

MARKER

The magazine for the sheet metal processing industry

Autumn 2020





"It's your SOLUTION": AMADA presents product highlights



Integrated intelligence: The new AMADA REGIUS-3015AJ



Individually automated: AMADA FLW-3000ENSIS

Dear readers,

We have all experienced an unprecedented global lockdown in the COVID-19 pandemic since the beginning of the year. The Corona crisis has farreaching consequences for the economy and for our society. Many are experiencing a difficult time and look forward to an uncertain future. Based on AMADA's corporate philosophy of "Growing together with our customers", we are working intensively to offer creative and innovative solutions in this situation as well, in order to successfully overcome the crisis together with you. An important key to this certainly lies in automation. Aspects like flexibility, remote connectivity and environmental protection are also important. With this in mind, I would like to invite you to take a look at the new products in this issue, see for yourself their innovative power and see how they can help you to meet the challenges of the future successfully. COVID-19 unfortunately also makes the coming together of many people currently only possible subject to special precautionary measures. Due to the postponement of the EuroBLECH 2020, AMADA will present our innovations to you in our own event program which starts in November and will last for several weeks. Take advantage of this opportunity to get to know the innovations and to talk to our experts. To get you in the mood, I wish you interesting reading while browsing through this issue.

Eiichi Yagi, President AMADA GmbH



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Events in the fall

"It's your SOLUTION"

Following the postponement of EuroBLECH 2020, the world's largest trade fair for the sheet metal processing industry, AMADA has come up with a program of events lasting several weeks and designed to help its customers benefit from personalized information.

he latest manufacturing solutions, which feature a range of machine and technological highlights and were originally scheduled to be launched at EuroBLECH, will now be presented by AMADA to its customers at Haan between 2nd November and 11th December. Under the motto "It's your SOLUTION," the AMADA Solution Center is due to host a comprehensive, varied program consisting of numerous virtual presentations and on-site events. In this way, all the participants can consult with their contact persons in the AMADA sales department to put together their own individual information packs.

At all events involving personal contact, the number of participants will be limited to ensure that there is sufficient space for the necessary distances to be maintained. Naturally, the provisions of all the coronavirus regulations applicable at the time of the event will be adhered to in order to ensure the safest possible environment for everyone attending.

"We will offer the participating companies the opportunity to exploit the restrictions resulting from the Covid-19 crisis in a beneficial way by providing them with new, personalized information channels," comments Ronald Schildt, Sales Manager at AMADA GmbH. "As

usual, we aim to provide an in-depth insight into AMADA's latest developments and highly competitive manufacturing solutions just as businesses are used to seeing at our trade fair booths, for example at EuroBLECH." Whether virtually, on-site or as a combination of the two - the participants can determine the mix themselves and will receive the information in exactly the way they want it. You can find more information on AMADA's "It's your SOLUTION" program of events at www.amada.de.

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New branch in Reutlingen

Outstanding customer proximity

To make it easier for customers in southwest Germany to get to know AMADA's technologies, AMADA will be opening a new branch for machine demonstrations in Reutlingen as of October 2020.

ersonal consulting services have always been of the greatest importance to AMADA. And what better way is there of getting to know new machine solutions than discussions conducted directly at the system itself? Because, as always, virtual media only partially replicate the immediacy of real-life experience. The joint viewing and demonstration provides an opportunity to explain the challenges faced in practice and to indicate potential solutions. That is why, as of October 2020, AMADA will be opening a new branch for machine demonstrations. The presentations and demonstrations at the Reutlingen site are intended for customers in southwest Germany.

