



PRECIFLUID DISPENSER

USER GUIDE

VOLUMETRIC DISPENSER PRECIFLUID®

BECAUSE DISPENSING IS OUR JOB,

ACCURACY IS OUR PERFORMANCE

User's guide

DISPENSER VOLUMETRIC PRECIFLUID®

This setup guide is also available online at :

[**www.precifluid.com**](http://www.precifluid.com)

Please dispatch it to your different services (production, supervisors,
maintenance , supply chains...)

INTRODUCTION

Thank you for the purchasing the Precifluid® Dispenser. This innovative technology is designed to dispense easily quickly and accurately every type of 1 or 2-component fluid. This controller benefited a propriety system PreciFluid® of-linear movement for forward and backward.

Please spend a few minutes to become familiar with the controls and features of your PreciFluid® Follow our recommended procedures. Review the helpful information we have included in this user's guide.. If you have any questions, contact your customer service by email :

contact@precifluid.com

Engagement Precifluid

*« You have just purchased the dispensing equipment PreciFluid®
I want you to know that all of us value your business and will do everything in our power to make you a satisfied customer.*

If at any time you are not fully satisfied with our equipment or the support provided, please contact me personally at 01 39 62 40 92.

*I guarantee that we will resolve any problems to your satisfaction.
Thanks again for choosing PreciFluid®.»*

President of PreciFluid

Summary

Safety	6-9
.....	
Metering dispenser's installation	10-16
.....	
Operation dispenser	17-25
.....	
PreciFluid® set up	26-27
.....	
Automatic mode operation	28-30
.....	
Manual mode operation	31-32
.....	
Sequential mode operation	33-34
.....	
Setting mode	35-36
.....	
Detached pieces	37-38

Important Safety Information

All PreciFluid® disposable components, including syringe barrels, cartridges, pistons, tip caps, end caps, and dispense tips, are precision engineered for one-time use. Cleaning them and re-using components will compromise dispensing accuracy and may increase the risk of personal injury.

Please use PreciFluid® consumables to preserve an optimal accuracy and avoid wast of product.

- Do always wear appropriate protective equipment and clothing suitable for your dispensing application.
- Do not exceed maximum operating feature
- Do not heat syringe barrels or cartridges to a temperature greater than 38°C (100°F).
- Dispose of components according to local regulations after one-time use.
- Do not clean components with strong solvents (e.g. MEK, Acetone, THF).

Introduction

Please read manual for proper use of this equipment. Follow all safety instructions. Task and equipment-specific warnings, cautions and instructions are included in equipment documentation where appropriate.

Make sure these instructions documents are accessible to persons operating or servicing equipment.

Qualified Personnel

Equipment owners are responsible for making sure that PreciFluid® equipment is installed, operated and serviced by qualified personnel. Qualified personnel are those employees who are trained to safely perform their assigned tasks. They are familiar with all relevant safety rules and regulations and are physically capable of performing their assigned tasks.

High Pressure Fluids

High pressure fluids, unless they are safety contained, are extremely hazardous. Always release fluid pressure before adjusting or servicing high pressure equipment.

A jet of high pressure fluid can cut like a knife and cause serious bodily injury, amputation, or death. Fluids penetrating the skin can also cause toxic poisoning.

Warning : Any injury caused by high pressure liquid can be serious. If you are injured or even suspect an injury :

- Go to an emergency room immediately.
- Show the doctor this note.
- Tell the doctor what kind of material you were dispensing.

Action in the Event of a Malfunction

If a system or any equipment in a system malfunctions, shut off the system immediately and perform the following steps : Disconnect and lock out system electrical power, slowly unscrew the barrel retainer. Identify the reason for the malfunction and correct it before restarting the system.

Fire caution

To prevent fire hazard, follow these instructions :

- Have adequate ventilation to prevent any dangerous situation about particles or vapour. For any council, please refer to the local code or toxicological specifications of products.
- Do not disconnect electrical circuits during it's turned on when we work near flammable materials. To avoid sparks, first turn off power before disconnect.
- Switch off all the equipment immediately if you receive even a slight electric shock and do not restart the equipment until the problem has been identified and corrected.
- Do not smoke or use flames where inflammable materials are stocked clean and maintain equipment following instructions of this user guide.
- Make sure you have an adequate ventilation to prevent any dangerous particles or vapours concentration. For more informations, please refer to the local code or the toxicological datasheet of your product.
- Do not disconnect working electrical circuits during work nearby flammable materials. To avoid sparks, first turn off power before disconnect .
- Know where emergency stop buttons, shut-off valves and fire extinguishers are located.
- Use only replacement parts that are designed for use with original equipment.
- Contact your PDS representative for information and advice.

Disposal

Dispose of equipment and materials used in operation and servicing according to local codes.

Personal safety

To prevent injury, follow these instructions:

- Do not operate or service equipment unless you are qualified.
- Do not operate equipment unless safety guards, doors or covers are intact and automatic interlocks are operating properly.
- Do not bypass or disarm any safety devices.
- Keep clear of moving equipment. Before adjusting or servicing moving equipment, shut off the power supply and wait until the equipment comes to a complete stop. Lock out power and secure the equipment to prevent unexpected movement.
- Switch off all the equipment immediately if you receive even a slight electric shock and do not restart the equipment until the problem has been identified and corrected.
- Get all informations concerning the toxicological specifications of the used product.
- Respect manufacturer's informations for a safe manipulation of products and use personal protective equipment.
- To prevent any accident, please consider the workstation's dangers, less obvious but may not be entirely eliminate : hot surfaces, electrical circuits and moving part who cant be trapped inside for practical reason.

