



Fire-fighting



SALAMANDRE Range

**USER MANUAL
SALAMANDRE 120**



Version 2
23/03/16

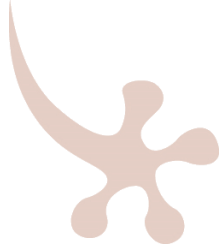
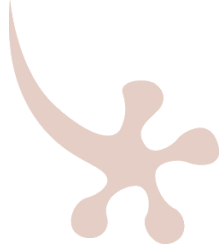


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Performances

THE PERFORMANCE OF SALAMANDRE MOTOR PUMPS

depends on the following criteria:

1 - The **"MINIMUM"** flow range (in litres/minute) is defined by the minimum flow required to ensure that regulation is stable.

2 - The **"MAXIMUM"** flow ranges are given according to:

- Truck' water pump performance
- The possibilities for transit in supply pipes of \varnothing 100 - 125 - 150.
- The **"MAXIMUM"** SALAMANDRE volumetric pump performances.

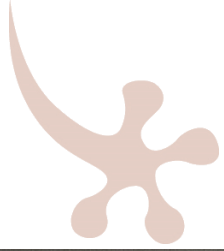
SALAMANDRE 120

Type of concentration keys		1 %	2 %	3 %	4 %	5 %	6 %
Pre-mix outlet Flow rate	Minimum	800	400	300	300	300	300
	Max DN 100	4000	4000	4000	3000	2400	2000

