

ROLLING STOCK SOLUTIONS



VIBRATION DETECTION:
BOLTS/FASTENERS
HYDRAULIC CONNECTIONS

IDENTIFICATION:
IN DIFFICULT,
HARSH ENVIRONMENTS

HEAT DETECTION:
HOT BOXES, TRACK REPAIRS

STEEL PROTECTION:
ALUMINIUM WELDABLE PRIMER



MARKS ON DIFFICULT SURFACES
STYLMARK ORIGINAL, QUIKSTIK®, PAINTSTIK ORIGINAL B®

DIRECT VISUAL EXAMINATION AND IDENTIFICATION OF VIBRATORY LOOSENING ON BOGIES, BRAKES, DOORS, PANTOGRAPHS ...
WARRANTY AGAINST TAMPERING ON NUTS — MARKING OF DEFINITIVE SCREW TIGHTENING POSITION
SECURITY CHECK ORIGINAL

VERY FAST DRYING PAINT FOR DIRECT VISUAL EXAMINATION AND IDENTIFICATION OF VIBRATORY LOOSENING ON BOGIES, BRAKES, DOORS...
WARRANTY AGAINST TAMPERING ON NUTS — MARKING OF DEFINITIVE SCREW TIGHTENING POSITION
SECURITY CHECK + FAST DRY

PRECISE MARKING FOR DIRECT VISUAL EXAMINATION AND IDENTIFICATION OF VIBRATORY LOOSENING ON ELECTRONICS OR SMALL PARTS FOR WARRANTY AGAINST TAMPERING ON NUTS — MARKING OF DEFINITIVE SCREW TIGHTENING POSITION
PAINT-RITER® INDUSTRY MARKER SL100

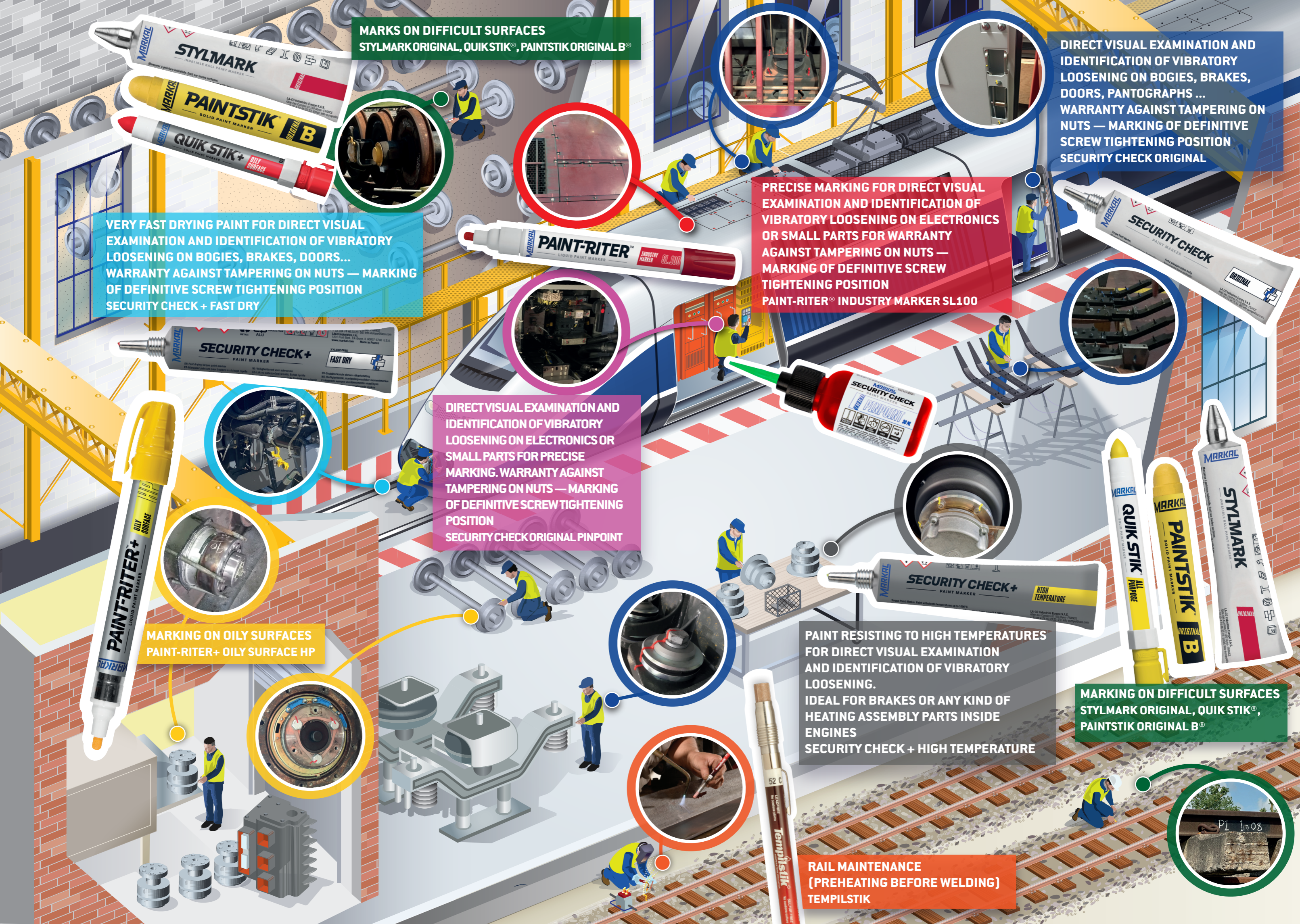
DIRECT VISUAL EXAMINATION AND IDENTIFICATION OF VIBRATORY LOOSENING ON ELECTRONICS OR SMALL PARTS FOR PRECISE MARKING. WARRANTY AGAINST TAMPERING ON NUTS — MARKING OF DEFINITIVE SCREW TIGHTENING POSITION
SECURITY CHECK ORIGINAL PINPOINT

