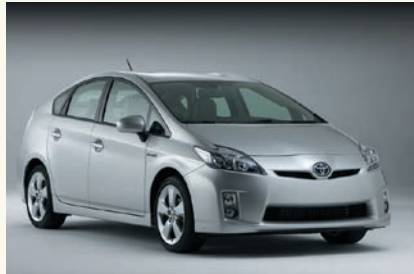
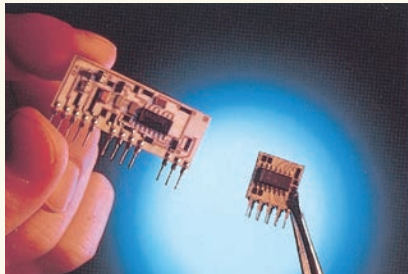




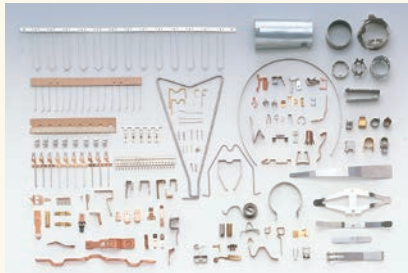
●Parts for Automotive



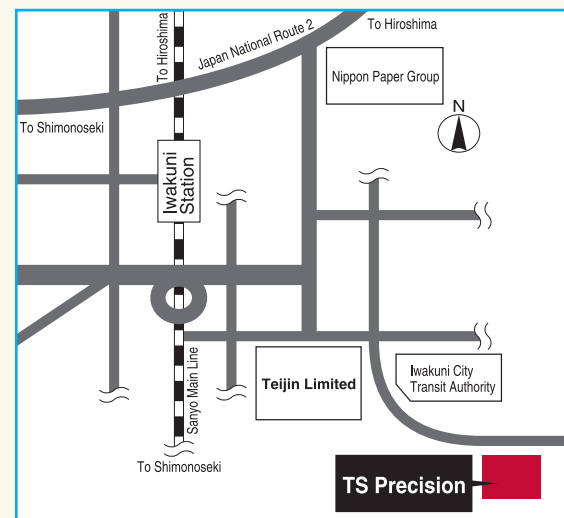
●Electrical parts



●Parts for construction, stationary and others



●Parts for medical, energy saving others



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Matuyama Office 2798-51 Minamiyoshida-machi, Matuyama, Ehime, 791-8042, Japan TEL.089-973-8314 FAX.089-972-1953

<http://www.tsprecision.co.jp/>

Notes 1 : Specifications are subject to change without notice.

Notes 2 : For your safety, be certain to read the instruction manual that comes with the equipment before operating it.

PROFORMA is a registered trademark of TS Precision Co., Ltd.

PROFORMA
FORMING MACHINE

Forming Machine "PROFORMA" makes possible efficient production.

Why we recommend Smart Forming Machine.

- *CNC machine with competitive cost-performance.
- *Fabrication of cam is unnecessary.
- *Material-waste is decreased comparing with press machine.
- *All unit's conditions are displayed on digital screen. Numerical control is possible.
- *Both strip material and wire material can be processed with same machine

- *Circumferential bending position produces exquisite finished bends that add value to finished products.
- *Common-use dies allows excellent cost-performance.
(Some dies cannot be used as common)
- *Complex bending processes are possible for many different applications.
- *Can be equipped tapping and welding unit to streamline.



SF-150-25



SF-250-35 ※Appearance without the protective cover.

Energy Saving

Certified as MF Eco Machine by Japan Forming Machinery Association.

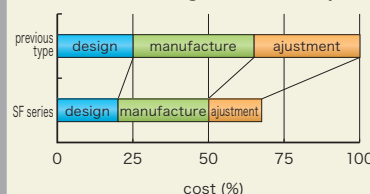
Registration
No : MF-P022

Reduced tooling cost and lead time (Example)

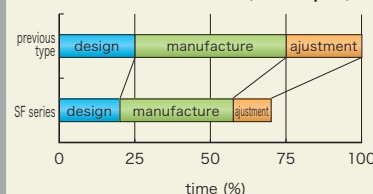
(Lower Die cost and part processing cost.)

- Cost and time to design and manufacture tooling can be reduced.
- Numerical control reduces time to adjust tooling.