Experiencing AMADA live

Thanks to this new facility, it will be even easier for the region's many

sheet metal processing companies to gain access to AMADA's solutions. The building, located at Reutlingen's Lembergstrasse 13, has a surface area of 570 square meters, some 260 of which are planned as a demonstration hall reserved exclusively for the installation of presentation machines. Here, the application engineers will present a range of machines for various applications - always focusing on the customers' specific needs and practical demands. The range covers every area - from laser cutting through stamping and on to press brake technology. In this way, it is possible to demonstrate solutions and bring them to life as part of an individual experience for visitors to this easyto-access site. In addition to the demonstration hall, the branch also provides space for conference and office rooms as well as a small cater-





Looking forward to welcoming customers from southwest Germany: Klaus Beck, David Gal, Ronald Schildt, Jan Rauf, Eiichi Yagi (from left to right).

ing area. Anyone wishing to make a visit should get in touch with their AMADA contact person to arrange an appointment. •

Branch in Reutlingen Lembergstrasse 13 72766 Reutlingen www.amada.de



The new AMADA REGIUS-3015AJ

Intelligent features and functions that are integrated in the AMADA REGIUS-3015AJ ensure that this laser cutting system performs permanent self-monitoring and automatically adapts all the plant and process parameters to the needs of the current cutting operation. This allows it to achieve maximum productivity and economic efficiency – while simultaneously simplifying operation and boosting availability.

The new AMADA REGIUS-3015AJ is the most recent development in the AMADA line of laser cutting systems and opens up completely new dimensions in terms of productivity, quality and machine availability. The new system is characterized by its integrated intelligence in the form of many new automatically acting features and functions. Thanks to these automated capabilities, the new AMADA REGIUS-3015AJ is able to monitor both its



Axel Willuhn, Product Manager for Punching and Laser Technology, Amada GmbH

own operation and the cutting process and adjust machine and process parameters autonomously. This gives the system an exceptionally high level of manufacturing efficiency. "The REGIUS-3015AJ is the most productive laser system that AMADA has ever produced," stresses Axel Willuhn, Product Manager for Punching and Laser Technology at AMADA. "Its performances at the levels of speed, precision, cutting quality and reliability are unique, as is the availability of the system."

Intelligent automation

The outstandingly high performance of the AMADA REGIUS-3015AJ is the result of a wide range of innovative functionalities. These include the improved 3-axis linear drive with even faster acceleration and deceler-

ation capabilities. This increases the overall speed of the current cutting process. It also features the original AMADA laser beam regulation mechanism in the form of the proven variable beam control. This ensures that the fiber laser achieves perfect cutting results with both thick and thin materials. This cutting quality has now been further enhanced with the new i-Process Monitoring solution. i-Process Monitoring monitors the beam and cutting conditions and ensures that these parameters are optimally configured. It is complemented by another new development, the i-Optics Sensor. This monitoring mechanism detects dirt, burn-in or other sources of interference on the protective glass of the cutting optics - and does so far more precisely than was possible in the past by means of the visual inspec-



tions of the optical protective glass that had to be performed by the operator. The new i-Nozzle Checker also has a contribution to make here. It uses an integrated camera to monitor the beam nozzle for potential accumulations of particles or damage and is also able to center the midpoint of the nozzle automatically and monitor the beam parameters. This excludes possible impairments during productive operation, in particular during long unstaffed cycles or when the machine is running with low personnel levels. And if the cutting head does ever collide with the cutting material then the head automatically takes evasive action, before then being automatically centered and checked. In this way, the cutting process can be resumed with minimum delay. In the event of possible cutting errors, this capability is ensured by the system's self-diagnosis function.

and the i-Nozzle Checker.

Simplified operation

The i-Process Monitoring, the i-Optics Sensor and the i-Nozzle Checker are new, intelligent functions and are

part of the Laser Integration System, which also greatly simplifies the operation of the system. This is because much of what used to depend on the operator's knowledge and experience when using conventional laser cutting systems is now done by the AMADA REGIUS-3015AJ itself. As a result, it is particularly easy to launch new jobs because the system performs self-checks of all the necessary factors and automatically adjusts itself accordingly. The i-Camera Assisted System in the AMADA REGIUS-3015AJ further simplifies operation. It has the task of automatically measuring the position of the metal sheet in the machine, including automatic origin point adjustment. In addition to this, it also detects and records residual sheet values after processing. At the controller's touchscreen interface the operator can then drag and drop further parts into the remainder of the sheet depending on the space available. This ensures optimum material utilization, thereby cutting costs and further increasing the efficiency of the system. Another highlight is the V-Remote function. With this, authorized users

can not only call up the current production status but, for example, can include additional parts jobs in the production sequence from almost any location. These networking capabilities and adaptability boost the efficiency and performance of the entire sheet metal processing operation even further – especially if the system is also equipped with AMADA's automation modules for automatic loading and unloading as well as for the automatic sorting of parts.

and records residual sheet values.

