



# TECHnotes

Company and industry information for distributors and users of Bel-Ray Total Performance Lubricants

## POWERSPORTS DIVISION

# Motorcycle Safety Foundations Steps For Preparing Your Bike For The Riding Season

### THIS MONTH

- Follow the T-LOCS system to prepare your bike for the upcoming riding season
- Bel-Ray continues to solve lubrication issues in the Mining Industry
- Lubrication of the oven chain is key to operations and Bel-Ray has a chain lubricant to meet your particular needs



For those of us that live in a temperate climate, there is a portion of the year when our bikes are normally stashed away and not ridden for a few months out of the year. Usually the bikes are prepared for this storage with a few simple steps. Normally, draining or stabilizing the gasoline in the fuel tank is done. Sometimes the lubricants may be changed or reapplied before storage and the bike may be put on a stand in order to keep pressure off the tires for an extended period of time.

Now, when you take a bike out of storage, there is a completely different procedure to follow to get the bike ready for riding again. The Motorcycle Safety Foundation developed a step-by-step system for taking bikes out of storage called T-CLOCS (**T**ires, **C**ontrols, **L**ights, **O**ils, **C**hassis, and **S**tands). All of these components should be inspected and tested before taking the bike out on the trails or the road after storage.

### Tires

The tires should be examined for any cracks and dry rotting in the rubber. If the rubber is acceptable, the tire pressure should be checked and

adjusted if need be. Also, spokes should be checked for tightness where applicable. A simple way to test the spokes is to tap them with a wrench. If you hear a high “ping” sound, the spoke is good and tight. If you hear a thud or a rattle, the spoke needs to be tightened. Be sure not to over tighten spokes, they only need to be tight enough to not move or rattle in place. This is also a good time to inspect your brake lines for any leakage during the storage time.

### Controls

Check your throttle and clutch cables. They should operate smoothly and snap back into place when released. If not, they may need to be lubricated using a penetrator like Bel-Ray 6 in 1, or replaced if there is damage. Check the brake lever and pedal for smooth operation. If not working properly, trace the lines and inspect them for any damage. It is not uncommon for small animals to chew through hydraulic hoses.

### Lights/Electrical

Motorcycle batteries are relatively small and have a tendency to lose their charge over a winter of cold storage.

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# Improve Mill Gearing Lubrication with Bel-Ray

Bel-Ray Peru has solved a gearing lubrication problem on mill teeth utilizing the Bel-Ray Molylube Mill Gear Grease.

The mill was a 9X13 and was operating in a mineral concentration plant. The original lubricant was not providing the lubrication film needed to separate the gear teeth, which resulted in high temperatures and excessive wear. The mill lubricant consumption was also very high. The two main problems were high temperatures of the components and premature component wear and excessive lubricant consumption.

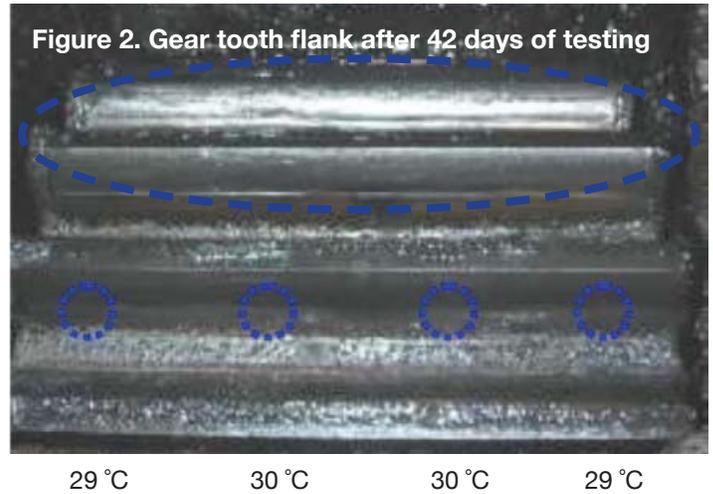
The picture below shows the conditions of the Mill's gear flank before of the test.



Temperature records in Mill 9X13 in Celsius						
Reading points						
	Day	P1	P2	P3	P4	Time
Starting day	5/15/2010	31	33.2	34.5	33	15:00
	5/27/2010	27	33	33	32	18:30
	5/28/2010	29	30	31	29	8:30
	6/27/2010	29	30	30	29	12:30

As we can observe in the picture, the points marked in red were the temperature readings, all above 31 degrees, that is not a high temperature, but if you noticed the hottest points were in the middle of the tooth flank, this means that there is more contact between the pinion and gear surfaces. The previous lubricant film was not protecting as it should, the previous lubricant did not provide the correct viscosity and Extreme Pressure additives, resulting in deformation, wear and corrosion on the gears tooth flanks.

