

# Press release

Application MNR Montagebau Neptun Rostock

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MNR gains competitive advantage thanks to PowerSpeed 6 by SHW Werkzeugmaschinen



## Productivity is head work

**(Rostock/Aalen) With a PowerSpeed 6 by SHW Werkzeugmaschinen, Montagebau-Neptun Rostock (MNR) has become an unparalleled contract manufacturer in the Baltic Sea region. Thanks to the new manufacturing possibilities on the machining centre, with SHW TightBlock and automatic universal milling head in orthogonal design, MNR is in an even better position to meet the demand for ever larger parts. This is appreciated by their demanding customers, including those from the shipbuilding and offshore wind energy industries.**

"Our wharfage, part of the former Neptunwerft, makes it possible for us to ship large assemblies. The new SHW machine means that we can now manufacture them even more quickly and flexibly", stresses Heiko Pagels, one of the two Managing Directors of Montagebau-Neptun Rostock GmbH (MNR). The large-sized parts

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manufacturer, whose customers build cruise ships and offshore wind turbines, among others, has steadily enhanced its manufacturing capacities in the Baltic Sea region since 2002. The new processing centre by SHW Werkzeugmaschinen continues the systematic development towards the flexible manufacture of large-sized parts in small batches. "Our customers have clearly expressed the desire that we continue to manufacture the increasingly larger-sized parts and assemblies in-house", Frank Godewols, also a Managing Director of the contract manufacturer, explains one of the reasons for the acquisition. Located in the halls of the legendary Neptunwerft, which were built in 1906, MNR is a reliable partner to its customers. The Neptunwerft, which now belongs to the Mayer Werft in Papenburg, is now located in Warnemünde. As a major customer of MNR, it places a significant amount of orders for assemblies which pose particular challenges.

### **Modern TightBlock concept compensates for difference in height**

As the processing of large-sized parts is required on an almost daily basis, MNR has selected a travel extension of the basic unit from X = 3,000 mm to 5,000 mm for the PowerSpeed 6 by SHW Werkzeugmaschinen. "Depending on customer requirements, our PowerSpeed 6 can be configured up to 8,000 mm travel with the SHW TightBlock and full housing. Without the TightBlock, it is even possible to have travel up to 30,000 mm", Christian Hühn, Managing Director of SHW Werkzeugmaschinen GmbH, describes the possibilities. The machine is installed on a prepared base plate at floor level. This is one of the features of the large SHW travelling column machine: It can be installed on grade without the need to pour a stepped foundation. "A base plate is sufficient to achieve stable results. The displacement circle, which can be individually designed, means that we can offer customers with very bulky workpieces a completely enclosed machine with a freely configurable workspace", explains Martin Rathgeb, Technical Director at SHW Werkzeugmaschinen.

The innovative TightBlock construction by the machine manufacturer located in Aalen ensures that height differences between machine and clamping surface(s) at floor-level installation are compensated. The TightBlock is a composite construction with high mass for optimum damping, which also allows an individual fixator arrangement that is adapted to the respective table units that have been installed. A welded steel construction filled with polymer concrete in front of the machine ensures maximum rigidity. The TightBlock accommodates the round table with extended 2,000 mm diameter selected by MNR, as well as a pallet tensioning station

with connection to an optional 2-position pallet changer."With the cutting edge TightBlock concept for on grade installation and the legendary automatic universal milling head in orthogonal design, the PowerSpeed 6 embodies state-of-the-art technology with robust construction for reliable and consistent results," confirms Hühn.

### **Full housing for large travel distances and dimensions**

Another feature of the PowerSpeed 6 is the possibility to completely enclose the machine at floor-level installation and with such large travel distances, as well as its fully configurable workspace. "This is unique in the world", according to Rathgeb. Users appreciate this full housing in particular due to its large dimensions, as it provides them with a closed processing centre for the manufacture of large-sized parts with a Y-axis travel of up to 3,100 mm. The back is closed by a strip door along its entire length. Tool changes take place through an opening in the left side wall. A podium is placed at the front entrance to the work area of the TightBlock, which facilitates access and improves visibility into the work area. Non-slip treads made of bulb plate or indentations which are embossed facing outwards, provide a load capacity up to 250 kg per square meter. The feet are adjustable and compensate for any unevenness of the floor.

### **Orthogonal milling head now with five years warranty**

For over 50 years, the compact and powerful automatic universal milling head in an orthogonal design has remained the core element of the SHW machines. With the articulated milling head, more than 64,800 calculated positions of the workpiece can be approached quickly and with exact precision, as a result of the 180° rotation range of the A-axis and 360° of the C-axis. Thanks to a robust serration, the entire power can be applied to the workpiece. The variant with variable axes and automatic head change system makes processing even more flexible. The compact head pivots automatically to any desired position. Pagels is very appreciative "This creates precisely the flexibility we need for our batch sizes, which are often very small at between one and five parts." To enlarge the NC-dimension of the A-axis to the spindle from 230 mm to 400 mm, Pagels has ordered the long milling spindle version for the automatic universal milling head. SHW Werkzeugmaschinen has recently started to offer five years warranty on its orthogonal head.

