

## Application Note – MTS 740 Cell Head Stop Ring

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### Introduction

Reproducible membrane resistance measurements from sample to sample require consistent compression pressure. The MTS 740 uses a precision compression spring which is deflected (compressed) a known amount in order to apply the compressive load to the electrodes, porous media and test sample.

Using a “Stop Ring” is an easy way to achieve reproducible compression pressure. Once the stop ring is made and installed, cell assemblies can be performed without the dial indicator gauge, instead relying on the stop ring to achieve reproducible deflection of the compression spring, and thus consistent compression force.

### Required Tools

1. Calipers

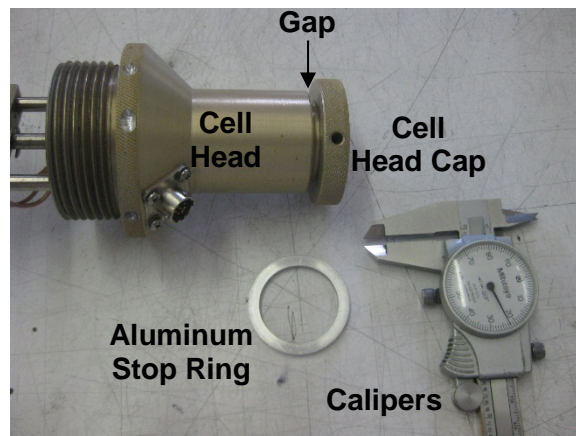
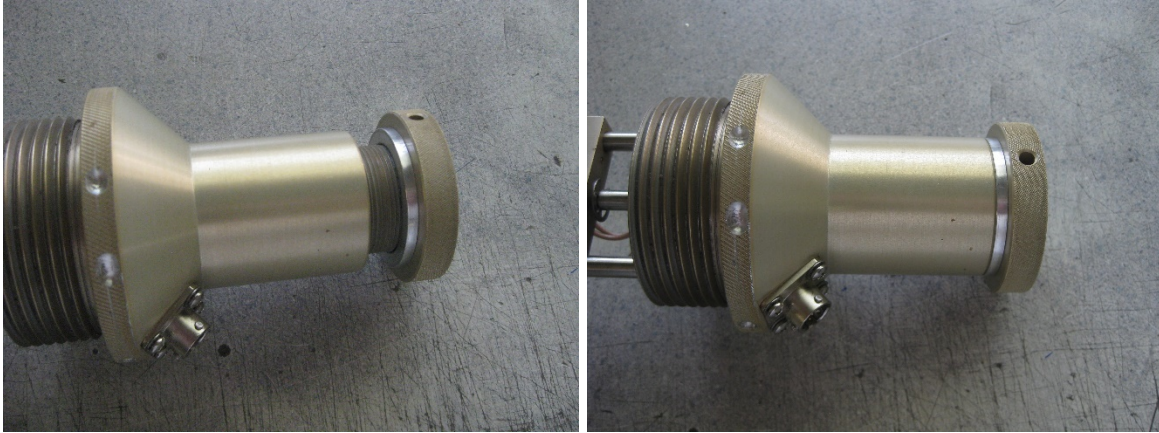


Figure 1 – Aluminum stop ring for cell head.

### Instructions

1. Use the dial indicator to apply the desired compression.
  - a. *E.g.*, Spring deflection of 0.350 in. (8.89 mm) provides ~ 300 PSI (2.41 MPa) compression pressure and is achieved with 7 full (360°) rotations of the cell head cap.
2. Use calipers or equivalent tool to measure the gap between the end of the cell head and the cell head cap.
3. Fabricate a stop ring of thickness equal to the gap measured in step 2.
  - a. Approximate dimensions: Gap thickness x 32 cm ID / 41 cm OD
4. Install the stop ring on the cell head cap.
5. Future cell assemblies can be compressed until a hard stop is achieved. That is, when the cell head cap contacts the stop ring and will no longer turn.



**Figure 2 – Cell with with a stop ring installed.**