

**BRESLE TEST KIT**  
SP7310



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# 1 INSTRUMENT DATA

## 1.1 Product Description

The TQC Sheen Bresle Kit complies with the ISO 8502-6 and ISO 8502-9 standards that describe the Bresle Method to assess the level of soluble salts using a Bresle patch or Bresle sampler, distilled water and a conductivity gauge. The conductivity is mainly directly proportional to the concentration of dissolved chloride ions in the solution. The kit includes all the necessary equipment to execute a Bresle test that will indicate the contamination of soluble salts on blast-cleaned surfaces prior to coating. Inside the Bresle Kit is a conductivity gauge used for the assessment of soluble salt ions as chlorides, sulphates and nitrates.








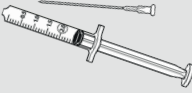

## 1.2 Name / Article

**SP7310** Bresle Test Kit

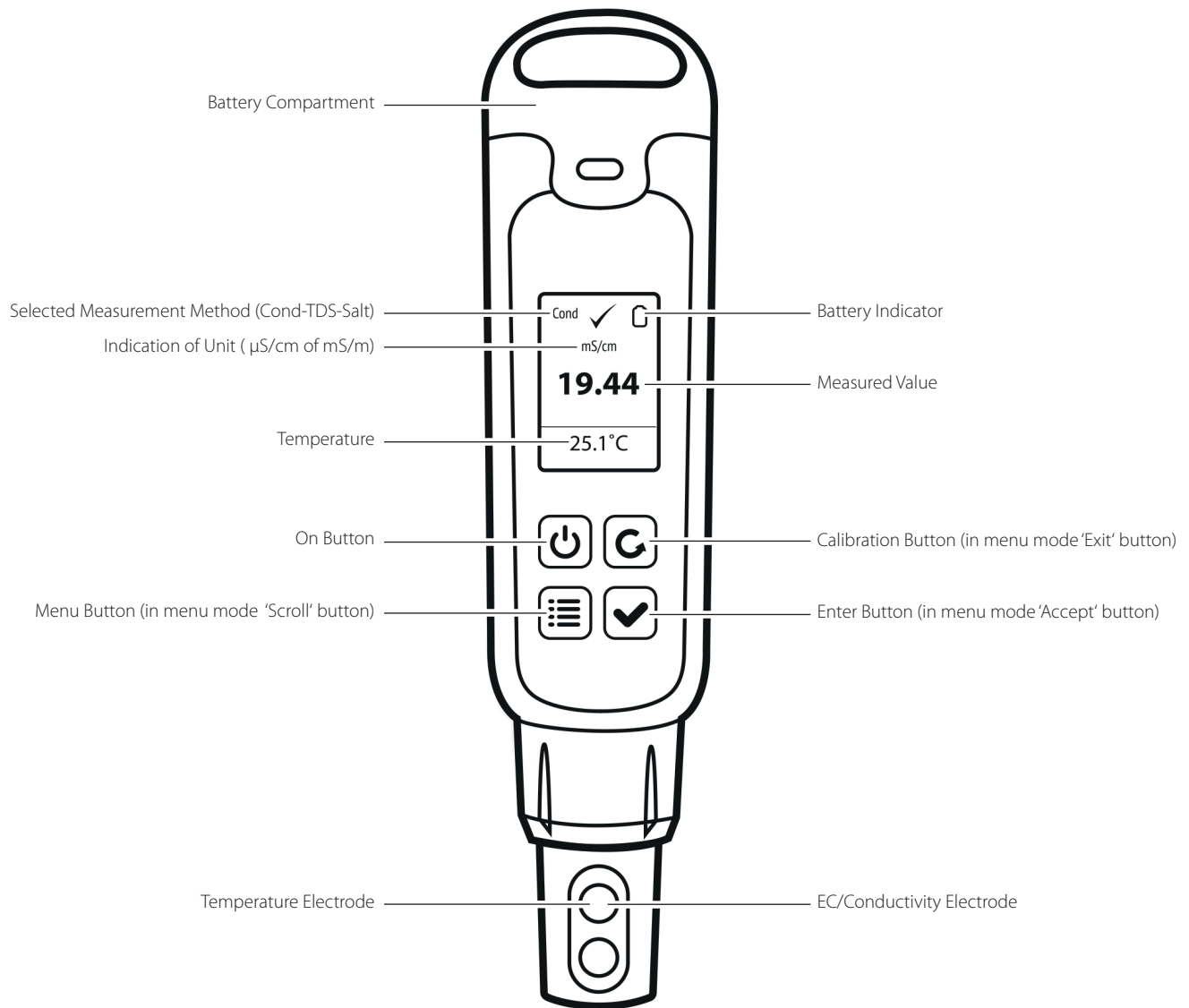
## 1.3 Standards

ISO 8502-6, ISO 8502-9, ISO 11127-6

## 1.4 Scope of Supply

 Case	 Digital Conductivity Meter	 Bresle Patches, 25 pieces	 Deionised Water	 Calibration Solution
 Cleansing Solution	 Cup	 Syringe	 Manual	

## 2 INSTRUMENT LAYOUT AND FUNCTIONS



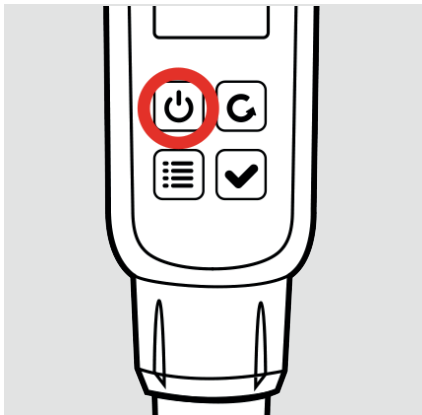
## 3 PREPARATIONS

### 3.1 Determine Test Area

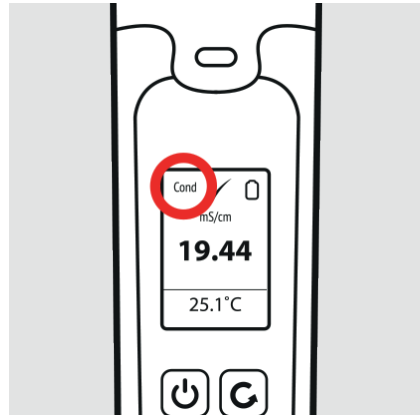
Select the section on the steel surface to be used as the test area for assessment of the total surface density of salts. It should preferably be dry and with no loosely adherent rust, dirt or moisture (dampness), so that the patch frame can properly adhere to the surface. The Bresle patch can be placed in almost every position, vertical, horizontal, slanting or on surfaces that are not completely flat.

