USINE À SOLUTIONS

FORCETEST TRACTION-PRESSION

User's manual

Translated from french

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1 General information

1.1 Warranty

VOH Ltd guarantees this product against any faulty manufacture or material in normal conditions of use and service, for one year from the commissioning at the client's place of business. If at any time during the length of the warranty, the product shall be deemed faulty or break down, VOH Ltd. shall repair or replace it (choice to be made by VOH Ltd.).
If the product is defective, please call the customer service of VOH on +41(32) 945 17 45.
Said warranty shall not apply if VOH Ltd proves that the fault or failure arises from damages which occurred while the product was in the possession of a buyer.
VOH Ltd.'s responsibility is limited to the repair or replacement of the product under the conditions listed hereabove.
VOH LTD. SHALL NOT BE RESPONSIBLE FOR LOSS OR ANY DAMAGES WHATSOEVER, INCLUDING CONSECUTIVE OR ACCESSORY DAMAGES, ARISING DIRECTLY OR INDIRECTLY FROM AN EXPLICIT OR IMPLICIT VIOLATION OF THE WARRANTY, OR FROM ANY OTHER FAULT OF THIS PRODUCT. THIS WARRANTY IS THE ONLY EXPLICIT WARRANTY THAT VOH GRANTS ON THIS PRODUCT.
This warranty only covers the initial buyer and is not transferable.
Should you have questions concerning this warranty, please write to VOH Ltd.:

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1.2 Safety information

Warning

- Do not use the Forcetest Traction-Pression if it is damaged. Before using the Forcetest Traction-Pression, inspect its casing and its electrical connections.
- The Forcetest Traction-Pression must be used in the way specified by the manufacturer.
- Do not use the Forcetest Traction-Pression near dust.
- The Forcetest Traction-Pression must only be used by people who have been trained to do so.

Beware!!!

- Please read the information included in this manual before using this apparatus. Incorrect use may damage the system or cause measurement errors.
- Before connecting the machine for the first time, verify that the supply voltage of the power grid corresponds to that required by the machine.
- In case of prolonged non-use, disconnect the electrical supply cable.
- Do not dismantle the machine. Only the manufacturer is entitled to replace or repair a faulty component.
- Use this machine at a temperature between 10°C and 40°C (140 °F)
- Never place objects other than watch cases on the device.

