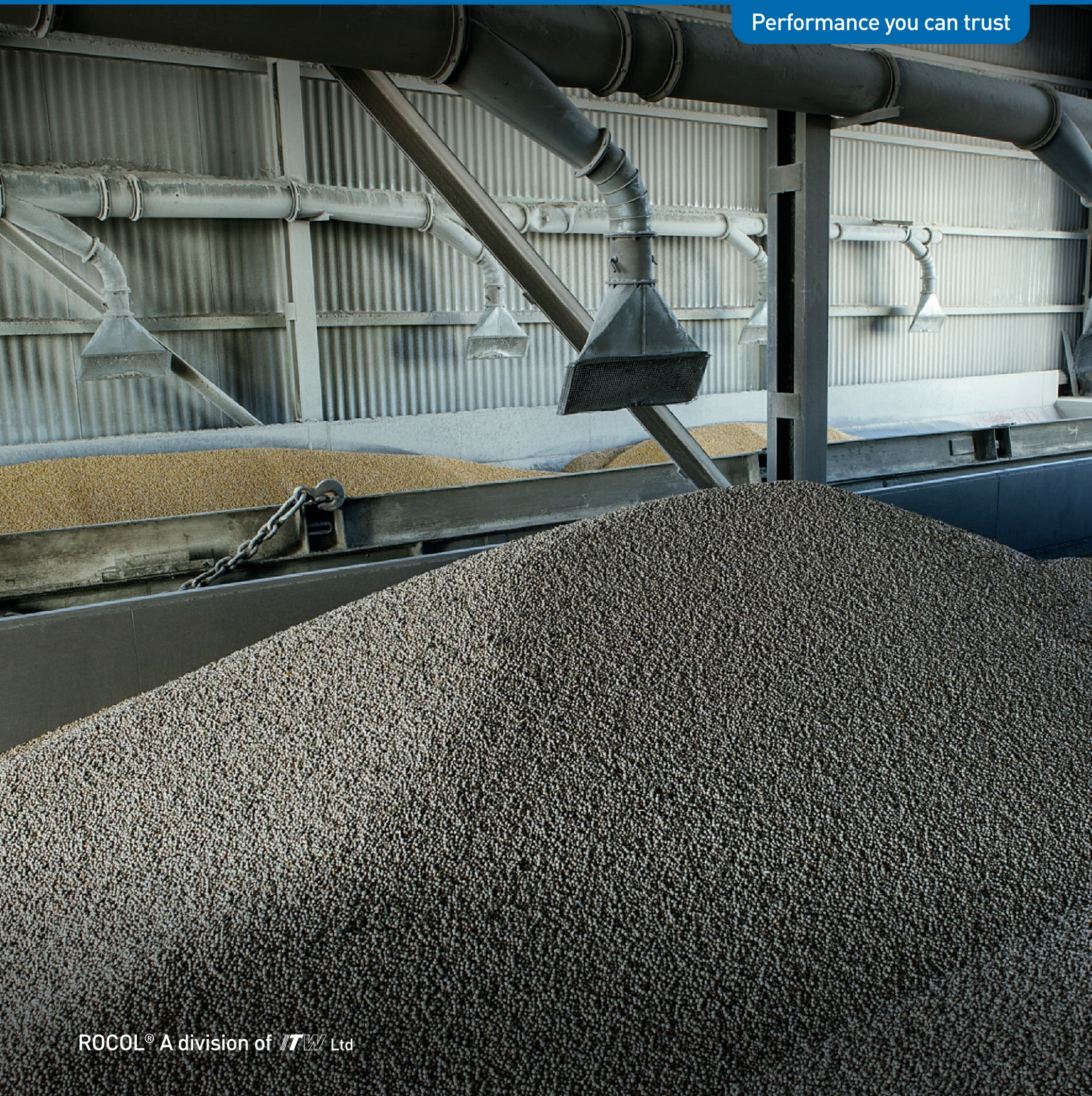




ANIMAL FEED MILLS

Lubrication Guide

Performance you can trust



Contents

From product concept, design and development through to technical expertise and customer services, ROCOL® supports your lubrication needs.