Objective manufacturing criteria

All in all, the new AMADA REGIUS-3015AJ with its integrated, intelligent features and functions makes laser cutting even faster, better and simpler. Operators can rely on the system's objective self-monitoring functions which are consequently also self-optimizing, thus minimizing the risks of errors and waste and increasing the availability of the system. The new AMADA REGIUS-3015AJ will be available as of the start of 2021.





The AMADA TK-4020L unloading and sorting system permits secure, error-free handling, in particular in the case of large sheet metal parts.

AMADA ENSIS-4020AJ with loading and unloading system

Automation on the large scale

With the new AMADA ENSIS-4020AJ, AMADA is supplying a laser cutting system that has been specially configured for 4×2-meter metal sheets machining – and which combines with the AMADA AS LUL II-4020 storage system and the AMADA TK-4020L unloading and sorting system to form a fully automated manufacturing solution.

he AMADA ENSIS-4020AJ is the latest addition to AMADA's family of ENSIS laser cutting systems. Here again, AMADA's variable beam control solution allows the fiber laser to adapt automatically to the type and thickness of the material that is being machined and to cut normal steel, stainless steel as well as aluminum, copper, brass or titanium without difficulty at thicknesses of between 0.8 and 25 mm. What is new, however, is the fact that the machine is configured to work with max. format, 4×2-meter metal sheets, thereby now providing a total sheet area of 8 square meters. AMADA also offers an end-to-end automation solution for handling sheet metal parts of this size in the form of the AMADA AS LUL II-4020 automatic storage system and the AMADA TK-4020L unloading and sorting system. "This is a compact, space-sav-

ing automation system which covers all the necessary operating steps," explains Rolf Somnitz, Product Manager Automation at AMADA. "The solution can achieve a 90-percent automation level and permits unstaffed or low-personnel production at a uniformly high and absolutely error-free manufacturing quality."

Extended capacity

The AMADA AS LUL II-4020 automatic storage system is the second, fully redesigned generation of the proven AMADA AS LUL storage tower. It automatically takes up the pallet with the sheets for machining and transports it to the loading station. Here, the sheets are separated, subjected to a thickness check and then placed on a cutting pallet which travels into the AMADA ENSIS-4020AJ. The new AMADA

AS LUL II-4020 has been designed in a way that then permits it to unload autonomously again – thanks to its own unloading unit and a total of three unloading pallets which are available as standard. The AMADA TK-4020L unloading and sorting system provides even more capacity. This removes the parts individually from the cutting pallet and places them down in their preprogrammed locations. A total of ten europallets are available for this.

Reliable and economical

All in all, AMADA is able to equip the new ENSIS-4020AI with an end-toend automation solution that permits outstanding, error-free reliability and precision specifically for the handling and machining of large-format sheets. In addition to the increased production efficiency, all users also benefit from outstanding economy due to the reduced personnel requirements made possible by the precisely calculable loading and unloading cycles, as well as from greater reliability during their cost planning. The entire solution is now available as standard from AMADA. •





Rolf Somnitz, Product Manager for Automation, AMADA GmbH



Automated bending

A new dimension in efficiency

With the AMADA HG-ARs press brake in the new compact five-meter layout and the new AMADA ABS-R bending automation solution for HFE M2 and HFE3i press brakes, AMADA is making bending even more productive and efficient – irrespective of part size.