Intended Use

Use of PreciFluid® equipment in ways other than those described in the documentation supplied with the equipment may result in injury to persons or damage to property.

Do not use incompatible materials

Do not make unauthorized modifications

Do not operate equipment in excess of maximum ratings

Any approvals obtained for PreciFluid® equipment will be voided if instructions for installation, operation and service are not followed.

To get it self and read every toxicological specifications of all used products. Follow the instructions of the manipulation and a safe manipulation of products and use personal protective equipment. To prevent any accident, thank to take into account the workstation's dangers who are the less obvious and can't be removed : hot surfaces, electrical circuits and moving part who can't be trapped inside for practical reason.

Volumetric controller's installation

Your volumetric controller 's PreciFluid® enjoys a unique technology and patented, allowing a metering accuracy exceptional and this, a few are variations of viscosity or temperature.

BASIC PRINCIPLE

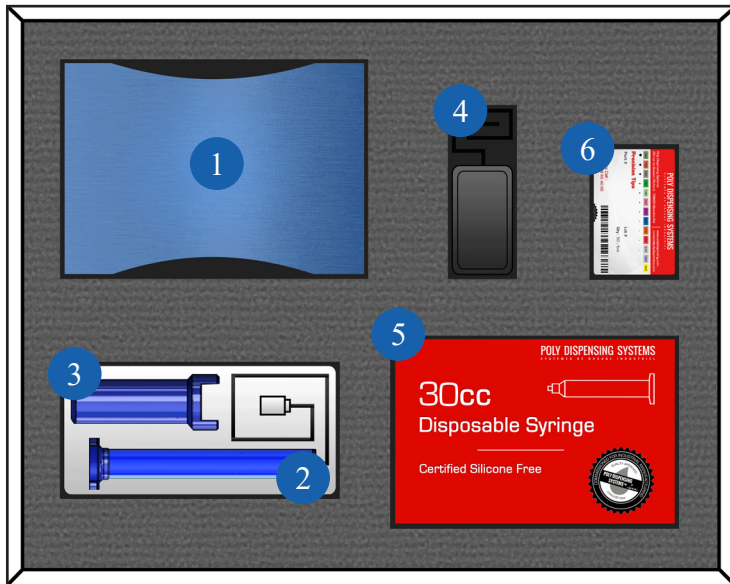
The PRECIDrop® allows the syringe's piston, directly united, to perform a defined distance. That distance combined to the container or syringe volume characteristics, represents a volume. That displaced volume is perfectly repeatable with greater accuracy than 1%.

FEATURES

- Fully electric, no compressed air
- Easy to set up : choose volume (cc), speed (cc/sec) and Vacuum if needed, than start with dispensing process. Other options are possible
- Available in syringes in 3cc, 5cc, 10cc, 30cc sizes
- Programmable pull-back stops drooling
- All-digital, multi-function multilingual display

UNPACK YOUR PRECIFLUID®

Remove all items from the box and check that all the components are present :



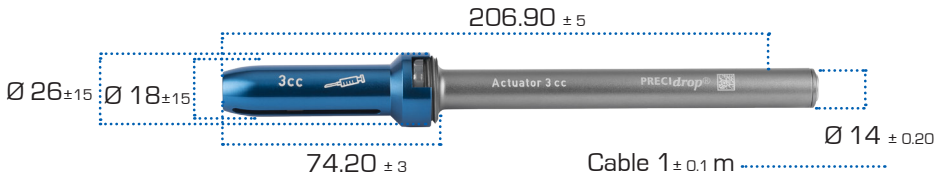
- 1 Case DropUnit : Control Unit
- 2 DropGun : Linear Distribution System
- 3 DropTube case : adaptable size and stabilizing magnet.
- 4 Battery pack to 9V
- 5 Starter kit : syringes + pistons
- 6 Needles DropTips : Sizes 14G to 32G

3 CC DROPGUN SPECIFICATIONS

SPECIFICATIONS

Size	3cc
Forward screw [mm] -env.	40
Linear displacement steps[mm]	0,000781
Section of the syringe [mm²]	70.88
Usable volume max [cc]	2.84
Volume by steps [mm³]	0.055
Volume by steps [cc]	0.000055

DIMENSIONS (mm)

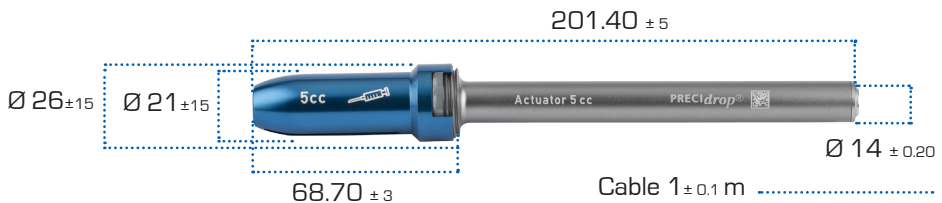


5 CC DROPGUN SPECIFICATIONS

SPECIFICATIONS

Size	5cc
Forward screw [mm] -env.	30
Linear displacement steps[mm]	0,000781
Section of the syringe [mm²]	124.69
Usable volume max [cc]	4.11
Volume by steps [mm³]	0.97
Volume by steps [cc]	0,000097

