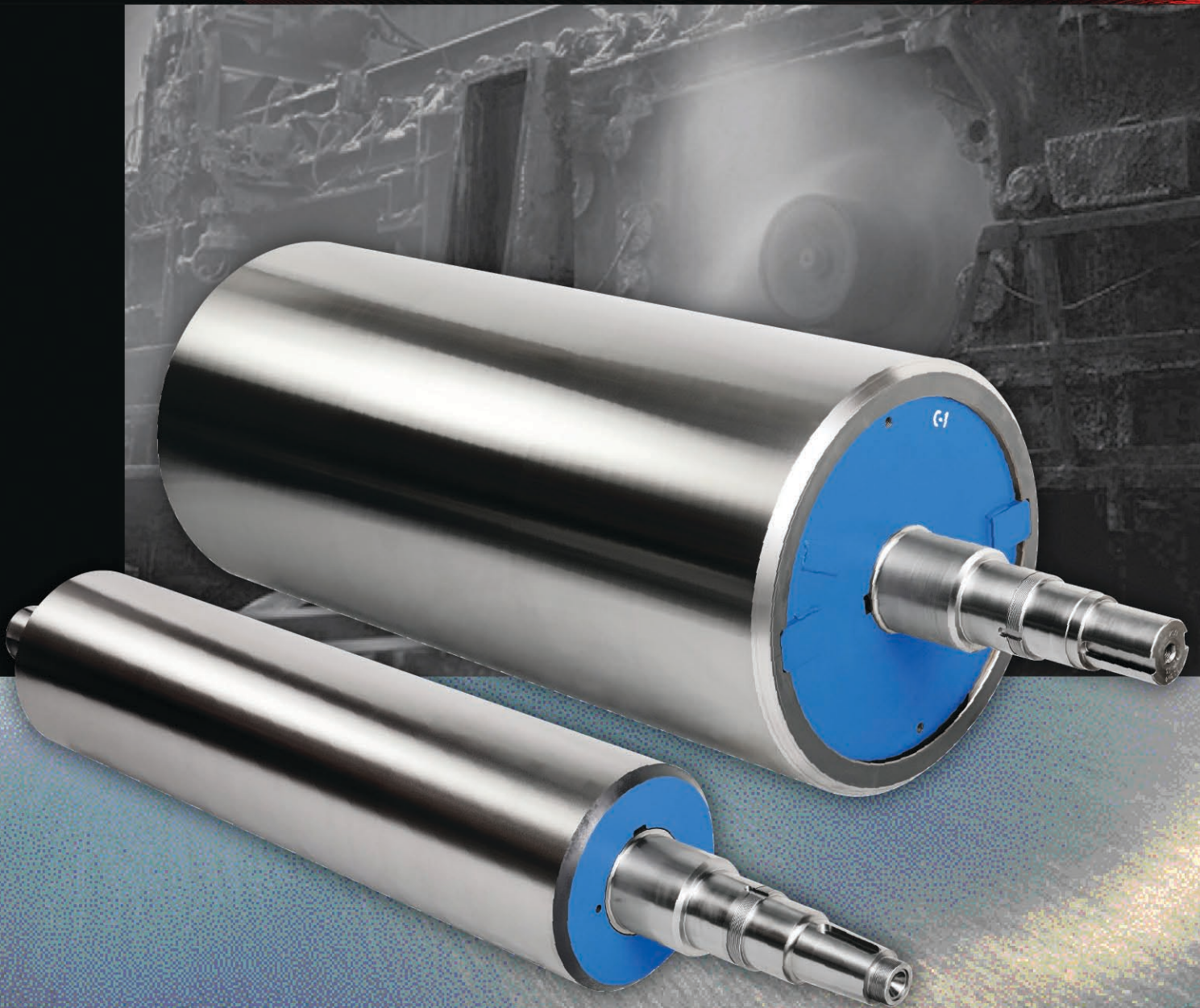


**Bemcalloy™ Pinch Rolls**

**Xtelk**



**Engineered for optimal  
performance in hot strip  
mill coiling applications.**





# Bemcalloy™ Pinch Rolls

## The Pinch Roll Unit

### Purpose

- Catch the strip head end and direct it down into the coiler proper
- Provide driving force to direct the strip around mandrel until "cinch"
- Provide strip hold-down function during body of coil
- Provide and maintain strip tension after the tail end leaves the mill

### Resistance to Pickup

Pickup is a condition whereby foreign material becomes adhered to the surface of the pinch roll during service. The condition causes mill downtime for pickup removal from the pinch rolls and/or scrapped coils due to poor surface quality.

