

**INSTRUCTIONS 1010-P00 (En)**

Section	1010
Effective	April 2025
Replaces	September 2020

Original instructions

CC10-24 pump

Construction A



INSTALLATION

OPERATION

MAINTENANCE

EC CERTIFICATE OF CONFORMITY :

The EC Certificate of Conformity (paper version) is systematically attached to the equipment when shipped.

WARRANTY :

CC10 Series pumps are covered 36 months by warranty within the limits mentioned in our General Sales Conditions. In case of a use other than that mentioned in the Instructions manual, and without preliminary agreement of MOUVEX, warranty will be canceled.



Z.I. La Plaine des Isles - F 89000 AUXERRE - FRANCE
Tel. : +33 (0)3.86.49.86.30 - Fax : +33 (0)3.86.49.87.17
contact.mouvex@psgdover.com - www.mouvex.com

Your distributor :

TANK TRUCK PUMP

SAFETY, STORAGE, INSTALLATION AND MAINTENANCE INSTRUCTIONS

MODEL : CC10-24 A

Definition of safety symbols



This is a SAFETY ALERT SYMBOL.

When you see this symbol on the product, or in the manual, look for one of the following signal words and be alert to the potential for personal injury, death or major property damage.



DANGER

Warns of hazards that **WILL** cause serious personal injury, death or major property damage.



WARNING

Warns of hazards that **CAN** cause serious personal injury, death or major property damage.



CAUTION

Warns of hazards that **CAN** cause personal injury or property damage.

NOTICE

Indicates special instructions which are very important and must be followed.

REMARKS :

CC10 pumps **MUST** be installed in systems designed by qualified personnel. The installation **MUST** be in compliance with local standards, national regulations and rules of safety.

This manual is designed to permit installation and commissioning of CC10 pumps and MUST accompany the pump.

Maintenance of CC10 pumps must ONLY be carried out by qualified technicians. This maintenance must meet local and national standards as well as all safety regulations. Read this manual, including all instructions and warnings, in full BEFORE any use of CC10 pumps.

Do not remove the warning and use label stickers that are found on the CC10 pumps.

TABLE OF CONTENTS

Page

1. OPERATING LIMITS	3
2. INSTALLATION	4
2.1 Choice of pump	4
2.2 Direction of rotation	4
2.3 Pump installation	4
2.4 Pipe diameter	4
2.5 Piping assembly	4
3. DIRECT DRIVE BY MOTOR	5
3.1 Installation of units	5
3.2 Alignment of motor/pump and reduction gearbox/pump shafts	5
3.3 Electric motors	6
3.4 Diesel engines drive	6
4. DRIVE BY POWER TAKE OFF	6
5. USE	7
5.1 Pumping hot liquids	7
5.2 Pump full of liquid when stopped	7
5.3 Starting-up the pump	7
5.4 Running without liquid in the pump	7
5.5 Using of the pump with a valve closed on the discharge line	7
5.6 Shutting down the pump	7
5.7 Protection from frost	8
5.8 Restarting	8
6. NECESSARY TOOLS	8
7. DISMANTLING - REASSEMBLY	9
7.1 Dismantling on side opposite to drive system	9
7.2 Dismantling on drive side	10
7.3 Reassembly	10
7.4 Assembly of flange for hydraulic trunk	10
8. CHANGING THE VANES	10
9. CHANGING SHAFT SEAL	11
10. BYPASS	12
10.1 Mechanical bypass	12
10.2 Pneumatic bypass without spring	13
10.3 Pneumatic bypass with spring	13
11. MAINTENANCE	15
11.1 Lubrication	15
11.2 Inspection of the vanes	15
11.3 Cleaning the filter	15
11.4 Cleaning the cover holes	15
12. TROUBLESHOOTING	15
12.1 Abnormal noise	15
12.2 Leaking seal	15
12.3 Inadequate output	15
13. STORAGE	16
13.1 Short duration (≤ 1 month)	16
13.2 Long duration (> 1 month)	16
14. SCRAPPING	16
15. FACTORY RETURN	16
16. OVERALL DIMENSIONS	17

1. OPERATING LIMITS

Speed range (rpm)	Max flow rate (m ³ /h)	Max pressure (bar)	Required power (Kw)
450 ▶ 1500 ⁽¹⁾	42	5	8,2
450 ▶ 920	24	10	8,2
450 ▶ 1000	26	10	9
450 ▶ 750	19	10	6,5

⁽¹⁾ Speed limited to 1000 rpm for Atex certification (see Instructions NT 1682)

Viscosity : < 40 cSt

Temperature range allowed : -20°C to +80°C

Products authorised : Clean petroleum product

Other products : Contact us

The pumps CC10 with mechanical or pneumatic with spring bypass are delivered with spring (5 or 10 bar) depending on the application.

When requested, they can be delivered with a 10 bar spring adjusted at the maximum pressure of use.

2. INSTALLATION

2.1 Choice of pump

To obtain the service expected from a MOUVEX pump, regarding both performance and longevity, it is vital that the type of pump, its speed and the materials used for its construction are determined as a function of the pump output, its installation and operating conditions.

The association of the pump CC10-24 with a gas separator (EC type from SATAM or equivalent) is prohibited because it potentially generates pulses. In this case, it is necessary to favor the use of a CC8-50 or CC8-65 which will give complete satisfaction.

You can contact our Technical Services at any time to ask for the information you require.

2.2 Direction of rotation

The pump rotates in one direction only. This is indicated by an arrow on the pump housing. However, the pump has both of shaft-ends led out (one is protected by a removable cover which, if necessary, can be removed and mounted on the opposite shaft) and must be driven through one the other depending on the direction of rotation of the power take-off.

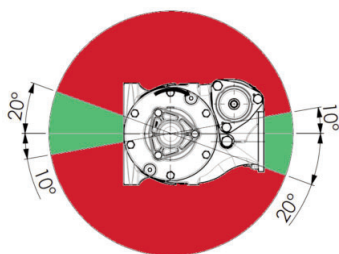
Because the pump rotates in one direction only, the positions of the suction and discharge ports are not be reversed (see arrows on housing). The safety bypass has not to be reversed.

2.3 Pump installation

- Do not mount the pump with the shaft in a vertical position
- Do not mount the pump with the ports facing downward.

Maximum angles :

- 20° if the bypass is on top
- 10° if the bypass is on bottom



It is essential to protect the pump against possible foreign matter by connecting a filter to the suction pipe (see Instructions 1011-G00 FILTERS PF).

