



Edition: 2021

User manual

SYMS I MANUAL SEALING MACHINE

For CBS™ High Security straws and HSV High Security Vitrification straws

Read this manual carefully before using the SYMS I manual sealing machine

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Contents

1	INTRODUCTION	3
1.1	<i>Applications</i>	3
1.2	<i>Mechanical characteristics</i>	3
1.3	<i>Electrical characteristics</i>	3
1.3.1	Equipment nominal value	3
1.3.2	Environmental parameters	4
1.3.3	Electrical safety	4
1.4	<i>Precautions</i>	4
2	HYGIENE AND SAFETY	5
2.1	<i>Scope of application</i>	5
2.2	<i>Protection, Safety</i>	5
2.2.1	Safety indications	5
2.2.2	Installation safety rules	6
3	SYMS I	8
3.1	<i>Overview</i>	8
3.2	<i>Description of devices</i>	8
3.2.1	SYMS I manual sealing machine	8
4	ASSEMBLY AND ADAPTATION.....	11
5	PROCEDURE	15
5.1	<i>Operation of the individual straw welder</i>	15
6	MAINTENANCE	17
6.1	<i>Precautions</i>	17
6.2	<i>Maintenance</i>	17
6.3	<i>Transport and storage</i>	17
6.4	<i>Recycling of worn parts</i>	17
6.5	<i>Non-responsibility clause</i>	17
7	CONTACT	18

1 INTRODUCTION

1.1 Applications

The SYMS I sealer is a tabletop device designed to seal CBST[™] High Security of a capacity of 0.3 ml and 0.5 ml and High Security Vitrification straws for applications such as:

- Epidemiology research departments;
- Biobanks;
- Serum banks;
- Cell and gene therapy units;
- Vaccine producing, pharmaceutical companies (living cells);
- Genetic heritage conservatories (animal, vegetable, microbiological);
- Laboratories and medical officers specializing in reproduction biology;
- Sperm banks.

1.2 Mechanical characteristics

□ Size (in mm)	
Length	230 mm
Width	220 mm
Height	170 mm
□ Mass (in kg)	6 kg

1.3 Electrical characteristics

1.3.1 Equipment nominal value

Sealer model

UF 400000 (ref. 016399)	removable sealing block
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□ Electric power	
Power supply voltage	230 VAC +/- 10%
Power supply frequency	50/60 Hz
Consumed power	120 W max
Control circuit	12 V direct current

□ Thermal energy	
Nature	electrical
Power	19 A at 4 VAC

☐ Protection by fuses

2 fuses of

2 A.T / 250 VAC / glass tube

5x20 mm, according to CEI127-2

standards.

1.3.2 Environmental parameters

☐ Indoor use

☐ Operating temperature

from 5 to 30°C

☐ Maximum relative humidity

80%

☐ Atmosphere

The equipment must not be used at an altitude higher than 2000 m or in an explosive or corrosive environment.

1.3.3 Electrical safety

☐ Safety standards

- Product in class I, requires installation with suitably protected ground.
- Pollution degree 2.

1.4 Precautions

We advise you to read this manual with care. It has been produced to help you discover our SYMS I manual sealing machine and to help you make the most of it.

2 HYGIENE AND SAFETY

2.1 *Scope of application*

The SYMS I sealer 230 V – UF400000 – ref. 016399 allows the sealing of CBS™ High Security straws and High Security vitrification straws used in laboratories.

2.2 *Protection, Safety*

2.2.1 Safety indications



DANGER!

These indications refer to hazards due to electric voltages



DANGER!

These indications refer to hazards due to risks of burns.

DANGER!

These
the



indications refer to hazards concerning the user and machine.

2.2.2 Installation safety rules

❑ Installation

- To be safe, this equipment must be connected to an installation that is in conformity (in France NFC 15-100), equipped with a ground connection, suitably protected against ground faults.
- Operation on alternating current. The voltage and frequency must comply with the indications given on the nameplate.
- In the event of damage to the mains cable, turn off the welder power supply immediately. "Mortal danger!" Have the cable replaced by a specialist or contact the after sales service at Cryo Bio System.

