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PRETREATMENT TEST KIT
SP7316

MANUAL

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BRESLE TEST KIT
SP7310

MANUAL

PRODUCT DESCRIPTION

The TQC 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 TQC Bresle Kit is a conductivity gauge used for the assessment of soluble salt ions as chlorides, sulphates and nitrates.

Details
Conductivity meter HI0070:

Battery compartment
Selected measurement method (Cond-TQS-Salt)
Indication of unit (µS/cm of mS/m)
Battery indicator
Measured value
Temperature
On button
Calibration button (in menu mode 'Exit' button)
Enter button (in menu mode 'Accept' button)
Menu button (in menu mode 'Scroll' button)
Temperature electrode
EC/Conductivity button
Synthetic protective cover

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STANDARDS

ISO8502-6, ISO8502-9

SCOPE OF SUPPLY

The Bresle kit is complete with

- Case
- Digital Conductivity meter
- Bresle patches, 25 pieces
- Distilled water,
- Calibration Solution
- Cleansing Solution
- Cups
- Syringes
- Pictorial manual
- Magnet

PREPARATIONS

- Remove the plastic cap from the measuring cell
- Press the on button
- 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
- Calibration prior to each use is desirable for a reliable measurement:
  - Place the gauge flat on a flat surface
  - Poor the supplied calibration solution in the measuring cell
  - Push the CAL button
  - Wait until the measurement is stabilized
  - The display shows CAL ✓, calibrations was successful
  - Push the enter button to return to the normal display

Measuring Cell

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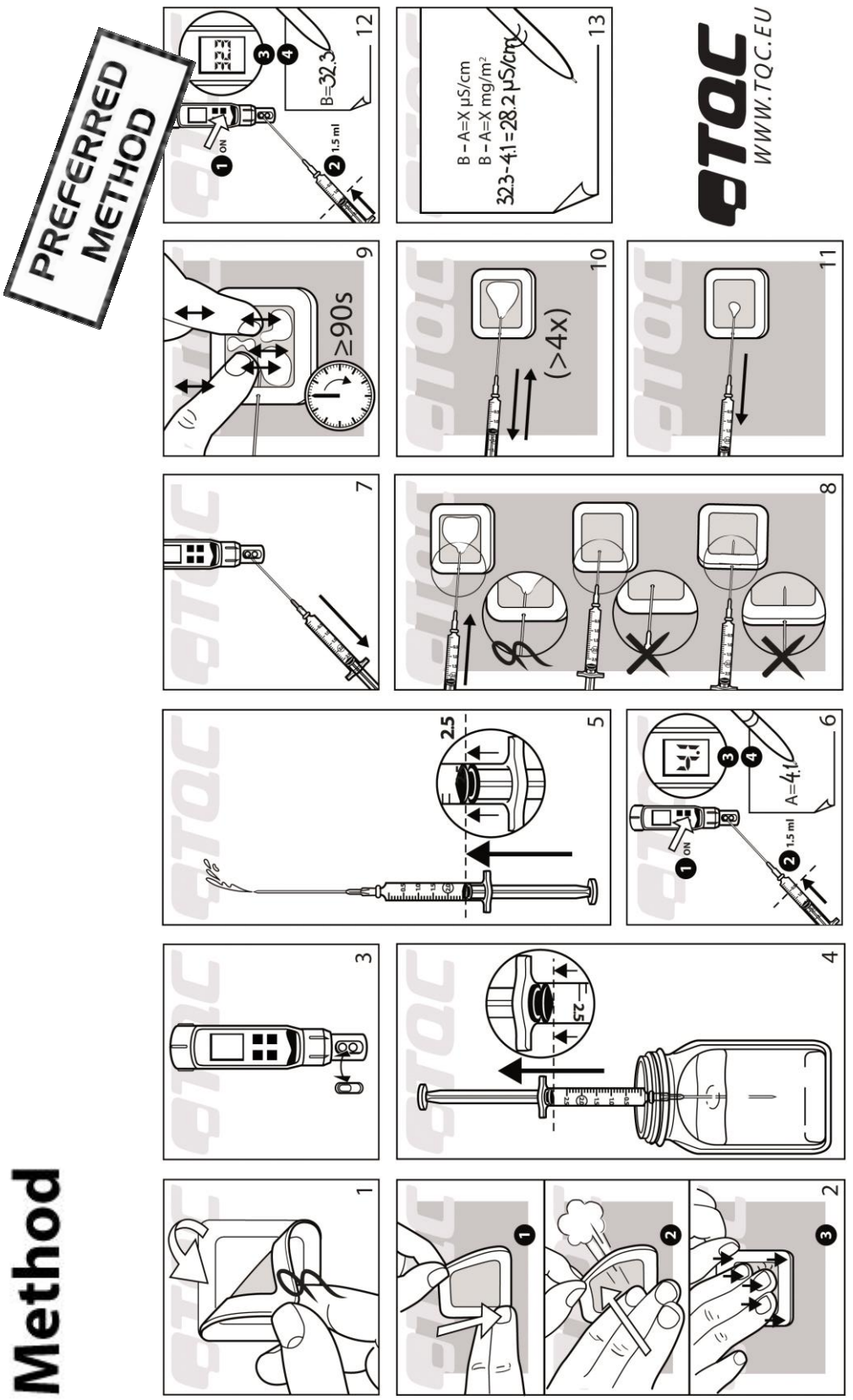
DETERMINATION OF SOLUBLE CONTAMINANTS ON SURFACES; DIRECT SAMPLE PROCEDURE



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A. 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.