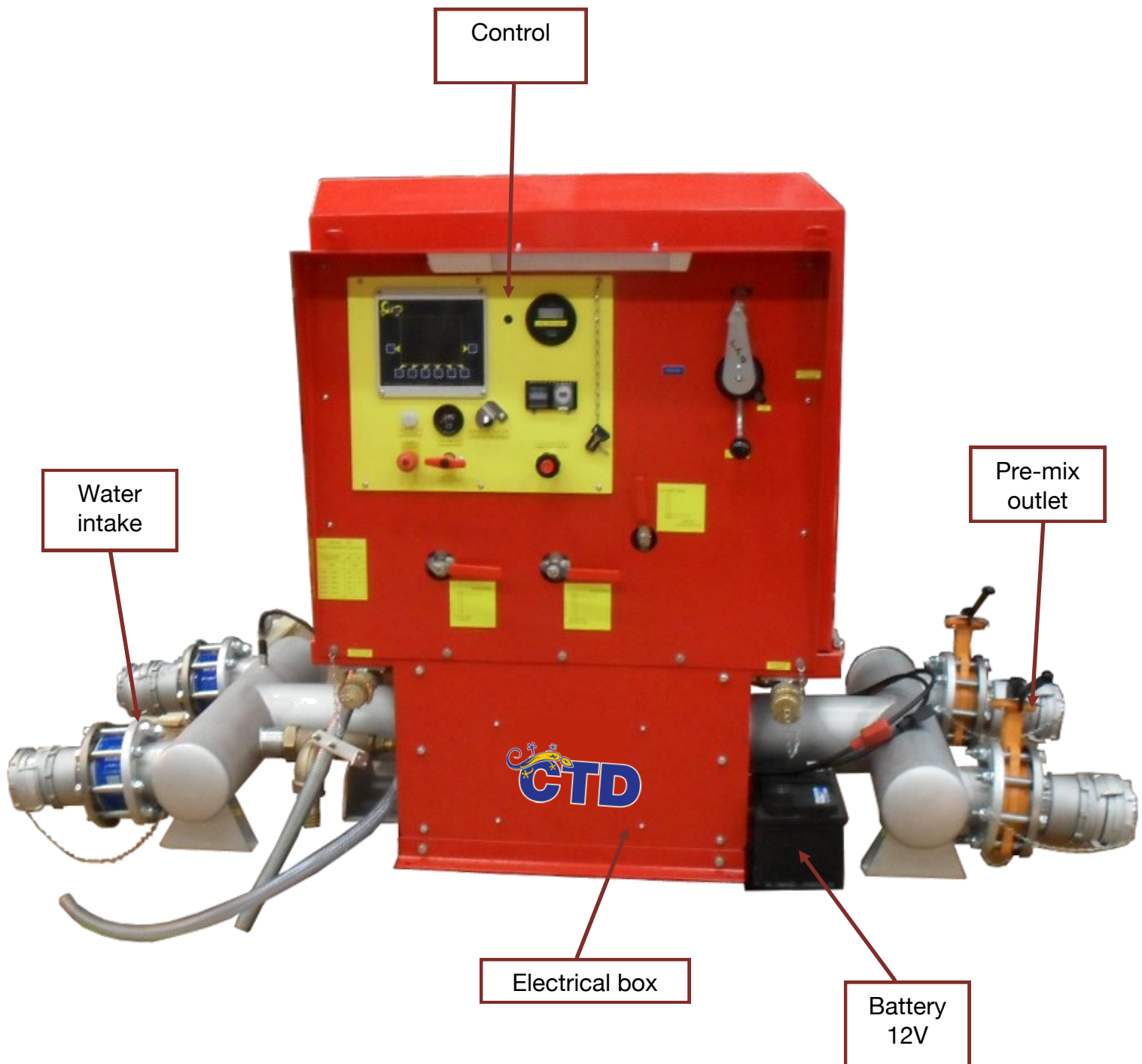
PRESENTATION



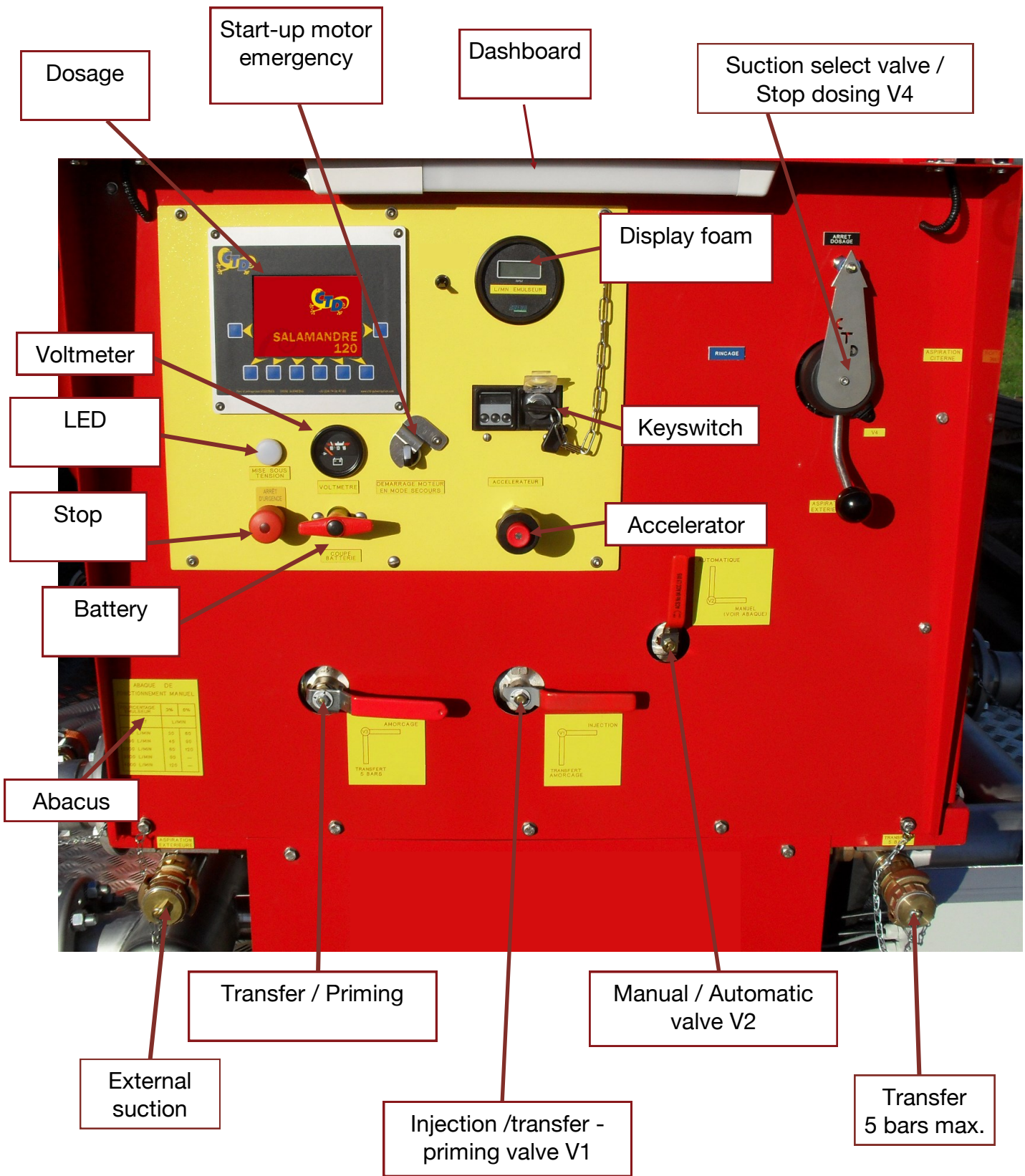
OF THE SALAMANDRE



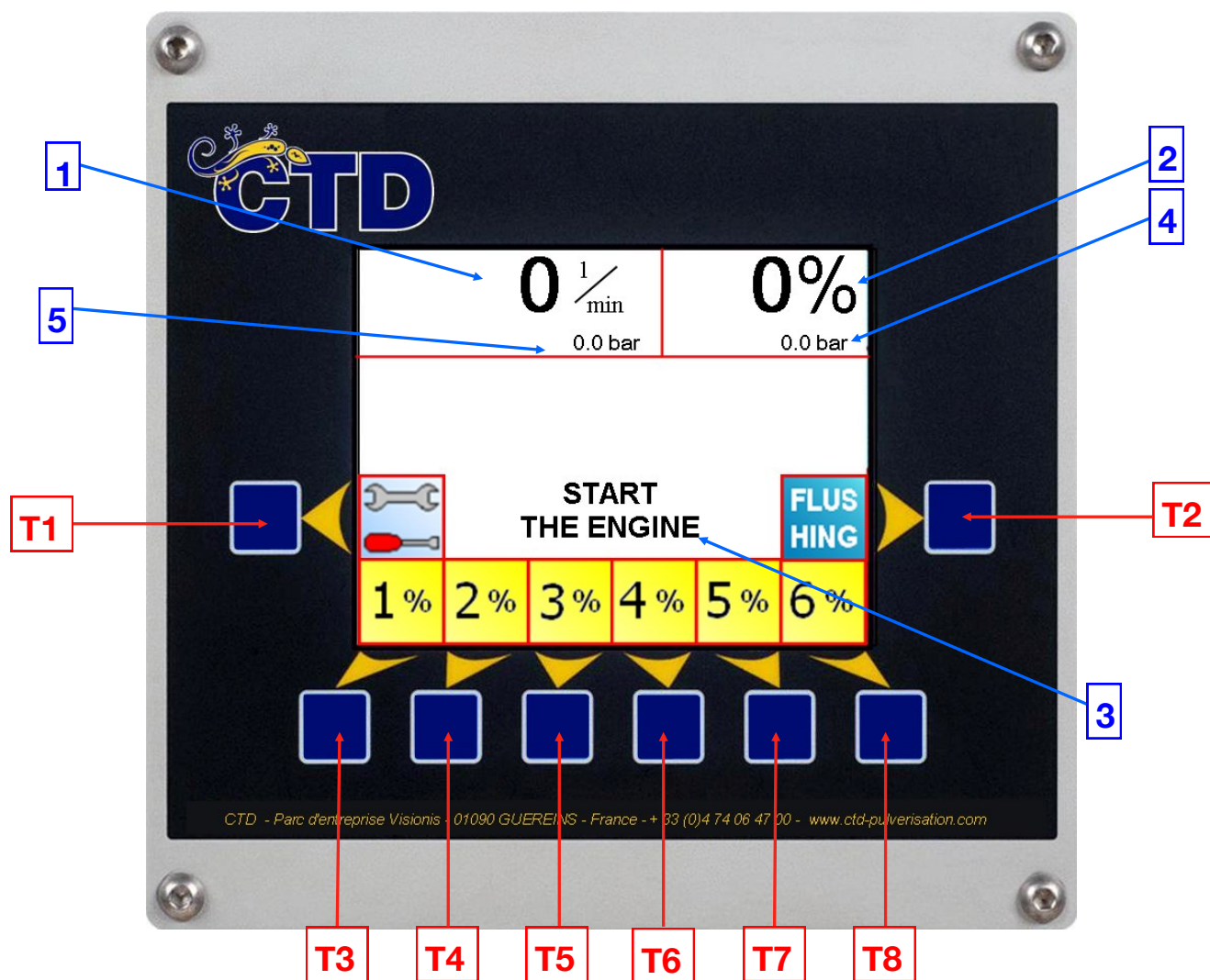
Presentation of the SALAMANDRE 120



Presentation of the control board



Presentation of the dosing screen



KEYS FOR STARTING UP AND USING THE UNIT

T1 Key to access the maintenance screen

T2 External suction key

T3 à T8 Intervention selection keys (Automatic selection of concentration)

DATA DISPLAY

1 Flow in Liters/minute

2 Concentration in%

3 Intervention information

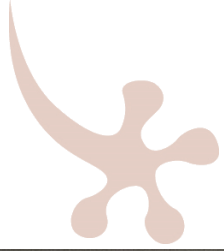
4 Injection pressure

5 Water pressure

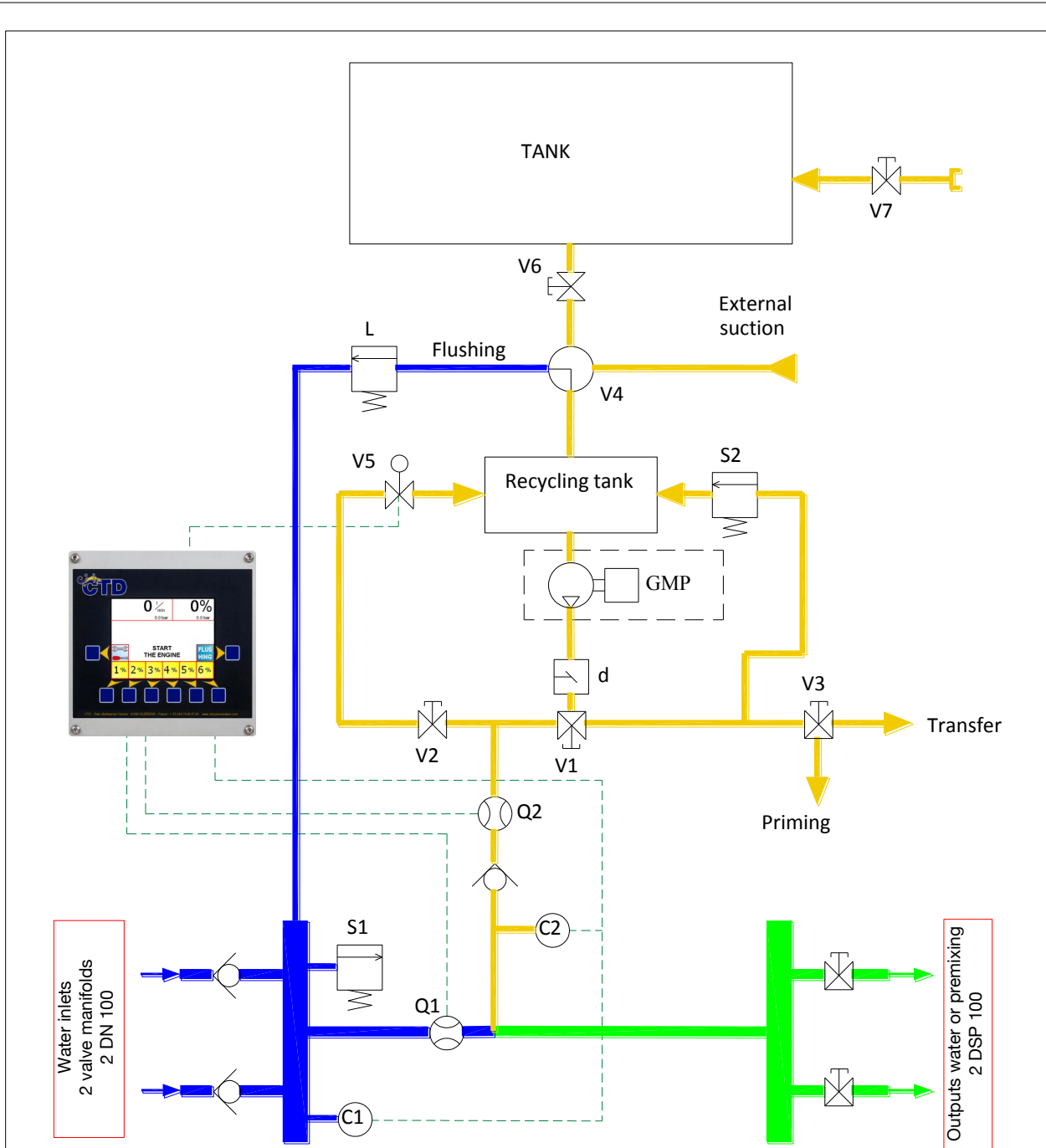
HYDRAULIC



DIAGRAM




Hydraulic diagram



- P : pump
- V1 : valve Injection / Transfer - Priming
- V2 : Auto / Manual valve
- V3 : valve Transfer - Priming
- V4 : suction selection valve
- V5 : regulation valve
- V6 : tank isolation valve
- V7 : return valve in tank
- L : pressure limiter

