

# Application Note

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 Confidentiality: public

## EasyWarePro Message Numbers

### 1. Revision History

V3.9.2.4	<ul style="list-style-type: none"> <li>- Modified existing warning messages and added new ones due to the introduction of the ATS/ERS Spirometry Standard 2019. For FVC/FVL tests performed according to Standard 2019, message numbers have been replaced by warning notes in the UI and in the XML export.</li> <li>- For FVC/FVL tests performed according to Standard 2005, and all other PFT test types, the following message number mechanism applies:  The parameter message no. contains a maximum of 7 error or warning codes using the following format: “aabbccddeeffgg.00”. Each number consists of 2 digits, except the first number, which consist of only 1 digit.           <ul style="list-style-type: none"> <li>○ Example: 2.00 → Warning 2</li> <li>○ Example: 21415.00 → Warning 2, 14 and 15</li> <li>○ Example: 220211.00 → Warning 22, 2 and 11</li> <li>○ Example: 111234.00 → Warning 11, 12 and 34</li> </ul> </li> </ul>
V3.7.0.2	<ul style="list-style-type: none"> <li>- Added new warning messages that are related to the quality grading introduced by the ATS/ERS DLCO 2017 standard.</li> <li>- Updated the descriptions of the message numbers and added clarifications.</li> </ul>
V3.5.1.7	<ul style="list-style-type: none"> <li>- The maximum number of error codes stored per trial has been increased from 3 to 7.</li> <li>- The applicable test types for message number 1 have been corrected. Message number 1 was not applied for FVL tests in versions lower than V3.5.1.7 and has been replaced by message number 38.</li> </ul>




### 2. Message Numbers





For all types of tests, EasyWarePro (or EasyOne Connect) contains a parameter called “Message No”. This parameter contains information about errors and warnings associated with a trial. This parameter is also available in the XML export file.

The following table contains a list of all error and warning codes, with short descriptions of the causes for these particular warnings or errors, and possible resolutions.






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Some error or warning messages do not appear if another message is shown.  
The column 'Action' contains the following symbols:








-  Everything is OK, no action required
-  The problem can be resolved by patient
-  The problem can be resolved by checking the EasyOne Pro device.

No.	Action	Test Type	Description
0		All	No error or warning, test is OK
1		FVC	<p>Abrupt end of test detected</p> <p><b>Problem:</b> Patient may not have exhaled completely. Detailed criteria: Expiration time was less than 2 seconds; or volume during last 2 seconds &gt;30 ml (expiration time between 2 and 7 sec) or &gt;45 ml (expiration time &gt;7 sec).</p> <p><b>Solution:</b> The patient must exhale longer and force as much air as possible out of his or her lungs.</p> <p><i>Remark: This message was replaced by no. 39 in EasyOne Connect version 3.5.1.7.</i></p>
2		FVC, FVL	<p>Patient hesitation detected</p> <p><b>Problem:</b> Patient hesitation detected. Detailed criteria: Back-extrapolated volume greater than 150 ml, or 5% of FVC whichever is greater (for age &lt;=6: 80 ml or 12.5% of FVC whichever is greater).</p> <p><b>Solution:</b> The patient must blast out as quickly and as hard as possible.</p> <p><i>Remark: In version 3.8.0.11 and above, this message is only applicable for tests performed under the Spirometry Standard 2005 settings.</i></p>
3		FVC, FVL	<p>Please, blow out faster</p> <p><b>Problem:</b> Peak flow is delayed. Detailed criteria: Time until peak flow greater than 160 ms.</p> <p><b>Solution:</b> The patient must blast out as quickly and as hard as possible.</p>








