## CALIBRATION

### USQ # Routine Maintenance

<table>
<thead>
<tr>
<th>Rev-Mod</th>
<th>Release Date</th>
<th>Justification</th>
<th>Summary of Changes</th>
</tr>
</thead>
<tbody>
<tr>
<td>F-2</td>
<td>08/01/2018</td>
<td>Maintenance Request</td>
<td>Added calibration instructions.</td>
</tr>
<tr>
<td>F-1</td>
<td>07/12/2018</td>
<td>Operations request</td>
<td>Add note to Step 5.2.3, &quot;NOTE - Wet/Damp rags may be used to remove Calibration caps.&quot;</td>
</tr>
<tr>
<td>F-0</td>
<td>05/17/2016</td>
<td>Periodic review recommendations</td>
<td>Added step 5.2.1 for performing L&amp;T if required.</td>
</tr>
<tr>
<td>E-1</td>
<td>11/20/2014</td>
<td>CHAMPS Removal.</td>
<td>Removed reference to CHAMPS, updated records statements and removed next periodic review date.</td>
</tr>
<tr>
<td>E-0</td>
<td>02/06/2013</td>
<td>Periodic Review.</td>
<td>Removed vague phrases and updated RadCon section.</td>
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</tbody>
</table>
1.0 PURPOSE AND SCOPE

1.1 Purpose

This procedure provides a safe and uniform method of calibrating Dwyer Magnehelic Differential Pressure Gauge Series 2000 and Capsuhelic Differential Pressure Gauge Series 4000.

1.2 Scope

This procedure applies to testing and calibrating Dwyer Magnehelic Differential Pressure Gauge Series 2000 and Capsuhelic Differential Pressure Gauge Series 4000.

2.0 INFORMATION

NONE
3.0 PRECAUTIONS AND LIMITATIONS

3.1 Personnel Safety

3.1.1 Lockouts, tagouts, or over-tagging requirements shall be performed in accordance with DOE-0336, Hanford Site Lockout/Tagout procedure.

3.1.2 Compliance with DOE-0359, Hanford Site Electrical Safety Program is required when working with this procedure.

3.2 Radiation and Contamination Control

3.2.1 Work in Radiological Areas will be performed using a Radiation Work Permit following review by Radiological Control per the ALARA Work Planning procedure TFC-ESHQ-RP_RWP-C-03.

3.2.2 FOLLOW Calibration Instructions. (Attachment 1)

4.0 PREREQUISITES

4.1 Special Tools, Equipment, and Supplies

The following supplies may be needed to perform this procedure:

- Calibrated pressure source/indicator
- Other tools, equipment and supplies as identified by Shift Manager/OE/FWS/User.
5.0 PROCEDURE

Special Instruction

If performance of any steps in this procedure is not required, steps not performed are documented by entering "N/A" in appropriate Data Sheet signoff space and explained in Comments/Remarks section of Data Sheet.

5.1 Cleaning and Inspection

5.1.1 CLEAN instrument with soft cloth.

5.1.2 INSPECT instrument for the following:

- Signs of moisture or other foreign matter inside instrument
- Cracked instrument casing or glass
- Bent or broken pointer
- Corrosion.

5.1.3 CHECK instrument gauge is legible.

5.1.4 RECORD inspection results in Comments Section of Datasheet.
5.2  As-Found

NOTE - This calibration may be performed in-place or in the shop.

5.2.1  FOLLOW Calibration Instructions. (Attachment 1)

5.2.2  IF Lockout Tagout is required, PERFORM Lockout Tagout in accordance with DOE-0336.

5.2.3  REMOVE gauge from service.

NOTE - Wet/Damp rags may be used to remove Calibration caps.

5.2.4  REMOVE calibration caps or signal lines to gauge AND CONNECT test equipment.

5.2.5  APPLY test input values as specified on Data Sheet AND RECORD in As-Found column of Data Sheet.

5.2.6  IF values are within tolerance per Data Sheet, RECORD As-Left values on Data Sheet AND GO TO Restoration, Section 5.4.

5.2.7  IF instrument As-Found outputs are out of tolerance as specified on Data Sheet, CONTINUE with Section 5.3.
5.3 Zero Adjustment

5.3.1 ENSURE plastic cover is screwed down for a tight seal.

5.3.2 WITH both taps open to atmosphere, ADJUST ZERO screw to within tolerance specified on Data Sheet.

5.3.3 APPLY test input values as specified on Data Sheet. AND CHECK output values for tolerance.

5.3.4 IF values are within tolerance per Data Sheet, RECORD As-Left values on Data Sheet AND GO TO Restoration, Section 5.4.

5.3.5 IF values are not within tolerance per Data Sheet, REPEAT Steps 5.3.2 through 5.3.4 until values are within tolerance

OR

IF unable to bring values into tolerance and replacement parts are required, PERFORM the following:

5.3.5.1 NOTIFY FWS.

5.3.5.2 CONTACT Planning for BOM and Waste Planning Checklist for failed gauge.

5.3.5.3 REQUEST planning to print new Data Sheet(s).

5.3.5.4 ACQUIRE new part(s) from material coordinator.

5.3.5.5 REPLACE failed gauge with newly acquired gauge.

5.3.5.6 RE-PERFORM Section 5.2.
5.4 Restoration

5.4.1 ENSURE test equipment has been disconnected and removed, and equipment has been restored to original configuration.

5.4.2 CHECK for leaks.

5.5 Acceptance Criteria

Acceptance Criteria has been met when Steps in this procedure have been satisfactorily performed and As-Left values meet the specifications and tolerance(s) per Data Sheet.

5.6 Review

5.6.1 INFORM Operations management and FWS test is complete.

5.6.2 FWS REVIEW AND ENSURE the following:
- Completed Data Sheets meet the acceptance criteria
- Comments sections are filled out appropriately
- Any work requests needed as a result of this procedure are identified and generated.

5.6.3 FWS RECORD in Comments/Remarks Section of Data Sheet work request number(s) of any work documents generated as a result of this procedure.

5.7 Records

The performance of this procedure generates no records. However, PM Data Sheets associated with the procedure, are records and are maintained in the work package as record material.

The record custodian identified in the Company-level Records Inventory and Disposition Schedule (RIDS) is responsible for record retention in accordance with TFC-BSM-IRM_DC-C-02.
Figure 1 – Negative Pressure Connection
Figure 2 – Positive Pressure Connection
Positive pressure calibrations:

Note: Vent Valve (VV) assembly is required on all positive pressure calibrations to ensure M&TE is not contaminated by venting potential process air back through M&TE.
Install vent valve assembly Per Figure 2
Ensure isolation valve (IV) is open and VV is closed
Proceed with calibration per work package
  ➢ Whenever venting is required during calibration steps, vent stored pressure as follows.

NOTE - Valve IV can remain open when reading is required via M&TE.
Ensure IV valve is closed
Ensure VV valve is opened
Repeat sequence as necessary to complete the calibration.
After all steps are completed for the calibration, perform RCT survey release plan.

Negative pressure calibrations:

Note: Use of surrogate filter is required for negative pressure calibrations to ensure M&TE is not contaminated by pulling process air into M&TE while drawing Vacuum.
Negative calibrations should be performed as follows.
Ensure surrogate filter holder has media installed.
Connect filter in-line per Figure 1

Ensure IV is open
Pull a representative vacuum into M&TE through filter
Ensure IV is closed
Vent through VV
RCT to perform survey of the media.
IF no contamination found remove surrogate filter holder and proceed with calibration.