Rotary Kiln and Dryer Lubricant

PRODUCT GUIDE 2017

One Lubricant for Inside Tire Bore Stop Blocks / Leaf Seals / Thrust Rollers

1591 Big Shanty Dr.
Kennesaw, GA 30144
Tele: 770-424-4093  Fax: 770-426-4167  Toll Free: 877-402-1670
Email: sales@easybarlube.com  Website: www.easybarlube.com
MAINTENANCE ISSUES

KILN TIRE SYSTEM: REQUIRES ACCURATE ALIGNMENT OF SHELL AND TIRE.

Tire Bore (Inside Diameter):
- As the Kiln Shell rotates inside the tire, there are rolling and sliding frictions on the mating surfaces of the Chair Pads and the inside diameter (ID) of the Kiln Tire.
- **EASY BAR® LUBRICATION IS CRITICAL TO MINIMIZE ANY SCORING OR GOUGING OF THE TIRE BORE.**

Wear Pads:
- When too much wear pad wear has taken place, the shell alignment and support system is compromised. The steel shell will flatten at the top of the rotation resulting in ovality. As this condition continues the results may become catastrophic, resulting in damage or loss of the insulating refractory inside the kiln shell. This will result in hot spots on the shell, prompting Kiln shut down with loss of production and costly repair.
- **EASY BAR® LUBRICATION IS CRITICAL TO MINIMIZE THE WEAR OF THE WEAR PADS.**

Stop Blocks:
- Stop Blocks limit the movement of the tire as it travels back and forth on the trunnion rollers. As the tire rubs against the stop blocks wear occurs. A tire that is thrusting against the stop blocks will wear and cause damage. Without attention, the stop blocks will break and/or require replacing.
- **EASY BAR® SP LUBRICATION IS CRITICAL TO MINIMIZE THE WEAR OF THE STOP BLOCKS.**

Weld Fractures:
- Weld Fractures occur due to friction of the tire I.D and the surface of the chair pads. Wear Fractures are detrimental to the chair pad system and will need to be repaired. Lubricants with poor lubricating qualities will not protect against weld fractures.
- **EASY BAR® SP LUBRICATION IS CRITICAL TO MINIMIZE WELD FRACTURES.**

Creep:
- Creep is the difference in distance travelled between the shell and the tire. Creep increases as wear occurs. Creep of greater than 25mm require immediate attention.
- **EASY BAR® SP LUBRICATION IS CRITICAL TO MAINTAIN CREEP AND MINIMIZE CHANGES OR VARIATIONS.**

**THIS EQUIPMENT DEMANDS A LUBRICANT THAT (1) FUNCTIONS AT TEMPERATURES GREATER THAN 750 DEGREES FAHRENHEIT (2) DELIVERS THE OPTIMUM AMOUNT OF WEAR REDUCING SOLIDS (3) LEAVES NO TACKY RESIDUE BEHIND AND (4) IS 100% LUBRICANT COMPOSITION (NO FILLERS. NO WAX. NO WASTE).**

**EASY BAR® LUBRICANTS ARE THE ONLY LUBRICANTS THAT MEET THESE REQUIREMENTS WHILE PROLONGING THE LIFE OF THESE KILN COMPONENTS**
Why EASY BAR® SP (Spray) for Rotary Kiln Tires?

- **Lubricate Difficult Areas with Ease**: “Paint With Precision” areas where typical Easy Bar® use is impractical due to high Kiln RPM (4+) or areas unreachable by hand.
- **Quick and Simple!** No mixing or preparation time needed.
- **100% Lubricant Composition**: Every ounce of Easy Bar® SP (Spray) is utilized for maximum lubrication.
- **Extend Kiln Life by 50%**: Protects the kiln and stop blocks while eliminating breakage of filler bar welds.
- **Save Money on Maintenance!**: Reduces the wear that results from scoring of the inside bore of riding ring.
- **No Flame Ups!** Auto-ignition point +1000F and 538C.
- **Highest Quality for Fewer Applications**: Typically, just 32 ounces applied (once a week) per tyre will provide a more superior lubrication than current methods.
- **Environmentally Safe!** Easy Bar® SP (Spray) completely evaporates leaving no sticky residue, no waste and no harmful chemicals traces.
- **Easy To Apply!** Easy Bar® SP (Spray) is applied with the pneumatically-operated Easy Bar SP Applicator Gun or through an automated-lube system.
EASY BAR® SP (Spray) vs. OTHER GRAPHITE SPRAY METHODS