❑ Warning

- If the equipment is used in a way that is not specified in the manual, this may have an effect on the protection offered by the equipment.
- All modifications and repairs of an electrical nature must only be carried out by qualified personnel, operating under the authority of the after-sales service technician representing Cryo Bio System.

❑ Descriptions

The SYMS I system consists of:

- the SYMS I sealer,
- a main power cable,
- a set of spare parts

New: a control pedal is available as an option, under the reference 017171.

Energizing is carried out using the switch marked "U0" on the back panel and is displayed by a green indicator light "D1" on the front panel.
The control pushbuttons or pedal will start the welding cycle.

Notes:

- welding time (in seconds), factory setting: 2 s
- press time (in seconds), factory setting: 4 s

The protection trap provides total safety against burns when the sealer is operating. Similarly, the opening of the protection trap will cause the cycle to stop and block the controls. However, the equipment will remain energized (indicated by the green power indicator light).

A fuse protection covers any fault current that might be generated.

☐ Recommendations

The CBSTTM straw is guaranteed to be tight, because of the temperature, the pressure and the thermal impulse time, adapted to the raw material.

The user must not change any of the sealing and press times.

The sealing area must be clean and dry.

Guaranteed tightness depends on the systematic use of suitable filling end fittings.

The SYMS sealer must never be used for sealing conventional PVC or PETG straws.

Never operate the sealer for more than 10 consecutive cycles. Allow at least 5 minutes between each series of 10 cycles.

Never operate the sealer empty (without any straws in place).

Comply with the protection indications given on the nameplate.

Pay attention to the stability of the sealer.

Never place the apparatus in such a way that it is difficult to operate the isolating switch.

2.3 Standardization

We the undersigned, Cryo Bio System - ZI n°1 Est - 61300 SAINT OUEN SUR ITON, certify that:

The SYMS I sealer, as per model ref.: ⇒ 016399

- complies with the European directives in force:

- Basse-Tension N° 73/23 CEE,
- CEM 89/336 CEE,

and to the standards:

