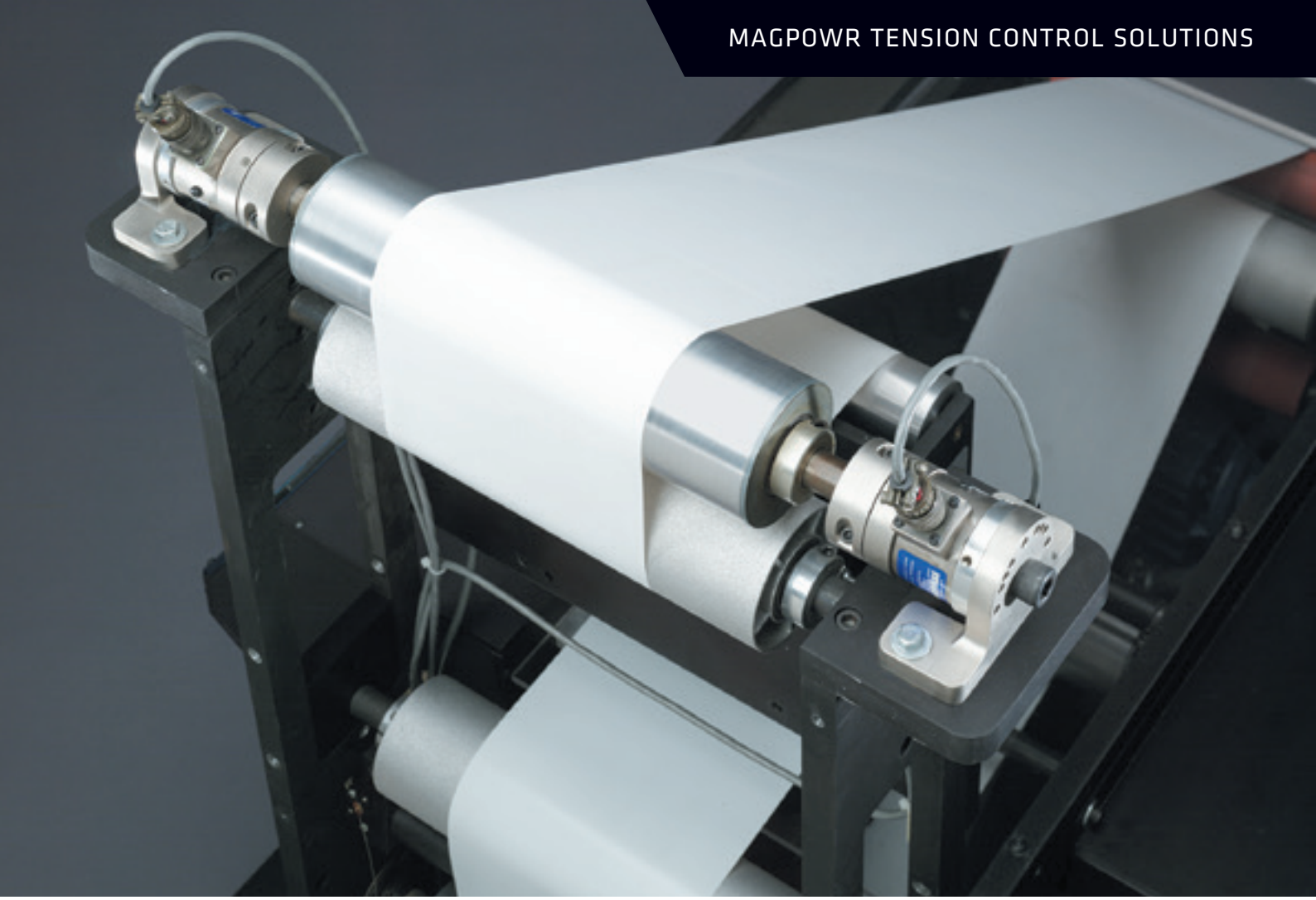


MAXCESS

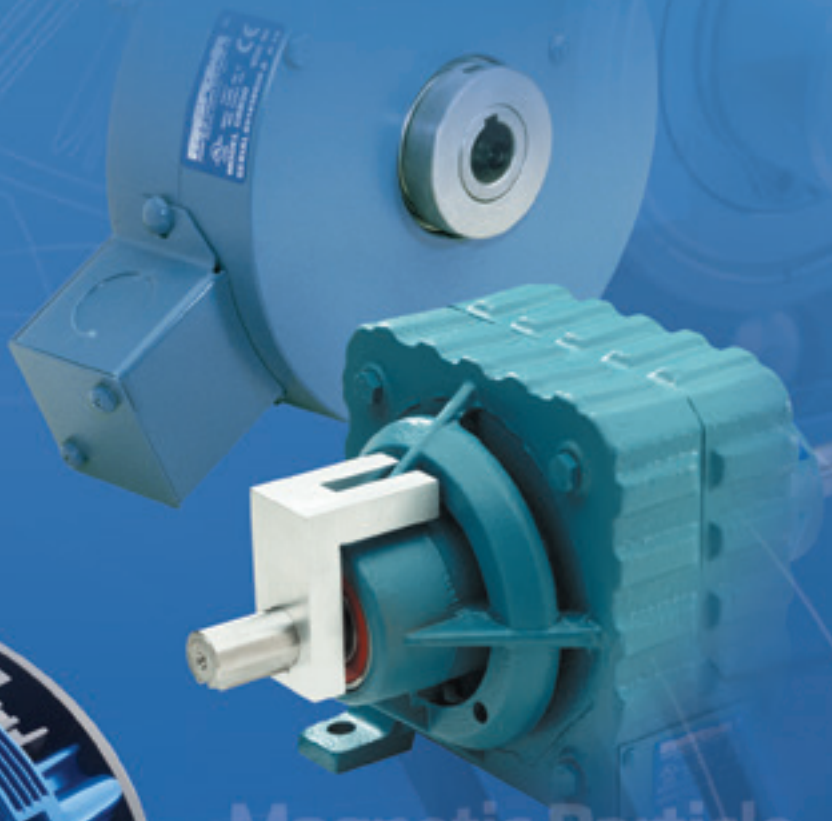
MAGPOWR

MAGPOWR TENSION CONTROL SOLUTIONS

Advanced Web Tension and Torque Control Technologies

Load Cells & Readouts

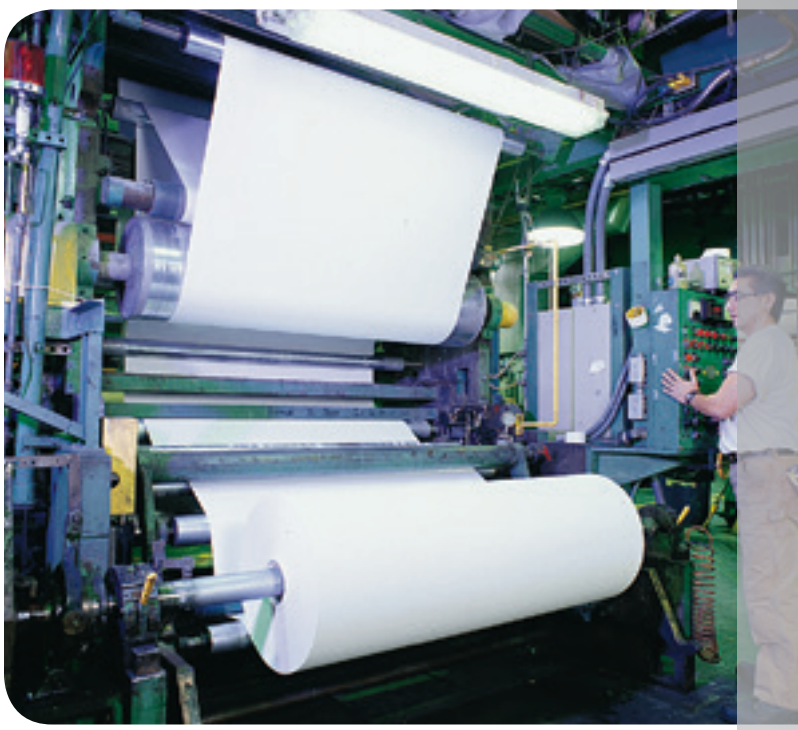
Pneumatic Brakes



Magnetic Particle Clutches & Brakes

Tension Controls

Permanent Magnet Clutches & Brakes



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

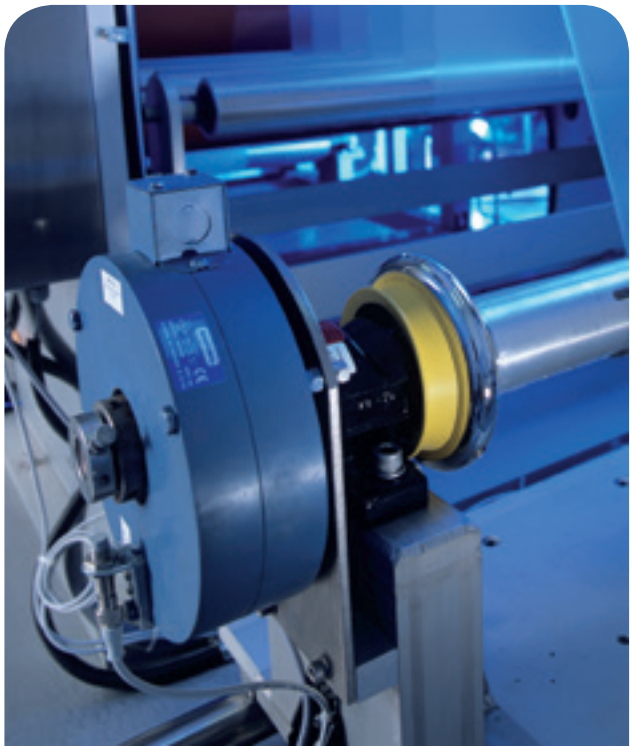
The industry has overwhelmingly chosen MAGPOWR's tension control systems as the preferred brand, with the most systems installed worldwide. With more than 40 years of providing high-quality tension control solutions, MAGPOWR has the first-hand experience and flexibility required to configure the right 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 Fife (Guiding & Inspection), Tidland (Slitting & Winding) and Webex / Componex (Precision Rolls). Combined, the Maxcess companies provide a global reach, with operations in North America, South America, Europe and Asia.



