



 A Maxcess
International
Company

Winding Solutions

*Shafts, Chucks, and Brakes
for Web Handling*

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.

T A B L E O F C O N T E N T S

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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 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

Because no two problems are alike, our highly-trained Customer Service Representatives and Field Sales Engineers will work closely with you, listening to your problems, and providing solutions that best fit your application.





Delivery

To keep your operations running smoothly, we can rush any product you need, when you need it, with either standard or priority delivery options.

Superior Service

With two convenient US factory locations, as well as multiple international locations, we can provide quick turnaround for any necessary repairs. Along with a six-month warranty, each repair receives a special safety assessment to ensure our products are fit for service.



Product Safety Data

All Tidland shafts come with an exclusive Safety Data Sheet to insure that you will always know the safe limits of operation.

Global Presence • Comprehensive Offering

As a Maxcess International company, we can provide you with the most comprehensive line of accessory products and systems – Fife Guiding and Inspection, Tidland Slitting and Winding, and Magpowr Tension Control. Our factory-direct field sales engineers also provide you with a local resource for certified product knowledge and application expertise. Global operations include North America, South America, Europe, Africa, Asia and Australia.





STANDARD AIR SHAFTS

Standard Air Shafts

Tidland shafts are engineered to meet the demands of virtually every winding and unwinding application. Custom manufactured to your specifications, our full line of standard expanding shafts deliver rugged, reliable performance with minimal maintenance.

Pad Shafts

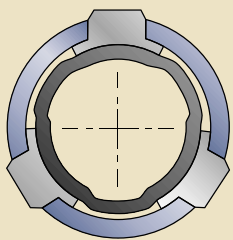
These lightweight shafts are an economical choice for light- to standard-duty applications. Pad shafts use molded rubber for the gripping elements and are constructed of standard steel, alloy steel, or a lightweight composite, delivering superior holding power and torque capacity at all speeds.

Button Shafts

Versatile, low cost shafts offering highly efficient winding and unwinding capabilities in all types of converting operations. These popular shafts use round buttons as gripping elements. Shaft body construction is available in standard steel, alloy steel or aluminum. The Button Shaft is durable, with exceptional beam strength, making it ideal for applications where maximum versatility and value are required.

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. These reliable shafts are constructed of standard steel, alloy steel, aluminum, or lightweight composite materials – depending on usage and requirements. Exclusive non-metallic springs eliminate the number one cause of bladder failure.

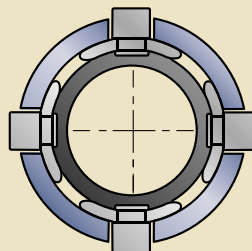


Series 300 Pad Shaft Light- to Standard-Duty

1" (25mm) to 6" (152mm) ID Cores

Approximate Torque Capacities* (per inch of web)

Nominal Sizes (inches)	Fiber Core (in.-lbs.)	Steel Core (in.-lbs.)
1	7	7
2.75	68	72
3	75	80
4	100	107
5	166	177
6	200	213

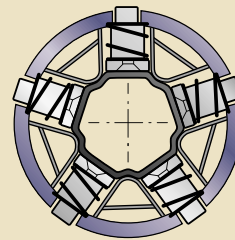


Series 450 Button Shaft Light- to Standard-Duty

1 1/2" (38mm) to 6" (152mm) ID Cores

Approximate Torque Capacities* (per inch of web)

Nominal Sizes (inches)	Fiber Core (in.-lbs.)	Steel Core (in.-lbs.)
1.5	28	9
2.75	118	39
3	152	50
4	320	107
5	490	163
6	830	276

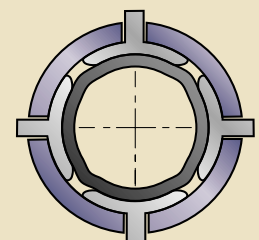


Series 480 Button Shaft Standard- to Mill-Duty

8" (178mm) to 24" (610mm) ID Cores/Coreless

Approximate Torque Capacities* (per inch of web)

Nominal Sizes (inches)	Fiber Core (in.-lbs.)	Steel Core (in.-lbs.)
8	615	205
10	895	298
12	1476	492
16	1968	656
24	3936	1312



Series 500 Lug Shaft-Air Light- to Heavy-Duty

2" (50mm) to 6" (152mm) ID Cores

Approximate Torque Capacities* (per inch of web)

Nominal Sizes (inches)	Fiber Core (in.-lbs.)	Steel Core (in.-lbs.)
2	78	26
2.75	135	45
3	175	58
4	370	123
5	564	188
6	958	319

*Torque capacities are shown at 80 psi.



