

PRECIMETAL CAST PVT. LTD.

We Cast Your Needs

Capabilities Brochure

Precision Investment Casting · Machined Components · Since 2001

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01 WHO WE ARE

Precimetal Cast Pvt. Ltd. is a precision investment casting manufacturer based in Kadi, Gujarat, India, delivering lost-wax castings and fully machined components to global manufacturers since 2001.

Our integrated manufacturing flow—from tooling design and wax production through casting, heat treatment, machining, and final inspection—enables customers to reduce lead times, simplify procurement, and maintain consistent quality.

With more than 25 years of investment casting expertise, a metallurgy-focused approach, and extensive in-house manufacturing capabilities, Precimetal serves demanding industries including **automotive, pumps & valves, oil & gas, aerospace & defence, general engineering, and EGR applications.**

1.1 At a Glance

25+ Years OF INVESTMENT CASTING	720 MT ANNUAL PRODUCTION CAPACITY
50+ Clients ACROSS REGULATED INDUSTRIES	

02 CORE STRENGTHS

What distinguishes Precimetal is the depth of in-house capability at every step of the investment casting process — from wax formulation through post-machining inspection. Each of the following is a real technological differentiator.

01 In-House Wax Manufacturing

Direct control over wax formulation and pattern quality — the foundation of dimensional accuracy in investment casting. In-house wax manufacturing provides greater control over wax formulation, pattern quality, and process consistency.

02 Precision Dimensional Control

We don't just achieve tighter-than-industry-standard tolerances—we consistently hold them, component after component, year after year.

03 Water-Soluble Core Technology

In-house water-soluble core capability enables intricate internal geometries that can be difficult or impractical with conventional core technologies. Particularly valuable for automotive components with complex fluid passages.

04 Quick-Set Gel Technology

Proprietary quick-set gel systems for closed impellers with 3D vein geometries and other components where conventional shell-building approaches may not provide the required geometry or process performance

05 Pre-Formed Ceramic Cores

In-house pre-formed ceramic cores support components requiring exceptional internal geometry precision and temperature resistance.

03 TECHNICAL SPECIFICATIONS

The core envelope within which Precimetal manufactures. For requirements outside these ranges, our engineering team can qualify project-specific limits.

PARAMETER	SPECIFICATION
Weight Range	20 grams to 30 kilograms
Dimensional Tolerance	Casting: IS 11166 Class 2 & 1 / VDG P690 D2 & D3 Machined: ISO 2768 (f) (20 Microns)
Surface Finish	As-cast: 3.2 Ra max. Machined: 0.4 Ra
Maximum Part Envelope	400 × 400 × 400 mm
Materials	Carbon Steel, Alloy Steels, Stainless Steel(austenitic, martensitic, duplex, ferritic), Tool Steels and Precipitation-Hardening Steels
Annual Production Capacity	720 metric tonnes (60 MT / month)

3.1 Materials Overview

Precimetal manufactures across Cast Steel, Stainless Steel, and Alloy Steel families, with more than sixty regularly produced grades. Standard-grade coverage includes:

Cast Steel	ASTM A27 (60-30, 65-35, 70-40) · ASTM A216 (WCA, WCB, WCC) · ASTM A148 (80-50 to 115-95)
Stainless Steel	CF3, CF3M, CF8, CF8M, CF8C, CF10, CF10M · CA15, CA40, CA6NM · Duplex 2205, Super Duplex 2507 · AISI 405, 409, 430, 431
Alloy Steel	ASTM A217 (WC1, WC6, WC9, C5, C12, C12A) · AISI 4130, 4140, 4145, 4150, 4340 · AISI 8620, 8630
Precipitation-Hardening	ASTM A747 CB7Cu-1 (17-4 PH)

A complete list of standard grades with chemical composition and mechanical properties is available in our Material Grade Specification Sheet.

04 PLANT INFRASTRUCTURE

Six dedicated process areas, integrated for high-volume, high-precision investment casting.

