English	en

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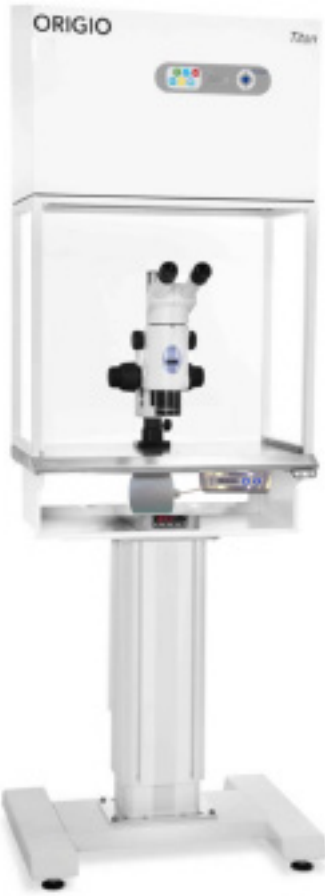
CooperSurgical®

Titan Workstation

User Manual



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I INTRODUCTION

You are now in possession of a microprocessor-controlled Titan workstation and it is designed to provide:

- Protection of the samples against particle /microbiological contamination
- Heating control of the heated work area for sample handling
- Heating control of the light opening for morphology study under microscopy (optional)

This user manual covers the following models:

- Titan IVF
- Titan LAF

The Titan workstation has a built-in microprocessor controller featuring:

- LCD display indicating fan and alarm status
- Air velocity sensors
- Clock (7 days) and hour-counter
- Pre-setting of automatic start-up and UV timer
- Alarm for any deviation from safety conditions

Furthermore, the Titan workstation has the following characteristics:

- Adjustable fan speeds
- Work chamber with tabletop in stainless steel

a. Intended Purpose

To reduce Volatile Organic Compounds (VOCs), Chemical Air Contaminants (CACs) (when fitted with a VOC filter) and particulate contaminates from air circulating in a laminar flow hood where Assisted Reproductive Technology (ART) procedures are conducted.

b. Warning & Safety Instructions

☞	***To avoid unintended or improper operation of the workstation, please read this manual carefully***

Before operation of the workstation.
Before operating your workstation, please note the following:

☞	***The work chamber is to be carefully cleaned and/or disinfected***
☞	***Run the fan at normal speed for at least 30 minutes prior to working inside the workstation***
☞	***Objects and instruments must be carefully cleaned and/or disinfected before bringing them into the work chamber***
☞	***Necessary instruments for use during work must be placed within reach to avoid unnecessary movement inside the workstation***
☞	***For reliable operation it is important that the air-flow conditions are as unobstructed as much as possible. Therefore, never overload the work chamber.***
☞	***Put on necessary personal clothing for reducing particle emission from operator (e.g. gloves, masks and general clean room clothing. Special attenttion should be given to hands and lower parts of the arms, as these are the parts of the operator most likely to emit particles near the product.***
☞	***All work in the workstation must be performed with slow movements. Rapid arm movements in the chamber may cause slipstreams, which will draw contaminated air into the work chamber.***

⚠	***WARNING: Some internal components of the workstation may become contaminated during normal use of the unit. Only experienced personnel competent in decontamination procedures or certified companies should decontaminate the workstation before servicing these components.***
⚠	***WARNING: All retrofitting and repair work are interferences with the safety system of the unit. Particularly, modifications to the filter system and resulting changes of the airflow may impair personal and material protection. Such work must be carried out only by authorized service personnel only.***
⚠	***WARNING: There are no user-serviceable parts within the housing. Repairs to this equipment should only be performed by a qualified technician. For service information, please contact CooperSurgical for assistance.***
⚠	***WARNING: Ensure that the workstation is connected to electrical service in accordance with local and national electrical codes. Failure to do so may create a fire or electrical hazard.***
⚠	***WARNING: Fuses must be exchanged by a qualified technician. Please contact CooperSurgical for assistance.***

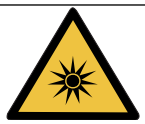
c. Glossary of Symbols

Source: BS EN 15223-1, ISO 7010, BS EN 61010-1:2010

Symbol	Description
	Consult instructions for use or consult electronic instructions for use
	Caution
	Warning
	Possibility of electric shock
	Catalogue or part number
	Serial number
	Country of manufacture
	Date of manufacture
	Caution: U.S. Federal law restricts this device to sale by or on the order of a physician (or properly licensed practicioner)
	The UKCA (UK Conformity Assessed) marking indicates that the product to which it is affixed complies with UK regulations and standards that ensure the product meets safety, health and envionmental protection requirements for sale in Great Britain.
	In accordance with Low Voltage Directive 2014-35-EU
	Laboratory Equipment with respect to electrical shock, fire, and mechanical hazards only in accordance with UL 61010-1 (2012), IEC 61010-1 (2010) A (2016) and CAN/CSA C22.2 NO. 61010.1 (2012)
	Manufacturer

c. Glossary of Symbols

Source: BS EN 15223-1, ISO 7010, BS EN 61010-1:2010

Symbol	Meaning
	Alternating current
	Crushing of hands
	Optical radiation
	Do not dispose of product with normal waste. Dispose of in accordance with the EU WEEE Directive

Symbols for information	
	Connection for heated for heated glass control
	Connection for Microscopic lamp LS112 or LS114
	Further information is provided in other sections
	Used to direct attention to a special item or for useful information.

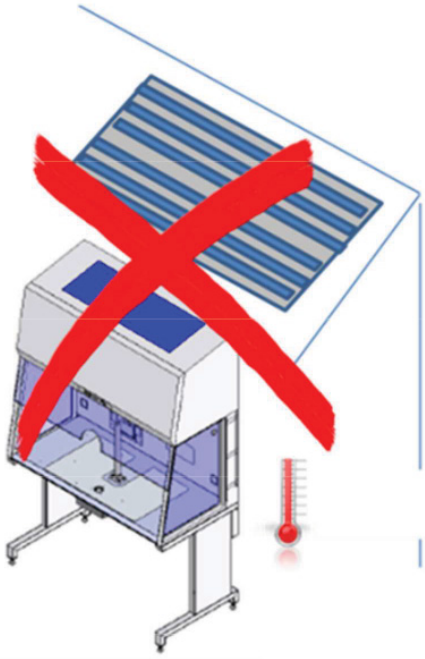
II. INSTALLATION

Installation of the workstation must be carried out by CooperSurgical authorized personnel.

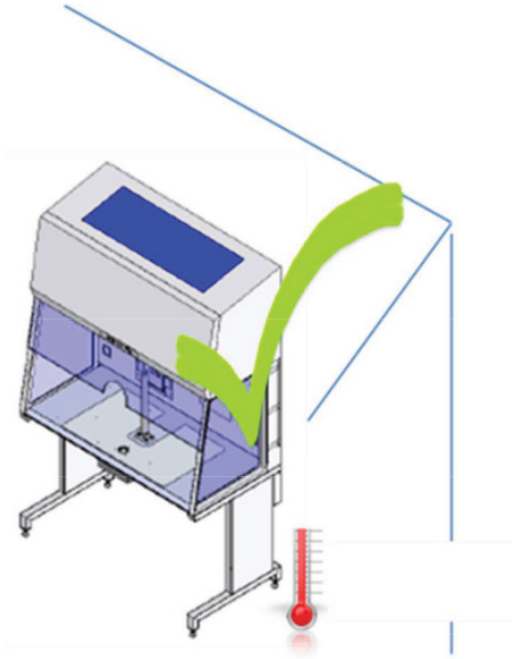
a. Device Placement

The device should be placed on a level secure surface, away from heaters, coolers and air-conditioning outlets.

The device may only be operated at temperatures ranging between 15°C and 35°C, with a maximum 80% relative humidity, and at normal air pressure.



