

Mercury™ Encoders: Design Guidelines for Customer Supplied Rotary Scale Segment Holders

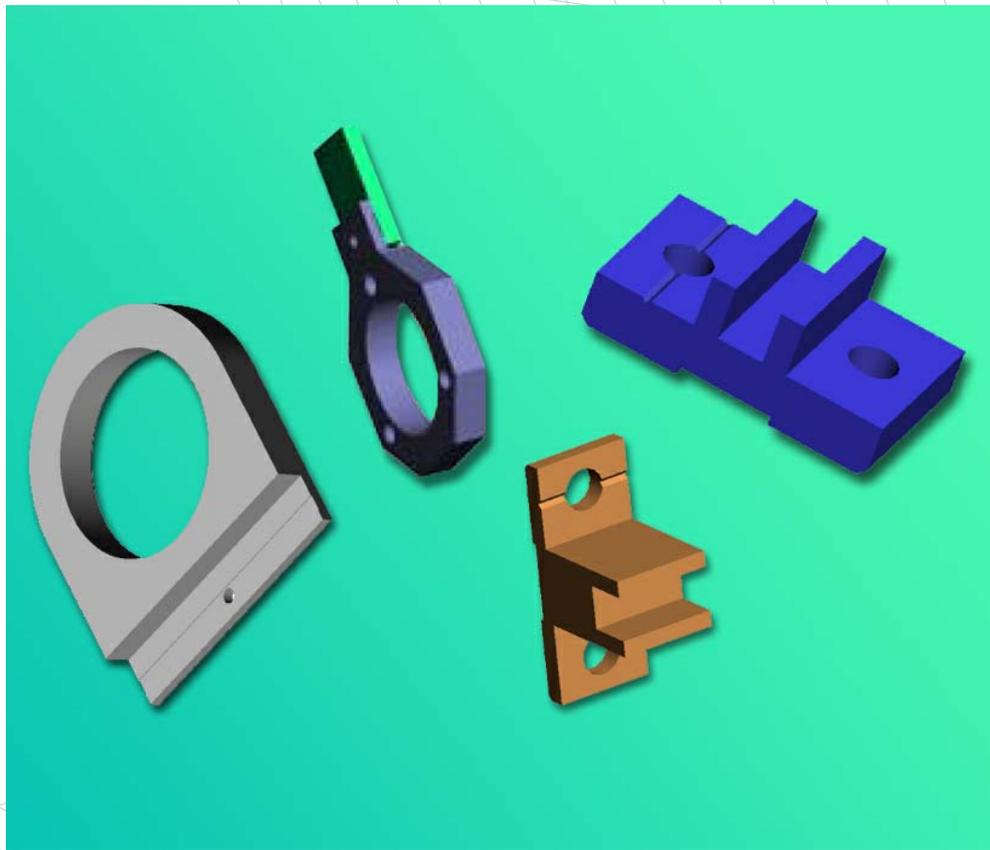


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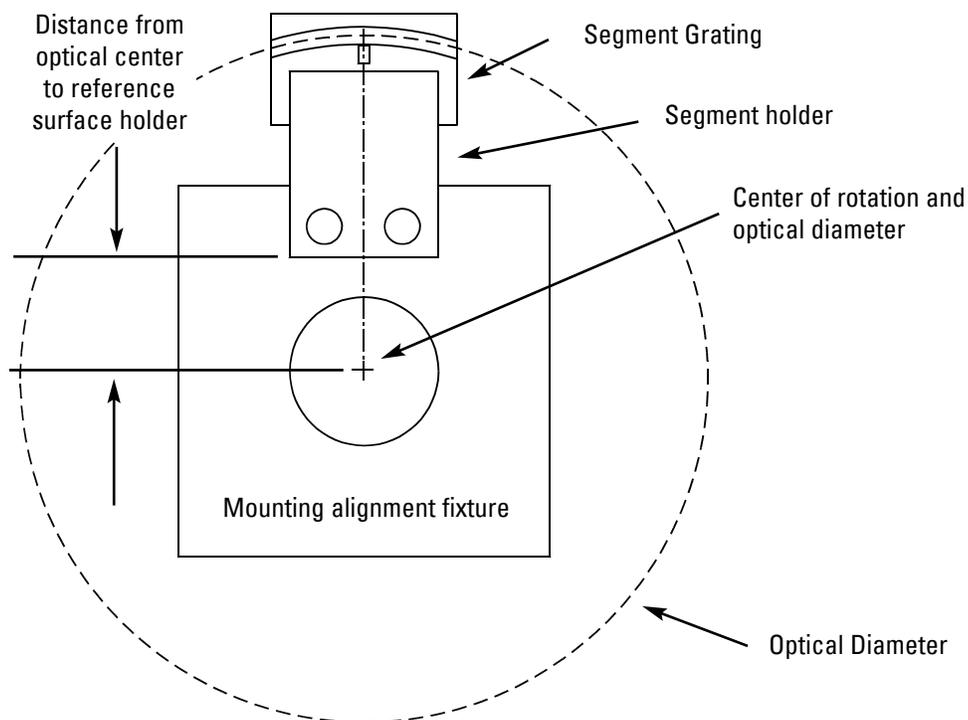
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Introduction

