

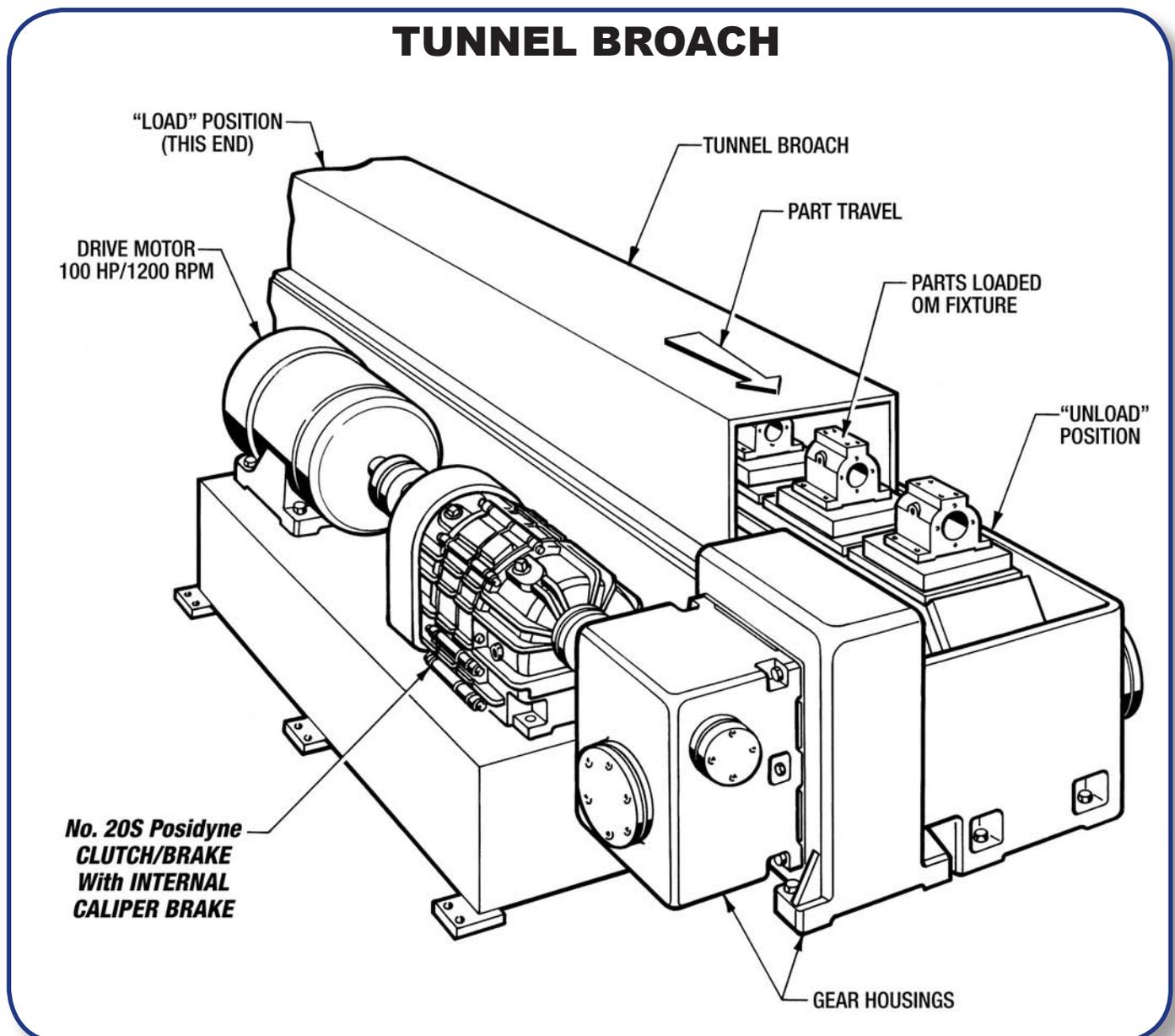
APPLICATION BULLETIN



APPLICATION: Tunnel Broach

INDUSTRY: Automotive and Machining Plants

PRODUCT: Oil Shear *Posidyne* Clutch/Brake



TUNNEL BROACH

WHERE THEY ARE USED: Automotive and machining plants

HOW THEY WORK: The Tunnel Broach is used to perform rough machining on raw castings to prepare them for secondary or finishing processes. The castings are loaded onto fixtures which are attached to a chain drive that drags the them across the tooling.

A 100 HP Motor and a large electro-magnetic brake was used to drive the chain. A No. 20 **Posidyne** with a caliper brake was connected between the motor and the drive. The motor normally runs continually. with no cycling involved. In an emergency stop situation however. such as a part being located incorrectly on a fixture. the drive must stop quickly. The **Posidyne** clutch is disengaged. and the brake is engaged to stop the load. For safety reasons. the motor is then shut off and a special caliper brake on the input end of the **Posidyne** is used to stop the motor shaft.

PROBLEMS SOLVED: By installing the **Posidyne** Clutch/Brake between the motor and the load. the motor inertia (which is approximately 63 Lb.Ft.² or 75% of the total system inertia) can be immediately disconnected from the system during a stop. Given the large reduction from the motor to the load (194:1 in this case), the total inertia of the load is approximately 23 Lb.Ft.² or only 25% of the total inertia of the drive system. By disconnecting the majority of inertia the drive can be stopped much more quickly and with less wear on the brake. The caliper brake stops the motor for safety precautions.

IMPORTANT FEATURES:

- Clutch allows for disengagement of high inertia motor. Greatly increasing the service life of the brake.
- Motor does not have to start while connected to the load. thereby greatly reducing electrical consumption.
- **Oil Shear** design and advance friction material provides quick. smooth. reliable stops.
- The enclosed caliper brake arrangement effectively drags the motor to a stop quickly for safety reasons.



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