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

DLCA & DTR65 DIGITAL SIGNAL AMPLIFIER

- Power supply:
  DLCA 24 VDC,
  DTR65 115/230 VAC or 24 VDC
- Setup and calibration through 3 push buttons and digital display
- Weightless load cell calibration
- 0 to 10 VDC and (0) 4 to 20 mADC outputs
- Outputs and display with adjustable and separate digital filtering
- One push button for re-zeroing, with optional input for remote re-zeroing
- Alarm output for high tension or low tension or high or low tension

DLCA NET

The DLCA NET load cell amplifier transmits calibrated tension values over the communications to a PLC, HMI or drive to display tension or be used in a tension control loop when not using a MAGPOWR tension control.

- Available in 3 mounting options:
  DLCA NET, DLCA NET-Slim and DLCA NET-IP65
- Communication over:
  EtherNet/IP, PROFINET, Modbus TCP or EtherCAT
- Embedded web server page for communication via Web-Browser
- Single and dual channel versions
- Two load cell inputs allow tension monitoring separately on the left and right side of the web (single channel version) or in two separate tension zones (dual channel version).
- Two programmable alarms
- Dual Ethernet ports
- Rockwell AOP (add on profile)
- DLR (Device Level Ring)
- PTPv2 and PTPv1 time stamping

DLCA NET

- Mounting on DIN-Rail in electrical cabinet
- Relay output that signals “ready to run”
- Setup and calibration by four push buttons on unit and six-digit display
- 0 - 10 VDC and 4 - 20 mA analog outputs for left, right and total tensions

DLCA NET-IP65

- Mounting in the machine
- IP65 rated

DLCA NET-Slim

- Mounting on DIN-Rail in electrical cabinet

MAGPOWR TENSION SENSING ROLLER

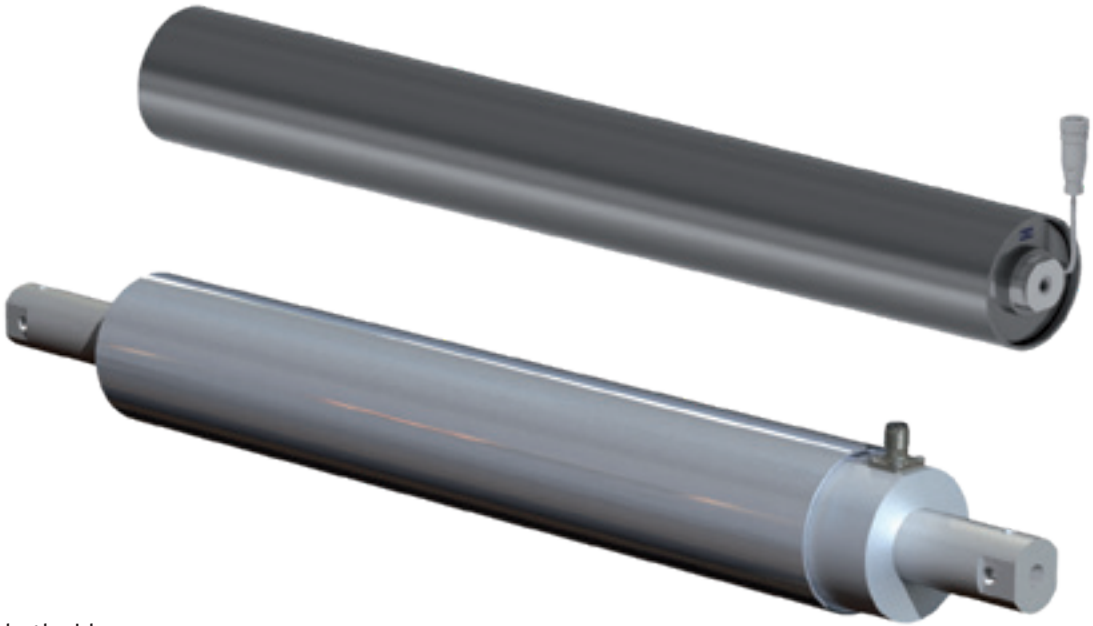
The MAGPOWR tension sensing rollers use two tension sensors embedded in the roller to provide a signal proportional to tension in any unwind, rewind or intermediate web processing application.

When installed in place of a standard idler roller, the CSR or ISR tension sensing roller delivers precise web tension measurement with low temperature drift due to full Wheatstone bridge construction on each load cell inside the roller.

- Fast and easy installation
- 7 sensing ranges available
  50 N, 100 N, 250 N, 500 N, 750 N, 1000 N and 2200 N
- Several diameters available
  80 mm, 100 mm, 120 mm, 150 mm and 160 mm
- Roller materials in Aluminum, Steel and Stainless Steel
- 5 x mechanical overload protection in both force directions for protection even under severe overloads
- The roller design can be customized according to customer requirements

CSR-SERIES

- Cantilevered mounting
- Optional integrated display offers display of actual tension on end of roller, weightless load cell calibration, 0 to 10 VDC output, digital filter of output and re-zero button
- Optional integrated RPM sensor
- Individual length from 250 to 700 mm
- Force measurement in positive or negative direction
- Flange and stud mount



ISR-SERIES

- Supported on both sides
- Single bolt mounting on each end
- Dead shaft
- Connector on one side only
- Individual length from 235 to 3000 mm

MAGPOWR LOAD CELLS

MAGPOWR load cells are extremely accurate devices used to measure web tension in any unwind, rewind or intermediate web processing application.

The load cells are available in a variety of mounting styles and measuring ranges. MAGPOWR load cells are designed with strain gauges in a full Wheatstone bridge arrangement that provide the lowest temperature drift rating possible.

- Models available to support cantilevered idler roller, or roller with one load cell on each side
- Inch and Metric models for worldwide use
- Mechanical overload stops for protection in both force directions
- Dual beam construction design to ensure linear output
- Full Wheatstone Bridge ensures the highest levels of accuracy to reduce scrap and increase efficiency
- Ruggedly constructed for long life and dependability

CL-SERIES

- Designed to support cantilevered idler rolls in processing machines
- Possible mounting inside or outside of the machine frame
- Two sizes with the following sensing ranges
  Size CL1: 20 N, 70 N, 250 N
  Size CL2: 70 N, 250 N, 750 N, 2500 N
- Dual beam construction design out of aluminium
- IP 67 rated

TS-SERIES

- Designed to support idler rolls by 2 TS-load cells in processing machines or for measuring the tension of wires or threads via a pulley
- An internal self-aligning ball bearing supports measuring rollers with “live shaft” or “dead shaft”.
- Two sizes with 6 sensing ranges
  20 N, 100 N, 250 N and 750 N, 1500 N, 2500 N
- Dual beam construction design out of aluminium
- IP 67 rated

TSCL -SERIES

- Designed to support cantilevered idler rolls in processing machines
- 1 size with 2 sensing ranges: 50 N and 250 N
- Dual beam construction design out of steel

TLC-SERIES

- Designed to support idler rolls by 2 TLC-load cells in processing machines
- 2 sizes with the following sensing ranges:
  size A: 50 N, 100 N, 250 N, 500 N, 750 N, 1000 N
  size B: 500 N, 1000 N, 2000 N, 3000 N
- Low profile design allows maximum web width
- Dual beam construction design out of steel
- Overload protection of the sensing range up to factor 10
- IP 67 rated

GTS-SERIES

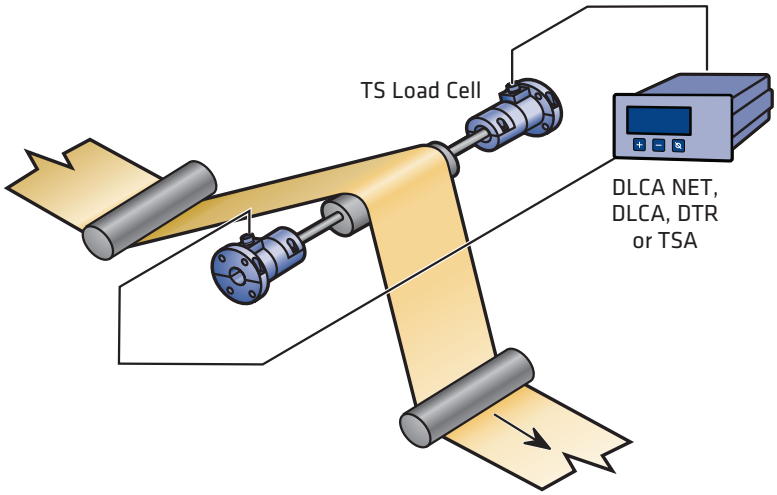
- Designed for mounting pillow block bearings on each side of the idler roll
- Four sizes with twelve sensing ranges from 10 daN to 150 kN
- IP 67 rated
- GTSA & GTSB for easy installation in any converting machine
- GTSC & GTSD designed for production in metals industry

TSR-SERIES

- Designed to support idler rolls by 2 TSR-load cells in processing machines
- 1 size with 3 sensing ranges: 150 N, 250 N and 500 N
- Dual beam construction design out of steel

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.