15°C to 35°C
Max 80% Humidity



15°C to 35°C
Max 80% Humidity

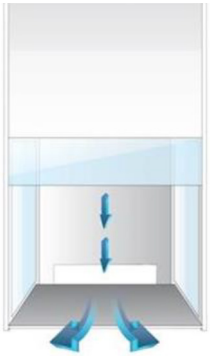
Do not place under a HVAC outlet.

III. AIR FLOW WORKING PRINCIPLE

The vertical clean air cabinet has a laminar vertical flow of clean air in the work chamber protecting the samples against particle contamination.

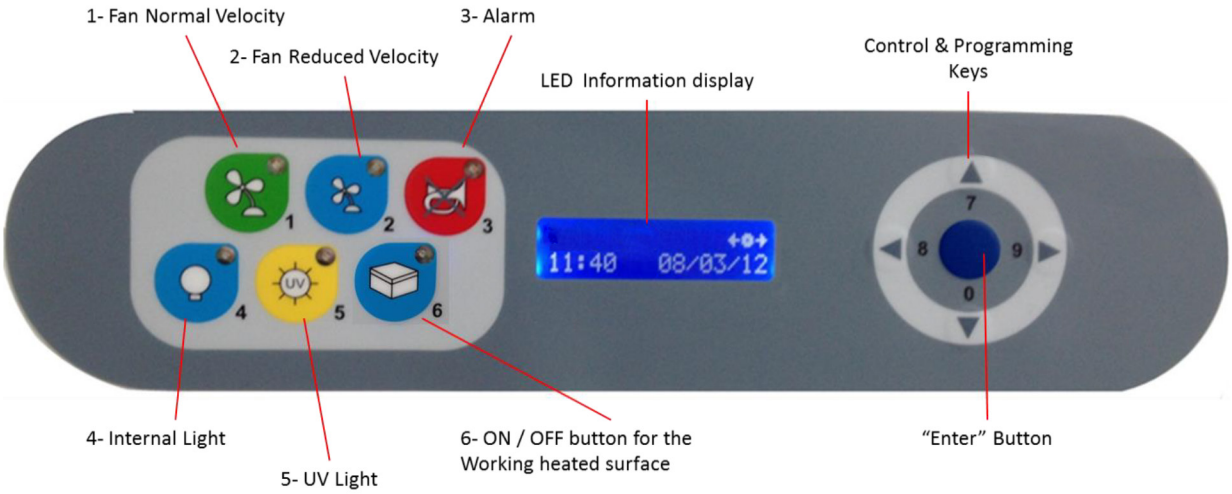
Filters: The Titan workstation main filter is a HEPA filter class (H14) and the pre-filter of Titan is EU-3 type to capture dust particles for increased lifetime of the HEPA filter.

Air velocity monitoring: The flow is monitored by means of an air velocity sensor. Any deviation from normal conditions will be indicated visually and acoustically.



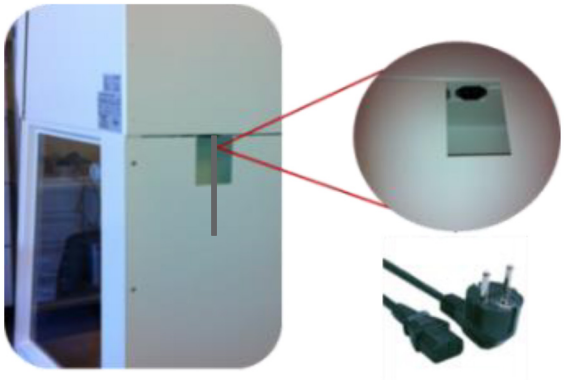
IV. CONTROL PANEL

During normal use, the LED display shows the time and the day and the Control and programming keys  to navigate through the menu program. The numbers 0 to 9 on the control and programming keys are for identification purposes.



V. GENERAL OPERATING PROCEDURES

a. Connecting the power cord

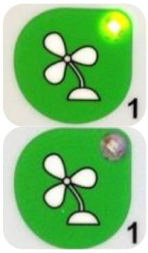


Connect the power cord to the mains power inlet.
The power inlet is located at the back of the workstation.
The power outlet must be grounded.

As soon as the device is connected an audible alarm will be activated, an LED light will turn on and a message with POWER UP ERROR will be activated on the control panel.

Press the ENTER button to switch off the alarm and to return to safe mode.

b. Switching the Fans ON / OFF at Normal Speed



Press the ‘‘1- Fan Velocity” button to turn the fans ON. When activated a small green light on top of the button will switch on.

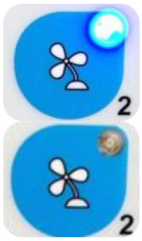
Press the ‘‘1- Fan Velocity” button to turn the fans OFF. When activated the small light on top of the button will be OFF.

To prevent any accidental switching on or off of the fan, the buttons for normal and reduced velocity must be activated for at least 15 seconds before they take effect.

CAUTION: DO NOT PLACE SAMPLES IN THE WORK SPACE AREA WHEN THE FANS ARE SWITCHED OFF.

c. Switching the Fans ON / OFF at Reduced Speed

CAUTION: Reducing fan speed reduces noise levels, but may also reduce the air flow to levels below optimal.



Press the 2 - Fan Reduced Velocity button to turn the fans ON. When activated a small blue light on top of the button will switch on.

Press the 2 - Fan Velocity Reduced Button to turn the fans OFF. When activated the small light on top of the button will be OFF.

When turning ON the reduced speed velocity, the internal light will turn off to alert the user. The internal light can be switched on again if needed.

d. Alarm

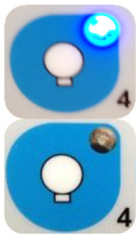
When an alarm is activated an audible acoustic signal is activated. On the control panel a small red light is activated on the Alarm button. Press the Alarm Button to mute the acoustic alarm signal.

The error causing the alarm will be explained on the LED display

When the error has been fixed the audible alarm and the small red light are switched off

CAUTION: Muting the acoustic signal will not solve the problem that caused the error

e. Internal Light



To switch ON the illumination light of the work chamber, press the "4-Internal Light" button. When activated, a small blue light on top of the button will switch ON.

To switch OFF the illumination light of the work chamber, press the "4-Internal Light" button again. The small light on top of the button will be OFF.

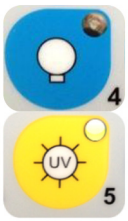
To adjust the light intensity, refer to the section "Adjusting the level intensity of the internal light"

f. UV LIght

The UV light and UV light timer are optional features

WARNING: For increased safety against UV radiation which will harm eyes and skin, use the timer to start the UV operation when no personnel are present in the room where the workstation is located. Use the front shield cover to contain the radiation.
UV light may damage materials such as plastics found as an example in microscopes.

To program the UV light time, refer to the section Programming and Controlling the UV light timer.



To switch OFF the illumination light of the work chamber, press the "4-Internal Light" button again. The small light on top of the button will be OFF.

To switch ON the UV light, press the "5- UV Light" button When activated a small yellow light on top of the button will switch on.

g. Working Heated Surface

To operate the heated work area, refer to the VII Heated Surface

To switch ON the Light Source and the working heated surface press the button. When activated a small blue light on top of the button will switch on. This button simultaneously activates the working heated surface.

To switch OFF the Light Source and the working heated surface press the button again. The small light on top of the button will be switched OFF.