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No.	Action	Test Type	Description
4		FVC, FVL	<p>Please, blow out longer</p> <p><b>Problem:</b> Patient may not have exhaled completely. Detailed criteria: Expiration time less than 2 seconds. OR volume in the last 0.5 seconds of the expiration more than 100 ml.</p> <p><b>Solution:</b> The patient must exhale longer and force as much air as possible out of his or her lungs.</p> <p><i>Remark: This message was replaced by no. 38 in EasyOne Connect version 3.5.1.7.</i></p>
5		FVC, FVL	<p>Unable to detect forced maneuver</p> <p><b>Problem:</b> Software was unable to detect a forced maneuver.</p> <p><b>Solution:</b> Please retry maneuver and follow the instructions that are shown during the maneuver.</p>
6		SVC	<p>Unable to detect steady tidal breathing</p> <p><b>Problem:</b> The software was unable to detect steady tidal breathing. Detailed criteria: All end-inspiratory volumes of 3 breaths are not within 200 ml, and/or the difference in VT of 3 breaths is larger than 200 ml.</p> <p><b>Solution:</b> Please instruct the patient to breathe steadily during tidal breathing phase.</p> <p><i>Remark: This message was replaced by no. 42 in EasyOne Connect version 3.9.2.4.</i></p>
7		SVC	<p>Incomplete maneuver, unable to calculate IRV</p> <p><b>Problem:</b> Unable to detect complete maneuver and to calculate IRV.</p> <p><b>Solution:</b> Please retry maneuver and follow the instructions that are shown during the maneuver. Complete in- and expiration are required.</p>
8		SVC	<p>Incomplete maneuver, unable to calculate ERV</p> <p><b>Problem:</b> Unable to detect complete maneuver and to calculate ERV.</p> <p><b>Solution:</b> Please retry maneuver and follow the instructions that are shown during the maneuver. Complete in- and expiration are required.</p>






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No.	Action	Test Type	Description
9		FVC, FVL	<p>Test started too early</p> <p><b>Problem:</b> Early test start detected. Detailed criteria: The time to peak flow (PEFT) is less than 30 ms, or flow detected before test was started.</p> <p><b>Solution:</b> Please instruct the patient to wait until the baseline setting is finished and until the software signals to start the test.</p>
10		FVC, FVL	<p>Cough detected</p> <p><b>Problem:</b> A cough has been detected.</p> <p><b>Solution:</b> Please instruct the patient to avoid coughing during the measurement.</p>
11		DLCO	<p>Gas inspiration time too long</p> <p><b>Problem:</b> Long inspiration time detected. Detailed criteria: Inspiration time &gt; 4.0 seconds.</p> <p><b>Solution:</b> Please instruct the patient to inhale test gas faster.</p>
12		DLCO	<p>Breath hold time out of range</p> <p><b>Problem:</b> Breath hold time is out of range. Detailed criteria: Breath-hold time is out of range (8-12 seconds).</p> <p><b>Solution:</b> Please instruct the patient to exhale immediately when the corresponding message shows and when the valve opens.</p>
14		CalCheck	<p>Calibration result out of range – Check setup</p> <p><b>Problem:</b> Calibration result is out of range. Detailed criteria: The measured volume is out of <math>\pm 3.5\%</math> of the target value.</p> <p><b>Solution:</b> Please check the test setup and repeat the test. If error reappears please contact service.</p>
15		CalCheck	<p>Try again - Flow criteria not met!</p> <p><b>Problem:</b> Cal-syringe flow rate too fast or too slow</p> <p><b>Solution:</b> Please perform the calibration check with the appropriate flow speed.</p>
16		CalCheck	<p>Inspiratory or expiratory maneuver not detected</p> <p><b>Problem:</b> Only an inspiratory or expiratory maneuver detected (and not both).</p> <p><b>Solution:</b> Please perform complete inspiratory and expiratory maneuvers and follow the given instructions.</p>







