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 °

TWI Ltd W: www.twi-global.com T: +44 (0)1223 899000 E: twi@twi-global.com

1490.06/17