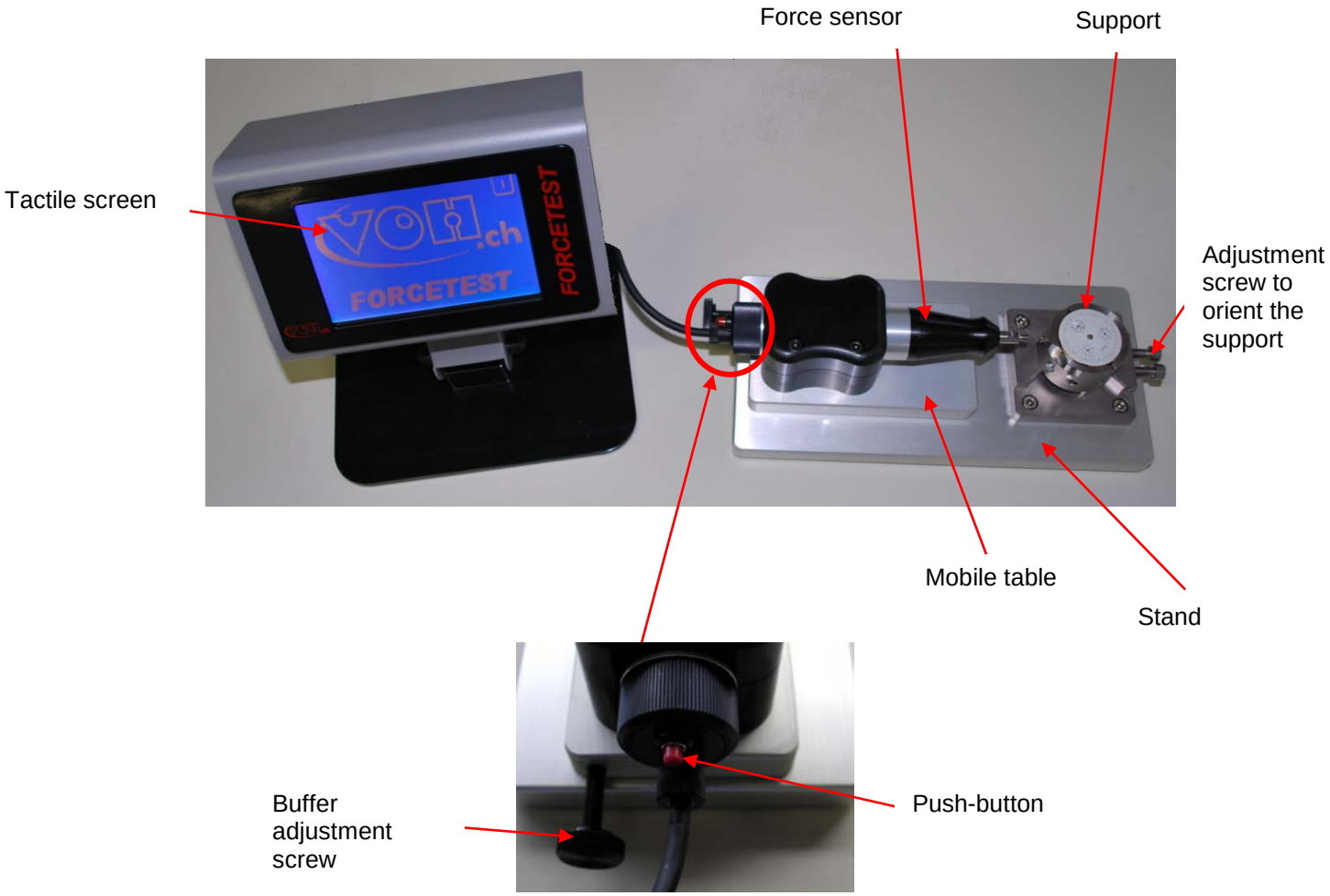
1.3 Transportation

If the apparatus is moved, take care not to cause any shocks that could damage its mechanisms. In case of transport over a long distance, it is preferable to use anti-shock packaging.

1.4 Storage

The Forcetest Traction-Pression must be stored in a dry and dust-free place. Storage temperature must be between 10°C and 40°C. It is advisable to wrap up the machine to protect it from dust and humidity.

2 Parts of the machine



The machine comprises a stand and a tactile screen. The stand holds a mobile table allowing the sensor to be manually brought close to the object to be tested. The adjustable buffer serves to limit the motion of the sensor towards the movement in order not to distort the measurement (thus avoiding moving beyond what is necessary to operate the movement push-button). The force sensor allows the measurement of positive and negative forces.

The support can move freely when in rotation, allowing the various buttons of the movement to be tested. The support orientation adjustment screws nevertheless allow rotation to be limited.

The red push-button on the sensor allows the value displayed on the tactile screen to be reset, or switching between the 4 programmed tolerances (see chap. 3 Operation)

Back of the tactile screen:

Remark: *Ii is possible to connect a printer to the machine in order to print results.*

3 Operation

3.1 Principle

The Forcetest Traction-Pression allows measurement of the force required to operate the push-buttons on a watch. It also allows measurement of the force required to pull out or push in the winding- and setting-stem of the watch. It is also possible to use it for other force measurement tasks, provided a correct support is used.

The machine comprises a support to hold the movement to be tested, a sensor and a tactile screen to read the measurement and to programme various tests.

There are two measurement modes:

- Production mode
- Control mode

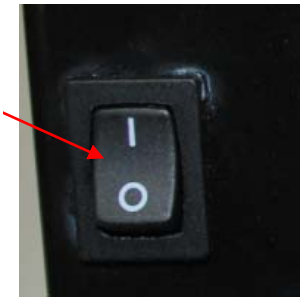
Remark: *These two modes may be selected on the menu page (cf. chap 5.1 Tactile screen).*

In **production mode**, reset of the value displayed on the screen is automatic after every measurement. The red push-button on the sensor permits switches between the 4 programmed tolerance values.
In **control mode**, resetting is done by pressing either on the red push-button on the sensor or on the reset button on the tactile screen (on the user page). To pass from one tolerance value to another, select it on the tactile screen.

