

ATEX AND HYDRAULIC ACTUATORS



ATEX Actuators

ATEX Actuators are approved for use in potentially explosive environments. They are based upon a unique design that integrates a highly efficient planetary roller screw mechanism with a high torque servomotor in a single self-contained package. The roller screw outperforms rival ball screws by a factor of 15, in terms of travel life and load carrying capacity. It consists of multiple threaded rollers assembled in a planetary arrangement around a threaded shaft. This highly robust design is designed to provide reliable and precise operation over thousands of hours.

The combination of the planetary roller screw and servomotor produces an all-electric actuator which is extremely compact, yet delivers similar performance to hydraulic actuators in terms of force (907 Kilograms max) and torque capability, while surpassing them in speed (up to 635mm/s), efficiency, positioning performance, operating life and environmental impact.

ATEX Actuators offers a unique combination of high speed, performance and accuracy in a compact package, plus the flexibility of compatibility with almost any resolver- based servo amplifier. The optimised performance features of the actuators are evident in valve and damper control applications, where the actuators continuously hold the position of the valve stem, or shaft, allowing extremely fast response to the smallest command signal changes, without overshoot, even when friction is present. This results in improved loop performance and reduced process variability.

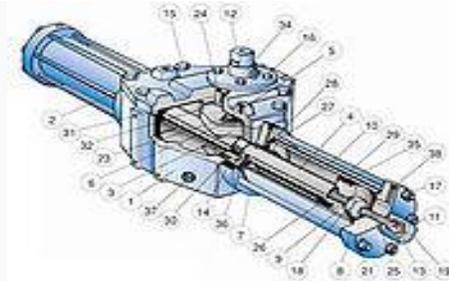
Also optimising the ATEX actuators for process applications is their excellent contamination protection. In conventional rotary to linear devices the critical mechanisms are exposed to the environment and therefore require frequent inspection, cleaning and lubrication. The explosion-proof rating, high performance and environmental packaging of the ATEX actuators mean that they are ideally suited to the widest range of applications.

Applications

- Valve and Damper control
- Shipboard fuel management systems
- Fuel skids, Refineries
- Engine test stands

- Paint booths
- Printing presses

Hydraulic Actuators



Hydraulic Actuators

Hydraulic Actuators are mechanical Actuators that converts hydraulic pressure and flow into torque and angular displacement. The hydraulic actuator is the rotary counter part of the Hydraulic Cylinders. Conceptually, a hydraulic motor should be interchangeable with a hydraulic pump because it performs the opposite function - much as the conceptual DC electric motor is interchangeable with a DC electrical generator.

However, most hydraulic pumps cannot be used as hydraulic actuators because they cannot be back driven. Also, a hydraulic actuator is usually designed for the working pressure at both sides of the motor. Hydraulic pumps, motors, and cylinders can be combined into hydraulic drive systems. One or more hydraulic pumps, coupled to one or more hydraulic actuators , constitutes a hydraulic transmission.

Hydraulic actuators or hydraulic cylinders typically involve a hollow cylinder having a piston inserted in it. An unbalanced pressure applied to the piston provides force that can move an external object. Since liquids are nearly incompressible, a hydraulic cylinder can provide controlled precise linear displacement of the piston. The displacement is only along the axis of the piston. A familiar example of a manually operated hydraulic actuator is a hydraulic car jack. Typically though, the term hydraulic actuator refers to a device controlled by a hydraulic pump.

Uses

Hydraulic actuators are used for many applications now such as winches and crane drives, wheel motors for military vehicles, self-driven cranes, and excavators. Conveyor and feeder drives, mixer and agitator drives, roll mills, drum drives for digesters, trommels and kilns, shredders for cars, tyres, cable and general garbage, drilling rigs, trench cutters, high-powered lawn trimmers.

Source: http://solidswiki.com/index.php?title=ATEX_Actuators