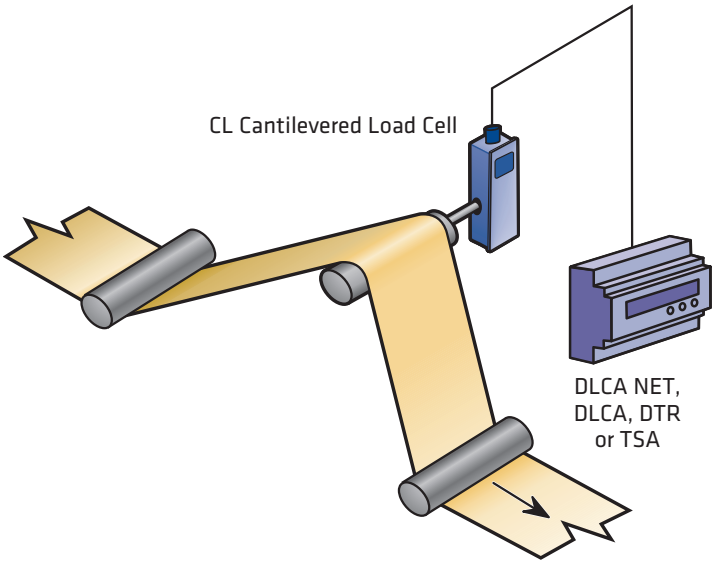
Tension Monitoring and Readout

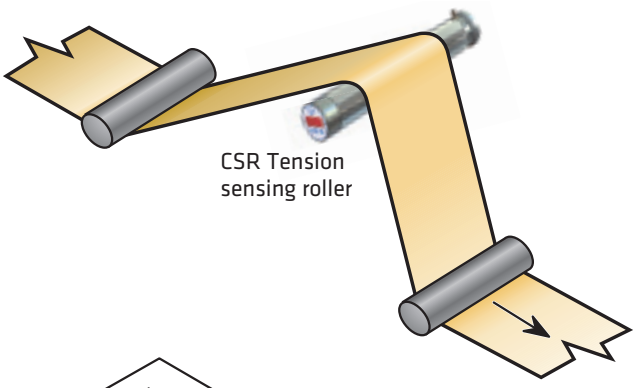


Tension Monitoring

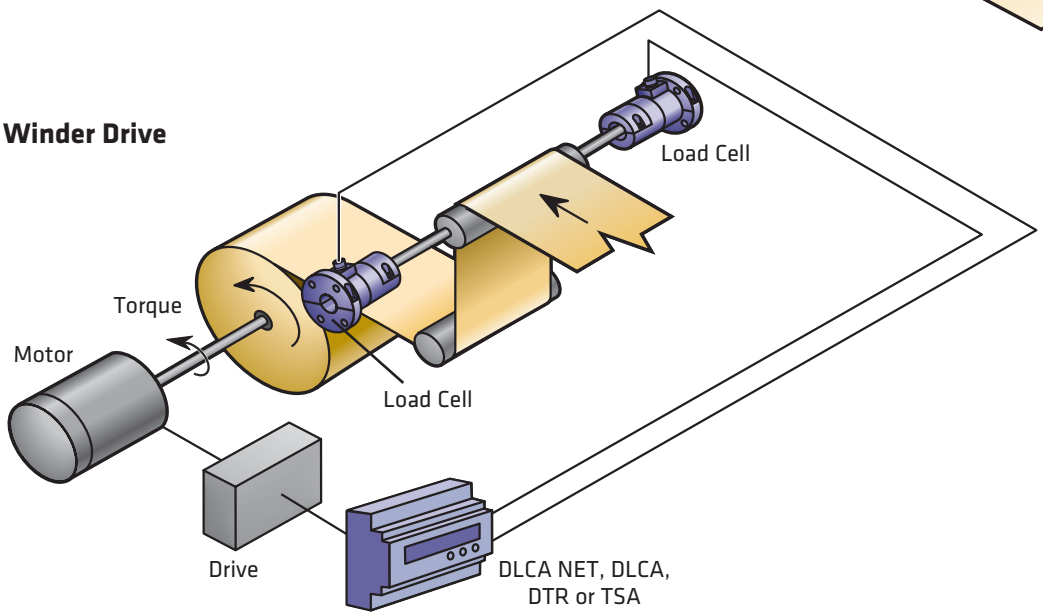
- Analog and digital displays available
- Amplifiers with embedded dual port communications including EtherNet/IP, PROFINET, Modbus TCP and EtherCAT to transmits calibrated tension values over the communications to a PLC, HMI or drive
- 0 to 10 VDC or 4 to 20 mADC analog outputs
- Available mounting options: DIN Rail (CE), Wall Mount, Panel Mount
- Tension sensing rollers with embedded tension sensors supported on both sides or mounted cantilevered

Tension Monitoring and Readout
Wire Application





Tension Reference to Winder Drive



TENSION CONTROLLER

- Digital Tension controller: Cygnus, Versatec, Spyder-Plus
- Tension control of unwinds, rewinds, dancer and open loop applications
- Installation with enclosure in wall mount, cabinet front door mounting or DIN rail mounting
- Backlit display
- Control signal: 0 - 10 VDC, -10 to +10 VDC, 4 - 20 mA
- Power supply: Cygnus & Versatec: 115/230 VAC, Spyder-Plus: 24 VDC
- Language selectable: English, French, German, Italian, Spanish
- Password protection

Cygnus & Versatec:

- Gain scheduling
- User interface
- Multiple setups
- Taper tension
- Winding calculator with 1/dia (speed/dia) analog output

POWER AMPLIFIER PS24/PS90 FOR MAGNETIC POWDER DEVICES

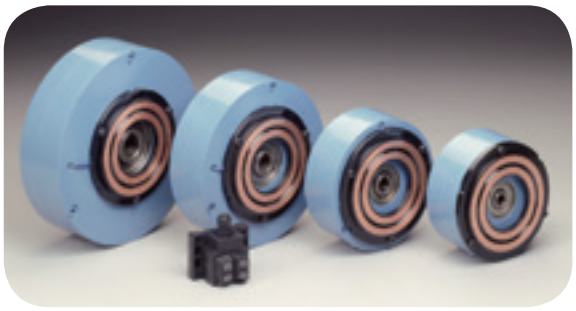
- Current regulated (24 VDC or 90 VDC) output with selectable current ranges
- Reverse-current feature to minimize drag torque
- 0 - 1 mA remote meter output is proportional to the current range selected and indicates output as percentage of the selected range
- Manually adjustable through remote potentiometer
- Compact enclosure requires minimal mounting space
- CE compliant and UL listed

CURRENT-TO-PRESSURE TRANSDUCER FOR PNEUMATIC BRAKES

- Superior response for control applications
- Compact surface mount design
- Ready to use, no calibration required
- Operates any pneumatic clutch or brake, regardless of make and size
- 4 - 20 mA control input
- 115 / 230 VAC power supply
- Regulated output pressure 0 - 5.5 bar
- Accurate and repeatable
- IP 65 protection against dirt and liquid
- Suitable Pressure gauge kit and filter kit as option available

**MAGPOWR clutches and brakes are available in three types:
Hysteresis, Magnetic Particle and Pneumatic.**

GLOBAL SERIES MAGNETIC POWDER BRAKES & CLUTCHES



- Shaft mounted magnetic powder brake & clutches
- Clean and quiet operation in all operating conditions- no slap, squeaks or dust
- Compact size and through bores for easy mount to existing machine frames and shafts
- Magnetic particle technology provides smooth, repeatable torque independent of speed.
- 6 brake sizes and 4 clutch sizes with true metric and imperial bores and keyways, 7.5 Nm, 14.9 Nm, 35.2 Nm, 75.9 Nm (135 Nm, 440 Nm brakes)
- All sizes available with 24 VDC and 90 VDC coils for international installations
- Fast delivery
- Rugged construction and no parts to wear out over time ensure long life
- Compatible with all MAGPOWR controls Cygnus, Versatec, Spyder-Plus
- Additional cooling option with blower for brakes available

