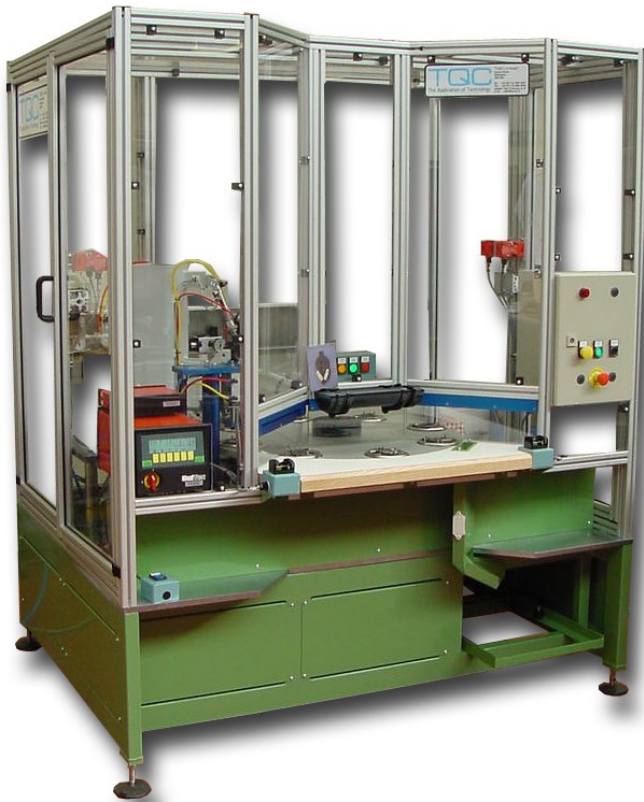
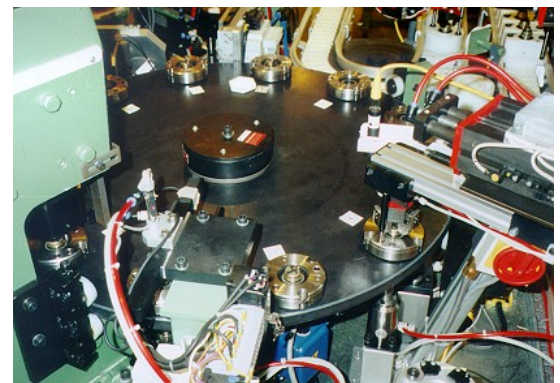


Rotary Machines and System for Assembly & Test Applications



Rotary assembly machines are used extensively in fully and semi automatic assembly and test. The advantages of using an indexing or continuous motion dial plate with a series of fixtures are the relative low cost and rapid index of the transport system.

Fully automatic systems can reach throughputs of 400 a minute or more when continuous motion is used.

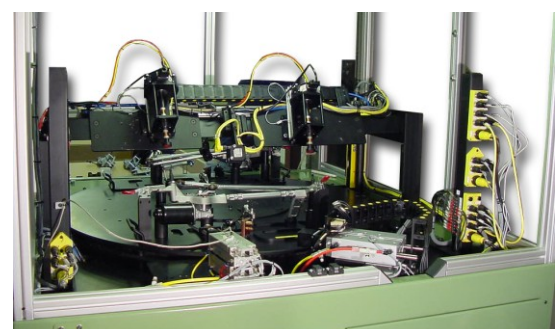


High Speed Fully Automatic Assembly Machine

The use of a rotary assembly and test machine is advantageous when the cycle time is greater than 5 seconds and an operator is best used for some of the assembly processes. The operator can be used to position difficult to feed parts into the fixtures or used as a final inspection operation, or both. Rotary or carousel type assembly machines can also offer a compact form of semi automatic machine.

The nest tooling tends to be “dumb” because of the continuous rotation. The assembly and test tooling is usually arranged in a radial fashion secured outside of the dial plate. Twin or even multiple track nests are possible, as are interchangeable nests for different variants.

TQC have considerable experience in engineering rotary assembly machines, combining sophisticated test and assembly on the same machine.

