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# Industrial Printers



**High Adhesion  
to Substrate**

**High Precision  
Printing**

**Digital Primer  
and Varnish**

**3D Layering  
Effect**

Linear motor, UV LED, Ricoh Gen. 6, Ink Waveforms, GREENGUARD Gold Page 3-4



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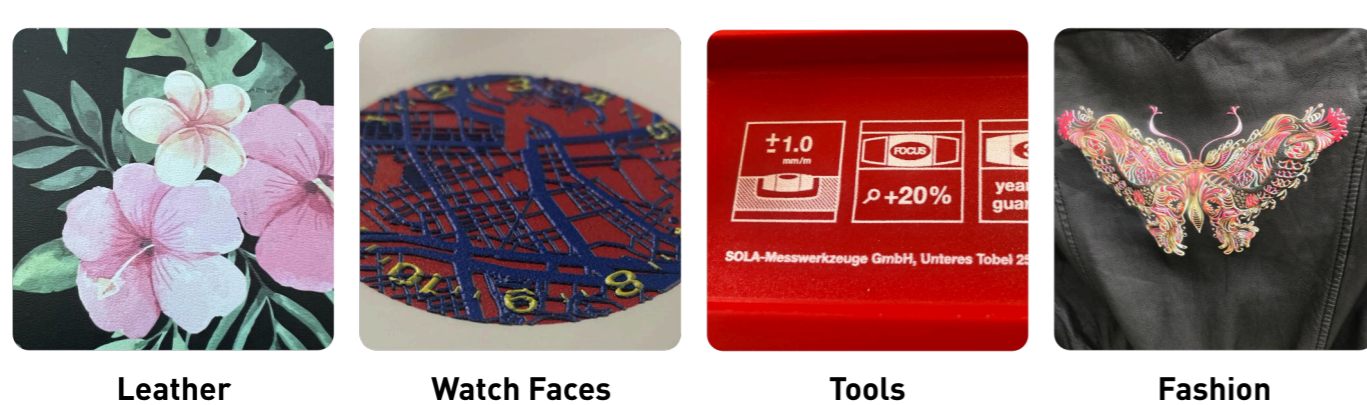
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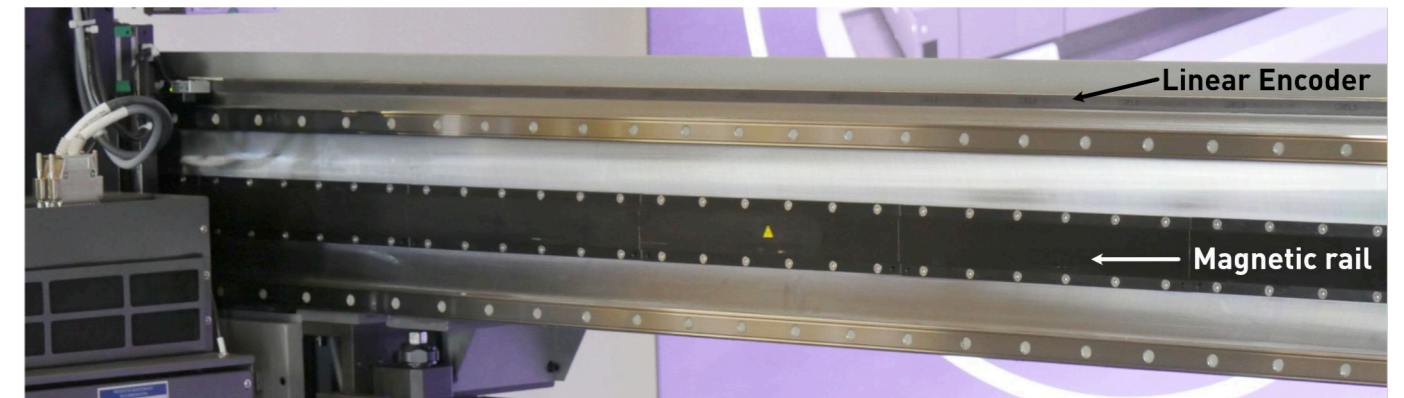


Industrial Applications Page 12



# INDUSTRIAL PRINTING SOLUTIONS

SIGNRACER is advancing all flatbed printers with the newest linear motor technology for demanding industrial applications.



### Linear Motor Technology

The integration of a linear motor in SIGNRACER flatbed printers ensures fast and smooth carriage motion. This technological advancement replaces the traditional belt-driven system, providing direct and precise motion control, significantly reducing vibrations and maintenance needs.