### Bemcalloy Completely Resists Pickup

The inherent lubrication properties of graphite in Bemcalloy along with the natural resistance to adhesion of dissimilar metals is the basis of the pickup resistance of Bemcalloy.

- Xtek Bemcalloy Pinch Rolls reduce mill downtime and coil rejections
- Xtek Bemcalloy Pinch rolls require no in-situ process grinding equipment

### Wear Resistance

Two wear mechanisms, abrasion and adhesion, occur in the pinch roll application. Abrasive wear results when a harder material removes particles from a softer surface. Adhesive wear, or frictional wear, results from the scuffing action between two contacting surfaces that become bonded and subsequently pulled from their respective surfaces. Both mechanisms cause pinch roll wear.

### Bemcalloy Resists Both Adhesive and Abrasive Wear

The specific chemistry and heat treatment process used at Xtek metallurgically tailors the Bemcalloy microstructure to resist both abrasive and adhesive wear.

- Xtek Bemcalloy Pinch Rolls provide predictable and uniform wear
- Xtek Bemcalloy Pinch Rolls require less stock removal at grind

### Attributes

- Excellent Wear Resistance
- Resistance to Pick-up
- Thermal Stability
- High Thermal Conductivity
- Resistance to Thermal Fatigue / Thermal Shock
- High Strength
- Through-hardening Capability



Application Requirements	Bemcalloy C141	Bemcalloy C1	Bemcalloy XA	Bemcalloy A3
Pickup Resistance	....	....	...	...
Wear Resistance	...	..	....	.
Corrosion Resistance	..	..	....	..
Thermal Stability	....	....	..	...
Impact Strength	..	..	..	....
Tensile Strength	..	..	..	....







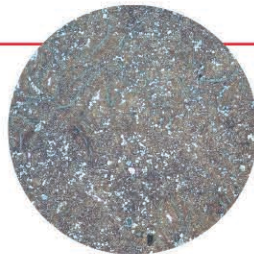
## Bemcalloy C141

### Composition

- Hypoeutectic Alloy Gray Cast Iron

### Attributes

- Resistance to Pickup
- Very Good Wear Resistance
- Thermal Stability
- High Thermal Conductivity
- Resistance to Thermal Fatigue
- Resistance to Thermal Shock
- Through-hardening Capability



**Optimal Hardness**  
Heat Treated  
62-67 HSC  
(46-50 HRC)

Carbon	Chromium	Molybdenum	Nickel	Niobium	Silicon
2.90 / 3.10	0.40 / 0.60	0.20 / 0.40	1.00 / 1.50	0.80 / 1.20	1.50 / 2.00

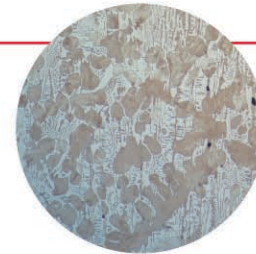
## Bemcalloy XA

### Composition

- Hardened White Alloy Cast Iron

### Attributes

- Resistance to Pickup
- Exceptional Wear Resistance
- Corrosion Resistance
- High Thermal Conductivity



**Optimal Hardness**  
Working Layer  
67-72 HSC  
(50-54 HRC)

Layer	Carbon	Chromium	Molybdenum	Nickel	Silicon
Working	3.45 / 3.70	1.45 / 1.70	0.20 / 0.30	1.45 / 1.70	0.15 / 0.30

## Bemcalloy C1

### Composition

- Hypoeutectic Alloy Gray Cast Iron

### Attributes

- Resistance to Pickup
- Good Wear Resistance
- Thermal Stability
- High Thermal Conductivity
- Resistance to Thermal Fatigue
- Resistance to Thermal Shock
- Through-hardening Capability



