PULSARLUBE

The Best **Lubrication** Solutions

Exclusive Distribution

LUBE TECH VETNAM CO.,LTD / www.lubetech.com.vn

Pulsarlube Timeline

Founded
Korea Leading Technology Company: KLT Co.,Ltd

1991

Founded
Pulsarlube USA

2000

1998 Introduced Pulsarlube **V**

1999 Introduced Pulsarlube **M**
Achieved **ISO 9001**

Founded
Pulsarlube GmbH

2010

2007 Introduced Pulsarlube **EX** and achieved global Explosion-Proof certifications

2008 Introduced Pulsarlube **S**

Founded
Pulsarlube China

2018

2011 Achieved **ISO 14001**

2012 Introduced Pulsarlube **E**

2013 Introduced Pulsarlube **Mi**

2015 Introduced Pulsarlube **PLC**

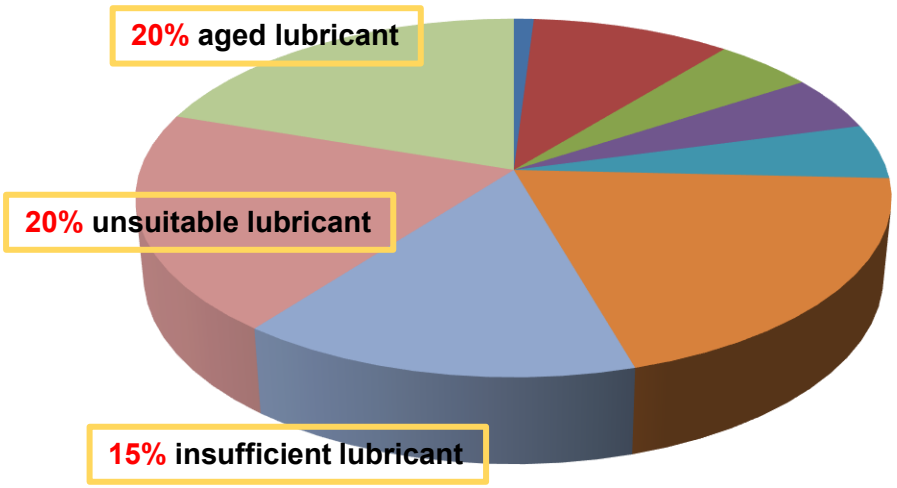
2017 Introduced Pulsarlube **EXP**

2018 Introduced Pulsarlube **BT**

Our Partners

Causes of Roller Bearing Failures

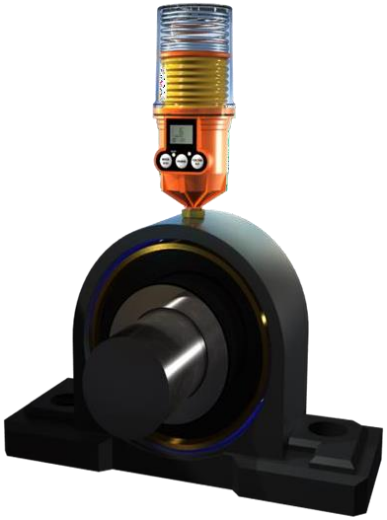
55% of Bearing Failures are *Lubrication Related*



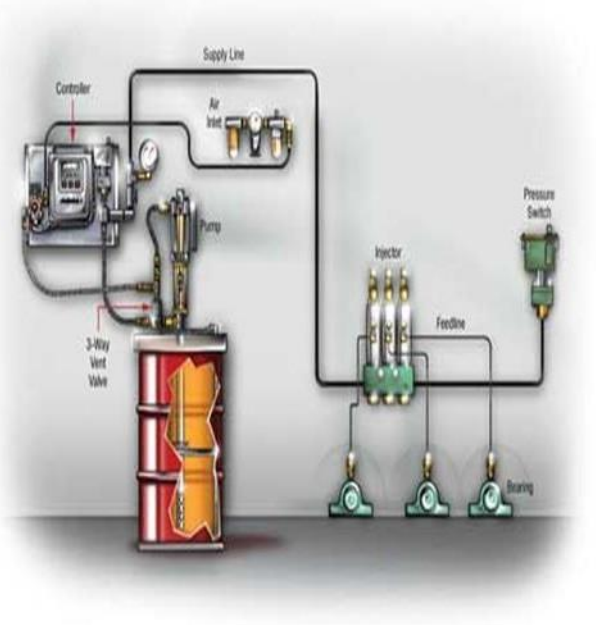
Lubrication Methods

Manual

Single Point

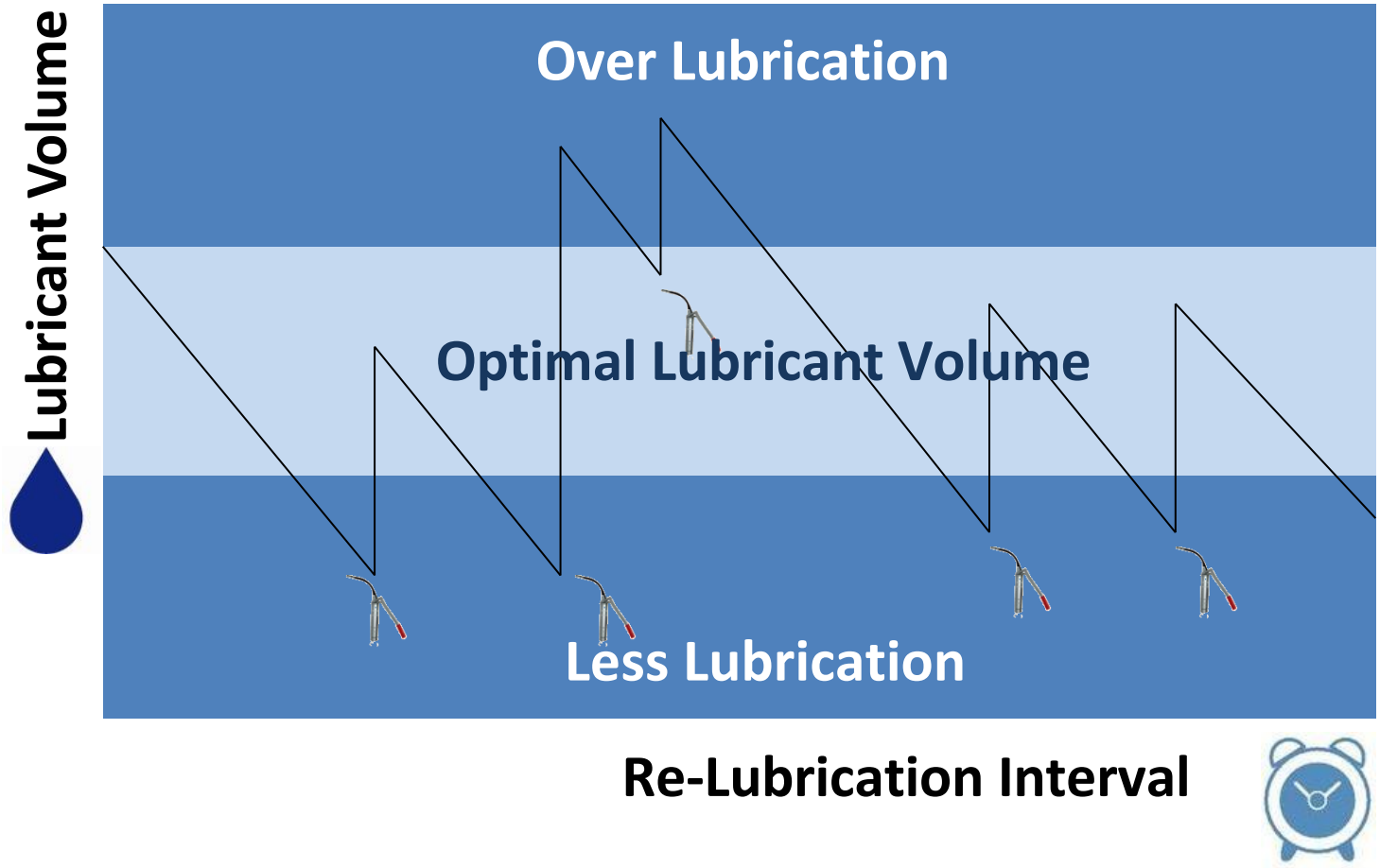


Centralized



Manual Lubrication

Manual Lubrication



Manual Greasing Disadvantages

- Safety concerns
- Complex lubrication schedule
- Over or under-lubrication
- Lifetime of machinery can be shortened
- Increased downtime (for lubrication and repair)
- Possible grease contamination in workplace

