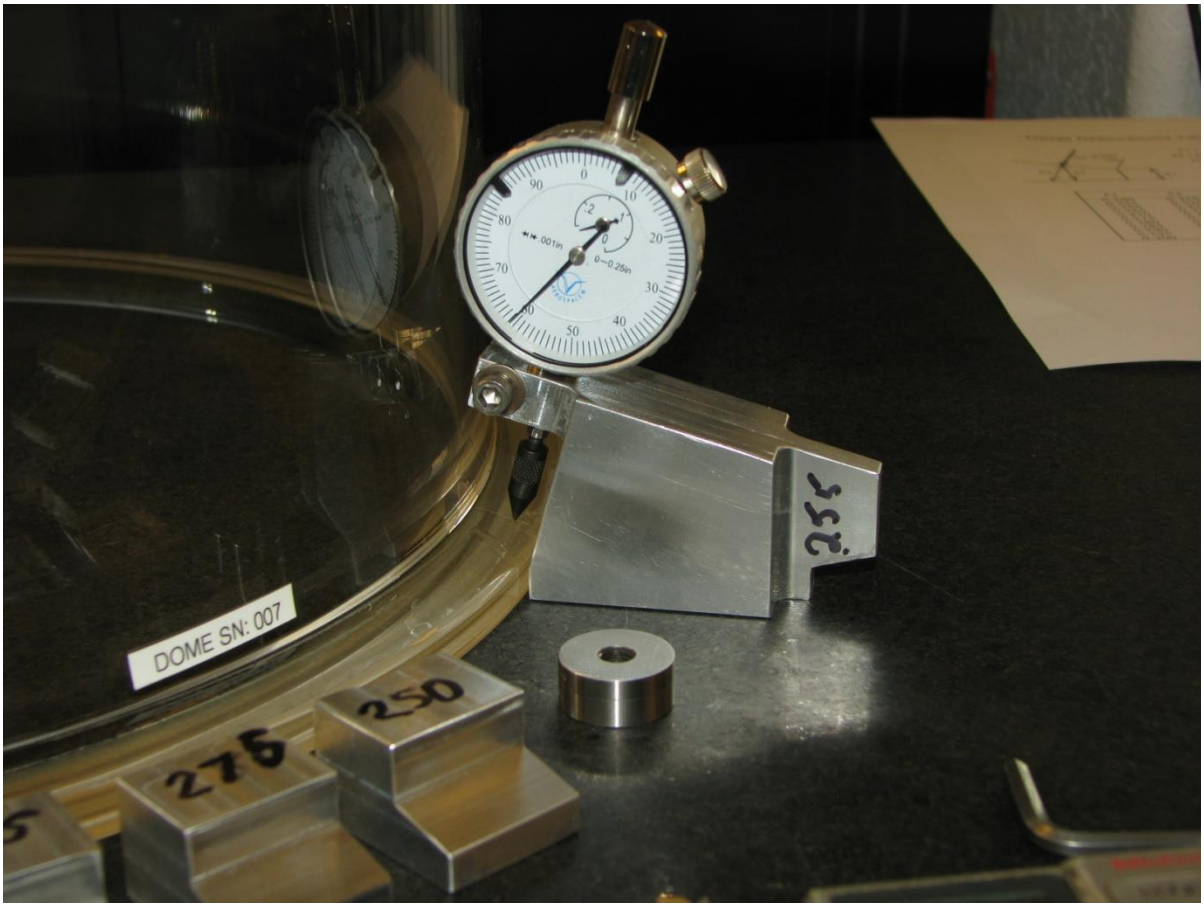
QIP 30-29-202-C3 Rev-A
Quality Inspection Procedure
Glass Dome Flange

Summary
This document gives instructions on the use of a dial indicator Flange Measuring Tool. It is difficult to measure the flange thickness at the edge due to the presence of a radius and other issues of flange forming. It is important that the flange have a proper thickness at some distance in from the edge where the band clamp will act to hold the dome in place. We have chosen a location about 1/4" from the outside edge of the flange to record and control the thickness. A dial indicator gage and holder along with 3 reference blocks are needed. Also needed is a conversion table to correct for the angular difference and 3 p.