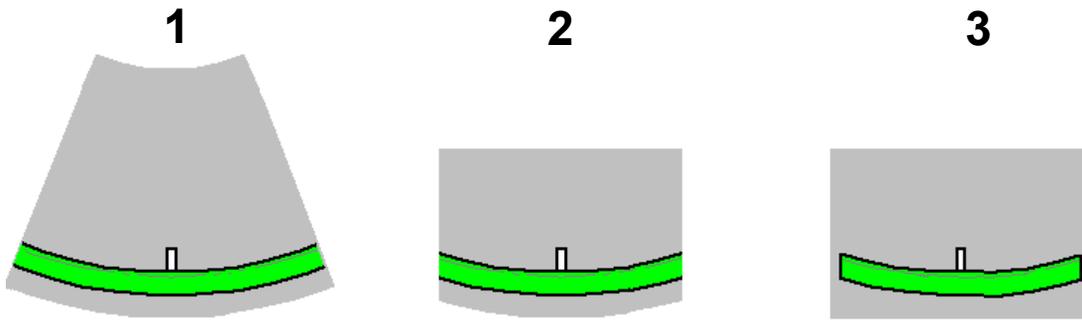
This document will guide customers through the key design elements for a successful segment holder design. Once the holder has been designed, a copy of the design should be sent to MicroE for review.

Mounting and Alignment Fixture for Segment Holder

Please provide a fixture for the Mounting and Alignment of the segment onto the holder. Otherwise provide dimensional information so MicroE can build a fixture. The key information is the distance from the center of rotation or the optical center to the reference surface of the holder.



Three Styles Available for Segment Gratings

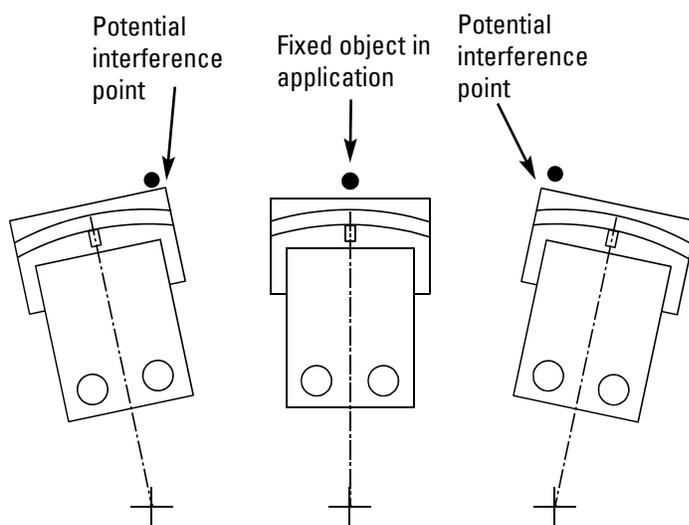


1) Angular segment cut from 360° rotary grating. Completed in RCR lab, not recommended for applications that have the potential for high volume.

2) Square segment cut from 360 rotary grating. Completed in RCR lab, ideally suited for prototype evaluation orders that will eventually lead to high volume applications. Difficult to make from R1919 and R3213 because of the small size.

3) Square segment cut from plate of segments. Recommend for all production segment gratings. Requires new master and is best for standard production. Processed by manufacturing. Designers need to ensure sufficient clearance for the corners that are only present on segments cut from plates.