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

B. Remove the square protective backing of the Bresle patch with its inner protective paper and dispose. Place the Bresle patch with the adhesive side to the test surface and press firmly in order to create a tight seal. When placing the patch take care to trap as less air as possible in the patch.

C. Use the syringe to draw 2,5 ml out of the large deionised water bottle. Take care that there are no air bubbles in the syringe.

D. Inject 1,5 ml of the deionised water in the measuring cell and note the blank value.
(Write the value down as blank value)

E. Draw the 1,5ml from the measuring cell back into the syringe to have again 2,5ml of water in the syringe.

F. Insert the 2,5 ml of deionised water into the Bresle patch by injecting it through the latex membrane and the foam at an angle of 30° from the surface.
(Inserting through the transparent part of the Patch or from the bottom side could cause leakage!)

G. Dissolve the salts by tapping the latex membrane for several minutes. In-between suck water from the patch and reinject into the patch several times. This operation should go on for about 3 to 5 minutes with 2-4 pumping strokes per minute.

H. When finished, suck up the entire volume of water into the syringe, remove the syringe from the TQC Bresle Patch. Inject 1,5ml of this water into the measuring cell of the conductivity gauge.

I. Measure the conductivity of the solution in the measuring cell and note down the value. This is the "**Measured Value**".

J. Calculate the difference between the measured value (measured at "I") and the blank value which has been determined earlier
(µS **Measured Value** - µS **blank value**).

The total surface density of soluble salts/contaminants (S) in mg/m^2 soluble salts measured as Sodium Chloride is

S mg/m^2 soluble salts measured as Sodium Chloride = 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.

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IF AN INTERPRETATION OF JUST THE CHLORIDES OR CL- IS REQUIRED THE MULTIPLIER WILL BE 0.6 INSTEAD OF 1 !

K. Dispose all the contaminated water in the supplied bottle and clean all critical parts by rinsing with clean distilled water.

CLEAN COMPONENTS ARE OF MOST IMPORTANCE FOR A RELIABLE TEST RESULT!

L. Make sure the Bresle Patch is removed from the surface after the test has been performed.

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 the 100 ml. beaker.
- Pour 100 ml. distilled water into the large 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 the 50 g of abrasives to the 100 ml distilled water in the large 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

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.

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.

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

DISCLAIMER

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V03. 1117

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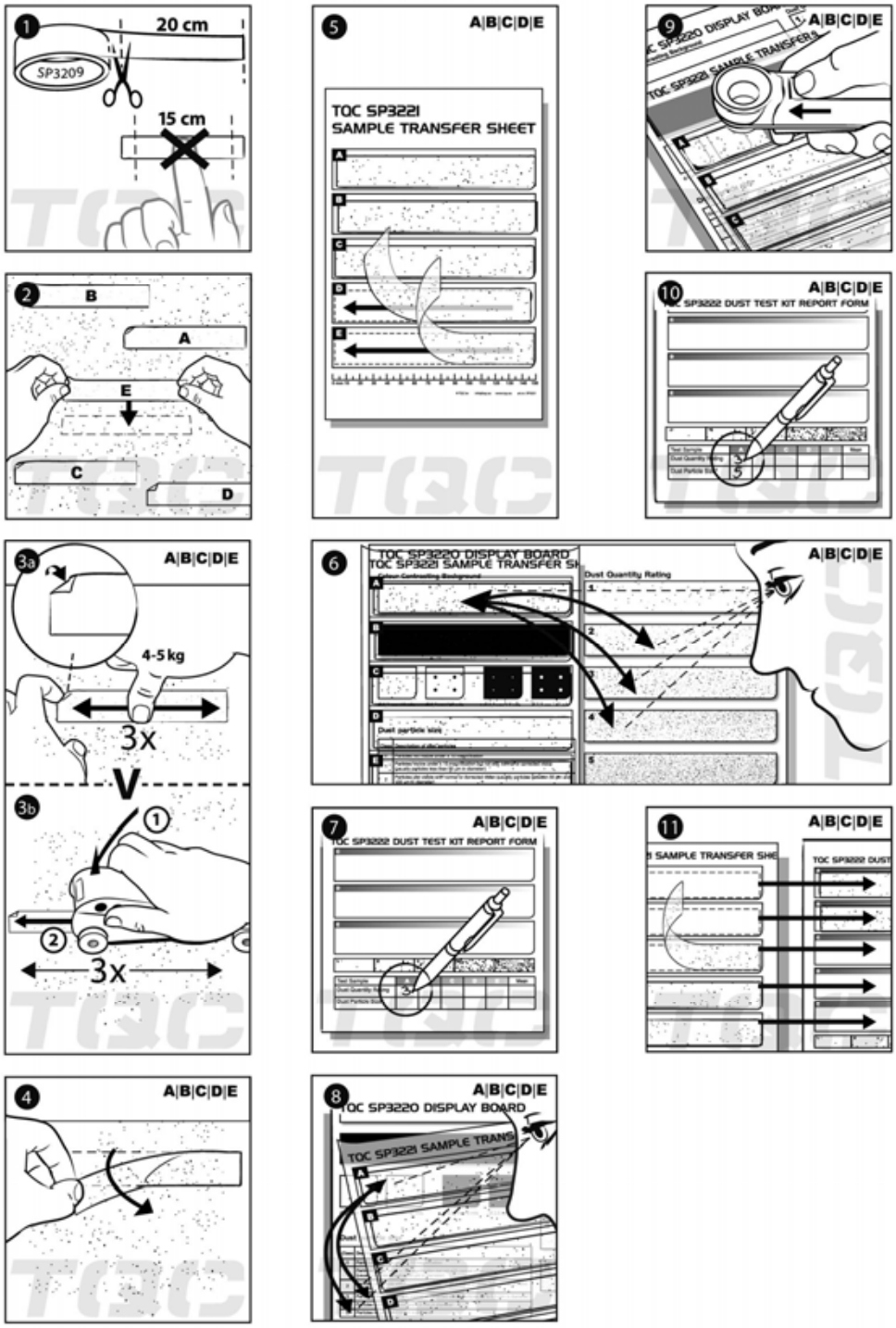
DUST TEST KIT
SP3200

