INSTRUCTIONS 209 e

Section	
Effective	B
Replaces	

Translation of the original instructions

Pumps
P15 - P25 - P40 - P60 - P100

Cast iron - Steel - Stainless steel

Standardized dual mechanical shaft seal

INSTALLATION

OPERATION

MAINTENANCE

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Your distributor :

Before installing, starting-up or maintaining the equipment, it is essential to follow the instructions in this document. Coverage by our guarantee is dependent on this.

PUMP…….. Refer to specific Instructions

1. OPERATION (refer to the cross-section drawings at the end of this document)

Shaft **501** drives the one-piece rotating parts **697**, by means of the set screws **617**. The counterparts **604** are integral – one with the shaft seal holder **601** by means of the ring seal **605** and the retainer **627**, and the other with the shaft seal abutment block (via the ring seal **621** and retainer **627**). Circulation of a buffer product between the two shaft seals prevents any contact of the pumped product with air (problem of crystallisation), and prevents any exterior leakage of the pumped product (dangerous product).

FLUID TIGHTNESS IS PROVIDED:

- on the shaft, by ring seals **613** of rotating parts **697**;
- by the contact surfaces between the one-piece rotating parts **697** and fixed counterparts **604**;
- between the immobile counterpart **604** and shaft seal holder **601** by ring seal **605**;
- between the immobile counterpart **604** and shaft seal abutment block **603** by ring seal **605**;
- between the shaft seal holder **601** and housing **725** by ring seals **602**;
- between the housing **725** and cover plate **401** by seal **727**.

Fluid tightness therefore depends on the condition of the friction faces and ring seals.

IMPORTANT! Before starting the pump, a buffer liquid compatible with the product(s) pumped should be pressurized in the shaft seal box to a pressure of at least 1 bar above the pump output pressure.

RINSING OF SHAFT SEAL

Two 1/4" BSP tapped orifices are provided for this purpose. In order to prevent any air pockets in the housing, the buffer product should enter via the lower orifice and should exit via the upper orifice.

Causes that can give rise to a leak at the shaft seals:

- the seal has been damaged during assembly (scratching on friction faces, etc);
- seal unsuited to product (chemical or mechanical attack against seals and counterparts) (abrasion);
- normal wear of the seal.

2. DISASSEMBLY AND REASSEMBLY

Before undertaking disassembly, make sure that the pump has been drained, and take the precautions necessary to prevent commencement of rotation. No accidental start-up should be possible.

2.1 Tools Required:

Flat spanners	Bushing
External circlips pliers	Extractor
Flat blade screwdriver	FACOM U-35L for example
Hex socket-head wrench	

2.2 Disassembly

(Refer to the cross-section drawings at the end of this documentation)

Uncouple the pump by removing the coupling sleeve.
Remove the shaft key **508**.
Carefully clean the end of the shaft, so as to remove any traces of paintwork, oxidization, splashes and seepage, etc.
Unscrew the screws **723** and remove the cover **705** without damaging the seal **707**.
Remove the circlips **537**.
Remove the washer **731**.
Using the bearing puller, remove the bearing **703**: position the claws behind the bearing, sliding them into the openings in the housing **725** and pressing against the shaft end **501**.
Remove the second washer **731**.
Unscrew the 3 screws **726**.
Slide the entire housing along the shaft.
Position the entire housing **725** vertically, with the shaft seals at the top.
Unscrew the 2 screws **729** and remove the 2 square nuts **730**.
Pull on the shaft seal holder **601** and remove it via the side opening in the housing **725**.
Withdraw the counterpart **604** and its ring seal **605** remaining on the shaft seal holder **601**.
Untighten the 6 screws **617**.
Remove the rotating parts **697** by sliding them along the shaft **501**.
Dismount the cover plate **401** of the pump casing.
Remove the 2nd counterpart **604** and its ring seal **605** from the cover plate **401**.
Remove the shaft seal abutment block **603** from the cover plate **401**.

2.3 **Reassembly** (refer to the cross-section drawings at the end of this documentation)

Check that the surfaces in contact with the counterparts **604** and rotating parts **697** are in good condition.

Check that the ring seals **605** and **613** are in good condition.

Mount the first counterpart **604** with its ring seal **605** in the shaft seal abutment block **603** of the cover plate **401**, checking that the ring seal **621** is in good condition and that the dowel pin is properly aligned.

