



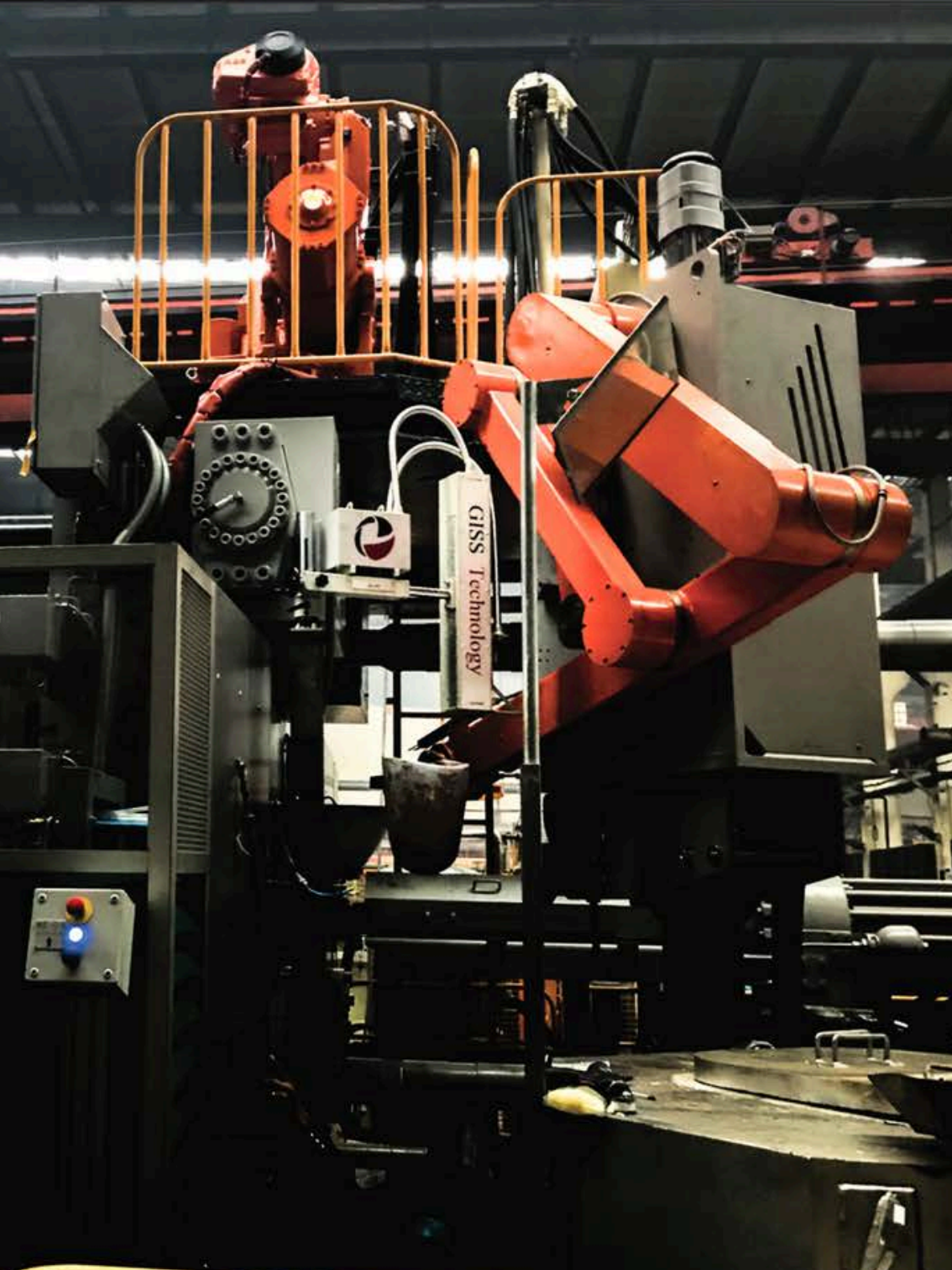
GISS Technology



# DEFYING THE IMPOSSIBLE

Quality Up, Costs Down





# GISS Technology

GISS Technology enhances casting quality and reduces production costs using the Superheated Slurry Casting Process. It offers a quick solution for aluminum die casters with high reject rates due to porosity defects, outperforming vacuum assist and squeeze pins by also cutting production costs.

