

**NDT**  
*Non destructive testing*



*Aerospace  
Industry Energy  
Railway*



**babbco**

**SKINCRIC**

**SHERWIN**  
**babbco**





*SOCOMORE can offer a range of products  
for all your Surface Treatment Operations,  
Pre & Post Non Destructive Testing.*

**[www.socomore.com](http://www.socomore.com)**

## ***Symbols legends used in this catalogue***

*Biodegradable Product*



*PMUC Certified Product*



*Low Temperature Product*



*High Temperature Product*



*Fluorescent Product*



*Coloured Product*



*Aqueous Suspension*



*Pictures may differ from actual products.*



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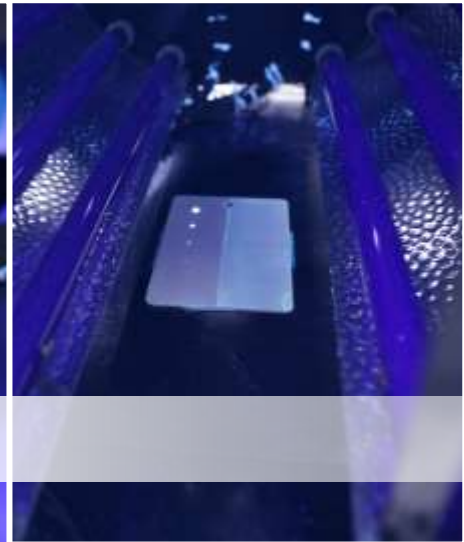
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**SERVICES**

Sherwin BabbCo can provide a range of high quality, non-destructive testing services in accordance with your needs.

Our NDT services include: **reference photos, metrology, consulting, equipment repair and calibration, analysis etc.**

**Benefits for our customers include:**

- Well-trained inspection technicians with expert knowledge
- Years of experience in the NDT
- Level III capabilities
- International presence and distribution
- In-depth knowledge of international specifications and local safety standards

*As a single source supplier for liquid NDT materials, technology and services, SHERWIN BABBCO provides our clients with the best value and service through all the stages of Penetrant and Magnetic Testing. From concept and design, through to materials acquisition, usage and after sales support, we are there to support you.*

**Reference photos**

**SHERWIN BABBCO CAN PROVIDE REFERENCE PHOTOS, COLOURED OR FLUORESCENT UNDER UV-A, SIMILAR TO TEST PANELS.**

Sherwin BabbCo can supply photos on a scale 1:1 that are visible under UV-A, without any background interference, in blue or bright colours, in accordance with AC 7114/1. These photos are exclusive to our laboratory. Sherwin BabbCo reference photos can also be coated on request.



*These photos can be used to:*

- ⇒ **Compare new processed panels with reference photos (fluorescent process).**
- ⇒ **Determine the % of NiCr indicated on the panels (colour contrast process).**
- ⇒ **Re-qualify in-use panels.**

*The fluorescent indications on the panel (PSM- 5, NiCr or other), are also reproduced on the fluorescent photo, so the controller does not have to leave the cabin to properly view the image, maintaining his eye adjustment to the darkness and allowing him to work in optimal conditions.*

*The images are always presented on a non-fluorescent background so as not to interfere with inspection.*

*The Sherwin BabbCo digital image department has MANY SERVICES to offer:*

- **Special methods for highly fluorescent photographic printing, to mimic the fluorescent indications of actual panels.**
- **Documents in A4 format.**
- **Accurate colour profile photos: no blue background interference and no fluorescent background: the best conditions for comparison with the reference panel.**
- **Measurement of indications with a resolution test pattern.**

*Our image services are performed in **OUR LABORATORY** or **ON SITE WITH OUR CLIENTS**.*

*For each service, we give a certificate.*

**SHERWIN babbco**

**CERTIFICAT DE MESURE DES INDICATIONS**  
**CERTIFICATE OF INDICATIONS SIZING**  
**N°P17030XXD**

Plaque / Panel: PSM5 P n°000000      Société / Company: XXXXXXXXX  
 Résultat / Result: 18/03/2017      Date de prochaine vérification recommandée / Next verification recommended on: 18/03/2018

Produit de référence / Reference product:  
 Matériau / Material: RC-77  
 Émulateur / Emulator: ER-03A  
 Révélateur / Developer: D-900 (électronique)

Note: Le photo de référence et le tirage numérisé associé ont été réalisés sous éclairage énergétique UV-A en conformité avec les normes ASTM E1444 et ASTM E 1417 ainsi que la norme EN ISO 3299.

Indications Indicators	Taille Size (mm, ± 0,1 mm)
A	1,0
B	1,5
C	2,4
D	4,0
E	6,0

Commentaire / Comment: P° élargissement

Résolution: 0,0485 mm

Opérateur / Operator:   
 Nom / Name: L. de BORT  
 Date / Date: 18/03/2017  
 Visa / Visa: 

Approbateur / Approver:   
 Nom / Name: A. BERT  
 Date / Date: 18/03/2017  
 Visa / Visa: 

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## Metrology

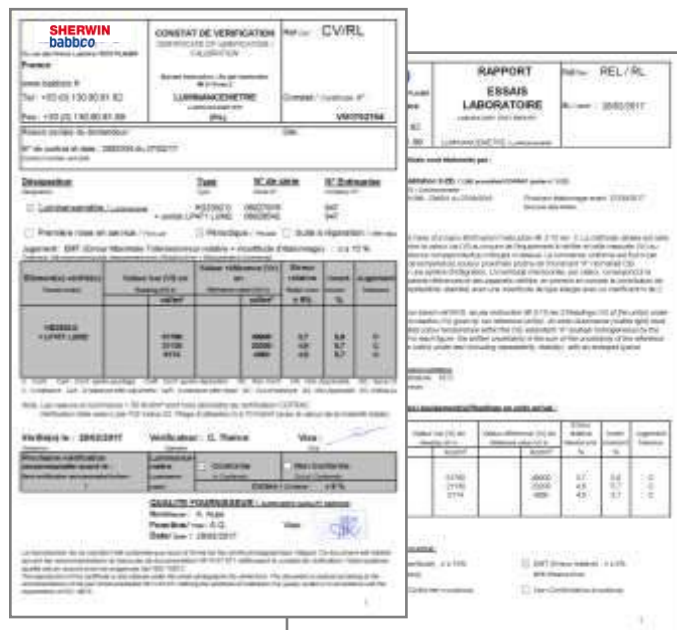


As part of the overall Sherwin BabbCo service, we offer a variety of metrology services on the devices we sell, and on other brands, that will ensure your devices meet:

- the specifications and standards required
- your expectations in terms of quality and safety
- your NADCAP requirements.

Our services:

- **Verification** (certificate in accordance with NF X 07011), or if requested, calibration only.
- **Traceability** (certificate)



To perform these services, our laboratories are equipped with radiometry / photometry benches and reference standards from UV-C to visible wavelength. A stabilized voltage and current supply guarantees stable emissions, continuous variation, ray spectra, and discrete spectra.

We can perform the the following tests:

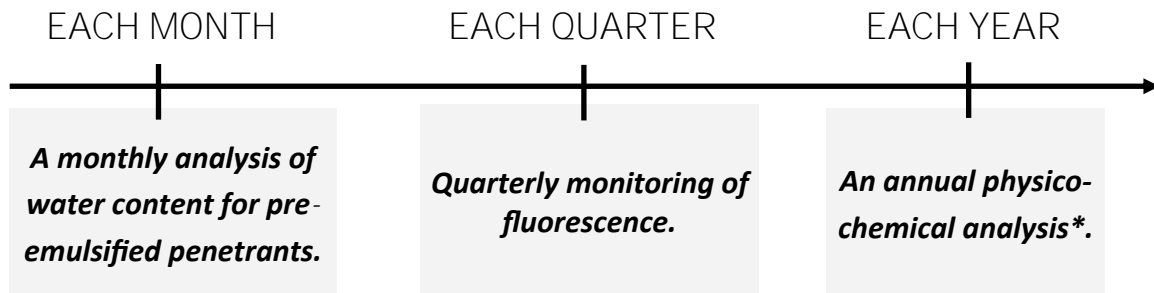
• <b>Radiometry</b> <b>Photometry</b>	White light 2800K Luminance (luminance meters) & illumination (luxmeters) UV-A 365 nm Actinic Blue A-blue® UV-B and UV-C
• <b>Magnetic particle testing</b>	DC or standard field generator, sinusoidal current, AC rectifier, etc.

**New** : spectroscopic UV-A & visible beam analysis, peak, central, centroid wavelength, FWHM, color temperature etc...

## Analysis

Some standards, requirements and specifications (AITM 6-1001, ASTM E1417, AMS 2644, DMS-0010, ISO 3452, NADCAP AC7114/1, etc.) recommend or require performing some analyses on pre and post-emulsified penetrant.

The Sherwin BabbCo laboratory performs **several types of analyses**:



To perform analyses that will allow you to be in compliance with the various standards and requirements, simply send us a sample of your penetrant. We will send you the certificate of analysis as soon as possible.

\* The annual physico-chemical analyses allow to statistically validate with great certainty a penetrant bath, in the case of large volumes it is a tool for monitoring the quality of the bath. This is essential in view of the financial value immobilized by the bath.



### The different analyses provided by Sherwin BabbCo include:

- Water content (pre-emulsified penetrants)
- Fluorescence brightness
- Washability (pre- and post-emulsified penetrants)
- Sensitivity
- Density
- Contamination (by visual inspection) in accordance with ASTM E1417
- Colour intensity in accordance with ISO 3452-1
- Effectiveness of the emulsifier in accordance with DMC 010 and ASTM E1417
- Flashpoint
- Stability of the fluorescence in accordance with AMS 2644
- Thermal stability in accordance with AMS 2644

Non exhaustive list, please contact us.

## Red dye penetrant ▲

### STEP 1 - SURFACE PREPARATION



With alkaline cleaner or solvent,  
By immersion or aspersion



Hot steam



Hot water  
+ alkaline cleaner



Solvent  
in spraycan



Make sure that the defects are clean

### STEP 2 - PENETRANT APPLICATION – DWELL TIME



Dip Drain



Brush



Spraycan



Electrostatic  
Spraying



Let's the penetrant material enough time for entering the defects

### STEP 3 - EXCESS PENETRANT REMOVAL



Water masturised  
sponge or rag



Water jet



Solvent masturised  
sponge or rag



Beware to do not overwash

## Red dye penetrant (continued) ▲

### STEP 4 - DRYING



Forced air



Clean non fluffly rag

Compressed air  
Low pressure

Warm air



Take care do not stain or polute

### STEP 5 - DEVELOPMENT

Non aqueous  
wet developerHigh volume  
low pressure Spray

A fine and uniform layer is mandatory to achieve convenient contrast & best sensibility

### STEP 6 - INSPECTION & RECORDING

Inspection under  
cold white lightObservation with  
lighting magnifierDigital  
Recording

Adequate Lighting lead to efficient inspection

## Fluorescent penetrant inspection ▲

### STEP 1 - SURFACE PREPARATION

				
With alkaline cleaner or solvent, By immersion or aspersion	Hot Steam	Hot water + alkaline cleaner	Solvent in spraycan	

Make sure that the defects are clean

### STEP 2 - PENETRANT APPLICATION – DWELL TIME




				
Dip Drain	Brush	Spraycan	Electrostatic Spraying	

Let's the penetrant material enough time for entering the defects

### STEP 3.1 - PENETRANT PRE-WASH (POST EMULSIFIABLE)

			
Water masturised sponge or rag	Water jet	Air / water washing	

### STEP 3.2 - EMULSIFIER APPLICATION DEPOSIT (POST EMULSIFIABLE)

		
Dip Drain	Spraycan	

Emulsifier contact should be less than 3 min generally  
in order to avoid over emulsifying.