The follow picture shows the Gear tooth flank after 42 days of testing with Molylube Mill Gear Grease.



The temperatures along the gear tooth flank are more uniform and the Molylube Mill Gear Grease lubricant film is providing excellent hydrodynamic lubrication. The temperature was reduced by 11% (less contact between components surfaces) reducing risk of wear and unexpected failure. Also we can observe the condition of the gear tooth flank showing no rust and/or corrosion. It is necessary to highlight that Molylube Mill Gear Grease did not correct the gear tooth surface; it just delivered the correct lubricant film to prevent the continued damage that was occurring with previous lubricant.

The second aim and achievement of Molylube Mill Gear Grease was the lowering of lubricant consumption.

	Centralized System Lubrication FARVAL, dosing valves D63, lubricant amount per charge 0.166 lb			
	Lubrication intervals every:			
	15 minutes	20 minutes	25 minutes	30 minutes
Competitor's lubricant				
Consumption/ day	15.94	11.96		
Consumption/ month	478.08	358.60		
Time of duration of a 440 lbs drum.	0.92/moth	1.22/month		
Bel-Ray Molylube Mill Gear Grease lubricant				
Consumption/ day			7.97	6.31
Consumption/ month			293.04	189.30
Time of duration of a 440 lbs drum.			1.50/ month	2.32/ month

With Bel-Ray Molylube Mill Gear Grease, they extended the lubrication interval by 50% from 20 minutes to 30 minutes. The lubricant consumption was reduced by 90%. This lower consumption resulted in lower lubricant disposal cost, less lubricant inventory, reduced unscheduled downtime, increased uptime and less environmental impact. Choosing the correct lubricant can solve lots of problems and reduce costs as we observed in this case.

Check out all the Bel-Ray Performance Products on the Bel-Ray website at [belray.com](http://belray.com) or contact your Bel-Ray Sales Representative

# Oven Chain Key to Proper Bakery Lubrication

When it comes to selling lubricants to the bakery industry, the oven chain is where the action is! Bel-Ray has been right there with a long successful history since 1946.

If the oven chain lubricant can't take the heat and the chain is showing signs of wear, premature failure and has become a maintenance nightmare, you need Bel-Ray Bakerylube Oven Chain Lubricant. When applied at recommended temperatures, superior wear protection and weekly relubrication will keep the chain operating smoothly.

The oven chain is vital to the bakery's operation. Down time, loss of production and costly chain repairs make for unhappy production managers and maintenance personnel.

The oven/chain temperature is critical when recommending a chain lubricant. When recommending a high temperature oven chain lubricant it is also important to know the temperature at the point of lubrication. When considering your oven chain lubricant recommendation, it is suggested that you know the temperature of the chain. A good way to check the oven chain's operating temperature is to shoot the chain as it goes into the oven with an inferred temperature sensor (heat gun) and again as it leaves the oven. This way you can average the two and pinpoint the operating temperature.

When using Bel-Ray Bakerylube Oven Chain Lubricants it is important to agitate each lubricant prior to use and always apply the lubricant at the specified application temperatures. If the chain is too hot the lubricant will smoke or flare up. If the chain temperature is too cold, the lubricant will not adhere properly.



There are two common methods of oven chain lubrication. One method is to brush the oil on a moving chain as if painting the chain. The most efficient and consistent method of lubrication is with an automatic oiler. The volume and time of lubrication is pre-set. Make sure the automatic lubrication system has continual agitation to insure that the graphite stays in suspension for uniform lubrication.

There are (4) four Bel-Ray Bakerylube Oven Chain Lubricants available.

## **Bakerylube Oven Chain Lubricant Series: *What is it?***

It is a mixture of fluid carriers and finely divided, high purity graphite powder. **Bakerylube Oven Chain Lubricant** is engineered to provide superior lubrication of chain side bars, sprockets, pins and bushings at various application temperatures.

## **Bakerylube Oven Chain Lubricant: *How does it work?***

When correctly applied, the carrier fluid evaporates, depositing the graphite lubricant to the baking oven chain's critical points. The carrier fluids used in **Bakerylube Oven Chain Lubricants** are carefully selected to minimize any smoke and fire risk.

■ **Bakerylube Oven Chain Lubricant - Cold Chain** (56720), formerly known as Bakerylube Regular, is for most chains that are cooled to below 82°C

(180°F). Application Temperature Range: 60°C to 82°C (140°F to 180°F); Useful Temperature Range up to 871°C (1600°F).

