

# The A-221 Small-Bore Self-Centering Target

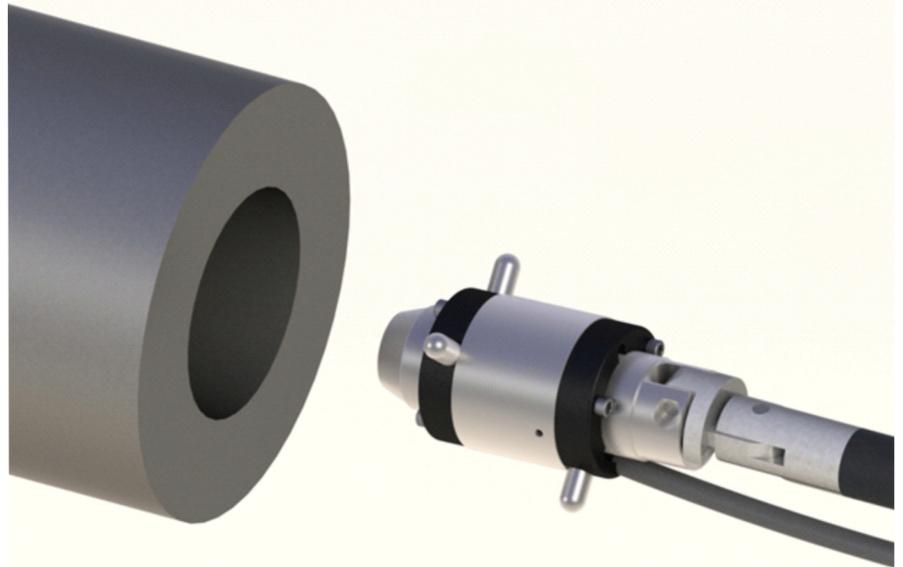
*The ideal alignment tool for large gun barrel straightness, and small extruder barrel alignment*

## Target Features

Hamar Laser's A-221 Self-Centering, Small-Bore Target is designed specifically to measure the straightness and alignment of small to medium sized bores, from 1.18 in. (30 mm) to 10 in. (255 mm). This small, lightweight, compact target self-centers to an accuracy of .0007 in. (0.018 mm) and has a sensor area of 10x10 mm.

## Target features include:

- Self-centering bore adapters with customized legs to fit the bore diameter, but can accommodate diameter changes of  $\pm 0.040$  in. (0.001 mm) without affecting the self-centering feature.
- 10x10 mm PSD (Position Sensing Detector) is concentric to bore ID to within .0005 in. (0.013 mm)
- Measurement resolution of .00004 in. (0.001 mm) when used with the R-1307 Readout.
- Five foot (1.5 m) insertion pole with connector for extra lengths up to a total of 15 ft. (4.5 m) insertion length.
- Accommodates bores from 1.18 in. (30 mm) to 10 in. (255 mm) when used with A-221STA/A-221LTA Bore Adapters and M-221 CLS-II/M-221CLL-II Customized Measuring Legs.
- Can be used with the R-1307C or R-1307 2.4ZB target readouts. Use the A-910-2.4ZB Radio Receiver for a PC with the R-1307-2.4ZB for wireless data downloads to our Bore9 software.
- Bullseye level orients the PSD sensor axes to the alignment axes of the bore.



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# Specifications

## The A-221 Small-Bore Self-Centering Target

<b>Dimensions:</b>	1.12 in. (28.5 mm) OD. 3.56 in. (92.0 mm) long without pole
<b>Sensor Size/Resolution:</b>	10x10 mm PSD with .00004 in. (1.0 micron) resolution when used with the R-1307.
<b>Sensor Concentricity to Target Housing:</b>	< .0005 in. (0.013 mm)
<b>Material:</b>	303 stainless steel
<b>Cable:</b>	Hard-mounted 10 ft. (3m) cable with Lemo connector
<b>Weight:</b>	5 oz. (85 g)
<b>Bore Diameter Range :</b>	Can accommodate $\pm .040$ in. (1 mm) diameter change and still self-center
<b>Insertion Pole:</b>	5 ft. (1.5 m) insertion pole with connector for extra lengths for up to a total of 15 feet (4.5 m) insertion length.
<b>Bore Adapters - Small:</b>	A-221STA Small Bore Adapter Hub for 1.18 - 3.5 in. (30 - 90 mm) bores Use M-221CLS-II Customized Measuring Legs for each bore ID.
<b>Bore Adapters - Medium:</b>	A-221LTA Bore Adapter Hub for 3.5 - 10 in. (90 - 255 mm) bores. Use M-221CLL-II Customized Measuring Legs for each bore ID.