**i** *It is recommended to test more than one spot to catch the variations of the contamination level!*

### 3.2 Instrument Preperation



① Turn on the Digital Conductivity Meter.

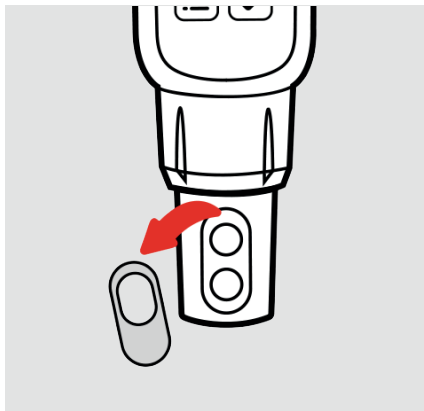


② Check whether 'COND' is shown at the top left. If so, perform the measurement. If not, go through the following steps:

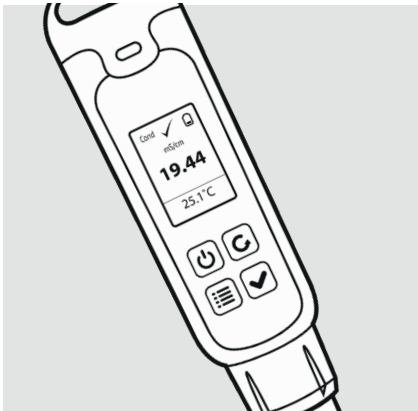
- ▶ Click on menu button.
- ▶ Scroll with the 'menu / scroll' button until 'measure' is selected.
- ▶ Confirm with the 'enter / accept' button.
- ▶ Scroll with the 'menu / scroll' button until 'COND' is selected.
- ▶ Confirm with the 'enter / accept' button. Press 'calibration / return' button to return to the measurement screen.
- ▶ COND is shown at the top left.

### 3.3 Calibration

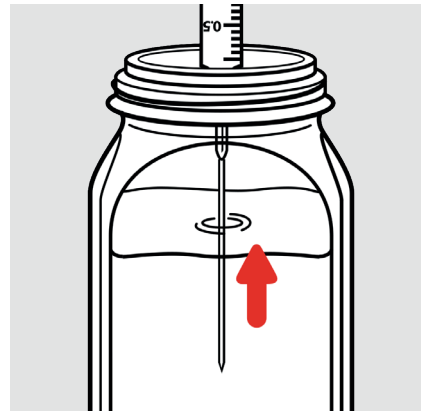
Calibration prior to each use is desirable for a reliable measurement.



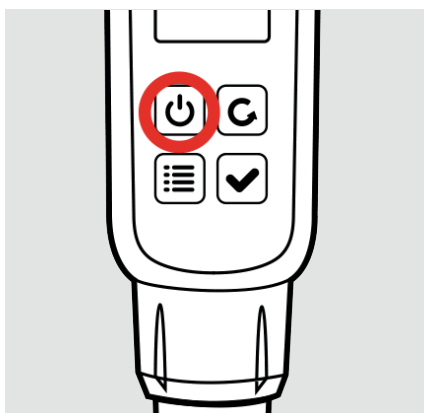
① Remove the plastic cap from the measuring cell.



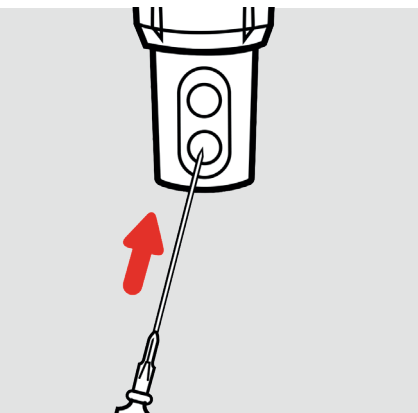
② Place the gauge flat on a flat surface.



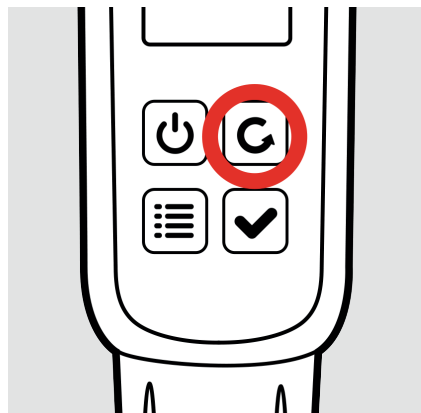
③ Fill up the syringe with deionised water.



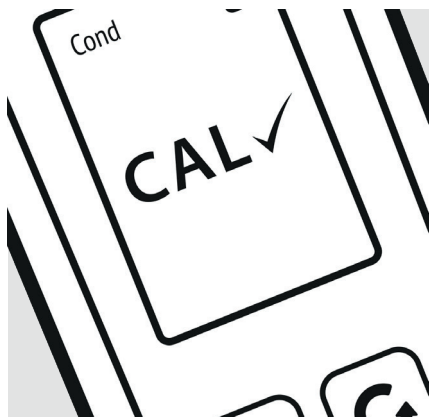
④ Turn on the Digital Conductivity Meter.



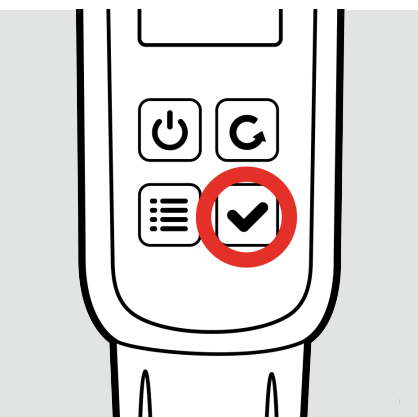
⑤ Inject the deionised water in the measuring cell.



