HSI BLOW BAR

Installation, Maintenance & Optimization Manual

Best Practices for Maximum Service Life & Safety

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■ CRITICAL SAFETY REQUIREMENTS

BEFORE performing ANY maintenance on HSI crushers:

1. ***LOCK-OUT/TAG-OUT (LOTO)*** *— De-energize ALL power sources and secure with personal locks*
2. ***ROTOR SECURED*** *— Ensure rotor is completely stopped and mechanically locked*
3. ***LIFTING EQUIPMENT*** *— Use only certified lifting tools and designated lift points*
4. ***NEVER*** *stand under suspended loads or inside crusher without proper supports*
5. ***PPE REQUIRED*** *— Helmet, safety glasses, gloves, steel-toe boots, fall protection*
6. ***CONFINED SPACE*** *— Follow entry protocols if applicable to your site*

Failure to follow safety procedures can result in serious injury or death.

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1. PRE-INSTALLATION INSPECTION

Blow Bar Inspection:
• Verify part numbers match your crusher model and rotor configuration
• Check all blow bars for visible cracks, chips, or casting defects
• Confirm weight consistency across all bars (±3% tolerance for rotor balance)
• Measure critical dimensions against OEM specifications
• Verify hardness if testing equipment available

Rotor & Chamber Inspection:
• Inspect rotor pockets for wear, damage, or deformation
• Check wedge threads and replace if worn (every 2-3 bar changes)
• Verify pocket seating surfaces are flat (no light under straight edge)
• Inspect impact aprons/curtains for excessive wear
• Clean all debris from rotor pockets and mounting surfaces

2. INSTALLATION PROCEDURE

Step 1: Position Blow Bar
• Lift blow bar using appropriate lifting equipment
• Lower carefully into rotor pocket, ensuring full seating
• Verify positive locating features (noses/tabs) engage correctly
• Check that bar sits flush against all pocket contact surfaces

Step 2: Install Wedges
• Insert wedges into designated positions
• Apply anti-seize compound to bolt threads if specified by OEM
• Hand-tighten all bolts before final torquing

Step 3: Final Torquing
• Use calibrated torque wrench only
• Torque to OEM specification in star/cross pattern
• Record torque values for maintenance log

Step 4: Verify Installation
• Check for any movement or rocking of blow bar
• Verify consistent gap around bar perimeter
• Rotate rotor by hand to check for interference

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3. TORQUE SPECIFICATIONS (TYPICAL)

Bolt Size	Grade 8.8	Grade 10.9	Grade 12.9
M16	175 Nm	245 Nm	295 Nm
M20	350 Nm	490 Nm	580 Nm
M24	610 Nm	850 Nm	1000 Nm
M30	1200 Nm	1700 Nm	2000 Nm

IMPORTANT: *Always refer to your specific crusher OEM manual for exact torque values. Values shown are typical guidelines only.*

4. CRITICAL: RE-TORQUE PROCEDURE

Re-torque is MANDATORY after initial operation.

- Run crusher for 1-2 hours under normal load
- STOP crusher and follow full LOTO procedure
- Re-check ALL wedge bolts with calibrated torque wrench
- Thermal expansion and initial seating WILL loosen fasteners
- Record re-torque values in maintenance log

Failure to re-torque can result in:
- Blow bar movement and uneven wear
- Severe rotor pocket damage
- Catastrophic blow bar ejection
- Serious injury or equipment destruction

5. BLOW BAR ROTATION & FLIP SCHEDULE

When to Rotate/Flip:
• At approximately 50% wear depth
• Every 200-400 operating hours (application dependent)
• When edge rounding exceeds 5mm (measure with radius gauge)
• When product gradation begins to drift

Rotation Pattern:
• Flip bars end-for-end to utilize second working edge
• Rotate positions around rotor to equalize wear
• Always maintain weight balance (±3%) when repositioning
• Document all rotations in maintenance log

Replacement Indicators:
• Any visible cracking or breakage
• Wear approaching OEM minimum thickness marking
• Wear within 15-18mm of rotor pocket or bolt holes
• Unable to maintain product specifications

6. OPERATIONAL OPTIMIZATION

Feed Management:
• Maintain consistent, centered feed across rotor width
• Avoid feed surges — use VGF or controlled feeder rate
• Pre-screen oversized material (max feed ≤60-70% rotor diameter)
• Scalp fines (-10mm) to reduce "sandblasting" wear

Rotor Speed:
• Lower speed = less wear, more oversize product
• Higher speed = more fines, exponentially faster wear
• Match speed to alloy capabilities and product requirements

Curtain Settings (S1/S2):
• Tighter = finer product, increased wear rate
• Wider = coarser product, reduced wear rate
• Maintain symmetry to prevent uneven wear

Tramp Metal Control:
• Install overband magnets at feed point
• Consider metal detectors for high-value operations
• Manual picking station for recycling applications
• CRITICAL for high-chrome alloys (zero tolerance)

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7. INSPECTION & MONITORING SCHEDULE

Interval	Inspection Items
Daily	Visual check for unusual vibration, noise, product drift
Weekly	Measure blow bar edge wear and thickness; inspect wedges
Every 200-400 hrs	Full chamber inspection: bars, rotor, aprons, liners
Each bar change	Document wear patterns; photograph worn bars for analysis

Maintenance Logging: *Keep detailed records of installation dates, operating hours, tonnage processed, torque values, and wear measurements. This data is essential for optimizing replacement intervals and cost-per-ton calculations.*

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