

CLS-16II

EXTENSION SPRING MACHINE

New extension spring making machine gives High speed production up to wire diameter 1.6mm with 11-axis that enables simultaneous coiling & raising both ends for making hooks in each stage.

Advanced model of the CLS series taking over its excellent forming capability for English hooks & Double loops.

New tooling unit with 6 arms and multi-axis shortens the set-up time for German-, U- & Varied diameter hooks.

MPS (Mec Program System) provides user-friendliness, measurement and multiple production controls



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FEATURES

Controlled by standard eleven 11-axis: Feed, Point, Initial tension, Torsion, Cam, Transfer, Clamp, 1st tooling, 2nd tooling, 1st tooling slide, and 2nd tooling slide.

High speed production-Simultaneous operating system in each four stages (Coiling, Part Transfer, Hook forming, and Ejection) with transfer conveyance system.

Two sets of feed rollers reduces the load from feed pressure on wire material and enables high-speed coiling.

Easy operation for Coiling Point controlled by 3D servo. Adjustments for Initial tension and Coil diameter, Forming Varied diameter hook and U hook can be made by touch panel, not by cam adjustment. Diameter can be adjusted automatically by the coil end sensor.

Cutting tool is able to move backward automatically to escape from longer stroke stepping over it.

The stop position and Clamping time on the transfer unit are controlled by programs, which enable the transfer unit to retract when the products twirling interferes. Set-up time can be shortened while production speed is reduced by programing for lesser amount of clamps.

There is no need to re-adjust the four clamps respectively. The clamps are on the transfer slide, and only adjust right-and-left position of the transfer slide and the transfer angle.

Tooling unit raises both coil ends to form hooks at once without shifting spring to the other hand. The angle and space clearance between hook and coil are equally the same at opposite sides with high accuracy.

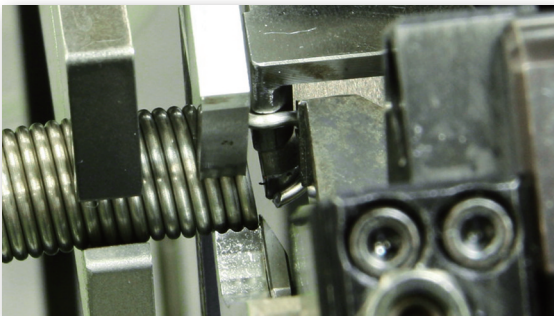
The toolings unit with 6-arm consist of three pawls, base, squeeze and hook. Regardless of outside coil diameter, the three pawls are able to grip. No need to prepare the tools to fit wire diameter or outside coil diameter for forming German hook.

Displaying all axes charts in a screen. Program flow, status of each axis, input-output and so on can be grasped at one view.

Winding angles are measured by a coil end sensor. Easy production control with automatic modification function and multifunctional screen of production control.

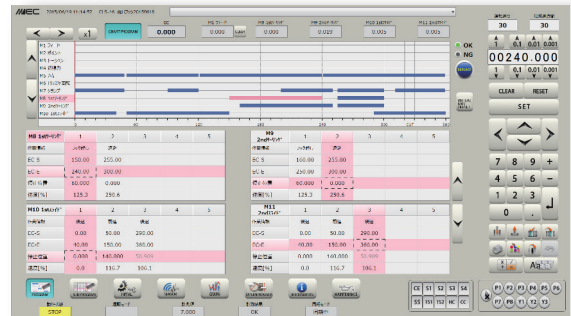
Equipping an off-bending block slide (Option) enables one side to form a longer U-hook.

Camera and Laser sensors (Options) are able to detect defective springs such as hook shaped precisely.



TOOLING UNIT

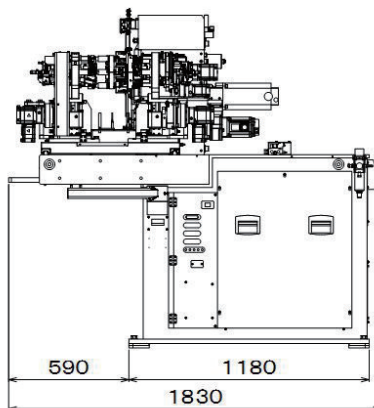
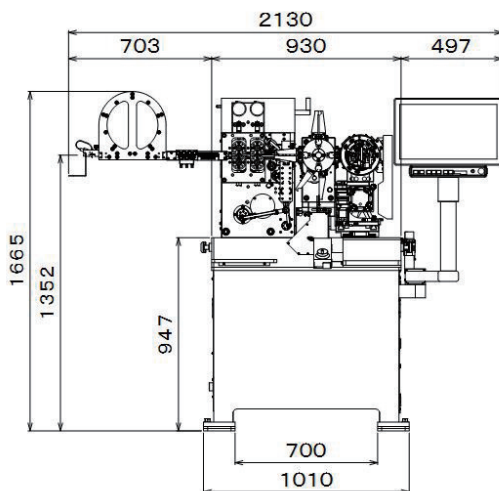
You can adjust the German hook tools respectively -3 pawls, open, hook, off pending & clamp tools.



PROGRAM DISPLAY

You can confirm you pattern program in a chart created by inputting you spring specifications. Easy correction is realized by displaying all axis in a chart.

MACHINE SPECIFICATIONS



Capacity Wire Dia.	$\phi 0.0197 \sim 0.063$ in ($\phi 0.5 \sim 1.6$ mm)
Outside Dia.	$\phi 0.7874$ in (20mm)
D/d	4 or more *
Closed Coil Length	W.D. $\times 10$ to 5.118in (140mm) *
Feed Axis	Resolution 0.00004in (0.001mm)
	Max. Speed 541.332ft (165m)/min
Point axis	Resolution 0.00004in (0.001mm)
Initial Tension Axis	Resolution 0.001 deg
Torsion Axis	Resolution 0.001 deg
Cam Axis	Resolution 0.001 deg
Transfer Axis	Resolution 0.001 deg
Clamp Axis	Resolution 0.001 deg
Tooling Axis x2	Resolution 0.001 deg
Tooling Slide Axis x2	Resolution 0.00004in (0.001mm)
Solenoid valve	8 pcs
Air Requirements	Max. 0.5 Mpa
Power Supply	3-phase AC200V, 20A
Net Weight	1,200kg
Control Device	OS Windows 7
Display	21.5" touch panel
Memory	USB memory
Ambient Temperature	0 ~ 40 °C

* Specifications are subject to be changed by wire diameter.
There are normal accessory price lists for your machine.
Specifications are subject to change without notice.