

Link-Belt® ES Series™ Idler Rolls

Introducing the ES Series Idler Rolls from Syntron Material Handling, specifically designed for extreme service in the harsh environment of oil sands extraction. Link-Belt ES Series Idlers feature a patented seal design that offers unique and superior benefits to competitor rolls.

Roll Features

- **Higher Load Ratings with Proven Seal Geometry**

Inefficient use of available space with the bearing housing can lead to load rating deficiencies. The deeper inside the roll the bearing is located, the larger the moment arm, which in turn, results in increased shaft deflection for a given load. Syntron Material Handling's patented seal design utilizes dual function components that make more efficient use of the available space inside the bearing housings.

This translates into higher load ratings with proven seal geometry.

- **Longer Roll Life**

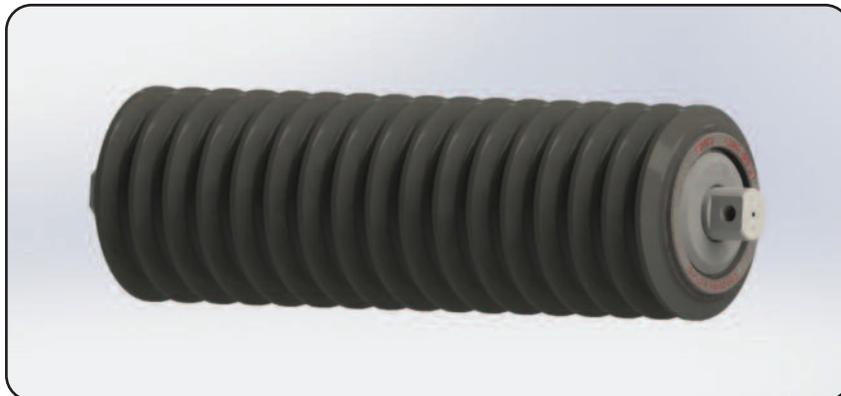
Every aspect of the design and manufacturing contributes to the superiority of Syntron Material Handling ES Series Idler Rolls. Using high-quality materials and state-of-the-art manufacturing methods, each roll is built with minimal endplay. Syntron Material Handling's advanced, pressed head design yields superior circular run out values by eliminating warping caused by welding. The precision-machined rugged cast bearing housings are designed to provide maximum rigidity to reduce bearing misalignment.

These features result in longer roll life.

- **Flexible, Cost-Effective Rebuild Options**

Industry standard roll design features a thin head that is welded directly to the end of the expensive, rubber coated shell. During a seal or bearing failure, this thin, welded head is often damaged and consequently, the entire roll must be replaced. Syntron Material Handling's roll features a pressed head that can be removed from the shell to permit replacement of all components while reusing the same shell, maximizing the life of the rebuilt roll at greatly reduced costs.

Syntron Material Handling pressed heads can be used to rebuild competitor rolls.



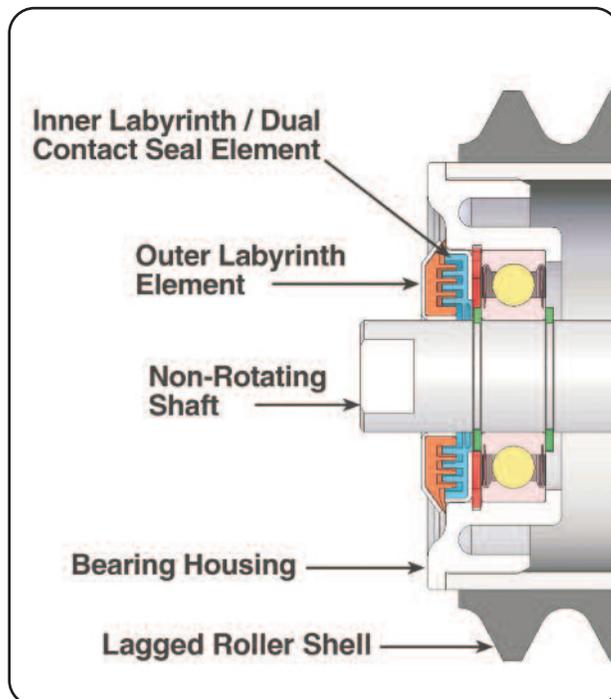
Revolutionary Seal Design

In developing the new ES Series idler rolls, Syntron Material Handling's research and development team considered all aspects of seal technology, optimizing each component for maximum benefit. Their patented seal design maximizes sealing effectiveness and minimizes shaft deflection.

Syntron Material Handling's new seal utilizes both contact seal (to exclude liquids) and labyrinth seal (to exclude solid contaminants) technologies. In contrast to typical competitor designs, Syntron Material Handling takes full advantage of the strengths of both types of seals, resulting in a revolutionary new arrangement.

The outer labyrinth seal element has a galvanized steel shield which protects the internal seal components from damage. This shield is constructed to withstand harsh environmental abrasions and abuse and includes a low-friction, outer face contact weather seal to prevent water washout of grease filled labyrinths.

The inner labyrinth/dual lip contact seal element is located deeper inside the roller which protects it from the outside environment. It rides directly against the shaft near the inner diameter of the bearing. This ensures full and constant contact, longer wear life, less drag and maximum sealing.



Bearing Location and Improved Load Rating

The load rating of an idler roll is largely dependent on the load rating of the bearings used in the rolls. The location of the bearings with respect to the shaft supports also affects the load rating and the expected life of the roll. As illustrated in Figure 2, shaft deflection is a result of bearing location. Under high loads, the shaft behaves as a flexible member. Shaft deflection causes unwanted friction inside the bearings and reduces bearing life. In Syntron Material Handling's new design, the bearings are placed closer to the support, reducing the length of the shaft extension from the bearing to the support by approximately 30 percent, thereby increasing the load rating. Efficient bearing placement also minimizes shaft deflection due to load, and thus increases bearing life.

