



Natator 125

Seiler



Stand-alone water-resistance testing device

Operating instructions

Version 1.2, 19 October 2009 - EN



Instruction

This document must be retained for future reference.



Attention

Before any use of the device, each user must have read the operating instructions and must pay particular attention to the safety instructions.

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1 General points

1.1 Identification

1.1.1 Document

Name :..... Operating instructions
Subject :..... Natator 125
Language :..... EN

Version history			
Version	Date	Description	Checked by
1.0	9 November 2007	First edition	C.Paroz
1.1	7 March 2008	Tank capacity modified	C.Paroz
1.2	19 October 2009	Tank modified	C.Paroz

Table 1 - 1

1.1.2 Device

Device name :..... Natator 125
Device number :..... -
Year :..... 2007
Manufacturer :..... ROXER SA

1.1.3 Copyright

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Printed in Switzerland

1.2 General information

This document has been written based on information available at the time of its publication. Nevertheless, ROXER SA accepts no responsibility in case of errors or omissions.

The reference version is written in the French language.

Information contained in the current manual is the property of ROXER SA; it has been provided for internal use by operators and is not intended for any other use; its transmission to third parties as well as its reproduction is forbidden.

1.2.1 Conformity with standards and directives

The “CE” marking indicates that this product conforms to all European requirements in respect of safety, health, the environment and protection of the user.



See the declaration of conformity on page 28.

1.2.2 Usage specifications

The indications given in these operating instructions must be observed, in particular the safety instructions.

Use of the device implies obligatory adherence to the following usage specifications:



Instruction

Read and observe the operating instructions supplied with the device. Only persons who have read and understood these instructions may use the device.



Warning

Access to protected elements requiring use of dismantling tools is only permitted to competent specialists who have been designated by the manufacturer.

1.2.3 Limitation of liability

ROXER SA accepts no responsibility for damages or losses:

- Resulting from the specifications given in this document not having been observed;
- Resulting from modifications made to mechanical elements, control or safety circuits without its agreement;
- Resulting from the use of the device without its protective equipment.

1.3 Procedure for requesting technical service

For any requests for technical service:

- A.** Collect any information from the identification plate.
- B.** Clearly identify the suspected fault.
- C.** Contact Roxer:

ROXER SA
Rue du collège 92
CH-2300 La Chaux-de-Fonds
Tél. +41 (0)32 967 86 86
Fax +41 (0)32 967 86 87



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2 Safety instructions

All protection and safety instructions given in this document, must be adhered to in order to avoid injuries, material damage or pollution.

At the same time, any other legal regulations, accident prevention and environmental protection measures, as well as any recognized technical regulations relating to appropriate and risk-free methods of working which apply in the country and place of use of the machine must be adhered to.

2.1 Definition of icons used

2.1.1 Danger

Used to designate an imminent dangerous situation which, if not avoided, could lead to death or serious injury.



Danger
Danger text.

2.1.2 Attention

Used to designate a potentially dangerous situation which, if not avoided, could lead to non-serious injuries.



Attention
Attention text.

2.1.3 Warning

Used to designate a potentially dangerous situation which, if not avoided, could lead to material damage.



Warning
Information text.

2.1.4 Restriction



Restriction
Restriction text.

2.1.5 Instruction



Instruction
Instruction text.

2.2 Potential and residual risks

2.2.1 General points

Potential and residual risks may be encountered in the system and its attached elements.

2.2.2 Risks arising from pressurized elements

During its operation, the device is subject to a considerable internal pressure.



Attention
Do not try to open the lid (1) when the tank is pressurized! Always completely reduce the tank pressure before opening.



Attention
Do not press the purge push-button (2) while the tank is pressurized!



Attention
Do not unscrew the tank purge connection (3) while the tank is pressurized!

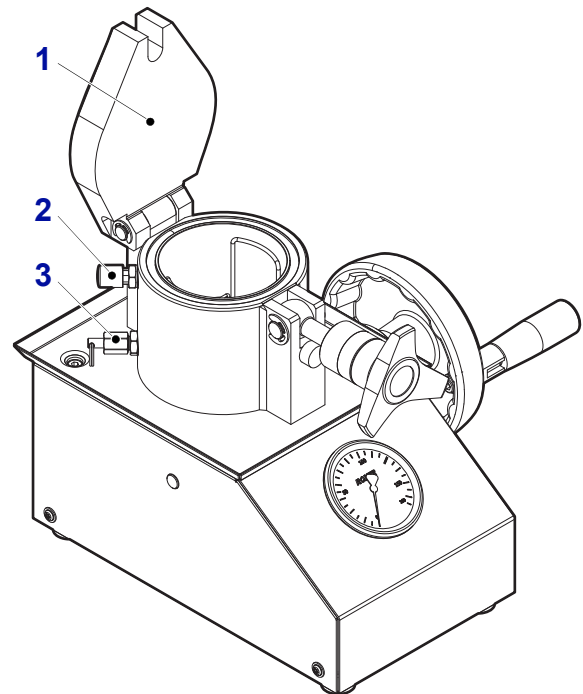


Figure 2-1

2.2.3 Mechanical risks

When closing the lid, there is a risk that your fingers can be pinched.



Attention, risk of pinching
Do not leave your fingers around the lid (1) when closing!