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No.	Action	Test Type	Description
17		DLCO	<p>Check complete gas connection and valve assembly</p> <p><b>Problem:</b> Significant difference between calibration and inspiratory CO concentration detected.</p> <p><b>Solution:</b> Please check complete gas connection and valve assembly and that test is performed correctly.</p>
18		DLCO	<p>Low inspiratory volume detected</p> <p><b>Problem:</b> The Inspiratory volume of the DLCO test is &lt;85% of the target value.</p> <p><b>Solution:</b> Please encourage the patient to inhale at least up to the dotted volume line, which indicates 90% (for DLCO 2017) or 85% (for DLCO 2005) of the expected VC.</p>
19		DLCO	<p>Check complete gas connection and valve assembly</p> <p><b>Problem:</b> Significant difference between calibration and inspiratory CO concentration detected.</p> <p><b>Solution:</b> Please check complete gas connection and valve assembly, and that test is performed correctly.</p>
20		DLCO	<p>Check patient technique, gas supply and valve assembly</p> <p><b>Problem:</b> The alveolar helium concentration measured is out of range.</p> <p><b>Solution:</b> Please check complete gas connection and valve assembly, and that test is performed correctly.</p>
21		DLCO	<p>Check patient technique, gas supply and valve assembly</p> <p><b>Problem:</b> The expiratory CO concentration measured is out of range.</p> <p><b>Solution:</b> Please check complete gas connection and valve assembly, and that test is performed correctly.</p>
22		DLCO	<p>Check patient technique, gas supply and valve assembly</p> <p><b>Problem:</b> The alveolar CO concentration measured is out of range.</p> <p><b>Solution:</b> Please check complete gas connection and valve assembly, and that test is performed correctly.</p>
23		DLCO	<p>Check patient technique, gas supply and valve assembly</p> <p><b>Problem:</b> The alveolar volume (VA) is out of range.</p> <p><b>Solution:</b> Please check complete gas connection and valve assembly, and that test is performed correctly.</p>




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24		DLCO	<p>Check patient technique, gas supply and valve assembly</p> <p><b>Problem:</b> The measured DLCO value is out of range.</p> <p><b>Solution:</b> Please check complete gas connection and valve assembly, and that test is performed correctly.</p>
25		MBW	<p>Unable to calculate FRC extrapol – Please check for leaks</p> <p><b>Problem:</b> The extrapolated MBW volume (i.e., the volume that would be washed out after the washout has been stopped) cannot be determined.</p> <p><b>Solution:</b> Do not stop the washout too early and/or check for leaks.</p>
26		MBW	<p>FRC extrapol too high - Do not stop the washout too early</p> <p><b>Problem:</b> The extrapolated MBW volume (i.e., the volume that would be washed out after the washout has been stopped) is greater than 1 liter.</p> <p><b>Solution:</b> Do not stop the washout too early and/or check for leaks</p>
27		MBW	<p>Inspiratory gas leak detected</p> <p><b>Problem:</b> Inspiratory gas leak detected. Detailed criteria: The end-inspiratory molar mass deviates from the tracer gas molar mass. This indicates that ambient air is inspired during the maneuver.</p> <p><b>Solution:</b> Please check valves and that FRC barriette and spirette are properly inserted. Check that nose clip is properly positioned and that patient is breathing normally.</p> <p><i>Remark: This message only appears in EasyOne Connect versions before 2.1.0.9.</i></p>
28		MBW	<p>High inspiratory or expiratory pressure detected</p> <p><b>Problem:</b> High inspiratory or expiratory pressure detected. Detailed criteria: Peak pressure at the flow sensor exceeds +/-5 mb.</p> <p><b>Solution:</b> Please check that O2 inlet pressure is set to 3-4 bar or 44-58 psi. Only minimal pressure variations are allowed during the test. Ensure that patient's breathing is not too deep or too fast, and is within the limits of <math>\pm 1.5</math> l/s.</p>