Lug

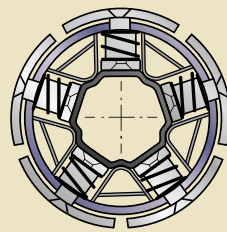
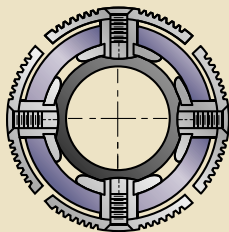
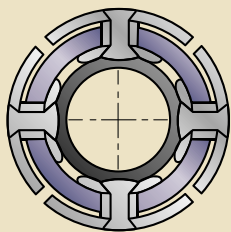


Leaf

STANDARD AIR SHAFTS

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, the shaft is particularly suited for delicate materials. While external leaves with full-length serrations can provide positive grip on multiple cores with inside diameter variation. The 360° radial expanding grip along the entire leaf face provides more winding surface and allows for winding of single or multiple rolls, with or without cores.



**Series 600 Leaf Shaft
Standard- to Heavy-Duty**

2" (50mm) to 6" (152mm) ID Cores/Coreless
Approximate Torque Capacities* (per inch of web)

Nominal Sizes (inches)	Fiber Core (in.-lbs.)	Steel Core (in.-lbs.)
2	46	15
2.75	88	29
3	106	35
4	212	71
5	368	123
6	616	205

**Series 650 Leaf Shaft
Light- to Standard-Duty**

2" (50mm) to 6" (152mm) ID Cores/Coreless
Approximate Torque Capacities* (per inch of web)

Nominal Sizes (inches)	Fiber Core (in.-lbs.)	Steel Core (in.-lbs.)
2	46	15
2.75	88	29
3	106	35
4	212	71
5	368	123
6	616	205

**Series 750 Leaf Shaft
Standard- to Heavy-Duty**

8" (178mm) to 24" (610mm) ID Cores/Coreless
Approximate Torque Capacities* (per inch of web)

Nominal Sizes (inches)	Fiber Core (in.-lbs.)	Steel Core (in.-lbs.)
8	461	154
10	671	224
12	1107	369
16	1476	492
24	2952	984