Remount the cover plate **401**, without hitting the counterpart **604**.

Mount the second counterpart **604** with its ring seal **605** in the shaft seal holder **601**, fitting the dowel pin **627** into the notch in the counterpart. Use a clean cloth to clean the surfaces in contact with the shaft seal.

Check the condition of the 2 ring seals **602**, and replace them if necessary.

Insert the shaft seal holder **601** with its ring seals **602** through the side opening in the housing **725**.

Lightly lubricate the shaft **501**.

Move the rotating parts **697** with their ring seals **613** into position (back to back).

(Refer to the drawings [at the end of this document] for position measurements.

Then tighten the screws **617**.

Important:

- The assembly procedure described concerns shaft seals of length L1K (as per French standard NFE 29991).
- You can use shorter shaft seals; to do so, take account of the “X” dimensions during assembly (refer to the table below).

PUMP	SHAFT DIAMETER	L1K
P 15 – P 25	30	42,5
P 40 – P 60	35	42,5
P100	45	45

X = L1K = L
(L = Length of the mounted shaft seal)

Reassembly (continued)

Tighten the 2 bolts **729** with the 2 nuts **730**.
Check that the seals **727** and **716** are in good condition, and replace them if necessary.
Slide the entire housing assembly onto the shaft **501**, until it comes to abut the cover plate **401**.
Be careful not to hit the edge of the counterpart **604** of the shaft seal.

Tighten the 3 screws **726**.

Position the first washer **731** against the shoulder of the shaft **501**.

Fit the bearing **703** on the shaft by hand, and then push it on until it comes to bear against the washer **731**, using an appropriate bushing **739**.

Under no circumstances should you push the bearing onto the shaft without holding the shaft.

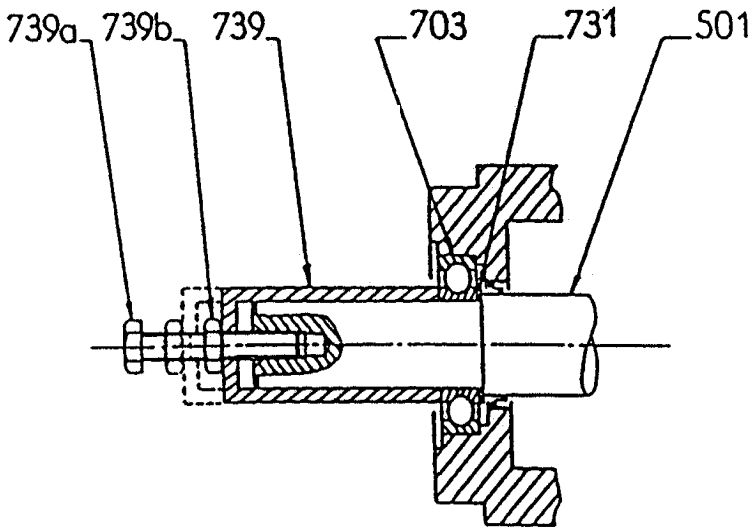
FAILURE TO FOLLOW THIS INSTRUCTION CAN CAUSE SERIOUS DAMAGE TO THE INTERIOR OF THE PUMP.

Position the second washer **731** against the bearing.

Fit the circlips **537**.
Clean the surfaces of the cover **705** and of the housing **725** with a clean cloth.
Check the lip seal **707**, and replace it if necessary (be careful to ensure it is positioned properly when mounting it).

Position the cover **705** with its lip seal **707**, after having applied sealing compound to the contact surface between the cover **705** and housing **725**.

Tighten the 4 screws **723**.



3. RUNNING MAINTENANCE

The mechanical shaft seals only require very little running maintenance, but you should follow the instructions specific to the particular model in each case.