Performance you can trust	3
Food grade lubricants from ROCOL®	3
DETEX® / Lube Shuttle	5
Case Studies	6
ROCOLCARE®	8
FOODLUBE® products	10
Training	14

Customer Service: +44 (0)113 232 2700

Performance you can trust for the food industry

Technically advanced lubricants developed by chemists and engineers to meet customer needs. Our food grade products:

- ▶ Reduce production downtime
- ▶ Avoid costly product recalls
- ▶ Support audit compliance

ALL PRODUCTS ARE:

- ▶ NSF H1 registered for incidental food contact
- ▶ Manufactured from only FDA listed ingredients
- ▶ Free from mineral hydrocarbons, GMOs and nut oils and their derivatives

ROCOL meets stringent hygiene and sanitation standards and has various certifications, including:

- ▶ ISO 21469 The international standard for the manufacture of food-grade lubricants.
- ▶ Halal and Kosher Certification. All NSF H1 and 3H lubricants and NSF registered cleaners are Halal and Kosher certified.

THE SECTORS WE SERVE

- | | |
|------------------------|------------------|
| ▶ Fruit and Vegetables | ▶ Sugar Refinery |
| ▶ Meat | ▶ Dairy |
| ▶ Fish | ▶ Confectionery |
| ▶ Pharmaceutical | ▶ Bakery |
| ▶ Animal Feed | ▶ Beverage |



Food grade lubrication from Rocol®

The globally recognised ISO 21469:2006 certification ticks an important box for auditors as it provides credible, independent assurance that all Rocol products are formulated, manufactured and supplied hygienically and safely.

WHAT IS ISO 21469?

For any food and drink manufacturer using FOODLUBE lubricants, especially those reliant on leading retailers through long-term contracts, this provides a vital first step towards conforming with major supermarket, European Food Safety Inspection Service and British Retail Consortium audit requirements.

Products in the FOODLUBE range are already NSF-H1 registered, which specifies the requirements for the formulation of lubricants that may incidentally come into contact with products during manufacture.

ISO 21469:2006 builds on the product-specific NSF-H1 standard to represent another important layer of safety approval. It means that products are manufactured to stringent recipe and hygiene standards using good manufacturing practices, dedicated equipment and strict handling procedures. Each product is hygiene assured as it has been independently verified by an NSF inspector and tested in their laboratories. It is then deemed safe for incidental food contact and certified as being manufactured only from FDA listed ingredients which are free from animal derived materials, nut oils, soya, dairy and genetically modified ingredients.



DETEX®

DETEX® metal and x-ray detectable detachable plastic components on aerosols and standard grease cartridges are designed to assist food processing plants in meeting strict HACCP requirements regarding the use of lubricants.

All blue, removable plastic components are metal detectable and capable of detection by most metal detection equipment and x-ray machines

- ▶ Reduce concerns of food product contamination and assist with HACCP requirements
- ▶ All blue, removable plastic components are GRAS listed (Generally Regarded As Safe – FDA 21 C.F.R Sections 177 and 178)
- ▶ Meets FDA requirements as acceptable material for use in food processing plants



LUBE SHUTTLE

The only 'best practice', audit compliant, method of applying grease for the food industry

The most common method of applying grease to a bearing is through the use of a grease gun. This can cause serious non-conformances for audit purposes. The biggest non-conformance being that it is not possible to see what type of grease is loaded into the grease gun.

FEATURES AND BENEFITS OF THE LUBE SHUTTLE:

When placed into the Lube Shuttle grease gun, the Shuttle cartridge has a dedicated space to display important audit information. Rocol has printed the product name, NSF category and registration number, and other audit specific information in this space.

- ▶ It has easy to change cartridges - screw threaded. Quick and easy for operators to use.
- ▶ The quantity of grease remaining in the cartridge is visible at all times - no wasted time or product.



