



Winding Solutions

*Shafts, Chucks, and Brakes
for Web Handling*



A Maxcess
International
Company

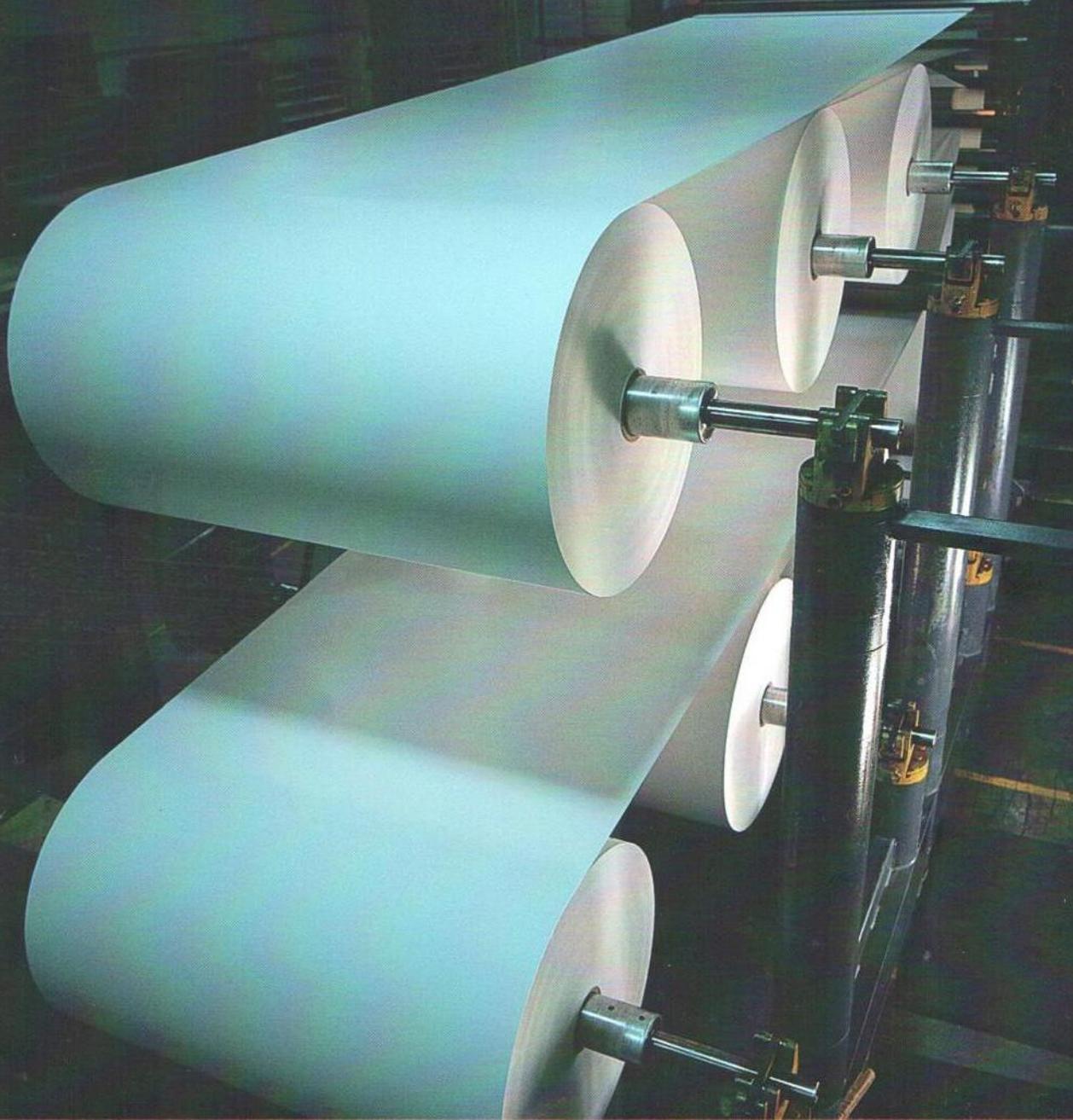
FISCHLI + FUHRMANN

(Pty) Ltd.