■ **Bakerylube Oven Chain Lubricant - Hot Chain** (27000), formerly known as Bakerylube 400, is recommended for the oven that is difficult to cool or where there is insufficient time for cooling. Application Temperature Range: 121°C to 177°C (250°F to 350°F); Useful Temperature Range up to 871°C (1600°F).

■ **Bakerylube Oven Chain Lubricant - Cold Chain (Water Based)** (56740), formerly known as Bakerylube WB, is for use when safety is of the utmost concern. Application Temperature Range: 49°C to 99°C (120°F to 210°F); Useful Temperature Range up to 871°C (1600°F).

■ **Bakerylube Food Grade Oven Chain Lubricant Heavy** (62057), formerly known as Bel-Ray No-Tox Bakerylube Heavy, is a high temperature oven food grade chain lubricant designed to deliver and deposit the advanced food grade solid lubricant "Graffight," leaving no sludge or carbon residue. It is an excellent fluid lubricant for lubrication under hydrodynamic conditions at temperatures up to 232°C (450°F). After prolonged exposure to temperatures above 232°C (450°F), the base fluids (carrier fluids) volatilize, leaving the solid lubricant without sludge or carbon residue. The solid lubricant effectively lubricates up to 900°C (1652°F) in exposed areas.

**Note:** When recommending and or using Bel-Ray Bakerylube Chain Lubricants, Follow the General Instructions for the suggested application conditions. Contact Bel-Ray Technical Services with application questions.

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If a battery tender was not used, check that your battery has a charge by turning on lights or other electrically powered components. If the battery does not work, make sure all of the connections are in their proper position. Inspect any wiring you can easily access to make sure no animals have chewed through the wires. Once you confirm your battery is working, or a new battery has been installed, check any switches for blinkers or lights to check that all controls are working.

### Oils/Fluids

It is a good idea to have changed the engine oil before putting the bike into storage. Used oil can have contaminants which, when kept in an inactive engine, may cause problems during the storage period. If the engine oil was changed before storage, check the oil level by either dipstick or sight glass to confirm the proper amount of oil in the engine. If a small leak is present, top off the reservoir to the appropriate level with fresh oil. If the engine oil was not changed before storage, it should be changed immediately before taking the bike out of storage. This same procedure should be followed for a transmission reservoir if separate from the engine.

If the bike is water cooled with a radiator, check that the coolant level is correct and there have been no leaks or broken hoses during storage. If the coolant level is changed, you may want to examine the lubricating oil in the engine or transmission for contamination as there may be a leak somewhere in the coolant circulation loop.

If the bike is chain driven, the chain should have been prepared for storage with fresh chain lube. Now that it is out, check that the chain lube is still on the chain. If the chain does not have lube on it, lube the chain now with a chain lube such as Bel-Ray Super Clean Chain Lube. If the bike is a drive shaft driven bike, check the gear box reservoir for the proper oil level and inspect the oil for



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any contamination.

The brake fluid level should be checked and the brake fluid should be inspected for any water contamination. If there is water contamination in the brake fluid, the liquid should appear a milky hazy color. If there is contamination, bleed the brake lines and flush them with fresh fluid of the same type. Then fill the reservoir with fresh brake fluid of the same type as previously used.

Any forks or rear shocks containing oil or compressed gas should be checked for leaks and proper operation.

It is a good idea to drain the fuel before storage, but if you do drain it, proper fogging oil should be used to stop condensation from rusting your tank. If you did not drain the gas tank and the gas was left in the tank with or without a stabilizer for the storage period, the fuel should be examined to make sure there is no discoloration and no abnormal odors.

### Chassis

Inspect the frame of the bike for any cracks or rusted spots. Welded connections and joints are the most important places to look at. Any flaked paint or rusted spots might be

signs of deeper damage in the frame of the bike and should be thoroughly checked for compromise. Also check all of the bolts along the chassis for any loose or damaged bolts.

### Stands

Check that any side stands or center stands move freely along their path and that all spring mechanisms are properly working. If the spring is broken or damaged, the stand will fall while riding and this could cause a very serious accident.

In addition to the bike, you should always check your gear such as helmets and pads for damage before riding. If there are any cracks in the plastics or tears in your padding, the item should be replaced with new gear to avoid serious injury in case of an accident.

Finally, it is time to start the engine. Once the engine is warmed up and everything appears to be running normally the bike can be ridden. Enjoy the warm weather and the riding season while it lasts. For next winter, remember all the steps you've taken and try to make them easier for yourself when putting the bike away at the start of the next cold season by putting the bike into storage properly.