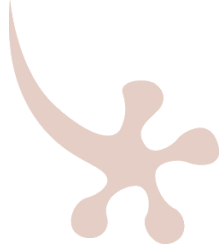
- S1 : main safety valve
- S2 : transfersafety valve
- Q1 : water flowmeter
- Q2 : foam concentrate flowmeter
- c1 : water pressure sensor
- c2 : foam concentrate pressure sensor
- d : priming detector

 Parc d'entreprises Visionis 01090 - GUEREINS Tel: 04 74 06 47 00 info@ctd-pulverisation.com	N°identification :	Matière :
	Ensemble : Salamandre 120	Ech.: 1:1
	Désignation : Hydraulic diagram	Date : 23/03/16
		Par : CDU

PROCEDURE

OF USE

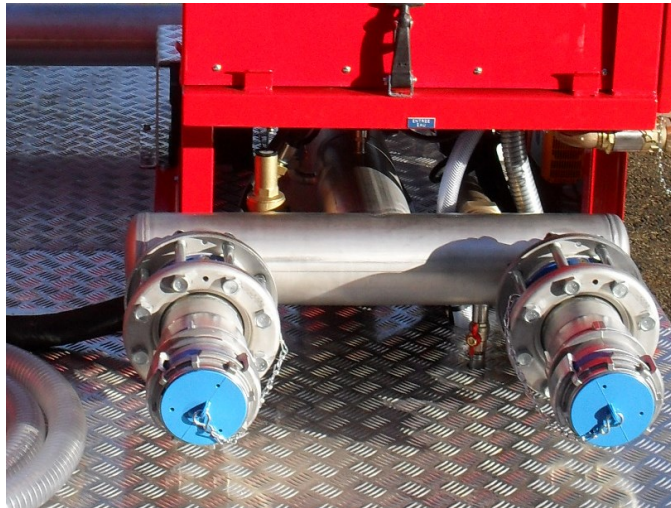




Procedure of use

1 – WATER SUPPLY :

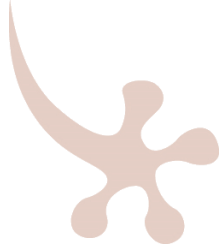
- Supplying water to the collector.



2 – POWER :

- Turn the battery switch **[1]** a quarter turn.
- The light power **[2]** lights..
- The voltmeter indicates the battery voltage **[3]** .
- The screen is started automatically **[4]** .





Procedure of use

3 – CHOICE OF SUCTION :

- The screen displays « select a suction » as long as the valve is in position « Stop dosing ».
- Switch the valve **V4** either on the suction valve either on the external suction.

NOTE : The engine can not start as long as the valve V4 is in position « stop dosing ».



4 – STARTING THE ENGINE :

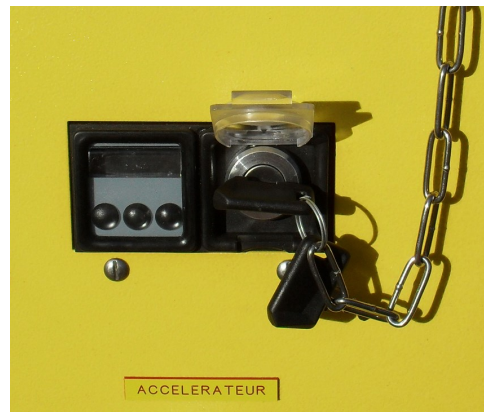
- Start the engine :

Turn the key one notch

Wait a few seconds (warm)

Turn a second notch to start the engine

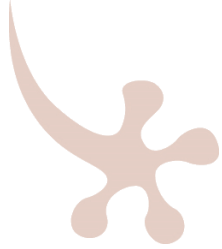
Release the key when the engine is running



- Accelerate the engine to bottom



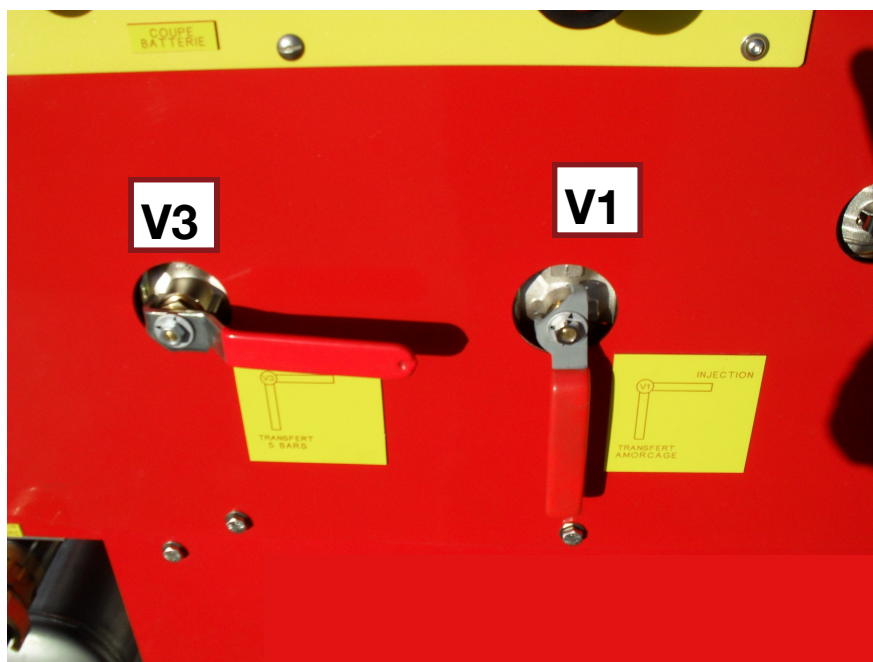
NOTE : The screen says "speed up the engine thoroughly" as it has not reached full speed.



Procedure of use

5 – PRIMING :

- Switch the valve **V1** in position « **TRANSFER - PRIMING** ».
- Switch the valve **V3** in position « **PRIMING** »
- When the liquid runs out under the Salamandre, the priming is finished.
- Switch back the valve **V1** in position « **INJECTION** ».



- The system is now ready to dose.

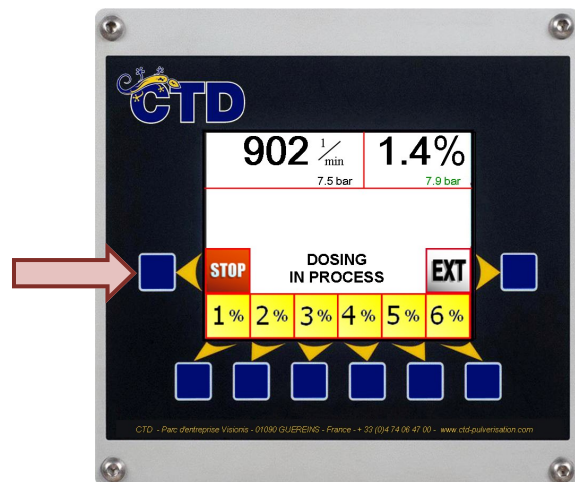
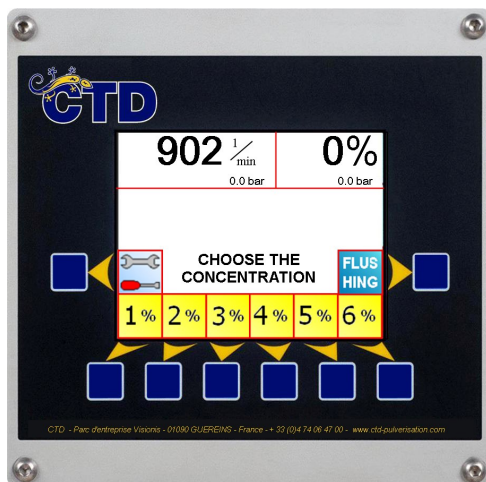
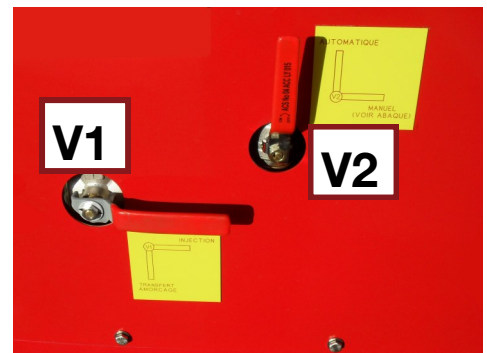
NOTE : The screen says « think to priming » until the operation was not realised. A beep will sound to alert the user.

If the Salamandre is not priming within 30 seconds after starting the engine it stops to prevent the pump from running dry.

