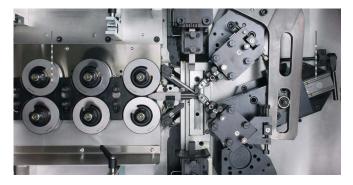


Spring Coiling Machine for the Production of Compression Springs



Baureihe

Tool room F6



Our Accomplishments for your Benefit

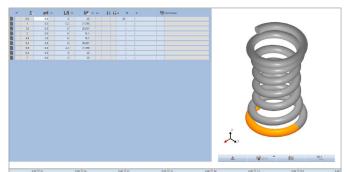
- Fully-fledged compression spring coiler even in standard version, equipped with the latest drive technology
- Performance Machine: Great compromise between high performance and attractive price
- Uses the familiar FPS 1.2 software with user-friendly interface and simplified spring input (except for F4 and F6)
- Modern machine design
- PTP coiling finger for regulating initial tension (except for F4 and F6)
- At F 12: The perfect intermediate size for the economical production of compression springs up to 1.2 mm wire diameter
- At F 18: Higher output in comparison to previous model (F2) due to increased feed speed

Design Features

Machine Structure

- New and cost-optimized coiling unit with rigid 2-axes coiling device
- Optional PTP coiling finger
- No optional second shape drive as motor can be easily converted from top to bottom due to innovative machine design (F08, F12, F18, F30)
- New design of the coiling pin holder similar to the F 30 with rotatable insert for the coiling pin (F 12 and F 18)
- Cost-optimized standard equipment with 4 CNC axes
- Axes for infeed, straight cut, vertically displaceable pitch device and coiling device
- High-precision roller feed unit with two or three (F 6) pairs of feed rollers

Input of the spring geometry



- Manually adjustable cutting mandrel, optionally also available as pneumatic mandrel displacement device
- Optional mandrel displacement device
- Electronic handwheel for convenient and safe set-up of machine and spring (option)
- Straight cut (optional multi cut, except for F 30)
- Vertically displaceable pitch device (parallel displaceable pitch device available as option)
- Modular configuration as stand-alone solution or integrated in production line
- Reduced variety of options

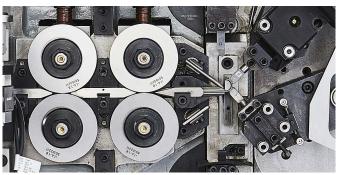
Measuring and software technology

- Optical camera measuring system for measuring and regulating the spring length and diameter (FVS)
- Sorting device

Software/Programming

- Industrial PC with color touchscreen / keyboard / mouse
- Multi-touch screen as control panel
- Handwheel (option)
- OPC UA Interface for exchanging data (Industry 4.0)

Tool room F 30



Versatile, Flexible and Profitable – WAFIOS CNC Spring Coiling Machines, Series F

Trend-Setting Machine Concept

The F series has been designed for the production of high-precision compression springs of 0.12 - 7 mm wire diameter. The Performance Machine combines high output with an attractive price. It thus constitutes an economical alternative to all established compression spring coilers.

The machines of the F series are fully-fledged, fully functional and precise production facilities, even in their standard version. The modular machine design can be adjusted depending on the requirements and production range. The F machine can be upgraded or downgraded to meet the needs of the production line. Modern, optical measuring systems for measuring the spring length and diameter and a sorting device guarantee a high quality of springs.

The F 08 succeeds the FSE 15 while the F 18 is the successor machine of the F2. The gap between the two machine sizes is closed by the F 12.

Application area: All types of compression springs and extension spring strands for e.g. the automotive industry, medical goods and technical components

Quality

Since 1893, the WAFIOS name is synonymous with outstanding quality, safety standards, and technical innovations in the German mechanical engineering industry.

Reliability

Strict quality controls, state-of-the-art production systems, and many years of experience guarantee that your investment is safe in our hands. Our global service network ensures high availability of WAFIOS machinery.

Cost efficiency

High production output and a long service life will save money and shorten the amortization time of your investment.





Product example

Sorting device



▲ User friendly WAFIOS Programming System WPS 3.2 EasyWay



Technical Data		F4	F6	F 08
Wire-Ø bei (Wm) Rm	[mm] [N/mm²]	1,5–4,0 mm at Rm 2.000 N/mm²	2,1–6,0 mm at Rm 2.000 N/mm ²	0,12–0,6 (6) mm at Rm 2.600 N/mm ²
		1,5–4,5 mm at Rm 1.800 N/mm²	2,1–7,0 mm at Rm 1.800 N/mm ²	0,6–0,8 (4) mm at Rm 2.300 N/mm ²
Spring diameter, max.:	[mm]	100 mm	130 mm	20 mm
Feed speed, max.:	[m/min]	100 m/min	100 m/min	160 m/min
Springs, max.:	[Stk/min]	280 Stk/min	160 Stk/min	1.500 Stk/min
Dimensions [mm] (lxwxh) mm (without pay-off unit)		1.900 × 1.800 × 2.350 mm	2.300 × 2.200 × 2.450 mm	900 × 1.700 × 900 mm
Weight	[kg]	ca. 3.200 kg	ca. 5.400 kg	ca. 700 kg
Technical Data		F 12	F 18	F 30
Wire-Ø bei (Wm) Rm			0,35–1,6 (4) mm	0,7–2,5 (4) mm
Rm	[mm] [N/mm²]	0,2–1,1 (4) mm at Rm 2.500 N/mm²	at Rm 2.300 N/mm ²	at Rm 2.000 N/mm ²
Rm				
Rm Spring diameter, max.:		at Rm 2.500 N/mm ²	at Rm 2.300 N/mm ² > 1,6-1,8 (4) mm	at Rm 2.000 N/mm ²
	[N/mm²]	at Rm 2.500 N/mm ² > 1,1 – 1,2 (5) mm at Rm 1800 N/mm ²	at Rm 2.300 N/mm ² > 1,6-1,8 (4) mm at Rm 1900 N/mm ²	at Rm 2.000 N/mm ² > 2,5 – 3,0 (6) mm at Rm 1800 N/mm ²
Spring diameter, max.:	[N/mm²] [mm]	at Rm 2.500 N/mm ² > 1,1 – 1,2 (5) mm at Rm 1800 N/mm ² 30 mm	at Rm 2.300 N/mm ² > 1,6 – 1,8 (4) mm at Rm 1900 N/mm ² 40 mm	at Rm 2.000 N/mm ² > 2,5 – 3,0 (6) mm at Rm 1800 N/mm ² 65 mm
Spring diameter, max.: Feed speed, max.:	[N/mm²] [mm] [m/min] [Stk/min] [mm]	at Rm 2.500 N/mm ² > 1,1 – 1,2 (5) mm at Rm 1800 N/mm ² 30 mm 160 m/min	at Rm 2.300 N/mm ² > 1,6 – 1,8 (4) mm at Rm 1900 N/mm ² 40 mm 140 m/min	at Rm 2.000 N/mm ² > 2,5 – 3,0 (6) mm at Rm 1800 N/mm ² 65 mm 135 m/min

F08 Limited operating range only with optional second pair of feed rollers (see FUL 16+ flyer)

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FUTURE FORMING TECHNOLOGY