### Reduced Vibration for Premium Print Quality

The advanced design of SIGNRACER printers significantly lowers vibration levels. This results in smoother carriage movement and superior print quality, especially in high-detail graphics and 3D printing applications. The shift to linear motors in SIGNRACER printers offers remarkable durability improvements. This change reduces mechanical wear, noise levels, and maintenance, enabling reliable and quiet operation in various environments.

### Key benefits of linear motor and linear encoder

- Electromagnetic force mechanism.
- Higher speed, for high-speed production.
- Superior precision, with high-resolution output.
- Suitable for industrial environment as linear magnetic encoder is not sensitive to temperature and dirt.

### Highest Accuracy with 1-Micron Linear Encoder

Equipped with a 1-micron linear encoder, SIGNRACER printers achieve the highest accuracy in carriage movement. This feature is critical for detailed and wide-format printing, ensuring perfect alignment and uniform print quality across large surfaces.

### Higher Resolution 1200 x 1210 DPI

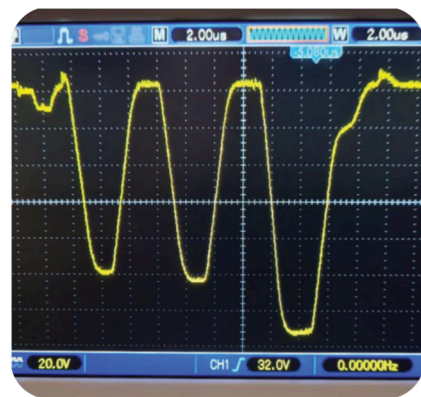
The upgrade to a 1200 x 1210 DPI resolution in SIGNRACER printers represents a significant improvement in print quality and color alignment which is only possible with the precise 1 micron encoder. This higher resolution allows for super precision, essential for producing finely detailed images and sharp text. It's particularly beneficial for applications where visual clarity and detail are paramount, such as in high-end graphics, detailed photographs, and precise industrial prints.

- Less vibration, ensuring smoother operation.
- Minimal maintenance, with fewer wear components.
- Higher durability, with robust long-term operation.
- Suitable for high-end, precision-intensive tasks.



**High Performance UV LED**

Signracer printers use the IST INTECH LED System, which has very high performance and air cooling (no water cooling tubes in the cable chain!). These LEDs Systems are offered with a 3 years warranty. Modular design allows custom LED UV configurations for various applications. LED UV lamps feature long life and light wavelength that perfectly matches the ink. Our LED is adjustable from 10-100% with maximum power of 14 Watt/cm2. High settings allow quick curing and the best adhesion and lower LED performance can be beneficial for further production processes (CNC machining, stretching materials, etc.)



**Standardization of Ricoh Gen. 6 print heads across all models**

- The Ricoh Gen. 6 assures uniform, high-quality printing with improved resolution and accuracy.
- SIGNRACER 1610 now also available in double row configuration.
- Higher frequency up to 40 KHz in Grey-scale mode
- Higher carriage speed up to 1.3 m/s
- 50% speed improvement over Ricoh Gen. 5
- Smaller drop size of 5,10, 15 pl for finer visual graphics
- Special wave-form development for Signracer inks
- Industrial grade stainless steel housing

Signracer has a development partnership and OEM agreement with Ricoh. Therefore we were one of the first companies offering Ricoh's Gen. 6 printheads on the market. Ricoh's smaller drop print heads are suitable for special applications that demand higher precision like watch faces or industrial components. We develop our own inks and waveforms, which is extremely important for small drop print heads and high frequency like Gen. 6. This feature allows us even higher print output, and top quality at maximum printing speeds without compromise. Signracer waveforms are a perfect match with our ink formulations especially in Grey-scale printing.

The GREENGUARD Gold Certification ensures the interior products are low in chemical emissions, decreasing indoor pollution levels. This program sets the most stringent guidelines for total VOC emissions. Greenguard Gold Certified products emit minimal gases. They maintain healthy indoor air quality, by reducing our chemical exposure. Low level of formaldehyde emissions specifically, makes them suitable for use in child's room or educational settings which has to meet even stricter standards. Lower emissions mean healthier indoor air, thereby reducing the risk of various irritations and diseases.



