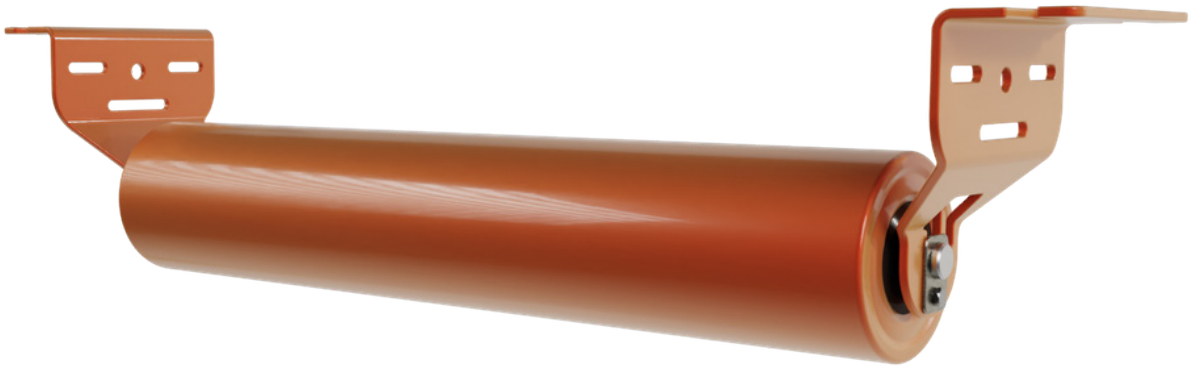
REPLACEMENT & AFTERMARKET

# REPLACEMENT STEEL RETURN IDLERS



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# TABLE OF CONTENTS




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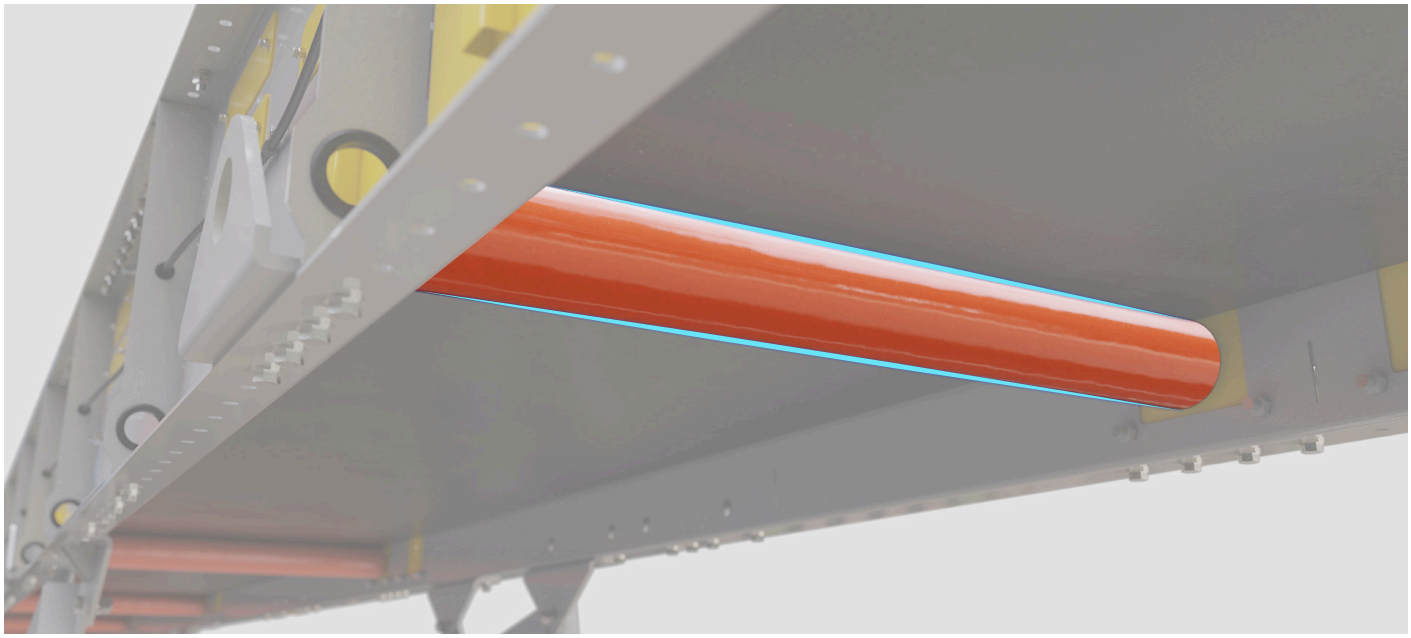
# REPLACEMENT STEEL RETURN IDLERS



## Replacement Steel Return Idlers

Return idlers carry the empty belt along the bottom strand of the conveyor, where unsupported spans allow the belt to sag, wander, and drag against the frame. On clean, dry applications, an underspecified or worn return roll accelerates edge wear, disrupts tracking, and forces unplanned stops to realign the belt. Steel return idlers address these conditions with a low friction roll surface rated for standard return run service, including high-speed conveyors where belt sag control depends on consistent roll geometry.

