

# APPLICATION BULLETIN

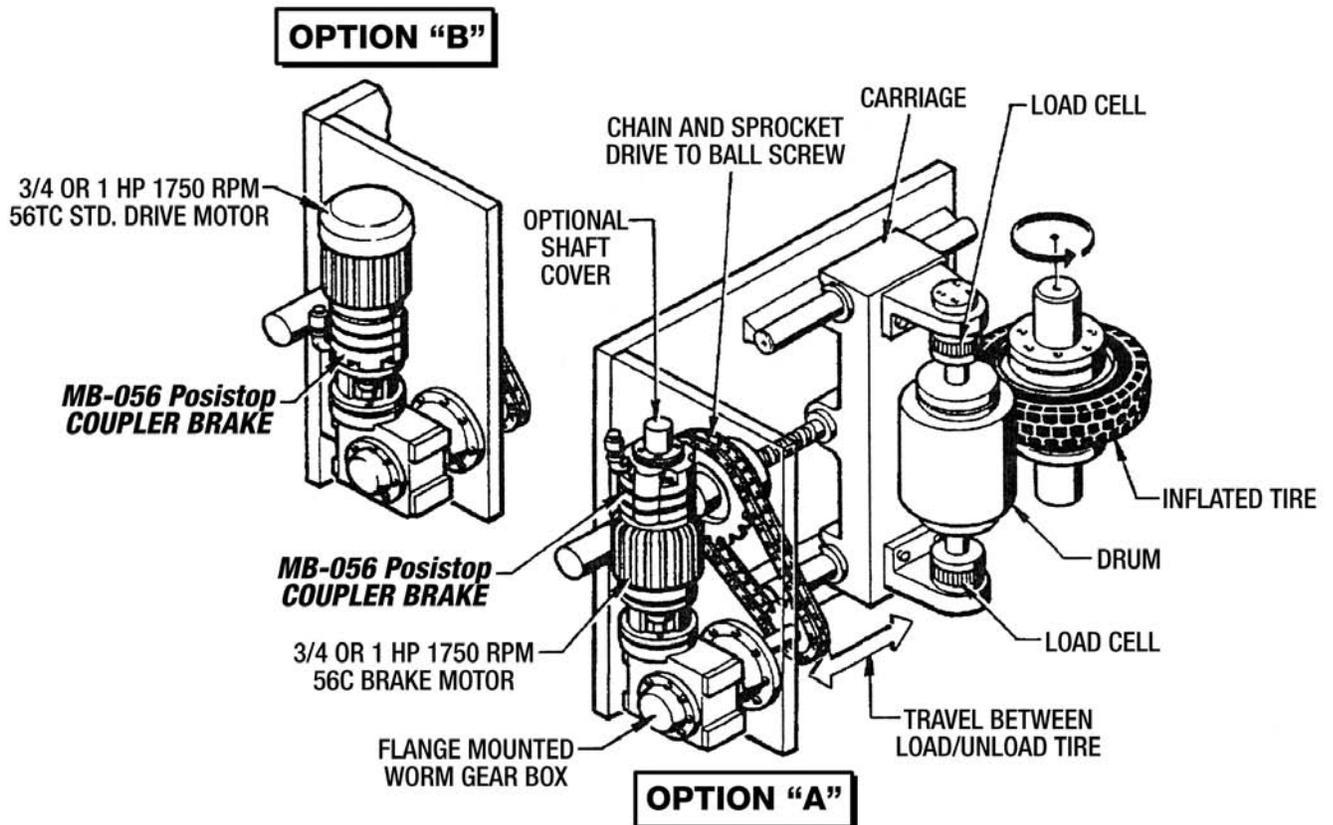


**APPLICATION:** (TUO) Tire Uniformity Optimizer  
(TUG) Tire Uniformity Gauge

**INDUSTRY:** Tire Plants

**PRODUCT:** MB-056 Posistop Coupling Brake

## (TUO) TIRE UNIFORMITY OPTIMIZER (TUG) TIRE UNIFORMITY GAUGE



## (TUO) TIRE UNIFORMITY OPTIMIZER (TUG) TIRE UNIFORMITY GAUGE

**WHERE THEY ARE USED:** Nearly all tire plants use a **TUO** or **TUG** for quality assurance. They both have similar carriage drives that use Stearns type motor brakes. The TUG only measures uniformity, where the TUO will measure, and grind the tire to Optimize the uniformity. The term Uniformity relates to the concentricity of the tire.

**HOW THEY WORK:** The carriage drive moves the drum towards the tire after it's been inflated. There a pair of load cells on the drum. The load cells signal to the processor and lets the carriage drive position the drum. The carriage may hunt back and forth for optimum position. Once in position, the tire is accelerated to testing speed, and the uniformity is checked. The surface of the tire may be ground to achieve optimal uniformity. When the test is complete, the carriage drive moves the drum away from the tire to the home position, and waits for another tire to be loaded.

The carriage drive consists of a motor, a brake, and a worm gearbox. The motors are variable speed (AC or DC), and are either brake motors, or standard c-face motors. The brakes are either mounted on the accessory end of the brake motor, and the motor is coupled to the gearbox, or the brake is sandwiched between a standard motor and the gearbox. In either case, a coupling is used to connect to the gearbox. A chain drive connects the gearbox to the ball screw. The ball screw moves the carriage, which is mounted on precision linear bearings.

**PROBLEMS SOLVED:** The current brake used on the **TUO/TUG** is dry friction. The brakes frequently need adjusted. The constant reversing leads to keyway and shaft damage.

Covers are typically removed and not replaced because of the frequency of required maintenance. This is not safe. The existing brakes do not provide a consistent brake torque that is necessary to record good uniformity data. The Force Control **Posistop** is oil filled and maintains a steady temperature therefore the brake torque is very consistent which leads to better data recordings. The oil also shears to transmit torque in the dynamic state, which reduces wear of the friction material. The **Posistop** is totally enclosed and air actuated. No adjustment is required. The **Posistop** uses a collet to connect to the motor shaft to prevent keyway and shaft damage. The MB-056 Coupler Brake can be used on both standard or brake type motors.

### **IMPORTANT FEATURES:**

- **Oil Shear** technology cools and lubricates internal components to provide extremely long service life.
- The unit is totally enclosed and sealed to prevent external contaminants.
- Collet design prevents key rolling.
- Brake is spring set, air release (good for loss of power).
- Easy retrofit - The coupler brake will easily mount on either the brake motor, or the standard C-face motor.
- Existing control signal (110 volt) can be used to operate the air valve.



### **FORCE CONTROL INDUSTRIES, INC.**

3660 Dixie Highway Fairfield, Ohio 45014

Phone: 513-868-0900 Fax: 513-868-2105

E-Mail: [info@forcecontrol.com](mailto:info@forcecontrol.com) Web: [www.forcecontrol.com](http://www.forcecontrol.com)