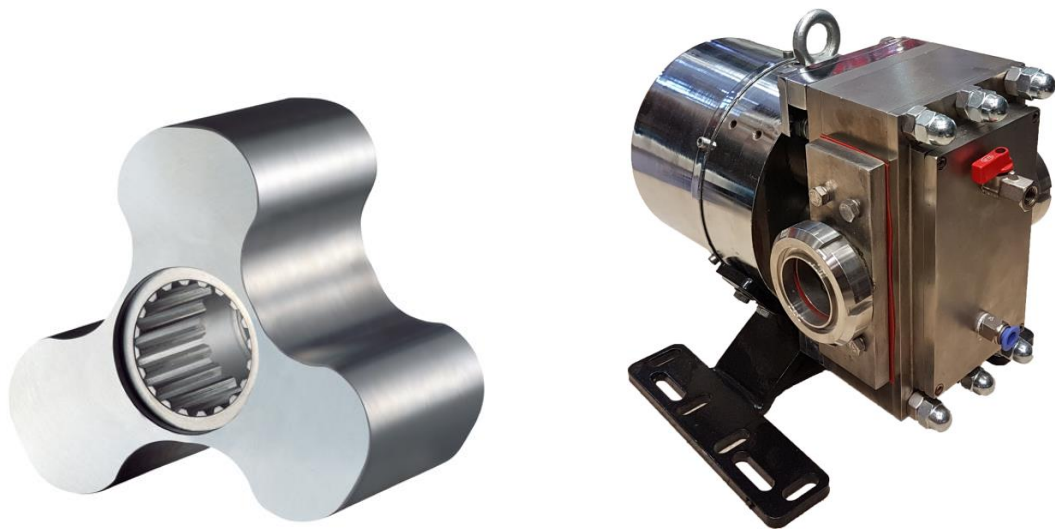


VERSION 2.1

JUNE 1, 2016



ROTARY LOBE PUMP

Special for food and medicine industries

PRESENTED BY: S.A

KKSAT CO.

ISLAMIC AZAD UNIVERSITY TECH PARK

ROTARY LOBE PUMP

INNOVATIVE PROCESS WITH LOBE PUMP TECHNOLOGY COULD BE ACHIVED

Our rotary lobe pumps are designed for low, medium and high-viscosity media and offer gentle pumping action and reliable performance. With its robust construction, each pump is developed for a different type of demand and meets high standards of quality and reliability. Collectively, they provide operating economy and high flexibility of use.



SIMPLICITY AT ITS BEST

Simplicity of installation, operation and maintenance are hallmarks of the LOBE PUMP, CZECH TECH basic rotary lobe pump. Universal mounting with inlet and outlet ports in vertical or horizontal position makes installation very simple.

Operation is just as straightforward and reliable thanks to the robust gearbox construction. Fully interchangeable front-loading seals provide fast access for inspection or replacement without pipe work disassembly.

SOLID PRODUCT QUALITY

The LOBE PUMP offers reliable fluid transfer and gentle product handling in combination with low pulsation, low shear and low noise characteristics. The pump is suitable for most general application as well as for Cleaning-in-Place.

LOW TOTAL COST OF OWNERSHIP

The LOBE PUMP not only reduces your initial capital investment but also reduces total cost of ownership. The simple, robust low maintenance design provides quick return on investment.

ROBUST CONSTRUCTION

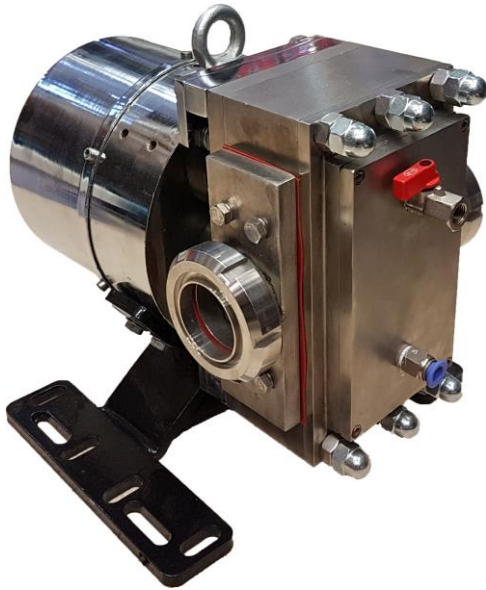
The LOBE PUMP features a robust gearbox construction with heavy-duty shafts, torque locking assemblies and taper roller bearings throughout. This delivers reliable operation and reduces maintenance.



