LÖWENSTEIN medical	FSCA2026011 Corrective Action Check blender connection cable Leoni plus	Based on EPN-077

General safety instructions

The liability for proper function of the device is irrevocably transferred to the owner or operator of the device if it is serviced or repaired by persons who are not employed by Löwenstein Medical Service department or are not authorised by Löwenstein Medical or if it is operated in a manner contrary to its intended use.

Löwenstein Medical cannot be held responsible for damage caused by non-compliance with the above stipulations. The warranty and liability provisions of the terms of sale and delivery of Löwenstein Medical also not modified by the following recommendations.

Approved service technicians

Service and safety inspections must be conducted only by technicians that we have trained and who have the recommended instrumentation and test equipment.

Combination with other devices

Combination with other devices that are not mentioned in the service manual is permitted only in consultation with the manufacturer.

Disconnect power

Always disconnect the mains power before opening the housing.

Prevent electrostatic discharge

Electrostatic discharge must be prevented during all work on the device to prevent damage to the components and the device.

Take the following precautions before touching a printed-circuit board or a component attached to a pcb. If this precaution is not observed the device may be damaged.

- All work on the device must be done on a suitable earthed and conductive work surface (antistatic, ESD protection).
- Make sure that you are sufficiently earthed (e.g. 1 MΩ).
- Earth every instrument used during work on the ventilator.
- Transport components and printed-circuit boards in the correct antistatic packages only.

Device check before operation

Device malfunctions may cause death or permanent injury to the patient. Always check the ventilator before operation.

Check sensors regularly

Sensor malfunctions may cause death or permanent injury to the patient.

- Calibrate the flow sensor regularly:
  - after switching on
  - after every sensor change.
- Calibrate the O2 sensors regularly:
  - every time the device is switched on
  - after 24 hours of operation
  - after every sensor change.

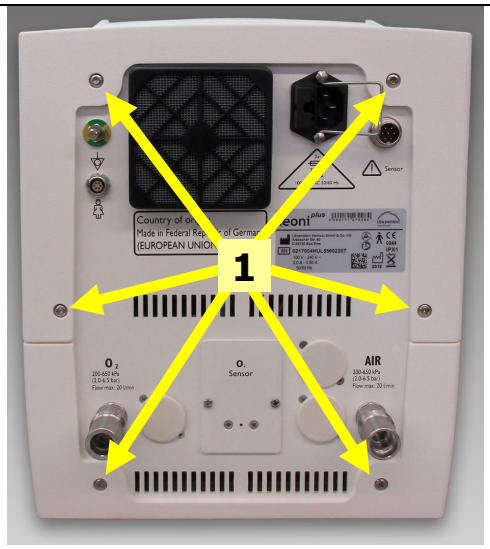
Required tools

	Screwdriver PH1; TX20
	Hexagon socket screwdriver (size 5.5)

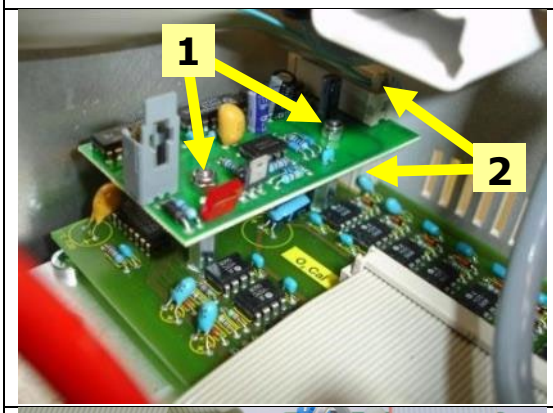
Check blender connection cable LeoniPlus

1. Open the housing

   → Service manual LeoniPlus
2. Remove the entire assembly of the base plate



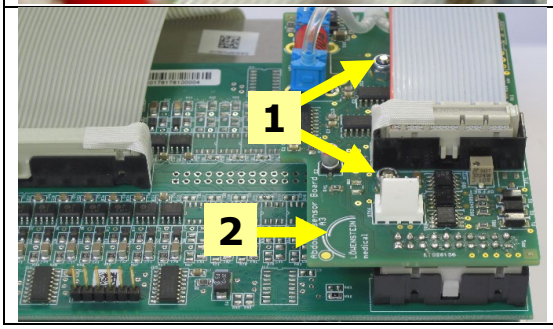
3. Unscrew the six screws (1) of the rear panel.
4. Turn the device round so that you can see into the device from below.



The control board of the HFO valve is only present there on older revisions of the HFO module.