Directly  
step 3.3



## Fluorescent penetrant inspection (continued) ▲

### STEP 3.3 - EXCESS PENETRANT REMOVAL



Dip Drain



Water Jet



Air / water washing



Beware do not over wash during this step mandatory done under UV-A

OR

### STEP 4 - DRYING

Forced air,  
Clean non fluffy rag,  
Compressed air Low pressure,  
Warm Air



Take care do not stain or pollute

### STEP 4 - DEVELOPMENT

Dip Drain



A fine and uniform layer is mandatory  
to achieve convenient contrast & best sensibility

### STEP 5 - DEVELOPMENT

Spraycan,  
Dust Storm Cabinet,  
Electrostatic Spraying,  
Dip Drain



A fine and uniform layer is mandatory  
to achieve convenient contrast & best sensibility

### STEP 5 - DRYING

Warm Air



Take care do not stain or pollute

### STEP 6 - INSPECTION & RECORDING

Inspection under  
UV-A light

Digital recording



Adequate lighting UV-A ou A blue ® lead to efficient inspection

## COLOUR CONTRAST PENETRANT TESTING ▲

### PRODUCT PACKAGING



PRODUCTS	AEROSOL (ml)	BARREL 1l	BARREL 5l	BARREL 10l	BARREL 20l	BARREL 25l	KEGS 60l	DRUM 200l	CONTAINER 1000l	BAG (80 SHEETS)	BUCKET (l)	POUCH (ml)	ROLLER (SHEETS)	METHOD LEVEL FORM	STANDARDS
<b>STEP 1 : SURFACE PREPARATION</b>															
C-10/S1	400		X			X		X							ISO 3452-2
DR-62	300	X	X	X		X	X	X							AMS 2644
LA1				X											/
N 120	300	X	X	X		X	X	X		1 / 5 / 18					ISO 3452-2 / PMUC
N 120 CO <sub>2</sub>	400														ISO 3452-2
SOCOCLEAN A3432					X			X							
SYNCLAIR A / C		X			X			X							
COMORAL DXP					X			X							
COMORAL DSP					X			X							
<b>STEP 2 : PENETRANT APPLICATION - DWELL TIME</b>															
BLEU PR												100			ISO 3452-2 / PMUC
DP-55	300 / 500	X	X	X		X	X	X						2	ISO 3452-2 / AMS 2644 / PMUC
DP-55 Thixo											0.5				/
DPR-256	300	X	X	X		X	X	X	X					2	ISO 3452-2
EFX-R02		X	X	X		X	X	X	X					2	/
LTP 82	250	X												2	ISO 3452-2 / ISO 3452-6
P-138/SA	400		X			X		X						2	ISO 3452-2
PR-25	500	X	X	X		X	X	X						2	ISO 3452-2
PRT 23E	300													2	ISO 3452-2 / AMS 2644 / PMUC
<b>STEP 3.3 : EXCESS PENETRANT REMOVAL</b>															
C-10/S1	400		X			X		X						C	ISO 3452-2
DR-60	500	X	X	X		X	X	X						C	AMS 2644
DR-62	300	X	X	X		X	X	X						C	AMS 2644
N 106A	300	X	X	X		X	X	X		100 sheets 1 / 5 / 18				C	ISO 3452-2 / PMUC
N 120	300	X	X	X		X	X	X		1 / 5 / 18				C	ISO 3452-2 / PMUC
N 120 CO <sub>2</sub>	400													C	ISO 3452-2
NT 101B	300													C	ISO 3452-2 / PMUC
DNE		X													/
<b>STEP 4 : DRYING</b>															
SONTARA EC													400		
SOCOWIPE ROLL													500		
<b>STEP 5 : APPLICATION OF DEVELOPER</b>															
D-100	300 / 500	X	X	X		X								e	ISO 3452-2 / AMS 2644 / PMUC
D-106	300		X	X										e	ISO 3452-2 / AMS 2644 / PMUC
D-110A.1											20 kg			c	ISO 3452-2 / AMS 2644
R60	500	X	X	X		X								e	ISO 3452-2
R-764/S1	400		X			X								e	ISO 3452-2
RT 71	300													e	PMUC

# FLUORESCENT PENETRANT TESTING ▲

## PRODUCT PACKAGING



PRODUCTS	AEROSOL (ml)	BARREL 1l	BARREL 5l	BARREL 10l	BARREL 20l	BARREL 25l	KEGS 60l	DRUM 200l	CONTAINER 1000l	BAG (80 SHEETS)	BUCKET (l)	JAR (ml)	ROLLER (SHEETS)	METHOD LEVEL FORM	STANDARDS
<b>STEP 1 : SURFACE PREPARATION</b>															
C-10/S1	400		X			X		X							ISO 3452-2
DR-62	300	X	X	X		X	X	X							AMS 2644
LA1				X											/
N 120	300	X	X	X		X	X	X		1 / 5 / 18					ISO 3452-2 / PMUC
N 120 CO <sub>2</sub>	400														ISO 3452-2
SOCOCLEAN A3432					X			X							
SYNCLAIR A / C		X			X			X							
COMORAL DXP					X			X							
COMORAL DSP					X			X							
<b>STEP 2 : PENETRANT APPLICATION - DWELL TIME</b>															
RC-29			X	X			X	X						1	ISO 3452-2 / AMS 2644
RC-50 / RC-55		X	X	X			X	X	X					2	ISO 3452-2 / AMS 2644
RC-65	300	X	X	X			X	X	X	X				3	ISO 3452-2 / AMS 2644
RC-77	300	X	X	X			X	X	X	X				4	ISO 3452-2 / AMS 2644
EFX-01		X	X	X			X							0.5	/
HM-2D		X					X		X					1	ISO 3452-2 / AMS 2644
HM-220		X	X	X			X	X	X	X				1	ISO 3452-2 / AMS 2644
WB-100		X	X				X		X					1	ISO 3452-2 / AMS 2644
HM-3A	300	X	X	X			X	X	X	X				2	ISO 3452-2 / AMS 2644 / PMUC
HM-440		X	X	X			X	X	X	X				2	ISO 3452-2 / AMS 2644
WB-200		X	X	X			X	X	X					2	ISO 3452-2 / AMS 2644
HM-406	300	X	X	X			X	X	X	X				2+	ISO 3452-2 / AMS 2644
HM-602		X	X	X			X	X	X	X				2+	ISO 3452-2 / AMS 2644
HM-3A.1 Thixo											0.1 / 0.5			3	PMUC
HM-430	300	X	X	X			X	X	X	X				3	ISO 3452-2 / AMS 2644
HM-604	300	X	X	X			X	X	X					3	ISO 3452-2 / AMS 2644
HM-607		X	X	X			X	X	X					3	ISO 3452-2 / AMS 2644
HM-704		X	X	X			X		X					4	ISO 3452-2 / AMS 2644
<b>STEP 3.1: PENETRANT PRE-WASH (POST-EMULSION)</b>															
This step is done with water.															
<b>ETAPE 3.2: EMULSIFIER APPLICATION (POST-EMULSION)</b>															
ER-83B	300	X	X	X			X	X	X					D	ISO 3452-2 / AMS 2644
ER-83A&C / ER-85		X	X	X			X	X	X					D/B	ISO 3452-2 / AMS 2644
<b>STEP 3.3 : EXCESS PENETRANT REMOVAL</b>															
C-10/S1	400		X				X		X					C	ISO 3452-2
DR-60	500	X	X	X			X	X	X					C	AMS 2644
DR-62	300	X	X	X			X	X	X					C	AMS 2644
N 106A / N 120	300	X	X	X			X	X	X	1 / 5 / 18				C	ISO 3452-2 / PMUC
N 120 CO <sub>2</sub>	400													C	ISO 3452-2
DNE		X													/
<b>STEP 4 : DRYING</b>															
SONTARA EC														400	
SOCOWIPE ROLL														500	
<b>STEP 5 : DEVELOPMENT</b>															
D-90G	200										10	100		a	ISO 3452-2 / AMS 2644
D-100	300 / 500	X	X	X			X							d	ISO 3452-2 / AMS 2644 / PMUC
D-106	300		X	X										d	ISO 3452-2 / AMS 2644 / PMUC
D-110A.1											20 kg			c	ISO 3452-2 / AMS 2644
D-113G.1											20 kg			b	ISO 3452-2 / AMS 2644
R60	500	X	X	X			X							d	ISO 3452-2
R-764/S1	400		X				X							d	ISO 3452-2

## Step 1: Surface Preparation

→ **C-10/S1** ▲▲ Ref 16BAC10

### Volatile Cleaner and Degreaser

- Removes grease and pollutants from mechanical and electrical parts.
- Use for degreasing or removing excess penetrant.
- After cleaning, parts are perfectly clean and dry, with no greasy residue.



→ **DR-62** ▲▲ Ref 1NDDR62

### Cleaner/Remover

- The DR-62 is a fast evaporating solvent, QPL AMS 2644 approved for aerospace.
- Its complex formulation has a broad range of action for removing pollutants prior to the penetration phase.
- Also suitable for dispelling doubts in fluorescent penetrant inspections.



→ **LA1** ▲▲ Ref 1NDLA1

### Alkaline Degreaser

- Compliant with all metals.
- Low-foaming. Leaves no white marks.
- Works at room temperature. Non-flammable.
- Can replace vapour degreasing.



→ **N 120** ▲▲ Ref 1NBAN120

### Degreaser

- Removes a large amount of pollutants through its broad range of action.
- Evaporates quickly, leaving cracks 'empty'.
- Use on wipes for localized cleaning operations.



PMUC

### → Aqueous Degreasers SOCOMORE

Sococlean A3432: in tank by immersion

Synclair A / C: in tank by immersion

Comoral DXP: in washing machine by aspersion

Comoral DSP: in washing machine by aspersion

## Step 2 : Penetrant Application - Dwell Time

### Penetrants

#### Type II Level ②

##### → BLEU PR ▲ Ref 1BABLEUPRPOCHE

- Thixotropic Blue Penetrant developed at the request of EDF to inspect and test the seal on valves (seal, needle, etc.).
- Easy to apply thanks to its thixotropic properties
- Easy to read, dense in colour.
- Can also be used as a penetrant (see DP-55 Thixo).

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##### → DP-55 ▲ Ref 1NDDP55

- Red Dye Penetrant. High contrast. Overwashing resistant.
- Accelerated dye penetrant inspection, will not run when used with developer D-100.



##### → DP-55 Thixo ▲ Ref 1BADP55TXO

Possesses the same detection characteristics as DP-55 liquid penetrant.

- Thixotropic Penetrant for local applications or to avoid penetrant runs.
- Can be removed with a damp sponge or with N-106A on a cloth.
- Development can be done with a non aqueous wet developer.

babbco DP-55 THIXO  
PENETRANT ROUGE THIXOTROPIQUE / THIXOTROPIC RED DYE PENETRANT

##### → DPR-256 ▲ Ref 1NDDPR256

- Tri dye combining amazing rinsability and little background noise.
- Good ability on carbon waste water treatment.
- Drastically reduces the wash time and volume of waste water.



##### → EFX-R02 ▲ Ref 1BAEFXR02

- Constant contrast that is noticeable regardless of the light quality (warm, cold, intermediate or natural) thanks to the tri dye formulation.



##### → LTP 82 ▲ Ref 1NDLTP82

- Low Temperature. Solvent removable penetrant, Type 2 Method C level 2.
- (In accordance with AMS 2644 and ISO 3452-2 and -6) detects discontinuities between -30°C and +10°C.



##### → P-138/SA ▲ Ref 16BAP138SA

- Without any glycol ether class 1+2.
- Provides good contrast, resistant to overwashing, little background noise.
- Usable from 10 to 50°C. Used primarily with Developer R60.



## Step 2 : Penetrant Application - Dwell Time

### Penetrants

---

#### Type II Level ②

- **PR-25** ▲ Ref 1NDPR25
- Ideal colouring, bi dye. Low cost.
  - Good rinsability, resistant to overwashing.
  - Used primarily with Developer R60.



- **PRT 23E** ▲ Ref 1BAPRT23E
- Suitable for use from 0°C to 200°C, particularly with high temperatures.
  - In welding, use between passes during pre or post-heating.
  - At 200°C, penetration is a few tenths of a second.



## Step 2 : Penetrant Application - Dwell Time

### Post-Emulsified Fluorescent Penetrants

#### Type I Level ①

##### → RC-29 ▲ Ref 1NDRC9

- *Very low viscosity, an advantage when working with tempered steel as it ensures a low consumption of penetrant. Also assists with pre-rinsing.*
- *The thin layer of penetrant remaining on the part will require little emulsifier ER-83A or ER-83B.*



#### Type I Level ②

##### → RC-50 ▲ Ref 1NDRC50

- *Low viscosity, an advantage when working with tempered steel as it ensures a low consumption of penetrant.*
- *The thin layer of penetrant remaining on the part will require little emulsifier.*



##### → RC-55 ▲ Ref 1NDRC55

- *Level 2 (+) : Detection of discontinuities is close to that of a Level 3.*
- *Odourless.*



#### Type I Level ③

##### → RC-65 ▲ Ref 1NDRC65

- *Brilliant penetrant for its level of sensitivity. The detection of discontinuities is close to that obtained on Level 4.*
- *The low viscosity of this penetrant ensures a lower consumption of penetrant (on tempered steel), a fast pre-rinse (time saving), and a slow saturation of the emulsifier bath (little penetrant remaining to emulsify after the pre-wash).*



#### Type I Level ④

##### → RC-77 ▲ Ref 1NDRC77

- *Is the reference Level 4 of AMS 2644 and ISO 3452-2.*
- *The level of fluorescence allows for safe detection.*



## Step 2 : Penetrant Application - Dwell Time

### Pre-Emulsified Fluorescent Penetrants

#### Type I Level ①

##### → EFX-01 ▲ Ref 1NDEFX01

- Synthetic and biodegradable.
- Lowers the cost of waste treatment and protects the environment.
- Can be used under UV-A or blue actinic light.



##### → HM-2D ▲ Ref 1NDHM2D

- Yellow-green colour.
- Compatible with all metals.

##### → HM-220 ▲

- Low viscosity with a yellow-green colour.



##### → WB-100 ▲ Ref 1NDWB100

- Approved water based Aqua-Check Lev.1 AMS 2644.
- Special characteristic making it resistant to overwashing.
- Available in concentrate, for dilution: **WB-100C**.



#### Type I Level ②

##### → HM-3A ▲ Ref 1NDHM3A

- Highly regarded in the aerospace industry for its intrinsic characteristics.
- Heavily loaded with optical brighteners: very bright, green-yellow indication.
- Very low background noise, high contrast ratio, low viscosity: low consumption driven by on parts for HM-3A compared to same sensitivity level penetrants.



##### → HM-440 ▲ Ref 1NDHM440

- New level Yellow-green colour.
- First biodegradable penetrant with low viscosity (unlike conventional biodegradable penetrants which are less fluid and thicker).
- Suitable for tanks (low consumption and a high recovery rate when draining).