Centralized Lubrication

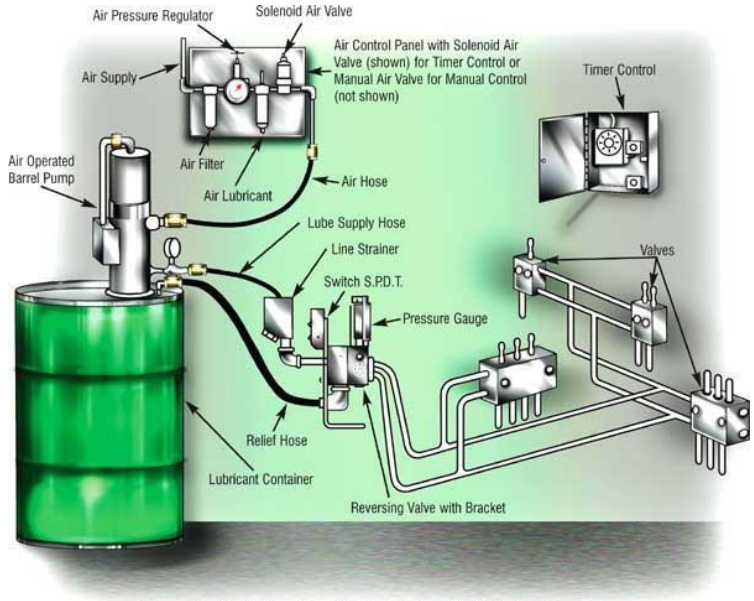


Figure 1. Dual-line Parallel Centralized Lubrication System

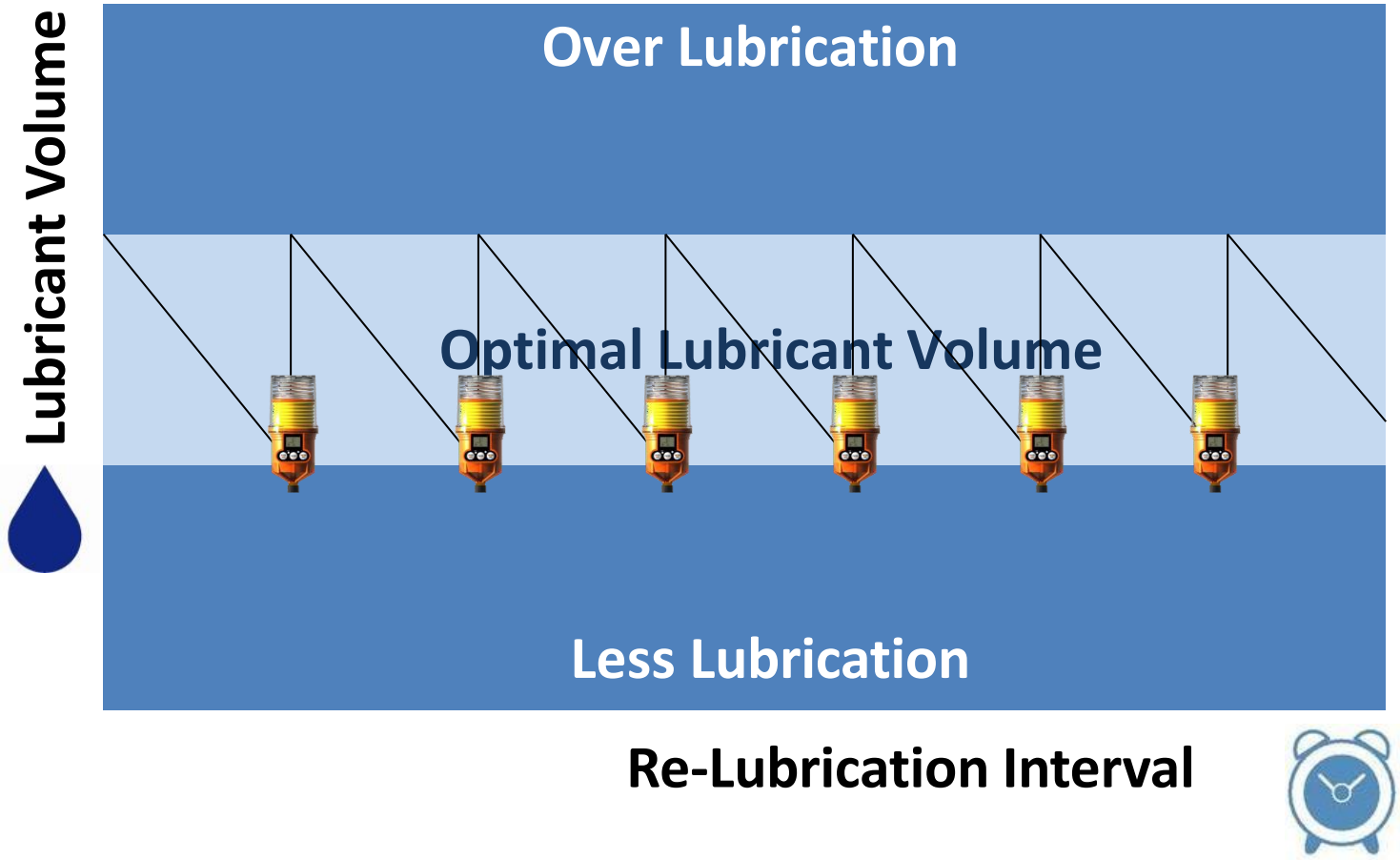
Advantages

- Safe and convenient
- Reliability of application
- Free of contamination

Disadvantages

- High initial cost
- Not cost-effective for smaller systems
- One blockage can disable *the entire system*
- May require complex piping/tubing runs

Single Point Lubrication



Single Point Lubricator

Advantages

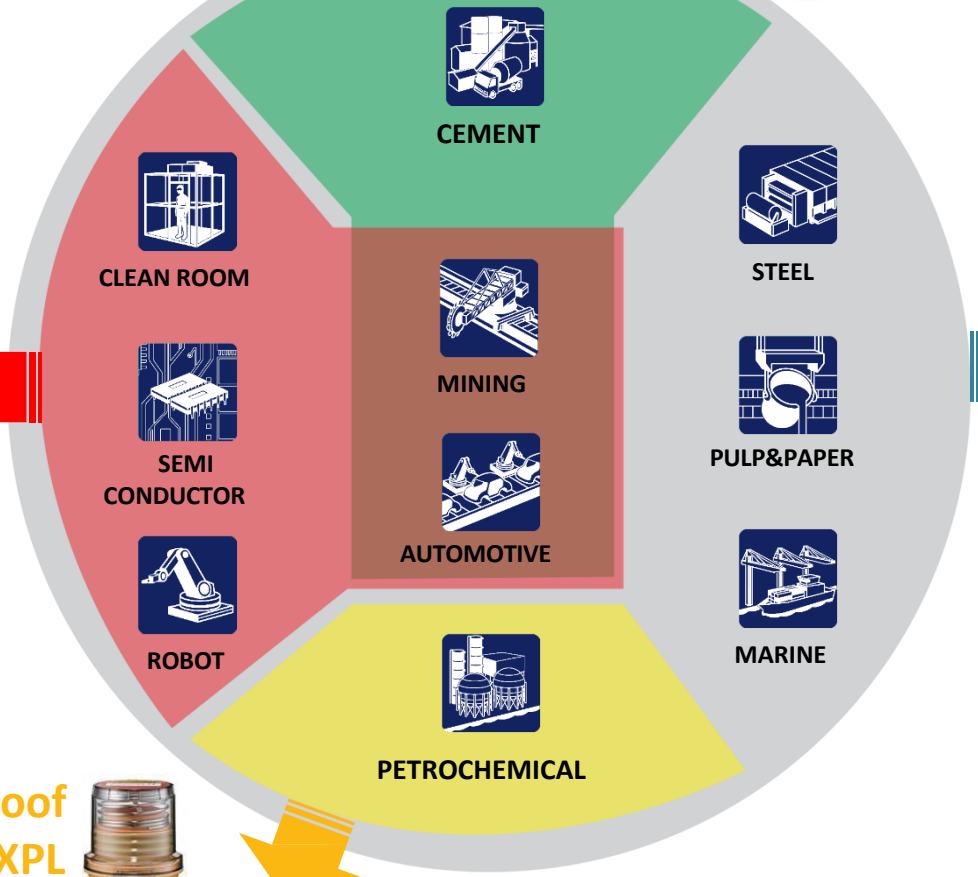
- Save on labour
- Reduces safety concerns
- Simple & reliable lubrication schedule
- Cleaner workplace
- Easy to install

Pulsarlube Line up for All Industries

About Single Point Lubricator

GAS TYPE
V / E

PREMIUM
PLC
BT



MECHANICAL
M
MS
MSP

Ex-Proof
EXP/ EXPL

Pulsarlube Lineup for All Industries




	E	V	M	MSP
Overview	Compact & Economical Grease Dispensing	Advanced Performance & Smart Operation	Powerful Electromechanical	Synchronizing with equipment
Operating Temperature	-20°C-55°C		-15°C-60°C -40°C-60°C(Li)	-15°C-60°C -40°C-60°C(Li)
Operating Pressure	5bar (73psi)		30 – 60bar (435 - 870psi)	
Remote Installation	Max. 1m (3.3ft) with Ø8 tube		Max. 10m with Ø6 tube	
Multi-Point Installation	Recommend Direct / Remote Installation		Max. 6m with Ø6 tube (Max. 8 points)	
Certifications	IP68		IP54	N/A
Grease Capacity	60ml, 120ml, 240ml (disposable)	125ml, 250ml (disposable)	60,125,250,500ml (replaceable)	

Pulsarlube Lineup for All Industries

About Single Point Lubricator

	EXP	PLC	Mi
Overview	Explosion-Proof Certified for IIC gas group	Integrating with a PLC with external power supply	Synchronizing Vibration Sensor
Operating Temperature	0℃~50℃	-20°C-60°C	-15°C-60°C -40°C-60°C(Li)
Operating Pressure	30 – 60bar (435 - 870psi)	30 – 60bar (435 - 870psi)	30 – 60bar (435 - 870psi)
Remote Installation	Max. 6m with Ø6 tube	Max. 10m (33ft) with Ø6 tube	Max. 1m (3.3ft) with Ø6 tube
Multi-Point Installation	Max. 3m with Ø6 tube (Max. 8 points)	Max. 6m with Ø6 tube (Max. 8 points)	Max. 1m with Ø6 tube (Max. 2 points)
Certifications	II 3 G / Ex ic IIB T4 (ATEX) Class I, Div. 2, Group A,B,C,D,T4 Class II, Div. 2, Group F,G,T4 (ETL)	CE / KC	CE
Grease Capacity	60,120,240,480ml (replaceable) *480ml with LB only	60,120,240,480ml (replaceable)	60,125,250ml (replaceable)

☑ Pulsarlube = Guaranteed Lubrication Solution

- All lubrication points are continuously lubricated with fresh lubricant.
- Pulsarlube E(gas type lubricator) especially designed for lubrication points in confined space.
- Pulsarlube lubricators protect lubrication points from contamination.
- With Pulsarlube service, your machinery can be lubricated with…

