



Trans-Quip Inc.'s

Jacks Journal

October 2003

The Benefits of Using ComDRIVE® Motorized Actuators

The ComDRIVE Motorized Actuator line from Joyce® offers the convenience of having a machine screw jack, motor and gear reducer in one compact unit.

BENEFITS

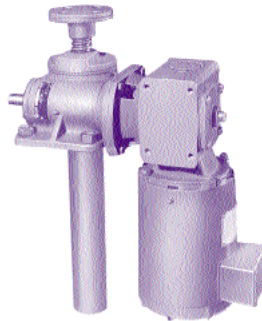
There are many benefits to this combination of products. For starters, one ComDRIVE unit can power an entire jacking system and reduce the number of components you need to specify. For instance, you can reduce the number of couplings and shafts required in multi-jack systems.

ComDRIVE is also less expensive to install because the only mounting required is one plate for the jack body. Finally, ComDRIVE saves you the time and hassle involved in selecting the appropriate gear reducer and motor to go with your machine screw jack.

SPECIFICATIONS

Joyce ComDRIVES come in translating screw, rotating screw (keyed for travelling nut) and keyed designs. ComDRIVES are available with one of four standard screw ends and special ends can be ordered to meet your specific requirements. All jack designs can be fitted with a protective boot.

Models are available in capacities up to 25 tons and provide speeds up to 21.9 inches per minute (CD) or 36.8 inches per minute (DCD). Screw travel is per your requirements.



ComDRIVE can be specified without the motor, with only the screw jack and reducer. The reducer flange accepts standard NEMA motor frame sizes. ComDRIVE may be equipped with Joyce limit switches and features adjustable stops as standard. Stops are not intended to be used as operating limits. Brake motors are optional.

Q & A

Q: Does Joyce Dayton offer a line of screw jacks that can resist corrosion?

A: Joyce Dayton stainless machine screw jack actuators are specifically designed for positioning or lifting applications in corrosive or other potentially contaminated environments. All exposed surfaces and components feature 316 or 17-4 stainless steel construction and bronze bushings. Nitrile rubber seals protect all internal parts. Stainless steel jack models are available in capacities from 2 to 25 tons.

Q: Does Trans-Quip repair screw jacks?

A: Trans-Quip Inc. will first inspect a damaged screw jack to determine whether or not it is repairable. At times, it may simply be better to replace than repair and Trans-Quip staff will advise you accordingly. Repairs can be done either by Trans-Quip staff or by your staff using replacement parts from Trans-Quip. Parts lists are available upon request.



Anode Jacks for Aluminum Smelting

Aluminum smelters are faced with the problem of maximizing efficiency and potline up time despite wear and tear on various components of their smelting equipment. Although anode jacks have a typical life of 10 to 30 years, many smelters were originally constructed in the 1950s through the 1970s. As existing anode jacks at these facilities increase in age so do instances of jack failure. An increasing number of smelters are now turning to the Joyce line of products for assistance in solving this problem.

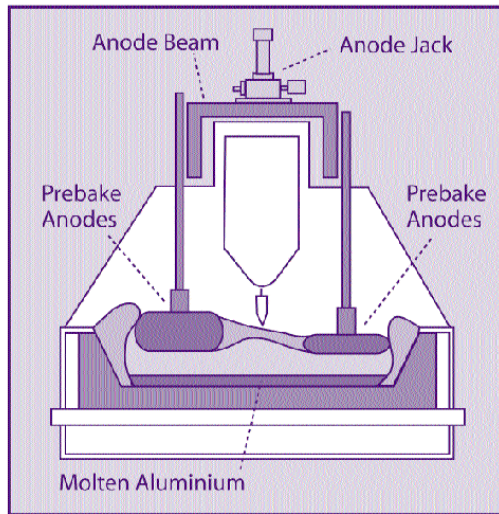
UNIQUE FEATURES

- 1) Anode jacks must be able to withstand extreme environmental factors, such as high ambient temperatures in excess of 200 degrees and the close proximity of abrasive materials that could contaminate the jacking mechanism.
- 2) Practically all anode jacks must be custom designed to conform to specific smelting pot specifications and operating conditions, such as length of travel and lifting capacities. Since it is impractical to change other characteristics and dimensions of the pot, any replacement jack must exactly fit the dimensions of the unit being replaced.
- 3) Replacement products must have the capability of being installed quickly since shutting down the smelting pot carries a high opportunity cost.
- 4) To minimize labour maintenance costs, many smelters prefer to replace worn out or broken jacks with new units, if costs of the new unit permit.

- 5) Some smelters have requirements for complete anode lifting systems including shafting, motors, gear boxes and electronic controls.

HOW THE SYSTEM WORKS

Depending on overall pot design, either two or four jacks position a beam to which anodes are attached in an electrolyte bath. The bath contains the raw materials to be smelted and various chemicals needed in the process. Highly specialized electronic controls, designed by smelting system specialists, permit precise positioning of the anodes in the electrolyte bath. The anode beam will be raised or lowered as directed by the control system. Positioning requirements may vary to the thousandth of an inch. This process is continuous, 24 hours a day, seven days per week.



WHY JOYCE JACKS

- 1) **Cost** - Joyce anode jacks may be purchased for less than the collective cost of spare parts from the OEM or will-fit manufacturer.
- 2) **Custom Design** - Joyce will design the anode jack to meet customer specifications.
- 3) **Availability** - Once the initial quantity has been manufactured, optional stocking programs are offered to make units available when they are needed.
- 4) **Service & Support** - Joyce application engineers are available to propose solutions to the unique problems faced by different smelting facilities.



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