

Pump models

PT05	PTX40
PT10	PT50
PT15	PT65
PT20	PTX80
PT25	PT80
PT32	PT100
PT40	PT125

**PT hose pumps**

English

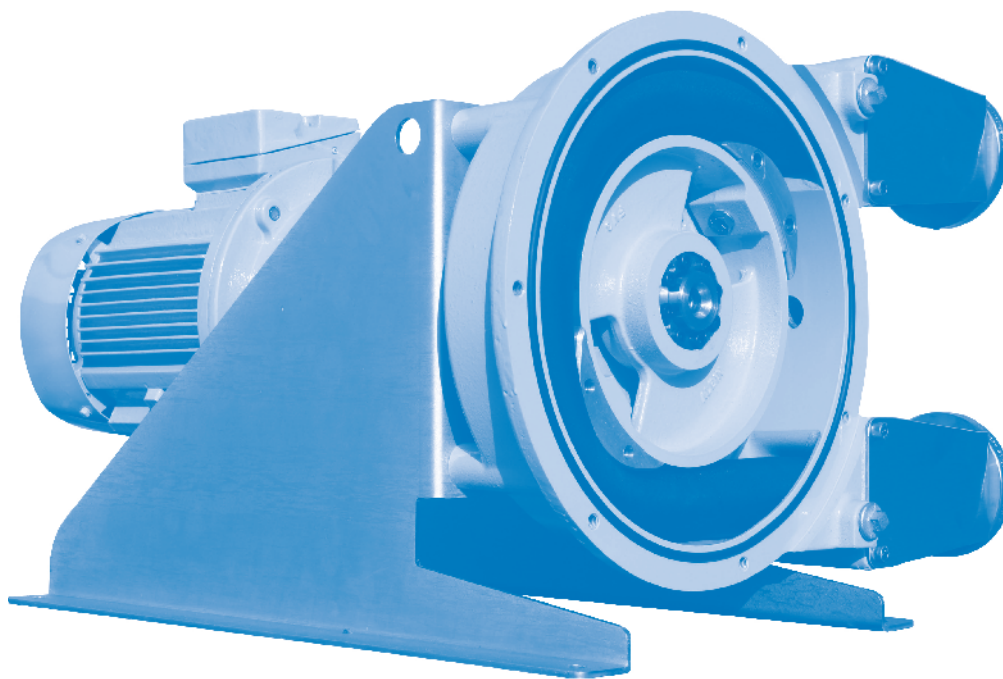


# CE **Instruction manual**

## Hose pumps

**topflo**<sup>®</sup>

Industrial high pressure  
hose pumps



▶ Instructions for installation, start up, operation,  
maintenance and repair

▶ Spare parts



**Read this instruction manual carefully, before  
you install and operate the pump**

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## **1. HOW TO USE THIS MAINTENANCE MANUAL**

This manual is specific to Tapflo pump hose pumps. It allows the users to install, to start and to undertake maintenance of pumps. All persons, fitters and users must read it in its entirety.

Documents concerning the gearbox, the electrical motors as well as all other options (pulsation dampener, hose rupture detector etc) are provided in annex. Refer to in these documents to know the specific details of every apparatus.

Your local Tapflo distributor is at your disposal for the information that you would not find in this manual. For short reply, please indicate the following informations:

- Type of pump
- Pump serial number
- Reference of order

## **2. SECURITY AND GUARANTEES**

### **2.1 USE OF THE PUMP**

The pump was defined for a specific application. Other use who do not comply with envisaged use are not guaranteed.

Tapflo pump cannot be held responsible for damage or possible wounds produced during the use of the pump. The pump was designed in accordance with EU norms and applicable directives. Use the pump only for applications represented above. If you want to change your application, first contact your Tapflo pump distributor.

### **2.2 RESPONSIBILITY**

Tapflo will be under no circumstances responsible for damage or wounds caused by non respect of security directives and maintenance instructions contained in this manual, or by negligence during the installation, use, service or repair of Tapflo hoses pumps. Moreover, additional directives of security can be necessary according to working conditions or according process. Contact your Tapflo pump distributor if you notice a potential danger during the use of the pump.

### **2.3 TRAINING OF THE USER AND INSTRUCTIONS**

Every person who installs, use or performs any operations of maintenance on the pump must be qualified and must have previously read this technical manual. Any temporary personnel must be supervised by skilled users.

The order of execution of operations defined in this manual must absolutely be respected. Store this manual next to the pump so that it can be consulted at any time.

### **2.4 CONDITIONS OF GUARANTEE**

Tapflo offers a guarantee of 2 years on the pump's parts. Tapflo promises to repair or to replace for free all damaged parts except if their deterioration came from a poor use of pump. This concerns all parts except for the hose of pump, the clamps, the sleeves, seals, bushings and bearings as well as the pump shoes.

Tapflo will not be able to accept a request of guarantee under no circumstances if the used parts are not of Tapflo pump origin. Any damaged parts covered by guarantee must be returned to the Tapflo pump factory or to the local Tapflo pump distributor. The returned parts must be accompanied with the duly filled and signed form of security. A copy of this form is at the end of this manual. It must be appended in a visible way outside the packing. The potentially dangerous parts for health must be cleaned before returning them to the producer. It must be pointed out on the form of security how parts were cleaned and those that have been decontaminated.

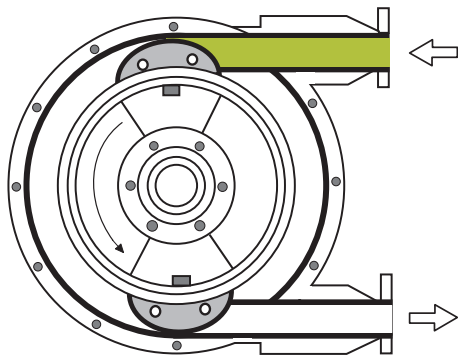
Tapflo is under no circumstances urged to respect guarantees given in its name by a third, whatever it is, representatives of Tapflo, subsidiaries and representatives including unless a specific agreement is written by a manager of Tapflo.

### 3 DESCRIPTION

#### 3.1 Identification of the pump

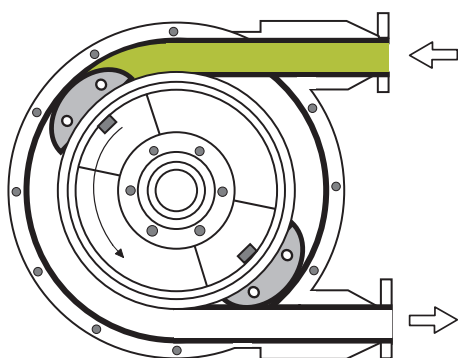
Tapflo Pumps are identifiable by the pump plate located on the upper bracket. This one includes the type and serial number of the pump. This serial number leads to all information concerning building materials, nature of the hose, characteristics of the gearbox and characteristics of the motor. The gearbox as well as the motor include their own descriptive plate they too on which you can read the reduction ratio, power and electrical voltage etc.

#### 3.2 Operation principle



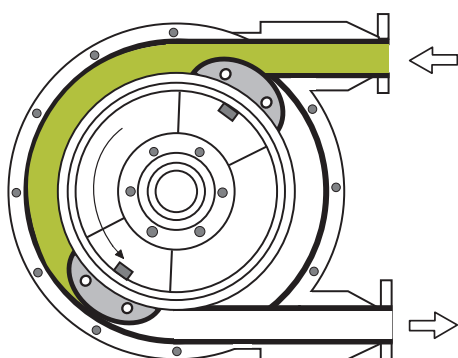
##### PHASE 1

The pump hose is compressed successively by two shoes assembled on a rotating wheel. The first shoe by pressing the walls of the hose, will create a vacuum and attract the pumped liquid into the hose.



##### PHASE 2

The pumped liquid has now entered the hose. The second shoe will compress the hose and push the liquid towards the pump outlet.

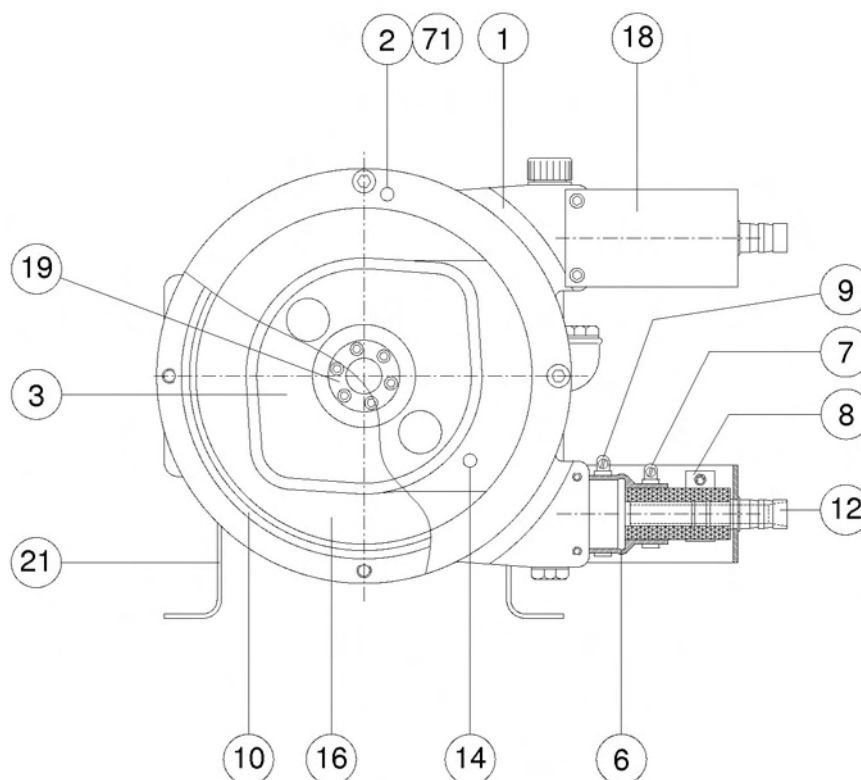


##### PHASE 3

As soon as, at the discharge side, the shoe is detached from the hose, the other shoe diametrically opposite is already in compression thus avoiding an internal product leakage. The product is then successively sucked and pushed due to the wheel rotation.

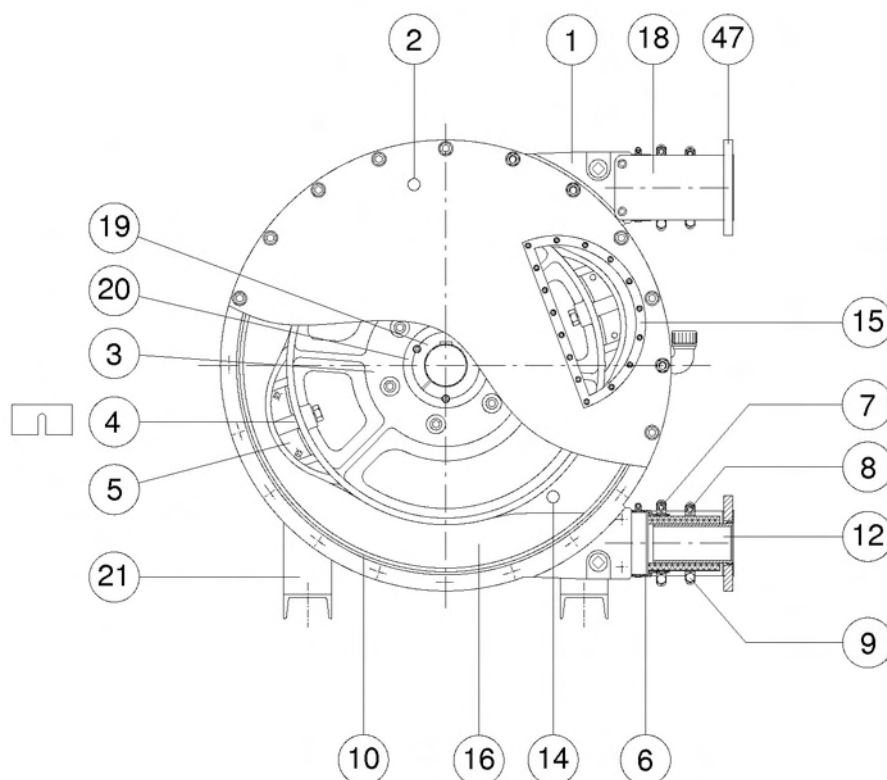
### 3.3 PUMP CONSTRUCTION

#### 3.3.1 PUMPS PT10, PT15, PT20



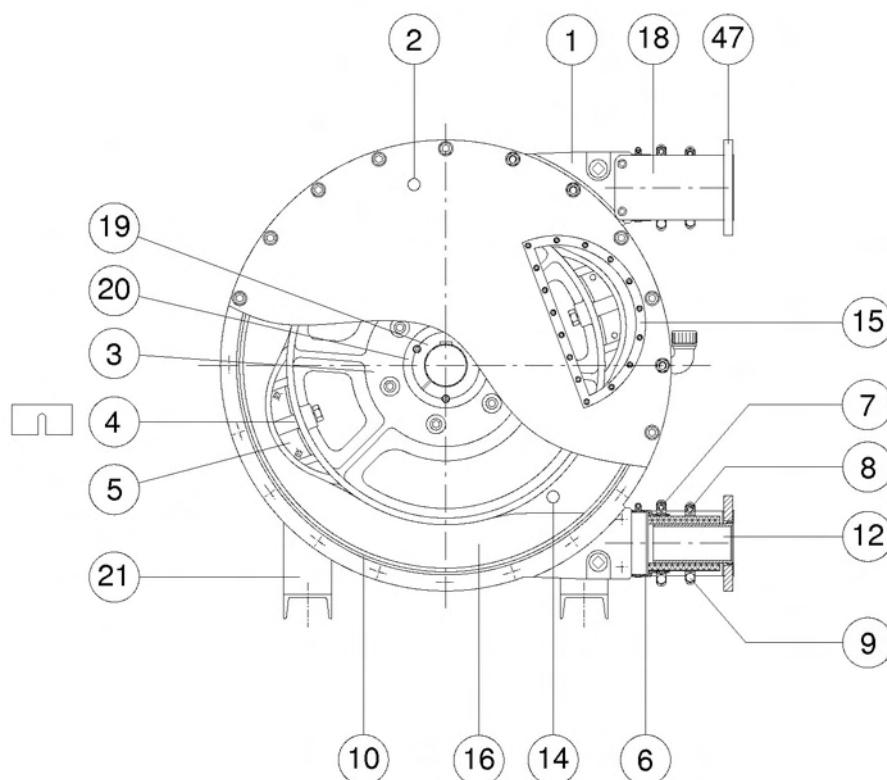
PART NO	DESIGNATION	PT 10 - PT 15 - PT 20
1	CASING	CAST IRON
2	COVER	LEXAN
3	WHEEL	CAST IRON
6	SLEEVE	EPDM
7	CLAMP ON CASING	STAINLESS STEEL
8	CLAMP SLEEVE / HOSE	STAINLESS STEEL
9	CLAMP ON HOSE	STAINLESS STEEL
10	SEAL COVER	NITRILE
12	INSERT	STAINLESS STEEL
14	LUBRICANT	GLYCERIN BLEND
16	HOSE	NR/NBR/EPDM
18	BRACKET	STAINLESS STEEL
19	HUB	STEEL
21	FRAME	STAINLESS STEEL
71	COVER FLANGE	STAINLESS STEEL

