

Eole/Eole DC

REF 2870

REF 2871

stryker[®]

Service Manual

Table of Contents

Troubleshooting.....	2
Quick Reference Replacement Parts.....	2
Service	3
Pumping set replacement.....	3
Air cell replacement	5
Check internal tubing.....	5
Fuse replacement	6
Main PCBA replacement	6
Timing motor module replacement	8
Micro switch replacement	9
Front Panel PCBA replacement.....	10
Filter replacement	10
Pressure Calibration.....	11
Pressure test.....	13

Troubleshooting

Problem/Failure	Possible Cause	Recommended Action
Low pressure alarm	Pump performance degradation	Replace pumping set
		Replace filter
	CPR control is not fully closed	Close CPR control
	There is a leak in the mattress	Replace broken tube
	The tubing of mattress is not connected properly	Check the tubing connectors and make sure they are securely connected
	Tubing inside the pump is not connected properly	Open the pump housing and connect the internal tubing properly.
Power failure alarm	Fuse is burnt	Replace fuse
	No power	Make sure the unit is plugged into ground outlet
	Transformer fail	Replace main PCBA
	Main PCBA fail	Replace main PCBA.
Service alarm	Main PCBA fail	Replace main PCBA
	Timing motor fail	Replace timing motor module
	Micro switch fail	Replace micro switch
Panel display error	Button or LED fail	Replace front panel PCBA
Cannot stop buzzer beeping	Forget to switch off power button	Switch off power switch
	The buzzer wire is not connected to the correct position	Check the wire connections on front panel and on main PCBA

Quick Reference Replacement Parts

Part Name	Part Number	For product model
Pumping set (50Hz, 8 Liter)	2870001016	EOLE DC/EOLE
Timing motor module	2870001017	EOLE DC/EOLE
Compressor	2870001004	EOLE DC/EOLE
Micro switch	2870001018	EOLE DC/EOLE
Main PCBA	2871001002	EOLE DC
Main PCBA	2870001014	EOLE
Front panel PCBA	2870001015	EOLE DC/EOLE
Filter	2870001019	EOLE DC/EOLE
Fuse (T1AL/250V)	2870001002	EOLE DC/EOLE
Label, Stryker, front enclosure	2870001006	EOLE DC/EOLE
Screw cover, rubber	2870001007	EOLE DC/EOLE
Screw, M3 x 20 mm	2870001008	EOLE DC/EOLE
Screw, M3 x 10 mm	2870001011	EOLE DC/EOLE
Air outlet assembly, with CPC connector	2870001009	EOLE DC/EOLE
Switch assembly, with PVC switch cap	2870001010	EOLE DC/EOLE
Front case enclosure	2870001012	EOLE DC/EOLE
Mattress bottom cover 32" (80cm)	2871019009	EOLE DC
Mattress, Bottom Cover, SV2	2871019012	Eole DC-SV2

