

Ring Test for the Measurement of Friction during Forging

- Objectives:
1. To become familiar with the use of the MTS system for forging experiments.
 2. To determine the friction factor for the forging of aluminum at room temperature for three different lubricants.
- Procedure:
1. Obtain four identical Al rings with geometrical dimensions of O.D. = 1.0", I.D. = 0.5" and height = 0.33". Measure and record initial dimensions at four locations.
 2. Compress the rings to final thicknesses of 0.25", 0.20", 0.15" and 0.10". Measure and record final dimensions at four locations.
 3. Repeat steps 1 and 2 with four other Al rings using different lubricants.
 4. Observe the changes in the size and shape of each ring after deformation.
 5. Check the measurements for consistency. (e.g. the volume of each ring before and after deformation.)
 6. Use the calibration curve, which is attached (similar to Fig. 15-26 in Dieter) to determine the friction factor for the test conditions.
- Report: A memo lab report is due on February 14, 2008.

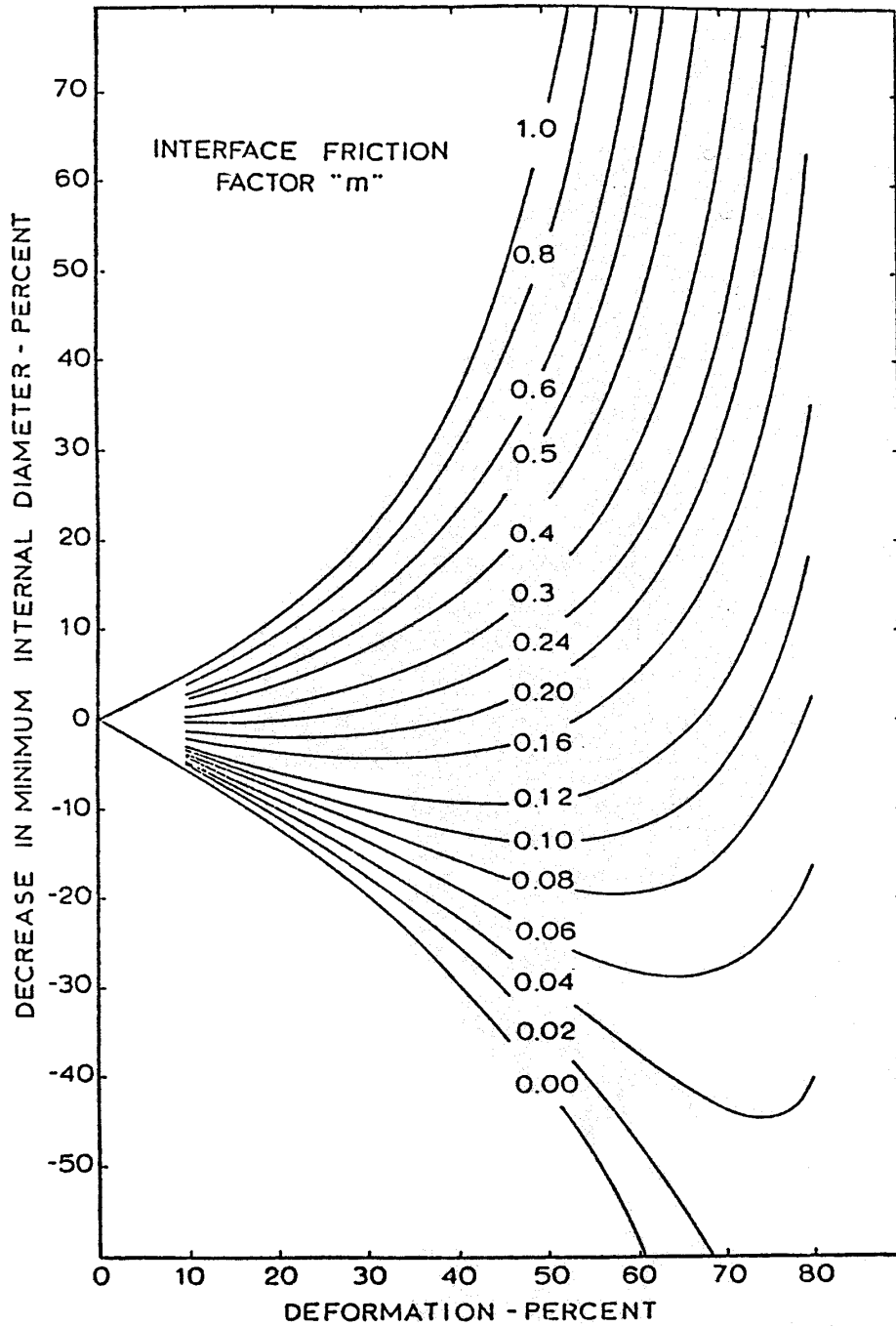


FIG. 6* CALIBRATION CURVES
(WITH BULGE)

* From R. Kohser, Ph.D. Dissertation, Lehigh University (1975).