2.4 Pipe diameter

In order to achieve the best usage conditions, it is important to take the following recommendations into account when it comes to pipe dimensions :

- The pipe diameter should be chosen as a function of pipe length and the flow rate and viscosity of the pumped liquid, so that any head loss remains within the permissible limits for the motor/pump unit. Therefore it is difficult to give general and precise directions. However, it is never a disadvantage to over-dimension pipe diameters, especially for the section on the inlet side.

- In the case of thin liquids and the piping on the discharge side, one can generally allow a diameter equal to that of the ports on the pump and a larger diameter for the piping on the inlet side, if the value for the inlet power of the pump is negative or especially high.

Our Technical Services are always available to provide you with precise data if you give them accurate information or, better still, the installation plans.


2.5 Piping assembly

In order to achieve the best usage conditions, it is important to take the following recommendations into account when it comes to fitting pipes :

- The location of the pump in the transfer or recycling circuit should always be determined so as to reduce the height and length of the piping as much as possible.
- Wherever possible, siphons and reverse slopes should be avoided in the inlet piping.
- Particular care needs to be taken with the sealing on the inlet side to prevent air entering.
- Pipe elbows must always have a large radius (more than 3 times the diameter of the pipes) and must not be mounted too close to the pump flanges (min. recommended distance : 10 times the diameter of the pipes), on both the inlet and discharge sides.
- The pipes are supported and aligned with the pump in such a way as to avoid putting stress on the pump flanges. Non-compliance with this instruction can lead to deformation of pump parts, misalignment of bearings and accelerated material wear, even causing parts to break.
- For ease of adjustment and checking, it is recommended that pressure tapping ports for pressure gauges/vacuum gauges be provided as close as possible to the pump's inlet ports (preferably, at a distance of less than 5 times the diameter of the piping).
- If the suction head is especially high or if you want to prevent the pipes emptying at shutdown, you can install a foot valve. It should have a large diameter so as not to generate additional head loss.
- We recommend placing valves as close as possible to the pump ports to avoid having to drain the entire system each time maintenance is carried out. These valves should have the same diameter as the pipes and preferably by full bore models.
- Before installing new pipes or tanks, be sure to clean them very carefully to remove any solder, rust, etc. which could be carried along with the water and cause excessive pump wear.
- The pipes should be designed to allow for thermal expansion/contraction (the use of flexible hoses or expansion loops is recommended).
- If the liquid may freeze or solidify, prepare for draining the piping by installing drain taps at the low points and air vents at the high points.

3. DIRECT DRIVE BY MOTOR

3.1 Installation of units

	WARNING BE CAREFUL WITH THE WEIGHT OF THE PARTS WHEN THEY ARE BEING REMOVED.
<p>The weight of the parts can be dangerous and may provoke bodily injuries or material damages.</p>	


The correct seating of the pump is vital for its efficient operation and its longevity. The base must be flat, level and sufficiently resistant to absorb the stresses caused by the motor-driven pump without deformation (if it is made of concrete, it must comply with standard BAEL 91).


In the case where the unit is fastened by anchor lugs or bolts, it must be carefully wedged to prevent any deformation of the chassis when tightening the bolts. Deformation of the chassis will cause stress prejudicial to the pump and the drive device and put the coupling out of true alignment, thereby causing vibrations, noise and premature wear. Care must be taken so that the chassis is clear of the ground, apart from the base plates.

If the chassis is a one-piece unit in doubled plate, it is recommended that a horizontal clearance of about 50 cm be left between one section of the chassis and the other to allow access for fastening the nuts on the pump, reduction gearbox and motor. In all cases, the clearance around the motor-driven pump should all room for demounting the pump (refer to § OVERALL DIMENSIONS).

The chassis is equipped with a ground connection that must be used to protect people and equipment.

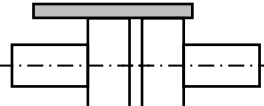
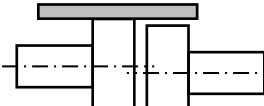
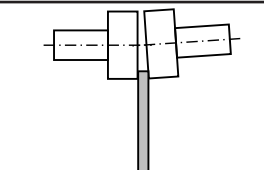
3.2 Alignment of motor/pump and reduction gearbox/pump shafts

	WARNING OPERATION WITHOUT THE SHAFT PROTECTOR CAN CAUSE SERIOUS PERSONAL INJURY, MAJOR PROPERTY DAMAGE OR DEATH.
<p>Do not operate without guard in place.</p>	

	WARNING DISCONNECT THE ELECTRICITY SUPPLY BEFORE ANY MAINTENANCE OPERATION.
<p>Dangerous voltage. Can cause injury and death.</p>	

The motor and pump shafts are accurately aligned at the factory before dispatch, but they should be checked carefully when received at the site and realigned if necessary. To align the coupling and the shaft, use a straight-edge to check the concentricity and thickness gauges for the angular misalignment.

The 3 figures below show the procedure in detail and the admissible deviations :

<i>Carry out the control at four points : at the top - at the bottom - left - right</i>	
	<p><i>Correct</i></p>
	<p><i>Bad alignment</i></p>
	<p><i>Angular fault (maximum : 1°)</i></p>

Controlling the alignment at each stage of the installation is important to be sure that none of the following procedures has generated stresses on the unit or the pump :

- after fastening on the foundations.
- after fastening the pipes.
- after the pump has been operated at the normal operating temperature.



Reminder :

You cannot rely on the coupling to compensate for misalignment.

NEVER START A UNIT IF THE COUPLING ALIGNMENT IS INCORRECT. THIS WILL RENDER OUR WARRANTY INVALID.

3. DIRECT DRIVE BY MOTOR (continued)



3.3 Electric motors



	WARNING	DISCONNECT THE ELECTRICITY SUPPLY BEFORE ANY MAINTENANCE OPERATION.
		
Dangerous voltage. Can cause injury and death.		



Check that the supply voltage matches the indications on the motor rating plate.

Comply with the wiring diagram, make sure the wires are rated for the power and take care with the contacts, which must be thoroughly tightened. The motors must be protected by appropriate circuit breakers and fuses. Connect the regulatory ground connections.

Check the direction of rotation.

	WARNING	TAKE ALL NECESSARY MEASURES TO RENDER ANY START-UP, EVEN ACCIDENTAL, OF THE PUMP DURING THE WORK IMPOSSIBLE.
		
Any unforeseen start-up can cause serious injuries or important material damages.		

