

20 February 2023

**FIELD SAFETY NOTICE**  
**for Distribution Partners of**  
**the HAMILTON-C6 Ventilator**  
**PN: 160021**  
**Reference #: CER 101091**

- Recipients:**
- All health care facilities using HAMILTON-C6 ventilators (e.g. intensive care units, intermediate care units, emergency rooms, long-term acute care hospitals or in the recovery room).
  - All distribution partners of HAMILTON-C6 ventilators and their service engineers.
- Time frame for distribution partners**
- The authorities must be notified within 10 days of receiving the safety notice. Proof of notification must be uploaded to TASK 2 in Ky2help.
  - The field safety notice should be translated into the local language and distributed to customers if required at local level.
  - The document entitled "**Confirmation — For HAMILTON-C6 Distribution Partners**" must be uploaded to TASK 1 in Ky2help no later than 45 days (**on 06 April 2023**) after receiving the field safety notice.

Dear distribution partner,

This field safety notice (FSN) provides information on two potential HAMILTON-C6 ventilator malfunctions detected following an inspection by Hamilton Medical AG.

Hamilton Medical AG wishes to inform you as follows:

**Malfunction 1:**

Safety ventilation can be triggered by switching to an adaptive mode.

**Malfunction 2:**

The display can be restarted by changing the Target Shift setting (only in INTELLiVENT-ASV).

**Malfunction 1:**

Safety ventilation can be triggered by switching to an adaptive mode.

Software version affected: 1.2.1

**Further information:** With a very low error rate, this malfunction may occur under certain circumstances if the following two conditions coincide:

First mode change to an adaptive mode (ASV, APVcmv, APVsimv, INTELLiVENT-ASV, (S)CMV+, SIMV+) and if the IntelliCuff controller and/or the HAMILTON-H900 humidifier is connected to the ventilator and is operational.

If this malfunction occurs, ventilation will continue in “safety ventilation” mode and the ventilator will sound an alarm. This allows enough time for alternative ventilation to be set up safely.

See the relevant instructions in the Operator’s Manual (Section 7.7 Safety ventilation):

1. Monitor your patient.
2. Provide an alternative device for ventilation.
3. Have the ventilator serviced.

**Error rate:** Estimated error rate: 0.085%

**Probability of harm to the patient:** Almost impossible < one in 1,000,000 patients

**Patient risks:** The alarm and safety ventilation are generated by a software error and require action from the user. The patient could be at risk if the user takes no action.  
(See probability of harm to the patient)

Safety ventilation is a sound, safe mode that gives the user enough time to replace the device. Safety ventilation is designed to protect the patient if the device develops a technical problem.

Safety ventilation guarantees continuous standard ventilation with the device. To date, Hamilton Medical AG have not received any complaints or any other information to suggest that short-term use of this mode is detrimental to the patient.

**How can the problem be detected on the device?** “Safety ventilation” is displayed on the screen.  
The ventilator also sounds a high pitch alarm that is both audible and visible. This draws the user's attention to safety ventilation.

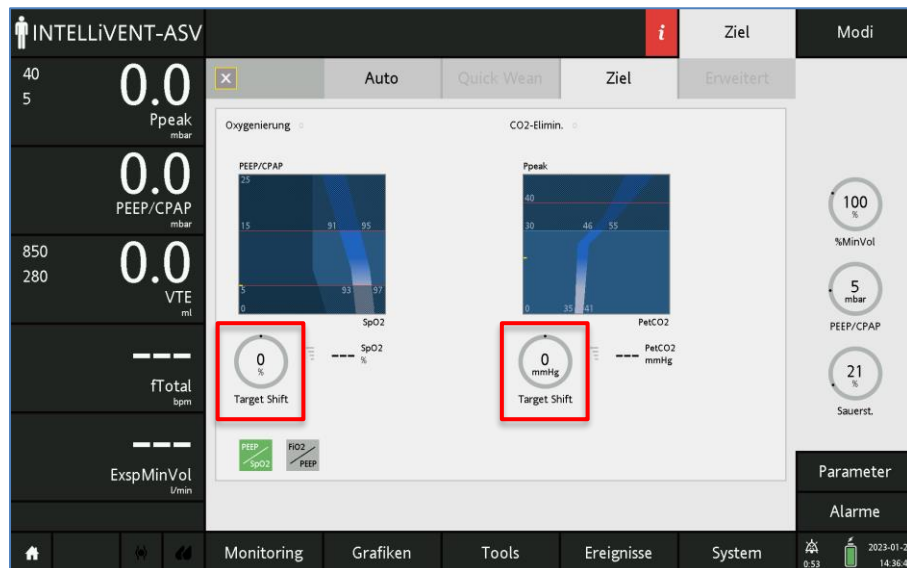
**Malfunction 2:**

The display can be restarted by changing the Target Shift setting.