Service

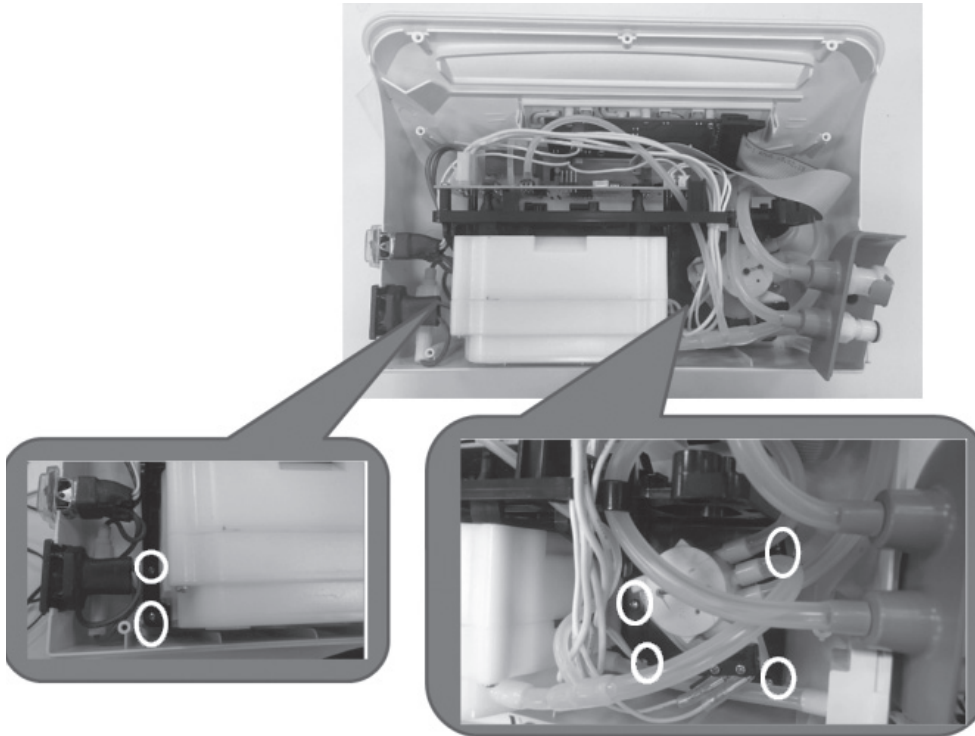
PUMPING SET REPLACEMENT

TOOLS REQUIRED:

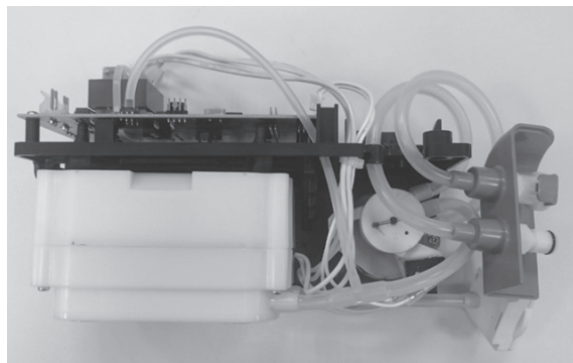
- Phillips screwdriver for M3 screws
- Threadlocker (LOCTITE 290)

PROCEDURE:

1. Take out the 8 rubbers and remove 8 screws on the rear case. Take off the rear case.
2. Remove 6 screws on the base.



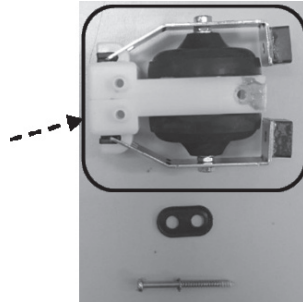
3. Remove wire connections to power switch and front panel PCBA. Take out the module set from the case.



4. Pumping set is inside the compressor. Unscrew the 4 screws on the compressor and open the case.
5. Remove the screw of pumping set.
6. Take out the pumping set.

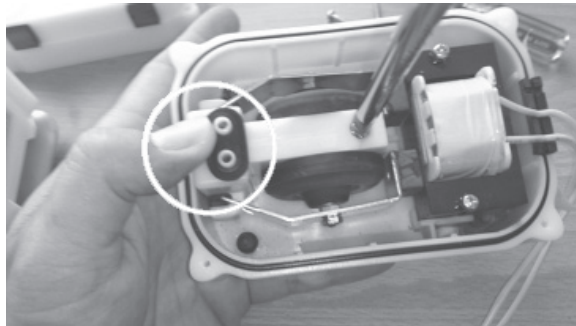
Service

7. Keep the rubbers, screw, and washer. Replace pumping set with a new one and discard the old one.

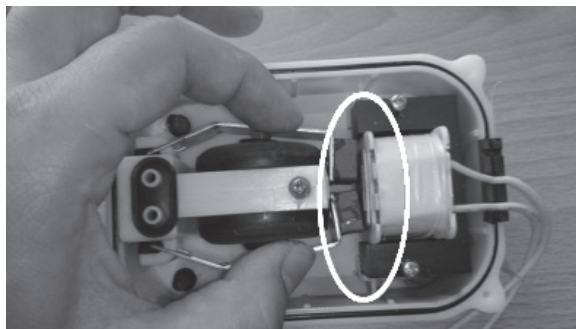


Assemble the pumping set:

1. Use your thumb to push back the pumping set and hold on this position, and then tighten the screw.



2. Press the vibration rods to make sure they will not touch the front object.



3. Apply threadlocker around the screw to set for the best bond.



Service

AIR CELL REPLACEMENT

TOOLS REQUIRED:

- Soap water and a container

PROCEDURE:

1. Infalte the air cells. Wipe soap water on the air cells.If you see bubbles on the air cells, there is an air leakage. If there is a leakage, replace the air cell.