Moreover, GISS Technology enables the casting of anodizable wrought aluminum alloys such as 6061, 6063, and 7075, opening new opportunities in the industry.



# GISS Slurry Unit

**Price range: \$99,000 - \$275,000\***

The primary goal of the GISS Slurry Unit is to use GISS Technology to enhance the existing process, not to change it.

This add-on for cold chamber aluminum die casting machines requires only simple installation modifications. Compatible with various die casting brands and sizes from 125-T to over 9,000-T, it works with existing dies, allowing immediate benefits. We provide technical support and expertise to optimize casting conditions.

*\*Note: Prices vary based on machine size, order volume, and year of purchase. Contact us for specific quotes and potential discounts.*

# Key Benefits

- Reject rate reduction due to gas porosity and shrinkage porosity from 10-50% to 1-5%
- Production cost reduction by 5-10%
- Cycle time reduction by 15-25%
- Increased die life by 2-4 times
- Melting energy, lubricant usage, and water treatment reduction by 15-30%

\*Actual savings and benefits vary by application. Generally, our customers achieve a payback period of about 6-12 months on their investment in GISS Technology.





# All Metals and Alloys

GISS Technology can process pure aluminum, copper, silver, gold, and other metals, as well as a wide range of commercial alloys including aluminum, magnesium, zinc, copper, lead, tin, and iron.

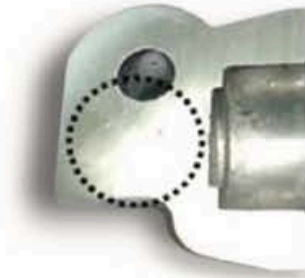
In fact, all metals and alloys can be effectively processed with GISS Technology.

# Applications

## High Pressure Die Casting

In the GISS high pressure die casting process, the high-pressure die casting machine and process cycle remain largely unchanged from conventional high pressure die casting. The only added step occurs during the ladle transfer when a diamond probe is immersed.

Therefore, no significant modifications are needed for existing high pressure die casting equipment.



Conventional  
Die Casting

GISS  
Die Casting

## **Squeeze Casting**

Adding the GISS process to create semi-solid slurry before squeeze casting is very simple. This process results in high density, near-zero porosity, heat-treatable, and high mechanical properties.

## **Gravity Casting**

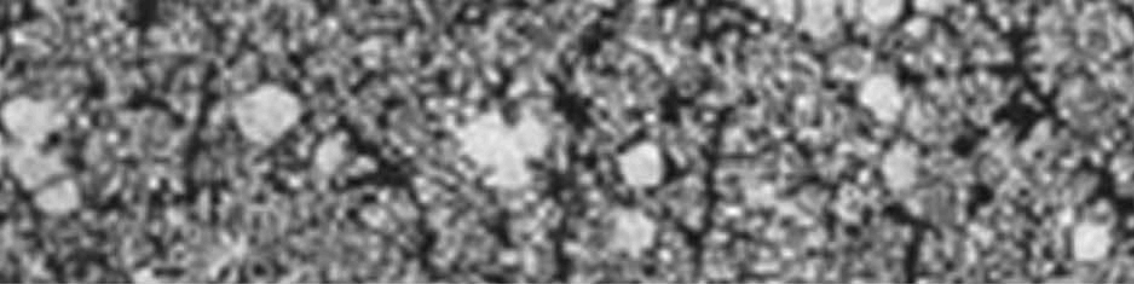
GISS gravity casting has been developed and demonstrates potential for products with improved mechanical properties, grain structure, reduced cycle time, and enhanced casting yield.