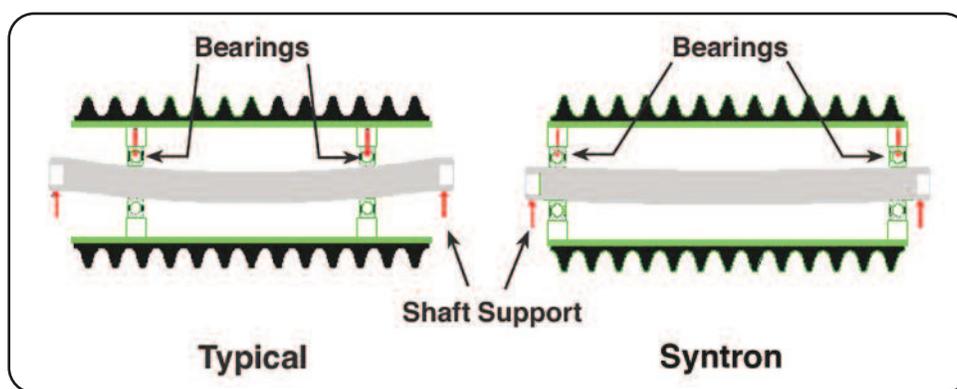


Figure 2: Shaft Deflection as a Result of Bearing Placement

Press-Fit Technology

Syntron Material Handling engineers developed press-fit technology, an interference-fit bearing housing (head) that presses into the shell, eliminating welding and the shell distortion caused by heat generated during welding. The internal areas are precision machined for accurate bearing/shaft alignment to provide desired interference values between the bearing housing and the shell.



Precision-machined ductile-iron bearing housings provide highly controlled bearing bore dimensions, excellent circular runout and excellent alignment through the roll from end to end. In addition, the high concentricity of the machined bearing housing is transferred to the shell and actually improves the roundness of the shell.

Press fit technology has been tried and proven in some of the most demanding applications and harshest environments in the industry, including rock quarries, construction and underground mining. Press-fit technology has been incorporated into the design of the Link-Belt ES Series rolls.

With press-fit technology, rebuilding ES Series rolls becomes easy and economical. The bearing housing can be pressed out and inspected for damage to components. Individual components can be easily replaced, or the entire bearing housing can be replaced. Either way, the shell can be reused. And Syntron Material Handling pressed heads can be used in competitor rolls.

It all adds up...

The most advanced and innovative technologies have gone into the development of Link-Belt ES Series Idler Rolls. Each individual component represents an advance in available technology:

- Patented seal design for higher load ratings and maximum sealing effectiveness
- Pressed head technology for superior and flexible rebuild options
- Efficient bearing placement for minimized shaft deflection and longer bearing life

Together, these features add up to outstanding performance, quality and value. Link-Belt ES Series Idler Rolls from Syntron Material Handling – specifically designed and engineered for extreme service in the harsh environment of oil sands extraction.

ES Series Idler Rolls are available in a range of standard models and sizes (refer to the chart). Other models and sizes are available by request and may be custom engineered to meet application requirements.

Models	72" Trough	72" Impact	72" Return	84" Trough	84" Impact	84" Return
40 mm Bearings	•	•	•	•	•	•
50 mm Bearings	•	•	•	•	•	•
60 mm Bearings	•	•	•	•	•	•

Link-Belt® EZ-Trip™ Idler Frames

- Heavy-duty, tubular construction
- Reduced weight assembly for ease of installation and reduced costs
- Polymeric powder coated frame affords superior corrosion protection
- Sealed-for-life design protects against mechanical seizure in cold, harsh environments

The Link-Belt EZ-Trip Idler is specifically built for the field-proven Link-Belt ES Series Idler Rolls.

Frame Features

- **Simple Assembly for Ease of Operation**

The unique Link-Belt EZ-Trip Idler is easy to install and operate – simply pull the pin and strike the end rod with a hammer.

- **Heavy-Duty, Tubular Construction**

Fabricated with heavy-duty tough steel, the frame members are welded to AWS D1.1 specifications to ensure superior strength and dimensional accuracy. Featuring a two-piece construction, the independent base frame maintains overall alignment of the assembly. In addition, there is minimal “play” in the frame when in a locked state. The rugged frame’s tubular construction also minimizes the potential for material buildup.



Frame Features (cont.)

- **Corrosion Resistance**

The E-Z Trip Idler features stainless steel pull pins with stainless lanyard tabs and corrosion resistant “strike” ends for excellent corrosion protection. Plus, a superior polymeric protective powder coating is applied to stand up to harsh environments.

- **“Sealed-for-Life” Design to Prevent Seizing Up**

The E-Z Trip Idler features a factory lubricated design to eliminate any need for re-lubrication, thus lowering total maintenance costs. Each “sealed-for-life” end is filled with low temperature grease. Nitrile rubber seals are employed to protect the frame pivots on each end and a Nitrile rubber oil-seal protects around the outside of the “strike rods.” Fiberglass reinforced nylon bushings provide low friction movement for both the frame pivot and the strike rod sliding contact.

You just can't find better performance than the Link-Belt EZ-Trip Idler.

For more information contact our Applications Specialist at 1-800-356-4899.



Upright



Tripped

ES-Series™ Product Line



5-Roll Impact Catenary
(rubber lagged)



5-Roll Dissipator Catenary
(urethane lagged)



3-Roll Carrying Catenary



2-Roll V-Return Catenary



3-Roll Carrying Idler "Upright"



Flat Return Idler



2-Roll V-Return Idler



Pressure Roller



Slide Guide Roller