⑥ Push the CAL button. Wait until the measurement is stabilized.

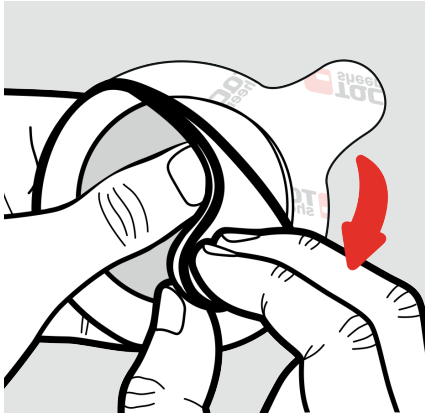


⑦ The display shows CAL ✓, the calibration was successful.

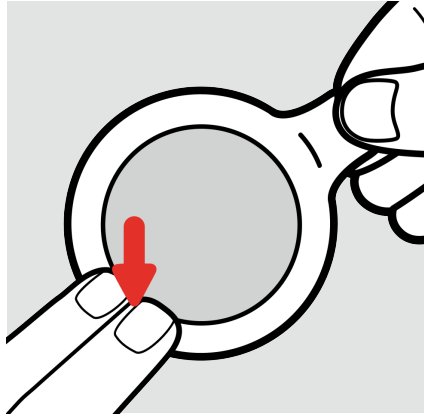


⑧ Push the enter button to return to the normal display.

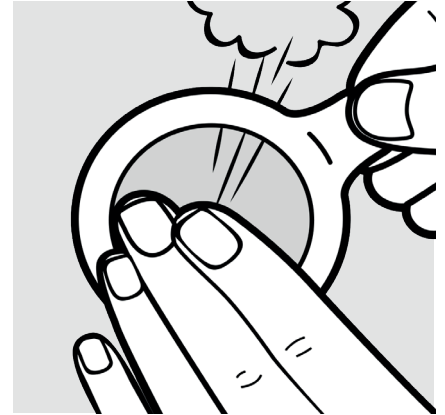
## 4 USE



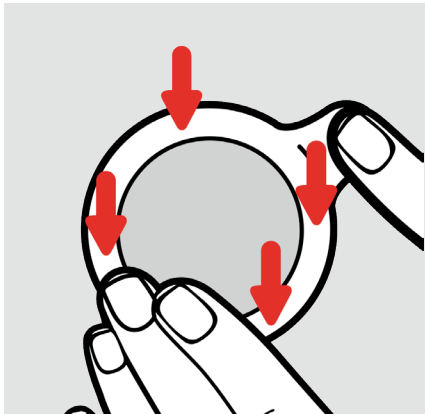
- ① Remove the protective backing of the Bresle patch with its inner protective paper and dispose.



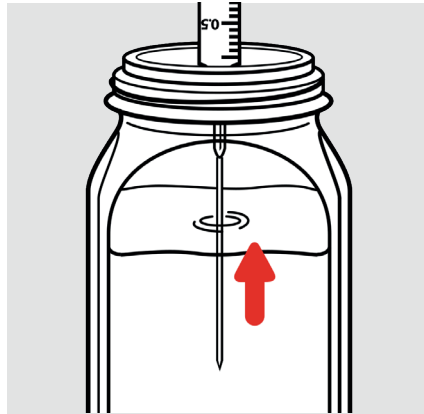
- ② Place the Bresle patch with the adhesive side to the test surface.



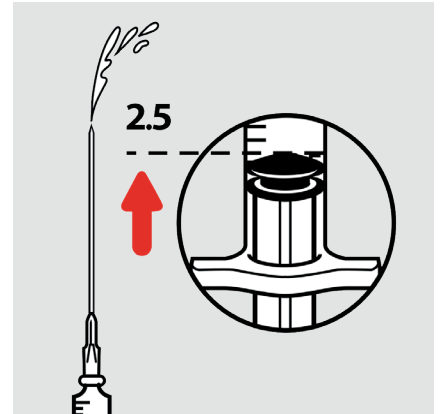
- ③ Take care to trap as less air as possible in the patch.



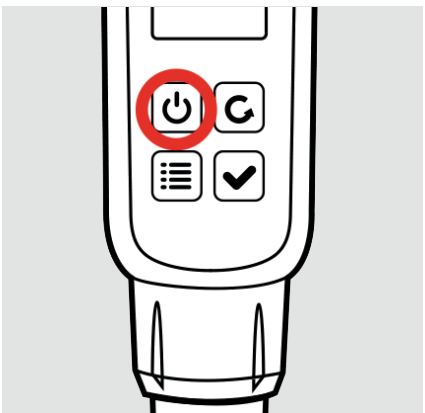
- ④ Press firmly in order to create a tight seal.



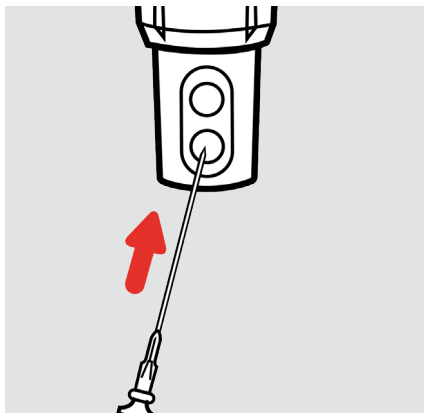
- ⑤ Fill up the syringe with deionised water.



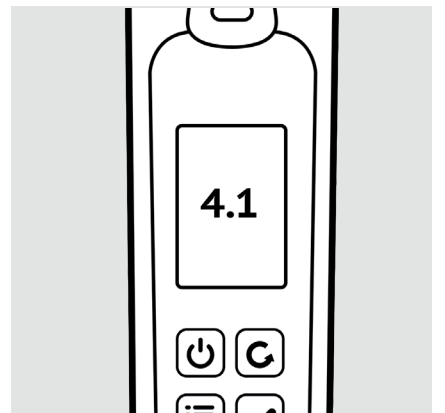
- ⑥ Empty the syringe until there is 2,5 ml left to take care that there are no air bubbles in the syringe.



