

Case Studies: Leak testing

Casting Leak Testing – Engine Blocks

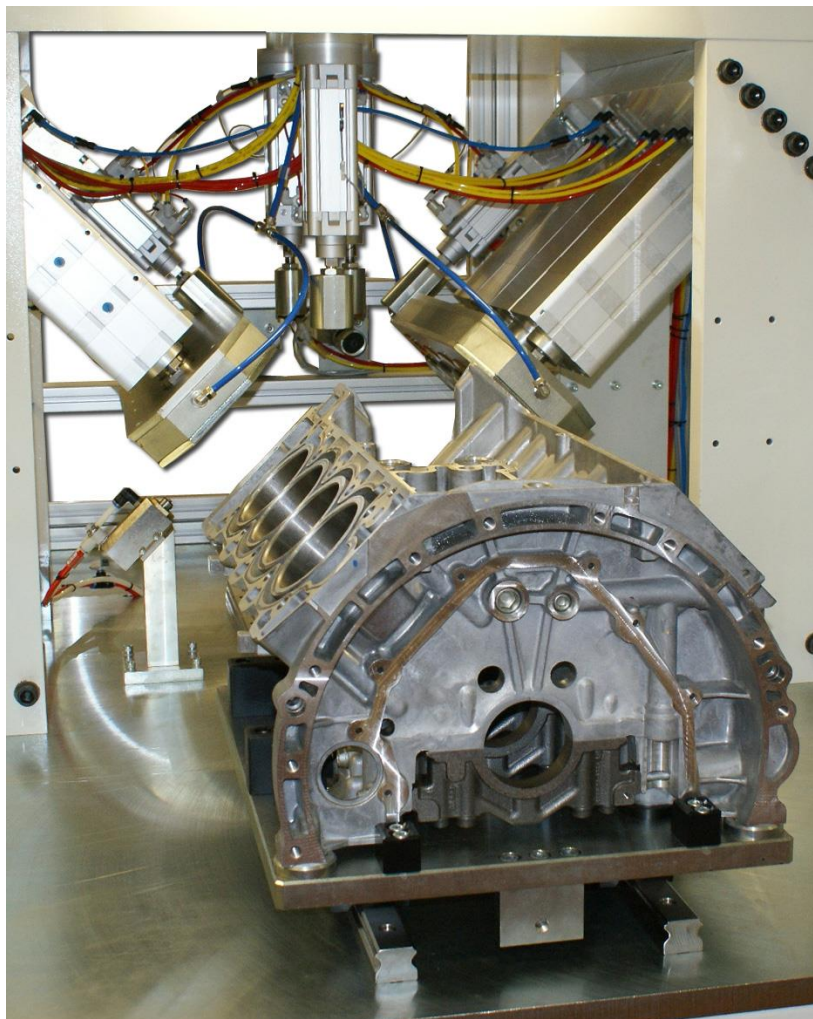
Clients: Tier 1 Automotive Engine Manufacturers

Part: Automotive engine blocks

Machine supplied: Automatic casting leak testing equipment for engine blocks

Overview: These systems were designed and manufactured in order to give the customer the ability to fully automatically test the water jacket and oil galleries within engine blocks on an automatic assembly line within their production environment. TQC develops systems alongside the client to allow them to quality assure that their engine blocks were leak free.

TQC have produced a number of leak test systems for a variety of automotive parts, this includes equipment for the testing of large engine block castings, aluminium and steel sumps, water pump housings, engine heads, cam carriers, electric battery trays, electric vehicle battery cooling systems and many more components and assemblies.



The casting leak testing machines supplied to date for a range of automotive clients include manual and automated loading / unloading, multi cavity leak testing functions and system diagnostics.

TQC incorporates standard concepts and customises the equipment to suit the components and test parameters. Examples of components tested include the Vauxhall V6 engine, Rover K Series, JLR, Audi, BMW, Scania etc

Casting Leak Testing – Features, Tests & Functions

- Ferrous and non ferrous castings
- Machined and 'As Cast' conditions
- Main cavity, High Pressure Oil & Water Cavity leak tests
- Interstream leak testing
- Integrated water submersal for leak area location
- Integrated flow & blockage testing
- Automatic core and ball plugging
- Multi-channel leak test unit allows many cavities to be tested simultaneously
- Manual loading and unloading
- Conveyor transfer
- Integrated robot cells
- Secondary machining operations
- Data logging of results with serial number pass marking for traceability

Typical Leak Rates and Test Pressures for no-fluid leakage

- Oil Circuits: 50mm³/sec @ 0.3 bar 3cc / min
- Water Circuits: 200mm³/sec @ 1 bar 12cc / min
- Interstream: 140mm³/sec @ 0.7 bar differential 8.4cc/min

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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