With a robot, automatic tool changer (ATC) and gripper station, the AMADA HG-ARs press brake is ideal for the processing of small and mid-sized parts – and with the new five-meter layout, which will be available as of the end of 2020, it provides many other decisive production advantages. Thus, the robot's five-meter-long linear axis makes the unit particularly compact, requiring approximately 26 percent less floor space than a conventional AMADA HG-ARs bending cell. In

Tankred Kandera, Product Manager for Bending Technology, AMADA GmbH

addition, in the new model, the two loading pallets are now split. As a result, it is now possible to keep not two but four different parts ready for operation, thus increasing loading capacity and also the number of production passes by 50 percent Another highlight: As part of the introduction phase, it will also be possible to use the optimized bending software AMADA VPSS 3i ARBEND in the future. This performs the fully automatic calculation of the bending sequence and also selects the tools required for it. This not only relieves the programmer of these tasks but the software also runs much faster.

Flexible configuration

The new AMADA ABS-R system also ensures an enormous increase in efficiency and performance. It is a

can be retrofitted to manual AMADA press brakes of type AMADA HFE M2 and HFE3i to convert them into fully automatic, autonomous bending cells - together with all the advantages that go with this: "The AMADA ABS-R bending automation solution reduces personnel requirements, increases production capacity, and ensures high-precision, error-free machining in absolutely unvarying quality," stresses Tankred Kandera, Product Manager for Bending Technology at AMADA GmbH. "The ABS-R bending cell is a flexibly configurable system whose layout can be individually adapted to meet any production requirements." It is therefore possible to choose between three different 6-axis robots with loading capacities of between 50 and 200 kg. The robot travels along a ground track which can be up to 24 meters in length. This exploits the entire length of the machine and keeps the loading and unloading capabilities flexible. It can also be used with an automatic loading system which considerably increases loading capacities compared to a closed cell. The system, which can be switched between robot and manual operation at the control cabinet, is rounded off by a reference table, reclamping station and optional customer-specific equipment, as well as by a safety barrier of up to three meters in height.

bending automation solution which



Inside the AMADA FLW-ENSIS welding cell: The stationary 6-axis robot and the 2-station changeover table integrated in the wall of the booth.

AMADA FLW-3000ENSIS

Individually automated

The AMADA FLW-3000ENSIS fiber laser welding cell technology stands for unique high-end welding with flexible automation capabilities. The three model variants – M2, M3 and M5 – offer individual capabilities.

rrespective of which model variant the user chooses: All of them offer the same unique welding technology of the AMADA FLW system. "One highlight takes the form of the ENSIS variable beam control which permits the exceptionally precise adaptation of the energy penetration from the fiber laser. The laser mode and the resulting energy distribution can be optimally adapted for the material and the current job at all times," explains Jörn Lota, Product Specialist for FLW Laser Welding at AMADA. "The innovative laser-weaving technology, for example for bridging even large gap sizes, the automatic focus adjustment that is integrated in the welding head, the camera-controlled Teach-Assist system as well as a range of nozzle types round off the AMADA FLW system. Thanks to the AMADA ENSIS technology, problems such as deformed parts, gap bridging, parts and position tolerances and the time and cost-intensive subsequent finishing processes are reduced to an absolute minimum." And there are

other benefits: Using the AMADA ENSIS technology, it is, in principle, possible to machine all weldable metals and all AMADA ENSIS fiber laser welding cells are equipped with T2 safety booths which also permit low personnel levels during production.

For all sizes

Thanks to the three model variants the M2, M3 and M5 - the AMADA ENSIS technology can be combined to create individually automated manufacturing solutions. Thus, in addition to a stationary 6-axis robot and turning and tilting table, the M2 variant also possesses an integrated 2-station changeover table which is integrated into the wall of the booth. By offering short cycle times and rapid access, this makes the compact AMADA FLW-3000ENSIS M2 ideal for the processing of simpler and smaller parts geometries. The M3 model variant also possesses a turning and tilting table. By contrast, the 6-axis robot travels on

a 3000-mm-long linear axis. This ensures outstanding flexibility, in particular when machining more complex mid-sized and larger parts geometries. The linear axis is optionally available in the lengths 1500 and 4000 mm and the turning and tilting table can be freely positioned in the booth.