Procedure of use

6 – SUCTION TANK :

- Switch the valve **V4** in position « **SUCTION TANK** ».
- Check that the valve **V2** is in position « **AUTOMATIC** ».
- Check that the valve **V1** is in position « **INJECTION** ».
- Open the output pre-mixtures of the collector.
- A flow is displayed on the screen .
- Select a concentration for starting the dosage.

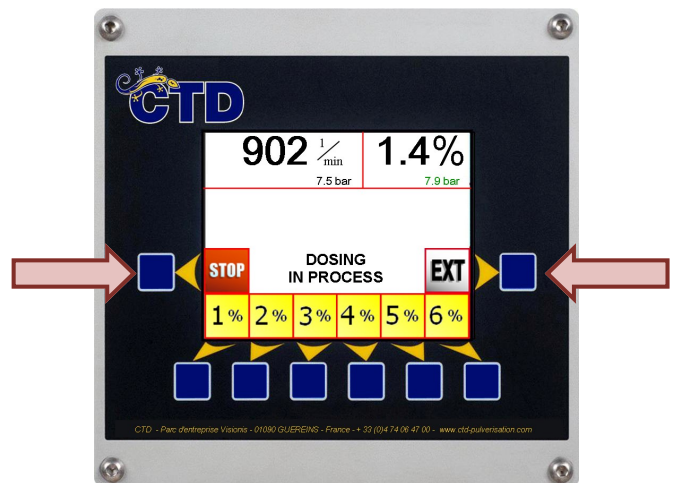
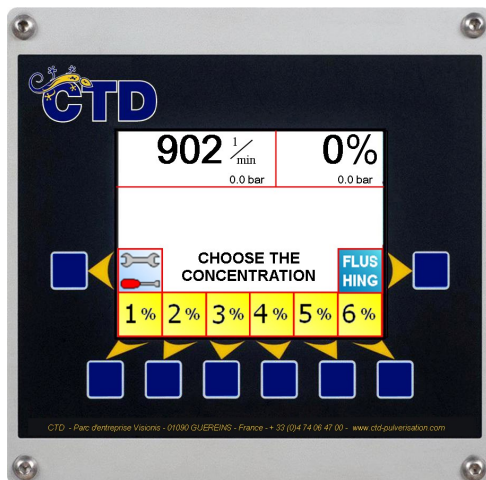
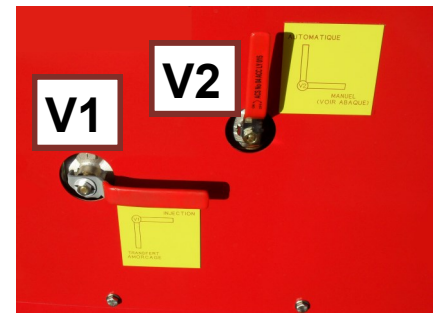


- Dosage begins if the flow rate is greater than 100 L/min
- The screen display « flow rate is too weak » if the ratio water flow rate / foam concentrate flow rate is less than the minimum performance of the dosage system (8 L/min of foam concentrate).
- The screen display « flow rate is too strong » if the ratio water flow rate / foam concentrate flow rate is strong that the maximum performance of the dosage system (120 L/min of foam concentrate).
- At any time, if the system beeps, a fault is detected and displayed :
- « Think to priming » : the pump is defused. Carry out the procedure of priming again.
- « Default injection » : the injection pressure remained below the water pressure for more than 25 seconds. Try again dosed. If the problem persists, contact the SAV.
- To stop the dosage press « **STOP** ».

Procedure of use

7 – EXTERNAL SUCTION :

- Connect a suction pipe on the external suction connector.
- Place the valve **V4** in position « EXTERNAL SUCTION ».
- Check that the valve **V2** is in position « AUTOMATIC ».
- Check that the valve **V1** is in position « INJECTION ».
- Open the output pre-mixtures of the collector.
- A flow is displayed on the screen.
- Select a concentration for starting the dosage.

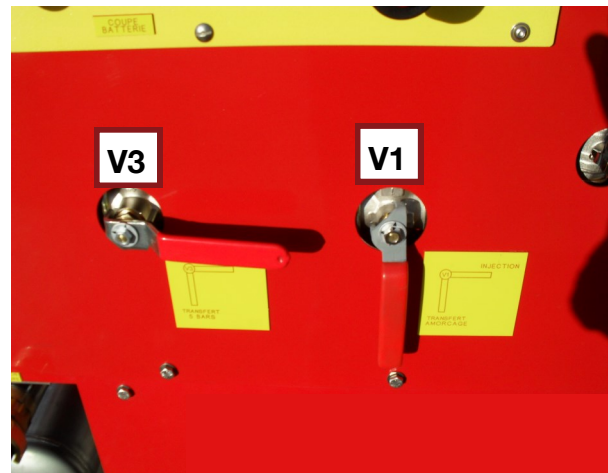
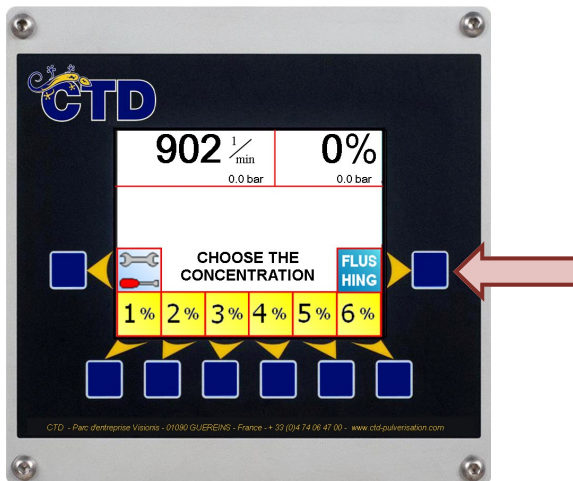


- Press the button « **EXT** » (icon becomes green). This action differentiates the source of suction in the newspaper interventions.
- Dosage begins if the flow rate is greater than 100l/min
- The screen display « flow rate is too weak » if the ratio water flow rate / foam concentrate flow rate is less than the minimum performance of the dosage system (8 L/min of foam concentrate).
- The screen display « flow rate is too strong » if the ratio water flow rate / foam concentrate flow rate is strong that the maximum performance of the dosage system (120 L/min of foam concentrate).
- At any time, if the system beeps, a fault is detected and displayed :
- « Think to priming » : the pump is defused. Carry out the procedure of priming again.
- « Default injection » : the injection pressure remained below the water pressure for more than 25 seconds. Try again dosed. If the problem persists, contact the SAV.
- To stop the dosage press « **STOP** ».

Procedure of use

8 – FLUSHING :

- The screen displays "think flush" until the flushing operation have been carried out as follows:
- Switch the valve **V4** in position « **FLUSHING** ».
- Ensure that the outputs premixes are « **OPEN** ».
- Press the button « **FLUSHING** » and « **VALIDATE** »



- At any time, if the outputs premixes are closed and the water flow drops to 0, flushing is put on hold. The screen displays "water flow is too weak".
- Flushing is an automatic cycle. However, to flush the priming circuit, proceed as follows during the cycle:
- Switch the valve **V1** in position « **TRANSFER - PRIMING** »
- Switch the valve **V3** in position « **PRIMING** » to flush the priming circuit (10 seconds is enough).
- When clean water flows under the rocks, flushing of the priming circuit is completed.
- Replace the valve **V1** in position « **INJECTION** ».

When the screen displays « **FLUSHING OK** », flushing the injection circuit is completed.

- Stop the engine.
- Switch the valve **V4** in position « **STOP DOSING** ».