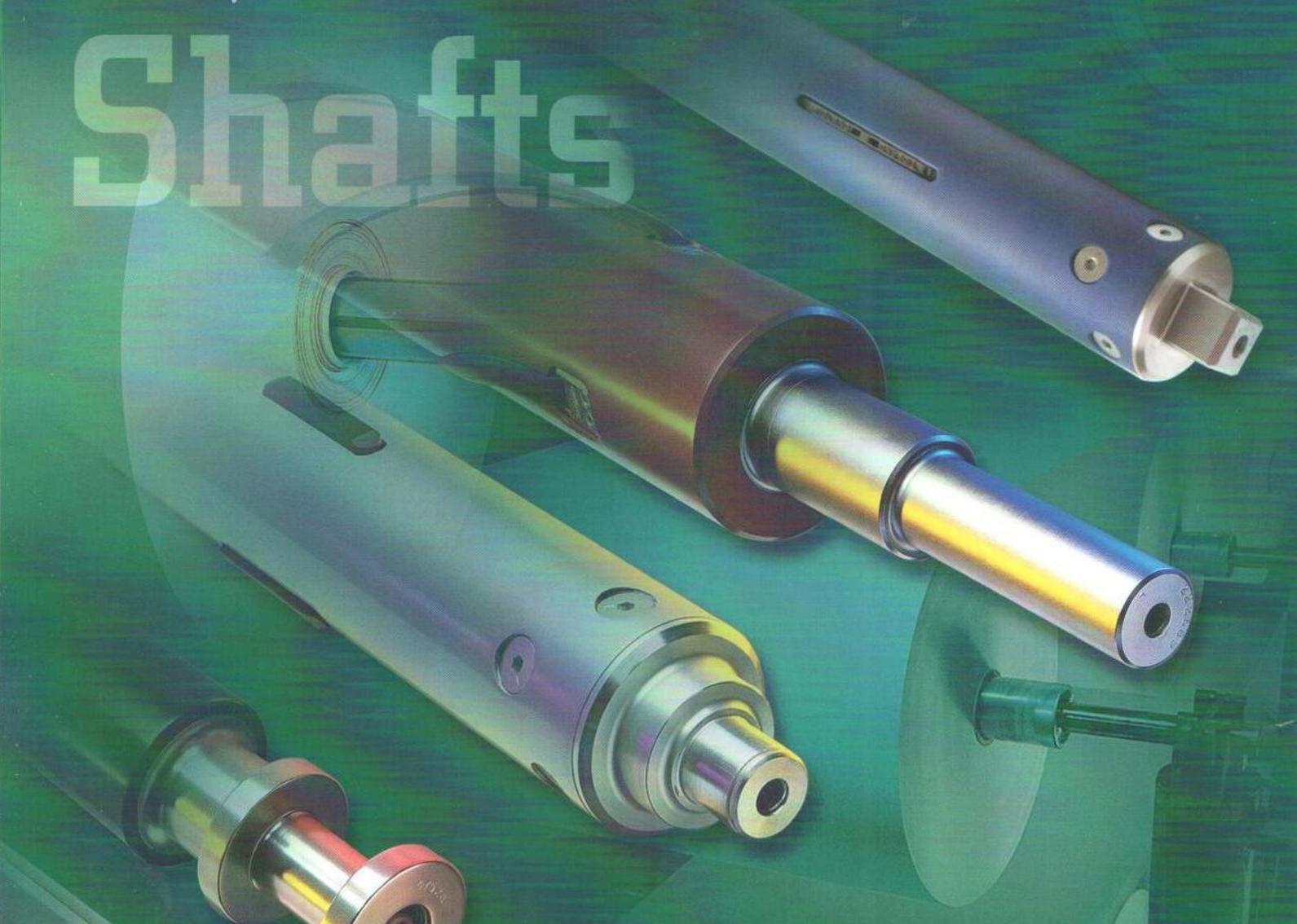
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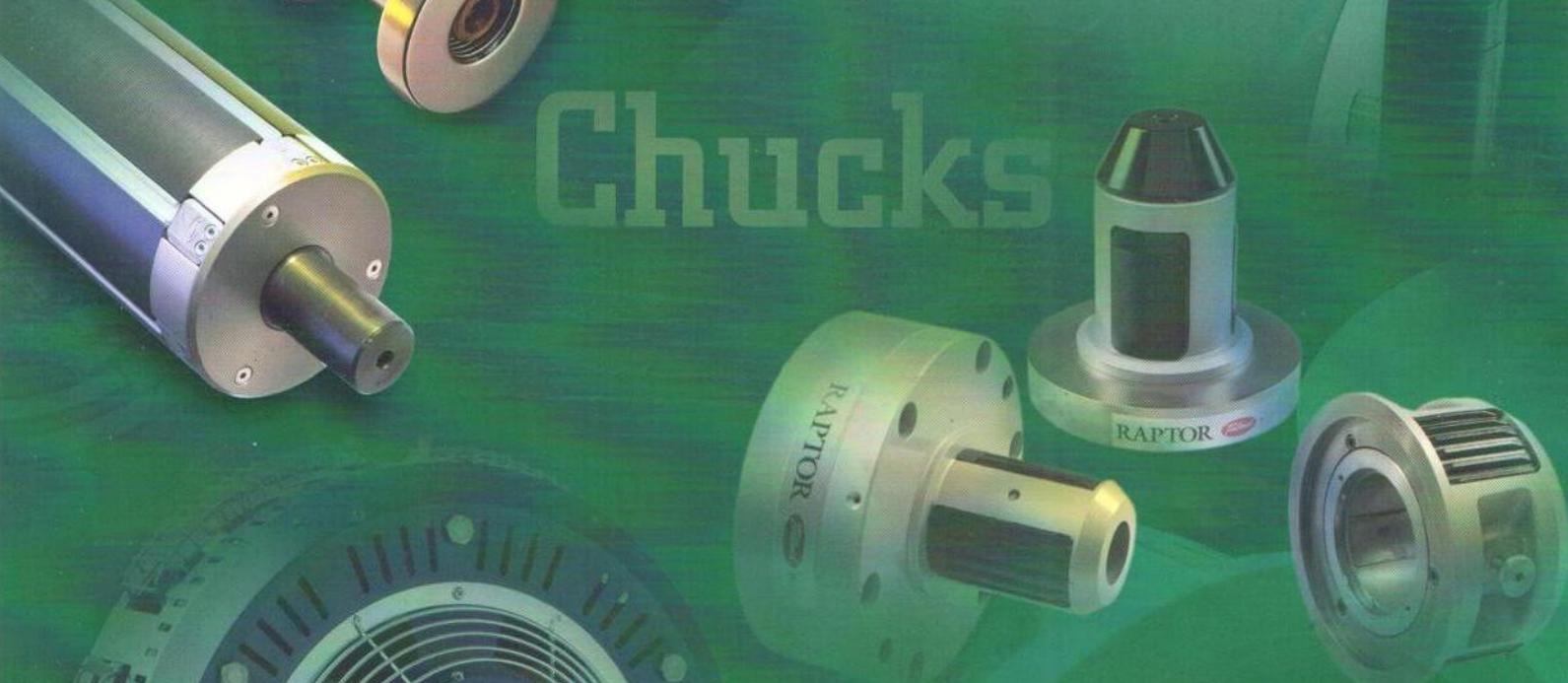
T I D L A N D W I N D I N G P R O D U C T S