COMPANY GOALS

	Top company goals
1	Reliable system for non-stop process
2	Extend user Relationship & Assurance
3	Good after sales service
4	On time & low price spare parts
5	Introducing and develop Medicine application
6	Rise Trustworthy between us and our customer

BUSINESS PURPOSE



MAIN SPECIFICATION OF ROTARY LOBE PUMP?

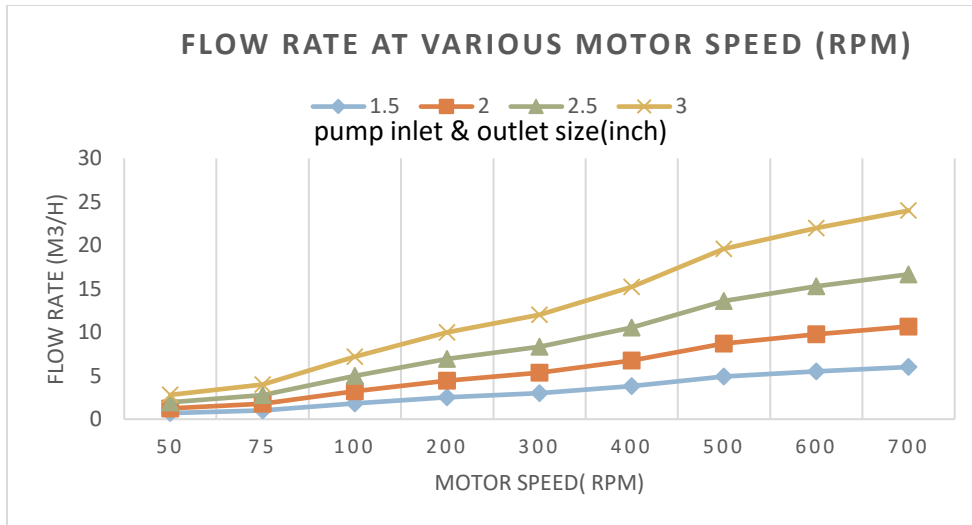
- all Food contact parts made from stainless steel 316-L
- Easy maintaining and lobe regulation system
- Input and output could rotate 90 degree CW
- Water jacket for prevent solidifying
-

