High quality and efficiency are the goals of every web production line, and proper control of tension and torque are critical in achieving the results you require. MAGPOWR’s range of tension control products and accessories are designed to help you reach those goals, whether your operation runs paper, film, foil or wire.

Industry-Preferred Control

The industry has overwhelmingly chosen MAGPOWR’s tension control systems as the preferred brand, with the most systems installed worldwide. With more than 40 years of providing high-quality tension control solutions, MAGPOWR has the first-hand experience and flexibility required to configure the right system to fit the needs of your application.

With a broad range of products including tension controls, readouts, load cells, brakes and clutches, MAGPOWR can match your line requirements to the proper solution, from the simplest to the most advanced.

Leading Technology & Expertise

Knowledgeable support and impeccable service are the hallmark of MAGPOWR’s role as the industry leader. That service begins with the internal sales staff and continues far beyond installation. Factory-trained in various service disciplines, including applications analysis, design and engineering, MAGPOWR’s service team is dedicated to providing solutions specifically designed for your applications.

MAGPOWR also offers the most comprehensive array of accessories and periphery equipment in the industry, thanks to its partner companies Valley Roller (Rubber Covered Rolls), Webex (Precision Rolls), Fife (Guiding & Inspection) and Tidland (Slitting & Winding). Combined, the Maxcess companies provide a global reach, with operations in North America, South America, Europe and Asia.
MAGPOWR clutches and brakes are available in three types: Hysteresis, Magnetic Particle and Pneumatic. Magnetic Particle and Hysteresis units simplify tension control by providing constant torque independent of slip speed. Hysteresis units are popular in light tensioning and torque applications such as these:

**As a tensioner**

By using one of the Perma-Tork assemblies, you can accurately control tension. The hysteresis unit is best suited for tensioning on unwind stands and nip rolls.

**As a torque limiting device**

The power-free, maintenance-free Perma-Tork design is particularly suitable for protecting all drive train, winding or unwinding components. It not only provides overload and jam load protection, but there are no complicated electrical feedback systems or mechanical wearing parts to break down or require maintenance. The only wearing parts are the bearings themselves, and nothing but the highest quality ball bearings are used.

**As a magnetic coupling**

Perma-Tork clutches guarantee a soft transfer of power between prime mover and load at start-up. In this application, Perma-Tork behaves similar to a fluid coupling, but locks in at zero slip once torque is reached.

**Testing**

Perma-Tork hysteresis units provide a constant slip torque unaffected by wear, humidity or “stick-slip.” This makes it an ideal device for many testing applications. The torque can be precisely adjusted (even at low speeds). Torque will not fluctuate over extremely long testing periods.
**Torque Limiting**
Hysteresis clutch provides overload protection

**Web Tensioning**
Hysteresis clutch on a web rewind providing a taper tension

**Film Tensioning**
Constant tensioning provided by hysteresis clutch

**Bottle Capping**
Constant torque provided by a hysteresis clutch

**Teflon Tape Slitter**
Hysteresis clutches on tape rewinds providing taper tension

**Film Unwind**
Tension provided by a hysteresis or magnetic particle unit
Tension Monitoring

MAGPOWR has a broad range of tension control products designed to deliver precise readouts every time. These products can be easily combined to create the ideal tension monitoring solution for your application.

- Analog and Digital displays available
- Amplifiers available to send a 0 to 10 VDC or 4 to 20 mA DC signal to a PLC or motor drive
- Available mounting options: DIN Rail (CE), Wall Mount, Panel Mount
Manual Control

MACPOWR Manual Tension Control systems are a low-cost solution for Rewind, Point-to-Point and certain Unwind Applications. Our manual power supplies allow you to overcome residual magnetism and use the full range of your magnetic particle brake or clutch with their unique reverse current feature. These systems are ideal for (1) Rewind Applications where natural taper is needed, (2) Point-to-Point Applications where roll build does not change and (3) Unwinds where material can withstand small changes in tension from roll to core.

- Manual power supplies are current regulated so output will not change as the clutch or brake coil rises from ambient to operating temperature
- 90 VDC and 24 VDC power supplies are available with jumper selectable current ratings to match the correct magnetic particle device for your application
- Available mounting options: DIN Rail (CE), Wall Mount or Panel Mount
Open Loop Follower Arm
Rewind or

These easy-to-install systems provide tension control based on changing roll diameter.

