



RACO electric actuators Application in hydro mechanical engineering steelwork - Actuation of two mitre-gates in a lock

The mitre-gate is designed as an open gate in steel and serves as a protection of the vertical gate in the lock system. The actuation of every gate wing is implemented by means of a RACO Elektrozyylinder®, which is supported horizontally in an adapted cardan mechanism. The area in which the electric cylinders are located can also be overflowed in case of high tide water.



Requirements:

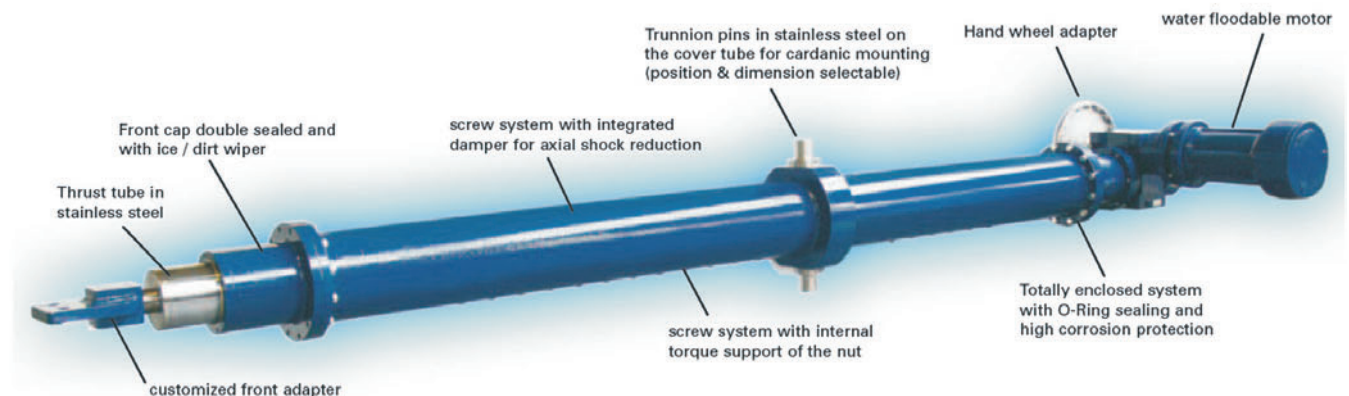
- The utilisation duration of the electric actuators is planned for 30 years.
- The electric actuators are equipped with submersible motors, including holding brake with an sealed housing in protection class IP68.
- The push-pull unit requires a sealing system which statically seals up to a water column of 5 metres above the electric cylinder for at least 72 hours, thus preventing water ingress.
- In case of a voltage failure, the electric cylinders can be activated manually.
- Axial impact loads which act on the rod should be absorbed by an shock damper in the electric cylinder.
- The requirements on corrosion protection are to be met in the selection of the materials (sleeve of stainless steel) and the coating system (painting) to DIN EN 12944-2.

RACO concept:

The scope of delivery of the company RACO includes two electric actuators of the type K1R9 with a stroke of more than 3 meters in each case. Both electric actuators are control-activated separately to the programmed final positions using a PLC control. In addition, a manual control of every electric actuator over a hand wheel is possible. The retention brake is mechanically released for this purpose and simultaneously a start-up of the motor is interlocked.

The RACO electric actuators for hydro mechanical engineering steelwork applications comes with a vent valve that encloses the volume in the interior of the cylinder at standstill and thus does not allow any exchange with the environment. The background is the so-called air-pump effect, which is implemented using a design type with electric cylinders through the change of volume during actuation movement.

For construction work of this size, the requirements concerning the period of use are often defined as more than 30 years. In addition to the dimensioning of the components in the power flow, which is based on the safety factors, corrosion protection is an important factor. The coating systems used by RACO come from certified manufacturers and are professionally processed with the greatest care.



RACO is your system supplier for hydraulic engineering steelwork

The interlocks for flap bridges have been one of the numerous solutions from our company over many decades. The installation-ready, electromechanical-drive systems position exactly and hold flood backup flaps, gates and sliders in their planned setting, even with extreme weather. As early as in the basic equipping, the RACO Elektrozyylinder® are suitable for use at ambient temperatures from -20°C to +70°C.

The equipment packages for "on-shore" and "off-shore" further include a great number of measures for corrosion protection (EN ISO 12944-2, C5 M). According to requirement, even the protection conditions according to EN 60529 IP65 or higher are fulfilled and, thanks to enclosed systems with "Long-life lubrication", minimum maintenance intervals with a maximum service life are guaranteed.

Would you like to find out more about our products? We would be glad to advise you!

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