

SPOTCHECK[®] SKL-SP2, SKL-WP2, SKL-LT, SK-3 KIT



Red Penetrants

Our SPOTCHECK[®] red colour-contrast penetrants offer maximum reliability in locating surface-open flaws and defects. They exhibit outstanding penetrating characteristics, producing vivid red indications of flaws which can easily be seen with the naked eye.

Penetrant	Description	Composition	Benefits
SKL-SP2	Solvent-removable (post-emulsifiable)	A blend of petroleum distillates, plasticiser and an oil-soluble organic red dye.	Broad range of applications.
SKL-WP2	Water-washable and solvent-removable	A blend of petroleum distillates, non-ionic surfactants and an oil-soluble organic red dye.	Excellent controlled washability over a wide temperature range and variable dwell times.
SKL-LT	Water-washable and solvent-removable. Designed for use at low temperatures (down to -15°C).	A blend of petroleum distillates, non-ionic surfactants and an oil-soluble organic red dye.	<ul style="list-style-type: none"> • Low temperature operation • Ultra-high sensitivity • Excellent controlled washability
SK-3 Penetrant Inspection Kit	The SK-3 Kit is a portable visible penetrant inspection kit that includes the following: <ul style="list-style-type: none"> • 2 x 400 ml aerosol cans of SKL-SP2 penetrant • 3 x 400 ml aerosol cans of SKC-S cleaner • 3 x 400 ml aerosol cans of SKD-S2 developer • 1 cloth • 1 set of instructions • 1 portable carrying case 		

Applications

Our red penetrants are used throughout industry wherever a visible penetrant inspection system is suitable for detecting surface defects. Typical applications include castings, forgings, leak testing, welds and general metal work.

The penetrants can also be used on non-porous ceramics and similar materials. However, we do not recommend them for inspecting plastic materials, as they may stain, soften or even dissolve the base material under test.

Typical Properties (not a specification)

Property	SKL-SP2	SKL-WP2	SKL-LT
Flash point	> 93°C (bulk product)	> 93°C (bulk product)	15°C
Density	0.85 g/cm ³	0.88 g/cm ³	0.77 g/cm ³
Viscosity	3.8 mm ² /s	8.0 mm ² /s	< 3 mm ² /s
Sulphur content	< 300 ppm	< 300 ppm	< 200 ppm
Chloride content	< 300 ppm	< 300 ppm	< 200 ppm
Corrosion	Meets AMS 2644	Meets AMS 2644	-
AMS 2644 class	Type 2, Method B/C/D	Type 2, Method A/C	-
Storage temperature	10°C to 30°C	10°C to 30°C	10°C to 30°C
Usage temperature	5°C to 55°C (bulk product) -5°C to 50°C (aerosol)	5°C to 55°C (bulk product) -5°C to 50°C (aerosol)	-15°C to 25°C
Coverage	10 - 15m ² per 400ml aerosol 20 - 30m ² per litre	10 - 15m ² per 400ml aerosol 20 - 30m ² per litre	20 - 30m ² per litre

Like all Magnaflux materials, our SPOTCHECK penetrants are closely controlled to ensure batch-to-batch consistency, optimum process control and inspection reliability.

