Calibration Procedures for Thread Ring Gages

1. Select the corresponding master set plug. Confirm all pitch diameters and class size match the ring gages. The set plug must be clean and calibrated to ensure it is not nicked, tapered, or out of tolerance. Lubricate the setting plug gage with a thin film of light viscosity oil.

2. Clean and inspect ring gages for nicks and embedded metal filings and burrs. Carefully remove the sealing wax with a knife.

3. Turn the ring gage locking screw counter-clockwise until it is loosened.

4. Turn the adjusting screw clock-wise which opens the ring to a larger pitch diameter than the setting plug.

5. Turn the ring gage onto the setting plug all the way to the back (Full form section) so that approximately one thread extends beyond the last thread of the setting plug. This will promote more uniform wear over the entire thread length of the plug.

6. Turn the adjusting screw counter-clockwise and rotate the ring on the setting plug until there is a slight drag between the two gages. The ring should have a noticeable amount of drag when rotated on the set plug. This procedure may have to be repeated more than once to obtain the proper amount of drag. Be patient! The degree of drag is subjective. Smaller ring gages and those set to set plugs near the low limit would require less drag than larger rings or rings set to setting plugs on the high limit.

7. To ensure that the ring has been properly seated, tap the ring with a small hammer and then recheck the amount of drag to ensure it has not changed. If the drag has changed, the ring gage has not been properly seated. Repeat step 6.

8. Turn the ring gage from the full form section to the truncated section at the front of the set plug. The drag should be essentially the same. The ring should not feel "shaky" or loose. A loose or "shaky" gage indicates lose of root relief or flank angles are worn out of tolerance and the gage should be removed for possible rework or replacement.

9. Remove the set plug from the ring. Now turn the ring onto the set plug 1 to 2 threads at the front. There should be some drag or resistance even at this short engagement. Remembering the feel at the 1 to 2 thread engagement, turn the ring further onto the truncated section. The drag should remain approximately the

same although it may be slightly greater at full engagement due to more flank contact. Repeat step 9 on the other side of the ring gage. The drag should be essentially the same on both sides.

10. The minor diameter of the ring gage should be measured with either a bore gage, internal measuring machine, or fixed limit GO/NOGO plug gages. For plug gages, the GO member plug gage should GO and the NOGO member should not.

11. The locking and adjusting screws should be sealed with wax to prevent tampering.

12. The gage is now ready for service.

IMPORTANT NOTES

- The setting of a thread ring gage is specific to the particular set plug the ring is set to. The ring gage will have a different feel on another set plug without readjustment.
- It is recommended that a set plug be readily available in house to inspect gages being heavily used or for gages that have been dropped or impacted.
- For high volume inspection it is good practice to have a new backup gage for comparison and reference inspection against the heavily used gage.
- Go thread ring gages may want to be set slightly snugger than NOGO thread ring gages particularly when shipping components to customers for incoming inspection and assembly.
- Keep gages lubricated and handle with care for longer gage life. Spinning ring gages onto parts or forcing rings past burrs will reduce gage life.

Feel free to contact us by phone or email if you have any questions or requirements regarding this topic.

Determo, Inc. **Houston, TX**

www.determo.com sales@determo.com