**SIGNRACER features developed for industrial printing**

- Extended color gamut ink set with CMYKLcLm, Orange, Violet and Light Black.
- New digitally printed primer for highest industrial adhesion requirements.
- High-distance printing accuracy up to 6 mm.
- Automated 3D Layer printing.
- Signracer SR-200+ ink series for highest industrial adhesion requirements.
- PremiumFlex+ for printing on leather.
- Signracer meets the newest directive for Safety of machinery SN EN ISO 13850 (optional).
- Antistatic system (optional)



Signracer has optimized the printer for distance printing in high quality. With our print heads we can achieve good printing results in a distance of 6-7 mm. Above this distance we have developed a patented technology to achieve good printing results up to 12 mm distance. This technology is already used to print on shoes, tools and components which are not 100% flat.

# SIGNRACER 2512 HB

**HB stands for High Bridge, direct printing on higher objects, by moving the bridge up to 50 cm height.**



The SIGNRACER 2512 HB was designed especially for those industrial customers who require printing capabilities up to 50 cm height. The printer is using motorized lifting mechanisms on both sides of the high bridge. In combination with a linear motor and 1-micron encoder, we can achieve the same accuracy as standard SIGNRACER flatbeds, even at the highest bridge position.



LOW POSITION

MEDIUM POSITION

HIGH POSITION

The combination of our high bridge design and the high-distance printing capabilities (7 mm) make this a unique industrial solution in the market. All our industrial inks can also be used on SIGNRACER 2512 HB. With PremiumFlex+, we can print on shoes and other fashion products like leather or artificial leather. With SIGNRACER SR-200+ ink, we can print on challenging materials like plastics, solid metals, wood, glass.



# SIGNRACER 2512 HB 3D

Signracer has customers in the Swiss watch industry who need high-precision 3D printing. For this purpose, ink layers of 10-40 microns are applied to create a few mm height. To build up the printed structure precisely, an innovative laser scanning of the printed surface is required. The laser scanner determines the highest point of the digitally printed layer and automatically adjusts the height of the bridge during the printing process. The biggest advantage of this technology is super high precision printing with controlled distance to the media and the fact, that printing doesn't have to be interrupted.

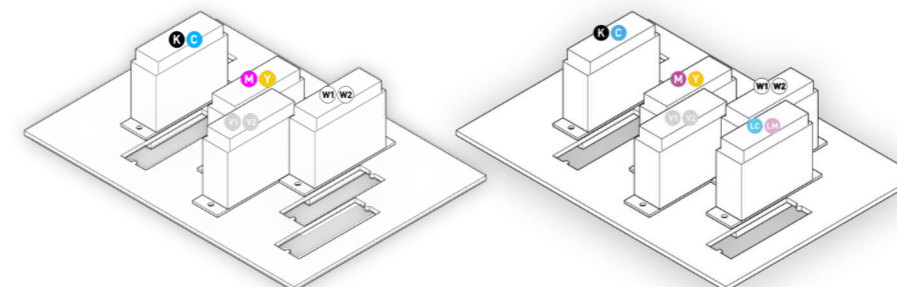


# SIGNRACER 2512V

**V stands for simultaneous printing of White, Color and Varnish.**



SIGNRACER 2512V is a special flatbed printer with triple row configuration and a sophisticated LED especially designed for this application. This printer can print and cure white, colour and varnish in one production process. The special LED uses a low intensity curing module for the delayed curing of the varnish. This allows finer control over the varnish curing process, and it results in superior solid and gloss finish.