4. SPARE PARTS LIST

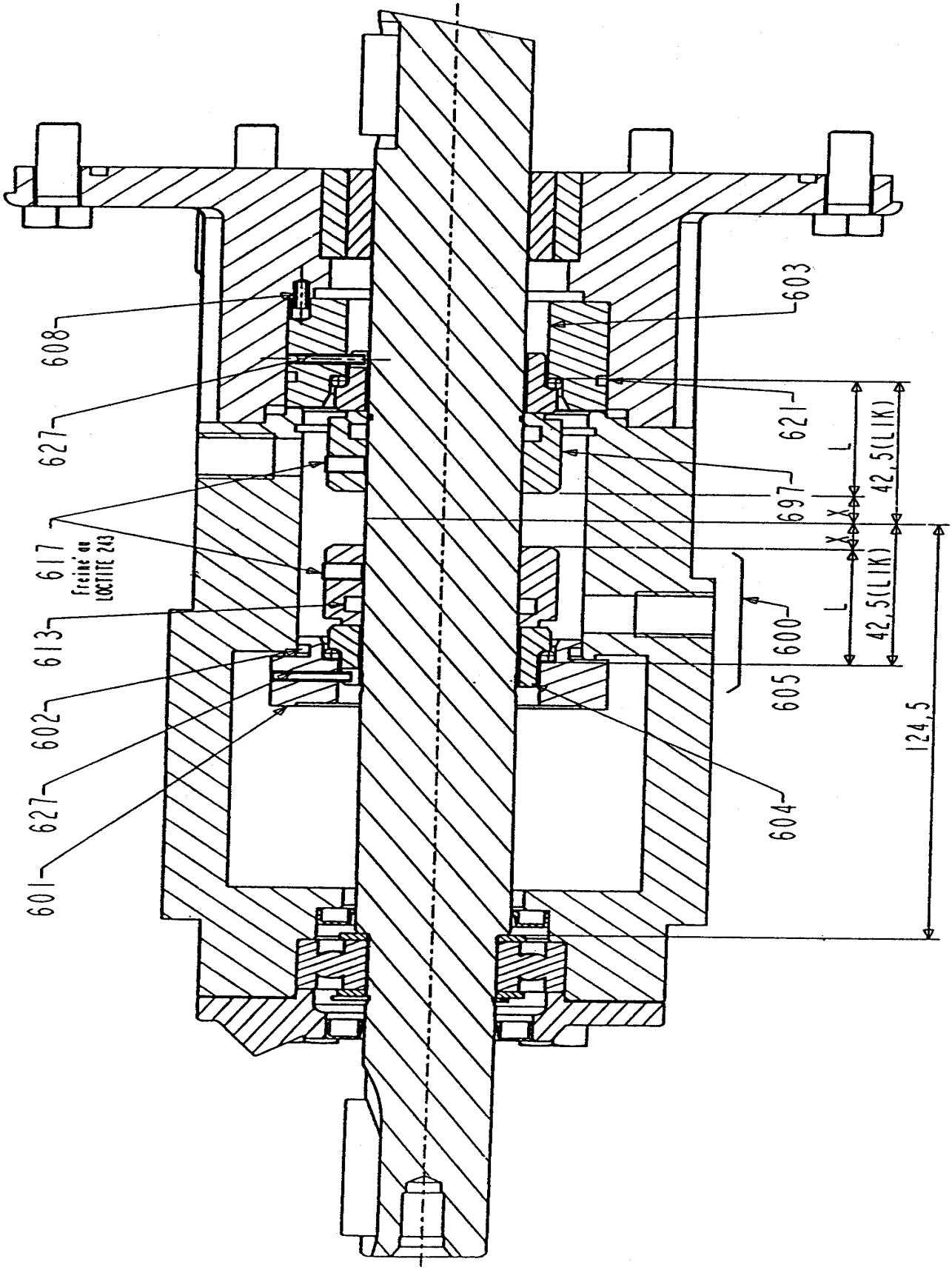
◆ = Assemblies or individual components that can be supplied.

Ref. No.	Num.	DESCRIPTION
◆ 600	2	COMPLETE SHAFT SEAL ASSEMBLY
◆ 699	2	SET OF RING SEALS (605 + 613)
◆ 609	1	COMPLETE DUAL SHAFT SEAL HOLDER
511	1	Circlips (see 715)
601	1	Dual shaft seal holder
602	1	Seal, dual shaft seal holder (see 715)
603	1	Abutment block, second shaft seal
608	1	Retainer, second shaft seal
621	1	Ring seal, shaft seal abutment block
627	1	Retainer, shaft seal
729	2	Screw, shaft seal holder
730	2	Nut, shaft seal holder
◆ 715	1	SET OF SEALS AND MISCELLANEOUS COMPONENTS (511 + 537 + 602 + 621 + 707 + 716 + 727)
◆ 720	1	COMPLETE HOUSING ASSEMBLY
703	1	Bearing, housing (see 704)
716	1	Lip seal (see 715)
725	1	Housing
726	3	Screw, housing
727	1	Seal, housing (see 715)
731	2	Washer, bearing (see 704)
◆ 740	1	COMPLETE HOUSING COVER
705	1	Cover, housing
707	1	Lip seal (see 715)
723	4	Screw, cover
◆ 704	1	BEARING KIT
537	1	Circlips
703	1	Bearing, housing
731	2	Washer, bearing