MANUAL

DUST TEST PROCEDURE



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SPRING LOADED ROLLER FOR DUST TEST TAPE

SP3600

MANUAL

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

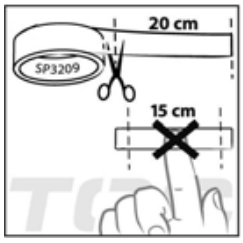
ISO 8502-3, IMO-PSPC MSC.215(82) and MSC.244(83)

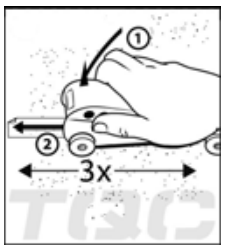
4 WHAT'S IN THE BOX?

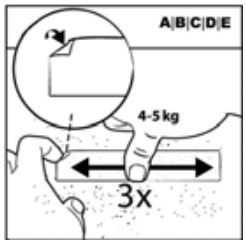
TQC Spring Loaded Roller
Plastic carrying case
Calibration certificate

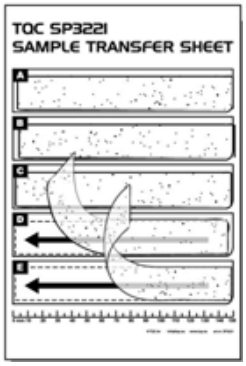
5 PERFORM A MEASUREMENT

- 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.









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6 MAINTENANCE

- 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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TQC SURFACE PROFILE AND COATING THICKNESS GAUGE
SP1560

MANUAL

1 PRODUCT DESCRIPTION

The TQC 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 *(standard on the gauge)*
: 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.

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6. Place the needle gentle 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 removed paint. 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 tongs 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.

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7 BATTERY REPLACEMENT

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

We recommend annual calibration. You can send the instrument to the TQC Service department, together with a completed RMA form. This form is available on www.tqc.eu under the Service-menu ; Repairs / Calibrations

9 MAINTENANCE

- 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.

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STEEL SURFACE ROUGHNESS COMPARATOR
LD2040, LD2050

MANUAL

1 PRODUCT DESCRIPTION

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

ASTM D 4417 Method A, ISO 8503-1

3 WHAT'S IN THE BOX?

The Surface Roughness Comparator comes in a sturdy leather wallet.

4 PERFORM A MEASUREMENT

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

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

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UV POCKET FLASHLIGHT
LD7290

MANUAL

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 TQC 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

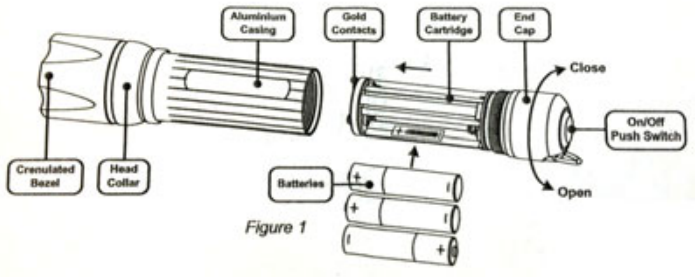

Figure 1

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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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