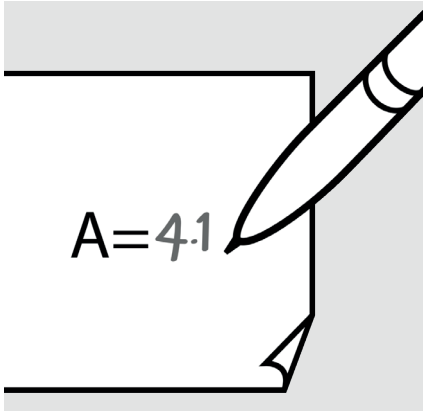
- ⑦ Turn on the Digital Conductivity Meter.



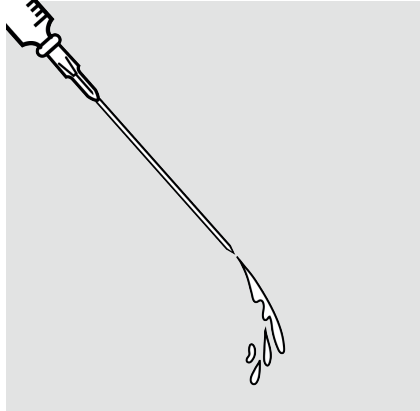
- ⑧ Inject the deionised water in the measuring cell until it runs over.



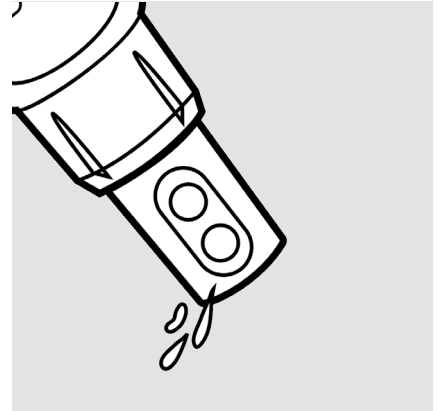
- ⑨ A value is shown on the display.



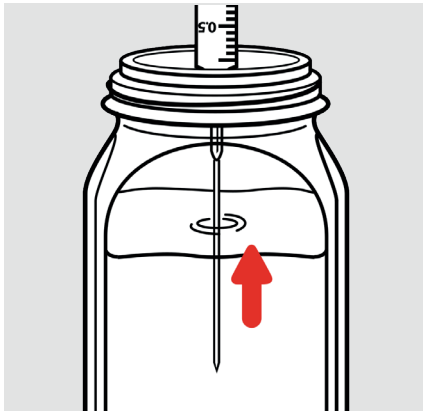
⑩ Write down the value as blank value.



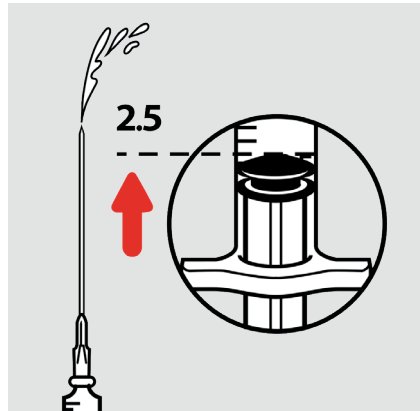
⑪ Empty the syringe.



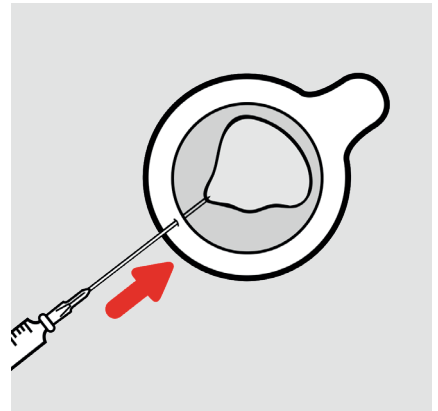
⑫ Empty the meter.



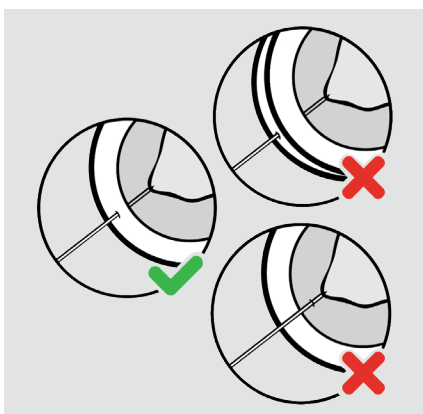
⑬ Fill up the syringe with deionised water.



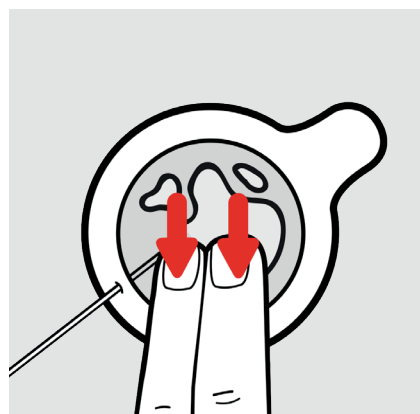
⑭ Empty the syringe until there is 2,5 ml left to take care that there are no air bubbles in the syringe.



⑮ Insert the 2,5 ml of deionised water into the Bresle patch by injecting it through the foam at an angle of 30° from the surface.