## 3.3.1 PUMPS PT25 - PT65



PART NO	DESIGNATION	PT 25 - 32 - 40	PTX 40 - PT 50 - PT 65
1	CASING	CAST IRON	CAST IRON
2	COVER	STEEL	STEEL
3	WHEEL	CAST IRON	CAST IRON
4	SHIM	GALVANIZED STEEL	GALVANIZED STEEL
5	SHOE	ALUMINIUM	ALUMINIUM
6	SLEEVE	EPDM	EPDM
7	CLAMP ON CASING	STAINLESS STEEL	STAINLESS STEEL
8	CLAMP SLEEVE / HOSE	STAINLESS STEEL	STAINLESS STEEL
9	CLAMP ON HOSE	STAINLESS STEEL	BICHROMATE STEEL
10	SEAL COVER	NITRILE	NITRILE
12	INSERT	STAINLESS STEEL	STAINLESS STEEL
14	LUBRICANT	GLYCERIN BLEND	GLYCERIN BLEND
15	SIGHTGLASS SEAL	LEXAN	LEXAN
16	HOSE	NR/NBR/EPDM	NR/NBR/EPDM
18	BRACKET	STAINLESS STEEL	STAINLESS STEEL
19	HUB	STEEL	STEEL
20	BOLT ON PLATE		
21	FRAME	STEEL	STEEL
46	SIGHT GLASS SEAL	SILICONE	SILICONE
47	INLET FLANGE / REF.	STAINLESS STEEL	STAINLESS STEEL

## 3.3.1 PUMPS PTX80 - PT125



PART NO	DESIGNATION	PTX 80 - PT 80	PT 100 - PT 125
1	CASING	CAST IRON	CAST IRON
2	COVER	STEEL	STEEL
3	WHEEL	CAST IRON	CAST IRON
4	SHIM	GALVANIZED STEEL	GALVANIZED STEEL
5	SHOE	ALUMINIUM	ALUMINIUM
6	SLEEVE	EPDM	EPDM
7	CLAMP ON CASING	STAINLESS STEEL	STAINLESS STEEL
8	CLAMP SLEEVE / HOSE	STAINLESS STEEL	STAINLESS STEEL
9	CLAMP ON HOSE	BICHROMATE STEEL	BICHROMATE STEEL
10	SEAL COVER	NITRILE	NITRILE
12	INSERT	STAINLESS STEEL	STAINLESS STEEL
14	LUBRICANT	GLYCERIN BLEND	GLYCERIN BLEND
15	SIGHT GLASS	LEXAN	LEXAN
16	HOSE	NR/NBR/EPDM	NR/NBR/EPDM
18	BRACKET	STAINLESS STEEL	STAINLESS STEEL
19	HUB	STEEL	
20	BOLT ON PLATE	CAST IRON	
21	FRAME	STEEL	STEEL
46	SIGHT GLASS SEAL	SILICONE	SILICONE
47	INLET FLANGE / REF.	STAINLESS STEEL	STAINLESS STEEL

### 3.4 HOSE

The Tapflo hoses are manufactured according to very strict specifications to acquire the best performances of the pump and to assure an optimum hose life. They are available in three materials: Natural Rubber (NR), perbunan (NBR) and EPDM. The material of the hose must be compatible with the pumped liquid. Consult a Tapflo pump distributor to define the best hose for your use or consult the chemical resistance table on our website.

#### HOSE DIMENSIONS (dimensions in mm)

PUMP	Ø INSIDE	THICKNESS	LENGTH
PT10	10	11	570
PT15	15	11	830
PT20	20	9	830
PT25	25	14,5	1090
PT32	32	15,5	1300
PT40	38	13,5	1300
PTX40	40	13,5	1500
PT50	51	15	1820
PT65	60	13,5	1950
PTX65	65	17,5	1950
PTX80	80	17,5	2400
PT80	80	21,5	2910
PT100	102	22,5	3410
PT125	125	21,25	4000

### 3.5 GEARBOX

Our standard gearboxes are coaxial gearboxes for pumps PT10 to PTX40 and planetary for pumps PT65 to PT125. They have been sized according to the important radial loads of the pump. Consult the gearbox manual of maintenance provided with the pump to know the quantity of lubricant requested as well as the periodicity of oil change.

### 3.6 ELECTRICAL MOTORS

The standard motors provided on our pumps are with squirrel-cage and have a voltage 220/400 & 400/660V 50Hz tri-phase. If the pump has to work in a potentially explosive environment, please contact your Tapflo pump distributor.

### 3.7 AVAILABLE OPTIONS

Tapflo pump offers several options for their pumps:

- Hose rupture detector
- Revolution-counter
- Pulsation dampener

Please contact your Tapflo pump distributor for any information about these different options.



## 4 INSTALLATION

### 4.1 UNPACKING AND CONTROL

During the reception of the pump, please follow the indications pointed out on the packing. Undertake a visual control to be sure that no damage happens during the transport. If this would be the case, please contact your Tapflo pump distributor as quickly as possible.

### 4.2 CONDITIONS OF USE

PT pumps can work in atmospheres where the temperature is between - 20°C and +70°C. Pumps are delivered in standard, painted with a 150µ polyurethane paint which allows them to resist to certain aggressive ambiances. They are designed for indoor setups and protected outdoor indoors.

### 4.3 SETUP

Before any installation of the pump, check the following points:

- The pump is delivered with a frame provided with four anchoring holes. It must be fixed on a solid base with the slope of which does not exceed 5mm for 1m and must be firmly fastened to this one.
- Require enough space around the pump to undertake the operations of maintenance. If such was not possible, consider the moving of the pump to a space planed at this effect.
- Make sure that the room is sufficiently ventilated to reduce the warmth produced by the pump. Leave a sufficient space between the motor aeration hood and the wall in order to avoid air admission obstruction.

### 4.4 PIPING

#### Suction line piping:

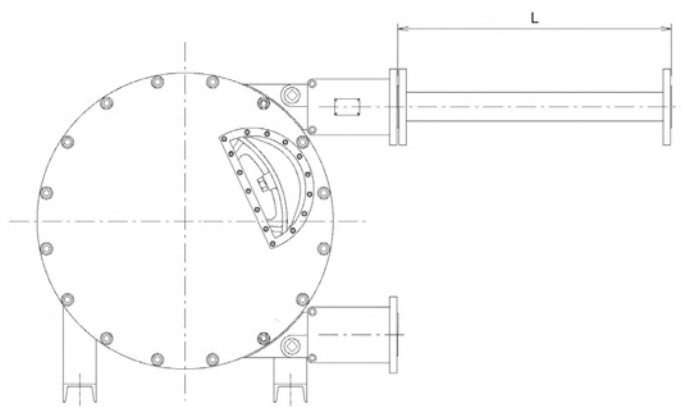
- The internal diameter of the piping must be superior to that of the pump hose (see §3.4.).
- It must be the shortest and most direct possible to avoid suction loss.
- Install a valve on the suction line especially if the pump is on load.
- Limit the presence of bends and make sure that they are as large as possible.
- Make sure that piping can support the service pressure of the pump.

#### Discharge line piping:

- The internal diameter of piping must be superior to that of the pump hose (see §3.4.).
- It must be the shortest and most direct possible to avoid discharge pressure loss.
- Limit the presence of bends and make sure that they are as large as possible.
- Provide a space for a pulsation dampener (see picture below).
- If there is a valve on the discharge line, install a pressure valve or a pressure gage of protection to avoid any possible damage to the pump and to the installation.
- It is recommended to install a Dillatoflex® pipe to absorb vibrations created by the pump pulsations.

During the pump ground study, provide enough space for the hose change as well as the possible installation of a pulsation dampener. Distance (L) is the required length for hose removal.

PUMP	DISTANCE (L)
PT10	400
PT15	500
PT20	500
PT25	800
PT32	1000
PT40	1000
PTX40	1200
PT50	1400
PT65	1400
PTX80	1600
PT80	2000
PT100	2800
PT125	3000



## 4.5 LIFTING THE PUMP

Pumps are provided with two lift rings fitted on the upper part of the frame. While lifting the pump, respect the following points:

- Lift the complete hose pump using the lifting ring plus additional support on the gearbox and the motor using suitably rated straps or slings.
- Never exceed the upper limits of lift and control the motorized pump weight's table below.
- The motorized pump, given its centre of gravity, will tend to overbalance on the pump head side. Make sure that the persons are at a security distance of the pump to avoid any risk of wound.
- Never raise the pump otherwise than by the pump's lifting rings.
- Never raise the pump by its orifices nor by its brackets.

PUMP	PT10	PT15	PT20	PT25	PT32	PT40
WEIGHT KG	25	35	35	80	130	145

PUMP	PTX40	PT50	PT65	PTX80	PT80	PT100	PT125
WEIGHT KG	210	315	335	650	930	1250	1750

## 5 PUMP STARTUP

### 5.1 PREPARATIONS

- Connect the electrical motor in accordance with the local rules and regulations. Perform this work by qualified personnel.
- Make sure that the lubricant level arrives at the level of the sight glass. Add lubricant if required by the breather or by the sight glass (see §6.1.).
- Make sure the shimming of the pump is according to the pump use (see §6.5 shoe shimming).
- Check the direction of rotation of the pump. It is recommended to install a rotation inverter on the motor for the hose change.

### 5.2 STARTUP

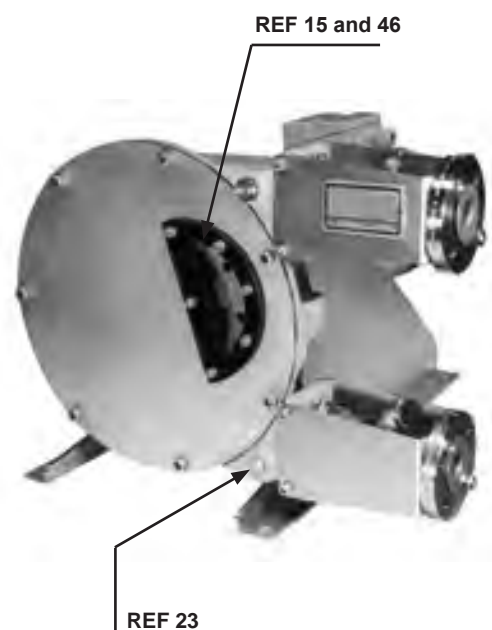
- Install piping at the inlet and outlet of the pump.
- Make sure that valves at the inlet and outlet are opened.
- Start the pump by checking its direction of rotation by the sight glass.

## 6 SERVICE

### 6.1 EMPTYING AND FILLING OF THE LUBRICANT.

Refer to §6.6 to know the periodicity of lubricant change

- Stop the pump.
- Place a tray underneath the drain plug REF23.
- If necessary, install a tap and a drain circuit instead of the drain plug REF23.
- Make sure that this tray can contain the quantity of lubricant during the drainage process (see lubricant volume table §9.5).
- Unscrew the plug REF23 and undertake emptying.
- Position and tighten the plug REF23 by applying Teflon band or waterproof paste or close the drain tap.



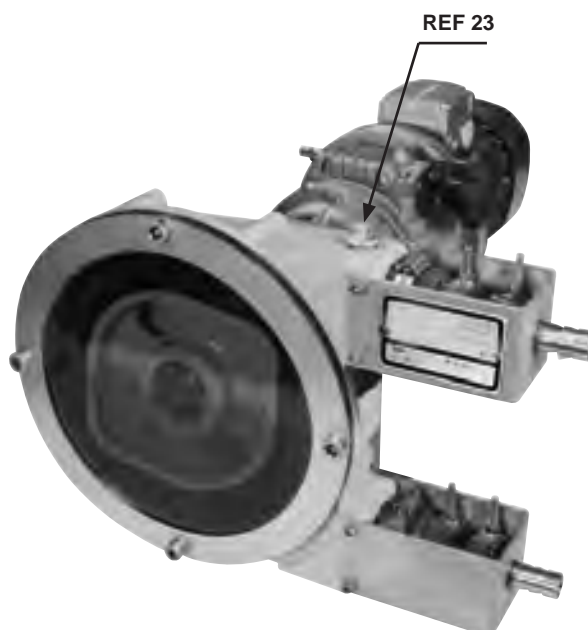
**NOTE:** If the pump is mounted with the inlet -outlet directed to the top, lubricant drainage is obtained by unscrewing some cover screws in the lower part.

7. Remove the sight glass REF15 as well as its seal REF46 and fill the casing with the Tapflo lubricant (see lubricant table §9.5.).