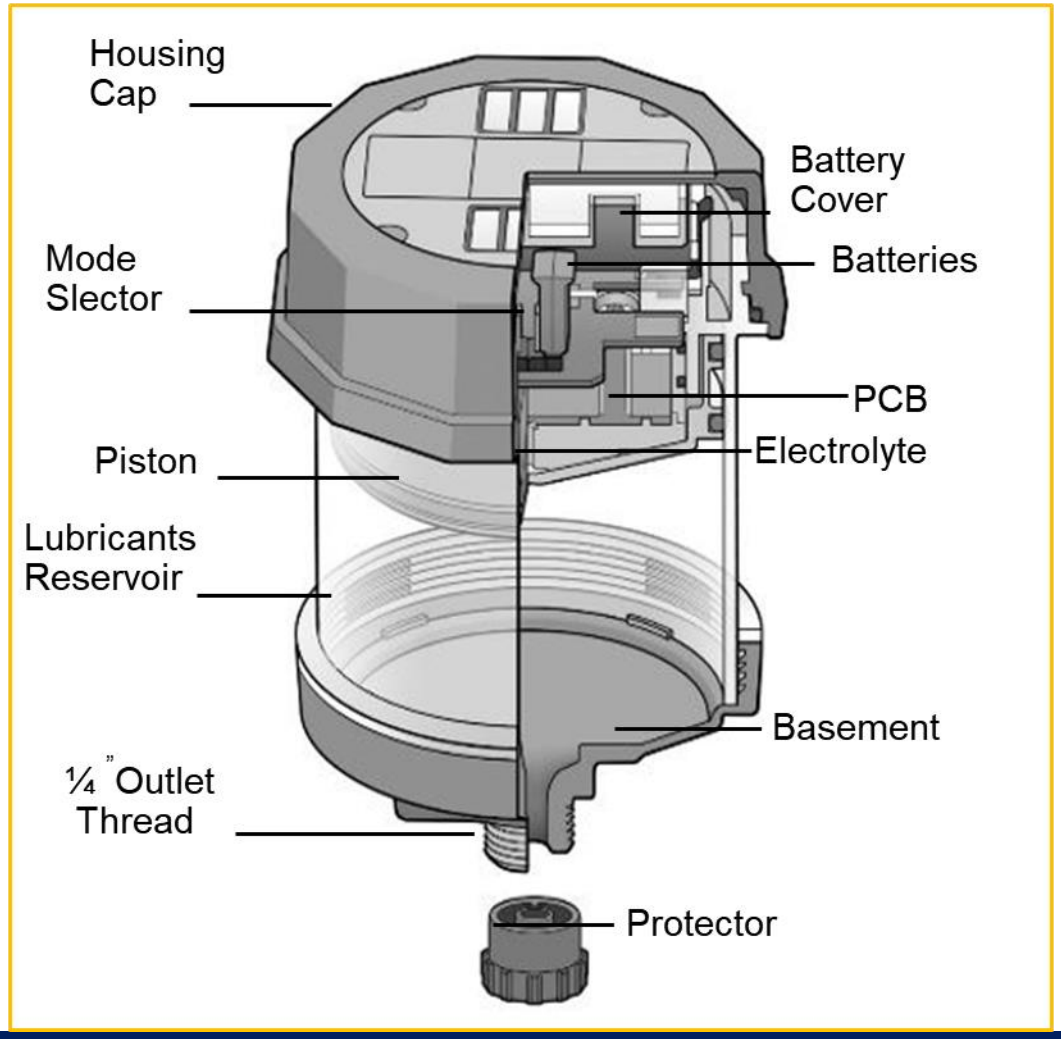
Right lubricant, Right amount, Right schedule.

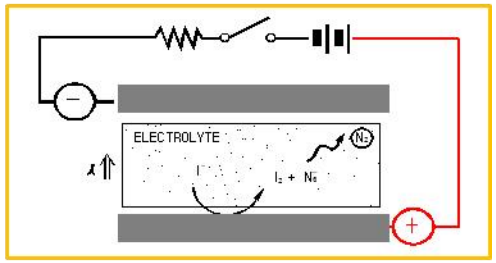
Electrochemical

Pulsarlube E

Electrochemical

Structure & Working Principle





Electrolyte Reaction

Gas Generation

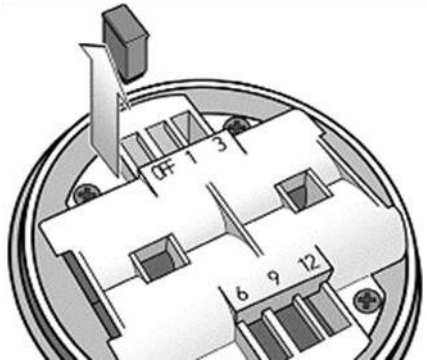
Pressure Build-up

Lubricants Dispensing

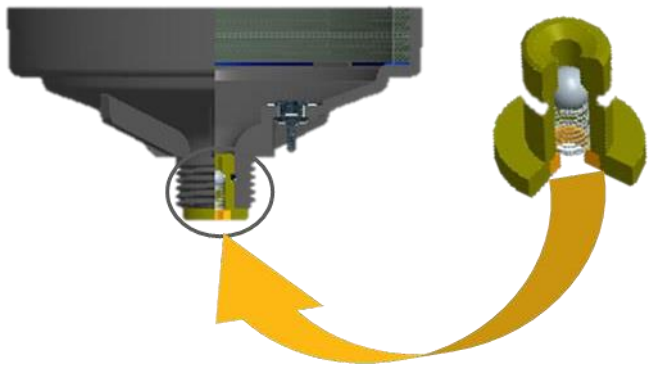
Electrochemical

Category	Description
Lubricants Capacity	60, 120, 240ml
Product Size	60cc : Ø77mm × 92mm 120cc: Ø77mm × 112mm 240cc: Ø77mm × 157mm
Operating Pressure	Max 5 bar
Available Lubricants	Grease up to NLGI#2 & Oil (Non-return valve)
Available Setting	6 steps (Off, 1, 3, 6, 9, 12 Months)
Operating temperature	-20˚C to +55˚C
EX Protection Ingress Protection	II 1G Ex ia IIC T4 Ga Class II, Div.I, Group E,F,G IP68

Setting method

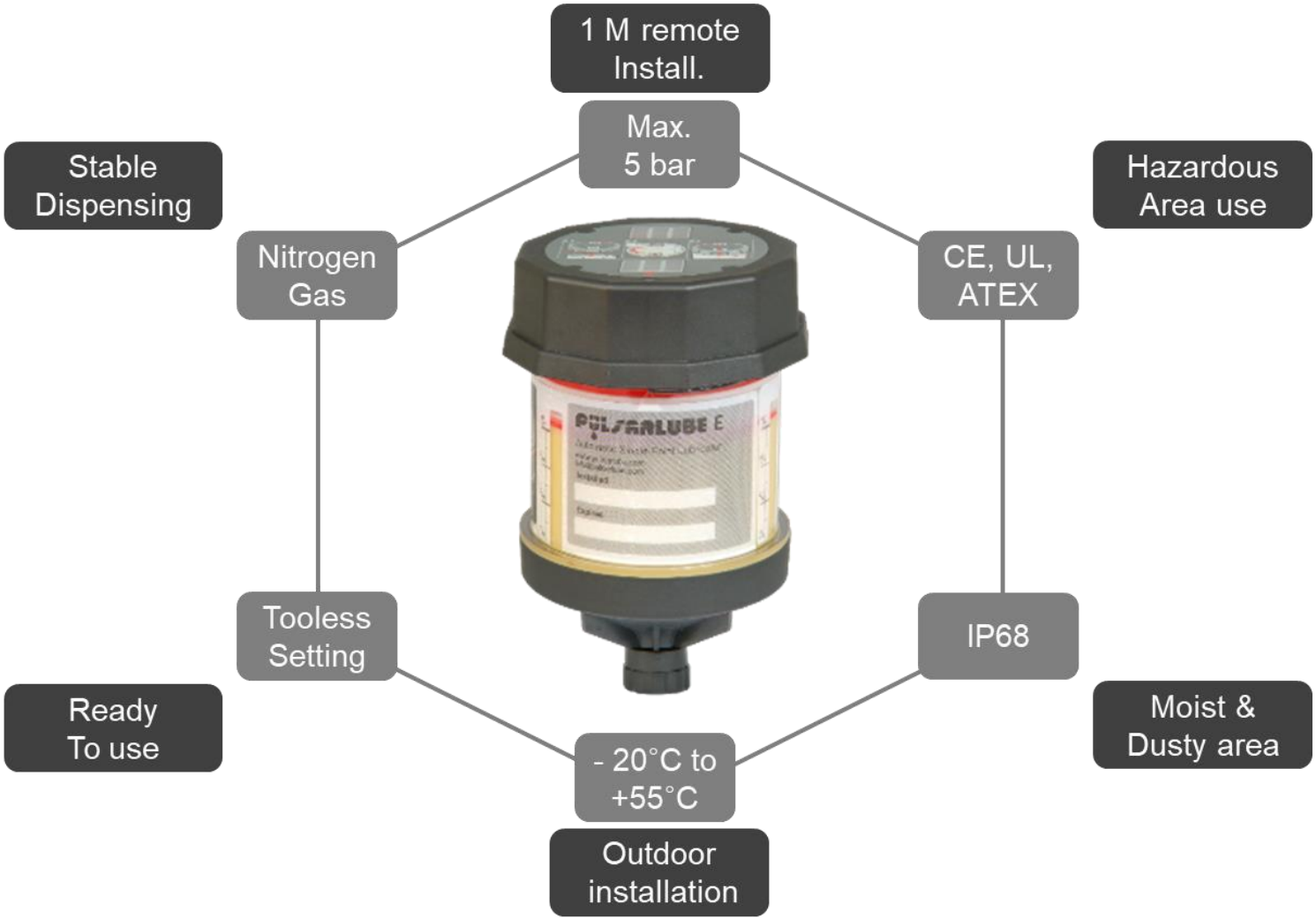


Oiler Usage



Electrochemical

Features & Advantages




Unrivaled Electromechanical Lubricator
Pulsarlube M
Capacity : 500ml
Pulsarlube USA. Inc
MODE LOCK
POWER
TEST
125/250
RESET

Product Specifications

Category	Description
Lubricants Capacity	60, 125, 250 & 500ml
Product Size	60ml : Ø91 x 183mm / 125ml : Ø91 x 183mm 250ml : Ø91 x 210mm / 500ml : Ø92 x 260mm
Operating Pressure	Avg. 30bar / Max. 60bar
Available Lubricants	Grease Up to NLGI #2
Available Setting	60ml : 1 ~ 12 months 125/250ml : H, 1, 2, 3, 6 & 12 months 500ml : H, 1, 2, 4, 6, 12, 18, & 24 months
Operating temperature	-15˚C ~ 60˚C -40˚C ~ 60˚C (with Lithium battery pack)
Multi & Remote Installation	Max. 6m up to 8 points via a progressive divider block
Certificate	UL/ CE/ IP54

Product Features

Transparent Housing

Grease pouch of various capacities - 60ml, 125ml, 250ml and 500ml

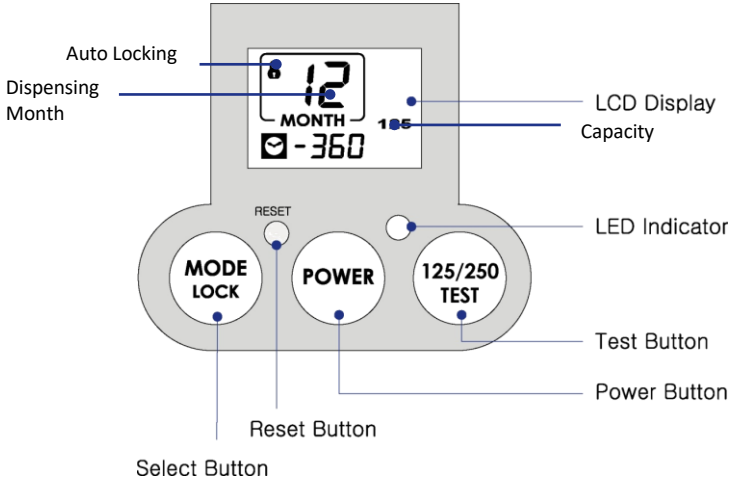
Pulsarlube Standard Alkaline Battery pack Or Lithium battery pack for longer setting months.

