

FORMING THE FUTURE



CROSSBAR ROBOT 4.0
CONNECT FOR SUCCESS!



reddot award 2015
winner

SCHULER 

Member of the ANDRITZ GROUP

CROSSBAR ROBOT 4.0. MORE ENERGY EFFICIENT, LIGHTER, MORE DYNAMIC: THE NEW GENERATION OF PRESS AUTOMATION.

ENORMOUS MOVEMENT RADIUS: PRESS SPACING FROM 4.5 TO 10 METERS.

Direct part transport. The Crossbar Robot 4.0 operates on the basis of its six standard axes, supplemented by a movement axis and a swivel axis. This means it can transport parts from one station to the next within a press line, with a high degree of movement flexibility. It removes up to four parts from the die simultaneously, repositions them if necessary and places them direct into the next die without an idle station.

SETTING A NEW STANDARD IN SPEED: UP TO 15 PARTS PER MINUTE.

A boost for press lines. The Crossbar Robot 4.0 offers an outstanding output rate of up to 15 parts per minute. A modified movement drive with two motors and a new ratio deliver a genuine speed boost. This means the Crossbar Robot is ideally suited to automating mechanical, hydraulic and servo presslines as well as for retrofitting to existing machines.

HIGHLIGHTS

- 20% more energy efficient due to innovative energy management
 - 50% weight reduction of the robot including the hand axis from about 2,800 to 1,400 kg
 - 50% more dynamic, due amongst other things to modified movement drive with two motors for high speed
 - Simply programmable with new robot controller
 - Lighter, faster, higher performance
 - Individual customer tooling interface
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Eight-axes Crossbar Robot 4.0.

INNOVATIVE ENERGY MANAGEMENT FOR 20 PERCENT GREATER ENERGY EFFICIENCY.

Higher performance, lower energy consumption.

Thanks to central energy management, the bottom line is significantly more positive – with an increase in energy efficiency by 20 percent. This gain is achieved by recuperating the kinetic energy during the braking procedure. This means it is once again available in the process.

50 percent lighter. In the Crossbar Robot 4.0, the weight has been reduced by half compared to the previous model, representing a reduction from about 2,800 to 1,400 kilograms. The hand axis, which is the robot's arm, is much lighter. All in all, this suite of optimizations amounts to a gain in speed, efficiency and performance: The Crossbar Robot 4.0 has become 50 percent more dynamic. The maximum payload including tooling remains 90 kilograms.

FREE ACCESS TO THE PRESS SPACE BECAUSE OF THE SUSPENDED ARRANGEMENT.

Excellently suited to all press lines. The horizontal movement of the Crossbar Robot 4.0 is performed along a track. As a result, it can easily span even large distances between the presses such as those that are still commonly encountered in older lines, in order to provide space for an unloading station. This is no longer required because the Crossbar Robot 4.0 can change the orientation of the parts if required during transport. In addition, it also significantly increases the output rate.

Another advantage of the suspended arrangement is that the press space remains freely accessible, and there is more space for maintenance work in the gap between the presses. Programming is simple and clear using the new robot controller.

SUSTAINABLE FORMING SOLUTIONS

With the aid of Schuler ECOFORM, we can improve the energy requirements of sub-assemblies, system solutions, forming processes and methods. ECOFORM offers you: a press shop energy analysis, the use of energy-efficient components, innovative system solutions, intelligent control solutions and practice-oriented consulting. Schuler ECOFORM is a pioneering program that achieves a perfect combination of innovation, sustainability and economic efficiency.



SUSTAINABLE
FORMING SOLUTIONS

FEATURES AND TECHNICAL DATA. THE CROSSBAR ROBOT 4.0 DRIVES PRESS LINES TO A NEW PERFORMANCE LEVEL.

COMBINATION OF TRIED-AND-TESTED ROBOT TECHNOLOGY WITH INTELLIGENCE FROM SCHULER.

The advantages:

- Direct parts transport from die to die
- Press spacings from 4.5 to 10 meters, no idle station
- Flexible parts orientation from die to die
- No turning of components from die to die
- User-programmable change in parts orientation
- Full tooling compatibility with Crossbar Feeder
- Complete solution including destacker and end-of-line
- Can be used as destacker and unloader
- Single, double and four-fold parts production possible
- Suitable for steel and aluminum
- One set of tooling per opening
- Rapid automatic tooling change
- Ease of maintenance due to free access to the gap between the presses



Crossbar Robot 4.0 with innovative process data interface.