3.2 Starting/stopping

The Forcetest Traction-Pression is powered by 24VDC. It is turned on and off by operating the switch behind the tactile screen.

ON/OFF switch
behind the screen



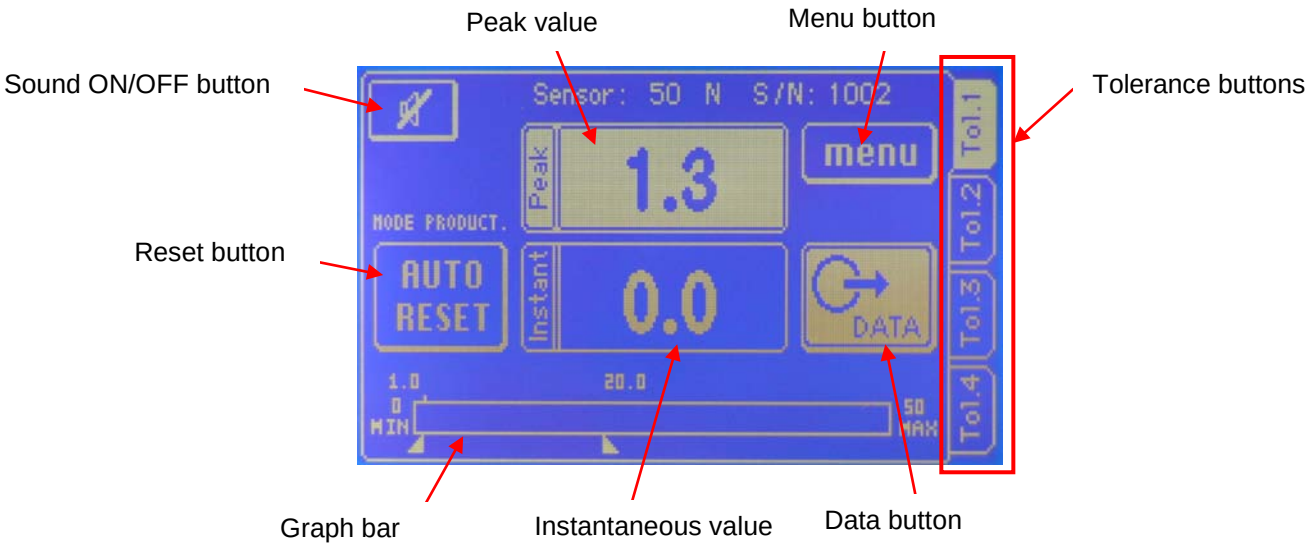
4 Use

4.1 Tactile screen

When the Forcetest Traction-Pression is turned on, the home page appears:

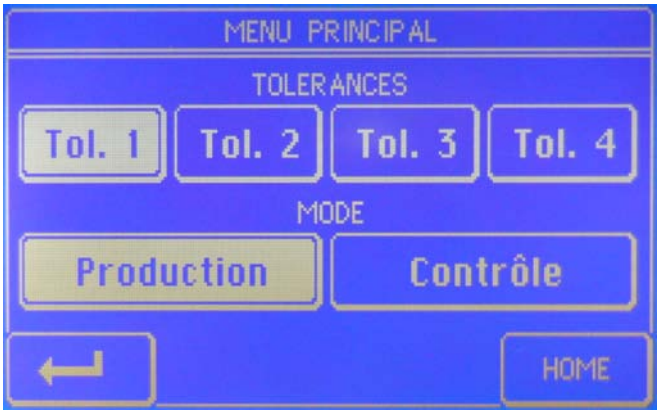
After pressing the *i* in the upper right-hand corner of the home page, the screen will display various information, such as series number, software versions, VOH contact. The page gives access to the customer service mode, only accessible to VOH staff.