VI. CONTROL AND PROGRAMMING

This section describes how to access the different menus and how to control and to program some the features offered with your workstation. The Control & Programming menu of your workstation contains the following:

Standard display

Adjusting the intensity of the internal light

Programming and controlling the UV light time

Setting the internal clock

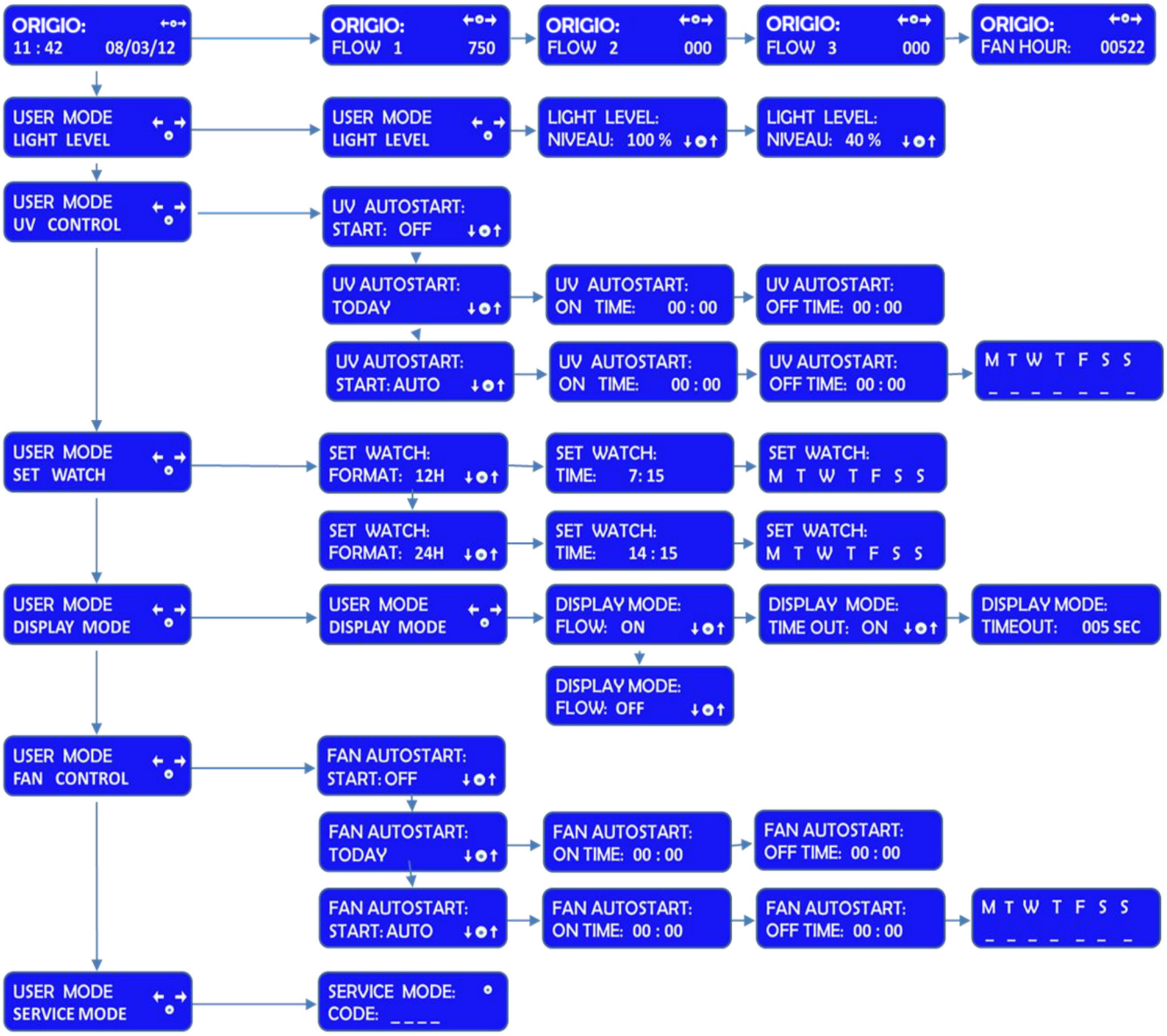
Adjusting display settings

Programming and controlling the automatic start and shut-off of the fan

Entering the service mode

a. Overview of the Control Panel Menu

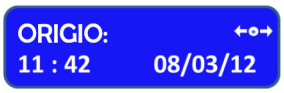
CONTROL PANEL MENU



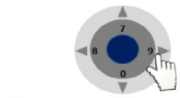
b. General air flow information & counter

This section describes how to access information about the running hours of the fan. The fans are designated FLOW 1, FLOW 2.

To learn how to enable and disable these functions refer to the section "Programming the Air Flow to Auto Start"

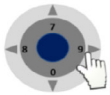


Standard display



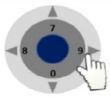
Press the right or left arrow button to navigate towards the FLOW information

ORIGIO with FLOW 1 will be displayed together with a value. This value is for internal service information.



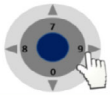
Press the right or left arrow button to navigate towards the FLOW information

ORIGIO with FLOW 2 will be displayed together with a value. This value is for internal service information.



Press the right or left arrow button to navigate towards the FLOW information

ORIGIO with FLOW 3 will be displayed together with a value. This value is for internal service information.



Press the right or left arrow button to navigate towards the FLOW information

ORIGIO with FAN HOUR will be displayed together with a value. This value is the number of hours the fan has been running.

c. Adjusting the level intensity of the internal light

This section covers how to adjust the light intensity of the internal light of the workstation.

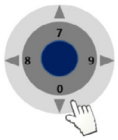
Standard display

Press the ENTER button to ENTER the menu

The USER MODE with the LIGHT LEVEL will be displayed together with a representation of the Control & Programming Keys. The first line with the arrow symbol ⬅ ➡ enables the user to go back to the previous menu or to move to another function. The symbol ‘‘o’’ represents the ENTER button.

Press the ENTER button to validate your choice

The LIGHT LEVEL and NIVEAU: 100% will be displayed together with a representation of the Control & Programming Keys



Press the UP or DOWN arrow. The level of intensity will go up or down. Repeat pressing the arrow until you reach the level of intensity desired. If you hold down the arrow, the light intensity will change more rapidly.

Press the ENTER button to validate and to return to the MENU or wait a few seconds and the display will return by itself to the standard display

d. Programming and Controlling the UV light timer

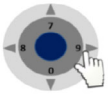
This section describes how to program the UV light timer.

NOTE: For this feature to work correctly, you must set up the date and time first. This is described in the section "Programming Time and Date"

WARNING: Unintended UV Radiation will harm eyes and skin. For protection, use the timer to start the UV operation when not present in the workstation area. Use the front shield cover to contain the radiation.

Standard display

Press the ENTER button to enter the menu

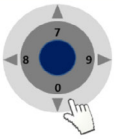


Press on the right arrow button to ENTER the next menu

The USER MODE with the UV CONTROL will be displayed together with a representation of the Control & Programming Keys. The first line with the arrows symbol ⬅ ➡ enables the user to go back to the previous menu or to move to another function. The symbol O represents the ENTER button.

Press the ENTER button to validate your choice

The UV AUTOSTART with START: OFF will be displayed



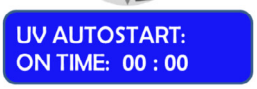
Press the up or down arrow to change the settings between START: OFF, TODAY and START: AUTO

If you wish to program the UV light to start today, use UV AUTOSTART TODAY

If you wish to program the UV light to start on a different day, use UV AUTOSTART START: AUTO

e. UV Autostart Option Selected:TODAY

Press the ENTER button to ENTER the menu



The UV AUTOSTART and ON TIME: 00:00 will be displayed. This is the time at which the UV light should start.

Press the ENTER button to validate your choice

The first digit of the hour will be blinking. To enter the hour press the appropriate number found on the control panel. Continue this operation for the hours and the minutes. This will indicate the time when the UV light will switch ON.

Press the ENTER button to validate your choice

The UV AUTOSTART and OFF TIME: 00:00 will be displayed. This is the time at which the UV light will switch off. (Note: time of day, not duration.)

Press the ENTER button to validate your choice

The first digit of the hour will be blinking. To ENTER the hour press the appropriate number found on the control panel. Continue this operation for the hours and the minutes. This will indicate the time when the UV light will turn OFF.