- EN 61010-1
- EN 61326-1
- EN 61326/A1

- complies with the Canadian requirements: CAN/CSA C22.2 No. 1010.1-92



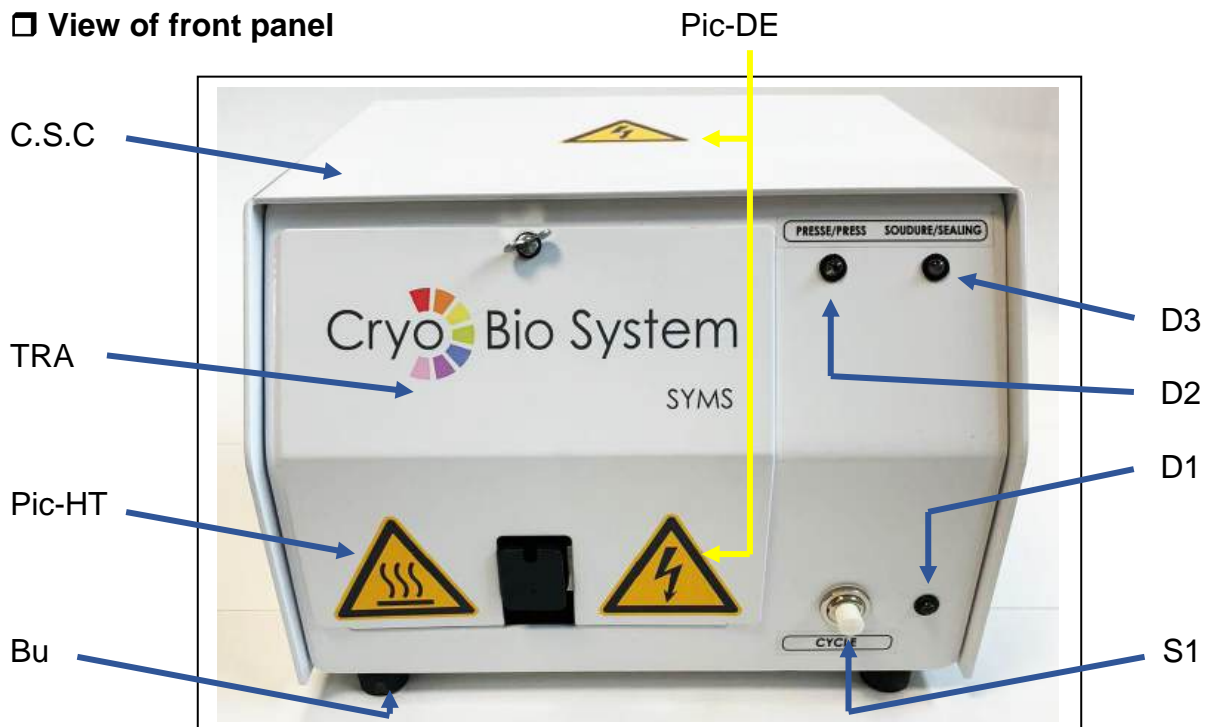
3 SYMS I

3.1 Overview

3.2 Description of devices

3.2.1 SYMS I manual sealing machine

□ View of front panel



□ View of rear panel



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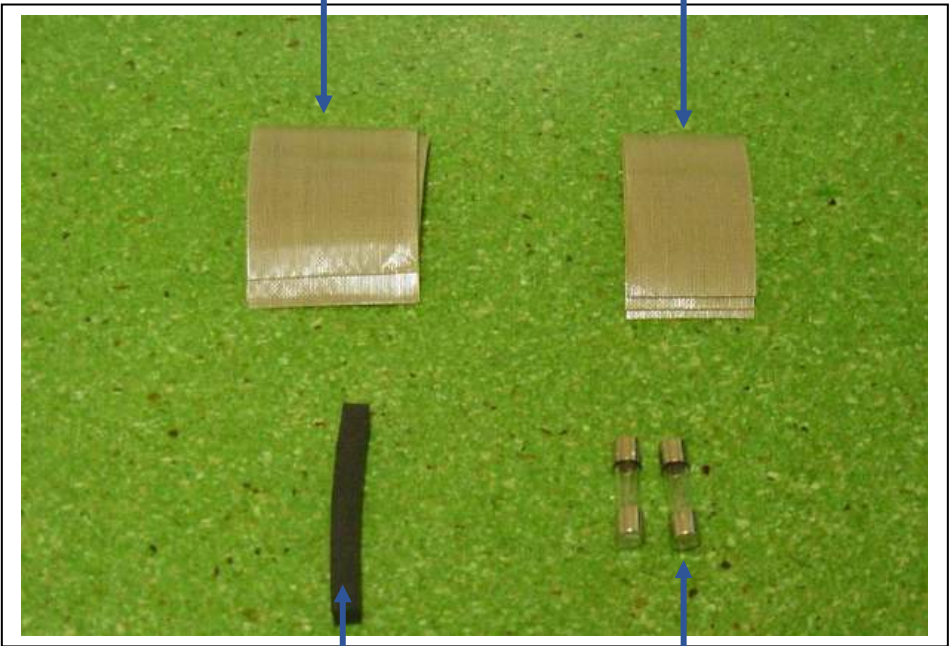
U2



COMP

G22

G9



A19

F1, F2

Mark	Quantity	Description	Article reference
C.S.C	1	Complete Upper casing	017179
Bu	4	Black rubber screw stop	016416
C-COF	1	Case frame with inserts	017178
TRA	1	Trap ¼ turn	009844
U2	1	Control pedal	017171
COMP-230v	1	Kit version 230V	017184
C-P1	1	Potentiometer cover	017328
U0	1	Wired mains socket	017168
S1	1	White NO push button	001593
J0	1	Female socket, 3-pin	001394
B-pl	1	Rev counter knob, P/N:90-87742C/ 1rev	001550
Cb1-230V	1	Mains power cord	000939
F1, F2 - 230V	2	Fuse 5x20 2A.T	017173
D1	1	Green LED T1 ¾ 4V	004815
D2	1	Yellow LED T1 ¾ 4V	004814
D3	1	Orange LED T1 ¾ 4V	004813
Pic-DE	2	Electrical Hazard Pictogram	001970
Pic-HT	1	High Temperature Pictogram	001967
F1, F2, PTFE G9 et G22, A19		Spare parts	009848

4 ASSEMBLY AND ADAPTATION

Recommendation: On exit from the factory, the SYMS I sealer is configured for use with 0.3 and 0.5 ml CBS™ High Security straws and High Security Vitrification straws.