Informative LCD display

Break-free 3/8” steel fitting

SERVICE PACK: REPLACEMENT KIT

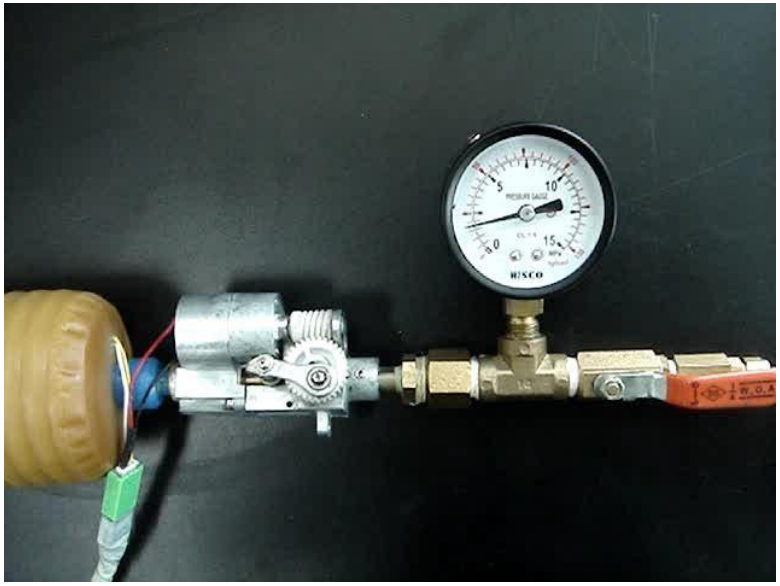
LCD DISPLAY & FUNCTIONS



Strong Points #1 Easy Replacement

- Service Pack is composed of 1) grease pouch, 2) dust cover and 3) battery pack for easy access.
  - Can be filled with Pulsarlube Standard Greases PL1 ~ PL12
  - Can also be filled with customized grease upon request
- Replacement Kit, Service Pack should be purchased with Pulsarlube M main unit.

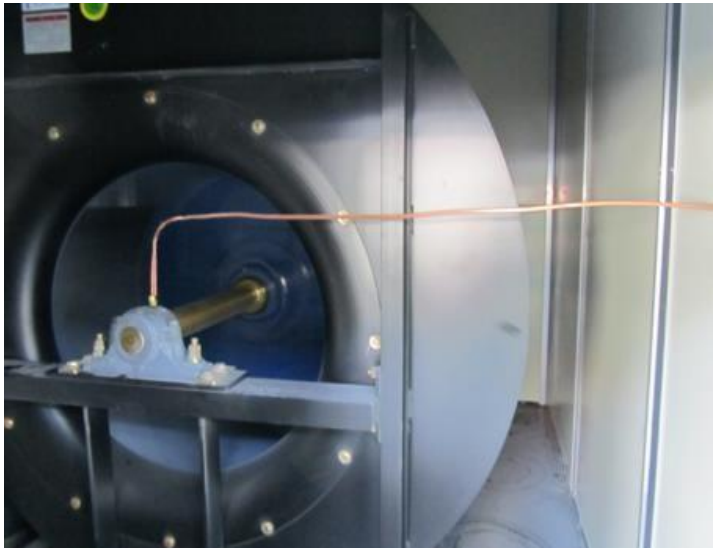
Strong Points #2 High Operating Power



■Self priming pump creates strong working pressure to overcome constant backpressure average 30kgf/cm²(425 psi) and instant backpressure 60kgf/cm²(850 psi).

■ The unit has the strongest dispensing pressure among existing lubricators in the market. Other competitor's working pressure use screw down system which is about 10kgf/cm²(142 psi).

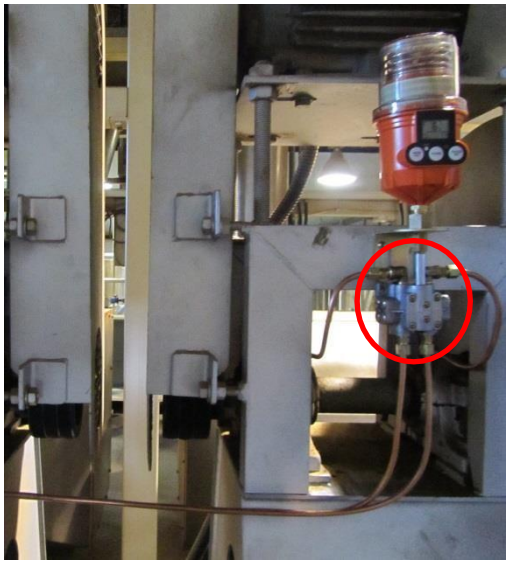
Strong Points #3 Remote Installation



■Pulsarlube M is capable of remote installation up to 10m(32ft) with its special remote installation kits.

■Remote installation is very convenient for applications which has high operating temperature and severe vibration.

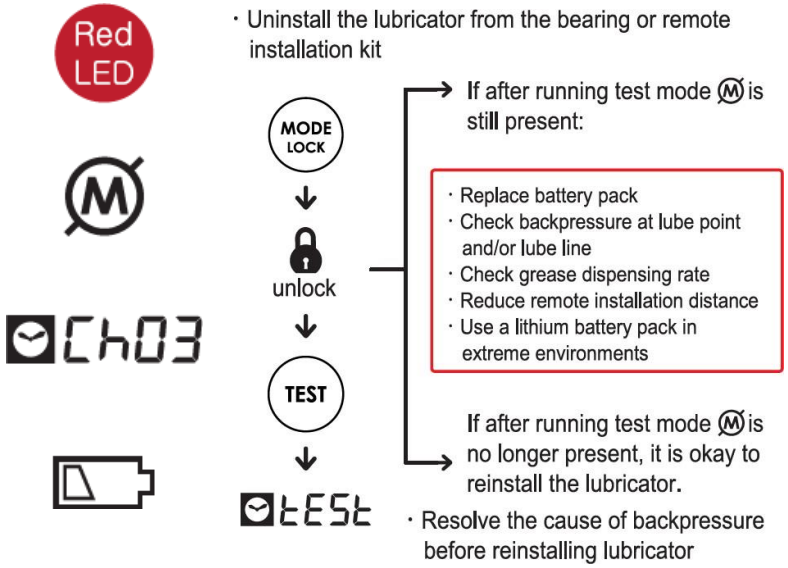
Strong Points #4 Multi Installation



- Maintenance personnel can save costs by using it as ***a small centralized system.***
  - Can supply grease up to 8 points

- Customized progressive divider block delivers accurate amount of grease to each bearings in perfectly sealed condition.

Strong Points #5 Informative Function

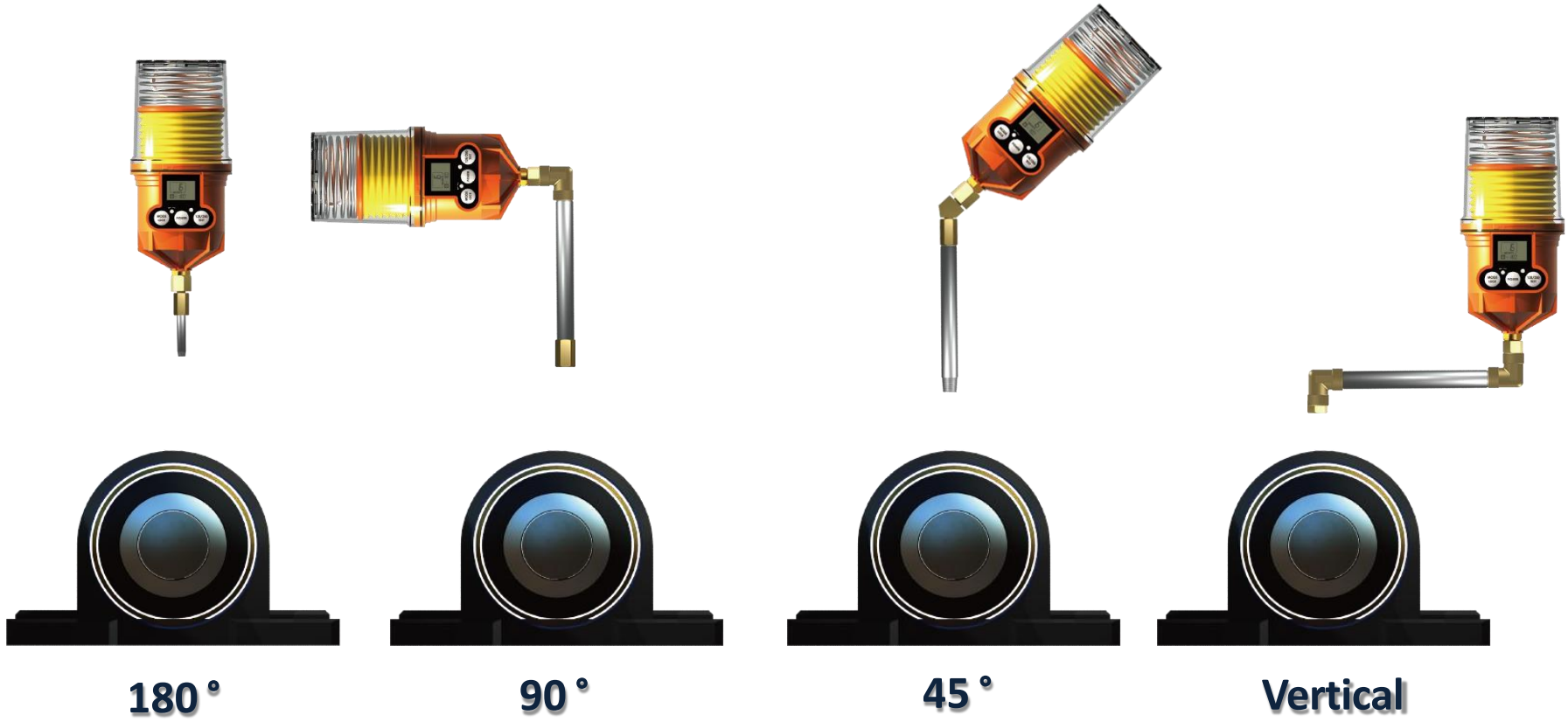


■If the lubricator encounters overwhelming backpressure from the lube point, lubricator operation automatically stops and 'Motor Overload' icon flashes. Also, it informs counted days since the operation stopped. For example, "Ch03" means 3 days since the lubricator stopped dispensing.

■ This function is for easy monitoring of lubricator status.