##### → WB-200 ▲ Ref 1NDWB200

- Approved water based Aqua-Check Lev.2 AMS 2644.
- Special characteristic making it resistant to overwashing.
- Reduction of COD in waste in comparison to traditional penetrants.
- Available in concentrate, for dilution: **WB-200C**.



## Step 2 : Penetrant Application - Dwell Time

### Pre-Emulsified Fluorescent Penetrants

#### Type I Level ②+

##### → HM-406 ▲ Ref 1NDHM406

- More sensitive than HM-3A, advanced or superior resistance to overwashing.

##### → HM-602 ▲ Ref 1NDHM602

- Green-yellow colour.
- Displays the excellent properties of the Sherwin HM-6XX series: imperturbable in washing with the advantage of biodegradability!



#### Type I Level ③

##### → HM-3A.1 Thixo ▲ Ref 1BAHM3A1TXO

- Thixotropic Penetrant equivalent. Very useful when it is necessary to have no fluorescent penetrant running on the site.
- Used for mating face inspections (valve sealing). It is, in this situation, much more efficient than Prussian blue.



Penetrant Fluorescent Thixotropique / Thixotropique Alcoolique Penetrant

##### → HM-430 ▲ Ref 1NDHM430

- Superior resistance to overwashing is better and low background noise.
- Optimized colorimetry.



##### → HM-604 & HM-607 ▲ Ref 1NDHM604 / 1NDHM607

- HM-607 is slightly more sensitive than HM-604.
- A non-oil, biodegradable synthetic base that facilitates disposal and/or waste treatment.



#### Type I Level ④

##### → HM-704 ▲ Ref 1NDHM704

- Synthetic basis, highly biodegradable.
- The HM-x04 high and ultra-high sensitivity series was developed with a synthetic base, allowing relatively easy washing while leaving an acceptable level of background noise, considering the high levels of sensitivities proposed.



## Step 3.2 : Emulsifier application (post-emulsion)

### Hydrophilic and Lipophilic Emulsifiers

→ **ER-83A** ▲ Ref 1NDER83A

- **Method D.**
- Dilutable range from 0 to 30%: very high maximum concentration.
- Only surfacic emulsification effect and not complete solvation : little risk of over-emulsification
- Usable on the RC-XX series of post-emulsified penetrants.



→ **ER-83B** ▲ Ref 1NDER83B

- **Method D.**
- Similar to the ER-83A in its characteristics and performance.
- It is free of alkyl phenol ethoxylates (APE).
- It is the only emulsifier with an integrated anti-corrosion function.



#### Reference Emulsifier

→ **ER-83C** ▲ Ref 1NDER83C

- **Method D.**
- Concentrated, water dilutable product for the removal of excess post-emulsified penetrants from the surface.
- APE free.



→ **ER-85** ▲ Ref 1NDER85

- **Method B.**
- For the removal of excess post-emulsified penetrant from the surface.
- No pre-wash or dilution required



### Step 3.3 : Washing - Excess Penetrant Removal

→ **DR-60** ▲▲ Ref 1NDDR60

#### Solvent Remover - Used in Aerospace

- Penetrant removal agent for use when water is not available.
- Use to eliminate excessive background noise that makes interpretation difficult.



→ **N 106A** ▲▲ Ref 1BAN106A

#### Cleaner

- Removes excess penetrant from the surface, without using water.
- Eliminates excessive background noise, making interpretation easier.
- Use on wipes for localized cleaning operations.



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→ **N 120** ▲▲ Ref 1NBAN120

#### Degreaser

- Can be used for excess penetrant removal at a temperature <10°C.
- Used on wipes for localized cleaning operations.



PMUC

→ **NT 101B** ▲ Ref 1BANT101B

#### High temperature cleaner

- Use with a water dampened cloth to remove excess penetrant, PRT 23E, at high temperatures, when N106A becomes too volatile.
- Do not spray NT101B directly onto the part.

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PMUC

→ **Anti-foam DNE** ▲▲ Ref 1BADNE

- Used in bubble-type washing stations.
- Silicone free anionic anti-foaming agent for aqueous environments, especially but not limited to basic environment.
- Forms in water stable emulsions.

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## Step 5 : Development

→ **D-90G** ▲ Ref 1NDD90G

### Dry Developer

- *Proposes exceptional resistance against blows from an air gun that are very severe or harsh or "dipping" in dust storm cabinet.*
- *Develops quickly.*
- *Fluid enough so does not make clusters on the surface for development and inspection*
- *Parts have a matt finish and UV reflections are reduced.*
- *100% mineral powder.*



→ **D-100** ▲▲ Ref 1NDD100

### Non Aqueous Wet Developer (volatile carrier fluid)

- *Accelerated development, improved sharpness and non-runny indication with DP-55. The DP-55/D-100 process is high tech and secures the penetrant inspection by minimizing the subjectivity of the inspection.*
- *The specific size and quality of the components are exceptional.*
- *Specific additives for a final rendering in neutral and smoothed white.*



→ **D-106** ▲▲ Ref 1NDD106A

### Non Aqueous Wet Developer (volatile carrier fluid)

- *Quick drying, non aqueous wet developer.*
- *Its average particle size makes it a very versatile developer.*
- *Preferable for temperatures below 12°C.*



→ **R60** ▲▲ Ref 1BAR60A

### Non Aqueous Wet Developer (volatile carrier fluid)

- *Gives good results with all BabbCo penetrants.*
- *Has a surfactant system.*



→ **R-764/S1** ▲ Ref 16BAR764-S1

### Non Aqueous Wet Developer (volatile carrier fluid)

- *Mixture of organic solvent and powders.*



→ **RT 71** ▲ Ref 1BART71

### High Temperature Developer

- *Perfect for use at temperature above 50°C.*
- *At 200°C, developing time take no more than a few seconds.*



## Step 5 : Development

→ **D-110A.1** ▲▲ Réf 1NDD110A1B20

### Water suspendable developer

- Powder to be diluted in water to form a suspension of white particles, which dries on the piece in a uniform white layer.



→ **D-113G.1** ▲ Réf 1NDD113G1B20

### Water soluble developer

- Powder to mix in water to form a clear liquid, which dries on the piece in a uniform white layer.



## Step 6 : Inspection & Recording

→ **Magnifiers** ▲▲

**Single** (Ref 3WI950046) in metal casing 20x lens.

**Double** (Ref 3WI950043) in metal casing 20x and 10x lenses.

**Triple** (Ref 3EDT38-331) in aluminum casing, 3x 4x 5x lenses. Magnification from 3 to 12x by combining lenses : 6x (3&4), 7x (3&5), 8x (4&5), 12x (3&4&5).



→ **Low Corrosion Marker** Ref 1INT-CRSP

This refillable marker (supplied with 12 refills) is suitable for all surfaces and allows for visible marking under UV-A. Low content of halogen (<200 ppm) and sulphur (<250 ppm) and low-melting-point metals (<250 ppm).



→ **Feutre PMUC** Réf 1INTSL250-PMUC

Low chloride and sulfur content for safe use on stainless steel, alloys and super alloys where only corrosion resistant products are to be used. 3 mm writing size, medium wear-resistant round tip.



→ **Resolution Test Pattern** Ref 1BAMIRE

The resolution target is used to check the quality of the reference image and to verify uncertainties when sizing indications.



## Step 6 : Inspection & Recording

### → Sizing gauges ▲ Ref 1WI1676

Set of gauges from 0.45mm to 1.50mm in 20 points, and 1.50mm to 3mm in 16 points, for sizing under UV-A by masking indications.



### → TAM : fluorescent comparator and swing-away flaw dimension tool. ▲

#### TAM 135273 Fluorescent comparator Ref 1SHTAM135273

Instant viewing of the linear or circular indication dimensions. The TAM strip enables you to size and compare the indications in fluorescent penetrant inspection / fluorescent magnetic particle testing, directly under UV-A light at the time of the inspection.



#### TAM 190466 Flaw dimension tool Ref 1SHTAM190466A

Set of 10 tabs in plexiglass ranging from 0.125 to 0.005 inches (3.17 to 0.13 mm).

### → Safran boards ▲▲ Ref 1BA455

μ-pore fluorescent tool. Specific for SAFRAN (G.E.) purpose.



### → Tumbling E chart ▲▲ Ref 1BAPHD-E

- High definition chart according to ISO 18490. Used to inspect near visual acuity to EN 4179. Black on white.
- Variation: Negative version, white on black (can be used under UV-A).



### → 25X Microscope with crosshair ▲▲ Ref 1EDT38837

- Using the crosshair, this pocket microscope enables you to size penetrant testing indications of 5mm in length, with a resolution of 50 μm (5/100mm). The fluorescent penetrant indications can be illuminated for inspection by a UV-A lamp by the recess of the base, and visualized for measurement under a mixed light.
- Suitable for inspection : Airbus AITM 6-1001, Appendix F, Table F.1



### → Magnifying pen with x25 magnification and graduated reticle

▲▲ Ref 1OT48000210 \* Available until exhaustion

- High precision pen magnifier
- Reduced size and maximum magnification
- Model with graduated plate (ruler 0.05 mm and angles) for ultra-precise measurements.
- Magnification x 25
- Dimensions: 50 x 23 x 138 mm



## Water Treatment

→ **CA30** Ref 9BACHARB30

### Activated Carbon

- Granular activated carbon produced from coal, peat, etc. that is steam activated at high temperatures.
- It is particularly recommended for any process in the liquid phase of purification, and water discolouration from penetrant inspection.



→ **CA270** Ref 9BACHARB270

### Activated Carbon

- Granular activated carbon produced from pine wood by chemical activation.
- It is particularly recommended for treating waste water from pre-emulsified penetrants.



→ **FSP3** Ref 9BAFSP3

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### Flocculent Penetrant Separator

- Flocculant for water polluted with organic products.
- It significantly reduces the consumption of active carbon and stabilizes the pollutants in sludge.
- There is no release by leaching.

→ **T50** Ref 1BAT50

### Corrosion Inhibitor

- Additive intended, among other things, to be injected by a dosing pump into equipment using running water, for example to rinse parts when performing a dye penetrant inspection, when the parts are easily corroded.

<i>Product Packaging</i>			
Products	Barrel (L)	Drums (KG)	Bags (KG)
CA30		25	
CA270		14.5	
FSP3			25
T50	5		

## Equipment

### → Inox Hydro-pneumatic and Pneumatic Boxes ▲▲

Ref 1BACOFREREGUL ■

Regulation boxes of air/ water/ air & water for penetrant inspection (rinse/ pre-rinse/ blowing).

Option: Set with non-stop water temperature measurement.

- Supplied with certificates.



### → Water / Air Spray Guns ▲▲

**Long barrel model (22 cm)** Ref PISTOLET ■

- Reduces water to fine particles, producing a very soft mist, this non-aggressive application is ideal for pre-emulsified penetrants.
- Weight 950 g , 4-8 bar, 12mm diameter for water, ¼" for air.

**Compact model (10 cm barrel)** Ref PISTOLJET ■

- Very convenient, single handle simultaneously controls the air and water, light and handy.
- Weight 440 g , 1-6 bar, 12mm diameter for water, ¼" for air.

**Economically Spray Gun** Ref 1MMCWG2 ■

Adjustable air/ water flow using thumb wheels.

**PREMIUM Spray Gun :** Ref 1JAPISTOLET ■

Excellent results regardless of the settings, adjustable water wheel.



### → Water Spray Gun ▲▲

**Simple Spray Gun** Ref 1DIPISTOLEAU ■

Generation of fine spray/mist. Full cone.

**WG-1 Spray Gun** Ref SH-WG-1 ■

A robust spray gun recommended by Boeing and compliant with MIL-I-6866 and ASTM E 1417 requirements. The gun is available with or without the full jet nozzle that emits coarse spray without air pressure.



## Equipment

### → Marker for localized penetrant application ▲▲

Ref 1INT-SL600VIDE ■



Single use marker for localized penetrant inspection (touch-ups).

Marking size: 18 x 5mm.

### → Digital Refractometers ▲▲▲ ■

BabbCo has a range of digital refractometers with temperature correction, reference curve, for direct immersion in tanks, etc.

- **Pal 1** (Ref 1ESPAL-1) : dual scale from 0 to 85% Brix and 0 to 45° Baumé, autoplay, resolution 0.1 Brix.
- **RCT 0-32** (Ref 1FIREFACTAUTOM0-32) : measuring range from 0 to 32% Brix, reading accuracy 0.1% Brix.
- **Brix Pen** (Ref 1ESREFRACTPEN) : measuring range from 0 to 85% Brix, resolution 0.1 Brix, measurement accuracy 0.2% Brix.



### → µvolume Dispenser ▲ Ref 1FISDISTRIBX40446 ■

For small quantities of solvent, used for "wipe-off" technique. Prevents spillage from solvent filled containers and reduces VOC emissions. Use with wipes or brush.



### → Lint-free, Smooth Swabs ▲ Ref 1SOSC3 / 1SOSC7 / 1SOSC9 ■

Lint free, dense cotton swabs for "wipe-off" technique. No risk to NDT (less expansion of the dense cotton from the small quantity of solvent involved). Available with a pointed (SC7) or round (SC3) end. Maximum diameter at the end is 3mm, length of cotton tip is 1cm. Total length is 7.5cm. Wooden stick with single tip has a length of 15cm.

