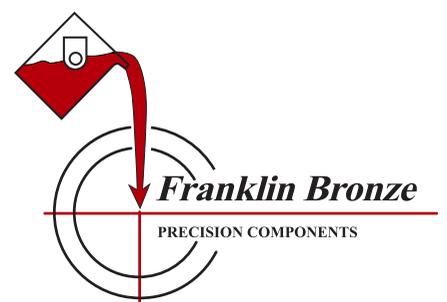
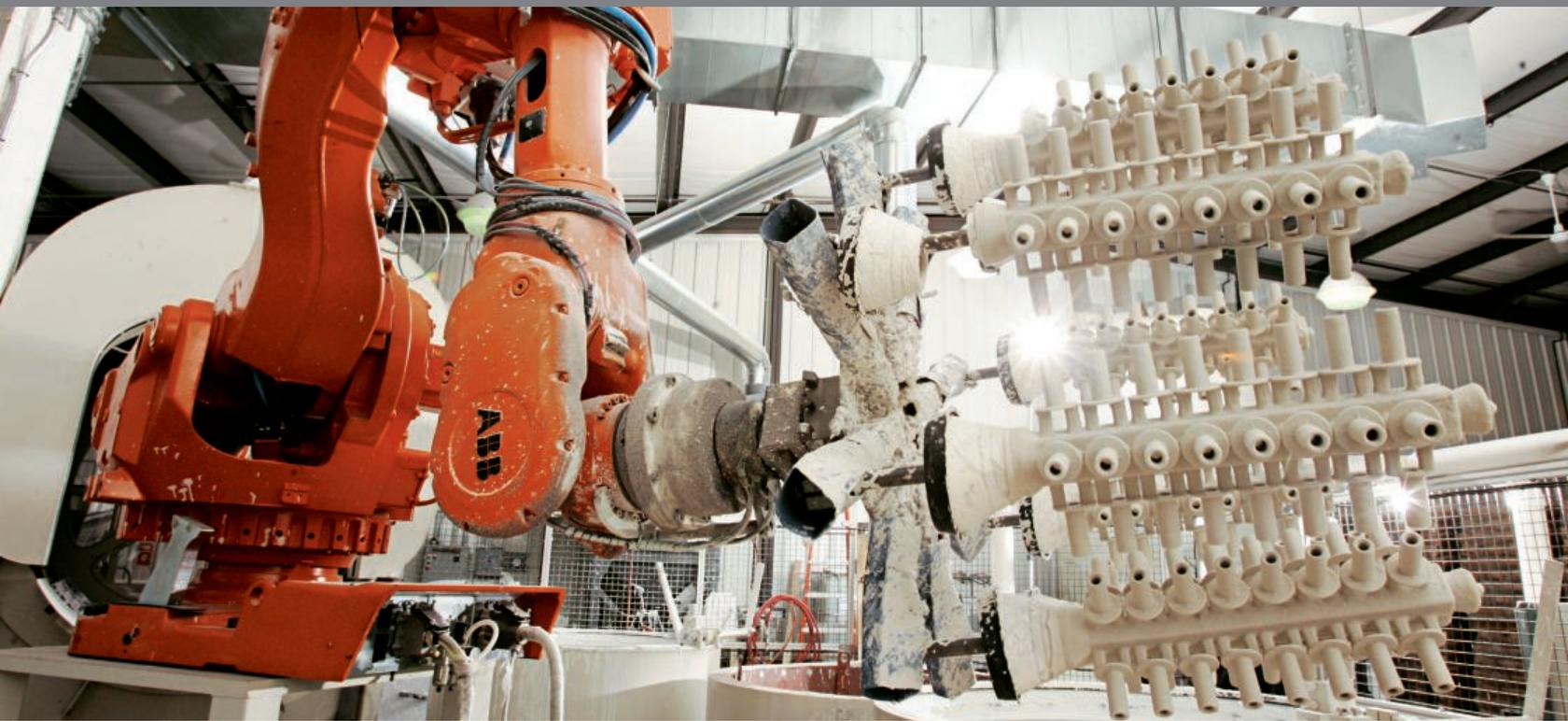


FRANKLIN BRONZE PRECISION COMPONENTS



AN AUTOMATED INVESTMENT CASTING FOUNDRY OFFERING TOOLING, MACHINING AND TECHNICAL EXPERTISE.

DELIVERING HIGH-QUALITY, CONSISTENT PARTS ON TIME.

Franklin Bronze Precision Components manufactures investment castings for glass container and many other industrial sectors. We provide high-quality, consistent products supported by our technical expertise, in-house tooling & machining, and automated processing.

Franklin Bronze Precision Components began investment casting production in 1985. Today, we are a leading automated investment casting foundry that offers toolmaking and machining – quickly delivering complete and finished investment cast parts. We are ISO 9001:2008 certified.

- Located in Franklin, Pennsylvania
- Approximately 100 employees



Oldest continually operating casting foundry in Pennsylvania, founded in 1878 as a sand casting foundry.