Pressing the center of the screen brings you back to the home page. From the home page, pressing the center of the screen displays the user page:



Sound ON/OFF button:	Allows the sound beeps to be activated or not when reaching max. or min. tolerance values.
Reset button:	Allows the peak value to be reset.
Menu button:	Gives access to the tolerance setting page.
Tolerance buttons 1-4:	Allow switches between the 4 programmed tolerance ranges.
Data button:	Allows the result to be printed when a printer is connected.
Peak value:	Max. value detected during a measurement.
Instantaneous value:	Instantaneous value read by the sensor.
Graph bar:	Represents the instantaneous value.

When the *menu* button is pressed on the user page, the menu page is displayed:



This page allows the 4 tolerance ranges to be programmed. Each tolerance range is defined by two values (min and max). Two modes of operation may also be chosen for the machine: **production mode** and **control mode**.

Tol.1–4 buttons: Allow the 4 min and max. tolerance values to be programmed.

Production button: Activates production mode.

Control button: Activates control mode.

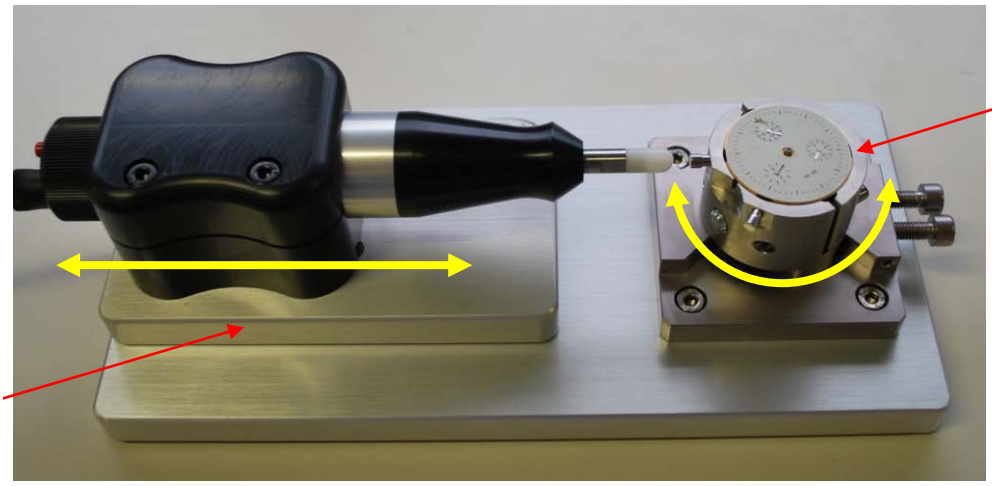
HOME button: Return to the home page.

↵ **button:** Return to the user page.

If one of the 4 Tol. buttons is pressed, the selected tolerance programming page will be displayed:

To modify a value, just select it and enter the desired value.

4.2 Stand

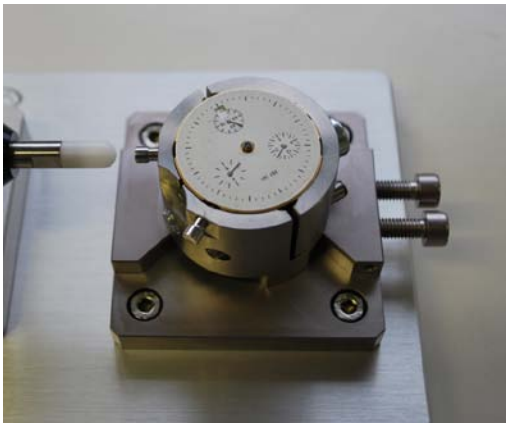


The mobile table moves manually. The support is also oriented manually, according to the element to be tested.

4.3 Example of a measurement

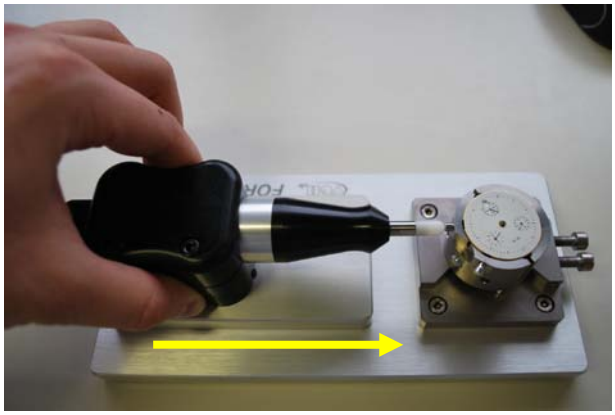
Aim: To measure the force needed to press the push-button of a movement.