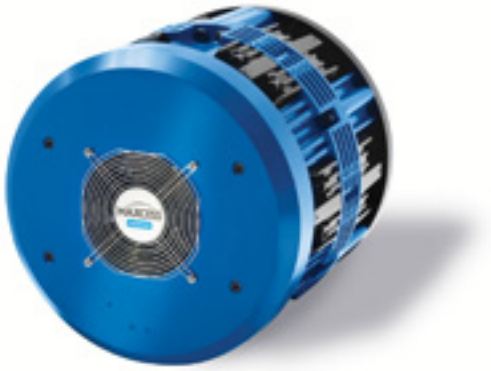
C-SERIES MAGNETIC POWDER BRAKES & CLUTCHES

- Foot mounted magnetic powder brakes & clutches
- Clean and quiet operation in all operating conditions - no slap, squeaks or dust
- Magnetic particle technology provides smooth, repeatable torque independent of speed.
- 5 brake & clutch sizes with 24 VDC or 90 VDC coils for international installations, 1.35 Nm, 4 Nm, 13.5 Nm, 67.8 Nm, 135 Nm
- Rugged construction with two bearings on each shaft for easy ratio installation with pulleys or sprockets
- no parts to wear out over time ensure long life
- Compatible with all MAGPOWR controls Cygnus, Versatec, Spyder-Plus
- Higher heat dissipation
- Additional cooling option with blower and/or water available

SOFSTEP-SERIES MAGNETIC POWDER BRAKES & CLUTCHES

- Designed for lower torque applications
- No maintenance - nothing to monitor or adjust
- Quiet operation - no slap or squeaks
- Energy efficient
- Compact design
- Fast response (no mechanical parts to move, engagement happens in milliseconds)
- Totally enclosed housing- no wear particles to contaminate environment
- 5 brake sizes and 4 clutch sizes with 24 VDC and 90 VDC coils for international installations
  0.2 Nm, 1.7 Nm, 7.9 Nm, 13.5 Nm (27 Nm brake only)

HEB250 PNEUMATIC BRAKE



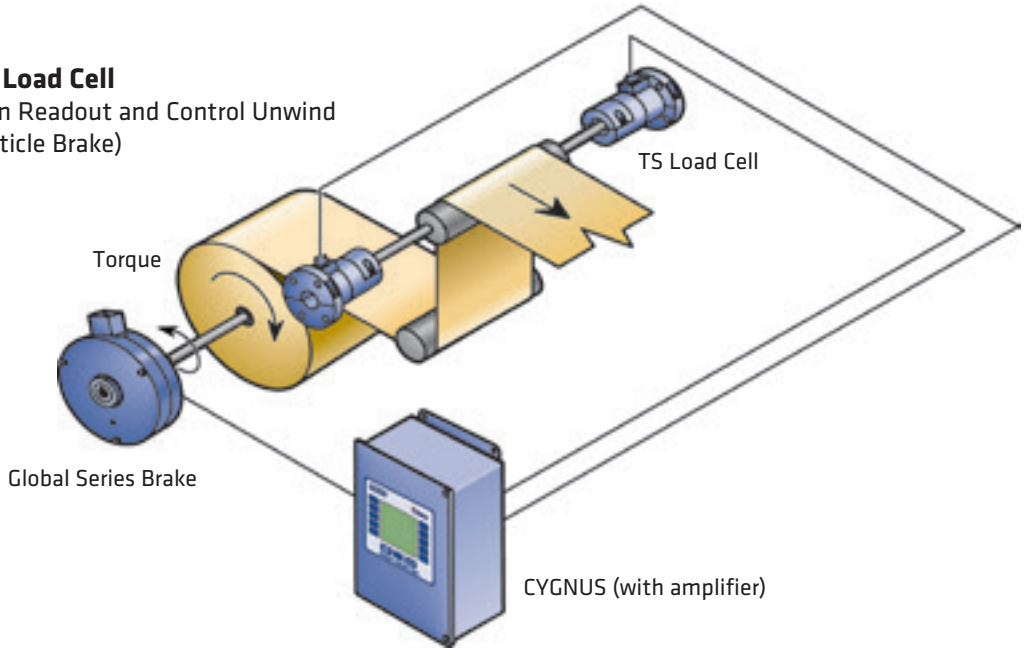
- Designed for high torque output and heat dissipation
- Small compact size
- Through bores and keyways
- Inch and metric bores
- Optional mounting adapter
- Longer pad life
- rotor with a bi-directional flute design for efficient cooling
- Optional integrated proximity sensor for speed detection
- Friction coefficient of the asbestos free brake pads: low: 0.12, medium: 0.41, high: 0.51
- Number of calipers: 1-6
- Max. Torque: 262 Nm (low), 910 Nm (medium), 1061 Nm (high)
- Max. Air pressure: 621 kPa
- Max. Rotation speed: 3200 1/min
- Optional additional fan (24 VDC, 1.5 ADC)
- Weight: ca. 25 kg

PERMATORK-SERIES HYSTERESIS BRAKES & CLUTCHES

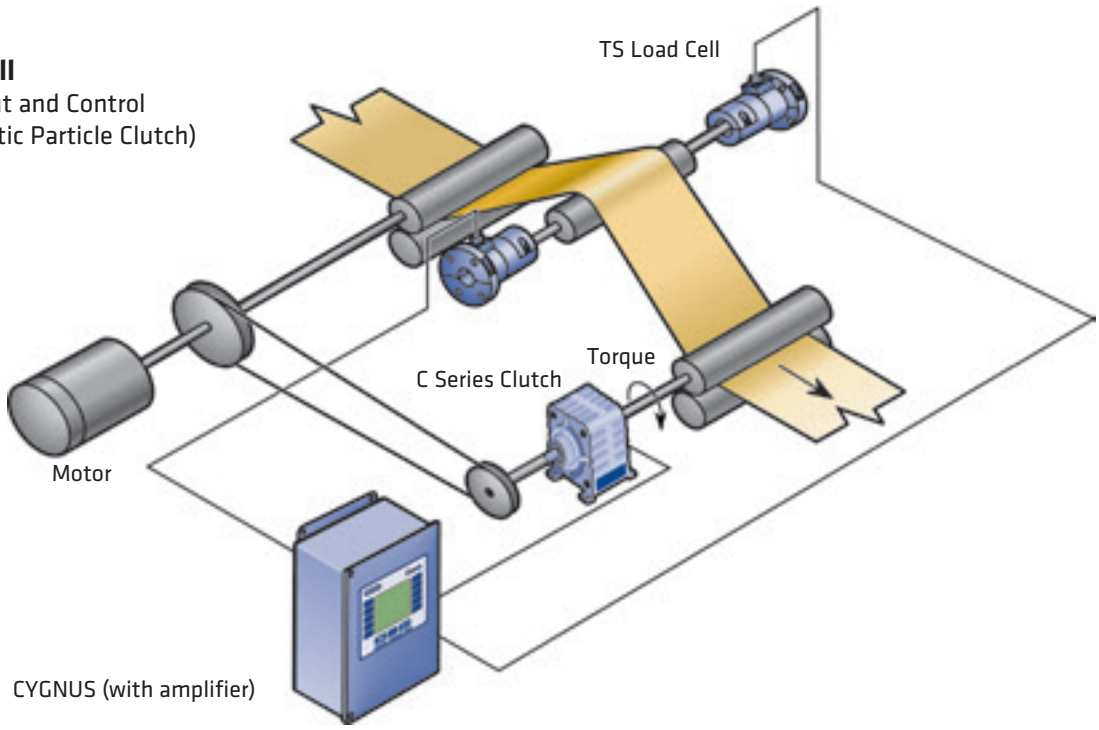
- Designed for low torque applications with a fixed torque
- Fast, precise torque adjustment
- Constant torque from 0 rpm
- No external control or power source
- Contactless torque generation provides maintenance free operation and long life
- Inch and Metric models for international installations
- 5 sizes within HC-series, 0.0077 Nm, 0.141 Nm, 1.13 Nm, 2.825 Nm, 6.215 Nm
- Other models PB6 (0.678 Nm), HB-1/2 (0.056 Nm), HB6 (6.215 Nm)

MAGPOWR brakes and clutches devices simplify tension control by providing constant torque independent of slip speed and are used in applications such as these:

Closed Loop Load Cell
Digital Tension Readout and Control Unwind
(Magnetic Particle Brake)