❶ Sealing power



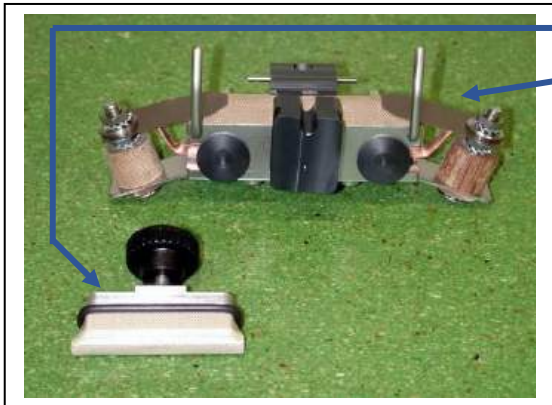
⇒ The welding power is pre-set in the factory and is accessible on the potentiometer on the rear face.

⇒ This setting is specific to the machine.

⇒ It is strongly advised not to modify this setting.

⇒ However, and only on the advice of a maintenance technician, the user may be called upon to modify this setting if the sealing is judged inadequate.

❷ Cleaning



The removable parts are:

- the cooling jig,
- the welding electrode assembly.

They may be removed without difficulty and decontaminated, provided that there is:

- **no immersion.**

Decontamination can be carried out with:

- Sanytex diluted to 5% or another equivalent product,
- a phase of rinsing with distilled water,
- drying with alcohol.

❶



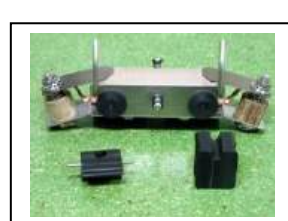
❷



❸



❹



❶ Open the protective flap using rapid nut, turning it anti-clockwise.

❷ Loosen the knurled nut and remove the cooling jig.

❸ Remove the welding electrode assembly

❹ - Remove the stop and straw guide by pulling them out of the electrode assembly.

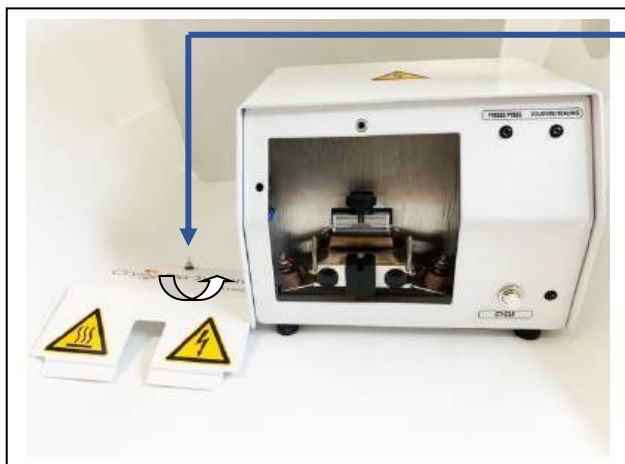


⇒ Carry out your decontamination procedure.

Recommendation: Dry the decontaminated elements before reassembly.

⇒ Reassemble the equipment and check manually that the cooling jig comes into contact with the welding band, otherwise, check the positioning of the end-stop and adjust the cooling jig with the help of the knurled nut.
⇒ Close the protective flap using the rapid nut, turning it clockwise.