WHY WORK WITH US?



ALLOYS Poured

A wide variety of bronze, stainless steel, nickel-based and cobalt alloys are poured for many applications spanning multiple industries.



ENGINEERING & PROTOTYPING

Proof of concept parts and 3D drawings can be handled completely in house. We work with your engineers to obtain optimized casting designs.



IN-HOUSE MACHINING

A complete in-house Machine Shop allows us to offer completely machined cast components.



AUTOMATED MANUFACTURING

We utilize various robotics in our system to ensure consistency, quality and economy.



IN-HOUSE TOOL MAKING

Procurement of new tooling for new designs is simplified with our modern CAD/CAM tool making facility.

CASTINGS FOR THE GLASS MOULD INDUSTRY

A world leader in the manufacture of precision investment castings for the glass mould industry.

Franklin Bronze's investment casting production was founded in 1985 for the targeted supply of castings to the glass mould industry. Parts manufactured include guide rings, baffles, plungers, inserts, thimbles, blowheads, and top-plates.

Franklin Bronze provides a high-quality, consistent product due to technical expertise, in-house tooling & machining, and automated processing.

Examples of Castings for the Glass Mould Industry



Guide Rings



Blow & Blow Plungers



Baffles



Top Plates



Neck Rings



Neck Ring Inserts



Blowheads & Blowhead Inserts



Take-out Castings



Funnels

INDUSTRIAL CASTINGS

Over twenty years experience specializing in industrial castings. Our extensive knowledge of the investment casting process enables us to provide high quality, expertly engineered products.

Franklin Bronze Engineering Team facilitates open communication with customers for the design and launch of a new casting, which is critical to the success of each project.

Industrial castings can be poured in brass, bronze, aluminum, stainless steel, and high nickel alloys. Castings may range in size from a few ounces up to 25 pounds (11.34 kg).

Industries Served



Anti-Microbial



Automotive Industry



Decorative Hardware



Drilling and Mining Industry



Food Handling Equipment and Machinery



Heavy Equipment Industry



Machine Shop/ Metal Fabricators



Marine Hardware



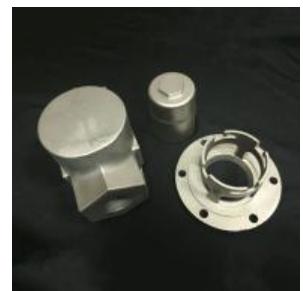
Military



Steel Industry



Transportation Industry



Valve & Pump Industry

SIZES, WEIGHTS, TOLERANCES

Part Sizes

In general, the longest part Franklin Bronze can produce is approximately 18" (45.72 cm). Taking into consideration width and depth dimensions, Franklin Bronze Engineering Team can determine whether a part can be made in our facility.

Casting Weights

The heaviest casting that Franklin Bronze makes is approximately 25 lbs. (11.34 kg). This figure can also be increased if the castings are heavy in section size, and not too physically large. The heaviest section Franklin Bronze casts is up to 2" (5.08 cm). Any casting approaching these limits – consult the Franklin Bronze team.

Dimensional Tolerances

Standard investment casting tolerances are held with the castings. Dimensionally, these are expressed as $\pm .010"$ for any dimension up to 1 inch ($\pm .0254$ cm for any dimension up to 2.54 cm). As the dimension increases, the tolerance increases also by a formula of an additional $\pm .003"$ per each additional inch of dimension ($\pm .00762$ cm per each additional 2.54 cm). The tolerances used are standard for the investment casting industry. Once the tooling has been manufactured, Franklin Bronze can produce castings with consistent sizing.



ALLOYS Poured

Extensive range of alloys poured to meet specifications and requirements

Franklin Bronze is compliant with industry standards including: ASTM, AISI, MIL, CDA, IC and AA.

Alloy Capabilities

- Nickel-Based
- Stainless Steel
- Bronze for Glass Mould Components
- Cobalt-Based
- Brass & Bronze

