INTEGRAL MAINTENANCE MANUAL

CONTENTS

1621 - GB - LPG Systems - Public company with share capital of 2.000.000 euros - Siren 335 183 836 RCS Romans -

1 INFORMATION

1.1 WARNINGS

Who is this manual for?

Only technicians from the manufacturer-approved maintenance company or a manufacturer's representative are authorized to perform the maintenance operations described in this document

How long is it valid?

LPG® Systems reserves the right to alter the characteristics of its products at any time in order to incorporate the latest technological advancements.
The information contained in this document is therefore subject to change without notice.
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What are the conditions for using the Cellu® M6?

The Cellu M6® should only be used by a qualified professional.
The Cellu M6® may only be used indoors.

The index of protection IP 20 defines protection against solid bodies that are at least Ø › 12 mm, not against splashes.

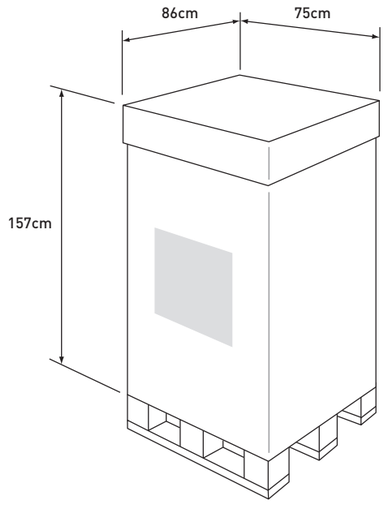
The electrical protection class is class 1 (interconnected grounded masses).

The Cellu M6® should be installed near a power outlet that should remain accessible after installation.
The power outlet must have a ground resistance ⩽ 3 ohms to operate properly and for personal safety, in accordance with current standards.
If the power outlet cannot be accessible, then during the installation, provide a selector switch that is quickly and easily available, with the following characteristics: bipolar 16A and 230V.
The Cellu M6® was designed to be connected to network with neutral grounded.
Provide for 30mA differential protection upstream of the power outlet where the machine is connected.

The Cellu M6® will be used on a flat, stable, and hard surface that is free of water. It is not attached to the ground, but its wheels do not allow it to move across thresholds or stairs.
If necessary, restart the machine on its palette.

The temperature of the room must be between 10°C and 30°C, with 30% to 85% relative humidity (without condensation) in a normally ventilated room.

Do not put the Cellu M6® where it is directly exposed to the sun or near heaters.



1.2 PRODUCT STORAGE CONDITIONS

Package Characteristics:

- Triple-wall cardboard
- Interior foam spacers
- Attachment with straps on a wooden palette

Storage:

The room where the product will be stored will be between –20°C and 70°C and the relative humidity will be between 10% and 90%, without condensation.

Observe the conditions detailed by the following icons:

Shipping diagrams and icons:

TILT INDICATOR
(FOR EXPORT ONLY)


SHOCK INDICATOR
(FOR EXPORT ONLY)

(FOR EXPORT ONLY)

FRAGILE, HANDLE
WITH CARE


STOCKER A L'ABRI
DES INTEMPERIES


MAINTENIR
A LA VERTICALE


NE PAS RENVERSER

Handling: By fork-lift truck.
Stackability: Not possible.
Sea transport: With an individual sealed bag and cardboard.

1.3 ELECTRICAL DANGER

NOTE: For your safety, never remove the machine covers, without first switching the off. Then unplug the power cord.

1.4 SWITCHING ON/OFF

The on/off switch is located on the front of the machine, to the left of the power cord connection.

Turn on:

- Confirm that the switch is at "0".
- Completely unwind the machine's power cord.
- Connect the cord first to the machine and then to the outlet.
- Set the switch to "1".

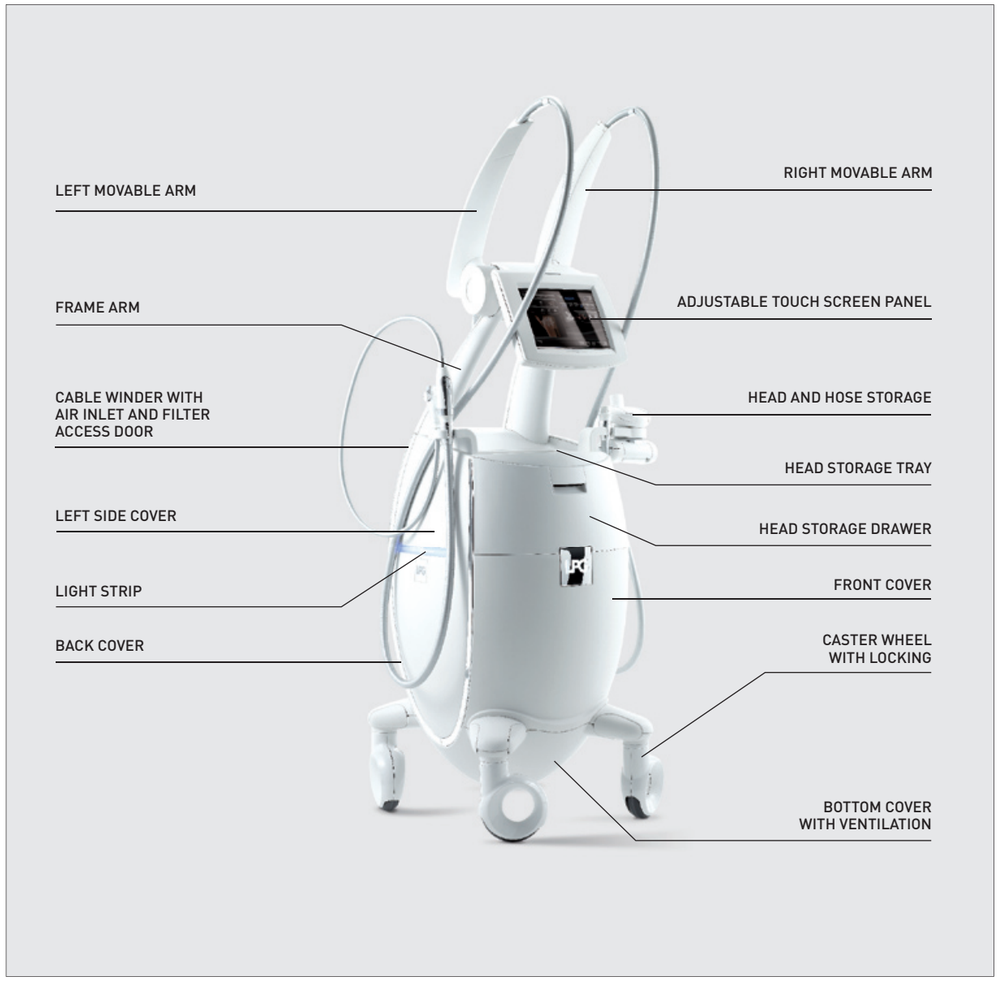
Turn off:

- Set the switch to "0".
- Disconnect the cord, first from the outlet and then from the machine.
- Wind the machine's power card on the designated holder.

1.5 USAGE PRECAUTIONS

- Do not use the auxiliary adapter directly against the skin like as a treatment head.
- Do not treat certain sensitive areas of the human body (eyes, ears, cuts and sores, recent injuries, etc.), which can cause serious injury.
- To test that the machine is working, use the treatment head in the palm of your hand.

2.1 LOCATION OF COMPONENTS



NOTE: Naming convention for the sides of the machine: The machine side is designated from the user's position.

2 OVERVIEW, OPERATION, AND MAINTENANCE

2.2 PRINCIPLE OF OPERATION

Power

The "universal power supply" block receives its power from the mains. A 24v DC is generated to power the entire device, and a 230v AC 50-60Hz is generated to power the 2 vacuum pumps.
The 24v DC output voltage powers the control board, the light strip, and the voltage indicator lights.
The 230v AC voltage is generated on two connectors independently powering each pump. It has the ability to stop any defective pump and use the BUS CAN to show a message on the panel. This power is protected against short circuits, overloads, and overheating.

Vacuum Pump, Control, and Selection

Each vacuum pump uses proportional and selection solenoid valves to create a suction in the selected treatment chamber. These pumps are powered by 230v 50/60Hz, depending on the device's suction need.
This is floating voltage, grounded only indirectly and presenting a risk of electric shock from physical contact when powered.
The pumps are equipped with circuit breakers in the event of overheating, allowing for an automatic reset.

Control and Selection

The resulting suction modulated by the proportional solenoid valves is either continuous or sequential, as controlled by the user. The suction is constantly controlled by the control board, which receives pressure information from each filter box sensor.

The suction is directed to either the left (#1) or the right (#2) massage head by one of the two selection solenoid valves controlled by the control board. Both heads cannot be activated at the same time.

Head Air Filters

These two identical filters, with quick access through the sliding back door, pick up accumulated desquamation and protects the vacuum control assembly from foreign bodies. Their use time is a 40 hours maximum. Their clogging rate is monitored by the control electronics only in the event of premature clogging.

PC Touch Screen Panel

The touch screen has a user interface for:

- Informing the user about how the machine is working (machine settings, chosen cycle, needed maintenance, etc).
- Controlling treatment cycles on the machine by selecting programs or modifications. The computer panel is the device's master system, which controls every component connected to it.
- Controlling the control board for all of its functionalities.
- Ordering the power supply to activate the pumps.
- Updating the device's software via a USB stick.
- Managing time meters: Registering operating time of the machine and of the left and right circuit filters.

Control Board

- Based on the information received by the filter pressure sensors and the information from the PC panel, the control board can:
- Calculate the pneumatic control settings.
- Control all of the pneumatic and electrical system actuators (EVP and EVS).
- Detect the level of clogging in the filters, if excessive.
- Transmit communication between the heads and panel. (BUS CAN 1 and CAN 2)
- Develop the 9v DC required by the device's low-power electronic circuits.
- Control the lateral light strips.
- Control the fan in the pump compartment.

cont. →

2.2 PRINCIPLE OF OPERATION (cont.)

Light strips

The purpose of the light strips is to add aesthetic value to the device:

- Controlled by the control board, which receives information from the PC panel.
- The electronic circuits are powered by the 9v from the control board, and the LEDs are powered by the 24vDC from the power supply.

Compartment Fan

The fan's role is to keep the pump compartment at an optimal temperature.
Controlled by the control board, which receives information from the PC panel.
Powered by the 24v from the power supply, it is controlled by the control board, which received tachometric information from the fan.

Voltage presence light

The voltage light notifies the user that the device is connected to the network, that it is receiving power, and that it is ready to operate.

Roll Massage Head

The motorized massage head adds two moving rollers to the suction. Their function is to form a wave that will be rolled up by the first roller, sucked to the top middle by the pressure, and then unrolled by the second roller.
It is controlled by the user either on the head using the switch and power settings or on the control panel screen.
The suction sequence and roller speed and direction can be adjusted. This information passes through the control board.

The auxiliary heads have the same effect as the main head. The difference is that there is no motorized rotation. Instead, pressure alone is enough to form the wave due to the narrow configuration of the nozzle.

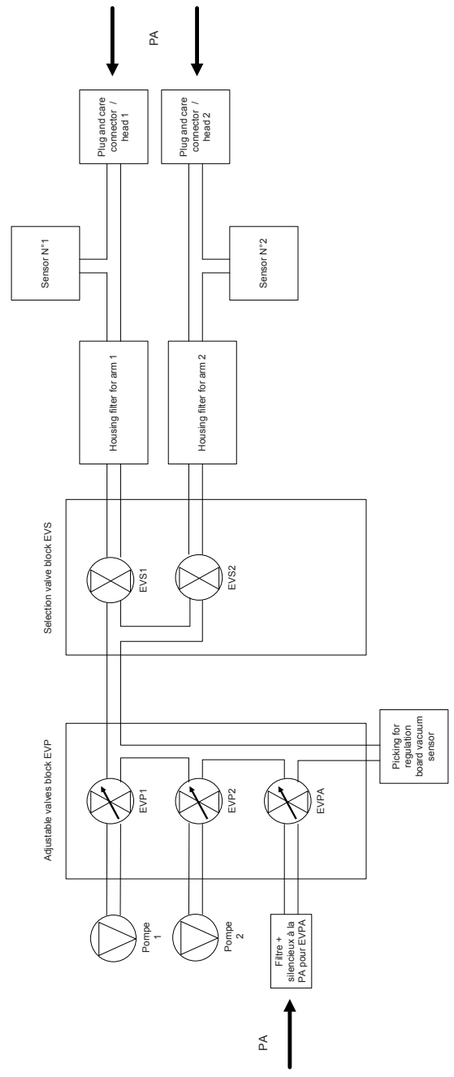
Lift Heads (TML Series)

The care head adds flap movement to the suction. It forms a fold and then releases it.
The suction sequence can be adjusted. This information passes through the control board.

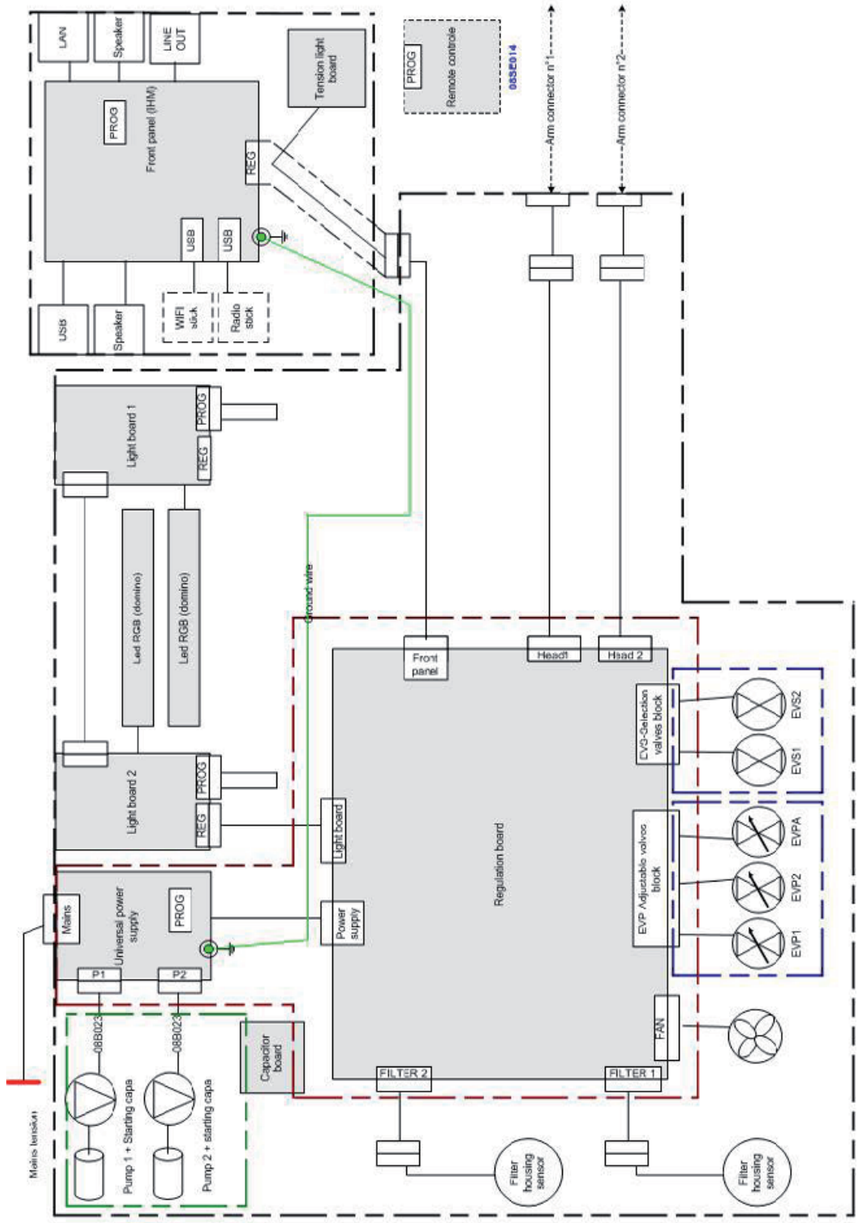
NOTE: The selected treatment power is constantly controlled through a system of electronic pressure sensors. However, if the treatment power is too high or incorrect, it can cause pain and trauma to the skin tissue, which may lead to bruising.

