

Mill diaphragms



**CHRISTIAN
PFEIFFER**

Diaphragms from the process expert

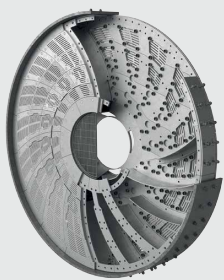
Since 1925, the name Christian Pfeiffer has stood for high-quality grinding plants. As an expert for the development and manufacture of reliable system components, we know about the potential of the ball mill internals.

That is why we design the diaphragms according to the physical and process constraints of your mill.

Our Diaphragms are a symbol of innovation, require very low maintenance, and are considered by many as the most sophisticated solution for modern grinding plants. The efficiency of a ball mill can be significantly influenced by the quality of the Diaphragms. This is because the Diaphragm regulates the level of ground material and promotes heat dispersion inside the chambers. The innovative design results in savings due to lower energy requirement of the grinding circuit.



Our Diaphragms



Intermediate Diaphragm

Separation of material and air flow.

Ensures optimum size reduction in the first grinding chamber. Dead zones behind the Diaphragm are eliminated and reduction of pressure drop for improved air flow across the mill.



Discharge Diaphragm

Individual adaptation to the ball mill

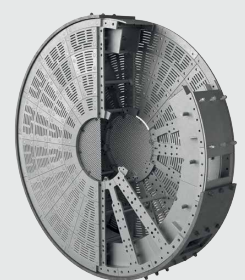
Allows the crushed grinding material to pass through and retains the grinding balls in the grinding chamber. Fixed to the mill head or on the mill shell.



Open lifter Diaphragm

For mills with integrated drying chamber

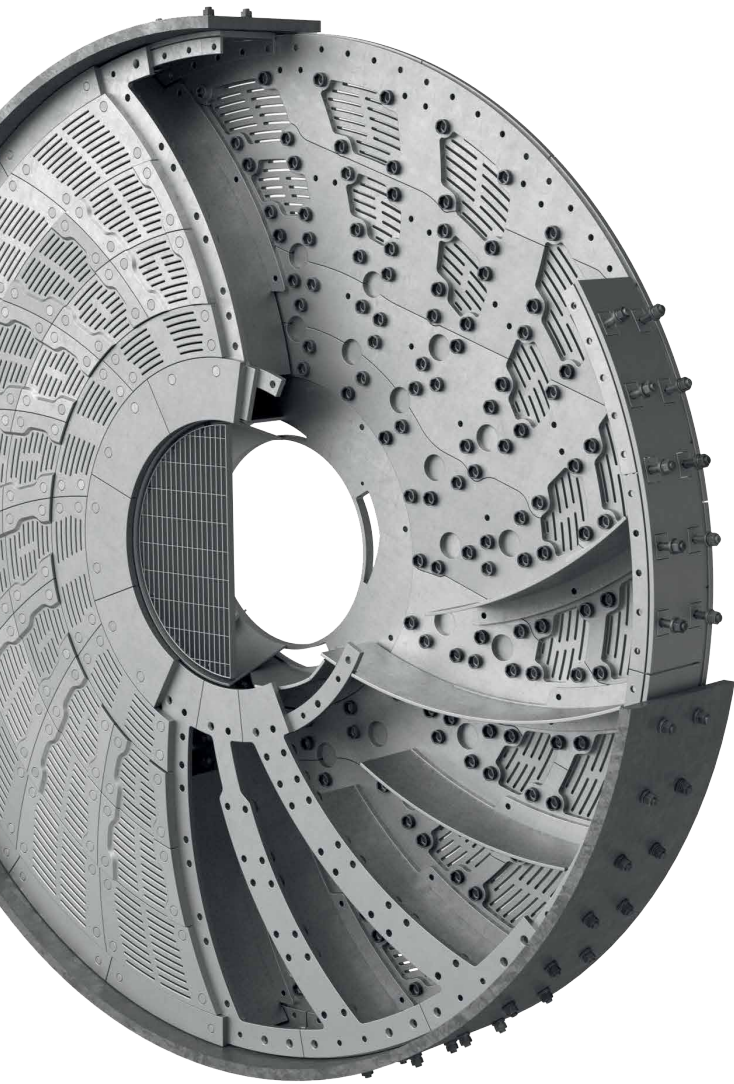
Easily withstands hot gases of up to 400°C present in the drying chamber.



Double outlet Diaphragm

For mills with central discharge

Optimum grinding material level in the grinding chambers due to special retention rings inside the Diaphragm.



Unique worldwide and unsurpassed stability

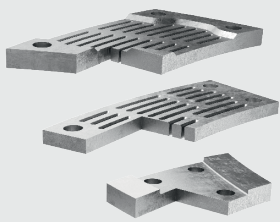
Diaphragms from Christian Pfeiffer are manufactured in the proprietary MONOBLOC® design resulting in long service life. Compared to Diaphragms of conventional segmental construction which can fail faster.

MONOBLOC® structure

This innovative design with U-ring for axial fixation to the mill tube, provides unsurpassed stability. The fastening supports the mill cylinder and counteracts deformation.

Enlarged air passage

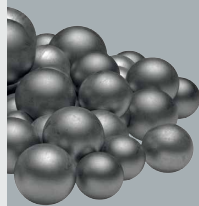
The enlarged air passage surface of the diaphragm is accompanied without loss of stability and ensures better cooling of the material to be ground, more efficient material transfer and shorter retention times without the risk of overgrinding. The pressure loss is reduced by 40% compared to conventional diaphragms.