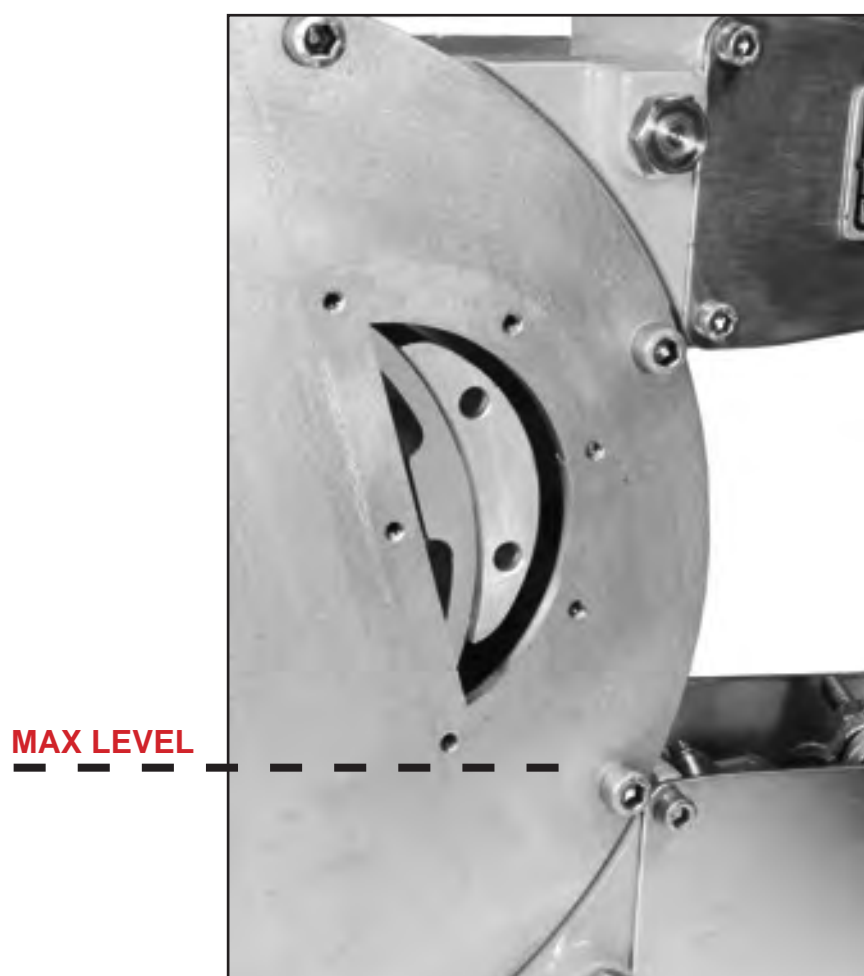
The level of necessary lubricant is at the level of the sight glass or underneath the shaft line (see photograph).

**FOR MODELS PT10, 15 and 20:**

Unscrew higher plug REF23 of the pump.  
Fill the casing with the Tapflo lubricant (see lubricant table §9.5.).  
The necessary volume of lubricant is just underneath the shaft line.



8. Check the state of the seal REF46 and reassemble the sight glass REF15.



## 6.2 HOSE CLEANING

The hose cleaning can be done without removing the hose. It can be done with water or with a cleaning liquid (check compatibility with hose material). With numerous products, it is necessary to clean the hose after every pumping in order to avoid the hardening of the product inside this one.

**ATTENTION!** Make sure that the temperature of cleaning is adapted to the hose material.

## 6.3 HOSE REPLACEMENT

Before any hose change, check the following points:

- This service have to be performed skilled personnel that is acquainted with this manual.
- The pump electrical supply must be disconnected.
- Inlet and outlet valves have to be closed to minimize loss of product.
- Always carry clothes and necessary protection according to the pumped product.
- Respect all rules necessary for the manipulation of the pumped product.

### 6.3.1 HOSE REMOVAL

- Disconnect and remove the piping of inlet and outlet.
- Drain the lubricant as explained in §6.1.
- At the pump's inlet, loosen clamps REF8 and 9 (photograph 1). Extract the insert REF12 and remove the flange REF47 (photograph 2).

#### FOR MODELS PT10, 15 and 20

Remove circlips REF24 and dismantle bracket REF18.

Extract insert REF12.

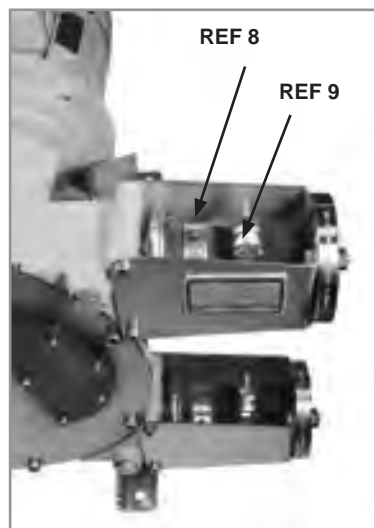


PHOTO 1

#### FOR MODELS PT10, 15 and 20:

Extract the insert REF12 and take out the flange REF47 (photograph 2).

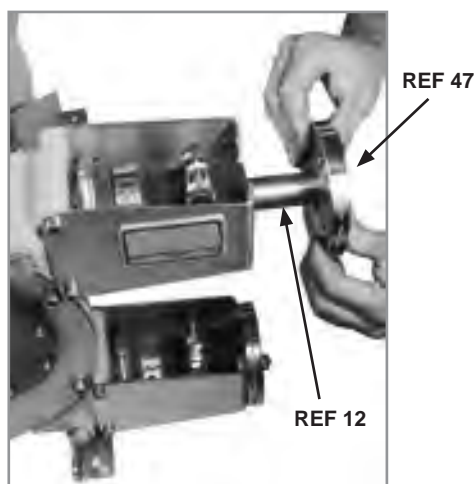
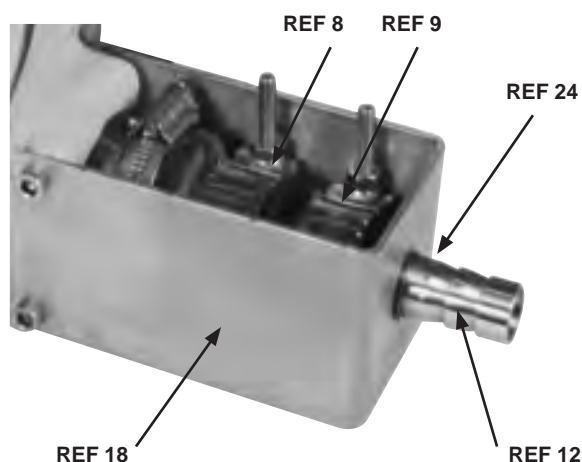


PHOTO 2

4. At the pump's outlet, loosen clamps REF8 and 9. Extract the insert REF12 and remove the flange REF47 as well as the brackets REF18 (photograph 4). Remove clamps REF8 and 9 (photograph 5).

**FOR MODELS PT10, 15 and 20:**

- At the pump's outlet, loosen clamps REF8 and REF9. Remove circlips REF24 and dismantle bracket REF18. Extract insert REF12. Remove clamps REF8 and REF9.

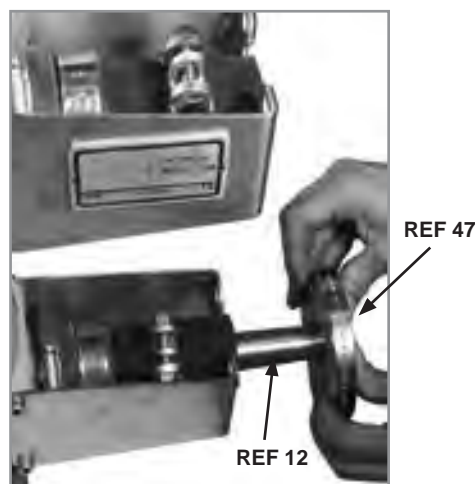
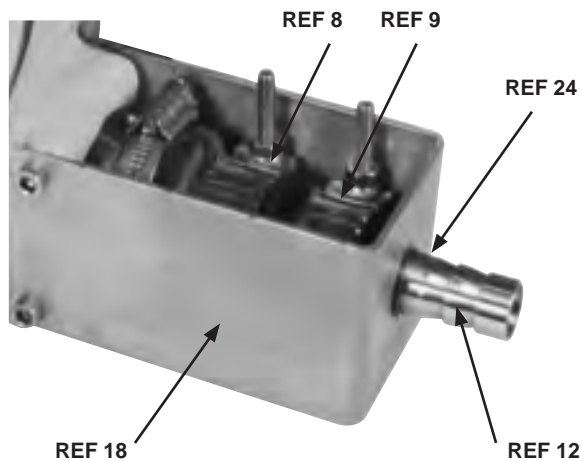


PHOTO 4



PHOTO 5

5. Run the motor a short instant to deliver the hose from the pump casing at the outlet side.

**ATTENTION!** The hose can come out of the pump casing very fast and cause harm. Check that nobody is in front of the pump's orifices while removing the hose.



PHOTO 6

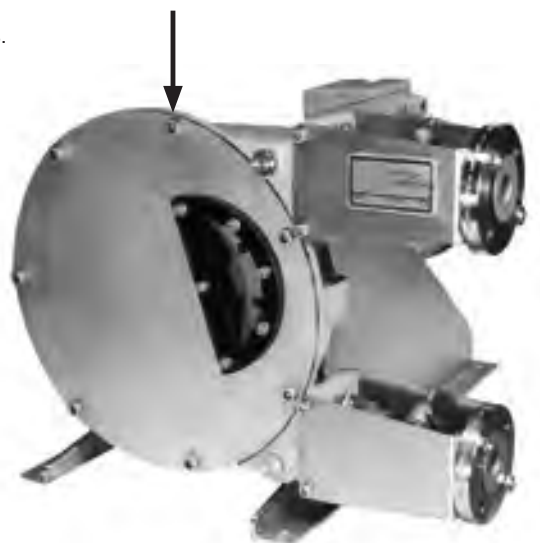
### 6.3.2 PUMP CASING CLEANING

This operation is necessary when a hose burst and when the product contaminated the inside of the pump casing.

1. Unscrew cover bolts by leaving two screws partly screwed on in the casing. Withdraw the cover of the casing lightly and fix a shackle in one of the holes to the cover high point. (Pumps PT80, 100 and 125 are equipped with a lifting ring). Install a lift equipment in this shackle and while raising the cover lightly, unscrew remaining screws. Withdraw the cover.
2. Check the state of the cover seal REF10 and replace it if necessary.
3. Check the state of wear of the shoes and replace them if necessary (see §6.4 Replacement of spare parts).

**ATTENTION!** A wear of shoes can cause of problems to the pump and provoke abnormal hose lifetime.

4. In the case of a hose burst, it is possible that the shaft seal REF26 as well as the bushing REF27 have been notably damaged when pumping an abrasive liquid. Relate to §6.4 if a replacement of these parts is necessary.
5. Wash the casing with clear water and withdraw any residues.
6. Dry the pump casing entirely.
7. Replace the cover seal in its groove.
8. Reassemble the pump cover.



### 6.3.3 REASSEMBLY OF THE HOSE

**ATTENTION!** You should never insert a new hose without a mounted cover.

1. Temporarily mount the flange REF47 at the inlet port by means of two bolts (photograph 1).

FOR MODELS PT10, 15 and 20

- Temporarily mount the bracket REF18 at the inlet port.

2. Clean the new Tapflo hose carefully. Coat it with Tapflo lubricant



PHOTO 1

3. Insert the hose by the outlet orifice by lubricating lightly the inside of the boot REF6 (photograph 2).
4. Reverse the sense of rotation of the motor.
5. While pushing on the hose run the motor by fits and starts & check that 's turning in the right direction.

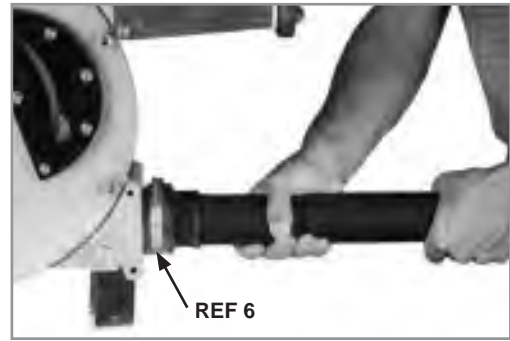


PHOTO 2

6. The shoes mounted on the wheel are going to "swallow" the hose and to push it to the inlet side. Always by giving jolts, to bring the hose in supported over the flange (photograph 3).
7. Assemble the clamps REF8 and 9 side inlet. Introduce the insert REF12 in the hose. Tighten clamps REF8 and 9.

FOR MODELS PT10, 15 and 20

Dismantle the clamp REF18. Mount clamp REF8 and 9 on the hose. To introduce the insert REF12 into the hose. Fix clamp REF18 and block the insert with circlips REF24. Tighten the clamp REF 8 and 9.

If you meet difficulties in introducing' inserts into the hose of pump, coat them lightly with Tapflo lubricant. Never employ another lubricant.

8. Assemble the brackets REF18 and flange REF47 side outlet with the aid of two bolts of temporary assemblage.

FOR MODELS PT10, 15 and 20

Assemble the bracket REF18 at the outlet.



PHOTO 3

9. Reverse the sense of rotation of the motor.
10. To give some jolts in the motor to bring the hose in supported counters the flange.
11. Undertake operation 7 at outlet side.
12. Fill lubricant (see §6.1. and §9.5.)
13. Take away the bolts of temporary assemblage of flanges REF47 and fix the piping.
14. Open the vanes at inlet and outlet.
15. Make sure the sense of rotation of the pump.

## 6.4 REPLACEMENT OF SPARE PARTS

### 6.4.1 REPLACEMENT OF SHOES OF THE PUMP (except PT10, PT15, PT20)

1. Jog run the motor and position one of the shoes in front of the sight glass.
2. Cut the power supply.
3. Drain the lubricant (see §6.1).
4. Remove the pump cover as well as the cover seal REF10.