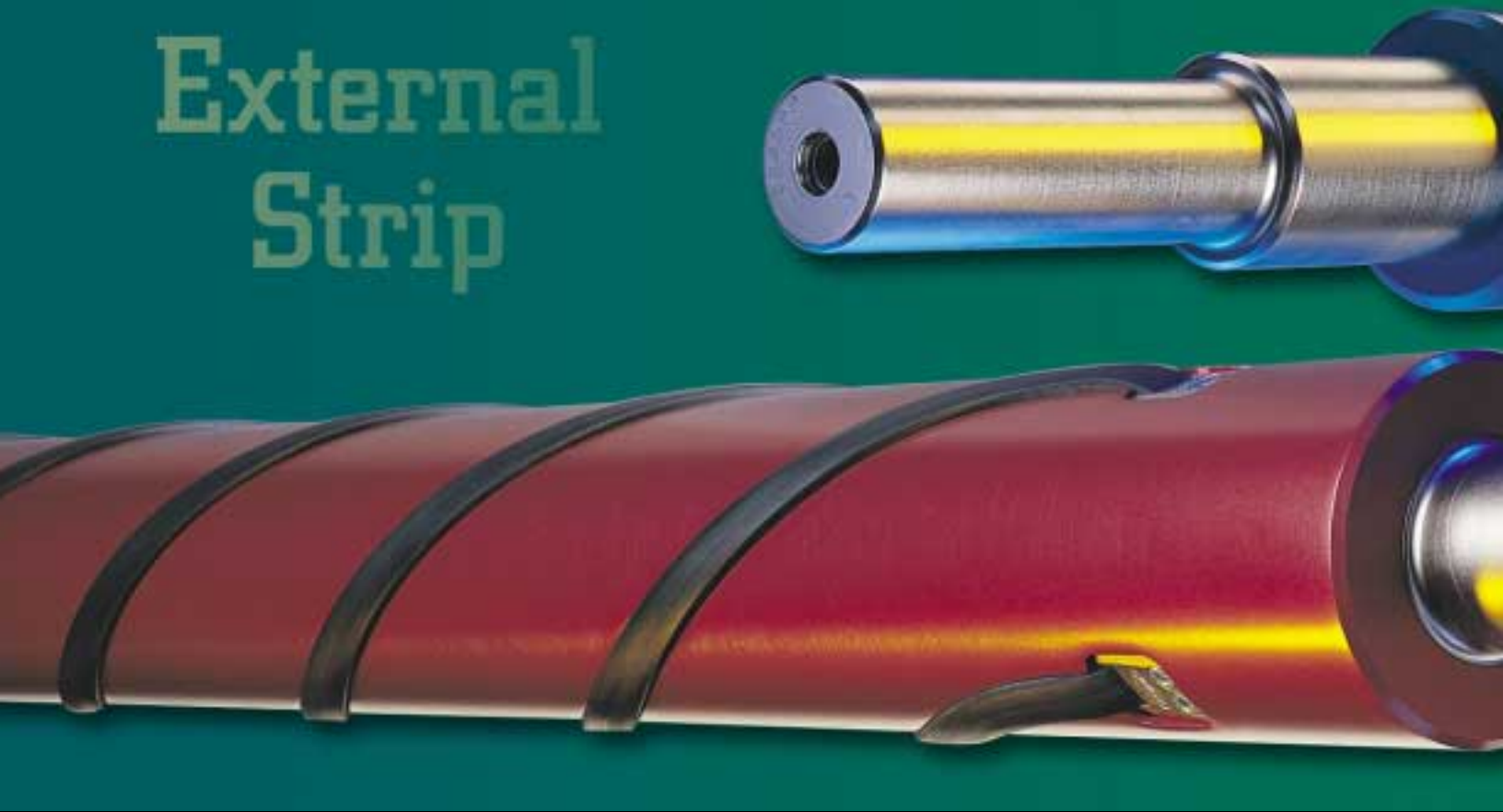
Label Press Shafts

Label Press Shafts

Label Press Shafts deliver quality and reliability to label press applications. Created specifically to meet the needs of narrow-web converters, these economical shafts are designed to fit any press, with cantilevered, drop-in, flange and bar mounting styles available. Options include:

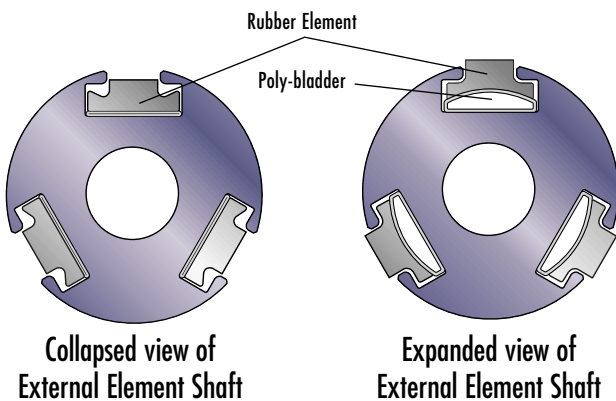
- Roll Centering Leaf Shaft - Three leaf design minimizes thin wall core deformation and improves roll quality. For rewinds, special centering ribs in between expanding leaves position cores closer to the center of a rotation, resulting in better-quality finished rolls.
- External Element Shaft - Designed for close tolerance cores on unwinds and for thicker walled cores on rewind.
- 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.

External Strip



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. Non-metallic retraction springs eliminate the number one cause of bladder failure. When required, each expanding element can be changed easily without even removing the shaft from the machine.



External Strip Shaft Standard- to Heavy-Duty 3" (76mm) to 16" (406mm) ID Cores

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

Approximate Torque Capacities* (per inch of web)

Nominal Sizes (inches)	Fiber Core (in.-lbs.)	Steel Core (in.-lbs.)
3	132	140
4	235	249
5	294	312
6	353	374
6.75	395	418
8	705	747
10	885	938
12	1415	1500
14	1650	1749
16	2355	2496
18	2650	2809
20	2944	3120

Larger diameter sizes available

Ultra-Lightweight Strip Shaft Light- to Standard-Duty 3" (76mm) to 6" (152mm) ID Cores

The GX is the lightest shaft we make. With its combination of light weight, affordability and innovative strip design, this versatile shaft is ideal for use in many applications.