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29		MBW	<p>Check complete gas connection and valve assembly</p> <p><b>Problem:</b> Side-stream flow is out of range (&lt;6 ml/s or &gt; 12 ml/s).</p> <p><b>Solution:</b> Please check complete gas connection and if patient tube (Maintenance kit) needs to be replaced. Contact support if error persists.</p> <p><i>Remark: This message only appears in EasyOne Connect versions before 1.9.0.19.</i></p>
30		DLCO	<p>Allow device to warm up.</p> <p><b>Problem:</b> CO sensor drift detected.</p> <p><b>Solution:</b> Please let the instrument warm up and repeat the test. If the error reappears, please contact service.</p>
31		MBW	<p>N2 concentration at end of test too high – Longer washout required</p> <p><b>Problem:</b> Tracer concentration at end of test too high. Detailed criteria: tracer concentration at end of test is &gt;2% N2.</p> <p><b>Solution:</b> Repeat the test, encouraging the patient to continue breathing until at least 3 breaths with concentrations below 2% N2 are achieved.</p>
32		MBW	<p>The automatic calibration of the CO2 sensor failed</p> <p><b>Problem:</b> The automatic calibration of the CO2 sensor failed.</p> <p><b>Solution:</b> Repeat the test. If the error reappears, contact service.</p> <p><i>Remark: This message only appears in EasyOne Connect versions before 2.1.0.9.</i></p>
33		DLCO	<p>CO level too high – Please respect waiting time between trials</p> <p><b>Problem:</b> CO level during tidal breathing too high.</p> <p><b>Solution:</b> Wait at least four minutes between DLCO tests. Please also check the DLCO valve unit. If the error occurs repeatedly, contact service.</p>
34		MBW	<p>Tidal breathing volume too low</p> <p><b>Problem:</b> Tidal breathing volume too low. Detailed criteria: Tidal volume outside 4 to 30 mL/kg body weight. OR outside 0.25 to 0.3 L if the body weight is not stated.</p> <p><b>Solution:</b> Ask patient to breathe regularly, calmly and within the suggested range.</p>

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35		MBW	<p>Check patient technique, gas supply and check for leaks</p> <p><b>Problem:</b> Volume drift during washout test detected. The volume drift correction could not be performed and/or the parameters IRV and/or ERV are smaller than zero.</p> <p><b>Solution:</b> Check for correct test performance and/or for leaks. If the error occurs repeatedly, contact service.</p>
36		DLCO	<p>DLCO-Warning: Check patient technique</p> <p><b>Problem:</b> Measured Vd (Fowler dead space) out of range</p> <p><b>Solution:</b> Ask patient to exhale steadily after breath hold</p>
37		FVC, FVL	<p>End of test criteria not met (short exhalation time)</p> <p><b>Problem:</b> Patient has not exhaled long enough, in accordance with ATS/ERS exhalation time criteria. Detailed criteria: expiration time was less than 6 seconds, for patients with age <math>\geq 10</math> years; or less than 3 seconds for patients that are between 7 and 10 years old. No criteria is applied for patients <math>\leq 6</math> years (pre-school age).</p> <p><b>Solution:</b> Please motivate the patient to exhale longer and force as much air as possible out of his or her lungs.</p> <p><i>Remark:</i></p> <ol style="list-style-type: none"> <li><i>This message was introduced with EasyOne Connect version 3.5.1.7.</i></li> <li><i>This warning can be enabled or disabled in the configuration (setting "Enforce minimum 6-second expiration").</i></li> <li><i>In version 3.8.0.11 and above, this message is only applicable for tests performed under the Spirometry Standard 2005 settings.</i></li> </ol>