Minimized cycle time

Maximized automation is provided by the M5 model variant with its 6-axis robot mounted on a 4000-mm linear axis, as well as two turning and tilting tables which travel in accordance with the changeover table system. This guarantees minimized changeover times. The AMADA FLW-3000ENSIS M5 shows its full performance capability in the case of more complex parts geometries requiring relatively long setup times. •



Jörn Lota, Product Specialist for FLW Laser Welding, AMADA GmbH

New software solutions

Extended system skills

With the further developed VPSS 3i ARBEND software and the new AMADA Order Manager, AMADA has added some innovative system components to its portfolio of software solutions. These integrate sheet metal processing even more closely into the customer's IT architecture, while also providing greater simplicity, flexibility and reliability.

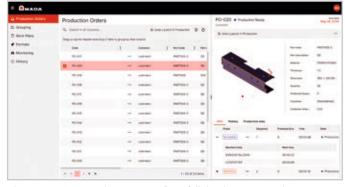
he new AMADA VPSS 3i ARBEND bending software has been designed for the AMADA HG-ARs and EG-AR bending cells and makes the programming of their bending and robot operations even simpler and more productive than before. The solution, which will be available as of the middle of next year, is fully integrated in the AMADA VPSS 3i concept and, for the first time, now also undertakes the fully automatic computation of the bending sequence and selects the tools required to perform it. "The degree of automation has now reached such a level of sophistication that any user can obtain a production-ready bending program using the software," explains Lukas Pollok, Software Application Engineer at AMADA GmbH. "Programming is extremely productive and permits considerable time savings in practice because the robot's motion sequences are shortened and are therefore also optimized." Messages regarding conflicts in the calculated bending program are also minimized. This is because, for example, if the setup length exceeds the length of the press beam then the automatic tool changer (ATC) now creates suitable tool setups and groupings by itself so that the bending operation

can be completed without conflicts.

New end-to-end control

Another newly developed software highlight takes the form of AMADA Order Manager (AOM). This now acts as the link between the customer's ERP system and the AMADA VPSS 3i software and permits integrated, automatic, real-time data transfer coupled with system feedback. To this end, AOM supports three standard interfaces, namely in the form of a shared database, Web API and data exchange using CSV

and XML formats. AOM, which will be available as of 2021, will be provided as Software-as-a-Service (SaaS) via the Cloud. In practice, this new end-to-end control – from the issuing of the production order through to manufacturing at the machine and feedback to the ERP system – makes manufacturing even more flexible as well as easier to monitor and plan, in particular when used in combination with the AMADA My V-factory, with which all customers can monitor every aspect of the entire production environment in real time from their desktop or at a smart terminal device. To permit this, My V-factory depicts all the current machine states as well as the running and completed programs. In addition, My V-factory also provides precise information about runtimes and setup times. This makes it possible to take action to counter bottlenecks and downtimes even before they arise.



The new AMADA Order Manager (AOM) links the customer's ERP system to the AMADA VPSS 3i software.



The new bending software AMADA VPSS 3i ARBEND calculates the bending sequence fully automatically and also selects the required tool.



Lukas Pollok, Application Engineer responsible for software, AMADA GmbH

Marker | Herbst 2019

osthaus & beckert GmbH, Schwanewede near Bremen

Three modules to boost capacity

With the AMADA VENTIS-3015AJ, the AMADA MP FLEXit loading and unloading system and the AMADA CS II compact storage system, osthaus & beckert GmbH in Schwanewede has successfully completed the changeover to automated laser-cutting technology. The company makes full use of the capabilities of the manufacturing solution and has consequently been able to boost its competitiveness by an unexpected amount.