Main Table: pump important information at 7500 cps viscosity

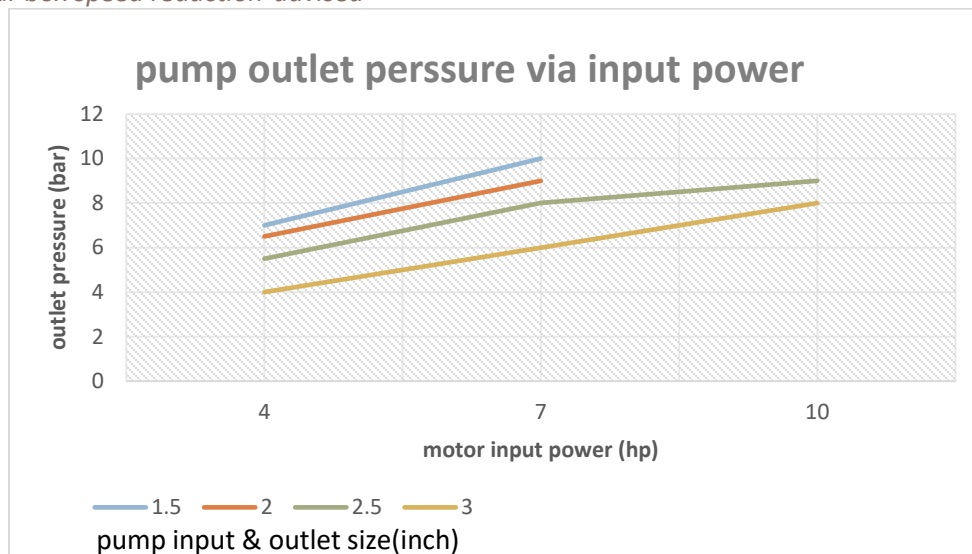
Size (Inch)	Flow rate@ 50 RPM (m3/h)	Flow rate@ 75 RPM (m3/h)	Flow rate@ 100 RPM (m3/h)	Flow rate@ 200 RPM (m3/h)	Flow rate@ 300 RPM (m3/h)	Flow rate@ 400 RPM (m3/h)	Flow rate@ 500 RPM (m3/h)	Flow rate@ 600 RPM (m3/h)	Flow rate@ 700 RPM (m3/h)	Pressure (Bar)		
										4hp	7hp	10hp
1 ½	0.7	1	1.8	2.5	3	3.8	4.9	5.5	6	7	10	-
2	1.2	1.7	3.2	4.4	5.3	6.7	8.7	9.7	10.5	6.5	9	-
2 ½	1.9	2.7	5	7	8.3	10.5	13.6	15.2	16.6	5.5	8	9
3	2.8	4	1	10	12	15.2	19.6	22	24	4	6	8

Notice: custom size could be negotiated

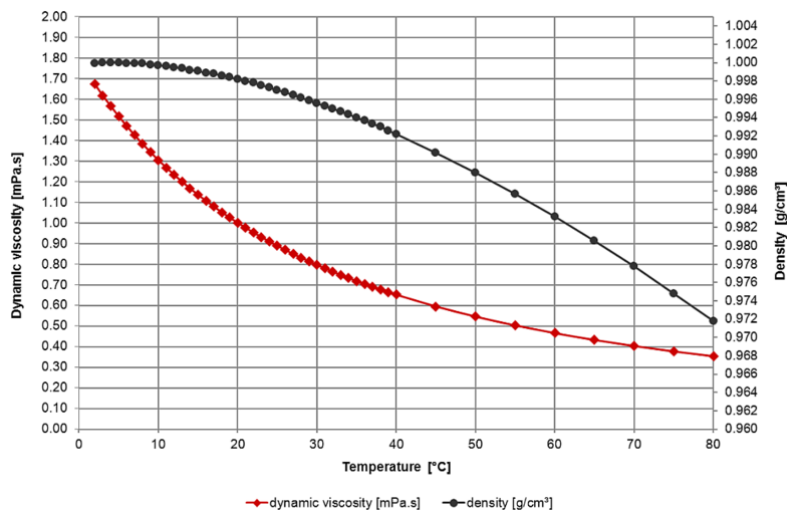
Important notice: all information collected above table are prepared at 7500 cps viscosity and clearly known that any change in viscosity could be effect on above table values.



Notice: inverter speed reduction caused torque losses
Notice: gear box speed reduction advised

