Installation Guide

HAMILTON-T1
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Hamilton Medical AG will make available on request component parts lists, descriptions, calibration instructions, or other information that will assist the user’s appropriately trained personnel to repair those parts of the equipment designated by Hamilton Medical AG to be repairable.

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Warnings, Cautions, Notes

⚠️ WARNING
A WARNING alerts the user to the possibility of injury, death or other serious adverse reactions associated with the use or misuse of the device. It also describes potential serious adverse reactions and safety hazards.

⚠️ CAUTION
A CAUTION alerts the user to the possibility of a problem with the device associated with its use or misuse, such as device malfunction, device failure, damage to the device, or damage to other property.

NOTICE
A NOTE emphasizes information of particular importance.

For complementary information consult Chapter 2 of the HAMILTON-T1 Operator’s Manual.
1 Inventory, Tools

HAMILTON-T1
PN 161005/
PN 161006/
PN 161009

High pressure oxygen connector
(incl. nut & nipple connector)
① PN 160470 DISS or
② PN 160471 NIST

Coaxial breathing set with
single-use Flow Sensor
PN 260087

Inspiratory Filter
PN 279963

Filter Set (Additional)
PN 161275

Protective sleeve
PN 161435

Battery
PN 369108

Demonstration lung
PN 151815

Feature Icons
PN 161737

Powercord
PN 355198 USA
PN 355199 GB
PN 355200 EU
PN 355308 Chinese

Cable Clamp
PN 361061  PN 361097
belongs to Powercord
PN 355199  PN 355198
PN 355200  PN 355308

Feature Icons Positioning Guides
PN 161975
2 Packaging

Language Kit
PN 161030 English
PN 161032 Spanish
PN 161031 German
PN 161033 French
PN 161037 Italian
PN 161034 Russian
PN 161035 Chinese
PN 161036 Portuguese

Battery cap and screws
MSP161173

Screwdriver T10
PN 239615

**NOTICE**

Store the original packaging for later use. This will protect the equipment if you have to move it.
3 Set Up

3.1 DISS / NIST

1: Remove the yellow cap.

2: Insert the NIST or DISS connector supplied.

3: Make sure both screws are tight.

**CAUTION**

Take care when you install the NIST or DISS connector. The connector must be flush with the connector plate. See the Installation Guide, PN 612219.03 for detailed installation instructions.
4 Check the O2 Cell

1: Remove the air filter cover screw (indicated) then remove the air filter cover.

2: Check that there is an O2 cell inserted.

3: Remove the O2 cell plug and check that the O2 cell is tight.

4: If the cell feels loose or moves in the socket then turn it to the right (clockwise) until it is tight.

5: If no cell is inserted you must obtain one before switching the unit on. Contact Hamilton for assistance.

6: Put the plug back into the O2 cell.

7: Attach the air filter cover removed earlier.
5 Connecting to a power source

5.1 Insert the Battery

Read the Operator’s Manual, Section 2.8 Connecting to a Power Source and Section 2.9 About the batteries before you begin.

**NOTICE**

- The HAMILTON-T1 does not require protective earth grounding, because it is a class II device, as classified according to IEC 60601-1.
- Always check the reliability of the power source used (AC or DC).

1: Open the battery door on the front of the unit.

2: Install one battery in the right battery compartment. If you have two batteries install the second battery in the left battery compartment.

**NOTICE**

The second battery in the HAMILTON-T1 is optional. You may not be supplied with a second battery, depending on your order.

3: Attach the battery cap using the two screws provided.

**NOTICE**

Make sure the battery retaining lock (second battery) is closed, whether you have a second battery or not. The battery door will not close unless the battery retaining lock is closed.

4: Close the left battery retaining lock.

5: Close the battery door on the front of the unit.
5.2 Power Cord (AC)

**NOTICE**

- Connect the HAMILTON-T1 to an outlet that supplies AC power between 100 and 240 V, 50/60 Hz.
- Install the ventilator in a location where the primary power can be easily disconnected.
- To prevent unintentional disconnection of the power cord, make sure it is well seated in the ventilator's socket and secured with the power cable retaining clip.

1: Insert the power cable.

2: Fix the cable with the appropriate retaining clamp. Make sure you use the correct clamp. The smaller clamp (PN 361061) belongs to the GB/EU cable and the larger clamp (PN 361097) to the USA/Chinese cable. Discard the unused clamp.

