



HYBRID HEAD  
FOR WELDING  
AND MILLING



WELD SEAM  
TRACKING

## FRICITION-STIR WELDING AND MILLING MACHINE ENDURA® 1000 FSW HSC

### TECHNICAL DATA

#### Traverse paths

X-axis:	up to 60,000 mm
Y-axis:	up to 4,000 mm
Z-axis:	up to 1,000 mm

#### A-axis

(Pivoting angle): 90° (± 45°)

#### B-axis

(Pivoting angle): 60° (± 30°)

#### Feed rate

X-axis:	5 - 40,000 mm/min
Y-axis:	5 - 30,000 mm/min
Z-axis:	5 - 10,000 mm/min
A-axis:	up to 15°/sec
B-axis:	up to 15°/sec

#### Acceleration

up to 1.0 m/sec<sup>2</sup>

#### Position accuracy

in X (P <sub>a</sub> )	0.100 mm
in Y (P <sub>a</sub> )	0.040 mm
in Z (P <sub>a</sub> )	0.030 mm
in A-axis:	0.080°
in B-axis:	0.080°

#### Position deviation

in X (P <sub>s</sub> )	0.050 mm
in Y (P <sub>s</sub> )	0.040 mm
in Z (P <sub>s</sub> )	0.030 mm
in A-axis:	0.040°
in B-axis:	0.040°

#### Pivoting torque (simultaneously)

A-axis:	up to 24,000 Nm
B-axis:	up to 15,000 Nm

#### Feed force (simultaneously)

X-axis:	up to 30,000 N
Y-axis:	up to 30,000 N
Z-axis:	up to 60,000 N

### HIGHLIGHTS

- For large-volume workpieces
- 5-axis simultaneous machining
- Ergonomic loading
- Welding depth up to 20 mm
- Weld seam tracking
- Force control
- Incl. clamping technology
- For aluminium alloy 5xxx and 6xxx

### MATERIAL

Plastics	Blockmaterials for modelling	Composite materials (CFRP/GRP)	Aluminium	Cast Iron	Steel
-	-	-	+	-	-

