Cleaning MR850 Heatbase

Using a damp cloth, clean the humidifier with either of the following: Isopropyl Alcohol, normal dishwashing detergent. Temperature Probe Always clean before use. Probes can be cleaned with one of the following solutions: Sporidon™, Cidex™ OPA, Sporox™ OR sterilize the probe using Ethylene Oxide sterilization at 55 °C (131 °F), 80 kPa, (allow at least 15 hours for residual ETO to disperse before use). Wipe the airway temperature probes clear of any cleaning residues efficacry and physical effect on the probe and the heaterbase. See the MR850 technical manual for more detailed instructions on cleaning.

Symbol Definitions

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**WARNING**

- Ensure that invasive mode is set for patients that have bypassed airways.
- The use of breathing circuits, chambers or other accessories which are not approved by Fisher & Paykel Healthcare may impair performance or compromise safety.
- Ensure that both temperature probe sensors are correctly and securely fitted. Failure to do so may result in temperatures in excess of 41 °C being delivered to the patient.
- Ensure maintenance of grounding integrity by connection to a “hospital grade” receptacle. Always disconnect supply before servicing.
- When mounting a humidifier adjacent to a patient ensure that the humidifier is always positioned lower than the patient.
- The operation of high frequency surgical apparatus, shortwave or microwave equipment in the vicinity of the humidifier may adversely affect its function. If this occurs, the humidifier should be removed from the vicinity of such apparatus.
- Do not touch the glass tip of the chamber temperature probe during use. Keep black connectors dry at all times.
- Check accessories for any physical damage before use and replace if damaged.
- California residents please be advised of the following, pursuant to Proposition 65: This product contains chemicals known to the State of California to cause cancer, birth defects and other reproductive harm. For more information, please visit: www.fphcare.com/prop65

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**Cleaning MR850 Heatbase**

Using a damp cloth, clean the humidifier with either of the following: Isopropyl Alcohol, normal dishwashing detergent. Temperature Probe Always clean before use. Probes can be cleaned with one of the following solutions: Sporidon™, Cidex™ OPA, Sporox™ OR sterilize the probe using Ethylene Oxide sterilization at 55 °C (131 °F), 80 kPa, (allow at least 15 hours for residual ETO to disperse before use). Wipe the airway temperature probes clear of any cleaning residues before use. Store probes in clean conditions. DO NOT autoclave probes.

**CAUTION:** DO NOT immerse the heatbase or temperature probe electrical connections in any liquid.

**NOTE:** Follow the cleaning agent manufacturers’ instructions carefully. It is the user’s responsibility to qualify any deviations from these procedures, both for disinfecting efficacy and physical effect on the probe and the heatbase. See the MR850 technical manual for more detailed instructions on cleaning.

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**MR850 RESPIRATORY HUMIDIFIER**

The MR850 respiratory humidifier is used to warm and humidify gases delivered to patients requiring mechanical ventilation, maintaining pressure breathing assistance, or other medical gases.
SET UP
1. Slide humidification chamber (A) onto humidifier base and connect breathing circuit (B) (refer to humidification chamber and breathing circuit operating instructions for further details).
2. Connect the temperature probe plug (C) (REF 900MR86X) to the blue socket on the humidifier base until an audible click is heard.
3. Push the chamber probe (D) and airway probe (E) into the breathing circuit. Make sure the chamber probe is correctly located in its key-way and that both probes are pushed home. The probe lead can be restrained using breathing circuit clips.
4. Connect the heater wire adaptor plug (F) (REF 900MR8XX) to the yellow socket on the humidifier base until an audible click is heard.
5. Connect the other end(s) of the heater wire adaptor to the breathing circuit socket(s) (G) and (H).
6. The humidification system is now set up and ready for use. After power on, the humidifier will default to invasive mode.

**ATTENTION:** Refer to operating instructions which accompany each accessory.

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OPERATION

**MUTE**
The mute button silences the humidifier’s audible alarm for at least two minutes. The muted time depends on the alarm condition and the severity of its cause.

**SET-UP INDICATORS**
- **Chamber & Airway Probes**
  Lights if either the chamber probe or the airway probe is not inserted into the breathing circuit correctly.
- **Heater Wire**
  Lights if the heater wire adaptor or breathing circuit has not been connected, or is damaged.
- **Temperature Probe**
  Lights if the temperature probe is not correctly plugged into the MR850, or the probe is faulty.
- **Water Out**
  Lights when there is insufficient water in the chamber. Check water supply. Maximum time to alarm of 20 minutes.