INSTALLATIONS

Direct Installation with Extension Pipe

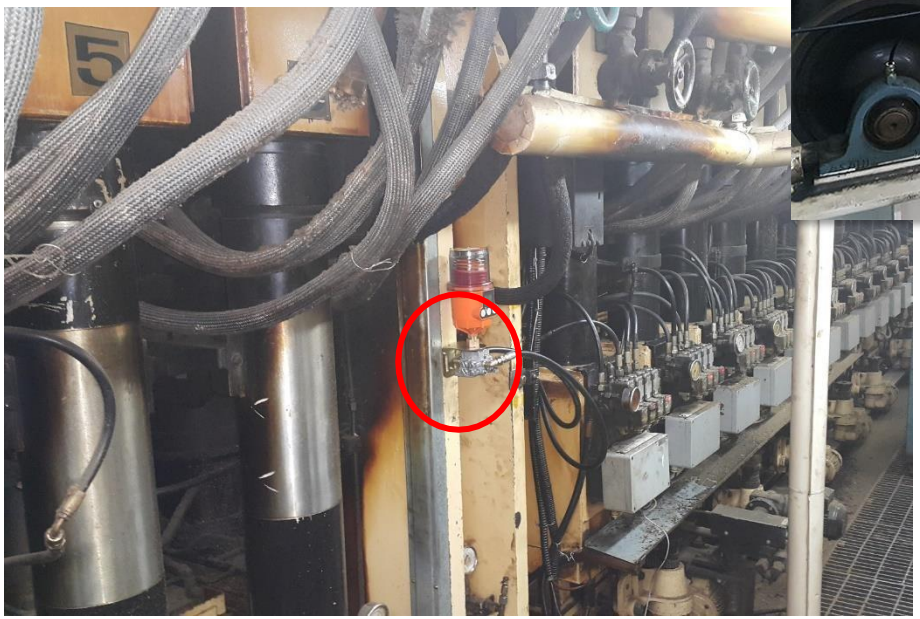


Direct Installation with Dampener for Extreme Vibration

- Withstands extreme vibration when installed with customized M dampener fitting

Multi Point Remote Installation with Installation Kits

■Can be applied as ***cost-efficient small centralized system***



- Maintenance personnel can save costs of the lubrication point by multi-lubrication dramatically.
- Progressive divider block deliveries accurate amount of grease to each bearing is perfectly sealing for grease leaking. Other models in market which have low working pressure about 75psi are mainly for single point lubrication.





Pulsarlube applications in various industries

Pulsarlube M

Applications

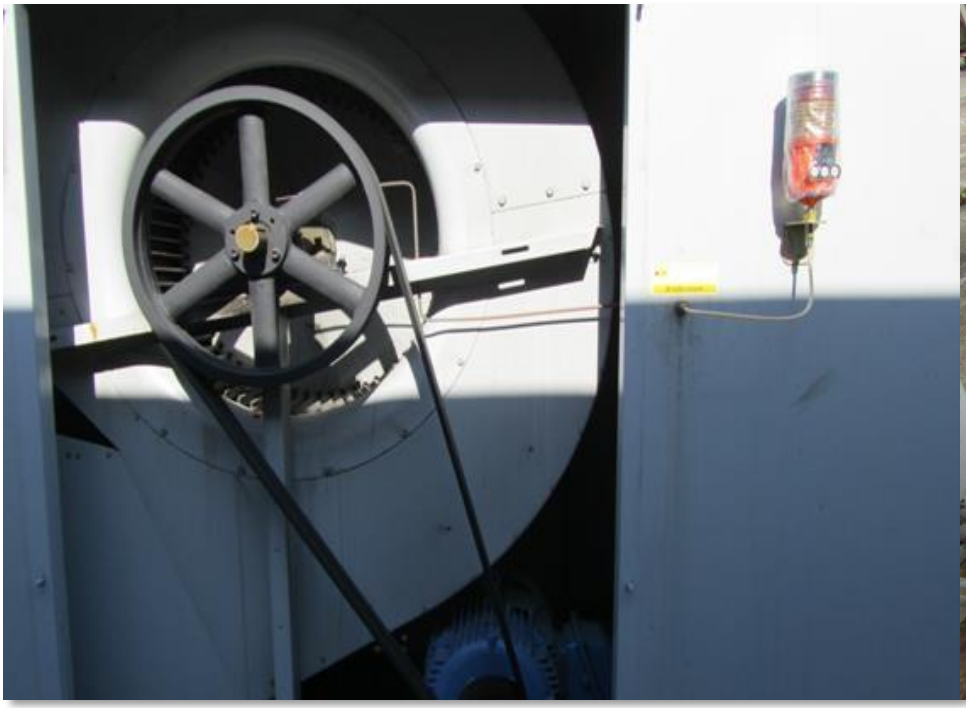
Pulsarlube M installed at vertical water pumps in HVAC systems of local hotel.

Pulsarlube M

Applications

Pulsarlube M installed outside of AHU Box (Air Handling Unit) by copper tube remote installation.

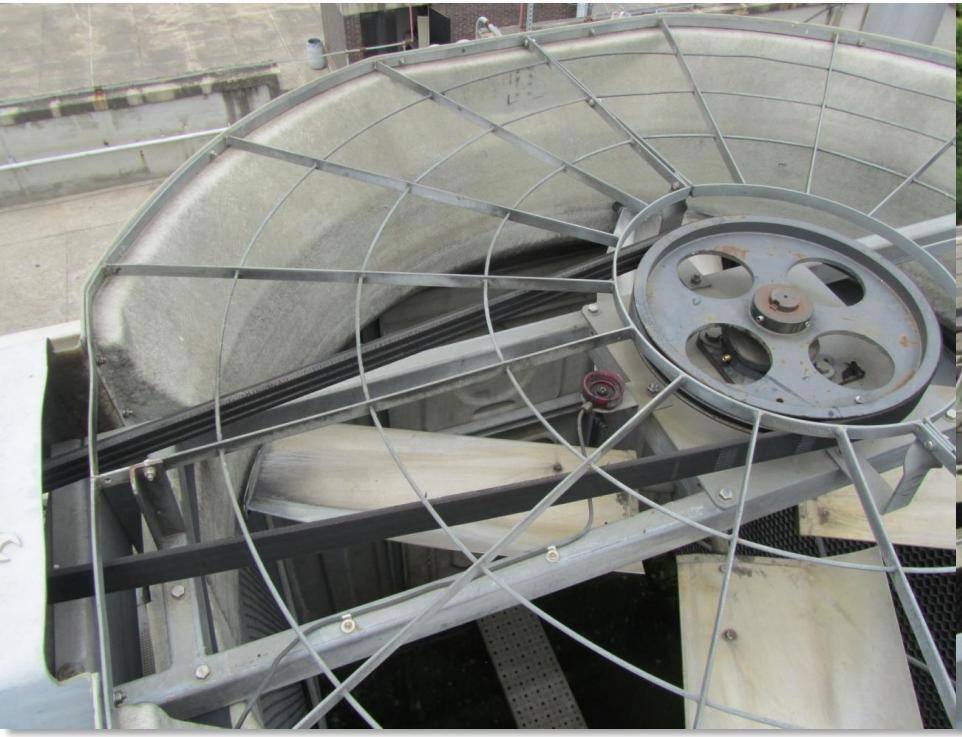
Applications



Pulsarlube M installed at fan motor bearing placed on the roof at Pharmaceutical factory.

Pulsarlube M

Applications



Pulsarlube M installed at cooling tower shaft motor bearings.

Pulsarlube M

Applications

Pulsarlube M installed at head bearing of conveyor in Australia mining.

Pulsarlube M

Applications

Pulsarlube M installed at tail bearing of conveyor in Australia mining.

Pulsarlube M

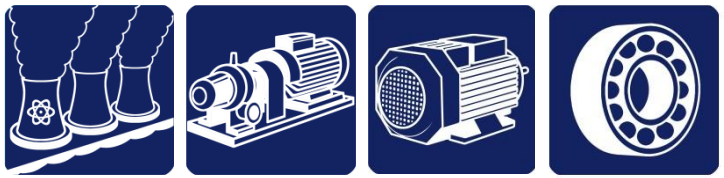
Applications

Pulsarlube M installed at take up bearing of conveyor in Australia mining.

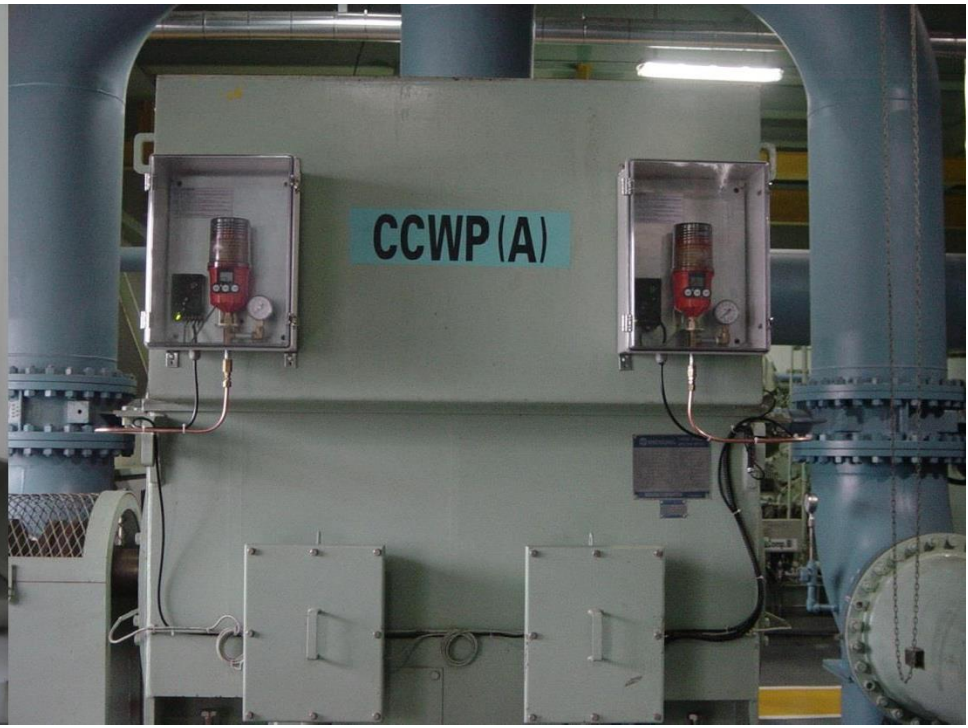
Pulsarlube M

Applications

Pulsarlube M remotely installed at Apron Feeders in mining sites.