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

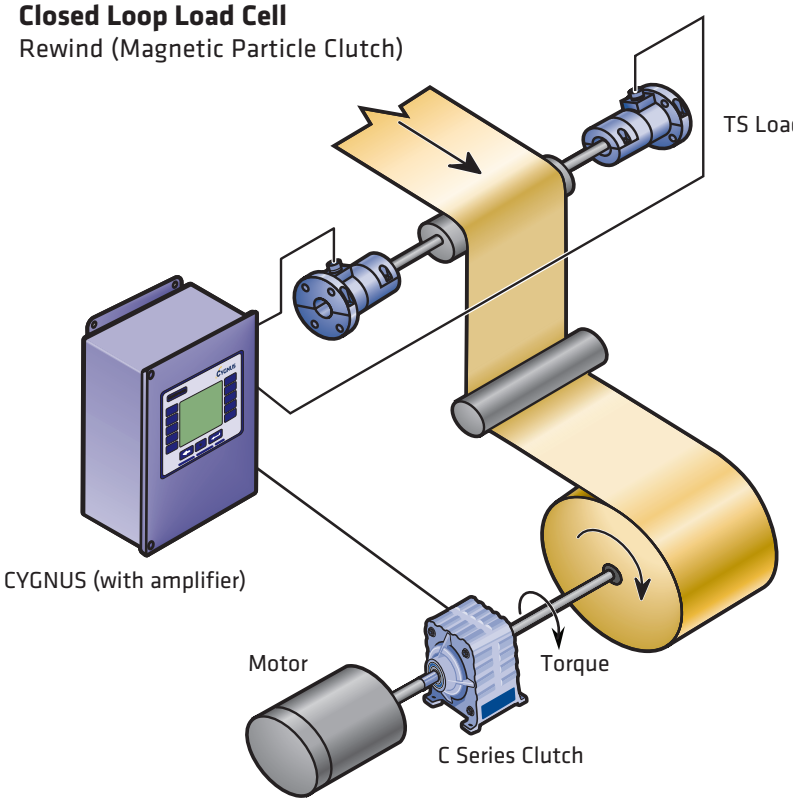


Closed Loop Load Cell

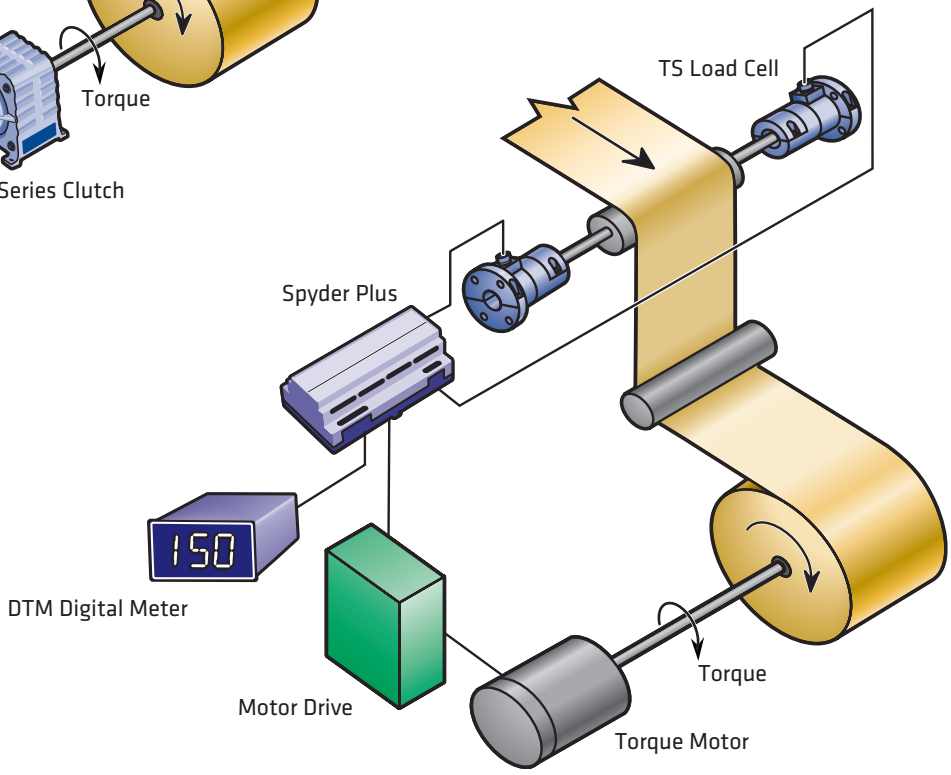
Designed to provide "actual" tension feedback, these product combinations will ensure you get the most accurate method of tension control available.

- Adjustable taper tension for rewinds standard
- 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) and DIN Rail Mount (CE)
- Inverse Diameter Output available to slow the rewind motor as the roll builds, decreasing slip heat in clutches
- Web break detection

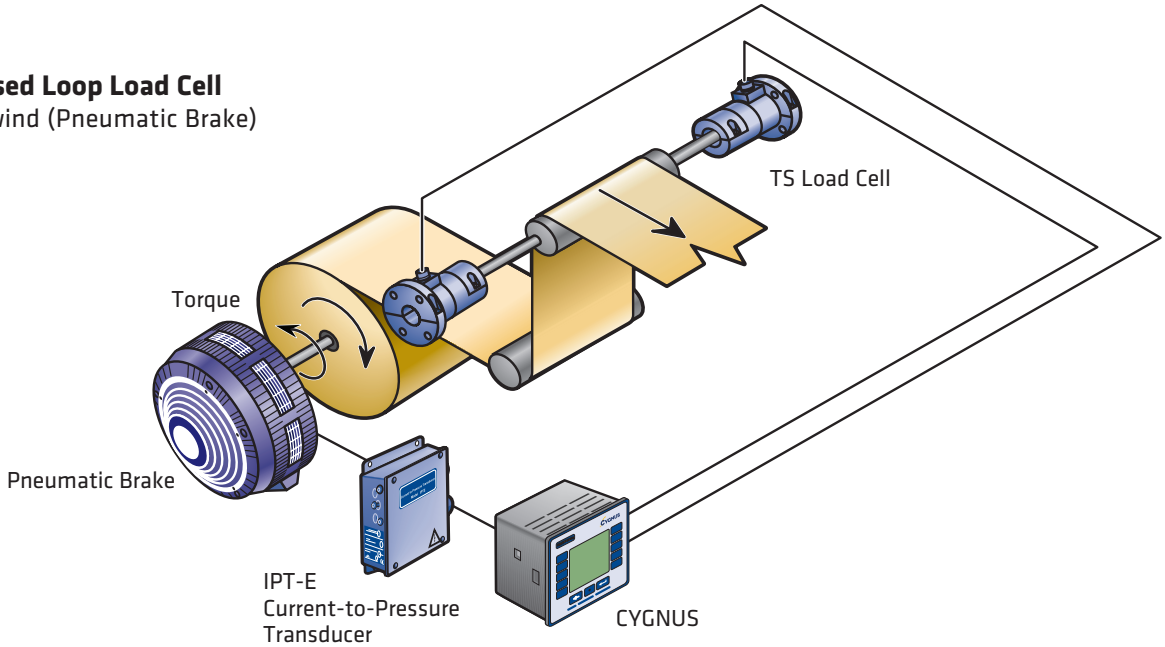
Closed Loop Load Cell
Rewind (Magnetic Particle Clutch)

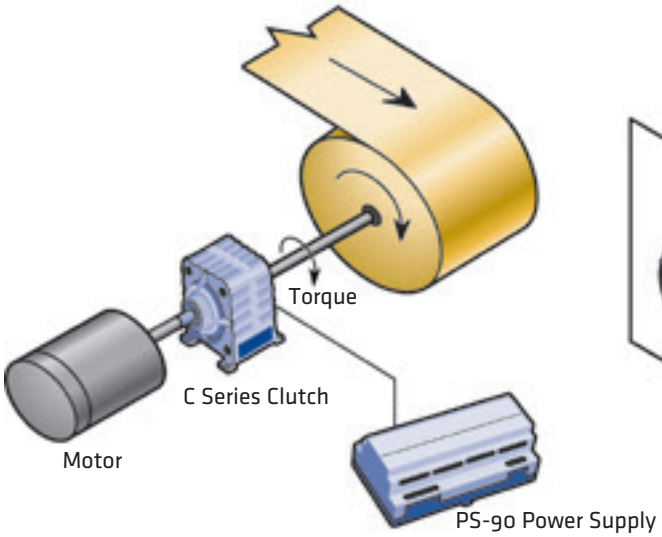


Closed Loop Load Cell
Rewind (Motor Drive in Torque Mode)

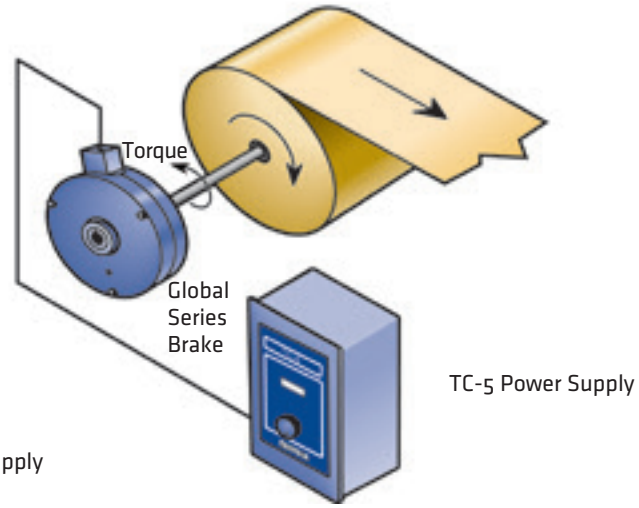


Closed Loop Load Cell
Unwind (Pneumatic Brake)