Photo is for reference only.

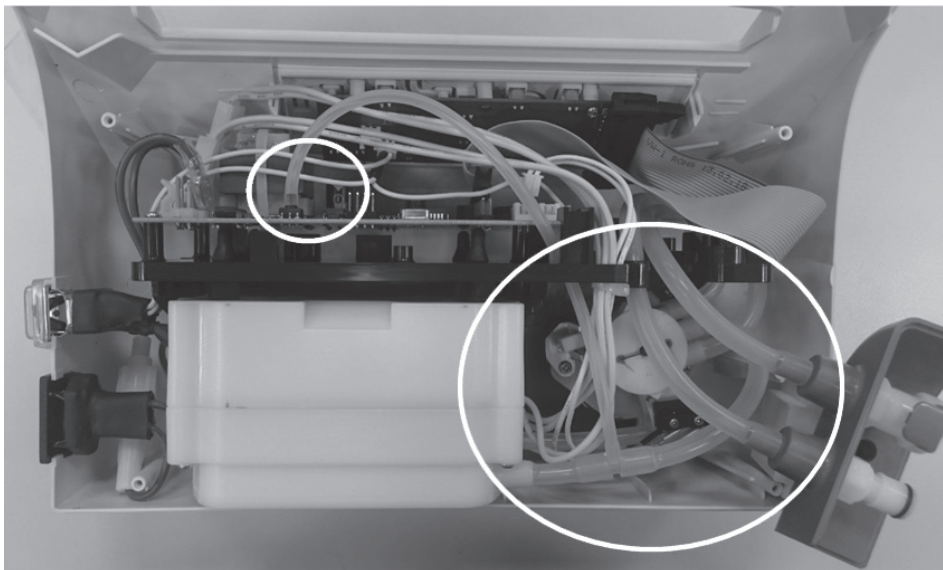
CHECK INTERNAL TUBING

TOOLS REQUIRED:

- Phillips screwdriver for M3 screws

PROCEDURE:

1. Remove the 8 rubber stops. Using a Philips screwdriver, remove the 8 screws that hold the rear case. Remove the rear case.
2. Inspect for the tubing connections. Make sure that each tube is attached to its connector.

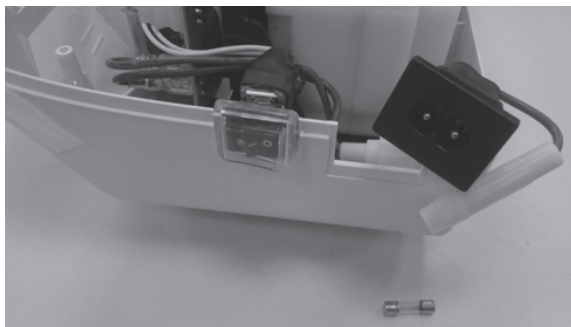
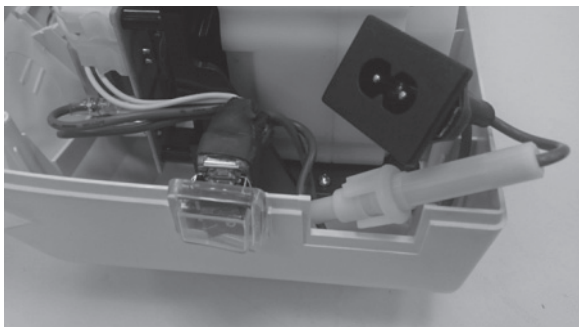


Service

FUSE REPLACEMENT

PROCEDURE:

1. Remove the 8 rubber stops. Using a Philips screwdriver, remove the 8 screws that hold the rear case. Remove the rear case.
2. Push the fuse holder together with turning counterclockwise to open it.
3. Replace the fuse and discard the old one.



