

## Leak Testing of Engine Blocks – Standard and Custom Solutions

TQC have produced a number of leak test systems for a variety of automotive parts, this includes equipment for the testing of engine cylinder block castings. The machines supplied to date include manual and automated loading / unloading, multi cavity leak testing functions and system diagnostics.

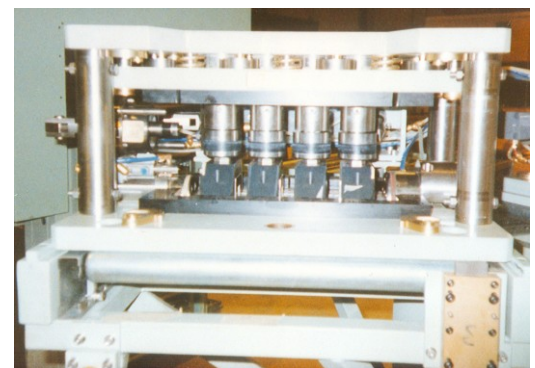
TQC incorporates standard concepts and customised the equipment to suit the components and the test parameters. Examples of components tested include the Vauxhall V6 engine, Rover K Series, Jaguar, Scania etc.

### Features, Tests & Functions

- Ferrous and non ferrous castings
- Machined and 'As Cast' conditions
- Main cavity, High Pressure Oil and Water Cavity leak tests
- Interstream leak testing
- Integrated water submersal for leak area location
- Integrated flow and blockage testing
- Automatic core and ball plugging
- Multi-channel leak test unit allows up to 5 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



Cast Iron - fully machined V8 cylinder block - automatic linear transfer



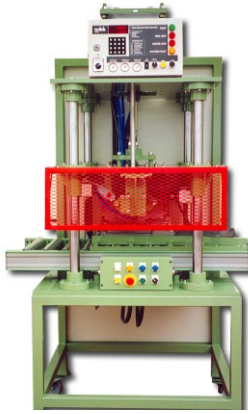
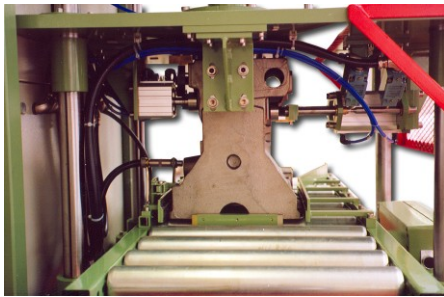
Interchangeable tooling

### Typical Leak Rates and Test Pressures for no-fluid leakage

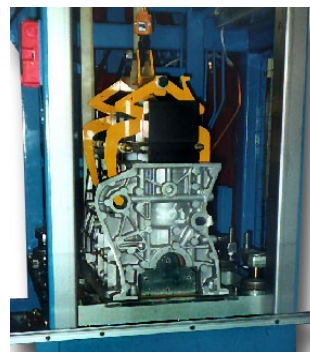
- Oil Circuits      50mm<sup>3</sup>/sec @ 0.3 bar (3cc/min)
- Water Circuits   200mm<sup>3</sup>/sec @ 1 bar (12cc/min)
- Interstream      140mm<sup>3</sup>/sec @ 0.7 bar differential (8.4cc/min)



**Cast Iron - 'As Cast'**  
**3 cylinder engine block**  
**Fully automatic transfer**



**Aluminium fully machined**  
**6 cylinder engine block with water dunk**  
**Manual load / unload with gripper 'lift assist'**



**Aluminium - 'As Cast'**  
**4 cylinder engine block with rotary water dunk**  
**Manual load / unload**