Performance Examples

Web Width (inches)	3" Shaft Weight (lbs.)	6" Shaft Weight (lbs.)
20	16	31
30	19	36
40	21	41
50	24	45
60	27	50
70	29	55
80	32	59
90	35	64

Example shows results for standard shafts; assumes (2) 2" diameter steel journals x 4" long; bearing centers of body length +4". Other designs will alter these results.



External Spiral Strip

EXTERNAL ELEMENT AIR SHAFTS

External Spiral Strip Shaft Standard- to Heavy-Duty

3" (76mm) to 16" (406mm) 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.

Approximate Torque Capacities* (per inch of web)

Nominal Sizes (inches)	Fiber Core (in.-lbs.)	Steel Core (in.-lbs.)
3	132	140
4	235	249
5	294	312
6	353	374
6.75	395	418
8	705	747
10	885	938
12	1415	1500

Mill Shaft Heavy-Duty

Up to 24" (610mm) ID Cores

The Series 860 is a heavy-duty air shaft designed for maximum reliability and performance in demanding mill environments, reducing the cost and storage of many 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 and wrenches.

Approximate Torque Capacities* (per inch of web)

Nominal Sizes (inches)	Fiber Core (in.-lbs.)	Steel Core (in.-lbs.)
10	885	938
12	1415	1500
14	1650	1749
16	1886	2000
20	2944	3120



Slitter Shaft

The Series 950 delivers superior balance and speed while greatly reducing down-time requirements for set up and maintenance. The shaft's external expanding elements are specifically designed to hold bottom knife rings firmly in place, while allowing easy and precise repositioning of the rings.

Series 860 Mill Shaft



Light in weight, yet high on performance. Constructed with high-strength carbon filaments wound to a precise wrap angle, these rugged composite shafts deliver a section modulus with a strength-to-weight ratio optimized for individual applications. Ultrashafts also feature full or partial protective metal sleeves for abrasion resistance and exclusive non-metallic springs that eliminate the number one cause of bladder failure. Giving you long-lasting reliability with minimal maintenance.

The unique characteristics of the Ultrashaft provide the durability required to carry heavier loads with less deflection, as well as the ability to operate at much higher speeds before reaching critical vibration. Every shaft is built to meet your specific needs. These shafts are also available in aluminum and titanium.

<p>Pad-Type Air Shaft Light- to Standard-Duty 3" (76mm) to 6" (152mm) ID Cores</p>
<p>B-Lug-Type Air Shaft Standard- to Heavy-Duty 3" (76mm) ID Cores</p>
<p>Lug-Type Air Shaft Standard- to Heavy-Duty 3" (76mm) to 6" (152mm) ID Cores</p>
<p>Lug-Type Mechanical Shaft Heavy-Duty 3" (76mm) ID Cores</p>



Lug
(Air or Mechanical)



B-Lug



Pad

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 from 0.50 p.l.i. to locked core.

Certain applications may exceed these limits, call for an engineering review.



Tension Segments

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 set-ups. Optional manual core stops are available for some applications.

Automated Differential Slip Shaft
3" (76mm) to 12" (305mm) ID Cores

Feature	Benefit
• Positive mechanical core stop	• Guarantees no lateral core movement
• Modular tension cartridge	• Quick, convenient maintenance
• Automatic core position locking	• No tools, quicker set-up time
• Run different slit widths on same shaft	• Maximizes job set-up with least number of runs
• No spacers	• Quicker set-up time

Manual Differential Slip Shaft
3" (76mm) to 12" (304mm) ID Cores

Feature	Benefit
• Removable core stop rings	• Eliminates dust and reduce core cut quality restrictions
• No spacers	• Quicker set-up time
• Low cost	• Economical

Automated Differential Slip Shaft



Manual Differential Slip Shaft



Force5 Air Chucks

Air Chucks

Tidland Air Chucks are engineered to perform in the most demanding of environments. Their unique design and durable construction provide reliable non-slip grip for maximum roll control in a wide range of applications.

Force5 Air Chucks

5.9" (150mm) or 6" (152mm) ID Cores

The Force5 Air Chuck offers a lightweight alternative to heavier chucks. 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
• Light weight	• Easier to handle
• 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
• Lowest cost	• Economical

Standard Air Chucks

4" (76mm) to 20" (304mm) 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.