	WARNING	PUMPS OPERATING AGAINST A CLOSED VALVE CAN CAUSE SYSTEM FAILURE, PERSONAL INJURY AND PROPERTY DAMAGE.
		
Hazardous pressure can cause personal injury or property damage.		

	WARNING	OPERATION WITHOUT THE SHAFT PROTECTOR CAN CAUSE SERIOUS PERSONAL INJURY, MAJOR PROPERTY DAMAGE OR DEATH.
		
Do not operate without guard in place.		

This check should be done with no liquid being pumped, and both the inlet and discharge circuits vented to avoid generating unexpected pressure (on the inlet side, for example). This will avoid damaging either the pump or the system.



Start the pump empty to check that the connections are good and that the direction of rotation corresponds to the system intake and discharge directions. If it is necessary to reverse the direction of rotation, follow the instructions below :

Three-phase motor : switch any 2 current input wires.

Bi-phase motor : switch two same phase wires.

Single-phase motor : follow the instructions on the notice supplied with the motor.

3.4 Diesel engines drive

	CAUTION	THE SURFACES OF THE PUMP CAN BE AT A TEMPERATURE LIABLE TO CAUSE INJURY OR SEVERE DAMAGE.
		
Excessive temperature can cause injury or severe damage.		

Do not forget that these engines are not reversible. It is therefore vital to carefully check the inlet and outlet sides of the pump before connecting the pump unit to the piping.

The use of diesel engines drive is now well known. Nevertheless, we strongly recommend that you carefully read the technical manuals concerning them.



4. DRIVE BY POWER TAKE OFF

Refer to Instructions NT 1010-B00 CC8 CC10 CC20 PUMPS DRIVEN BY POWER TAKE OFF.

5. USE



The operator should remain nearby the equipment through-out the use to ensure the proper functioning of the system.



5.1 Pumping hot liquids

	CAUTION
	THE SURFACES OF THE PUMP CAN BE AT A TEMPERATURE LIABLE TO CAUSE INJURY OR SEVERE DAMAGE.
Excessive temperature can cause injury or severe damage.	

When pumping hot liquids, make your you retighten screws and bolts after starting for the first time in order to compensate for contraction.

5.2 Pump full of liquid when stopped

	WARNING
	FAILURE TO INSTALL ADEQUATELY SIZED PRESSURE RELIEF VALVE(S) CAN CAUSE PROPERTY DAMAGE, PERSONAL INJURY OR DEATH.
Hazardous pressure can cause personal injury or property damage.	



	WARNING
	IF PUMPING HAZARDOUS OR TOXIC FLUIDS, THE SYSTEM MUST BE FLUSHED PRIOR TO PERFORMING ANY SERVICE OPERATION.
Toxic or hazardous fluids can cause serious injury.	



If the pump circuit is to be located between valves and/or a non-return valve, you need to take account of the variations in temperature that can lead to contraction of the liquid in the circuit. In this case, you need to provide some means of compensating for the contraction. A discharge valve may be sufficient. The opening pressure for this valve should be compatible with the permitted pressure for the other components in the circuit.

It is also advisable to fit a discharge device to allow the circuit to be completely emptied for any maintenance work.

In the case of liquids containing particles settling on shut-down, it is necessary to make sure the consistency of the deposit will not impede restarting the pump.

5.3 Starting-up the pump

	WARNING
	FAILURE TO RELIEVE SYSTEM PRESSURE PRIOR TO PERFORMING PUMP SERVICE OR MAINTENANCE CAN CAUSE PERSONAL INJURY OR PROPERTY DAMAGE.
Hazardous pressure can cause personal injury or property damage.	

	WARNING
	OPERATION WITHOUT THE SHAFT PROTECTOR CAN CAUSE SERIOUS PERSONAL INJURY, MAJOR PROPERTY DAMAGE OR DEATH.
Do not operate without guard in place.	

Before starting the pump, make sure that the following conditions are met :

- The circuit should be in one of its pumping configurations, with the appropriate valves open, especially on the intake side.
- For products requiring heating, they must be brought to their pumping temperature before starting the pump.

5.4 Running without liquid in the pump

MOUVEX CC10 pumps can run without liquid in the pump for 5 minutes without causing damage, in particular during pump priming.

5.5 Using of the pump with a valve closed on the discharge line

The using of the pump with a valve closed on the discharge line implies the liquid is not renewed which generates a heating up. In consequence, that operating way must not exceed 3 minutes.

5.6 Shutting down the pump

When shutting down the pump, we recommend waiting for it to stop completely before closing the valves, especially the inlet valve.

5. USE (continued)

5.7 Protection from frost

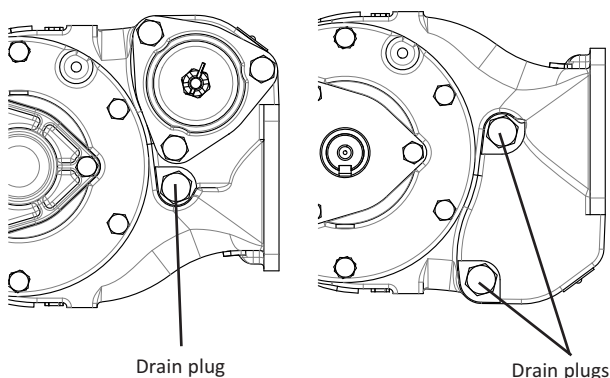
If there is a risk of frost with the product contained in the pump, it is necessary to drain the body after each use as follows :

Step 1 :

- Check there is no valve closed on the discharge side as well potential counter pressure due to a check valve or liquid remaining inside a vertical pipe.
- Rotate the pump.
- Create an air entering on the suction side during 30 seconds.
- Stop and close the pump and make sure there is no liquid inside the pump.

Step 2 :

- Defect or in complement, drain by the bottom plug.



5.8 Restarting

Follow the standard start-up procedure for the pump/ motor-driven pump, as well as the instructions below.

Turn the pump by hand to make sure the parts move freely.

Remove the bypass and inspect the parts and make sure they move freely.



6. NECESSARY TOOLS



- Flat wrenches 13 - 17
- Tube wrench 17
- Circlip opening pliers
- Flat screwdriver



Makeup torques :



- M1039 Nm
- M 820 Nm



7. DISMANTLING - REASSEMBLY



	WARNING
	
Dangerous voltage. Can cause injury and death.	DISCONNECT THE ELECTRICITY SUPPLY BEFORE ANY MAINTENANCE OPERATION.