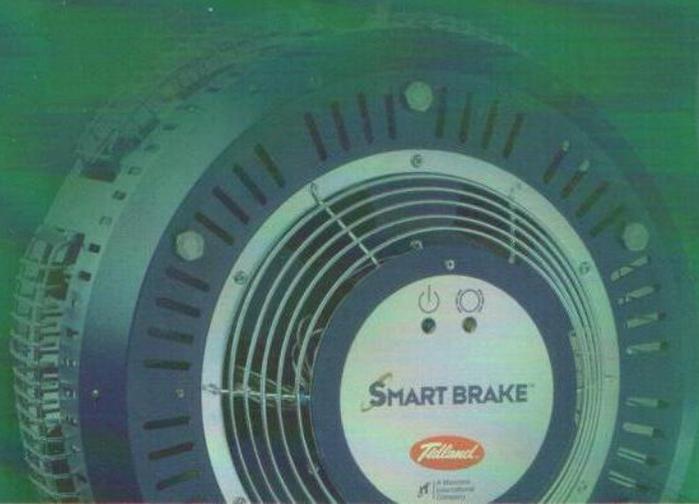
Shafts



Chucks



Brakes





 A Maxcess
International
Company

Winding solutions for all your web handling needs.

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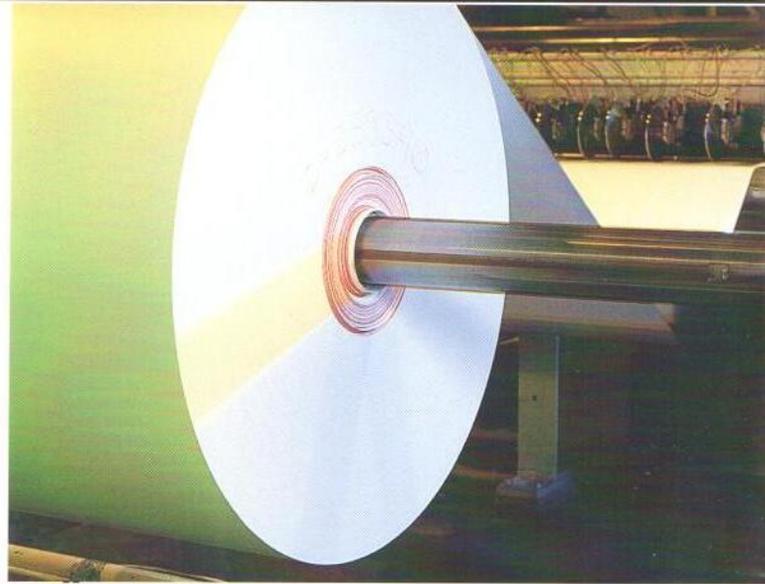
Productivity Through Innovation

Rolls have gotten bigger and bigger. Speeds have gotten faster and faster. The reason? Because - faced with the day-to-day challenge of increasing productivity - they have to. And if you can't keep up, you lose out.

Since the invention of the very first air shaft, Tidland has been committed to building products that are durable, designed for easy use, and engineered for reliable, long-lasting operation. As a result, Tidland has provided the web industry with truly innovative winding and slitting products that not only improve the way you work, they take productivity to a whole new level.

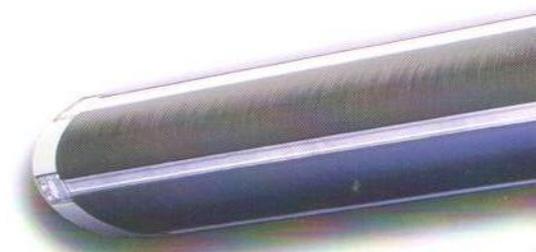
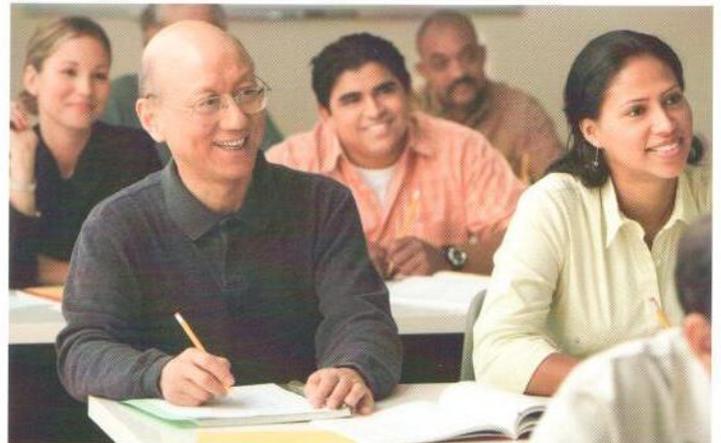
So whether you're working with films or foils, papers or non-wovens, we offer the broadest range of winding solutions to meet your specific needs. And we don't stop there:

- Application Expertise
- Delivery
- Superior Service
- Product Safety Data
- Global Presence
- Comprehensive Offering



Industry Leadership

Training and education are extremely important to the growth of our industry. Along with our involvement in the Web Handling Research Center at Oklahoma State University, we are proud to sponsor a number of training opportunities, including Maxcess University, on-site and online training that covers the theory and implementation of web handling technology in multiple formats that are easy to use and understand.