Reduced tooling cost (Example)



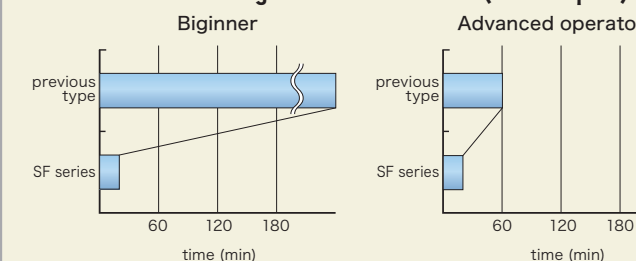
Reduced lead time (Example)



Improved repeatability (Example)

- High repeatability independent of operator's experience level can be performed.

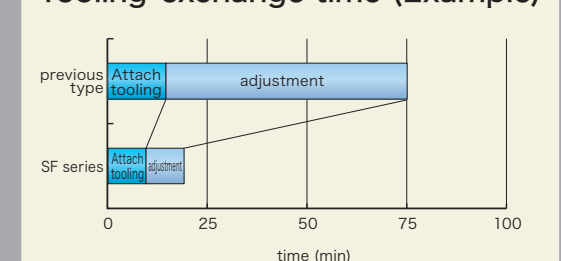
Reduced adjustment time (Example)



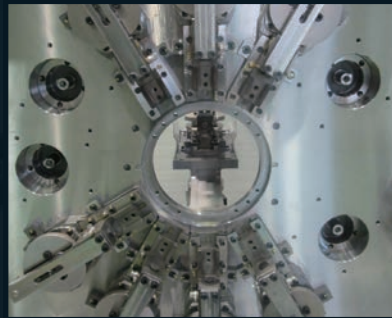
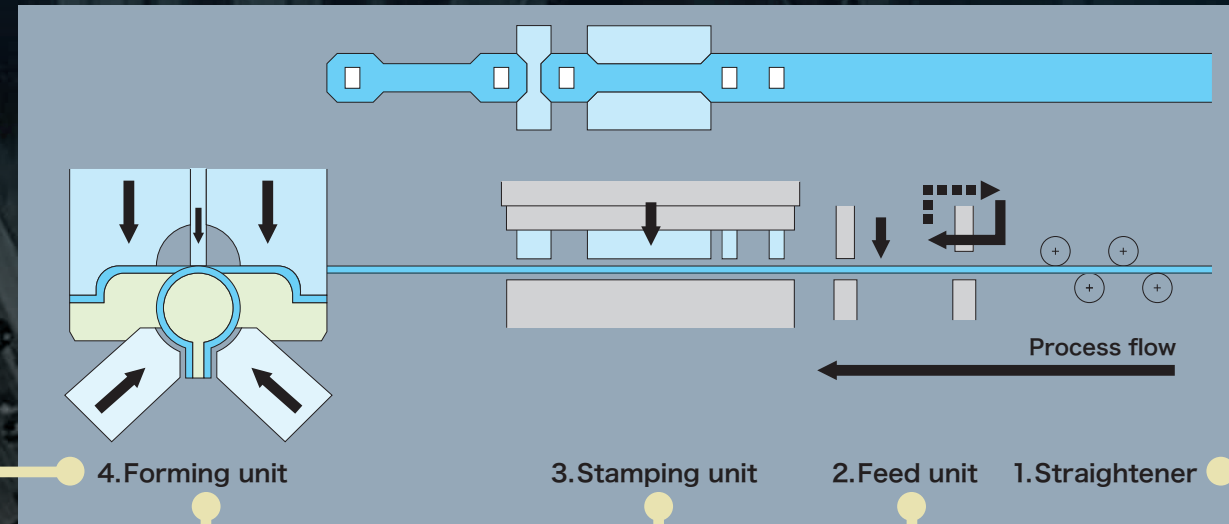
Shortened tooling-exchange time (Example)

- No need to exchange cams shorten tooling-exchange time.
- Numerical control shorten adjustment time.

Tooling-exchange time (Example)



We created a Smart Forming Machine by placing priority on ease of use.



Forming unit



Rear slide unit



Stamping unit

The programmable motion control achieves low vibration, low noise and improved die life.

- The programmable motion control produces skilfully finished bends.
- Camless operation reduces tooling costs and lead times.

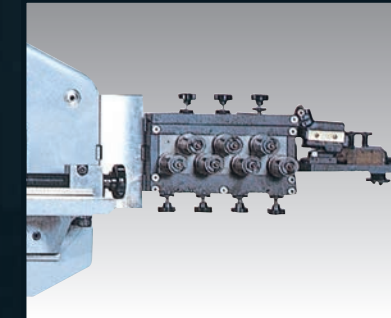
- Both "Reciprocating motion" and "Continuous rotation" are possible by changing programs.



Feed unit

Accurately sends material to the processing stage.

- The NC gripper system ensures a fast and highly precise feed.
- Can process complex products with various types of motion (such as multi-stage and reverse feed).