Standard assemblies machine the shaft from cold-rolled steel and pair it with a welded steel roll tube, with tube options extending to ERW1020 and DOM tubing specified for CEMA Class F service. Sealed ball bearings close the housing against dust and moisture, with seal configurations matched to wet, dry and dusty, dredging and fines, or high moisture environments. Rolls are supplied in flat, V-return, and self-aligning configurations across CEMA classes B through F, matched to belt width, belt speed, and conveyor length for direct replacement on existing frames.

# APPLICATIONS

### Recycling & Material Recovery

Recycling and material recovery facilities run pulley-driven sortation conveyors for hours of continuous picking, where return run stability determines belt tracking across 8 to 12-man sort stations. Steel return idlers support the return strand on sort station and transfer conveyors handling dry, non-sticky recyclables, holding belt sag within spacing limits through every shift.

### Aggregate Processing

Crushing and screening plants move dry stone, sand, and gravel across long conveyor runs in dusty conditions. Steel rolls paired with dry-configured seals keep aggregate fines out of the bearing housing on the return strand.

### Grain & Agriculture

Grain terminals and feed operations demand clean-running conveyors where product contamination is unacceptable. The bare steel roll surface sheds dry grain dust without trapping material against the belt cover.

### Package Handling & Sorting

Distribution and sorting operations run flat belt conveyors at sustained speeds with light, uniform loads. Low rolling friction on the steel shell suits high-speed return runs where closer idler spacing controls belt sag.

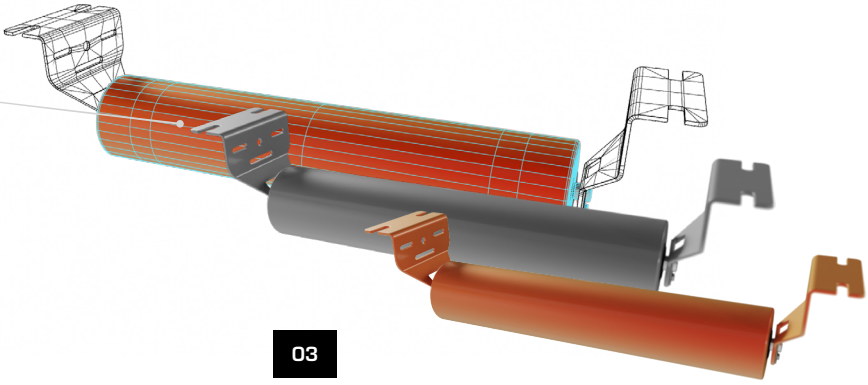
### Overland & Bulk Handling

Long-center conveyors carry bulk material across extended distances with return spans exposed to weather. Galvanized and stainless finish options protect the roll assembly on outdoor return runs.

### Mobile Stacking

Radial stackers reposition constantly, transmitting frame vibration into every idler along the boom. CEMA-rated roll assemblies absorb repeated repositioning loads while maintaining alignment on the return side.

# KEY FEATURES



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### ERW Steel Tube Construction:

Rolled and welded to a concentric shell that holds true at high belt speeds, with DOM tubing available where CEMA Class F loading demands tighter wall consistency.

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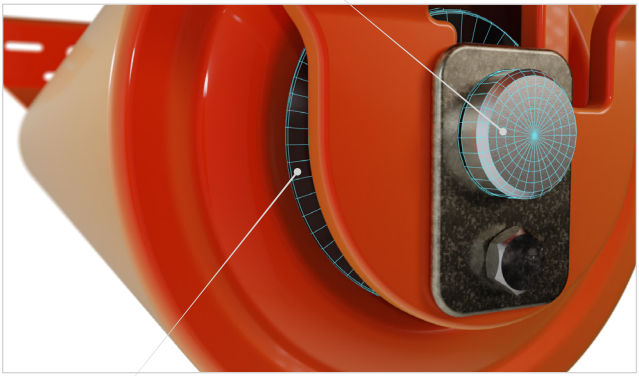
### C1018 Cold-Rolled Shaft:

Machined to hold bore tolerance at the bearing seats and resist deflection across belt widths from 18" to 96".