Procedure of use

9 – MANUAL mode :

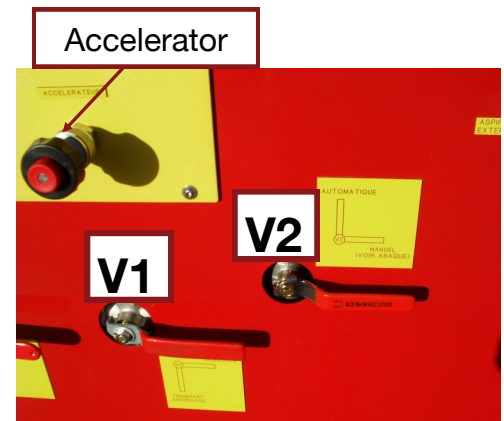
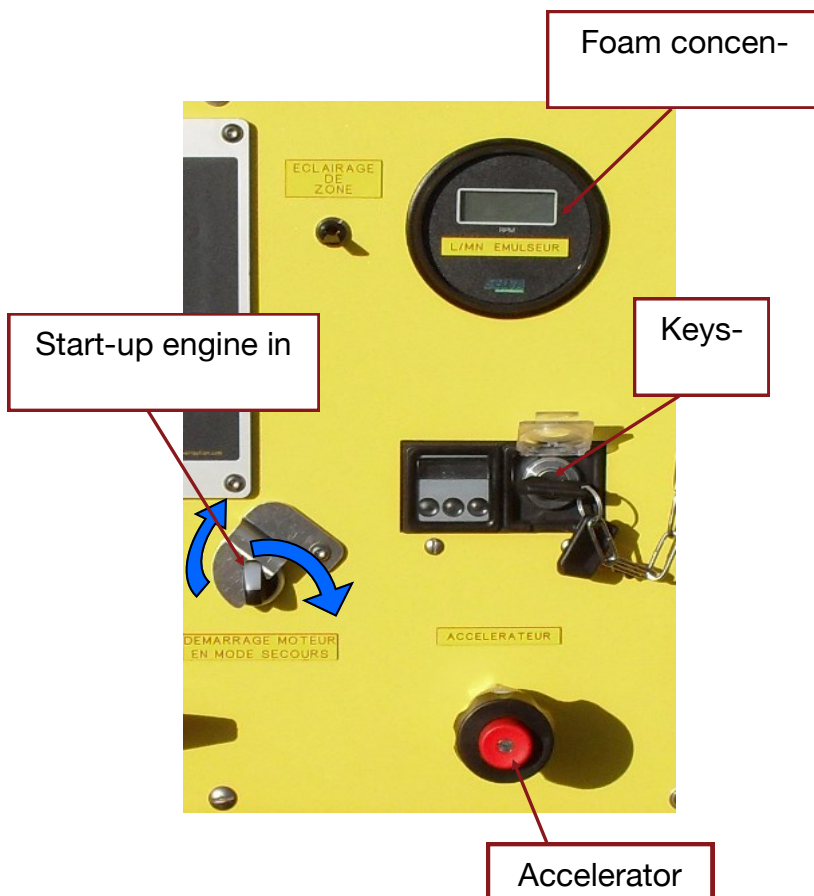
In case of malfunction of the automatic dosing, it is possible to perform the dosing in manual mode.

Adjusting the concentration is obtained as a function of engine acceleration.

The abacus is used to find the amount of foam concentrate required based on water flow.

Adjusting the amount of foam will be by motor acceleration and can be adjusted using the theoretical speed displayed.

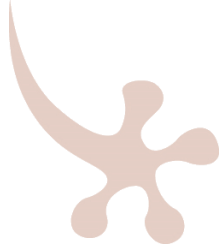
- Switch button « **ENGINE STARTING IN EMERGENCY MODE** » then start the engine with the key.
- Switch the valve **V2** in position « **MANUAL** ».
- Check that **V1** is on « **INJECTION** ».



ABAUQUE DE FONCTIONNEMENT MANUEL

POURCENTAGE EMULSEUR	3%	6%
DEBIT	L/MIN	
1000 L/MIN	30	60
1500 L/MIN	45	90
2000 L/MIN	60	120
3000 L/MIN	90	—
4000 L/MIN	120	—

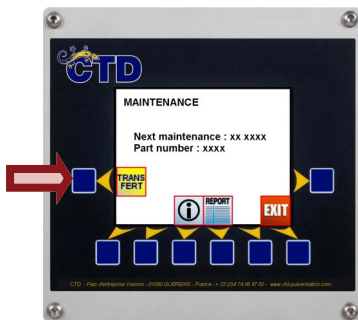
Using the tachometer and the abacus above-cons, set engine with the accelerator in order to obtain the value Flow of foam desired.



Procedure of use

10 – TRANSFER :

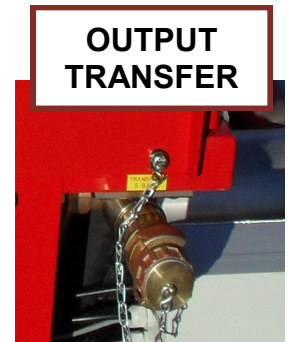
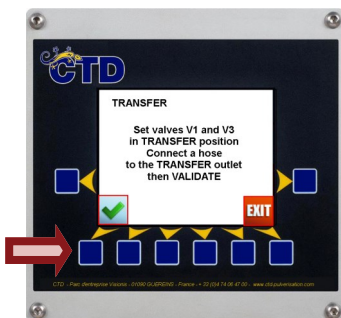
Select the transfer aid available from the Maintenance screen
Key **[T1]** then press key « **TRANSFER** »



- Chose either to connect a suction pipe on the external suction and switch the valve **V4** on « **EXTERNAL SUCTION** »
- Or switch the valve **V4** on « **SUCTION TANK** »



- Connect a suction hose on the output TRANSFER
- Switch the valve **V1** in position « **TRANSFER/PRIMING** » and the valve **V3** in position « **TRANSFER** »
- Then « **VALIDATE** ».



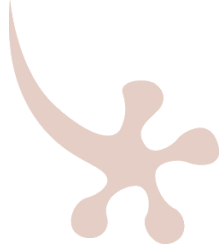
- Start the engine.

Once the transfer is complete,

Proceed with flushing in the following manner:

- Supply the collector with water.
- Switch the valve **V4** in position « **FLUSHING** »
- When clean water flows out the transfer, replace the valve **V4** In position « **STOP DOSING** » The engine stops.

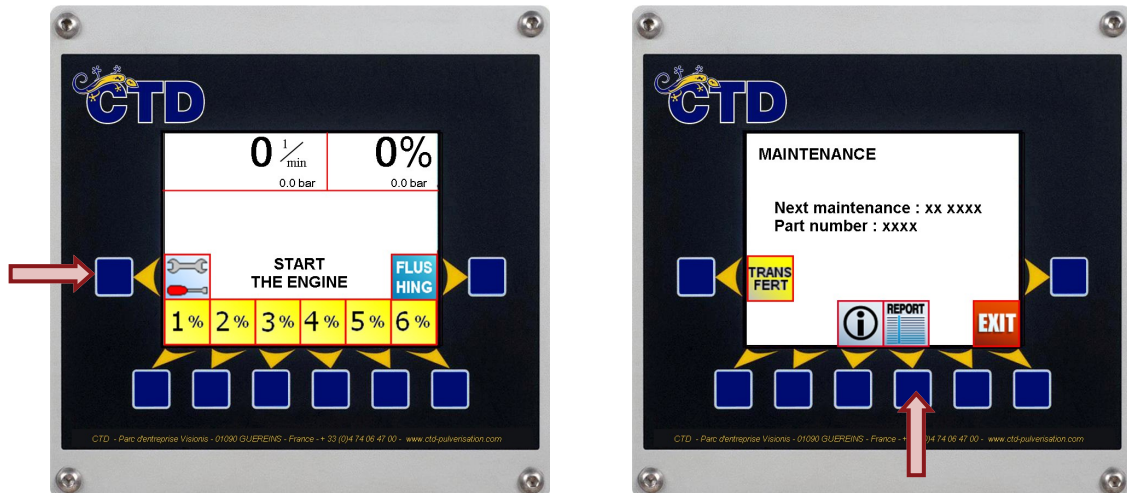
- Replace the valve **V3** on « **PRIMING** » and **V1** on « **INJECTION** ».



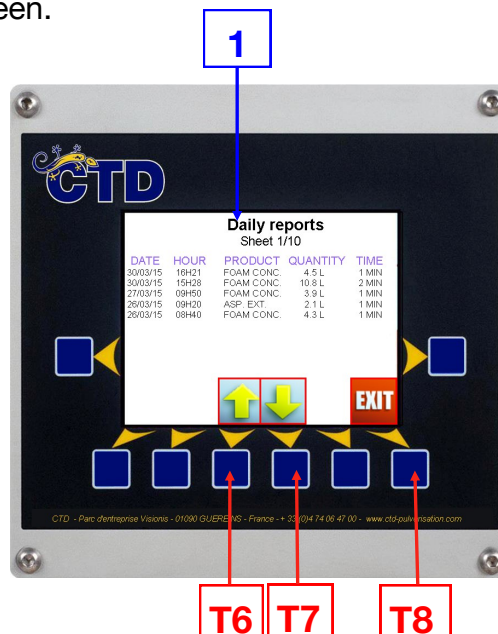
Use of the screen

11 - JOURNAL OF OPERATIONS :

- To access to the journal of operations, press the key « **MAINTENANCE** » then press the key « **REPORT** ».



- This button provides access to the historical past 120 interventions :
- Press the arrows to scroll through the pages, and the "EXIT" key to return to the Maintenance screen.



STARTING AND USING BUTTON

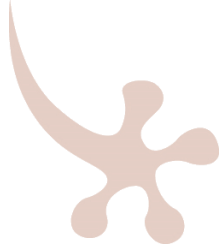
T6 Key « PREVIOUS PAGE ».