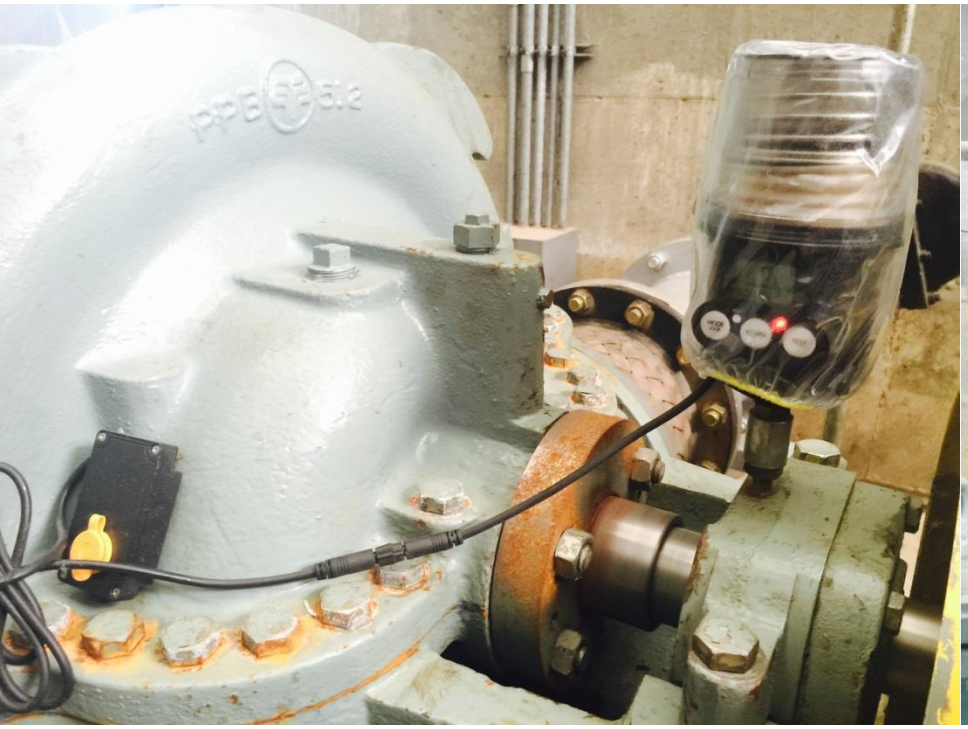
Applications



Pulsarlube MS installed in nuclear power plant.

Pulsarlube Mi

Applications



Pulsarlube Mi installed at sewage treatment.

Pulsarlube OL500

Applications

Pulsarlube OL500 installed at guide liner of ski resort gondola.

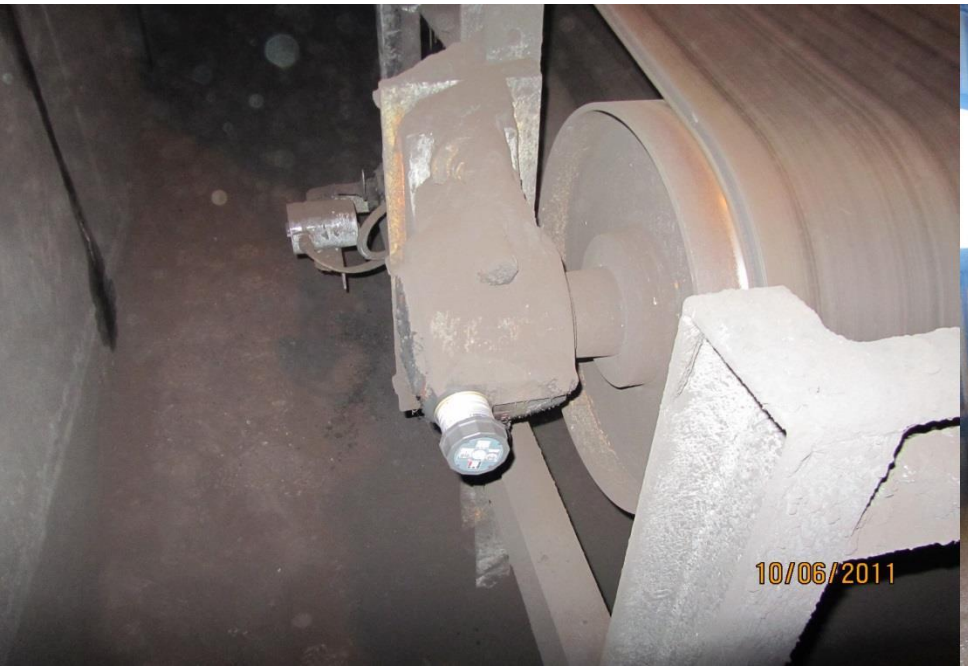
Pulsarlube OL500

Applications

Pulsarlube OL500 multi lubrication with brush application.

Pulsarlube E

Applications



Pulsarlube E installed at conveyor belt pulley in cement plant.

Pulsarlube E

Applications

Pulsarlube E installed at windmill generator in India.

Pulsarlube V

Applications

Pulsarlube V installed at water pump motors and water treatment rail in steel mill.

Pulsarlube S

Applications

Pulsarlube S installed at soil improve machine in Japan.

Pulsarlube applications in various industries

Pulsarlube Applications in various industries

Steel mill industries

1. Features

There are many automated plants due to large scale size of factory. Steel mill is one of the industries that automatic lubricator is very popular and prevailed.

Many places maintenance worker can not access easily. Also the plant is severely contaminated by dust and pollution. Hence, bearing premature happens frequently due the failure of right lubrication.

Many rotational equipment like conveyor, motor, tension bearing etc. present comparing a few maintenance staff available.

Pulsarlube Applications in various industries

Steel mill without furnace

1. Features

Plant size is small but has many rotational equipment for single point automatic lubricator like conveyor, motor, tension bearing, and pump.

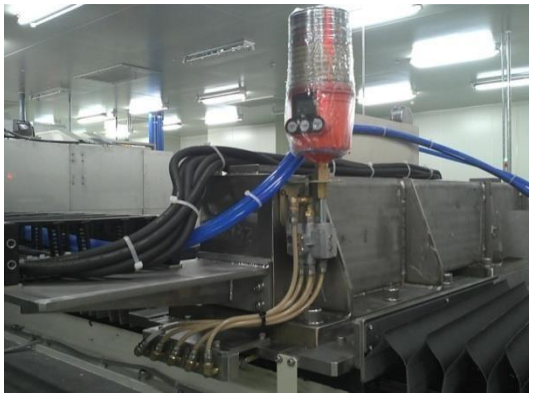
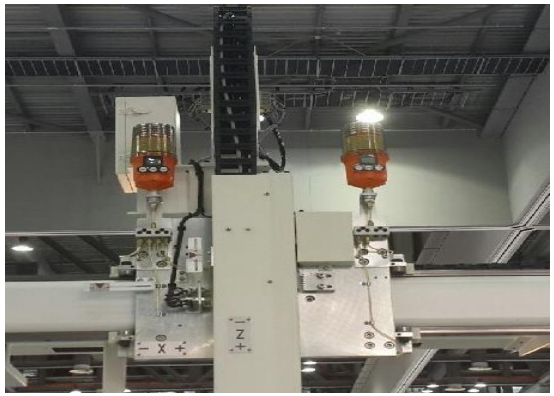
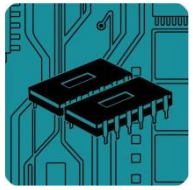
Pulsarlube Applications in various industries

Electronics & semiconductor

1. Features

Major players in electronics industry of Korea, Samsung, LG, Hynix, Dongbu electronics use electromechanical type lubricators these days. Lubricators are mostly installed at particular machine and production facilities, especially for lube points gathered in confined areas.

Remote installation is much more efficient than direct installation. Technical support for installation is required in case divider block is used.






Pulsarlube Applications in various industries

Petrochemical

1. Features



Korea has three petrochemical industrial complex, Ulsan, Yeocheon, and Seosan.

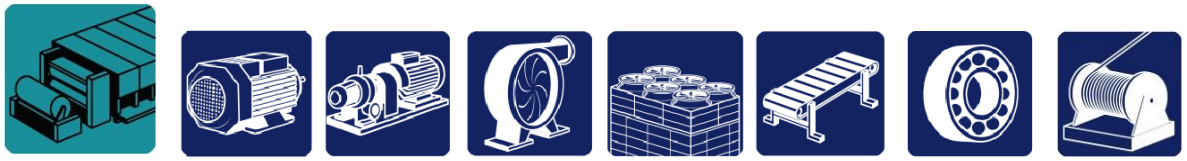
In spite of the appearance of Electromechanical type on market, electromechanical type is use a few points due to the shrinkage of new investment in petrochemical industry. Bearing is replaced annually to prevent downtime. Maintenance is very often due to high possibility of explosion. Hence, petrochemical is very suitable application to use electromechanical units.

Pulsarlube Applications in various industries

Pulp & Wood

1. Features

SPL is popular for the machine exposed to high temperature and moisture.
It is very difficult to access lube points during pulp production so it is easy to miss the time to lubricate. Most of pulp & wood plants are short-handed. Hence, it is important to provide valuable service focused on the convenience the maintenance worker's installation and Inspection schedule. Many water pumps and collection systems like fan, blower etc. exist.
Please note particular grease is often requested due to severe working conditions.



Pulsarlube Applications in various industries

Automotive

1. Features

Factory size is big and there are many dangerous places to be accessed. Maintenance workers tend to avoid hard working routine due to two shifts which leads to irregular lubrication. Furthermore lubrication is impossible during working hours due to the characteristic of line processing. Provide valuable service focused on the convenience the maintenance worker's installation and inspection.

Pulsarlube Applications in various industries

Cement

1. Features

The scale of line to transfer raw material is big. And it is very difficult to access conveyor lines sending brown coal which makes toxic dusts harmful to human body. SPL is very popular in cement industry. Demands of SPL is currently smaller than steel mill and automotive industry but has many rotational facilities comparing other industries. SPL is mainly used for inaccessible areas in severe conditions.

Pulsarlube Applications in various industries

Power plant

1. Features

As national basic industry, very sensitive to choose qualified products since problems in facilities can badly effect to many other industries. There are very keen competitions between power plants. Also the industry is known for tight maintenance budget. However, due to hazardous certification, the plant must use ex-proof products in order to meet the safety requirement.

Pulsarlube Applications in various industries

Food and Beverage

1. Features

Working area is small. Maintenance worker can easily access the machines and facilities comparing other industries. Every machine is maintained to be very clean and needs to use food grade lubricant. Maintenance budget is tight so tends to purchase small quantities.








Pulsarlube applications in various machines

Pulsarlube applications in various Machine

Blower

Blower and the lubrication

Air blowers generally use centrifugal force to propel air forward. Inside a centrifugal air blower is a wheel with small blades on the circumference and a casing to direct the flow of air into the center of the wheel and out toward the edge. Blowers widely used in most industries are usually located in high places and roof side, so that it is common manual greasing by maintenance department has long re-lubrication interval. Blower requires high repair costs once bearing premature happens. Regular grease feeding is the most important factors in blower application. Pulsarlube Single Point Automatic lubricator series will meet to your satisfaction.