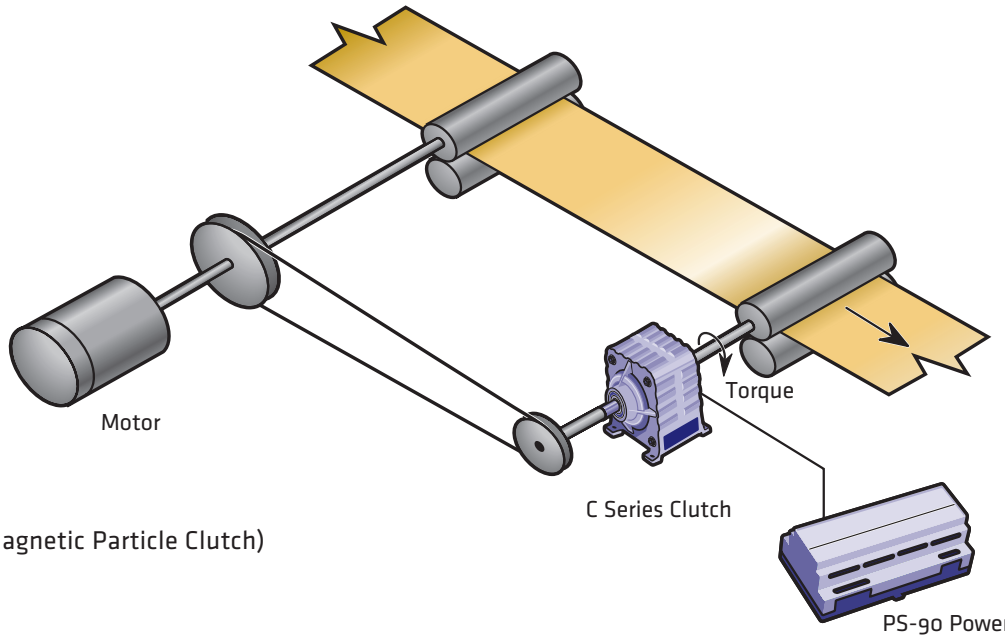




Manual Control
Rewind (Magnetic Particle Clutch)



Manual Control
Unwind (Magnetic Particle Brake)



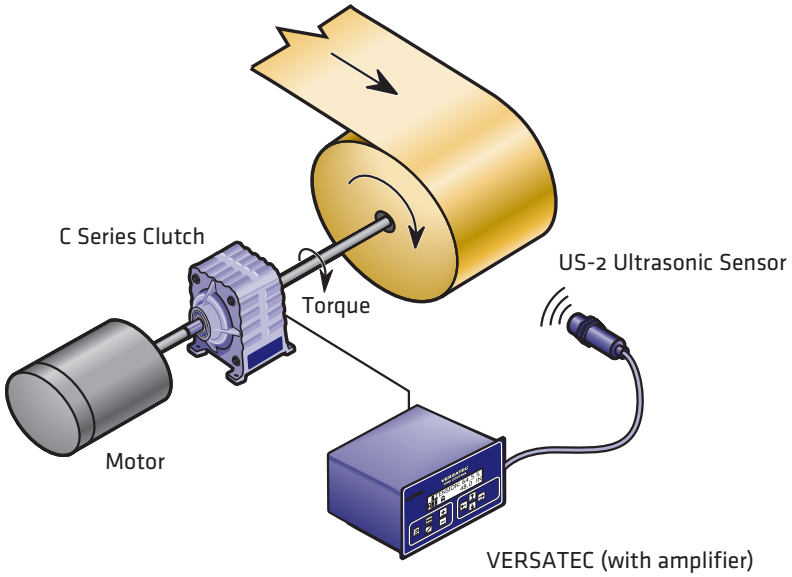
Manual Control
Point-to-Point (Magnetic Particle Clutch)

Manual Control

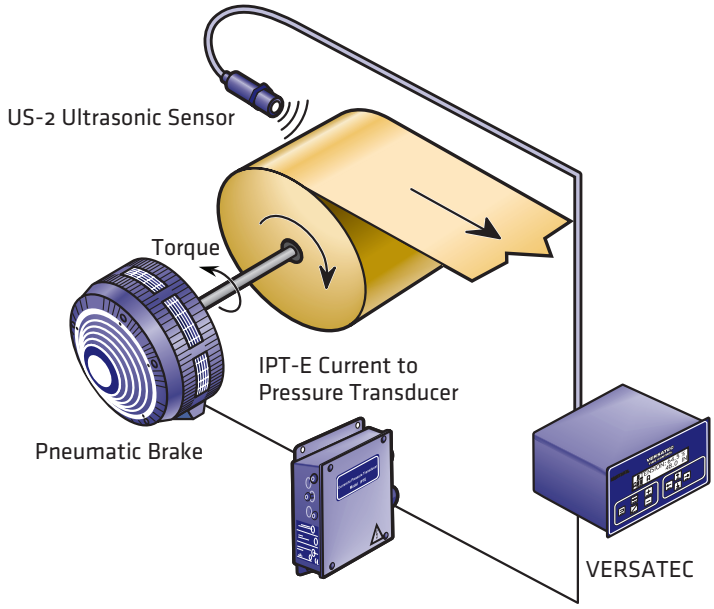
MAGPOWR Manual Tension Control systems are a low-cost solution for Rewind, Point-to-Point and certain Unwind Applications. Our manual power supplies allow you to overcome residual magnetism and use the full range of your magnetic particle brake or clutch with their unique reverse current feature. These systems are ideal for Rewind Applications where natural taper is needed, Point-to-Point Applications where roll build does not change and 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 Ultrasonic
Rewind (Magnetic Particle Clutch)



Open Loop Ultrasonic
Unwind (Pneumatic Brake)