5. Disassemble the shoe which is not in contact with the hose and put aside the shims if any.

6. Mount a new shoe on the wheel (do not forget the washer REF29). Slide the shims between the shoe and the wheel before tightening.

**BE CAREFULL OF THE POSITION OF THE SHOE WITH THE CENTERING PIN (except PT80 to PT125).**

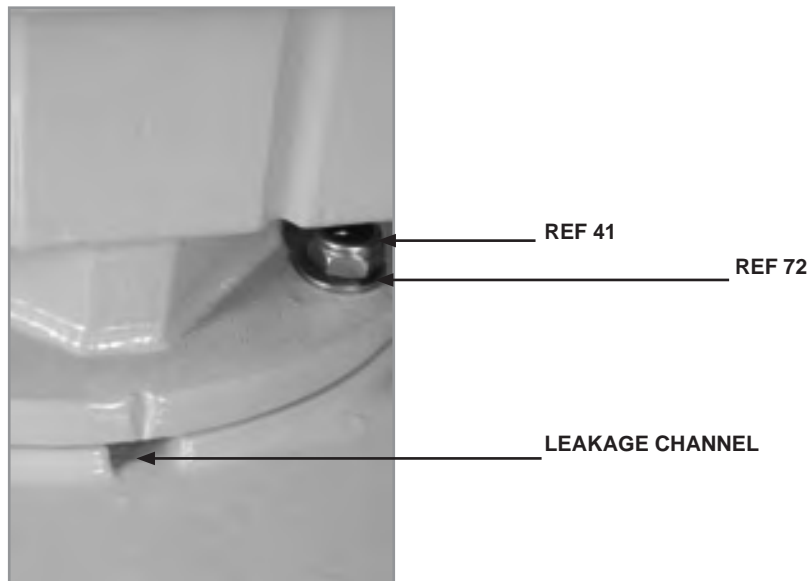
7. Tighten the shoe with one or several bolts.
8. Reassemble the cover with 3 bolts disposed in about 120° between one and other.
9. Jog run the motor and bring the second shoe in front of the sight glass.
10. Remove the cover once again and undertake operations 5 - 7.
11. Reposition the cover and tighten all cover screws.





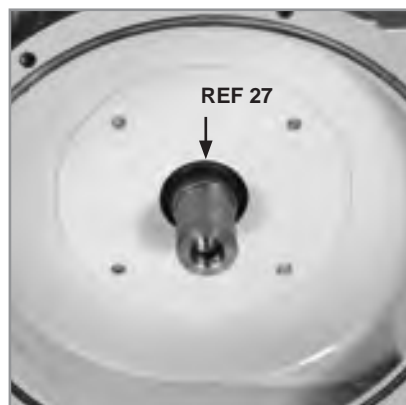
#### 6.4.2 REPLACEMENT OF THE SEAL RING REF27 AND THE SEAL OF SHAFT REF26

Tapflo hose pumps are equipped with a leakage channel that allows to see the wear of the seal ring or the shaft seal. This channel is at the back of the pump casing underneath the gearbox flange. It also protects the gearbox seals by leaving the lubricant or the product to pass freely at the back of the pump casing.



PUMPS PT10 to PT65 (refer to the nomenclature §9.3. for the landmarks of parts).

1. **Cut the power supply of the pump.**
2. Clean out the pump (see §6.1).
3. Remove the pump hose (see §6.3.1).
4. Disassemble the pump cover and withdraw the cover seal REF10.
5. Disassemble the wheel by unscrewing the expansible hub REF19.
6. Withdraw the wheel of the pump shaft with the aid of a lifting equipment.
7. Support the gear motor with a lifting equipment.
8. Unscrew the nuts REF41 and withdraw the gearbox from the pump casing.
9. Extract the seal ring REF27 if this one presents a wear.
10. Replace a new bushing on the shaft and position it with the gearbox shaft shoulder by referring to the table below.

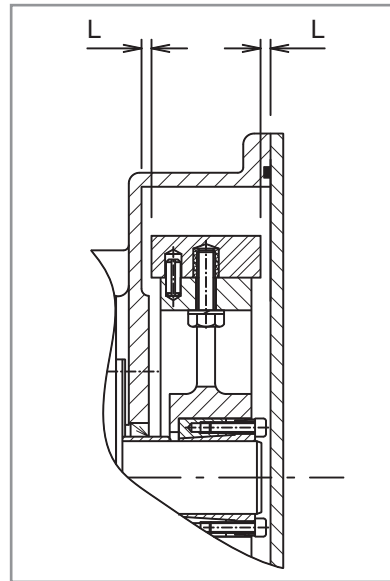
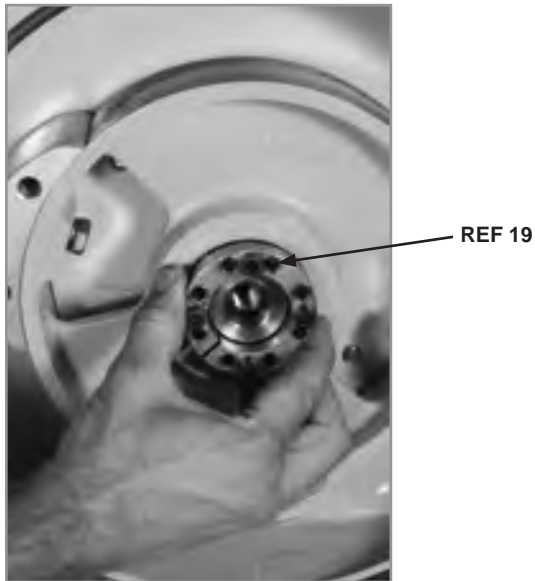


PUMP	PT 10	PT 15-20	PT 25	PT 32-40	PTX 40	PT 50-65	PTX 80	PT 80	PT 100	PT 125
Setting of seal ring REP27	0 mm	0 mm	0 mm	0 mm	0 mm	15 mm	24 mm	4,5 mm	28 mm	No Ring

11. Withdraw the shaft seal REP26 with the aid of drift punch.
12. Replace a new seal with an appropriate tool (wooden or plastic cylinder). Check the mounting position of the seal (opened side turned to the cover). It must be mounted by the inside of the pump casing.



13. Replace the gear motor on the casing and tighten the nuts REF41 with their washers REF72.
14. Replace the wheel on the pump shaft by positioning it referring to the table and the drawings below.



PUMP	PT 10	PT 15 - 20	PT 25	PT 32 - 40	PT 40	PTX 40	PT 50 - 65	PTX 80	PT 80	PT 100	PT 125
Distance casing / shoe (L)	4 mm	2,75 mm	5,5 mm	6 mm	2,5 mm	5 mm	3 mm	6,5 mm	8 mm	10 mm	15 mm
Tolerance + or -	0,5 mm	0,5 mm	0,5 mm	0,5 mm	0,5 mm	0,5 mm	0,5 mm	0,5 mm	0,5 mm	0,5 mm	0,5 mm

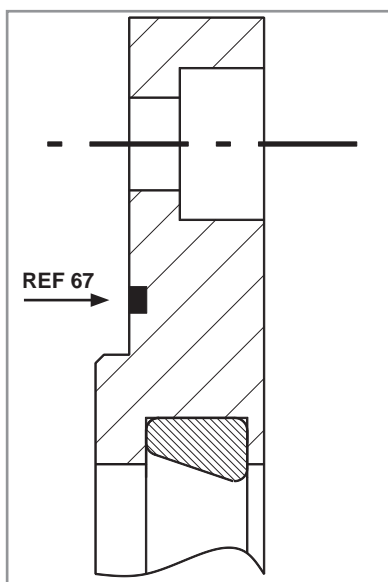
15. Tighten the expansible hub and check the wheel position once again.



16. Replace the cover seal REF10 in its groove and replace the cover.
17. Mount the pump hose as stated in §6.3.3.

**PUMPS PTX80 AND PT125** (refer the nomenclature for the landmarks of parts §9.3.)

1. Undertake the same operations 1 - 10 as for pumps PT10 to PT65.
2. Disassemble the seal flange REF25 and withdraw the seal with the aid of a screwdriver.
3. Take the new seal REF26 between the thumb and the index and by tightening your fingers, form an "8" figure. The seal can now be inserted into its groove by respecting the mounting position (see drawing).



4. Mount the gear motor on the pump casing (see operation 13).
5. Replace the O ring REF67 if necessary and reassemble seal flange.
6. For pumps PTX80, undertake operations 14 to 17 of precedent chapter.  
For pumps PT80 to PT125, undertake operation 14 of precedent chapter. Then block the wheel with the washer REF60 and the screw REF59. Undertake operations 16 and 17 of precedent chapter.

## 6.5 SHIMMING OF SHOES

**NOTE:** This paragraph does not concern pumps PT10, PT15 and PT20.

**ATTENTION!** The shimming of shoes is an operation which consists in adding shims under the shoe to stop any internal leakage. An internal leakage considerably reduces the life of the hose as well as the flow. As a result, it is essential to adjust the shoe's shimming according to the speed of rotation of the pump as well as in the desired outlet pressure.

The shoes shimming can be made without disassembling the hose or taking off the cover. Shims are inserted or withdrawn by the sight glass as pointed out below:

1. Jog run the motor and bring a shoe in front of the sight glass.

**ATTENTION!** Never run the pump without the sight glass.

2. Cut the power supply of the pump.



3. Unscrew the sight glass bolts and withdraw taking care in not damaging the seal.



4. Slightly unscrew the shoe's bolts and lift the shoe off the wheel with the aid of a screwdriver.

5. You can now either slide in or withdraw the necessary number of shims under the shoe. Consult the shimming table §9.6 to determine the precise number of shims according to your application.

6. Tighten the shoe bolts.

7. Reassemble the sight glass with its seal.

8. Re-connect and jog run the motor to bring the second shoe in front of the sight glass.

9. Cut the power supply of the pump.

10. Repeat operations 3, 4, 5, 6 and 7.  
Replace the sight glass seal REF46 if necessary.



## 6.6 MAINTENANCE AND PERIODIC INSPECTIONS.

1	Pump hose replacement.	In prevention, change the pump hose after 90 % of the life time of the first hose.	see §6,3
2	Lubricant replacing.	At the end of two hose changes or 5000 hours of functioning. Otherwise, in every hose break.	see §6,1
3	Gearbox oil replacing.	Refer to the gearbox maintenance manual provided with the pump.	
4	Replacing of the seal ring REF27.	In case of presence of lubricant in the leak channel.	see §6,4,2
5	Replacing of the shaft seal REF26.	In case of presence of lubricant in the leak channel	see §6,4,2
6	Replacing of the shoes.	If these are worn on the contact surface.	see §6,4,1
7	Replacing of the cover seal REF10.	In the case of a leak around the pump cover.	see §6.3.2
8	Replacing of the sleeves REF6.	If these are damaged.	Refer to §6.3. Perform operations 1, 2, 3 and 4 of §6,3,1 and change sleeves. Respect directives of security.
9	Check the lubricant level.	Before starting the pump and periodically during the pump service.	see §6,1
10	Check the lubricant level.	Before starting the pump and periodically during the pump service.	see §6,4
11	Check the pump casing to discern possible leakages around the cover, the sight glass, the flanges and the sleeves.	Before starting the pump and periodically during the pump service.	
12	Check the state of the shoes.	At every hose change.	see §6,4
13	Check the presence of a gearbox oil leakage.	Before starting the pump and periodically during the pump service.	see §3.5
14	Check for strange noise coming from the pump or abnormal pump casing temperature.	Periodically during the pump service.	

## **7 STORAGE**

### **7.1 STORAGE OF THE PUMP**

Store the pump in a sheltered and dry place and ensure that the storage room temperature is between - 20°C and +70°C.

Protect the pump if necessary and block the inlet and outlet orifices:

If the pump stays without working more than 3 months, withdraw the hose from the pump or withdraw one of the shoes as well as its centring pin and position the wheel so that the second shoe is in front of the sight glass.

For models PT10, 15 and 20, position the wheel so that one of the cam lobes remains submerged in the lubricant.

In the case where you neither withdraw the hose or one of the shoes, run the pump 5min a week.

### **7.2 STORING OF THE PUMP HOSES**

Hoses must be stored sheltered from light in a cool place. Their life is reduced after two years. The performance of hoses is reduced at the end of this expiry date due to the ageing of rubber.