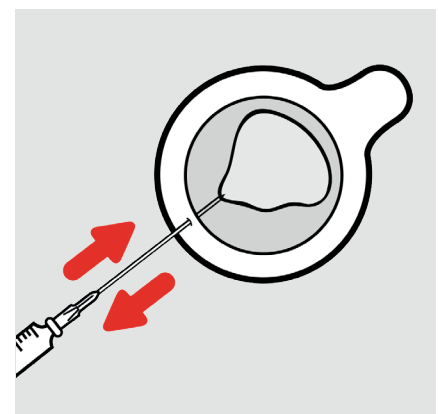


⚠ **Inserting through the transparent part of the Patch or through the bottom side could cause leakage!**

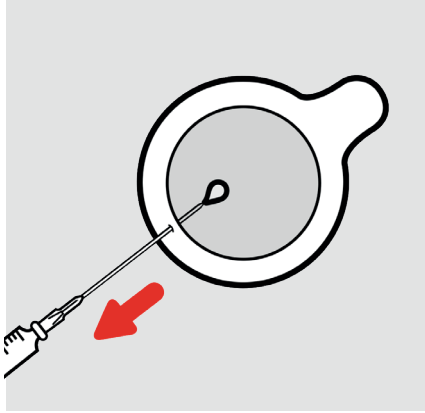


⑯ Dissolve the salts by tapping the membrane for 90 seconds.\*

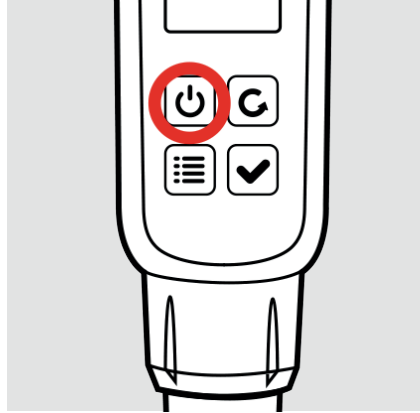
*\* ISO 8502-6 recommended time is 10 minutes. Most users test at 90 seconds. Always agree on test time prior to testing.*



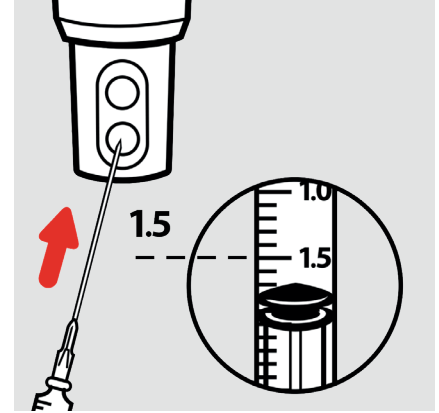
⑰ Extract the water from the patch and reinject into the patch 4 times.



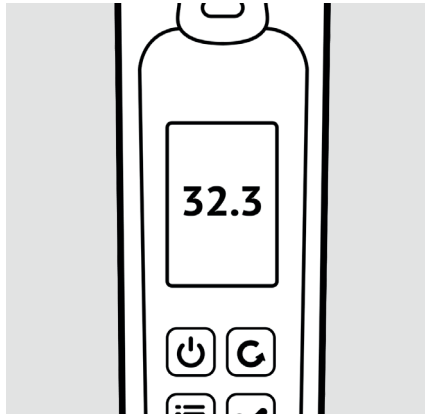
18 When finished, extract the entire volume of water into the syringe and remove the syringe from the Bresle Patch.



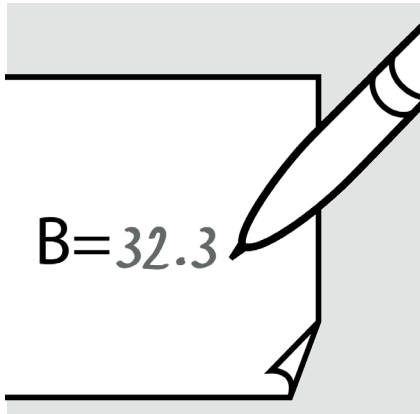
19 Turn the Digital Conductivity Meter back on.



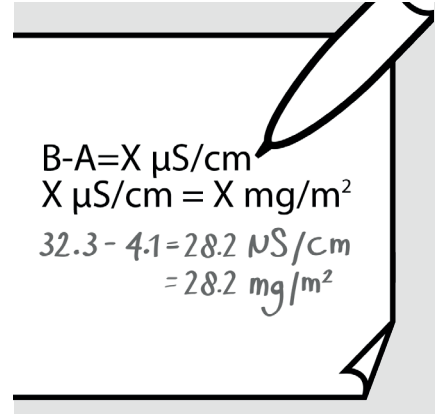
20 Inject 1,5 ml of this water into the measuring cell of the Conductivity Meter.



21 A value is shown on the display.



22 Write down the measured value.



23 Calculate the difference between the measured value and the blank value. (measured value - blank value).

The total surface density of soluble salts/contaminants (S) in mg/m<sup>2</sup> soluble salts measured as Sodium Chloride is 1 x (measured value – blank value).

(All salts are considered as NaCl or Sodium Chloride) . "Sample Value" and "Zero Reference" are in microSiemens (μS) per centimeter.

**i** If an interpretation of just the chlorides or cl- is required the multiplier will be 0.6 instead of 1!

## 5 ISO 11127-6

Determination of the water soluble salts in mineral abrasives, conform ISO 11127-6.

- ▶ Collect a number of samples , minimum 5, of the abrasive at random at different places.
- ▶ Mix them well and take 100 g from this mix into a 100 ml. beaker.
- ▶ Pour 100 ml. distilled water into a 250 ml. beaker which has been cleaned before with distilled water.
- ▶ Take a reading of this water with the conductivity gauge and note the value. This is the "Zero Reference"
- ▶ Add 50 g of abrasives to the 100 ml distilled water in the 250 ml. beaker.
- ▶ Shake the mixture well for about 5 minutes and leave it for one hour. Shake again for 5 minutes.
- ▶ Decant some of the water into a clean beaker and measure the conductivity.

Contact the paint-manufacturer, abrasive supplier or project-manager for the maximum acceptable conductivity level

## 6 MAINTENANCE

Maintenance of the conductivity meter is minimal, because it's quite easy to perform a measurement. Nevertheless the technology inside the instrument is very advanced.