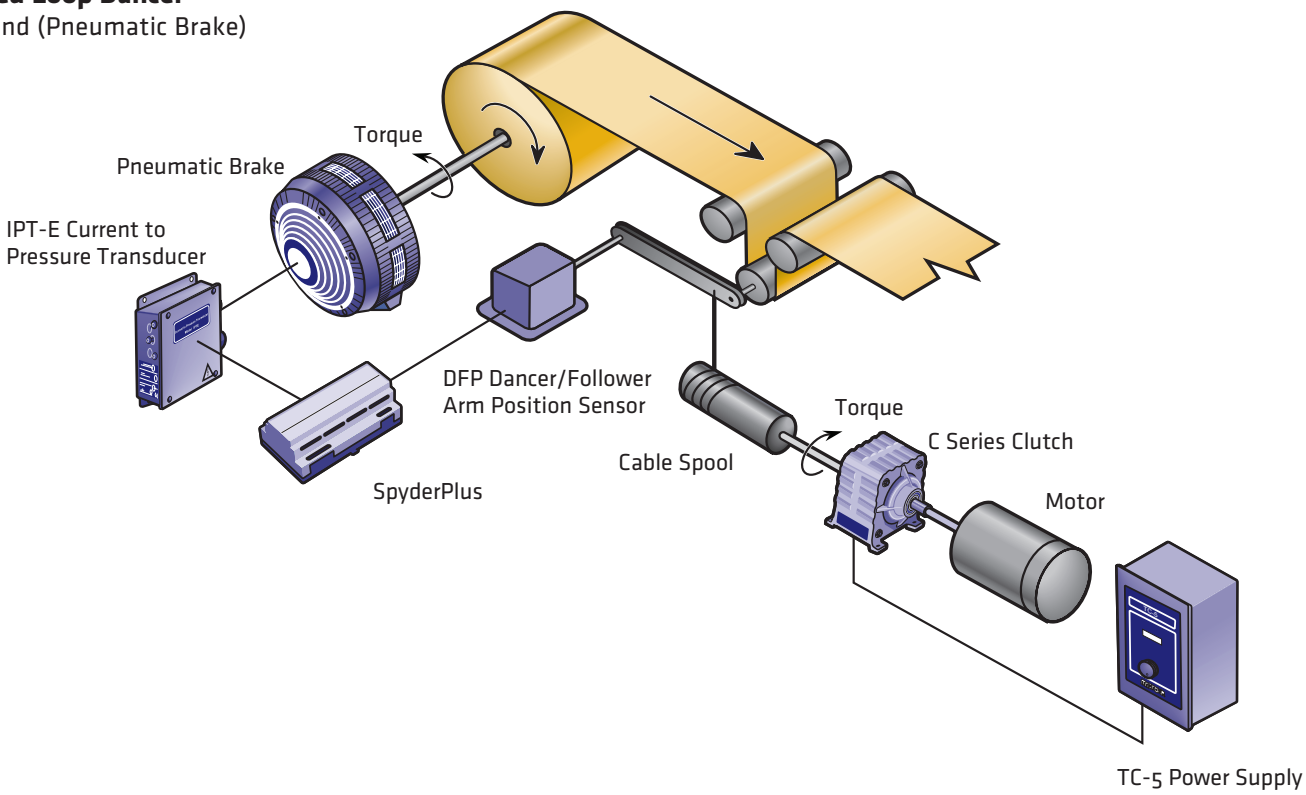


Open Loop Ultrasonic

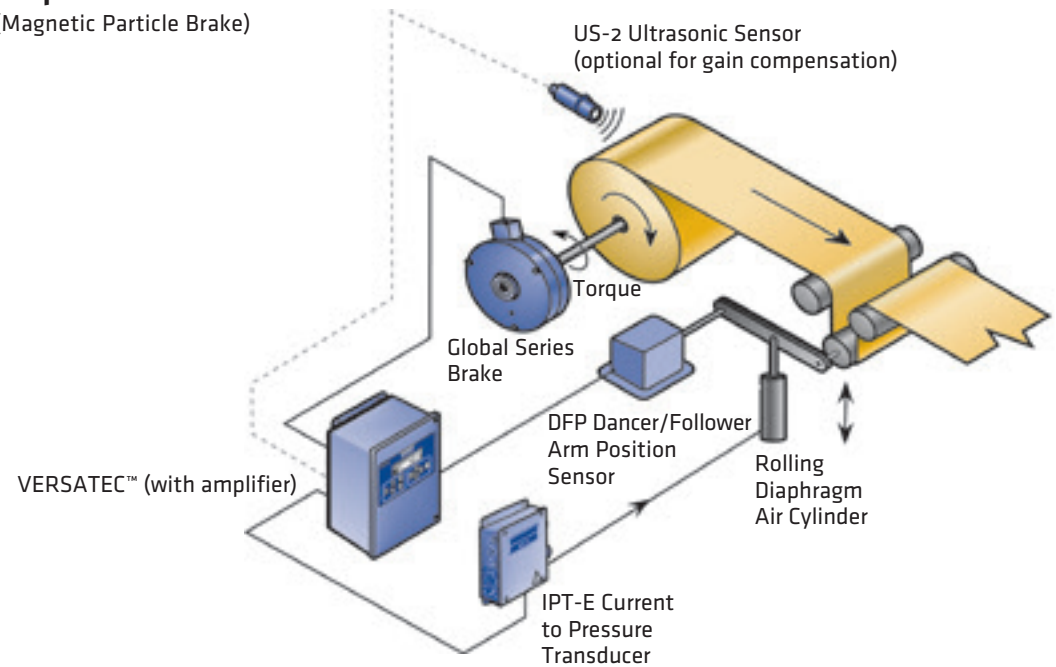
These systems are accurate, simple to engineer and easy to install. Tension control is based upon changing roll diameter, with no physical contact made to your web.

- 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)

Closed Loop Dancer
Unwind (Pneumatic Brake)



Closed Loop Dancer
Unwind (Magnetic Particle Brake)

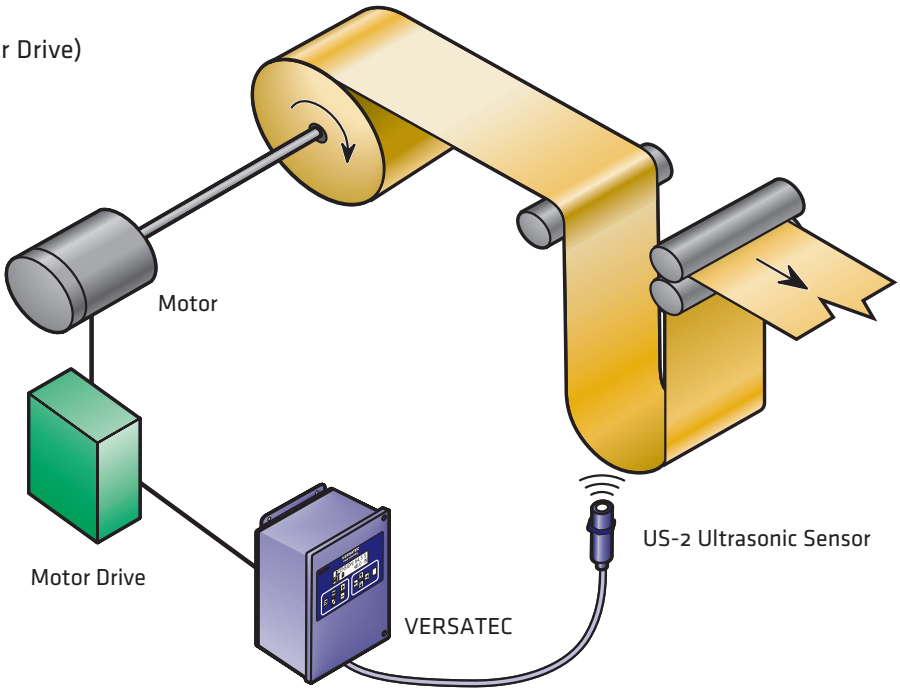


Closed Loop Dancer

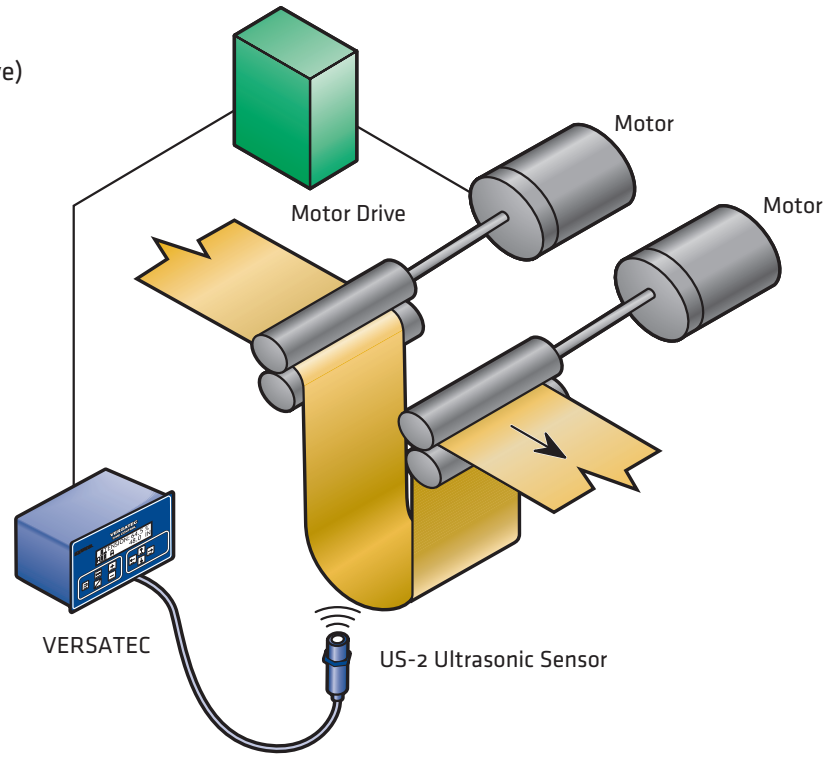
These systems are the ideal choice for maintaining constant tension on start/stop applications or when unwind rolls are out-of-round.

- 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 mADC, -10 to 10 VDC, 90 VDC and 24 VDC
- Available mounting options:
  Wall Mount (CE), DIN Enclosure Mount (CE), DIN Rail Mount (CE)

Closed Loop Control
Free Loop Unwind (Motor Drive)



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



Ultrasonic Free Loop

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.

- 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
- Available outputs:
  0 to 10 VDC, 4 to 20 mADC, -10 to 10 VDC
- Mounting options:
  Enclosure Mount (CE), DIN Panel Mount (CE)

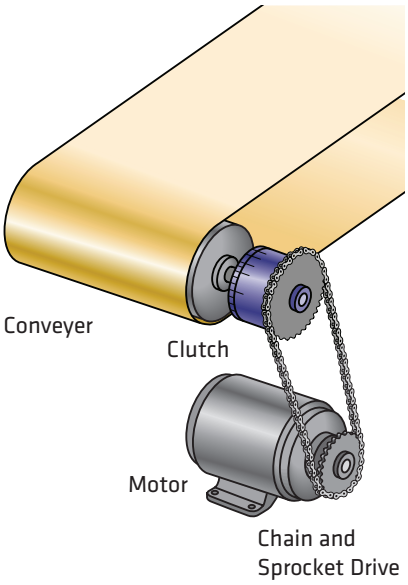
Hysteresis brakes and clutches are popular in light tensioning and torque applications such as these:

As a tensioner

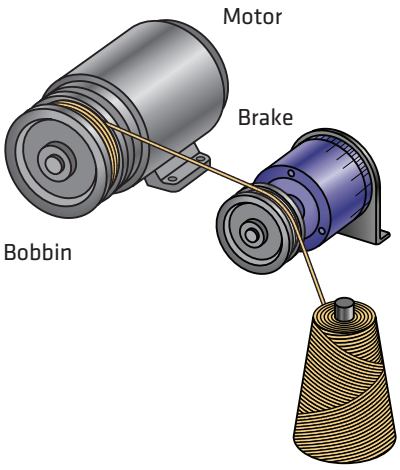
By using one of the Perma-Tork assemblies, you can accurately control tension. The hysteresis unit is best suited for tensioning on unwind stands and nip rolls.