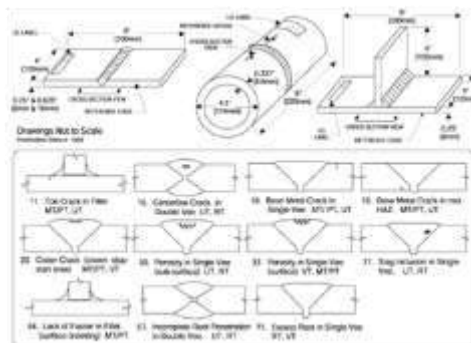


### → Teaching kits ▲▲ Ref 1SHLA1TESTKIT

**Real artificial discontinuities.**

**Set of teaching materials and training parts.**

- Several standard sets in different methods are offered.
- Fake specimens are available in different materials, with different types of discontinuities (RT, PT, MT, US, VT).



■ Step 1

■ Step 2

■ Step 2.2

■ Step 3

■ Step 4

■ Step 5

## Reference Panels

### → European test panel ISO 3452-3 Type II ▲▲

Ref 1MPPLAQUEURO

5 star discontinuities and 4 roughness ranges for overall penetrant process in red dye or fluorescent.



### → Tesco Eishin NiCr (ISO 3452-3 Type I) ▲▲ Ref 1TETP

- Single or Twin in a protective box.
- Available in 10, 20, 30, 50  $\mu\text{m}$  : denotes the thickness of the chrome discontinuities.
- Discontinuities are linear and their width is 1/20th of the chromium layer thickness.



### → PSM-5 P (TAM 146040) ▲▲ Ref 1SHPSM5P

- Poly/sandblasted.
- Meets Pratt & Whitney, General Electric etc. specifications



### → PSM-5 G (TAM 146040) ▲▲ Ref 1SHPSM5G

- Fully sandblasted.



### → Twin KDS ▲▲ Ref 1SHTWINKIDS

**Features:** identical twins, use alone or as a pair.



### → WTP 1 ▲▲ Ref 1SHWTP1

- Two areas of identical roughness for washability tests.
- Steel AISI321, sanded alumina grade 120.



### → "Runchek" Disposable Bakelite Panels ▲▲ Ref 1DIPLABAK

- Contains 1, 2 or 3 discontinuities. The panels are disposable and cannot be used to measure the sensitivity of the products or process.
- Sold in sets of 100.



### → ASME aluminium block ▲▲ Ref 1SHBLOCKASME

Use with high temperature penetrant testing in accordance with ISO 3452-5 Annex A penetrants comparator.

- Can be reused several times with the same products. Overall summary test.



## Magnetic testing

### STEP 1 - SURFACE PREPARATION



With alkaline cleaner or solvent,  
By immersion or aspersion



Hot steam



Hot water  
+ alkaline cleaner



Solvent  
in spraycan

Make sure that the defects are clean



coloured fluorescent

### STEP 2 - WHITE CONTRAST OIL-PAINT DEPOSIT



Spraycan

Apply fine and uniforme layer



### STEP 3 - MAGNETIZING



Equipments used for magnetization are :  
Yokes, permanent magnets or benches.



directly  
step 3

## Magnetic testing (continued)

### STEP 4 - DEVELOPMENT



Spraycan



Spraying gun



Squeeze bottle



Produce a streaming of the magnetic product on the part to be checked.

⚠ Continue to magnetize while you apply the developer

### STEP 5 - INSPECTION & RECORDING



Inspection under cold white or UV-A light



Digital recording



Adequate Lighting lead to efficient inspection.

## MAGNETIC PARTICLE TESTING PRODUCT PACKAGING



PRODUCTS	AEROSOL (ml)	BARREL 1l	BARREL 5l	BARREL 10l	BARREL 20l	BARREL 25l	KEGS 60l	DRUM (l)	BOX (KG)	BUCKET (L)	DOSES* (ml)	STANDARDS
<b>STEP 1 : SURFACE PREPARATION</b>												
B 105	500			X								ISO 9934-2 / PMUC
SAFE 105	400	X	X	X								PMUC
SOCOCLEAN					X			X				
SYNCLAIR A / C		X	X		X			X				
COMORAL DXP					X			X				
COMORAL DSP					X			X				
<b>STEP 2 : WHITE CONTRAST OIL-PAINT APPLICATION</b>												
B 102A	500											ISO 9934-2
B 104A	500			X								ISO 9934-2 / PMUC
<b>STEP 3 : MAGNETIZING</b>												
This step is done with an electromagnet.												
<b>STEP 4 : DEVELOPMENT</b>												
<b>FLUORESCENT DEVELOPERS ▲</b>												
Ready-to-Use Concentrates	B 101C	400										ISO 9934-2 / AMS 2641 / AMS 3046 / PMUC
	KP 17B				X							ISO 9934-2 / AMS 2641 / AMS 3045 / PMUC
	KP 25				X		X					ISO 9934-2 / AMS 2641 / AMS 3045
	KP 118				X		X					ISO 9934-2 / AMS 2641 / AMS 3045
	KP 600		X	X	X							ISO 9934-2 / AMS 2641 / AMS 3041
	SAFE 778A	400	X	X							6x250ml	ISO 9934-2 / PMUC
	WCF 17B			X							6x200ml	ISO 9934-2
Powders	LY 2500								0.5 / 1			ISO 9934-2 / AMS 3044
	MG 118								0.5 / 1			ISO 9934-2 / AMS 3044
	SY 8000								0.5 / 1			ISO 9934-2 / AMS 3044
	UW1								0.9			ISO 9934-2
Carrier Liquids	K 5500				X							ISO 9934-2
	K 9300				X		X	X				ISO 9934-2
	K 9300P				X		X	X				ISO 9934-2 / AMS 2641
<b>COLOURED DEVELOPERS ▲</b>												
Ready-to-Use Concentrates	B 103C	400										ISO 9934-2 / AMS 2641 / AMS 3043 / PMUC
	KP 42A				X							ISO 9934-2 / AMS 2641 / AMS 3041 / PMUC
	KP 600				X							ISO 9934-2 / AMS 2641 / AMS 3041
	SAFE 820A	400									6x250ml	ISO 9934-2
	SAFE 850A	400										ISO 9934-2 / AMS 3042
	WCB 42										6x200ml	ISO 9934-2 / PMUC
Powders	BP 42								1			ISO 9934-2 / AMS 3042
	UW1								0.9			ISO 9934-2
Dry Powders	DP 66									2.3		ISO 9934-2 / AMS 3040
	DP 68									2.3		ISO 9934-2 / AMS 3040
Carrier Liquids	K 5500				X							ISO 9934-2
	K 9300				X							ISO 9934-2
	K 9300P				X		X	X				ISO 9934-2 / AMS 2641

\*Dose : 1 dose per 10 liters of water (jerrican)

## Step 1 : Surface Preparation

→ **B 105** ▲▲ Ref 2BAB105

### Cleaner / Degreaser

- Use to clean the highly resistant B104A (and all white backgrounds in general, etc.).
- May also be used as a general degreaser.



PMUC

→ **Safe 105** ▲▲ Ref 2BASAFE105

### Cleaner / Degreaser

- Mainly used to remove white backgrounds for magnetic particle testing B104A and B102A .
- Can also be used as a degreaser prior to inspection, or for general mechanical cleaning.



PMUC

### → Aqueous Degreasers SOCOMORE

Sococlean A3432: in tank by immersion

Synclair A / C: in tank by immersion

Comoral DXP: in washing machine by aspersion

Comoral DSP: in washing machine by aspersion

## Step 2 : White Contrast Aid Paint Deposit

→ **B 102A** ▲▲ Ref 2BAB102A

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### PELLICAL White Contrast Aid Paint

- White peel-off lacquer, average layer thickness of 30µm very easy to remove by peeling and brushing. A fast drying paint with great coverage, it can be used as a contrast agent for any black or red magnetic developer.
- B102A offers considerable time saving for magnetic particle testing when removal of the white background is required after inspection. Almost no obstruction.

→ **B 104A** ▲▲ Ref 2BAB104A

babbco

### White Contrast Aid Paint

- Heavily loaded opacifier.
- Treated length: over 30 metres with an aerosol unit.
- High coverage in low layer thickness of 20µm , very beneficial covered surface / aerosol ratio. After drying, the layer is very fine, which is best for optimum detection.

PMUC

## Step 4 : Development

### Ready-to-use

→ **B 101C** ▲ Ref 2BAB101C

babbco

#### Fluorescent Magnetic Ink, Organic Suspension

- Particle size ranges from 0.5 to +10, so it is very versatile and suitable for detecting very fine or 'normal' discontinuities.
- The liquid carrier allows the particles to be highly mobile, supporting flawless detection, even in critical operating conditions.

PMUC

→ **B 103C** ▲ Ref 2BAB103C

babbco

#### Black Magnetic Ink, Organic Suspension

- The product is ideally loaded with powder, for an ideal contrast balance.
- The carrier liquid allows the particles to be highly mobile, supporting flawless detection.

PMUC

→ **KP 17B** ▲ Ref 2BAKP17B

#### Fluorescent Magnetic Ink, Organic Suspension

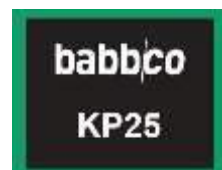
- General-purpose product for magnetic particle testing.
- Average particle size range starts at 1µm, centres on 4µm, ends at 10µm.
- Low background noise, oil with a flash point of 60 C. It is intended for use on small work benches or by spraying as lost product.



→ **KP 25** ▲ Ref 2BAKP25

#### Fluorescent Magnetic Ink, Organic Suspension

- Zero VOC.
- Approved by Dassault, Rolls Royce & SAFRAN (SNECMA / Turbomeca).
- The particles size makes it a very advanced detection product.
- Ideal for machined surfaces. The organic suspension has been improved to support high contrast and fewer purple reflections.
- Slow sedimentation, very fast resuspension of particles, almost no risk of untimely deposit of powder in the tanks.



→ **KP 42A** ▲ Ref 2BAKP42A

#### Black Magnetic Ink, Organic Suspension

- Equivalent of B103C but in bulk.
- Moderately loaded with particles for a good indication/background contrast ratio and an easy detection.
- Flash point of 60°C.



PMUC

## Step 4 : Development

### Liquids

→ **KP 118** ▲ Ref 2BAKP118

#### Fluorescent Magnetic Ink, Organic Suspension

- Zero VOC.
- *Extremely bright powder for very clear indications and minimal background noise, even on rough surfaces.*
- *Very versatile magnetic ink with average particle sized powder.*
- *Flash point of 100°C.*



→ **KP 600** ▲▲ Ref 2BAKP600

#### Red and Fluorescent Magnetic Ink, Organic Suspension

- Zero VOC.
- *Oil-based magnetic developer, red in white light and fluorescent orange in ultraviolet and actinic blue lighting.*
- *Its colour, on certain dark parts, makes it possible to skip the white background application.*
- *Using the fluorescent method, background noise is significant as the KP600 is heavily loaded with powder.*



→ **Safe 778B** ▲ Ref 2BASAFE778B

#### Fluorescent Magnetic Ink, Aqueous Suspension

- Odourless.
- *Yellow-green colour for inspection under UV-A lighting.*
- *Very fine and very stable.*
- *Usable with all magnetic generators (current flow, electromagnets, permanent magnets) and in magnetic benches.*
- *Also available in concentrate, for dilution with water.*

spraycan



→ **Safe 820B** ▲ Ref 2BASAFE820B

#### Black Magnetic Ink, Aqueous Suspension

- Odourless.
- *Inspection under white light.*
- *Very fine, very stable, available in an aerosol.*
- *Usable with all magnetic generators.*
- *Also available in concentrate, for dilution with water.*

Spraycan



→ **Safe 850A** ▲▲ Ref 2BASAFE850A

#### Red and Fluorescent magnetic ink, aqueous suspension

- Zero VOC, odourless.
- *Detection with or without a contrast aid paint application.*
- *Saves time on site.*

spraycan

babbco



## Step 4 : Development

### Concentrates

→ **WCB 42** ▲ Ref 2BAWCB42

**babbco** WCB42

REVELEATEUR MAGNETIQUE NOIR / BLACK MAGNETIC DETECTING MEDIUM

#### Black Magnetic Ink, Aqueous Suspension

- Contains an anti-corrosion, wetting and anti-foaming agent.
- High performance developer for at minimal cost.
- Use on site with a sprayer or on bench.
- Precautions: degrease parts well. Do not allow to freeze.



→ **WCF 17B** ▲ Ref 2BAWCF17B

#### Fluorescent Magnetic Ink, Aqueous Suspension

- Contains powder with an anti-corrosion, wetting and anti-foaming agent.
- Very effective developer for a minimal cost.
- Use on the site with a sprayer or on bench.
- Precautions: degrease parts well. Do not allow to freeze.



→ **SAFE 778B** ▲ Réf 2BASAFE778B

- Concentrated to dilute in water at 5,0 % volumic (1:20).
- Very fine and very stable product containing anticorrosive, dispersing and wetting agents.
- Very low odor, very low halogen and sulfur content
- Frost resistance up to -10 ° C



→ **SAFE 820B** ▲ Réf 2BASAFE820B

- Blackmagnetic ink, inspection under white light.
- Very fine and very stable



### Powders

→ **BP 42** ▲ Ref 2BABP421K

#### Black Magnetic Powder, Organic Suspension

- Black, very fine, very stable. Upgrade of KP42.
- For high quality magnetic inspections under ordinary light.