he transport truck automatically travels on its ground rail at the AMADA CS II rack system as far as the required location, takes the pallet loaded with a 4-mm-thick stainless steel sheet from it and transports it to the AMADA MP FLEXit loading and unloading system. This transfers the sheet to the cutting table of the AMADA VENTIS-3015AJ and the fiber laser then immediately starts the extremely fast, high-precision cutting process. Just a few minutes later, the finished parts and scrap are returned to the AMADA MP FLEXit, which passes them to the truck for transport back to the rack storage. When it gets there, a new metal sheet is already waiting at the next location for transfer to the cutting system and the process is repeated fully automat-

Cutting as core competence

This production solution has only been in operation at osthaus & beckert GmbH in Schwanewede near Bremen, Germany, since the end of August. The company, which was founded in 1994, uses it to manufacture ready-to-use parts and modules for the mechanical engineering, ship



Mathias Raulf. Sales Executive Northern Area at Amada GmbH



and yacht building, automotive, construction and aviation industries. The company acts as a developer and full-range supplier to these sectors and the portfolio of services it offers is correspondingly large, ranging from engineering through welding, cutting as well as sawing, forming, chip removal and joining and on to surface marking and assembly work. The cutting of steel, stainless steel and aluminum as well as of copper and titanium is of central importance for the company's activities. "The company was originally set up to offer the high-quality, precision cutting of a wide range of metals and this is still one of our core competences today," explains Christian Osthaus, who runs the company together with Andreas Beckert.

Convinced by the technology

In the past, the company has relied on a water-jet cutting system and two AMADA CO2 LC-F1 NT lasers to cut metal components out of a total of 460 different material types and

thicknesses. "The AMADA CO2 laser in particular always provides perfect results - clean, smooth and without a fiber laser wouldn't be able to However, all that changed overnight when AMADA launched the AMADA VENTIS-3015AJ with variable beam control, which ensures smooth, highspeed, high-quality cutting without ment of the laser beam. "We saw the beam control at the last EuroBLECH was for us," recounts Andreas Beckert. "We were convinced by the new cutting quality and, of course, by the same time, it was clear to us that we automation."

Massive synergy effects

osthaus & beckert GmbH achieved this automation by introducing the

new production solution was the right decision: Christian Osthaus (left) and Andreas

> burr. For a long time, we believed that match that," reports Andreas Beckert. burr thanks to the side-to-side move-AMADA VENTIS-3015AJ with variable trade fair and immediately decided it particularly high cutting speed. At the could only exploit the full potential of this system by introducing additional



AMADA MP FLEXit-3015 and the AMADA CS II rack storage system. The storage system keeps all the raw materials close at hand in 136 storage locations with a payload of 3 tonnes each and can transfer the contents of the required location to the AMADA MP FLEXit or the laser cutting system extremely quickly a capability that is of crucial importance given the frequent changes in the parts manufactured by the company. "Another vital factor was the ability to manage partially used sheets at the rack system and, of course, to handle the temporary storage of all the manufactured parts," emphasizes Mathias Raulf, Sales Executive at AMADA. osthaus & beckert GmbH is now able to use the entire potential of the rack system since the system's software is closely integrated with the company's own ERP system. Since it was

introduced in the company 16 years ago, this has been gradually extended and now manages all production jobs, including the production sequence, sheet metal requirements and stock management. The two Managing Directors agree: "The synergy effects are truly massive, quite apart from the increased speed of cutting itself. Order management and material handling are organized in such a way that the laser cutting system can run by itself practically non-stop around the clock." At osthaus & beckert GmbH, approximately 80 percent of all parts are now cut using the new AMADA VENTIS-3015AJ.

Impressive competitive position

In combination with the outstandingly high cutting speed of the

AMADA VENTIS-3015AJ, this has resulted in a considerable increase in capacity in the parts manufacturing shop. It enables the company to manufacture existing products far more economically as well as to take part in sales platforms that now allow it to be active at supra-regional level and thus gain access to completely new customers. As a result, the assessment of the new manufacturing solution is also extremely positive. Christian Osthaus and Andreas Beckert are convinced: "With the combination of the new laser cutting system, the rack storage system and the loading and unloading unit, there is no doubt that we made the right decision. The way these solutions have worked together to increase our competitiveness is truly impressive and has exceeded our expectations."

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