	WARNING
	
Hazardous pressure can cause personal injury or property damage.	DISCONNECTING THE FLUID OR PRESSURE CONTAINMENT COMPONENTS DURING PUMP OPERATION CAN CAUSE SERIOUS PERSONAL INJURY, DEATH OR MAJOR PROPERTY DAMAGE.



	WARNING
	
Hazardous pressure can cause personal injury or property damage.	FAILURE TO RELEASE ALL SYSTEM AIR AND WHEN EQUIPPED, HYDRAULIC PRESSURE, CAN CAUSE PROPERTY DAMAGE, PERSONAL INJURY OR DEATH.

	WARNING
	
Hazardous or toxic fluids can cause serious injury.	IF PUMPING HAZARDOUS OR TOXIC FLUIDS, THE SYSTEM MUST BE FLUSHED PRIOR TO PERFORMING ANY SERVICE OPERATION.

	WARNING
	
The weight of the parts can be dangerous and may provoke bodily injuries or material damages.	BE CAREFUL WITH THE WEIGHT OF THE PARTS WHEN THEY ARE BEING REMOVED.

	CAUTION
	
Slippery lubricant. Spills should be cleaned up.	THE PUMP LUBRICANT IS VERY SLIPPERY AND MAY CAUSE SERIOUS INJURY. ANY SPILLS MUST BE CLEANED UP.

	CAUTION
	
Excessive temperature can cause injury or severe damage.	THE SURFACES OF THE PUMP CAN BE AT A TEMPERATURE LIABLE TO CAUSE INJURY OR SEVERE DAMAGE.

	WARNING
	
Any unforeseen start-up can cause serious injuries or important material damages.	TAKE ALL NECESSARY MEASURES TO RENDER ANY START-UP, EVEN ACCIDENTAL, OF THE PUMP DURING THE WORK IMPOSSIBLE.

Before any dismantling, make sure that the pump has been drained and take all the necessary precautions to prevent it from starting up. The pump must not start up, even accidentally.

7.1 Dismantling on side opposite to drive system

Unscrew the screws 723, and remove the cover 712 and the seal 714.

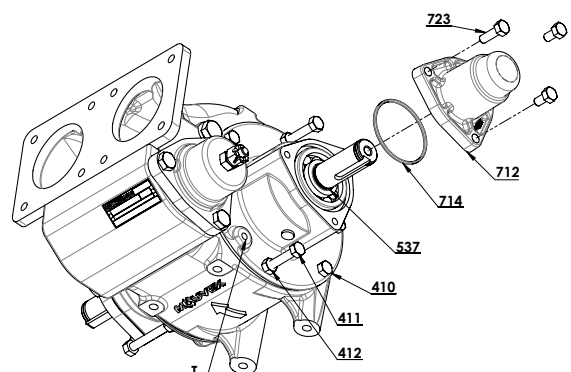
Remove circlip 537.

Carefully clean the shaft end (remove any trace of paint, oxidation, burrs...).

Unscrew the 4 screws 410.

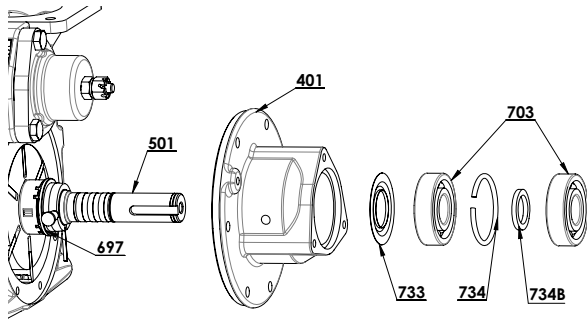
Unscrew the 4 screws 411 fitted with their nut 412 and place them in the 2 tapped holes T where are the bosses.

Screw up the 2 screws at the same time so that the end-plate is gradually released along the centre line.



7. DISMANTLING - REASSEMBLY (continued)

When the end-plate is free on the shaft, hold it by hand supporting it.



Once the end-plate is out, the rotating part 697 of the mechanical seal stays in place on the shaft. Caution not to scratch friction face.

7.2 Dismantling on drive side

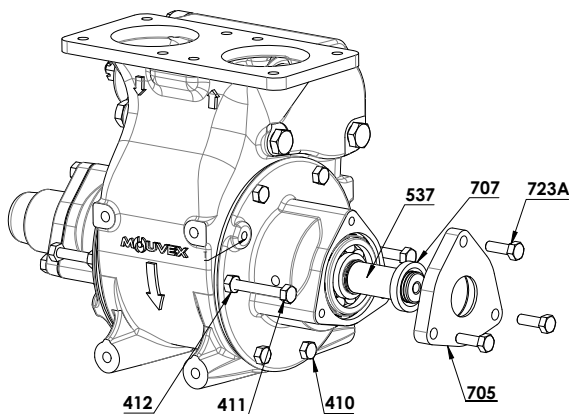
Uncouple the pump by removing the coupling.

Remove the key 508 and clean the end shaft. Then proceed in the same way as in § DISMANTLING ON SIDE OPPOSITE TO DRIVE SYSTEM. It is necessary to push cover 705 slightly a side to avoid damaging O-ring 707 on key.

Unscrew the screws 723A, remove the cover 705 with its seal 714A taking care not damaging seal 707.

Remove the circlip 537.

Operate then in a identical way in § DISMANTLING ON SIDE OPPOSITE TO DRIVE SYSTEM.



7.3 Reassembly

When putting the end-plate back into place, take care to have the shaft seal drive lugs facing the notches on rotor. Refit in the end-plate 401 the Nilos ring 733, the ball bearings 703 and the spacers 734 and 734B. Then replace the cover 712 or 705 on the front cover 401 with screws 723 or 723A.

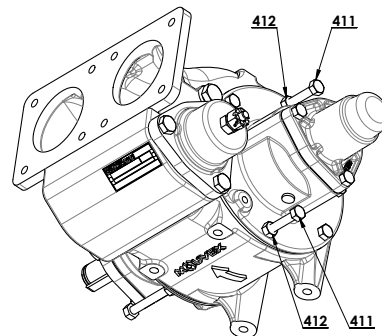
Lubricate the shaft 501 slightly.

Make sure that the end-plate seal 403 is correctly positioned, check it and change it if necessary.

Make sure the stationary seal face 604 of the mechanical seal and its seal 605 are in the front cover 401 and the rotating part 697 is on the shaft. Then, position the front cover 401 on the shaft and approach it as far as possible by hand.

