

SF-1A

MEC 5-AXIS CNC SINGLE-POINT COILING MACHINE for Ultra-Fine Wire

For wire diameters of $\varnothing 0.016 \sim \varnothing 0.1 \text{ mm}$

**One of the world's best ultra-fine wire coiling machines,
with the ability to process wire under $\varnothing 20 \mu\text{m}$.**

High-precision coiling has been made a reality, with the operation accuracy of various adjustment mechanisms and the ability for the length measurement of the ultra-high precision sensor "MSD" to be controlled in units of 0.001 mm.



Compression
spring

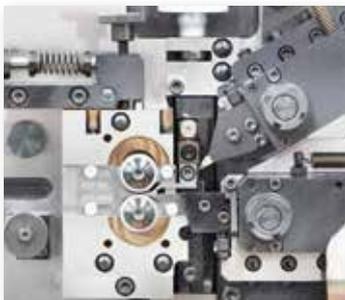


Features

- 5-axis control with an emphasis on operability for ultra-fine wire**
 - The 5-axis control is equipped with feed, cut, pitch, and outer coil diameter point functions and MSD sensors as standard features.
 - The coiling mechanism has been designed exclusively for ultra-fine wires. Consistent coil processing is achieved by shortening the feed roller diameter to $\phi 16$ mm and the wire guide length to 6 mm.
 - The standard MSD contact sensors for ultra-fine wire allow for free length measurement. This makes it possible to adjust the servo motor control in 0.001 mm increments.
 - The tool has adopted a standard structure in which the wire guide is mounted relative to the feed roller. The newly developed pitch arbor unit can be moved up, down, left, and right to adjust the arbor position in respect to the wire guide.
- Support for IOT**

The operating status of machine can be monitored through mobile phones or computers, and regular maintenance with preventive maintenance functions can contribute to improved production efficiency.
- Improved operability with the MNO2 (MEC New Operation 2) programming software**
 - The MEC original MNO2 software easily organizes important statistics about the machine, including program flow, operating status of each axis, inputs/outputs, jump, etc., as with our other spring machines.
 - The program editing function has greatly evolved, and the navigation system function and touch screen make it easier to create programs and shorten the setup time.
 - It has a built-in servo motor control sensor system, which achieves high resolution.
 - In addition to the automatic function of coil length correction based on the MSD sensor length measurement method, the multi-functional production manager system makes production easy to control.
- Options**

Computer numerical control is possible by a program by adding an initial tension servo, arbor front, and arbor rear servo units, enabling more consistent, high-quality coiling.



Coiling area
Coiling area with a 6 mm long wire guide



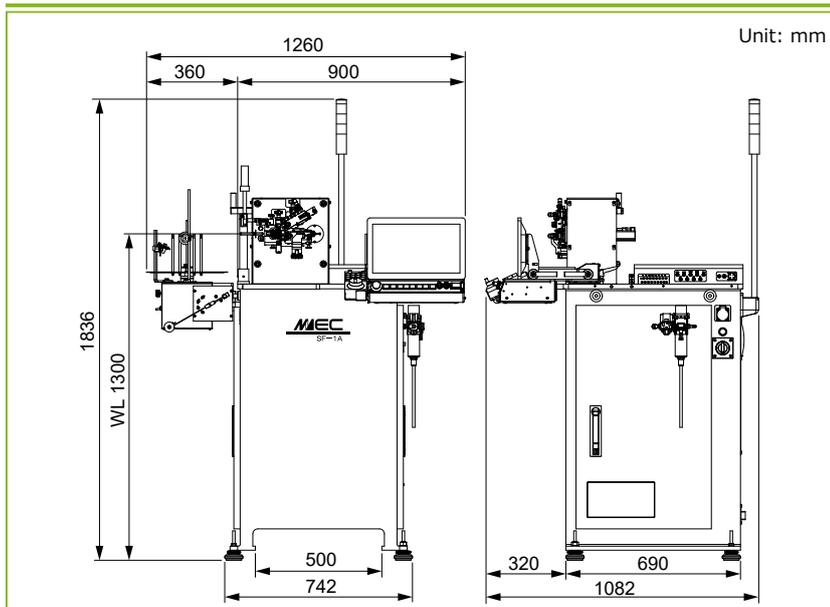
Precision spring products with SF-1A



Production control screen

This program displays line graphs, histograms, standard deviations, process capability production quantity, production speed, wire remaining amount, etc., during spring production in real time.

Specifications



Unit: mm

Machine name	SF-1A
Wire diameter	$\phi 0.016 \sim \phi 0.1$ mm
Outer coil diameter	$\phi 1.5$ mm
Feed axis*	0.0001 mm
Cut axis*	0.001°
Pitch axis*	0.0001 mm
Point axis*	0.0001 mm
Solenoid valves	4 pcs (Max 8 pcs)
Max air pressure	0.5 MPa
Power source	3-phase AC 200V, 15A
Net weight	380 kg
Control device	Windows
Software	MNO2
Display	15.6" Full HD touch screen
External memory	USB Thumb drive
Temperature	5 ~ 40°C

*Resolution: Program input unit, which does not represent accuracy.
Specifications are subject to change without notice for product improvement.

