



# Why Lubrication is Necessary for Machine?

Lubrication is essential in machines to keep the moving parts working efficiently. It creates a thin film between surfaces, which prevents direct contact and damage - by reducing resistance.

Lubrication helps in saving energy by improving performance. It also keeps the machine cooler by controlling excess heat generation due to friction. Lubricants act as a shield against dust, dirt and moisture. In this way, lubrication not only improves working but also reduces maintenance costs and breakdowns.

# Advantages of Lubrication

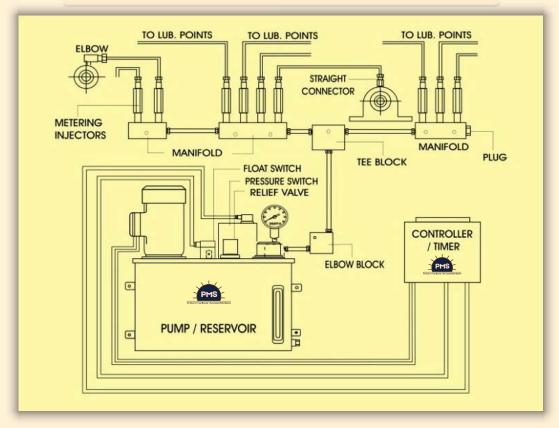
- · Reduces friction helps machine parts move smoothly.
- Prevents wear and tear increases the life of parts.
- Controls heat keeps the machine cool during working.
- Protects from rust and corrosion makes parts safe from damage.
- Saves energy as less force is needed to run the machine.
- Reduces noise and vibration makes operation smoother.
- Lowers maintenance cost fewer breakdowns and repairs needed

# What is Centralised Lubrication System?

A centralised lubrication system is a method of providing lubricant to different parts of a machine from one central source. In this system, the lubricant is supplied automatically to all required points in the correct amount.

It ensures uniform distribution, which reduces wear and tear of machine parts. This system also saves time and labour compared to manual lubrication. By keeping the machine parts properly lubricated, it improves efficiency and reduces chances of breakdown. Centralised lubrication is widely used in large machines, vehicles, and industrial equipment for smooth and reliable operation.

# ❖ FLOW DIAGRAM OF CENTRALISED LUBRICATION SYSTEM ❖







# **LUBRICATION OIL SYSTEMS**



### PMS LUBRICATION OIL SYSTEM



# **JACKING OIL SYSTEM**



PA FAN LOS



# **GENERATOR LUBE OIL SYSTEM**



# FD LUBE OIL SKID



# **ID FAN LOS**





# **MOTORISED LUBRICATION UNITS**



#### **MODEL PMLU-2800**

Reservoir Cap. 2.8 Ltr. (Transparent Polycarbonate), Motor 110 W & 120 W, 220V & 415V AC, 1340 RPM, Discharge 0.75 lpm, Pressure Setting 10-12 & 12-15 kg/cm<sup>2</sup> with Pressure Switch & Float Switch



#### **MODEL PMLU-03**

Reservoir Cap. 3 Ltr., Motor 0.12 KW, 415V AC, 1340 RPM, Discharge 1 lpm, Pressure Setting 12-15 kg/cm<sup>2</sup> with imported Pressure Switch & Float Switch



#### **MODEL PMLU-05**

Reservoir Cap. 5 Ltr., Motor 0.12 KW, 415V AC, Discharge 1.25 lpm, Pr. Setting 18-20 kg/cm<sup>2</sup> with Pressure Switch and Float Switch

#### **MODEL PMLU-08**

Reservoir Cap. 8 Ltr., Motor 0.12 KW, 415V AC, Discharge 1.5 lpm, Pr. Setting 20-22 kg/cm<sup>2</sup> with Pressure Switch and Float Switch



#### **MODEL PMLU-20**

Reservoir Cap. 20 Ltr., Motor 0.18 KW, 415V AC, Discharge 2 lpm, Pr. Setting 22-25 kg/cm<sup>2</sup> with Pressure Switch and Float Switch

#### **MODEL PMLU-30**

Reservoir Cap. 30 Ltr., Motor 0.18 KW, 415V AC, Discharge 2 lpm, Pr. Setting 25-27 kg/cm<sup>2</sup> with Pressure Switch and Float Switch

# OIL RECIRCULATING SYSTEMS

#### **MODEL PMORS-20**

Reservoir Cap. 20 Ltr., Motor 0.18 KW, 415V AC, Flange Mounting, Fan-cooled, Discharge 2 lpm, Pr. Setting 5 kg/cm<sup>2</sup> Return Line Filter (Acrylic) for visual indication, Oil Level Gauge