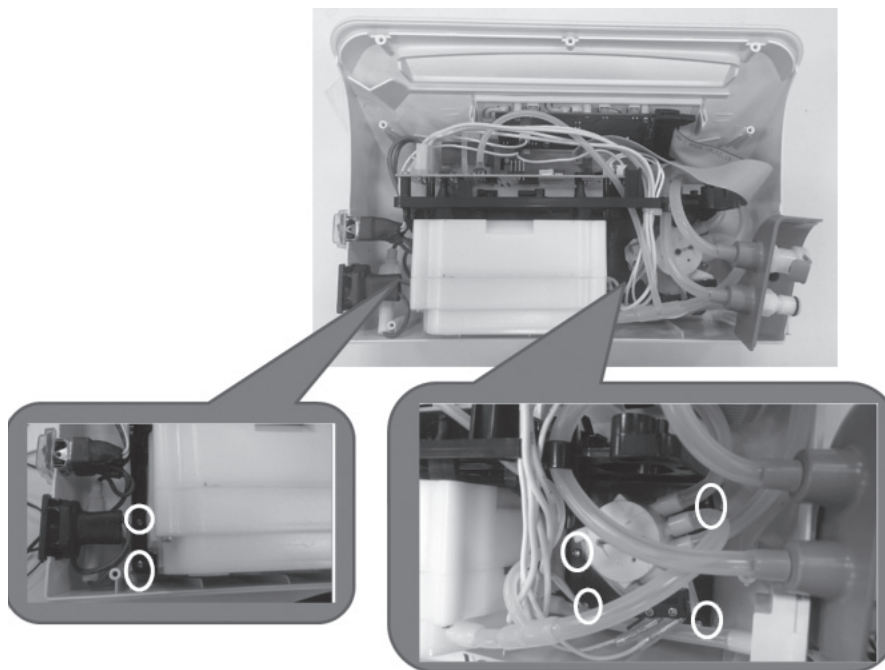
MAIN PCBA REPLACEMENT

TOOLS REQUIRED:

- Phillips screwdriver for M3 screws

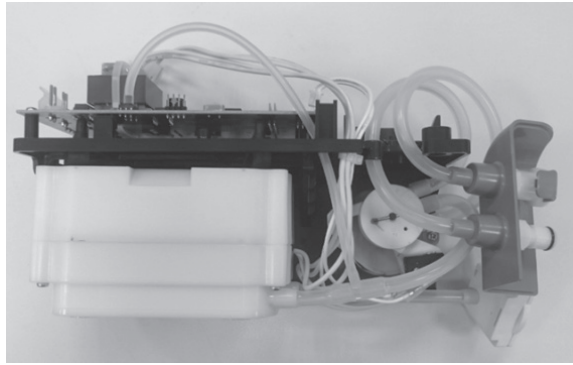
PROCEDURE:

1. Remove the 8 rubber stops. Using a Philips screwdriver, remove the 8 screws that hold the rear case. Remove the rear case.
2. Remove 6 screws on the base.

