

## **Application Information Release**

### **Pulp & Paper Industry - Wet End of the Paper Machine**

Commonly, fibers and additives are blended into a pulp mixture that is then screened and cleaned prior to delivery to the paper machine headbox.

There are two basic types of paper machines: Fourdrinier and Cylinder. The Fourdrinier being a moving screen or wire type on which the fiber, additives and water mixture is deposited. The Cylinder Machine uses a single or multiple wire-covered cylinders on which the fiber, additives and water mixture is also deposited. In each case and while the sheet is being formed, water is removed from the pulp mixture by gravity and further extracted by a vacuum system prior to moving deeper into the machine.

Because of the high content of water, condensation in the air and elevated temperatures this has become known as the "wet end" of the machine and also a killing ground for pneumatic actuators. Depending on the actuator used, the typical failure modes maybe:

- Condensation, which formed in the air supply line, is deposited in the actuator cylinder(s) resulting in a swelling of the piston seal(s), corroding and/or pitting of the cylinder wall plus destroying any lubrication present causing reduced actuator output torque and operational life.
- Condensation, also from the air line, makes contact with the actuator's bearings, output shaft and drive linkage resulting in additional corrosion, pitting and destruction of lubrication on these very critical parts. This also reduces both the actuator's output torque and operational life.
- Moisture mixed with the pulp additives and aggressive wash-down chemicals attack the actuator's materials of construction, internally and externally, resulting in the loss of applied protective coatings thus allowing the accelerated destruction of the actuator by corrosion.
- Higher ambient temperatures, practically above the paper machine, will adversely affect the actuator's pressure and environmental seals causing leakage as well as accelerate the already detrimental effects of all the above failure modes.

Due to QTRCO QTRPAQ's exclusive use of 316 Stainless Steel and EPDM elastomers, moisture with or without additives combined with internal condensation even in a high ambient temperature has no life shorting effect on performance. Known as the "install and forget" actuator, the QTRPAQ puts a stop to the "wet end" actuator killing ground.



QTRCO, Inc. 13120 Theiss Lane Tomball, TX 77375  
Ph: 281-516-0277 Fax: 281-516-0288

[www.QTRCO.COM](http://www.QTRCO.COM)

Email: [qtrco@qtrco.com](mailto:qtrco@qtrco.com)