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38		FVC, FVL	<p>Abrupt end of test detected</p> <p><b>Problem:</b> Short expiration time or high flow at end of test detected. Patient may not have exhaled completely. Detailed criteria: For patients with age <math>\geq 7</math> years, volume during the last 0.5 seconds <math>&gt;100\text{ml}</math>, or exhalation time less than 2 seconds. No criteria applied for age <math>\leq 6</math> years (preschool age).</p> <p><b>Solution:</b> The patient must exhale longer and force as much air as possible out of his or her lungs.</p> <p><i>Remark:</i></p> <ol style="list-style-type: none"> <li><i>This message was introduced with EasyOne Connect version 3.5.1.7.</i></li> <li><i>In version 3.8.0.11 and above, this message is only applicable for tests performed under the Spirometry Standard 2005 settings.</i></li> </ol>
39		FVC, FVL	<p>End of test criteria not met (Plateau criteria)</p> <p><b>Problem:</b> Patient may not have exhaled completely, in accordance with ATS/ERS plateau criteria. Detailed criteria: For patients with age <math>\geq 7</math> years, volume during the last second <math>&gt; 25\text{ml}</math>. No criteria applied for age <math>\leq 6</math> years (preschool age).</p> <p><b>Solution:</b> Please motivate the patient to exhale longer and force as much air as possible out of his or her lungs.</p> <p><i>Remark:</i></p> <ol style="list-style-type: none"> <li><i>This message was introduced with EasyOne Connect version 3.5.1.7.</i></li> <li><i>In version 3.8.0.11 and above, this message is only applicable for tests performed under the Spirometry Standard 2005 settings.</i></li> </ol>
40		DLCO	<p><math>VI &lt; 90\%</math> of largest VC</p> <p><b>Problem:</b> Patient may not have inhaled completely. Additional note: ATS/ERS criteria are still fulfilled if VI is between 85% and 90% of the largest VC in the same test session and VA is <math>\geq 0.95 * V_{\text{Amax}}</math> OR VA is <math>\geq V_{\text{Amax}} - 200\text{mL}</math>; where <math>V_{\text{Amax}}</math> is the largest VA from other maneuvers graded as A.</p> <p><b>Solution:</b> Please encourage the patient to inhale at least up to the dotted volume line, which indicates 90% of the expected VC.</p>

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No.	Action	Test Type	Description
41		DLCO	<p>VI &lt; 80% of largest VC</p> <p><b>Problem:</b> Patient may not have inhaled completely.</p> <p><b>Solution:</b> Please encourage the patient to inhale at least up to the dotted volume line, which indicates 90% of the expected VC.</p>
42		SVC	<p>Unable to detect steady tidal breathing</p> <p><b>Problem:</b> The software was unable to detect steady tidal breathing. Detailed criteria: The difference between the highest and the lowest points of any four consecutive end-expiratory volume points is greater than 15% of the tidal volume.</p> <p><b>Solution:</b> Please instruct the patient to breathe steadily during tidal breathing phase.</p> <p><i>Remark: This message was introduced with EasyOne Connect version 3.9.2.4 and is only applicable for tests performed under Spirometry Standard 2019 settings.</i></p>
43		SVC	<p>Unable to detect steady tidal breathing and less than 10 tidal breaths were detected.</p> <p><b>Problem:</b> Unable to detect steady tidal breathing and less than 10 tidal breaths were detected.</p> <p><b>Solution:</b> Please instruct the patient to breathe steadily during tidal breathing phase or perform more tidal breaths.</p> <p><i>Remark: This message was introduced with EasyOne Connect version 3.9.2.4.</i></p>
44		SVC	<p>End of test criteria not met (plateau criteria or expiratory time <math>\geq</math> 15s)</p> <p><b>Problem:</b> Patient may not have exhaled completely according to the end of test criteria. Criteria details: Must have variations of volume during the last second <math>\leq</math> 25ml, or expiration time <math>\geq</math> 15s.</p> <p><b>Solution:</b> Please motivate the patient to exhale longer and force as much air as possible out of his or her lungs.</p> <p><i>Remark: This message was introduced with EasyOne Connect version 3.9.2.4.</i></p>
46		All	<p>Timeout identified</p> <p><b>Problem:</b> A timeout has occurred during the maneuver.</p> <p><b>Solution:</b> Please follow all test instructions.</p>







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No.	Action	Test Type	Description
47		All	Device error <b>Problem:</b> An unexpected device error occurred. <b>Solution:</b> Please check if sensor is connected correctly and repeat trial.
48		All	Invalid trial, please repeat trial <b>Problem:</b> Trial did not meet acceptability criteria <b>Solution:</b> Please repeat trial.
50		All	No error or warning, test is OK
51		All	Test started too early <b>Problem:</b> Early-Start detected. <b>Solution:</b> Wait until the instrument signals to start the test.
52		FVC, FVL, MVV, SVC	Unable to detect maneuver <b>Problem:</b> Unable to detect maneuver. <b>Solution:</b> Please retry maneuver and follow the instructions that are shown during the maneuver.
54		DLCO	Unable to get sampling volume – Please blow out longer <b>Problem:</b> Unable to get sampling volume. <b>Solution:</b> Ask patient to exhale enough volume after the breath hold.
55		DLCO	Incorrect test procedure <b>Problem:</b> Incorrect test procedure. <b>Solution:</b> Please retry maneuver and follow the instructions that are shown during the maneuver.
56		DLCO	Incorrect test procedure <b>Problem:</b> Incorrect test procedure. <b>Solution:</b> Please retry maneuver and follow the instructions that are shown during the maneuver.