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Being light does not make you smarter. Unless, of course, you're talking about shafts. This super-light-weight line of Tidland shafts matches the weight that can reasonably be lifted by a single person, without sacrificing quality or performance. Ergonomically speaking, that's pretty smart.

GX Ultra-Lightweight External Element Shaft
Light- to Standard-Duty

76 mm to 152 mm (3 inch to 6 inch) ID Cores

These are the lightest shafts we make, delivering ergonomic benefits as well as high performance. With their combination of lightweight, affordability and innovative two-piece external element design, these versatile shafts are ideal for use in many applications.

Feature	Benefit
• Lightweight construction	• Reduces risk of operator injury
• Two-piece element design	• Easily changed without removing from machine
• Isolated air system	• Enables completion of roll run without loss of grip on core
• Rubber/Aluminum gripping element	• Positive core grip for a variety of application demands

GX Ultra-Lightweight

Ultrashaft™ – Lightweight Carbon Fiber Shafts
Light- to Heavy-Duty

76 mm to 152 mm (3 inch to 6 inch) ID Cores

The Ultrashaft™ combines the durability required to carry heavy loads and the reduced deflection required to operate at higher speeds without vibration in a light-weight, ergonomic carbon fiber winding solution. These shafts are constructed with precision wound, high-strength carbon filaments to provide a section modulus with a weight-to-strength ratio optimized for a wide variety of applications. The Ultrashaft™ is available in the following designs:

- Pad-Type Air Shaft
- B Lug-Type Air Shaft
- Lug-Type Air Shaft (Air and Mechanical)
- Tubular Mandrel

New Ultrashaft™ with X_{PRO}10

The innovative X_{PRO}10 features a unique flexible polymer coating over a lightweight carbon fiber shaft, protecting the shaft from the normal wear and tear of daily operations. Not only does this coating increase durability and reduce weight, it also eliminates downtime and replacement costs associated with metallic sleeves.

Feature	Benefit
• Lightweight construction	• Reduces risk of operator injury
• High-strength carbon fiber design	• Permits higher speeds, higher loads and minimal deflection
• X _{PRO} 10 coating	• Reduces core wear, eliminates safety issues associated with traditional metallic sleeves

Ultrashaft with X_{PRO}10





Pad

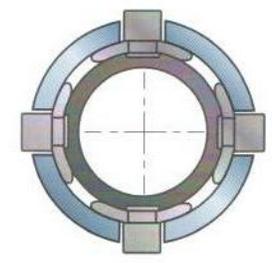
Lug

Button

C O R E S H A F T S - U N W I N D

Common Unwind/Rewind Shaft Features and Benefits:

Feature	Benefit
• Custom journal design	• Fits existing equipment
• Available in many sizes	• Accommodates most application requirements
• Durable construction	• Long life, low maintenance
• Modular air systems	• Reusable hardware/lower repair costs
• Steel, alloy, aluminum construction	• Optimum material selected based upon application needs

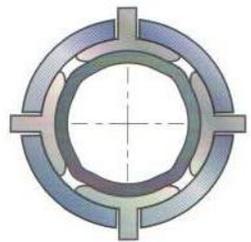


Series 450 Button Shaft
Light- to Standard-Duty
38 mm to 152 mm (1.5 inch to 6 inch) ID Cores

Lug Shafts

Offered as air-expanding or mechanical-expanding, Lug Shafts deliver superior performance for most converting applications.

The serrated steel lug-style design prevents roll slippage through fast acceleration and deceleration, and minimizes vibration at high web speeds.



Series 500 Lug Shaft - Air
Light- to Heavy-Duty
50 mm to 152 mm (2 inch to 6 inch) ID Cores

Series 550 Lug Shaft - Mechanical
Standard- to Heavy-Duty
76 mm and 152 mm (3 inch and 6 inch) ID Cores

Button Shafts

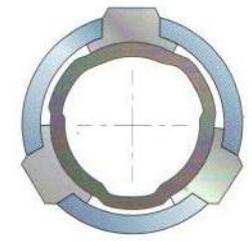
Versatile, low cost shafts offering highly efficient winding and unwinding capabilities in all types of operations. These popular shafts use round buttons as gripping elements.

Feature	Benefit
• Button-style design	• Maximum versatility and value
• Exceptional strength	• High load carrying capacity and durability

Feature	Benefit
• Serrated steel, lug-style design	• Prevents slippage during acceleration and e-stops
• Non-metallic springs	• Long bladder life
• Mechanical lug activation	• Superior torque for your most demanding applications

Pad Shafts

These lightweight shafts are an economical choice for light- to standard-duty applications. Pad shafts use molded rubber for the gripping elements.