3 Description

3.1 General points

The Natator 125 is stand-alone, water-resistance testing device for watches. It permits creation of a pressure between 0 and 125 bar in the interior of a tank filled with water in which the watch under test is placed.



The device does not require any electrical power supply.

3.2 Technical specification

Pressure range	:.....0 to 125 bar
Tank height (int.)	:.....65 mm
Tank diameter (int.)	:.....80 mm
Tank capacity	:.....0.33l
Dimensions l/w/h	:.....306/325/355 mm
Weight	:.....11.9 kg

3.3 General description

- (1) Watch loading basket
- (2) Lid
- (3) Locking handle for closing the lid
- (4) Pressure gauge
- (5) Purge push-button
- (6) Tank purge connection
- (7) Dropping cup purge valve
- (8) Pressurization tank
- (9) Dropping cup
- (10) Hand wheel for increasing the pressure (and reducing the pressure)
- (11) Hand wheel (10) notched ring
- (12) Displaceable handle of the hand wheel (10)

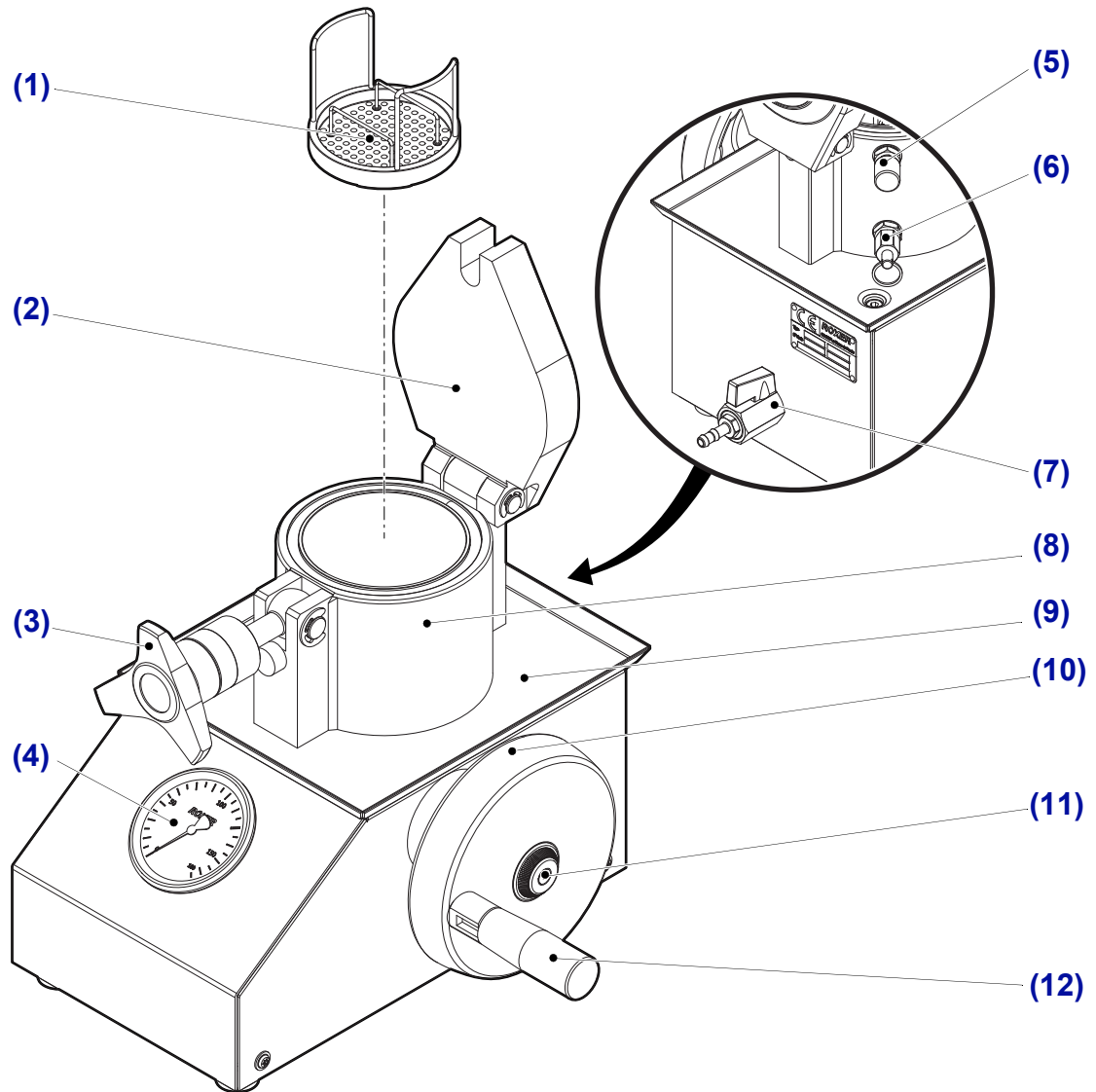


Figure 3-1

3.4 Operating principle

The watch under test is placed in the tank which has been filled with water (2). Once the lid (1) is closed, the pressure can be progressively increased by turning the hand wheel (4). The tank's internal pressure is indicated by the pressure gauge (3).