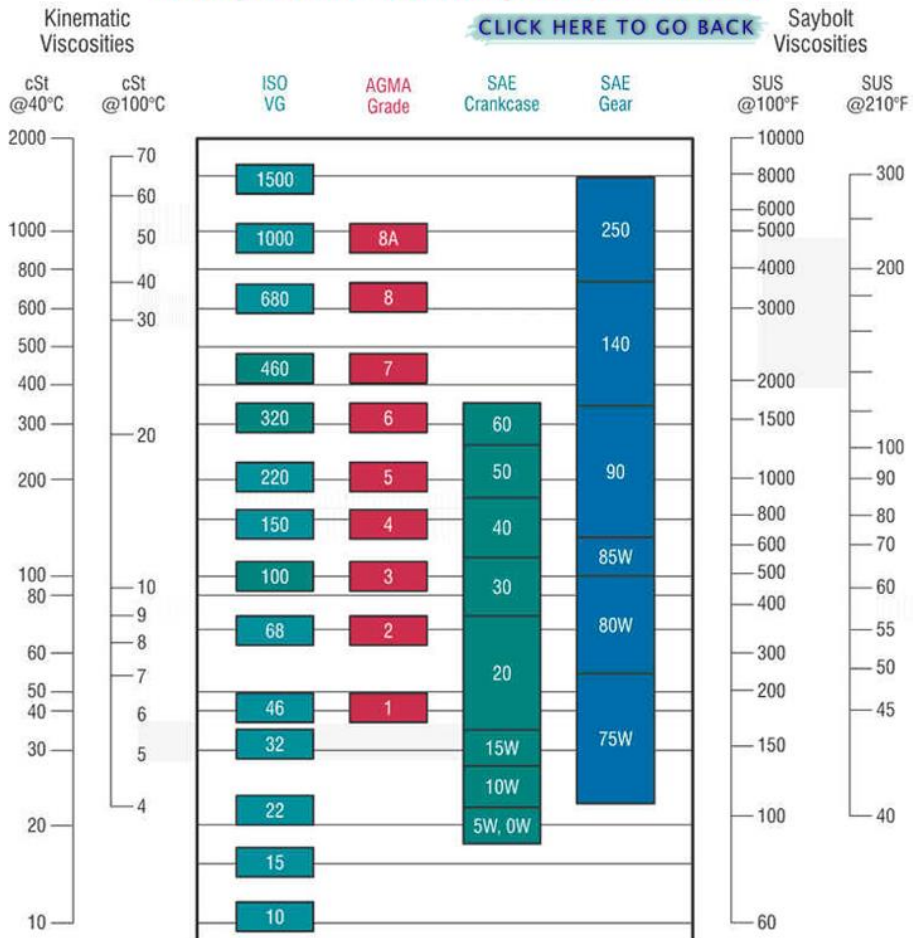


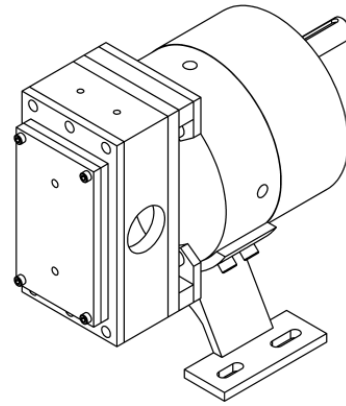
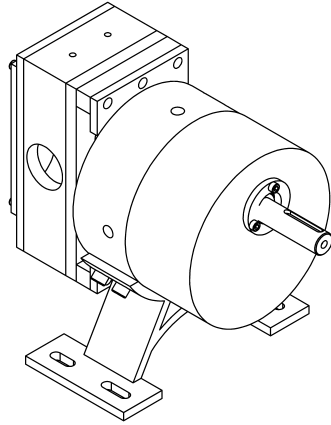
Notice: materials viscosity must be considered



Approximate Viscosities of Common Materials (At Room Temperature-70°F) *	
Material	Viscosity in Centipoise
Water	1 cps
Milk	3 cps
SAE 10 Motor Oil	85-140 cps
SAE 20 Motor Oil	140-420 cps
SAE 30 Motor Oil	420-650 cps
SAE 40 Motor Oil	650-900 cps
Castrol Oil	1,000 cps
Karo Syrup	5,000 cps
Honey	10,000 cps
Chocolate	25,000 cps
Ketchup	50,000 cps
Mustard	70,000 cps
Sour Cream	100,000 cps
Peanut Butter	250,000 cps

Comparative Viscosity Classifications





PRIMARY CUSTOMERS

- 1 food High viscosity fluid such as honey, bread dough,...
- 2 Chocolate and Biscuits process line specially for line supply
- 3 Medicine and Drug treatment industries
- 4 Food grade oil process
- 5 Dairy industries such as milk, cheese, butter and...
- 6 Industrial high viscosity such as Grease line &...

PURCHASE INFORMATION

What Questions must be identify by user	
1	What is your industry?
2	What is your materials type?
3	What is your Process capacity ?
4	What is process temperature?
5	What is your Material Corrosion properties?
6	What is process line pressure?