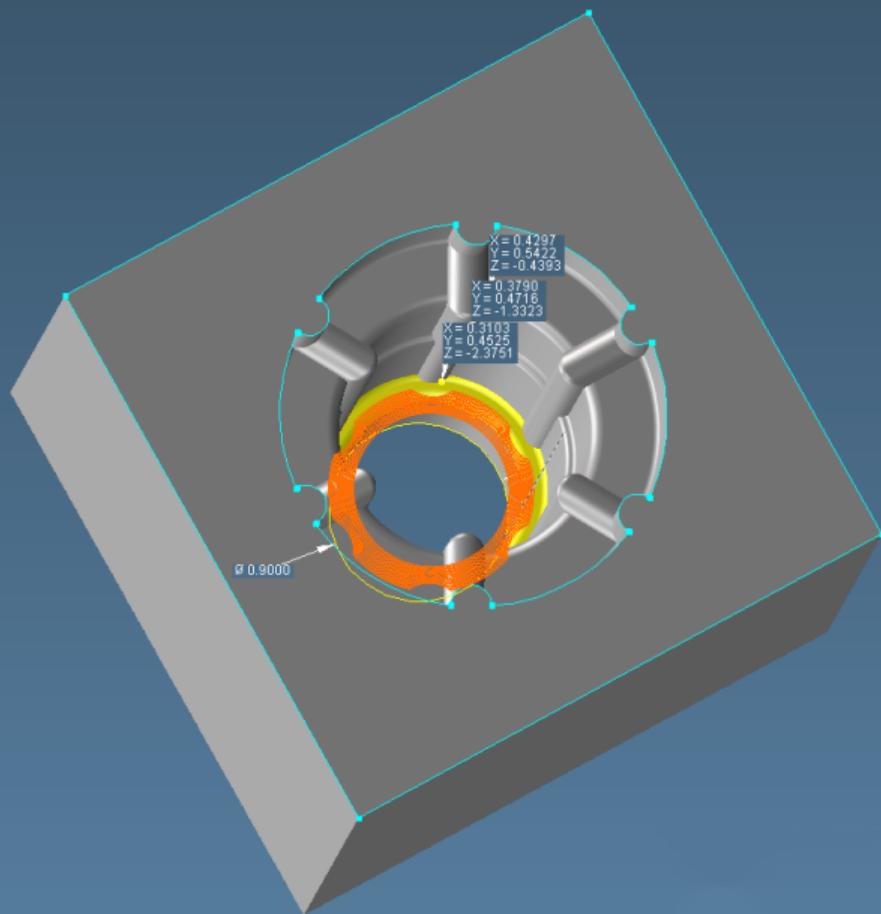
ENGINEERING & PROTOTYPING

Offer a complete path to effectively manufacture new casting designs

Franklin Bronze prides itself in efficiency and speed in the design and production of approved first article castings.

Franklin Bronze Precision Components can quickly determine if parts are candidates for the investment casting process at their facility. With its own in-house tool making, casting manufacturing, and modern machine shop, Franklin Bronze offers a complete path to effectively manufacture new casting designs (prototypes). This in turn leads directly to a smooth casting production process.

Franklin Bronze can also optimize your design for ideal metallurgy and geometry. First article prototypes give confidence in an exacting design.



New advancements in 3-D printing technology also allows for quick, small order prototyping with no need for wax model tooling. Franklin Bronze is capable of using 3-D printed waxes for the investment casting process, but encourages customers to discuss the decision with engineering staff.

IN-HOUSE TOOL MAKING

Expedited casting deliveries and new product development

Franklin Bronze designs and manufactures all necessary tooling to the customer's drawings, in accordance with their production and specification requirements.

Tooling made in-house is always made from aluminum, with some bronze used for cores and inserts.

These materials are easily machined, provide for good thermal transfer to set up the wax patterns, and provide hundreds of thousands of injections.

All tools are designed and made using Mastercam, GibbsCAM and Kubotek KeyCreator.

Our in-house tool room features:

- Vertical Machining Center
- VMC 600 II
- 2 tree 3 axis CNC Mills
- 13" (33 cm) Lath
- Vertical Mill



AUTOMATED MANUFACTURING

Supervisory systems for a repeatable process

Wax Injection

For higher volume and larger size parts, automation is added to the tooling and the wax patterns are made with little or no manual steps. This process also requires injection presses that are designed to function automatically.

Automated Shell Room

A computer-driven shelling system has increased capacity while also improving the uniformity of shells. The shell dipping area is also equipped with three hand dipping slurry baths, three hand dipping fluidized sand beds, and automated drying racks.

Cleaning & Grinding

Water blasting process is very economical and efficient and allows for no surface damage to the castings. All this is accomplished in a newly expanded cleaning department which also includes a caustic ceramic core removal system and two NC controlled automatic grinders.



IN-HOUSE MACHINING

Tooling, castings, and finished parts – all from one facility

Franklin Bronze Precision Components provides finished machined castings through a newly constructed, modern machine shop.

This eliminates the need to outsource for finish machining and provides finished, ready-to-assemble parts from a single source.

Our Machines

Turning

- Cobra C65 CNC lathe
- Conquest T42 CNC lathe
- Elite II 8/51 CNC lathe with live tooling and sub spindle

Milling

- DNM 500 CNC Vertical Machining center
- (2) High torque CNC Vertical Machining Centers
- CNC knee mill

Miscellaneous

- (2) Flex arm tapping machines
- Drilling center with 3 stations
- Bridgeport manual knee mill with 2 axis digital readout
- Mastercam CNC Programming software with Lathe, 3-D Milling and Solid Modeling package



FRANKLIN BRONZE PRECISION COMPONENTS

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The information provided herein is given as a guideline to follow. It is the responsibility of the end user to establish the process and engineering information most suitable for their specific application(s). Franklin Bronze Precision Components, LLC. assumes no responsibility for failure due to misuse or improper application of this product, or for any incidental damages arising out of the use of this.