DIMENSIONS (mm)

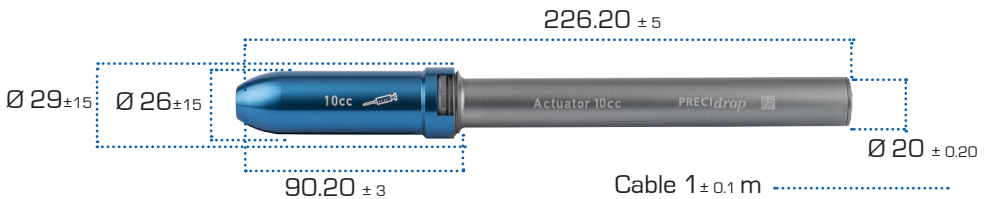


10 CC DROPGUN SPECIFICATIONS

SPECIFICATIONS

Size	10cc
Forward screw [mm]	50
Linear displacement steps[mm]	0,002411
Section of the syringe [mm²]	196,07
Usable volume max [cc]	9,80
Volume by steps [mm³]	0,473
Volume by steps [cc]	0,000473

DIMENSIONS (mm)

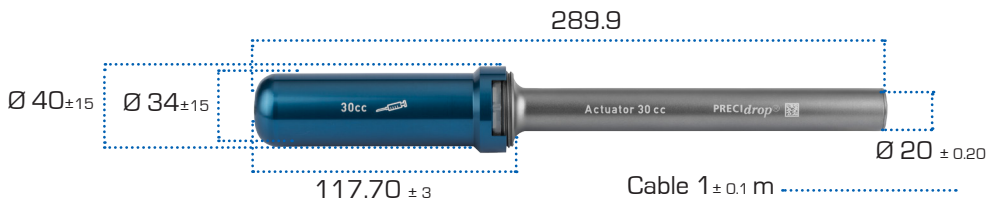


30 CC DROPGUN SPECIFICATIONS

SPECIFICATIONS

Size	30cc
Forward screw [mm]	70
Linear displacement steps[mm]	0
Section of the syringe [mm²]	401.15
Usable volume max [cc]	28.08
Volume by steps [mm³]	0,933
Volume by steps [cc]	0,000933

DIMENSIONS (mm)



CONTROLLER SPECIFICATIONS

SPECIFICATIONS

Congestion L*I*H (mm)	205 x 148 x 82
Weight	1,47 Kg
Outer- power supply range of input voltages	110-240V
Maximum inrush current	2A
Range of input frequencies	50-60Hz
Output Voltage	9V
Output Current	1,5A
Output power	13,5W
Cycle start signal	Pedal, Command to the finger or dry contact
Cycle end signal	Static output

DIMENSIONS



PRINCIPLE OF OPERATION OF PRECIFLUID®

Due to a high performance DropGun, the PreciFluid® metering dispenser perform a linear progression of the piston in contact with the fluid. The screw activated by the step-by-step motor has a high precision machining and is linked to the piston thanks to a patented connection system.

The system also offers a high pushing capacity going beyond 500,000 cps with a torque multiplication.

The depositing cycle consists in the forward movement of the piston in a defined volume and speed, a parametrized mechanical drawback which performs a backward movement of the piston PistonDrop®.

Working delay can be programmed in order to be alerted at the end of the process (for example, this can be useful during the application of a two-components product with a limited operating time).

The equipment can operate in three modes :

Manual : As long as the cycle is activated by the pedal or switch, the machine table dispense at a defined speed. When stopped, a drawback can be programmed.

Automatic : Each pulse (pedal or PLC control finger contact) the dispenser performs a deposition as the saved settings of the active program

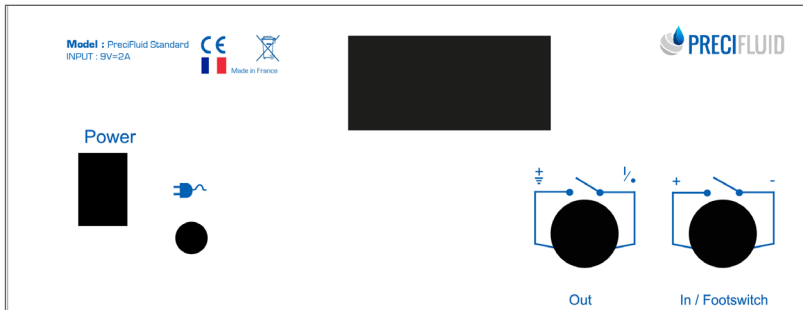
Sequences : A sequence is a serie of programs (same or different) spaced a programmable time or an external trigger (pedal for example).

Buttons :



START THE UNIT IN 10 STEPS

Back Panel.....

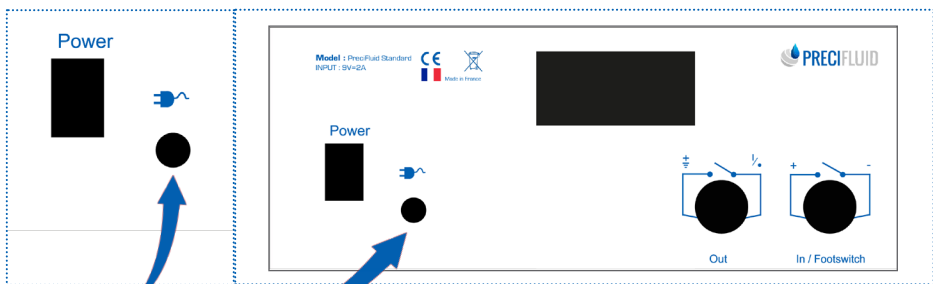


1

Electrical power

The PreciFluid® metering dispenser has an electrical supply compatible 100V to 230V. Please check the compatibility before connecting it to the power outlet.

