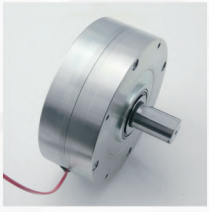
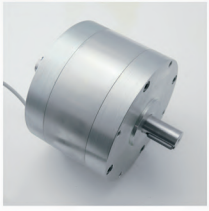
PLACID INDUSTRIES

OUR PRODUCTS

MAGNETIC PARTICLE CLUTCHES & BRAKES | LOW/HIGH TORQUE VERSIONS

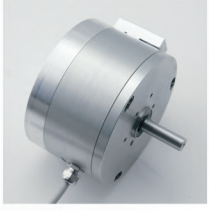




0.01 OZ-IN TO 300 LB-FT

Placid Industries is well known for the quality and smooth operation of a wide variety of magnetic particle clutch and brake products. The virtually instantaneous engagement provides unmatched precision and the torque can be infinitely varied based on the input current. With no electrical excitation the shaft freely rotates, but with power applied the shaft becomes coupled to the housing because the free flowing steel powder particles inside form chains along the magnetic field lines, thus linking the disk to the housing. The torque is proportional to the magnetic field strength and therefore to the applied DC input current. While the load torque is less than the output torque, the shaft won't rotate. However, when the load torque is increased the brake will slip smoothly at the torque level set by the coil input current. Since the output torque is independent of slip RPM, you can find these clutches and brakes in a variety of tensioning, load simulating, torque limiting, overload protection and soft start/stop systems. Our team can answer your questions and work with you to determine which brake or clutch is best for your application.

HYSTERESIS BRAKES



0.04 OZ-IN TO 15 LB-IN

Similar to Magnetic Particle Clutches & Brakes, with no electrical excitation the shaft freely rotates. In Hysteresis Brakes, however, there is no powder inside as the torque is produced purely through the magnetic flux generated in the air gap. The electric current travels through the coil then into the poles and through the hysteresis disc attached to the rotor, causing it to be restrained, which provides the braking action. Placid has a patented Cog-Buster technology, which prevents cogging or pulsating output torque, which occurs after the input current is reduced while the shaft is at or near zero RPM. With an inherent, frictionless design this style of brake is capable of longer life, smoother torque, broader speed ranges, better repeatability and more accurate control.

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POWER SUPPLIES

Placid has power supplies available off-the-shelf for every product up to our largest size magnetic particle brakes and clutches. All of our products require the use of a power supply in order to ensure the proper current is reaching the brake or clutch. Our most common power supply is a constant current type with a 3/4 turn potentiometer for setting output voltage from 0% to 100%. Without the use of a constant current power supply to automatically adjust the output voltage, the output current (and torque) will decrease as the temperature of the brake or clutch rises due to the increased resistivity of copper with the rising temperature. The output current can also be controlled with a 0-10 volt input signal from your PLC, a Follower Arm Potentiometer or an Ultrasonic Sensor.

FOLLOWER ARM POTENTIOMETERS

The Follower Arm Potentiometer is used to maintain constant tension when using a brake for producing unwind (payout) tension or when using a clutch for rewind tension. The arm rides on the roll measuring the roll diameter and as the roll size decreases the arm moves downward, rotating the potentiometer shaft. The power supply current automatically decreases, which in turn, decreases the brake (or clutch) torque to maintain constant tension, increasing productivity and reducing waste. This method is ideal for measuring narrow webs with large spool flanges as sound waves from an Ultrasonic Sensor would be distorted due to the flange.

ULTRASONIC SENSORS

The Ultrasonic Sensor is used to maintain constant tension when using a brake for producing unwind (payout) tension or when using a clutch for rewind tension. The sensor measures the diameter of the roll and sends a 0-10 VDC signal to the Placid power supply. Torque is automatically varied as roll size changes in order to keep tension constant. The sensor measures distances by sending an ultrasonic pulse of sound and then measuring the time for the return echo pulse. This non-contact method is ideal for measuring webs that may scratch easily or otherwise cannot be touched.

ABOUT US

Founded in 1973, Placid Industries was originally located in Lake Placid, NY prior to relocating to SEPAC Inc.'s headquarters in Elmira, NY. Placid's products are well known throughout the USA and Europe for tension control applications where unwinding/rewinding is required or in applications where torque needs to be controlled independent of RPM. Placid also has the capability to package entire systems which may include a brake or clutch, power supply and potentiometers or ultrasonic sensors for live feedback. Placid brings more than 50 years of strong technical product performance and applications expertise with a diversified, global customer base and a business model built on rapid deliveries as well as responsive customer service. We look forward to working with you on your next application!

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