**New special LED module for delayed curing of varnish**



Specifications	SIGNRACER 1610	SIGNRACER 2512	SIGNRACER 2512 HB (3D)	SIGNRACER 2512V	SIGNRACER 3116	SIGNRACER 3020	Specifications
<b>Print technology</b>	Multi-drop technology			Multi-drop technology			<b>Print technology</b>
<b>Print Heads</b>							<b>Print Heads</b>
<b>Ricoh Gen. 6 (Standard)</b>	2-8 Print Heads	2-8 Print Heads	2-8 Print Heads	4-5 Print Heads	2-8 Print Heads		<b>Ricoh Gen. 6 (Standard)</b>
<b>Ricoh Gen. 5 (Optional)</b>	2-4 Print Heads	2-8 Print Heads	-	4-5 Print Heads	2-8 Print Heads		<b>Ricoh Gen. 5 (Optional)</b>
<b>Printbed</b>	1600 x 1000 mm	2500 x 1250 mm	2500 x 1250 mm	2500 x 1250 mm	3100 x 1600 mm	3050 x 2050 mm	<b>Printbed</b>
<b>Flatbed</b>	Honeycomb 2 zones vacuum table with registration pins	Honeycomb 4 zones vacuum table with registration pins		Honeycomb 4 zones vacuum table with registration pins			<b>Flatbed</b>
<b>Carriage Speed</b>							<b>Carriage Speed</b>
Ricoh Gen. 6 (Linear motor)	1.3 m/s	1.3 m/s	1.3 m/s	1.3 m/s	1.3 m/s	1.3 m/s	Ricoh Gen. 6 (Linear motor)
Ricoh Gen. 5 (Belt)	0.8 m/s	0.8 m/s	0.8 m/s	0.8 m/s	0.8 m/s	0.8 m/s	Ricoh Gen. 5 (Belt)
<b>Nozzle Quantity   Drop size</b>							<b>Nozzle Quantity   Drop size</b>
<b>Ricoh Gen.6 / 40 KHz</b>	1280 nozzles   5 - 15 pl grayscale	1280 nozzles   5 - 15 pl grayscale	1280 nozzles   5 - 15 pl grayscale	1280 nozzles   5 - 15 pl grayscale			<b>Ricoh Gen.6 / 40 KHz</b>
<b>Ricoh Gen.5 / 20 KHz</b>	1280 nozzles   7 - 21 pl grayscale	1280 nozzles   7 - 21 pl grayscale	-	1280 nozzles   7 - 21 pl grayscale			<b>Ricoh Gen.5 / 20 KHz</b>
<b>Dimensions</b> (height x width x depth) *without PC arm	1300 x 3100 x 1700 mm	1320 x 4670 x 1960 mm	1400 x 4700 x 2500 mm	1320 x 4670 x 1960 mm	1350 x 5230 x 2220 mm	1350 x 5230 x 3200 mm	<b>Dimensions</b> (height x width x depth) *without PC arm
<b>Weight</b>	760 kg	1380 kg	1450 kg	1380 kg	1610 kg	1760 kg	<b>Weight</b>
<b>Energy Consumption</b>	4 kW	6 kW	6 kW	6 kW			<b>Energy Consumption</b>
<b>Media / Curing</b>							
<b>Max. Media Width / Max. Print Width</b>	1640 mm / 1600 mm	2540 mm / 2500 mm	2540 mm / 2500 mm	2540 mm / 2500 mm	3150 mm / 3100 mm	3100 mm / 3050 mm	<b>Max. Media Width / Max. Print Width</b>
<b>Media Type</b>	Rigid and flexible (PVC Boards, Aludibond, PS, PP, Acrylat, PET-G, Glass)			Rigid and flexible (PVC Boards, Aludibond, PS, PP, Acrylat, PET-G, Glass)			<b>Media Type</b>
<b>Media Thickness</b>	Maximum 100 mm	Maximum 100 mm	Maximum 500 mm	Maximum 100 mm			<b>Media Thickness</b>
<b>Media Curing System</b>	LED UV curing with variable power levels			LED UV curing with variable power levels			<b>Media Curing System</b>
<b>Single Row</b>	90 mm / 14 Watt/cm <sup>2</sup>	90 mm / 14 Watt/cm <sup>2</sup>		90 mm / 14 Watt/cm <sup>2</sup>		90 mm / 14 Watt/cm <sup>2</sup>	<b>Single Row</b>
<b>Double Row</b>	180 mm / 14 Watt/cm <sup>2</sup>	180 mm / 14 Watt/cm <sup>2</sup>		180 mm / 14 Watt/cm <sup>2</sup>		180 mm / 14 Watt/cm <sup>2</sup>	<b>Double Row</b>