5. Remove the control board of the HFO valve:
   Unscrew the lock nuts (1) with a hexagon socket wrench (size 5.5).

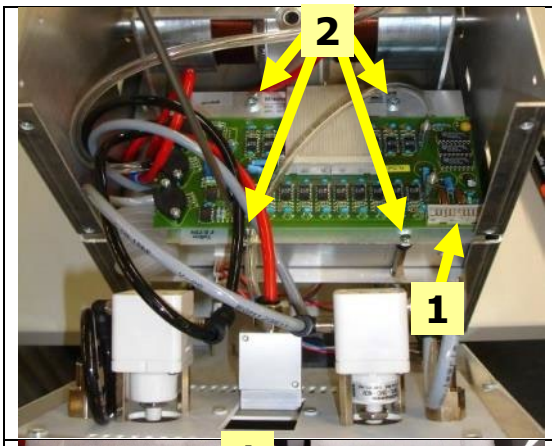
   The ribbon cable can remain connected to the control board of the HFO valve.



On devices with the abdomen sensor option, the abdomen sensor board (2) is mounted on the blender board.

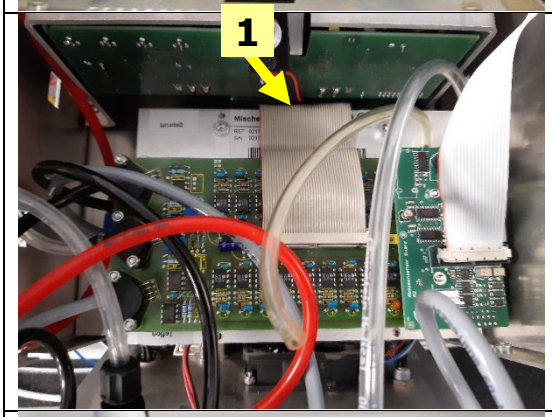
6. Remove the abdomen sensor board:
   Unscrew the lock nuts (1) with a hexagon socket wrench (size 5.5).

   The ribbon cable on the abdomen sensor board can remain connected.



7. Remove the ribbon cable that is connected directly to the blender board (1) (not on devices with an HFO control board or abdomen sensor board).
8. Remove the four screws (2) with which the blender is mounted on the spacing bolts.

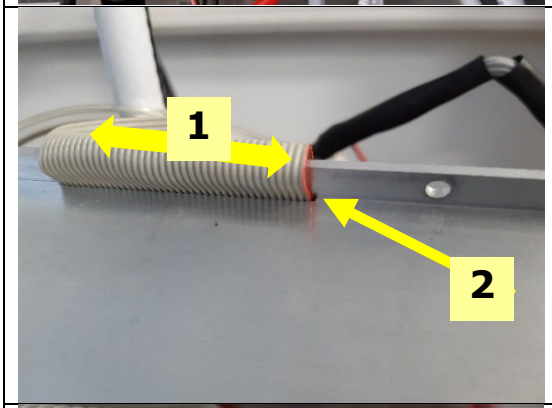
Leoni plus transport: An additional splash guard is mounted on the two rear facing screws of the blender.



When removing the blender, take care not to damage any cables or hoses!

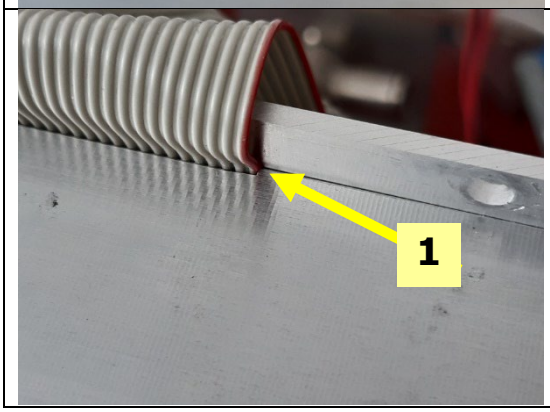
9. Take the blender so far out of the device to be able to check the ribbon cable (1) for correct seating!

checking the cable is about the exit of the cable from the aluminum housing!



10. **It must be possible to slide the cable back and forth in the slot of the cutout! (1) The cover of the blender must not pinch the cable sides!**

Check that the first strand (red marking) of the cable is not pinched! (2)



If the stranded wire of the cable (1) is pinched or damaged, replace the blender!

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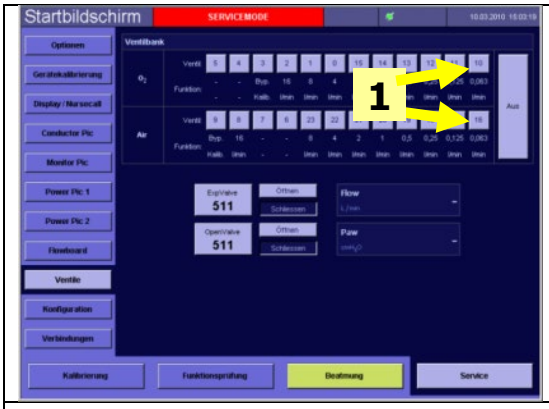	To check the functionality of the cable, proceed as follows: **11.** Start the device **12.** Log into the service menu. **13.** Navigate to the menu item Valves. **14.** Open the valves 10 (smallest valve O2 side) and 16 (smallest valve Air side) (1) A clear opening and closing of the valve must be audible!
	Finally, perform an inspection in accordance with Service Inspection Instruction PA 10-72 (latest version)!