## 8 TROUBLESHOOTING

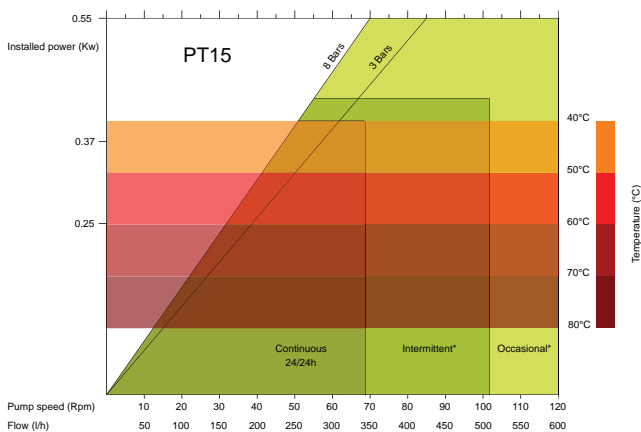
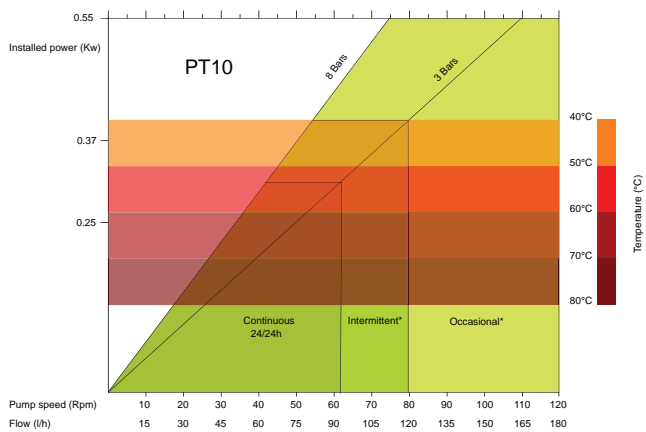
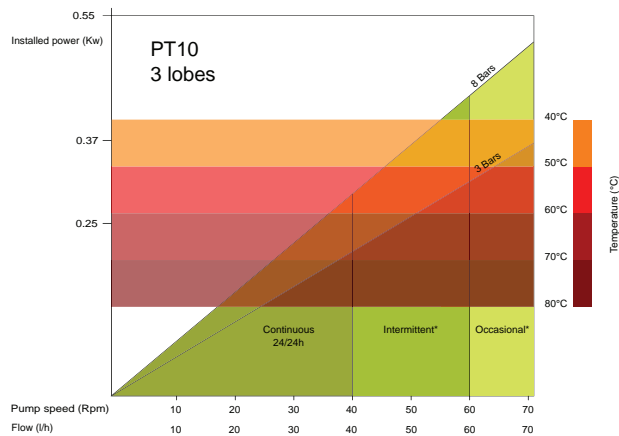
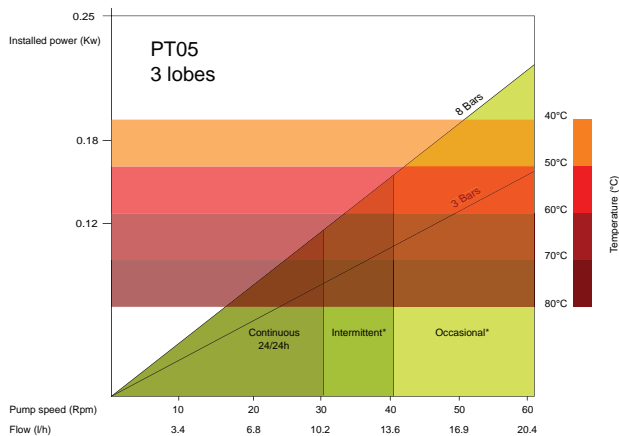
PROBLEM	POSSIBLE REASON	RESOLUTION
<b>The pump does not work</b>	No power supply.	Check that the pump power switch is on position "ON".
		Check the connection of the motor.
	The wheel of the pump stalls.	Check the fixing of the hose.
		Check that the discharge pressure is not too high.
		Check that the product hasn't sedimentated in the hose.
	The lubricant level detector has been operated.	Check the reason for which the level detector has been operated.  Check the correct functioning of this one. If the pump hose has bursted, undertake the replacement of the pump hose.
<b>Low capacity or pressure</b>	Not enough Shims under shoes.	Add the sufficient number of shims.
	Air leak at the inlet of the pump.	Check the tightening of the clamps of the pump and the sealing of the inlet piping.
	Valve closed or partly closed at inlet.	Fully open the valve.
	Wear of the hose.	Replace the hose.
	Product too viscous or too high pump speed in comparison with the product viscosity.	Ask for advice from your Tapflo distributor.
	Piping blocked or partly blocked at inlet.	Unblock piping at inlet and make sure of the good flow of the product.

PROBLEM	POSSIBLE REASON	CORRECTION
<b>Hose life is too short.</b>	Incompatibility of the hose with the pumped product.	Make sure the compatibility of the hose with your product and contact your Tapflo distributor.
	Discharge pressure too high.	Check that the discharge pressure of the pump does not exceed 15 bars (or 8 bars for PT10 to PT20). Check that the outlet piping is not blocked up and that all valves are opened.  Make sure that the security valve works correctly.  Make sure that the piping friction losses do not exceed the value requested for an appropriate functioning of the pump.
	Pump speed too high.	Reduce the pump speed.
	Wrong shimming.	Check the shimming.
	Too high temperature of the product.	Contact your Tapflo distributor.
<b>Lubricant leakage around the cover</b>	Deficient tightening of cover bolts.	Tighten cover bolts.
<b>Lubricant leakage in the leakage channel (underneath the gearbox flange)</b>	Wear of the shaft seal or the seal ring.	Replace these parts.
<b>Lubricant leakage at the sleeves</b>	Deficient tightening of clamps or spoilt sleeve (s).	Tighten clamps or replace sleeves.
<b>Pulsations in piping.</b>	Deficient fastening of the piping.	Fix piping correctly.
	Process creating important pulsations due to the product, the speed of the pump, discharge pressure or the sizing of piping.	Contact your Tapflo distributor.



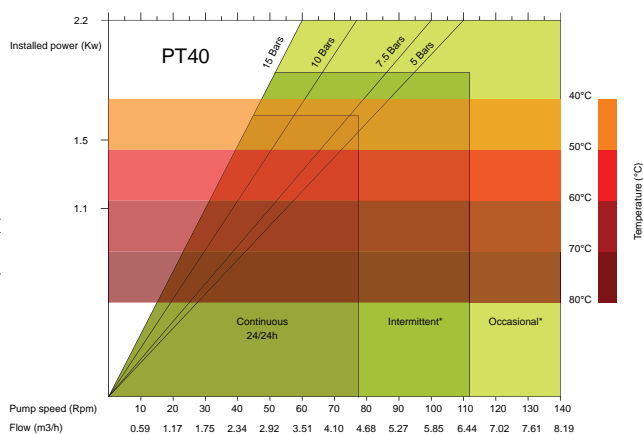
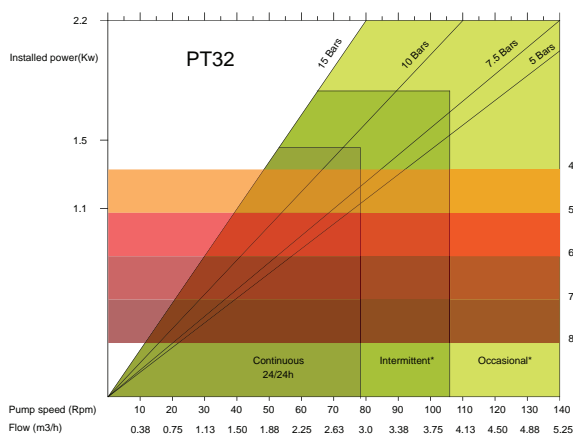
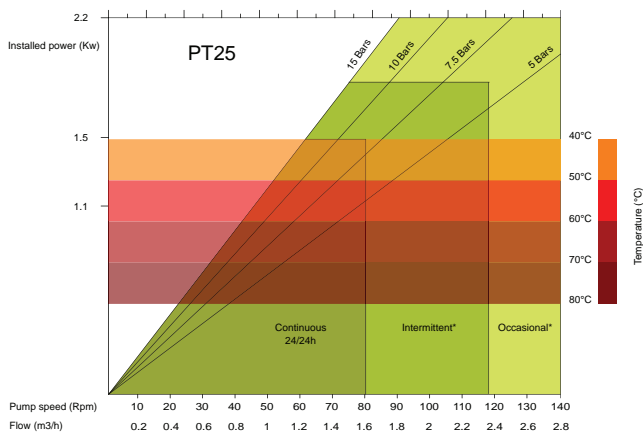
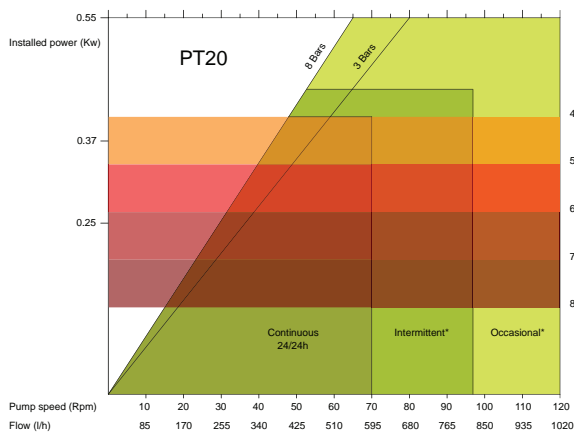
## 9 CHARACTERISTICS AND TECHNICAL SPECIFICATIONS

### 9.1 PERFORMANCE CURVES



## 9 CHARACTERISTICS AND TECHNICAL SPECIFICATIONS

### 9.1 PERFORMANCE CURVES

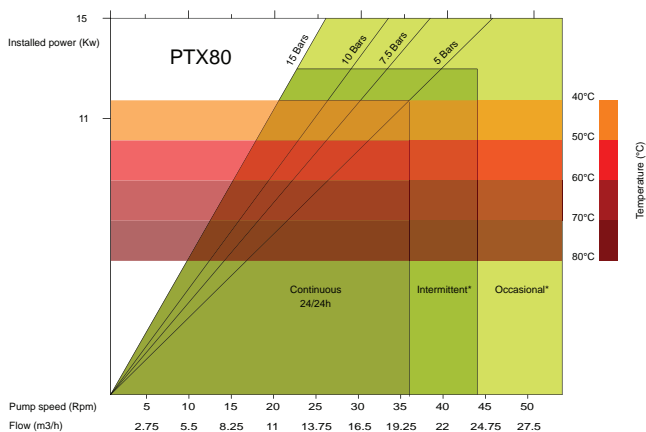
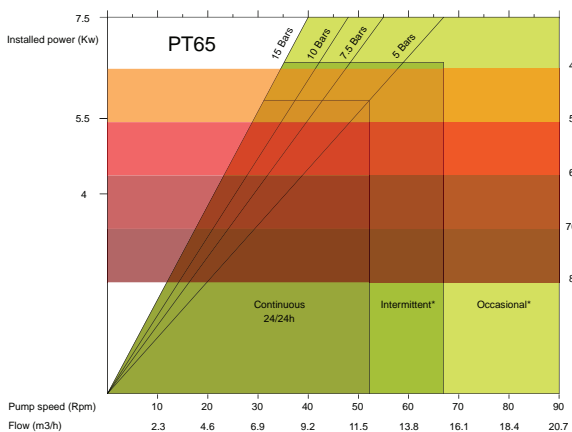
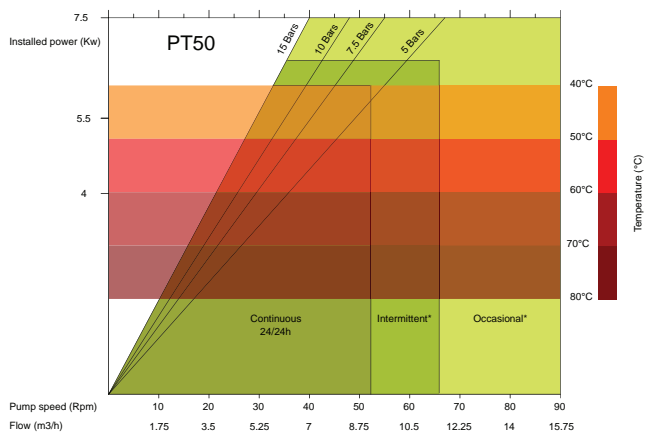
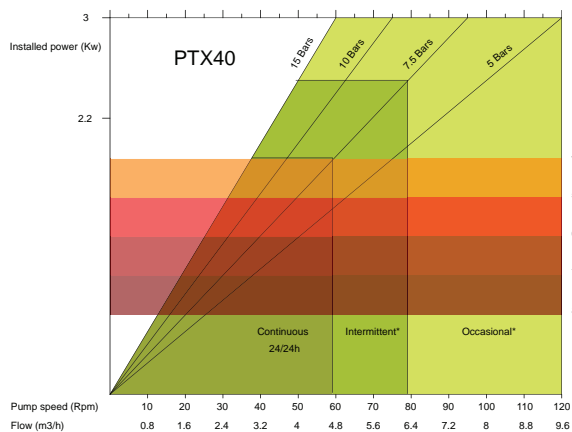


\* Intermittent use: Minimum of 1 hour stop after 2 hours use

\* Occasional use: Maximum 1 hour per day

## 9 CHARACTERISTICS AND TECHNICAL SPECIFICATIONS

### 9.1 PERFORMANCE CURVES

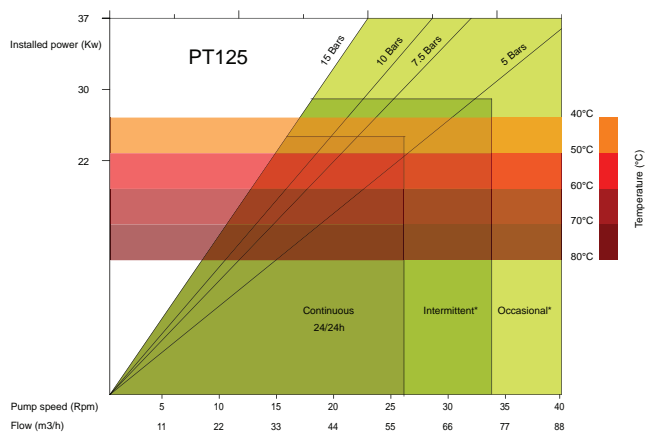
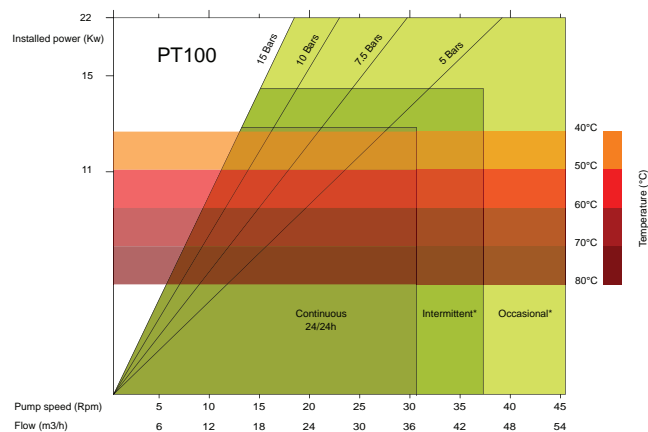
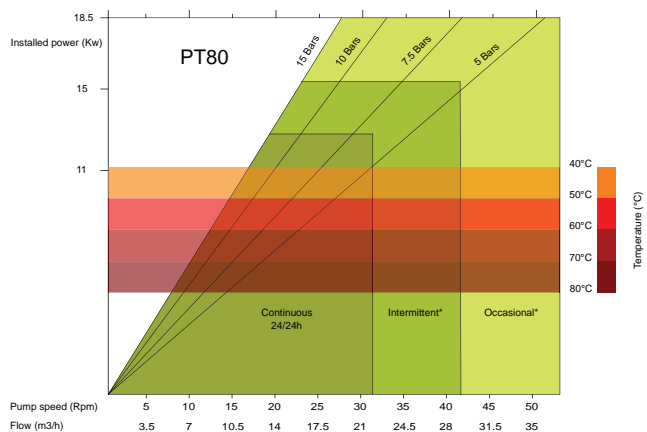