PRIMARY APPLICATION

Primary application

1 On the pulse of innovative solutions and the food production industry

Achieving the desired taste, stable shelf life and impeccable hygiene levels requires tight control of process timing and temperatures, as well as careful and correct raw ingredients and materials.

Success starts with understanding how to get the most out of each ingredient and raw material – from dry powders to sticky sugars, viscous liquids to shear or heat-sensitive ingredients such as flavor enhancers and essences. Accurate handling, dosing and mixing of ingredients then keep production costs low by minimizing spillage and waste.

CZECH TECH solutions ensure hygienic production as well as efficient, effective cleaning-in-place (CIP) of equipment and processing lines – complying in full with the most stringent regulatory standards for hygienic applications.



Equally importantly, CZECH TECH enables you to:

- Increase production yields and maintain long running times, through high availability and uptime levels
- Decrease ingredient and product loss levels by getting more out of your raw materials
- Reduce your consumption of utilities, such as energy and water, and recycle waste streams. For instance, our membrane filters can help create a zero-liter water discharge site. And using the right CZECH TECH pump for your specific processing parameters can reduce energy consumption by as much as 50%.

Gum processing

A wide range of gums are used throughout the food industry in products such as margarine, chocolate, chewing gum, bakery, and convenience foods, as well as in increasing numbers of cosmetic, pharmaceutical and technical applications.



Dairy processing

CZECH TECH is well equipped to provide the optimal components required for many different dairy applications. Our changing world means enormous potential for the dairy industry in the years to come. The key to capturing the opportunities is a clear understanding of regional and global trends. CZECH TECH comprehensive range of innovative hygienic components are key building blocks in dairy processes. Our ongoing mission is to secure hygienic conditions and optimize dairy production.



Primary application

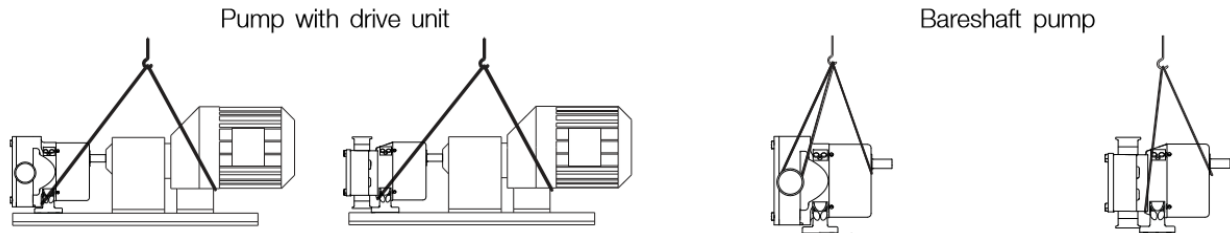
Your note here!

INSTALATION GUIDE

Unpacking, Handling and Storage

Step 1

Refer to the pump weights guide before selecting and using any lifting gear. The drawings show how the pump should be lifted. Ensure that lifting equipment is correctly rated and used within these limits.



Step 2

On receipt always:

- Check the delivery note against the goods received.
- If motorized, check that the drive instructions are available.
- Be careful not to discard any manuals that may be enclosed with the packaging.
- Inspect the packing for signs of damage in transit.
- Carefully remove the packing away from the pump.
- Inspect the pump for any visible signs of damage.
- Clean away the packing from the pump port connections.
- Report any damage immediately to the carrier.