<b>Triple Row</b>		210 mm / 16 Watt/cm <sup>2</sup>		120 mm Color (14 Watt/cm <sup>2</sup> ) + 30 mm Varnish (Low Intensity)		210 mm / 16 Watt/cm <sup>2</sup>	<b>Triple Row</b>
<b>Printing Speeds</b>							
<b>Ricoh Gen. 6</b>	<b>Single Row / Double</b>	<b>Single / Double / Triple Row</b>	<b>Single / Double / Triple Row</b>	<b>Triple Row</b>	<b>Single Row / Double Row</b>	<b>Single / Double / Triple Row</b>	<b>Ricoh Gen. 6</b>
<b>Draft</b> (4 pass, 600x900 dpi)	28 m <sup>2</sup> /h / 47 m <sup>2</sup> /h	40 m <sup>2</sup> /h / 60 m <sup>2</sup> /h / 84 m <sup>2</sup> /h	28 m <sup>2</sup> /h / 49 m <sup>2</sup> /h / 63 m <sup>2</sup> /h	33 m <sup>2</sup> /h	41 m <sup>2</sup> /h / 69 m <sup>2</sup> /h	44 m <sup>2</sup> /h / 74 m <sup>2</sup> /h / 97 m <sup>2</sup> /h	<b>Draft</b> (4 pass, 600x900 dpi)
<b>Production</b> (6 pass, 600x900 dpi)	20 m <sup>2</sup> /h / 40 m <sup>2</sup> /h	30 m <sup>2</sup> /h / 46 m <sup>2</sup> /h / 65 m <sup>2</sup> /h	24 m <sup>2</sup> /h / 42 m <sup>2</sup> /h / 56 m <sup>2</sup> /h	24 m <sup>2</sup> /h	30 m <sup>2</sup> /h / 51 m <sup>2</sup> /h	32 m <sup>2</sup> /h / 55 m <sup>2</sup> /h / 70 m <sup>2</sup> /h	<b>Production</b> (6 pass, 600x900 dpi)
<b>Quality</b> (9 pass, 600x900 dpi)	15 m <sup>2</sup> /h / 29 m <sup>2</sup> /h	22 m <sup>2</sup> /h / 36 m <sup>2</sup> /h / 44 m <sup>2</sup> /h	16 m <sup>2</sup> /h / 30 m <sup>2</sup> /h / 40 m <sup>2</sup> /h	16 m <sup>2</sup> /h	22 m <sup>2</sup> /h / 40 m <sup>2</sup> /h	24 m <sup>2</sup> /h / 43 m <sup>2</sup> /h / 49 m <sup>2</sup> /h	<b>Quality</b> (9 pass, 600x900 dpi)
<b>Ricoh Gen. 5</b>	<b>Single Row</b>	<b>Single Row</b>	<b>Single Row / Double Row</b>	<b>Triple Row</b>	<b>Single Row / Double Row</b>	<b>Single Row / Double Row</b>	<b>Ricoh Gen. 5</b>
<b>Draft</b> (4 pass, 600x900 dpi)	23 m <sup>2</sup> /h	29 / 44 m <sup>2</sup> /h	-	21 m <sup>2</sup> /h	31 m <sup>2</sup> /h / 50 m <sup>2</sup> /h	31 m <sup>2</sup> /h / 50 m <sup>2</sup> /h	<b>Draft</b> (4 pass, 600x900 dpi)
<b>Production</b> (6 pass, 600x900 dpi)	18 m <sup>2</sup> /h	21 / 35 m <sup>2</sup> /h	-	14 m <sup>2</sup> /h	23 m <sup>2</sup> /h / 38 m <sup>2</sup> /h	23 m <sup>2</sup> /h / 38 m <sup>2</sup> /h	<b>Production</b> (6 pass, 600x900 dpi)
<b>Quality</b> (9 pass, 600x900 dpi)	14 m <sup>2</sup> /h	16 / 29 m <sup>2</sup> /h	-	10 m <sup>2</sup> /h	17 m <sup>2</sup> /h / 31 m <sup>2</sup> /h	17 m <sup>2</sup> /h / 31 m <sup>2</sup> /h	<b>Quality</b> (9 pass, 600x900 dpi)
<b>Ink Specifications</b>							
<b>Certified Ink Series</b>	SR-100 HD, SR-200+, PREMIUMFLEX+			SR-100 HD, SR-200+, PREMIUMFLEX+			<b>Certified Ink Series</b>
<b>Colour Configurations</b>	CMYK + LC + LM + White + Varnish / CMYK + LC + LM + LK + White CMYK + Orange + Violet + Light Black + White			CMYK + LC + LM + White + Varnish / CMYK + LC + LM + LK + White CMYK + Orange + Violet + Light Black + White			<b>Colour Configurations</b>
<b>Ink Consumption</b>							<b>Ink Consumption</b>
Ricoh Gen.5	10 ml/m <sup>2</sup>			10 ml/m <sup>2</sup>			Ricoh Gen.5
Ricoh Gen.6	8 ml/m <sup>2</sup>			8 ml/m <sup>2</sup>			Ricoh Gen.6