2.3 OPERATING DIAGRAMS

1/a Pneumatic Circuit Diagram

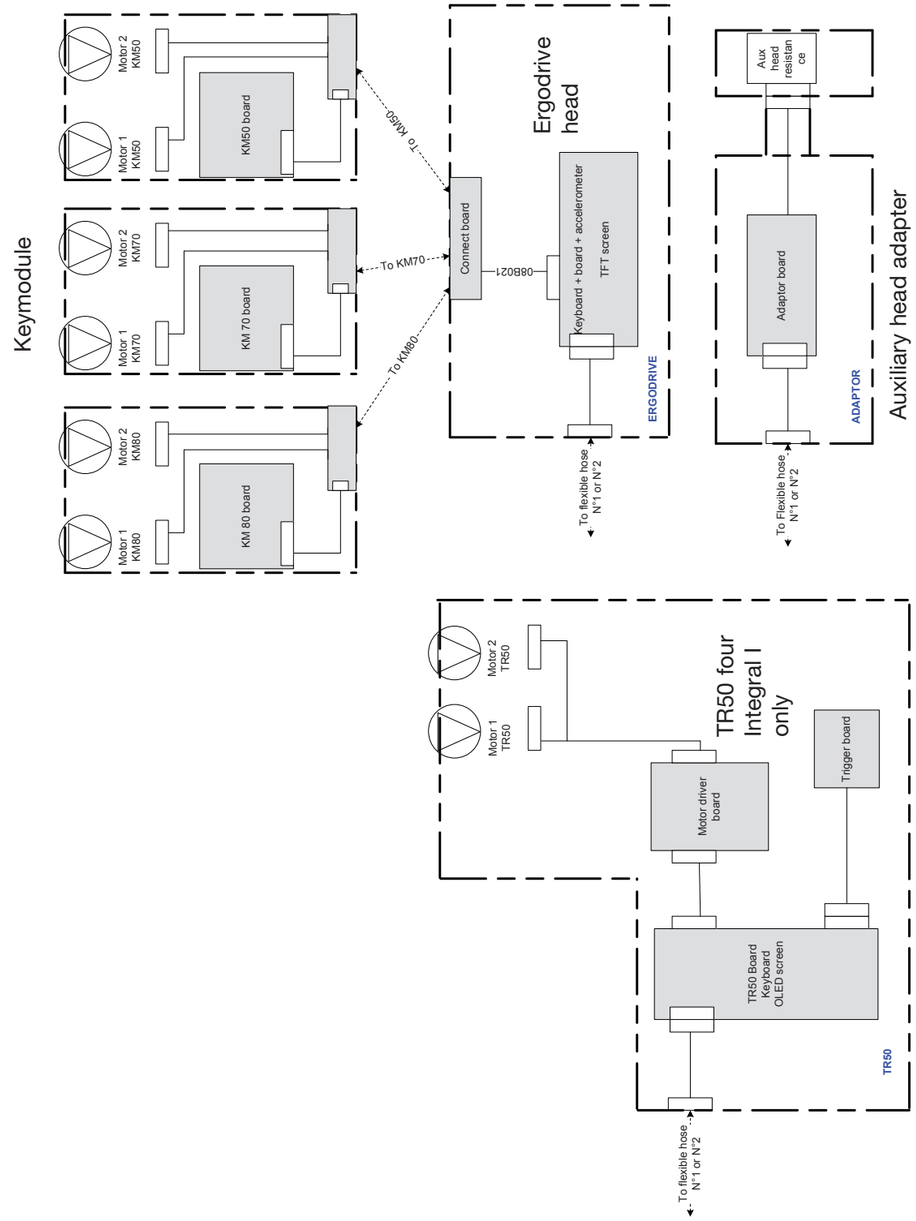


2/a Board Connection Diagram

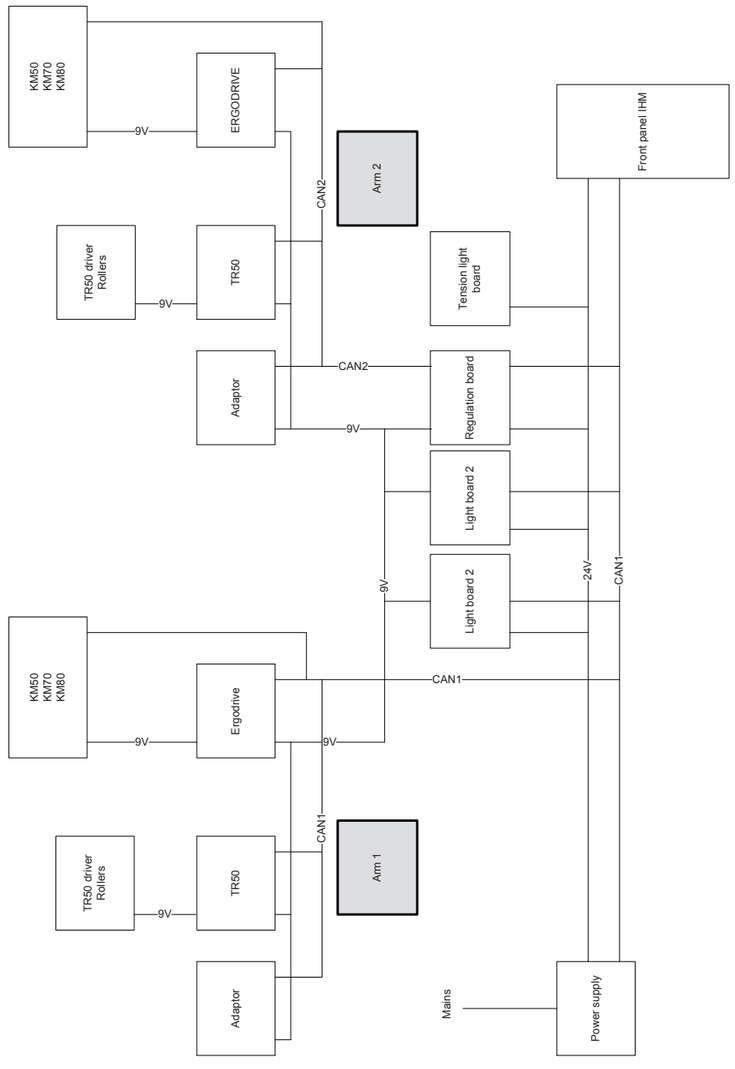


2 OVERVIEW, OPERATION, AND MAINTENANCE

3/a Head Connection Diagram



4/a Bus Can and DC Power Diagram



2 OVERVIEW, OPERATION, AND MAINTENANCE

2.4 MAINTENANCE

To keep the Cellu M6® in top working order, follow the maintenance schedule recommended by the manufacturer.

Recommended Maintenance

Clean the device*	As often as possible
Clean the main head*	After each use
Use the auxiliary heads*	After each use
Replace the filter cartridges (massage head)*	When the warning message appears
Replace Endermolift kit	14 sessions
Change motorized head flaps (Keymodules - TR50)*	As needed
Change motorized heads (Keymodules - TR50)	1000 hours/as needed

Time Meter

Each motorized head and each electronic card has its own electronic time meter. Operating time information can be viewed from the PC panel in the After-sales/Configuration module. The device operating time can be viewed from the Identification/Configuration module.

Recommendations for Cleaning the Machine

- Avoid harsh products, such as acetone, trichloroethylene, alcohol 90%, wood alcohol, etc.
- Avoid using abrasive sponges.
- When cleaning the parts of the machine that come into contact with patients, always use wipes.
- For the inside of the head storage drawer and tray, use a fine-tipped vacuum cleaner to remove dirt, using care with all of the auxiliary heads. The inside of the back door for filter access should be cleaned the same way.
- Use a damp sponge to clean all external covers, hoses, and the power cord.

3 DIAGNOSTICS

3.1 NOISES

Problem	Probable causes	Solutions
Pump is too loud: clicking.	Absorption of a foreign body	Check for a foreign body.
Loud pump: (foghorn)	Defective silencer mechanism	Replace the silencer.
Pump vibration noise	Loose attachment	Tighten the pump attachment.
Whistling sound in the filter compartment	Loose filter	Tighten the filter.
		Test the pneumatic seal from the onboard test menu.
Whistling sound in the hose	Cut hose	Replace the hose.
		Test the pneumatic seal from the onboard test menu.

3.2 EQUIPMENT PERFORMANCE

Problem	Probable causes	Solutions
Poor performance by a pump	Blocked flap, presence of a foreign body	Replace the pump.
		Test the pump from the onboard test menu.
Pump stops and does not start back up, weak suction on the head	Thermal overload	Check the pump's coolant.
	Pump connection problem	Check the pump power connection, and check the cable in the pump compartment.
		Identify the defective pump using the onboard test menu.
Weak or no suction in the heads	The filter is not completely screwed in. There is a leak in the threading.	Check that the filter is positioned correctly.
	No filter	Put in a new filter.
	Missing filter compartment seal	Put in a new seal.
		Test the seal from the onboard test menu.
	Stopped pump	See above.
Weak suction from the auxiliary heads.	The hose has a hole.	Change the hose.
		Test the seal from the onboard test menu.

cont. →

→ 3.2 EQUIPMENT PERFORMANCE (cont.)

Problem	Probable causes	Solutions
Poor suction from the main massage head.	Wear on the head on the outside bevel of the treatment chamber	Change the head.
	The head has exceeded 1000 hours of use.	Change the head or keymodule.
	The flaps may be stuck due to tissue desquamation.	Detach and clean the flaps.
	The hose has a hole.	Change the hose.
		Test the seal from the onboard test menu.
Suction loss on one of the heads	Tissue desquamation has formed plugged up a "plug and care" hose connection to the head or machine.	Clean the hose connections.
		Test the seal from the onboard test menu.
Painful treatment for the patient. Ineffective treatment. Jerking movement.	Excessive suction in the heads. Loss of rhythmicity in the suction sequence.	Change the pneumatic control assembly.
		Change the control board.
		Test the control from the onboard test menu.

3.3 GENERAL CRITICAL PROBLEMS

Problem	Probable causes	Solutions
Machine not operating.	Wrongly positioned power cord	Check the connection to the machine and to the power outlet. Press the power switch.
No light on the switch.	The machine is not plugged in properly. If the cord is too long or to short, it creates too much resistance.	Check that the socket has power.
		Plug it in and switch on the power.
Black screen on the panel, voltage indicator and rear green indicator lit	Panel fails to start up	Replace the panel.
	No back-lighting	

cont. →

3.3 GENERAL CRITICAL PROBLEMS (cont.)

Problem	Probable causes	Solutions
Pumps do not start	The power line filter may not be working.	Check that the voltage indicator on the panel is lit. If it is not, replace the power unit.
	The machine is not plugged in properly. If the cord is too long or to short, it creates too much resistance.	Plug it in and switch on the power.
	Two thermal overloads tripped	Check the pump's coolant.
		Check that the pump compartment fan is working.
Session not started, rollers don't turn, pump does not start, head not recognized on the panel.	The PC panel has lost communication with one or more devices.	From the onboard test menu, check for recognized devices and their status. Change the defective device.
A pump is not starting; blockage, groaning, heat odor, with or without smoke	Pump condenser not working	Replace the condenser.
Lost power in the rollers, or no rotation even with suction in the head	Failure in the head control card	Replace the TR50 or keymodule.
	Failure in the gear unit	Replace the TR50 or keymodule.
keyboard on the auxiliary head adapter not working	Check the keyboard functionality from the test menu.	Replace the auxiliary head adapter.
No suction on one side of the device	EVS solenoid valve membrane blocked in low position	Inspect and then clean or replace the defective solenoid valve.
	EVS solenoid valve not working	Check that the coil is working properly by seeing if it is hot or if a steel screwdriver attaches to the coil.
	No voltage from the control card	Update the control card software. Check the solenoid valve connection.

3.4 GENERAL UNEXPECTED PROBLEMS

Problem	Probable causes	Solutions
Unexpected crash when using the machine	Cellular phone or short-wave generator in use near the machine	Stop using such devices or move away from the machine.
	Defective ground connection	See Section 1.1.

3.5 CONTROL SCREEN PROBLEMS

Problem	Probable causes	Solutions
Bars appear on the dashboard screen/ Lines.	The screen does not work.	Replace the panel.
The touch screen is very difficult to read.	Contrast set incorrectly	Adjust the contrast from the onboard test menu.
	Screen problem	Replace the panel.
The TR50 head screen or Ergodrive head cannot be read, lost contrast.	Screen problem	Adjust the contrast from the onboard test menu.
		Replace the panel display for an Ergodrive head.
		Replace the TR50.
Difficulty making a selection from the touch screen. Selection pressed or repeated.	Residual pressure in the touch screen	Slightly loosen the screw on the plastic frame to relieve some pressure.
	Miscalibrated screen	Recalibrate the touch screen from the onboard test menu.
	Interface problem	Replace the panel.

3.6 CRITICAL MASSAGE HEAD PROBLEMS

Problem	Probable causes	Solutions
The front/rear switch on the TR50 or Ergodrive head no longer works, or no keyboard response	The switch or keyboard does not work.	Test the keyboard from the onboard test menu. Replace the TR50 or panel for the Ergodrive head.
Rollers not turning	Roller motor problem	Replace the TR50 or keymodule.
	Defective roller driver	Replace the TR50 or keymodule.
	Contact lost between the Keymodule head and Keymodule	Clean the contacts and test the connection from the onboard test menu.
		Change the plate on the Keymodule head or Keymodule

3.7 MINOR MECHANICAL PROBLEMS

Problem	Probable causes	Solutions
Mauvaise tenue du bras en position.	After prolonged storage, the arm no longer stays in position.	Room temperature influences the arm position.
	Shock-absorbing spring too weak	Replace the moving arm.
One or more rollers blocked	Dust accumulated in the rollers over time	Clean the roller.
		Check the brake, and reposition it after removal.
		Replace the roller.
Head storage drawer or filter access locked	A foreign object is blocking the drawer.	Remove the foreign object.
	A slide is defective.	Replace the slide.
The touch screen panel not staying in position when pressing controls	Damaged panel brake	Replace the panel brakes.

