



Precision spindle friction stir welding machine

Transformation Technologies RM2 moving-table friction stir welding (FSW) machine

FSW machine with low-runout spindle capable of running ceramic FSW tools for fabricating components made from high-temperature materials.

Features and benefits

- 10µm spindle run-out
- High rigidity with a moving table
- Tool cooling
- Data logging with tool-temperature telemetry
- Video logging
- Control positional, Z and X force, and electronic deflection compensation

Some applications

- Ideal machine for research into FSW and friction stir processing of high-temperature materials
- Well instrumented to measure critical process forces for development of FSW tool materials and process parameter development
- Typical areas of interest include:
 - Joining titanium for aerospace structures such as fuel tanks
 - Joining steels for marine applications
 - Processing steels with increased toughness and hardness such as for machine blades and knives
 - Processing oxide dispersion-strengthened (ODS) alloys for use in high-temperature creep-resistant applications

Technical specification

- Working envelope: 2000 x 700 x 800mm
- No. of axes: 4
- Spindle power: 37kW
- Spindle speed: 0-3000RPM
- Spindle torque: 500Nm
- Z force: 0-100kN
- Force other axes: 0-45kN
- A axis tilt: +10 °