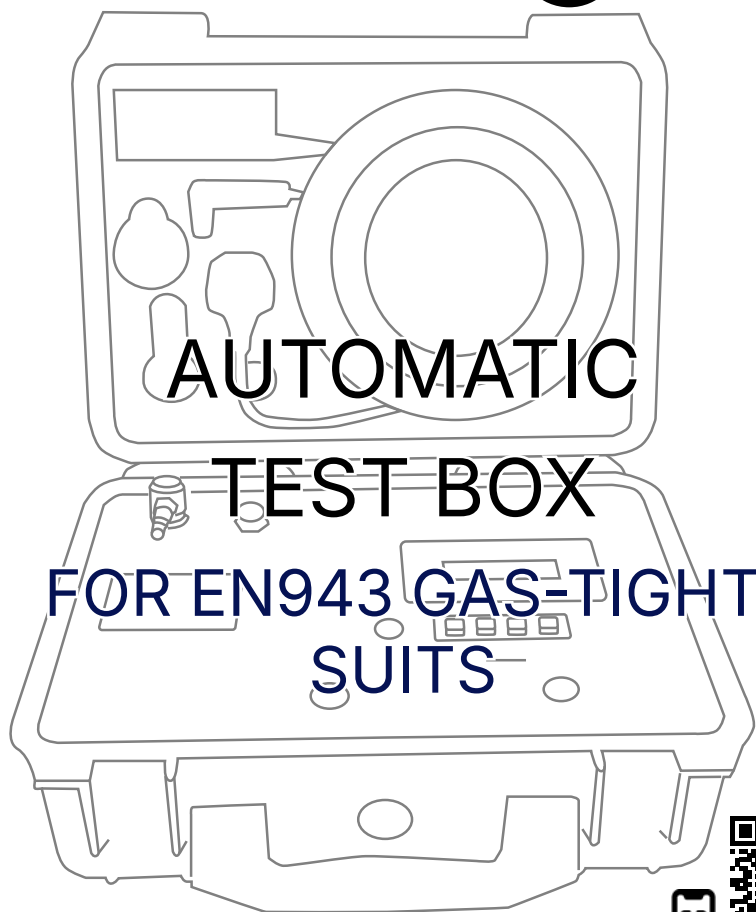




INSTRUCTIONS FOR USE

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General Information

The Respirex automatic test box is designed to perform a gas-tight suit pressure test according to the procedure specified in ISO 17491-1:2012, Method A2. The test process is fully automatic, so once the test is started the user is free to undertake other activities. The test box continually monitors and adjusts the pressure in the suit during a test, preventing accidental over-pressurisation, which could damage the suit.

During a test the test box will display the current test stage, the pressure in the suit, the ambient temperature and the elapsed time in the current stage, along with the test number. The test stages are 'Fill', 'Settling', and 'Test'; the time taken to fill the suit with air will be determined by the size of the suit and the inlet air pressure, the settling stage takes 10 minutes and the test stage takes 6 minutes. If the suit does not inflate to the settling pressure after 15 minutes, the test box will indicate that there is a problem.

Specifications

Input voltage (Power supply):	110-240 VAC
Inlet Air Pressure:	1 - 3.5 Bar / 15-51 PSI (Maximum)
Inlet Coupling:	CJEN Plug (Standard), other coupling supplied on request.

Test Box Contents:

- 3x Suit bungs to block exhalation valves
- 1x Suit inflation hose with separate exhalation valve test plug
- 1x Multi-region power adapter with UK, EU and US power leads

All declarations of conformity: <http://www.respirex.co.uk/doc>

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Initial Set-up

Connect the test box power supply cable to the test box, and plug the power supply into a mains voltage electrical socket using the appropriate power cable for your region, ensuring the socket is turned on, then turn on the test box using the black rocker switch on the front panel (marked ).

When you first power up the test box you will need to set the date and time before you can conduct a test; to set the date and time follow the instructions below:

Press ➡ This will take you to the screen to set the date and time

Press ➡ This will move the cursor to the first digit of the date

Press ⬆ or ⬇ to adjust the value up or down, press ⬅ or ➡ to move the cursor left or right

Once the time and date are correct move the cursor so that it is under CONFIRM and press ⬆ to accept

The menu will now change to INSERT AN SD CARD TO TRANSFER TEST DATA you can now turn the test box off and then on again to go back to the start screen. Alternatively you can press ⬅ to move the cursor to CANCEL and press ⬆ - you will need to do this four times (to skip the next four menus) to return to the start screen.