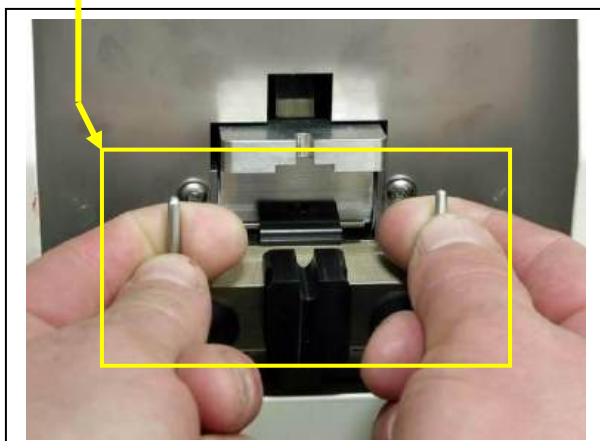
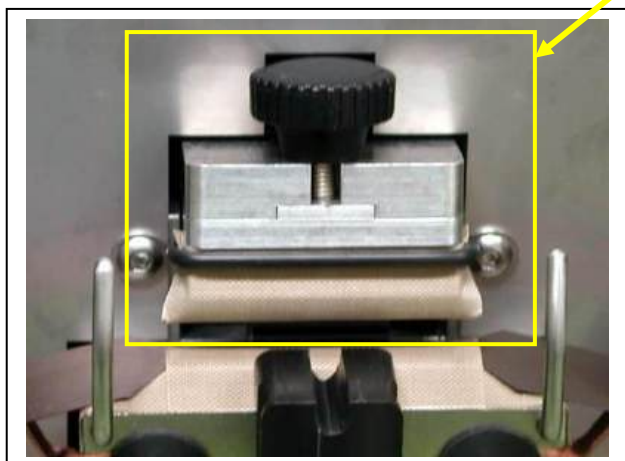
③ Replacing the bands



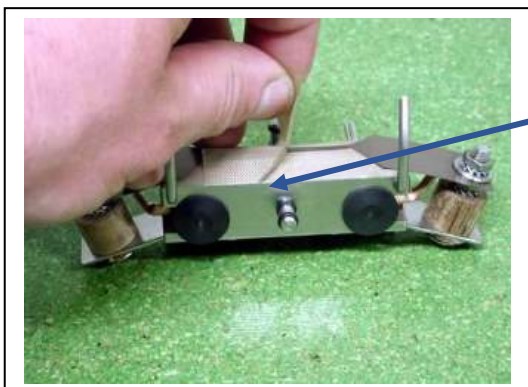
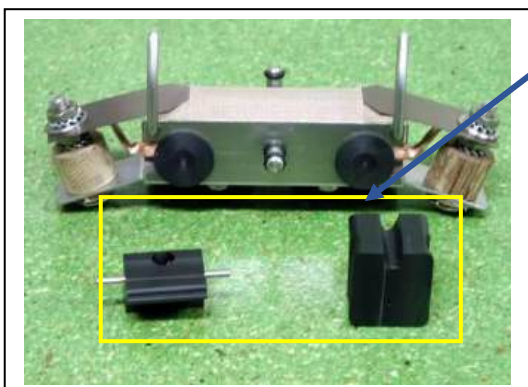
⇒ Open the protective flap using the rapid nut, turning it anti-clockwise.

⇒ Loosen the knurled nut and remove the cooling jig.

⇒ Remove the welding electrode assembly by pulling it by the levers.



❑ Changing the welding tape band

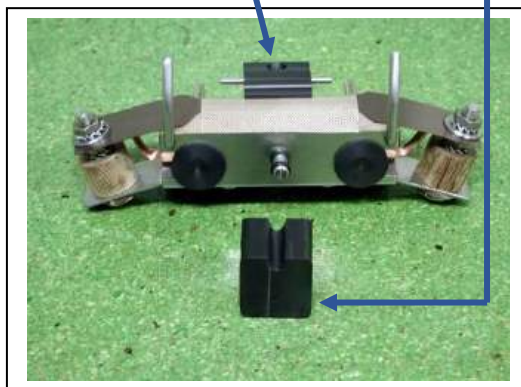


⇒ Remove the stop and straw guide by pulling them out of the electrode assembly.

