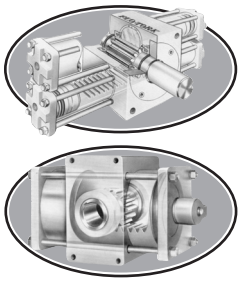
MOOG
FLO-TORK



Application Bulletin

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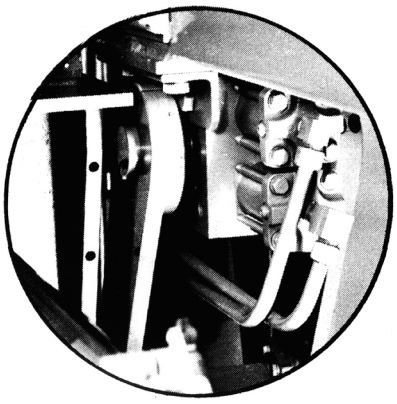
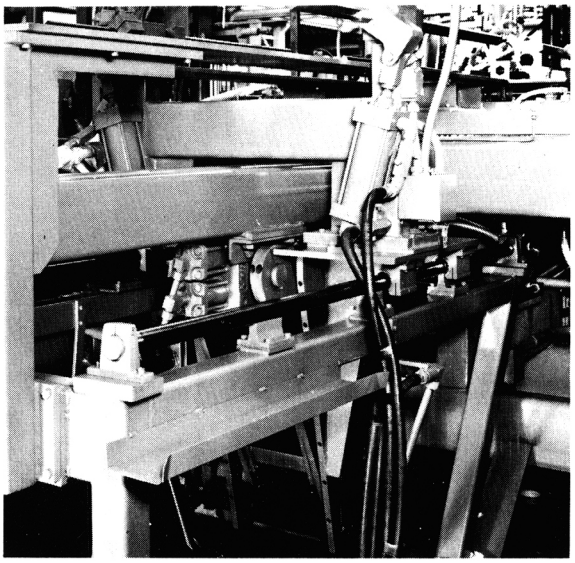
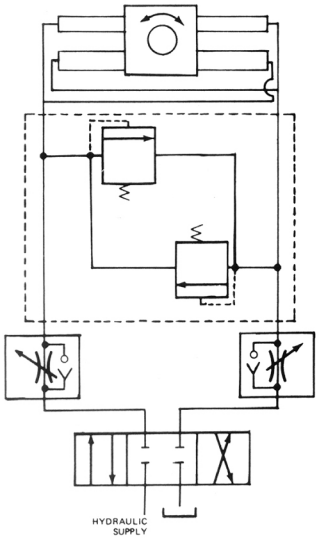
HYDRAULIC ROTARY ACTUATOR FOR LINEAR TRANSFER





The Actuator

A Moog Flo-Tork actuator Model 30000-180-CQ-ET-MXF-RKD-N. The actuator is equipped with ball bearings, heat treated racks, and a one-piece heat treated pinion and double extended shaft. Cushions are located in each piston head.



How It Operates

The unit is powered by 500 psi from a central hydraulic system for the machine. It receives sufficient flow to enable the transfer arm to reach a velocity of 42 in/sec at mid-stroke.

The Application

The application moves a six station welding fixture, weighing 900 pounds, 54" in 2 seconds. The welding fixtures are used in the manufacture of oven liners for use in Electronic Ovens by a major appliance manufacturer. The fixtures are part of a large welding and forming line built by Taylor-Winfield Corporation, Warren Ohio. A 27" arm is clamped to each of the extended and keyed shafts of the Moog Flo-Tork unit. On the end of each arm is a ball bearing idle wheel that fits into a slot of the two arms on the transfer mechanism of the welding fixture. These arms ride on hardened and chromed rods and support clamping cylinders to hold the fixtures to the transfer track. The clamps are released for the return stroke of the actuator.

Advantages

Because this is an assembly line of machines with many stations, the compact design of the Moog Flo-Tork actuator used as a transfer device reduces the overall length of the machine. The use of the arm and slot design provides a harmonic motion drive which produces a sinusoidal speed curve thereby simplifying hydraulic valving. This allows faster, smoother transfer motion in less space, and with a much lower fluid flow rate than would be required by a conventional hydraulic cylinder.

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