- Available control outputs: 0 to 10 VDC, 4 to 20 mA DC, and 90 VDC
- Available mounting options: DIN Rail (CE), Printed Circuit Board
Open Loop Ultrasonic
Rewind (Magnetic Particle Clutch)

- Adjustable Taper Tension for Rewinds also available
- Inverse Diameter Output available to slow rewind motor as roll builds, decreasing slip heat in clutches
- Available control outputs: 0 to 10 VDC, 4 to 20 mADC, -10 to 10 VDC, 90 VDC, and 24 VDC
- Available mounting options: Wall Mount (CE), DIN Enclosure Mount (CE)

Open Loop Ultrasonic
Unwind (Pneumatic Brake)

These systems are accurate, simple to engineer and easy to install. Tension control is based upon changing roll diameter, with no physical contact made to your web.
**Closed Loop Control**
Free Loop Unwind (Motor Drive)

- For applications where the weight of the material provides adequate tension
- Ideal for start/stop applications or if unwind rolls are out-of-round
- Provides control through loop position feedback
- Mounting options: Enclosure Mount (CE), DIN Panel Mount (CE)
- Available outputs: 0 to 10 VDC, 4 to 20 mA DC, -10 to 10 VDC

**Ultrasonic Free Loop**
Point-to-Point (Motor Drive)

These simple to engineer systems provide a low-cost solution for speed control on applications where the weight of the web is enough to provide tension.
Closed Loop Load Cell
Digital Tension Readout and Control Unwind
(Magnetic Particle Brake)

- Adjustable taper tension for rewinds standard
- Available control outputs: 0 to 10 VDC, 4 to 20 mA DC, -10 to 10 VDC, 90 VDC and 24 VDC
- Available mounting options: Wall Mount (CE), DIN Enclosure Mount (CE) and DIN Rail Mount (CE)
- Inverse Diameter Output available to slow rewind motor as roll builds, decreasing slip heat in clutches
- Web break detection

Closed Loop Load Cell
Digital Tension Readout and Control
Point-to-Point (Magnetic Particle Clutch)
**Closed Loop Load Cell**
Rewind (Magnetic Particle Clutch)

- CYGNUS
- TS Load Cell
- Spyder Plus
- Motor
- C Series Clutch
- DTM Digital Meter
- Motor Drive

**Closed Loop Load Cell**
Rewind (Motor Drive in Torque Mode)

- TS Load Cell
- Spyder Plus
- Motor Drive
- Motor

**Closed Loop Load Cell**
Unwind (Pneumatic Brake)

- TS Load Cell
- Pneumatic Brake
- IPT-E Current-to-Pressure Transducer

**Closed Loop Load Cell**
Rewind (Motor Drive in Torque Mode)
**Closed Loop Load Cell Fieldbus**

Access and control multiple independent tension zones over an Ethernet IP, DeviceNet or Profibus DP network. Modbus/TCP available on some models.

- Ethernet capabilities for networking and remote access
- Available control outputs: 0 to 10 VDC, 4 to 20 mA, -10 to 10 VDC, 90 VDC and 24 VDC
- Available mounting options: Enclosure Mount (CE), DIN Panel Mount (CE) and DIN Rail Mount (CE)
Closed Loop Dancer
These systems are the ideal choice for maintaining constant tension on start/stop applications or when unwind rolls are out-of-round.

- Inverse Diameter Output available to slow rewind motor as roll builds, decreasing slip heat in clutches (when using optional US-2 Sensor with Versatec™)
- Available control outputs: 0 to 10 VDC, 4 to 20 mA DC, -10 to 10 VDC, 90 VDC and 24 VDC
- Available mounting options: Wall Mount (CE), DIN Enclosure Mount (CE), DIN Rail Mount (CE), Printed Circuit Board
For the tension control solution that is right for you, simply find your application in the chart below, then select the combination of MAGPOWR products that best suit your specific needs.

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* requires 3rd party diameter sensor with a 0 to 10 VDC output