



**Particle Physics Division
Mechanical Department Calibration
Standards/Procedures**

Number: MD-CALPROC-020

Date: 6/26/2009

Manufacturer: WIKA

Model: Calibration Procedures for Field-Calibratable Movements

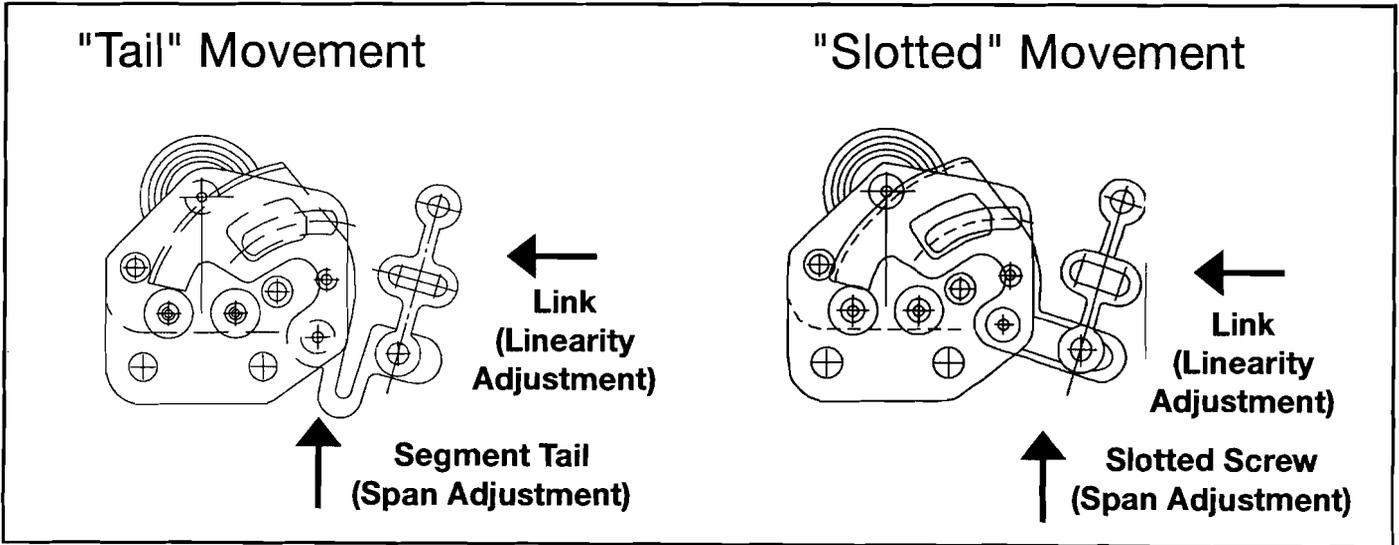
Reviewer(s): *James E. Tweed*

This Procedure is used for:

Calibration of Wallace and Tiernan mechanical gauges.

Calibration Procedures for Field-Calibratable Movements

Many WIKA industrial, stainless steel, and test pressure gauges feature field-calibratable movements. Pressure gauges should only be calibrated by trained service technicians, particularly when the gauges are used in critical applications. U.S. standard accuracy grades and tolerances for pressure gauges are set forth by the American Society of Mechanical Engineers in their document ASME B40.100



Calibration of span

- Connect gauge to pressure source in normal operating position.
- Set pointer to zero position and hand-tighten pointer to shaft.
- Apply full scale pressure to gauge.
- Depending on the pointer position (over or under range), open or close the segment tail or move the slotted screw according to the diagram to the right.
- Release the pressure and reset pointer at zero.
- Again check full scale and repeat steps, if required.
- Span can be increased or decreased by up to 15% of full scale value.

To decrease pointer rotation (decrease span):

Use a screwdriver or pliers to bend the segment tail open or,



Move the slotted screw to the right, away from the movement.

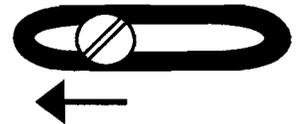


To increase pointer rotation (increase span):

Use pliers to squeeze the segment tail closed or,



Move the slotted screw to the left, toward the movement.



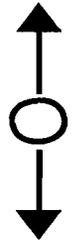
Calibration of linearity

NOTE: In most cases, only adjusting the span is necessary.

- First calibrate the span.
- Apply mid-scale pressure to gauge and observe pointer reading.
- Depending on the pointer indication, shorten or lengthen the link according to the diagram to the right.
- Release pressure and reset pointer at zero.
- Check full scale and adjust as required.
- Check deviation at mid-scale.
- Repeat calibration steps as required until the pointer deviations are within the rated accuracy of the gauge.

To speed up the indication at midscale:

Use pliers to open the link



To slow down the indication at midscale:

Use pliers to close the link