T7 Key « NEXT SUIVANTE ».

T8 Key « EXIT » = Return to the maintenance screen.

INFORMATION DISPLAY ON THE SCREEN

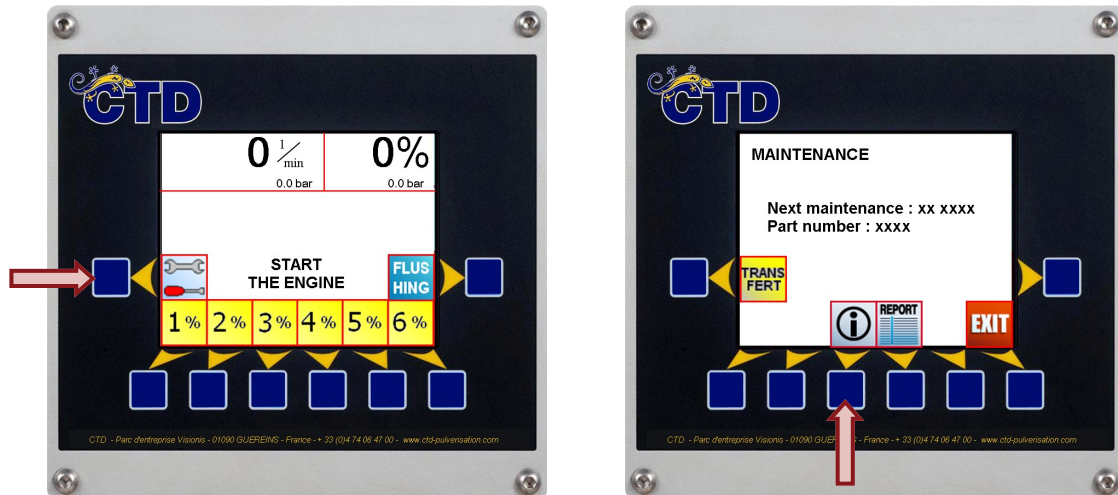
1 Daily information (Day - Hour - type of used additive - Quantity - Internention time)



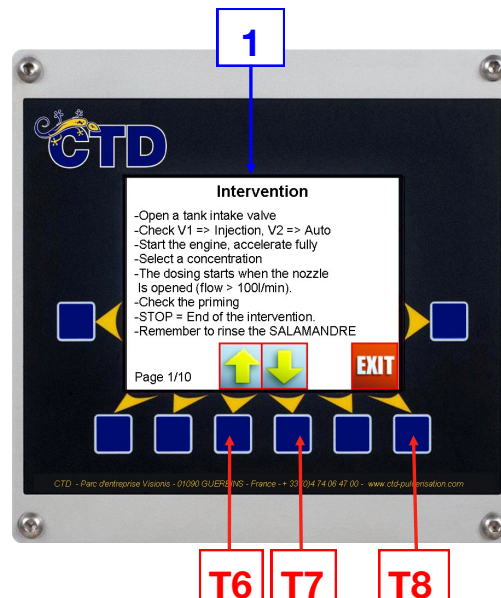
Use of the screen

12 - INFO MENU :

- To access the Info menu, press the key « **MAINTENANCE** » then press the key « **i** ».



- This button provides access to the user manual synthetic :
- Press the arrows to scroll through the pages, and the "EXIT" key to return to the Maintenance screen.



STARTING AND USING BUTTON

T6 Key « PREVIOUS PAGE ».

T7 Key « NEXT SUIVANTE ».

T8 Key « EXIT » = Return to the maintenance screen.

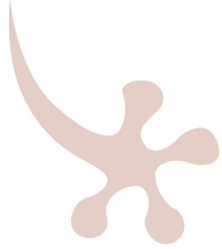
INFORMATION DISPLAY ON THE SCREEN

1 Instructions for use

MAINTENANCE



PROCEDURE



Maintenance procedure

13 - FROST (After flushing) :

- Check that the the tank suction valve is closed.
- Switch the valve **V4** in position « **EXTERNAL SUCTION** ».
- Switch the valve **V1** in position « **TRANSFER - PRIMING** ».
- Switch the valve **V3** In position « **PRIMING** ».
- Start the engine.
- Expect that more water flows under the rocks.
- Turn off the engine.
- Open the valves located under the collector to purge.



14 - WARNING :

- Joints of pumps are leather : the system must run at least once a month to pump seals that are wetted by water, otherwise they dry, creating leaks.

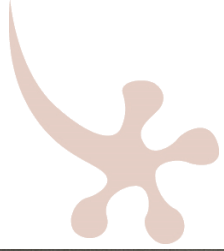
- Simplified procedure to moisten the pump: (Salamandre engine shutdown)
- Connect a water hose (maxi 5 bar) on the external suction.
- Switch the valve **V4** on « **EXTERNAL SUCTION** »
- Switch the valve **V1** on « **TRANSFER - PRIMING** ».
- Switch the valve **V3** on « **PRIMING** ».
- Allow water to run for 5 minutes.
- Shut off the water.
- Return the valves to their initial positions.

- Never run the pump dry.