MARKING ON OILY SURFACES
PAINT-RITER+ OILY SURFACE HP

PAINT RESISTING TO HIGH TEMPERATURES FOR DIRECT VISUAL EXAMINATION AND IDENTIFICATION OF VIBRATORY LOOSENING. IDEAL FOR BRAKES OR ANY KIND OF HEATING ASSEMBLY PARTS INSIDE ENGINES
SECURITY CHECK + HIGH TEMPERATURE

MARKING ON DIFFICULT SURFACES
STYLMARK ORIGINAL, QUIKSTIK®, PAINTSTIK ORIGINAL B®

RAIL MAINTENANCE (PREHEATING BEFORE WELDING)
TEMPILSTIK



VISUAL INSPECTION SOLUTION

BOLT/FASTENER/HYDRAULIC CONNECTION FAILURES

Loosening of fasteners/bolts & connection devices due to vibration is a constant train maintenance issue. Visual identification of bolt/fastener/coupling connections without the need for manual torque testing is critical to maintaining operational efficiency.

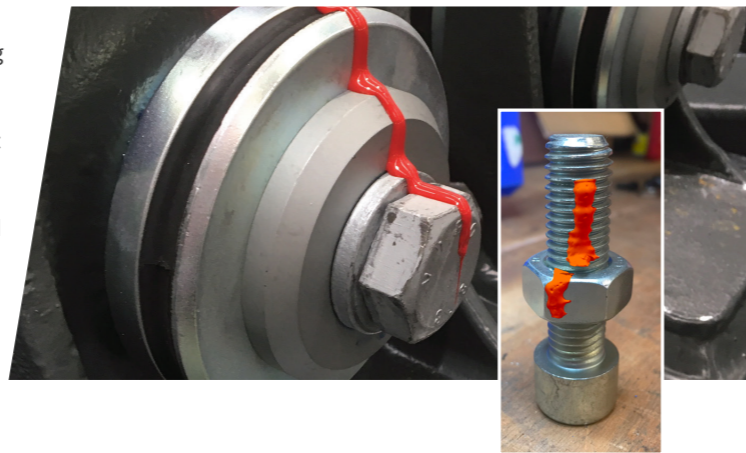
SECURITY CHECK

PAINT MARKER

Our Security Check Paint Marker provides a visual torque detection mark for all bolted and coupled connections, eliminating the need for manual tests. While the paint does not lock bolted connections in place, its viscosity is specifically formulated to create a thick, continuous 3D mark that fully covers every element of the bolted connection.