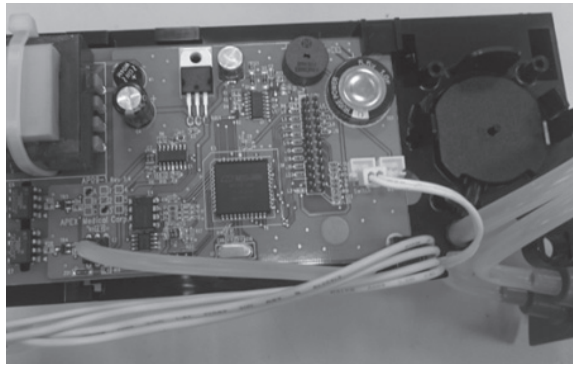


Service

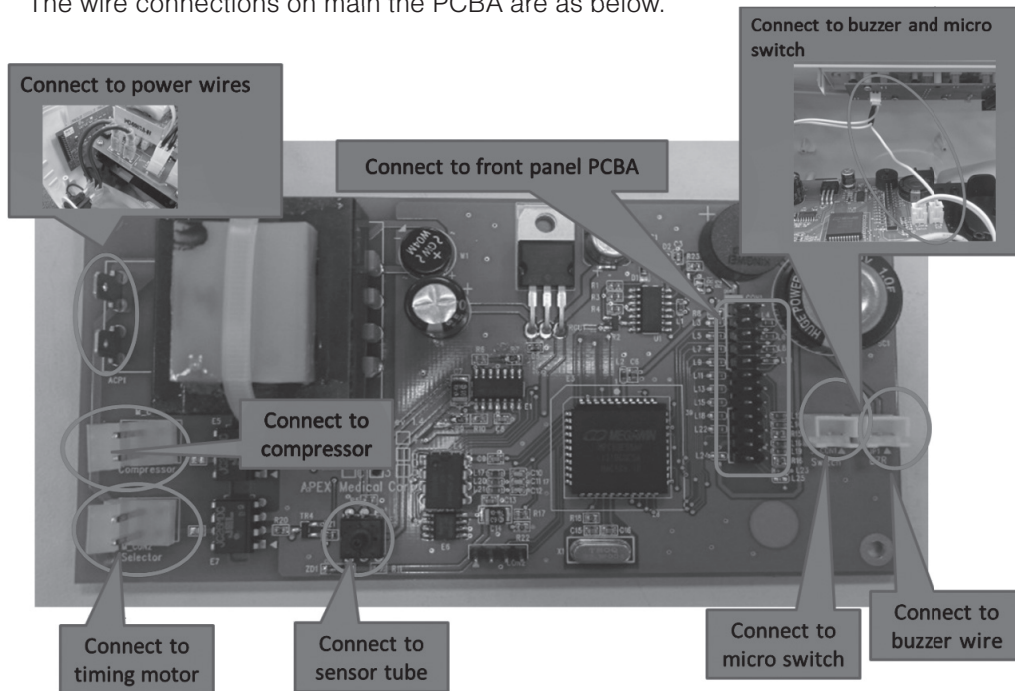
3. Remove wire connections between power switch and main PCBA, front panel PCBA and main PCBA . Take out the module set from the case.



4. Remove the 2 screws and all wire connections on the main PCBA.



5. Take out the main PCBA. Replace with a new one and discard the old one.
6. The wire connections on main the PCBA are as below.



7. After replacement, perform pressure calibration. Refer to Pressure Calibration section.

Service

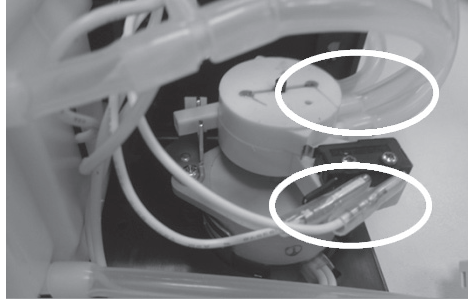
TIMING MOTOR MODULE REPLACEMENT

TOOLS REQUIRED:

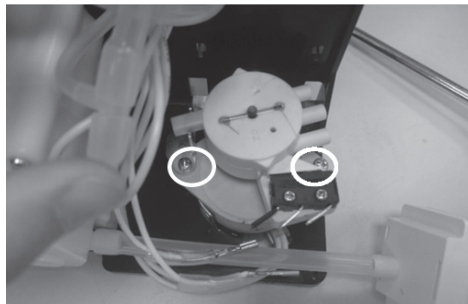
- Phillips screwdriver for M3 screws

PROCEDURE:

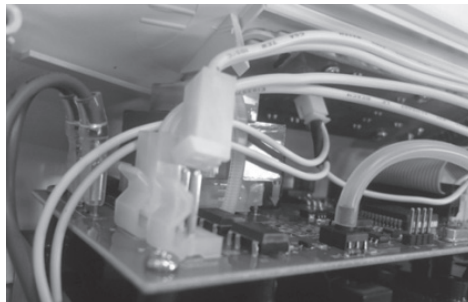
1. Remove the 8 rubber stops. Using a Philips screwdriver, remove the 8 screws that hold the rear case. Remove the rear case.
2. Remove the tubes and wire connections from timing motor module.