- ▶ Depending on the frequency of use, a thin film may occur on the probe. Use a damp cloth to remove this.
- ▶ After each use the instrument should be rinsed with tap water and demineralized liquid. Make sure the probe stays clean.
- ▶ A blinking battery indicator indicates the batteries need to be replaced. Open the battery compartment cover. Note polarity facing up and remove the old batteries. Replace with fresh ones with the same polarity. facing up as the old ones.

## 7 WHEN SOMETHING GOES WRONG

When the instruments doesn't perform the way you expected, usually you can solve it yourself easily. Therefore read this part thoroughly before claiming warranty.

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<b>The value measured is unstable</b> <i>Possible cause: Pollution?</i>	Clean the measuring cell with a damp soft cloth and rinse the measuring cell thoroughly with demiwater afterwards.
<b>Display fails</b> <i>Possible cause: Insufficient battery power.</i>	Replace batteries
<b>Calibration fails</b> <i>Possible cause: Dirty measuring cell or old / polluted calibration standard.</i>	Always use a 'fresh ' calibration standard. Once opened the calibration standard will not keep.

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## 8 DISCLAIMER

The right of technical modifications is reserved.

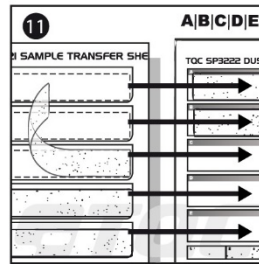
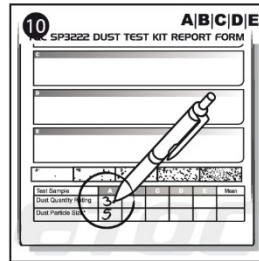
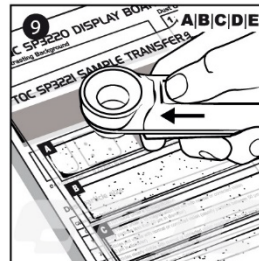
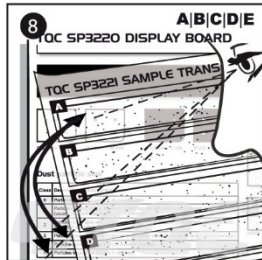
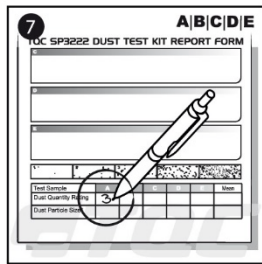
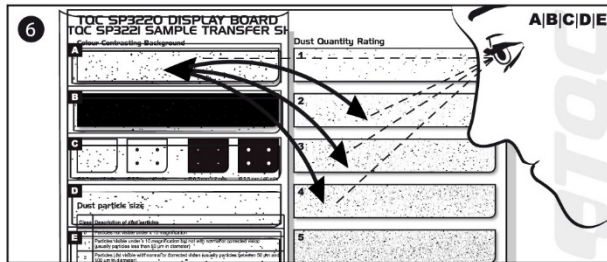
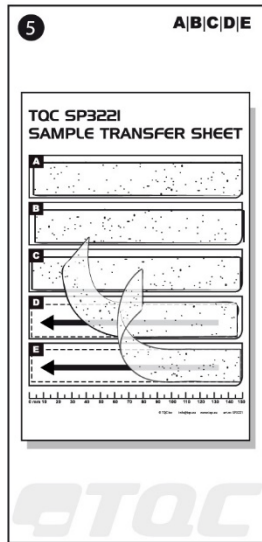
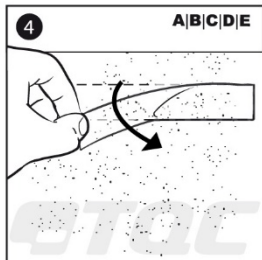
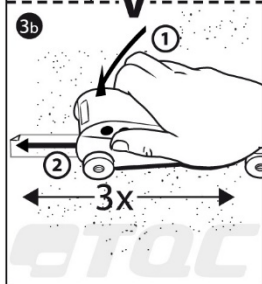
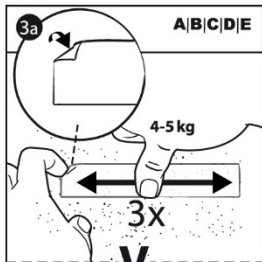
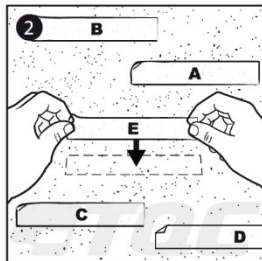
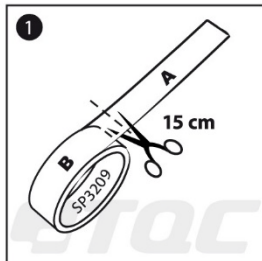
The information given in this sheet is not intended to be exhaustive and any person using the product for any purpose other than that specifically recommended in this sheet without first obtaining written confirmation from us as to the suitability of the product for the intended purpose does so at his own risk. Whilst we endeavour to ensure that all advice we give about the product (whether in this sheet or otherwise) is correct we have no control over either the quality or condition of the product or the many factors affecting the use and application of the product. Therefore, unless we specifically agree in writing to do so, we do not accept any liability whatsoever or howsoever arising for the performance of the product or for any loss or damage (other than death or personal injury resulting from our negligence) arising out of the use of the product. The information contained in this sheet is liable to modification from time to time in the light of experience and our policy of continuous product development.





**DUST TEST KIT**  
SP3200

**DUST TEST PROCEDURE**



**DISCLAIMER**

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## SPRING LOADED ROLLER FOR DUST TEST TAPE

SP3600

### 1 SAFETY PRECAUTIONS

- Always keep the instrument in its case when not in use.
- Though robust in design, this instrument is precision-machined. Never drop it or knock it over
- Clean the instrument with a damp soft cloth. Never use abrasives or solvents.