Once dry, the paint mark will visibly 'break' if the connection's tightness and safety have been compromised by vibration or hand tampering, providing a clear visual indicator. In contrast, aerosol, bucket paint, or standard liquid paint marks tend to 'leak' and do not create a distinct break, making tampering harder to detect. Ideal for visual inspections on a train's:

- Main transformer, ventilation system & door assemblies
- Hydraulic systems
- Dome, roof, draw bar, coupling devices & manway covers
- Bogie assembly



PRECISION COST EFFECTIVE SOLUTION

SECURITY CHECK Original's nozzle is designed to provide various marking sizes and increase the marking precision. By simply screwing the nozzle on the tip of the marker, it provides additional length to extend the marker's head by 3 cms, offering easy access to hard-to-reach areas. The new tip comes with a built-in cap for a convenient and quick closure. An integrated retaining wire keeps the cap attached to the nozzle, preventing its loss and keeping it within reach.

MORE THAN 2X AS MANY APPLICATIONS WITH THE PLASTIC TIP

PART NR.	
	SECURITY CHECK Plastic tip
	96676



SECURITY CHECK PINPOINT TIPS

DISPENSING TIPS FOR CONTROLLED APPLICATIONS

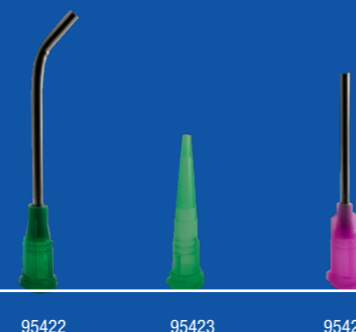
Whether designed for the tube or the bottle format, each Security Check tip offers the same key benefits: precision, controlled paint flow, and access to hard-to-reach areas. While the tube uses a dedicated extension nozzle, the bottle is compatible with a range of three precision tips. All options are built for industrial use, ensuring consistent, clean, and reliable marking performance.

PART NR. — BOX	
	95422 45° angled dispensing Needle 18 gauge, for PINPOINT Luer Lock adapter (length 3,5 cm)
	95423 Plastic taper dispensing tip 18 gauge for PINPOINT Luer Lock adapter (length 2,54 cm)
	95424 Regular straight dispensing needle, 16 gauge, for PINPOINT Luer Lock adapter (length 2,7 cm)

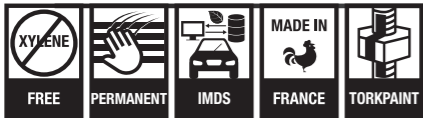


- Cut the nozzle tip to the desired level using a cutting tool
- Remove the cap from the tube
- Screw the nozzle onto the tube
- Apply gentle manual pressure on the tube to release the paint
- Do not bend or roll the tube so as not to puncture it
- Properly shut the cap if the product is left unused for a prolonged period

SECURITY CHECK PAINT MARKER



STANDARD USE



SECURITY CHECK ORIGINAL

TORQUE PAINT MARKER

SECURITY CHECK Original Paint Marker provides a convenient visual method for identification of vibratory loosening or tampering in nuts, bolts, fasteners, and assemblies. High visibility paint mark becomes a hard 3D film that breaks easily. Ideal for quality control and warranty work. Safe on most surfaces, adheres perfectly to metal. Safe for the user, doesn't contain Xylene.



BOX	PART NR. — BOX	MAX TEMP.	PART NR. — BOX	MAX TEMP.
	96668	200°C	96674	200°C
	96669	200°C	96675	175°C
	96670	175°C	96677	175°C
	96671	175°C	96678	175°C
	96672	175°C	96679	175°C
	96673	200°C	96680	175°C
			96681	175°C