**TEMPERATURE DISPLAY**
Displays the saturated gas temperature (the lower of the airway and chamber temperatures in °C) delivered to the patient. This display will normally show the chamber temperature (around 37 ± 0.5 °C for invasive mode, and 31 ± 0.5 °C for noninvasive mode).

By pushing and holding the mute button for one second, the chamber outlet temperature then the airway temperature is displayed. The display will then revert to normal operation.

**LOW TEMPERATURE ALARM**
An audible alarm and flashing temperature display showing 35.5 °C or lower (in invasive mode only). Caused by cold/drafty conditions or very high or low gas flows.

If the circumstances causing the low humidity alarm cannot be changed then the audible alarm acts as a reminder that the patient is receiving inadequate humidity and may require further intervention to maintain airway clearance.

**HIGH TEMPERATURE ALARM**
A flashing temperature display showing 41 °C or higher. The humidifier will discontinue heating of the chamber and circuit until the temperature decreases to within normal limits.

**MODE BUTTON**
This button switches between invasive and noninvasive mode.

- **Invasive Mode**
  The mode is for patients with bypassed airways. The humidifier delivers gas as close to body temperature saturated (37 °C, 44 mg/L) as possible. Under cold or drafty conditions the chamber temperature may drop as low as 35.5 °C in order to maintain a dry breathing circuit.

- **Noninvasive Mode**
  This mode is for patients receiving face mask or headbox therapy, and delivers a comfortable level of humidity.

**ON/OFF BUTTON**
The humidifier will power ON if this button is held down briefly, but must be held down for one second to turn the humidifier off. The humidifier will always default to invasive mode when it is turned on.

**WARNING:** Ensure that invasive mode is set for patients that have bypassed airways.

**ROUTINE MAINTENANCE**
Refer maintenance to qualified service personnel. A full technical description including routine maintenance and service data is contained in the Technical Manual which is available from your supplier or Fisher & Paykel Healthcare (REF 185041340)

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THE FOLLOWING ACCESORIES ARE REQUIRED:
- Humidification Chamber (e.g: MR290)
- Breathing Circuit (e.g: RT110)
- Temperature Probe (e.g: 900MR869)
- Heater Wire Adaptor (e.g: 900MR800)
- Mounting Bracket (to suit ventilator)

Choice will depend upon application. Please contact your local Fisher & Paykel Healthcare representative for recommendations.

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See Manual
The humidifier and all accessories should be immediately replaced and sent for servicing.
NOTE
To set the humidifier to non-heater wire mode, refer to the MR850 technical manual. (Rev. H or later).

If a heated breathing circuit is used while in non-heater wire mode the humidifier automatically changes to heater wire mode. To use non-heater wire mode again will require it to be manually set.

The airway probe out test does not work with non-heated breathing circuits. A low humidity alarm will instead be given.

When there is no gas flow the humidifier will give a low humidity alarm.

If the chamber runs dry either a water out alarm or a low humidity alarm will occur.

NON-HEATED BREATHING CIRCUITS

SET UP

1. Slide humidification chamber (a) onto humidifier base and connect breathing circuit (b) (refer to humidification chamber and breathing circuit operating instructions for further details).

2. Connect the temperature probe plug (c) (REF 900MR86X) to the blue socket on the humidifier base until an audible click is heard.

3. Push the chamber probe (d) and airway probe (e) into the breathing circuit. Make sure the chamber probe is correctly located in its key-way and that both probes are pushed home. The probe lead can be restrained using breathing circuit clips.

4. The humidification system is now set up and ready for use. After power on, the humidifier will default to invasive mode.

ATTENTION: Refer to operating instructions which accompany each accessory.

RECOMMENDED SETUP FOR ADULT PATIENTS

Non-heated breathing circuit with MR290 Chamber
900MR869 Temperature Probe, Mounting bracket to suit ventilator
For all other applications refer to Product Guide or contact your local Fisher & Paykel Healthcare representative.

SPECIFICATIONS (additional)

Temperature Control Settings (non heated circuits)
- Invasive Mode: Airway 37 ºC
- Noninvasive Mode: Airway 31 ºC

Alarm Parameters (non heated circuits)
- High Temperature Alarm: Immediate, audible alarm at a displayed temperature > 41 ºC
- Low Temperature Alarm: Audible alarm at a displayed temperature < 29 ºC (Invasive), < 26 ºC (Noninvasive)

Performance (non heated circuits)
- Recommended Flow Range: Invasive Mode: 6 to 60 L/min
- Non-Invasive Mode: 6 to 120 L/min

ATTENTION: Refer to operating instructions which accompany each accessory.