



**KingCast**

# **Casting, Machining & Metal Fabrication Solutions**

**StressCrete**  
GROUP

KingCast Inc., a division of the StressCrete Group, is a gravity die cast supplier of high-quality aluminum and zinc products to various market segments in the manufacturing industry. KingCast management possess more than three decades of foundry experience, ensuring a seamless flow from initial design to finished product. Our sales and operations teams work closely with clients to design premium castings in a variety of gravity die cast methods. With virtually endless capabilities, clients can rely on KingCast to provide turnkey solutions through a fully-equipped CNC machine shop, fabrication shop, as well as multiple finishing processes such as powder coating.



## Permanent Mold Casting

Permanent mold casting is the process of introducing molten aluminum into reusable cavities to produce superior castings. Our in-house permanent mold casting facility offers various gravity pressure casting processes to provide high-quality aluminum and zinc castings that suit every customer's needs. Engineers provide casting design assistance, solid modeling, gating and flow analysis, plus prototyping and modeling to ensure each project is perfectly crafted to customer specifications.

### Advantages

- Intricate design capabilities with high dimensional precision
- Castings with excellent mechanical properties
- Excellent surface finish with consistent quality
- Cost-effective castings due to design, tooling life and production processing
- Rapid low-cost prototyping with graphite permanent molding

## Design and Mold Production

With in-house mold making capabilities, our expert design team can work with you to make your concept into reality. Our experienced staff can design, engineer and manufacture tooling from scratch with the use of state-of-the-art CAD and CAM software. Conveniently, we can also alter, modify, and/or repair existing tooling.

## Casting Capabilities

Our modern static and tilt-pour permanent mold facility has ten furnaces for a total capacity of 10,000 pounds, producing aluminum or zinc parts ranging from 1 ounce to 150 pounds. With a variety and various sized casting machines, our foundry allows us to operate efficiently and to deliver a wide range of high-quality castings to our customers on time.

## Permanent Mold Production

- **Tilt Pour Permanent Mold** – Molten metal is poured into cups while the mold is in a horizontal position and flows into the cavity as the mold is gradually tilted into a vertical position. As the molten metal flows into the mold cavity at a controlled, gradual rate, there is little turbulence present, resulting in a high-quality casting.
- **Static Pour Permanent Mold** – Molten metal is poured directly into the mold and fed by gravity. A fixed amount of time is given for the metal to solidify in a stationary position.
- **Semi-Permanent Mold** – Introducing sand cores to either tilt or static permanent methods. Temporary sand cores create a non-machined shape or passageway within the casting for a variety of customer requirements.



## Graphite Permanent Mold Production

Excellent for smaller sized parts using a bottom fill, low turbulence process, that produces high quality, homogenous castings with an outstanding surface finish. Graphite molds are an economical option for any quantity of zinc castings or an excellent alternative for lower volumes or prototypes of aluminum castings.

## Core Production

The use of a bonded sand to produce inserts for desired shapes, passageways or relieve drafts in the casting process without machining.

## Finishing Processes

- **Cutting** – The process of trimming gating, excess material from a casting
- **Grinding** – Utilizing abrasives to remove parting lines and other excess material from a casting
- **De-burring** – The process of filing down unwanted edges or lines from a casting
- **Shot Blasting** – A process typically utilizing steel media to blast the surface of a casting, effectively cleaning and texturizing the metal
- **Vibratory Finishing** – Tumbling process to deburr, descale, burnish or clean and polish castings
- **Heat Treatment** – The process of improving the mechanical and physical properties of an aluminum casting
- **Impregnation** – Effectively seals against leaks and other damaging agents

## Machining

Our fully equipped CNC and manual machine shop offers a variety of services including milling, turning, drilling and tapping. With the recent advancements in machine technology and CMM inspection, we can achieve tight tolerances to provide finished products that meet a variety of customer requirements.

## Metal Fabrication

With premium quality, efficiency and cost-effectiveness in mind, our experienced team of fabricators offer a multitude of capabilities.

- Custom and production metal fabrication
- CWB certified welding of aluminum and mild steel
- CNC HD plasma profile plate cutting capabilities for aluminum and steel
- Metal forming of pipe, plate and sheet

## KingCoat™ Powder Coating

A super durable exterior polyester powder blend of non-volatile ingredients is applied dry and fused into a continuous film by heat. This warranted service features excellent film appearance in various finishes and color options, as well as superior outdoor exposure qualities and outstanding corrosion and barrier protection. Quality is guaranteed with a multitude of QC procedures such as 4,000 hours of salt spray testing for steel, aluminum, cast iron and cast aluminum.





## Quality Assurance and Gold Standard Customer Service

Over the last 30 years, our operations teams have been continually perfecting our production and quality processes to guarantee premium products. We are ISO 9001 certified, follow ASTM practices and our qualified team maintains their skills with industry certifications to provide quality products and guaranteed workmanship.

We take pride in providing excellent customer service and exceeding the needs of our clients. Each customer's projects are unique, and as such, we work as a team to become a valued part of their supply chain, fostering relationships that will last a lifetime.



**KingCast**

**Contact us to see how we can meet your casting, machining and metal fabrication needs.**

**695 Arvin Ave, Stoney Creek, Ontario L8E 5R2  
1-800-268-7809 | [sales@kingcast.com](mailto:sales@kingcast.com) | [www.KingCast.com](http://www.KingCast.com)**

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