Press the ENTER button to validate your choice

f. UV Autostart Option Selected:AUTO

Note: For this feature to work correctly, you must set up the date and time first. How to do this is described in the sectionProgramming Time and Date

Press the ENTER button to enter the menu

The UV AUTOSTART and ON TIME: 00:00 will be displayed. This is the time at which the UV light should start.

Press the ENTER button to validate your choice

The first digit of the hour will be blinking. To enter the hour press the appropriate number found on the control panel. Continue this operation for the hours and the minutes. This will indicate the time when the UV light will switch ON.

Press the ENTER button to validate your choice

The UV AUTOSTART and OFF TIME: 00:00 will be displayed. This is the time at which the UV light will switch off.

Press the ENTER button to validate your choice

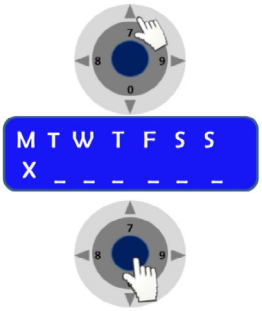
The first digit of the hour will be blinking. To enter the hour press the appropriate number found on the control panel. Continue this operation for the hours and the minutes. This will indicate the time when the UV light will turn OFF.

Press the ENTER button to validate your choice

The Week display will appear M T W T F S S

Press the ENTER button to validate your choice

The Monday option will be blinking



Press on the UP arrow to select Monday. Press the right and left arrows to navigate between the days.

In this example the Monday option will be marked with an X to indicate that the UV light will be ON on Monday at the desired time and will be switched OFF at the desired time programmed earlier in this section.

Press on the ENTER button to confirm

g. Programming Time and Date

This section describes how to set the time and the date.

Press the ENTER button to enter the menu

Press the right or left arrow button to reach the menu displaying SET WATCH

The USER MODE menu with SET WATCH will be displayed together with a representation of the Control & Programming keys

Press the ENTER button to enter the menu

The SET WATCH menu with FORMAT: 12H or 24H will be displayed together with a representation of the Control & Programming keys.

Press on the DOWN or UP arrows to change the settings from 12H to 24H and vice versa.

Press the ENTER button to enter the menu

The SET WATCH menu with TIME will be displayed

The first digit of the hour will be blinking. To enter the hour press the appropriate number found on the control panel.
Example: Setting up the watch at 16:39

Press the button that has the number 1 and it will be registered on the display

The second digit of the hour will be blinking

Press the button that has the number 6 and it will be registered on the display. Continue this to fill out all digits.

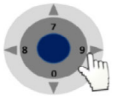
Press the ENTER button to enter the menu, and press the right or left arrow buttons to reach the menu displaying SET WATCH

The SET WATCH menu with the day's first letter M T W T F S S will be displayed

Press on the RIGHT or LEFT arrow button to navigate to the correct day

Press the ENTER button to validate your choice

The SET WATCH menu with DATE will be displayed. The date has the format of DD / MM/ YY.

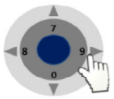


Press the RIGHT arrow button to navigate to the day, month or year section. Use the same method for setting the time to enter the date.

h. Programming the Air Flow to auto start (Weekly or Daily)

This section describes how to enable and program the airflow to auto start on a specific date and time, and how to disable that feature.

Press the ENTER button to enter the menu

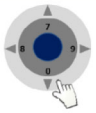


Press the RIGHT or LEFT arrow button to reach the menu displaying FAN CONTROL

The USER MODE menu with FAN CONTROL will be displayed together with a representation of the Control & Programming keys.

Press the ENTER button to ENTER the menu

The FAN AUTOSTART and START: OFF will be displayed.This indicates that the auto start function is disabled.



Press Down or UP to change the settings. Two options can be selected FAN AUTOSTART: TODAY, or, FAN AUTOSTART: START:AUTO.:

The FAN AUTOSTART and TODAY indicate the auto start function can be programmed for the current day at a specific time

The FAN AUTOSTART and START: AUTO indicate the auto start function can be programmed any given day and time

i. Option selected: TODAY

Press the ENTER button to enter the menu

FAN AUTOSTART:
ON TIME: 00 : 00

The FAN AUTOSTART and ON TIME: 00:00 will be displayed. This is the time at which the fans should start.

Press the ENTER button to enter the menu

FAN AUTOSTART:
ON TIME: ■0 : 00

The first digit of the hour will be blinking. To enter the hour press the appropriate number found on the control panel. Continue this operation for the hours and the minutes. This will indicate the time when the fan will turn ON.

Press the ENTER button to validate your choices

FAN AUTOSTART:
OFF TIME: 00 : 00

The FAN AUTOSTART and OFF TIME: 00:00 will be displayed. This is the time at which the fans will turn off.

Press the ENTER button to enter the menu

FAN AUTOSTART:
OFF TIME: ■0 : 00

The first digit of the hour will be blinking. To enter the hour press the appropriate number found on the control panel. Continue this operation for the hours and the minutes. This will indicate the time when the fan will turn OFF.

Press the ENTER button to confirm your choices

j. Option selected: AUTO

Note: For this feature to work correctly, you must set up the date and time first. How to do this is described in the section "Programming Time and Date"

Press the ENTER button to enter the menu

FAN AUTOSTART:
ON TIME: 00 : 00

The FAN AUTOSTART and ON TIME: 00:00 will be displayed. This is the time at which the fans should start.

Press the ENTER button to enter the menu

FAN AUTOSTART:
ON TIME: ■0 : 00

The first digit of the hour will be blinking. To enter the hour press the appropriate number found on the control panel. Continue this operation for the hours and the minutes. This will indicate the time when the fan will turn ON.

Press the ENTER button to validate your choices

FAN AUTOSTART:
OFF TIME: 00 : 00

The FAN AUTOSTART and OFF TIME: 00:00 will be displayed. This is the time at which the fans will turn off.

Press the ENTER button to enter the menu

The first digit of the hour will be blinking. To enter the hour press the appropriate number found on the control panel. Continue this operation for the hours and the minutes. This will indicate the time when the fan will turn OFF.

Press the ENTER button to confirm your choices

The Week display will appear M T W T F S S

Press the ENTER button to validate your choice

The Monday option will be blinking

Press on the UP arrow to select Monday or press the right and left arrows to navigate between the days.

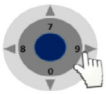
In this example the Monday option will be marked with an X to indicate that the fan will be ON, on Monday at the desired time and will be switched OFF at the desired time programmed earlier in this section.

Press on the ENTER button to confirm

k. Display Mode Functions

This section describes how to enable and disable the Flow and Fan information presented in the overview of the control panel menu.

Press the ENTER button to enter the menu



Press the RIGHT or LEFT arrow button to reach the menu displaying DISPLAY MODE

The USER MODE menu with DISPLAY MODE will be displayed together with a representation of the Control & Programming keys

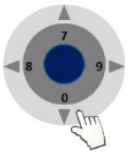
Press the ENTER button to ENTER the menu

The DISPLAY MODE and FLOW: ON will be displayed together with a representation of the Control & Programming keys

Press the up or down arrow to select the between up or on mode. This feature will disable the view of the information on FLOW 1, FLOW 2 AND FLOW 3.

Press ENTER to validate. The display will return to DISPLAY MODE.

Press the ENTER button to enter the menu

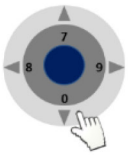


Press the DOWN or UP arrow to reach the following display:

The DISPLAY MODE and TIME OUT will be displayed together with a representation of the Control & Programming keys

Press the ENTER button to enter the menu to turn this function ON or OFF. Turning this function OFF will disable the following display and return to DISPLAY MODE.

Press the ENTER button to enter the menu



Press on the DOWN or UP arrow to reach the following display:

The DISPLAY MODE and TIME OUT: 005 SEC will be displayed. This feature indicates that any information or changes will remain displayed for 5 seconds before returning to the Standard Display. The display time is of a minimum of 5 seconds and therefore can only be increased. To increase the duration of the displayed information use the UP and DOWN arrows.

