

Marking

VIN Marking on Mild Steel

Mild Steel is one of the most widely used metals due to its weldability, durability and low cost. Applications for Mild Steel include car chassis, motorcycle frames and multiple domestic products such as cookware and cleaning appliances.

Vehicle Identification Number (VIN) marking is used in the automotive sector to trace vehicles and car parts through the manufacturing process. The challenge is to produce a long lasting, legible mark which cannot be removed. To improve traceability, marks can be made unique using special fonts and by changing the parameters to create distinctive groove profiles.

A high quality legible mark can be engraved into Mild Steel to a depth of over 0.3mm using SPI's G4 100W EP-Z laser with high peak power and high pulse energy. Using multiple passes and various scan speeds produced 13 characters (8mm tall, 0.8mm wide and 0.3mm deep) in a time of 10.4 seconds. After the mark has been produced the surrounding area is laser cleaned using short duration pulses to remove dross and debris. This significantly improves mark quality (as seen right).

The flexibility of the G4 laser allows pulse duration to be changed on the fly so the cleaning pass can take place immediately after the VIN mark has been produced. There are a number of variables to this process which will affect the process time such as the type of character being marked, the font and the depth of mark.

Related Product



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redENERGY G4

Before cleaning pass



Finished VIN mark

Application Parameters

Type	G4 100W EP-Z
Power	100W
M ²	<1.6
Beam Ø	8mm
Scanner/Lens	>8mm/163mm FL
Energy	WF1 100kHz @ 45/50/60mm/s

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