4 SERVICE SHEETS

4.1 ITEMS REQUIRED FOR PERFORMING SERVICE

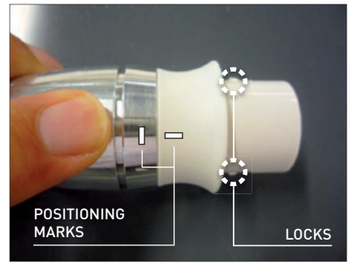
Intervention	Material necessaire
4.3 Replacing a Head Hose	1 x T20 torx key
4.4 Replacing a Moving Arm	1 x T20 torx key, 1 x T30 torx key
4.5 Replacing Panel Adjustment Brake (IHM)	1 x T20 torx key
4.6 Replacing the Top Structure	1 x T20 torx key, 1 x T30 torx key
4.7 Replacing the Filter Housing	1 x T20 torx key
4.8 Replacing a Front, Rear or Side Cover	1 x T20 torx key, 1 x T3 hex key
4.9 Replacing the Head Support	1 x T20 torx key
4.10 Replacing a Castor Wheel	1 x T20 torx key, 1 x T3 hex key, 18cm wooden dowel
4.11 Replacing the Front Panel (IHM)	1 x T20 torx key
4.12 Replacing the Filter Sensor	1 x T20 torx key
4.13 Replacing the Universal Power Supply	1 x T20 torx key, 1 x T3 hex key, 1 x 3mm flat screwdriver
4.14 Replacing the Regulation Board	1 x T20 torx key, 1 x key with a 3mm fork or tube, 1 x 3mm hex key
4.15 Replacing a Pump	1 x T20 torx key, 1 x T3 hex key, 2 x 10mm flat wrenches
4.16 Replacing a Pump Startup Capacitor	1 x T20 torx key
4.17 Replacing the Fan	1 x T20 torx key, 1 x T3 hex key, 1 x cutting pliers
4.18 Replacing a Valve Block (Regulation or Selection)	1 x T20 torx key, 1 x T3 hex key, 1 x 8mm flat wrench
4.19 Cleaning an EVS Selection Valve	1 x T20 torx key
4.20 Replacing a Light Strip Circuit	1 x T20 torx key, 1 x T3 hex key
4.21 Replacing the Ergodrive Front Panel	1 x T7 torx key, 1 x 3mm flat screwdriver
4.22 Replacing the Ergodrive Lower Plate	1 x T7 torx key, 1 x 3mm flat screwdriver, 1 x N°2 Phillips screwdriver

NOTE: When servicing electrical components, we recommend wearing a grounded anti-static wrist strap and working on an anti-static foam pad.

4.2 DISCONNECTING HOSES

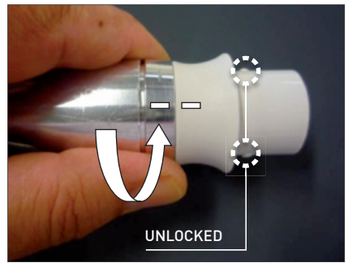
Normally locked connector

(When in place on the head or in the female connector)



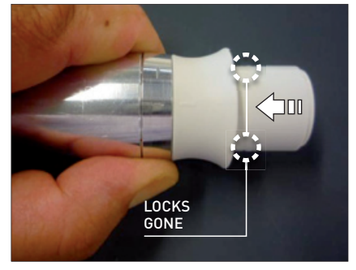
Unlocked connector ready for extraction:

Turn the metallic ring to line up the two marks.



Extraction of the connector, head, or female connector:

Pull on the metallic ring. The locks disappear, and the connector comes out of its housing.



Automatic engagement and lock:

Turn the ring into locked position and then press it into its housing until it clicks into position.

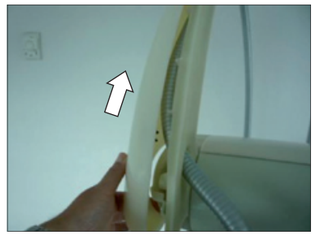
4.3 REPLACING A HEAD HOSE

Safety: For safety reasons, the CELLU M6 safety operator or technician should not continue when the machine is powered on or in 230V areas.
Unplug the power cord from the outlet.

Required materials: 1 x T20 torx key.

Operating time: 5 min.

1) Remove the cover by unscrewing the screw using the T20 Torx key.

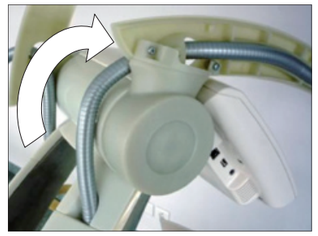


2) Remove the movable arm cover by releasing the two prongs.

3) Open the filter drawer and pull on the frame arm cover to remove it, releasing the two prongs.

4) Unlock the ring by lining up the two ¦ symbols, and then pull the ring to disconnect the hose.
(Disconnecting: See note at the start of the chapter.)

5) Remove the hose with its guide from its housing.
Remove the metal guide and reposition it on the new hose.



Reassembly: Perform the operations in reverse to reassemble the new assembly.

NOTE: Adjust the hose's position so that it runs along the joint of the moving arm when in its lower position.

4.4 REPLACING A MOVABLE ARM

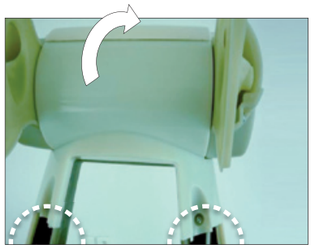
Safety: For safety reasons, the CELLU M6 safety operator or technician should not continue when the machine is powered on or in 230V areas.
Unplug the power cord from the outlet.

Required materials: 1 x T20 torx key, 1 x T30 torx key.

Operating time: 40 min.

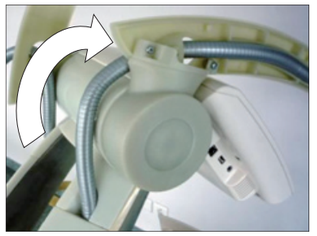
1) Follow the instructions from step 1 to 4: **4.3 REPLACING A HEAD HOSE**

2) Remove the hose from the movable arm, with its guide.



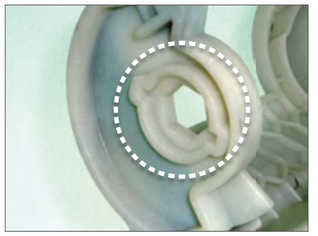
3) Unscrew the two screws from the rear cover of the panel. Tilt the panel down to remove the cover.

4) Unscrew (T30 Torx) and remove the movable arm with the panel still tilted.



Reassembly: Perform the operations in reverse to reassemble the new assembly.

NOTE: Adjust the hose's position so that it runs along the joint of the moving arm when in its lower position.



NOTE: Note the housing for the movable arm's hinge housing in the top frame.

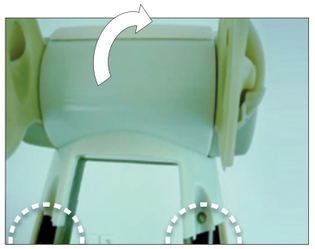
4.5 REPLACING THE PANEL ADJUSTMENT BRAKE

Safety: For safety reasons, the CELLU M6 safety operator or technician should not continue when the machine is powered on or in 230V areas.
Unplug the power cord from the outlet.

Required materials: 1 x T20 torx key.

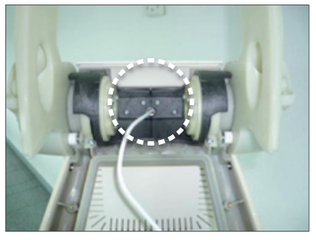
Operating time: 20 min.

1) Open the filter drawer and pull the lid for the frame arm to remove it. Remove the top two prongs. Repeat the same operation on the second arm.

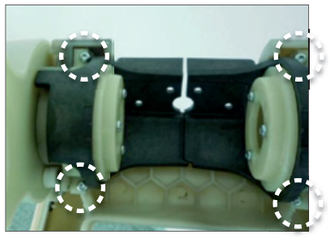


2) Unscrew the two screws from the rear cover of the panel. Tilt the panel down to remove the cover.

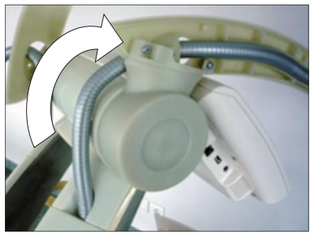
3) Disconnect the cable from the panel.



4) Unscrew the four screws (T20 Torx) from the panel and remove the entire panel.



5) Unscrew the large screws (T20 Torx) from the panel and set them aside.



Reassembly: Perform the operations in reverse to reassemble the new assembly.

NOTE: Adjust the hose's position so that it runs along the joint of the moving arm when in its lower position.

4.6 REPLACING THE TOP STRUCTURE

Safety: For safety reasons, the CELLU M6 safety operator or technician should not continue when the machine is powered on or in 230V areas.
Unplug the power cord from the outlet.

Required materials: 1 x T20 torx key, 1 x T30 torx key

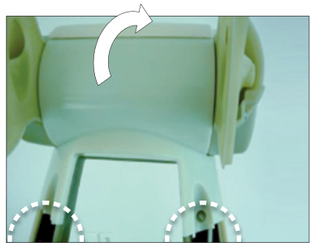
Operating time: 45 min.

1) Follow the instructions from step 1 to 2: **4.3 REPLACING A HEAD HOSE**

2) Open the filter drawer and pull the lid from the frame arm to remove it. Repeat the same operation on the second arm.

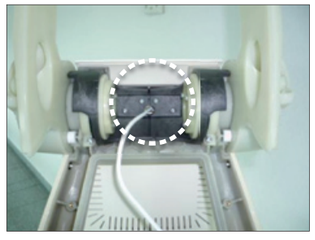
3) Unlock the ring by lining up the two ¦ symbols, and then pull the ring to disconnect the hose. (Disconnecting: See note at the start of the chapter.)

4) Remove the hose from the movable arm, with its guide.

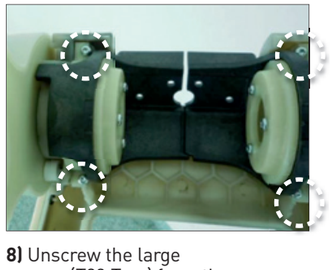


5) Unscrew the two screws from the rear cover of the panel. **Tilt the panel** down to remove the cover.

6) Disconnect the cable from the panel.



7) Unscrew the four screws (T20 Torx) from the panel and remove the entire panel.



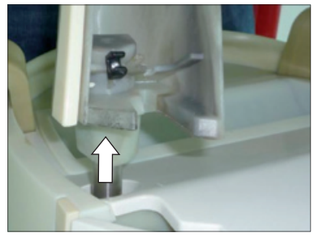
8) Unscrew the large screws (T20 Torx) from the panel and set them aside.

9) Unscrew (T30 Torx) and remove the both movable arms.

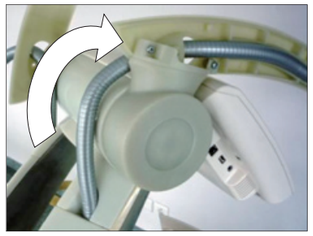
10) Unscrew the **two bases** (right and left) from the frame.

cont. →

→ 4.6 REPLACING THE TOP STRUCTURE (cont.)

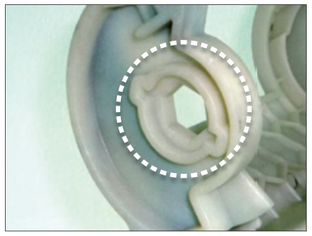


11) Lift the top frame to remove it.



Reassembly: Perform the operations in reverse to reassemble the new assembly.

NOTE: Adjust the hose's position so that it runs along the joint of the moving arm when in its lower position.



NOTE: Note the housing for the movable arm's hinge housing in the top frame..

4.7 REPLACING THE FILTER HOUSING

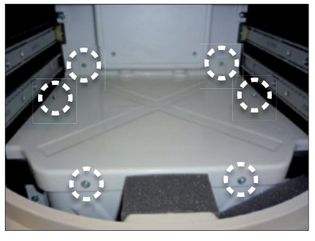
Safety: For safety reasons, the CELLU M6 safety operator or technician should not continue when the machine is powered on or in 230V areas. Unplug the power cord from the outlet.

Required materials: 1 x T20 torx key.

Operating time: 15 min.

1) Open the head storage drawer, empty it, and remove the bottom. Unscrew the four screws holding the slides, and remove the drawer.

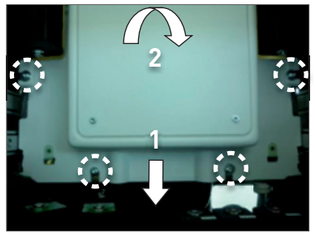
2) Unclip and raise to remove the head storage tray.



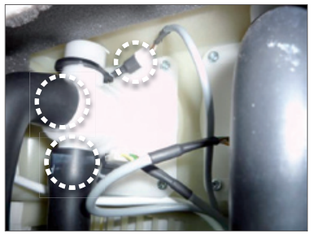
3) Unscrew the six screws (T20 Torx) from the top plate and remove it.

cont. →

→ 4.7 REPLACING THE FILTER HOUSING (cont.)



4) Unscrew the four screws (T20 Torx) from the bottom plate (six screws in the first version), and lift the plate by moving it down and up.



5) Disconnect the sensor. Disconnect the two hoses from the filter housing. (Remove the clamps, if necessary, depending on the version.)

6) Unscrew the four screws (T20 Torx) on the housing and set it aside.

Reassembly: Perform the operations in reverse to reassemble the new assembly.

4.8 REPLACING A FRONT, REAR, OR SIDE COVER

Safety: For safety reasons, the CELLU M6 safety operator or technician should not continue when the machine is powered on or in 230V areas. Unplug the power cord from the outlet.

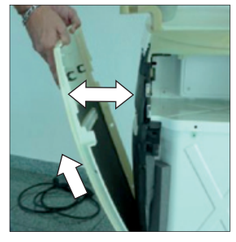
Required materials: 1 x T20 torx key, 1 x T3 hex key

Operating time: 5 min.

1) Unscrew the screws attached to the cover under the wheel legs (3mm hex key, depending on the version). Remove the wheel covers.

2) Unscrew the locking screw on the top of the power socket.

3) Unclick the top/ bottom covers by firmly pulling down.



4) Unclip the side coves by pulling up and lifting in order to release the two internal guides.

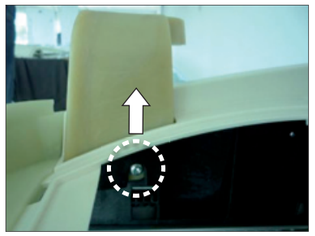
4.9 REPLACING A HEAD SUPPORT

Safety: For safety reasons, the CELLU M6 safety operator or technician should not continue when the machine is powered on or in 230V areas.
Unplug the power cord from the outlet.

Required materials: 1 x T20 torx key

Operating time: 5 min.