TECHNICAL DATA

Output rate with press [strokes/min]	15
Payload (part and tooling) [kg]	90
Number of axes	8
Installation position	ceiling
Transfer principle	linear
Press spacing [mm]	4,500 – 10,000
Dynamic stroke inside die [mm]	850
Part orientation in flow direction [mm]	± 150
Part orientation across flow direction [mm]	± 250
Turning horizontally [degrees]	± 10
Swiveling in flow direction [degrees]	± 25
Swiveling across flow direction [degrees]	± 25

Model variants:

- **Crossbar Robot 4.0** – the Industry 4.0 prepared new generation of press automation
- **Crossbar Robot 4.0 S** – with additional shift-axis for using Crossbar Feeder toolings
- **Crossbar Robot 4.0 H** – with additional equipment for use in the Hot Forming production

INTELLIGENCE INCLUDED. DECISIVE GAIN IN PROCESS SECURITY BY INDUSTRY 4.0 STANDARD.

SEAMLESS PROCESS COMMUNICATION: ON THE WAY TO THE INTELLIGENT FACTORY.

Connection to Industry 4.0. The process data interface means the new Crossbar Robot 4.0 is already optimally prepared for the Industry 4.0 age. Components such as personalization, networking and resource efficiency will play an even more important role; intelligent system components that actively intervene in controlling the production process are central features. The Crossbar Robot 4.0 dovetails with this scenario, thereby optimally linking press lines to the future. Its intelligent networking also makes it an analytical tool that monitors the process and reports back if faults arise. As a result, it contributes decisively to safeguarding a high and consistent level of productivity.

ANALYSIS FUNCTIONS INTEGRATED INTO THE PROCESS: IMMEDIATE FEEDBACK IN CASE OF FAULTS.

Quality and process safeguarding. The Crossbar Robot 4.0 has significant monitoring and diagnostic functions. These include the two integrated double blank monitoring sensors, the vacuum pumps with I/O link as well as the vacuum injectors with monitoring. They make sure the process is highly reliable.

In this way, the tooling is checked out and tested during a change. This is followed by a diagnosis of the vacuum cups in case of wear or restricted functional capability. Complaints or faults are reported immediately, which means that production failures can be avoided. This dialog-type process monitoring not only provides for quick changeovers in a reliable process, but also for quality that can be relied on.

INTELLIGENT NETWORKING FOR MAXIMUM PROCESS RELIABILITY

- Vacuum pumps with I/O link for generating vacuum
 - Two pneumatic valves for additional movements with monitoring
 - Manual and automatic tooling coupling
 - Two integrated double blank monitoring sensors
 - All media lines to the gripper interface
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AUTOMATION TECHCENTER GEMMINGEN. EXPERIENCE INNOVATION LIVE – THE NEW CROSSBAR ROBOT 4.0.



Automation TechCenter at Schuler plant location in Gemmingen.



Red Dot product design award for the Crossbar Robot 4.0.

TECHNOLOGY PRESENTATION AT A NEW LEVEL: IN THE INNOVATIVE SCHULER TECHCENTER.

The new TechCenters from Schuler are inviting you to experience cutting-edge technology directly on the spot, and to get to know new developments under individual requirements, with their own tools. This is the location where customers can exchange experience directly with Schuler's specialists through dialog in a spirit of partnership, making it possible to gain a direct, personal impression of all the benefits offered by Schuler's innovations.

RED DOT PRODUCT DESIGN AWARD 2015 FOR THE CROSSBAR ROBOT 4.0: STATEMENT BY THE JURY.

"The smooth surfaces of the industrial robot appear immaculate and fluid. The bright white communicates clear workflows."

Source: Red Dot Design Yearbook 2015/2016



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SCHULER SERVICE.

STATE-OF-THE-ART SERVICE FOR MORE PERFORMANCE.

Schuler Service offers a tailored portfolio of services covering the entire life cycle of your equipment.

Over 900 service employees worldwide provide expert support 24/7 in close cooperation with you – our partners. Our main priority is always to ensure the maximum productivity and safety of your production equipment in order to secure your company's continued success.

With over 175 years of experience and expertise, we can guarantee the best possible support for the operation of your machines – and not only those supplied by Schuler, but by all other manufacturers. Whatever the situation, Schuler Service has the right solution for your specific needs.



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ABOUT THE SCHULER GROUP – WWW.SCHULERGROUP.COM

Schuler offers customized first-rate technology in all areas of forming – from the networked press to press shop planning. In addition to press, our product includes automation and software solutions, dies, process know-how and service for the entire metalworking industry. Our customers include automotive manufacturers and suppliers, as well as companies in the forging, household appliance and electronics industries. Presses from the Schuler Group mint coins for more than 180 countries. When it comes to the digital transformation of the forming technology, we support our customers worldwide as a supplier of innovative system solutions. Founded in 1839 with headquarters in Göppingen, Germany, Schuler AG has about 6,600 employees at production sites in Europe, China and America, as well as service companies in more than 40 countries. The company is majority-owned by the Austrian ANDRITZ Group.

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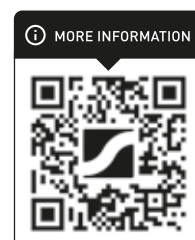
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