Series 300 Pad Shaft
Light- to Standard-Duty
25 mm to 152 mm (1 inch to 6 inch) ID Cores

Feature	Benefit
• Pad-style design	• Lightweight construction
• No metallic spring	• Long bladder life

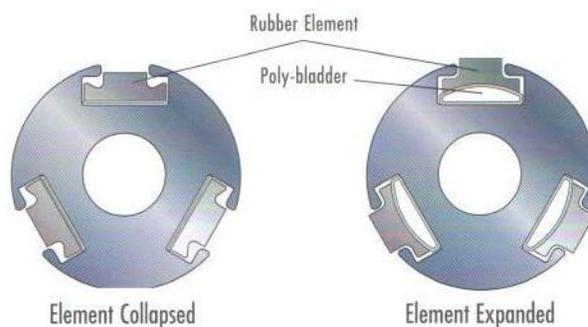


C O R E S H A F T S - R E W I N D

Leaf Shafts

Durable and reliable, these Leaf Shafts are designed to handle a wide range of converting applications, and are best for the elimination of thin wall core deformation. With smooth, polished external leaves, these shafts are particularly suited for delicate materials.

Feature	Benefit
<ul style="list-style-type: none"> • Full-length leaf-style design 	<ul style="list-style-type: none"> • More winding surface, eliminating thin wall core deformation, provides positive grip on multiple cores with inside diameter variation
<ul style="list-style-type: none"> • 360° radial expanding grip 	<ul style="list-style-type: none"> • Can wind single or multiple rolls, with or without cores

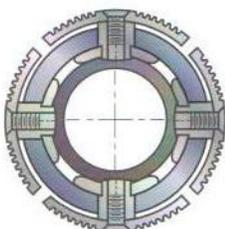


Series 800 External Element Shaft

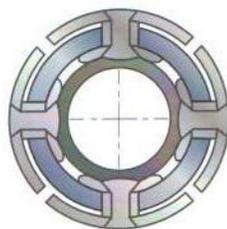
Standard- to Heavy-Duty
38 mm to 406 mm (1.5 inch to 16 inch) ID Cores

This shaft's full-length external element design delivers excellent torque characteristics, making the Series 800 ideal for general duty rewind and unwind applications.

Feature	Benefit
<ul style="list-style-type: none"> • Two-piece element design 	<ul style="list-style-type: none"> • Easily changed without removing from machine
<ul style="list-style-type: none"> • Isolated Air System 	<ul style="list-style-type: none"> • Enables completion of roll run without loss of grip on core
<ul style="list-style-type: none"> • Rubber/Aluminum External Elements 	<ul style="list-style-type: none"> • Positive core grip for a variety of application demands
<ul style="list-style-type: none"> • Patented Spiral Element 	<ul style="list-style-type: none"> • Eliminates vibration against surface rolls



Series 650 Leaf Shaft
Light- to Standard-Duty
38 mm to 152 mm (1.5 inch to 6 inch)
ID Cores/Coreless



Series 600 Leaf Shaft
Standard- to Heavy-Duty
50 mm to 152 mm (2 inch to 6 inch)
ID Cores/Coreless

External Element Air Shafts

Advanced technology. Remarkable performance. With our innovative two-piece expanding elements, these shafts combine the balance and torque you need with the safety and reliability you want. This unique design features a fail-safe multi-circuit air system. Check valves ensure that a loss of air in one element will not affect the expansion and performance of the other elements.

Series 850 Spiral External Element Shaft

Standard- to Heavy-Duty
76 mm to 406 mm (3 inch to 16 inch) ID Cores

The unique spiral design of the Series 850 provides 360° of radial grip and intrinsically equalized load distribution. By minimizing vibration, the Series 850 delivers smoother operation and higher speeds than any air shaft on the market, making it an ideal choice for surface winders or with lay-on rolls.

Differential Air Shafts

Tidland's breakthrough Differential Air Shafts are designed to deliver multiple roll tension equalization to slit rolls winding on the same shaft for duplex center or surface winders – engineered for tension ranges down to 0.2 pli.



D4 Core-Lock Cartridges

The advanced features of these shafts hold rolls straight and true, reduce roll loping and offer positive mechanical locking to prevent lateral roll movement, providing improved finished roll quality, reduced scrap and fast, easy setups.

D2 Core-Slip Differential Shafts (Manual Core Stops)

Optimum control over roll quality and setup time
76 mm to 406 mm (3 inch to 16 inch) ID Cores

Feature	Benefit
• Mechanical, adjustable core stops	• Allows for a variety of setup
• Locked core stops between runs	• Quicker setup time, repeatable core stop positions with the same roll sets

D3 Core-Slip Differential Shaft (Automated Core Stops)

Fast setups and high quality roll structure
76 mm to 406 mm (3 inch to 16 inch) ID Cores

Feature	Benefit
• Positive mechanical core stop	• Guarantees no lateral core movement
• Automatic core position locking	• No tools, quicker setup time

D4 Core-Lock Differential Shaft

High quality roll structure with no dust
76 mm and 152 mm (3 inch and 6 inch) ID Cores

Feature	Benefit
• Positive core-locking cartridge design	• Eliminates dust
• Two-row, 12-ball, torque activated design	• Concentric roll support and superior roll build quality

D5 Core-Slip Differential Shaft (Interchangeable Core Positioning Tray)