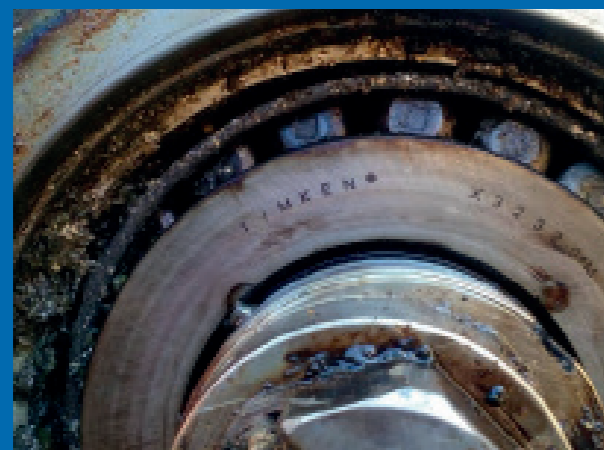
Pellet Mill Ring Die Bearing Case Studies

ROCOL® FOODLUBE Premier 1 - for use on all pellet mills

- ▶ At least 4 times less quantity of grease needed (45g of ROCOL FOODLUBE Premier 1 grease per hour instead of 200g per hour of competitor grease as recommended by pellet mill OEM).
- ▶ Using ROCOL® FOODLUBE Premier 1 guarantees food safety (NSF H1, ISO21469, Kosher and Halal registered).
- ▶ Using competitor grease with a quantity of 200g per hour means there will be approximately 150g per hour surplus grease passing into the feed pellets. This excess grease will change the texture and the mixture of pellets and potentially mean that this grease contamination is greater than any allowable limits (causing product recalls).
- ▶ Bearings last at least 2.5 times longer than a previous maximum life of 6 months.



Use your phone camera to scan the QR code to find out more



Bearings Using Competitor (Matrix) Grease (after 10 Days)



Bearings using ROCOL® foodlube premier 1 (after 5 months)

ROCOL® FOODLUBE Extreme - for use when anti-bacterial grease is required

APPLICATION

Bearings are lubricated by an automatic lubrication system

DIFFICULTIES

- ▶ High load bearings
- ▶ High temperature application for the bearings up to (+ 100°C)
- ▶ Contamination with solids
- ▶ High humidity

LUBRICANT

FOODLUBE Extreme

ADVANTAGES

- ▶ 100% synthetic high performing product
- ▶ Prevents grease from "melting" inside the bearing
- ▶ High temperature up to 160°C
- ▶ Easy pumpability
- ▶ NSF H1

PROPOSAL

- ▶ FOODLUBE Extreme with the extraordinary EP performance, non-melting, high temperature range, can increase lubrication periods up to 3 times.
- ▶ Protects the bearings
- ▶ Due to the formulation the grease absorbs the free humidity avoiding corrosion

APPLICATION DETAILS

Bearing lubrication of the CPM pellet Mills (2 x CPM 3000 & 1 x CPM 2000), lubricated with a Mineral Lithium soap grease. Lubrication interval every 8 hours. Issues with the grease melting due to the temperature and high lubricant consumption. Also, the grease was not food safe and the manufacturer needed to change to a food safe grease.

RECOMMENDATIONS

Use FOODLUBE EXTREME and increase the lubrication interval to 48h (from 8h).

BENEFITS

- ▶ Due to the lubrication interval increasing from 8h to 48h, the maintenance time required to carry out the lubrication has reduced by a factor of 6.
- ▶ Due to the lubrication interval increasing from 8h to 48h, the quantity of grease used has reduced by a factor of 6.
- ▶ Compliance with food safety audits due to using foodsafe (NSF H1) registered grease.
- ▶ The bearings are lasting approximately 4 times longer than they did with the previous grease and lubrication regime.



Use your phone camera to scan the QR code to find out more



About ROCOLCARE®

OUR HISTORY

Established in 1878, ROCOL® has become a market leader in the development of high-performing chemicals and lubricants, by understanding the complex needs of the industrial, clean and safety markets. Our comprehensive range includes high performance lubricants, cutting fluids, line marking and anti-slip systems. Operating to internationally-recognised standards in quality, environment, and safety, ROCOL is proud of its commitment to the continual engagement and development of staff and its Investors In People accreditation.

OUR PRODUCTS

ROCOL holds many patented trademark brands within the food and industrial manufacturing markets; brands such as FOODLUBE®, DETEX™, SAPPHIRE® and FLO-LINE® that help a facility to operate safely, without sacrificing performance.

Our portfolio features a wide range of lubricants developed to answer the specific needs of the most demanding applications in the markets we serve. Comprising of premium grade base oils, including synthetics, renewable oils and silicones, these lubricants are treated with the most effective additives to address the performance and application needs of today's varied industry-specific manufacturing processes. With higher load carrying capability, superior resistance to water washout, lower flammability ratings and greater temperature ranges, our products are designed to preserve and protect against costly breakdowns and ensure maximum performance.

