

A background image showing a horizontal splash of water at the top, with numerous small water droplets falling and dispersing downwards against a light blue gradient background.

Usage Manual

NEC-20

Water Treatment System for
Bathing Pools and Whirlpools

www.NECON.de

Functional Principles



**RAPID
DISINFECTION**

LONG-LASTING RESIDUAL EFFECT



Searching for a balance for their positive polarity, the ions attach themselves to and penetrate the walls of bacteria and pathogenic microorganisms.



The NECON treatment electrode produces positively charged ions.

Photosynthesis and nutritional uptake of the cells is prevented; they rapidly succumb.

Residual effect:
Free ions remaining in the water prevent recontamination.

Congratulations on your purchase of a NEC-20 treatment system for bathing pools up to a volume of 20 cubic meters.

Scope of delivery: In addition to the NEC-20 device including pre-installed sacrificing electrode, your purchase includes the following accessories:

1. Power Supply
2. 2 adaptors for hoses sized 32 or 38 mm inside diameter
3. Threaded adaptor for connection to existing pump or filtration system
4. Timer switch (not available in all markets)
5. Testing kit to check ion level in treated water



Setup

The NEC-20 is bi directional and can be fitted facing any direction of the water flow.



Using the provided hose adaptors, the device can be easily integrated into any existing filtration system.



Using the provided threaded adaptor, the unit can be fitted directly to most threaded pump outlets:

Unit is powered via the provided external power transformer. Simply connect the supply to timer (if available) /mains, power jack.

Use of timer switch is recommended to automate regular system usage.



The run time of the unit should be regulated to achieve an ion level of between 0.7 and 1.0 mg per litre.

This is achieved by adjusting the run time and daily intervals, based on regular testing of the ion levels using the supplied test kit (measuring range "LR"). For details see pages covering Pool Tester. For starters, try these:

Ionisation for above-ground pool example 20 m³ = 30min /day => < mg/l

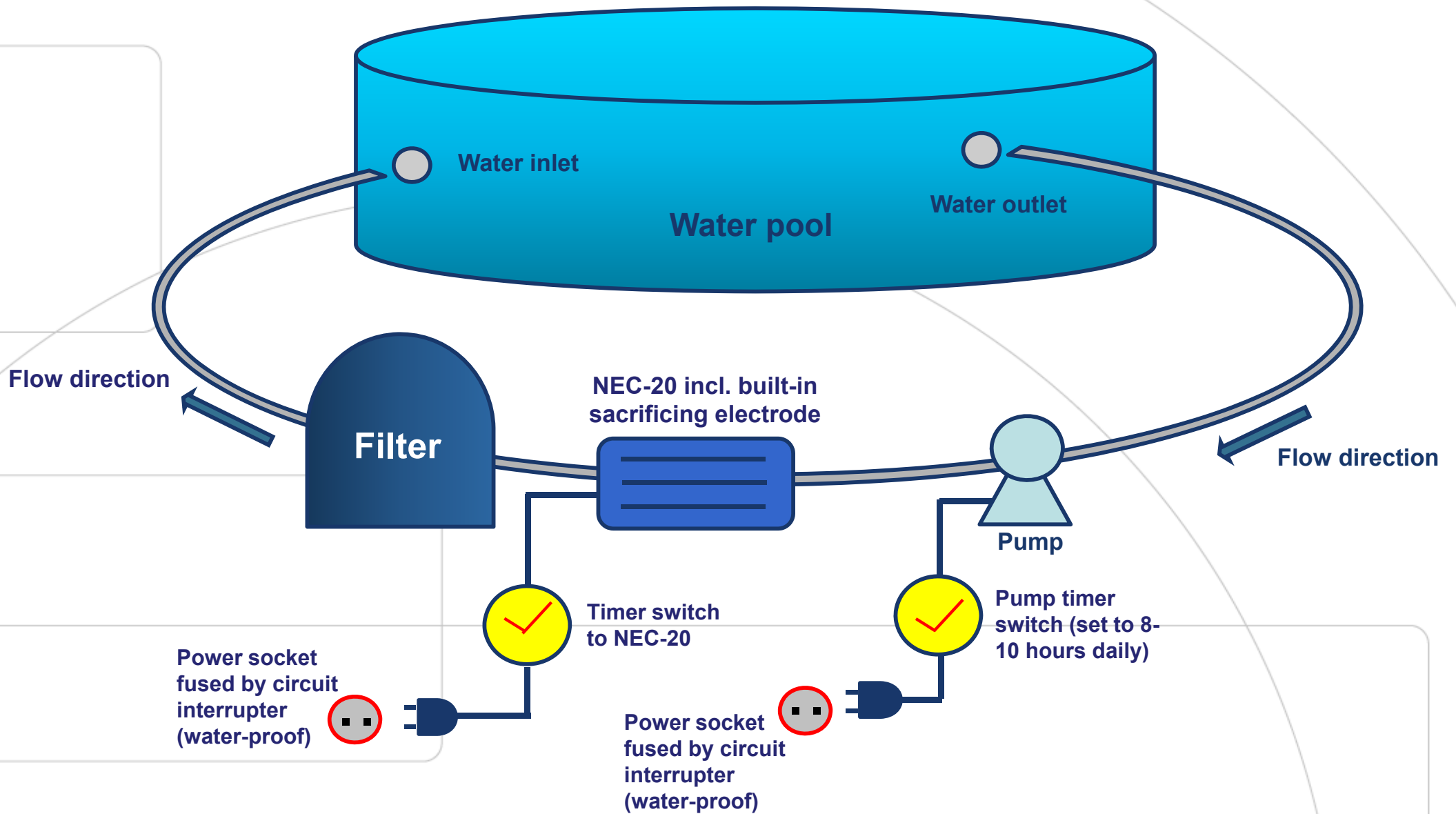
Ionisation for jacuzzi example 1-2 m³ = 5-10 min /day during first 2 days, afterwards 1-2 min /day => mg/l

Important!

Please note that increased ion levels will reduce electrode life and may discolor plastic or metal pool.

pH level checks are dispensable as pH levels between 6.5 and 9.5 are safe enough to qualify as drinking water (for example acc. to German Drinking Water Regulations) and will not limit the effectiveness of the water).

Integration with filtration system



NEC-20 Front Panel Indicator Lights



Green LED = POWER Lights when power supply is connected.

Amber LED = Water Lights when the electrode is in operation.



It is vital that the unit is only powered on when the pump is actively circulating.

Attention! Warning: Incorrect usage will reduce electrode life. Only run while pump circulates water!

Red LED = ERROR Lights in the event of electrode malfunction and indicates that the electrode requires cleaning or replacement.

Should the error light illuminate the electrode should be checked as detailed in the page "NEC-20 Overview / Maintenance". Clean by immersion in a weak acid solution or using pressure washer, or replace.

Technical Data of NEC-20 unit

Power supply:

included external Euro-plug transformer: 100-240V, 1250 mA (min. 1000mA), output 13,4V (min. 12V) DC

Frequency range: 50/60 Hertz

Green/red LED (red will illuminate on higher DC outputs)

Power Rating: 5 Watt

Controls: On / Off via mains or timer

Housing Material: ABS

IPE Rating : IP54

Dimensions: L=200mm (incl. Adapter: 292mm), H=148mm; B=115mm;

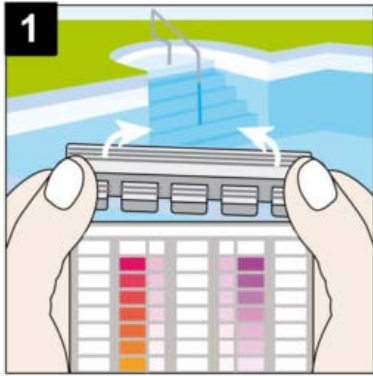
Weight 2.3 kg incl. Electrode (incl. connectors 1.9 kg)