VII. HEATED SURFACE

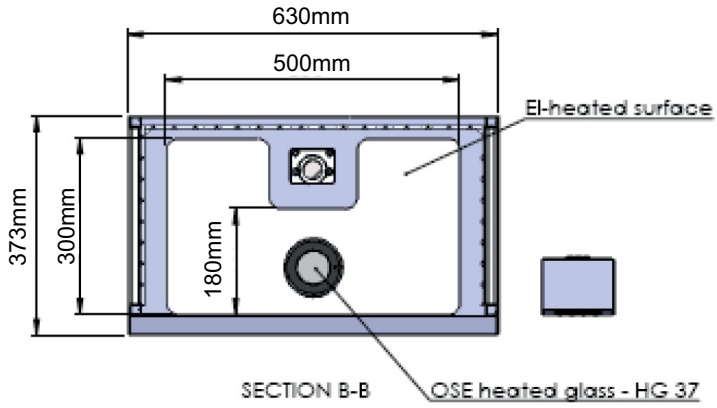
The heated surface is only applicable on the TITAN IVF model.

The Titan uses electrical heating for the heated surface with a PT100 sensor.

The heated area is indicated by a brushed steel effect in the work surface.

a. Operational Characteristics

The surfaces will be heated to 37ºC, and are controlled by a sensor and a processor.



Placing of large hot or cold masses on the heated elements will affect the regulation process and should be avoided during normal operation.

Placing a hand will also draw heat from the surface; therefore, please avoid placing fingers or a hand on the surface during warming up or during the calibration of the controller.

Turn on the heating system for at least 60 minutes before starting work. If possible, place all needed equipment on the surface during the warming up period to warm these appropriately. Always wait for the temperature to stabilize completely before starting work.

CAUTION: There is heat loss from the edges of the heated surface. Do not place temperature sensitive material there.

b. Temperature Controller

Performance Criteria:

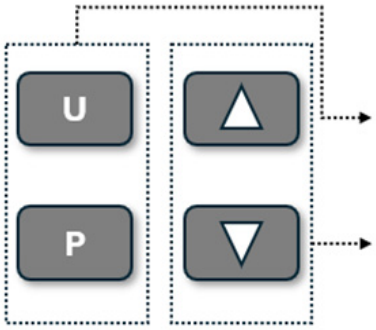
The Heated surface is designed to provide and maintain a constant 37 °C / 98.6°F of the heated part of the working surface to within ± 0.2 °C / ± 0.3 °F at a maximum ambient temperature of 35 °C / 95 °F.

The temperature controllers for the heated surface is shown above.

The display shows the measured temperature. The table below lists the typical values and messages that can be shown in the display and the LED indicators.

LED Display	Description
37.0	Display readout used to show temperature values and data settings
OUT1	Output-1 indication LED for the heated surface
OUT2	Output-2 (not used)
=	Green LED indicates the measured temperature is at the setpoint
+	Red LED indicates the measured temperature is above the setpoint
-	Red LED indicates the measured temperature is below setpoint
St.bY (standby)	Controller in standby mode. Press (U) button for 2 sec to switch between standby and normal operation.

The four buttons for operating the temperature controller are placed on the right side of the display.
These are described in the figure below.



[U] Accessing the parameters and information menu
[P] Program button.

The up-arrow and down-arrow will change the setpoint temperature UP or DOWN.

Press the information button to display the value you have selected.

c. Setup Temperature

The workstations are tested and calibrated by the manufacturer. Installation is to be performed by certified field service personnel. During installation the workstation is to be calibrated to allow for different environmental temperatures.

In case of an alarm situation, the display will start flashing a display code, see below.

LED Display	Error messages
0000	The display shows the OVER-RANGE conditions with the following indications:
u.u.u.u.	The display shows the UNDER-RANGE conditions with the following indications:
- - - -	The sensor break will be signaled as an out of range

d. Operating the Heated surface

Normal Operation

The temperature controller will maintain the work surface temperature at the setpoint and will not require any user interaction after the initial setup performed by certified field service personnel.

Checking the temperature setpoint of the heated surface

The actual temperature of the surface is shown on the display.

To check the setpoint of the temperature controller, briefly press Ⓟ. The display will flash intermittently between the SP1 and the setpoint.

Changing Setpoint

To change the setpoint, briefly press Ⓟ. The display will flash intermittently between the SP1 and the setpoint.

Whilst the display is flashing the setpoint can be adjusted using the up or down buttons.

Confirm the setpoint by pressing the Ⓟ button. The display will continue to flash SP1 and the new setpoint then the display will revert to the actual measured temperature.

To ensure the correct setpoint has been programmed correctly briefly press Ⓟ and check the setpoint value is correct.

Switching to Standby (turning the temperature controller OFF).

Hold the Ⓤ button for 2 sec to switch to the Stand By (St.bY) mode. The display will flash intermittently between the actual measured temperature and St.bY when in Stand By mode.

Switching to Normal Operation (turning the temperature controller ON).

Hold the Ⓤ button for 2 sec to switch to normal operation mode. The display will flash once with rEG then display the actual measured temperature.

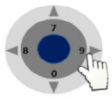
VIII. TROUBLESHOOTING YOUR WORKSTATION

a. Flow 1 alarm

You have an alarm on the FLOW 1. This indicates that a calibration of the inflow and downflow is needed.

Before starting, make sure the window is lowered to its normal working height. Make sure that all accessories, devices regularly used in the workstation are in place and not taken out. Then follow the instructions.

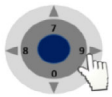
From STANDARD DISPLAY



Press the RIGHT or LEFT arrow button to navigate towards the Information menu until you reach the SERVICE MODE

Press the ENTER button to enter the service functions

Enter code 1234 using the numbers found on the control panel and press ENTER



Press on the RIGHT or LEFT arrow button to navigate towards the Information menu until you reach the FLOW SENSORS menu

Press on the ENTER button

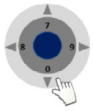
FLOW SENSOR 1 with as a standard type ANALOG is displayed. If not SWITCH will be displayed. FLOW SENSOR 1 is the down flow.

Press on the ENTER button

NEW CALIBRATION will be displayed

Press on the ENTER button.

FLOW ALARM 1 with HIGH and a set of values will be displayed (e.g. 0285)



Press the arrow down until the alarms starts. By pushing the arrow the numbers will decrease by units.

By maintaining a constant pressure on the arrow, the numbers will decrease by decimals

Press the arrow up one unit at a time and wait for 2 to 3 seconds to see if the alarm stops

Repeat the operation until the alarm stops

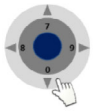
When the alarm has stopped, read the value displayed: e.g. 0225. Add 50 to the number: 0225 + 50 = 0275. Press on the arrow up until you reach this number.

Press on the ENTER button

FLOW ALARM 1 with LOW and a set of values will be displayed (e.g. 0175)

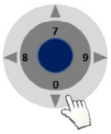
Press the arrow up until the alarms starts. By pushing the arrow the numbers will decrease by units.

By maintaining a constant pressure on the arrow, the numbers will decrease by decimals



Press the arrow down one unit at a time and wait for 2 to 3 seconds to see if the alarm stops

Repeat the operation until the alarm stops



When the alarm has stopped, read the value displayed: e.g. 0125. Add 50 to the number: 0125 + 50 = 0175. Press on the arrow down until you reach this number.

Press on the ENTER button

FLOW ALARM 1 with ALARM NORMAL will be displayed

Press the ENTER button

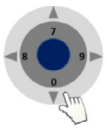
FLOW SENSOR 2 with a standard type ANALOG will be displayed. If not, SWITCH will be displayed. FLOW SENSOR 2 is the Inflow/ exhaust.

Press the ENTER button

NEW CALIBRATION will be displayed

Press the ENTER button

FLOW ALARM 2 with HIGH and a set of values will be displayed. (e.g. 0305)



Press the arrow down until the alarms starts. By pushing the arrow, the numbers will decrease by units.