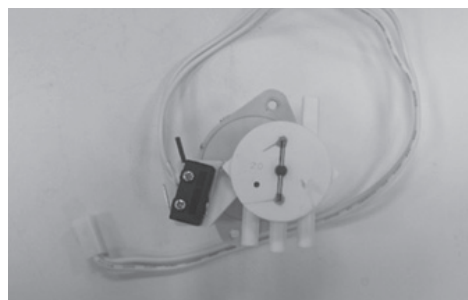
3. Remove the 2 screws on the motor assembly.



4. Remove the wire of timing motor module from the main PCBA.



5. Take out the timing motor module. Replace with a new one and discard the old one.



Service

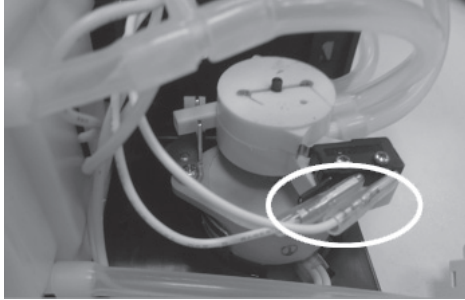
MICRO SWITCH REPLACEMENT

TOOLS REQUIRED:

- Phillips screwdriver for M3 screws

PROCEDURE:

1. Remove the 8 rubber stops. Using a Phillips screwdriver, remove the 8 screws that hold the rear case. Remove the rear case.
2. Remove the wire connections from micro switch.



3. Remove the 2 screws on the micro switch and then take out the micro switch. Replace with a new one and discard the old one.



Service

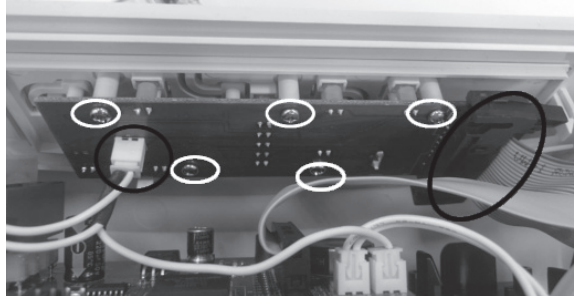
FRONT PANEL PCBA REPLACEMENT

TOOLS REQUIRED:

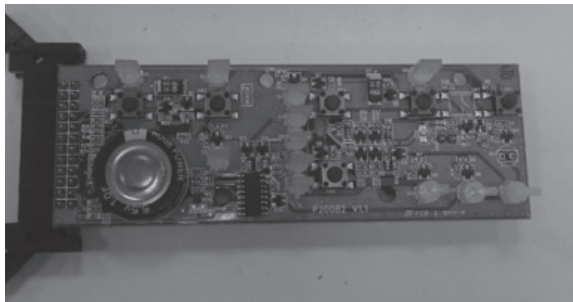
- Phillips screwdriver for M3 screws

PROCEDURE:

1. Remove the 8 rubber stops. Using a Philips screwdriver, remove the 8 screws that hold the rear case. Remove the rear case.
2. Remove the tubes and wire connections from front panel PCBA.



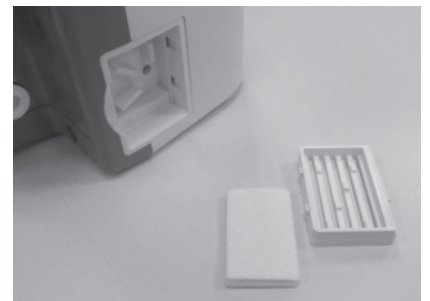
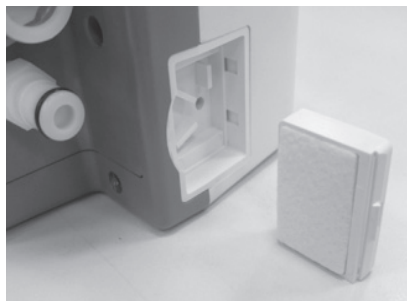
3. Remove the 5 screws on the front panel PCBA.