Straightener

Straightens coiled material for more accurate feeding.

- Options available to handle strip and wire material.



Control panel

Configure the settings of each operating unit to display various types of information such as abnormal operations.

- Easily set the operating speed of each unit.
- Equipped with an environmentally conscious energy-saving mode.
- Includes user friendly touchscreen display.
- 【Option】
Centralized management system

PROFORMA-SF series

Main specifications of SF series

Items			SF-150-25 A / B / C	SF-250-35 A / B / C
Material	Strip material (Max.)	mm	40w×1.6t	70w×1.6t
	Wire material (Max.)	mm	ø6	ø8
Feed unit	Feeding length (Max.)	mm	150	250
	Feed force	kN	0.3	0.3
	Feeding speed	m/s	0.124	0.124
	Vertical adjustment range	mm	±35	±35
	Feeding accuracy	mm	0.01	0.01
	Driving method		1axis clank(driven from top side)	1axis clank(driven from top side)
	Stamping force	kN	250	350
Stamping unit	Force generated point	mm	1.0mm above the bottom point	0.9mm above the bottom point
	Ram stroke (standard)	mm	15	18
	Die height	mm	230	335
	Ram adjustment range	mm	20	31
	Bolster vertical adjustment range	mm	Fixed	Fixed
	Bolster size	mm	420×267	590×320
	Over load detector		Spring and limit switch	Spring and limit switch
	PCD between bending slide	mm	600	1000
	Forming center height from floor level	mm	1200	1200
Forming unit	Outer diameter of disc plate	mm	236 (plus 60mm comparing with RF-60)	460 (plus 120mm comparing with RF-80)
Bending slide	Bending force	kN	A)Standard:12(Any position) B)Option:30(Near bottom point) C)Option:30(Any position)	A)Standard:14(Any position) B)Option:40(Near bottom point) C)Option:40(Any position)
	Bending stroke	mm	A)40 B)40 C)13	A)70 B)70 C)27
	Force generated point	mm	A)~40 above bottom point B)Near bottom point C)~13 above bottom point	A)~70 above bottom point B)Near bottom point C)~27 above bottom point
	Max. number of bending slide mount		7/11	7/11
Rear slide unit	Bending force	kN	A)Standard:12(Any position) B)Option:30(Near bottom point) C)Option:30(Any position)	A)Standard:14(Any position) B)Option:40(Near bottom point) C)Option:40(Any position)
	Bending stroke	mm	A)40 B)40 C)13	A)70 B)70 C)27
	Force generated point	mm	A)~40 above bottom point B)Near bottom point C)~13 above bottom point	A)~70 above bottom point B)Near bottom point C)~27 above bottom point
	Max. number of rear slide attachment		1/2	1/2
Main body	Speed	min ⁻¹	~260 (vary by part or tooling spec)	~170 (vary by part or tooling spec)
	Motor	kW	~11(CNC)	~15(CNC)
	Power consumption		200V 3P 50/60Hz	200V 3P 50/60Hz
	Power capacity	kVA	14	22
	Compressed air supply	MPa	0.4~0.6	0.4~0.6
	Machine dimensions	mm	2070L×1390W×2210H	2950L×1520W×2500H
	Machine weight (at standard)	kg	3200	6300

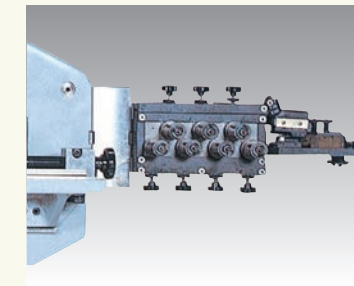
※The above specifications are for machines with seven bending slide units.

※Production rate varies depending on the machining process.

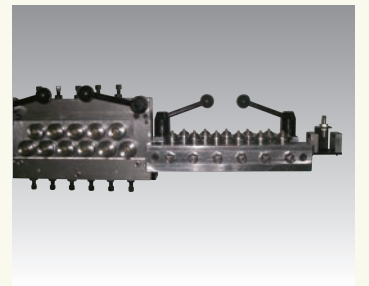
※Number and position on bending slide and number of rear slide can be chosen as option.