Step 3

After receipt and inspection, if the pump is not to be installed immediately, the pump should be repacked and placed in suitable storage. The following points should be noted:

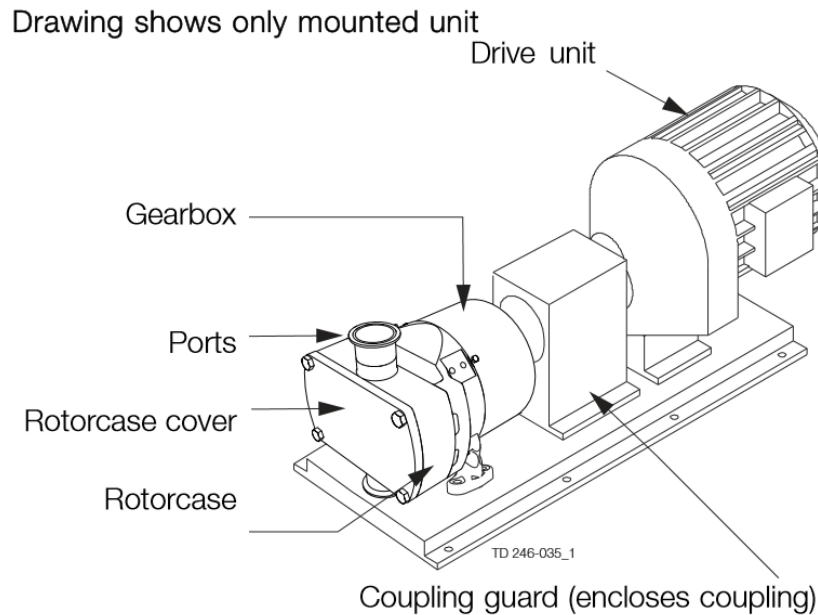
- Plastic or gasket type port covers should be left in place.
- Pumps received wrapped with corrosion inhibiting treatment material should have wrapping replaced.
- A clean, dry storage location free from vibration should be selected. If a moist or dusty atmosphere is used for storage, further protect the pump or unit with a suitable cover.
- Rotate the pump/pump unit by hand weekly, to prevent bearing damage.

- All associated ancillary equipment should be treated similarly.

The CZECH TECH LOBE PUMP range of pumps is of conventional rotary lobe pump design with the positive displacement being provided by non-contacting, contra rotating tri-lobe rotors within a fully swept pump chamber.

The LOBE PUMP range has a universal gearbox design which gives the flexibility of mounting pumps with the inlet and outlet ports in either a vertical or horizontal plane by changing the foot position.

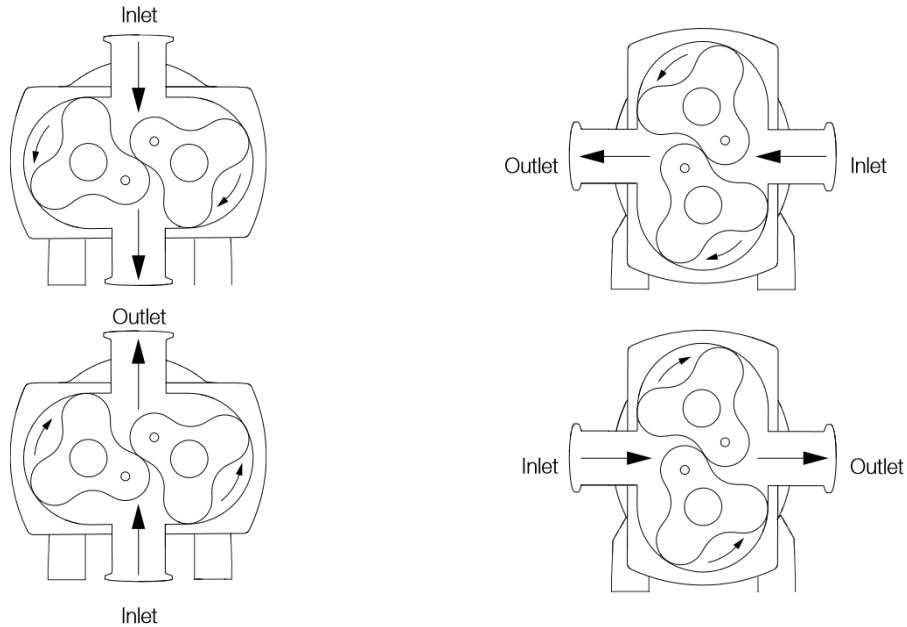
Handling from low to high viscosity pumped media, the pump's characteristic smooth, low shear pumping action is ideal in application areas such as Brewing, Dairy, Food industries, and is suitable for CIP (Cleaning In Place).