SECURITY CHECK PINPOINT

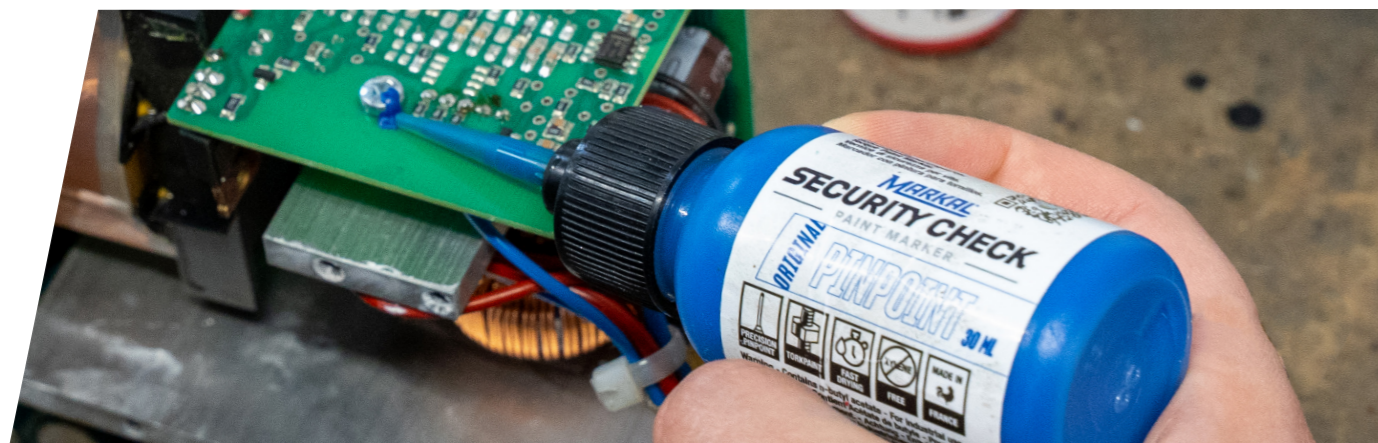


PRECISE FAST-DRYING PAINT MARKER FOR BOLTED ASSEMBLIES

This 30 ml paint bottle with Luer Lock applicator is ideal for controlled and precise applications. It includes a plastic Needle and a Luer Lock adapter for compatibility with other needles. The formula allows for a thick mark, creating a visible 3D effect. It dries to the touch in less than 2 minutes and is xylene-free. Once dry, it breaks under force, allowing for easy visual detection of loosening. Perfect for quality control, preventive maintenance, and industries such as railway, mechanical, aerospace, and electronics.



BOX	PART NR. — BOX	PART NR. — BOX
	95408	95411
	95409	95412
	95410	



SPECIFIC USE



SECURITY CHECK+ FAST DRY



EXTREMELY FAST DRYING TORQUE PAINT MARKER

SECURITY CHECK+ Fast Dry provides a convenient visual method for identification of vibratory loosening or tampering in nuts, bolts, fasteners, and assemblies. The fast drying, high visibility paint mark forms a hard 3D film that breaks easily. Ideal for quality control and warranty work. Safe on most surfaces, adheres perfectly to metal. Safe for the user, doesn't contain Xylene.



BOX	PART NR. — BOX	PART NR. — BOX
	95210	95225
	95211	
	95212	
	95213	
	95214	



SECURITY CHECK+ HIGH TEMPERATURE

HIGH TEMPERATURE RESISTANCE TORQUE PAINT MARKER

SECURITY CHECK+ High Temperature provides a convenient visual method for identification of vibratory loosening or tampering in nuts, bolts, fasteners, and assemblies. High visibility paint mark becomes a hard film that breaks easily. Mark at ambient temperature and the high-performance paint withstands temperatures up to 1000°C. Ideal for quality control and warranty work for brakes or any kind of heating assemblies parts inside engines. Safe on most surfaces, adheres perfectly to metal.



BOX	PART NR. — BOX	MAX C°
	97516	1000°C
	97517	1000°C



Identification: In difficult, harsh environments



PAINT-RITER® INDUSTRY MARKER SL.100



LIQUID PAINT MARKER FOR GENERAL MARKING

PAINT-RITER® Industry Marker SL.100 is a xylene-free, low-odor fast-drying liquid paint marker that provides long-lasting marks for almost any surface. The 15 opaque, bright colors are weather- and UV-resistant for excellent mark identification.

- 15 colors for excellent mark identification, quality control, and parts inspection
- Strong medium bullet tip resists wear to provide long marking life



PART NR. — BOX									
	31240120		31240420		31240720		31241020		31241320
	31240220		31240520		31240820		31241120		31241520
	31240320		31240620		31240920		31241220		31241620



PAINT-RITER®+ OILY SURFACE HP



LIQUID PAINT MARKER FOR OILY SURFACE MARKING

PAINT-RITER®+ Oily Surface HP is a liquid paint marker developed for superior marking performance on oily and greasy surfaces. The high performance paint penetrates through oils and greases to dry quickly and leave a bold, permanent mark that is wear-, weather-, and fade-resistant.