Conventional  
Gravity Casting

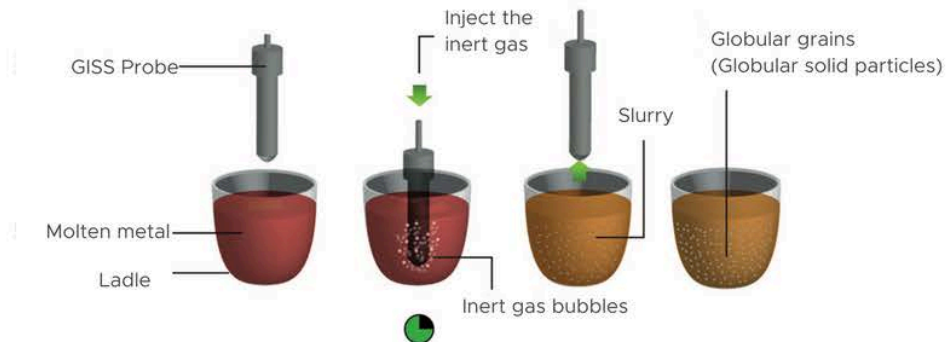


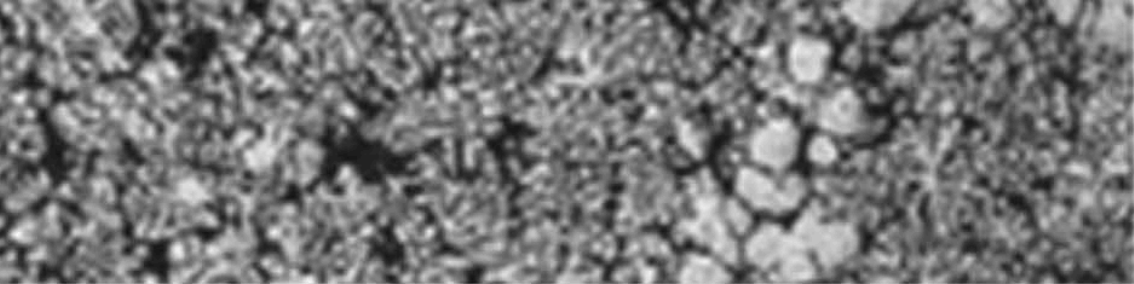
GISS  
Slurry Casting



# Superheated Slurry Casting Process

GISS (gas induced semi-solid) Technology transforms liquid metal into superheated slurry by using a special probe to inject micro-sized inert gas bubbles at suitable conditions, resulting in a controlled fraction of solid particles ready for casting.





# Key Features

## 1. Gas porosity reduction

Controlled solid fraction in the slurry reduces turbulent flow compared to conventional high-pressure die casting, thereby reducing gas porosity.

## 2. Shrinkage porosity reduction

Initial solid particles in the slurry act as nucleation sites, altering solidification and reducing shrinkage porosity.

## 3. Heat content reduction

Slurries enter the die with lower heat content, resulting in shorter cycle times and extended die life.

## 4. Ultra-fine solid particles

These facilitate easy flow into ultra-thin sections and promote a uniform microstructure.





# A Team You Can Trust

At GISS Technology, our team is led by a founder and CEO who developed the patented GISS technology during his PhD studies at MIT under the mentorship of Professor Merton Flemings, a renowned metallurgist.

This strong academic foundation underscores our expertise in materials science, enabling us to offer our clients unparalleled technical expertise and full onsite support to ensure optimal die casting results.