## Journey to UV Extended Color Gamut Inkset

### Process Colors



SIGNRACER has introduced SR-200+ Magenta-R and Yellow-HD (nickel-free) colors to expand the color gamut beyond the traditional CMYK setup, while addressing future health standards.

### Light Colors



The use of Light Cyan, Light Magenta-R, and new Light Black are especially important for industrial production including, fashion and watch making. These light colors contribute to the production of fine gradients, less grainy appearance and excellent shading.

### White, Varnish



Based on the strict industrial customer requirements, SIGNRACER developed new White ink formulations without yellowing effects. Such White is a requirement to achieve a extended color gamut. Varnish comes in two variants for rigid and flexible media, which can be applied partially, creating a unique visual and tactile experience.

### Special Colors



To further enhance extended color gamut ink set, we introduce Orange and Violet inks. These special colors significantly enhance color reproduction and allow you to create prints with rich, deep tones that faithfully represent the original colors.



### SR-100 HD

- Greenguard Gold Certified
- Low viscosity ink developed for LED
- Good adhesion on roll and rigid material
- Good flexibility
- High density colours
- Highest solvent and scratch resistance



### SR-200+

- Greenguard Gold Certified
- Enhanced performance
- Superior adhesion
- Superior solvent resistance
- Increased flexibility
- Extended color gamut
- Non-sticky finish



### PREMIUMFLEX+

- Medium viscosity ink developed for LED
- Developed for leather, fake leather and other flexible materials
- Good adhesion on above material
- High density colour
- Best long term flexibility and stretch ability



## GREENGUARD Gold Certification

The GREENGUARD Gold Certification exceeds basic compliance requirements by emphasizing safety considerations to ensure products are suitable for use in sensitive environments such as schools and healthcare facilities. This certification takes into account the well-being of vulnerable groups, including children and the elderly, affirming the product's safety for such settings.

### Features and Benefits:

- **Low VOC Emissions:** Minimizes indoor air pollution.
- **Safer Printing Solutions:** Ideal for sensitive environments such as schools and healthcare facilities.
- **Sustainability:** Demonstrates SIGNRACER's commitment to environmental responsibility.
- **Compliance with Health Standards:** Meets rigorous health-based criteria for safer products.
- **Market Differentiation:** Offers a competitive advantage by prioritizing safety and sustainability.

Ink Type	Colours	Print Head Temp.	Key Features	Adhesion	Application
SR-100 HD	CMYK	38°C	Multi-purpose ink with high solvent and scratch resistance.	Good	Roll + Some Rigid
	White	40°C			
SR-200+	CMYK, LC, LM, LK, Orange, Violet	42°C	Enhanced performance, superior adhesion, increased flexibility, extended color gamut, non-sticky finish.	Excellent	Rigid+Roll
	White, Varnish	42°C			
PREMIUMFLEX+	CMYK, LC, LM	46°C	Long term flexibility on special materials like leather, fabrics and melamine.	Good	Leather
	White, Varnish	46°C			

The ink bottles are also used as the printer ink reservoirs. We achieve slow aging of the ink because old inks are never mixed with new inks. This results in a very stable printer and no sediments in the bottles because they are always changed.

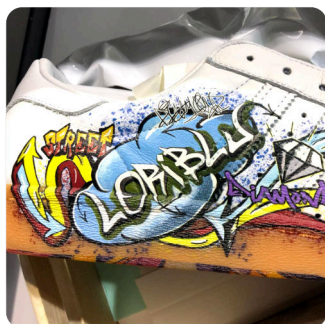
# Industrial Applications

## SIGNRACER SR-200+ Ink

SIGNRACER SR-200+ ink guarantees superior adhesion to challenging materials such as various metals, including aluminum, stainless steel, and anodized aluminum, crucial for industries like automotive and watchmaking. Such robust adhesion is vital for applications requiring endurance against harsh conditions. Its ability to pass stringent tape tests after extreme climate treatments makes it ideal for durable, high-quality prints on industrial components.

## SIGNRACER PremiumFlex+ Ink

SIGNRACER PremiumFlex+ ink is specifically formulated for high flexibility, making it ideal for leather and artificial leather used in shoes, bags, fashion items, and racing suits. This ink ensures long-term flexibility, essential in the fashion footwear and luxury goods sectors. Its durability and high elasticity are key for products that undergo regular use and physical stress, meeting the demanding requirements of the Bally Test for industrial leather standards.



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