3: When you switch the power on, the AC power symbol in the bottom right corner of the screen is displayed with a frame around it.

**NOTICE**

The power supply preferred hierarchy is AC - DC - battery 2 - battery 1. For more information see the Operator's Manual, Section 2.8 and 2.9.

4: When you connect the HAMILTON-T1 to a DC power source the DC power symbol is displayed in the bottom right corner of the screen.
6  Attach the Feature Icons

1: Attach one feature icons positioning guide to the front, lower left of your ventilator (as shown).

2: Attach the appropriate feature icons (as shown).

3: Remove and discard the positioning guide.
7  Document History

<table>
<thead>
<tr>
<th>Revision</th>
<th>Date</th>
</tr>
</thead>
<tbody>
<tr>
<td>00</td>
<td>June 2011</td>
</tr>
<tr>
<td>01</td>
<td>October 2011</td>
</tr>
<tr>
<td>03</td>
<td>January 2014</td>
</tr>
<tr>
<td>04</td>
<td>June 2014</td>
</tr>
<tr>
<td>05</td>
<td>February 2016: Feature icons added, illustrations updated.</td>
</tr>
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</table>
## 8 Testing & Acceptance

### HAMILTON-T1 Initial Install Report

**Date in YYYY-MM-DD:**

**Name of person who performed installation:**

**Serial number of HAMILTON-T1:**

**Location of installation:**

<table>
<thead>
<tr>
<th>Procedure</th>
<th>Perform or observe...</th>
<th>Verify...</th>
<th>Notes</th>
<th>Performed and verified</th>
</tr>
</thead>
<tbody>
<tr>
<td>Verify that the DISS or NIST connector is mounted correctly.</td>
<td>Connector is mounted correctly.</td>
<td>For details see Section 3.1 in this Installation Guide.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Make sure an O2 cell is inserted.</td>
<td>O2 cell is inserted and tight.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Connect the ventilator to an AC power supply and an oxygen supply. Assemble the patient breathing circuit.</td>
<td>Breathing circuit is correctly assembled.</td>
<td>For details see Section 2.3 in the HAMILTON-T1 Operator’s Manual.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Switch on the power.</td>
<td>When the ventilator is switched on the buzzer sounds and the red alarm lamp flashes. After the self test is passed the alarm lamp flashes again.</td>
<td>The buzzer sounds only briefly, at the beginning.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Use the configuration setting to choose the language.</td>
<td>Appropriate language is set OK.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Set the date and time correctly.</td>
<td>Time and date are OK.</td>
<td>For details see Section 3.3.5 in the HAMILTON-T1 Operator’s Manual.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Perform the electrical safety tests.</td>
<td>Document the measured values.</td>
<td>For details see Section 7.2 in the HAMILTON-T1 Service Manual.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Make sure the ventilator is in standby and select ‘Preop check’ from the Patient setup window.</td>
<td></td>
<td>For details see Section 3.2 in the HAMILTON-T1 Operator’s Manual.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Open the System &gt; Tests &amp; calib window. Select and run the Tightness test then the Flow Sensor calibration. Close the window</td>
<td>These tests pass.</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
### Procedure

<table>
<thead>
<tr>
<th>Perform or observe...</th>
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</tr>
</thead>
<tbody>
<tr>
<td>If necessary perform the O2 cell calibration. Close the window.</td>
<td>This test passes.</td>
<td>For details see Section 8.8.7 in the HAMILTON-T1 Service Manual.</td>
<td>☐</td>
</tr>
<tr>
<td>Generate an alarm situation (e.g. disconnect the mains power).</td>
<td>Corresponding alarm message in message bar (e.g. loss of external power).</td>
<td>During standby, patient alarms are suppressed. For details see Section 3.5 in the HAMILTON-T1 Operator's Manual.</td>
<td>☐</td>
</tr>
<tr>
<td>Resolve the alarm situation (e.g. re-connect the mains power).</td>
<td>Alarm is reset.</td>
<td></td>
<td>☐</td>
</tr>
<tr>
<td>Check that the feature icons are attached to the front of your ventilator.</td>
<td>Feature icons attached.</td>
<td></td>
<td>☐</td>
</tr>
</tbody>
</table>