1) Raise and unclip to remove the head storage tray..



2) Unscrew the screw attached to the housing (T20 Torx) and take it out from the top.

Reassembly: Perform the operations in reverse to reassemble the new assembly.

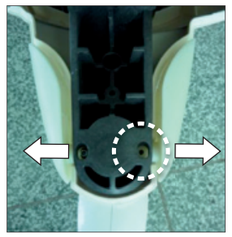
4.10 REPLACING A CASTOR WHEEL

Safety: For safety reasons, the CELLU M6 safety operator or technician should not continue when the machine is powered on or in 230V areas.
Unplug the power cord from the outlet.

Required materials: 1 x T20 torx key, 1 x T30 torx key, 1 x 18cm wooden dowel

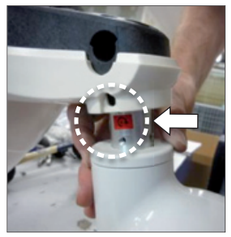
Operating time: 10 min.

1) Unscrew the screws attached to the cover under the wheel legs (3mm hex key, depending on the version). Remove the wheel covers.



2) Unscrew **one of the two** screws from the axel, and slide the two pedals to remove them.

3) Unscrew the two screws from the wheel to pull it downward. Put the dowel under the device to stabilize it.



Reassembly: Perform the operations in reverse to reassemble the new assembly.

NOTE: Move the red marker on the wheel axis to the left, as shown below. Otherwise, the brake lever will work backwards.

4.11 REPLACING THE FRONT PANEL (IHM)

Safety: For safety reasons, the CELLU M6 safety operator or technician should not continue when the machine is powered on or in 230V areas.
Unplug the power cord from the outlet.

Required materials: 1 x T20 torx key

Operating time: 20 min.

1) Follow the instructions from step 1 to 4: **4.5 REPLACING THE PANEL ADJUSTMENT BRAKE**

Reassembly: Perform the operations in reverse to reassemble the new assembly.

NOTE: Download the software update via the USB key, if needed.

4.12 CHANGING THE FILTER SENSOR

Safety: For safety reasons, the CELLU M6 safety operator or technician should not continue when the machine is powered on or in 230V areas.
Unplug the power cord from the outlet.

Required materials: 1 x T20 torx key

Operating time: 15 min.

1) Remove the filter (see User Guide).
2) Follow the instructions from step 1 to 6: **4.7 REPLACING THE FILTER HOUSING**.

3) Remove the sensor clip, and remove the O-ring.

Do not touch the sensitive part of the sensor to prevent damage.

Reassembly: Perform the operations in reverse to reassemble the new assembly.

4.13 REPLACING THE UNIVERSAL POWER SUPPLY

Safety: For safety reasons, the CELLU M6 safety operator or technician should not continue when the machine is powered on or in 230V areas.
Unplug the power cord from the outlet.

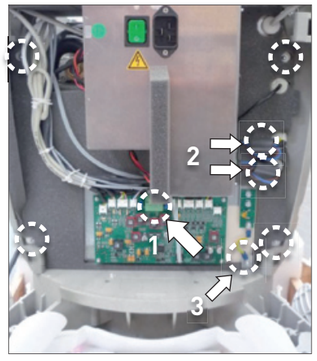
Required materials: 1 x T20 torx key, 1 x 3mm flat screwdriver, 1 x 3mm hex key.

Operating time: 15 min.

1) Unscrew the screws attached to the cover under the wheel legs (3mm hex key, depending on the version). Remove the wheel covers.

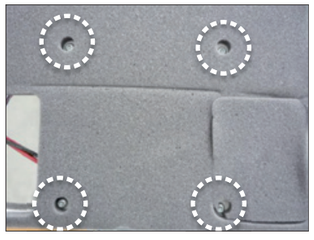
2) Unscrew the locking screw on the top of the power socket.

3) Unclick the top/bottom covers by firmly pulling down.



4) Unscrew the four retaining screws (T20 Torx), and then disconnect:

- The power cable from the control card (1)
- Both pump power cables (2), marking their respective positions, and unscrewing the locks (3mm flat screwdriver)
- Disconnect the pumps from the grounding (3) (If needed, depending on the version).



5) Rotate the plate to the left, being careful not to pull on the strands of cable, and then unscrew the four retaining screws (T20 Torx) from the power unit at the back of the plate.

Reassembly: Perform the operations in reverse to reassemble the new assembly.

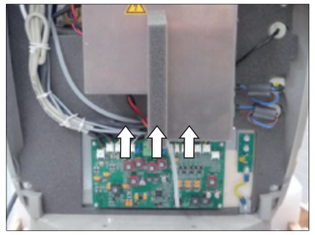
4.14 REPLACING THE REGULATION BOARD

Safety: For safety reasons, the CELLU M6 safety operator or technician should not continue when the machine is powered on or in 230V areas.
Unplug the power cord from the outlet.

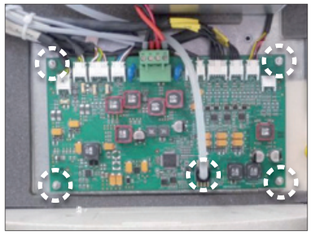
Required materials: 1 x T20 torx key, 1 x key with a 3mm fork or tube, 1 x 3mm hex key.

Operating time: 15 min.

1) Follow the instructions from step 1 to 3: **4.13 REPLACING THE POWER SUPPLY**



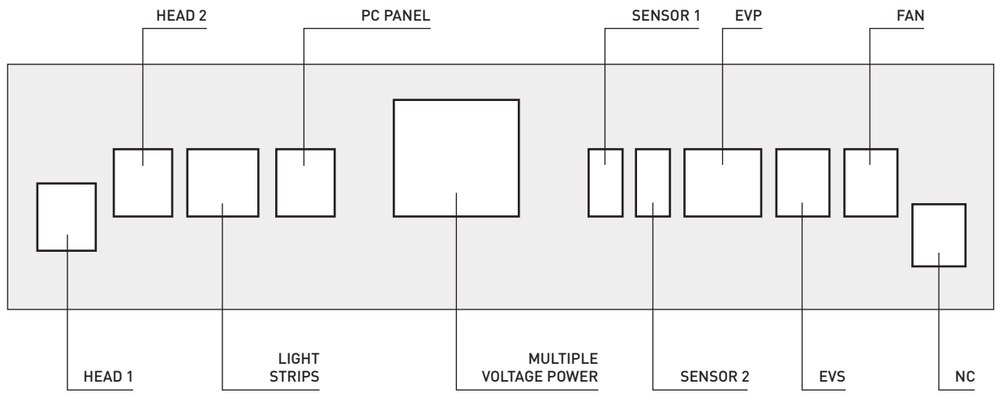
2) Disconnect all of the cables, marking their respective positions.



3) Disconnect the host from the suction sensor exhaust. Unscrew the four nuts (3mm key) and remove the board.

Reassembly: Perform the operations in reverse to reassemble the new assembly.

Connector Positions



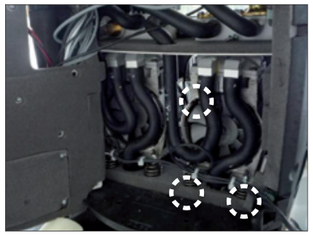
4.15 REPLACING A PUMP

Safety: For safety reasons, the CELLU M6 safety operator or technician should not continue when the machine is powered on or in 230V areas.
Unplug the power cord from the outlet.

Required materials: 1 x T20 torx key, 2 x 10mm flat wrenches, 1 x 3mm hex key.

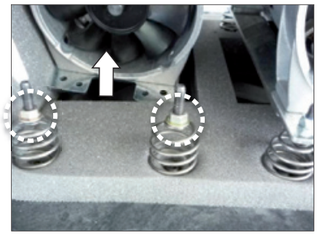
Operating time: 30 min.

1) Follow the instructions from step 1 to 4: **4.13 REPLACING THE UNIVERSAL POWER SUPPLY**



2) Rotate the plate assembly to the left, being careful not to pull on the strands of cable. Disconnect the suction inlet hose and unscrew the two nuts on the shock absorbers, holding the locknuts (2x10mm flat wrenches).

3) From the front: Unscrew the six screws from the base plate and remove it.



4) Unscrew the two nuts (2 10mm keys), holding the shock-absorber locknuts, and remove the pump from the back of the unit.

Reassembly: Perform the operations in reverse to reassemble the new assembly.

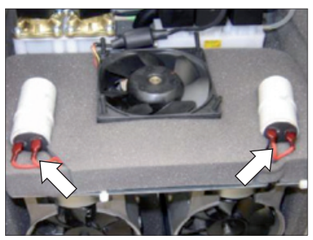
4.16 REPLACING A PUMP STARTUP CAPICITOR

Safety: For safety reasons, the CELLU M6 safety operator or technician should not continue when the machine is powered on or in 230V areas.
Unplug the power cord from the outlet.

Required materials: 1 x T20 torx key.

Operating time: 15 min.

1) Follow the instructions from step 1 to 3: **4.7 REPLACING THE FILTER HOUSING**



2) Disconnect and remove the condenser from its housing by removing the plastic ties

ELECTRIC SHOCK WARNING:
Discharge the condenser before handling it.

Reassembly: Perform the operations in reverse to reassemble the new assembly.

4.17 REPLACING THE FAN

Safety: For safety reasons, the CELLU M6 safety operator or technician should not continue when the machine is powered on or in 230V areas.
Unplug the power cord from the outlet.

Required materials: 1 x T20 torx key, 1 x cutting pliers, 1 x T3 hex key.

Operating time: 25 min.

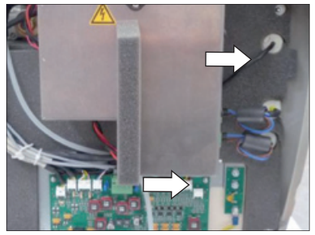
1) Follow the instructions from step 1 to 3: **4.7 REPLACING THE FILTER HOUSING**

2) Remove the fan by pulling its Richmo attachments, cutting them, and removing them, if necessary.

3) Unscrew the screws attached to the cover under the wheel legs (3 mm hex key, depending on the version).
Remove the wheel covers.

4) Unscrew the locking screws on the top of the power socket.

5) Unclip the rear cover by firmly pulling downward, and set it aside.



6) Disconnect the fan's power cable, and then remove the fan.

Reassembly: Perform the operations in reverse to reassemble the new assembly.

4.18 REPLACING A VALVE BLOCK (REGULATION OR SELECTION)

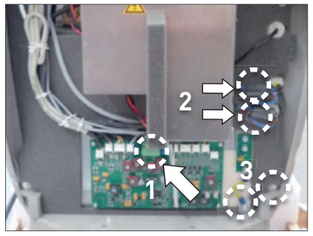
Safety: For safety reasons, the CELLU M6 safety operator or technician should not continue when the machine is powered on or in 230V areas.
Unplug the power cord from the outlet.

Required materials: 1 x T20 torx key, 1 x 8mm flat wrench, 1 x 3mm hex key.

Operating time: 30 min.

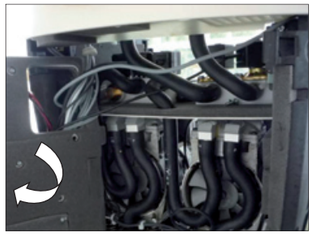
1) Follow the instructions from step 1 to 3: **4.7 REPLACING THE FILTER HOUSING**

2) Follow the instructions from step 1 to 3: **4.8 REPLACING A FRONT, REAR, OR SIDE COVER**

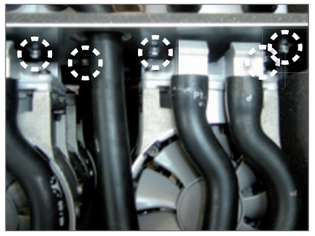


3) Unscrew the four retaining screws (T20 Torx), and then disconnect:

- The power cable from the control card (1)
- The two (2) pump power cables, marking their positions. Unscrew the locks (3mm flat screwdriver).
- Disconnect the pumps from the grounding (3) (If needed, depending on the version).



4) Rotate the plate assembly to the left, being careful not to pull on the strands of cable. Disconnect the inlet hoses on the solenoid valve bar to be removed.



5) Unscrew the screws from the bar to be replaced from below the plate (8mm flat key).

6) Disconnect the interconnecting hose and the clear silicon hose, if replacing the regulation bar. Remove the bar to be replaced.

Reassembly: Perform the operations in reverse to reassemble the new assembly.

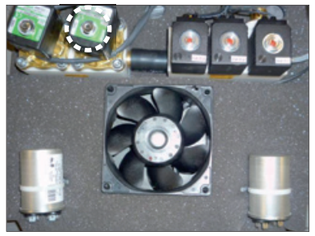
4.19 CLEANING A SELECTION SOLENOID VALVE

Safety: For safety reasons, the CELLU M6 safety operator or technician should not continue when the machine is powered on or in 230V areas.
Unplug the power cord from the outlet.

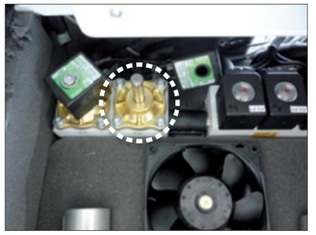
Required materials: 1 x T20 torx key.

Operating time: 10 min.

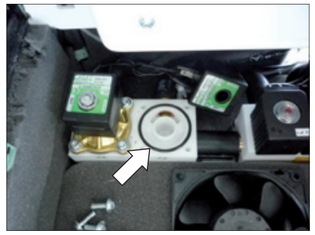
1) Follow the instructions from step 1 to 3: **4.7 REPLACING THE FILTER HOUSING**



2) Use the flat screwdriver to remove the lock clip from the solenoid coil to be cleaned.



3) Unscrew the four screws from the top assembly (T20 Torx) and open the solenoid coil body. Pull out the moving parts: membrane, core, and compression spring.



4) Dust off all of the parts, and check that the O-ring is correctly positioned..

Reassembly: Perform the operations in reverse to reassemble the new assembly.

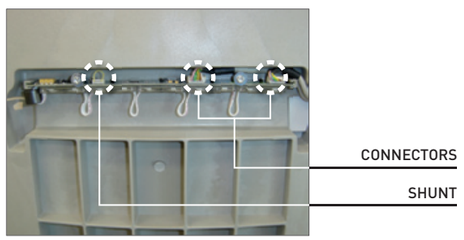
4.20 REPLACING A LIGHT STRIP CIRCUIT

Safety: For safety reasons, the CELLU M6 safety operator or technician should not continue when the machine is powered on or in 230V areas.
Unplug the power cord from the outlet.

Required materials: 1 x T20 torx key, 1 x 3mm hex key.

Operating time: 15 min.

1) Follow the instructions from step 1 to 4: **4.8 REPLACING A FRONT, REAR, OR SIDE COVER**



2) Disconnect the connector(s) (2 on the left side and 1 on the right side) and the shunt (identified by yellow to the left and blue to the right).

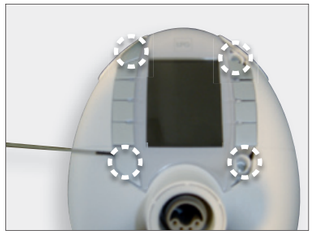
Reassembly: Perform the operations in reverse to reassemble the new assembly.