Straightener specifications

Applicable material	Number of rollers	Roller dimensions
13w×1.5t	13×1	φ10×12L
30w×1.5t	7×1	φ24×30L
40w×1.5t	7×1	φ26×42L
60w×1.6t	5×1	φ45×62L
80w×1.6t	5×1	φ50×82L
105w×1.6t	5×1	φ50×110L
φ1.5	11×2	φ16
φ3	7×2	φ19
φ8	11×2	φ36
φ1.0	11×2	φ10



For strip



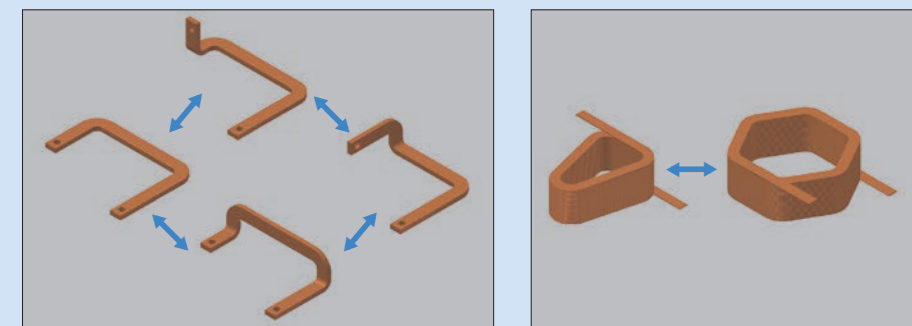
For wire

Introducing edgewise and flat wise bending

- ① The material yield is significantly improved compared with conventional methods.



- ② Changing the program makes it possible to produce multiple products.



Detailed attention to customer needs

TS Precision has well established service and engineering support system and conducts regular technical seminars for customers and provides advice regarding die design.



●Technical seminar



●Training

PROFORMA-IF series



IF-60



IF-20



IF-80

Main specifications of IF series

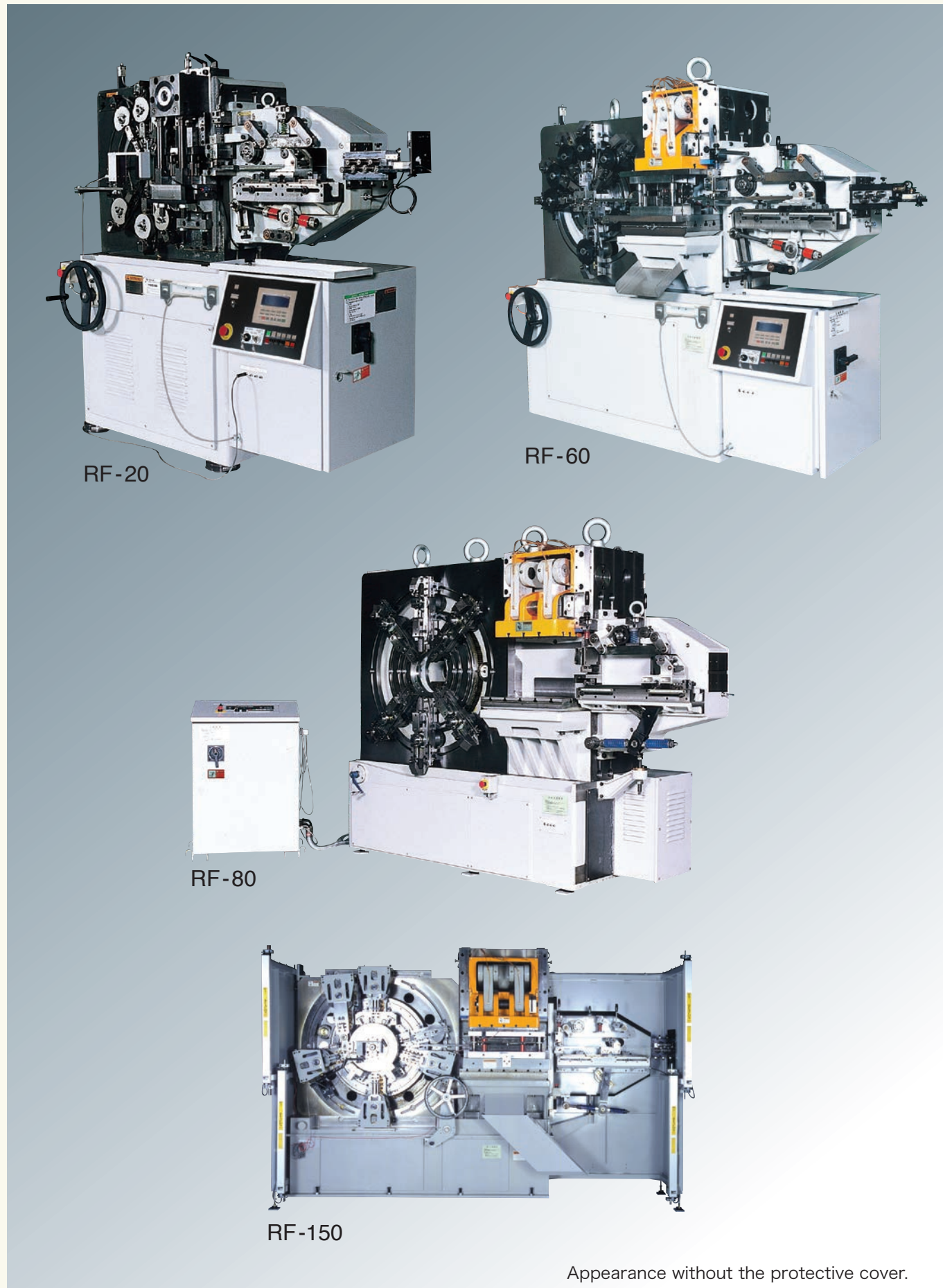
Items			IF-20	IF-60	IF-80
Material	Strip material (Max.)	mm	50w×1.6t	60w×1.6t	80w×1.6t
	Wire material (Max.)	mm	φ3	φ6	φ8
Feed unit	Feeding length (Max.)	mm	150	150	250
	Feed force	kN	0.5	0.5	0.7
	Feeding speed	m/s	0.65	0.65	0.55
	Vertical adjustment range	mm	±35	±35	±35
	Feeding accuracy	mm	0.01	0.01	0.01
Stamping unit	Stamping force	kN	80	250	350
	Ram stroke	mm	30	35	49
	Die height	mm	155	230	335.5
	Ram adjustment range	mm	20	20	31
	Bolster vertical adjustment range	mm	55	Fixed	Fixed
	Bolster size	mm	240×115	420×267	590×320
	Slide speed	m/s	0.09	0.1	0.09
Bending slide	Bending force	kN	10(20)	30	40(80)
	Bending stroke (standard)	mm	35(35)	40	70(60)
	Number of sets installable (standard/Max.)		7/9	7/11	7/11
Rear slide unit	Bending force	kN	20	30	40
	Bending stroke (standard)	mm	50	60	80
	Number of sets installable (standard/Max.)		1/2	1/2	1/2
Main body	Power consumption	V	200	200	200
	Power capacity	kVA	Approximately 13	Approximately 28	Approximately 36
	Compressed air supply	MPa	0.5	0.5	0.5
	Machine dimensions	mm	1970L×1170W×1980H	2100L×1150W×2000H	2910L×1520W×2260H
	Machine weight	kg	2200	3600	7000
	Paint color		Munsell N7	Munsell N7	Munsell N7

