provide our customers with only the best our highly skilled Design Engineers and state-of-art modeling software, coupled with our commitment to using the highest quality material for tooling, separates our Aluminium Castings tooling from the competitor's. By using Latest Solid Edge Cad and Siemens NX Cam Software, write programs to begin machining the molds, sending them to one of our CNC Machining Centers. From there, we begin cutting the material to create the mold halves. Cast Iron or High Strength steel is used because of the stability of the alloys and superior tool life which serves the customer from unnecessary tool reworking costs over the life of the product. During this time if any steel inserts or sand cores are needed they also designed and manufactured for the actual casting process

## CORE MAKING

Making a good core is a critical component in making a Quality Casting. At Pavan Pressure Cast analyzes every core and determines the best way to make it. Complex core boxes are our specialty and at Pavan Pressure Cast using Automatic Shell Core Shooting Equipment investments allows us to explore every option when designing a core box. Whether the design calls for a top blow core box design or a side blow core box design – whether the core is large and bulky or small and intricate we has the experience and the capabilities to make premier cores.

## FOUNDRY

We melt Primary Aluminium Ingots meeting each Customer's Specifications. Each Batch of our Ingots is certified as to its Alloy Composition at NABL Approved Laboratories. We specialize in casting A356.1 (LM25, AlSi7Mg) and A360 (LM09, AlSi10Mg) Alloys here in a regular basis. Ingots are placed in our Electrical tilting or Gas fired Silicon Carbide Crucibles and are then heated to approximately 750 degrees Celsius. We uses crucible Melting/Holding furnaces with a total melting Capacity of 150-300 kg per hour. Temperature control is important in all aspects of the pouring process. The use of Thermocouples and laser temperature sensors are utilized to insure optimum temperature control.

We at Pavan Pressure Cast specialize in Gravity Pour and Tilt Pour Casting. We had installed PLC based, Hydraulic operated fixed type, semi auto tilting type Gravity Die Casting Machines, Die capacity Size 600mm x 600mm x 500mm. We had also installed Low Pressure Die Casting Machine, Die Capacity Size 600mm x 600mm x 600mm. Once this pouring is completed we remove the casting from the mold, allow it to cool, and send it on other process. Remove of Risers and gates are performed on Horizontal & Vertical Cutting Machines. Then parts follow through next process for Heat Treatment & Aging.

## HEAT TREATMENT

We at Pavan Pressure Cast designed and developed Gas Fired & Electrical oven heat treatment furnaces having Cage capacity of 200-250 Kgs per batch. It is Air Circulating Electrically operated solution treatment Furnaces with a precipitation treatment oven. Parts are carefully loaded into specially designed baskets and staged to be heat treated. Our especially Bottom drop designed assures uniformity heat treatment. The amount of time in the heat treat and the temperature are critical factors since the temper of the alloy is determined in this process. We



# Plant Tour



can heat treat parts to a specific conditions with our capabilities. We verify our Heat treatment process by testing the hardness of our castings per customer specification.

## **MACHINE SHOP**

Our CNC Turning centers and Machining centers are used to provide additional services to the Customer. The Machine Shop takes possession of the castings once they are finished with the heat treatment process. Our machine shop runs by operators who program the CNC machines to fulfill the required customer specification to the part capability with 0.01 mm precision. Our 9 CNC Machines provide service as 3-axis to 5 axis rotary table. All Fixtures and apparatus used during machining are supplied in our own facility. The controls are performed with Portable FARO Measuring Device. Our Flexible choices of fixing and bench methods, enable to supply products in various numbers changing from one to thousands.

## **FINISHING/ SHOT BLASTING**

For Finishing at Pavan Pressure Cast, installed Swing Table Type Shot Blasting Machine, by using SS 304 Shots for uniform finish which removes heat treated scales on the casting parts applied before machining. Other Tool & Cutter Grinders, Hand Grinders and Belt & Disc Grinders also used for removing parting lines. This process is carried out by our handcrafted staffs and provides us surface Quality.

