

# ADVANCED CONTINUOUS COVER BLADE (CCB)

High Efficiency & Reliability

## High Reliability

- Mono-block blade structure
- Fewer locations for corrosive deposits
- Less susceptible to stress corrosion cracking (SCC)
- Interlocking integral covers – eliminates tenons and cover to tip closing issues
- Simple connections at blade tip and mid-span locations
- Reduced vane stress levels
- Elimination of stress concentration points at the tie-wire hole, tenons and tenon hole locations

## Steady Stress Analysis Results

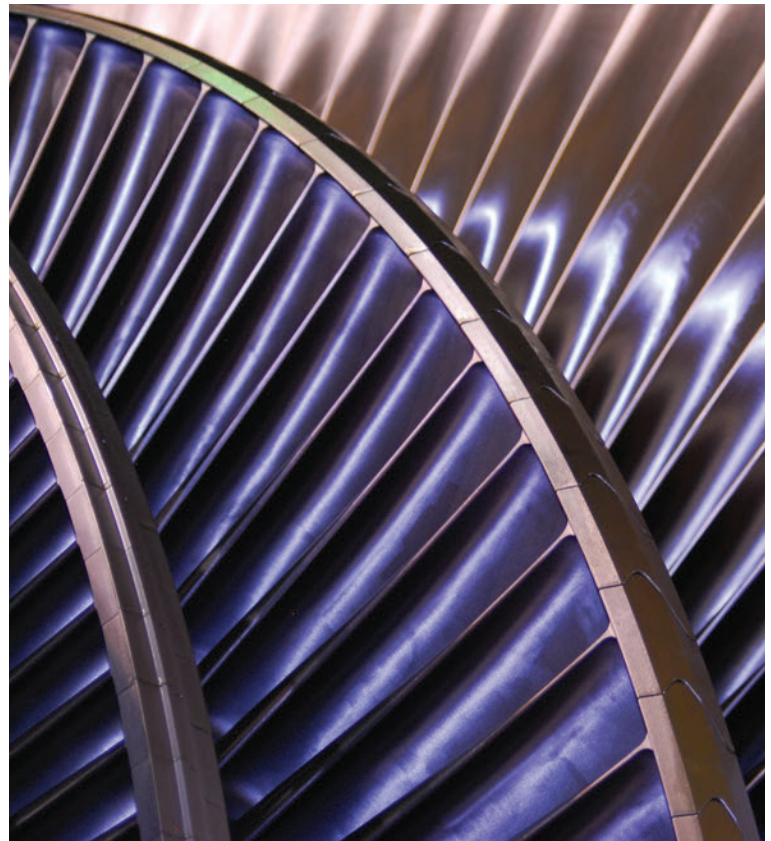
- Significantly reduced stresses in the blade profile
- Elimination of the tie-wire holes

## Excellent Vibration Characteristics

- Predictable sinusoidal mode form
- Dampening from integral locking cover
- Fewer resonance points – easier de-tuning