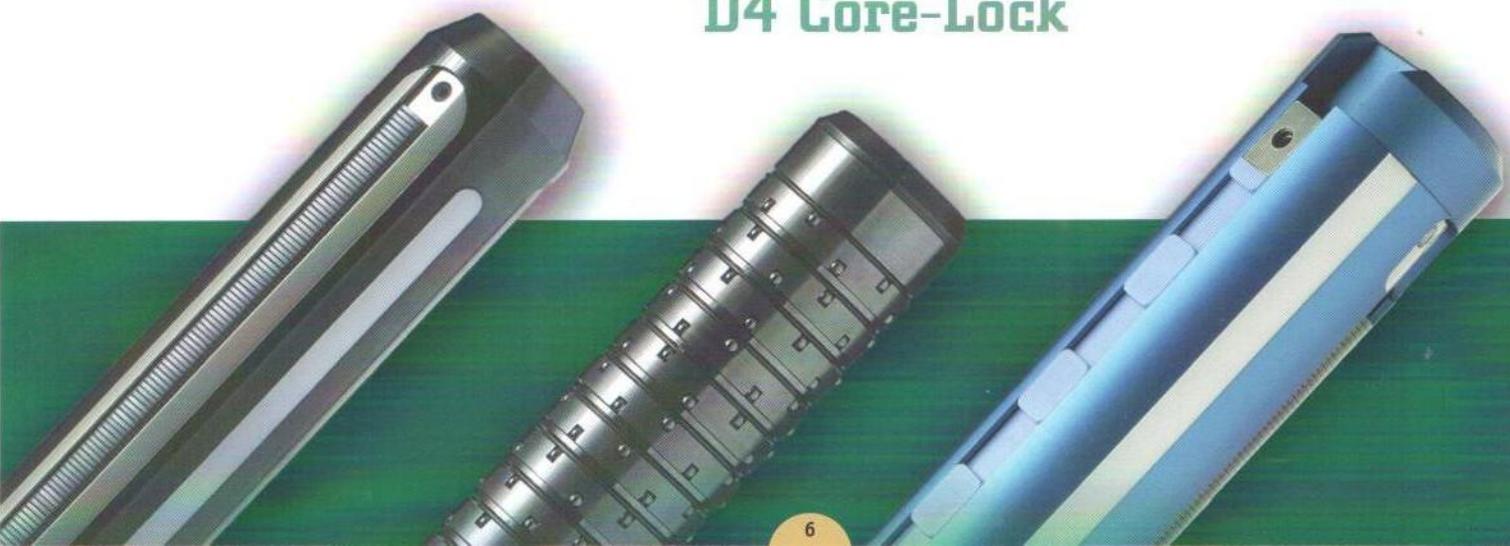
Fast core positioning for multiple narrow rolls
76 mm to 406 mm (3 inch to 16 inch) ID Cores

Feature	Benefit
• Interchangeable core stop tray	• Reduces setup and changeover time
• Pre-set core stops	• Adjust core position across the entire web

D2 / D3 Core-Slip

D4 Core-Lock

D5 Core-Slip





Reel Spool - Spiral External Element

Mill-Duty Air Shafts

The Series 860 Reel Spool is a heavy-duty air shaft designed for maximum reliability and performance in demanding mill environments, reducing the cost and storage of expensive reel spool mandrels. Using the spiral strip design, this shaft eliminates critical speed and vibration issues that prevent successful turn-ups and splices. Its ergonomic design also provides increased safety by eliminating the need for dangerous locking collars or wrenches.

Reel Spool - Spiral External Element

Up to 610 mm (24 inch) ID Cores

Reel Spool - Non-Expanding Mandrel

178 mm to 610 mm (7 inch to 24 inch) ID Cores

Series 480 Button Shaft

178 mm to 610 mm (7 inch to 24 inch) ID Cores and Over

Series 750 Leaf Shaft

178 mm to 610 mm (7 inch to 24 inch) ID Cores and Over/Coreless

Light Metals

Series 750 Leaf Shaft

Heavy-Duty

Up to 610 mm (24 inch) ID Cores

These shafts provide maximum torque for high web tension, ensuring smooth operation in both unwind and rewind applications. Leaf options include knurling for increased torque, case hardening for wear resistance and serpentine leaf edges or core-centering bars to minimize vibration from a nip roll.

Feature	Benefit
<ul style="list-style-type: none"> Maximum torque, high web tensions 	<ul style="list-style-type: none"> Ensures reliable operation
<ul style="list-style-type: none"> Durable external leaves 	<ul style="list-style-type: none"> Ideal for fiber, steel, or aluminum cores
<ul style="list-style-type: none"> Journal detail customizable 	<ul style="list-style-type: none"> Fits existing equipment
<ul style="list-style-type: none"> Serpentine external leaf profile 	<ul style="list-style-type: none"> Minimizes vibration against nip drum



Series 750 Leaf Shaft - Light Metals

Feature	Benefit
<ul style="list-style-type: none"> Mill-duty construction 	<ul style="list-style-type: none"> Ideal for demanding mill environments
<ul style="list-style-type: none"> Patented spiral element design 	<ul style="list-style-type: none"> 360° radial grip/equalized load distribution/minimum vibration at turn-up
<ul style="list-style-type: none"> External expanding elements 	<ul style="list-style-type: none"> Air system maintenance without removing journals from spool
<ul style="list-style-type: none"> Quick-disconnect air valve 	<ul style="list-style-type: none"> Ergonomic design/ease of inflation/insures full inflation and complete deflation
<ul style="list-style-type: none"> Isolated air system 	<ul style="list-style-type: none"> Core grip sustained enabling completion of roll even if bladder fails



Great Expansion Shafts

XP Great Expansion Shafts 152 mm to 406 mm (6 inch to 16 inch) ID Cores

Taking versatility to new heights, these new shafts from Tidland are specifically designed for applications where variations in core sizes from suppliers are common. Operators can adjust the core diameter of the shaft while it remains on the machine, eliminating the need to stock multiple shafts and drastically reducing setup time.