Slotted plates and backside plates

Optimum material and air transfer

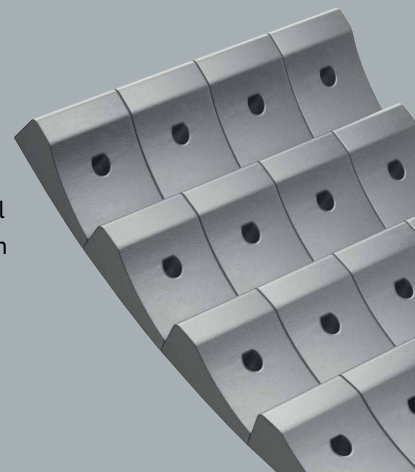
Hardened rolled steel, slots with self-cleaning effect; long service life up to a residual thickness of 8-10 mm.



Even more efficiency through mill internals

The condition of the ball charge and the mill shell lining also have a decisive influence on the energy efficiency of the grinding plant.

Talk to us! Together we will find the best technical solution for your mill.



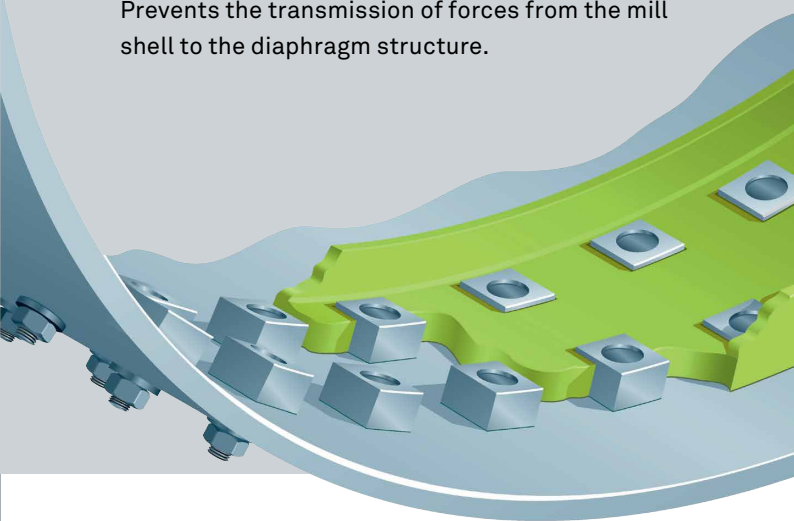


Efficient plate design

The special shape of slots allows only the the passage of fine ground material. The innovative fastening system with conical bolts ensures precise plate seating as well as efficient use of the plate up to a residual thickness of 8 - 10 mm.

Floating connection

Prevents the transmission of forces from the mill shell to the diaphragm structure.



Hardened rolled steel

Diaphragms from Christian Pfeiffer are equipped with plates made of hardened rolled steel, which have considerable advantages over plates made of cast material. Christian Pfeiffer steel with a typical hardness of 60 HRC ensures a long service life.

Breakage resistance

Plate breakages in slotted and backside plates cause considerable repair costs and downtime during plant operation. By using hardened rolled steel plates instead of cast plates, the risk is almost eliminated. Even with 8 - 10mm residual plate thickness.

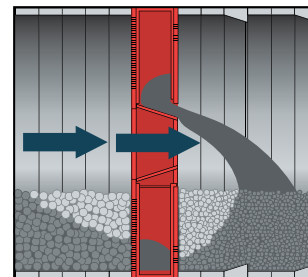
Plates with such a low residual thickness require special fastening. For this purpose, we have developed conical tear-off bolts. Together, they achieve a significantly higher degree of utilization of the plates without the risk of plate breakage.

Conventional vs. Christian Pfeiffer

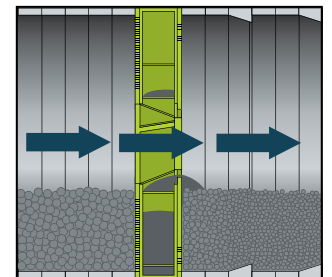
There is a common problem with conventional diaphragms: they guide much of the material uncontrolled through the air stream into the second grinding chamber. Energy loss and higher wear are the result. Large areas in both chambers remain without ground material.

Our innovative solution: A stepless, directly accessible and individually adjustable slide ring ensures a constant grinding bed in the first chamber. In the second chamber, the material falls directly into the ball charge through separate openings below the air flow along the diaphragm.

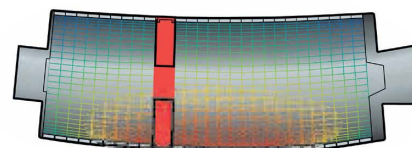
Instead of transferring stress from the mill shell to the intermediate diaphragm, the MONOBLOC® design, with floating fixation, provides a stabilizing effect.



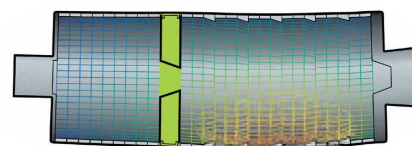
Conventional design



Christian Pfeiffer design with separate air and material flow



Conventional diaphragms



Christian Pfeiffer MONOBLOC®

Less energy required,
more **EFFICIENCY**:

The installation of a
state-of-the-art

Diaphragm can increase
the efficiency of the
ball mill enormously.

Get to know how fast your
investment pays back!

USE THE **ROI CALCULATOR**
FOR CHRISTIAN PFEIFFER
DIAPHRAGMS

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More than just grinding and separation:

EFFICIENT PROCESSES

We understand, analyze and optimize the entire grinding process. Thanks to this expertise, Christian Pfeiffer has been one of the technology leaders in the grinding industry for nearly a century.

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