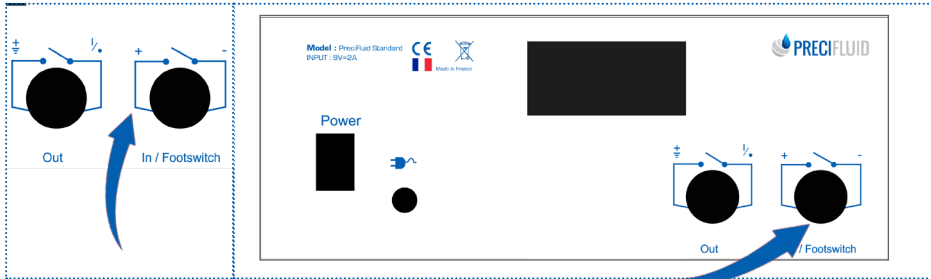
No adjustment is required by the user, the electronic console adjustment PreciFluid® Standard uses of the low voltage.



- a. Turn the power switch on to the OFF position.
- b. Plug the power connector 9V located on the unit
- c. Turn the power switch on to the ON position

Your device is electrically connected.

- 2 Connect your foot control or command to the finger or even contact machine (*)

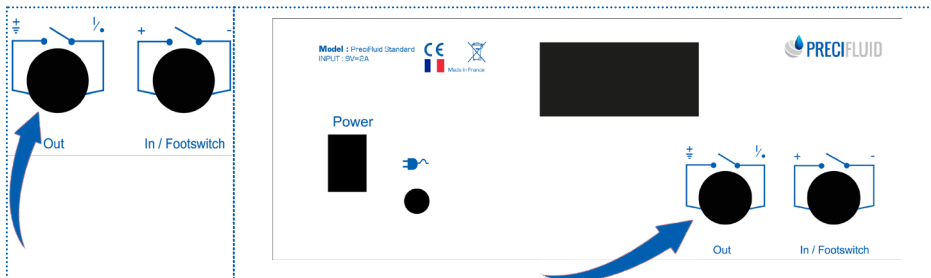


Connect your foot control or command to the finger or even contact machine (*)

- 3 If you want an ending cycle signal, use the additional connector provided with your Precifluid®. It is important to follow the following wiring diagram :

Feed pin 1 +12 or + 24VDC or + 48VDC.

You retrieve this voltage end of the cycle to 3 pins during 500ms

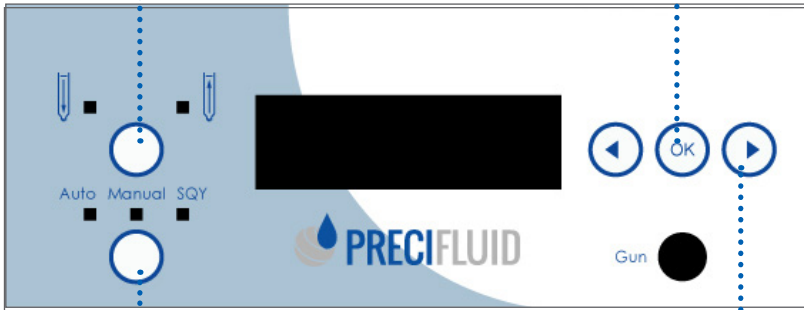


Front panel

Take the time to recognize the buttons and connections of the device :

Advance / contraction

Validation



Change to mode

Navigation

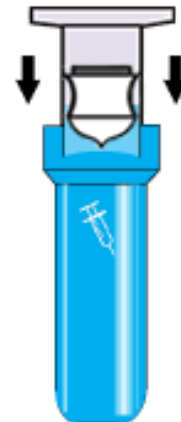
4

Now that your console is plugged in electrically, we are going to mount the DropGun.
To prepare your gun you must assemble the elements in the order of the following image :