Description of the Tool
The tools needed are as follows: a flat reference surface, a dial indicator gage and holder, and 3 reference blocks to confirm gage operation.



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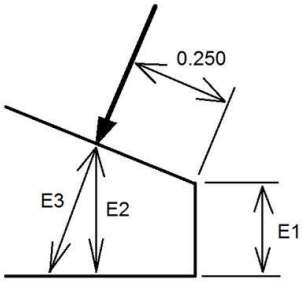
Procedure

Clean the granite reference surface and clean the Glass Dome flange face. Place the dome on the granite surface. Place the gage onto the flange so that the indicator shaft does not experience side loads. Ensure that the indicator base is pressed flat against the granite and the flange edge. Record the dial indicator value. Use the table to convert the indicator value to the dimension E2. Perform this procedure at several locations around the flange. Continue lapping the flange until the specification is met.

Flange Measurement Table



E1 = control

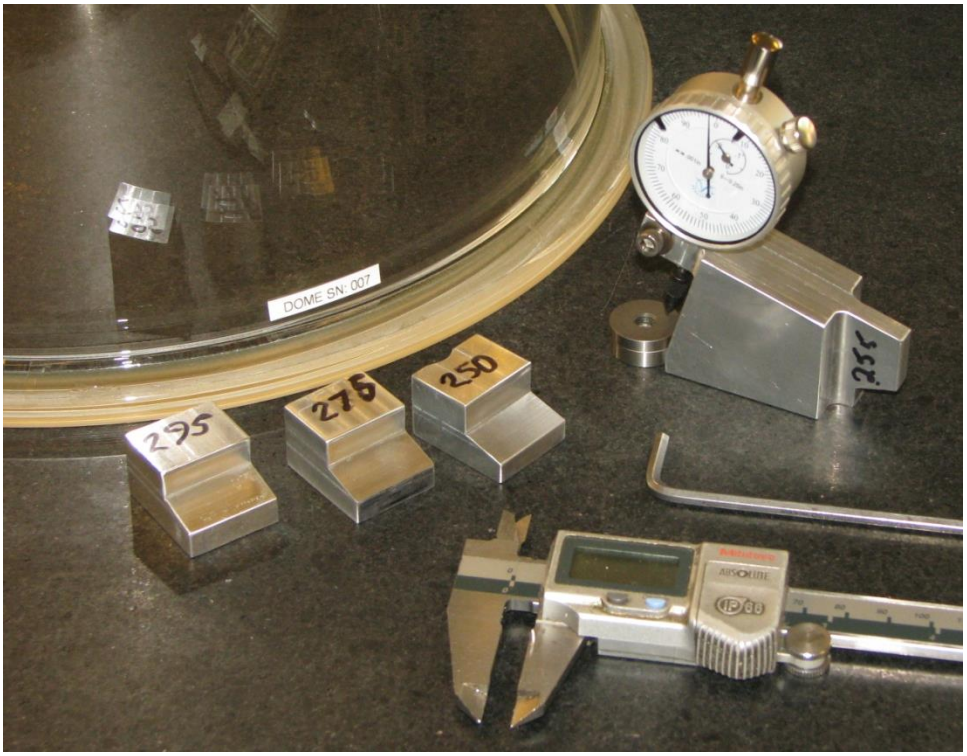
$E2 = E1 + 0.250 \times \sin(15°)$

$E3 = \frac{E2}{\cos(15°)}$

$E2 = E1 + 0.0647$

$E3 = \frac{E2}{0.9659}$

E1	E2	E3	Dial
0.250	0.315	0.326	-0.026
0.255	0.320	0.331	-0.021
0.260	0.325	0.336	-0.016
0.265	0.330	0.341	-0.010
0.270	0.335	0.347	-0.005
0.275	0.340	0.352	0.000
0.280	0.345	0.357	0.005
0.285	0.350	0.362	0.010
0.290	0.355	0.367	0.016
0.295	0.360	0.372	0.021
0.300	0.365	0.378	0.026



Calibration & Setup

How to use the 3 setup blocks.
The .276 block we are using to "0" the gage.
The .295 & .250 blocks are the + & - limits, they should match the table.
Never slide indicator point up 15 deg surfaces, bring indicator on to surface from vertical.