\* Intermittent use: Minimum of 1 hour stop after 2 hours use

\* Occasional use: Maximum 1 hour per day

## 9 CHARACTERISTICS AND TECHNICAL SPECIFICATIONS

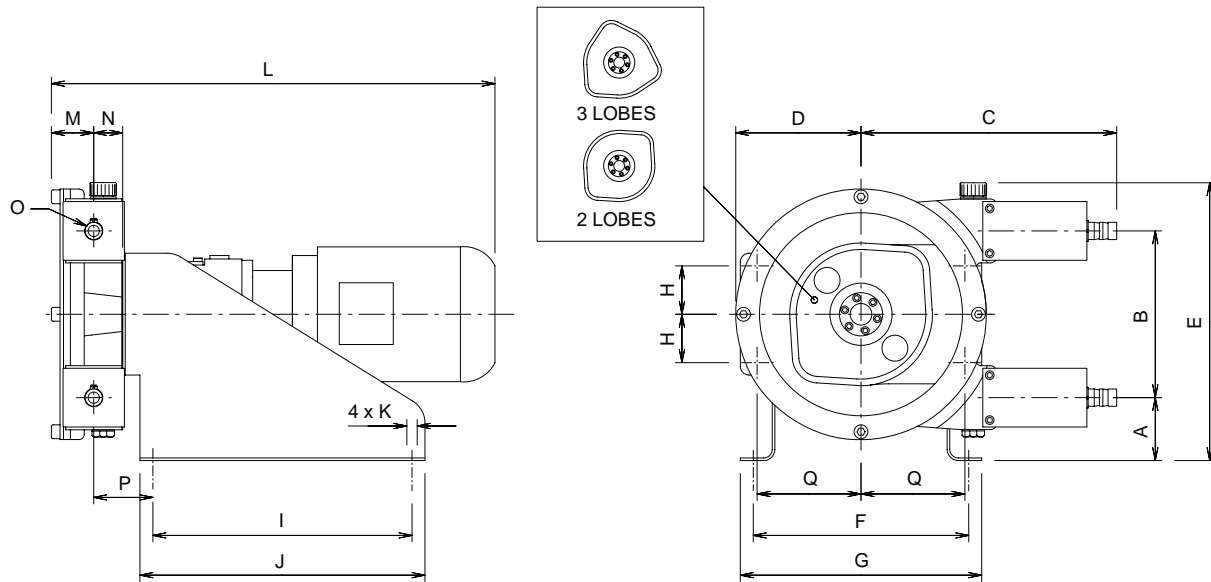
### 9.1 PERFORMANCE CURVES



\* Intermittent use: Minimum of 1 hour stop after 2 hours use  
\* Occasional use: Maximum 1 hour per day

## 9.2 TAPFLO PUMP DIMENSIONS PT10 to PT125 FLANGED GEAR MOTOR

### PUMPS PT10 to PT20

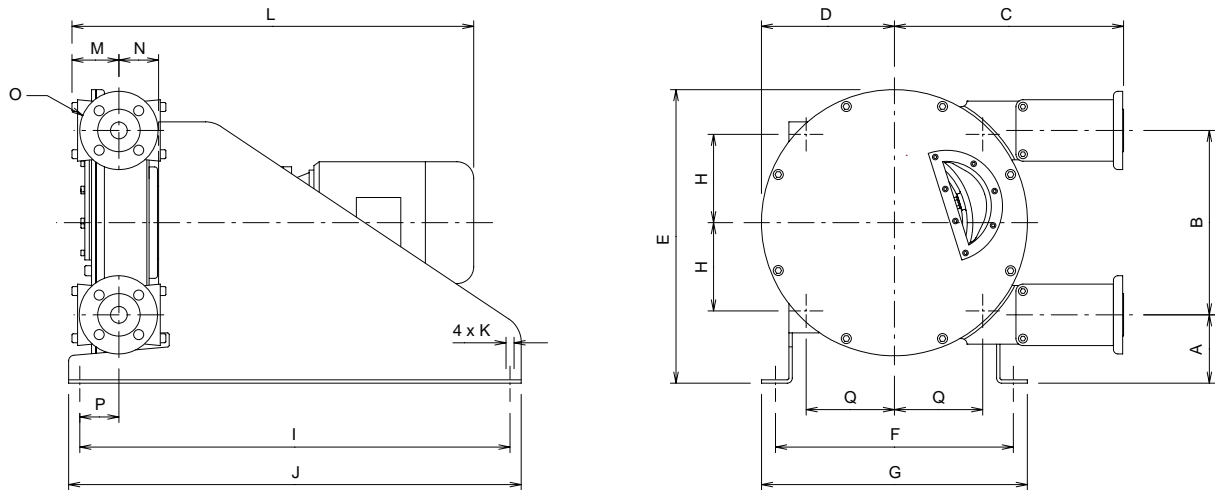


	A	B	C	D	E	F	G	H	I	J
PT10	103,5	115	226,5	95	256	220	240	33,5	260	280
PT15	73	193	296	145	322	250	280	51,75	300	330
PT20	73	193	296	145	322	250	280	51,75	300	330

	K	L	M	N	O	P	Q
PT10	4xø9		46,5	26	ø16 barb	56	81,25
PT15	4xø13		49	33,5	ø20 barb	68,8	124,75
PT20	4xø13		49	33,5	ø25 barb	68,5	124,75

## 9.2 TAPFLO PUMP DIMENSIONS PT10 to PT125 FLANGED GEAR MOTOR

### PUMPS PT25 to PT40

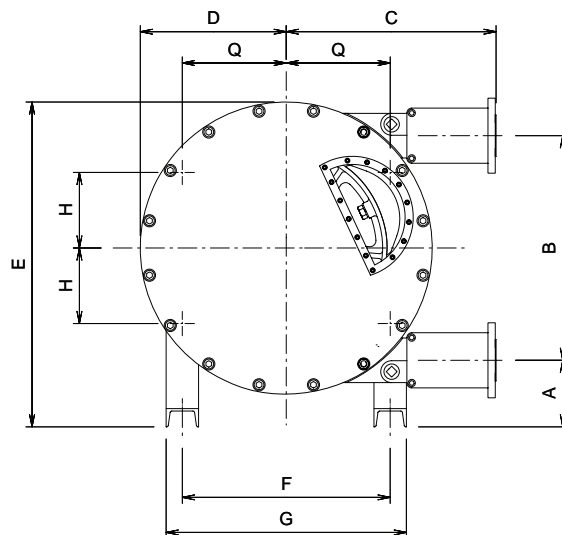
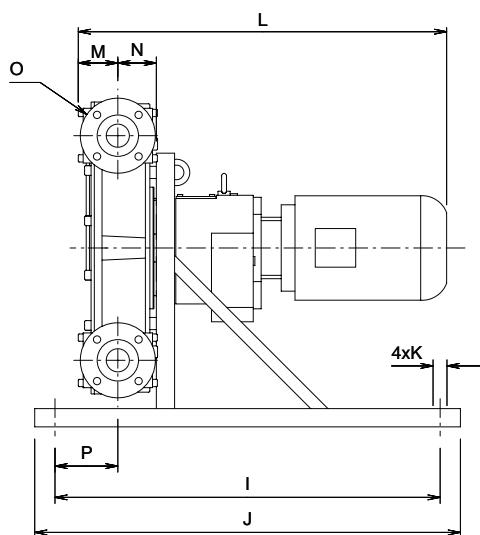


	A	B	C	D	E	F	G	H	I	J
PT25	95	262	355,5	190	416	311	351	110	560	600
PT32	122,5	330	435,5	238	525,5	426	476	157,75	770	810
PT40	122,5	330	435,5	238	525,5	426	476	157,75	770	810

	K	L	M	N	O	P	Q
PT25	4xø13		65	79	DN25 PN16	61	110
PT32	4xø13		83	71	DN32 PN16	109	157,75
PT40	4xø13		83	71	DN40 PN16	109	157,75

## 9.2 TAPFLO PUMP DIMENSIONS PT10 to PT125 FLANGED GEAR MOTOR

### PUMPS PTX40 to PT125



	A	B	C	D	E	F	G	H	I	J
PTX40	110	430	400	291	616	340	420	170	850	950
PT50	164,5	554	517,5	360	801,5	513	593	186,5	950	1050
PT65	164,5	554	517,5	360	801,5	513	593	186,5	950	1050
PTX80	154	748	604	473	1004	580	680	290	1150	1250
PT80	262	876	803	560	1320	690	830	345	1300	1400
PT100	300	1040	887	685	1680	820	960	410	1900	2000
PT125	263,5	1273	1038	785	1750	1000	1140	500	1900	2000

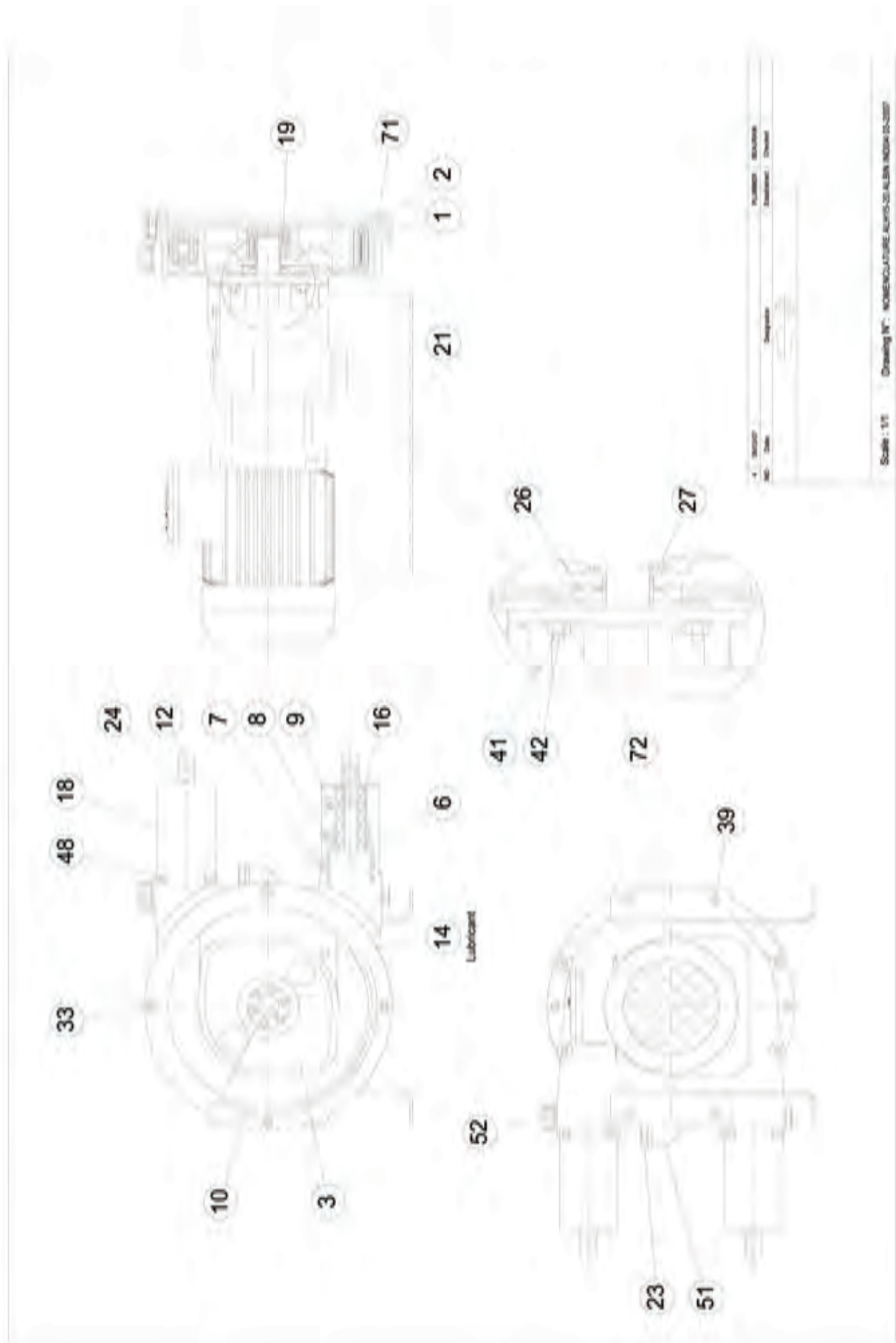
	K	L	M	N	O	P	Q
PTX40	4xø19		75	88	DN40 PN16	87	170
PT50	4xø19		94,5	98	DN50 PN16	152	256,5
PT65	4xø19		94,5	98	DN65 PN16	152	256,5
PTX80	4xø19		129	133	DN80 PN16	117	290
PT80	4xø27		140,5	145	DN80 PN16	210	345
PT100	4xø27		149	220	DN100 PN16	295	410
PT125	4xø27		300	232	DN125 PN16	660	500