Threaded Connections: 1½" (1" when using supplied threaded adaptor)

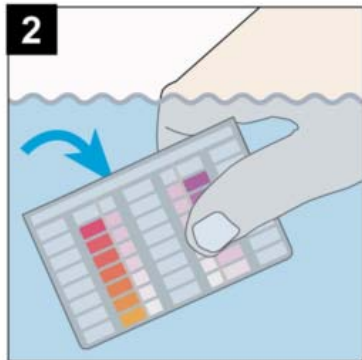
Number of Electrodes Supplied: 1

Max. Pool Size: 20m³

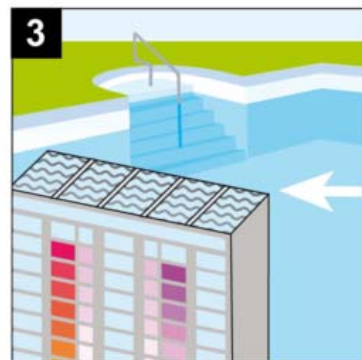
Pool Tester – how to know the ion concentration in the water?



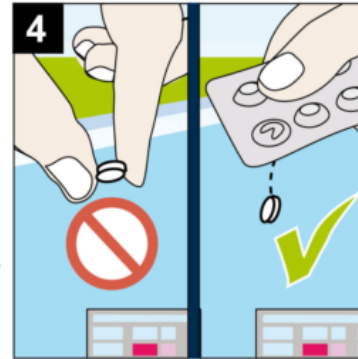
1. Remove top cover.



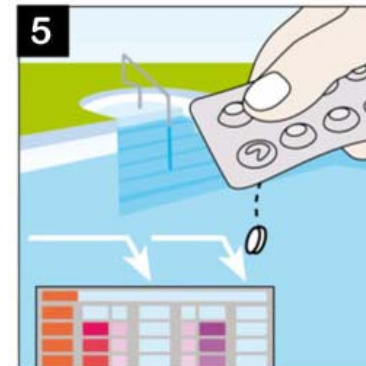
2. Fill in some pool water.



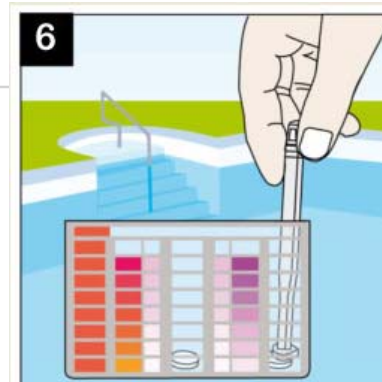
3. Make sure to fill tester with sample water up to the seam.



4. To ensure proper testing results, avoid skin contact when removing testing pills from the packaging!

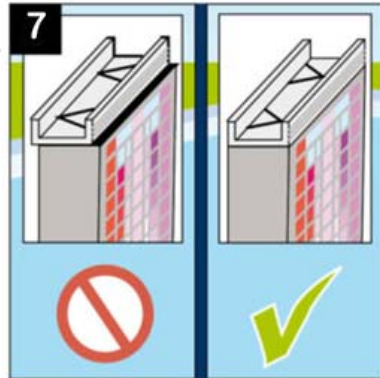


5. Put one „Copper 1“ pill into the Pool Tester's middle chamber, which is the relevant segment for measuring ions in the range to target (up to 1.0 mg per liter, cf. p. 5).