XP Great Expansion Shaft

Narrow Web Shafts and Core Holders

76 mm (3 inch) ID Cores

Narrow web shafts and chucks deliver quality and reliability to narrow web applications, such as label presses. Options include:

Roll Centering Leaf Shaft - Three leaf design minimizes thin wall core deformation and improves roll quality. For rewinds, special centering ribs between expanding leaves position cores closer to the center of a rotation, resulting in better-quality finished rolls.

External Element Shaft - Designed for close tolerance cores on unwinds and for thicker walled cores on rewind.

Feature	Benefit
<ul style="list-style-type: none"> Specifically engineered for label press applications 	<ul style="list-style-type: none"> Reliable, affordable solutions
<ul style="list-style-type: none"> Cantilevered, drop-in, flange, or bar mounting 	<ul style="list-style-type: none"> Fits almost any application

External Element Core Holder - Designed for bar mounting, interchangeable to hold other core sizes, axial adjustment requirements.

Automatic Lug Chuck - For economical die cut and trim removal in narrow web applications.



Whether taking advantage of emerging technologies or adapting to new market opportunities, at Tidland, the evolution of winding is well under way. Adding innovative 'Smart' features and technologies to our rugged pneumatic brakes, Tidland has improved heat dissipation and provided greater productivity to create the new Smart Brake.

Smart Brake

The Smart Brake provides continuous, accurate tension as the converting material pays into the process to produce the highest-quality finished rolls possible. Innovative

smart technology features – pad wear indicator, heat detection, integrated cooling features and tension control feedback – offer reliable performance as well as predictive and toolless maintenance to minimize downtime and keep your operations running smoothly.



Feature	Benefit
• New design allows easy access to vital components and toolless pad replacement	• Minimize process downtime
• Electronic pad wear detection with external indicator	• Enables predictive maintenance and replacement based on actual pad wear
• Thermal detection and auto-cooling functions	• Maximum heat dissipation in a wide range of applications
• Embedded communication output to log and monitor performance data	• Integrate into a closed-loop tension control system for long-term performance optimization

Pneumatic Brakes

Tidland's original Pneumatic Brakes are still available as a simple solution for light-to standard-duty applications. Like the Smart Brake, these popular pneumatic brakes provide the design specifications and operating sensitivity required to fully integrate tension control components.

Safety Chucks

Tidland System Boschert Safety Chucks are designed as a pre-engineered solution for roll support and torque transfer. These affordable Safety Chucks are available in a wide range of sizes and options, and are very effective in light-to standard-duty, and some heavy-duty applications. Available for flange or pedestal mounting.



Feature	Benefit
• Replaceable hardened inserts	• Long life, reduced cost
• Unique self-closing handwheel and optional pneumatic designs	• Increased safety
• Available in many sizes	• Suitable for almost any application
• Durable construction	• Long life, low maintenance
• Square or triangular saddles	• Maximum torque transfer, ease of loading

Tension Controls

MAGPOWR Tension Control Systems, in combination with Tidland's new Smart Brake, deliver the most advanced web handling solution on the market. Real-time communication of thermal temperature and pad wear from the Smart Brake can be used to automatically control operation and improve tension regulation for higher speed and greater accuracy. Choose Cygnus® Tension Control for unwind applications using an idler roll and load cells or applications using an ultrasonic roll diameter measuring system.



Shaftless Chucks

Raptor Series

Whether you're running air powered or torque actuated chucks, the key to preventing core damage is a firm, tight grip. The new Air Powered Lug and Torque Chucks feature wide-footprint lugs to provide a consistent grip on the core, without damaging the inside. This means no more tugging, pulling or pounding to remove the chucks at the end of a run. The chucks are also designed for on-machine maintenance and toolless adapter changes, reducing downtime and risk of injury to the operator. Switch core sizes with two easy steps, in less than 5 seconds. Faster speed, stronger grip - no wonder they're called Raptors.



Wide-Footprint Lug

Common Raptor Series Shaftless Chucks Features and Benefits:

Feature	Benefit
• Wide-footprint lug	• Eliminates core damage/sticking rolls/wasted product
• Durable construction	• Long life, low maintenance
• Toolless adapter allows users to switch core sizes	• Reduces downtime and additional component costs
• Absolute core centering	• Insures web stability into process for maximum productivity
• On machine maintenance capability	• Reduces downtime and risk of ergonomic lifting hazard

Torque Chucks

76 mm to 305 mm (3 inch to 12 inch) ID Cores

Raptor Series Torque Chucks are engineered for continuous-duty shaftless applications. The new Torque Chucks deliver substantial torque output and are ideal for corrugating, sheeting, paper finishing or laminating.

Feature	Benefit
• Torque activated expansion using precision ground rollers	• Maximum grip at all speeds
• Expansion, retraction and disengagement requires no operator intervention, tools or air supply	• Supports automated process objectives/eliminates sticking rolls



Raptor Series Torque Chucks with Toolless Adaptor

Air Powered Lug Chuck

76 mm to 305 mm (3 inch to 12 inch) ID Cores

Raptor Series Air Powered Lug Chucks are easy to use and maintain, and help eliminate the core damage usually associated with shaftless applications. The Lug Chuck is ideal for high speed printing, laminating, sheeting applications on unwind flying or zero speed splicers.



Core Size Adapter

The Raptor Series Core Size Adapter works with Air Powered Lug Chucks and Torque Chucks. A wide variety of sizes are available, allowing toolless core-size changes without removing the chuck from the machine, reducing downtime and risk of injury to the operator.