→ **LY 2500** ▲ Ref 2TELY2500

#### Fluorescent Magnetic Powder, Organic Suspension

- Ultra-fine, with a preference for machined surfaces, high attachment to magnetic flux leakage fields.
- Upgrade of KP25.

→ **MG 118** ▲ Ref 2CIMG118

#### Fluorescent Magnetic Powder, Organic Suspension

- Excellent brightness, little background noise, for use on all parts.
- Excellent results on rough surfaces.
- Upgrade of KP118.

## Step 4 : Development

### Powders

→ **SY 8000** ▲ Ref 2TESY8000

#### Fluorescent Magnetic Powder

- Versatile, high performance powder: SNCF approval.

→ **UW1** ▲▲ Ref 2UW1

#### Combined Magnetic Powder for Underwater Inspection

- Intended for aqueous suspension.
- Use for showing indications visible in an underwater environment or standard magnetic particle testing under UV-A or blue actinic lighting.

### Dry Powders

→ **DP 66** ▲ Ref 2CIDP66

#### Dry Magnetic Powder

- Yellow, for fast inspection without a white contrast aid paint, for use in high temperatures (427°C).

→ **DP 68** ▲ Ref 2CIDP68

#### Dry Magnetic Powder

- Blue, for fast inspection without a white contrast aid paint, for use in high temperatures (427°C).

### Organic Carrier Liquids

→ **K 5500** ▲▲ Ref 2DIK5500

#### Special Oil for Magnetic Particle Testing

- Dearomatized dilution oil, flash point > 60°C.

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K5500

→ **K 9300 and K 9300P** ▲▲ Ref 2DIK9300 / 2DIK9300-P

#### Special Oil for Magnetic Particle Testing

- No VOC.
- Dearomatized dilution oil, flash point > 100°C.
- K9300P is odourless.
- K9300P is conform to AMS 2641 Type 1.

**babbco**  
K9300

**babbco**  
K9300P

## Equipment

### Electromagnets

→ **B 100 S** Ref 2PAB100S



#### Can be dismantled and repaired

- Supplied with carry case and certificate of compliance.
- The switch is located under the index finger.
- Device can be dismantled, and therefore easily repaired in the event of a fall.

Weight: 2.95 kg

Maximum pole spacing: 0 to 260 mm

Lifting capacity: 6 kg

Alternating field.



→ **B 300 S / B48** Ref 2PAMB300S/CE - Ref 2PAMB48AC/CE



#### Reinforced Cable Output

- Resistant to water spray, steam or liquids. Supplied with a carry case and a certificate of conformity.
- Of molded construction, the B 300 S cannot be dismantled.
- Encapsulated in resin, the electrical circuit is particularly protected. Only the cable and the switch can be changed.
- The switch is located under the index finger.

Weight: 3.4 kg

Maximum pole spacing: 260 mm

Lifting capacity: 6 kg (5 kg B 48)

Alternating field.

Available in low voltage: **B 48, 48V.** (Ref 2PAMB48AC/CE )



→ **B 310 S / B310 BDC / B 142**

Ref 2PAMB310S/CE - Ref 2PAMB310BDC - Ref 2PAMB142/CE



#### Reinforced Cable Output

- Splash proof. Supplied with a carry case and a certificate of conformity.
- B 310 S is the smallest electromagnet in the range and is exceptionally easy to handle.
- Of molded construction, the electrical circuit is encapsulated in resin and particularly well protected.
- The switch is located under the thumb, for use in even the most inaccessible places.

Weight: 3.1 kg

Maximum pole spacing: 205 mm

Lifting capacity: 5 kg

Alternating field.

Available in low voltage: **B 142, 42 V.** (Ref 2PAMB142/CE)



B310 BDC (variation): powered by battery, the B310 BDC delivers a **continuous** and powerful magnetic field. (Ref 2PAMB310S/CE)



## Equipment

### Electromagnets

→ **DA 200 S / A 48 / D 48** Ref 2PADA200S / 2PAMA48AC



#### Can be dismantled and repaired

- Supplied with a case and certificate of compliance. DA 200 S comes with a alternating/ half-wave rectified switch. These are the most powerful electromagnets in the range.
- The DA 200 S has the advantage of a handle for grip and to reduce hand fatigue. The switch is located under the thumb.
- Its powerful magnetic circuit gives it the ability to work on large parts or loaded alloys in the workshop.
- Can be dismantled for easy maintenance.



Weight: 5.8 kg

Maximum pole spacing: 400 mm

Lifting capacity: DA 200 S & A 48 alternating: 11 kg

D 48 R1A: 28 kg

→ **A 410 S / A 448 / DA 400 S** Ref 2PAMA410S/2PAMA448/2PAMDA400S



#### Can be dismantled and repaired

- Supplied with carry case and certificate of compliance. DA 400 S comes with a alternating/ half-wave rectified switch.
- These metallosopes have the advantage of a handle for grip and to reduce hand fatigue. The switch is located under the thumb.
- Constructed with removal housing for maintenance or repairs in the event of a fall. Very popular device among service providers.



Weight: 3.6 kg

Maximum pole spacing: 255 mm

Lifting capacity: A 448: 5 kg

A 410 S or DA 400 S alternating: 7 kg

DA 400 S in R1A (rectified in alternation): more than 18 kg

**Reduced exposure to the magnetic field thanks to the handle (European directive 2013/35/EU).**

## Equipment

### Batteries

#### → Power-Pack: Stand-alone Battery Ref 2HUPP230V

**Robust, ergonomic and splash-resistant with an improved battery life. Available at an affordable and reasonable price, the new BabbCo stand-alone battery has arrived!**

- *The Power-Pack set provides you with the ability to perform magnetic particle inspections independently with real AC, rather than pulsed DC, and therefore be closer to normal control conditions (detection of surface discontinuities).*
- *Available in 230V AC (PP-230).*
- *Supplied with a shoulder strap for ease of carriage and movement.*

<b>Working temperature</b>	5°C - 35°C (< 50% R.H.)
<b>Performance</b>	PP-230: 230V modified sine wave, max 3.7A
<b>Autonomy</b>	<i>With a 12.6v LiFePo battery, the battery lasts for about a day on on the 230V. The use depends on the electromagnet and the intensity.</i>
<b>Low battery indicator</b>	<i>Audible alarm when the battery is low.</i>
<b>Dimensions</b>	31(L)*12(w)*25(h) cm
<b>Weight</b>	PP-230: 4.2 Kg
<b>International protection level</b>	IP 54
<b>Recharging cycle</b>	<i>Up to 2000 recharges while retaining 80% of the initial performance level.</i>



- *Supplied in a carry case for safe and easy travel. The compact size also enables it to be portable and transported in a 'professional backpack'.*
- *Can be used with your own 230V metalloscope.*
- *The battery life allows you to work for more than half a day without having to recharge the battery.*

## Equipment

### Indicators

#### → The Berthold Cross Ref 2DIBERTHOLD

- The Berthold Cross consists of a remanence-free shielding ring surrounding an iron cylinder covered by a thin brass plate. The cylinder is divided into four quarters by cuts which simulate artificial flaws in the form of a cross.
- To determine magnetizing efficiency, turn the shielding ring slowly to increase the distance of the brass plate from the test piece.



#### → Asme Field Indicator Ref 2DITEMASME

- Consists of 8 carbon steel triangles, soldered together. A copper film about 0.25 mm thick covers everything.
- Like the Berthold Cross, the best drawn lines are those that are perpendicular to the magnetic force lines.



#### → Afnor Indicator No. 2 Ref 2DIAFNOR2

Circular extra-soft alloy 1-2mm thick, with a diameter of 28mm and a circular discontinuity mid-radius, coated on one side with a 0.5mm thick copper foil. The discontinuity on the other side (observational) is hidden by a paint film, 0.01mm thick.



#### → Indicators A, B, C

- Indicators A: Shim with hole, supplied in accordance with NF-A 09.570. Ref 2DITEMA
- Indicator B: Step wedge, split longitudinally Ref 2DITEMB
- Indicators C: Conforms to ISO 9934-2 Type 2. Ref 2DITEMC



#### → KETOS Ring Ref 2HEKETOSRING

- 12 holes ASTM E 1444
- 12 holes AS5282 & ASTM E 1444 with magnetic characterization.



#### → Magnetic Card Indicator Type A Ref 2CIMSCTYPEA

This card is for use with coloured magnetic inks (daylight), dry powders, or fluorescent magnetic ink that do not contain fine particles.



#### → Magnetic stripe card type 2000 Ref 2CIMSCTYPE2000

This magnetic card is recognized by the ASTM E -709 "Standard Guide for Magnetic Particle Testing" as per ASTM E- 1444 / E- 1444M "Standard Practice for Magnetic Particle Testing."



#### → Disc and shim SNECMA Réf 2SRDISCSNEC & 2SRCAL/SNECMA

Snecma disc n° 8.21.1.000 038.0 DMC 0070 : circular for electric current control

Snecma shim n° 8.21.1.000 039.0 DMC 0070 : parallelepipedal standard for control between polar masses or encircling solenoids.

## Equipment

### Indicators

#### → BURMAH Strips Ref 2NDTBURMAHT

- Type G: Old type 1, pouch of 5, general mechanics.
- Type A: Old type 2, pouch of 5, aerospace sector.



#### → MTU Test Block No. 3 Ref 2HEMTU3

- Reference block type 1 in accordance with EN ISO 9934-2. Supplied with a reference photograph with BabbCo magnetic ink (product to specify).



#### → ASTM D91 Conical Centrifuge Tube Ref 2DIDECANTD

- Graduation: 0.05ml up to 1 ml, 0.1ml up to 2ml, 0.2ml up to 3ml, 0.5ml up to 5ml, then every 1ml up to 10ml, and then finally every 5ml/l.
- Stand available.



#### → ASTM E709 Pear Shaped Centrifuge Tube Ref 2DIDECANT

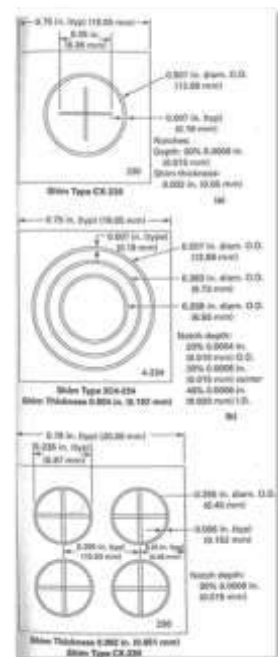
- Fluorescent bath model:  
Graduation every 0.05ml from 0.05ml, up to 1.0ml.
- Non-fluorescent bath model:  
Graduation every 0.1ml from 0.1ml, up to 1.5ml.



#### → Quantitative Quality Indicators (QQI)

##### Flexible Ephemeral Indicators

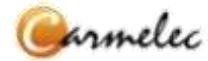
- Shim type CX-230  
Ref 2IC519630
- Shim type 3C4-234  
Ref 2IC519632
- Shim type CX-230 (4 indicators)  
Ref 2IC519631



## Equipment

### Magnetic Field Measuring Devices

→ **Analyse** Ref 2CAANALYSSE



Magnetic field meter with graphic display and a drop down control menu for visualization of the magnetization curve. Specially designed for the aerospace sector with a display of the true and peak values. Supplied with the Certificate of Conformity according to ISO 10012 and protective bag.



- Angle probe : Tangential field, indication of residual field.
- Straight probe : Tangential field.
- Long straight probe

**NEW**



Thin part: length 100 mm, thickness 3 mm, width 6 mm  
Base plate 6 \* 6 \* 100 mm, total length 200 mm

Electromagnetic compatibility	Complying with EN61326
Power supply	9V battery (PP3/6F22/6LR61)
Consumption	27 mA
Battery life	~ 20 hours (without backlighting)
Sensor	Hall Effect SS495A
Range of Measurement	47000 to 47000 real A/m
Resolution	10 A/m
Frequency Range	40Hz to 410Hz
Sampling Frequency	10kHz
Refresh rate	8Hz
Dimensions	120mm x 65mm x 22mm (excluding probe)
Weight	180g with battery
Housing	Reinforced ABS plastic
Humidity and dust proofing	IP 64
Units available	kA/m, A/m, A/cm, Oe, mT

## Equipment

### Magnetic Field Measuring Devices

#### → MDC1n<sup>2</sup> Ref 2CAMDC1N2

- Robust, accurate, versatile & simple.
- Backlit mono display unit selection (A/cm, Gauss, Oe, mT).
- Measurement range: + /- 333 A/cm effective (470A/cm peak).
- Max resolution 10 A/m on 3 significant digits

The MDC1n<sup>2</sup> is a long-lasting, stable and accurate reference instrument. It is the preferred device in the mechanical and nuclear industries.