An interesting feature for MNR is that the processing centre can also be used as a vertical turning and boring mill. "This is important for our manufacture of large flanges for the offshore wind industry," stresses Pagels. This is possible because great dynamics and speeds up to 8,000 min<sup>-1</sup> can be achieved with the PowerSpeed 6. For further, greater flexibility, MNR has selected the extension of the

magazine from 48 to 120 tools for the tool changer. At each change, the spindle head is blown out to protect against contamination.

### **MNR takes advantage of the flexibility of the turning milling center**

Montagebau-Neptun Rostock uses the new flexibility it has gained from the PowerSpeed 6 by SHW Werkzeugmaschinen for its production of large-sized parts and assemblies for shipbuilding, machine construction, the petrochemical industry and the offshore wind energy sector. The variety of products is as large as that of its customers. This leads to the manufacture of parts and assemblies such as large sun roofs for river cruise ships, pipe modules for large satellite systems, as well as seafastening steel constructions for offshore wind turbines. "Processing these parts in one setup on the SHW machine is of tremendous assistance to us", stresses Pagels in conclusion. The reason is that the handling of the parts required for multiple setups always involves great effort, despite the availability of large hall cranes. This should now be limited as far as possible to the loading of finished parts at the company's own quay wall.

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### **((Company Info SHW Werkzeugmaschinen GmbH))**

#### **A young company with an ancient tradition**

SHW Werkzeugmaschinen GmbH is one of the world's leading manufacturers of machine tools for the machining of large-sized parts. The machining centres with their large travel distances are used for production of parts, which must have a high degree of precision in spite of their huge size, for machinery, mould and plant construction, turbine and tool manufacture, or for the aircraft industry. What started as a young and innovative company in Aalen-Wasseralfingen in 1999, can actually look back on a tradition in industrial technology which dates back to 1365. Consistent growth and a commitment to the Swabian location, with some 200 highly qualified and quality-conscious employees, have recently led to an annual turnover of around 63 million Euro. A presence in 45 countries ensures customer proximity worldwide.

### **((Company details Montagebau Neptun Rostock))**

#### **Steel construction at a traditional site**

Established in 2002, Montagebau-Neptun Rostock GmbH manufactures large-size steel parts up to a weight of 20 t per workpiece. These include, for example, the manufacturing of towers and masts for shipyards, as well as steel construction for general machine manufacturing. The company has the manufacturer's qualification for the welding of steel structures in accordance with DIN 18800-7:2002-09 class E (comprehensive qualification record). Furthermore, MNR specialises in the manufacture of primary and secondary steel structures for the offshore industry, with BW/FW process testing for KV-40°C. MNR is located in the former Neptune shipyard buildings and has its own offshore quay.

## Image directory SHW WM, application MNR

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Image no. 17-01 SHW\_MNR-Windkraftdorn.jpg  
The variety of products is as large as that of the MNR customers.

Image source: © MNR



Image no. 17-02 SHW\_MNR-PS6.jpg  
Montagebau-Neptun Rostock uses the new flexibility it has gained from the PowerSpeed 6 by SHW Werkzeugmaschinen for its production of large-sized parts and assemblies for shipbuilding, machine construction, the petrochemical industry and the offshore wind energy sector.

Image source: © Jan Walford



Image no. 17-03 SHW\_MNR-Ring.jpg

Frank Godewols: "Our customers want us to continue to manufacture the increasingly larger-sized parts and assemblies in-house."



Image no. 17-04 SHW\_MNR-Zugänglichkeit.jpg

A podium is placed at the front entrance to the work area of the TightBlock, which facilitates access and improves visibility into the work area.

Image source: © Jan Walford



Image no. 17-05 SHW\_MNR-Einblick.jpg  
 With the new processing centre by SHW Werkzeugmaschinen, MNR continues its systematic development towards the flexible manufacture of large-sized parts in small batches.

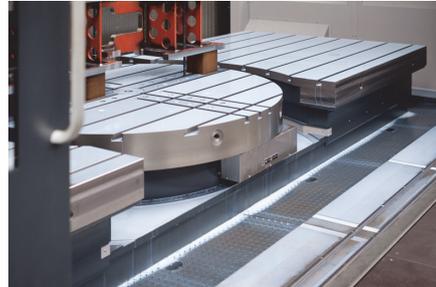


Image no. 17-06 SHW\_MNR-Rundtisch.jpg  
 The TightBlock accommodates the round table as well as a pallet tensioning station with connection to an optional 2-position pallet changer

Image source: © Jan Walford



Image no. 17-07 SHW\_MNR-Podest.jpg  
 The innovative TightBlock construction by SHW WM ensures that height differences between machine and clamping surface(s) at floor-level installation are compensated for.

Image source: © Jan Walford



Image no. 17-08 SHW\_MNR-Wzg-Wechsler.jpg  
 Tool changing system for up to 120 tools.

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Image no. 17-09 SHW\_MNR-Roste.jpg  
 The PowerSpeed 6 can be installed on grade without the need to pour a stepped foundation.

Image source: © Jan Walford



Image no. 17-10 SHW\_MNR-Hinten.jpg  
 The back is closed by a strip door along its entire length.

Image source: © Jan Walford



Image no. 17-11 SHW\_MNR-Arbeitsraum.jpg

Users appreciate this full housing in particular due to its large dimensions, as it provides them with a closed processing centre for the manufacture of large-sized parts.



Image no. 17-12 SHW\_MNR-Halle.jpg

Located in the halls of the legendary Neptunwerft, which were built in 1906, MNR is a reliable partner to its customers.