※The above specifications are for machines with seven bending slide units.

※Production rate varies depending on the machining process.

※Number and position on bending slide and number of rear slide can be chosen as option.

PROFORMA-RF series



Main specifications of RF series

Items			RF-20	RF-60	RF-80	RF-150
Material	Strip material (Max.)	mm	50w×1.5t	60w×1.6t	80w×1.6t	100w×2.5t
	Wire material (Max.)	mm	ø3	ø6	ø8	ø10
Feed unit	Feeding length (Max.)	mm	150	220	360	500
	Feed force	kN	0.5	0.5	0.7	0.7
	Vertical adjustment range	mm	±35	±35	±35	±70
	Feeding accuracy	mm	0.01	0.01	0.01	0.01
Stamping unit	Stamping force	kN	80	250	350	600
	Ram stroke	mm	10	15	18	30
	Die height	mm	155	230	335.5	355
	Ram adjustment range	mm	20	20	31	31
	Bolster vertical adjustment range	mm	55	Fixed	Fixed	Fixed
	Bolster size	mm	240×115	420×267	590×320	800×450
Bending slide	Bending force	kN	11 (20)	30	40 (80)	100
	Bending stroke (Max.)	mm	45	50	65	65 (MAX.90)
	Number of sets installable (Max. sets)		9	11	11	11
Rear slide unit	Bending force	kN	20	30	40	50
	Bending stroke (standard)	mm	50	60	80	125
	Number of sets installable		3	3	3	3
Main body	Power consumption	V	200	200	200	200
	Power capacity	kVA	Approximately 7	Approximately 14	Approximately 14	Approximately 22
	Power equipment	KW	3.7/4P	7.5/4P	7.5/4P	11/4P
	Compressed air supply	MPa	0.5	0.5	0.5	0.5
	Machine dimensions	mm	1510L×910W×1780H	2000L×875W×1950H	2655L×1100W×2155H	3345L×1520W×2350H
	Machine weight	kg	1400	2700	5000	11000
	Paint color		Munsell N7	Munsell N7	Munsell N7	Munsell N7
Speed		min ⁻¹	35~350	45~260	35~170	15~100

※The machine weight does not include the bending slide and die.