

## Case Studies: Leak testing

### Leak Test Fixture with Interchangeable Tooling

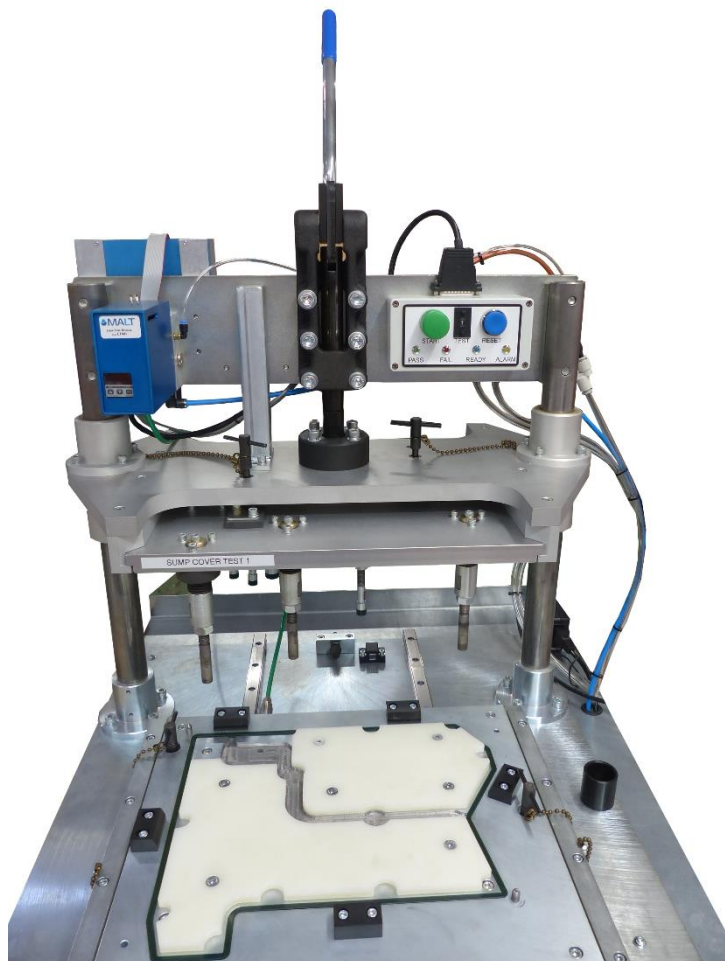
**Client:** Leading Aluminium Die Casting Company

**Part:** Various Automotive Die Cast Parts

**Machine supplied:** Leak Testing fixture with interchangeable tooling

**Overview:** This system was designed and manufactured in order to give the customer the ability to automatically produce 100% checked parts. The low volume production parts were cost-effectively leak tested using a flexible solution with interchangeable tooling.

This particular leak testing system was supplied as a Series 10 based leak test fixture mounted on a bench. The bench had cabinets and shelves to allow storage of those leak test fixtures not currently in use and for spare seals.



An OEM MALT LT401 valve module and controller, complete with a button box is mounted onto a standard series 10 flexible leak testing system and allows leak testing of medium-to-large aluminium die cast parts.

The toggle press system clamps the part under test against the seal line in the bottom tool. Bespoke white plastic infill pieces are included, these are used to reduce the test volume and therefore increase the sensitivity of the leak test. Both the bottom and top tooling plates are interchangeable and this system was supplied with 4 sets of tooling for 4 different variant parts. The sprung loaded pins hung below the top tool plate put pressure onto the bolt locations of the part with the included spring washers allowing the correct pressure at each clamping point.

The test parts are relatively large in area so the bottom tooling system is on a slideway to allow the part under test to be easily placed and removed from the bottom tool at one position, then slid forward to a second position under the toggle clamp mechanism. The leak test tooling includes bespoke black location blocks which nest the part ensuring the correct alignment of the part is easy and quick to achieve.

The top and bottom tools easily slide in and out and the system uses SMED (Single Minute Exchange of Die) principles for changing from one variant to the next.

Part marking is integrated into this leak test solution with a single pass marker included for all variants.

The TAKT time for the leak test was less than a minute and so this was a relatively high throughput, low cost, flexible leak testing facility.

#### Key features:

- Bench-mounted fixture
- MALT leak test unit with button box
- Manual toggle clamp system
- Interchangeable top and bottom tooling
- Custom-designed polyurethane seals
- Bespoke infills for test volume reduction
- Pass stamp

If you have an application that could benefit from TQC's expertise in leak testing, please contact us by email or phone via the contact details

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