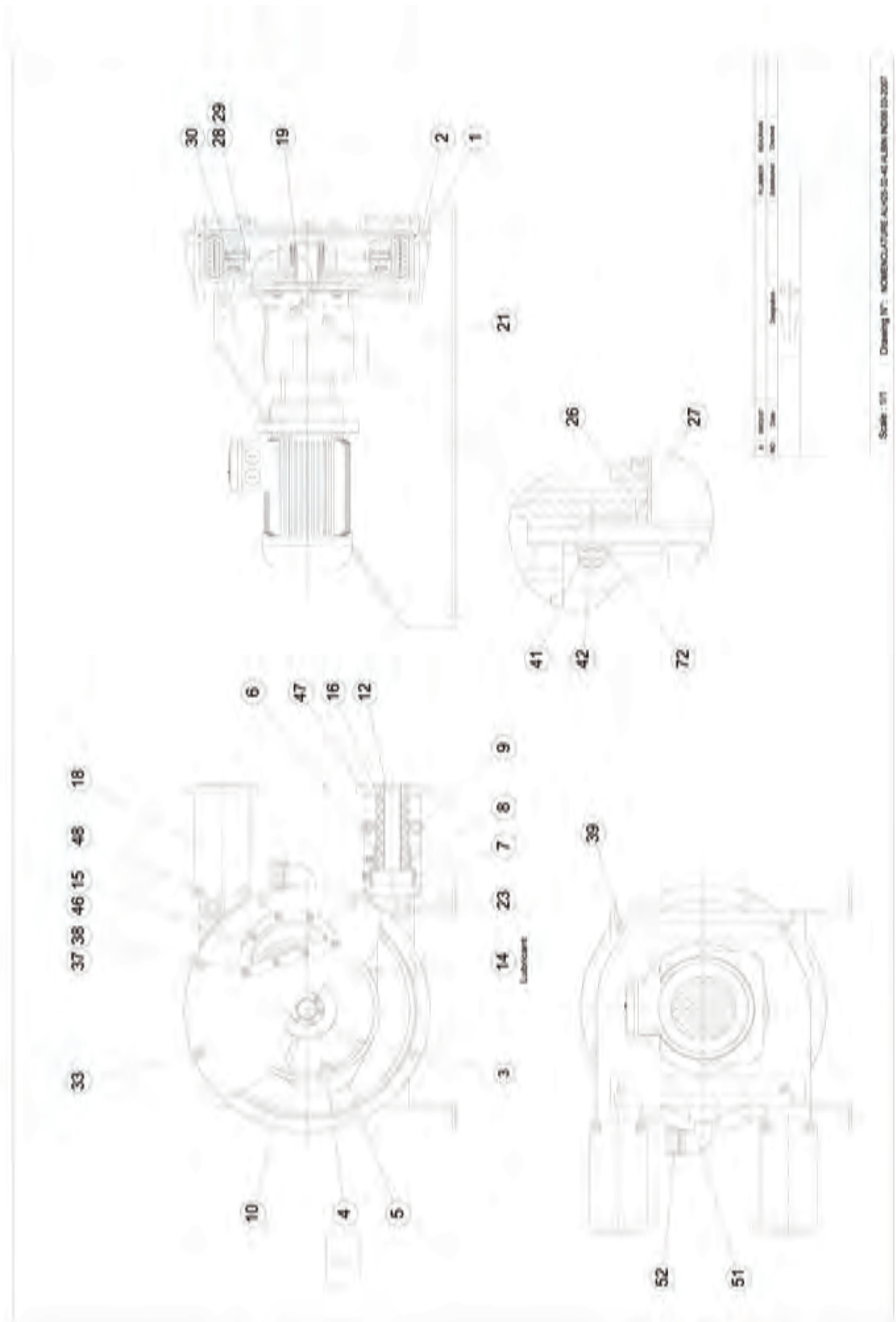
### 9.3 DIMENSIONAL DRAWING

#### DIMENSIONAL DRAWING PT15 to PT20

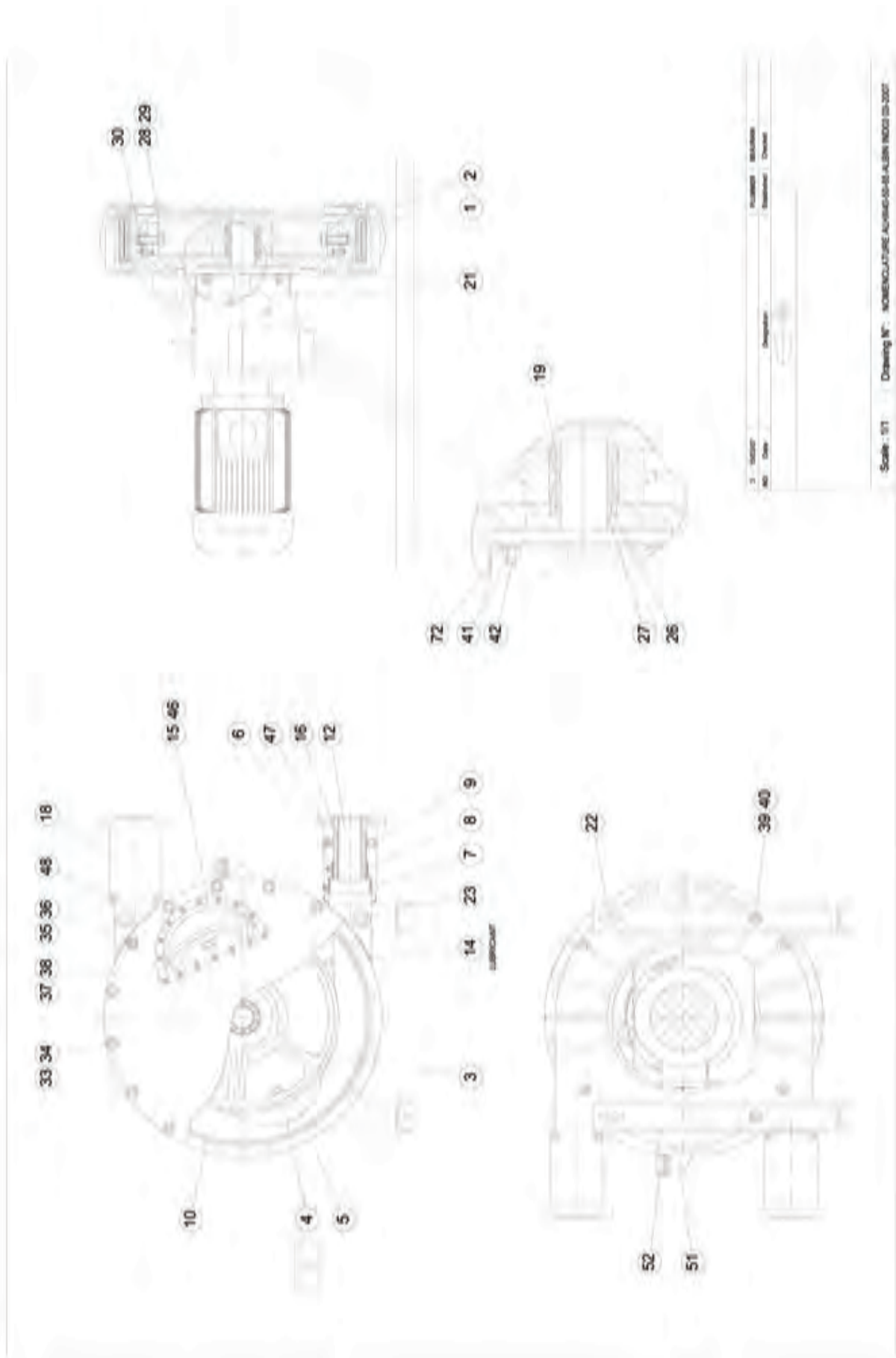


### 9.3 DIMENSIONAL DRAWING

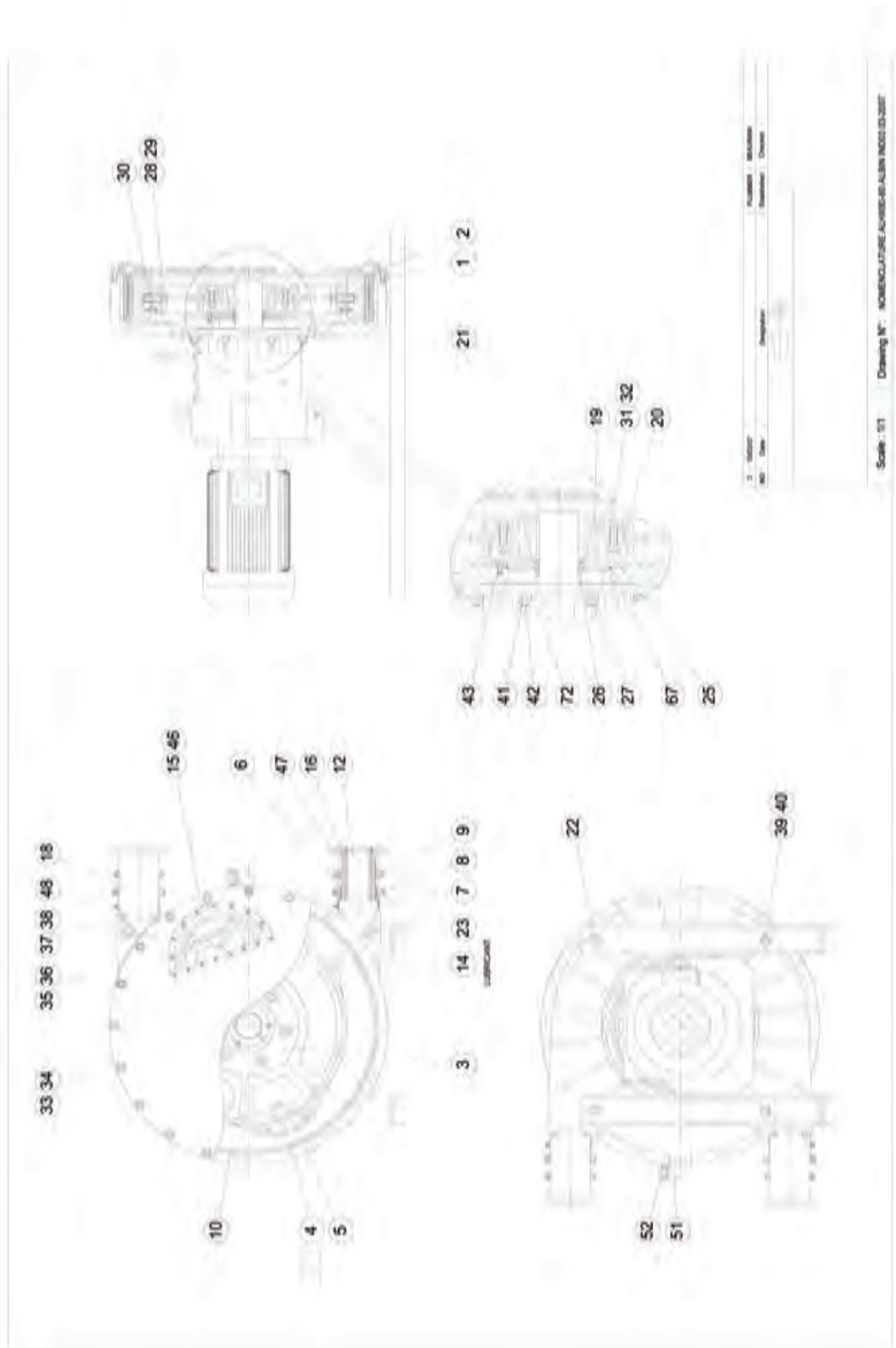
#### DIMENSIONAL DRAWING PT25 to PT40



DIMENSIONAL DRAWING PTX40 to PT65

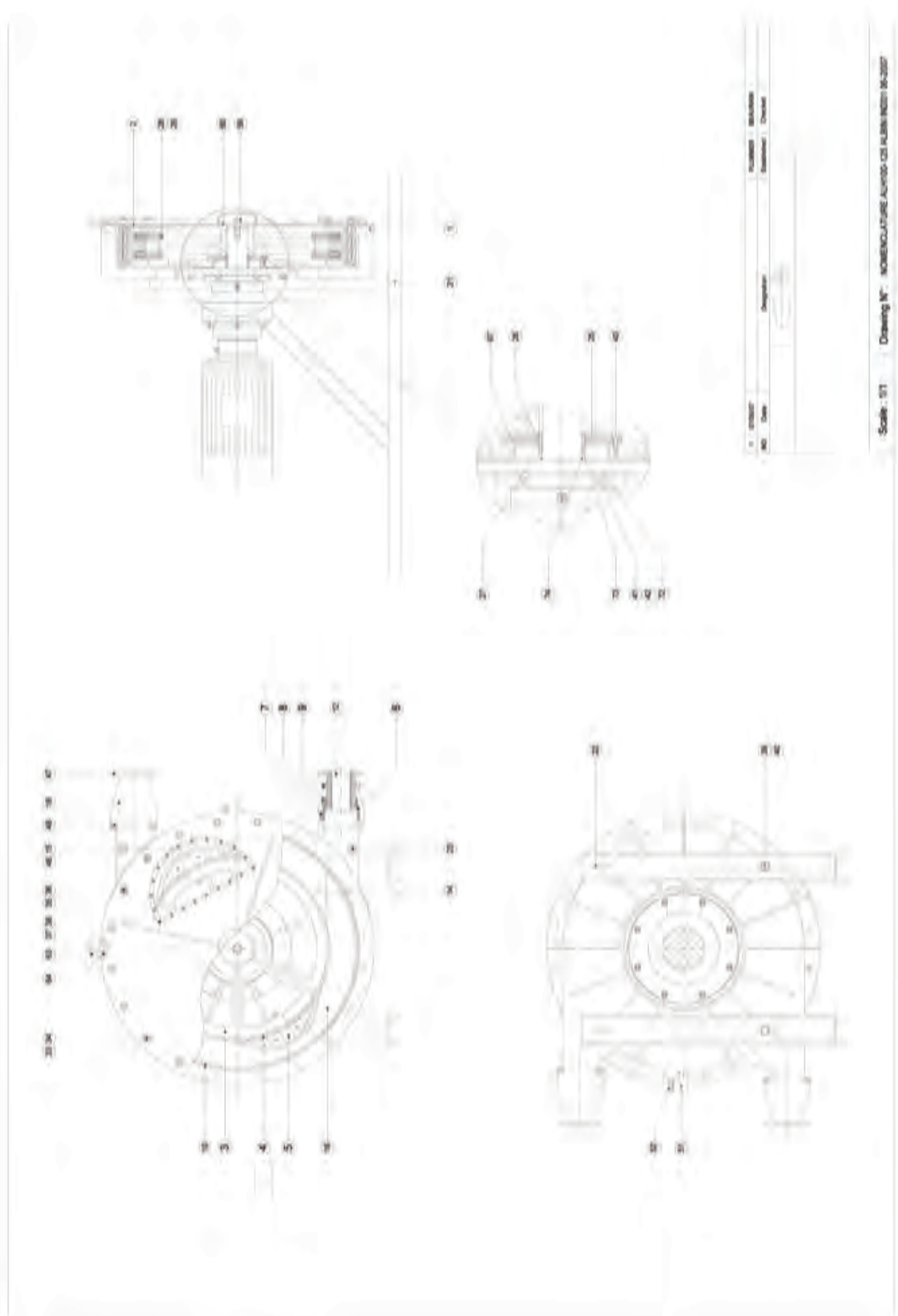


## DIMENSIONAL DRAWING PTX80 to PT80



### 9.3 DIMENSIONAL DRAWING

#### DIMENSIONAL DRAWING PT100 to PT125



## 9.4 SPARE PARTS LIST

REF.	DESIGNATION	PT 10	PT 15 - 20	PT 25 - 40	PTX 40 - PT 65	PTX 80	PT 80	PT 100	PT 125
1	CASING	X	X	X	X	X	X	X	X
2	COVER	X	X	X	X	X	X	X	X
3	WHEEL	X	X	X	X	X	X	X	X
4	SHIM			X	X	X	X	X	X
5	SHOE			X	X	X	X	X	X
6	SLEEVE	X	X	X	X	X	X	X	X
7	CLAMP SLEEVE	X	X	X	X	X	X	X	X
8	CLAMP ON SLEEVE / HOSE		X	X	X	X	X	X	X
9	CLAMP ON HOSE	X	X	X	X	X	X	X	X
10	COVER SEAL	X	X	X	X	X	X	X	X
12	INSERT	X	X	X	X	X	X	X	X
14	LUBRICANT	X	X	X	X	X	X	X	X
15	SIGHT GLASS			X	X	X	X	X	X
16	HOSE	X	X	X	X	X	X	X	X
18	BRACKET	X	X	X	X	X	X	X	X
19	HUB	X	X	X	X	X	X		
20	BOLT ON PLATE					X	X		
21	FRAME	X	X	X	X	X	X	X	X
22	LIFT RING					X	X	X	X
23	OIL PLUG	X	X	X	X	X	X	X	X
24	CIRCLIPS	X	X						
25	SEAL FLANGE					X	X	X	X
26	SHAFT SEAL	X	X	X	X	X	X	X	X
27	SEAL RING	X	X	X	X	X	X	X	X
28	SHOE BOLT			X	X	X	X	X	X
29	SHOE BOLT WASHER			X	X	X	X	X	X
30	SHOE CENTERING PIN			X	X	X			
31	BOLT ON PLATE SCREW					X	X		
32	NUT FOR REF 31					X	X		
33	COVER BOLT	X	X	X	X	X	X	X	X
34	COVER BOLT WASHER	X	X	X	X	X	X	X	X
35	COVER STUD			X	X	X	X	X	X
36	NUT FOR REF 35			X	X	X	X	X	X
37	SIGHT GLASS BOLT			X	X	X	X	X	X
38	WASHER FOR REF 37			X	X	X	X	X	X
39	FRAME BOLT	X	X	X	X	X	X	X	X
40	WASHER FOR REF 39	X	X	X	X	X	X	X	X
41	GEARBOX STUD	X	X	X	X	X	X	X	X
42	NUT FOR REF 41	X		X	X	X	X	X	X
43	SEAL FLANGE BOLT					X	X	X	X
46	SIGHT GLASS SEAL			X	X	X	X	X	X
47	INLET & OULET FLANGE			X	X	X	X	X	X
48	BRACKET BOLT	X	X	X	X	X	X	X	X
49	BRACKET BOLT WASHER								X
51	90° BEND		X	X	X	X	X	X	X
52	BREATHER PLUG	X	X	X	X	X	X	X	X
59	WHEEL BOLT							X	X
60	WHEEL BOLT WASHER							X	X
63	LIFT RING ON COVER						X	X	X
64	BOLT FOR REF 63						X	X	X
67	O RING FOR SEAL FLANGE					X	X	X	X
70	GEARBOX FLANGE						X		
71	COVER FLANGE		X						
72	WASHER for REF 41	X	X	X	X	X	X	X	X

## 9.5 TABLE OF LUBRICATION

The table indicates the quantity of lubricant necessary for every pump size. Employ only the Tapflo lubricant for Tapflo hose pumps. refer to §6.2 for lubricant emptying and filling.

PUMPS	PT 10	PT 15-20	PT 25	PT 32	PT 40	PTX 40
QUANTITY OF LUBRICANT (LITRES)	0,4	0,8	1,4	2,3	2,3	6

PUMPS	PT 50	PT 65	PTX 80	PT 80	PT 100	PT 125
QUANTITY OF LUBRICANT (LITRES)	9	9	20	40	60	100

## 9.6 SHOE SHIMMING TABLE

Refer to §6.5 to remove or add shims. The table below points out the necessary number of shims under every shoe according to the speed, pressure and the temperature of the product. Respect these indications scrupulously to optimize the hose life and to avoid a possible deterioration of the internal parts.

For temperatures over 60°C, withdraw one shim in comparison with the table below.

For viscosities over 3000cP or concentrations exceeding 300g / l, withdraw one shim in comparison with the table below.

For a suction lift higher than 4 metres, add one shim to the following figures.

**ATTENTION: Every shoe must include the same number of shims (0.5mm).**

PUMP TYPE PT 25			PUMP TYPE PT 32		
Pressure bar (psi)	Speed - Rpm	Number of shims	Pressure bar (psi)	Speed - Rpm	Number of shims
$\Delta P \leq 5$ (72,5)	0 to 40	0	$\Delta P \leq 5$ (72,5)	0 to 45	0
	40 to 160	0		40 to 140	0
$5$ (72,5) $\leq \Delta P \leq 7,5$ (108,75)	0 to 40	2	$5$ (72,5) $\leq \Delta P \leq 7,5$ (108,75)	0 to 40	2
	40 to 125	1		45 to 140	1
$7,5$ (108,75) $\leq \Delta P \leq 10$ (145)	0 to 40	3	$7,5$ (108,75) $\leq \Delta P \leq 10$ (145)	0 to 40	3
	40 to 105	2		45 to 110	2
$10$ (145) $\leq \Delta P \leq 15$ (217,5)	0 to 40	4	$10$ (145) $\leq \Delta P \leq 15$ (217,5)	0 to 40	4
	40 to 90	3		45 to 80	3

PUMP TYPE PT 40			PUMP TYPE PTX 40		
Pressure bar (psi)	Speed - Rpm	Number of shims	Pressure bar (psi)	Speed - Rpm	Number of shims
$\Delta P \leq 5$ (72,5)	0 to 40	0	$\Delta P \leq 5$ (72,5)	0 to 55	0
	40 to 160	0		40 to 120	0
$5$ (72,5) $\leq \Delta P \leq 7,5$ (108,75)	0 to 40	2	$5$ (72,5) $\leq \Delta P \leq 7,5$ (108,75)	0 to 55	2
	40 to 125	1		40 to 95	1
$7,5$ (108,75) $\leq \Delta P \leq 10$ (145)	0 to 40	3	$7,5$ (108,75) $\leq \Delta P \leq 10$ (145)	0 to 55	3
	40 to 105	2		40 to 75	2
$10$ (145) $\leq \Delta P \leq 15$ (217,5)	0 to 40	4	$10$ (145) $\leq \Delta P \leq 15$ (217,5)	0 to 55	4
	40 to 90	3		40 to 60	3

## 9.6 SHOE SHIMMING TABLE

PUMP TYPE PT 50		
Pressure bar (psi)	Speed - Rpm	Number of shims
$\Delta P \leq 5$ (72,5)	0 to 30	0
