

Casting Multi-Position Screwdriving and Marking System

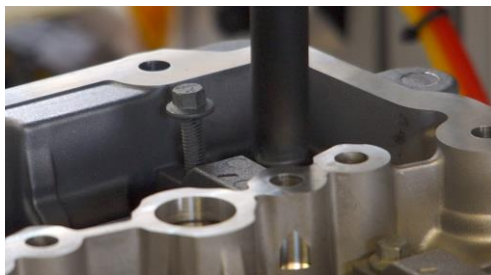
The machine has been designed primarily as a tear down facility for incorrect parts but it also has the ability to fully assemble and rework components and provides low volume production.

The assembly is a single casting which has 20 screws that secure 9 cam caps in place. The screws are a self-tapping style known as 'Taptight'. Further assembly operations are to insert 2 hollow dowel pins into the casting. After a successful assembly process, fitted parts are marked with identification to ensure that when these parts are removed they can be refitted in the correct configuration.

The machine is constructed from a fabricated mild steel base frame with a steel bedplate. The upper guarding is constructed from aluminium extrusion and polycarbonate panels.

Key Features

- Two off 2-axis servo drive systems
- Electronic screwdriver
- Dot peen marker
- Pin insertion mechanisms
- Two off vision systems with associated light sources



Screwing



Marking



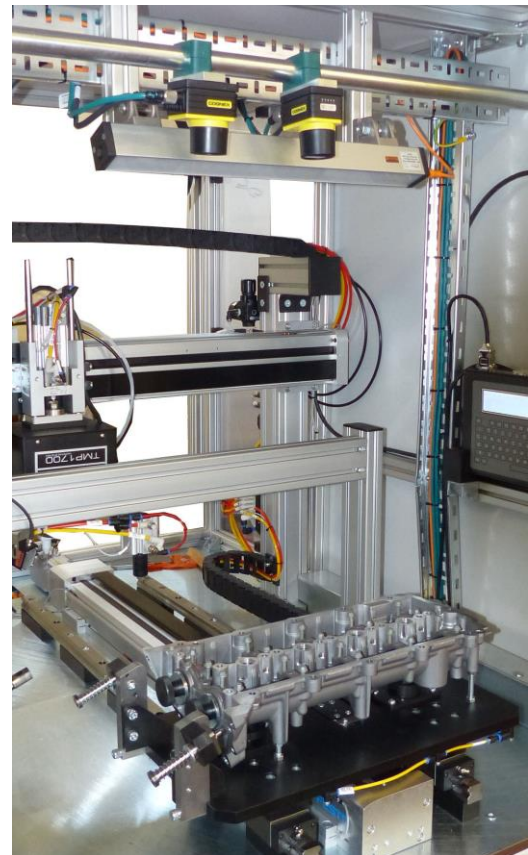
Inspecting



Sequences of Operation

– Low volume production cycle

- Manual load of main casting and cam caps on machine platen at the front of the machine.
- Vision check all parts are present and correct
- Machine platen indexes to pin insertion station.
- Pins inserted.
- Machine platen indexes to main assembly position.
- Screws automatically inserted in multiple places with position in 2 axes via the machine platen in one axis, the screwdriver in the other.
- Dot Peen marking in multiple positions again using the 2 servo positioning systems
- Machine platen returns to front position for final vision inspection of the assembly and reading of the percussion identification marks
- Manual unload of the finished assembly



– Tear Down or Stripdown mode

This sequence varies depending of the requirements of each particular assembly. The system has the capabilities of removing any screws and refitting, then completing the identification marking and final vision inspection.

There is an automatic rework mode for part assembly parts and also an automatic tear down mode that removes all 20 screws from an assembly.