Replace the front cover taking care to orientate it in accordance with the overall dimension drawing. See § OVERALL DIMENSIONS.

Finish fitting the end-plate, screwing the 2 nuts 412 gradually on to the 2 screws 411. Make sure that end-plate is centred while screwing.



When the end-plate is in place, remove the screws 411 and their nuts 412 and screw them.

Replace the screws 410.

Remove the cover 712 or 705.

Replace the circlip 537.

Replace the cover 705 or 712 with its seal 707 after check condition of seal.

7.4 Assembly of flange for hydraulic trunk

Refer to Instructions NT 1010-K00 ASSEMBLY OF FLANGE FOR HYDRAULIC TRUNK ON PUMP CC8 CC10.

8. CHANGING THE VANES

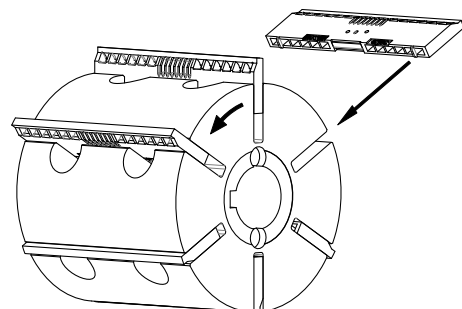
Remove the end-plate in a identical way in § DISMANTLING ON SIDE OPPOSITE TO DRIVE SYSTEM and/or § DISMANTLING ON DRIVE SIDE and place it on its face on which the cover was mounted.

Remove the vanes 317.

Check for wear (see § MAINTENANCE). If vane wear is abnormal, check surface condition of body and of end-plate faces.

Refit the vanes (new if necessary) respecting the direction of assembly and check that they slide freely.

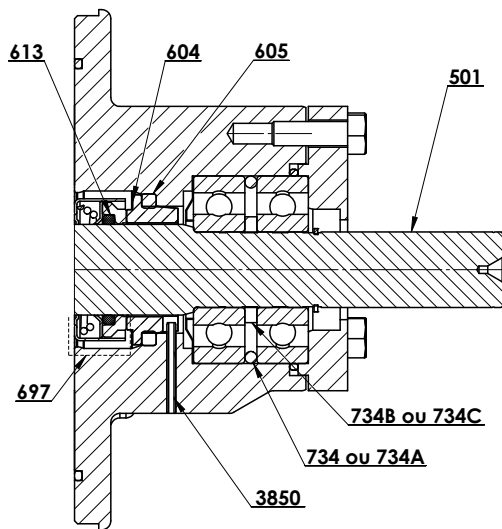
Reassemble the pump and check that it rotates freely when turned by hand.



9. CHANGING SHAFT SEAL

IMPORTANT :

Mechanical seal components must never be put on friction faces without protection sheets.



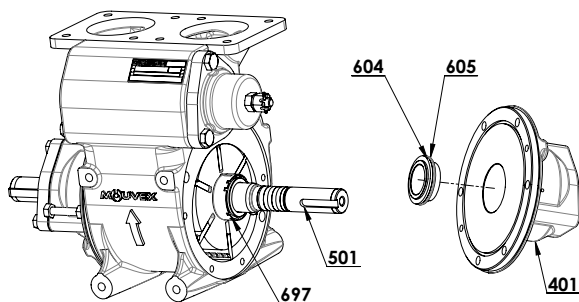
Dismantling

Remove the end-plate in a identical way in § DISMANTLING ON SIDE OPPOSITE TO DRIVE SYSTEM and/or § DISMANTLING ON DRIVE SIDE and place it on its face on which the cover was mounted.

Remove the stationary seal face 604 in the end-plate by inserting fingers in shaft seal center hole.

Remove the rotating part 697 of the mechanical seal from shaft 501.

If necessary, clean friction face with a clean, soft cloth. Caution not to scratch friction face.



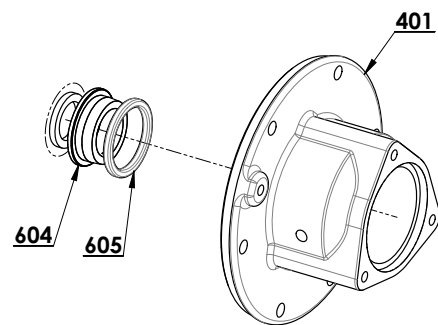
Reassembly

IMPORTANT

Lubricate the bore of the end-plate which takes the shaft seal.

Make sure that the seals 605, 613 and the shaft seal are in good condition. Change them if necessary.

Place the seal 605 on the stationary seal face 604.



The introduction of the stationary seal face 604 and its seal 605 on the end-plate bore is done by hand up to stop. The rotating part of the mechanical seal 697 can be used to not scratch friction face. Otherwise use a clean, soft cloth.

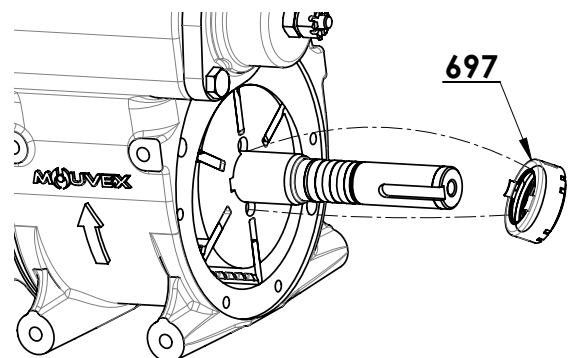
If necessary, clean friction face with a clean, soft cloth. Caution not to scratch friction face.

Check shaft 501 surface condition. Rub it down with thin sand paper if there are scratches on seal rotating part O-ring place. In particular, it must be check that there are no scratches parallel to shaft axis.

To reduce friction, lubricate surfaces on which O-rings will slip during assembly.

Fit the rotating part 697 aligning ergots with grooves located in the rotor 301.

Refit the front cover (see § REASSEMBLY).



10. BYPASS

The bypass must be set depending on the needs and the limitations of the installation.

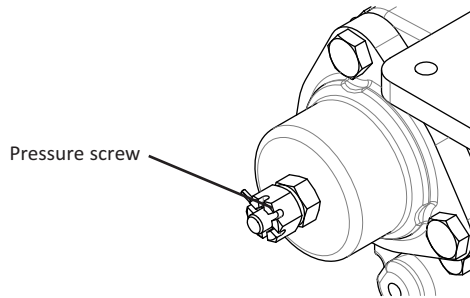
A preset can be operated, please refer to the information below, but it has to be followed up by a check-up on the installation.

