

Launch of Progressive Stamping Press Automation System for the EV Market

High-speed and high-precision processing realized by integrating the controls and operation screen of the press and the peripheral equipment, called the ALFAS system



SDEW-8010i3 + ALFAS-03ARZ

AMADA PRESS SYSTEM CO., LTD. (Isehara, Japan) announced today the launch of an automation system for progressive stamping press production SDEW-8010i3 + ALFAS-03ARZ. This is a new product that has been developed for the EV market for high-speed and high-precision processing.

Equipped with the newly developed “i3” control, this new system combines the SDEW-8010i3, the digital AC servo press that has a double-crank mechanism for the first time in the GORIKI Series of high-rigidity frame, with the ALFAS-03ARZ, the high-speed NC roll feeder and the new-concept up-loop straightener. This product inherits the integration of the operation screen and the control of the SDE-1515i3 and the ALFAS-03KR, which was launched in September, simplifying setup operations by operators and reducing workload. In addition, it supports productivity improvement through stable high-speed and high-precision production. Demand for this system is expected in the area of high-speed stamping presses, including battery case throttling, explosion-proof valves and lids (sealing plate), control units, bus bars related to copper terminals for batteries, and electrical components essential for EV relays.

Along with growing interest in SDGs (Sustainable Development Goals), the global EV market is rapidly becoming more active, especially through corporate responses to environmental issues. Against this backdrop, we will contribute to society by launching new products for the EV market.

By developing systems for a stamping press machine and peripherals by ourselves, we can not only maximize the performance of individual machines, but also offer package proposals to support speedy decisions on specifications. While we are planning to further expand the lineup of this ALFAS system, we will also promote selling servo stamping presses, NC roll feeders, and up-loop straightener separately to meet customer needs.

Features of the digital AC servo press SDEW-8010i3

First double-crank servo stamping press in the high-rigidity GORIKI Series

With a pressurizing capacity of 800 kN, SDEW-8010i3 is a new product in the well-received high-rigidity GORIKI Series. Since many on-vehicle electronic components of EVs are asymmetrical, it is necessary to ensure rigidity against the eccentric load in all directions during production. In order to cope with this, the 8-point bottom dead point Slide gibbing and the double-crank mechanism, which have been adopted for the first time in the GORIKI Series, provide high eccentric load resistance and support high-precision production. In addition, our proprietary high-speed pendulum motion provides stable productivity improvement.

Features of NC roll feeder and up-loop straightener ALFAS-03ARZ

1. Better productivity and quality with a faster and more precise feed

In response to demand for better productivity in the EV market, we have developed a high-speed NC roll feeder and an up-loop straightener that increase the top speed by approximately 4 times compared to our conventional roll feeders with a down-loop straightener. By adopting a backlash-less structure in which the servo motor and the feed roll are directly coupled with each other, the speed and precision of the servo motor can be directly transmitted to the feed roll. The high-speed and high-precision feed of the roll feeder and the high-speed pendulum motion of the servo press realize processing at high productivity and quality. Furthermore, taking into account copper, electrical steel, aluminium, and other materials expected to be used in the EV market, the new straightener structure facilitates roll cleaning and contributes to quality improvement.

2. Environmentally friendly new servo pilot release mechanism (Patent pending)

The releasing drive of the roll feeder has been changed from the air cylinder type to a servo pilot release mechanism using a cam. Digital pressurization has been adopted to adjust the pressure applied to the feed roll according to the specifications of the material, enabling the minimum release amount and the optimum pressurization to be set. This reduces scratches on materials and noise, improves the durability of the roll feeder, and reduces air consumption.

3. Space saving with the up-loop straightener

With the simple analog loop control and the up-loop type with the straightener placed diagonally, the loop amount between the uncoiler, the straightener, and the roll feeder has been optimized and successfully reduced. This saves about 40% more space compared to our roll feeder with down-loop straightener. In addition, the angle of the straightener and the shape of the material guide can be adjusted (Patent pending) according to the material and its specifications. This enables formation of an appropriate loop shape and achieves a stable feed.

Specifications of the system

Models	Details		
Entire system	Dimensions (W x H x D)	mm	5938 x 2903 x 1920
Stamping press machine SDEW-8010i3	Press capacity	kN	800
	Continuous no-load stroke rate	min ⁻¹	130 (100 mm stroke length)
	Number of strokes with the high-speed pendulum specifications	min ⁻¹	170 (50 mm stroke length)
			200 (30 mm stroke length)
Die height	mm	320	
NC roll feeder ALFAS-03ARZ	Sheet width	mm	50 - 300
	Sheet thickness	mm	0.2 - 1.0
	Coil mass	kg	Max 2000
	Coil outer diameter	mm	Max ø1200
	Top speed	m/sec	Max 6.0

*The information in this release is as of the launch date. Please note that the information is subject to change without notice. We would appreciate your understanding in advance.