

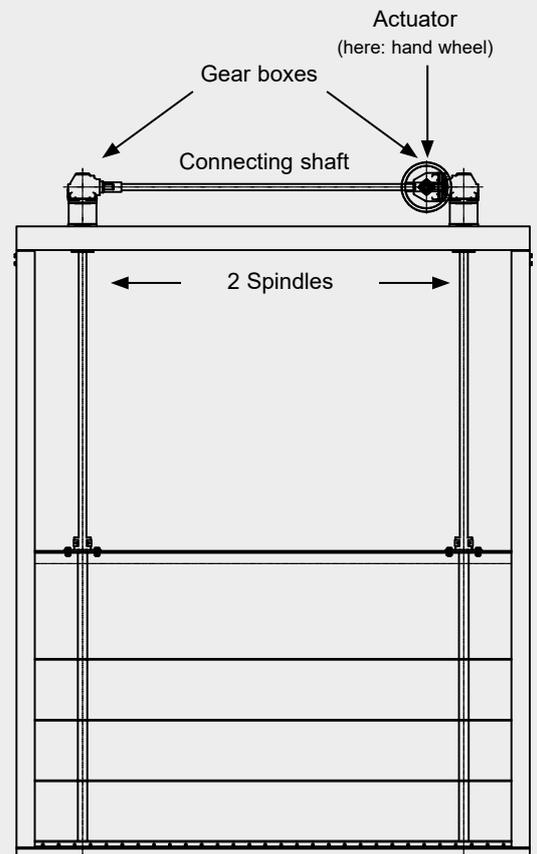
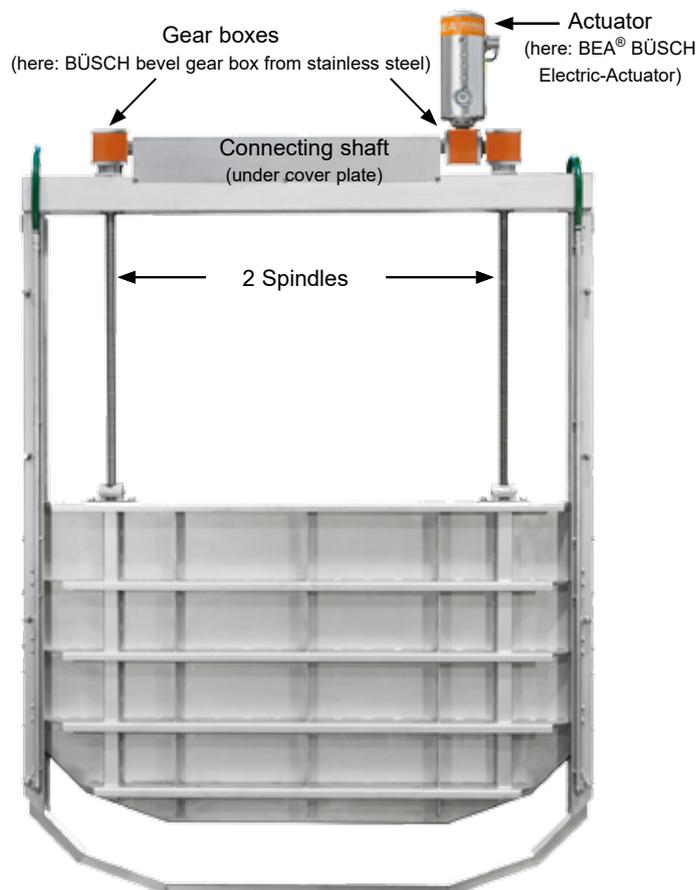
## Penstocks as two-spindle version

Penstocks can also be built as a two-spindle version. A second spindle is necessary if the sliding plate dimensions have a ratio of sliding plates width to sliding plate height at about 2:1 or higher. In order to ensure a smooth operation of the sliding plate in the frame and to prevent any tilting, the sliding plate is guided via two spindles.

When used as lowering type penstock with throttle or control purposes, where a continuous overflow edge is used, the two spindles are guided precisely in the frame. The two-spindle version, protected in the frame, offers the advantage particularly when used in wastewater with high coarse particle content. This coarse dirt does not stick at the spindle.

If additional valves are mounted on the sliding plate, e.g. an additional penstock or a flap cover, the penstock is also produced in a two-spindle design.

The absolute synchronous run of both spindles is ensured by two gear boxes mounted on the penstock bridge. The two gear boxes are connected by a connecting shaft, which is protected by cover plate.



# Penstocks as two-spindle version

## Examples



Three XL4 penstocks 2000 x 1300 mm as two-spindle version  
*WWTP Chemnitz (Germany)*



12 XL3 channel penstocks 3-side sealing 1200 x 6650 mm as two-spindle version  
*WWTP Warsaw (Poland)*



Two XL4 penstocks 2000 x 1300 mm as two-spindle version, penstock bridges with mounted gear boxes and actuator, located over floor  
*Pumping station Parkstetten (Germany)*



CP3-RS channel penstock 3-side sealing 1800 x 1200 mm as two-spindle version, both spindles located outside in the frame, not in the direct media flow  
*Culvert in Chemnitz (Germany)*



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