<table>
<thead>
<tr>
<th></th>
<th>Easy Bar® SP (Spray)</th>
<th>Water/Oil Based Sprays</th>
</tr>
</thead>
<tbody>
<tr>
<td>% Lubricant Composition</td>
<td>100%</td>
<td>1-5%</td>
</tr>
<tr>
<td>Mixing / Prep Time Required</td>
<td>NONE</td>
<td>20-30 Minutes</td>
</tr>
<tr>
<td>Auto-Ignition Point</td>
<td>+1000 degrees F + 538 Celsius</td>
<td>~500 degrees F ~ 260 Celsius</td>
</tr>
<tr>
<td>Blow-Back Hazard &amp; Clean-Up</td>
<td>NONE</td>
<td>YES</td>
</tr>
<tr>
<td>Applications per Week</td>
<td>Once</td>
<td>DAILY</td>
</tr>
<tr>
<td>Application Time Required per Tire</td>
<td>1 Minute</td>
<td>20-30 minutes</td>
</tr>
</tbody>
</table>

Disadvantages of other graphite spray methods:

Time Consuming
- 20-30 minute preparation/mixing time
- Carrying sloshing bucket up to the lubrication area for each tyre of the kiln
- 20-30 minute application time
- Clean-Up Time

Delivery System - “Pump and Pray”
- Hand-pumped sprayers are not precise and cannot provide appropriate lubricant coverage to the specific lubrication areas.
- Inaccurate spray can “blow-back” the extremely hot mixture onto employees during application.
- Hand-pumped sprayers often “clog” or “jam-up” as the mixture’s temperature cools down.

Low Solid Lubricant Composition
- After diluting graphite into the carrier (ie. water or diesel) the amount of actual solid lubricants present in the mixture is only 1-5%
- Carriers mixed with Diesel have a lower flash-off point which could be dangerous at normal kiln operating temperatures
EASY BAR® SP (Spray) Application with 25-T APPLICATOR

Easy Bar SP will extend the life of filler bars/wear pads and reduce wear on the tire bore.

Spray between filler bars on uphill side of the tire. Between 5 and 7 o’clock position in the outbound direction.

Apply a coating to the sides of the tire/riding ring to reduce wear of the stop blocks and tire.

Long wand allows for application from safe distance.

Adjust air pressure to vary the spray pattern. A typical setting of 30 P.S.I. is optimal.

The Easy Bar SP Formula has an auto ignition point of 1000 Degrees F/538 C. So it will not auto-ignite.

Applying two tubes, per tire, per week will provide proper lubrication of the filler bars and tire bore.

Click to see Video Demonstration
EASY BAR®SP (Spray) Application with 25-U APPLICATOR

Easy Bar Inc, now provides a Pump System to easily and effectively lubricate the Inside Tire-Bore of the Kiln Shell as well as the sides of the tire for Stop Block lubrication with our patented Easy Bar SP lubricant. Lightweight, this pump system secures to our 25-SP/35 product (35lb pail). With the addition of plant air, the pump system can delivery enough Easy Bar SP to lubricate each tire in roughly 1-2 minutes per week. The compact design allows for easy mobility or easily located at each pier to minimize lubrication time.

Available Wand Lengths

- 36” Chrome Wand
- 47” Chrome Wand
- 59” Chrome Wand
- 79” Chrome Wand

Click to see Video Demonstration

Application at 3-4 Inches from Tip of Applicator to Lubrication Point
EASY BAR®SP (Spray) Application with 25-V/PwrLbr APPLICATOR

This Lincoln PowerLuber corded grease gun delivers 7500 PSI and high torque values, making it an excellent choice for automotive, farm, wind turbines and industrial applications. Variable speed trigger combines with 2-speed transmission for excellent flow control.

