

The World of Dr. Fritsch: FAST/SPS & Powder Processing Technologies

FAST/SPS
SINTERING PRESS

DSP 520



Benefits with Dr. Fritsch

Experience:

- Leading in FAST/SPS technology since 1953
- More than 1.000 FAST/SPS Sinter Presses installed worldwide
- Quality Made in Germany

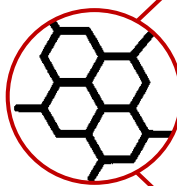
Application Center:

- Most machines available for testing and product development
- Powder processing equipment
- CAD Mold Design
- Consulting & Support

Customized Turnkey Solutions for:

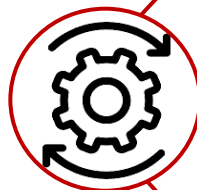
- FAST/SPS sintering
- Automation
- Powder Processing

FAST/SPS Advantages



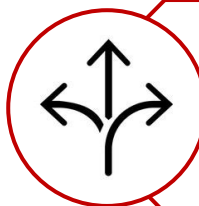
Improved Material Properties:

- Significant reduction of grain growth (esp. for nanoscale)
- Highest density achievable
- Homogeneous microstructure



Highest Productivity

- Very short sinter cycles
- Near net shape production reduces or even omits post-processing steps, which are necessary when using traditional sintering techniques



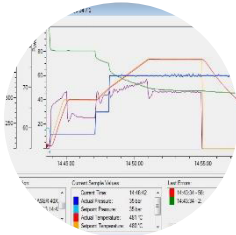
Highest Flexibility

- Development time for new materials can be substantially shortened
- Quick change over to other materials and dimensions



Click [here](#) or scan QR-code to watch a FAST/SPS sintering demonstration

Product Features



Precise control

All sintering parameters (pressure, temperature, travel distance and time) can be controlled and monitored exactly via visualization software and process management.



Highest output

Machine is designed for highest productivity and for 24/7-operation. Automation and integration in an automated production environment possible.



Easy operation & Low maintenance

Easy operation by a touch panel. Clear and intuitive menu navigation. Low maintenance due to high quality standards.

Machine Data

	<u>Standard</u>	<u>Option</u>
Electric Power: - Total electric power: - Max. heating power: - Max. heating current: - Total electric load:	Approx. 250 kVA 240 kVA Up to 47.500 A, 4 tappings available 3 x 360 A	(other voltages and frequencies are possible on request)
Vacuum:	20 mbar	0,05 mbar
Pressing force: - normal / differential switching: - effective pressing area of cyl.: - oil pressure:	39 – 461 and 51 – 603 kN 153,9 cm ² and 201,1 cm ² 25 – 300 bar 2,5 – 30 MPa	differential switching: 35 – 414 kN and 47 – 555 kN 61 – 725 kN and 76 – 904 kN 91 – 1092 kN and 119 – 1424 kN 2 – 100 % regulation: 49 – 482 kN and 173 – 2072 kN
Graphite electrodes: - dimensions (WxDxH): - max./min. opening height: - specific resistance:	350 x 350 x 40 - 130 mm 505 – 325 mm (dep. on electrodes, cooling options, etc.) 12 – 14 μΩm	Ø 350 x 40 - 130 mm (reduction of opening height on request)
Temperature control	Thermocouple Ni-Cr-Ni: up to 1.100 °C three-fold control	Thermocouple Pt-Rh-Pt: up to 1300 °C Pyrometer: 300 – 3.000 °C
Electronic Position sensor:	accuracy 0,1 mm resolution 0,005 mm	
Dimensions: Weight:	according to floor plan approx. 6.300 kg	

