Trans-Quip Inc.'s
Jacks Journal
February 2002

What About Complete Powertrain Systems?

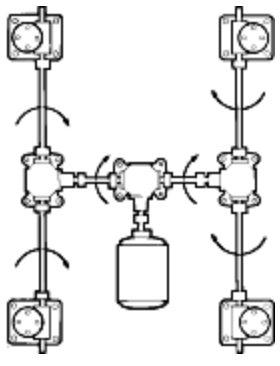
Trans-Quip Inc. is dedicated to being a full service powertrain vendor. Our technical sales team can be called on to design and propose a full powertrain assembly including actuators, line shafting, couplings, gear-boxes, travel limits and more. As well, we employ our own machinists in order to promptly make application-sensitive modifications to any part of the powertrain assembly.

Common Arrangements

Joyce® jacks, miter gear boxes, couplings and motorized ComDRIVE® jack/actuators can be used in a number of system arrangements. Because jacks selected for such systems have uniform lifting speeds and are fully synchronized, unevenly distributed loads can be raised, lowered and positioned in unison. Jacks of differing capacities may be used in the same system as long as driven shaft turns per 1" of travel are the same.

Joyce ComDRIVE motorized jack/actuators are particularly effective in multiple jack systems. Because ComDRIVE combines motor, jack and reducer into a single unit, the number of gear boxes, shafts and couplings in most arrangements can be reduced.

H System



Shafting

Joyce shafting matches perfectly with Joyce jacks and couplings to meet a wide range of system requirements. Shafting is made from cold-finished C1018 steel, with ends machined to ANSI-standard keyways.

Couplings

Joyce **Model S and Model F geared couplings** offer greater torque capacity than ordinary couplings. Joyce **Model S sleeve-type gear couplings** are available in flex/rigid and full/flex configurations.

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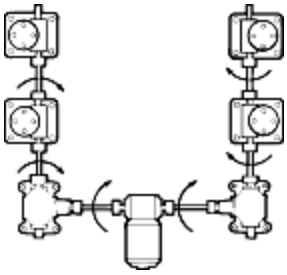


Model F flange-type gear couplings offer superior radial-misalignment capability and radial flexibility.

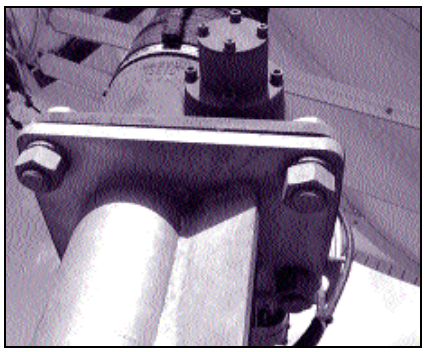
Model J jaw-type couplings are ideal for all kinds of general industrial applications, require no lubrication and are resistant to oil, grease, moisture and other contaminants.

Gear Boxes

Joyce miter gear boxes are specifically engineered for use with Joyce jacks and actuators in multiple jacking systems. When driven shaft turns per inch of travel are the same, total synchronization is assured because all models have a uniform lifting speed. All standard Joyce miter gear boxes are 1:1 ratio, other ratios are available in the RC series units. Four-shaft units are also available in the RC-18 through RC-204 and the MK series.

Featured Application

Machine screw jacks and ballscrew jacks are commonly used in the manufacture of antennas ranging from small five or six meter units used for broadcasting, to large Earth station dishes used for satellite communications.

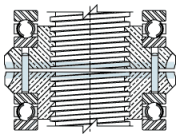


For example, a new antenna was developed for the broadcasting industry by Efficient Antenna Systems Inc. (EASi) in Clear Lake, Iowa using Joyce ComDRIVE units. The driving force behind this product development was the need for a larger, more robust antenna.

EASi contacted Joyce/Dayton to provide jacks for the azimuth and elevation control of the antennas. Joyce supplied a special anti-backlash 10-ton ComDRIVE with a tachometer between the motor and reducer and a special 90-volt DC motor for this particular antenna design.

Anti-Backlash Accessories

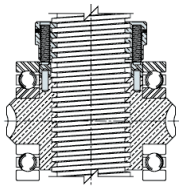
Anti-backlash accessories are available in three different designs for Joyce worm gear jacks:



Split Gear Design

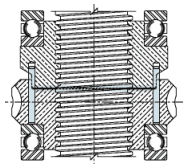
Best suited for light dynamic loads (1/3 jack capacity or less) and full jack capacity in a static condition. A split gear and dowel pins maintain gear alignment. Adjustments to this unit are made by tightening the sleeve (housing) cap. This design will typically reduce screw endplay to .010-.015 inches. Typical applications include steel mill and paper mill roll actuators. The Split Gear Design is available in all upright and inverted Translating and Keyed For Traveling Nut machine screw jacks from 2 to 75 tons as well as some Keyed models.

A90 Design



Ideal for medium dynamic loads (1/2 to 3/4 jack capacity) and full jack capacity in a static condition. This design incorporates a hardened steel plate pinned to the top of the internal gear and a secondary nut placed above the steel plate. Pressure to separate the gear and secondary nut is applied via dog point set screws placed around the secondary nut. The set screws are externally adjustable. This design will typically reduce screw endplay to .008-.012 inches. Typical applications include antenna and solar dish actuators. The A90 Design is available in upright Translating machine screw jack models from 25 to 100 tons.

A95 Design



Patent pending A95 design is capable of handling full jack capacity in dynamic as well as static conditions. This adaptation of the split gear design allows the gear teeth to remain intact and therefore retain their full load carrying capability. Adjustments are made by tightening the sleeve (housing) cap. The A95 design will typically reduce screw endplay to .008-.012 inches. This design can be used for any application requiring minimized screw endplay under full dynamic capacity. It is available in upright and inverted Translating machine screw jack models from 2 to 150 tons.

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