Reservoir Cap. 30 Ltr., Motor 0.18 KW, 415V AC, Flange Mounting, Fan-cooled, Discharge 3 lpm, Pr. Setting 5 kg/cm<sup>2</sup> Return Line Filter (Acrylic) for visual indication, Max. & Min. Oil Level Gauge

Note: Optional: Float Switch & Pressure Switch



#### **MODEL PMORS-63/RL**

Reservoir Cap. 63 Ltr., Pump Discharge 5 lpm, Motor 0.18 KW, 415V AC (3-phase), 1500 rpm, Fan-cooled type with In-line Filter, Pressure Relief Valve, Float Switch, Return Line indication system, which will give signal electrically in case if oil will return back to the reservoir.

Note: Size of Reservoir Capacity of Pump & Others Specifications can be provided as per Customer's Requirements.

o way (for single injector)

# MANIFOLDS (FOR PMI-1 & PMI-2 INJECTORS)



PIVI-1	One way (for single injector)
PM-2	Two way (for two injectors)
PM-3	Three way (for three injectors)
PM-4	Four way (for four injectors)
PM-5	Five way (for five injectors)
PM-6	Six way (for six injectors)
PM-7	Seven way (for seven injectors)
PM-8	Eight way (for eight injectors)
<b>PM-9</b>	Nine way (for nine injectors)
PM-10	Ten way (for ten injectors)

The above mentioned manifolds are use in the lubrication circuit for mounting the metering injectors having thread size M8 × 1 and outlet port M10 × 1

# **MANIFOLDS (FOR PMI-3 INJECTORS)**



PM-1 P	One way (for single injector)
PM-2 P	Two way (for two injectors)
PM-3 P	Three way (for three injectors)
PM-4 P	Four way (for four injectors)
PM-5 P	Five way (for five injectors)

The above mentioned manifolds are use in the lubrication circuit for mounting the metering injectors having thread size M10 × 1 and outlet port M10 × 1







# HAND OPERATED BUCKET GREASE PUMP



PBu-GP-5 (Reservoir Cap. 5 Kg.) Discharge - 8 gms per stroke,

Max. Pr. - 100 kg/cm<sup>2</sup>, with Rubber hose & grease adopter.

PBu-GP-10 (Reservoir Cap. 10 Kg.) Discharge - 10 gms per stroke,

Max. Pr. - 125 kg/cm<sup>2</sup>, with rubber hose & grease adopter.

PBu-GP-20 (Reservoir Cap. 20 Kg.) Discharge - 20 gms per stroke,

Max. Pr. - 150 kg/cm<sup>2</sup>, with rubber hose & grease adopter.

All the above models are of mobile type. Each model is provided with a pressure plate or dead weight to eliminate the air gap. These pumps are designed for pressurized greasing of machine components.

NOTE: Before filling grease in the reservoir, remove the pressure plate or dead weight from its bottom position. After filling, place the pressure plate or dead weight back into the reservoir.

# AIR OPERATED BARREL GREASE PUMP



Reservoir Cap. 25 Kg. Discharge - 300 to 400 gms per PBr-GP-25 minute, Max. Pr. 125 kg/cm<sup>2</sup>, with rubber hose. Grease gun & Trolley mounted.

PBr-GP-50 Reservoir Cap. 50 Kg. Discharge - 300 to 400 gms per minute, Max. Pr. 125 kg/cm<sup>2</sup>, with rubber hose. Grease gun & Trolley mounted.

The above models are pneumatically operated barrel grease pumps. For their proper operation, an air pressure of 5-7 kg/cm<sup>2</sup> is required. Each pump is equipped with a pressure plate or dead weight to prevent air gaps.

NOTE: Before filling grease into the reservoir, remove the pressure plate or dead weight from the bottom. After filling, place the pressure plate or dead weight back into the reservoir.

PBr-GP-200 Designed for drums of 200 kg capacity, this pump delivers 300-400 gms per minute, with a maximum pressure of 150 kg/cm<sup>2</sup>. It requires an air input pressure of 5-7 kg/cm<sup>2</sup> and comes with a rubber hose and grease gun. The pump is highly suitable for transferring grease at higher discharge rates.

NOTE: • The drum shown in the illustration is not included with the equipment.