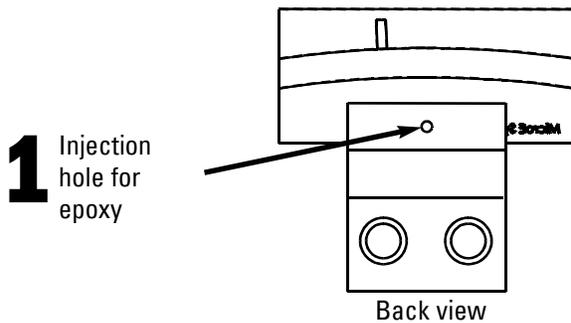
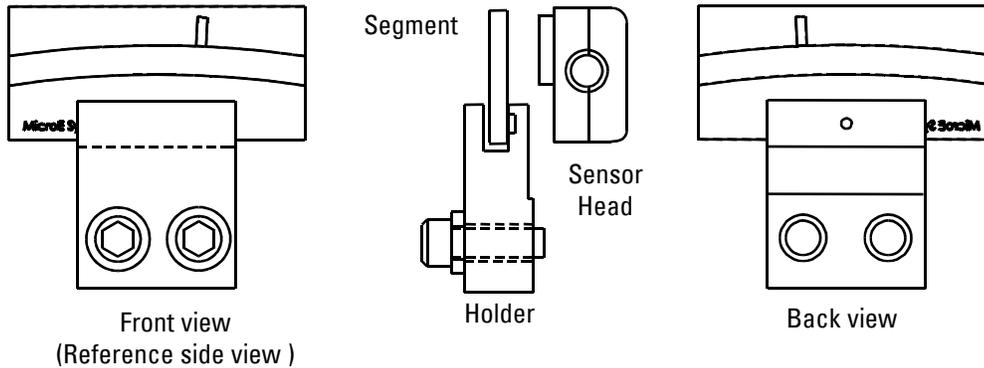
Checking for Clearance



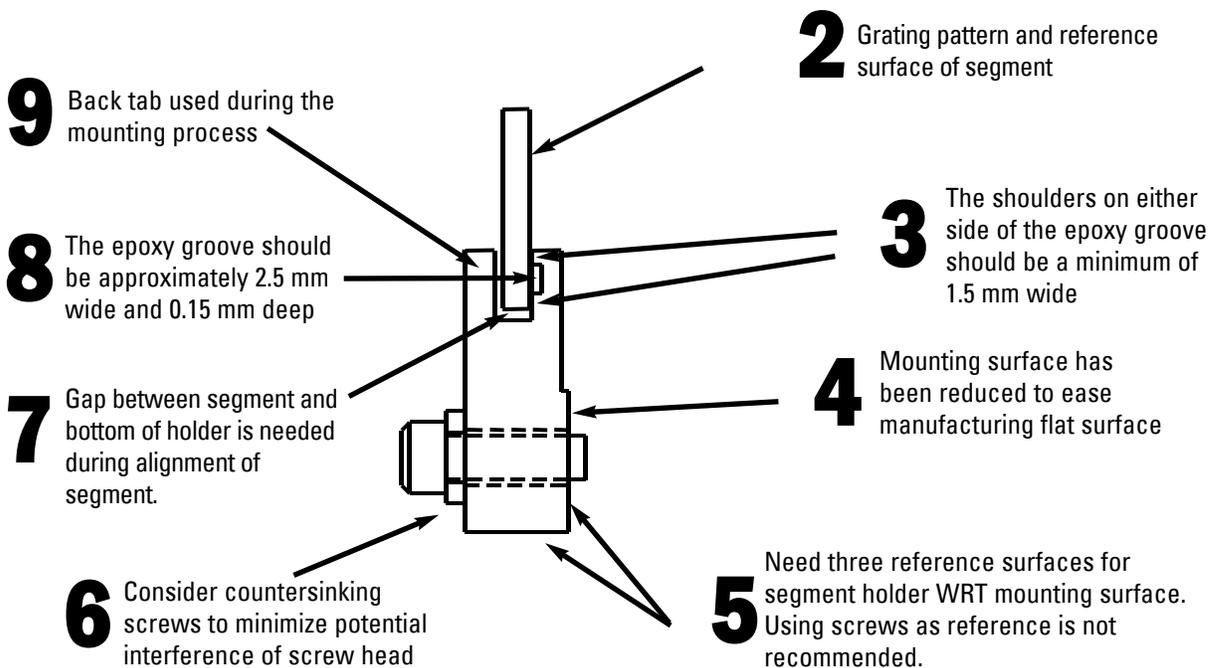
If the application is using a segment grating cut from a plate of segments, rather than from a 360° rotary grating, be sure that the corners of the segment do not interfere with any fixed objects in the application.