- Durable metal barrel and nib
- IMDS registered product



PART NR. — BOX									
	96960		96965		96964		96975		96967
	96961		96966		96974		96971		96972
	96962		96963		96973		96970		



PAINT-RITER®+ WATER ERASE SL130



REMOVABLE LIQUID PAINT MARKER FOR TEMPORARY MARKING

PAINT-RITER®+ Water Erase SL.130 is a crayon-based liquid paint that easily wipes away with water from any smooth, non-porous surface without leaving a ghost trace or residue once the mark is removed.

- Marks can be easily wiped away with water
- 9 bright colors including 4 fluos are excellent for temporary mark identification, quality control, and parts inspection



PART NR. — BOX									
	31200126		31200326		31200526		31201926		31201826
	31200226		31200426		31200626		31202026		

As manufacturer, we cannot control the conditions under which our products are being used or the many factors that have an effect on the use and application of our products. We disclaim liability for any damages caused by using our products. Please always perform compatibility tests to your application/material demands.

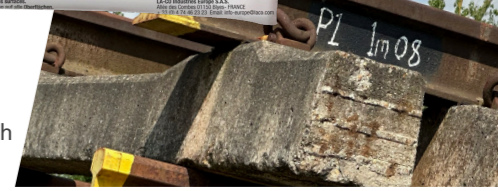


STYLMARK ORIGINAL



BALL TUBE MARKER FOR MULTIPLE SURFACES

STYLMARK Original is a metal-ball tip marker for marking most surfaces. The aluminum squeeze tube and thick paint makes it suitable for rough, vertical and overhead surfaces with excellent adhesion on oily and wet surfaces. Xylene-free paint reduces user health risks.



PART NR. — BOX					
	96664		96683		96662
	96665		96667		96659
	96689		-		96656
	96682		-		96660



PAINTSTIK® ORIGINAL B®



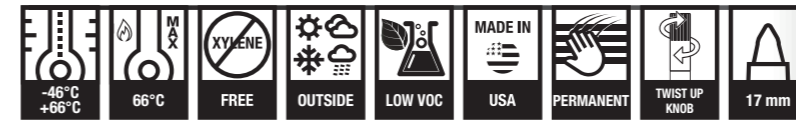
MULTI-PURPOSE PERMANENT SOLID PAINT CRAYON

As Markal's most versatile and economic marker, the Paintstik® Original B® solid paint marker combines the durability of paint in the convenience of a crayon. The real paint formula has superior marking performance on oily, icy, wet, dry or cold surfaces and is weather- and UV-resistant. This Paintstik® works on rough, rusty, smooth, or dirty surfaces.

- Superior marking on rough, rusty, or dirty surfaces



PART NR. — BOX											
	80220		80225		80224		80227		80232		82842
	80221		80226		80228		80229		82831		82835
	80222		80223		80230		80233		82832		82836
									82834		82834



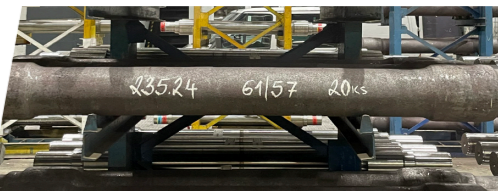
QUIK STIK®+ OILY SURFACE



FAST-DRYING SOLID PAINT IN TWIST-UP HOLDER FOR OILY AND WET SURFACES

QUIK STIK®+ Oily Surface solid paint markers are specially designed for challenging industrial environments where marking on oily and wet surfaces is needed. Additionally, they leave long lasting marks that dry quickly on dry surfaces.

- Industrial-grade paint formula for exceptional performance on oily and wet surfaces. Also writes on dry, smooth or rough surfaces
- Fast-drying, vibrant paint marks dry in 30 seconds to 1 minute on dry surfaces - does not smear when over stacking



PART NR. — BOX							
	28880		28881		28882		28883





DURA-INK® DUAL TIP

DUAL-SIDED INDUSTRIAL INK MARKER THAT PROVIDES THE CONVENIENCE AND VALUE OF TWO MARKERS IN ONE

Experience the versatility of DURA-INK® Dual Tip permanent ink markers and conveniently create both fine and micro-sized marks with one marker instead of two. Versatile, two tip design can tackle jobs both big and small, and the industrial-strength ink writes on most any surface - allowing for faster, more efficient marking in a variety of applications.



PART NR.— BOX



- 96283
- 96282

HOT BOX ALARMS CAUSE

All trains have axle journal boxes that contain roller bearings designed to bear the weight of the train, hold the wheels in alignment to the rails & allow the axle in the bogie assembly to turn freely.