ISO 21469 CERTIFICATION

ROCOL takes pride in having become one of the first companies worldwide to achieve ISO 21469 approval.

This certification takes into consideration our manufacturing facility for hygiene, quality, dedicated manufacturing areas and good manufacturing practice.

NSF.org states: ISO 21469:2006 specifies hygiene requirements for the formulation, manufacture, use and handling of lubricants.

Within a factory environment, lubricants can have incidental contact with products and packaging used in the food, food-processing, cosmetics, pharmaceutical, tobacco or animal feeding-stuffs industries. All ROCOL food grade products are manufactured within the strict guidelines of ISO 21469:2006, ensuring zero risks to consumer products in the event of a contamination.

FULLY AUDITED PROCESS

ROCOL is audited annually by NSF, ensuring the highest standards of hygiene and quality are maintained. A sample of every NSF H1 product manufactured by ROCOL has been tested in an NSF laboratory to ensure it complies with the highest standards of food safety. The ISO 21469 certification ensures that every ROCOL NSF H1 product comes from a strict recipe.



ISO 21469 Certified



Use your phone camera to scan the QR code to find out more

What is ROCOLCARE®

ROCOLCARE® is the premium service package for the food, clean and associated industries that offers the following features and benefits;

- ▶ **Full Audit Compliance** – ROCOL® is the first ISO21469:2006 certified lubricants manufacturer. ISO21469 is a globally recognised hygiene certification that ticks an important box for auditors as it provides credible, independent assurance that all ROCOL products are formulated, manufactured and supplied hygienically and safely.
- ▶ **Risk Reduction** – Establishes all your lubricant requirements and ensures contamination free lubrication.
- ▶ **Rationalisation** – Rationalises your lubricant usage and reduces your stock holding on site.
- ▶ **Training** – best practice lubrication training is available.
- ▶ **Increased Efficiency** – Increases lubricant efficiency, improvements in plant productivity and reduction in costs.



ROCOLCARE® CUSTOMERS – WHAT DO YOU GET

- ▶ Enjoy peace of mind – assurance that you and the lubrication experts are working together in partnership
- ▶ Achieve operational excellence – efficiencies are increased through the ROCOL preventative and proactive approach to lubrication management
- ▶ Assurance of full traceability – All ROCOL products are developed, manufactured, passed through a stringent QC process and despatched from the ROCOL manufacturing site.

FOODLUBE® products designed to keep your mill running smoothly



FOODLUBE® PREMIER 1

Food grade grease for bearings operating at high speeds and temperatures.

A high performance EP grease, fortified with PTFE, designed for enhanced lubrication, particularly high speed and high temperature applications.

- ▶ For electric motors and fan and conveyor bearings
- ▶ High load and wear properties - significantly extends bearing life
- ▶ Highly resistant to water washout - excellent corrosion protection

Description	Part code	Size
NLGI 1	15291	380g
	15281	380g (Shuttle Cartridge)
42 H1	15294	18kg
	15297	50kg
	15299	170kg

Used in ring die bearings on pellet press machines

TEMP RANGE
-30°C to +180°C



FOODLUBE® ANTI-SEIZE

FOODLUBE Anti-Seize is an advanced next-generation anti-seize grease designed specifically for the challenges of the food processing industry.

Optimized for use on stainless steels, such as those commonly found in food, pharmaceutical and other clean environments. Promotes controlled assembly, and reduced galling and seizure on disassembly even in wet, dirty and corrosive conditions.

- ▶ Optimised for preventing pick up and seizure of stainless steel fasteners, particularly at elevated temperatures
- ▶ Extremely tenacious – resists water wash off
- ▶ Suitable for use with aluminium and its alloys
- ▶ Only requires a thin film for maximum performance - economical in use
- ▶ Exceptionally clean compared to copper based anti-seize

Part code	Size
15744	85g

Perfect for use on pellet press conditioner screw conveyor splined shaft

TEMP RANGE
-30°C to +450°C



FOODLUBE® EXTREME

Food grade grease for extremely wet applications.

A highly tenacious extreme pressure bearing grease with superior performance in wet conditions, for the lubrication of all types of ball, roller and plain bearings.