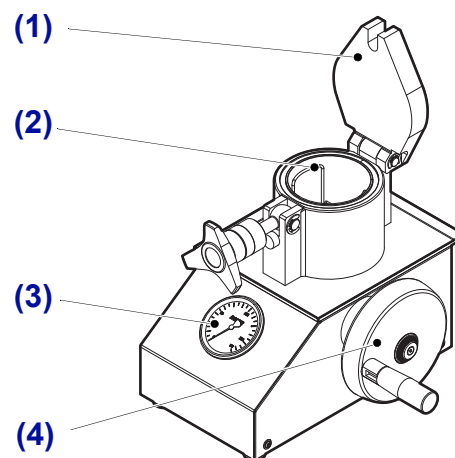


Figure 3-2



Warning

The tank pressure can be increased up to a value which could destroy the watch!



Attention

Using the hand wheel it is possible to obtain a pressure greater than 125 bar. Never exceed this value (risk of damage to the mechanical elements of the Natator 125).



Warning

Roxer does not guarantee the correct functioning of the device if the maximum pressure (125 bar) has been exceeded.

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4 Installation

4.1 Parts supplied

- Natator 125 device;
- Watch loading basket (contained within the tank when delivered);
- Dropping cup purging tube;
- This current operating instructions.

4.2 Usage environment

The Natator 125 must be placed in an environment meeting the following requirements:

- Dry and clean area (max. 60% humidity);
- Stable temperature (between 20°C and 30°C);
- Do not expose the Natator 125 directly to the sun's rays;
- Clean, stable and horizontal work surface.



See the installation drawing on page 29.

4.3 Before first use

4.3.1 Connection of the tube for purging the device

- A. Connect the purging tube (2) to the dropping cup purge valve (1).
- B. Connect the other side to a water evacuation system of your choice (3).
- C. Open the valve (1).

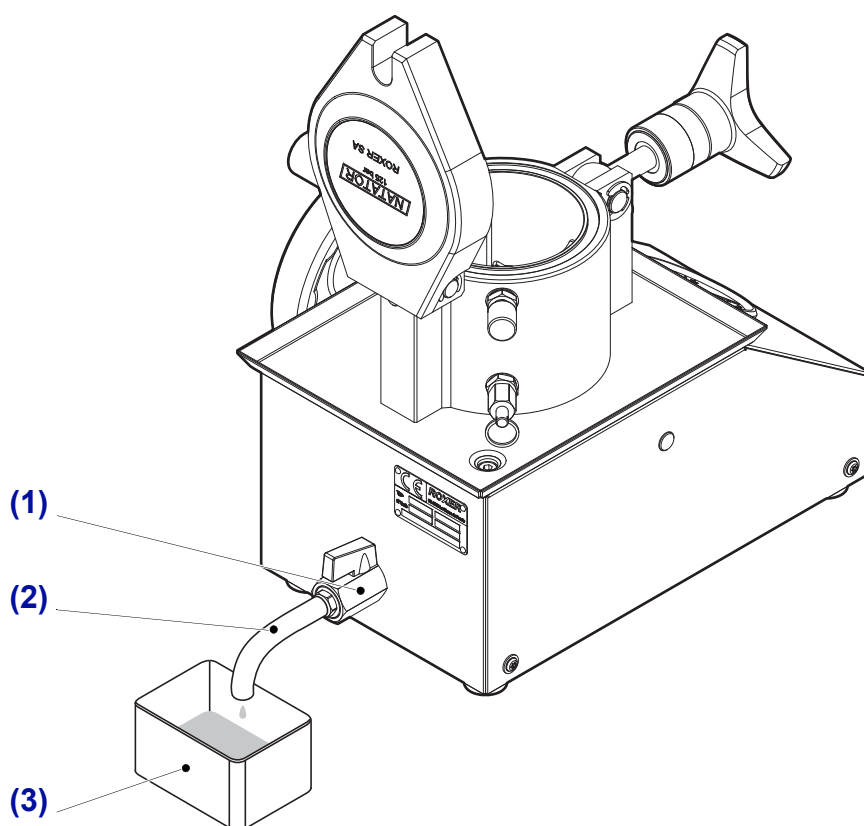


Figure 4-1

4.3.2 Purge

Before first use, it is **imperative** to carry out a device purge. This operation permits removal of any residual air within internal piping.

i *When delivered, the hand wheel is screwed fully home and the notched ring is positioned to reduce the pressure.*

- A. Open the lid (1).
- B. Fill the tank with water (2).

! **Instruction**
Do not close the lid.

- C. Unscrew (6) the hand wheel (4) as far as it will go.

i *To unscrew the hand wheel, the notched ring must first be turned in a clockwise direction (7).*

! **Warning**
Do not force the hand wheel once it is fully screwed out! Risk of severely damaging the device.