Adapter Tightening Screw

Other Shaftless Chucks

Mechanical Chucks

76 mm to 152 mm (3 inch to 6 inch) ID Cores

Feature	Benefit
• Positive, mechanical retraction of lugs	• Prevents sticking lugs during normal operation
• Wide-footprint lug	• Non-destructive torque transfer enables re-use of cores
• Pneumatic actuation	• Sustains positive core grip throughout roll cycle

Air Chucks

Standard Air Chucks

76 mm to 508 mm (3 inch to 20 inch) ID Cores and over

Rugged, high-torque air chucks designed for winding and unwinding with shafts or in shaftless applications. Tidland Air Chucks are economical and lightweight.

Feature	Benefit
• Designed to work with or without shafts	• Maximum rotational control in Unwind/Rewind applications
• Gripping force spread over a wide area	• Prevents slippage and increases core life
• Easy to use	• Maximizes productivity
• Simplicity of design	• Trouble-free operation

Force5 Air Chucks

150 mm or 152 mm (5.91 inch or 6 inch) ID Cores

The Force5 Air Chuck offers a lightweight alternative to aluminum chucks, providing unmistakable ergonomic benefits to operators. The specially-engineered polymer expanding element is not only designed for high durability in extreme conditions, but retains its shape over time for ease of insertion and removal.

Feature	Benefit
• Lightest weight	• Easier handling
• Wide area gripping force	• More holding power on the core
• Highest durability	• Long-lasting, dependable
• Easiest core insertion and removal	• Faster setups and core changes

Tidland Factory Repair

When you send a shaft in for repair, only Tidland can give you a true shaft condition and function assessment. And with convenient locations on both the East and West coasts, as well as locations worldwide, we can provide quick turnaround to help get your system up and running as fast as possible. All repairs come with a six-month warranty.



Accessories

Tidland offers a complete line of accessories to keep your winding products running at peak efficiency, including technical literature with tips on use and care of our products. And because we stock what we sell, we're able to ship your order immediately.



Mark I and Mark II Roll Savers

• Operation

- Inflation and deflation tools and hoses for shafts and chucks
- Drive couplings
- Collars
- Roll Savers

• Maintenance

- Element punch kits
- Journal impact pullers

• Roll Savers

Available to reopen crushed cores, enabling you to convert scrap rolls into usable materials. These durable Roll Savers are easy to operate, feature hydraulic power up to four tons, and work virtually anywhere. Mark I and Mark II standard Roll Savers restore 76 mm (3 inch) cores. The Mark I is available with multi-core size adapters for 102, 127, 152, and 171.45 mm (4, 5, 6, and 6.75 inch) cores.

Feature	Benefit
• Delivers over 9,000 psi	• Re-opens even the most damaged cores
• Lightweight, easy to use	• Fast results without special training
• Durable construction	• Long life, low maintenance

PRODUCT SELECTION CHART

Use this chart to find the Tidland products that best suit your application needs. Customized solutions are also available. For assistance, please call one of our local sales engineers at (800) 426-1000, or visit www.tidland.com.

	General Converting		Non-wovens		Narrow Web	Publication Press Splicers	Corrugating	Laminating/Coating	Film Extruders	Flexography	Paper/Tissue	Metals	Tissue & Personal Care	Tire & Rubber				
	Light Duty	Standard Duty	Heavy/Wide	Standard Duty	Wide/High-Speed	Standard Duty	Heavy Duty	Standard Duty	Standard Duty	Wide/High-Speed	Standard Duty	Heavy Duty	Mill Duty	Light Duty	Heavy Duty	Standard Duty	Standard Duty	
ERGONOMIC SHAFT SOLUTIONS																		
GX Ultra-Lightweight Shaft	X			X		X			X				X			X		
Pad-Type Ultrashaft with X _{PRO} 10	X			X												X		
B-Lug-Type Ultrashaft with X _{PRO} 10							X			X								
Lug-Type Ultrashaft with X _{PRO} 10 - Air		X	X		X	X	X	X	X						X	X	X	
Lug-Type Ultrashaft - Mechanical			X			X		X			X				X			
Force5 Chuck Shaft	X	X	X	X				X	X							X	X	
CORE SHAFTS - UNWIND																		
Series 500 Lug Shaft - Air		X	X	X	X		X	X	X		X				X	X	X	
Series 550 Lug Shaft - Mechanical			X				X	X							X			
Series 450 Button Shaft	X	X		X				X	X		X			X		X	X	
Series 300 Pad Shaft	X			X		X										X		
CORE SHAFTS - REWIND																		
Series 600 Leaf Shaft			X		X							X						
Series 650 Leaf Shaft	X	X				X				X			X				X	
Series 800 External Element Shaft		X		X						X			X			X		
Series 850 Spiral External Element Shaft		X		X														
CORE SHAFTS - DIFFERENTIAL																		
	X	X		X		X		X										
SPECIALIZED SHAFT SOLUTIONS																		
Mill-Duty Air Shafts/Reel Spools								X			X	X		X			X	
XP Great Expansion Shafts		X	X	X														
Narrow Web Shafts				X		X												
CORE CHUCKS																		
Raptor Series Air-Powered Lug Chucks	X	X	X			X	X	X					X	X			X	
Raptor Series Torque Chucks		X	X					X					X	X			X	
Force5 Air Chucks	X	X		X				X	X		X		X			X		
Standard Air Chucks	X	X		X				X	X		X		X			X		
BRAKES, TENSION CONTROL AND SAFETY CHUCKS																		
Tension Control	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
Boschert Safety Chucks	X	X	X		X		X	X		X	X		X	X			X	
Smart Brake		X	X	X	X		X	X	X	X	X	X	X	X	X	X	X	