

22 May 2023

FIELD SAFETY NOTICE
for End-Customers using
Hamilton Medical Ventilators HAMILTON-C1/T1/C2/C3
with Neonatal Option
Reference #: CER 110972

- Recipients:**
- Health care facilities using Hamilton Medical ventilators (e.g., intensive care units, intermediate care units, emergency rooms, long-term acute care hospitals or in the recovery room (this list is not complete)).
 - Distribution partners of Hamilton Medical ventilators and their service engineers.
- Time frame for End-customers:**
- The document **“Confirmation — For HAMILTON MEDICAL Ventilator End-Customers”** must be returned to local retailers as quickly as possible, but no later than 45 days after receiving the Field Safety Notice.
 - All incidents of this type should be reported to the local distribution partner.

Dear End-Customer,

This Field Safety Notice (FSN) provides information on a Hamilton Medical ventilator malfunction which was reported to Hamilton Medical AG by users:

We have become aware of a malfunction with our HAMILTON-C2/C3/C1/T1 ventilators when used long term in neonatal patient group. If an affected device is used accumulatively for 91 days in neonatal patient group without a restart of the device, the device will switch to “Ambient State” and therefore stop ventilation. During the “Ambient State” the device is alarming audibly and visually until it is switched off by the user. Hence, it is mandatory to apply a periodic preventive restart of affected devices.

Failure description: Affected HAMILTON-C2/C3/C1/T1 devices which are used for long-term ventilation in neonatal patient group will switch to the “Ambient State” if the ventilation time is exceeding 91 days.

During the “Ambient State” the ventilator will alarm audibly and visually and be displaying the following on the screen:



Figure 1: Ambient state (example, another Technical Fault number might be displayed)

Failure effect: No active ventilation is provided anymore to the patient. The device is constantly alarming audibly and visually.

For further information see chapter “Ambient State” in the respective Operator’s Manual.

Devices and Software version affected: All HAMILTON-C1/T1 with SW version $\leq 2.2.10$ and neonatal option installed
All HAMILTON-C2 with SW version $\leq 2.2.5$ and neonatal option installed
All HAMILTON-C3 with SW version $\leq 2.0.9$ and neonatal option installed

Note: The installed software version of a ventilator can be viewed in the System → Info window.

Patient risks:	If the ventilator switches to “Ambient State” it will alarm and open the airways without active ventilation. If the patient can breathe spontaneously, the ventilator will allow that. The alarm given by the ventilator indicates, that the device is in “Ambient State”. Serious consequences or death may result for patients which do not breathe spontaneously whenever the ventilation by means of an alternative device or temporary hand bagging is delayed.
Required user actions if failure occurs:	<p>In such a case, perform the following actions steps:</p> <ol style="list-style-type: none">1. Provide alternative ventilation immediately.2. You must switch off ventilator power to exit the “Ambient State”.3. Once patient safety is ensured, it is required to have the ventilator serviced. (After passing the service software the device can be returned to use.) <p>For further information see chapter “Ambient State” in the respective Operator’s Manual.</p>
Mandatory periodic, preventive action:	<p>To avoid this malfunction, perform the following: The device needs to be restarted regularly.</p> <p>Note: Switching into “standby” is not sufficient.</p> <p>We recommend performing the restart of the device during the regular exchange of the breathing circuits (usually every 28 days).</p>
Preventing the failure from occurring through a software update:	<p>For HAMILTON-C1/T1: Update the devices to SW version 3.0.0 or higher.</p> <p>In the meantime, please act as described in the chapter “Mandatory periodic, preventive action” above.</p>
Failure rate:	<p>The failure will occur in neonatal patient group after the ventilation time since the last complete restart is exceeding 91 days. Based on number of complaints received in relation to the installed neonatal licenses.</p> <p>HAMILTON-C1: 0.78 % HAMILTON-T1: 0.16 % HAMILTON-C2: 0.42 % HAMILTON-C3: 0.23 %</p>
Actions to be taken by End-Customers:	<ul style="list-style-type: none">• Until the malfunction is corrected as part of Field Safety Corrective Action (FSCA), please continue to follow the instructions in this field safety notice.• Please sign the enclosed/attached sheet to confirm that, as an End-Customer, you have received and duly noted this FSN.• Also, please continue to notify your local distribution partner of any cases of the aforementioned malfunction.

The local distribution partner is always the first point of contact in this matter.

Manufacturer:	Hamilton Medical AG Via Crusch 8 CH-7402 Bonaduz Switzerland	Contact:	Hamilton Medical AG Technical Support Parc Industrial Vial 10 CH-7013 Domat/Ems Tel. +41 58 610 10 20 Email: techsupport@hamilton-medical.com
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Please keep this field safety notice with your HAMILTON-C1/T1/C2/C3 Operator’s Manual.

We appreciate your support in this matter and sincerely regret any inconvenience you may experience because of the malfunction described above.

Name	Digital signature
Annika Schoser Vigilance Department Medical Hamilton Medical AG	Schoser Annika Maria 23460 Digitally signed by Schoser Annika Maria 23460 Date: 2023.05.22 06:09:43 +02'00'
Niels Mende Head of Technical Support and Services Hamilton Medical AG	Mende Niels Rico 22987 Digitally signed by Mende Niels Rico 22987 Date: 2023.05.22 07:16:58 +02'00'