1. Place the movement in the corresponding support (cf. chap. 6.3 Fixing a movement)
2. Place the support and its movement on the stand



3. Adjust the mobile table buffer in such a way that the movement's push button is just pressed (cf. chap 6.1 Mobile table buffer).
4. Adjust the support rotation locking screws (cf. chap 6.2 Support rotation).
5. Turn on the Forcetest.
6. Move the mobile table and activate the movement's push-button by pressing with the sensor.

7.

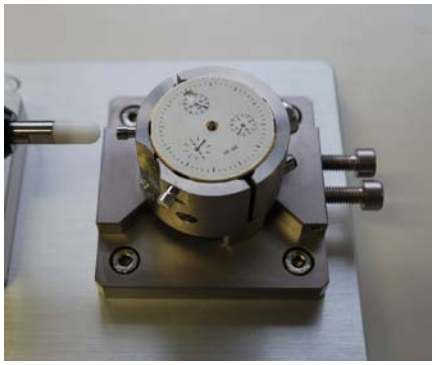


8. Note the measured value

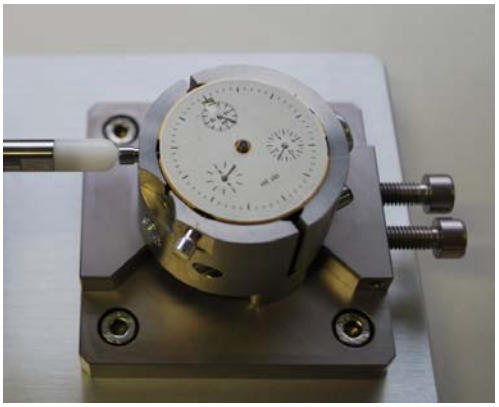
5 Adjustments

5.1 Mobile table buffer

1. Place the movement and its support on the stand.



2. Move the mobile table and rest the tip of the sensor against a push-button.

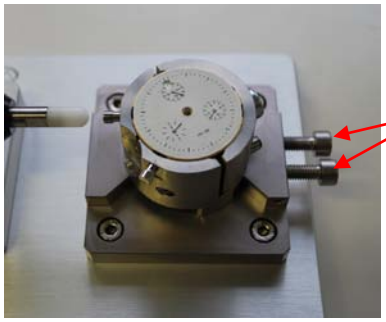


3. Turn the knob in order to adjust the buffer in such a way as to stop the movement of the table right after activating the movement's push-button.

Buffer adjustment screw

5.2 Support rotation

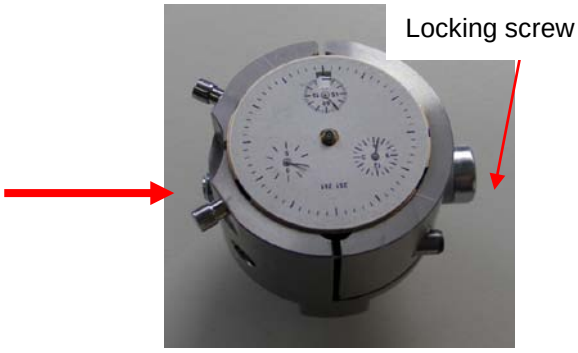
1. Place the movement and its support on the stand



2. Adjust the buffers in such a way as to stop rotation of the support when the push-buttons are facing the tip of the sensor.

5.3 Fixing a movement

1. Place the movement in its support.



2. Squeeze the movement by turning the locking screw.

5.4 Changing a tip

According to the type of object to be measured, the bit of the sensor tip must be changed:

1. Unscrew the bit

2. Screw on the new bit

6 Equipment provided with the Forcetest Traction-Pression

The following equipment is provided with the Forcetest Traction-Pression:

- 1 tactile screen
- 1 sensor
- 1 stand

The various bits and supports should be ordered separately.

7 Representation/distribution

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