Pulsarlube applications in various Machine

Blower

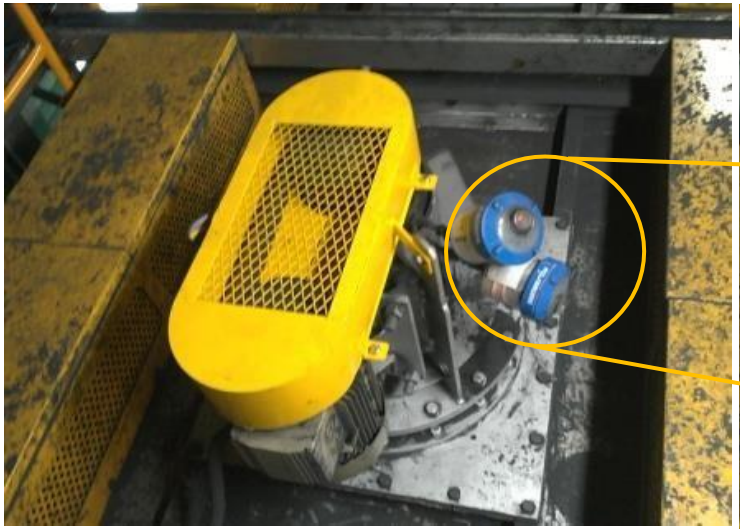
Main industries and purposes

- ✔ Releasing poisonous gases in the lab of *pharmaceutical* company
- ✔ Emission of harmful chemical gases in the painting spray room of *automotive*
- ✔ Discharging food smell and cooking smog in the kitchen of *big restaurants*
- ✔ Clean toilets in luxury hotel and department store
- ✔ Most *steel mill, cement* companies remove dusts by dust collector and air blower
- ✔ Using air blower in *paper mill* to exhaust heating high temperature
- ✔ For emission of toxic chemicals produced in petrochemical or *oil refineries*

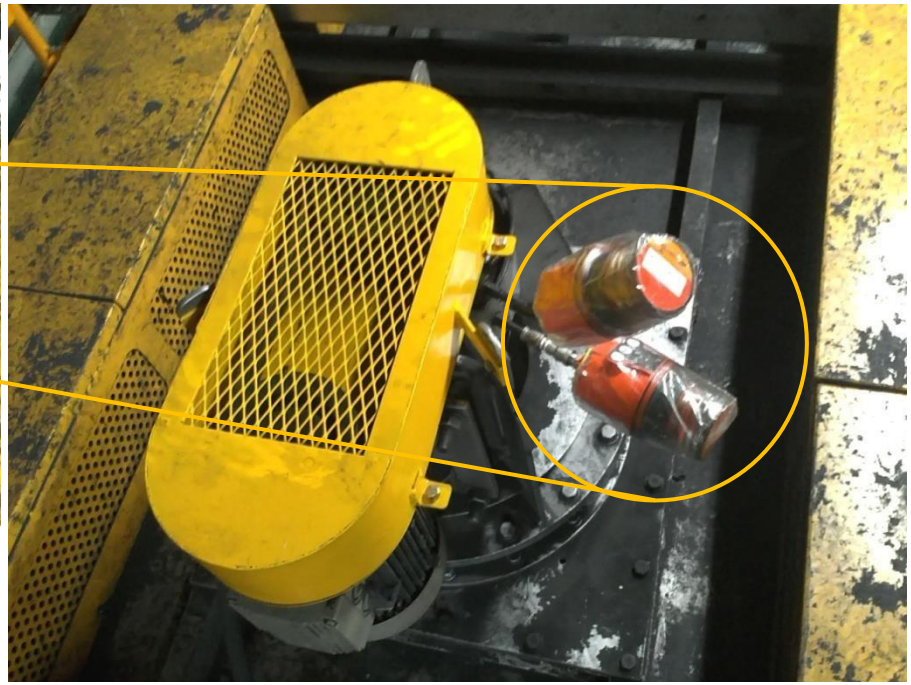
Pulsarlube applications in various Machine

Blower

Before



After



❋ Challenges

- ✔ High temperature environment
- ✔ Grease leaking caused by high temperature
- ✔ Gas type lubricators already installed had difficulties to dispense accurate grease grease volume

❋ Benefits

- ✔ Frequent lubricating to the points in high place
- ✔ Re-investing labor force by adopting single pint lubricator
- ✔ Savings the labor and maintenance costs
- ✔ Low initial costs and simple installation

Pulsarlube applications in various Machine

Blower

Before

After

❋ Challenges

- ✔ Wrong grease volume, 250cc has selected
- ✔ High temperature grease should have applied
- ✔ Contaminated by using multi purpose grease

❋ Benefits

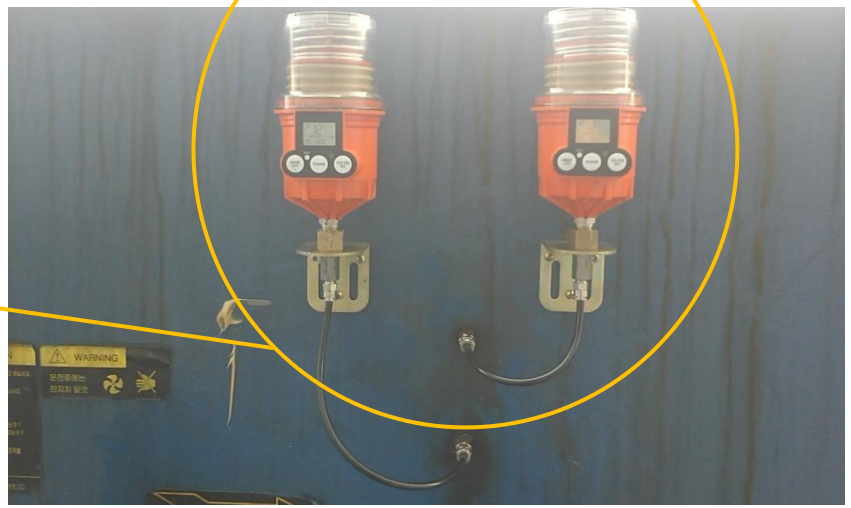
- ✔ Frequent lubricating to the points in high place
- ✔ Re-investing labor force by adopting single pint lubricator
- ✔ Savings the labor and maintenance costs
- ✔ Low initial costs and simple installation

Pulsarlube applications in various Machine

Blower

Before

After



❋ Challenges

- ✔ Grease dispensing problem by gas type lubricator's low pressure
- ✔ High repair costs required since the facilities has installed in high place
- ✔ Difficulties for regular checking because of high place

❋ Benefits

- ✔ Overcome back pressure
- ✔ Removing dangerous factors for manual greasing in roof
- ✔ Improved lubricating process by LCD information
- ✔ Decreased time to replace bearings and increased time to produce

Pulsarlube applications in various Machine

Cooling tower

What is cooling tower ?

A cooling tow is a piece of equipment that drives a primary cooling effect from the evaporation of water when brought into direct contact with air. Cooling towers are designed to expose the maximum transient water surface to the maximum air flow.

Pulsarlube applications in various Machine

Cooling tower

Lubrication points of cooling tower

Fan shaft bearing stranded by pillow block ball bearings and combined with slinger and locking collar to prevent water ingression. Temperature near lube point -40°C~+120°C, and required water washed out. Fan motor bearing doesn't need regular greasing as it is double sealed.

Lubrication tips for cooling tower

Cooling tower is always watered and works in the wide range of temperature. Cooling tower operates in wide temperature, Mineral base oil grease is not suitable for cooling tower. For the best lubrication, grease required the specifications has good water wash out, strong pump ability in low temperature, Synthetic based oil to cover extreme temperatures in summer winter season and high compatibility as Synthetic grease.

Pulsarlube applications in various Machine

Cooling tower

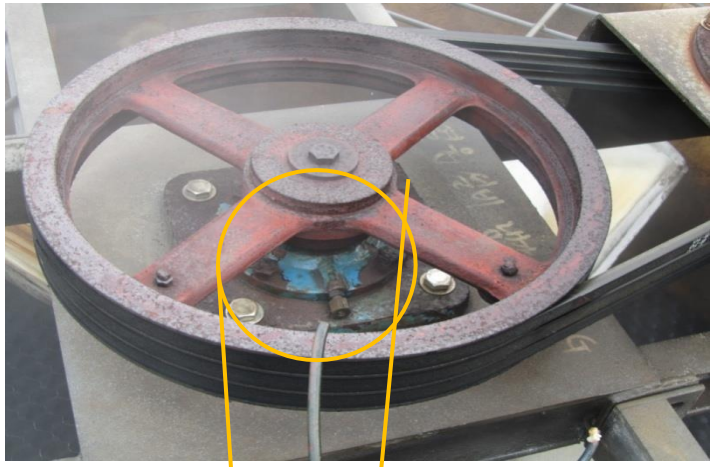
❋ Challenges

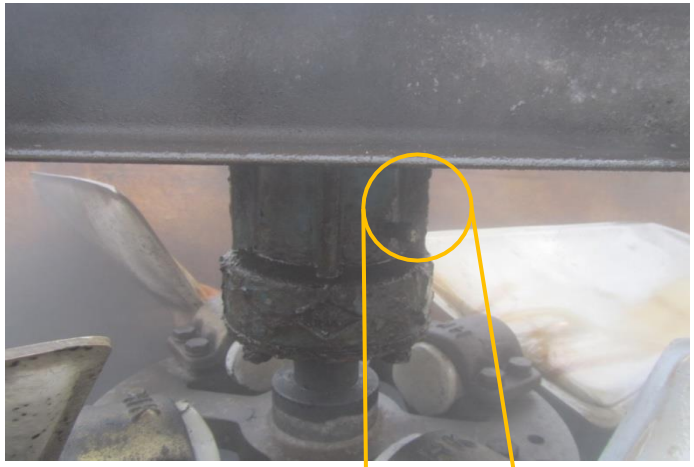
- ✔ Cooling tower is usually located in very high place
- ✔ Difficulties to access the lube points of fan bearing motor
- ✔ Lube points of cooling tower is very watered and dusty
- ✔ Difficulties to lubricate as cooling time operation for long time
- ✔ Impossibilities to check lubricating status regularly
- ✔ Safety reason_ Dangerous manual greasing
- ✔ Copper tube has already broken once trying to install
- ✔ Fan had to be lifted by crane because of bearing failure High repair costs required due to bearing failures.

