



# Marksolid 904

## User Manual

Marks Black on Anodised Aluminium

### Important to know:

- The product is a "thixotrope", therefore shake well before use, for at least for 1 minute.  
Shaking will cause a change in consistency; the product will then become a more fluid consistency.
- To dilute the product, **only use distilled water** and never bring it in touch with alcohol. Apply too thick a coating should be avoided.
- For some laser marking machines, it is necessary to defocus them for good results.

### How to proceed:

1. Make sure the **Anodised Aluminium** is *clean, dry and free from grease*.  
When indicated, clean with alcohol or acetone.
2. The product must be **shaken thoroughly for at least one minute**. Don't stop shaking earlier, even if the product already seems to be liquid; continue shaking!  
The product shows thixotrope characteristics. As a result of longer storage periods, the consistency changes to a viscous gel. Only if the product is shaken, the gel changes back to a liquid condition. The product's viscosity decreases by shaking for a longer period. The longer you shake the product, the more liquid it will get.  
(Shake for approx. 1 minute at least!).
3. Before you start to **dilute** the product further, make sure you have shaken long enough. For dilution only use *distilled water*! Never add alcohol as a diluting agent!  
Adding alcohol will render the product unusable.
4. To apply the product, use a **foam brush**:  
Make sure the brush is *completely dry*.  
A brush which is still wet (from cleaning) would dilute the product more. This would result in irregular markings. You will receive the best results with the provided foam brush (only with sample kit) while using the undiluted product. Dip the brush approx. 5 mm deep into the liquid product. Lead the brush slowly and with constant speed smoothly over the surface without stopping. Repeat this as often as necessary to coat bigger areas with several lines one below the other. To coat the surface, arrange it in a  $> 45^\circ$  angle. Then excess liquid product will flow to the bottom of the line and can be taken away by the brush when producing the next line.



5. Apply product by using an **Airgun** or **Airbrush**:

Try to find an adjustment for your spraying equipment to avoid the need for diluting the product too much. Higher dilution may cause trouble with the adhesion on the anodised surface. Droplets would be produced and a poor marking result would be delivered. The coating thickness should be  $\sim 30 \mu\text{m}$  and just cover the surface. It shouldn't exceed  $30 \mu\text{m}$ . Nevertheless, a too thin coating produces a grey instead of a black mark.

6. Approach to **adjust and optimise laser parameters**:

Make sure the coating is dry before you start with laser marking.  
Start with high power (approx. 50 Watt or adjust 100% power with lasers possessing lower power) and slow speed (approx. 50 – 200 mm/sec). Adjust a correct focus distance for the smallest spot size.

**A)** Only if the result shows an **even smooth and dark mark** you should increase the marking speed step by step until the colour of the mark fades out to grey. The picture shows a good result →



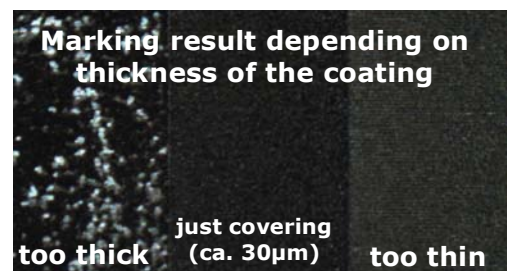
A further increase of power or slowing down marking speed changes the mark's colour to black again. Optimise your mark by adjusting laser power and marking speed in small steps.

**B)** Sometimes a mark produced with the laser's start settings can show a more **brownish colour with white spots** and the surface feels rough-textured. See picture ---- > By appearance of this characteristics, **try some different focus distances** to get a bigger size of the laser spot. Continue marking and reduce the focus distance in small steps. In most cases you will receive even smooth and dark marks again within a range between 0 – 3 mm defocused. Continue as described above ---- > **A)**



**C)** In case you **couldn't get reasonable results by readjusting the focus distance**, the reason for your troubles is probably caused by a too thick coating layer. Try to **apply the product as a very thin coat** and continue as described above ----- > **A)**

A spray gun or air brush equipment allows a much better control of coating thickness as a brush can do.



7. **After laser marking** remove the exceed material with water or a damp cloth.

*Sample configuration  
searching for best working focus distance*