### 2 PRODUCT DESCRIPTION

The Spring Loaded Roller is used to perform objective dust tape tests, as mentioned in ISO 8502-3, and eliminates the human factor. The Spring loaded roller is so designed that it is capable of applying a load of 44,13 N. Iso 8502-3 quantifies the quantity and size of dust particles on surfaces prepared for painting. This test has to be performed just before the paint is applied. The test itself is not included in the delivery

### 3 STANDARDS

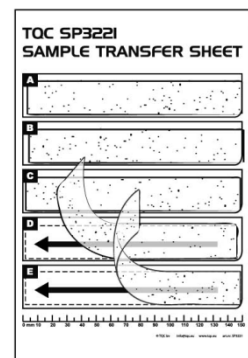
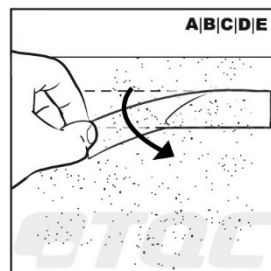
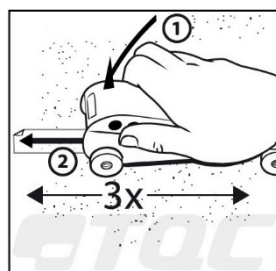
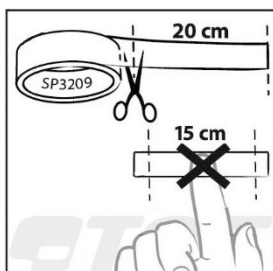
ISO 8502-3, IMO-PSPC MSC.215(82) and MSC.244(83)

### 4 WHAT'S IN THE BOX?

Spring Loaded Roller  
Plastic carrying case  
Calibration certificate

### 5 PERFORM A MEASUREMENT

- Cut a piece of 20 cm from the special specified dust tape (SP3209) supplied with the Dust Test Kit SP3200 or the PreTreatment Kit SP7315/7316.
- Apply the tape at an appropriate location and rub 3 times by thumb with a hand force of approx. 4-5 kg.
- Take the Spring Loaded Roller and place it axial over the applied tape before.
- Press and hold down the roller till all wheels are in contact with the surface to assure the specified force of 44,13 N is applied.
- Move the spring roller, while holding it down, 3 times for and backwards over the tape.
- Peel the tape off by taking it on one of the corners and apply it on a Sample Transfer Sheet (SP3221) to examine and rate.



## 6 MAINTENANCE

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- Though robust in design, this instrument is precision-machined. Never drop it or knock it over
- Always clean the instrument after use.
- Clean the instrument using a soft dry cloth. Never clean the instrument by any mechanical means such as a wire brush or abrasive paper. This may cause, just like the use of aggressive cleaning agents, permanent damage.
- Always keep the instrument in its case when not in use.

## 7 DISCLAIMER

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The right of technical modifications is reserved.

The information given in this manual is not intended to be exhaustive and any person using the product for any purpose other than that specifically recommended in this manual without first obtaining written confirmation from us as to the suitability of the product for the intended purpose does so at his own risk. Whilst we endeavour to ensure that all advice we give about the product (whether in this manual or otherwise) is correct we have no control over either the quality or condition of the product or the many factors affecting the use and application of the product. Therefore, unless we specifically agree in writing to do so, we do not accept any liability whatsoever or howsoever arising for the performance of the product or for any loss or damage (other than death or personal injury resulting from our negligence) arising out of the use of the product. The information contained in this manual is liable to modification from time to time in the light of experience and our policy of continuous product development.

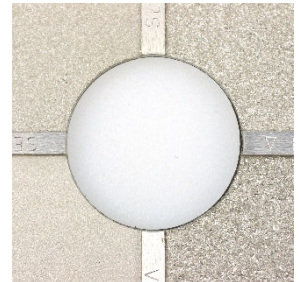
## STEEL SURFACE ROUGHNESS COMPARATOR

LD2040, LD2050

### 1 PRODUCT DESCRIPTION

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Comparison standard according to ISO 8503 part 1 made of quality steel. Indicates the surface condition of blasted steel according to ISO 8503 in grades of fine, medium, and coarse.



#### 1.1 Specifications

LD2040 - Surface Roughness Comparator for Grit Blasting

LD2050 - Surface Roughness Comparator for Shot Blasting

Material : High purity nickel

Width : 85mm

Height : 85mm

The comparator has been reproduced from a specially prepared and numbered master block

### 2 STANDARDS

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ASTM D 4417 Method A, ISO 8503-1

### 3 WHAT'S IN THE BOX?

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The Surface Roughness Comparator comes in a sturdy leather wallet.

### 4 PERFORM A MEASUREMENT

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By placing the appropriate comparator (G for Grit, S for Shot) against a blast cleaned surface, the finish achieved can be compared against the four sections of the comparator. It is then a simple matter to identify (by sight and touch) the standard surface:

- Fine grade equal to or above segment 1 but below segment 2
- Medium grade equal to or above segment 2 but below segment 3
- Coarse grade equal to or above segment 3 but below segment 4

### 5 MAINTENANCE

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- Always keep the instrument in its case when not in use.

### 6 DISCLAIMER

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The right of technical modifications is reserved.

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## SURFACE PROFILE AND COATING THICKNESS GAUGE

SP1560

### 1 PRODUCT DESCRIPTION

The Surface Profile & Coating Thickness gauge is a combination gauge. that can be equipped with two different tips, one for surface roughness and another for coating thickness.

#### 1.1 Technical Specifications

Range	: 0~3,4 mm / 0~0.13 inch
Resolution	: 1µm / 0.04 mil
Accuracy	: ± 5µm / 0.2 mil
Thread	: M2.5 x 0,45
Stem Diameter	: 8 mm / 0.3 inch
Battery	: Type LR44 1.5 V

#### 1.2 Details

Tips:	: Sharp needle tip for Surface Roughness gauge ( <i>standard on the gauge</i> )
	: Round tip for Coating Thickness Gauge



### 2 STANDARDS

ISO 2808-4B, ASTM D 4417-B, JIS K 5600-1-7, BS 3900-C5

Look up the appropriate standard for a correct execution of the test

### 3 WHAT'S IN THE BOX?

The instrument comes with two tips and a glass calibration plate, all in a leather pouch.