- ▶ Superior water resistance - excellent corrosion protection
- ▶ High load and wear properties - significantly extends bearing life
- ▶ Resists water wash out

Description	Part code	Size
NLGI 2	15241	380g
34 H1	15282	380g (Shuttle Cartridge)
	15246	4kg
	15244	18kg

Excellent oxidation stability resulting in extended re-lubrication intervals and a reduction in lubricant usage

TEMP RANGE
-30°C to +160°C



FOODLUBE® HI-TORQUE

Food grade gear oil with start up protection system.

High performance fully synthetic gear oils incorporating start up protection system (SUPS) and anti wear additives to provide maximum lubrication and protection in all types of gearboxes.

- ▶ SUPS – a unique protection for gear teeth on start up and in use
- ▶ Outstanding load carrying performance: FZG load stage 12
- ▶ Excellent anti-wear performance - no need for additional additive treatments

Description	Part code	Size
Hi-Torque 150	15426	5l
28 H1	15425	20l
	15429	200l
Hi-Torque 220	15526	5l
8 H1	15525	20l
	15529	200l
Hi-Torque 320	15766	5l
13 H1	15765	20l
	15769	200l
Hi-Torque 460	15775	20l
27 H1	15779	200l

Used in gearboxes across all food factories

TEMP RANGE
-20°C to +150°C





FOODLUBE® HI-POWER

High performance, food grade oils for compressor, hydraulics and airline systems.

High performance, fully synthetic oils incorporating an optimum blend of high performance additives. Suitable for use in hydraulics, air compressors and airline systems.

- ▶ Enhanced oxidation stability
- ▶ Extremely low sludge build up
- ▶ Minimal foaming
- ▶ Unique L-CO system, reduces carry over

Used for all hydraulic power packs across animal feed mills

TEMP RANGE
-50 to +120°C



Description	Part code	Size	Description	Part code	Size
Hi-Power 22	15796	5L	Hi-Power 68	16006	5L
5 H1	15795	20L	3 H1	16005	20L
	15799	200L		16009	200L
Hi-Power 32	15896	5L	Hi-Power 100	15946	5L
6 H1	15895	20L	17 H1	15945	20L
	15899	200L		15949	200L
Hi-Power 46	15995	20L			
18 H1	15999	200L			

FOODLUBE® PROTECT SPRAY

High performance, food grade, long-term corrosion protection.

Effective heavy duty, waxy film for long term corrosion protection for all metal parts.

- ▶ Excellent corrosion protection outdoors for up to 2 years
- ▶ Clean, white visible film
- ▶ Resilient to aggressive cleaning
- ▶ Water displacing for immediate corrosion protection
- ▶ Fortified with PTFE - acts as a dry film lubricant

Easy to use spray which prevents corrosion and rust

TEMP RANGE
-40 to +110°C



Part code	Size	
15020	300ml	33 H1

FOODLUBE® CHAIN SPRAY

Tenacious, food grade spray lubricant for extended chain life.

Convenient aerosol chain lubricant. Ideal for lubrication of all types of drive and conveyor chains.



Very effective chain lubricant that cleans away dust whilst leaving a clean tacky film

TEMP RANGE
-20°C to +150°C

Part code	Size	
15610	400ml	16 H1

FOODLUBE® MULTI-PASTE SPRAY

Food grade, multi-purpose lubricating spray.

Specifically designed for wet, dirty and corrosive operating environments, and those subject to frequent wash out.



Excellent general purpose dry film lubricant perfect for dusty environments

TEMP RANGE
-30°C to +450°C

Part code	Size	
15751	400ml	26 H1



FOODLUBE® WD SPRAY

Food grade water displacing and lubricating spray fortified with PTFE.

Effective heavy duty, waxy film for long term corrosion protection for all metal parts.



Ideal for removing moisture from areas around the pellet mill

TEMP RANGE
-20°C to +110°C

Part code	Size	
15010	300ml	32 H1

ROCOLCARE® Training

APPLICATION-FOCUSED TRAINING

The scale of UK manufacturing and food production is vast. From frozen goods to bakeries, glass bottles to cardboard boxes, the equipment used for production is put through its paces every day, under conditions that differ from one sub-sector to the next. Which means the maintenance requirements for each piece of equipment can also vary dramatically, depending on their use.