- D. Screw in (5) the hand wheel (4) as far as it will go. Check that there are no air bubbles in the tank (3).

i *To screw in the hand wheel, the notched ring must first be turned in a counter-clockwise direction (8).*

- E. If bubbles appear, restart at point C. until they have completely disappeared.

i *If problems occur, screw in the hand wheel as far as it will go, empty the tank and restart the operation at point A. To empty the water out of the tank, follow the procedure on page 24.*

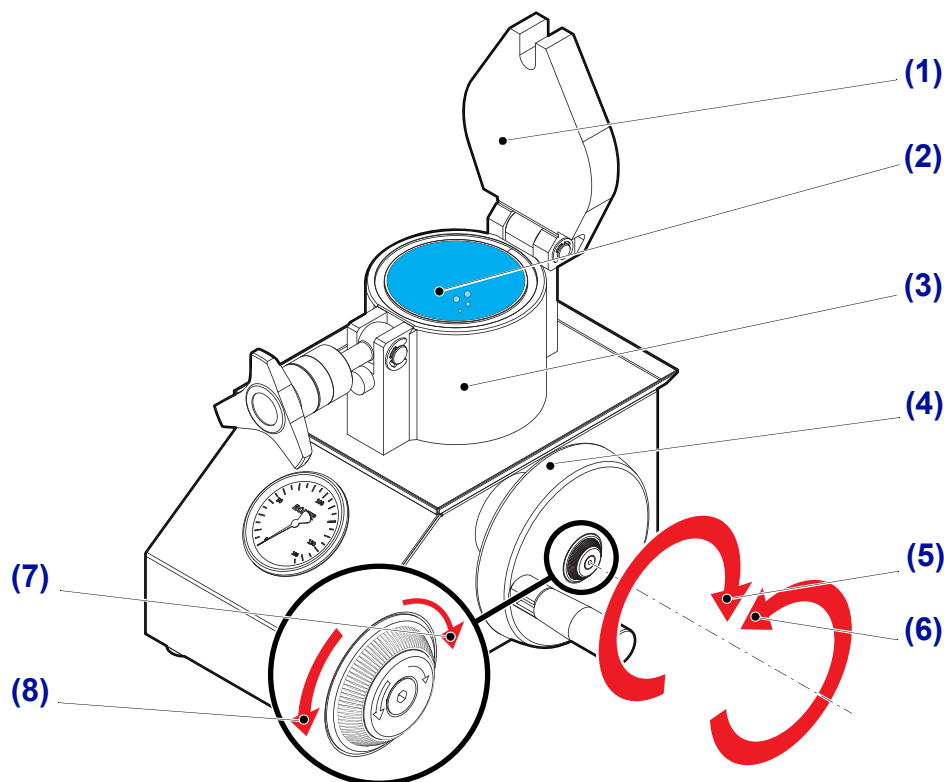


Figure 4-2



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5 Use

To test a watch using the Natator 125, carry out the following operations:

5.1 Initial operations

- A. Ensure that the hand wheel (5) is completely unscrewed (6).
- B. Place a watch (1) in the basket (2) and insert in the tank (3).
- C. Adjust the water level until the tank (3) floods.

Ensure the water spills over slightly to make sure the tank is completely full (the dropping cup ensures any excess water is caught (4)).

Use demineralised water to ensure no marks are left on the watch after testing.

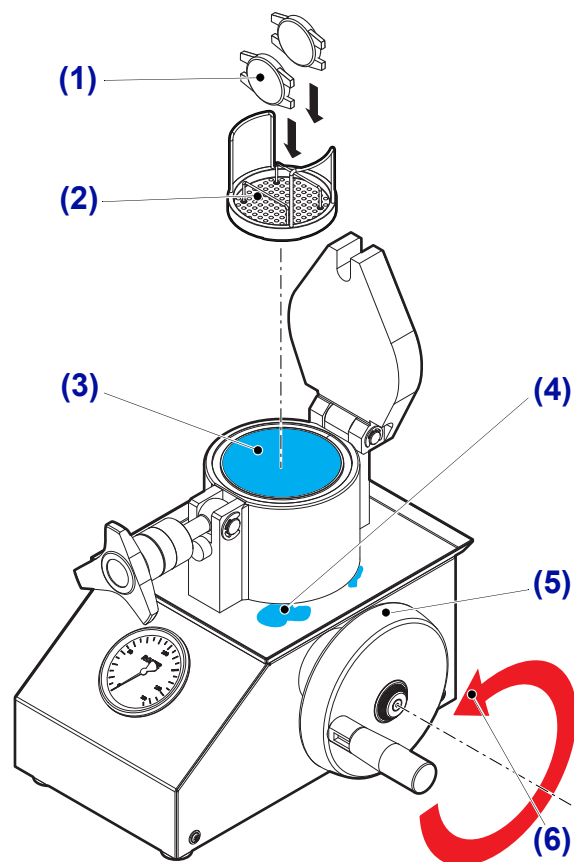


Figure 5-1



Warning

Do not force the hand wheel once it is fully screwed out ! Risk of severely damaging the device.

- D. Close the lid (7), pivot and screw in the locking handle (8) while pressing the purge push-button (9).