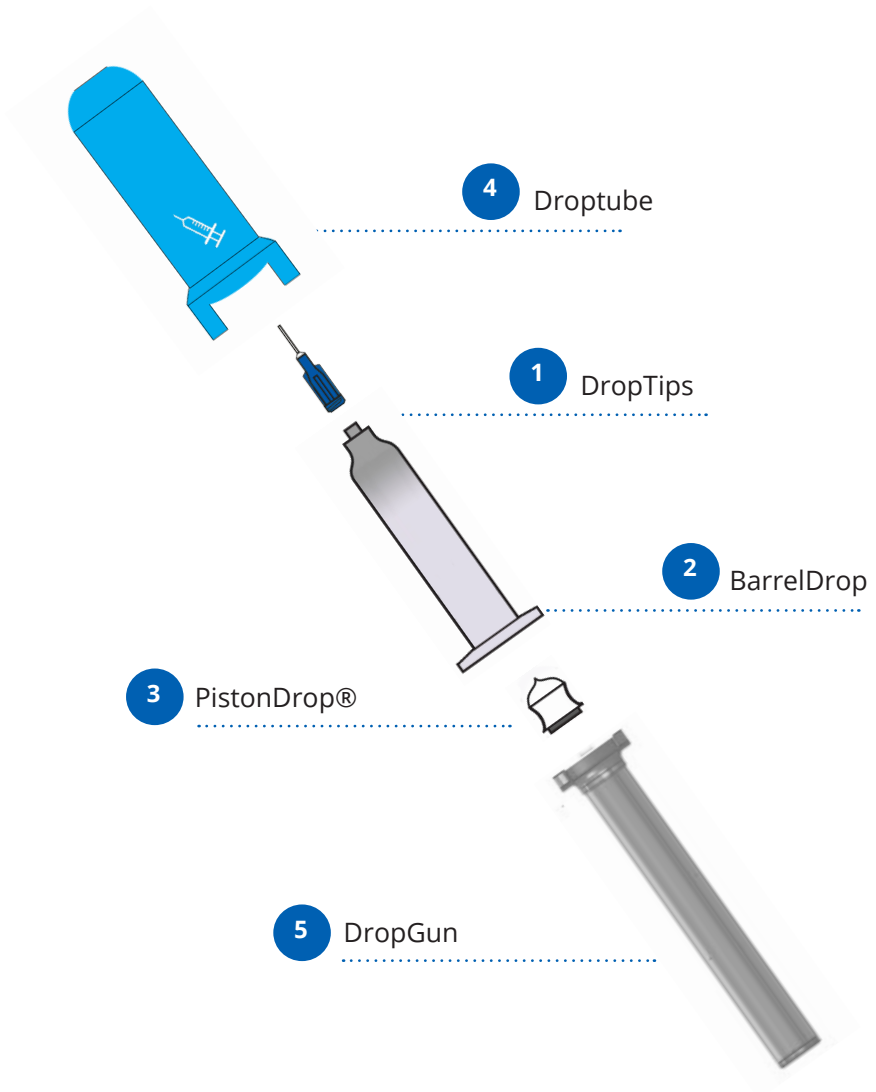
Insert the correctly filled PreciFluid® syringe (maximum $\frac{3}{4}$ of the barrel capacity) into the DropTube (syringe case). Do not force because each DropTube is perfectly suited for syringe sizes.

Important :

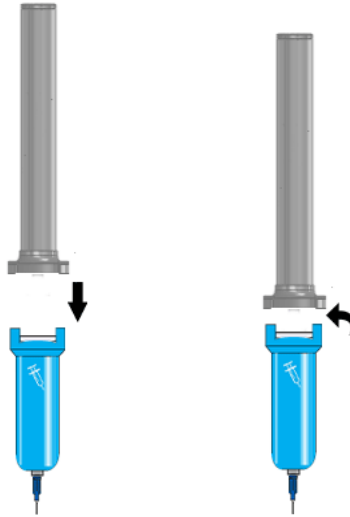
Use only PreciFluid® syringe barrels and pistons that are designed for use with original equipment. The gun calibration is design for the syringe PreciFluid® with a very high accuracy. Only syringes and pistons PreciFluid® guarantee the most accurate and repeatable dispense.



COMPOSITION OF PRECIDROP®



Assemble the gun to the Droptube with the syringe barrel and simply screw, without over tightening it.



5

Take your DropGun and connect it to your control unit.

The connector is provided with keyed to ensure a good connection. You should hear a «click» felt and looked safe and locks the connection.


To disconnect the DropGun, please keep the enclosure with one hand and pull toward you the connector.



6

When connecting the Precifluid® you must set your gun so that it finds its zero point.

To do this, connect the gun to the Precifluid® case, when you turn on the console, you are asked to initialize the gun :



INIT DISPENSER

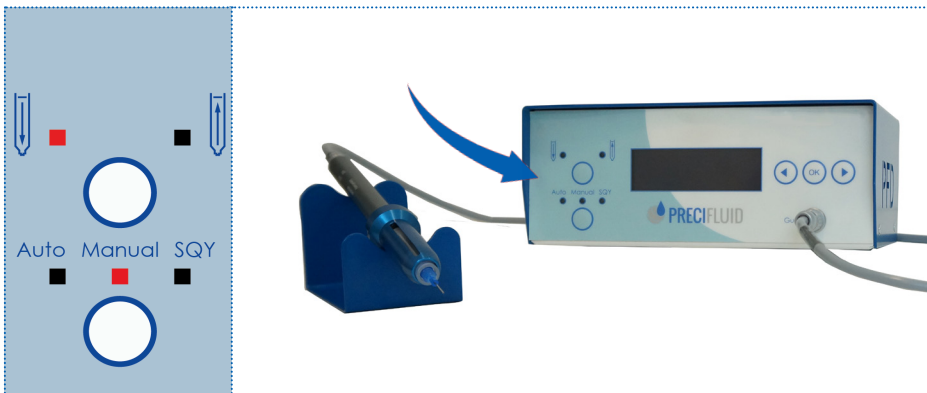
Press OK. When the message «Init dispenser» disappears the screw of the PRECIDrop® retracts completely, you can then begin to program your console.

Note : Each time you unplug the gun, you will be prompted to reset it.

7

Once your DropGun has been set, activate the «manual» mode, select a relatively high speed, select the «↓» button and then press the pedal.

