

Standard Operating Procedure Purging Set-Up	SOP No. 5.007
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1 Purpose

- 1.1 To establish a standard procedure for purging (stainless steel) lines with argon while performing welds.

2 Scope

- 2.1 This procedure applies to all stainless steel piping.

3 Responsibility

- 3.1 The Therma field foremen shall manage the welders and verify compliance with this procedure.
- 3.2 The GTAW certified welder is responsible for the following procedures.

4 Reference

- 4.1 ARC Manual General Guidelines for Fusion Welding, November 1, 1985.

5 Purging Procedures

Note: The intent of this procedure is to ensure proper shield purge for GTAW and to minimize interior discoloration of the weld heat affected zone (HAZ).

- 5.1 Connect a certified dewar to the manifold assembly, used for supplying purge gas including flow regulator.
 - 5.1.1 If the manifold assembly is supplying more than one weld station, ensure that each weld station has a flow indicator before continuing.
- 5.2 Connect the purge supply to one end of the fabrication spool.
 - 5.2.1 Ensure that each purge line has a 0.2 micron in-line filter at the point of connection.
 - 5.2.2 Use 1/4" Food Grade Polyethylene tubing and compression fittings.

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- 5.3 Attach a purge discharge fitting at the other end of the fabrication spool.
 - 5.3.1 Locate the vent at the highest point in the system.
 - 5.3.2 If the pipe/tube diameter is larger than 1" off-set the discharge hole to the top half of the pipe/tube outlet (12 o'clock position).
 - 5.3.3 If there are multiple branches, install vent restrictors on each branch. Verify that gas is flowing through each restrictor.
- 5.4 Time allotted for pre-purging is based on the volume (diameter x length) of the given fabrication spool. Use the following guidelines for pre-purging times.
 - 5.4.1 1" and under – 30 SCFH (standard cubic feet per hour) or 14 LPM (liters per minute) for 5 seconds/linear foot.
 - 5.4.2 2" - 50 SCFH or 23.5 LPM for 30 seconds/linear foot.
 - 5.4.3 3" - 50 SCFH or 23.5 LPM for 30 seconds/linear foot.
 - 5.4.4 To ensure that pre-purging has completely displaced the air in the fabrication spool the welder shall take an oxygen reading of the purge discharge. The reading shall indicate an oxygen content of less than 1% or 2ppm. If meter is not available the welder shall generate a test coupon using the fabrication spool purge discharge for ID purging. If the test coupon complies with weld acceptance criteria for the given job the welder can proceed with welding out the fabrication spool.
- 5.5 Adjust purge flow to the power supply (AMI 107, 207, Miller, etc.) as needed to ensure proper operation of the GTAW machine, orbital/automatic or manual.
- 5.6 Connect purge line to GTAW machine with ¼" flexible polyethylene tubing and compression fittings.
- 5.7 Perform weld.
- 5.8 Post purge weld for 30 second minimum.
- 6 Review and Approval
 - 6.1 The Therma Quality Control Examiner (QCE) shall examine the coupon as per SOP 7.005 (GTAW Weld Examination).

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Document Approval




 Field / Operations Manager

3-6-12
 Date



 Process Systems Manager

3-6-12
 Date



 Engineering Manager

3/06/12
 Date



 Quality Assurance Manager

3/06/12
 Date

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