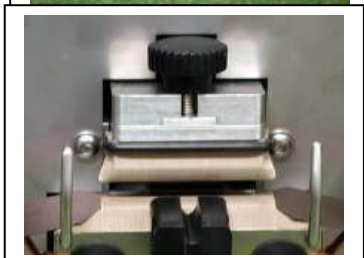
⇒ Remove the adhesive PTFE band covering the sealing tape.

⇒ Cover the sealing tape with the PTFE adhesive "G9" supplied in the composition. Make sure that the adhesive is correctly applied.

⇒ Reinstall the end-stop and the straw guide.



❑ Changing the cooling jig band



⇒ Remove the 'O' ring weld.

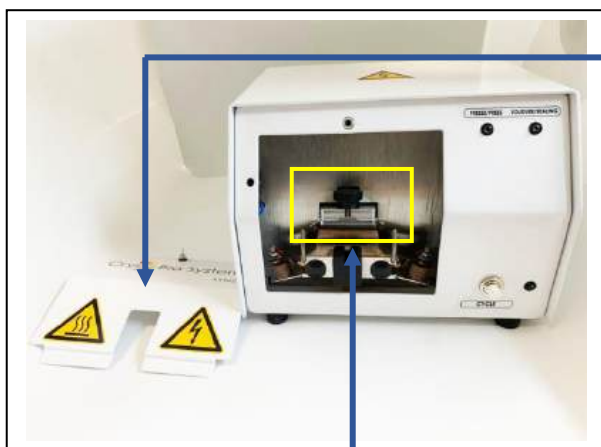
⇒ Remove the adhesive PTFE band covering the cooling jig.

⇒ Cover the cooling jig with the "G22" adhesive PTFE band size 45mm x 30mm supplied in the composition. Make sure that the adhesive is correctly applied.

⇒ Reinstall the 'O' ring weld.

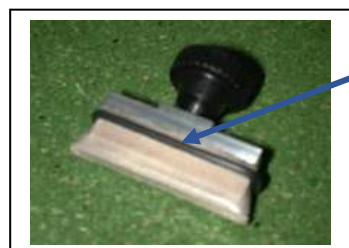
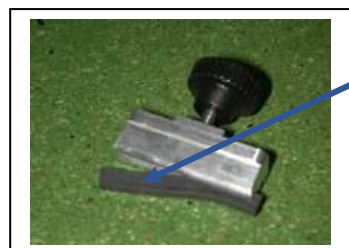
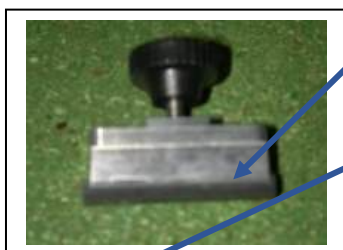
⇒ Reassemble the equipment and check manually that the cooling jig comes into contact to the welding band, otherwise check the positioning of the end stop and adjust the cooling jig with the help of the knurled nut.

4 Replacing the elastomer mat



⇒ Open the protective flap using the rapid nut, turning it anti-clockwise.

⇒ Loosen the knurled nut and remove the cooling jig.



⇒ Remove the 'O' ring weld.

⇒ Remove the adhesive PTFE band covering the cooling jig.

⇒ Change the elastomer mat supplied in the composition by inserting it in the groove of the cooling jig.

⇒ Cover the cooling jig and the elastomer mat with the "G22" adhesive PTFE band of size 45 mm x 30 mm supplied in the composition (apply the adhesive correctly).

⇒ Reinstall the 'O' ring weld.

⇒ Reinstall the cooling jig, then check manually that the cooling jig comes into contact with the welding band, otherwise, check the positioning of the end-stop and adjust the cooling jig with the help of the knurled nut.

⇒ Close the protective flap.

5 PROCEDURE

5.1 Operation of the individual straw sealer

The sealer does not require any heating up time. It can be used without any problem in a laminar flow hood or a controlled temperature environment, because the thermal pulse welding principle limits the release of calories.

⚠ However, after a series of 10 seals, it is recommended to comply with a rest time of five minutes in order to obtain optimum operation.