- A mobile trolley can be supplied on request at extra cost.
- When the drum is empty, remove the pressure plate or dead weight from the bottom of the reservoir. Insert it again only after fitting the pump on a new drum filled with grease.

# **HOSE REEL**



The PANNAMA hose reel assembly is designed for oil and grease lubrication and is available in various sizes such as 1/4", 1/2" and 3/8" diameter. It comes in lengths of 5 m, 10 m, and 15 m with R-2 rated coiled hoses. Depending on user requirements, grease guns and couplers can also be supplied along with the hose for **lubrication purposes.** 

# **SPARES**

# **FLOAT SWITCH**



PFSV - 01,02 PFSH - 01,02

For sensing min, oil level electrically with NO or NC (Top ON or Bottom ON) contact Horizontally/Vertically (220V AC/24V DC,

(All models of float switches are potential free.)

#### PRESSURE SWITCH



PPS - 830, PPS - 320, PPS - 020 Pressure range 8-30 kg/cm<sup>2</sup> (adj.)

Pressure range 3-20 kg/cm<sup>2</sup> (adj.) Pressure range 0-20 kg/cm<sup>2</sup> (adj.) (FOR LUBRICATION / HYDRAULIC OIL, 220V AC, 5 Amp., Potential Free)

#### OIL FILTER CUM AIR BREATHER



PFCB - 45, PFCB - 75

Provision for oil filling with cover and Filter (small / big size)

### PRESSURE GAUGE



**PPG-028** 

Dial size 2", Bottom connection 1/8" NPT,

Pressure range: 0 - 28 kg/cm<sup>2</sup>,

Dial size 1½", Bottom connection 1/8" NPT,

Pressure range: 0 - 28 kg/cm<sup>2</sup>

### **SIGHT GLASS**



**PSG - 25, PSG - 38** 

Tube dia - 25mm & 38mm OD, Inlet & outlet port - 1/8" BSP Working Pressure - 10 kg/cm<sup>2</sup>

#### **FLOW SWITCH**



**PFS - 010** 

Flow switch for 0-10 lpm Inlet & Outlet port - 1/4" & 1/2" BSP 1 NO + 1 NC Contact Read Switch rating - 1 Amp, 220V AC

### VISUAL FLOW INDICATOR



**PVFI - 25** 

Visual flow indicator with 1/4" BSP Inlet & Outlet for 0 - 10 lpm Flow

#### IN LINE FILTER



**PIF - 13** 

In-line filter for Oil & Grease upto 149 micron Filtration.

Inlet & Outlet Port - 1/4" BSP

### **LOCKING SCREW**



PLS - 4, PLS - 6

For solderless connection of 4mm & 6mm OD Tube.

### **LOCKING CONE (Ferrule)**



PLC-4 PLC-6 PLC-10

(Brass) (Brass) (Aluminium) Material - Brass - ID: 4mm & 6mm

Material - Alu./Brass/M.S. - ID: 10mm

# **SEALING WASHER**



PSW - 8, PSW - 10, PSW - 1/4"

Material Copper, ID - 8mm

Material Copper, ID - 10mm

Material Copper, ID - 15mm

### **TUBE BENDER**



**PTB - 6** 

Use for bending of Copper/Alu./Steel tube of 4/6mm OD bending upto 180°

**PTB - 10** 

Use for bending of Copper/Alu./Steel tube of 8/10mm OD bending upto 180°

### **TUBE CUTTER**



PTC - 310

For flareless cutting of steel tubes Cutting Range: 3 - 10mm OD Tube

### COUPLING



PLC - 050, PLC - 075, PLC - 095

To coupled motor & pumps in **Hydraulic & Lubrication Systems** 

### **RELIEF VALVE**



**PRV - 030** 

Used for pressure setting in the **Hydraulic & Lubrication systems** From 0 to 30 kg/cm<sup>2</sup>

#### **LEVEL GAUGE**



PLG - 120U, PLG - 75P

To use in Lubrication Units & **Hydraulic Tanks** 

#### SUCTION STRAINER



PSS - 08, PSS - 30

For PMLU - 03, 05 & 08 Lubrication Units (25/50/10mm size) for Oil Recirculating Systems

PP-6 & PP-10(50/67/1/4" BSP size)





# FITTINGS FOR 4mm & 6mm OD TUBE

# STRAIGHT CONNECTORS (Taper Thread)



PSC-4T (1/8" BSP or M8×1) PSC-4T (1/4" BSP) PSC-6T (1/8" BSP or M8×1)

PSC-6T (1/4" BSP)

To connect 4mm & 6mm OD Tube at end point of machine

#### **GREASE SPRAY NOZZLE**



#### **PGSN**

The grease spray nozzle delivers precise lubrication to targeted areas, ensuring efficient maintenance in industrial machinery.