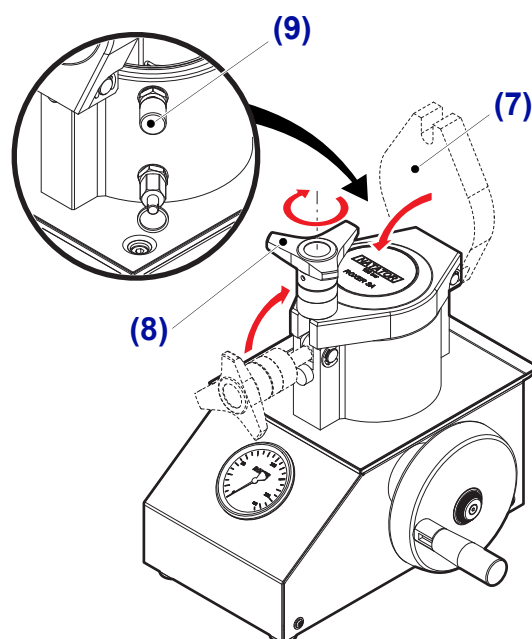


Figure 5-2

5.2 Increasing the pressure

- A. Turn the notched ring (2) in a counter-clockwise direction until it "clicks".
- B. Turn the hand wheel (3) in a **clockwise direction** to increase the pressure to the required value (1).

i The test can be carried out at any value between 0 and 125 bar. It is not necessary to increase the pressure up to the maximum device pressure.

i If the required pressure is not reached, decrease the pressure down to zero and repeat the purge of the tank as explained on page 17.

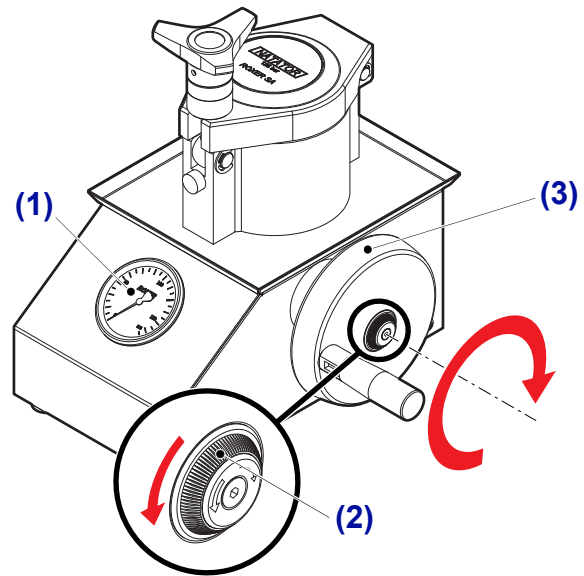


Figure 5-3



Attention

Using the hand wheel you can obtain a pressure greater than 125 bar. Never exceed this value (risk of damage to the mechanical elements).



Warning

Roxer does not guarantee the correct functioning of the device if the maximum pressure (125 bar) has been exceeded.

i If the force to be applied to the hand wheel is too great, the handle (5) can be positioned as indicated (4) in the adjoining figure. The pressure can then be increased or reduced by back and forth motion.

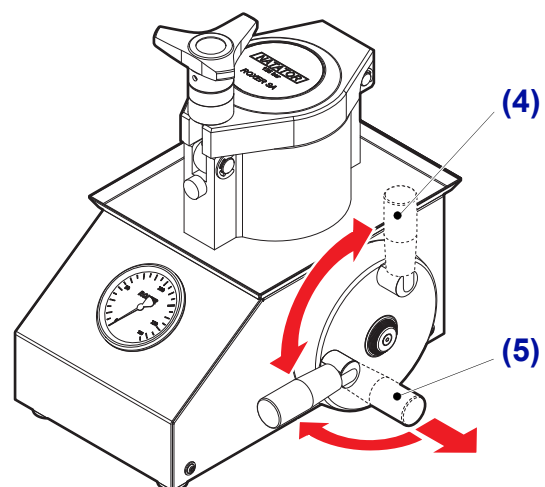


Figure 5-4



Warning

Do not force the hand wheel once it is fully screwed out! Risk of severely damaging the device.

5.3 Reducing the pressure

- A. Turn the notched ring (1) in a clockwise direction until it “clicks”.
- B. Turn the hand wheel (2) in a **counter-clockwise direction** as indicated in the adjoining figure to reduce the pressure in the tank.

If the force needed to turn the hand wheel is too great, change the position of the handle as illustrated Figure 5-4, p. 20.

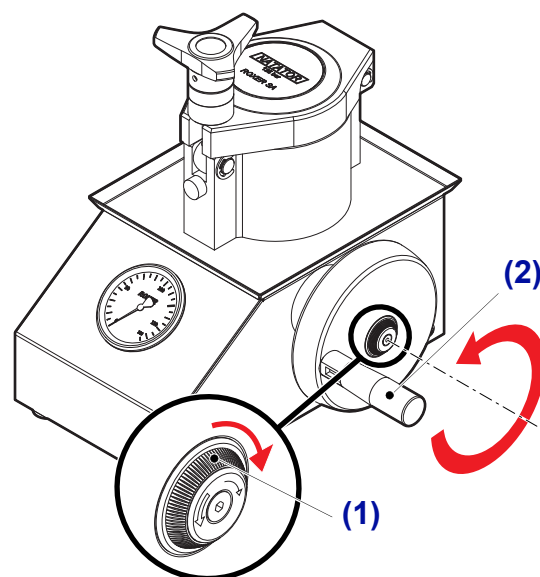


Figure 5-5

- C. Continue to turn the hand wheel until the pressure gauge (7) indicates **0 bar**.
- D. Unscrew and pivot the locking handle (6) then open the lid (8).



Attention
Ensure the pressure is reduced to zero before opening the lid.