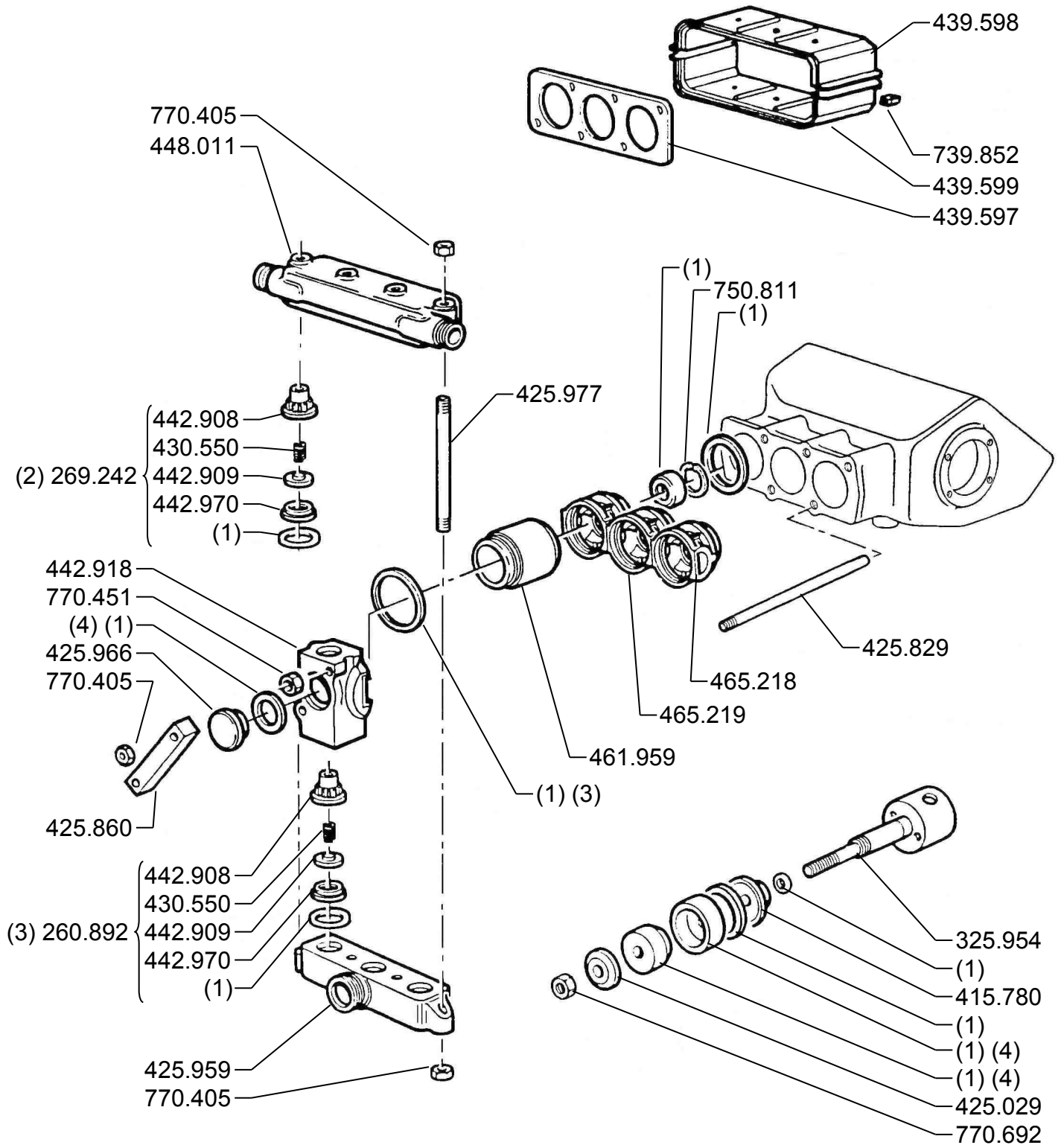


ANNEXES

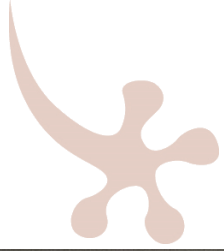




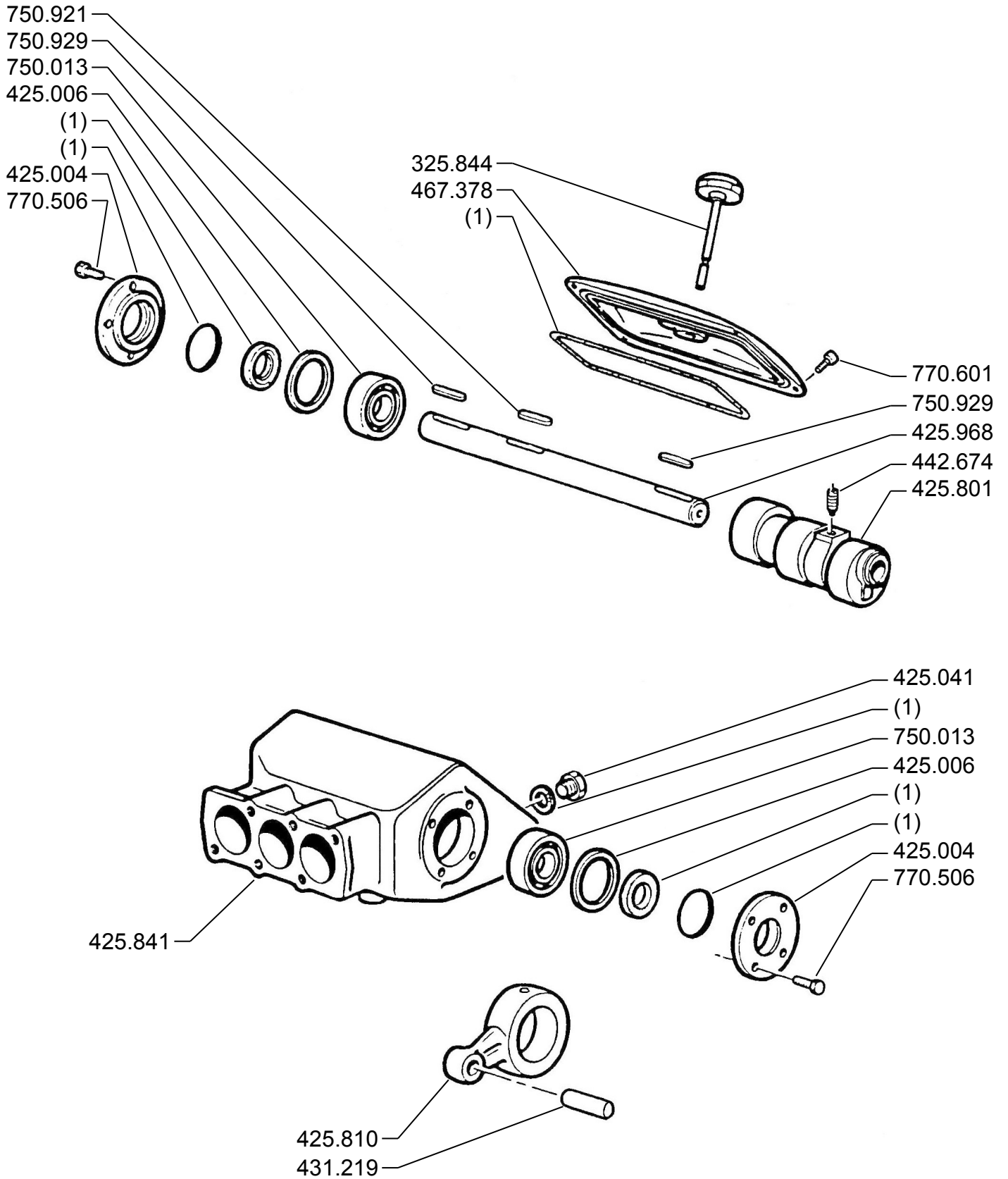
Pump GAMA 130



- (1) Parts being in the small pochet of breakdown service Ref : 215.785
- (2) Set of 3 valves of discharge Réf : 269.242
- (3) Set of 2 suction valves Réf : 260.892
- (4) Set of 3 pistons leathers with ring and joint Réf: 215.784



Pump GAMA 130



(1) : Small pocket of repair Ref : 215.785

Maintenance Pump GAMA 130

To control every 50 operating hours : Oil levels :

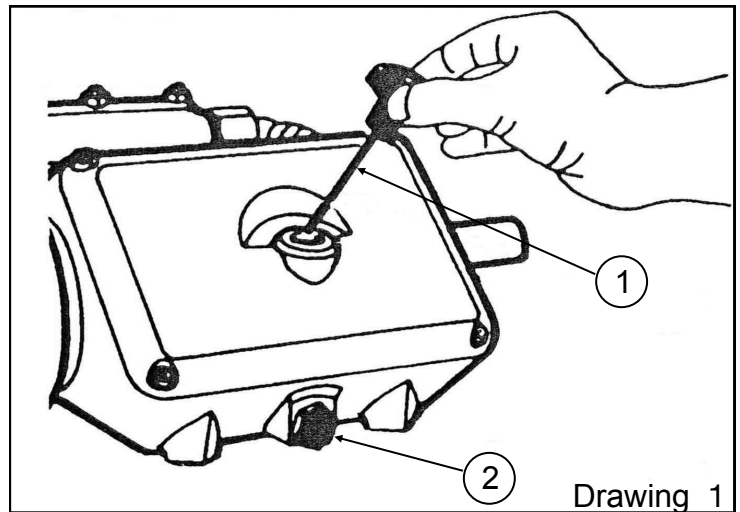
- Engine (to refer to the technical booklet of this one)

- GAMA pump (figure 1)

To check the oil level gauge. The right level is when the oil is on the notch (1). Total draining is carried out by unscrewing the stopper (2).

To use SAE30 oil or BERTHOUD special oil ref.769.286 (can of 2 liters).

Quantity : 1.40 litters.



- Gear (figure 2)

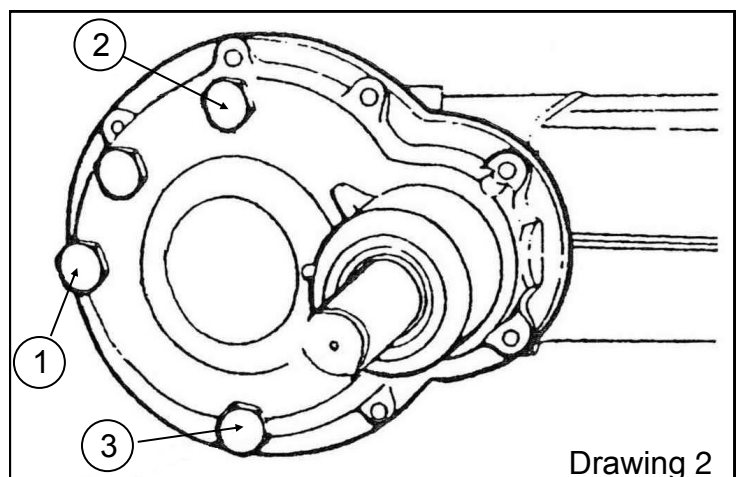
To unscrew the stopper to check the oil level gauge (1).

To complete the oil level through the hole (2).

Total draining is carried out by unscrewing the stopper (3).

To use SAE30 oil or BERTHOUD special oil ref.769.286 (can of 2 liters).

Quantity : 0.25 litters.