**Device supplied with carrying case**

**Available with (only one choice apply):**

Angled probe (tangeantial field + residual field)

Straight probe (tangeantial field)

Mini straight probe



#### → Magnetis Ref 2CAMAGNETIS

- Matrix display, shock-proof probe
- Max resolution: 1 A/m. (interpolation/averaged integration)
- Available units: A/m, Oe, mT
- Device supplied with carrying case, a protective bag, recent metrological certificate to ISO 100 12

#### Technical characteristics

- Detection characteristics:
- Field: DC only
- Sensor: Hall effect sensor SS495A
- Measuring range: - 47 000 to 47 000 A/m real
- Resolution: (on 3 significant digits) from 0 to 100 A/m:1 A/m (DC only)

#### Mechanical and environmental characteristics

- Device dimensions: 120 mm x 65 mm x 22 mm (without probe)
- Probe dimensions: D 10mm x L 27,5mm
- Weight: 180 g with battery
- Housing: Reinforced ABS reinforced plastic
- Humidity and dust proofing: IP 64 (first digit = level of protection against the ingress of solid foreign objects: 6 (complete protection against dust); second digit = level of protection against harmful ingress of water: 4 (protection against water-splashes).



#### → Residual Field Indicator Ref 2JOICR

- Graduation: 0 to ± 20 Gauss.
- Accuracy : ± 2Gauss +3% deviation, full scale.
- Weight : 75g, ∅ 63mm \* 34mm, fluorescent dial.

Supplied with a calibration certificate.



#### → Protection bag Réf 2CASACOCHE

Accessory for 3 field meters

## Equipment

### Accessories

#### → Permanent Magnet AP 56 Ref 2BAAP56

- Permanent magnet with boron-iron-neodymium non-dischargeable poles. Poles are 150mm in length and are connected by a metallic cable 300mm long. Supplied in a pouch.
- Lifting power >30 kg. Pole's diameter =33mm. Aluminium and resin body.



#### → Permanent Magnet AP 65 Ref 2BAAP65

- Permanent magnet with boron-iron-neodymium non-dischargeable poles. Poles' length =150mm, connected by a metallic cable 300mm long.
- Lifting capacity > 40 kg. Poles have a diameter of 40mm. Aluminium and resin body. Supplied in a case.



#### → Induction Light Y400/Y300 Ref 2PAY400 / 2PAY300

- Y400 : B 100 S / DA 400 S alternative A 410 S / A 448.
- Y300 : B 300 S / B 48
- Provides additional lighting levels of approximately 500 lux when the metaloscope is in AC mode.



#### → TB 10 Ref 2PATB10

4.5kg bar to verify the lifting force of electromagnets.  
Each bar has a serial number and certificate.



#### → Transformer for 48V Electromagnets Ref 2DI630NF48

- Compliant with EN 60742
- Carry-on handle
- Circuit-breaker, circuit separation
- Extension cords available in option : 10, 20 and 30 meters



#### → Transformer for B142 Ref 2HUTRANSFO

- Compliant with EN 60742
- Carry-on handle
- Circuit breaker, circuit separation
- Extension cords available in option : 10, 20 & 30 meters
- 230 / 48V



#### → Powder blower Ref 2PAPB1

Powder blower for dry powder.



#### → PULJET 2 Spray Bottle Ref 1WIPULJET2

- Spray bottle for use with hydrocarbon solvent cleaners or non aqueous magnetic inks.
- FPM seal (resistant to chlorine, acids, alkaline solvents, mineral oils, light fuel oils and diesel, mineral oil based grease).
- Plastic reservoir with graduation and an adjustable PVC nozzle for directional spray.



**Characteristics:** Net capacity: 1,5 L Total volume: 2 L Weight: 0.42 Kg

## UV Lighting

### Ambient Lights

#### → Waterproof UV-A Overhead Light Réf 3LSTMW401

- Waterproof overhead lights with a highly efficient concentrated reflector for optimal reflection in the UV-A wavelength range.
- UV-A transparent plastic covers
- Bare tube version: general ambience
- Version with reflector tube and UV-A PMMA cover, with 2 types of adjustable reflectors.



Mesures (Cm)	Plafonnier 1 tube 60 cm 1x36W		Plafonnier 2 tubes 120 cm 2x36 W	
	Face (μW)	Latérales (μW)	Face (μW)	Latérales (μW)
60	450	265	650	440
80	250	170	450	310
100	160	130	320	270
120	110	90	240	190
140	80	65	180	140

Mesures effectuées avec un DMX 365 XA n°1226320

#### → Waterproof ATEX Double Tube UV-A Lighting

Ref 3LSTMW4011

- Marine aluminium alloy construction.
- Glass tube with yellow polyurethane paint.
- Nominal intensity of 250 μW/cm<sup>2</sup> at a distance of 50cm, and 100 μW/cm<sup>2</sup> at 100 cm.
- Standard 230V 50Hz voltage
- 1 3/4 inch brass NPT cable gland and 1 3/4 inch steel NPT cap.
- 1 set of articulated brackets (2)



Mesures (Cm)	Plafonnier 2 tubes étanches			
	18 W		36 W	
	Face (μW)	Latérales (μW)	Face (μW)	Latérales (μW)
60	150	110	300	150
80	80	70	190	100
100	50	50	140	90
120	40	40	110	60
140	30	30	80	50

Mesures effectuées avec un DMX 365 XA

#### → PowerMAX 365 Ref 3SPPM-1600SBLC

- Ceiling light with 16 UV-A LED lights specifically designed for NDT applications. Multiple lamp units can be “ganged” together longitudinally or back-to-back for a larger coverage area, to meet your specific inspection requirements.
- Low visible light emission—less than 0.5 foot-candle (5 lux).
- Supplied with a Wood Filter to limit violet reflections.

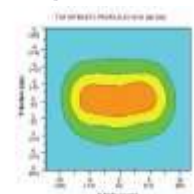
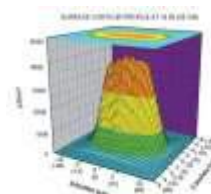
Illumination: UV-A of <math>5000\mu\text{W}/\text{cm}^2</math> at 38 cm.

Dimensions (L x W x H): 35x14x15 cm.

Weight: 4 Kg

Compliant with Rolls-Royce RRES 90061 and ASTM E3022 Requirements.

**Suitable for AIRBUS AITM6-1001 Issue 11 November 2016.**



## UV Lighting

### Lumières d'inspections

→ **uVision 365** Ref 3SPUV-365

**NEW**



Compact and economical inspection lamps allow very high quality evaluations. Using a state-of-the-art heatsink concept, the uVision cools mechanically without the need for a fan. In addition to three powerful LEDs UV-A (365 nm), it comes with a white LED for lighting work areas.

The compact design of the head provides access to areas inaccessible to large UV inspection lamps.

Resistant to dust and splash water, one of the most robust lamps from Spectroline.

- Certified ASTM E 3022 and ISO 3059.
- Non Destructive Control
- Fluorescence detection

#### Specifications :

- Dimensions : Ø 8,9 cm\*19 cm.
- Weight : 0,73 kg
- Cords: Each lamp comes with a 2.40 m cord.

Available in standard intensity (ES) version

AC Deluxe Kit

AC / DC Mobile Deluxe Kit



	UV-365SBLC*	UV-365MSBLC*	UV-365ES*
<b>Rolls-Royce RRES 90061 REQUIREMENTS</b>	✓	✓	✗
<b>ASTM E3022-15 STANDARD</b>	✓	✓	✗
<b>EN ISO 3059</b>	✓	✓	✓

## UV Lighting

### Inspection Lights

#### → TRITAN 365 Ref 3SPTRI-365

Three diode 365nm UV-A and 1W white single diode projector delivering a wide beam. For use in fluorescent NDT methods.

- Supplied with a Wood Filter to limit violet reflections.
- ASTM E 3022 certified, ISO 3059 certified.
- Non Destructive Testing
- Fluorescence detection
- Leak detection tracer

There are many advantages of UV-A LEDs: Low electrical consumption, no overheating, instant-on, portable equipment with great autonomy on battery, low voltage.

#### Specifications:

- **Dimensions:** Ø 8.5 cm\*20.3 cm.
- **Weight:** lamp 454g / battery (if supplied) 700g.
- **Cables:** - AC version (230V mains) 2.4m or 6m.  
- AC/DC Version AC/DC (mains/battery) 1.10m in secondary, 2.40m in primary.

**Complies with COFREND PT & MT lighting guide recommendations for best practice.**

- **Operation:** continuous on AC, 3.5 hours on battery.
- **Charge time:** 2 hours

#### Variation of the visible spectrum from 5500 K to 3000 K:

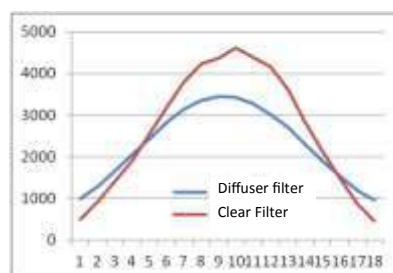
- **Clear filter:** only for protection. Solar white light 5500 K.
- **Tungsten:** reduction of blue photons in the visible beam to minimize pupil constriction during inspections in dark cabins, after detection under UV-A. A 3000K warm white light also allows for visual inspection.
- **Safelight Gold:** reduction of blue photons in the visible beam to minimize the pupil constriction during inspections in the dark cab, after detection under UV-A. Visible yellow coloured light.

- **Several levels of illumination:** high (> 2000 lux ; < 4000 lux), standard (> 1100 lux ; < 2000 lux), medium (≈ 500 lux) and low (< 100 lux).

The TRITAN AC/DC battery is not contained in the lamp but in a separate unit that hangs on a belt or shoulder strap, distributing the weight of the battery. This allows the reduction of the weight supported during use and increase the capacity of the batteries.

#### Optional

- On all TRITAN lamps, the rubber ring on the filters provides good protection against shocks.



SPECTROLINE®



## UV Lighting

### Inspection Lights

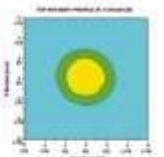
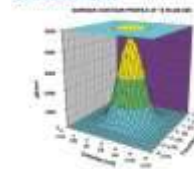
#### → TRITAN 365 RR Ref 3SPTRI-365\*/F-RR

**Spectronics® has created the new Tritan 365 RR to meet Rolls Royce RRES 90061 Requirements.**

- Three diode 365nm UV-A and 1W white single diode lamp white 1W monodiode.
- Several levels of illumination: Low (< 100 lux), medium (approximately 500 lux) and high (> 1000 lux).
- Nominal steady-state UV-A intensity of less than 5,000  $\mu\text{W}/\text{cm}^2$  at 38 cm with a 15cm diameter area covered.
- New lens for a progressive beam shape.
- Low visible light emission—less than 10 lux.
- The Tritan RR has the same standard features as the Tritan 365 (dim., weight, filters), and also comes with a 2.4m or 6m mains cable.
- Thermal cut-off circuitry prevents lamp from going out of compliance when internal temperature exceeds specifications.
- Supplied with a Wood Filter to limit violet reflections.
- **Suitable for AIRBUS AITM6-1001 Issue 11 November 2016.**



UV-A BEAM PROFILE



#### → TRITAN 365H Ref 3SPTRI-365H/F

Lamp is Also available without the Wood Filter, delivering 9000  $\mu\text{W}/\text{cm}^2$  at 38cm. Use for detecting fluorescence or leaks.



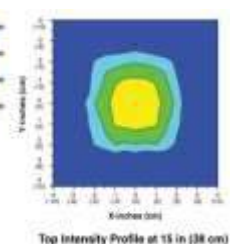
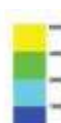
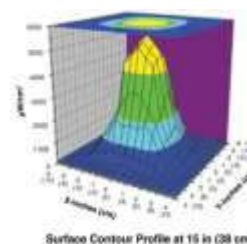
#### → EK-3000 Eagle Eye Ref 3SPEK3000

- Two high intensity UV-A (365 nm) LEDs for inspection, plus a three-LED white light assembly for general illumination. 30 hour service life.
- Adjustable strap allows lamp to be worn on a hard hat or directly on the head for hands-free operation.
- Unique lamp mount/sprayer attachment permits lamp and spray to be mounted together for convenient, single-handed fluorescent method inspection. Built-in fan keeps the lamp cool to maintain optimum UV-A intensity during extended use.
- Splash guard with integral particulate filter protects UV-A lenses and cooling fan from damage.
- Powered by a rechargeable lithium-ion battery. Provides up to 45 minutes of continuous inspection between charges. Supplied with 3 batteries, 1 charger and a carry case.



- Option : Complies with ASTM E 3022 and ISO 3059 Ref 3SPEK3000SC

**NEW**



## UV Lighting

### Inspection Lights

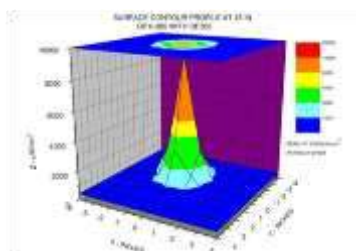
#### → Optimax OPX-365 Ref 3SPOPX-365

SPECTROLINE®

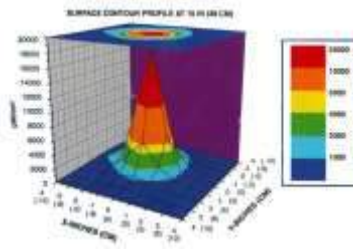
- SPECTROLINE powerful UV-A LED flashlight.
- Cordless. Powered by a rechargeable NiMH battery, charger included.
- 90 minutes of continuous inspection, two-colour charge indicator light.
- Nominal steady-state UV-A intensity of  $7000\mu\text{W}/\text{cm}^2$  at a distance of 60cm
- Rubber lamp protector prevents damage to LED head
- Optional: a diffuser filter.