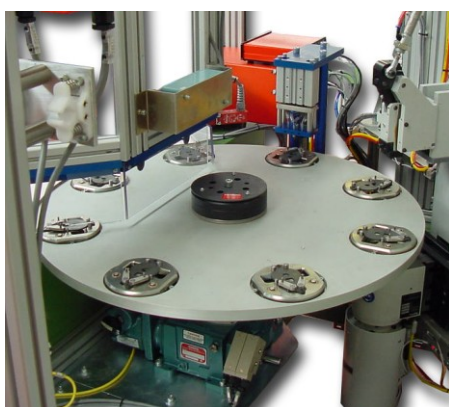


Electro-Mechanical Test Machine with Vision

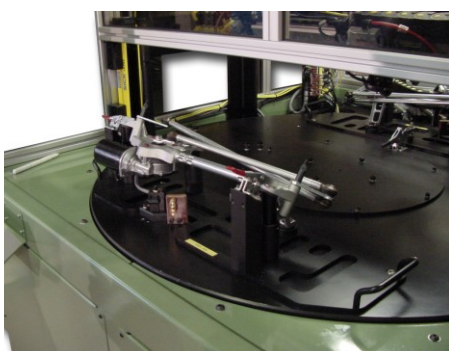


Typical Applications

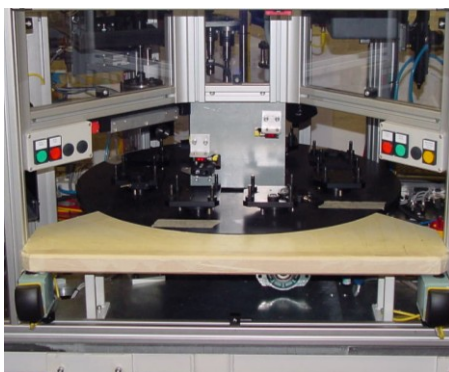
- Automotive part assembly
- Medical device assembly
- Automatic electro-mechanical test
- Automatic leak test
- Simultaneous assembly & test
- Dual or triple track assembly



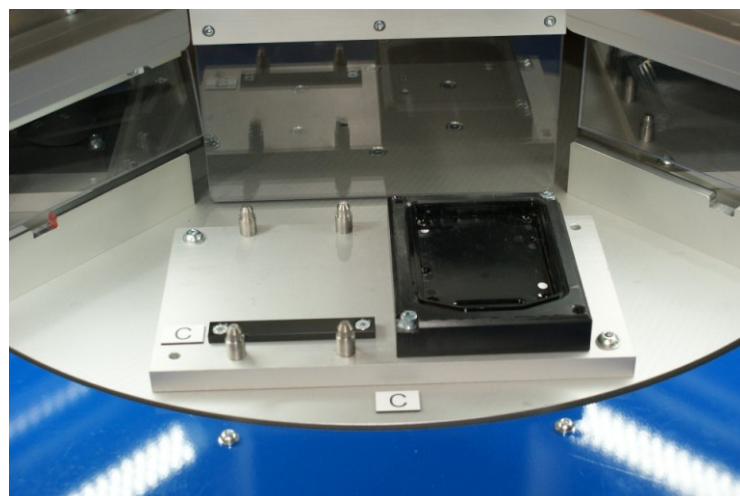
Automatic Spin Riveting Machine



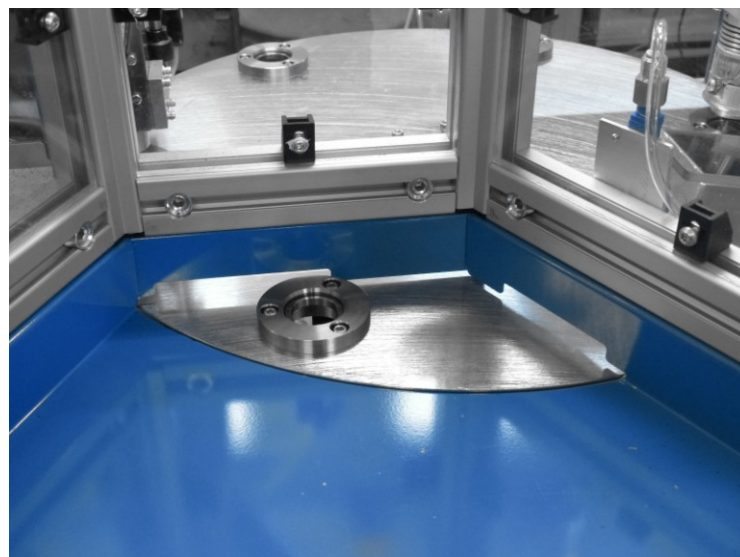
Automatic Windscreen Wiper Assembly Test



Oil Filter Assembly & Test Machine



Multiple Part Tooling on a 4-Station Machine



Tooling on 6-Station Machine

Rotary Machines & Systems typically incorporate the following modules

- Operator load station
- Press station
- Orbital spin riveting
- Automatic electro-mechanical testing
- Automatic labelling
- Vision system
- Automatic glue or sealant dispensing
- Vibratory feeding
- Robot modules