**160 GISS Units**  
**14 Countries**

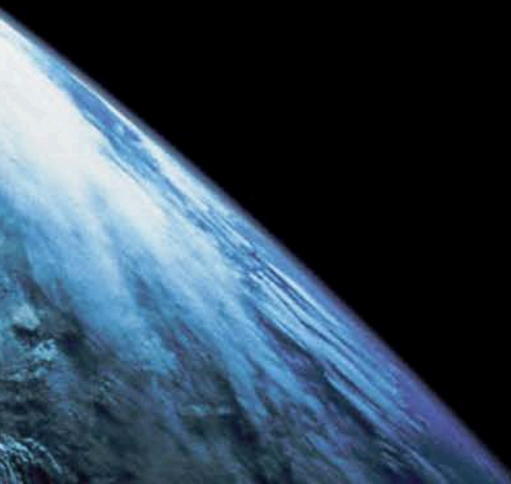


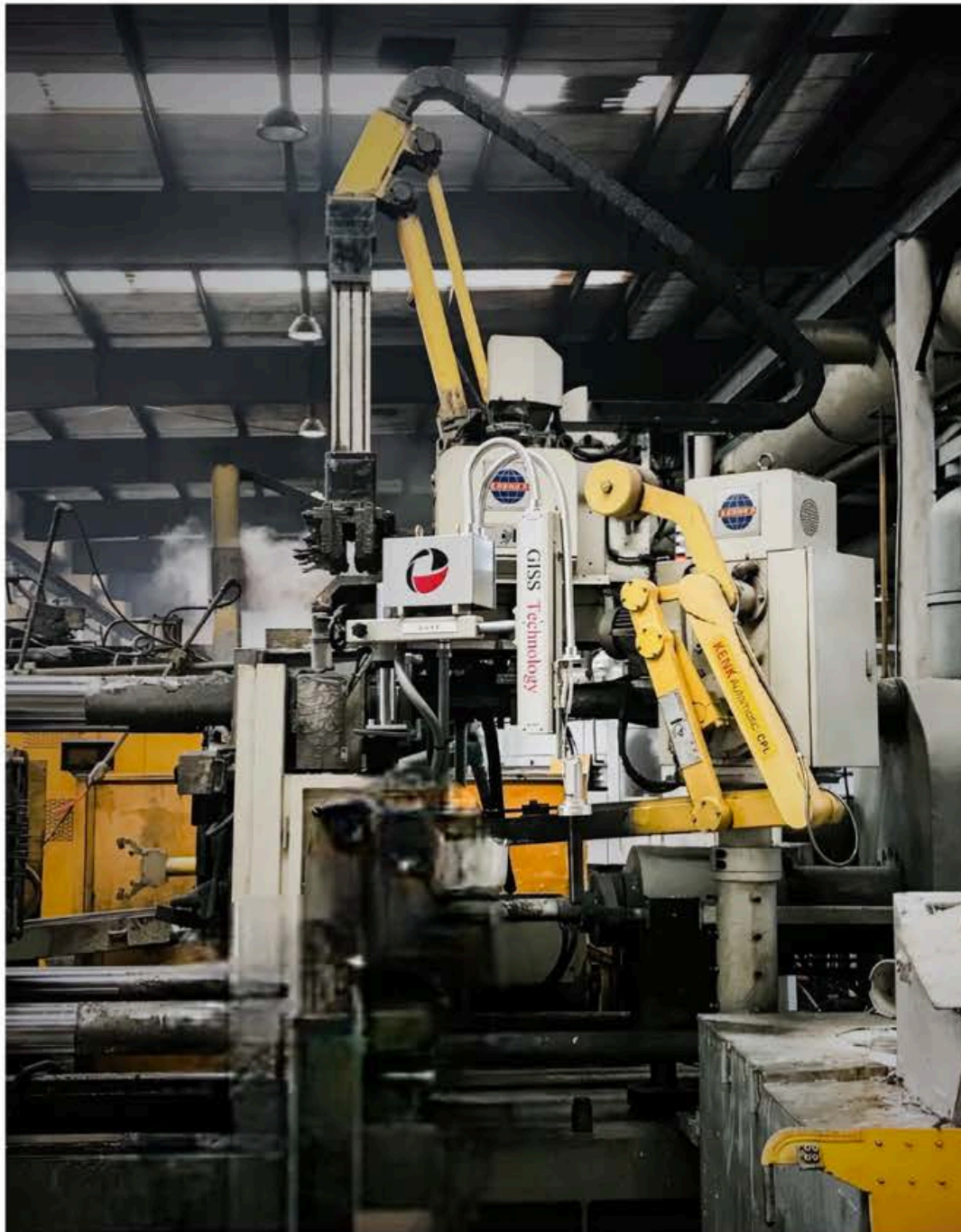


# GISS Global Network

GISS Technology is currently being applied in several die casting companies across the United States, Japan, South Korea, China, Italy, Spain, Brazil, Thailand, Singapore, India, Turkey, Mexico, Vietnam, and Switzerland.

Key clients include Toyota Motor Corporation, Hyundai Motor, Foxconn, and LG Electronics. Additionally, we have other major customers whose identities we cannot disclose due to confidentiality agreements.







# Contact us

✉ **Email:** [contact@gissco.com](mailto:contact@gissco.com)

☎ **Mobile:** (+66) 81-444-5143  
**Tel:** (+66) 34-440309

🌐 **Website:** [www.gissco.com](http://www.gissco.com)

📍 **Headquarters:**  
48/400 Moo 1, Khok Krabue,  
Muang Samut Sakhon, Samut  
Sakhon,  
74000 THAILAND

**R&D Center:**  
170/4 Moo 3, T. Pawong,  
A. Muang, Songkhla,  
90100 THAILAND