Software version affected: 1.2.1 and 1.2.2 with INTELLiVENT-ASV option installed.

**Further information:** The HAMILTON-C6 ventilator screen has restarted in some cases. It takes approximately 45 seconds for the screen to restart. During the restart process, the screen is dark and the device sounds an alarm. Ventilation continues in the INTELLiVENT-ASV mode. Apart from these few instances, one case was reported in which this problem triggered the safety ventilation mode.

This type of malfunction can occur if a user tries to set the Target Shift setting in INTELLiVENT-ASV mode.



**Error rate:**

Screen restart error rate: 0.256%

Screen restart error rate with safety ventilation: 0.01%

<b>Probability of harm to the patient:</b>	Screen restart: No patient harm expected  Screen restart with safety ventilation: Almost impossible < one in 1,000,000 patients
<b>Patient risks:</b>	According to our risk assessment, the patient is not at risk if the screen restarts. (See probability of harm to the patient) This problem causes the screen to restart. It does not affect the ventilation unit <i>per se</i> . Ventilation continues unchanged because the interaction panel and basic unit operate independently.  Safety ventilation is triggered by a technical problem and requires action from the user. The patient could be at risk if the user takes no action. (See probability of harm to the patient)  Safety ventilation is a sound, safe mode that gives the user enough time to replace the device. Safety ventilation is designed to protect the patient if the device develops a technical problem. Safety ventilation guarantees continuous standard ventilation with the device. To date, Hamilton Medical AG have not received any complaints or any other information to suggest that short-term use of this mode is detrimental to the patient.
<b>How can the problem be avoided?</b>	Using only the Press & Turn (P&T) knob to alter the Target Shift setting further reduces the likelihood of this type of problem.
<b>How can the problem be detected on the device?</b>	If the screen restarts, it will not respond to any touch command for approximately 45 seconds. The screen goes dark and restarts.  If the screen restarts and the ventilator goes into safety ventilation mode, the problem is evident because safety ventilation has been triggered. "Safety ventilation" is displayed on the screen in this mode. Inform your local distribution partner accordingly.  See the relevant instructions in the Operator's Manual (Section 7.7 Safety ventilation): <ol style="list-style-type: none"><li>1. Monitor your patient.</li><li>2. Provide an alternative device for ventilation.</li><li>3. Have the ventilator serviced.</li></ol>

**Resolving the issue**

A software update to software version 1.2.2 or higher must be performed on ventilators without INTELLiVENT-ASV.

A software update to software version 1.2.3 must be performed on ventilators with INTELLiVENT-ASV.

Software update 1.2.3 will be available from the second quarter of 2023.

**Actions to be taken by distribution partners:**

- Please sign the enclosed/attached sheet to confirm that, as a distribution partner, you have received and duly noted this field safety notice (FSN), and have informed your end customers accordingly. This confirmation is to be filed in TASK 1 in the Hamilton Medical AG Complaints System.
- Distribution partners are requested and obliged to notify the local authorities if Hamilton Medical AG has not already done so. Please contact [vigilance.med.global@hamilton-medical.com](mailto:vigilance.med.global@hamilton-medical.com) if you have any further questions. This confirmation is to be filed in TASK 2 of the Hamilton Medical AG Complaints System.
- On receipt of this safety notice, immediately prepare an overview to show how many devices are in your market and the relevant software version installed. Send this overview to your local Hamilton Medical AG Technical Support Team.
- Furthermore, we will ask you to confirm the following when software version 1.2.3 is available:
  - The customer has installed software version 1.2.2 or higher (INTELLiVENT-ASV option is not installed).
  - The customer has installed software version 1.2.3 (INTELLiVENT-ASV option is installed)
- Follow up confirmations from end customers and file the documents locally.
- This FSN must be actioned by 06 April 2023.
- If the end customer does not respond promptly, the distribution partner must send and document at least three reminders to the end customer. If the end customer does not provide a response, this can be documented internally and no further action need be taken in respect of this end customer.
- Please report any new incident to the Hamilton Medical AG Technical Support Team via the Hamilton Medical AG Complaints System.

**Manufacturer:** Hamilton Medical AG  
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We appreciate your support in this matter and sincerely regret any inconvenience you may experience as a result of the issue described above.

Annika Schoser  
Vigilance Department  
Hamilton Medical AG

Jürg Marugg  
Medical Technical Support  
Hamilton Medical AG

**Please keep this field safety notice with your HAMILTON-C6 Operator's Manual.**