FILTER REPLACEMENT

PROCEDURE:

1. Open the filter case.
2. Take out the filter. Replace with a new one and discard the old one.



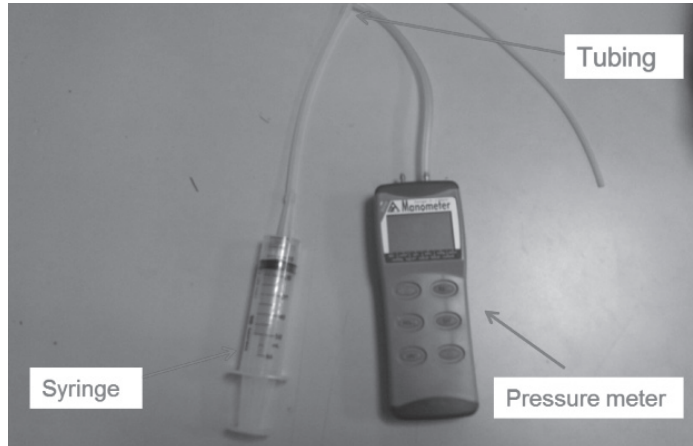
Service

PRESSURE CALIBRATION

TOOLS REQUIRED:

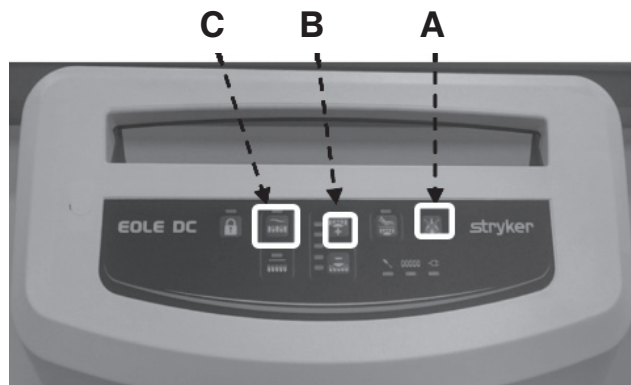
- Phillips screwdriver for M3 screws
- Syringe
- Pressure meter
- Tubing

Note: Pressure Meter suggested Specification
±2psi or ±5psi range
Resolution: 0.001psi
Accuracy: ±0.3% FS

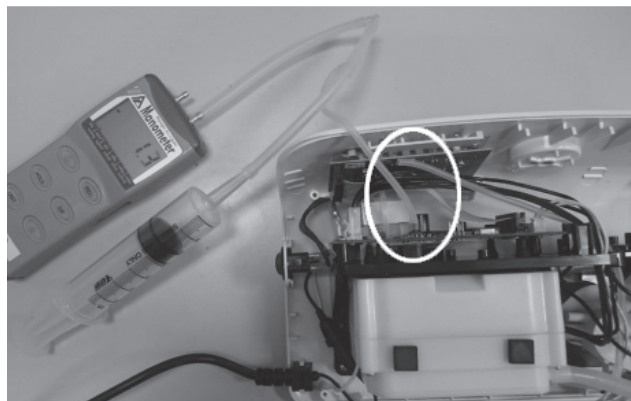


PROCEDURE:

1. Take out the 8 rubbers and unscrew 8 screws on the rear case. Remove the rear case.
2. Connect the device to power supply and switch on power switch.
3. In order press A → B → C → A, then it goes into calibration mode.