## Increased Backpressure Limits

- Expanded back pressure alarm & trip limits



## Current 60 Hz Blade Sizes Available

- 26" L-0, 17.414" L-1, 16.59" L-1
- 30" L-0, 17" L-1
- 33.5" L-0, 20.9" L-1

### Proven Operating Results and Experience:

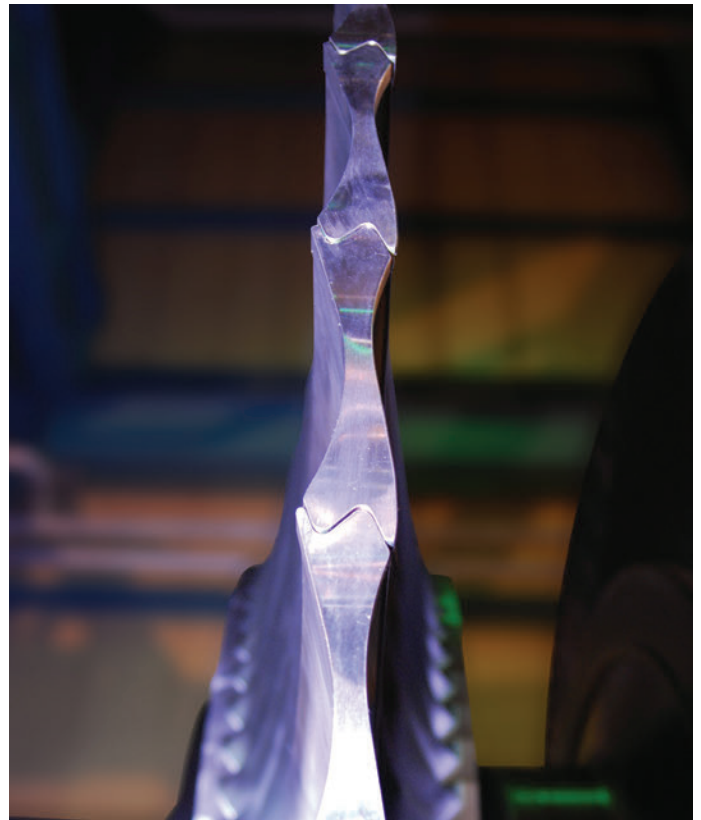
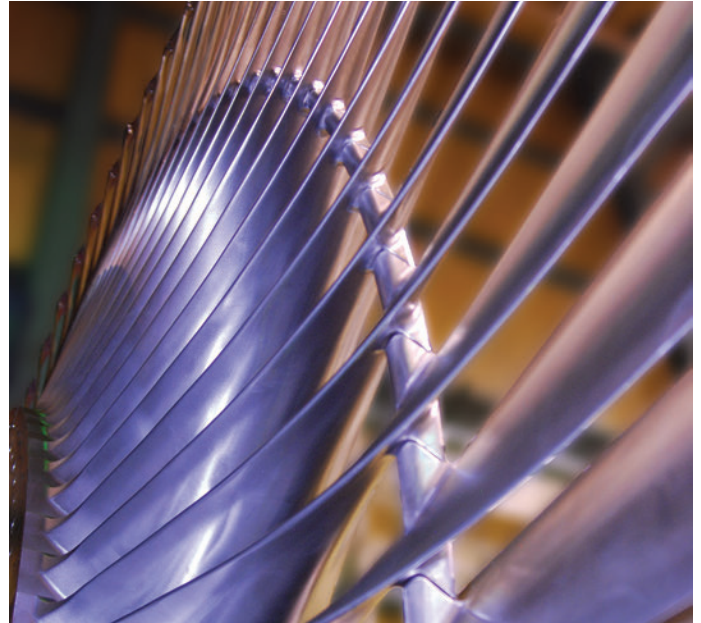
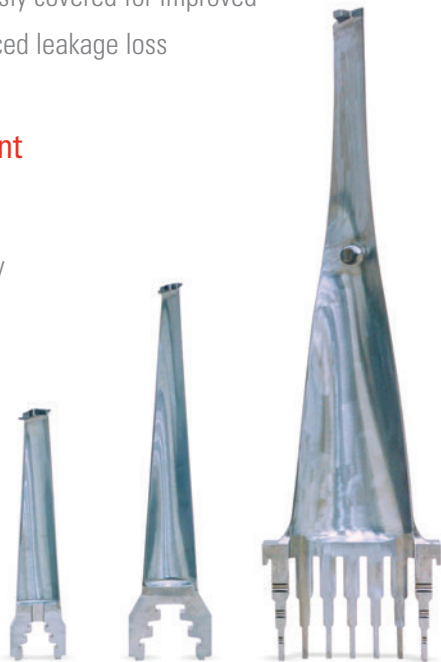
- Over (50) Rows Installed by MD&A on Rotors in the US.
- First Installed in 1991– Over 500 Rows in Service
- Installation and Supervision by Highly Experienced Technicians and Steampath Engineers
- Over (1,650) Units in Service Worldwide

### Improved Efficiency

- Up to an 8% stage efficiency increase on the 26" LSB without a new diaphragm
- Advanced transonic blade profile
- Elimination of mid-span coupling blades and tie wires on all blades
- Blades are continuously covered for improved steam flow and reduced leakage loss

### Drop-In Replacement

- No need to replace diaphragms or modify existing components



## MECHANICAL DYNAMICS & ANALYSIS

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