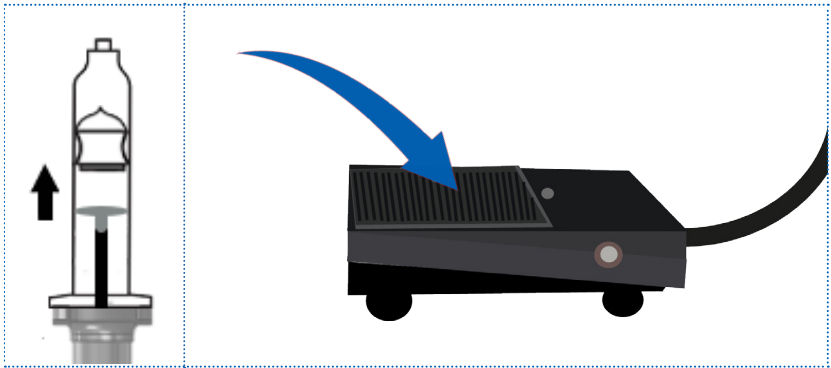
The «manual» and «↓» leds must be illuminated.



8

Now tilt the gun upwards, advance the PreciDrop® gun screw by pressing the pedal.

As soon as the screw is in contact with the piston, you will hear a «click». Release the pedal and start programming your console.



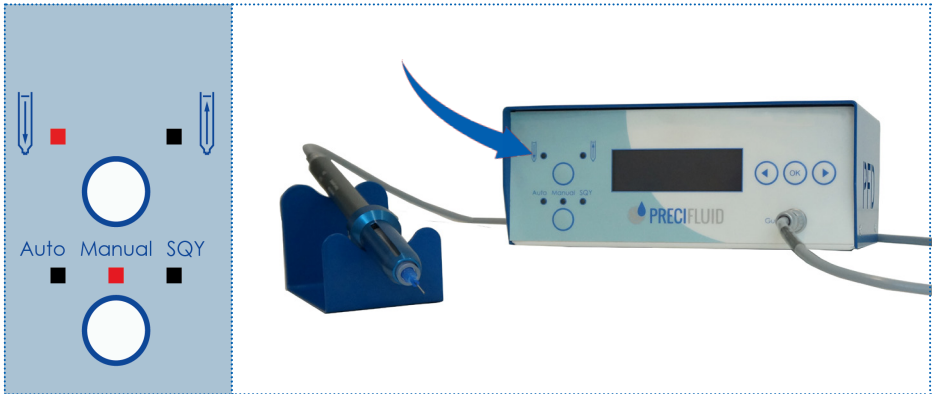
9

Your Precifluid® equipment is now ready to use. Unscrew the seal from the syringe barrel and place the dispensing tip Luer Lock. Activate your dispensing mode :

- "Auto" mode page 28
- "Manual" mode page 31
- "SQY" mode page 33

10

Make sure the right dispensing mode is activated

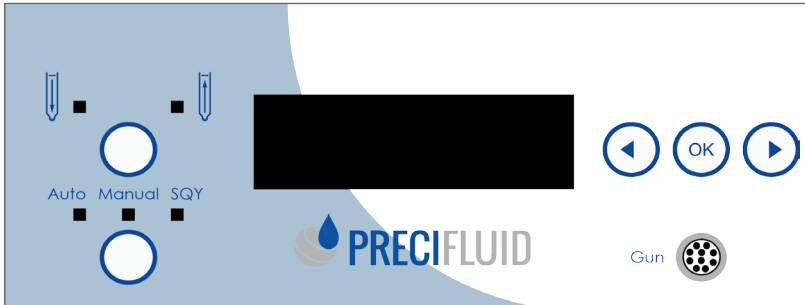


Start dispensing using the foot pedal or the finger switch

Important :

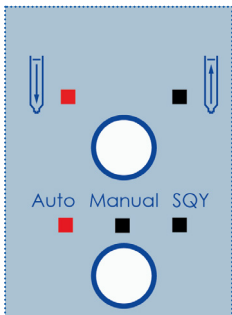
Always use dispensing tips as wide as possible and reduce the flow.
The width of the tip has no influence on the dispensed volume.
The loss of load caused
by a diameter of needle too low creates a compression and
an inertia which complicated the settings of reminder of gout and mistreated
certain fluid.

PreciFluid® Set up



CHOICE OF THE MODE OF OPERATION : AUTO – MANUAL - SQY :

Press once the button just below the Led to highlight the right dispensing mode. For each mode, you'll find a dispense parameters menu. Select your dispensing mode and set it up.



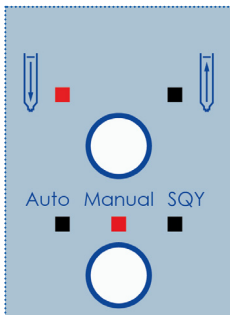
Mode « Auto »

This Auto mode is used to give out a fixed and defined quantity of medium at a selected speed (.in cc/s)
Pressing the foot pedal starts the dispensing process even if not held.

This mode is used for calibrated and repeated shots.

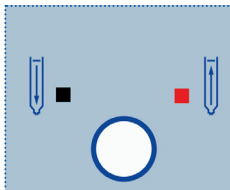
In this mode, you can also schedule :

- « Default program » : Choose that the program to be launched by default at the start of the device
- « Alarm working time » : Define a working time limit beyond which the device goes into alarm (this allowing not to exceed the time of life product for example)
- Save your program.

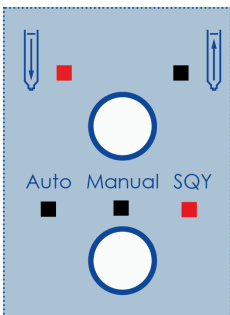


Mode « Manual » :

The «manual» mode allows you to make deposits at a programmed speed (in cc / s), pressing the pedal (or sending an external contact , PLC for example) triggers the cycle which continues as long as the pedal is not released (or the external contact has not stopped). This mode is often favoured for the realization of deposits with the «judged» or of cordons to judge or else of removal of cord led by an external contact. This is the only way to back the screw in a controlled way.