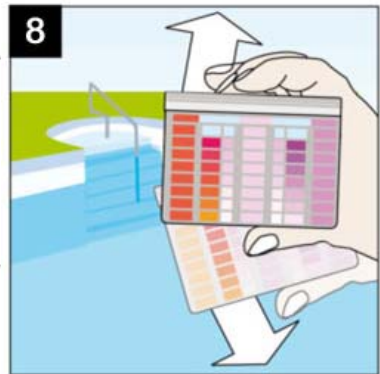


6. Crush the pill using the supplied pestle until all pieces are dissolved in the sample water.

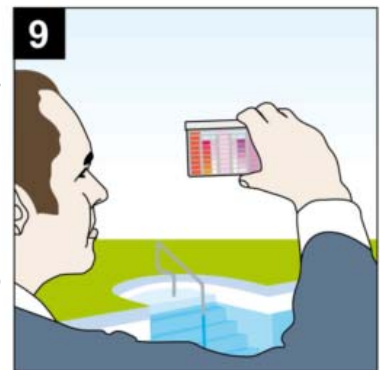
Pool Tester – how to know the ion concentration in the water? (cont.)



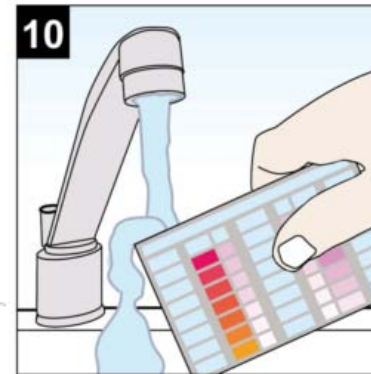
7. When reattaching the top cover make sure that the tips of the triangle markers point to the front of the Pool Tester.



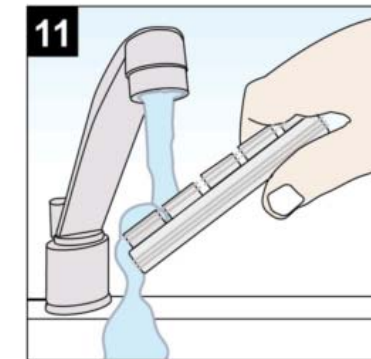
8. Shake Pool-Tester for even distribution of the pill's ion reagent in the sample water.



9. Read the measurement result in bright daylight from the color scales printed on the front of the Pool Tester.



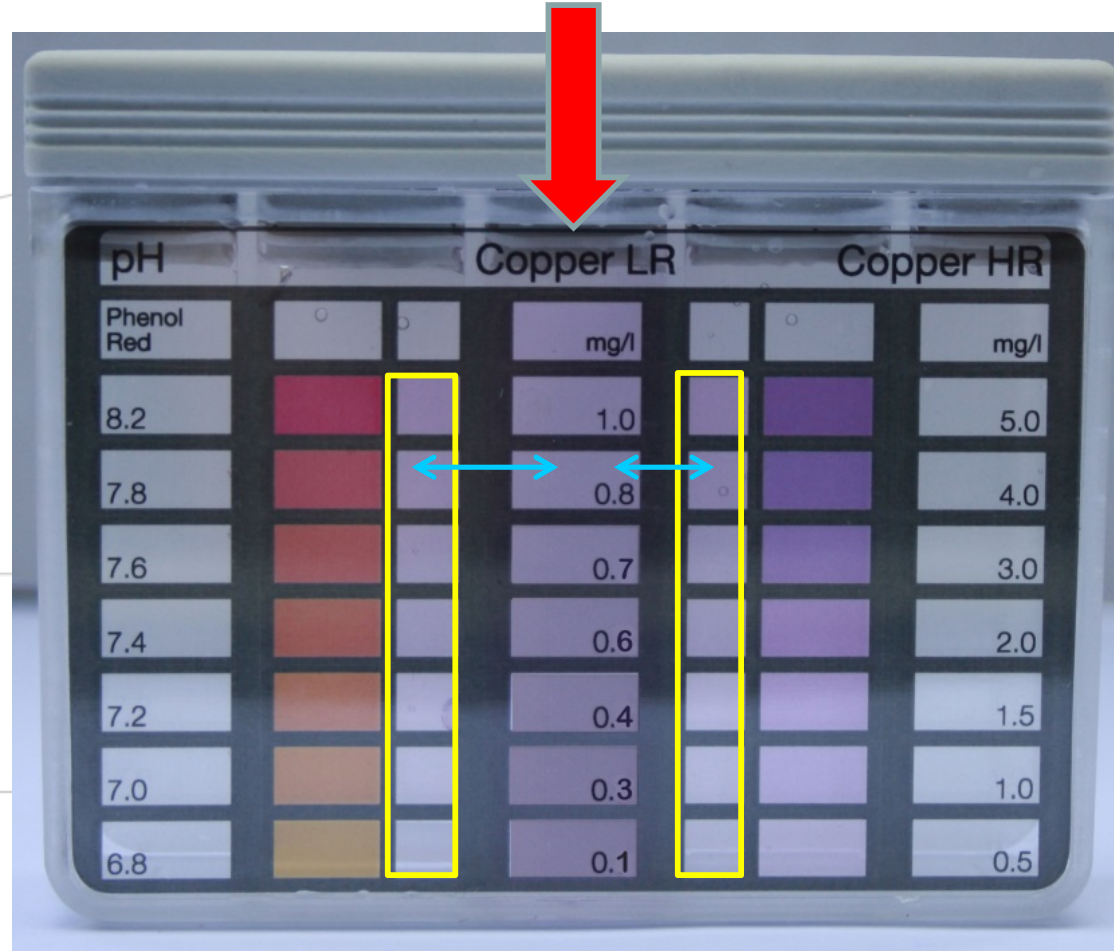
10. Afterwards, rinse all measuring chambers of the Pool Tester with fresh water.