Pump duty conditions:

The pump should only be used for the duty for which it has been specified. The operating pressure, speed and temperature limits have been selected at the time of order and **MUST NOT** be exceeded. These details are stated on the original order documentation and if not available may be obtained from your supplier quoting pump model and serial number.

Direction of flow: The direction of flow is dictated by the direction of rotation of the drive shaft. Reversing the direction of rotation will reverse the flow direction.



Pump Lubrication:

The pump will be supplied filled with grease. It is recommended to change the grease every 5000 hours of pump operation. When changing the grease one of the recommended greases listed below must be used:

Aralube MFL 00

BP Energrease PR-EP00

Mobilux EP 004

Cleaning in place (CIP)

The pump can be manually cleaned or cleaned in place (CIP). The following is an example of a typical CIP procedure. However specific advice for each application should be sought from the pump supplier.

Typical CIP procedure

1. Flush through the system with cold water or bore water (6°C) (43°F).
2. Run hot caustic soda (70-80°C) (158-176°F) at 2.5% dilution through the system for 20-30 minutes.
3. Final flush through with cold water again.

Warnings

- Never touch the pump or the pipelines as they can be extremely hot!
- Do not subject the pump to rapid temperature changes during CIP procedures, as pump seizure can result from thermal shock. A suitable bypass is recommended.
- Always rinse well with clean water after using a cleaning agent.
- Always use rubber gloves and protective goggles when handling caustic agents.
- Always store/discharge cleaning agents in accordance with current rules/directives.



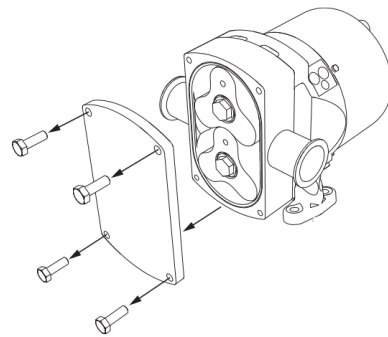
Dismantling

Step 1

Before disassembling the pump refer to safety precautions. See exploded view drawings.

Removing rotor case cover

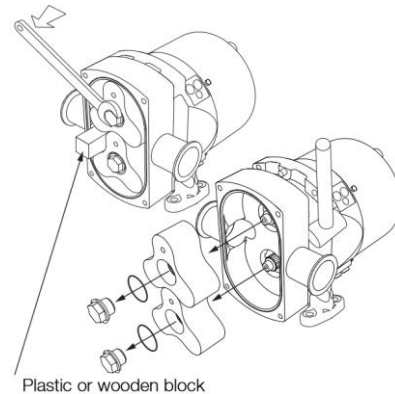
1. Remove rotor case cover screws and cover .



Step 2

Removing rotors

1. Insert a plastic/wooden block between the two rotors to stop them turning.
2. Remove rotor nuts, rotor nut O-rings and rotors.
3. Remove the rotor case cover O-ring and spline sealing O-rings if these are to be replaced.



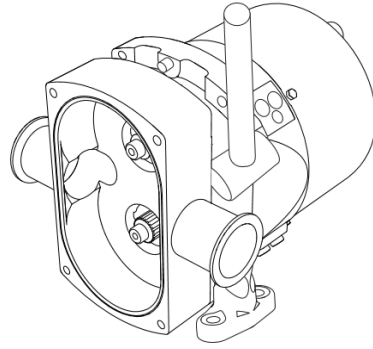
Step 3

Removing primary seal components Primary seals removal and fitting for seal removal.

