Sarginsons

PIONEERS IN ALUMINIUM DIECASTING

Can low pressure diecasting save you money?

According to conventional wisdom, low pressure diecasting is an expensive alternative to gravity diecasting – it has a higher upfront cost and doesn't add enough value. The fact, however, is that low pressure can achieve a superior quality component than gravity diecasting. And with new investment in the latest technology, Sarginsons is now able to offer low pressure more cheaply than gravity for many production runs. As a result you can benefit from a component with high integrity and low porosity – without having to pay a premium.

Been using gravity diecasting? Depending on your requirements you may be able to save money – and boost quality – by switching to low pressure. Here are some basic guidelines for determining whether low pressure may be right for you.

1. Do you require lots of the same component annually?

As a mechanised process, low pressure diecasting offers a much higher throughput rate than gravity diecasting. Thus, once the design is completed and the die is prepared, larger production runs can be completed quickly and easily. This extends to recurring orders for the same component, so thinking in terms of your annual requirement – rather than in terms of discreet batch jobs – can save a great deal of time and money.

2. Are your components large or complex?

Large, intricate components generate a great deal of wastage with gravity diecasting. In fact, yield generally sits at just 40%. This makes each production run much more expensive. On the one hand, the castings require considerably more fettling and trimming, which leads to increased finishing costs. On the other hand, there is a greater energy cost associated with remelting the excess metal, which leads to a higher cost per unit.

Low pressure diecasting offers high yields, which can exceed 90% even with walls as thin as 2-3mm. As a result an exceptional surface finish can be achieved with much less machining. This means that the larger the component – or the more complex the component – the greater the savings over gravity diecasting. In fact, low pressure quickly becomes more cost effective than gravity, so it is worth consulting with a diecasting expert as early in the design stage as possible.

www.sarginsons.co.uk

Sarginsons Industries Ltd, Torrington Avenue, Coventry, West Midlands CV4 9AG
t: +44 (0) 2476 466 291 **f:** +44 (0) 2476 468 135 **e:** info@sarginsons.co.uk

3. Do you want more transparency and control over the diecasting process?

Gravity diecasting is truly an art. Low pressure diecasting is more of a science. Because low pressure is automated we are able to scrutinise every element of the process in real time. A major reason behind the quality of low pressure diecasting is the controlled, non-turbulent method of filling the die, which yields a microstructure of exceptionally high integrity. We therefore monitor overall thermal management, metal temperature, process air dew point and a multi-stage injection profile to ensure everything is as controlled – and consistent – as possible across the production run. This means that there is full transparency at every stage, meaning we can offer a level of stability and repeatability that can't be achieved with an operator-dependent process like gravity diecasting.

4. Is process repeatability crucial to you?

With low pressure the die is filled with a consistency and control that no human can achieve. This means that the component is of much higher quality than with gravity diecasting. Components have very low oxide levels, meaning that they are stronger and can achieve a more aesthetically-consistent finish. And because we have so much real-time control over the low pressure diecasting process, this quality is repeatable across the production run.

5. Do you have environmental or emissions targets?

Energy efficiency within the supply chain is becoming more important as new environmental regulations come into effect. Low pressure diecasting is much more energy efficient than gravity diecasting. The machinery is built such that it requires much less energy to keep the aluminium at the required temperature. There is also less waste per casting, so less metal has to be remelted. As a result the carbon footprint associated with a low pressure diecast component is substantially less than for the same component, but gravity diecast.

If you would like to know more about Sarginsons' low pressure diecasting capabilities please email Anthony Evans at anthonye@sarginsons.co.uk or Roy Sims at roys@sarginsons.co.uk.

Sarginsons Industries Ltd, Torrington Avenue, Coventry, West Midlands CV4 9AG
t: +44 (0) 2476 466 291 **f:** +44 (0) 2476 468 135 **e:** info@sarginsons.co.uk