

Ogura Magnetic Particle Brake Provides Computer Controlled Tension.

A new Sign Printer uses 4 inch wide spools of colored foils that are heat transferred to a moving sign medium like paper, vinyl, plastic or Mylar. For proper print registration and uniform appearance, the colored foil must be applied using a constant tension or drag (friction, not queen) on the unwinding spool. This "tension" controls the amount of "stretch" applied to the foil.

Different thickness of foils can be used in one machine and the brake system needs to be intelligent and flexible enough to provide just the right amount of tension for each material. In addition, the tension must be held constant regardless of temperature, RPM, or the amount of foil left on the spool.



Programming a job

To achieve this, the customer chooses Ogura's variable torque OPB-5N Magnetic Particle Brake. The brake is coupled directly to the unwinding spool of foil. Each full spool is loaded into a cartridge. Each cartridge contains a microchip programmed with the amount and thickness of the material. This chip will also remember how much material has been used and how much is left on the spool. (This feature also insures that you do not run out of foil during a print operation). A shaft encoder monitors the shaft speed and the computer counts the total revolutions of the spool. With the spools turning at 30 RPM, the brake slip torque is computer controlled as the foil is deployed.

How It Works: The output shaft is rigidly coupled to an internal brake rotor. Surrounding this rotor is an air gap that contains unique ferrous particles. When current is applied, the particles form chains along the magnetic force lines through the rotor to the brake housing. The brake rotor is then restrained (from turning) by these magnetic chains. The amount of restraint (torque) is linearly proportional to the brake's input current. To keep the brake torque constant, the computer monitors and adjusts the amount of current going to the brake.



Running a job

Another important feature of our Magnetic Particle Brake is its very long operational life. Unlike conventional friction type brakes, Magnetic Particle Brakes do not appreciably wear while providing this controlled torque.

This customer solved many complex machine problems by using Ogura's OPB-5N Magnetic Particle Brake. Their new Sign Printer works better than they imagined. The engineers were able to provide a level of control and product quality previously unobtainable in their market.



Replacing a cassette

Can we do the same for you?