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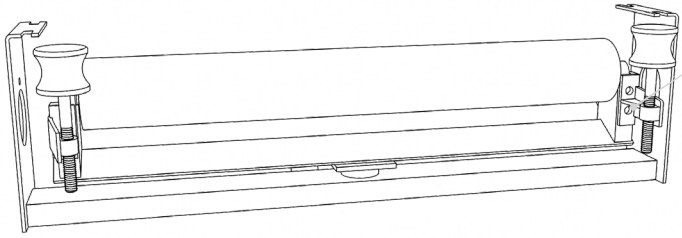
### Four-Series Seal System:

Pairs eco, titanium, wet, or dry seal configurations with the bearing housing to block washed sand, fines, moisture, or aggregate dust at the shaft entry point.



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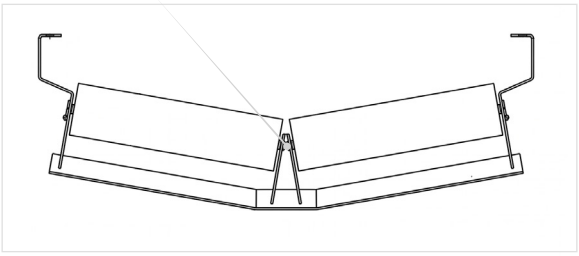
### V-Return Roll Geometry:

Sets two rolls in a shallow V that centers the belt on long runs and high-speed applications, limiting belt sag and edge wear between frames.



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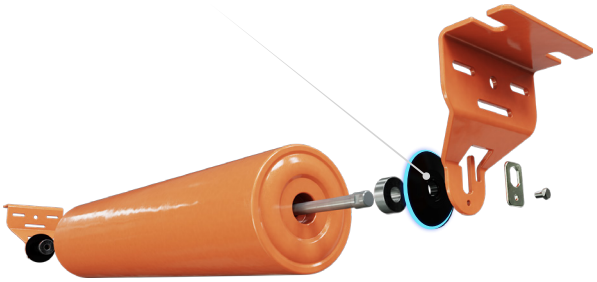
### Sealed Ball Bearing Assembly:

Encloses deep-groove ball bearings in a factory-sealed housing that requires no field lubrication over the service life of the roll.



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### Self-Aligning Pivot Frame:

Rotates on a central pivot to steer the belt back to center when uneven loading or structural misalignment pushes the return strand off track.


# REPLACEMENT STEEL RETURN IDLERS SPECIFICATIONS

| Parameter | Standard specification |
|---|---|
| CEMA classes | B, C, D, E, F |
| Belt widths | 18" – 96"; custom widths available |
| Roll diameters | 4" – 6" (depending on CEMA class) |
| Configurations | Flat, V-return, self-aligning, training |
| Bearings | Sealed ball bearings |
| Shaft material | Cold-rolled steel (C1018 or equivalent) |
| Tube material | Standard steel, ERW steel (ERW1020), DOM tubing (Class F applications) |
| Seal configurations | Eco (washed sand and fines), Titanium (severe duty), Wet (wash plants, dredging, high moisture), Dry (crushing, screening, dusty aggregate) |
| Mounting options | Standard drop bracket, channel inset (low profile), web mount |
| Finish options | Painted, galvanized, stainless steel |
| Typical return spacing | 8 – 10 ft* |

Note: *High-speed applications may require closer spacing to control belt sag and maintain tracking.