### 4 SPARES / ACCESSORIES

SP1619	Replacement tip for coating thickness
SP1616	Replacement tip for roughness
SP1618	Spare leather pouch for SP1560

### 5 PERFORM A MEASUREMENT

#### 5.1 Measuring Roughness

1. Press the On/Off button to switch the gauge on.
2. Check if the right tip is chosen. (the sharp needle tip is suitable for measuring roughness)
3. Choose parameter by pressing the IN/MM button.
4. Place the needle of the gauge on the flat glass specimen (zero plate) and press the gauge with the holder down until the base of the holder stands firmly on the zero plate.
5. Press the ZERO button to make the instrument read zero.



6. Place the needle gently on the blasted surface and press the base of the gauge-holder firmly against the steel. Do not drag the instrument.
7. Read the peak-valley value.
8. Make 10 measurements on each desired location and determine the mean as being the profile of the surface.

## 5.2 Measuring Thickness

1. Press the On/Off button to switch the gauge on.
2. Check if the right tip is chosen. (the round tip is suitable for measuring thickness)
3. Choose parameter by pressing the IN/MM button.
4. Place the needle of the gauge on the flat glass specimen (zero plate) and press the gauge with the holder down until the base of the holder stands firmly on the zero plate.
5. Press the ZERO button to make the instrument read zero.
6. Gently remove a piece of paint with a diameter of 8mm from the surface. Try to remove the paint without damaging the underground material.
7. Place the needle on the spot where the paint has been removed. Make sure the aluminium footing stands on the painted area.
8. The Coating thickness appears on the display.

## 6 CHANGING TIPS



### Step 1

Two tips are supplied. The sharp needle tip is suitable for measuring roughness, the round one for thickness.



### Step 2

Take the tip between two fingers and turn anti-clockwise until it is loose. If the tip stays stuck, go to step 2a.



### Step 2a

Only when loosening the tip anti-clockwise by hand fails, a pair of tweezers may be used GENTLY. Make sure the tip remains undamaged.



**Step 3**  
Turn the new tip clockwise until it's stuck.



**Step 4**  
The tips have been changed. Don't forget to store the tip that's not in use.

## 7 BATTERY REPLACEMENT

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If the display blinks it's necessary to replace the battery. The battery compartment lid is the grey cap on top of the gauge. Remove it by lifting it with a small screw driver. Replace the LR44 battery with its positive side facing upwards.

## 8 CALIBRATIONS

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We recommend annual calibration. You can send the instrument to the TQC Sheen Service department, together with a completed RMA form. This form is available on [www.tqcsheen.com](http://www.tqcsheen.com) under the Service-menu ; Repairs / Calibrations or RMA Service form

## 9 MAINTENANCE

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- Though robust in design, this instrument is precision-machined. Never drop it or knock it over
- Always clean the instrument after use.
- Clean the instrument using a soft dry cloth. Never clean the instrument by any mechanical means such as a wire brush or abrasive paper. This may cause, just like the use of aggressive cleaning agents, permanent damage.
- Do not use compressed air to clean the instrument.
- Always keep the instrument in its case when not in use.

## 10 DISCLAIMER

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## UV POCKET FLASHLIGHT

LD7290

### 1 SAFETY PRECAUTIONS

- **WARNING:** The light from this flashlight is very powerful and should not be shone directly into anyone's eyes, as this may cause short term blindness. If the beam does shine in your eyes, close them and look away immediately.

### 2 PRODUCT DESCRIPTION

Small, light weight, UV pocket flashlight powered by an ultra-high output 390-410nm UV LED. This UV pocket flashlight is used to detect contaminations that react under UV-illumination and cannot be seen with naked eye such as some organic fats, alkaline contaminants etc. Ideal to inspect the cleanliness of steel prior to painting.



#### 2.1 Specifications

Light Source	: LED
Chip	: 1x Edixeon UV LED
Batteries	: 3xAAA alkaline batteries
Net. weight	: 76 grams excl. batteries
Wavelength	: 395-410 NM
Beam distance	: 50 meters
Burning time	: 170 hours
IP No.	: IP67
Contacts	: Hard gold-plated contacts
Size	: 32 x 126mm

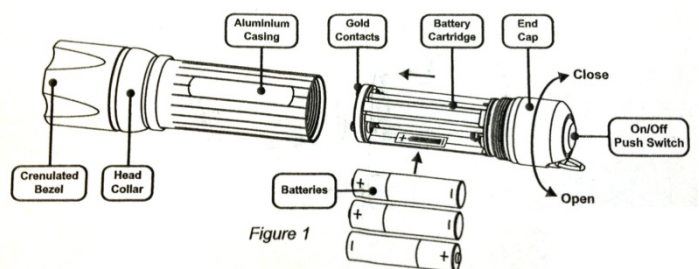
### 3 WHAT'S IN THE BOX?

UV pocket flashlight  
3 x AAA alkaline battery  
Wrist strap  
Pouch

### 4 PERFORM A MEASUREMENT

#### 4.1 installing the batteries

Hold the aluminium casing firmly in one hand and turn the end cap in a counter clockwise direction until fully unscrewed (see figure) Pull the end cap away from the casing and this will reveal the battery cartridge. Place each battery in turn within the cartridge ensuring that the polarity marks (+ and -) on the battery match that of the cartridge. With all





batteries installed replace the cartridge in to the casing and turn the end cap in a clockwise direction until fully tightened. The flashlight is now ready to use.

**IMPORTANT:** please make sure the batteries are installed correctly otherwise battery damage may occur, possibly resulting in a explosion. Never try to recharge batteries or use new and used batteries together. Always change all the batteries at the same time and only use high quality ones. Be careful not to touch the gold contacts at the end of the battery cartridge or rest them against anything conductive as this could cause short circuit. If you do not intend to use the flashlight for a long period of time, remove the batteries to prevent them leaking and damaging the flashlight.

## 4.2 operating the flashlight

To switch on the flashlight simply press the end cap switch until it engages, then release. To switch the flashlight off, press the end cap switch once again until it disengages, then release.

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