Holder Design

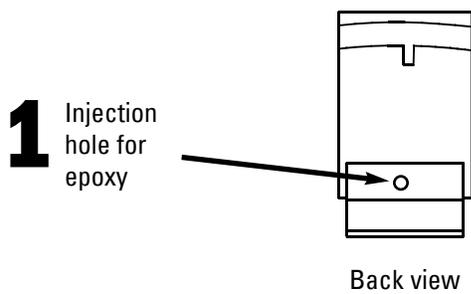
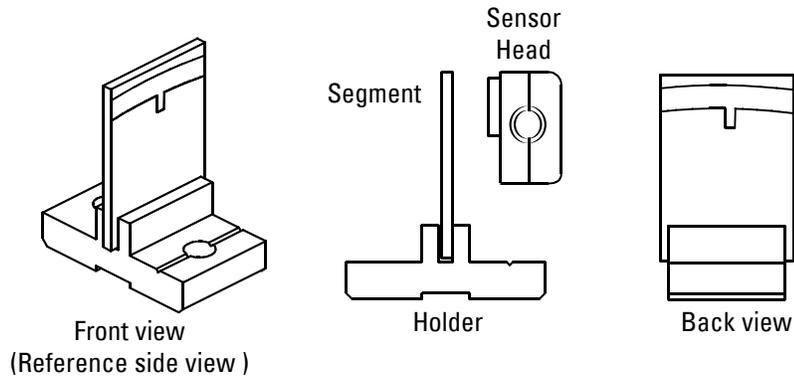
Rotary Segment Holder Design: Flat holder



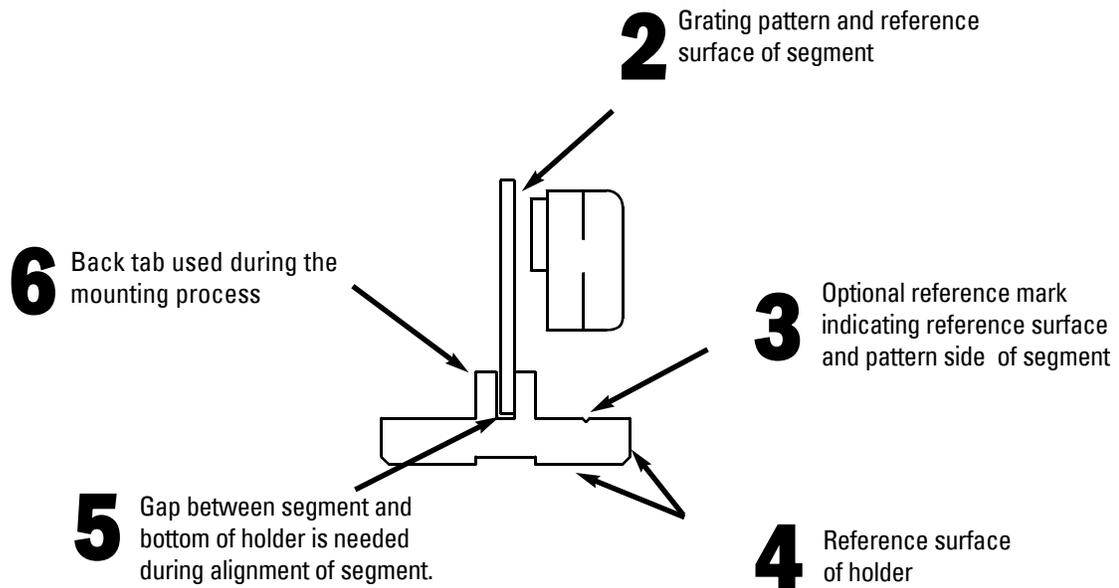
Note: For segments less than 8 mm wide no epoxy holes are needed. For larger segments, add an epoxy hole for every 20 mm of epoxy groove length. For example, if the epoxy groove is 21 mm long, two epoxy holes should be evenly spaced over the length of the epoxy groove.



Rotary Segment Holder Design - 90° Holder



Note: For segments less than 8 mm wide no epoxy holes are needed. For larger segments, add an epoxy hole for every 20 mm of epoxy groove length. For example, if the epoxy groove is 21 mm long, two epoxy holes should be evenly spaced over the length of the epoxy groove.



Contact MicroE Systems

Thank you for purchasing a MicroE product. You should expect the highest level of quality and support from MicroE. If you want to download the Mercury Encoder Installation Manual, Data Sheet or Interface Drawing, or have any questions, browse www.microesys.com to find the information you need. Refer to the Mercury Data Sheets and User's Guide sections.