Wax Shop

- Automatic wax injection presses
- Temperature-controlled wax holding tanks
- Dedicated assembly stations

Shell Room

- 24/7 Environment-controlled with 100-tonne capacity
- Slurry tanks for dipping
- Sand Rainer Machine

Melting

- Induction furnace
- Shell baking furnaces

Heat Treatment

- 2 Heat Treatment Furnaces
- Combined capacity of 60 tonnes per month

Machine Shop

- High-precision machines to 50-micron tolerances
- 2 VMCs with 4th-axis
- 2 CNC turning centres

Quality Lab

- CMM
- Linear height gauge
- Spectrometer
- Microstructure analysis

05 OUR PROCESS

Fifteen integrated manufacturing steps, from tooling design through final inspection and dispatch. Every stage is controlled and executed in-house.

01 Tooling Design & Development	02 Wax Pattern Injection
03 Pattern Assembly	04 Ceramic Shell Building
05 Dewaxing	06 Shell Firing
07 Metal Melting & Pouring	08 Cooling & Solidification
09 Shell Removal (Knockout)	10 Cut-Off & Fettling
11 Heat Treatment	12 CNC Machining (If Required)
13 Surface Finishing	14 Inspection & Testing
15 Packaging & Dispatch	

06 QUALITY & CERTIFICATIONS

6.1 Certifications Held

CERTIFICATION	SCOPE
ISO 9001:2015	Quality Management System
IATF 16949:2016	Automotive Quality Management System
PED 2014/68/EU	Pressure Equipment Directive — Material Manufacturer
AD 2000 — Merkblatt W0	European Pressure Vessel Material Manufacturer

6.2 Four-Stage Quality System

Every casting flows through four gated inspection points from raw material to dispatch.

Step 01 Incoming Material Inspection

Ensures only approved, compliant raw materials enter the manufacturing process.

Step 02 First Article Inspection (FAI)

Verifies the first production sample meets all customer drawings, specifications, and quality requirements before full-scale production.

Step 03 In-Process Inspection

Continuously monitors critical process parameters and product quality to ensure consistent production and on-time delivery without defects.

Step 04 Final Inspection

Comprehensive dimensional and visual verification to ensure only fully compliant products are dispatched to customers.

06 INDUSTRIES WE SERVE

Six focus industries, each with dedicated engineering knowledge and application-specific casting expertise.

Automotive

Engineered castings that meet the rapidly changing demands of modern mobility — precision, reliability, and full traceability. Fuel systems, transmission components, and structural parts, cast to IATF 16949 standards.

Pumps & Valves

Cast pump impellers and valve bodies developed for exceptional durability and performance in flow-control applications. Materials range from carbon steel to super duplex for aggressive service environments.

General Engineering

Flexible casting solutions for complex industrial machinery and general engineering components across a broad range of applications and volumes.

EGR Investment Castings

Heat-resistant EGR valves, coolers, and manifold housings for emissions control systems. Complex internal geometries enabled by in-house water-soluble core capability.

Aerospace & Defence

High-integrity castings engineered for the reliability and traceability that flight- and mission-critical applications demand.

Oil & Gas

Reliable, high-integrity castings for wellhead components, valve bodies, and other equipment operating under demanding oil and gas service conditions.

07 ENGINEERING SUPPORT

Our engineering team works as an extension of your design team, helping optimise component geometry for investment casting, reduce weight and manufacturing cost, improve manufacturability, and maintain structural integrity.

8.1 File Formats Accepted

STEP, IGES, SolidWorks native files, PDF drawings

8.2 Simulation Tools

MAGMASOFT casting simulation · ANSYS structural analysis

8.3 Design-to-Delivery Workflow

01 Process Building

Twenty-five-plus years of investment casting expertise, applied end-to-end from procurement through dispatch.

02 Tool Design

In-house mould design for faster turnaround and tighter quality control.

03 Prototype Stage

Fast-tracked prototype wax patterns for functional testing prior to mass production.

04 Inspection & Feedback

Process refinement for bulk production, driven by comprehensive data analysis of prototype samples.

Start Your Next Project

Whether you're specifying a new component or evaluating a change of casting partner, our engineering team is ready to assess your requirement and return a detailed quotation within 24 hours.

Reach us via the enquiry form on our website, by phone, or at the contact details below.

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