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No.	Action	Test Type	Description
57		DLCO	<p>Unable to detect DLCO inspiration – Please follow test instructions</p> <p><b>Problem:</b> Unable to detect DLCO inspiration and to determine starting point of breath-hold time (Jones &amp; Mead).</p> <p><b>Solution:</b> Please retry maneuver and follow the instructions that are shown during the maneuver.</p>
59		DLCO	<p>Inspiratory CO concentration error</p> <p><b>Problem:</b> Unstable CO concentration during breath hold. Detailed criteria: CO not within +50..-800 ppm.</p> <p><b>Solution:</b> Please check for leaks (valves, patient mouth) and follow the instructions that are shown during the maneuver.</p>
60		DLCO	<p>Delay incorrectly determined</p> <p><b>Problem:</b> Side-stream time-delay incorrectly determined.</p> <p><b>Solution:</b> Please check complete gas connection and valve assembly, and that test is performed correctly.</p>
61		DLCO	<p>CO sensor calibration failed</p> <p><b>Problem:</b> CO sensor calibration failed.</p> <p><b>Solution:</b> Please check complete gas connection and valve assembly, and check for leaks.</p>
62		DLCO	<p>CO sensor is clipping</p> <p><b>Problem:</b> CO sensor is out of range (clipping).</p> <p><b>Solution:</b> Please check complete gas connection and valve assembly, and check for leaks.</p>
63		DLCO	<p>CO sensor 3-point cal error: S-Factor range</p> <p><b>Problem:</b> CO sensor 3-point calibration error (S-Factor range).</p> <p><b>Solution:</b> Please check complete gas connection and valve assembly, and check for leaks.</p>
64		DLCO	<p>CO sensor 3-point cal error: 3-point level out of range</p> <p><b>Problem:</b> CO sensor 3-point calibration error (3-point level out of range).</p> <p><b>Solution:</b> Please check complete gas connection and valve assembly, and check for leaks.</p>






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No.	Action	Test Type	Description
65		DLCO	<p>CO sensor 3-point cal error: sd of 3-point level out of range</p> <p><b>Problem:</b> CO sensor 3-point cal error (sd of 3-point level out of range).</p> <p><b>Solution:</b> Please check complete gas connection and valve assembly, and check for leaks.</p>
66		MBW	<p>No start of washout detected</p> <p><b>Problem:</b> No start of washout detected.</p> <p><b>Solution:</b> Please follow the instructions that are shown during the maneuver.</p> <p><i>Remark: This message only appears in EasyOne Connect versions before 2.1.0.9.</i></p>
67		MBW	<p>Check gas supply and breathe regularly</p> <p><b>Problem:</b> Side-stream time-delay incorrectly determined.</p> <p><b>Solution:</b> Please check complete gas connection and valve assembly, and that test is performed correctly (breathe regularly).</p>
68		MBW	<p>Not enough breaths for washout analysis</p> <p><b>Problem:</b> Not enough breaths for washout analysis detected.</p> <p><b>Solution:</b> Repeat the test without stopping it early.</p>
69		MBW	<p>Check gas supply and check for leaks</p> <p><b>Problem:</b> Leak or wrong test gas detected.</p> <p><b>Solution:</b> Check test gas, gas supply and check for leaks.</p> <p><i>Remark: This message only appears in EasyOne Connect versions before 2.1.0.9.</i></p>
70		MBW	<p>Check gas supply, check for leaks and breathe regularly</p> <p><b>Problem:</b> Unable to evaluate Multi-Breath-Washout.</p> <p><b>Solution:</b> Please breathe regularly. Check complete gas supply and check for leaks.</p> <p><i>Remark: This message only appears in EasyOne Connect versions before 2.1.0.9.</i></p>