❶ Connection



⇒ Connect the mains power cable "Cb1" to the socket in the input filter "U0" identified by: **POWER SUPPLY**

⇒ For use with the control pedal (available as an option), connect the cable of the control pedal to the socket "J0" identified by: **FOOT SWITCH**

❷ Sélection chauffe

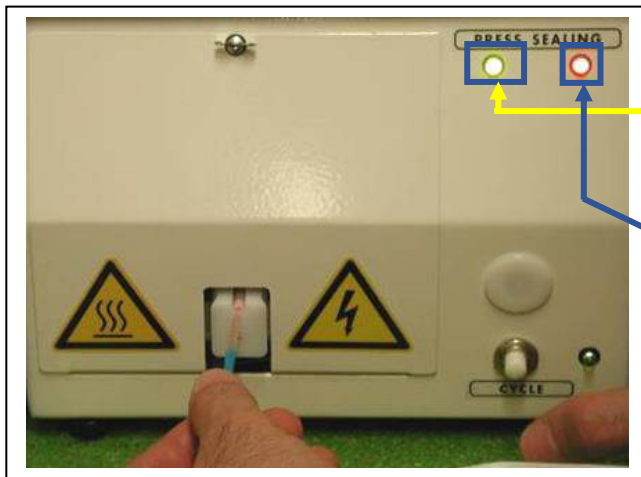


- ⇒ – Set the "U0" main switch to the 'ON' position.
- ⇒ – Check that the green "D1" Power On indicator is lit.

3 Starting the cycle



⇒ Pressing the white "S1" pushbutton or the "U2" control pedal (available as an option) activates a welding cycle.

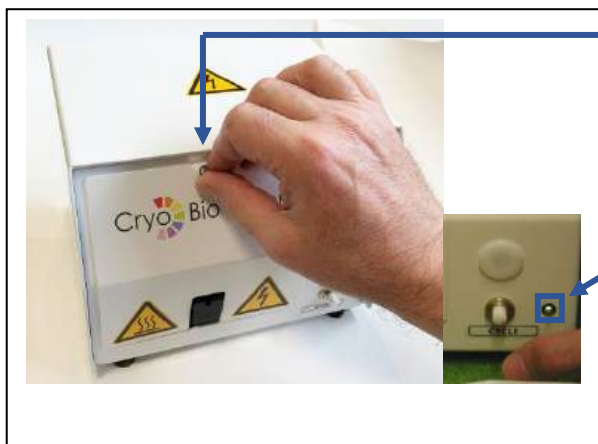


⇒ The welding cycle lasts 4 seconds and is indicated by the yellow indicator.

⇒ The orange indicator corresponds to the thermal pulse.

Remark: Each pressing of the pushbutton or the control pedal causes a welding cycle.

4 Opening the flap




⇒ The opening of the protective flap causes:

- the stopping of the cycle,
- the clocking of the controls.

⇒ The equipment remains switched on. This is indicated by the presence of the green Power On indicator


6 **MAINTENANCE**

6.1 Precautions

 Maintenance on the individual straw welding machine must be carried once the machine has been powered down. In case of an accident, Cryo Bio System cannot be held responsible.


6.2 Maintenance

The main mechanical and electrical parts of the welding machine do not require any particular maintenance.

 Repairs must be carried by a specialist, approved by Cryo Bio System. However, it is recommended to regularly clean the welding jaws, particularly if they got accidentally dirty when welding the straws. If burn marks show on the PTFE bands, they need to be replaced (see composition).

6.3 Transport and storage

- ❶ Disconnect the equipment from the mains.
- ❷ To prevent damage, always store and transport the equipment and related parts in their original packaging.
- ❸ Store the equipment in a dry place.


 When transporting the SYMS I, avoid shocks or brisk movements.

6.4 Recycling of worn parts

 Please dispose of old equipment (transformer, electromagnet) at a specialized center.

 Separate the old pieces of equipment as per their composition: metal, plastic, etc...

6.5 Non-responsibility clause

 The Cryo Bio System company cannot be held responsible for any damage due to external effects or to inappropriate handling or usage. See the paragraphs on scope of application and electrical specifications on page 2 of these instructions for use.

7 Contact

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