

Lime Recovery Kiln Discharge End Grizzly Bar Lump Breaker System



FEATURES & BENEFITS

- “Grizzly” teeth break up large chunks of material before they exit the kiln.
- Mounts in place of existing nose castings for easy installation; designed to match existing nose ring mounting holes on Metso family of kilns.
- Custom designs adaptable to multiple discharge end configurations
- Complete design and installation package
- Complete turnkey supply available

- **INCREASED SAFETY**

Operators spend less time breaking chunks

- **DECREASED TIME REQUIREMENTS**

Less time to monitor hood grate

- **INCREASED OPERATING TIME**

Less downtime to handle chunks

- **REDUCED MAINTENANCE**

Less maintenance of product equipment

- **REDUCED POWER CONSUMPTION**

Less draw or elimination of product equipment

- **INCREASED OPERATOR SATISFACTION**



Metso Minerals Industries, Inc. has designed and installed rotary Lime Recovery Kiln Discharge End Grizzly Bar Lump Breaker Systems to prevent the blocking of firing hood floor outlets. Manufactured from cast HH or HK grade austenitic stainless steel and attached in place of standard discharge end castings, the breaker bars are spaced 4-5" apart, retaining larger lumps to be broken up before exiting the kiln. The breaking action is initiated by the tooth profile design of the bars. A single large tooth at the base of each bar acts as the primary hook to start lifting the chunks high enough to fall back and begin to break apart. The additional smaller teeth also lift and agitate the broken pieces until they are reduced to a size to pass through the openings between the bars.

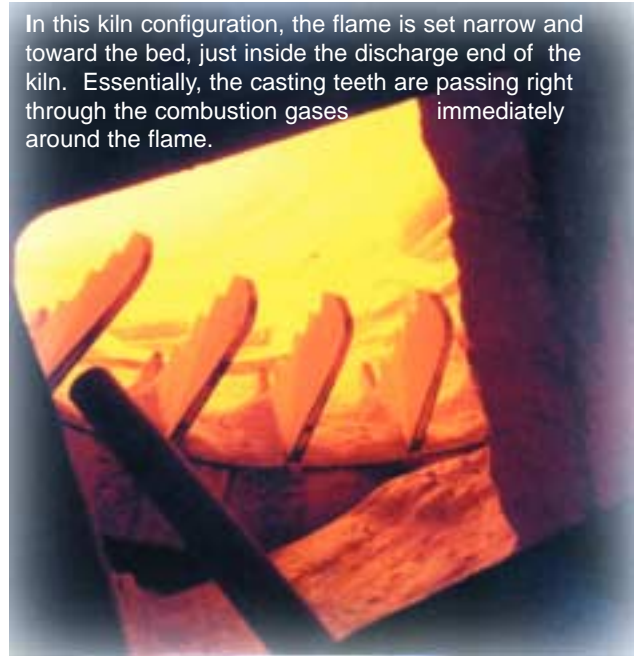
The system is typically purchased to assist in breaking up lumps and slabs which would otherwise block the firing hood floor Grizzly. Numerous process factors may cause excessive lumps and/or chunks forcing unstable kiln operations; and can be a significant safety concern, when they need to be broken up manually. Both personnel safety and process stability contribute to the justification of installing the Grizzlies. The Metso Minerals Industries, Inc. Grizzly Bar Lump Breaker System is sold as a complete unit, providing the necessary attachment hardware, refractory, refractory hardware and refractory brick retaining ring, allowing for a smooth installation.

When retrofitting older kilns, or installing the castings on new kilns, the area around the castings is filled with 9" thick plastic refractory lining for extended durability and ease of installation. A brick retaining ring is also set at the uphill end of the plastic zone against the downhill end of the existing brick refractory lining, to assure the positioning of a brick dam and/or the uphill brick refractory lining. Metso Minerals Industries, Inc. now includes these castings as standard supply on new lime recovery kiln installations, when equipped with a firing hood.



An upgraded design of this system has also been utilized on kilns which are firing #6 fuel oil and are not equipped with coolers or a discharge end dam. Under normal kiln conditions, the "standard" design casting life is 10+ years. Firing of #6 fuel oil in kilns without a discharge end dam or product cooler often creates an area of high sulfur concentration, and when enhanced by vanadium (often found in oils of Brazilian origin or recycled oils) will quickly corrode even high alloy stainless materials. Previous attempts using alterations in alloy content provided a small increase in casting life. Use of larger or thicker castings has doubled the lifespan of these installations, from 1.5 years to 3 years. Even with this short lifespan, the mills have continued to install replacements, as they have determined that the benefits outweigh the costs. The standard design teeth are .75" thick. The extra thick, heavy-duty design teeth are 1.5" thick.

In this kiln configuration, the flame is set narrow and toward the bed, just inside the discharge end of the kiln. Essentially, the casting teeth are passing right through the combustion gases immediately around the flame.



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