	30 to 100	0
$5$ (72,5) $\leq \Delta P \leq 7,5$ (108,75)	0 to 30	2
	30 to 65	1
$7,5$ (108,75) $\leq \Delta P \leq 10$ (145)	0 to 30	3
	30 to 50	2
$10$ (145) $\leq \Delta P \leq 15$ (217,5)	0 to 30	4
	30 to 42	3

PUMP TYPE PT 65		
Pressure bar (psi)	Speed - Rpm	Number of shims
$\Delta P \leq 5$ (72,5)	0 to 30	0
	30 to 90	0
$5$ (72,5) $\leq \Delta P \leq 7,5$ (108,75)	0 to 30	2
	30 to 55	1
$7,5$ (108,75) $\leq \Delta P \leq 10$ (145)	0 to 30	3
	30 to 47,5	2
$10$ (145) $\leq \Delta P \leq 15$ (217,5)	0 to 30	4
	30 to 40	3

PUMP TYPE PTX 80		
Pressure bar (psi)	Speed - Rpm	Number of shims
$\Delta P \leq 5$ (72,5)	0 to 25	0
	25 to 65	0
$5$ (72,5) $\leq \Delta P \leq 7,5$ (108,75)	0 to 25	2
	25 to 46	1
$7,5$ (108,75) $\leq \Delta P \leq 10$ (145)	0 to 25	3
	25 to 40	2
$10$ (145) $\leq \Delta P \leq 15$ (217,5)	0 to 25	4
	25 to 31	3

PUMP TYPE PT 80		
Pressure bar (psi)	Speed - Rpm	Number of shims
$\Delta P \leq 5$ (72,5)	0 to 20	0
	20 to 60	0
$5$ (72,5) $\leq \Delta P \leq 7,5$ (108,75)	0 to 20	2
	20 to 47	1
$7,5$ (108,75) $\leq \Delta P \leq 10$ (145)	0 to 20	3
	20 to 37	2
$10$ (145) $\leq \Delta P \leq 15$ (217,5)	0 to 20	4
	20 to 31	3

PUMP TYPE PT 100		
Pressure bar (psi)	Speed - Rpm	Number of shims
$\Delta P \leq 5$ (72,5)	0 to 15	0
	15 to 50	0
$5$ (72,5) $\leq \Delta P \leq 7,5$ (108,75)	0 to 15	2
	15 to 32,5	1
$7,5$ (108,75) $\leq \Delta P \leq 10$ (145)	0 to 15	3
	15 to 25	2
$10$ (145) $\leq \Delta P \leq 15$ (217,5)	0 to 15	4
	15 to 20	3

PUMP TYPE PT 125		
Pressure bar (psi)	Speed - Rpm	Number of shims
$\Delta P \leq 5$ (72,5)	0 to 10	0
	10 to 35	0
$5$ (72,5) $\leq \Delta P \leq 7,5$ (108,75)	0 to 10	2
	10 to 27,5	1
$7,5$ (108,75) $\leq \Delta P \leq 10$ (145)	0 to 10	3
	10 to 25	2
$10$ (145) $\leq \Delta P \leq 15$ (217,5)	0 to 10	4
	10 to 20	3



## 10. STATEMENT OF COMPLIANCE CE

### SECTION 1.0

**Description of the pump:**

**Exporter:** TAPFLO  
Filaregatan 4  
S-442 34 Kungälv, Sweden

**Type:** PT05 - PT10 - PT15 - PT20 - PT25 - PT32 - PT40 - PTX40 -  
PT50 - PT65 - PTX80 - PT80 - PT100 - PT125

**Serial N°:**

**Description:** Volumetric pump, hose pump.

### SECTION 2.0

**Applicable directives:**

**Machinery directives:** 89 / 392 / EEC  
89 / 655 / EEC  
91 / 368 / EEC  
93 / 44 / EEC

### SECTION 3.0

**Statement:**

We declare under our responsibility that the equipment defined in section 1.0 satisfies in all the directives of the European Community specified in section 2.0 and in the French work legislation.



Håkan Ekstrand

**Date:** 30 July 2007

## 11. SECURITY FORM

In compliance with Health & Safety Regulations you, the user are required to declare the substances that have been in contact with the product(s) you are returning to Tapflo or any of its subsidiaries or distributors. Failure to do so will cause delays in servicing the item or in issuing a response. Therefore, please complete this form to ensure that we have the information before receipt of the item(s) being returned.

**A FURTHER COPY MUST BE ATTACHED TO THE OUTSIDE OF THE PACKAGING CONTAINING THE ITEM(S).**

**You, the user, are responsible for cleaning and decontaminating the item(s) before returning them.**  
Please complete a separate decontamination certificate for each item returned.

**1.0** Company name .....  
Address .....  
Postal code .....  
City .....  
Country .....  
Telephone .....  
Fax number .....

**2.0** PUMP .....

**2.1** Serial number .....

**2.2** Has the pump been used? YES ☐ NO ☐

If yes, please complete all the following paragraphs. If no, please complete paragraph 5 only

### **3.0 Details of substances pumped**

**3.1** Chemical Names:

a) ..... b) ..... c) .....

**3.2** Precautions to be taken in handling these substances:

a) ..... b) ..... c).....

**3.3** Action to be taken in the event of human contact:

a) ..... b) ..... c).....

**3.4** Cleaning fluid to be used if residue of chemical is found during servicing;

**4.0** I hereby confirm that the only substances(s) that the equipment specified has pumped or come into contact with are those named, that the information given is correct, and the carrier has been informed if the consignment is of a hazardous nature

**5.0** Signed ..... Name .....

Position ..... Date .....

### **Remarks:**

Note: To assist us in our servicing please describe any fault condition you have witnessed.

.....  
.....

## NOTES

This image shows a full page of white paper with horizontal dotted lines. The lines are evenly spaced and run across the width of the page, providing a guide for handwriting or typing. There are no margins, text, or other markings on the page.



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