



# Accessory Newsletter – No.1

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## ROBOTIC TOTAL STATION PRISMS

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Leica Geosystems offers a range of light-weight, passive prisms for use with robotic Total Stations. For efficient operation without the need for directing the prism toward the instrument, a 360° type prism is recommended. This consists of six individual prisms joined together. The arrangement allows the measuring beam to reflect directly back to its source evenly from any position on the prism set. The even distribution of the prisms provides similar offset and accuracy readings from any side.

The following types of 360° Prisms are available from Leica Geosystems:

### 1. GRZ4 360° CLASSIC PRISM

This prism is recommended for all robotic work where the prism is mounted on a reflector pole. The rubber mountings on the top and bottom of the prism provide protection if the pole falls over. The prism is supplied in a padded case for safe transportation.

The GRZ4 has an overall pointing accuracy of 5mm. However, when aiming directly at one of the six prisms, an accuracy of better than 2mm can be achieved. Yellow arrows, appropriately placed on the rubber cap, allow easy control of manual aiming by sight.

### 2. GRZ121 360° PRECISION PRISM

For machine control, accurate height determination is critical. The GRZ121 provides a height measuring accuracy of 2mm. The prism is fixed using a screwable clamp for secure mounting on the prism holder. With the improved clamping stability, it is ideally suited for rugged machine control applications.

### 3. GRZ101 360° MINI PRISM

Due to its small size, this low cost alternative provides the greatest pointing accuracy of 1.5mm. However, it has restricted functionality with the TPS Power Search, and a shorter measuring and ATR range, than the standard size prisms. The GRZ101 is supplied with a four-part reflector pole, two pole tips and a level bubble.

The GAD103 Adapter allows the mini prism to be mounted on all reflector poles having a Wild

Stub. This adapter provides the correct offset in order for the prism height to be read directly off the pole scale.

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## 360° PRISMS OF OTHER BRANDS

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Illegal copies of Leica Geosystems patented 360° Prism design are available in the market. Apart from breaching the patent, these copy prisms are of inferior quality. Leica Geosystems is receiving an increasing number of complaints from customers regarding the poor quality of copy 360° Prisms. The primary reason for these complaints is that the prisms are falling apart. These prisms were usually purchased without the knowledge that they were copies.

The six prisms of the Leica Geosystems product are fused together under high force in a complete vacuum. This forms a strong bond due to the perfectly smooth polished glass surfaces. With other brands the prisms are glued together. The prism surfaces are not in contact when glued which results in a lower measuring accuracy. In addition, the glue on the surface reduces the reflectivity and therefore affects the measuring range.

There is no bonding agent available that produces a secure connection between rubber and glass. Leica Geosystems uses a secret method of bonding to join the rubber supports to the prisms. The materials are merged into each other, making them virtually inseparable. The manufactures of the illegal copies simply glue the two materials together. The prism therefore falls apart with only limited rough handling. Once the copy prism has come apart, the dealer who sold this prism is unable to reassemble the components and the prism can no longer be used.

## AUTHENTICATION

To ensure that you are purchasing an original Leica Geosystems prism, look out for the silver foil label on the product. The label states the manufacturer as Leica Geosystems AG, and further bears a product description and article number. Only original prisms have a warranty against any defects and guarantee the Leica Geosystems specifications.