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General Method of Use

1. Ensure test part is clean and dry , and free from oil, grease and other contaminants.									
2. Apply penetrant by immersion dip, brush, flow on, conventional or electrostatic spray. Cover the test area completely.									
3. Allow penetration time:	SKL-SP2 and SKL-WP2: minimum penetration time is 2 to 5 minutes, with 10 minutes being adequate for most situations. Lower temperatures thicken the penetrant and require longer penetration times.								
	SKL-LT: at temperatures over 10 °C, the minimum penetration time is 5 - 10 minutes. At low temperatures, the dwell time needs to be increased - see below:								
	<table border="1"> <thead> <tr> <th>Temperature (°C)</th> <th>Dwell time (minutes)</th> </tr> </thead> <tbody> <tr> <td>+25</td> <td>10 - 20</td> </tr> <tr> <td>0</td> <td>15 - 40</td> </tr> <tr> <td>-10</td> <td>20 - 60</td> </tr> </tbody> </table>	Temperature (°C)	Dwell time (minutes)	+25	10 - 20	0	15 - 40	-10	20 - 60
	Temperature (°C)	Dwell time (minutes)							
+25	10 - 20								
0	15 - 40								
-10	20 - 60								
<p>IMPORTANT: At temperatures below 10 °C, any water, moisture or ice on the test surface may negatively affect the result and should be removed prior to the test.</p> <p>We recommend that you perform a reference test at the temperature at which the real test will take place, and compare this result at temperatures in excess of 5 °C. Our reference test block is ideal for this purpose.</p> <p>For more information relating to the use of penetrants at low temperatures (< 10°C) and the relevant testing requirements, you may wish to refer to the standard EN ISO 3452-6.</p>									
4. Remove penetrant:	SKL-SP2: remove excess surface penetrant with a solvent wipe or by the hydrophilic remover method (see next page).								
	SKL-WP2: spray the component with clean water at 10°C - 40°C, or wipe with a lint-free cloth dampened with our SKC-S cleaner. Once clean, the component should be dried before a developer is applied.								
	SKL-LT: Wipe with a lint-free cloth dampened with our SKC-S cleaner. The solvent blend used in SKC-S makes it suitable for use at low temperatures, especially around 0 °C or lower, where the use of water is impractical.								
If you are using SKL-LT on smooth components at temperatures over 10 °C, you can remove excess penetrant by spraying the component with clean water at 10°C - 40°C.									
5. Apply a thin layer of developer* to the surface and allow a minimum of 10 minutes development time before inspecting the component under white light. Indications will appear dark red against the white developer background.									
6. Post-cleaning: developer residue can be removed either by wiping with a cloth or by a water and detergent wash. Penetrant residues can be removed by vapour degreasing or solvent soak.									

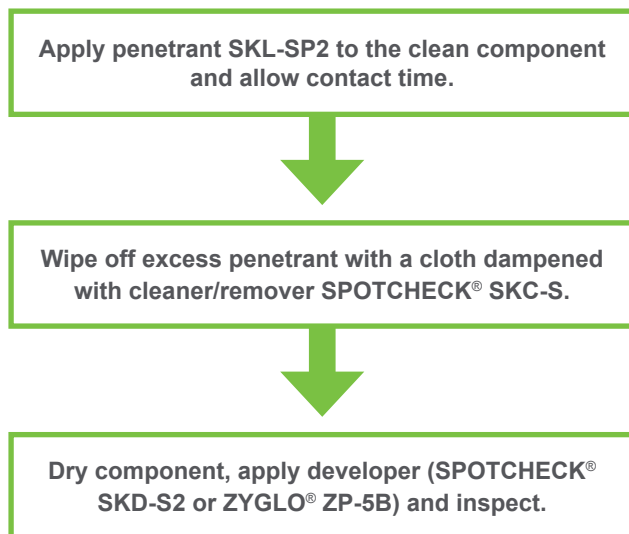
- * A developer is used to maximise sensitivity and provide a white contrasting background. Two types of developer can be used:
- **Solvent-based:** quick-drying materials which are applied by spraying. The component under test must be dry before developer is applied. Note: the solvent blend in our SKD-S2 developer makes it suitable for use at low temperatures, especially around 0°C and lower, where the use of water would be impractical.
 - **Water-based (aqueous):** can be applied by dipping or spraying. To maximise penetrant sensitivity, parts should only be exposed to aqueous developers for short periods of time. The component must be dried before inspection.

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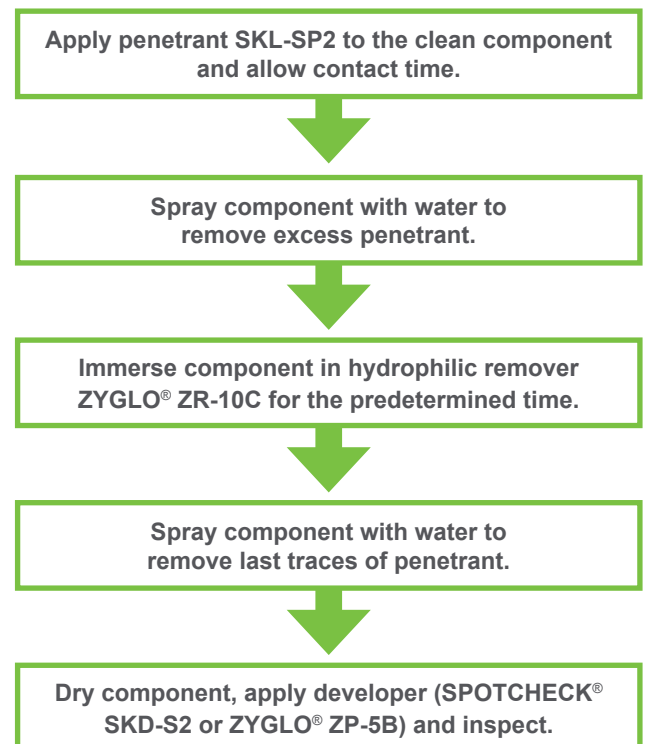
General Method of Use

