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# Fully automated setting and sharpening of knife rings



Setting and Sharpening Robot PZSE

**PALLMANN**

# THE ROBOT: Highest precision - Constant flake quality and reduced production costs.

## Area of Application

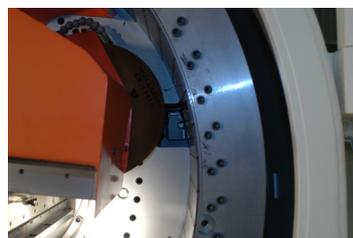
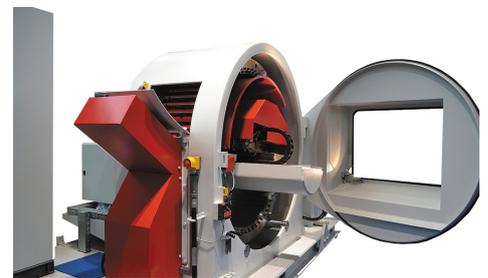
The knife ring flakers are one of the key components in wood preparation systems for the particleboard industry. The knives have to be sharpened and adjusted at regular intervals. This can be a very time-consuming and personnel-intensive job. The quality and precision strongly depends on the accuracy and dedication of the individual worker.

With the setting and sharpening robot PZSE the knives can automatically be set and sharpened. Therefore, the total time and labor costs required to complete this operation are reduced. The highest precision of knife setting results in a constant and high flake quality.

## Design and Method of Operation

The clean knife ring with dull knives is placed inside the robot. The individually predetermined knife protrusion value is entered into the computer. Afterwards the fully automatic process starts. Electronically controlled torque wrenches loosen the knife clamping bolts and pushers move the dull knife forward against stops. Then the knife clamping bolts are tightened again with the required torque. The knife ring rotates to the next knife carrier position. This procedure repeats until all knives have been set. The automatic sharpening program starts.

The precise inner face of the knife ring is the reference for an accurate knife protrusion. The unique feature of the PZSE is to automatically detect uneven wear and grind the wear shoes.



## Decisive Advantages

- › Automatic sharpening and setting process
- › Operator only required for handling of the ring
- › Setting of the knives with high accuracy
- › Constant and high flake quality
- › Electronic control and monitoring of tightening torque of the knife fixing bolts
- › Integrated diagnostic maintenance program thanks to PLC-control
- › Unique re-grinding process for wear shoes for maximum utilization of the knife ring's service life

PZSE

12-450

14-450

15-500

16-600

Cycle time for setting and sharpening  
(without handling)

45 - 90 min. / ring  
(depending on the number and condition of knives)

# Knife ring cleaning cabin PZW - Essential component for operation of the Robot.



## Area of Application

For an effective cleaning of slightly and badly soiled knife rings, before changing of the knife packets or use in the setting and sharpening robot PZSE.

## Design and Method of Operation

After the flaking operation, the knife ring is lifted into the washing cabin. The drive shafts rotate the knife ring, which is cleaned by an oscillating lance from the outside. Two high-pressure nozzles swing into position to clean the inside surface of the knife ring. A high pressure water-based cleaner is used.



### Decisive Advantages

- › Automatic cleaning process
- › Operator only required for handling of the ring
- › Effective preparation of the ring for the setting and sharpening robot PZSE
- › Minimal space requirement
- › Easier exchange of the knife packages
- › Process that results in accurate and equal knife protrusion, longer lifetime of the knife ring and constant flake quality

PZW	14-450	15-500	16-600
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Cycle time for ring washing (without handling)

approx. 6 - 12 min. / ring (depending on condition of knife ring)



#### **System solutions for:**

- Flake production
- Fiber production
- Recycling of waste wood
- Annual plants preparation
- Thermal usage

#### **Engineering and Service:**

- Design and Manufacturing
- Research and development
- Control Systems
- Process monitoring
- Spare and wear parts for size reduction machines in PALLMANN quality
- Installation, commissioning, start - up
- Maintenance and repair service
- Operator training
- Technological training
- Retrofit and modernisation
- Warehouse stocking programs and logistic concepts



**Any questions?  
We've got answers**

Pallmann is the leading manufacturer of size reduction machinery for the wood products industry. Pallmann designs, manufactures and supplies tailor-made, individual or complete solutions for the processing of raw material for MDF, OSB and particleboard plants. At its headquarters in Zweibrücken, PALLMANN company operates the world's largest research and development center for size reduction technology as well as a training and service center. Numerous machines are available for the preparation of various raw materials including subsequent laboratory analysis on individual scale. Our global presence is ensured by our sales network for machinery as well as spare parts and after-sales service.

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