10.1 Mechanical bypass

Setting

Loose the nut 835.

Unscrew completely the pressure screw.



Screw it clockwise depending on the values given below.
Please consider the accuracy is $\pm 0,3$ bar on the given values.

Tight the nut.

Check on the installation the pump gives the right pressure (using a manometer) with a closed valve on the discharge line.

Pressure got (bar) :

Pressure screw rotation	Mechanical bypass	
	5 bar	10 bar
0	2,3	4,5
1	2,6	5,2
2	2,9	5,8
3	3,2	6,4
4	3,5	7,0
5	3,8	7,6
6	4,1	8,2
7	4,4	8,8
8	4,7	9,4
9	5,0	10,0
10	5,3	10,7 (1)
11	5,6	11,3 (1)

(1) Pressure limited to 10 bar, prohibited zone

Dismantling

Set bypass at minimal pressure by unscrewing the locknut 835 taking care to count the number of rotations so as to be able to reset bypass at initial pressure setting.

Unscrew completely the pressure screw.

Unscrew the 3 screws 856 of the bypass cap.

Remove spring 824.

Remove the valve 823 by pulling its cylindrical section with the fingers.

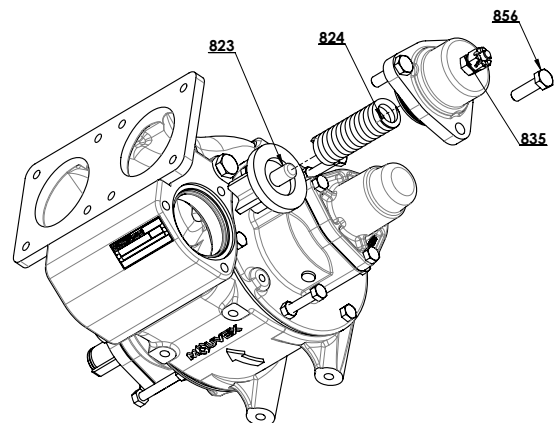
Check condition of bypass.

Reassembly

Clean all parts before reassembly.

Reassemble in reverse order of dismantling.

Set bypass at initial pressure setting by tightening nut with the same number of rotations as counted during dismounting.



10. BYPASS (continued)

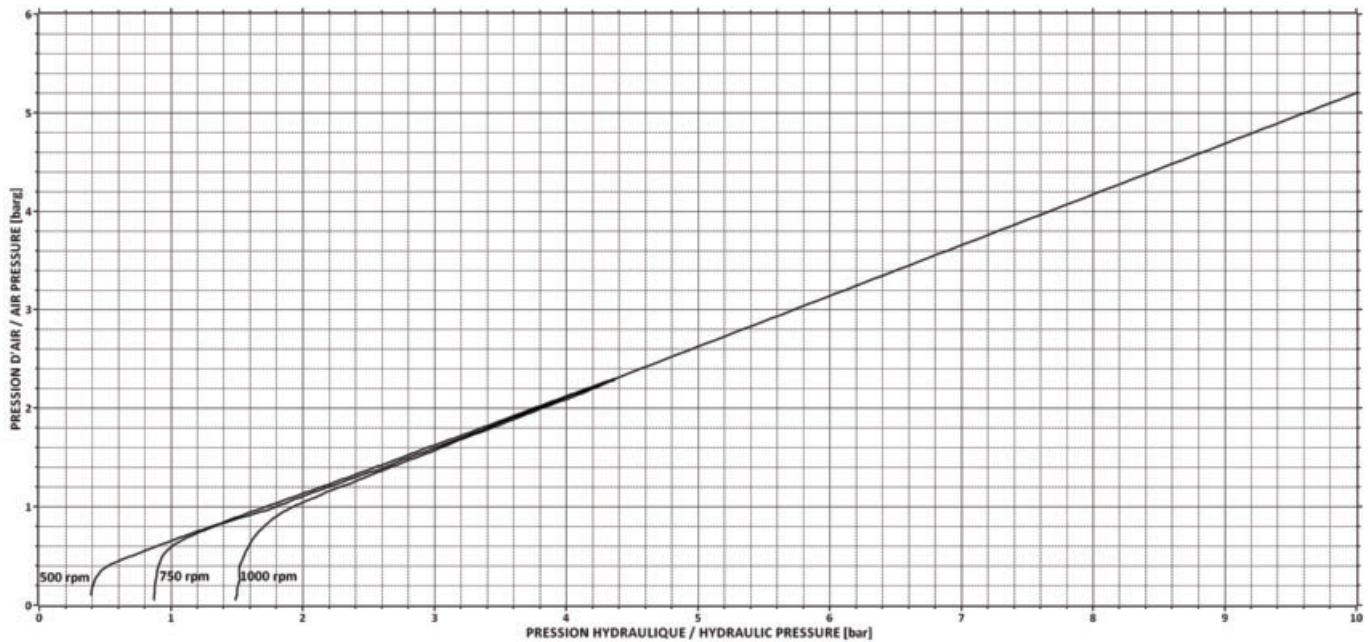
10.2 Pneumatic bypass without spring

The pressure regulator preset can be operated, please refer to the curve below, but it has to be followed up by a check-up on the installation :

- From 0 to 5 bar, the bypass setting depends on the rotation speed of the pump.
- From 5 to 10 bar, the rotation speed does not impact the pilot air pressure of the bypass.

These curves indicate the nominal air pressure when the discharge valve is closed, it will be necessary to adjust this pressure according to the installation, but the hydraulic pressure in the pump must, in no case, exceed 10 bar.

Check on the installation the pump gives the right pressure (using a manometer) with a closed valve on the discharge line.

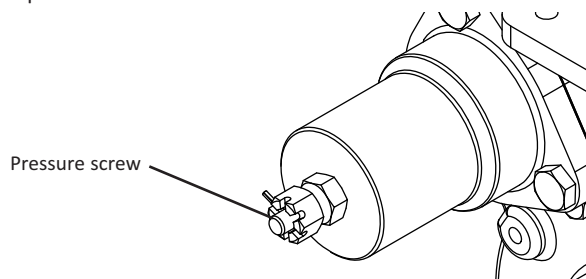


10.3 Pneumatic bypass with spring

Spring setting (without air pressure in the bypass)

Loose the nut 835.