4.21 REPLACING THE ERGODRIVE FRONT PANEL

Safety: For safety reasons, the CELLU M6 safety operator or technician should not continue when the machine is powered on or in 230V areas.
Unplug the power cord from the outlet.

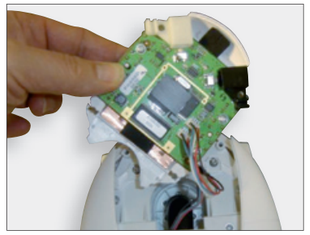
Required materials: 1 x T7 torx key, 1 x flat screwdriver.

Operating time: 5 min.



1) Remove the four caps and unscrew the screws (T7 Torx).

2) Remove the two inverter buttons using a lever to extract them.



3) Disconnect the two cables, and remove the panel assembly.

Reassembly: Perform the operations in reverse to reassemble the new assembly.

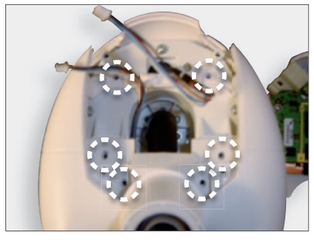
4.22 REPLACING THE ERGODRIVE LOWER PLATE

Safety: For safety reasons, the CELLU M6 safety operator or technician should not continue when the machine is powered on or in 230V areas.
Unplug the power cord from the outlet.

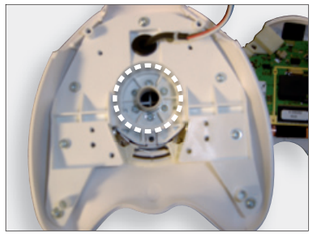
Required materials: 1 x T7 torx key, 1 x 3mm flat screwdriver, 1 x N°2 Phillips screwdriver

Operating time: 15 min.

1) Follow the instructions from step 1 to 3: **4.21 REPLACING THE PANEL**



7) Unscrew the six assembly screws. (No. 2 Phillips screwdriver + T7 Torx) Lift and remove the top lid with the hose.



8) Unscrew the six screws holding the rotating mechanism (No. 2 Phillips screwdriver).

9) Remove the lower lid. Remove the rotating mechanism.

Reassembly: Perform the operations in reverse to reassemble the new assembly.

5 FEATURES

5.1 TECHNICAL FEATURES

NOTE: Values are given at nominal conditions, unless otherwise specified.

5.2 PRESENTATION

- Medical device: Class IIa per rule 9 of 93/42/EC MDD
- Equipment made of a vacuum pump (generator) and a pneumatic system (actuator) controlled by a 16-bit microprocessor (pilot), and a (100-240V; 50-60Hz) universal power supply.
- Electronic boards using SMT and Thru-Hole technology.
- Communication between electronic boards by CAN bus.
- Filtration of the vacuum circuitry by 2 disposable cartridge filter of 5 µm grade.
- HMI: Color LCD user interface display. Touch screen panel. 10"4 color LCD screen (800x600 resolution)

	**TR70 Ergodrive** TR70 Ergodrive with 180° rotating base, with a couleur 2"7 color screen (320x240 resolution), an 8-key keyboard & 2 trigger keys.		**TR50** TR50 keyboard with 4 keys + 1 trigger key, 0,46" color OLED display (96x64 resolution). Type I machines only. Unibouchon.		**Adaptateur** Adapter, 4-key keyboard, allowing a small-diameter hose to be used for the non-motorized heads below:
	**Tête TR30** Non-motorized rollers Push Pull Connector 2 pins		**Tête TR15** Non-motorized rollers Push Pull Connector 2 pins		**Tête TML 10** Width: 10 mm with flaps (material TPU), Push Pull Connector 2 pins
	**Tête TML 20** Width: 20 mm with flaps (material TPU), Push Pull Connector 2 pins. Equipped with wheels.		**Tête TML 30** Width: 30 mm with flaps (material TPU), Push Pull Connector 2 pins Equipped with wheels.		**Plug** for micro-heads

5.3 POWER SUPPLY

100-240V / 50-60Hz / 650-625W

5.4 RESEAU ELECTRIQUE

Voltage	230 V AC	120 V AC	127 V AC	100 V AC
Frequency	50/60 Hz	60 Hz	60 Hz	50 / 60 Hz
Intensity	10 A	16 A	NC	15 A

Connection: Standard grounded wall outlet

5.5 ENVIRONMENTAL CONDITIONS

- Room temperature: +10°C +30°C
- Cooling: Mechanical ventilation incorporated into the pump and cabinet
- Relative humidity: 30% 85% (without condensation)
- To be used in a normally ventilated room (air pressure of 800-1050 mBar).

5.6 PERFORMANCE

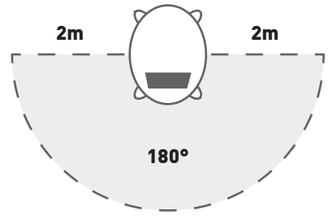
Maximum air flow and pressure (at pump)
14 m^3/h - 690 mBar relative; 0.69 atm (50 Hertz)
20 m^3/h - 690 mBar relative; 0.69 atm (60 Hertz)

5.7 SIZE

Height: 166 cm
Width: 68 cm
Depth: 78 cm

Weight: 76 kg

Working area around the device: 2 meters in 180°



5.8 STRUCTURAL COMPONENTS

- Main head hose: Ø white exterior: 25 mm; Ø gray exterior: 26 mm; Overall length: 2.8 meters
- Auxiliary head hose: Ø white exterior: 18.2 mm; Ø gray exterior: 19,2 mm; Overall length: 2.3 meters
- Vacuum pump: With oscillating pistons (without oil)

cont. →

5.8 STRUCTURAL COMPONENTS (cont.)

Power cord with removable molding

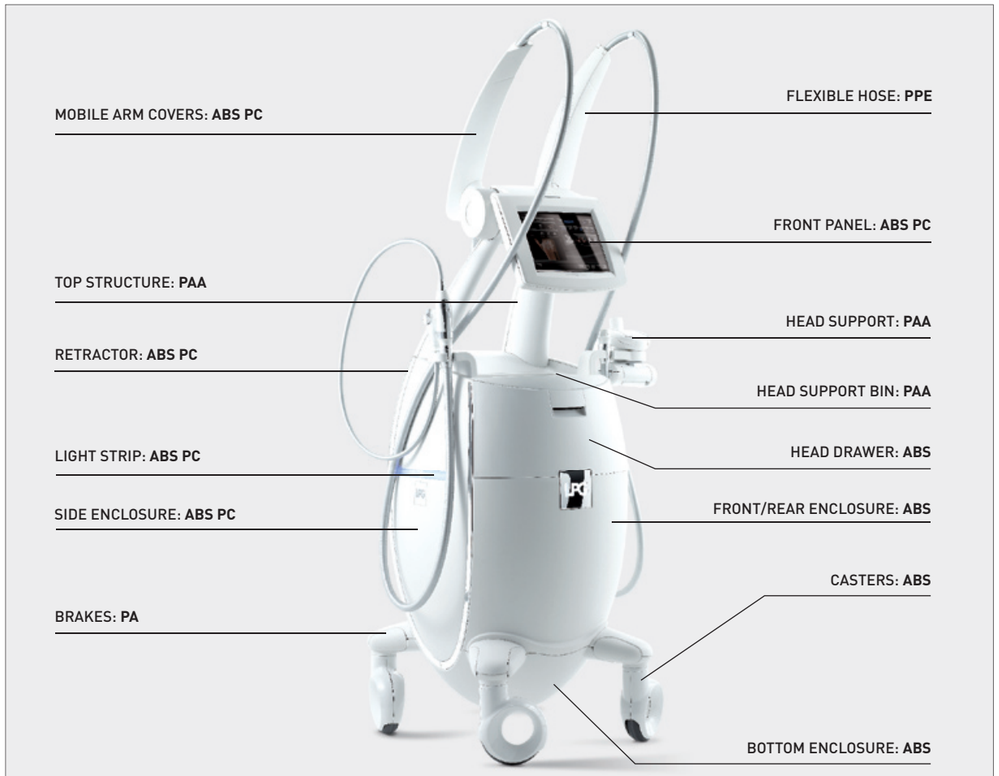
Japan	498GJ-VCTF3X2.00-C19 / 2.50m gris RAL 735	100VAC cord, grat, 2.50 m, 2P+T, right, cable, C19 outlet
USA, Canada. Mexico	N5/15-SJT3X14AWG-C19 / 2.50m gris RAL 7001	115-127VAC cord, grat, 2.50 m, 2P+T, right, cable, C19 outlet
Europe	VII-H05VVF3G1,50-C19 / 2.50m gris RAL 7001	230-240VAC cord, gray, 2.50 m, 2P+T, bent (VII -BS13/13) right (I/3/G/16 -23G), cable, C19 outlet
Italy	I/3/16-H05VVF3G1,50-C19 / 2.50m gris RAL 7001	230-240VAC cord, gray, 2.50 m, 2P+T, bent (VII -BS13/13) right (I/3/G/16 -23G), cable, C19 outlet
Switzerland	23G-H05VVF3G1.50-C19 / 2.50m RAL 7001	230-240VAC cord, gray, 2.50 m, 2P+T, bent (VII -BS13/13) right (I/3/G/16 -23G), cable, C19 outlet
United Kingdom	BS13/13-H05VVF3G1,50-C19 / 2,50m RAL 7001	230-240VAC cord, gray, 2.50 m, 2P+T, bent (VII -BS13/13) right (I/3/G/16 -23G), cable, C19 outlett

5.9 TREATMENT HEADS

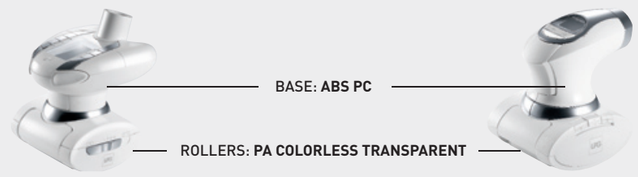
Main Head:	**TR70 Ergodrive:**	Keymodule™ - 1:	Roller dimensions: Ø 26 mm – L 80 mm Variable care surface: 29.09 to 45.87 cm^2
		Keymodule™ - 2:	Roller dimensions: Ø 28 mm – L 70 mm Variable care surface: 17.38 to 32.39 cm^2
		Keymodule™ - 50:	Roller dimensions: Ø 26 mm – L 50 mm Variable care surface: 17.10 to 25.66 cm^2
Lift Heads:	**TR50:**		Roller dimensions: Ø 26 mm – L 50 mm Variable care surface: 17.10 to 25.66 cm^2
Têtes Lift:	**TML 10:**		Width of flap: 10 mm. Variable care surface: 0.7 to 1.4 cm^2
	TML 20:		Width of flap: 20 mm. Variable care surface: 1.5 to 5.3 cm^2
	TML 30:		Width of flap: 30 mm. Variable care surface: 2.5 to 8.6 cm^2
Auxiliary Heads:	**TR 30:**		Rollers: Ø 14 mm – L 30 mm. Variable care surface: 5.5 to 7.3 cm^2
	TR 15:		Rollers: Ø 10 mm – L 15 mm. Variable care surface: 2.3 to 2.9 cm^2
Micro-buses:	**Number 1:**		Care surface: 1,5 cm^2
	Number 2:		Care surface: 3,8 cm^2
	Number 3:		Care surface: 7 cm^2
	Number 4:		Care surface: 6,8 cm^2
	Number 5:		Care surface: 11 cm^2
Micro-heads:	**T7pl:**		Care surface: 1,3 cm^2
	T7cc:		Care surface: 0,7 cm^2
	T7cv:		Care surface: 0,93 cm^2

All of the above treatment heads are patented.

5.10 MATERIALS USED



Elements in contact with the patient:



5.11 PROTECTION

- Electrical protection by two delayed action fuses, 6.3 x 32mm ceramic: T16A
- Protection against AC overvoltage and microcuts.
- Thermal protection by thermal switch, 125 °C +/- 5 on pumps.
- Thermal protection on power supply.
- Protection Index: IP 20
- Motor insulation class: Class B

5.12 MAINTENANCE

Cleaning:

- Cleaning the outside of the device: Damp sponge and rag with a household cleaning product without alcohol.
- Cleaning treatment heads: Wipes soaked in an antiseptic, bactericide, and fungicide solution. Avoid alcohol-based products.

Maintenance Frequency:

- Replacement of filter cartridges: When the warning message appears.
- Replacement of Lift head flaps: When the flaps no longer treat the skin properly, they should be replaced. They should be replaced approximately every 14 hours.

5.13 MISCELLANEOUS

- Available color: White
- Noise level at 1 meter (indicative values, not normalized): Without sequentiality: 50 dB A
With sequentiality: 60 dB A
- Degree of impurity filtration: 5 µm
- Product identification by individual serial number located on the identification label.
- Product traceability by individual manufacturer sheet.
- INPI-registered model (Institut National de la Propriete Industrielle)

5.14 APPLICABLE DIRECTIVE & STANDARDS

- Electrical protection class: Class 1
- Applicable European Directive: 93/42/EC. MDD
- Medical device (class IIa, rule 9) marked CE under Appendix V of the directive
- IEC 60601–1 standards and collateral EMC, Usability and Risk Management standards
  DEEE 01 and 02 (RoHS)
  Labeling, graphical symbols: ISO15223-1; EN980; EN1041
  Risk Management: ISO14971
  FMEA IEC60812
  Biocompatibility: ISO10993-5/-10
  Clinical trials: ISO 14155-1/-2
- Quality Management System: ISO9001, ISO13485, ISO13485 CMDCAS, FDA QSR,

6 CONFIGURATION AND MAINTENANCE MENUS

6.1 INTRODUCTION

The Settings menu is accessed from the main 'carousel' menu.

CONFIGURATION SCREEN

6.2 CHANGING THE LANGUAGE

The interface language can be changed from the following screen:

LANGUAGE CHANGE SCREEN

The choice of language is stored once it is changed. The chosen language is then used for all other operations.
In some cases, changing the language will also require:

- Reloading the carrousel menu icons
- Changing the system font

6.3 DATE AND TIME ADJUSTMENT

The date and time can be adjusted from the following screen:

DATE AND TIME ADJUSTMENT SCREEN

The date and time can not be adjusted while the 'rental mode' is activated. The machine should be restarted after adjusting the date and time.

6.4 PREFERENCES

This screen allows acces to screens for the adjustment of the light band and touchscreen brightness via two buttons:

Touchscreen brightness adjustment

Light band adjustment

Touchscreen brightness adjustment:
Two buttons increase or decrease screen brightness.

TOUCHSCREEN BRIGHTNESS ADJUSTMENT SCREEN

Light band adjustment:
Each primary colour (red, green, blue) can be independently adjusted using the corresponding buttons. The colour mix is indicated on the colour band displayed on the left (image depends on machine type).

LIGHT BAND ADJUSTMENT SCREEN

6.5 CHANGING THE FILTER

Depending on the type of machine, one or two filters are used. Each filter has a usage time counter.