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.



Material handling
Hysteresis clutch can provide overload protection and soft start



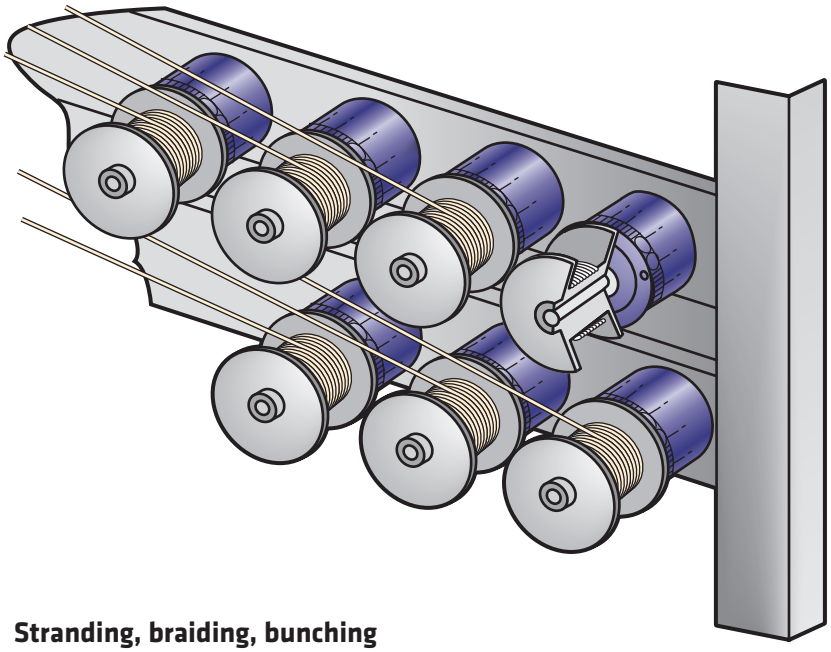
Coil winding
Constant tension provided by hysteresis or magnetic particle unit

As a magnetic coupling

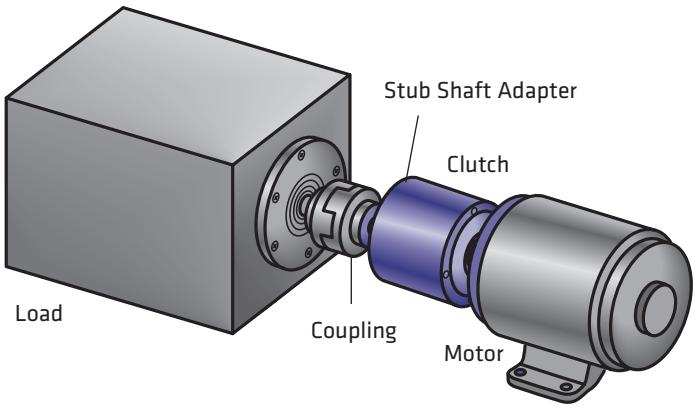
Perma-Tork clutches guarantee a soft transfer of power between prime mover and load at start-up. In this application, Perma-Tork behaves similar to a fluid coupling, but locks in at zero slip once torque is reached.

Testing

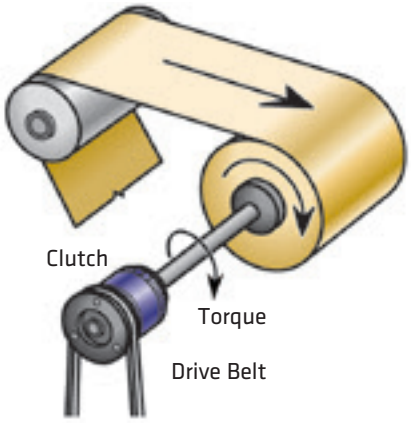
Perma-Tork hysteresis units provide a constant slip torque unaffected by wear, humidity or "stick-slip". This makes it an ideal device for many testing applications. The torque can be precisely adjusted (even at low speeds). Torque will not fluctuate over extremely long testing periods.



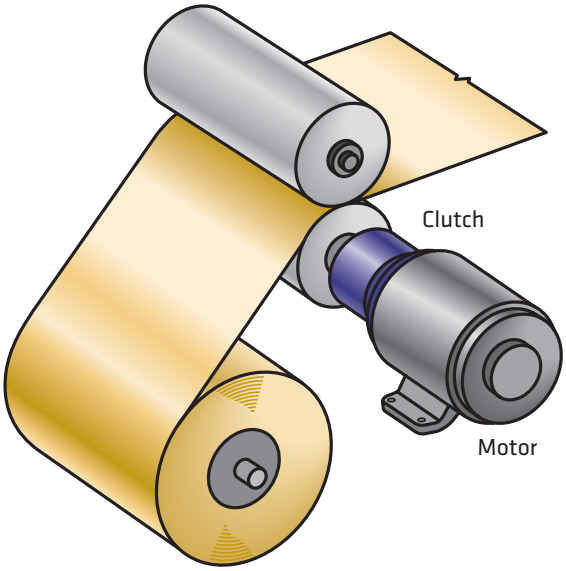
Stranding, braiding, bunching
Tension provided by hysteresis or magnetic particle unit



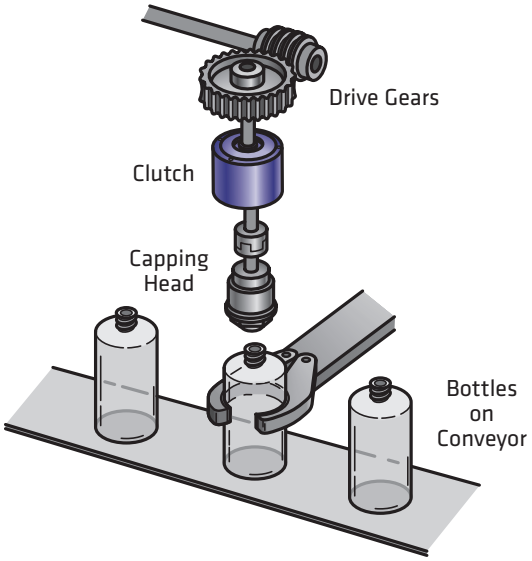
Torque Limiting
Hysteresis clutch provides overload protection



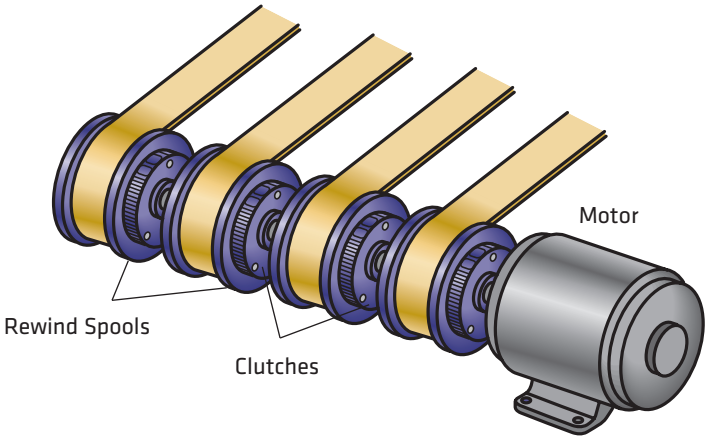
Web Tensioning
Hysteresis clutch on a web rewind providing a taper tension



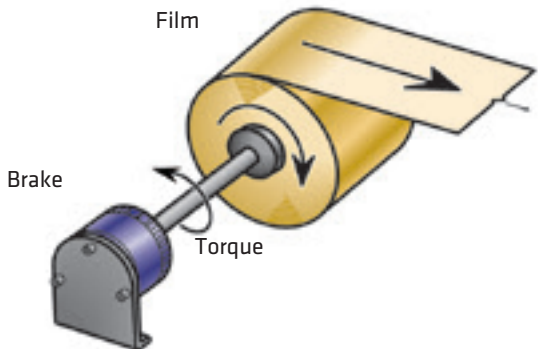
Film Tensioning
Constant tensioning provided by hysteresis clutch



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

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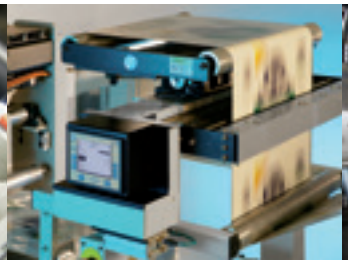


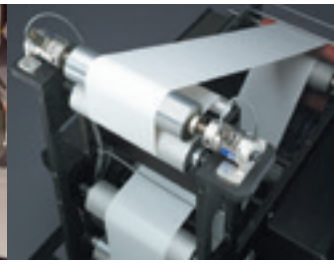

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