Unscrew completely the pressure screw until it comes to a stop.



Screw it clockwise depending on the values given below. Please consider the accuracy is $\pm 0,3$ bar on the given values.

Tight the nut.

Then check on the entire system including the pump (using a manometer) with a closed valve on the discharge line, without air pressure in the bypass, meets the requirements.

Pressure got (bar) :

Pressure screw rotation	Speed (rpm)		
	500	750	1000
0	1,00	2,00	2,80
1	1,25	2,10	2,80
2	1,35	2,20	2,90
3	1,55	2,20	3,10
4	2,00	2,40	3,40
5	2,25	2,60	3,60
6	2,50	3,00	3,80
7	3,00	3,20	4,20
8	3,25	3,60	4,40
9	3,50	3,80	4,40
10	4,00	4,20	4,60
11	4,30	4,40	4,90
12	4,60	4,60	5,20
13	5,00	5,00	5,40

10. BYPASS (continued)

Dismantling

Set bypass at minimal pressure by unscrewing the locknut 835 taking care to count the number of rotations so as to be able to reset bypass at initial pressure setting.

Unscrew completely the pressure screw.

Unscrew the 3 screws 805 of the bypass cap.

Remove the valve 823 by pulling its cylindrical section with the fingers.

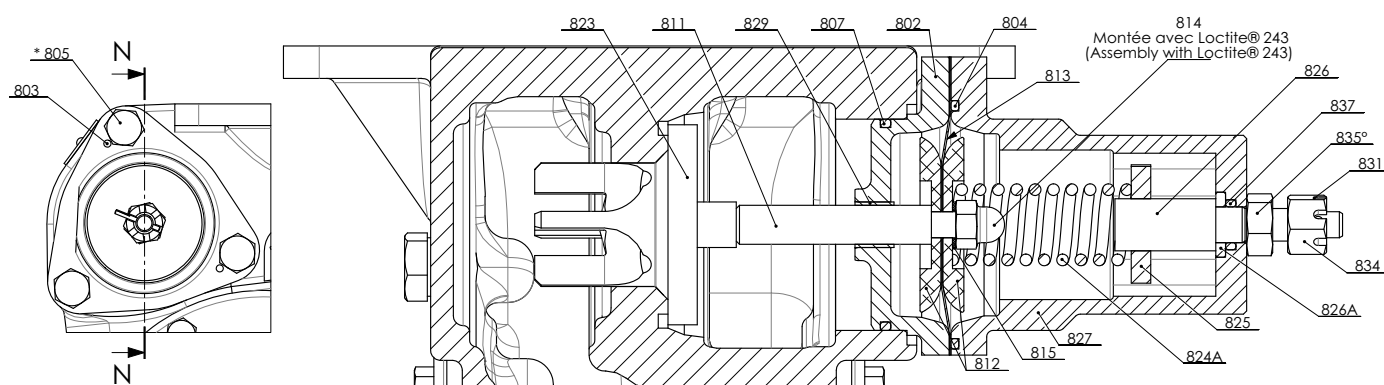
Check condition of bypass.

Reassembly

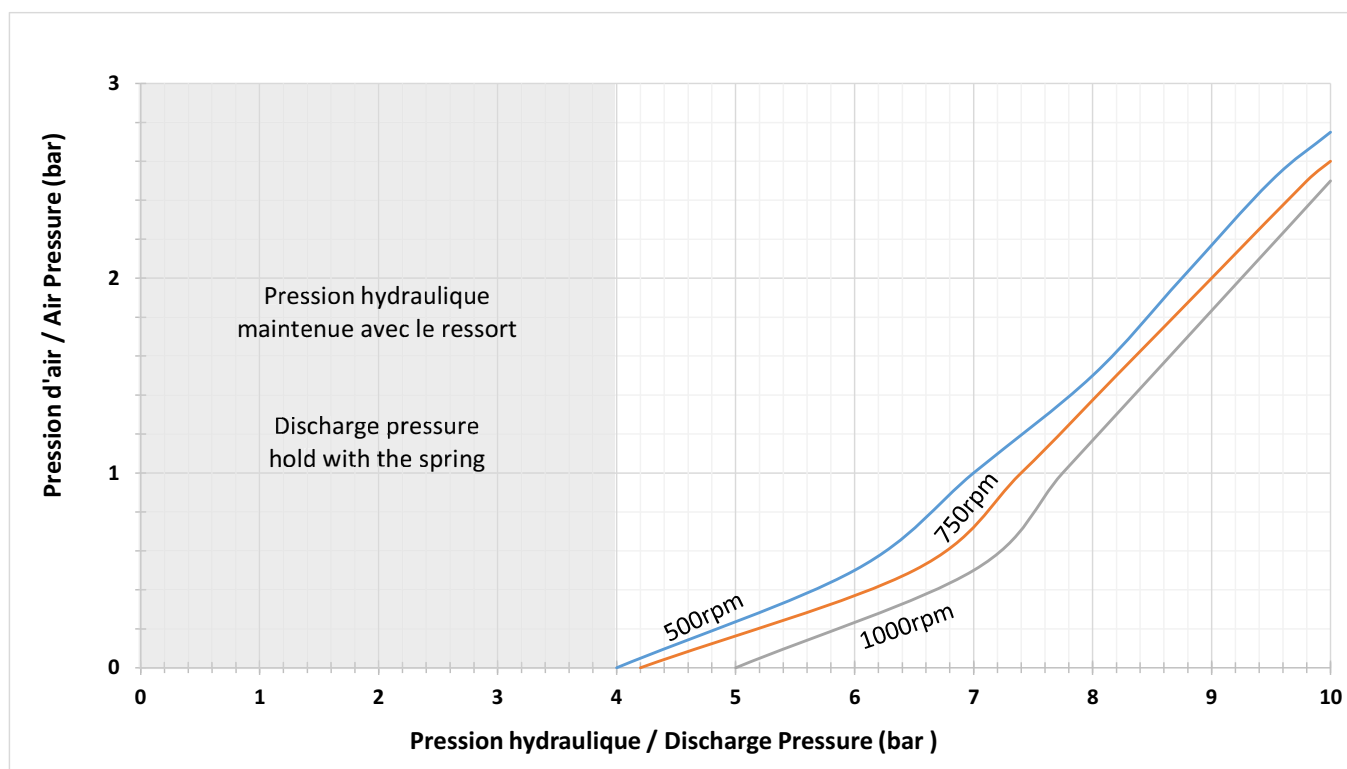
Clean all parts before reassembly.