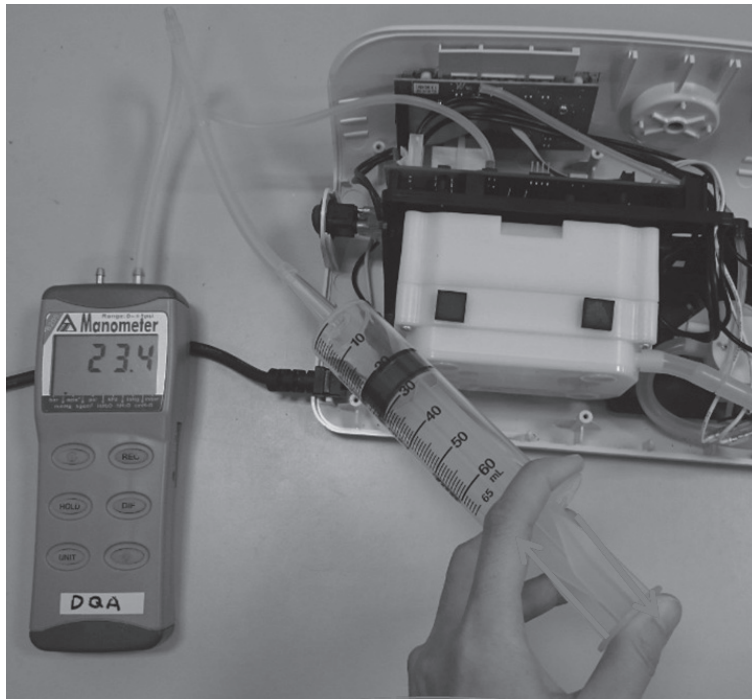


4. For timing motor to be in position, there will be a long beep.
5. Press "A". There will be a long beep.
6. After 10 seconds, press "A" again. There will be a long beep.
7. Remove the sensor tube from the main PCBA.
8. Connect the tubing of the calibration tool onto the sensor on the main PCBA.



Service

9. Push (or pull) the loading piece of the syringe until the pressure meter shows and holds 10 mmHg, and then press "A". There will be a long beep.
10. Push (or pull) the loading piece of the syringe until the pressure meter shows and holds 33 mmHg, and then press "A". There will be a long beep.
11. Push (or pull) the loading piece of the syringe until the pressure meter shows and holds 63 mmHg, and then press "A". There will be a long beep. After about 5 seconds, another long beep (total 2 beeps). The calibration is completed.
12. Switch off the power.
13. Remove the calibration tubing and put the sensor tube on sensor.
14. Close the rear case and tighten all screws.



Adjust the pressure by pushing or pulling the loading piece of the syringe

Note: Once you displace the main PCBA, you must complete the pressure calibration and pressure test.

Service

PRESSURE TEST

TOOLS REQUIRED:

- Air cells with air loss x2
- Pressure meter
- PVC tubes and connector.

Note: Pressure Meter suggested
Specification
 ± 2 psi or ± 5 psi range
Resolution: 0.001psi
Accuracy: $\pm 0.3\%$ FS

PROCEDURE:

1. Connect the pressure test tool to the pump.

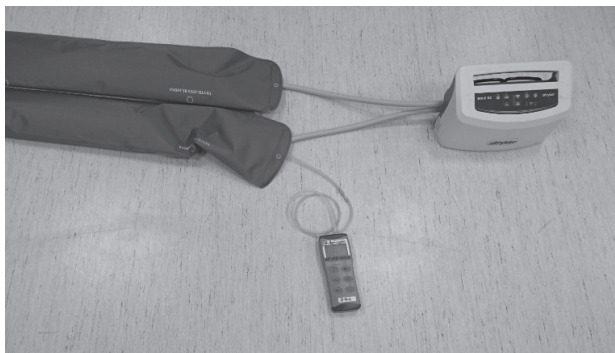


Photo is for reference only

2. Switch on power
3. After inflation is completed, change mode to "Static".
4. Choose level1, and after the pressure is stable, check the pressure meter. The pressure should be **20 \pm 3 mmHg**.



5. Choose level 5, and after the pressure is stable, check the pressure meter. The pressure should be **32 \pm 5 mmHg**.

Note: If the pressure is out of range, please repeat the calibration process.



Stryker Medical
3800 E. Centre Avenue
Portage, MI 49002
USA

stryker[®]