Required Infrastructure

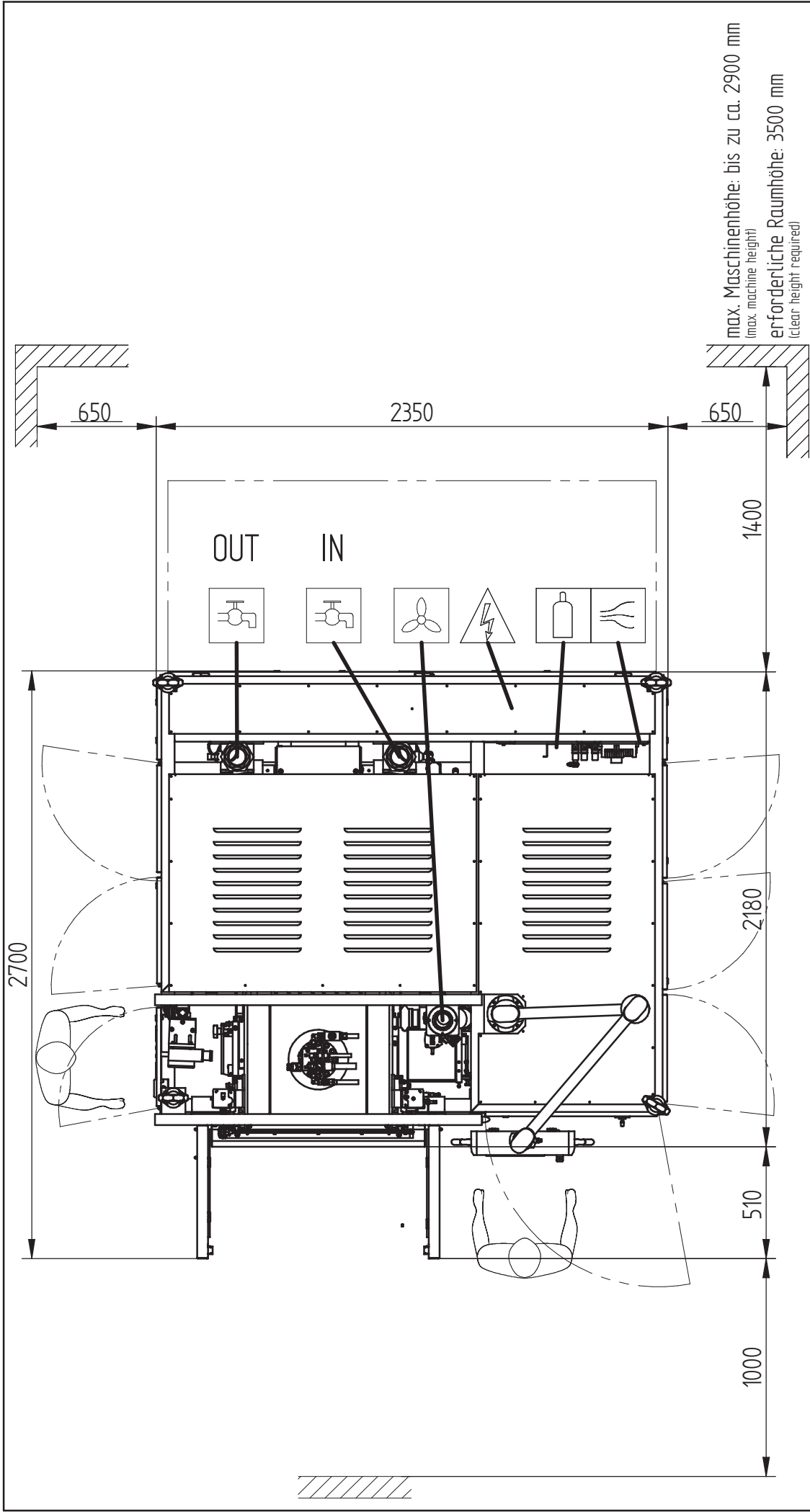
	<u>Standard</u>	<u>Option</u>
Power: Supply voltage: Fuses (provided by customer):	3 x 400 V, 50/60 Hz 3 x 400 A	(other voltages and frequencies are possible on request)
Cooling water: - consumption: - recommended water supply temperature: - pressure: - differential pressure (supply – discharge): - connection:	approx. 220 l/min (at 20 °C) 18 – 22 °C 2 – 4 bar 1 – 2 bar supply: for external thread 3" discharge: for external thread 3"	
Compressed air: - consumption: - pressure: - connection:	approx. 20 l/min (depending on process) 4 – 6 bar hose nozzle for hose with inner Ø 8 – 9 mm	
Inert gas: - consumption: - pressure: - connection: - types:	approx. 300 – 1000 l/h (depending on process) 1 – 5 bar plug-type adapter for hose with outer Ø 6 mm nitrogen, forming gas (max. 5 % H ₂), noble gas	
Suction system: - connection: - recommended air flow rate:	provided by customer connection piece for hose or pipe with inner Ø 100 mm approx. 800 m ³ /h	

Subject to modifications of technical data and design

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Dosing – Mixing – Granulating – Cold Pressing – FAST/SPS Sintering – Automation





max. Maschinenhöhe: bis zu ca. 2900 mm
(max. machine height)
erforderliche Raumhöhe: 3500 mm
(required clear height)

Aufstellplan floor plan		DSP518_APL.dft ASM034849.d.stm	
		Bearb. 18.07.2013 Gepr. e_freitag Norm.	Name e_freitag
Maschinen Typ : DSP5XX harmonisiert machine type :		DR. FRITTSCH Sondermaschinen GmbH D-70722 Fellbach	
Zeichnungs Nr.: 30		500	