FILTER CHANGE SCREEN

This screen indicates the usage time remaining and a visual representaion of the fill-level of each filter.
When one or both filters exceeds its maximaum usage time, an icon is displayed in the toolbar

 Display the Change Filter screen

 No action (pumps started)

'FILTER USAGE-TIME EXCEEDED' POP-UP WARNING

Additionally, a pop-up filter-change warning will be displayed when the pumps are started.

The pop-up warning is displayed automatically when the usage time counter reaches its limit of 40 hours.
Closing this pop-up warning (by pressing the red cross) allows the pumps to start at the next attempt.

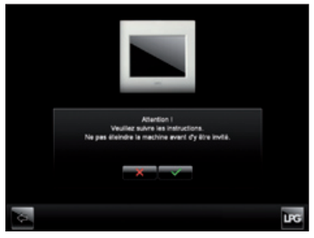
Validating this message (by pressing the green tick) allows access to the filter change screen.

FILTER CHANGE SCREEN

When the maximum filter usage time has been exceeded, the appropriate counter is displayed in red.
Once the appropriate filter is changed, the corresponding counter must be re-initialised by pressing the button next to the counter.

Filters may be changed as deemed necessary without having exceeded the maximum usage time.

6.6 SOFTWARE UPDATES



SOFTWARE UPDATES SCREEN

The Massage software (and all other data) can be updated regularly.
These updates require a USB key containing a 'pack-lpg' file-type.

The Cancel button allows access back to the Settings menu.
The Confirm button launches the update set-up application.

During initialisation of this application, the screen will be de-activated.

6.7 PERIODIC LOCKING FUNCTION

This function is inactive when the unit is delivered. The lock function allows the supplier to define a limited period of use in cases where the unit is under a rental agreement.

Three lock status exist:

Status	Description
Lock function inactive	The unit can be used without time limit.
Lock function active and unit functional	The limited period of use has not been reached and use of the unit is allowed.
Lock function active and unit blocked	The limited period of use has been reached and use of the unit is blocked.

When the lock is active, the date and time setting of the unit can not be adjusted. The lock must be inactive to carry-out date and time adjustments.
A security code is required to adjust the lock settings. The lock settings are accessed from the Settings menu.

Security code input

The security code may be input by two methods:

 Manually by using the on-screen keyboard

 Automatically by using a USB key

MANUAL CODE INPUT SCREEN

Manuel mode

The 32 character hexadecimal code is input using the on-screen keyboard.
Once the complete 32 character code has been input, the confirm button must be pressed.
If the code is correct a confirmation screen is displayed.
If the code is incorrect, the code input may be repeated in case of error.

AUTOMATIC CODE INPUT SCREEN

Automatic mode

A USB key containing a 'lock-lpg' or 'unlock-lpg' file is required.
Once the USB key is inserted, the application searches for a file commencing with the unit serial number and ending with either a 'lock-lpg' or 'unlock-lpg' file extension.

If no corresponding file is found, an 'invalid content' message is displayed. If a corresponding file is found, it is checked.
If the code is correct a confirmation message is displayed.

cont. →

6.7 PERIODIC LOCKING FUNCTION (cont.)

Security code confirmation

Once the code is input (either manually or automatically) a confirmation is displayed.

SECURITY CODE CONFIRMATION SCREEN

The new period of use dates corresponding to the code are displayed.
The new dates are activated by confirmation of this screen.

In the case of an expired unlocking code being input, a confirmation is still required.

Dispaying the current status

The status of the lock function can be viewed in the toolbar

Icone	Description
	Lock function active. Remaining number of days use is displayed. In cases where the remaining number of days use exceeds 999, the number 999 is displayed.
	Lock function active. The rental period has expired and/or the machine is blocked
No icon	Lock function inactive

Pressing either of the icons displays the all the information relevent to the lock function and its status.

Anti-piracy feature

The anti-piracy feature checks that no unauthorised attempt has been made by the user to change the lock status or the current use period dates.

If this is the case, the unit switches to locked mode and can not be used.
It is necessary to switch to 'Lock Inactive' mode (using an 'unlock-lpg' file type) before switching back to 'Lock Active' mode (using a 'lock-lpg' file type).

6.8 SYSTEM INFORMATION

The system information screen displays various information regarding the unit and its software.
Three screens are available from the tabs:

- Machine identity
- Software
- Counters

SYSTEM INFORMATION SCREENS

Pressing the 'Machine identity' tab displays information concerning the unit:

- SN panel PC: screen serial number
- SN machine: unit serial number
- Machine type: machine type (Integral or Endermolab)
- Application area: market type (I or S)

If any of this information is not available, an error message is displayed and the machine can not be used.

Pressing the 'software' tab displays information concerning the software applications installed in the unit:

- Software version
- Software reference
- Protocol options

Pressing the 'counters' tab displays the available counter values:

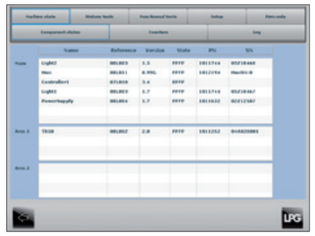
- Machine usage counter
- Ergodrive usage counter
- KM usage counter (in the case of dual Keymodules, the highest value is displayed)
- TR50 usage counter (in the case of dual TR50's, the highest value is displayed)

The counter values can only be displayed when all components are connected

6.9 MAINTENANCE ACCESS

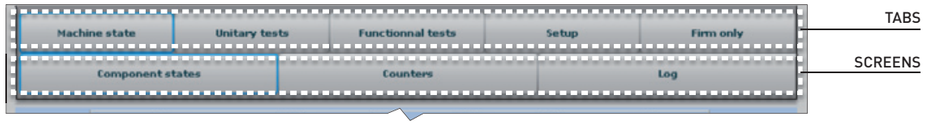
PASSWORD INPUT SCREEN TO ACCESS THE MAINTENANCE MENU

Access to the maintenance menu is password protected. Several passwords exist, according to the usage rights. The password can be input via the onscreen keyboard.



DEFAULT MAINTENANCE SCREEN

The maintenance screens are accessible from the tabs at the top of the screen.
These tabs allow access to different maintenance screens:



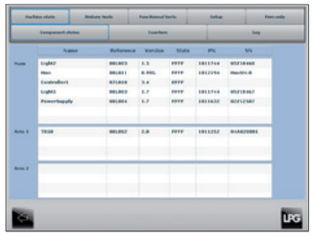
Tab	Screens	Screen description
Machine state	Component states	Component status
	Counters	Counter values
	Log	Unit log
Unitary tests	Pumps	Pump tests
	Valves	Valves tests
	Fan	Fan tests
	Ergodrive	Ergodrive tests
	TR50	TR50 tests
	Adapter	Adapter tests
	Lights	Lights tests
	Hmi	Touch screen tests
Functional tests	Vacuum	Regulation tests
	Button box	Suction parameters management (according to software version)
	Burning	Temperature tests
Set-up	Components Setup	Component updates and set-up
Firm only (Non visible ou non accessible selon les droits)	AutoTest	Autotest and serialization
	Development	Development

6.9a MACHINE STATE TAB

The machine state tab allows verification of the components' general status.
Two maintenance screens are available under this tab:

Component States Screen

Once this screen is displayed, information requests are sent to all the connected components.
The following information for each component is displayed:

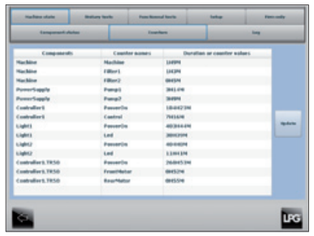


COMPONENT STATE SCREEN

Title	Description
Name	Component name
Reference	Software reference
Version	Software version
State	Software status
PN	Part number
SN	Serial number

Counters screen

The counters for the unit and its attached components display usage times in hours (H) and minutes (M).
Each component independently manages its counter(s). Once the counters screen is displayed a counters status request is sent to the components. The information is refreshed by pressing the 'update' button.



COUNTERS SCREEN

Counter name	Description	Declenchement Compteur	Arrêt Compteur
Machine	General usage time of the unit	Pump on	Pump off
Filter1 / Filter2	Filter usage time	Suction corresponding to filter on	Suction off
Pump1 / Pump2	Pump usage time	Corresponding pump on	Corresponding pump off
PowerOn	Component power supply time	Power supplied to corresponding component	Power supply stopped
Control	Suction regulation time	Suction on	Suction off
Led	LED usage time	LED on	LED off
FrontMotor/ RearMotor	Roller usage time	Roller on	Roller off
Button Press	Total number of button presses		

cont. →

→ **6.9a MACHINE STATE TAB (cont.)**

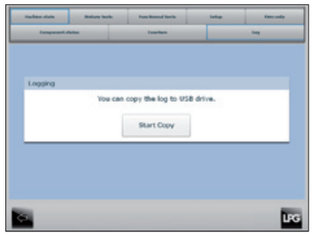
Counters screen (cont.)

Memory updates of the current usage times is variable. A variation of 1 to 2 minutes exists for the components and up to 5 minutes for the IHM.

For example, pressing the adapter button prompts an increase of the 'button press' counter. The new counter value is not immediately visible after refreshing the screen. The updated value will be displayed after the component has updated the counter memory.

Log screen

The logs event history, application and error information etc. can be copied to a USB key for future reference.



LOG SCREEN

Once the 'Start Copy' button is pressed, the insertion of a USB key is requested. Once inserted a file is written to the USB key containing all the logs under the following name type:
'LpgCont.Log ←SN Machine →←SN HMI→←Date-Heure→'

When the file copy is completed a prompt is displayed to remove the USB key.

6.9b UNITARY TESTS SCREEN

The unitary test screens allow simple tests to be carried out on each component. Eight screens are available under this tab:

Pumps screens

The correct function of pumps can be checked from this screen. Each pump can be started individually or simultaneously.

ATTENTION: the start-up of the pumps is uncontrolled – both the Pump solenoid valves (EVPs) and the Selection solenoid valve (EVS) or Atmospheric Pressure solenoid valve (EVPA) must be opened to start the pumps. The pumps can not be started under constraint.

PUMP TEST SCREEN

Button	Action
Pump 1 On	Start Pump 1
Pump 2 On	Start Pump 2
Pumps 1 & 2 On	Start Pumps 1 & 2
Pumps Off	Stop Pumps

cont. →

→ **6.9b UNITARY TESTS SCREEN (cont.)**

Valves screen

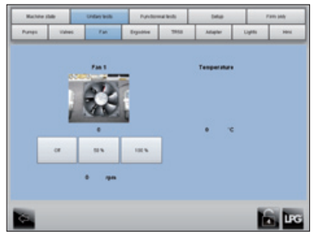
Each solenoid valve can be tested individually from this screen

SOLENOID VALVES TEST SCREEN

Button	Action
EVS1 Close	Close Selection Solenoid valve 1
EVS2 Close	Close Selection Solenoid valve 2
EVP1 -	Close Pump Solenoid valve 1
EVP2 -	Close Pump Solenoid valve 2
EVPA -	Close Atmospheric pressure solenoid valve
EVS1 Open	Open Selection Solenoid valve 1
EVS2 Open	Open Selection Solenoid valve 2
EVP1 +	Open Pump Solenoid valve 1
EVP2 +	Open Pump Solenoid valve 2
EVPA +	Open Atmospheric pressure solenoid valve

Fan screen

The measurements from the temperature sensor on the regulation board can be checked from this screen.



FAN TESTS SCREEN

Button	Action
0 %	Fan speed set at 0%: 900rpm (±10%)
50 %	Fan speed set at 50%: 2250rpm (±10%)
100 %	Fan speed set at 100%: 3600rpm (±10%)

cont. →

6.9b UNITARY TESTS TAB (cont.)

Ergodrive Screen

The Ergodrive head and its associated functions can be tested from this screen.

ERGODRIVE AND KEYMODULES SCREEN

Button	Action
SCREEN BRIGHTNESS AND BACKLIGHT ADJUSTMENT:	
OFF	Backlighting off
ON	Backlighting on
CONTRAST ADJUSTMENT:	
0	Contrast set at 0%
-	Reduce contrast by 10%
100	Contrast set at 100%
+	increase contrast by 10%
CONNECTED KEYMODULE ROLLER SPEED ADJUSTMENT	
-	Roller speed decreased by 10%
- 100	Roller speed decreased by 100%
0	Stop rollers
+	Roller speed increased by 10%
+ 100	Roller speed increased by 100%

Button test: Each Ergodrive button can be tested independently.
The depressed button is indicated by an arrow on the image.

TR50 Screen

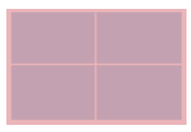
The TR50 treatment head and its associated functions can be tested from this screen.

TR50 TEST SCREEN

Button	Action
-	Roller speed decreased by 10%
- 100	Roller speed decreased by 100%
0	Stop rollers
+	Roller speed increased by 10%
+ 100	Roller speed increased by 100%

Test ecran:

The screen position and the presence of defective pixels can be tested by pressing the 'Screen Position' button. The following screen is displayed: The TR50 must be disconnected to remove this screen.

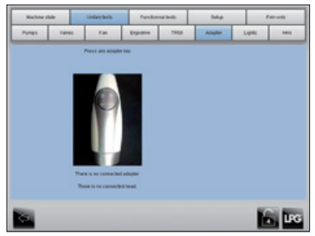


cont. →

6.9b UNITARY TESTS TAB (cont.)

Adapter Screen

The adapter and its associated functions can be tested from this screen.



ADAPTER TEST SCREEN

The connection of an adapter or an auxiliary head is automatically detected and indicated beneath the adapter image.

Button test:

Each adapter button can be tested independently.
The depressed button is indicated by an arrow on the image.

Lights Screen

The light band and its colour settings can be tested from this screen.

LIGHT BAND TEST SCREEN

The colour mix (red, green and blue) for each light band is adjusted by pressing the appropriate buttons. This adjustment is not memorized by the unit and is only used to test the individual coloured lights.

Hmi Screen

The touch-screen backlight and calibration can be adjusted from this screen.

TOUCHSCREEN TEST SCREEN

Button	Action
Min	Reglage du retro-eclairage a 10%
-	Diminution du retro-eclairage de 10 %
Max	Reglage du retro-eclairage a 100%
+	Augmentation du retro-eclairage de 10 %

A setting of 0% is possible by decreasing the backlight adjustment. This setting is temporary as information is no longer visible on the screen. A pop-up warning is displayed when the backlight setting is 0%. Confirming this pop-up warning allows the backlight setting to reduce to 0% for 5 seconds. After this delay, the setting is automatically increased to 10%.

cont. →

6.9b UNITARY TESTS TAB (cont.)

Hmi Screen (cont.)

The calibration button allows access to the touch-screen calibration screen

TOUCHSCREEN CALIBRATION SCREEN

The calibration is carried out by pressing for a few seconds (preferably with a stylus type object) the point indicated onscreen by a cross.