## **WELDING/ASSEMBLY**

Casting parts can be bonded through the Argon Gas & Oxy- Acetylene methods, as well as mounting process can be carried out with Components and module parts. We had latest technology MIG & TIG Welding machines for specially Aluminium Welding which can weld Casting to Exclusion Sections or Casting to Casting as per customer requirements. The mounted parts are tested and made ready to use directly.

## **QUALITY**

During many of the procedures and upon completion of all the machining operations we performs Quality checks to ensure the manufactured part meets the exact customer specifications. We use a variety of testing instruments including "Go or No-Go" gauges to determine if threads of other dimensions holes are correct, Micrometers, Digital Height gauge, Calipers, thread gauges, bore gauges and ring gauges. We test and certify these gauges regularly.

We also have a Pressure Testing facilities, tests Air or Water pressure upto 15 Bars as per Customer requirements. Pavan Pressure Cast also has Portable CMM FARO capabilities and can supply Component Part Report to our Customers with their shipped product. This CMM has greatly reduced our time in measuring new and full production parts and allows us to measure dimensions of critical areas.



# Industries Served

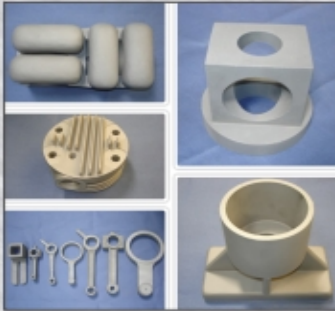


The following are the list of the types of casting we served to industries:-

- Hi-Voltage Current Carrying Aluminium Castings  
(Electrical Industries)
- Hi-Voltage Sub Station Aluminium Components  
(Electrical Industries)
- Disconnectors Assembly Products  
( Sub Station Accessories)
- Aluminium Gravity Castings  
(Hi Voltage Switch Gear Manufacturer)
- Aluminium Bushing Components  
( Bushing & Transformer Industries)
- Aluminium Cylinder Head  
( Compressors Manufacturer Industry)
- Aluminium Components  
(Instrument Transformer Industry)
- Aluminium Valve Body  
( Pumps & Valve Industry)
- Coupling Box & Cover Components  
(Mass Transport Industry)
- Aluminium Housing  
( General Engineering Industry)



# Our Products



**Aluminium Compressor Components**



**Aluminium Flanges**



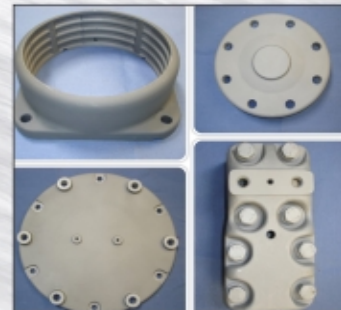
**Aluminium Welding Assemblies Products**



**Bushing Flanges**



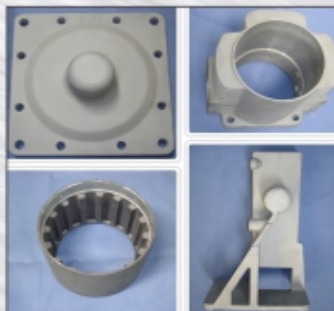
**Connection Head, Finger Holder & Top Cover**



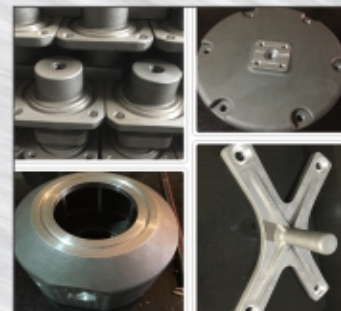
**Covers, T type Clamp & Flanges**



**Crankcase Housings & Valve Flanges**



**Cylinders, Holders, Crankcase & Cover**



**High Voltage Terminals & Covers**



**Valve Body, Bearing Housing & Gas Flow Flange**



# Contact Us



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