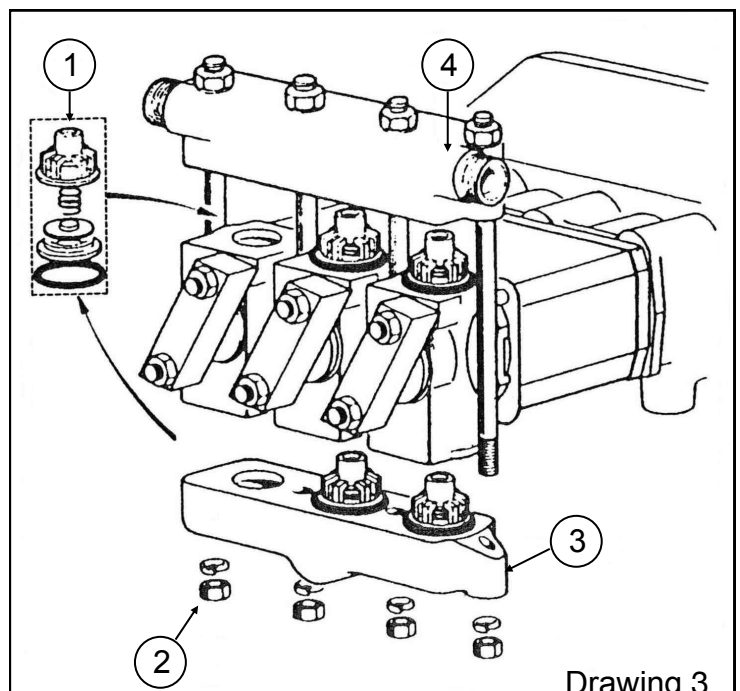


Every 200 operating hours or once a year :

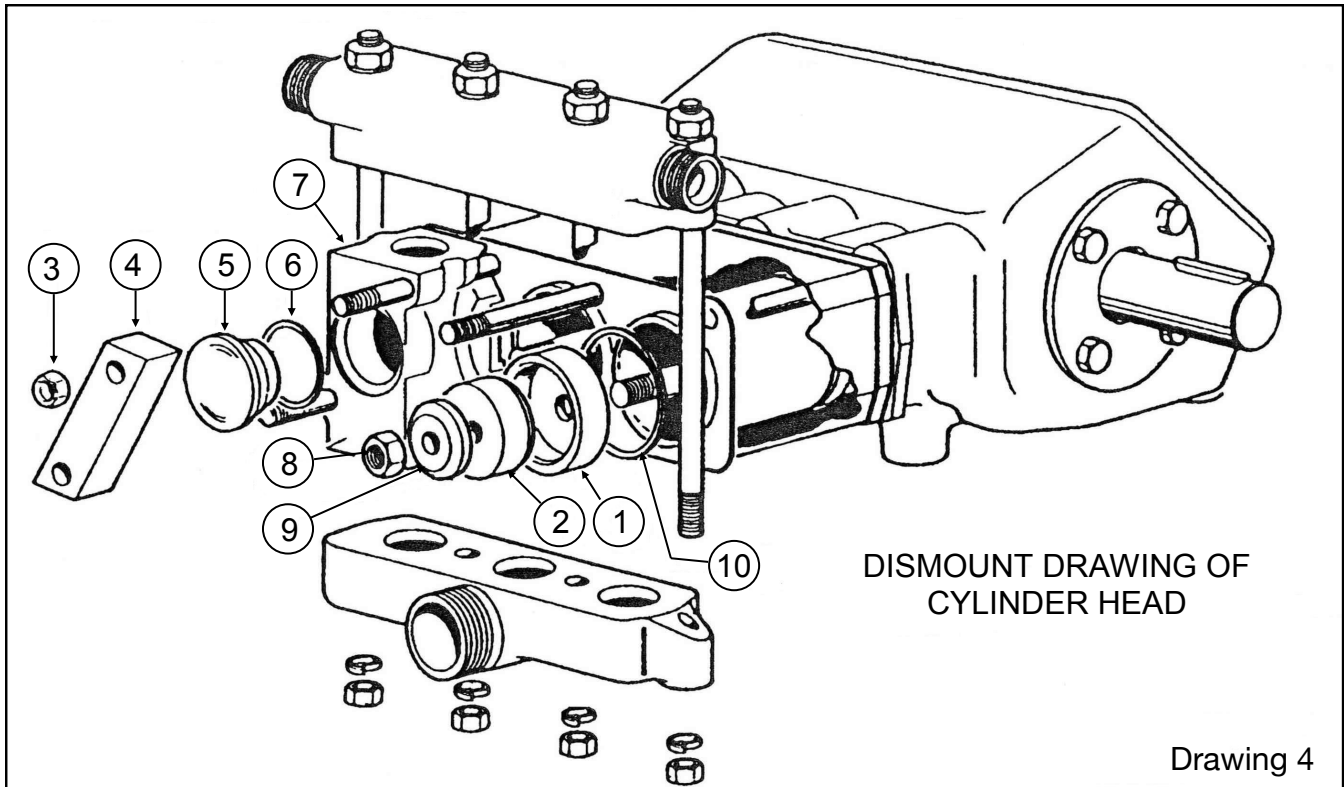
- To drain and replace the oil of the pump and the gear (drawings 1 et 2).

- To check the state of 6 sets of valve (item.1, drawing 3) :

- To unscrew the 4 nuts (2).
- To remove the aspiration's collector (3).
- To remove the pression's collector (4) and its 4 tirans.
- To dismantle the 6 sets of valve (1), to clean with the gasoline, and to oil slightly before the reassembly.
- To reassembly the unit.



Maintenance Pump GAMA 130



Every 50 operating hours :

- To tighten the cups of pistons (1) by compressing the rings of extension (6) with the Nylstop nuts (8).

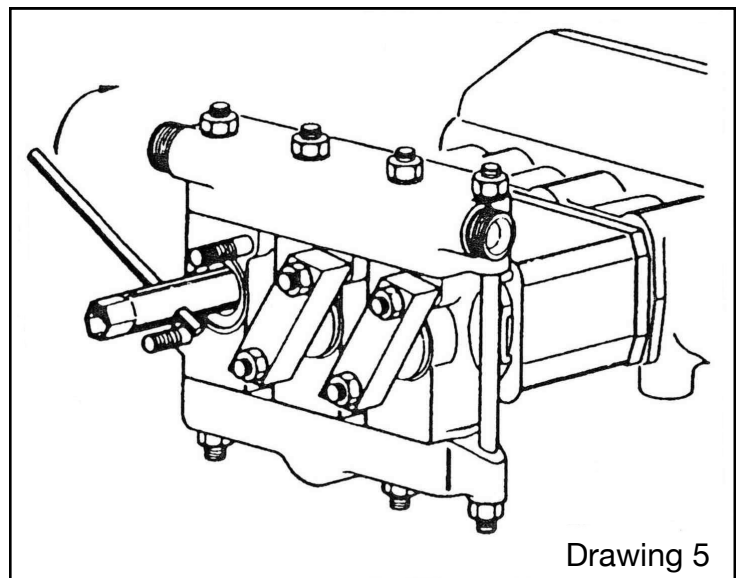
For that :

- To unscrew the 6 nuts (3) (drawing 5).
- To remove the 3 bars (4).
- To remove the 3 stoppers and seals (5).
- To tighten moderately with the special tool (drawing 5) or with a tube wrench of 19 millimetres.

Every 200 operating hours or once a year :

- To check the wear of the cups of piston (1) and them rings (2) (drawing 4) :

- To unscrew the 6 nuts (3).
- To remove the 3 bars (4).
- To remove the 3 stoppers and seals (5) and (6) as well as the 3 cylinder heads (7).
- To unscrew the nuts (8).
- To remove the 3 discs (9), the 3 cuts (1) and the rings of expansion (2).
- To change the defective parts if it's necessary.
- To reassemble the unit after changing the 3 nylon seals (10) between cylinders head and cylinders.

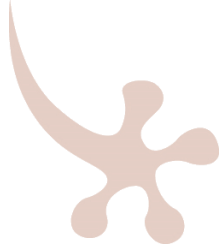


FOOT NOTE :

If you don't use the pump during few weeks, you could see some liquid get out of the pump. But this thing must stop after a few minute. If it persists, to tighten the cups of piston.

PROTECTION AGAINST FREEZING :

To turn the pump 2 or 3 minutes to vacuum and purge.



Spare parts

DESIGNATION	QUANTITY	REFERENCE
MOTOR 7CV	1	LOM-15LD35 DET
PUMP GAMA 130	1	217281
COUPLING PLATE HRC110 F1610	2	Z410130
HUB TL1610 Ø25.4 HRC 110/130	1	Z410148
HUB TL1610 Ø30 HRC 110/130	1	Z410150
ELASTIC ELEMENTS HRC 100/110	1	Z410135
SILENT BLOCKS	4	Z410004
BATTERY	1	Z2000055
ACCELERATOR	1	Z201502
TACHOMETER + HORAMETER	1	Z200053
SCREEN	1	Y200129
DASHBOARD LIGHTING	1	Z200008
BATTERY SWITCH	1	Z200163
VOLTMETER 12V	1	SOP580012
REGULATION VALVE	1	AR465442
SAFETY VALVE 2" - 5 BAR	1	MGP2650601
SAFETY VALVE 2" - 8-20 BAR	1	MGP265060
PRESSURE LIMITER 1"1/2 - 3 BAR	1	Z430002
INJECTOR	1	Y110002
FLOW DETECTOR	1	Z220215
WATER FLOWMETER	1	Z220015
FOAM CONCENTRATE FLOWMETER DN25	1	715593
ELECTRONIC CARD	1	U070010
PRESSURE SENSOR	2	Z220202
5 WAYS VALVE	1	Z424051
MAGNETIC DETECTOR M12	1	F732734



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