

APPLICATION BULLETIN

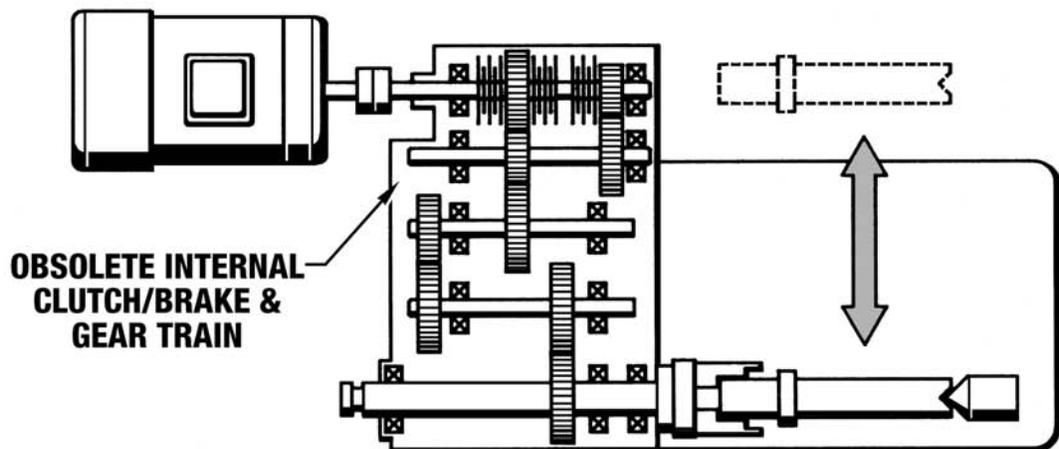


APPLICATION: Production Lathe Retrofit

INDUSTRY: High Production Machining

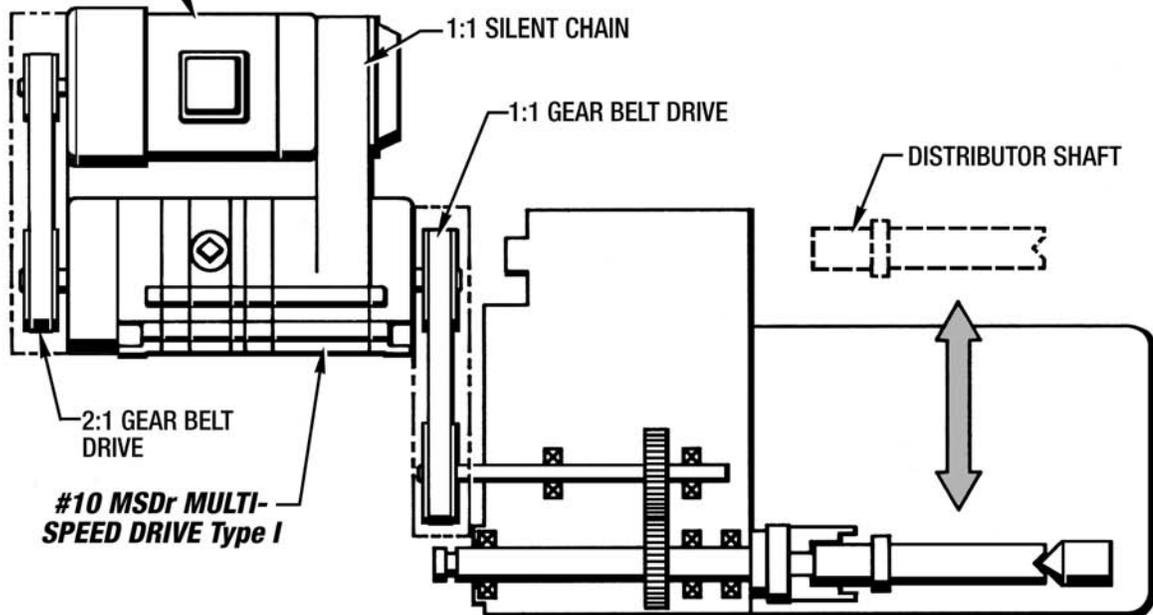
PRODUCT: Posidyne Multi-Speed Drive Type I

PRODUCTION LATHE RETROFIT



30 HP DRIVE MOTOR

Posidyne MULTI-SPEED DRIVE Type I RETROFIT



PRODUCTION LATHE RETROFIT

WHERE THEY ARE USED: High production turning of small automotive and non-automotive component parts ie; distributor and oil pump shafts.

HOW THEY WORK: Two different speeds are required in machining a distributor shaft, high speed (1200 rpm) for the rough turn, and a slower speed (800 rpm) for a grooving tool. The initial design uses an internal clutch/brake and complicated system of gears to provide the two speeds. The **Multi-Speed Drive MSDr Type I** accomplishes this by using a double-ended motor with one end connected to the primary clutch through a timing chain and the other end through a timing belt with a reduction of 2:1. The proper speed is selected by engaging the proper clutch. The timing chain can be furnished in ratios up to 3:1 and the timing belt in ratios up to 4:1 for a wide variety of speeds.

PROBLEMS SOLVED: The initial system had many breakdowns due to the sharp torque spike caused by the internal clutch/brake, which did not have the internal fluid recirculation. These spikes caused unnecessary stress and wear on the system of gears, shafts, and bearings. The **MSDr Type I** retrofit has allowed at least one customer to reduce his inventory of gears, bearings and shafts and eliminate the annual rebuild at a savings of \$11,000. Lathe efficiency has also been increased.

IMPORTANT FEATURES:

- Adjustable torque control.
- **Oil Shear** design provides smooth, positive, and quick acceleration to machining speeds.
- Patented internal fluid recirculation lubricates and cools friction surfaces for long life.
- The **MSDr** provides the ability to dynamically downshift from high to low speed quickly, yet smoothly.
- Low inertia, small diameters, and quality machining give the **MSDr** inherent balance, which reduces vibrations harmful to the parts finish and tool life.



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