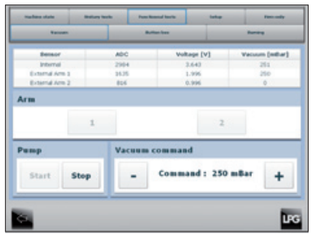
Four points are required for correct calibration. The calibration of each point has a time limit (the remaining time is indicated in the bar at the bottom of the screen). The calibration is automatically cancelled when the time limit is exceeded.

6.9c FUNCTIONAL TESTS TAB

Functional tests on the unit may be carried out from these maintenance screens.

Vacuum screen

The correct function of pressure regulation for each arm can be checked from this screen.
It can be used to detect faulty sensors or leakages.



REGULATION TESTS SCREEN

The pressure values are limited at approximately 900mBar for the external sensors and 1150 mBar for the internal sensors.

This screen is divided into 4 parts

- Measurements table
- Arm selection
- Pumps start-up
- Regulation command

Measurement results table

Column	Description
Sensor	Pressure sensor used
ADC	Value returned by the Analoque/Digital Converter
Voltage	Voltage corresponding to the value returned by the ADC
Vacuum	Vacuum pressure corresponding to the voltage

cont. →

6.9c FUNCTIONAL TESTS TAB (cont.)

Vacuum screen (cont.)

Button	Action
ARM SELECTION	
1	Select Arm 1 to regulate the vacuum pressure
2	Select Arm 2 to regulate the vacuum pressure
PUMP START UP	
Start	Start the regulation pumps
Stop	Stop the regulation pumps
PRESSURE SETTING	
-	Decrease the pressure setting by 50 mBar
+	Increase the pressure setting by 50 mBar

The arm selection can only be changed when the pumps are off.
The pressure control is carried out by the external sensor (External Arm 1 or External Arm 2)
The pressure value measured should correspond to the specified pressure setting by ±10%
This test can only be carried out if the arm hose is in correct working condition, without blockage or leakage.

Button box screen (according to software version)

The 'button box' screen allows testing of various functions simultaneously. These include:

FUNCTIONAL TESTS SCREEN

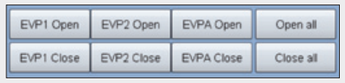
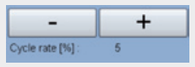
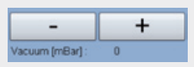
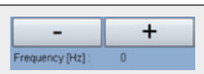
- Solenoid valves
- Setting parameters (frequency, cycle rate, pressure)
- Pump pressure
- Light band
- Fan and temperature

This screen displays a large quantity of buttons and information.
Each part is described in full on the following pages.

cont. →

6.9c FUNCTIONAL TESTS TAB (cont.)

Button box screen (cont.)

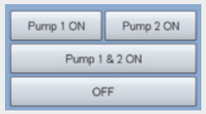
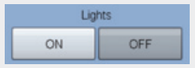
	Button	Action
SELECTION SOLENOID VALVE ADJUSTMENT: These solenoid valves allow selection of Arm 1, Arm 2 or both		
	Open all	Open all Selection Solenoid valves
	EVS1 Open	Open Selection Solenoid valve 1
	EVS2 Open	Open Selection Solenoid valve 2
	Close All	Close all Selection Solenoid valves
	EVS1 Close	Close Selection Solenoid valve 1
	EVS2 Close	Close Selection Solenoid valve 2
PRESSURE SOLENOID VALVE ADJUSTMENT: Once a regulation is launched, all solenoid valves are checked by the regulation board		
	Open all	Open all The pump and atmospheric pressure solenoid valves
	EVP1 Open	Open the Pump Solenoid valve 1
	EVP2 Open	Open the Pump Solenoid valve 2
	EVPA Open	Open the Atmospheric Pressure solenoid valve
	Close All	Close all solenoid valves
	EVP1 Close	Close Pump solenoid valve 1
	EVP2 Close	Close Pump Solenoid valve 2
	EVPA Close	Open the Atmospheric Pressure solenoid valve
CYCLE RATE ADJUSTMENT		
	-	Decrease the cycle rate by 5%
	+	Increase the cycle rate by 5%
VACUUM ADJUSTMENT		
	-	Decrease the pressure by 50 mBar
	+	Increase the pressure by 50 mBar
FREQUENCY ADJUSTMENT		
	-	Decrease the frequency by 0.1 Hz
	+	Increase the frequency by 0.1 Hz

cont. →

6 CONFIGURATION AND MAINTENANCE MENUS

6.9c FUNCTIONAL TESTS TAB (cont.)

Button box screen (cont.)

	Button	Action
TIMER: A timer can be launched as required. It displays time in hours / minutes / seconds		
	Start Count	Start timer
	Stop Count	Stop timer
PUMPS MANAGEMENT		
	Pump 1 On	Start Pump 1
	Pump 2 On	Start Pump 2
	Pump 1 & 2 On	Start Pump 1 and 2
	OFF	Stop Pump 1 and 2
ADJUSTING THE LIGHT BAND		
	ON	Switch on the light band in red
	OFF	Switch off the light band
ADJUSTING THE FAN		
	ON (100%)	Fan on at full speed (3600 rpm ±10%)
	OFF (0%)	Adjust the fan speed to 0% (900 rpm ± 10%)

Regulation

This table displays the pressure in mBar (Vacuum column) calculated for each sensor.

Sensor	Vacuum [mBar]	diff vacuum [mBar/s]
Internal	149	-1
External 1	149	-2
External 2	0	0

The 'Differential Vacuum' column displays the differential pressure each second and corresponds to residual leaks.

Temperatures

This table displays the temperatures recorded by different sensors.

Power supply sensor	Temperature [°C]	Controller t° [°C]
FlvBack	37	32
PFC	43	
Variator	32	

The temperature displayed beneath 'Controller t°' corresponds to the regulation board temperature.
The temperatures displayed in the table correspond to those measured on various units of power supply hardware.

cont. →

6.9c FUNCTIONAL TESTS TAB (cont.)

Burning screen

This screen allows testing of temperature endurance under unfavourable conditions.

FUNCTIONAL ENDURANCE TESTS SCREEN

Pressing the 'start' button launches the unfavourable conditions test.
The start button becomes 'stop' once launched.

- Pressure: 900 mBar
- Frequency: 4 Hzz
- Cycle rate: 40 %

An automatic timer records the duration of the test.

The following table describes the sensors used to calculate current temperature

Sensor name	Description
FlyBack	Temperature measured on the 24V power supply (maximum recommended temperature: 90°C)
PFC	Temperature measured on the power factor corrector (maximum recommended temperature: 90°C)
Variator	Temperature measured on the power inverter of the power supply (maximum recommended temperature: 85°C)
Controller	Temperature measured on the regulation board (maximum recommended temperature: 70°C)

6.9d SETUP TAB

The 'setup' tab has one maintenance screen, named 'Components Setup'

COMPONENT UPDATES SCREEN

This screen allows updates of components connected to the machine. These updates are contained in the update package loaded during the last touch-screen update.

To update a component the file corresponding to the component must be selected from the table (the selected line is displayed in grey) and the 'Load Application' button must be pressed.

Attention: in the case of a massage head or Keymodule, these must be connected to Arm 1.

Components cannot be updated simultaneously.

The progress of the update is displayed in the bar next to the button.

6.10 ERROR MANAGEMENT

Monitoring of all components is carried-out from the start-up of the software. Different levels of error or fault may be encountered:

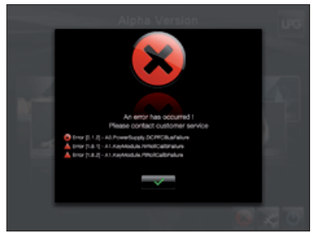
- Critical level (potential danger to the user)
- Warning level (no danger to the user)

These two error levels are displayed in the toolbar:

Button	Action	Description
	Error display	Critical level
	Error display	Warning level

Critical level error

In the event of a Critical Level error occuring, an error pop-up is displayed on screen:



CRITICAL LEVEL ERROR POP-UP

This pop-up lists all detected errors (of both 'critical' and 'warning' levels)

All components are automatically switched to 'sleep' mode:

- Pumps and suction stopped
- Massage heads and rollers stopped
- Fan at minimum speed

Pressing the confirm button closes the pop-up whilst the icon in the toolbar remains even if the error is no longer present. All critical level errors are conserved in this manner.

Warning level error

In the event of a Warning Level error occurring, an error icon is displayed in the toolbar.
A pop-up does not appear and the components are not placed in 'sleep' mode

WARNING LEVEL ERROR DISPLAY

The error details can be viewed by pressing the error icon in the toolbar.

Once the Warning level error is cleared from the screen, it is also removed from the fault list

cont. →

→ 6.10 ERROR MANAGEMENT (cont.)

Error history

All errors are logged in a text file, specifying the date of their occurance, their clearance and description.
This file can be copied to a USB key by navigating to the 'Log' maintenance screen from the 'Machine State' tab.

Enumeration des erreurs:

Type de sous-ensemble	Libelle du defaut	Description	Niveau de l'erreur
FlyBack PFC Variator Controller	AccFailure	Start-up autotest fault - accelerometer	Warning
	SDRAMFailure	Start-up autotest fault - SDRAM	Warning
	DataFlashFailure	Start-up autotest fault - Flash	Warning
	1p2VFailure	Start-up autotest fault - Flash	Warning
	PWMFailure	Start-up autotest fault – Voltage reference for contrast	Warning
KeyModule	RrRollCalibFailure	Rear roller not calibrated	Warning
	FtRollCalibFailure	Front roller not calibrated	Warning
TR50	RrRollCalibFailure	Rear roller not calibrated	Warning
	FtRollCalibFailure	Front roller not calibrated	Warning
Adapter			
Light	MissingComponent	Missing component	Warning
	BadStatus	Not specified	Warning
Controller	MissingComponent	Missing component	Critical
	ExternalSensor2 Failure	External Pressure Sensor 2 fault (uniquement pour Reg version → 3.4)	Warning Integral uniquement
	ExternalSensor1 Failure	External Pressure Sensor 1 fault (uniquement pour Reg version → 3.4)	Warning
	Fan1Failure	Fan fault (uniquement pour Reg version → 3.4)	Critical
Hmi	CannotWriteIdentity	MachineIdentity.xml file writing not possible	Warning
	CannotParseIdentity	MachineIdentity.xml reading not possible	Warning

cont. →

6 CONFIGURATION AND MAINTENANCE MENUS

→ 6.10 ERROR MANAGEMENT (cont.)

Error history (cont.)

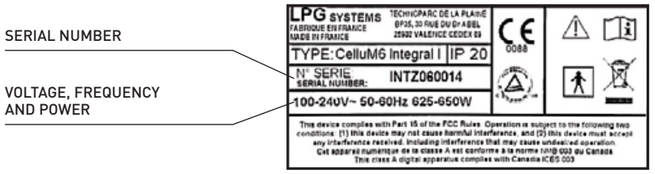
Type de sous-ensemble	Libelle du defaut	Description	Niveau de l'erreur
Power Supply	MissingComponent	Missing component	Critical
	DCPFCBusFailure	Bus voltage fault DC PFC (U DC →450V ou ←230V)	Critical
	PowerVarOverheat	T° power inverter module fault, (T° → 85°C)	Critical
	24VCCOverLoaded	24 VDC fault, DC overload	Critical
	24VOverheat	T° 24V supply fault (T° → 90°C)	Critical
	PFCOverheat	T° PFC fault (T° → 90°C)	Critical
	OverloadFailure	Overload fault	Critical
	CANFailure	CAN fault	Critical

7 APPENDICES

7 APPENDICES

7.1 DEVICE IDENTIFICATION AND IDENTIFICATION MODULE

For any technical assistance or after-sales service, you must provide the serial number for the device in order to identify the version. An identification plate is affixed near the device's power button.



- Your unit is identified by a serial number shown on the rating plate.
- The rating plate also shows the permitted supply voltage for the unit.
- If you need to contact LPG Systems because of a technical problem, please indicate the serial number of your Cellu M6 Integral *i*.
- This serial number provides information on the year and month of manufacture of your unit.
- The letter indicates the tyear the device was manufactured: Z=2009, A=2010, B=2011, etc.
- The two digits indicate the production month: 01=January; 02=February; 03=March; etc.

This icon indicates that the unit was sold after August 13, 2006. In conformity with the 2002/96/CE directive, it cannot be thrown away with standard household waste but must be disposed of by means of recycling.
By doing so, you help the environment by contributing to the conservation of natural resources and the protection of human health.

This icon indicates that some specific warnings or precautions associated with this device are not on the label.

This icon indicates that "Your device contains a part that comes in contact with the patient that is electrically isolated from all other parts of the device."

This icon means "Refer to the user manual."

7.2 IDENTIFYING THE DEVICE USING THE PANEL

1) Start up the device, and go to the «Configuration» menu.

2) Select the device identification module.

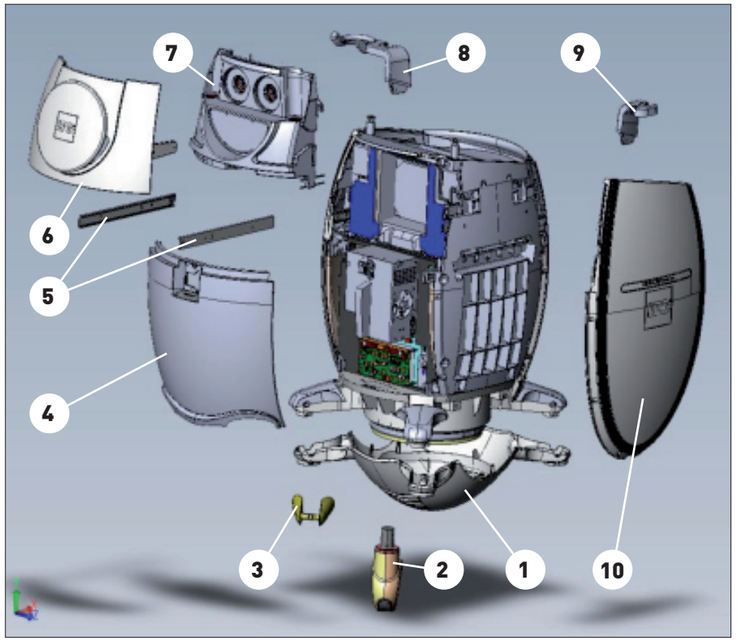
3) Machine identity screen:
- Front panel number
- Device number
- Machine type
- Market
- Front panel software version
- Machine counter

Exit the module by pressing the arrow in the bottom corner.