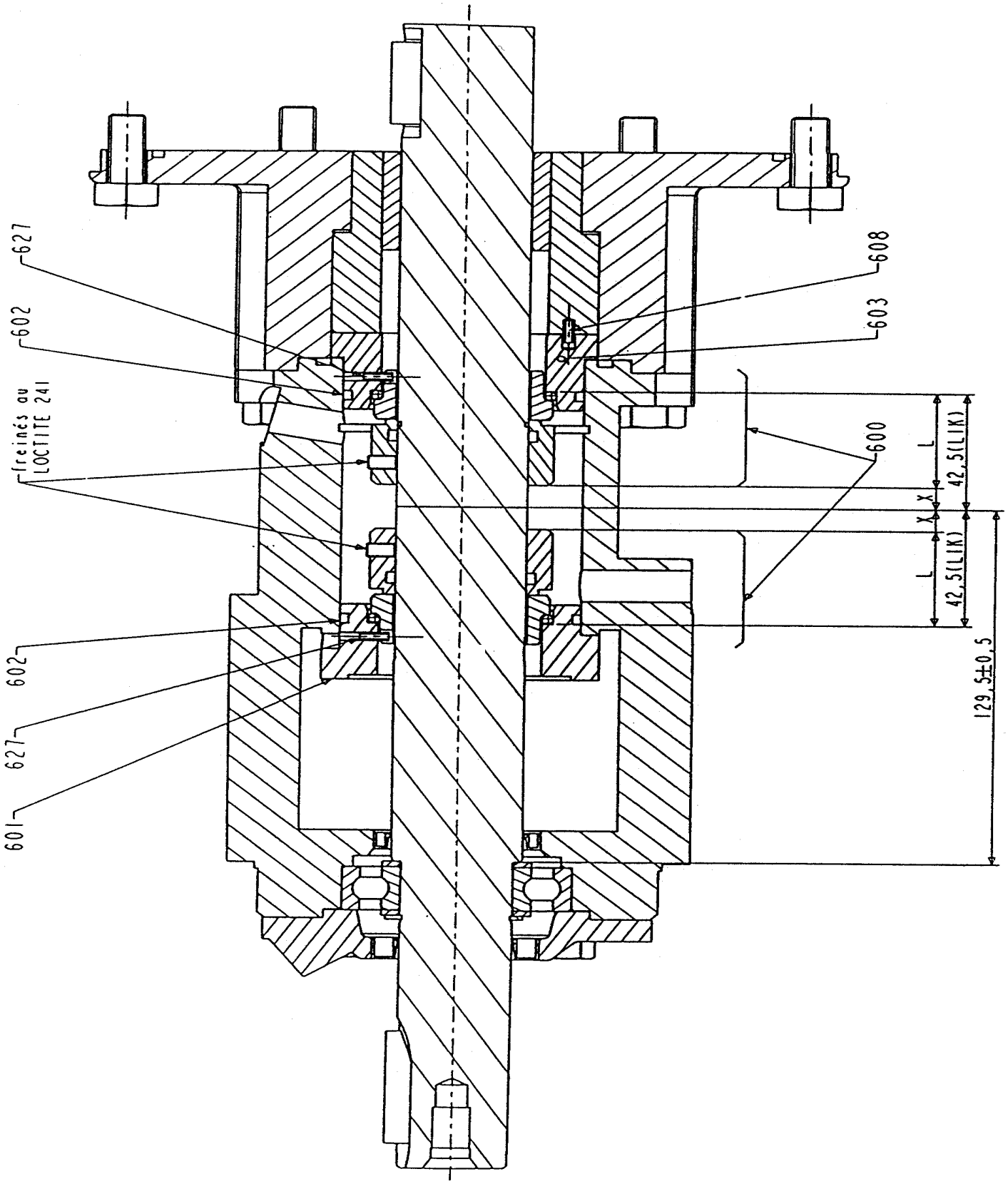
When ordering spare parts, please state the following :
- TYPE and REGISTRATION No. of the pump (marked on the data plate on each pump)
- Instructions 209
- REF. and DESCRIPTION of the desired parts (assembly or individual components preceded by (◆)