Features

- Non-slip performance
- Maximum rotation control
- Gripping force spread over a wide area
- Ease of use
- Simplicity of design for trouble-free operation



Standard Air Chucks

Air-Powered Lug Chuck

3" (76mm), 4" (102mm), and 6" (152mm) ID Cores

Designed for continuous, light-duty operation. Ideal for use on shaftless unwind stands, especially splicers.

Features

- Light- to Standard-Duty
- Clean, simple, dependable operation
- Durable precision-cast alloy steel body
- Gripping lugs expand from within chuck body



Air Brakes

Brakes

The Tidland Pneumatic Brake provides the design specifications and operating sensitivity required to fully integrate tension control components. These durable brakes feature a heat dissipating design for maximum reliability, with models capable of handling a maximum torque range of 1,430 inch-pounds to 23,700 inch-pounds.

Each brake can be built to meet your specific requirements. Disc diameter, caliper size, number of calipers and pad coefficients can all be adjusted to provide the ideal brake for your operation. Available for flange or pillow block mounting.



Boschert Safety Chucks

Safety Chucks

Tidland System Boschert Safety Chucks are designed to be 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 medium-duty, and some heavy-duty applications.

Tension Controls

Magpowr Tension Control Systems, in combination with Tidland Pneumatic Brakes, deliver the most advanced web handling solution on the market. Together these products provide automatically controlled operation with superior tension regulation for higher speed and greater accuracy. Choose EZ-TRAC™ Tension Readout and Control for unwind applications using an idler roll and load cells, and VERSATEC™ Versatile Tension Control for applications using an ultrasonic roll diameter measuring system.



MAGPOWR Tension Control

Tidland Factory Repair

When you send a shaft in for repair, only Tidland can give you a true shaft condition and function assessment. We perform a thorough "Fit for Service" evaluation on each and every part we repair to ensure that it is safe to return to the application for which it is intended. And with convenient locations on both the East and West coasts, 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.



Mark I and Mark II 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. Tidland's Mark I and Mark II standard Roll Savers restore 3-inch cores. The Mark I is available with multi-core size adapters for 4, 5, 6, and 6 3/4-inch cores.

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.

• Operation

- Inflation/deflation tools & Hoses for shafts and chucks
- Drive coupling
- Collars
- Roll savers



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 Field Sales Engineers at 800-426-1000, or visit us at www.tidland.com.

	General Converting			Non-wovens		Label & Narrow Web	Publication Press Splicers	Corrugating	Laminating/Coating	Film Extruders	Flexography	Paper Machine	Metals	Tissue & Sanitary	Tire & Rubber			
	Light Duty	Standard Duty	Heavy/Wide	Standard Duty	Wide/High-Speed	Standard Duty	Heavy Duty	Standard Duty	Standard Duty	Standard Duty	Wide/High-Speed	Standard Duty	Heavy Duty	Mill Duty	Light Duty	Heavy Duty	Standard Duty	Standard Duty
STANDARD SHAFTS																		
Series 300 Pad Shaft	X			X		X											X	
Series 450 Button Shaft	X	X		X					X	X		X			X		X	X
Series 480 Button Shaft									X			X						
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 600 Leaf Shaft			X		X							X						
Series 650 Leaf Shaft	X	X				X					X		X					X
Series 750 Leaf Shaft									X			X	X			X		X
EXTERNAL EXPANDING SHAFTS																		
Series 800 Spiral Strip Shaft		X		X							X		X				X	
Ultra-Lightweight Strip Shaft	X			X		X				X			X				X	
Series 850 Spiral Strip Shaft		X		X														
Series 860 Mill Shaft												X						X
Series 950 Slitter Shaft								X										
Pad-Type Air Shaft	X			X														X
B-Lug-Type Air Shaft							X			X								
Lug-Type Air Shaft		X	X		X		X	X	X	X						X	X	X
Lug-Type Mechanical Shaft	X	X	X	X	X	X	X	X	X			X				X		
Force5	X	X		X					X	X		X			X		X	
Standard Air Chucks	X	X		X					X	X		X			X		X	
Air-Powered Lug Chucks	X	X							X									
Tidland Air Brakes		X						X										
Tidland System Boschert Safety Chucks	X		X		X		X			X		X		X	X			
Magpowr Tension Control	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X



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