If the lid resists, press the purge push-button (5).

- E. Remove the basket (4).
- F. Withdraw the watch (3).

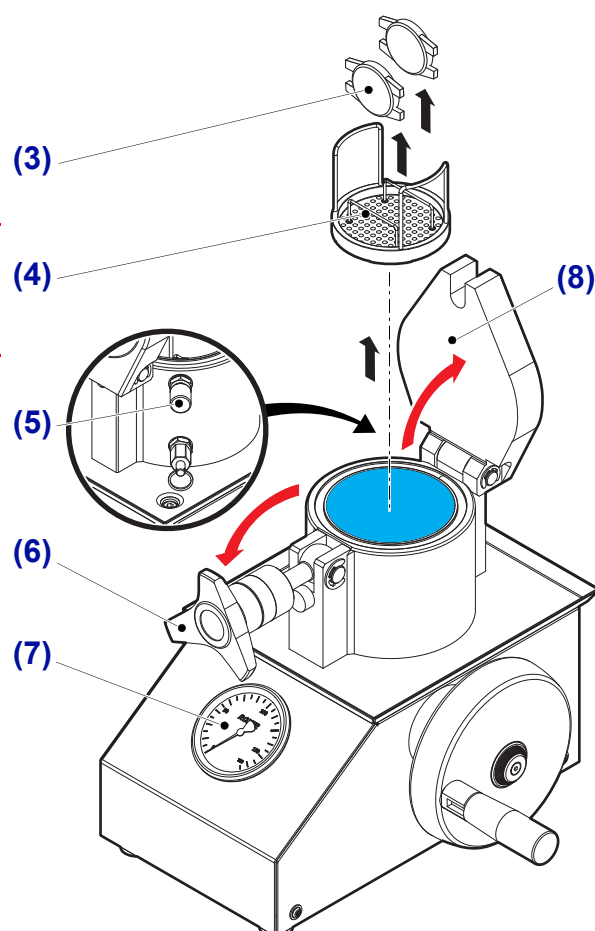


Figure 5-6



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6 Maintenance

6.1 Cleaning

The Natator 125 can be cleaned using alcohol and a soft cloth. Certain greasy deposits can accumulate on the tank seal. It requires regular cleaning.

6.2 Replacement of the tank seal

**Instruction**

Regularly check the condition of the seal. If it is deteriorated, replace and carry out the following procedure.

- A. Disengage the seal (1) using a blower (2).

**Warning**

Do not use a solid object to extract the seal (1).

- B. Clean the seal recess (groove) using industrial alcohol and a blower.
- C. Place the new seal in the groove (3).

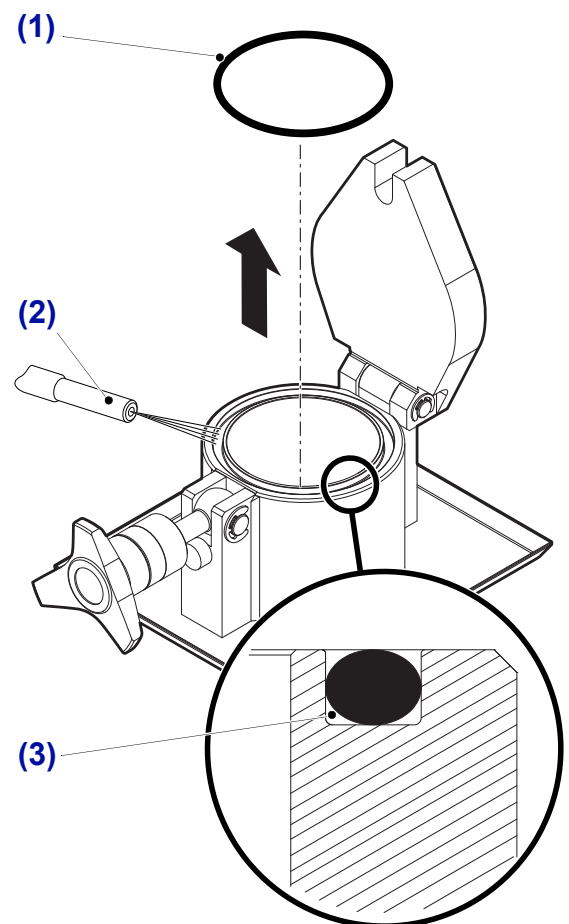


Figure 6-1


**Warning**

Do not grease the seal.

6.3 Changing the water in the tank

i *Change the water in the tank once per week.*

To empty the water from the tank, proceed as follows:

- A. Unscrew the tank purge connection (1).
 The water flows into the dropping cup (2).
- B. Once the tank is empty, screw the tank purge connection (1) **by hand**.

i *Use demineralised water to ensure no marks are left on the watch after testing.*

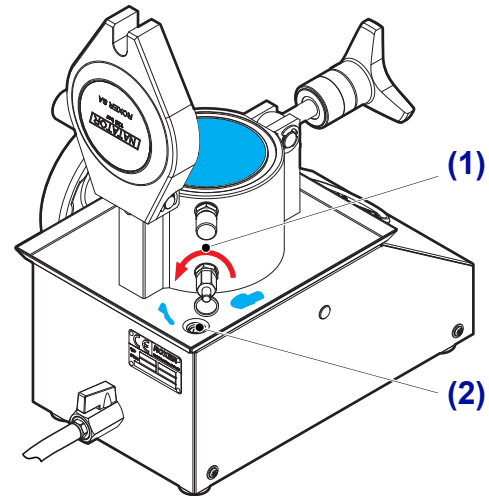


Figure 6-2

6.4 Troubleshooting

Under normal usage conditions for the Natator 125, the following problems may occur:

It is impossible to attain the desired pressure

- ➔ **Air bubbles are present in the internal piping of the Natator 125.**
 ✓ Carry out purging (see "4.3 Before first use").
- ➔ **Air bubbles are present in the tank.**
 ✓ Check that the pressure is 0 bar in the tank, open the lid, adjust the level of water until the tank just floods and reclose the lid. See page 19 for more details.
- ➔ **Water flows through the tank purge connection.**
 ✓ Check the tightening of the tank purge connection and its seal.

It is impossible to turn the hand wheel while the pressure is increasing (clockwise direction)

- ➔ **The notched ring is orientated to allow a pressure reduction**
 ✓ Turn the notched ring in a counter-clockwise direction until it "clicks".
- ➔ **The force applied to the lever is insufficient**
 ✓ Change the position of the lever and apply a back and forth motion as explained on page 20.

It is impossible to turn the hand wheel during pressure reduction (counter-clockwise direction)

- ➡ **The notched ring is orientated to allow a pressure increase**
 - ✓ Turn the notched ring in a clockwise direction until it “clicks”.
- ➡ **The force applied to the lever is insufficient**
 - ✓ Change the position of the lever and apply a back and forth motion as explained on page 20.

It is impossible to open the lid after a test cycle

- ➡ **The tank lid resists a little**
 - ✓ Turn the hand wheel slightly in the clockwise direction (check that the pressure gauge indicates 0 bar before opening the lid).

It is impossible to turn the notched ring

- ➡ **The force exerted on the ring pawl prevents it from turning**
 - ✓ Before changing the position of the notched ring, exert a slight force on the hand wheel handle so that the ring pawl is freed.

6.5 Disposal

Disposal of the Natator 125 must be undertaken in conformity with the environmental standards applying in the country of use.

Particular attention must be paid to the different metals which are to be recycled.



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7 Appendices

7.1 Standards relating to the water-resistance of watches

A water-resistance test with the Natator 125 may be carried out as follows:

After a certain time has elapsed in the Natator 125 at a previously defined pressure, either:

↳ the watch is destroyed (glass broken, parts deformed,...).
In this case, **the watch is not considered water-resistant.**



↳ water has ingressed into the watch.
In this case, **the watch is not considered water-resistant.**

↳ water has not ingressed into the watch.
In this case, heat the watch to 40°C and place a drop of cold water on the glass for one minute.
If traces of condensation appear on the inside face of the glass, then **the watch is not considered water-resistant.**
If not, **the watch is considered water-resistant.**



Standards ISO 2281 and ISO 6425 describe in detail procedures for verifying the water-resistance of watches.

7.2 Declaration of conformity

	Déclaration de conformité	
---	----------------------------------	---

CE	Déclaration de Conformité	
EC	Declaration of Conformity	
EG	Konformitätserklärung	

Nous (ROXER SA) certifions par la présente, que le produit décrit ci-après est conforme, tant dans sa conception que dans sa réalisation, aux normes de sécurité et d'hygiène exigées par les standards de la CE. En cas de modification du produit sans notre accord, cette déclaration devient caduque.

We (ROXER SA) herewith declare that the product described below is in accordance with the relevant safety and health requirement of the EC standards regarding design and version when delivered from our factory. This declaration becomes invalid whenever the product has been modified without our consent.

Hiermit erklären wir (ROXER SA), dass nachstehendes Produkt aufgrund seiner Konzipierung und Bauart sowie in der von uns in Verkehr gebrachten Ausführung den einschlägigen grundlegenden Sicherheit- und Gesundheitsanforderungen der EG-Richtlinien entspricht. Bei einer nicht mit uns abgestimmten Änderung des Produkts verliert diese Erklärung ihre Gültigkeit.

Description du produit
Description of product
Bezeichnung des Produkts

NATATOR 125

N° de fabrication / Fabrication No. / Fabrikations-Nr.

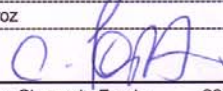

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Le produit est conforme aux directives suivantes / The product is in conformity with the following directives / Das Produkt entspricht folgenden Richtlinien :

- ☒ directive CE pour machines / EC machinery directive / EG-Maschinenrichtlinie 98-37 / CE
- ☒ directive CE pour équipement sous pression / EC pressure equipment directive / EG-Drückrichtlinie 97-23 / CE
- ☐ directive CE pour basse tension / EC low voltage directive / EG-Niederspannungsrichtlinie 73-23 / CE
- ☐ directive CE de compatibilité électromagnétique / EC electromagnetic compatibility directive / EG-Richtlinie über elektromagnetische Verträglichkeit 89-336 / CE, 91-263 / CE, 93-68 / CE, 93-97 / CE

Standards appliqués et harmonisés / applied harmonised standards / Angewandte harmonisierte Normen