If not properly maintained, the bearing will wear & produce heat leading to smoke, distortion, axle freeze up & in extreme cases, derailment.

To detect bearing failure while the train is in motion, infrared hotbox sensor systems are used along the railways to detect high temperatures in wheel bearings, axle & brakes as the train passes.

HBD (hot box detection) alarms will trigger & notify the train's engineer/conductor in real time.

On-board crew will use a Tempilstik to check the temperature axles on each side.



THE ALUMINOTHERMIC WELDING PROCESS

Rails can be welded using a technique known as aluminothermic welding, also called thermal welding. Aluminothermic welding is a process in which a chemical reaction between aluminum powder and iron oxide generates heat, producing molten steel that fills the space between two rail ends to form a continuous welded rail.

The aluminothermic welding of rails involves the following steps:

- **Preparation:** The rail ends are first cleaned and cut to ensure they are square and fit together well.
- **Mold assembly:** A mold is assembled around the rail ends to be welded. The mold is made of a refractory material and is designed to contain the molten metal generated during the welding process.
- **Preheating:** The rail ends and the mold are preheated to a specific temperature to prevent the molten metal from solidifying too quickly: **SNCF has approved/certified 4 temperatures of Tempilstiks as part of the verification of reaching the desired temperature.**
- **Ignition:** The mixture of aluminum powder and iron oxide, called thermite, is placed in the mold and ignited. The thermite reaction generates intense heat that raises the temperature of the molten metal to about 2,500 °C.
- **Casting:** The molten steel is then poured into the mold, filling the space between the rail ends and creating a continuous welded rail.
- **Finishing:** once the molten metal has cooled and solidified, the mold is removed and the excess metal is removed. The rail is then ground to achieve a smooth finish.

Aluminothermic welding is a popular method for welding rails due to its high strength and durability. It is widely used in the railway industry worldwide to weld new rails, repair existing rails, and assemble rails on railway tracks.



TEMPERATURE VERIFICATION SOLUTIONS



TEMPILSTIK®

FAST, ACCURATE SURFACE TEMPERATURE INDICATOR

Providing accuracy, confidence and compliance for over 80 years, Tempilstik® is the original temperature-indicating stick with the best combination of precision and convenience for surface temperature measurement. Specially engineered for accurate temperature indication in pre-heating, interpass and post-weld heat treating applications, Tempilstik® is the industry's leading choice for use in the most critical jobs. Please note that the color of the Tempilstik® are not a part of their function, since the temperature signal consists of melting. Indicator color is subject to change without notice.

• **116 temperatures available from 100°F(38°C) to 2000°F(1093°C)**

• **Accurate to within +/- 1% of Fahrenheit and +/- 3% Celsius rated**

SNCF approved temperatures for aluminothermic rail repair/replacement.

PART NR.	T°C — CELSIUS	T°F — FAHRENHEIT
28006	66 °C	150 °F
28007	73 °C	163 °F
28305	75 °C	167 °F
28012	93 °C	200 °F
28309	95 °C	203 °F
28013	97 °C	206 °F

PART NR.	T°C — CELSIUS	T°F — FAHRENHEIT
28034	198 °C	388 °F
28046	302 °C	575 °F
28048	343 °C	650 °F
28050	399 °C	750 °F



Melts Instantly

Stick instantly melts at designated temperature for easy and immediate visual inspection

Accurate Temperatures

Accurate to within +/- 1% of Fahrenheit and +/- 3% Celsius rated. Imprinted part number, temperature and lot code across entire stick for improved traceability

100% Reliability

Calibration-free with 100% reliability

PROTECTIVE SOLUTIONS



BLOXIDE®

AN ALUMINUM-BASED WELDABLE PRIMER

Bloxide® is a versatile weldable primer with a unique aluminum-based formula that eliminates cleaning or removal before welding, thus saving time and labor costs. Enhanced by corrosion preventative features, Bloxide® can be applied to a wide range of metals for extended periods of storage, assisting in producing X-Ray quality welds.

- **Enhanced corrosion resistance for extended periods of storage**
- **Aluminium-base formula allows for welding without removal, reducing downtime and rework contamination**
- **High temperature resistant to 800°F (427°C)**



PART NR.	24100	24104
BOX	Bloxide 3,79 L	Bloxide 355ml (spray)





MARKAL®

THE MARK OF WORK™

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