**Optimal Hardness**  
Heat Treated  
62-67 HSC  
(46-50 HRC)

Carbon	Chromium	Molybdenum	Nickel	Niobium	Silicon
2.90 / 3.10	0.40 / 0.60	0.20 / 0.40	1.00 / 1.50	—	1.50 / 2.00

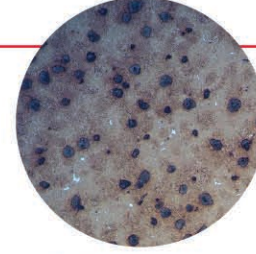
## Bemcalloy A3

### Composition

- Nodular Ductile Cast Iron

### Attributes

- Resistance to Pickup
- Thermal Stability
- Resistance to Thermal Fatigue
- Resistance to Thermal Shock
- High Tensile Strength
- High Impact Strength



**Optimal Hardness**  
Heat Treated  
58-64 HSC  
(44-48 HRC)

Carbon	Chromium	Molybdenum	Nickel	Niobium	Silicon
2.90 / 3.10	0.40 / 0.60	0.20 / 0.40	1.00 / 1.50	—	2.00 / 2.50

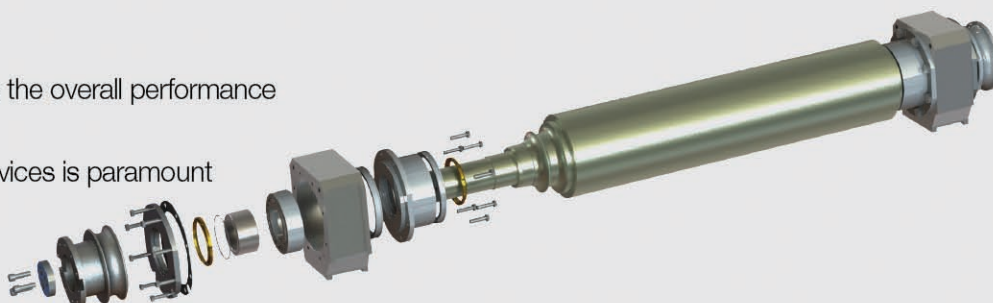
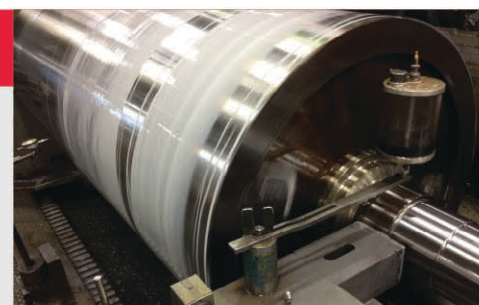
## Pinch Roll Reconditioning Services

Chargeable and recurring services include:

- Complete assembly evaluation and reconditioning
- Regrinding Services
- Re-sleeves of top pinch rolls
- Bearing diameter rebuilds
- Metallurgical evaluations
- Field engineering services

These services are critical factors in effecting the overall performance and total life costs of the pinch rolls.

The information obtained by doing these services is paramount in the continual product enhancement and development process.





# Xtek: A Trusted World Leader in Heavy Industry Components for Over 100 Years.



## Gearing & Gearboxes

- AGMA 15 capability
- TSP carburizing to 58-62 Hrc
- Gear diameters from 10" - 100"
- Up to 100,000 pounds
- Reverse engineering and FEA analysis
- Gearbox reconditioning specialists



## Gear Spindle Couplings & Universal Joints

- World leader in couplings
- All driveshaft products are custom designed for your application
- All wear components TSP carburized to 58-62 Hrc
- Reconditioning specialists



## Hardened Steel Wheels & Wheel Assemblies

- Xtek crane, brake and sheave wheels are the industry's longest lasting wheel products
- Proprietary heat treatment provides industry's best performing wheels
- Emergency breakdown services available



## Below-the-hook Lifting Products

- Design & manufacturing of heavy duty lifting equipment
- Multiple options for handling coil, slab, sheet, ingot, tube and specialty products
- Licensed, professional engineers on staff
- Lifter inspection services
- Repair and retrofitting of all lifter brands

# Xtek

## Solutions in Motion

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