- ☒ ISO 12100-1 et / and / und ISO 12100-2, sécurité des machines, instruments et systèmes / safety of machinery, instruments and systems / Sicherheit von Maschinen, Geräten und Anlagen
- ☐ ISO 13849-1 et / and / und ISO 13849-2, partie des systèmes de commande relatives à la sécurité / safety-related parts of control systems / Sicherheitsbezogene Teile der Steuersysteme
- ☐ ISO 138851, dispositifs de commande bimanuelle / two-hand control devices / Zweihandsteuervorrichtungen.
- ☐ ISO 13852, distances de sécurités par rapport aux endroits dangereux / safety distances from danger points / Sicherheitsabstände gegen das Erreichen von Gefahrstellen.
- ☐ ISO 13854, sécurité des machines (éviter les écrasements) / safety of machinery (avoidance of crushing) / Sicherheit von Maschinen (Vermeidung von Quetschung).
- ☒ ISO 14121, principes pour l'appréciation du risque / principles of risk assesement / Sicherheit von Maschinen (Grundsätze für die Beurteilung des Risikos).
- ☐ EN 60204-1, équipement électrique pour machines utilisées dans l'industrie / electrical equipment for machinery used in the industry / elektrische Ausführung für Industriemaschinen.
- ☐ CEI 60947-5-1 et / and / und 60947-5-2, appareillage basse tension / low-voltage switchgear and controlgear / Niederspannungsschaltanlage

Directrice	Date / Datum	CH-2300 La Chaux-de-Fonds,	28.02.2007
Division Manager	Nom / Name	Céline Paroz	
Divisionsgruppenleiterin	Signature / Unterschrift		
Responsable de production	Date / Datum	CH-2300 La Chaux-de-Fonds,	28.02.2007
Product Manager	Nom / Name	Jacques Baumann	
Produktgruppenleiter	Signature / Unterschrift		

7.3 Installation drawing

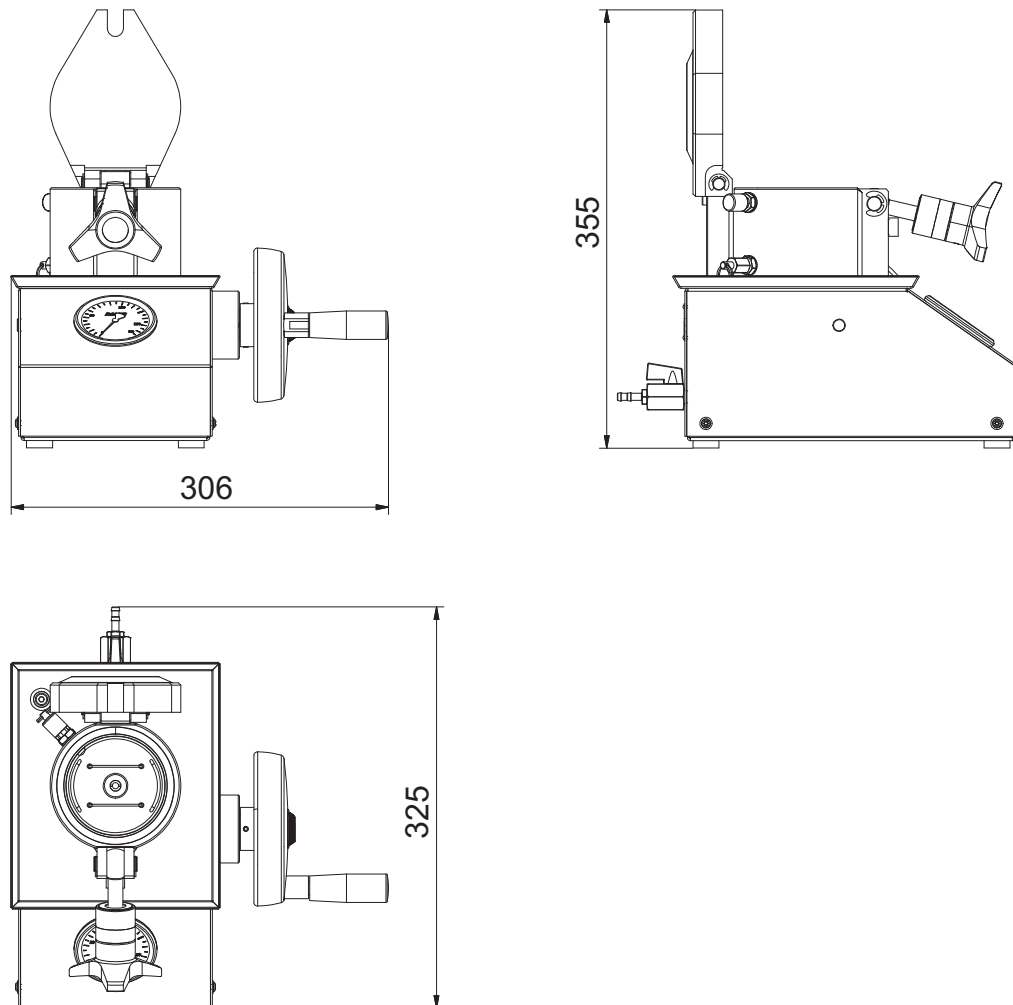


Figure 7-1

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