11. Remember to rinse the top cover as well!

Pool Tester – interpreting the results

Red arrow marks the middle chamber where the reagent pill should be dissolved into the sample water!



In this example, the sample water's ion level is in the area of 0.8 mg per liter (cf. blue arrows).

Thus the ion level is within the target range for pool water (cf. page 5).

Compare colorization of the sample water in the measurement chamber with the printed color scales to the left and the right of the chamber (marked yellow above).

NEC-20 Overview

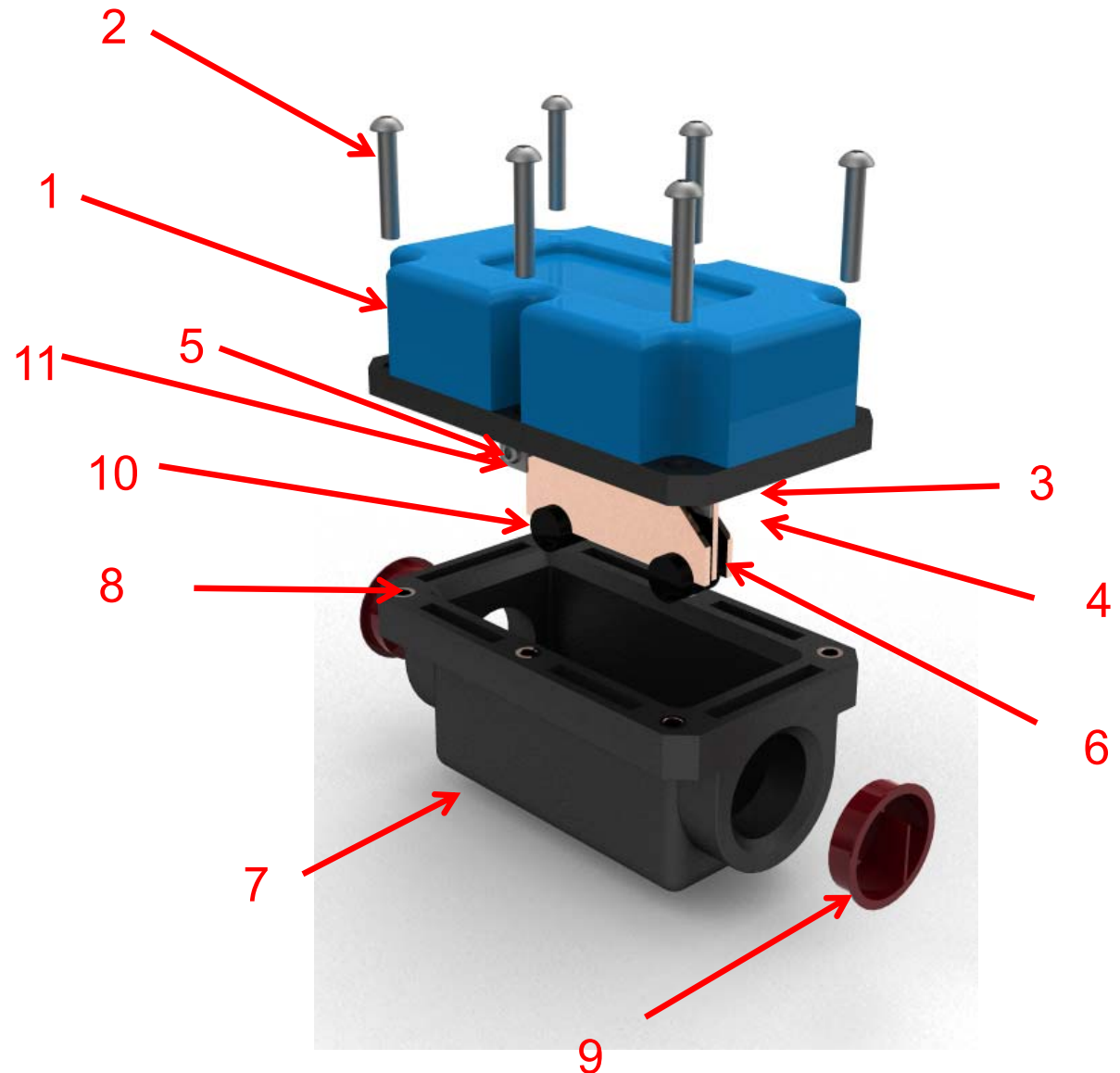
1. Electronics housing
2. Lens head screw
3. Stainless steel nut
4. M6 retaining screw
5. M6 electrode screw
6. Sacrificing electrode
7. Electrode housing
8. Brass collets
9. Threaded Outlet / Inlet, with detachable transport protection caps
10. Spacer combs
11. Mounting brackets

Electrode Maintenance

To remove the electrode package (for inspection, cleaning, or eventual replacement) firstly remove the 6 lens head screws (No 2 in parts list) using a 5.5mm Allen Key.

With a 10mm Spanner remove the retaining screw (No 4 in parts list).

To re-assemble, repeat the process in reverse.



Limited Warranty, Repairs

Cover Period

Necon GmbH, manufacturer of this unit guarantees this unit for a period of 2 years from purchase by the end user.

Warranty

This warranty is effective only if the unit was not subjected to improper treatment, negligence, incorrect installation, abuse or use other than that specified. This warranty does not cover consumables or minor defects.

Coverage

For the period of cover, given a product failure, Necon GmbH undertakes to examine the unit fully and should defect concur with the above, replace the unit or defective parts of the unit without cost or charge.

Additional claims, specifically claims for damage other than that has occurred on the unit itself are excluded.

In the event of a warranty service, the warranty cover period is not extended from the date of said repair or replacement.

This warranty is in addition to the statutory legal rights of the end user against his or her direct contracting party and does not in any way from them detract.

Repairs

In cases of no entitlement for warranty services, client will receive a quotation in writing for repair and return of the product(s) in question, valid for 14 days starting from the date of the quotation.

If during this period the client does not remit a written order and payment for return of the unit, either repaired or not, the client's consent with abandonment of the product will be assumed.

Transport

Initial and return shipping and transport costs, to include a description of the defect and proof of purchase, are the responsibility of the claimant.



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