SKL-SP2

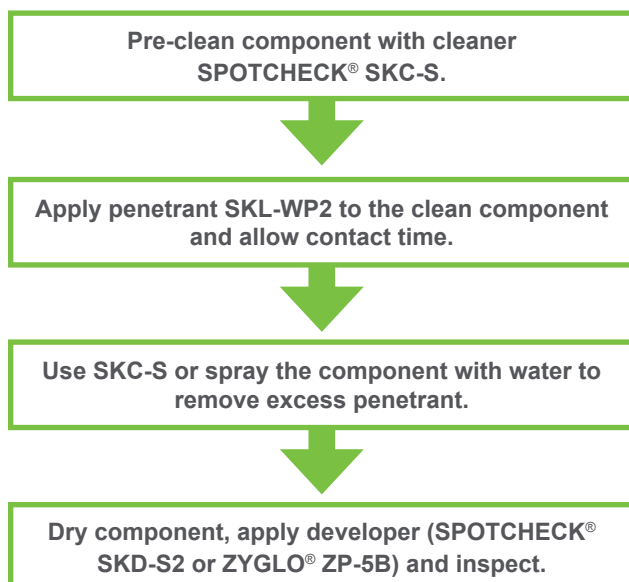
Solvent wipe method



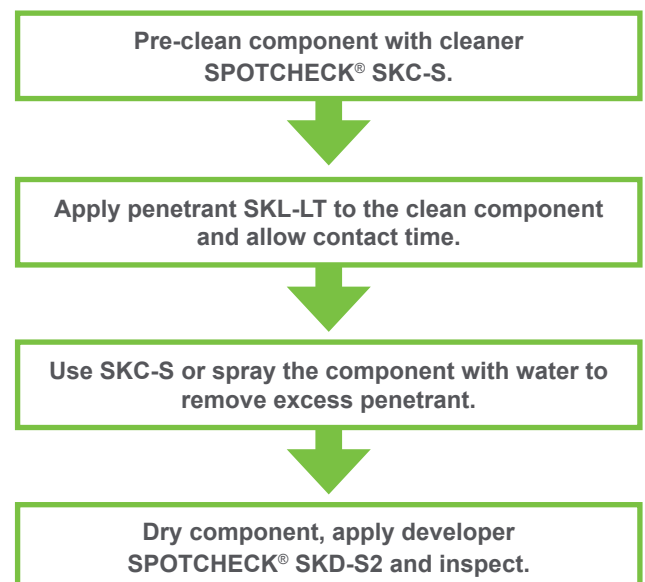
Hydrophilic method



SKL-WP2



SKL-LT



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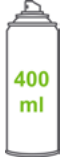





Recommended Products

Product type	Product Name(s)	Type
Cleaner/remover	SPOTCHECK® SKC-S	Solvent-based
Emulsifier	ZYGLO® ZR-10C	Hydrophilic
Developer	SPOTCHECK® SKD-S2	Solvent-based
	ZYGLO® ZP-5B	Water-based
Reference test block (part no. 070C001)		

Specification Compliance

Specification	SKL-SP2	SKL-WP2	SKL-LT
AMS2644	✓	✓	
ASME B & PV Code, Sec V	✓	✓	✓
ASTM D129	✓	✓	
ASTM E165	✓	✓	✓
ASTM E165M	✓	✓	
ASTM E1417/E1417M	✓	✓	
EN ISO 3452-1	✓	✓	
EN ISO 3452-2 (Sensitivity Level 2)	✓	✓	
MIL-STD-2132D	✓	✓	
MIL-STD-271F	✓	✓	

Availability and Part Numbers

SKL-SP2		SKL-WP2			SKL-LT
					
008A016 (x 10)	055C076 (x 4)	008A163 (x 10)	055C071 (x 4)	055C072	055C081 (x 4)

The SK-3 kit is available as:

- Complete SK-3 kit - part number 008A038
- Carrying case only - part number 053C009

Health and Safety

Read the relevant Safety Data Sheets for the individual products before use. Safety Data Sheets are available on request from your Magnaflux distributor or via the Magnaflux website.