Reassemble in reverse order of dismantling.

Set bypass at initial pressure setting by tightening nut with the same number of rotations as counted during dismantling.



The bypass air pressure can be adjusted to the desired pressure by following this curve :



Check on the installation that the pump gives the right pressure (using a manometer) with a closed valve on the discharge line.

11. MAINTENANCE

11.1 Lubrication

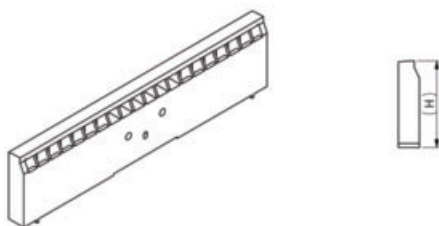
Ball bearings are lubricated for life and don't require any grease adding.

11.2 Inspection of the vanes

It is recommended that the condition of the vanes should be checked every 700 hours of operation.

In the case of excessive wear, vanes and pushrods should be replaced by a complete new set.

	Original height (H)	Change if "H" <
CC10	26,3	24,3



11.3 Cleaning the filter

The pump should always be protected against possible foreign matter by means of a filter connected into the suction pipe.

Check the cleanliness of the filter mesh from time to time as a partly clogged filter could starve the pump and reduce its output.

To clean the filter, remove the meshes and clean them carefully. Before refitting them, drain the filter by removing the drain plug, then rinse it thoroughly.

11.4 Cleaning the cover holes



It is imperative to clean the evacuation holes of the mechanical seal once a year so as not to damage the pump.

12. TROUBLESHOOTING

CAUTION :

OBSERVE ALL SAFETY WARNINGS CONTAINED IN THIS MANUAL.

12.1 Abnormal noise

Main causes :

- Excessive suction vacuum, due to :
 - a pipe, accessories (valves, filter...) which are either clogged or of insufficient diameter,
 - excessive suction head (e.g. during liquid transfer operations),
 - a viscosity or vapour tension too high for the system to cope with (e.g. when changing the product to be pumped).
- Overly high rotation speed for the liquid being pumped.
- Pump damaged
 - as a result of binding due to :
 - an excessively high rotation speed,
 - failure to release the drive when pumping is ended,
 - sudden engagement of the drive,
 - an unduly high pulling force on the shaft, leading to a damaged ball-bearing and shaft.
 - as a result of foreign matter, due to :
 - the absence of a filter or inefficient cleaning,
 - the absence of a basket (failure to replace it after cleaning),
 - solder or rust particles remaining in the pipe between the filter and the pump.
- Bypass valve hammer on its seat due to incorrect adjustment of the spring's tension.
- At least one vane mounted in the wrong direction during a reassembly.

12.2 Leaking seal

Main causes :

- Abnormal pulling force on the shaft, leading to a damaged bearing and seal,
- Displacement of the shaft when mounting an unduly tight coupling making the seal unserviceable,
- Seal damage caused by pumping an aggressive product,
- parallelism between the pump shaft and the power take-off (PMT) not respected. Refer to Instructions NT 1010-B00 CC8 CC10 CC20 PUMPS DRIVEN BY POWER TAKE OFF.



12.3 Inadequate output

Main causes :

- Excessive suction vacuum (see § ABNORMAL NOISE - Excessive suction vacuum),
- Bypass setting too low,
- Air leaking in at suction end,
- Discharge pipe diameter too small,
- Speed of rotation too low,
- Bypass valve not closing properly due to foreign matters on valve seat or because the valve lifting wheel (in the case of pumps fitted with one) has not been returned to its initial position after use,
- Pump damaged (see § ABNORMAL NOISE - Pump damaged due to passage of foreign matter).

13. STORAGE

13.1 Short duration (≤ 1 month)

 WARNING	
	
Toxic or hazardous fluids can cause serious injury.	IF PUMPING HAZARDOUS OR TOXIC FLUIDS, THE SYSTEM MUST BE FLUSHED PRIOR TO PERFORMING ANY SERVICE OPERATION.

MOUVEX pumps and motor-driven pumps are well lubricated when delivered to protect the internal parts during brief storage in a building where :

- the temperature remains between 10°C and 50°C.
- the relative humidity does not exceed 60%.
- exposure to vibration is limited (maximum movement : 0,05 mm).
- pump is stored in an area sheltered from bad weather and sun.

13.2 Long duration (> 1 month)

We recommend the following procedure for longer periods of storage :

The recommendations from the manufacturer should be followed if the pump is stored with its gear motor.

Pump ports should be filled with a non-corrosive liquid that it compatible with the pump components in order to prevent corrosion.

Unpainted external surfaces of the pump (e.g. shafts, couplings, etc.) should be covered in some form of anti-corrosion protection.

The best storage conditions are inside a building that meets the conditions set out above.

If inside storage is not possible, the materials should be covered to prevent direct exposure to sun and bad weather. This protection should also prevent condensation.

It is recommended to turn the pump by hand every two months to distribute the lubricant around the interior. Items should then be placed where there is no risk of damage if they are moved slightly by vibrations.

14. SCRAPPING

The pump must be scrapped in compliance with the regulations in force.

During this operation, particular care must be paid to the drainage stages of the pump (pumped product).

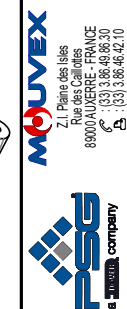
15. FACTORY RETURN

Before any material return, it is required to get an authorization from MOUVEX.

Pumps **MUST** always be returned :

- NOT degassed (no rinsing with water),
- emptied of its product,
- ports plugged with rags to avoid any water or any foreign body to come inside.

CAD generated and maintained drawing. All printed and electronic copies outside of PSG AUXERRE database are "Uncontrolled" and shall be used for reference only.



P	Plaque de pompe	Nameplate
E-2	Raccordement pneumatique	Pneumatic connection
E-1	Réglage du bypasse	Bypass adjustment
J	Recul pour démontage du fond	Place for dismounting the cover
S	Emplacement de la sonde M6 longueur taraudée 8 mm	Inserting M6 sensor Thread depth : 8mm
V1	Prise de Vide / Vidange	Drain/Vacuum plug
V2	Prise de pression / Vidange	Drain/Pressure plug
V3	Bouchon de vidange	Drain plug

CAD generated and maintained drawing. All printed and electronic copies outside of PSG AUXERRE database are "Uncontrolled" and shall be used for reference only.