By maintaining a constant pressure on the arrow, the numbers will decrease by decimals

Press the arrow up one unit at a time and wait for 2 to 3 seconds to see if the alarm stops

Repeat the operation until the alarm stops

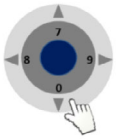
When the alarm has stopped, read the value displayed: e.g. 0225. Add 50 to the number: 0225 + 50 = 0275. Press on the arrow up until you reach this number.

Press the ENTER button

FLOW ALARM 1 with LOW and a set of values will be displayed. (e.g. 0205)

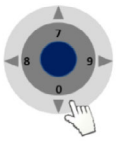
Press the arrow up until the alarms starts. By pushing the arrow the numbers will decrease by units.

By maintaining a constant pressure on the arrow, the numbers will decrease by decimals



Press the arrow down one unit at a time and wait for 2 to 3 seconds to see if the alarm stops

Repeat the operation until the alarm stops



When the alarm has stopped, read the value displayed: e.g. 0125. Add 50 to the number: 0125 + 50 = 0175. Press on the arrow down until you reach this number.

Press the ENTER button

FLOW ALARM 1 with ALARM NORMAL will be displayed

Press the ENTER button

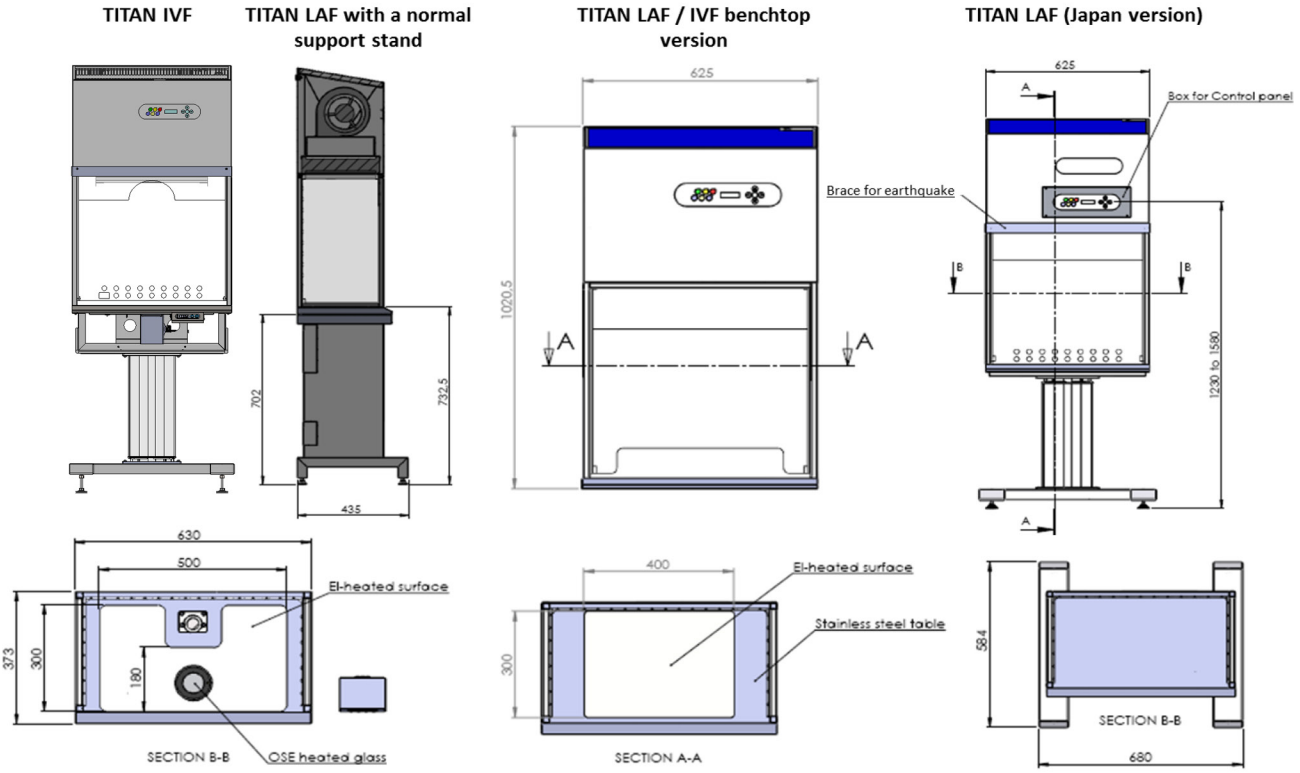
FLOW SENSOR3 with TYPE NONE is displayed

Press the ENTER button and navigate in the menu until your reach SERVICE LOGOUT

Press the ENTER to LOGOUT and reach the Standard Display

IX. TECHNICAL SPECIFICATIONS

a. Titan IVF and Titan LAF



Titan IVF/LAF	
Titan IVF dimensions (W x D x H) with adj. Height	630 X 584 x 1983 (+/-150)mm
Titan LAF / IVF benchtop version (W x D x H)	630 x 340 x 1020mm
Table plate dimensions (W x D)	573 x 318mm
Titan IVF heated surface dimensions (W X D)	500 x 300mm
Titan LAF with heated surface dimensions (W x D)	400 x 300mm
Air velocity, vertical flow	0,28m/s (adjustable 0.01 -0.70m/s)
Air velocity, deviation	+/- 10%
Noise level, ISO 6081	<50 dB(A)
Light intensity variable	0 – 700Lux
HEPA Filters, EN 1822	Efficiency is 99.999% against 0.3µm particle H-14 size
Energy consumption	0,2A
Fuses	10A
Voltage / Frequency	220-240V / 50-60Hz or 110 -120V / 50-60Hz
Window material (side/Front)	Toughened safety glass
Cabinet material / Work surface	Polyester coated steel /AISI 304 stainless steel
Packing dimensions (W x D x H)	916 x 716 x 1559mm
Shipping volume	1,03m³
Net Weight / Gross Weight	131 Kg / 171Kg

b. Spare Parts

Contact Customer Service for any information regarding spare parts. Contact information is located on the last page of this document.

X. OPERATING THE STERO MICROSCOPE HEATED GLASS AND LIGHT SOURCE CONTROLLER

a. Overview of Unit

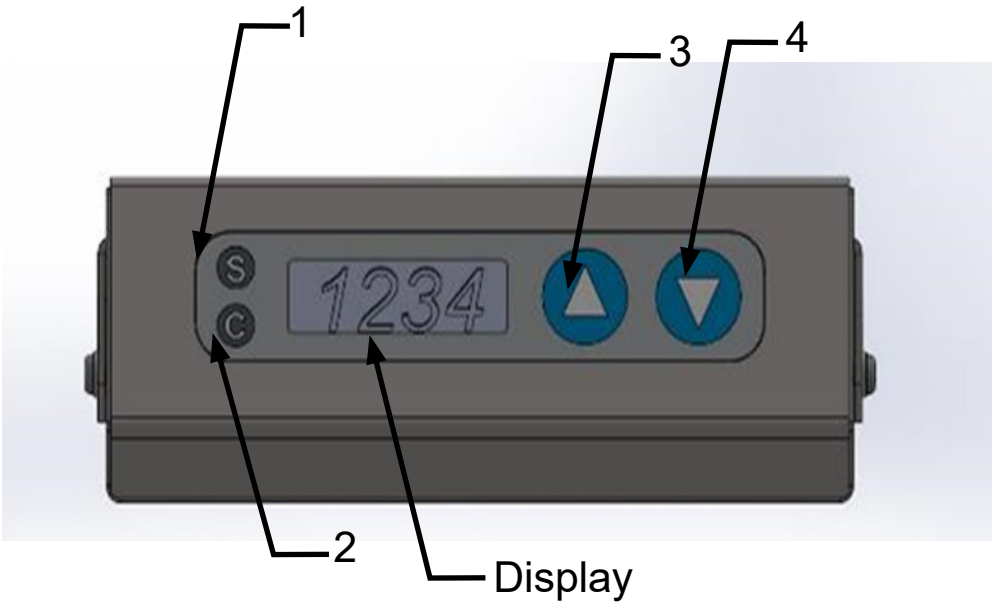


Figure 1 *Heated Glass and Light Source controller seen from front*

1	“S Push button for Setpoint mode
2	“C Push button for Calibration mode
3	“Arrow Up Push button to increase light-intensity or temperature in Setpoint mode or temperature in Calibration mode
4	“Arrow Down Push button to decrease light intensity or temperature in Setpoint mode or temperature in Calibration mode
Display	Display to indicate temperature on heated glass