When it comes to keeping your processing equipment in peak condition, a 'one size fits all' approach is not good enough. ROCOL® recognises the need to support engineering managers with added value, through support mechanisms tailored to the products and services in their industry niche.

A BESPOKE APPROACH

Each sub-segment of the food industry and manufacturing space has equipment, processes, regulations and unique requirements. No surprise, then, engineering managers find it a challenge to identify only those maintenance products amid the thousands available suited to their niche market. And, once they do uncover any relevant products, all too often the manufacturer focuses its product training on the lubricant's performance rather than its application.

OPERATOR TRAINING

ROCOL training for machine operators is delivered from our head office in Leeds or at your premises. The team at ROCOL helps your staff with multi-level training and support, from fundamentals such as "The Essential Principles of Lubrication" to advanced "Train the Trainer" courses designed to upskill your staff with the technical knowledge to conduct your training sessions in-house.

ONLINE TRAINING

At ROCOL, we're making it even easier for manufacturing and processing teams to improve efficiency and reduce down-time across their production facilities by introducing our brand new online training. ROCOL Online Training is designed for all operators and maintenance engineers involved in equipment maintenance – whether you're new in the role, or a seasoned engineer wanting to refresh your knowledge.

TECHNICAL SUPPORT

Our technical support team includes multiple experts such as chemists and professional engineers. Using a full range of testing equipment, the team at ROCOL is quick to investigate any mechanical failure, providing insight into the root cause before dealing with the identified issues swiftly.



FIND YOUR NICHE

Comprehensive application-based training will take you through a typical factory layout in your sub-sector, look at the major items of equipment found within this environment and provide information and advice relating to the relevant equipment lubrication.

Take, for example, a food factory that uses rotary rack ovens. Engineering managers will be keen to ensure they get maximum life out of the rotary table bottom bearing to keep the ovens operational and efficient. These slow speed plain and anti-friction bearings move at less than 300 rpm and operate at temperatures above 180°C. Normal greases will leave heavy deposits, causing blockages and jamming that can eventually lead to bearing failure.

Or a chocolate moulding machine, which will be carrying vast weights of chocolate at any one time and operating miles of chain. These machines are generally operational for months at a time, which leaves only a small window of opportunity for maintenance. Making sure that the most effective lubricants are used in the right quantities to keep the machine fully operational through to its next maintenance cycle is crucial to avoid breakdowns or downtime.

Or beverage manufacturers, who will have fillers operating over prolonged periods, at relatively high speeds and often involving aggressive carbonated liquids. Keeping all moving parts operational in this demanding environment when downtime is not an option requires knowledge of the right lubrication products alongside application expertise.

Lubricant manufacturers should not just be selling you products; they should also be offering training that considers the specific equipment and operating conditions in your industry segment. That training should highlight the products most suitable for reducing downtime and extending bearing life (in the case of rotary ovens; ROCOL® HT70, a high molecular weight hydrocarbon polymer that evaporates slowly at high temperatures leaving minimal deposits) and demonstrate application techniques.

They should also be able to advise and train you on the products that have the necessary NSF registration for your specific industry, equipment and operating conditions.

TAKING ADVANTAGE OF TECH

We also have a database of Standard Operating Procedures for the lubrication of key plant items in the food industry to give us one of the most detailed industry-specific lubrication training packages for these sectors.

In the current climate, it may be some time before face to face training becomes the norm again. In the meantime, thanks to the wonders of technology, virtual training is on the rise, and is accessible from all areas of the world.

Our team has been making the most of video conferencing capabilities to roll out our application-based training to our specialist distribution partners across the globe. Feedback has been glowing, but we are not standing still. The next stage is to enable our distribution partners to provide this application-specific training to end users.

If you are interested in application-based training, contact Andy Howard to find out more.
E: andy.howard@rocol.com
T: +44 (0) 7730 486 828

ROCOL®



Customer Service: +44 (0)113 232 2700

T +44 (0) 113 232 2600
F +44 (0) 113 232 2740
E customer.service@rocol.com
www.rocol.com

ROCOL House, Swillington, Leeds LS26 8BS

Registered Company No 559693 VAT No 742 0531 67

Registered Office: Nexus House, Station Road, Egham, Surrey, TW20 9LB

ROCOL® A division of **ITW** Ltd