Click for Easy Bar SP Application Demo
EASY BAR®SP (Spray) Application with R25-V/PwrLbr-20V_Ion

This Lincoln PowerLuber grease gun with a high-torque gearset, the two-speed motor delivers grease at up to 10,000 psi (690 bar) in both high- and low-output settings. The multifunction liquid crystal display (LCD) accurately provides standard readings such as battery level and grease flow (ounces or grams). Flex hose: The 36 in. (91 cm) flex hose comes with anti-kink spring guards on each end and a specialized spray tip to provide accuracy and application distance for oiler.

Includes:
- Cordless Li ion grease gun
- (1) Rechargeable Lithium-Ion battery
- Charger
- Heavy-duty carrying case
EASY BAR®SP (SPRAY) SIZES

<table>
<thead>
<tr>
<th>PRODUCT CODES</th>
<th>PACKAGING</th>
</tr>
</thead>
<tbody>
<tr>
<td>25-SP/TU-20</td>
<td>CASE OF TWENTY (20) 20 ounce Cartridges</td>
</tr>
<tr>
<td>25-SP/35</td>
<td>35 LB PAIL</td>
</tr>
<tr>
<td>25-SP/120</td>
<td>120 LB KEG</td>
</tr>
<tr>
<td>25-SP/500</td>
<td>500 LB DRUM</td>
</tr>
<tr>
<td>25-T</td>
<td>APPLICATOR GUN WITH CUSTOM LANCE</td>
</tr>
<tr>
<td>25-U</td>
<td>APPLICATOR PUMP WITH CUSTOM LANCE</td>
</tr>
<tr>
<td>R25-V/PwrLbr</td>
<td>ELECTRIC APPLICATOR</td>
</tr>
<tr>
<td>R25-V/PwrLbr-20V_Ion</td>
<td>BATTERY (20V Lithium Ion) APPLICATOR</td>
</tr>
</tbody>
</table>

TESTIMONIAL

“Easy Bar Sp is working well and did help us improving our rotary dryer reliability. One month after we started using it, we could already notice a significant reduction of the shim plates and tires ID galling problem. We are now using 1 tube/pier every week.

The air spray lube gun you’ve provided is also working well. This tool allows us to SAFELY re-lubricate often enough to maintain our dryer in good condition without having to stop it. Doing so, it has solved one of my reliability problems without creating a new problem for the production department.

Once again thanks for your help.”

CEPSA – ENGINEER SERVICE & RELIABILITY
Why EASY BAR® SP for Rotary Kiln Tires?

1. Cost savings are realized immediately in extending replacement part life greater than 50% and higher while reducing maintenance costs. (Filler Bars & Wear Pads last significantly longer).

2. Labor costs are lowered by reducing lubricant application time down to less than 1 minute a week for each tire.

3. Material costs are lowered by reducing lubrication schedule to typically just 32 ounces of Easy Bar® SP once a week.

4. Longer equipment life means savings to repair filler bar weld fractures and replacement of filler bars. Typically $20,000 to $60,000 per tire section.

5. Easy Bar® SP prevents against “unscheduled downtime” which ultimately can shut down a plant and halt production.

6. 100% Lubricant for 100% Effectiveness! No Flame-ups, No Messy Residues, No Fillers, No Waste.

COST BENEFITS OF EASY BAR SP

<table>
<thead>
<tr>
<th>Potential Maintenance work</th>
<th>Potential Maintenance cost</th>
<th>Benefits and Cost Savings</th>
</tr>
</thead>
<tbody>
<tr>
<td>Wear pad replacement</td>
<td>$20,000-$45,000/tire</td>
<td>Plant benefits by longer-lasting wear pads that no longer require replacement</td>
</tr>
<tr>
<td>Wear pad repair</td>
<td>$10,000-$40,000</td>
<td>No loss of production as wear pads are intact and do not require replacement</td>
</tr>
<tr>
<td>Refractory damage</td>
<td>$80,000/10ft Section</td>
<td>Wear pads in serviceable condition ensure that shell ovality is minimized and premature refractory damage is not incurred</td>
</tr>
<tr>
<td>Refractory repair time</td>
<td>+ 4 Days (x) cost of lost production</td>
<td>No unscheduled loss of production or kiln shutdown</td>
</tr>
<tr>
<td>Weld fracture repairs</td>
<td>Labor personnel @ $65/h x number of hours to repair</td>
<td>No repair needed. Results in lower operations costs</td>
</tr>
</tbody>
</table>