



Magnesium Alloy Casting

innovative | cost effective | environmentally responsible

New Patented Magnesium Casting Process

View the T-Mag Process video

To view a 4 minute video of the latest machine trials for production of a motor cycle wheel.

[See Downloads](#)



15 Kg machine in operation

T-Mag is a fully enclosed melting and easy to use casting solution.

T-Mag is a fully enclosed melting and easy to use casting solution:

- Flux-less metal preparation
- Minimal cover gas usage
- Small machine footprint
- Environmental advantages over other casting processes

New Patented Magnesium Casting Process



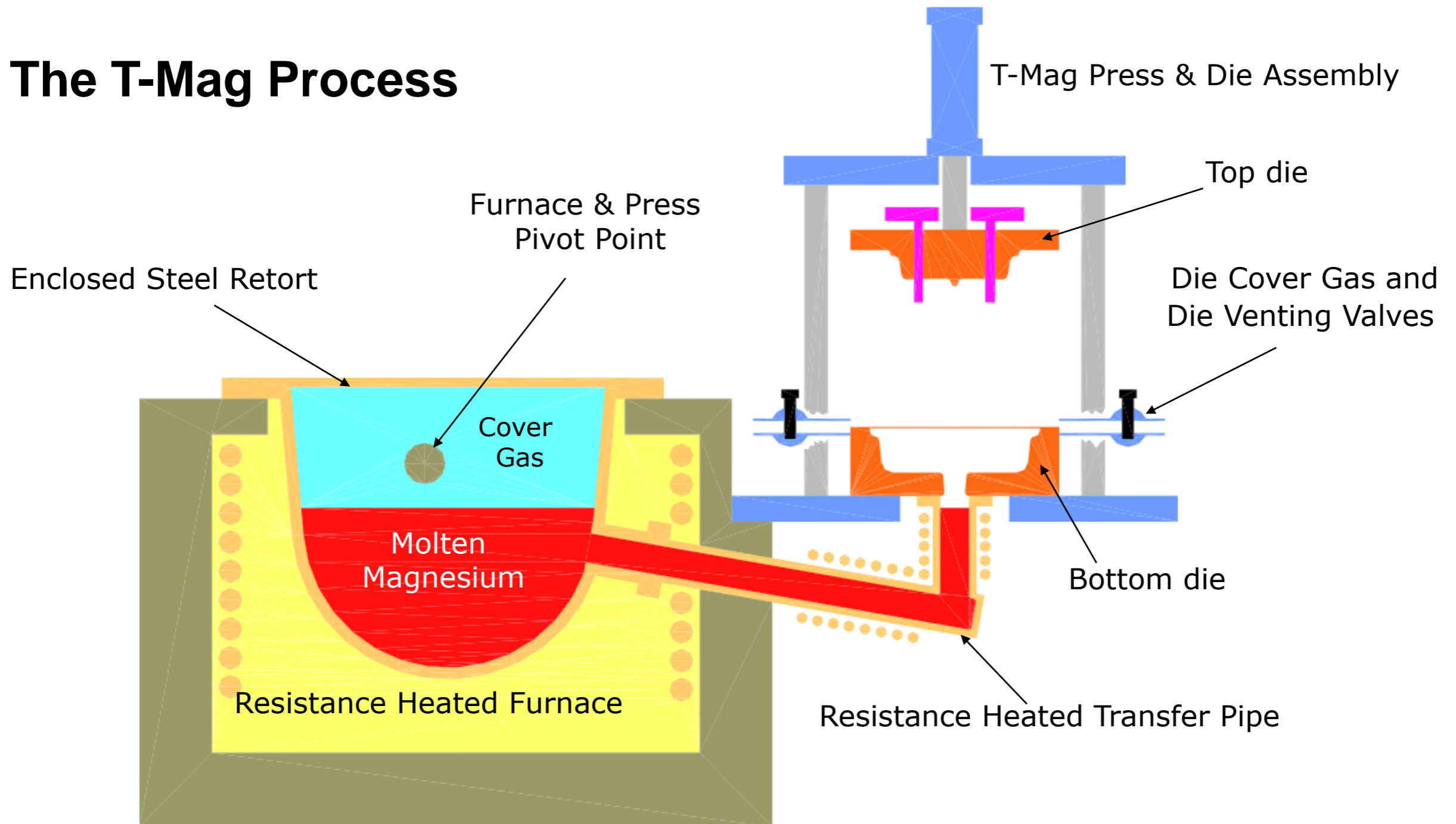
Recent Trials

T-Mag is a fully enclosed melting and easy to use casting solution.

T-Mag is successfully casting Motor Cycle wheels with hollow internal features using silica sand cores and standard binders.