With diffuser filter DF365:



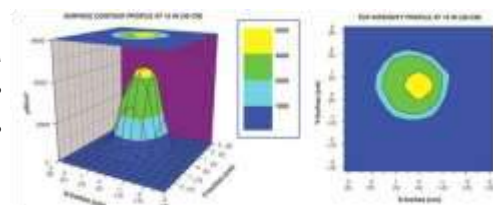
Without DF365:



#### → OPTI-LUX OLX-365 Ref 3SPOLX-365

SPECTROLINE®

- SPECTROLINE powerful UV-A LED flashlight.
- Nominal steady-state intensity of less than  $4,500\mu\text{W}/\text{cm}^2$  at 15 inches (38cm). Coverage area up to 6.3cm diameter at 38cm (specific to aerospace standards).
- Anodized aluminum lamp body minimizes corrosion and stands up to years of heavy use. Instant-on operation; lamp reaches full intensity immediately and then stabilizes.
- 100,000 hour LED service life.
- Powered by one rechargeable lithium-ion battery, with an extra battery included with the lamp. Each battery provides 4 hours of continuous inspection between charges. 8 hour charge time (possible to recharge both batteries at the same time).
- Complies with ASTM E1444 and ISO 3059 standards.
- Supplied with an in-built Wood Filter and a pair of UV-A protection glasses. A rubber anti-shock bumper can be purchased as an accessory, to protect the head of the lamp in case of falls.



#### → Waterproof handheld UV-A lamp HLWC 111 Ref 3LSHLWC111-UV

Waldmann W  
MULTI-PHOTO-LED

- Supply voltage 230V: 50Hz
- Equipment: 9W UV-A curved tube
- Cable: Approx. 5m
- Weight: Approx. 1.0 kg
- Protecting marking: IP67 (IP24 for integrated ballast connector)
- Illumination:  $150\mu\text{W}/\text{cm}^2$  at 38 cm
- Shockproof plastic casing



## UV Lighting

### Inspection Lights

#### → QUADRAN 365 S-Serie Ref 3SPQDR-365

SPECTROLINE®

To meet client demand, SPECTROLINE has expanded its range of LED lamps and now presents their latest innovation: the **QUADRAN!** Four 365nm UV-A LEDs plus a convenient white light LED. Supplied with a Wood Filter to limit purple reflections. Base allows for use in a fixed or semi-fixed position. The broad-beam configuration produces an extremely wide coverage area, making this lamp an ideal tool for use on large surface areas or aluminium, titanium sheets etc.



ASTME 3022 certified, ISO 3059 certified.

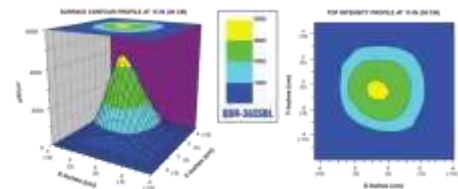


#### Specifications:

- Light source: 4 UV-A and 1 white LED.
- Lamp head dimensions: 15x14 cm.
- Height: 25 cm.
- Weight: 1.36 kg.
- Cables:
  - AC version (230V mains) 2.4 m or 6 m.
  - AC/DC Version (mains/battery) 1.10 m in secondary, 2.4 m in primary.
- Operation: Continuous on AC, 4.5 hours on battery.
- Charge time: 2 hours.

**Variation of the visible spectrum from 5500 K to 3000 K in accordance COFREND PT & MT lighting guide recommendations for best practice.**

- Clear filter: gives protection only. Solar white light 5500 K.
- Tungsten: reduction of blue photons in the visible beam to minimize pupil constriction during inspections in dark cabins, after detection under UV-A. A 3000K warm white light also allows for visual inspection.
- Tungsten: reduction of blue photons in the visible beam to minimize pupil constriction during inspections in dark cabins, after detection under UV-A. Visible yellow coloured light.



## Blue Light Sources

### Inspection Lights

→ **Optimax OPX-450** Ref 3SPOPX450/F

SPECTROLINE®

- The A-Blue blue actinic LED lamp from SPECTROLINE.
- Specifically for leak detection and fluorescence dye penetrant testing in re-works outside the dark cabin.
- Controlled inspection, even outside of the inspection cabin.
- Avoids the presence of UV-A in workshops, and allows for self-inspection and time saving when working outside specific observation areas (NDT fluorescent methods).
- Two-colour charge indicator light.
- A case, yellow glasses and a protective rubber bumper is supplied with the OPX series.
- According to FD LEN TR 16638.



→ **TRITAN 450 A-BLUE** ® Ref 3SPTRI-450

SPECTROLINE®

#### Specifications:

- Dimensions: Ø 8.5 cm\*20.3 cm.
- Weight: lamp 454 g / battery (If supplied) 700 g.
- Cables : - Version AC (mains 230v) 2,4 m or 6 m.  
- AC/DC Version (mains/battery) 1,10 m secondary + 2,40 m in primary.
- Operation: continuous in AC, 3.5 hours on battery.
- Charge time: 2 hours.
- Supplied with a protective bag and yellow glasses.
- According to FD LEN TR 16638.



## Mixed Light Sources

### Inspection Lights

→ **Optimax OPK-300N** Ref 3SPOPK-300N/F

**SPECTROLINE®**

The kit consists of three interchangeable LED lamp heads:

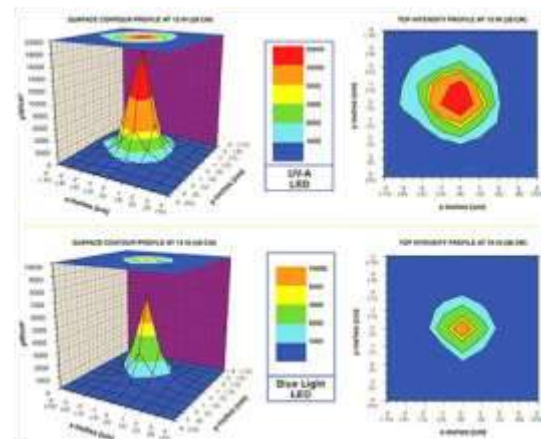
- UV-A
- Actinic Blue A-BLUE®
- White light

The power of the lamp heads is comparable to the OPX-365 for the UV-A, and the OPX 450 for the blue actinic.

The lamp has 90 minutes of continuous battery life, and a charge time of 5 hours. Batteries are in-built.

The kit contains two chargers, one AC and one DC 12/24V with car charger, and two pairs of protective glasses (UVS30 and UVS40).

This lamp was particularly designed for NDT professionals to provide a constant source of illumination in all inspection situations. It is extremely versatile.



## White Light Sources

### Inspection Lights

#### → Battery torches



Ref.	Description	Lumens	Battery duration (low power) in hours	Light distance in meters	T° in K
<b>P5.2</b> 3SEL9405	<ul style="list-style-type: none"> <li>• 1xAA 1.5V battery</li> <li>• Weight 79 g</li> <li>• Length 113 mm</li> <li>• 2 power modes</li> <li>• Supplied with carry case and wrist strap</li> </ul>	140	5	120	
<b>P7.2</b> 3SELP7.2	<ul style="list-style-type: none"> <li>• Practical and lightweight lamp</li> <li>• 4xAAA batteries</li> <li>• Weight 175 g</li> <li>• Length 130 mm</li> <li>• Focus system ranges from 6000 lux in focus, to 400 lux in broad beam (measured at 60cm)</li> </ul>	320	50	260	5500-8000
<b>X21.2</b> 3SELX21.2 * Available on demand	<ul style="list-style-type: none"> <li>• 7 LED lamp head</li> <li>• Most powerful in the range</li> <li>• 4xD batteries</li> <li>• Weight 1355 g</li> <li>• Length 397 mm</li> <li>• Supplied in a box, accessories included</li> </ul>	1500	50	600	5000-7000
<b>i7</b> 3LLI7	<ul style="list-style-type: none"> <li>• Practical and light torch</li> <li>• 4xAAA batteries</li> <li>• Weight 175 g</li> <li>• Length 130 mm</li> <li>• Possible to lock the beam position</li> </ul>	220	35	180	

## White Light Sources

### Inspection Lights

#### → Rechargeable torches

LED LENSER®

Ref	Description	Lumens	Battery duration (low power)	Light distance in meters	T° in K
<b>P5R2</b> 3SEL9405R	<ul style="list-style-type: none"> <li>• 1x Li-ion 3.7V battery</li> <li>• Length 117mm ; Weight 77g</li> <li>• 2 power modes</li> <li>• Charge level display</li> <li>• Supplied with carry case &amp; wall charger</li> </ul>	270	12	240	
<b>M7-R</b> 3SELM7R	<ul style="list-style-type: none"> <li>• Very powerful and very light</li> <li>• 1x Li-ion 3.7V battery</li> <li>• Length 153mm / Weight 200g</li> <li>• 2 power modes</li> <li>• 3 programmes</li> <li>• 7 light functions</li> <li>• Supplied with carry case &amp; wall charger</li> </ul>	400	40	280	7000-9000
<b>M17RX7R</b> 3SELM17R * Available until exhaustion	<ul style="list-style-type: none"> <li>• Powerful lamp</li> <li>• Safety YtrionCell battery without memory effect</li> <li>• Length 302 mm / Weight 750 g</li> <li>• 2 energy modes</li> <li>• 4 programs</li> <li>• 8 light functions</li> <li>• Comes with wall charger and belt clip</li> </ul>	850	36	450	5000-7000
<b>i9R Iron</b> 3LLI9R-IRON	<ul style="list-style-type: none"> <li>• Rapid recharge and LIFE battery</li> <li>• Quick focus</li> <li>• Lock beam position</li> <li>• 5000 charge cycles</li> <li>• Length 160 mm / Weight 265 g</li> <li>• 2 energy modes</li> <li>• Delivered with a loading station</li> </ul>	400	35	260	


- All these lamps are fitted with Advanced Focus System that combines lenses & mirror. Result is a sharp focussed beam an an homogeneous large beam.
- AFS is one of the best systems to focus & defocus.



## White Light Sources

### Inspection Lights

#### → Headlamps

Ref.	Description	Lumens	Battery duration (low power) in hours (H)	Light distance in meters (M)
<b>LED LENSER</b>   <b>H7R.2</b> 3SEL7298	<ul style="list-style-type: none"> <li>• Rechargeable lithium-ion battery</li> <li>• Rear lighting (fixed or flashing)</li> <li>• Load indicator by color codes..</li> </ul>	250	30	160



#### → **SabreLite 2010 ATEX zone 0** Ref 3LS2010Z0

- Very powerful LED bulb
- Colour temperature: 6500 K.
- 109 lumens.



#### → **MAG 3 2-in-1 Torch** Ref 3DEMAG3

Ultra-powerful LED. The torch is fitted with a 1 watt LED, and works continuously for up to 8 hours, on a 4 hour charge time. The 3 powerful built-in magnets combined with 2 adjustable hooks, allow you to use this torch anywhere. The front of the torch is flexible, and can be tilted at an angle of up to 180°.

#### Specifications

- Water and oil resistant body.
- Ergonomic handle, in soft grip material.
- Rechargeable battery: 3.7V 2100mAh, Li-ion.
- Illumination: 1200 lux torch: 300 lux at 0.5 m.
- Protection marking: IP20.
- Dimensions / Weight: 56x250 mm / 380g.



## Equipment

### → Dino Lite Video Microscope

The Dino Lite is a digital microscope that can be connected to a computer, allowing you to record images, videos, take measurements etc. It has LED lighting, emitting white light, or a UV-A light >375 nm in wavelength.

UV-A radiation is NOT centered at 365 nm, making it unsuitable for final inspection. Only use as an indicator.

**The UV-A light is not compliant with EN ISO 3059.**



#### Two different models available:

- UV-A 375 nm + white - 4 white LEDs and 4 UV-A LEDs - Resolution: 1.3 Mpx (Ref AM4113t-fv2w)
- UV-A 375 nm + white - 4 white LEDs and 4 UV-A LEDs - Resolution: 5 Mpx (Ref AM7013t-fv2w)

#### Accessory Ref 1CDMS33W

Dino Lite stand, several models available, including the MS33W:

The MS33W Flexible Arm Stand has a round metal base with flexible arm and holder for Dino-Lite microscopes. An additional feature of the MS33W is the fine adjustment knob in the base of the stand. Flexible arm: 30cm.



### → UV UVEX Safety glasses Ref 3UVE9195.265

Complies with COFREND PT & MT lighting guide recommendations for best practice.

#### Temples and frames:

- Material: Permaflex (thermo plastic rubber)
- Features: 5 different side arm positions
- Small size available (1.2cm shorter than the standard frame).

#### Lens:

- Material: Polycarbonate, duo-spherical, mono-screen lens
- Thickness: 1,85 mm
- Filter: 2-1.2 in accordance with EN 170, 100% UV filter.
- Treatment: UVEXSUPRAVISION HC-AF K-N, integrated anti-glare coating.
- Optical class: 1 (without distortion for continuous wear).
- Impact resistance: F, (45m/s) in accordance to EN 16.



### → Anti-UV & contrast coated safety glasses UVS30, 40, 60

Complies with COFREND PT & MT lighting guide recommendations for best practice.

Optical quality lens surfaces: prevents micro-distortions in the field of vision that are found in molded polycarbonate anti-UV glasses.