#### **ELBOW BLOCKS**



**PEB - 4** 

**PEB - 6** 

For joining Two Tubes at Right Angle of 4 mm OD & 6 mm OD Tubes.

#### TEE BLOCKS



**PTB - 4** 

**PTB - 6** 

For dividing main line into Three Lines of 4mm OD & 6mm OD Tubes.

#### **CROSS BLOCKS**



**PCR - 4** 

**PCR - 6** 

For dividing main line into Four Lines of 4mm OD & 6mm OD Tubes.

#### **CONNECTOR BLOCKS**



**PCB - 4** 

**PCB - 6** 

For joining Two Tubes of 4mm OD & 6mm OD

### **ELBOWS (TAPER THREADS)**



PEL - 4T (1/8" BSP or M8 × 1)

PEL - 6T (1/8" BSP)

Male thread 1/8" BSP (Taper Thread) for right angle connection of Lubrication Point with respective Female Tapping, i.e. for 4mm OD & 6mm OD Tubes.

#### DISTRIBUTION BLOCK



#### **PDB**

The grease distribution block efficiently channels lubricants to multiple points, optimizing machinery performance and longevity.

### **DUAL LINE DOSE FEEDERS**



The dose feeder accurately dispenses grease to each lubrication point, preventing both excessive lubrication that can cause messy build up and insufficient lubrication leading to wear and tear.

PDF41: Discharge 0.5-2.0 gm/cycle

PDF42: Discharge 1.5-5 gm/cycle, Outlet: 4

### BANJO (4mm & 6mm)



PB - 4 (1/8" BSP or M8 × 1)

Male thread M8 × 1 & 1/8" BSP used for right angle turn from end point of machine

PB - 6 (M10 × 1)

Male thread M10 × 1 (for 6mm OD tube) used for right angle connection of tube.

#### **SCREWS**



PMS: M5 × 8

 $M5 \times 20$ 

 $M5 \times 30$ 

For Fixing Clamps, Tee Blocks, Cross Blocks, Manifolds, etc.

## HYDRAULIC OVER REVERSING VALVE



### **PHORV**

This valve alternates grease flow between two main lines, so that each lubrication point receives grease consistently. By controlling flow direction, it maintains balanced lubrication across the machinery. reducing friction & extending component lifespan.

#### **TUBING & FITTINGS**



Essential components of fluid systems, with tubing serving as conduits & fittings as connectors for fluid transport and control.

#### METERING CARTRIDGE



Mechanical device operated by hand to generate fluid flow or pressure, commonly used in situations where power sources are limited or unavailable.



# **TUBING**

#### STEEL TUBE



- **PST 4** OD - 4mm, Wall thickness - 0.75mm approx. (Copper coated)
- **PST 6** OD - 6mm, Wall thickness - 0.75mm approx. (Copper coated)
- **PST 10** OD - 10mm, Wall thickness - 1mm approx. (Copper coated)

#### **NYLON TUBE**



- **PNT 4** OD - 4mm, Wall thickness - 1mm, Material Nylon-6 (Suitable for moving points)
- **PNT 6** OD - 6mm, Wall thickness - 1mm, Material Nylon-6 (Suitable for moving points)
- PNT 10 OD - 10mm, Wall thickness - 1mm, Material Nylon-6 (Suitable for moving points)

## MECHANICAL PROTECTION (SPRING COIL)



- PMP-4 To protect 4mm OD Nylon Tube against High Temp. & Friction
- PMP-6 To protect 6mm OD Nylon Tube against High Temp. & Friction

# HOSES

### RUBBERISED HOSES WITH 4MM & 6MM OD STEEL ENDS



PRH - 4-250	250mm long with 4mm Steel Ends
PRH - 4-500	500mm long with 4mm Steel Ends
PRH - 4-800	800mm long with 4mm Steel Ends
PRH - 4-1000	1000mm long with 4mm Steel Ends

PRH - 6-250	250mm long with 6mm Steel Ends
PRH - 6-500	500mm long with 6mm Steel Ends
PRH - 6-800	800mm long with 6mm Steel Ends
PRH - 6-1000	1000mm long with 6mm Steel Ends

NOTE: Hose with different kinds of end fitting and length can be supplied as per customer's requirements.



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