5. CROSS-SECTION DRAWINGS

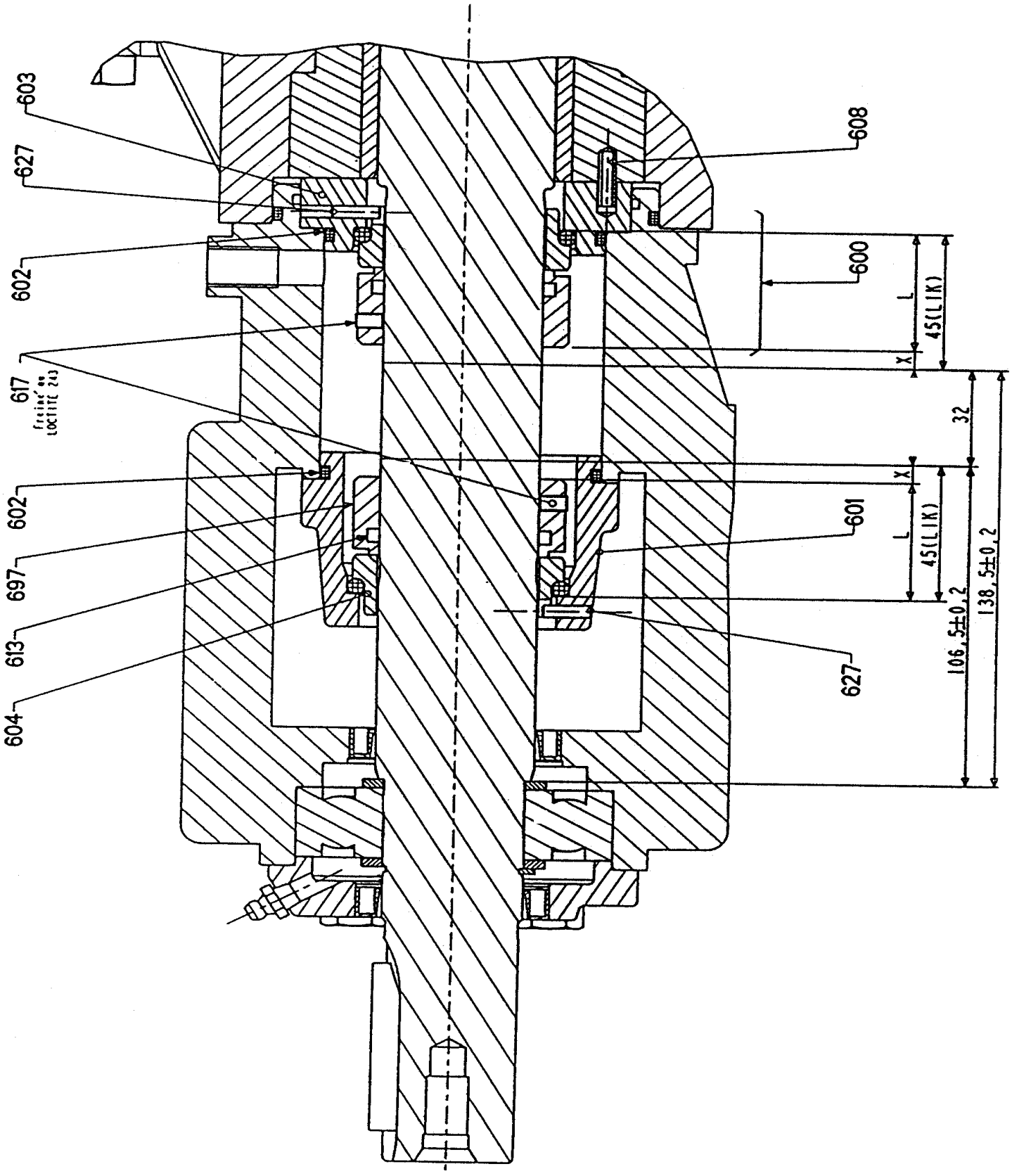
P 25 Pump



P40 - P60 Pumps



P100 Pump


603
627
602
617
602
697
613
604
608
600
601
627
L
45(L1K)
X
32
106,5±0,2
138,5±0,2