Performing a Test

1. Lay the suit to be tested out as flat as possible, away from any source of heat and/or currents of air. Seal all but one of the exhalation valves with the rubber bungs provided. Visually inspect the suit and remove any creases and folds as far as is practicable. Leave the suit at ambient temperature ($20^{\circ}\text{C} \pm 5^{\circ}\text{C}$) for minimum of 1 hour.
2. Connect the test box power supply cable to the test box, and plug the power supply into a mains voltage electrical socket using the appropriate power cable for your region, ensuring the socket is turned on
3. Connect the spiral wrapped suit inflation hose fitted with the exhalation valve test plug to the test box outlet coupling, marked with the suit icon (see below)
4. Connect a suitable compressed air source providing air at a minimum of 15 PSI (1.03 bar) and a maximum of 51 PSI (3.5 bar) to the inlet coupling (this is fitted with the airline coupling specified when the box is ordered).
5. Using a 2mm hexagon key, loosen the screw from the centre of the exhalation valve that has not been sealed with a bung and remove the cap.
6. Carefully stretch the diaphragm over the centre spigot to remove from the exhalation valve body.
7. Push the exhalation valve test plug into the exhalation valve body until sealed
8. Turn on the test box using the black rocker switch on the front panel (marked ). If this is the first time you have used the box you will need to set the date and time - see initial setup instructions below
9. Press the start/stop test button on the front panel (marked ) to start the test - you can cancel a test at any time by pressing this button again
10. The test box will now inflate the suit to 1750 Pa and then let it settle for 10 minutes, maintaining the pressure at 1750 Pa. After 10 minutes the test box will reduce the pressure in the suit to 1650 Pa and monitor the suit for 6 minutes (without adding any air). For a suit to pass the test the pressure drop in the suit must not be more than 300 Pa or 18% (e.g. the final pressure must be ≥ 1350 Pa).
11. At the end of the test the final pressure reading and temperature will be displayed together with Passed or Failed and either a Red or Green status LED

After completing the test

1. Remove the exhalation valve test plug from the exhalation valve
2. Carefully stretch the diaphragm over the centre spigot making sure that it is correctly orientated and that the hole in the diaphragm is located under the shoulder of the spigot.
3. Replace the exhalation valve cap making sure that the location channel on the cap is located over the location key on the exhalation valve body (the RESPIREX lettering should be at the top when the suit is worn).
4. Remove the other exhalation valve bung(s)
- 5.

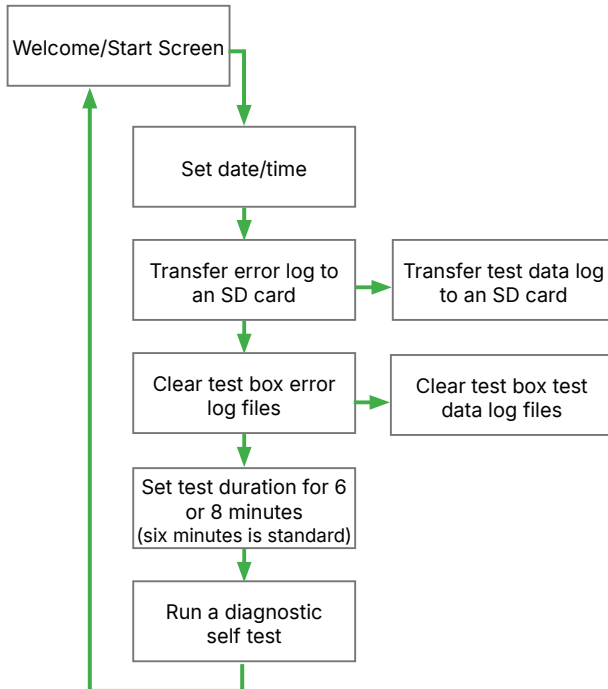
Note

Testing should be conducted in a room with a stable ambient temperature of $20^{\circ}\text{C} (\pm 5^{\circ}\text{C})$ / $68^{\circ}\text{F} (\pm 9^{\circ}\text{F})$. The automatic test box includes an ambient temperature display in degrees Celsius for this reason. Variations in temperature during the test can negatively affect the result.

Test Box Menus

The test box has a simple menu system for configuration and backup. At the welcome screen press → to enter the configuration menu. The first screen is to set the date and time (see initial set-up for how to set this), to move to the next screen Press ↑ when the cursor is on either CONFIRM or CANCEL.

At each following menu you either need to select CONFIRM (which will start the selected action), or CANCEL, to advance to the next menu option. Each choice is selected by moving the cursor using ← or → and pressing ↑ when the action is underlined.



Downloading Test Data

The automatic test box records the details of each test it performs, logging the date, time, pass or fail result, the pressure at the end of the test and the test number (which is also displayed during the test). This data can be transferred to an SD card (max 64GB) if required, as can an error log. To transfer this data put an SD card into the slot in the test box front panel, then press → to enter the configuration menu. Now press

At the welcome screen press → to enter the configuration menu. Now press ↑ (CONFIRM) to go to the Transfer sub menu. The screen will either display 'Transfer test data test_data.csv' or 'Transfer test data error_log.csv' depending on the last option chosen. If it is currently set to transfer error_log.csv and you want to download the test data press → to move to the file name and ↓ to change to test_data.csv (or vice versa). You can now press ← to move back to CONFIRM and then press ↑ to start the transfer.

Other Menu Options

Clear Data Log Files

If you want to delete the test or error log files, select this menu option then use the right arrow key to move the cursor to the Test or error data and the down arrow to swap between the two options. Press the left arrow key to move back to confirm and then the up arrow to delete the selected file

Set Test Duration

The test box gives the option to extend that standard test period from 6 minutes to 8 minutes. This is a more demanding test and is used by Respirex for production testing, but is not usually required for ongoing suit performance tests.

Diagnostic Self Test

This option runs through a sequence of tests to check the function of the test box; if you experience any problems with the operation of your test box our service engineer may ask you to run this test, but it is not needed for daily use of the test box.

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