NEWS RELEASE

December 21, 2018
AMADA HOLDINGS CO., LTD.

Launch of EML-AJ Series, Punch/Fiber Laser Combination Machine

Equipped with advanced punching and laser cutting functions
to achieve high-speed and high-quality processing with uninterrupted operation

AMADA CO., LTD. (Isehara, Japan) began marketing the EML-AJ Series in December 2018. The EML-AJ Series is a high-speed punch/fiber laser combination machine designed to perform multiple processes on a single machine for maximum production flexibility.

AMADA is the first manufacturer in the sheet metal processing industry to succeed in developing punch/laser combination machines. They are all-in-one machines capable of integrating multiple steps for processing sheet metal such as cutting, punching, forming, and tapping.

AMADA offers two series of punch/laser combination machines: the LC-C1AJ Series of compact machines, which is capable of energy-saving, low-cost process integration, and the ACIES-AJ Series, which features v-mix, v-lot production, uninterrupted operation, and high-quality punch processing. These combination machines are highly rated by customers. To compliment these technologies, AMADA has launched the EML-AJ Series combination machines capable of performing high-quality punching and laser cutting and displaying enhanced comprehensive capabilities featuring high productivity and many automated features for uninterrupted operation.

EML-AJ Series combination machines come with all of the punching functions inherent in single-function punching machines. Combined punches and dies are supplied with a Z-turret with different diameters of ø1010 mm upper and ø1200 mm lower or a high capacity

turret of ø1200mm upper and lower. These machines include the same punching force of 300 kN as AMADA's best-selling EM Series turret punch presses. The EML-AJ Series also achieves a 25% improvement in stroke frequency (number of hits per minute) compared to conventional machines, making it the fastest punch processing machine available from AMADA.

With the EML-AJ Series, AMADA has improved the quality of the laser beam with a 3kW fiber laser oscillator combining high oscillation efficiency with new optics. It employs assist gas rectifying technology for higher quality processing than conventional machines, while increasing cutting speed by a factor of three. The series also features an energy-saving operation, with power consumption reduced to one-third that of conventional machines.

The EML-AJ Series allows up to 24 hours of continuous operation by combining a wide range of optional automation solutions, such as automated Punch and Die Changer (PDC), nozzle changer, laser scrap unloading device, and a cleaning function for cutting plates. As a result, customers can build a system to meet their needs with uninterrupted operation.

AMADA delivers machine and automation solutions that achieve high quality, and high productivity, at low processing cost to meet customers' diversifying needs.

Main features of the EML-AJ Series

- Fiber laser cutting processing function

  Delivering high productivity, high quality, and low running costs

  In a fiber laser cutting process, this series can reduce the height of dross (residual melt attached to a cut edge) by approximately 50% and improve the surface roughness of a cut edge by 1.3 times[*1], as well as achieve three times faster cutting[*2], while reducing power consumption to one-third of conventional machines.

  When the punching and laser cutting process are performed simultaneously, the EML-AJ Series is twice as productive with a 50% cut[*2] in running costs compared to conventional machines.

  *1 In the case of SPCC (Cold strip steel sheet) of t3.2 mm

  *2 In the case of SECC (Electric galvanized steel sheet) of t2.3 mm

- Punching function

  Improved stroke frequency when punching small diameter holes

  When punching small diameter holes (ø31.7 mm or less), the EML-AJ Series can improve the stroke frequency by 25% compared to conventional machines by optimizing the control method of the servo motor drive allowing high-speed punching and a

significant improvement in productivity.

Improved productivity with an advanced automatic tool changer

Models equipped with an automatic Punch and Die Changer (PDC) have undergone an evolution to allow automatic replacement of tools in the processes of loading materials while laser cutting allowing high actual operation rates and further improvements in productivity. In addition, the model supports AMADA's original ID tooling and can manage individual tools. As a result, the tool life can be monitored to improve the quality of punch processing and prevent setup errors that can occur when manually changing tools.

Specifications of machine

<table>
<tr><td colspan="2" rowspan="2">Model name</td><td colspan="2">Standard model</td><td colspan="2">Model with PDC</td></tr>
<tr><td>EML-2512AJ</td><td>EML-2515AJ</td><td>EML-2512 AJ-PDC</td><td>EML-2515 AJ-PDC</td></tr>
<tr><td rowspan="2">Travel method</td><td>Punching</td><td colspan="4">X/Y-axis material travel</td></tr>
<tr><td>Laser cutting</td><td colspan="4">X-axis material travel/Y-axis laser head travel</td></tr>
<tr><td colspan="2">Punching force kN</td><td colspan="4">300</td></tr>
<tr><td rowspan="3">Processing range</td><td>Punch X x YP mm</td><td rowspan="3">2550 x 1270</td><td>3050 x 1525</td><td rowspan="3">2550 x 1270</td><td>3050 x 1525</td></tr>
<tr><td>Laser X x YL mm</td><td rowspan="2">3050 x 1525 (with regrip)</td><td rowspan="2">3050 x 1525 (with regrip)</td></tr>
<tr><td>Combination X x Y mm</td></tr>
<tr><td>Rapid feed rate</td><td>X/YP/YL/Z m/min</td><td colspan="4">100/80/100/80</td></tr>
<tr><td colspan="2">Processing accuracy mm</td><td colspan="4">±0.07 (According to AMADA's punching pattern)</td></tr>
<tr><td colspan="2">Max. workpiece thickness mm</td><td colspan="4">6 (punch/laser)</td></tr>
<tr><td colspan="2">Max. workpiece mass kg</td><td>75 (F1)/ 150 (F4)</td><td>75 (F1)/ 150 (F4)/ 220 (FA+F4)</td><td>75 (F1)/ 150 (F4)</td><td>75 (F1)/ 150 (F4)/ 220 (FA+F4)</td></tr>
<tr><td colspan="2">Machine mass kg</td><td>23000</td><td>24000</td><td>26000</td><td>27000</td></tr>
<tr><td colspan="2">Power requirements (including chiller and dust collector) kVA</td><td colspan="2">57</td><td colspan="2">65</td></tr>
</table>

Note: The information is subject to change without notice.