Choice Mode «advance» or «decline» of the screw



Mode « SQY » :

The «SQY» mode or sequence allows you to make deposited one or more volumes scheduled spaced a programmed time. This is a series of doses. These doses course programmed speed (cc/s), a withdrawal movement end of the programmed cycle , as well as other parameters such as those expressed above for the «Auto» mode.

Auto mode set up

Follow these instructions to program your auto mode :

1

« Extend » is highlighted
Press button 2 on the touch "auto"

2

You can select with touch ◀ and ▶ the program to be modified
(0 by default)
You can store up to 10 programs.



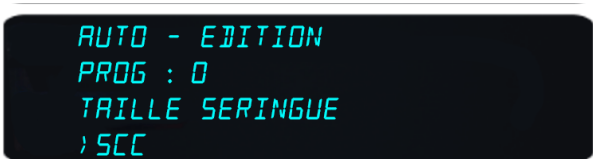
```
AUTO
PROG : 0
DROPS : 0,000000CC
```

3

Click "OK" to enter "edition mode"

4

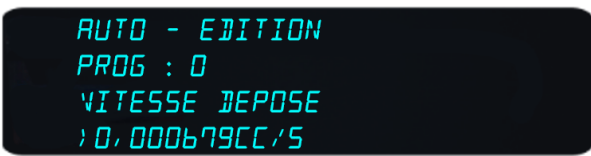
- Enter sub-menu "syringe size"
- Click on touch «OK» to choose the syringe size
- Select size with keys ◀ and ▶ (3cc, 5cc, 10cc, 30cc)
- Press "OK" to save the right size



```
AUTO - EDITION
PROG : 0
TAILLE SERINGUE
5CC
```

5

- Press key ► to reach next sub-menu, “dispense time”
- Press key « OK » to modify the speed in cc/s
- Press keys ◀ and ▶ to increase and decrease speed
- Press key « OK » to save the right speed.



```
AUTO - EDITION
PROG : 0
VITESSE DEPOSE
) 0,000679CC/S
```

6


- Press key ► to reach sub-menu « retreat ».
- Press key « OK » to modify parameter
- Press keys ◀ and ▶ to increase and decrease.
- Confirm with the «OK» key in order to validate the time selected
- For this setting, use a 5-step learning method



```
AUTO- EDITION
PROG : 0
RETRAIT
) 2STEPS
```

7

- Press key ► in order to go to the sub-menu «Alarm time»
- Press key « OK » to be able to change the time in minute
- Press the keys ◀ and ▶ to increase or reduce the time
- Confirm with the «OK» key in order to validate the time selected



```
AUTO - EDITION
PROG : 0
ALARME TEMPS
12MIN
```

8

- Press key ► in order to go to the sub menu Next « Default Program»
- Press key « OK » In order to select « YES » or « NO »

9

- Press key ► In order to back up and then press « OK »
- The program of your PreciFluid® is now fully established and parameter.

Manual mode set up

Follow these instructions to program your manual mode :

1

« Extend » is highlighted
Press button 2 "manual"

2

You can select with touch ◀ and ▶ the program to be modified
(0 by default)



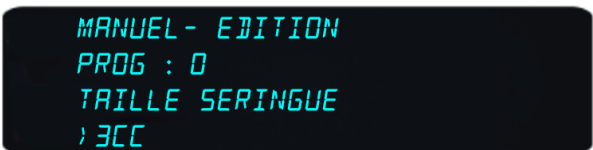
```
MANUEL  
PROG : 0
```

3

Click "OK" to enter "edition mode"

4

- Enter sub-menu "syringe size"
- Click on touch «OK» to choose the syringe size
- Select size with keys ◀ and ▶ (3cc, 5cc, 10cc, 30cc)
- Press "OK" to save the right size



```
MANUEL - EDITION  
PROG : 0  
TAILLE SERINGUE  
3CC
```

5

- Press key ► to reach next sub-menu, "dispense time"
- Press key « OK » to modify the speed in cc/s
- Press keys ◀ and ▶ to increase and decrease speed.
- Press key « OK » to save the right speed
-

```
MANUEL - EDITION  
PROG : 0  
VITESSE DEPOSE  
} 0,0007 15cc/s
```

6

- Press key ► to reach sub-menu « retreat »
- Press key « OK » to modify parameter
- Press keys ◀ and ▶ to increase and decrease
- Press key « OK » to save the value

```
MANUEL - EDITION  
PROG : 0  
RETRAIT  
} 2STEPS
```

7

- Press key ► in order to go to the sub-menu «Alarm time»
- Press key « OK » to be able to change the time in minute
- Press the keys ◀ and ▶ to increase or reduce the time
- Confirm with the «OK» key in order to validate the time selected

```
MANUEL - EDITION  
PROG : 0  
ALARME TEMPS  
} 3MIN
```

8

- Press key ► and press « OK » to save
- Your PreciFluid@program is now set up

Sequential mode operation

Follow the following steps to program your sequential modes :

1

- « Extend » is highlighted
- Press button 2 "SQY"

2

- You can select with touch ◀ and ▶ the program to be modified (0 by default)



```
SEQ
PROG : 0
9 2 0 0 0 0 0 0 0 X
```