# REPLACEMENT STEEL RETURN IDLERS SPECIFICATIONS

## Configuration Selection

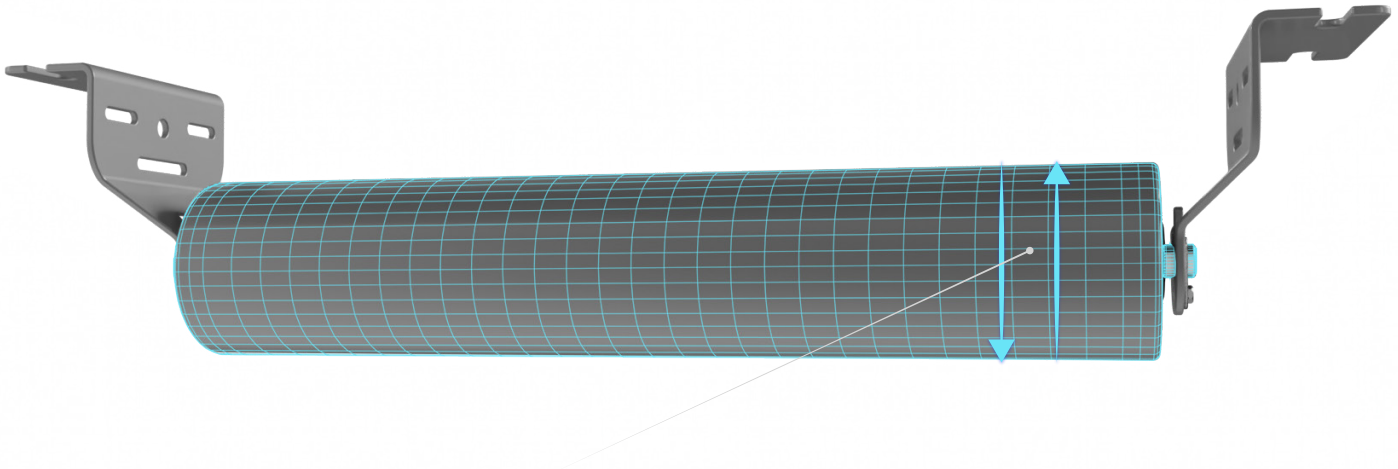
| Configuration Selection | Roll Arrangement | Application |
|---|---|---|
| Flat return | Single roll | Short conveyors, stable tracking conditions, general replacement |
| V-return | Two rolls, shallow V | Long runs, high-speed applications, belt centering |
| Self-aligning | Pivoting single roll | Belt wander from uneven loading or structural alignment issues |

## Protection Selection

| Seal package | Operating environment | Application |
|---|---|---|
| Dry | Reinforced barriers | Crushing, screening, and dusty aggregate handling |
| Wet | Enhanced moisture protection | Wash plants, dredging, and high-moisture applications |
| Eco | Combined wet and dry protection | Extreme conditions with washed sand and fines |
| Titanium | Maximum durability build | Severe-duty applications |

# THE ENGINEERING ADVANTAGE

This section outlines the fabrication and selection methodology behind steel return idlers, covering shell concentricity, duty classification, seal pairing, and finish specification to ensure direct fit and full service life on the return run.



**Concentric Shell Fabrication:**

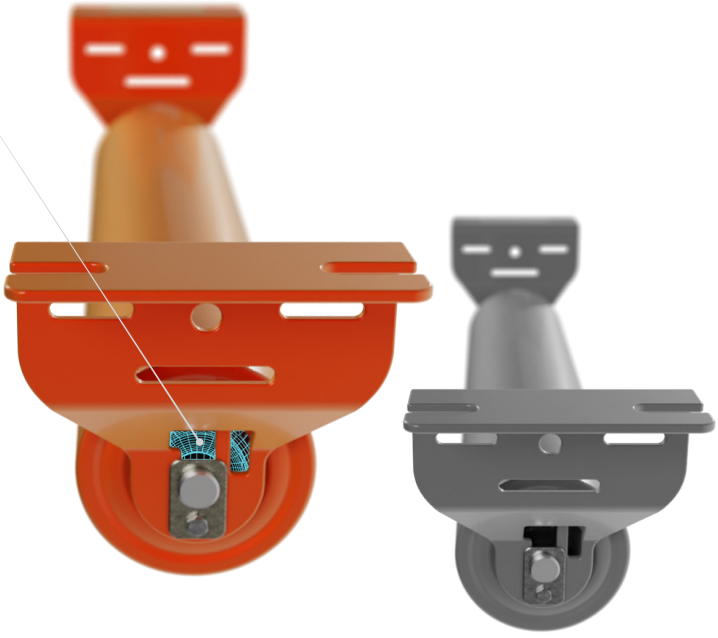
Controls tube roundness and runout during rolling and welding so the shell spins in balance at the belt speeds typical of package handling and sortation conveyors.

**CEMA Duty Classification:**

Rates every roll assembly to CEMA B, C, D, E, or F loading, calculated from belt width, belt speed, and conveyor length rather than a single generic duty rating.

**Environment-Matched Seal Pairing:**

Assigns the seal series at the point of order so each idler ships preconfigured for the wet, dusty, fines-laden, or high moisture conditions of its installation.



**Corrosion-Rated Finish Selection:**

Specifies painted steel for indoor service, hot-dip galvanizing for outdoor exposure, and stainless steel for corrosive environments across the same roll platform.

# CONTACT INFORMATION

## OUR ENGINEERS WILL SPEC THE EXACT PART FOR YOUR SYSTEM

For product specifications, engineering support, or order inquiries, please contact our team using the information provided below. Our specialists are available to ensure accurate recommendations and efficient service for your application requirements.

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