Step 4

Removing rotor case

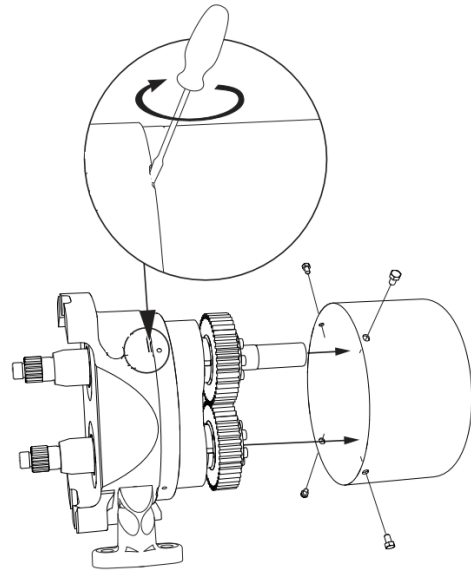
1. Remove the rotor case retention screws.
2. Tap both sides of the rotor case with a soft hammer.
3. Take care not to allow the rotor case to drop onto the shafts during the removal process.



Step 5

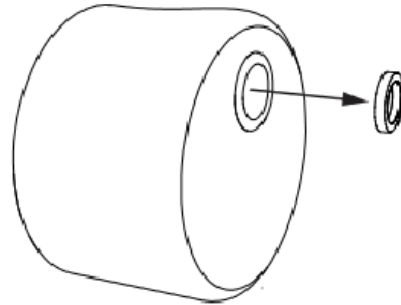
Removing canister

1. Place a tray under the canister to collect the waste lubricant.
2. Remove the four canister retaining screws and allow lubricant to drain.
3. Remove canister from the bearing housing which is sealed with an O-ring. To assist in removal a suitable lever can be used in the slots provided.
4. Remove the canister O-ring if this needs to be replaced.



Step 6

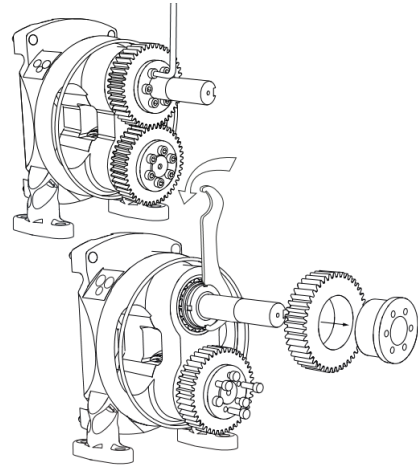
Canister lip seal removal Extract the lip seal from the seal retainer. It is essential to renew the lip seal prior to assembly.



Step 7

Removing timing gears

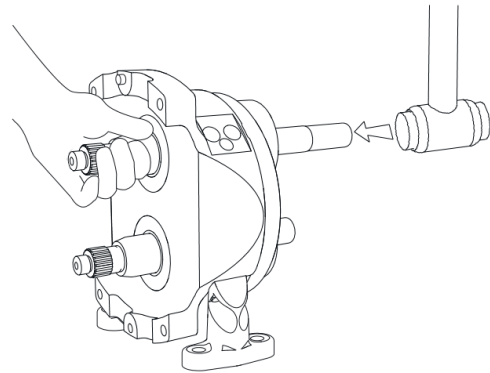
1. Loosen the bearing nuts with a 'C' spanner by tapping sharply.
2. Remove the torque locking assembly screws in several stages (do not fully undo each screw on the first stage of screw removal).
3. Insert the screws into the threaded holes in the assembly flange and gradually tighten in a crossed sequence until the back cone is released.
4. Slide timing gears off the shafts .



Step 8

Shaft assembly removal

1. Remove bearing nuts with a 'sharp tap' on a 'C' spanner (see also drawing shown in step 7).
2. Using a soft hammer gently tap the rear end of each shaft to remove through the front of the bearing housing, supporting each shaft during removal. As the shaft is removed the bearing housing lip seal and rear bearing will also be removed.
3. Remove lip seal from shaft. It is essential to renew the lip seal prior to assembly.



Step 9

Bearing removal

1. Mount the shaft vertically in a press (rotor part of the shaft down) with a tool positively located against the front bearing inner ring with rolling elements as shown, and apply pressure to the top of the shaft so that the shaft moves through the bearings.
2. From bearing housing tap the outer bearing rings (front and back) and remove shims. Renew bearings if removed from the shafts for any reason.