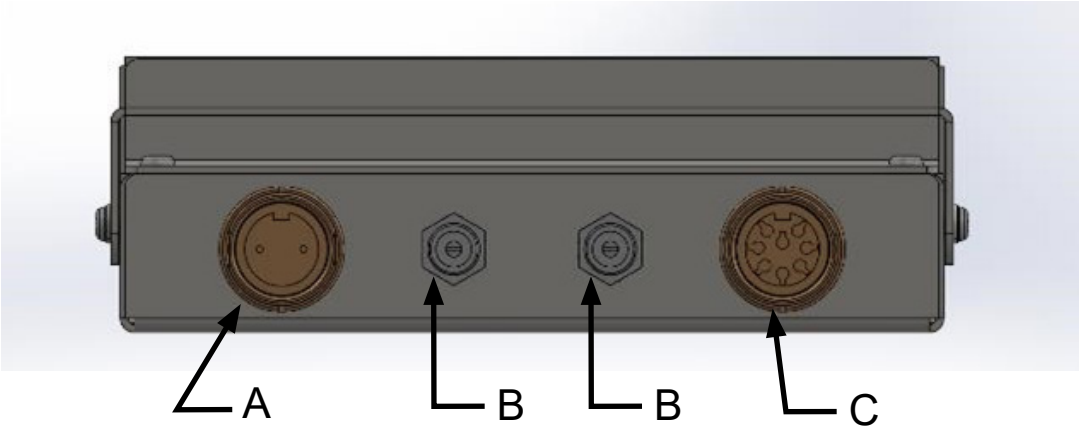


Figure 2 *Rear view of controller for Heated glass and Light source*

A	Connector for LS112 light source
B	Connector for Power input or Power output
C	Connector for heated glass

b. Operation

Mode	User Interactions
Normal mode (Default)	Control of light intensity and turn heated glass ON and OFF
Setpoint mode	Change desired temperature on heated glass
Calibration mode	Calibrate the temperature sensor in the heated glass

The 3 modes are described below

c. Normal Mode

A special heat indicator can be seen in the heated glass as shown in Figure 4.
When the workstation is powered up the indicator, the heated glass will always be switched on. The indicator will turn red as shown.

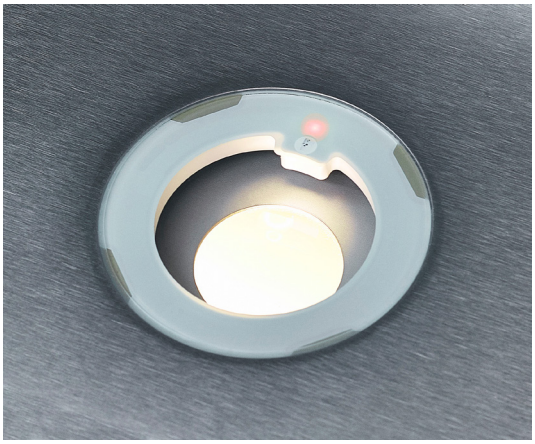


Figure 4 *Heated glass outside temperature limits*

The Display will start at room temperature and increase until it reaches the setpoint. If the setpoint is 37.0°C the temperature will increase until the display shows 37.0°C as shown in Figure 5.

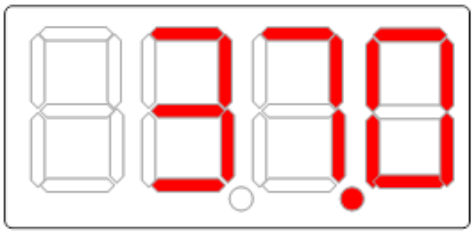


Figure 5 *Display in Normal mode (IVF versions)*

When the setpoint is reached the indicator in the heated glass will change to green.

The indicator will stay green when the temperature is at setpoint +/- 0.5°C, when outside the range the indicator will shift to red to warn the user.

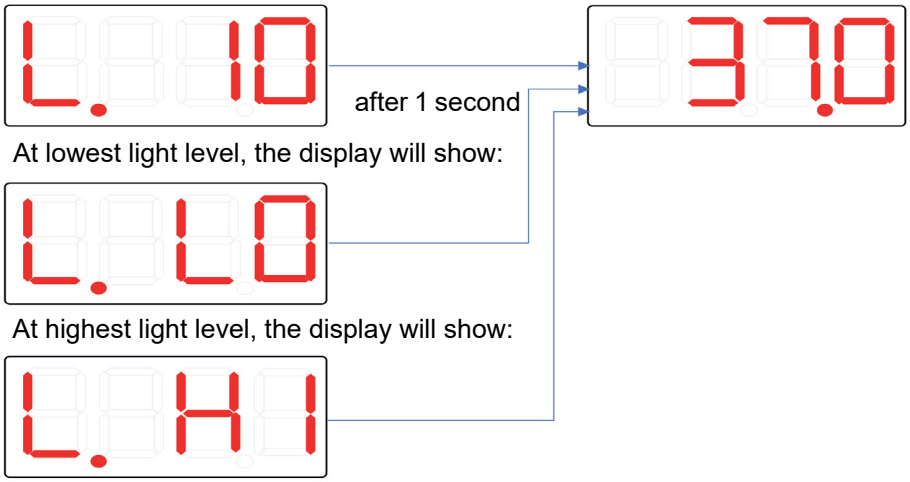
d. Light Source control in normal mode

It is possible in normal mode to switch the microscope light source on and off as well as change the intensity of the light. The light can be adjusted in 30 levels.

See location of buttons in Figure 1

Increase light	Press or hold ”Arrow Up”
Decrease light	Press or hold ”Arrow down”
Turn light off	Press “Arrow up” and “Arrow down” simultaneously
Turn light on	Press “Arrow up” or “Arrow down” Light intensity is the same as last time the light was turned off

When increasing light level, the display shows the actual light level for 1 second. Below is the display shown at light level 10. After 1 second, the display changes to show the temperature.



The Controller will remember last light level after power down and power up again.

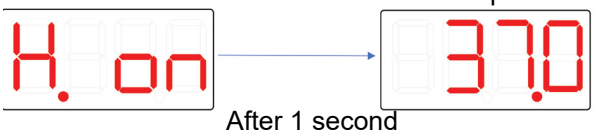
The knob for adjusting the mirror is placed on the left hand side of the Light Source. The rotable mirror has two different sides. One side is a plane mirror, while the other is concave.

The plane mirror is used when a high magnification is needed and the concave mirror is used for when lower magnification is needed. Virtual dark field is obtained by positioning the mirror almost vertically. The mirror can be rotated 360 degrees in a rotational pattern and moved 45 mm horizontally, which enables positioning for an optimal lighting of the object.

e. Turn the heated glass on and off in normal mode
Turn the heated glass off by holding the"S" button pressed for 3 seconds.
When the heated glass has been turned off the display will show

The indicator in the heated glass will slowly fade between red and green to indicate that the heated glass has been turned off.

To turn the heated glass on again, hold the"S" button pressed for 3 seconds. The display will show the following for 1 second and then return to show temperature.



After 1 second

f. Heated Glass Setpoint mode

To ENTER setpoint mode hold the"S" ,"Arrow Up" and"Arrow Down" buttons pressed for 1 second simultaneously. A flashing S indicates that the controller is in Setpoint mode.