8 SPARE PARTS

8.1 MAIN FRAME

Picture no. 1a

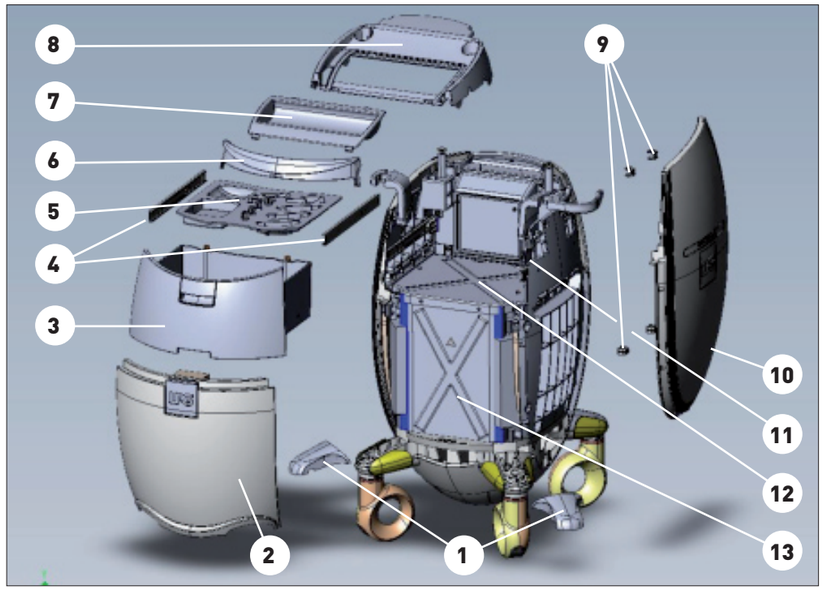


ID	Designation	Code
1	Bottom cover subset	1011408
2	Caster wheel	1011403
3	Pedal	1012773
4	Integral back cover	1011585
5	Filter trap door guide set	
6	Filter trap door	1011616
7	Integral filter housing	1012149
8	Integral right head support	1011670
9	Integral left head support	1011671
10	Integral left side cover	1011977

cont. →

→ 8.1 MAIN FRAME (cont.)

Picture no. 1b

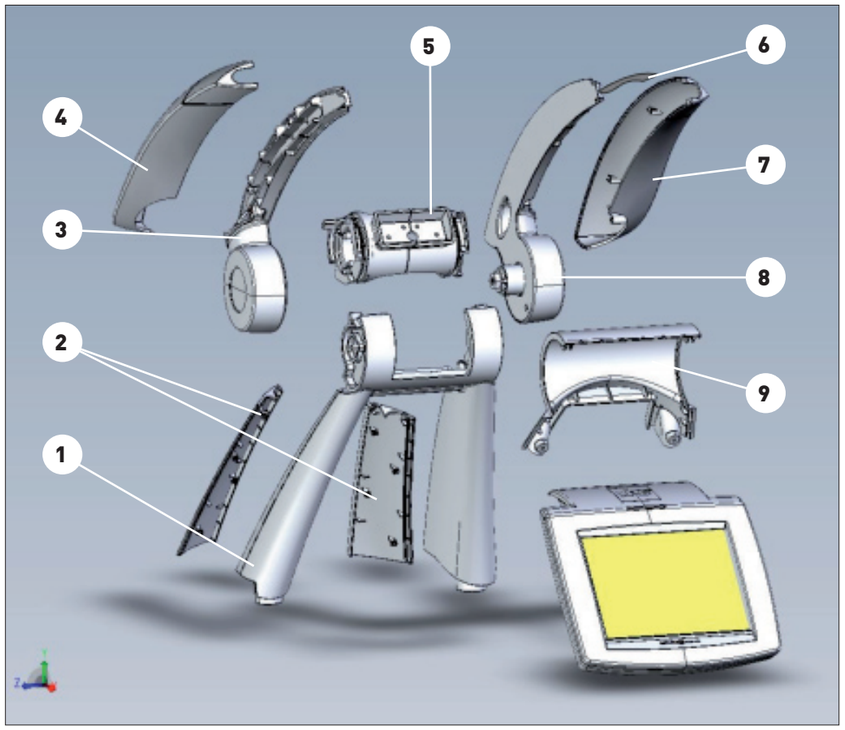


ID	Designation	Code
1	Caster wheels cover set (L&R)	1012785
2	Integral front cover	1011576
3	Integral storage drawer	1011637
4	Head drawer guide set	
5	Thermoplastic storage plate	1011396
6	Integral Handle	1011672
7	Integral head storage box	1011660
8	Upper support	1011974
9	16mm clip pack (X10)	1012779
10	Integral right cover	1011631
11	Back filters compartment cover	1011387
12	Upper sheet	1011572
13	Front sheet	1011384
14	Ejot Easy boss nuts pack (X10)	1012774

cont. →

→ **8.1 MAIN FRAME (cont.)**

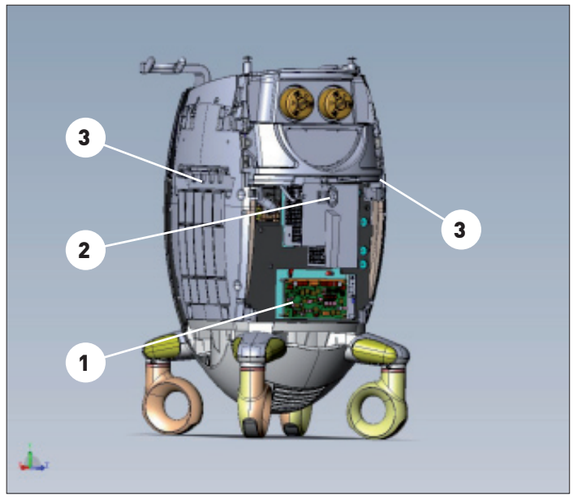
Picture no. 1c

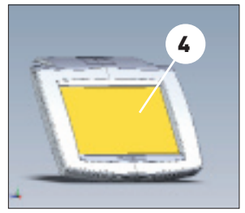


ID	Designation	Code
1	Upper frame	1011642
2	Upper frame cover set	1012783
3	Left moving arm	1011685
4	Left moving arm cover	1011646
5	Front panel axle set	1012781
6	Hose metal blade	1012445
7	Right moving arm cover	1011645
8	Right moving arm	1011684
9	Front panel axle cover	1011648

8.2 ELECTRICAL CIRCUIT

Picture no. 2





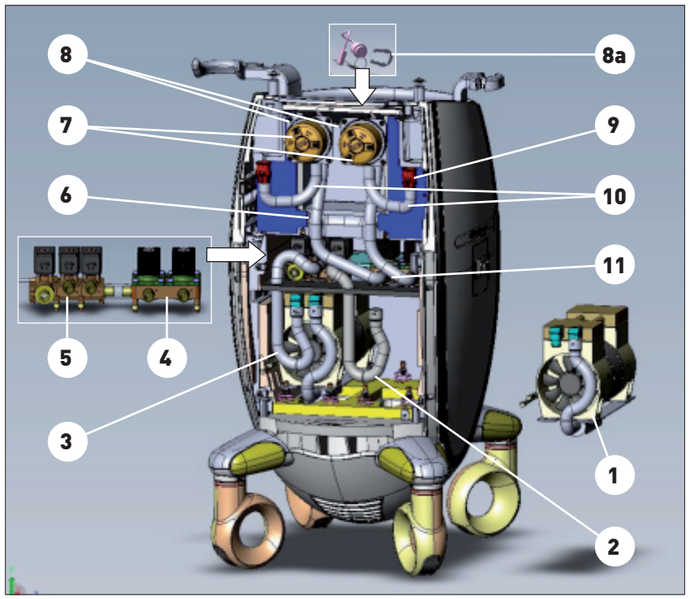
ID	Designation	Code
1	Regulation board	1012155
2	Universal power supply subset	1012780
3	Light board	1011744
	Right side identification shunt	1012356
4	Front panel subset	1012195
5	Light board	1011744
	Left side identification shunt	1012357

Cables / *Cables*

ID	Designation	Code
-	Interconnection light boards wire	1012376
-	Regulation board – Front panel plug wire	1012374
-	Regulation board - Head plug wire	1012378
-	Regulation board - sensor plug wire	
-	Regulation board - light board wire	1012375
-	Integral front panel wire adaptor	1013180

8.3 PNEUMATIC CIRCUIT

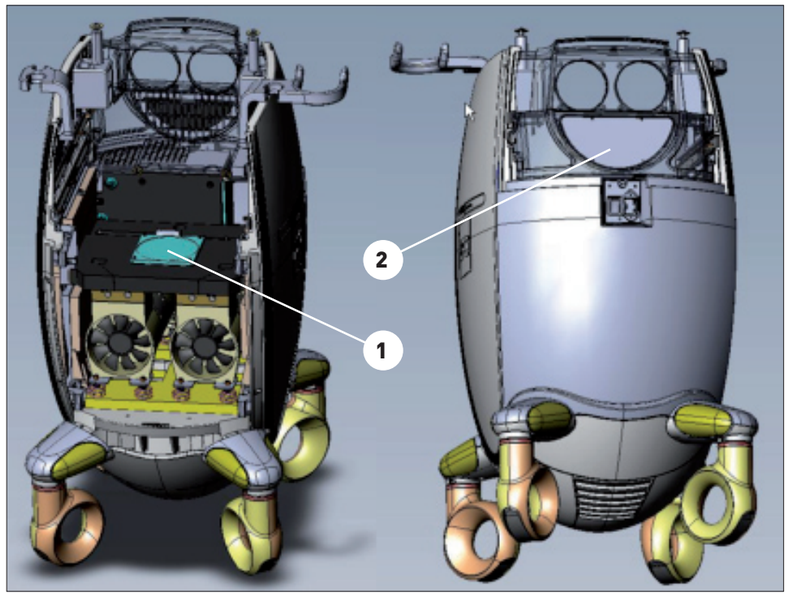
Picture no. 3



ID	Designation	Code
1	Integral pump	1011607
2	Left pump-Regulation subset hose	1011686
3	Right pump-Regulation subset hose	1011687
4	Integral selection valve subset	1012775
	Selection valve body	1000199
5	Regulation block	1012776
6	SelectValve-Right filter hose	1011689
7	Disposable filters pack (X6)	1012430
8	Filter housing	1012148
	Seal kit for filter housing	1010209
8a	Vacuum sensor subset	1012778
9	Head hose connector	1012143
10	Integral Filter hose	1012150
11	SelectValve-Left filter hose	1011688

8.4 AIR COOLING CIRCUIT

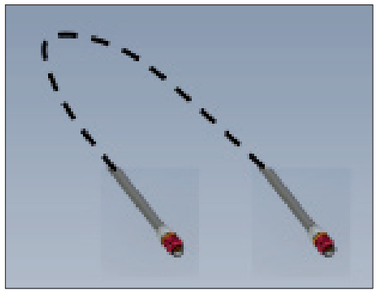
Picture no. 4



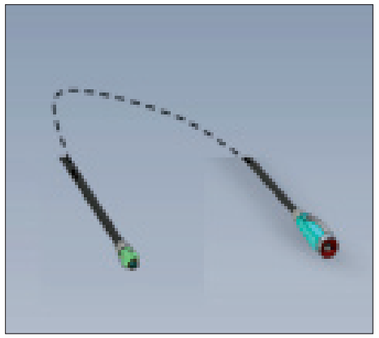
ID	Designation	Code
1	Fan subset	1012777
2	Cool inlet filter	1012141

8.5 TREATMENT HEADS AND ADAPTERS

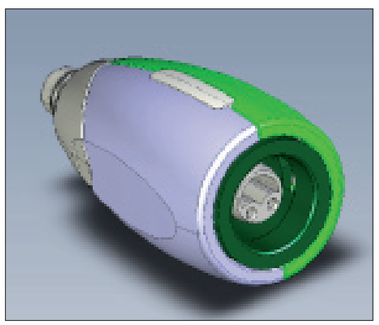
Hoses and adapters



Designation	Code
Flexible head hose	1012191



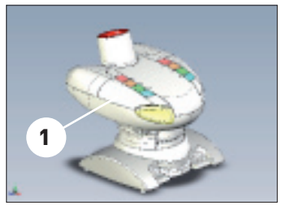
Designation	Code
Auxiliary head adaptor	1012178

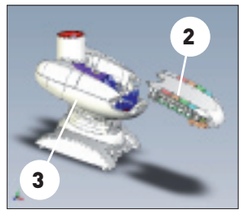


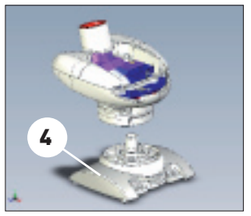
Designation	Code
Micro head/nozzle adaptor	1011776

8.6 MOTORIZED HEADS

Ergodrive head

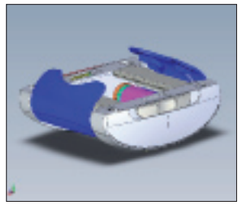


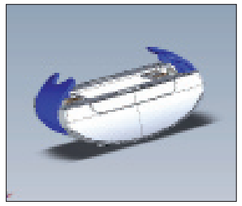


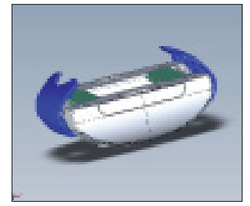


ID	Designation	Code
1	Ergodrive	1011379
2	Ergodrive front panel	1011348
3	Ergodrive casing	1011373
4	Ergodrive contact board	1011349

Ergodrive head





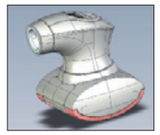


Designation	Code
Ergodrive KM80	1011552
Ergo KM80 tightness flaps (X6)	1013144
Ergodrive KM70	1011530
Ergo KM70 tightness flaps (X6)	1013261
Ergodrive KM50	1011444
Ergo KM50 tightness flaps (X6)	1013260

cont. →

→ 8.6 MOTORIZED HEADS (cont.)

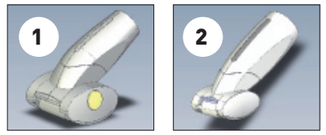
Ergodrive head



Designation	Code
TR50	1011374
TR 50 Flaps and cover subset	1013144

8.7 NON-MOTORIZED HEADS

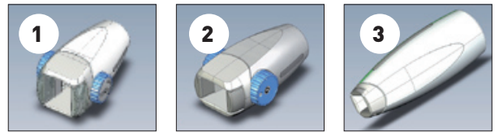
TR30, TR15



ID	Designation	Code
1	*TR30*	1011791
2	*TR15*	1011790

8.8 FACIAL LIFT HEADS

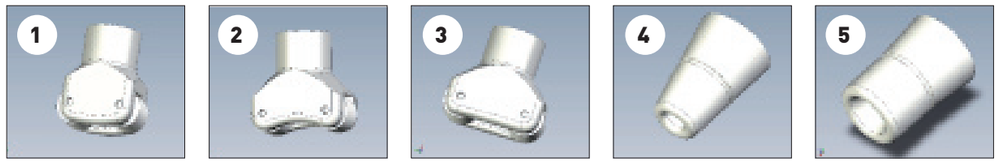
TML30, TML20, TML10



ID	Designation	Code
1	TML30	1011763
	Flap for TML30 Regular X5	1012704
	Flap for TML30 Sensitive X5	1012706
2	TML20	1011762
	Flap for TML20 Regular X5	1012703
	Flap for TML20 Sensitive X5	1012705
3	TML10	1011761
	Flap for TML10 Regular X10	1012707
	Flap for TML10 Sensitive X10	1012826

8.9 MICRO HEADS

T7 heads set and micro-nozzles



ID	Designation	Code
1	T7 Convex	1004859
2	T7 Concav	1004860
3	T7 flat	1004861
4	Micro-nozzle N°1	1003802
5	Micro-nozzle N°2	1003803