The T-Mag Process

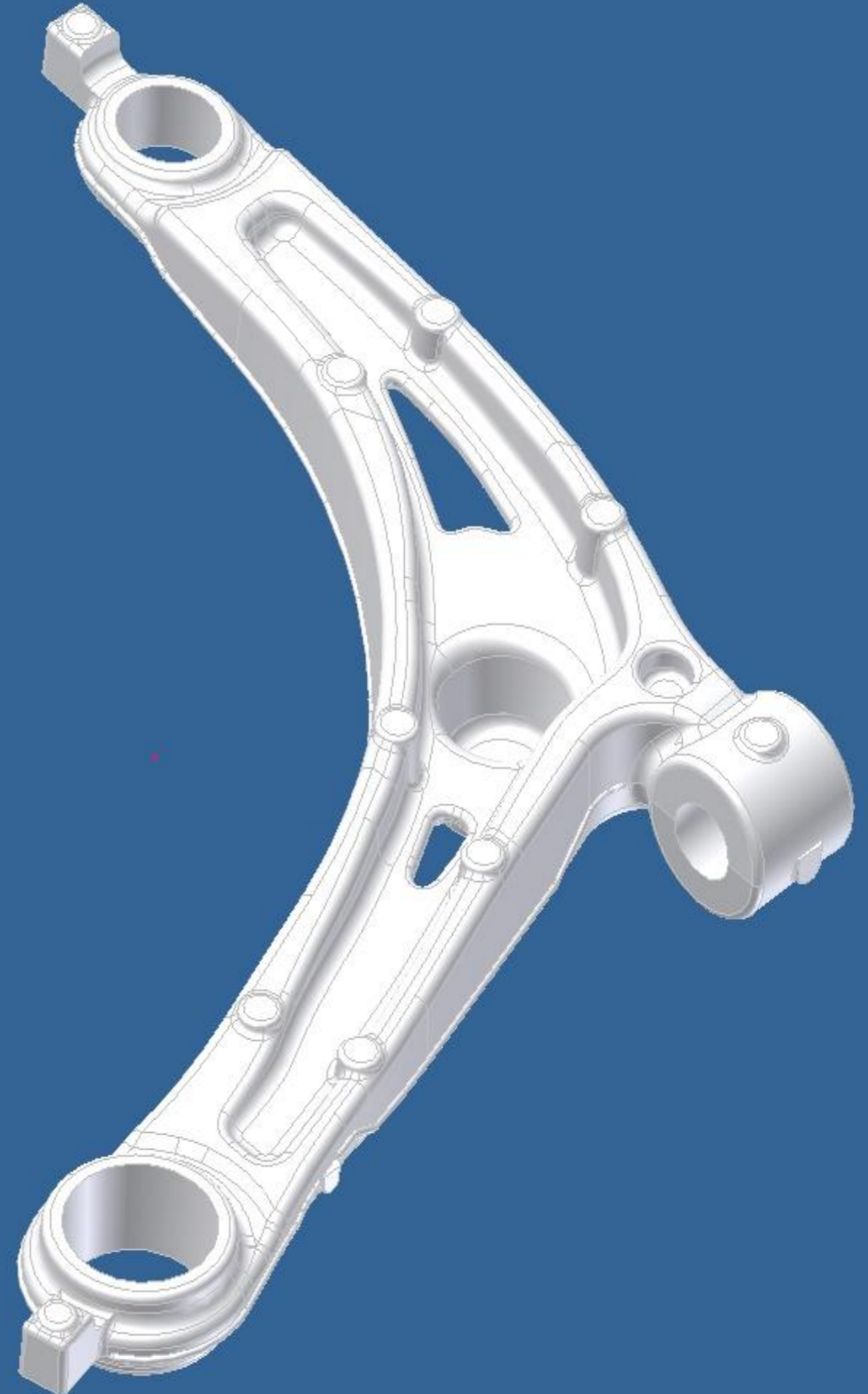


Example of T-Mag Capability

T-Mag participated in the USCAR/HIMAC project and produced a permanent-mould lower control arm,

This was ranked (USCAR Program) as being in the top two casting processes.

Subsequently the other process has been discarded.



Example of Wheel Casting

A large range of products can be cast using T-Mag's patented technology.

Large products – up to 15 Kg can be cast in the machine, situated in Adelaide, Australia.



Magnesium Benefits

- Reduce vehicle weight saving running costs and reducing CO₂ emissions
- Strength, impact resistant, damping, heat transfer capability, and machinability
- Only 5% wastage in production and fully recyclable.
- Fully integrated and self contained.
- Environmentally friendly cover gas



Magnesium Specifications

The attraction of magnesium (alloys) to customers is the lower density compared to other materials.

This means:

Lighter parts, as the required mechanical properties are met.

Aluminum alloys are the obvious material to beat. Magnesium alloys (e.g. AZ91):

~ **1810 kg/m³** Aluminum alloys (e.g. 601):

~ **2690 kg/m³**. Mg is 66% the density of Al on a volume basis.



T-Mag Cost Comparison

ATTRIBUTE	MAGNESIUM CASTING PROCESSES				
	SAND CASTING	GRAVITY PM CASTING	<i>T-Mag</i> *	LOW PRESSURE PM CASTING	HIGH PRESSURE DIE CASTING
Castable Surface Detail	Low	Medium	Medium	Medium	High
Sand Cores for Hollow Features	Yes	Yes	Yes	Yes	No
Tooling Cost	Low	Medium	Medium	Medium	High
Potential Casting Soundness	High	High	High	High	Low
Heat Treatable Castings	Yes	Yes	Yes	Yes	No
Weldable Castings	Yes	Yes	Yes	Yes	No
Casting Yield %	50% Typical	60% Typical	90% Typical	90% Typical	90% Typical
Plant Cost	Low	Low	Medium	Medium / High	High
Cover Gas Management	Difficult	Difficult	Easy	Difficult	Easy

New Patented Magnesium Casting Process

Trials + Viewing

The T-Mag machine is available for casting trials and demonstration at T-Mag premises in Adelaide, South Australia

We welcome your enquiry.....

New Patented Magnesium Casting Process



Collaboration

T-Mag is actively seeking collaboration partners to take advantage of this NEW high yield, cost effective, semi-permanent mould casting process for magnesium.

T-Mag has a green foot print and will assist companies to meet carbon targets.

New Patented Magnesium Casting Process



Contacting T-Mag

Mr Steve Groat
Managing Director

T-Mag Pty Ltd (Aust)
Level 1 / 214 Greenhill Road
EASTWOOD, South Australia 5063

Phone: + 61 8 272 5299

Mobile: + 61 419 816 707

email steve.groat@t-magcasting.com

web www.t-magcasting.com

New Patented Magnesium Casting Process

