

High-Performance G-FSWC2318



The high-performance FSW-Centre G-FSWC2318 is a unique solution that synthesizes the very latest FSW technology with an upgradable high-speed milling in one multi-purpose gantry machine (Stirtec 2-in-1 concept).



G-FSWC2318

The machines in this series are conceived as 3-axes machines in gantry design and are capable to be upgrade up to 6-axes systems.

The machines can optionally be equipped with an FSW in-process quality monitoring system for reliable series production.

The exceptionally rugged design ensures:

- ✓ high process stability
- ✓ excellent system availability
- ✓ outstanding technological and economic productivity

Ideal for high performance friction stir welding

Specially developed very powerful motor spindle, HSK-A100, upgradable to 1- or 2-axis head

X and Y operating travels 2 300 x 1 500 mm and Z operating travel 1 050 mm - box in box cross rail design - easy loading of large workpieces

FSW force control system up to 40 kN

High speed-range of up to 15 000 rpm and high power / torque

High rigidity for high table load at fixed table - Rotary table with \varnothing 1 800mm available

FSW process quality monitoring system incl. FSW process data collection and monitoring

Fully automated process- and tool-change between milling and FSW-process

Siemens Sinumerik 840D control system - absolute scales on all axes

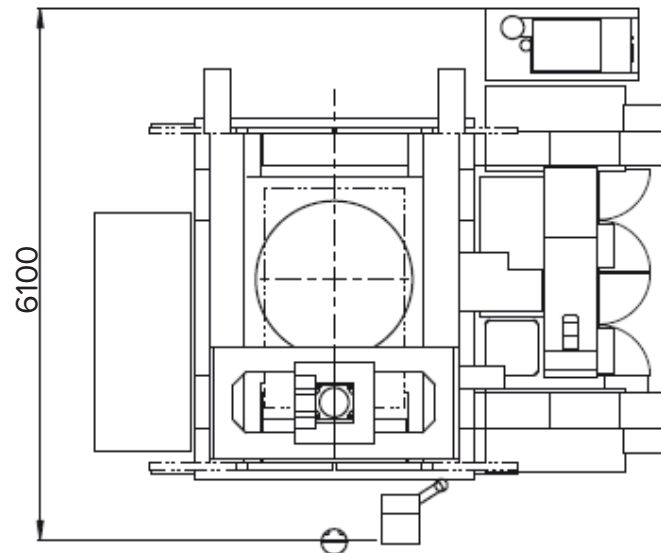
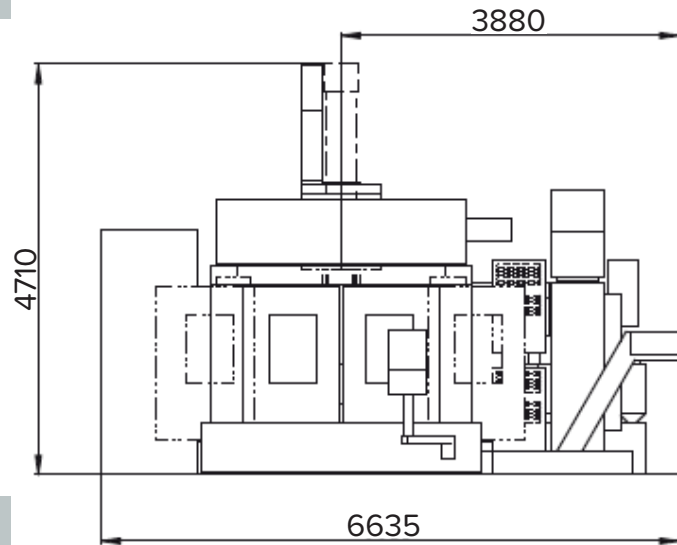
G-FSWC2318 Specifications

Standard Machine Configuration

- ✓ Siemens Sinumerik 840D SL
- ✓ motor spindle for FSW and milling 15 000 rpm max. HSK-A100
- ✓ Automatic central greasing
- ✓ Automatic tool changer 50 tool magazine
- ✓ FSW force measuring system X, Y, Z
- ✓ Siemens digital feed drives
- ✓ Spindle temperature stabilization
- ✓ Totally enclosed work space
- ✓ Full protection guarding of all moving items on the machine – Siemens safety integrated
- ✓ All electrical devices comply with CE, or are UL /CSA approved or listed

Options

- ✓ Double-axis CNC head
- ✓ Coolant system with through-flow filtration 7 MPa JV40 variable (4 levels), 5 microns
- ✓ Rack style tool magazine HSK-A100 for 60 / 80 / 120 tools
- ✓ Trough spindle air / coolant
- ✓ Dual set workpiece and tool probe RENISHAW (OMP60+OTS+OMI-2T)
- ✓ Fixed table 2 520 x 1 600 mm with an integrated rotary table diameter, 1500 mm
- ✓ Manual spray gun
- ✓ External oil mist cooling Acculube
- ✓ Oil mist removal system
- ✓ Chip containers
- ✓ Interface for remote diagnostic service
- ✓ Machine hibernation mode
- ✓ Air supply through spindle center
- ✓ Two rake type chip conveyors



Operating Travels

	3-axis - spindle unit Fixed table
X-axis - binder	2 300 mm
Y-axis - cross slide	1 500 mm
Z-axis - slide ram	1 050 mm

C-axis - rotary table

Distances

Spindle nose to table surface	
Floor to table surface	805 mm

Feed Rates

Cutting feed rate in X, Y, Z axes	50 m/min
Rapid traverse in X, Y, Z axes	50 m/min
Acceleration in X, Y, Z axes	5 m/s ²
Speed in B axis – tilting head	

Accuracy

Positioning (VDI/DGQ 3441) X, Y, Z axes	0,008 mm
Repeatability (VDI/DGQ 3441) X, Y, Z axes	0,006 mm
Positioning (VDI/DGQ 3441) B axis	

Hybrid Spindle CNC/FSW

Speed	1 - 15 000 rpm
Power S1 (S6 - 40%)	52 (68) kW
Torque S1 (S6 - 40%)	172 (224) Nm
Max. force in Z - axis	40 kN
Tool clamping taper	HSK-A100
Control concept	Force and position

Control System

SIEMENS	SINUMERIK 840D
Travels	Absolute scales

Fixed Work Table

Table dimension	2 520 x 1 600 mm
Number of T- slots x width	12 x 18 mm
Central slot dimension	18 H7 mm
Span of T- slots	125 mm
Maximum load	10 000 kg

Tool Magazine

Tool holder	HSK-A100
Number of positions in magazine	50
Tool interchange time - tool to tool	3,5 sec.
Tool maximum diameter / length	160 mm / 425 mm
Tool maximum weight	15 kg
Max. weight of all tools	350 kg

Electric Power Requirements

Mains voltage rating	3 x 400 V / 50 Hz
Operational power input	~ 100 kVA
Full load current (fully loaded machine)	170 A

Weight Data

Machine without tool magazine and electric cabinet (depending on options)	ca. 29 000 kg
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Space Required

Floor space	6 650 x 6 100 mm
Max. machine operating height	5 100 mm

We do our best to improve continuously the performance of our machines. Please note that therefore some specifications may have changed.