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71		DLCO	<p>Allow device to warm up</p> <p><b>Problem:</b> CO sensor drift detected.</p> <p><b>Solution:</b> Allow the CO sensor to warm up. If error reappears, contact service.</p>
100		FVC/FVL	<p>BEV <math>\leq</math> 5% of FVC or 0.100L</p> <p><b>Problem:</b> Must have BEV <math>\leq</math> 5% of FVC or 0.100 L, whichever is greater</p> <p><b>Solution:</b> Take a deep breath to completely fill your lungs, then blast out as hard and fast as you can.</p> <p><i>Remark: This message is only applicable for tests performed under Spirometry Standard 2019 setting activated</i></p>
101		FVC/FVL	<p>Expiratory plateau</p> <p><b>Problem:</b> Expiratory plateau (<math>\leq</math> 0.025 L in the last 1 s of expiration)</p> <p><b>Solution:</b> Exhale longer until completely empty.</p> <p><i>Remark: This message is only applicable for tests performed under Spirometry Standard 2019 setting activated</i></p>
102		FVC/FVL	<p>Expiratory time</p> <p><b>Problem:</b> Expiratory time <math>\geq</math> 15 s</p> <p><b>Solution:</b> Exhale longer until completely empty.</p> <p><i>Remark: This message is only applicable for tests performed under Spirometry Standard 2019 setting activated</i></p>
103		FVC/FVL	<p>FIVC – FVC <math>\leq</math> 0.100 L or 5% of FVC</p> <p><b>Problem:</b> If the maximal inspiration (FIVC) after EOFE is greater than FVC, then FIVC-FVC must be <math>\leq</math> 0.100 L or 5% of FVC, whichever is greater</p> <p><b>Solution:</b> Take a deep breath to completely fill your lungs, then blast out as hard and fast as you can.</p> <p><i>Remark: This message is only applicable for tests performed under Spirometry Standard 2019 setting activated</i></p>

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No.	Action	Test Type	Description
104		SVC	<p>Unable to detect steady tidal breathing</p> <p><b>Problem:</b> The software was unable to detect steady tidal breathing. Detailed criteria: The difference between the highest and the lowest points of any four consecutive end-expiratory volume points is greater than 15% of the tidal volume.</p> <p><b>Solution:</b> Please instruct the patient to breathe steadily during tidal breathing phase.</p> <p><i>Remark: This message was introduced with EasyOne Connect version 3.9.0.10.</i></p>
105		SVC	<p>Unable to detect steady tidal breathing and less than 10 tidal breaths were detected.</p> <p><b>Problem:</b> Unable to detect steady tidal breathing and less than 10 tidal breaths were detected.</p> <p><b>Solution:</b> Please instruct the patient to breathe steadily during tidal breathing phase or perform more tidal breaths.</p> <p><i>Remark: This message was introduced with EasyOne Connect version 3.9.0.10.</i></p>
106		SVC	<p>End of test criteria not met (plateau criteria or expiratory time <math>\geq</math> 15s)</p> <p><b>Problem:</b> Patient may not have exhaled completely according to the end of test criteria. Criteria details: Must have variations of volume during the last second <math>\leq</math> 25ml, or expiration time <math>\geq</math> 15s.</p> <p><b>Solution:</b> Please motivate the patient to exhale longer and force as much air as possible out of his or her lungs.</p> <p><i>Remark: This message was introduced with EasyOne Connect version 3.9.0.10.</i></p>
107		FVC/FVL	<p>Exhale longer until completely empty.</p> <p><b>Problem:</b> FET <math>&gt;</math> 1 s.</p> <p><b>Solution:</b> Exhale longer until completely empty.</p>
108		FVC/FVL	<p>Exhale longer until completely empty.</p> <p><b>Problem:</b> FET <math>&gt;</math> 0.75 s.</p> <p><b>Solution:</b> Exhale longer until completely empty.</p>