3

- Click « OK » to enter "edition mode"



```
SEQ - EDITION
PROG : 0
PROGRAM #0
9
```

4

First select with keys ◀ and ▶ the program to be modified and press «OK»

```
SEQ - EDITION
PROG : 0
PROGRAM #2
12
```

5

Once in the program, select the cycle using the ◀ and ▶ (From 0 to 9) and assign it by pressing «OK»

6

- Press keys ◀ and ▶ for next sub-menu « Alarm time »
- Press key « OK » to modify time in second
- Press keys ◀ and ▶ to increase and decrease time
- Press key « OK » in order to validate the time selected

```
SEQ - EDITION
PROG : 0
DELAIALARME TEMPS
18SEC
```

7

- Press key ▶ to sub-menu « save »
- Select « Save » than press key « OK ».

Note : You have two options for this mode:

- Delay 0 which allows the product to be removed at each pulse on the pedal
- Delay between 0 and 30 seconds which allows to start the sequence with a waiting time between each pulse.

ENTER IN THE PARAMETER

Follow the following steps to enter in the settings :

To return to the parameters Precifluid® (Initialize the pistol, Language, factory setting) press two time quickly on the « OK », to change of parameter press in the keys ◀ and ▶.

To initialize the gun


To initialize the gun, press the button «OK», the LED on «Retract» and press the command start of cycle.



```
REGLAGES  
INITIALISER PISTOLET
```

To change language

To change the language, press the «OK» button and then select «EN», «FR» or «DE» using the ◀ and ▶ then confirm with «OK»



```
REGLAGES  
LANGUAGE  
) FR
```

For Factory Settings


To reset the Precifluid® console, select «Factory settings» and press the «OK» key.



```
REGLAGES  
PARAMETRE D'USINE
```

To create a password

To create a password, select «password», press «ON» to create it then the «OK» key and then create your password with 4 digits between 0 and 9. Creating a password allows you to protect the editing of programs you have saved.



```
REGLAGES  
MOT DE PASSE
```

Note : If you have forgotten your password, the console must return to the manufacturer

To exit the settings

To exit the settings press the «OK» key twice quickly

To turn off the case

To switch off, press the «OK» button and then the power button to the rear.

Detached pieces

Reference	Description
Syringes	
BD03CNR	Transparent syringe 3cc
BD05CNR	Transparent syringe 5cc
BD010CNR	Transparent syringe 10cc
BD030CNR	Transparent syringe 30cc
Amber Syringes	
BD03UNV	Amber syringe 3cc
BD05UNV	Amber syringe 3cc
BD010UNV	Amber syringe 3cc
BD030UNV	Amber syringe 3cc
Pistons	
BMP-03	PistonDrop® 3cc
BMP-05	PistonDrop® 5cc
BMP-10	PistonDrop® 10cc
BMP-30	PistonDrop® 30cc
Gun + Droptube	
PDS-PDT3cc	Dropgun and droptube 3cc
PDS-PDT5cc	Dropgun and droptube 5cc
PDS-PDT10cc	Dropgun and droptube 10cc
PDS-PDT30cc	Dropgun and droptube 30cc
Droptube	
BDET003	Droptube 3cc
BDET005	Droptube 5cc
BDET010	Droptube 10cc
BDET030	Droptube 30cc

Reference	Description
Detached pieces	
PDS-PDC	Foot pedal Precifluid
PDS-PREIDC	9V 2A Power Supply for Precifluid
PDSRL1.5M	Extension for Pistol Precifluid 1,5M
PDSRL3.0M	3M Precifluid Gun Extension
PDS-SDP	Pistol holder blue
ZPRECISAMP	0.25 inch Needle Sample Box - 14 Tapered Pieces
PDS-ADPLEMO	DropGun adapter to new connector
PDS-CAD	Finger Control
PDS-DROPKIT	Drop Kit Integrator Kit
PDS-KA	Needle Start Kit
PDS-CAB	Cable 1m PRECIDrop®

Warranty Precifluid® : 1 year parts and labour

The Precifluid® volumetric dispenser is guaranteed 1 year parts and labour from the date of purchase. During this warranty period, the Technical Service Precifluid® repairs or replaces all or part of the dispenser. After agreement, the material is returned at the expense of the user.

In no case shall the obligation of Precifluid® to answer for damage, can exceed the purchase price of the equipment. The user must ensure that the equipment complies with the intended use.

Precifluid® makes no warranty of merchantability or fitness for any particular purpose. Precifluid® shall not be liable for incidental or consequential damages.

PreciFluid®, a concentrated of technology at the service of your dispensing. Compatible with every types of fluid (from the most liquid to the most viscous), this volumetric dispenser allies speed and accuracy while keeping a simple and ergonomic structure.

By the action of a step by step engine which makes the movement of a volume of product in a repetitive and checked way, this range goes beyond the limits of the pneumatic systems of dispensing (at least seven times more precise) and allows deposits outstandingly smaller than the volumetric dispensers of the market with a minimum volume going to 0,06 microliters. This patented dispenser is the only one to guarantee you the volumetric deposit with such a precision.

Designed and made in Switzerland, the electromechanical movement of PreciFluid® ensures a very high precision whatever are the variations of viscosity of the deposited fluid. PreciFluid® also offers a high capacity of push going beyond 500 000 cps thanks to a multiplication of the couple.

For a technical assistance :
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