The display will show the last chosen setpoint. For instance, 37.0 as shown in Figure 6. To change desired temperature up or down, press the"Arrow up" or"Arrow down" several times, or hold it in, until the desired temperature has been reached.

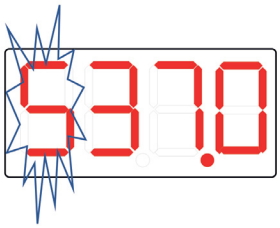


Figure 6 *Flashing Display in Setpoint Mode*

Leave the Setpoint mode by pressing the"S" once. The display will return to normal mode.

Heated Glass Calibration Mode

Calibration of the sensor in the heated glass requires a reference thermometer with a special probe, such as the F100 Thermometer, part no: 11010, together with the Solid Temperature sensor part no: 11006.

Place the Solid temperature sensor on the heated glass, turn on the F100 instrument. Wait 10 min until the temperature reading in the Thermometer has stabilized.

a.) To ENTER calibration mode, hold the"C","Arrow Up" and"Arrow Down" buttons pressed for 1 second simultaneously. A flashing c indicates that the controller is in calibration mode.

b.) The display will show the temperature assumed by the controller. For example, refer to Figure 7.

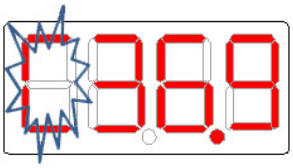


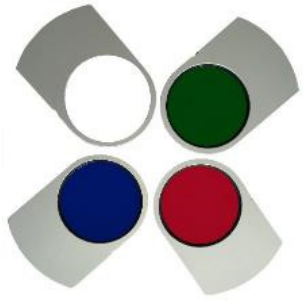
Figure 7 *Flashing Display in Calibration mode*

c.) Leave the Calibration mode by pressing the”C” once. The display will return to normal mode.

d.) Wait 10 min or until the display on the F100 thermometer has stabilized. Read the actual temperature on the Thermometer. If necessary, repeat the calibration from a).

The LS112 can be supplied with filters for specific light conditions:

1. No filter inserted (included)
2. Green filter
3. Red filter
4. Blue filter



OPERATING THE LCD MONITOR

Depending on the customer order and the configuration selected, please refer to the user manual provided with the monitor.

XI. CLEANING AND DECONTAMINATION

a. Work area surfaces

Clean surfaces according to your standard laboratory protocols. However, please note the following:
Use cloths moistened with cleaning agents where possible. Excessive use of liquids may damage electrical components.
Some cleaning and disinfection agents can damage metal and plastic surfaces. Test a sample on a small area before use.

b. UV light

The UV light may be used after disinfection. The run time of the routing can be preset from the control panel.

To start the UV cycle, please refer to the section ”Programming and Controlling the UV light timer” for further information

WARNING: The radiation of the UV-lamps causes skin burns and conjunctivitis within minutes. For this reasons skin and eyes must be protected from direct radiation. The use of the UV light shield cover is mandatory.
WARNING: UV light may alter coloration of plastic components after extended exposure.

c. Cleaning exterior surfaces

Wipe the exterior surfaces of the workstation using a solution of warm water and laboratory detergent solution, then wipe exterior surfaces dry using a soft, clean cloth.

d. Disposal of Electrical and Electronic Equipment

Coopersurgical have taken the necessary steps to comply with the EC directive 2021/19/EU on waste and electrical and electronic equipment (WEEE).

Environmental implications: WEEE contains materials that are potentially hazadous to the environment and to human health. Therefore, when this instrument has reached its end of life it must be collected and recycled seperately from other waste according to national requirements. Please contact a local CooperSurgical distributor for instructions. Do not dispose of with ‘normal’ waste.

XII. WARRANTY INFORMATION AND LIMITS ON LIABILITY

CooperSurgical warrants that this item will be free from defects in materials and workmanship for one year from the date of installation. If CooperSurgical determines that the product fails to conform to that warranty during the one-year period, CooperSurgical will repair or replace the product, at CooperSurgical's discretion, free of charge. To return the product to CooperSurgical, a customer must comply with CooperSurgical's Returned Goods Policy described in this manual and the warranty requires the customer to return the product to CooperSurgical in accordance with the CooperSurgical Returns Instruction. CooperSurgical will return products (that it repaired or replaced under warranty) to the same customer who returned those products, at CooperSurgical's expense F.O.B. the customer's facility. Under all other circumstances, CooperSurgical will return products to the same customer who returned those products at the customer's expense.

CooperSurgical's warranties do not cover damage caused by misuse, improper care, improper use of chemicals or cleaning methods, loss, theft, use of non-authorized parts, servicing by non-authorized personnel or negligent or intentional conduct on the part of the owner or user of the product, nor do they cover normal wear and tear or general maintenance. Any modifications or changes to a product will void that product's warranty. CooperSurgical's warranties do not apply to any single-or limited-use, disposable or consumable components or items. CooperSurgical is not responsible for, and the owner and operator of the product shall defend, indemnify and hold harmless CooperSurgical from and against, all claims, damages, and other losses resulting from the improper servicing, maintenance, repair, use or operation of the product or the owner or operator's negligence or willful misconduct, and use of inadequate packing and packaging when returning product for repair.

The above warranties are in lieu of, and CooperSurgical hereby disclaims, all other warranties, express or implied, written or oral, with respect to CooperSurgical products, including the warranties of merchantability and fitness for a particular purpose. No terms, conditions, understandings or agreements that purport to modify the above warranties or that make any additional warranties for any CooperSurgical product shall have any legal effect unless made in writing and signed by an authorized CooperSurgical corporate officer.

CooperSurgical shall not under any circumstances be liable for lost profits, damages from loss of use or lost data, or indirect, special, incidental or consequential damages under its warranties or otherwise for any claim related to CooperSurgical products, even if CooperSurgical has been advised, knew or should have known of the possibility of such damages. CooperSurgical's liability with respect to a product covered by a warranty or otherwise shall be limited in all circumstances to the purchase price of that product.

XIII. RETURNING PRODUCT FOR REPAIR

Please refer to the 'Troubleshooting' section in this manual before returning product. If you continue to have a problem with your device, please follow these instructions:

Returned Goods Policy

Goods will be accepted for return for the following reasons:

- If shipment was made without the customer's authorization or order
- If incorrect items were shipped
- If defective items were shipped
- If defective goods are covered by the standard warranty

To return product, please contact Customer Service for a Returned Merchandise Authorization (RMA) number. Items will not be accepted without an RMA number. Please have the following information:

- Reason you wish to return the goods
- Quantity, description, part number, serial number of the goods
- Date of receipt of order
- Customer's purchase order and the CooperSurgical invoice number

All used products will be cleaned and sterilized prior to shipment. A signed decontamination declaration may be required.

All products should be carefully and adequately packed, preferably in original packaging. Replacement items or additional repairs will be invoiced.

All packaging should be clearly labeled with the RMA number and statementUrgent – Returned Items for Repair. If authorization to return a product is granted you will be provided with a return address label.

Shipments must be sent prepaid by the customer and insured for their full value during shipping. Freight collect shipments will not be accepted, and goods will be returned to the sender.

If the customer intends to return equipment ordered in error, the following restocking charges and terms will apply

- 25 percent within 60 days from date of shipment
- Goods must be returned unused, in the original carton, and in marketable condition
- Refurbishing and replacement charges will be added to the restocking charges for damaged or missing items
- No return after 60 days

No refund on sterile, single-use disposable products.

XIIV. CUSTOMER SERVICE CONTACT INFORMATION

Customer Service Contact Details

Tel: +45 46 79 02 02
Fax: +45 46 79 03 02
E-mail:sales@coopersurgical.com
coopersurgical.com

Contact Details for Customers in the USA

Tel: 800-243-2974
Fax: 800-262-0105

CooperSurgical®

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