Pulsarlube applications in various Machine

Cooling tower

Before





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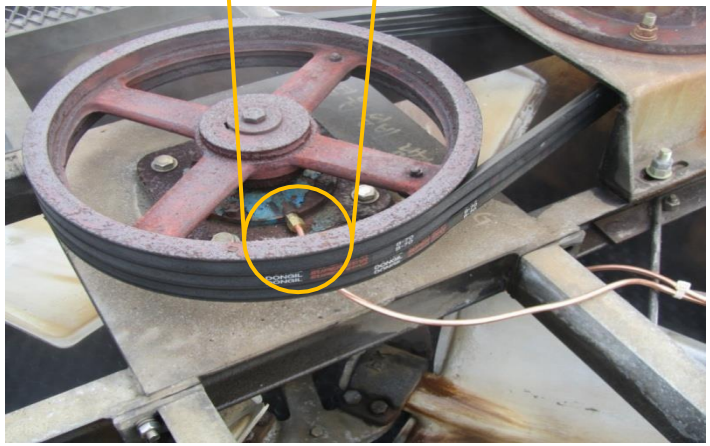
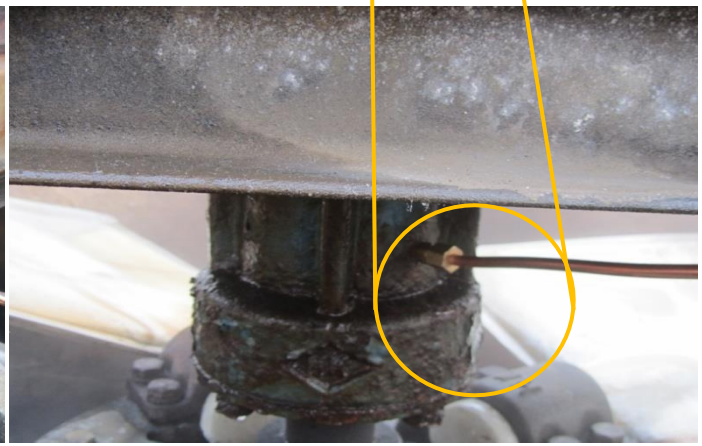
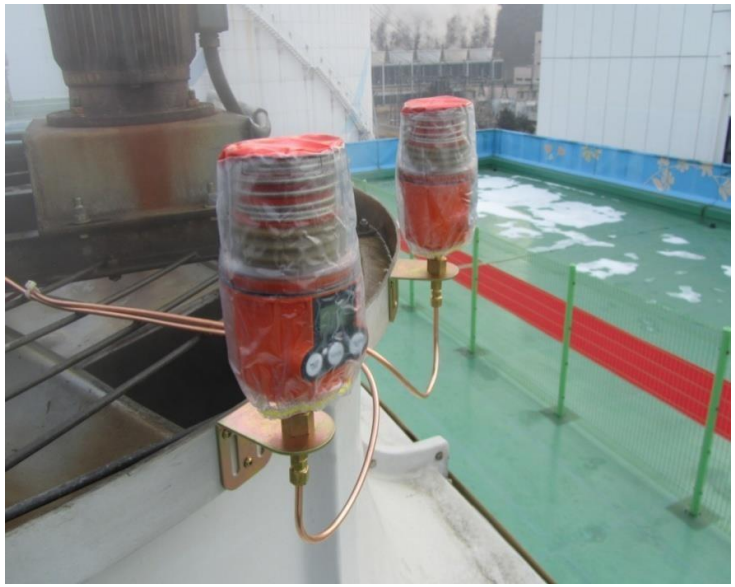




Pulsarlube applications in various Machine

Cooling tower



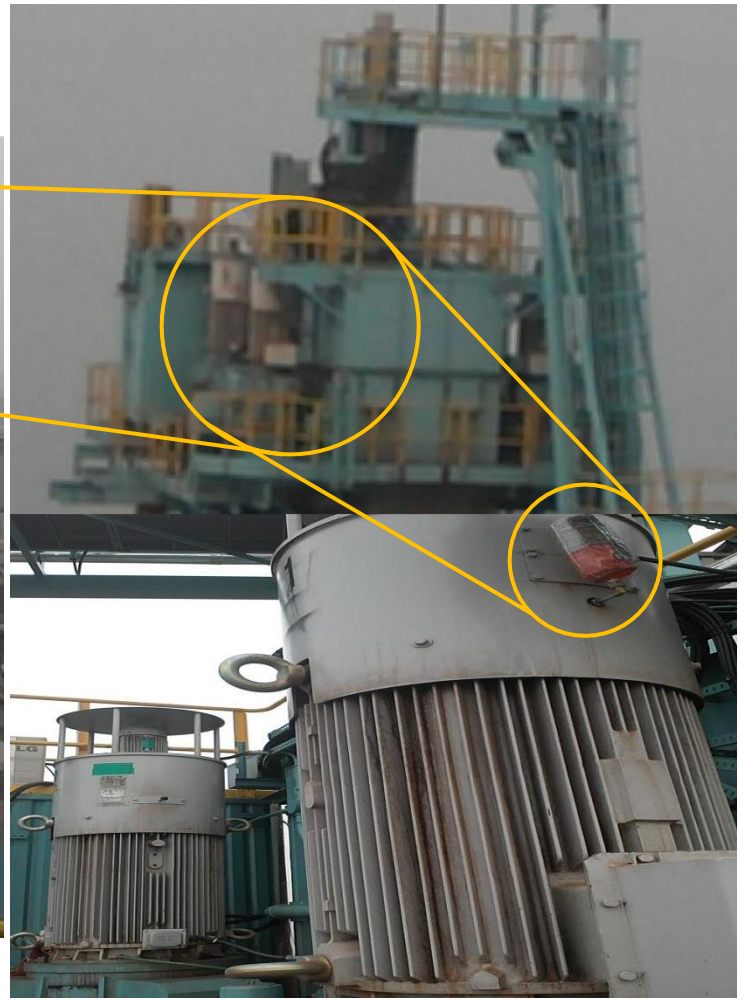
❋ Benefits

- ✔ Remote installation by Pulsarlube M in safety area
- ✔ High working pressure by Pulsarlube M improved reliability in winter season
- ✔ No stoppage of cooling tower by constant lubrication
- ✔ Great savings by no bearing premature

Pulsarlube applications in various Machine

CSU Crane

8 points for 4 motors at the top part of 3500t crane
4 points for 2 motors at 1600t CSU crane

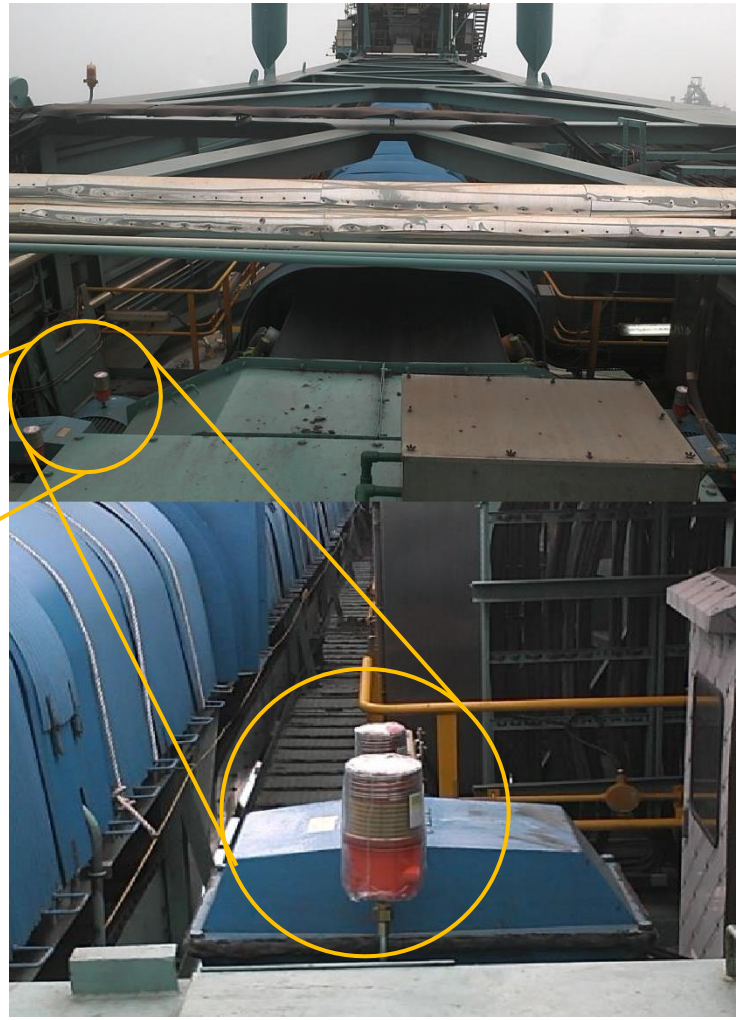


Bucket Elevator Motor

Pulsarlube applications in various Machine

CSU Crane

4 points for 2 motors at 3500t crane



Boom B.C Motor

Pulsarlube applications in various Machine

CSU Crane

2 points at the conveyor motor from slewing frame to B.C at down side

Conveyor Motor

Pulsarlube applications in various Machine

CSU Crane

2 points at 1 motor using for the last unloading process by CSU

Conveyor Motor

Pulsarlube applications in various Machine

LLC Crane

4 points at 2 motors to

Motors for LLC frame rotating movement

Pulsarlube applications in various Machine

LLC Crane

2 points at 1 motor to lift Jib

Operating motor at LLC Luffing

Pulsarlube applications in various Machine

BTC Crane

4 points at 2 motors for hoist

Applied at hoist motor in machine house

Pulsarlube applications in various Machine

BTC Crane

2 points at 1 boom motor

Boom operation motor

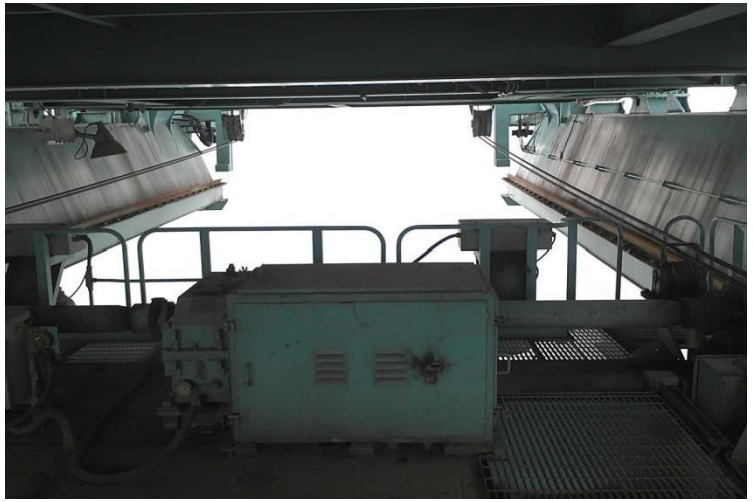
Remote installation with
copper tubing due to vibration

Pulsarlube applications in various Machine

BTC Crane

2 points at 1 trolley motor

Trolley operation motor



Pulsarlube applications in various Machine

Other Cranes

Transferred coke from harbor to storage dome through conveyorbelt.

Pulsarlube applications in various Machine

Other Cranes

Thank You!