Ref 3SPUVS30



Ref 3SPUVS40



Ref 3SPUVS60



## Equipment

### Accessories for UV lamps

SPECTROLINE®

- **FA100 Flexible Arm + B6 Bench Mount** Ref 3SPFA100+B6
- **FA100 + W6 Wall Mount** Ref 3SPFA100+W6
- **WM100 Rigid Wall Arm** Ref 3SPWM100
- **W6 Wall Mount** Ref 3SPW6
- **LH-300A Tritan holder** Ref 3SPLH300



- **WOOD Filter** (for FB100 and FC100 only) Ref 3RI800-UV-FGT
- *Excellent UV-A / visible light ratio.*



### Measurement Units

- **XRP-3000 Radiometer / Luxmeter** Ref 3SPXRP3000

SPECTROLINE®

The combined radiometer/ lux meter measures both ultraviolet and visible light in accordance with ISO 3059 'Conditions of Observation', the basic standard used in all sections of NDT for magnetic and penetrant testing methods, fluorescent and day light processing and visual inspections.

The probe is equipped with a low impedance dual sensor, providing excellent linearity, and is digitally controlled by  $\mu$ -controllers. Protected by a shockproof cover, the electronics offer an automatic zero and optimum optical characteristics, especially through the use of diffusers, providing an angular response closest to the answer, according to the cosine.

The mechanical protection of all circuits, and the electrical / electronic quality make this device safe, accurate and durable.

**Supplied with a carry case, a standard USB cable and a metrology certificate compliant with ISO 10012 and ISO 3059 'Observation Conditions'.**

**Variations: Radiometer only / Lux meter only / Luminance meter 1 million cd/m<sup>2</sup> / UV-A-B-C-Blue Radiometers**

**Option: set of two probes**

- *To have a calibrated probe on hand, at all times.*



- **VF100A inspection bench** Ref 3SPVF100

SPECTROLINE®

- *For Tritan torches and lamps. Allows you to check the intensity of spotlights and lamps. Adjustable distance from the spotlight. Height adjustable unit positioning.*
- *Dimensions (H x L): 26 cm x 66 cm*
- *LH300A holder is required for Tritan lamps.*



## Equipment

### Measurement Units

#### → AccuPRO™ Series Digital Radiometer/Photometers

Ref 3SPXP-2000/F / Ref : 3SPXP-4000/F

AccuPRO™ Series meters feature an advanced, microprocessor-controlled readout unit calibrated to accurately measure and display both UV-A and visible light readings for non-destructive testing applications.

**Available in two versions:** The AccuPRO™ (XP-2000) readout unit features a single dual-wavelength sensor detector designed to measure both ultraviolet A and visible light. The AccuPRO™ Plus (XP-4000) features a single 3-in-1 multi-purpose sensor that measures ultraviolet A, visible and Actinic blue light.

These compact, lightweight, battery-operated units are ideal for use in the field, the factory or anywhere accurate light measurements are needed!

- Large, easy to read, LCD screen with 4-digit autoranging display
- Both units provide accurate readouts for UV-A irradiance as well as visible illuminance. AccuPRO™ Plus unit also measures blue light.
- Simply to use, three-button interface.
- Overall accuracy greater than  $\pm 5\%$  per NIST standards
- Multi-wavelength sensor directly attached to meter by 3 ft (0.9 m) cord

Conformities:

- AccuPRO™ (XP-2000) complies with ASTM 2297 and ISO 3059
- AccuPRO™ Plus (XP-4000) compliant CEN / TR 16638 and ISO 3059

Spectral Range

	Measurement Range
UV-A Sensor	320-400 nm
Visible Sensor	460-675 nm
Actinic Blue Light Sensor	410-475 nm

UV-A & visible sensor comply to EN ISO 3059

Actinic blue light sensor comply to CEN TR 16638

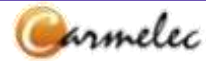
- Dimensions readout unit: 15.2(L) x 7.6 (w) x 2.5(thickness) cm
- Weight readout unit: 227 g



## Equipment

### Measuring Cells

#### → POLLUX Combined Radiometer/ Lux meter Ref 3CAPOLLUX



Combined radiometer/lux meter. Single unit with dual UV-A and visible light sensor. The automatically backlight matrix screen displays simultaneously the two values: UV-A and visible light, when reading is under 50lux.

The waterproof dual probe is equipped with a smooth mineral diffuser, resistant to pollution and splashes, allowing for easy cleaning. Reinforced housing.

- Easy to use: a single on/ off button.
- Spectral response curves for both values.
- Range of use / max resolution (on 3 significant digits):
  - UV-A: 0 to 20,000  $\mu\text{W}/\text{cm}^2$  \ 1  $\mu\text{W}/\text{cm}^2$
  - Visible: 0 to 6,000 lux \ 0.1 lux
- Powered by a 9V battery; automatic light-off; automatic extinction.
- Supplied with a carry case and metrology certificate in accordance with ISO 10012.

#### Variations:

- Lux meter only: 0 to 6,000 lux / 0.1 lux
- Radiometer only / UV-A integrator
- Luminance meter 0-3 000 000cd/m<sup>2</sup>
- Combined luminance / lux meter.

Luminance meter and lux meter for light box. Luminance meter unit tube on the back, and a lux meter unit on the front. Comes with a Pollux probe.

To verify viewing conditions in industrial radiography (max. resolution 100 cd/m<sup>2</sup>).



#### → Lux meter Ref 3WI5027

Use to measure white light illuminance.

- Unit size: 83 x 52 x 20.5mm
  - Dimensions: 125.5(L) x 72 (w) x 27 (thickness) mm
  - Weight: 140g approximately (without battery)
  - 0 to 50 000 lux in 3 ranges
  - Accessories: battery, user manual.
- Supplied with a calibration certificate.



## Ultrasonic Testing

### Products

#### → SG0 Coupling Gel Ref 4NDSG0

Transparent straw yellow, synthetic based liquid, water dilutable with water. It was developed to facilitate ultrasonic inspections on parts that require a good level of accuracy in testing.

The distinctive thickness of the SG0 coupling gel ensures it adheres to the surface under inspection, and a fine and constant film under ultrasound probe, regardless of its position.

Temperature for use ranges from 0°C to 50°C; beyond which use remains possible, but the viscosity of the liquid may vary.

babbco



#### → SG1 Coupling Gel Ref 4NDSG1

A new generation product, made as a gel due to the low level of molecular bond disturbance (non-thixotropic, it is half-pasty / half-fluid, very easy to spread and adheres well to the surface, even if vertical).

Temperature for use ranges from 0°C to 50°C without significant change. Above this and up to the max. temperature of 80°C, it becomes increasingly fluid.

A non-drying, part aqueous gel, it easily adapts to poorly degreased surfaces and is easy to clean. Fluoresces pink under UV-A.

babbco



PMUC

#### → Matrix Ref 4NDMATRIX

The thixotropic properties ensure it adheres well to parts under inspection, regardless of their position. Temperature for use ranges from -10°C to 120°C.

The excellent wetting properties and thixotropy provide excellent sound transmission. It was developed specifically to facilitate ultrasonic inspections on construction sites and large surfaces.



#### → G641 High Temperature Coupling Gel Ref 4ELG641

Silicone gel with a high boiling point due to additives. It can be used for ultrasonic inspection on large surfaces, up to 250 °C.

The product does not run or dry, and provides excellent sound transmission even at high temperatures.



#### → UHT Ultra High Temperature Coupling Gel Ref 4NDUHT100

Paste ultra high temperature complementary to G641, the temperature for use ranges from 200°C to 550°C.

babbco



Product Packaging					
Products	BOTTLE (ml)	POUCH (l)	BUCKET (l)	JAR (kg)	TUBE (g)
SG0	250 / 1000				
SG1	250	3 / 5 / 10			
MATRIX	250	3 / 5 / 10	2.5		
G641					200
UHT				0.2 / 1	

## Ultrasonic Testing

### Equipments

#### → ELMASONIC Cleaning Tanks

*Ultrasonic cleaning is the most popular cleaning process at present. The main advantage of ultrasonic cleaning is its ability to completely clean parts in a very short time, without damaging parts, materials, or having to manually follow up afterwards.*

*What is ultrasound? It is mechanically produced sound oscillations. The human ear is capable of perceiving oscillations ranging from 16 to 20,000 Hz (cycles per second). Ultrasonic waves begin beyond human hearing. It is possible to convey high ultrasonic energy in a liquid. Vibrations and current accelerate cleaning, resulting in a highly effective process that delivers optimal results.*

*A well- proven analog technology. These cleaners are compact and suitable for many applications .*

*High cleaning efficiency with transducers in sandwich fashion.*

- *Stainless steel, robust tank and casing for easy maintenance.*
- *Clock and timer for continuous operation.*
- *Thermostat heater, optional for some of the range.*
- *Equipped with drain valve and two T660 / H model handles.*
- *High level of safety, EC label certified.*

*Available from S10 model with 0.8l capacity, 35 kHz, and 70 watts, to the Model T 1060 with 90l, 40 kHz and 1600 watts advanced high frequency cycle.*

#### → Accessories for ultrasonic tanks

##### Basket inserts:

*For ELMASONIC 10, 15, 30, 40, 60, 70, 80, 100, 120, 180, 300.*

##### Lids:



## Thickness Measuring Device

### → EM-1 THICKNESS METER Ref 13ECEM-1 / Ref 13ECEM-1D

• **Device for measuring the thickness of a wide range of materials such as steel, plastic, glass, ceramic and other homogeneous materials.**

- **Function:** Calibration by 1 or 2 points / Velocity
  - **Measurement mode:** 1 point or scanning
  - **Measures under painting (EM-1D)**
  - **Measurement storage and transfer via a USB port**
  - **Back-lit LCD screen.**
  - **Measurement range from 0.65 mm to 500 mm (Steel)**
  - **Thru Coat Function (Echo to Echo) EM-1D**
  - **Velocity adjustable from 1000 to 9999 m/s**
  - **Resolution: 0.1 mm or 0.01 mm configurable**
  - **Accuracy: +/- 0.5% (+ 0.04 mm thickness)**
  - **Depending on conditions of use and material being measured**
  - **Units: Metric or Inch configurable**
  - **4 measurements per second (Pr = 4 Hz) in static mode, and 10 measurements per second (Prf = 10 Hz) in scan mode (Scan)**
  - **Can memorize 2000 files (up to 100 measurements for each file) or 200,000 values**
  - **Powered by 2 "AA" 1.5 volt batteries, service life of 200 hours (without backlighting)**
- **Weight:** 245 g
  - **Dimensions:** 136mm x 72mm x 20mm



Complies with standard EN 15317

Supplied in case with software instructions and USB connections.

Available with under coat measurement function (E-E, Multi) EM-1D

Probes available



Frequency	Diameter	Measurement range (steel)	Use
2.5 MHz	22 mm	3 to 500 mm	Attenuating material (Cast iron), very thick
2.5 MHz	12 mm	3 to 500 mm	Standard (very thick)
5 MHz	10 mm	0.7 to 400 mm	Standard (ideal for thru-paint function)
		3.0 to 60 mm (E to E)	
5 MHz	6 mm	0.7 to 25 mm	Standard for piping
7.5 MHz	6 mm	0.65 to 80 mm	Thin or small diameter
7.5 MHz	10 mm	0.65 to 250 mm	High resolution
5 MHz	14 mm	4 to 80mm	High temperature < 310°C

## Thickness Measuring Device

### → THICKNESS METER SERIES UM-4

Ref 13ECUM-4 / Ref 13ECUM-4D / Ref 13ECUM-4DL



• **Device for measuring the thickness of a wide range of materials such as steel, plastic, glass, ceramic and other homogeneous materials.**

#### Data Logger option:

- Capacity: 400 files, 100,000 pieces of data.
- File structure: Grid file.
- Rows x columns: 21\*12.
- Communication port: USB 2.0 port (full-speed).
- Software: DataView PC Software.

Features	UM-4	UM-4D	UM-4DL
Colour display	✓	✓	✓
A-scan Snapshot	✓	✓	✓
Gain: Low, Medium, High	✓	✓	✓
Min/Max Capture	✓	✓	✓
DIFF/RR%	✓	✓	✓
Thru-paint		✓	✓
Data Logger			✓
DataView Software			✓

### Device performance

Display type	OLED 2.4" colour, 320x240 pixels, contracted 10,000:1
Measurement principle	Pulse echo with PT12 probe
Transmitter	Square pulse 100V, 100ns, Rise time <5ns (10-90%)
Working frequency	1, 10 MHz
Measurement Range	0.60mm to 508mm (0.025" to 20.00")
Accuracy of measurements	Selectable 0.01mm, 0.1mm (selectable 0.001", 0.01") Resolution: >10mm: 0.5%, <10mm: 0.05mm
Units	Inch or millimeter
PRF	Selectable 4Hz, 8Hz, 16Hz
Material speed range	500 to 9999m/s (0.0197 to 0.3937 in/US)
Languages	Chinese, English, Japanese or French, depending on the version
Alarm settings	Minimum and Maximum alarms. Range from 0.25 mm to 508 mm ( 0.010 " to 20.00 " ). Dynamic colour change in the event of an alarm.
Operating time	Approximately 40 hours. Battery level has a visual alert.
Temperature for use	-10°C to +50°C (+10°F to +120°F)
Connectors	Lemo Double 00 and Mini USB 2.0 socket
Compliance	EN 15317:2013
Dimensions	153mm x 76mm x 37mm (H x L x thickness)
Weight and batteries	280g with two AA batteries

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