

Rev	ECO	Description	Checked	Approval	Date
01	32- 227	Release	M. Smith		

Instrument GN2  
 Purge Procedure  
 CRaTER  
 Dwg. No. 32-06003.06

Revision 01  
 June 26, 2007



# 1. Introduction

## 1.1. Activity Description

The procedure defined here in defines the GN2 purge procedure for the Flight CRaTER Instrument.

## 1.2. Test Item Description

The CRaTER Flight Unit, 32-10000 requires Gaseous Nitrogen Purge weekly for 10 minutes, or as directed by project scientist or engineering.

## 1.3. Support Items

- 1.3.1. High Grade (five 9s (99.999%) or better) Nitrogen.
- 1.3.2. A 2 Micron Sterilizing Grade Filter, Millipore p/n MTGR75010
- 1.3.3. Swage-lok Cap Plug , p/n SS-400-P
- 1.3.4. Air Flow metering valve, 0-100 SCFH
- 1.3.5. Teflon Tubing ¼” OD.

## 1.4. Applicable Documents

ESD  
Cleanliness

# 2. Procedure

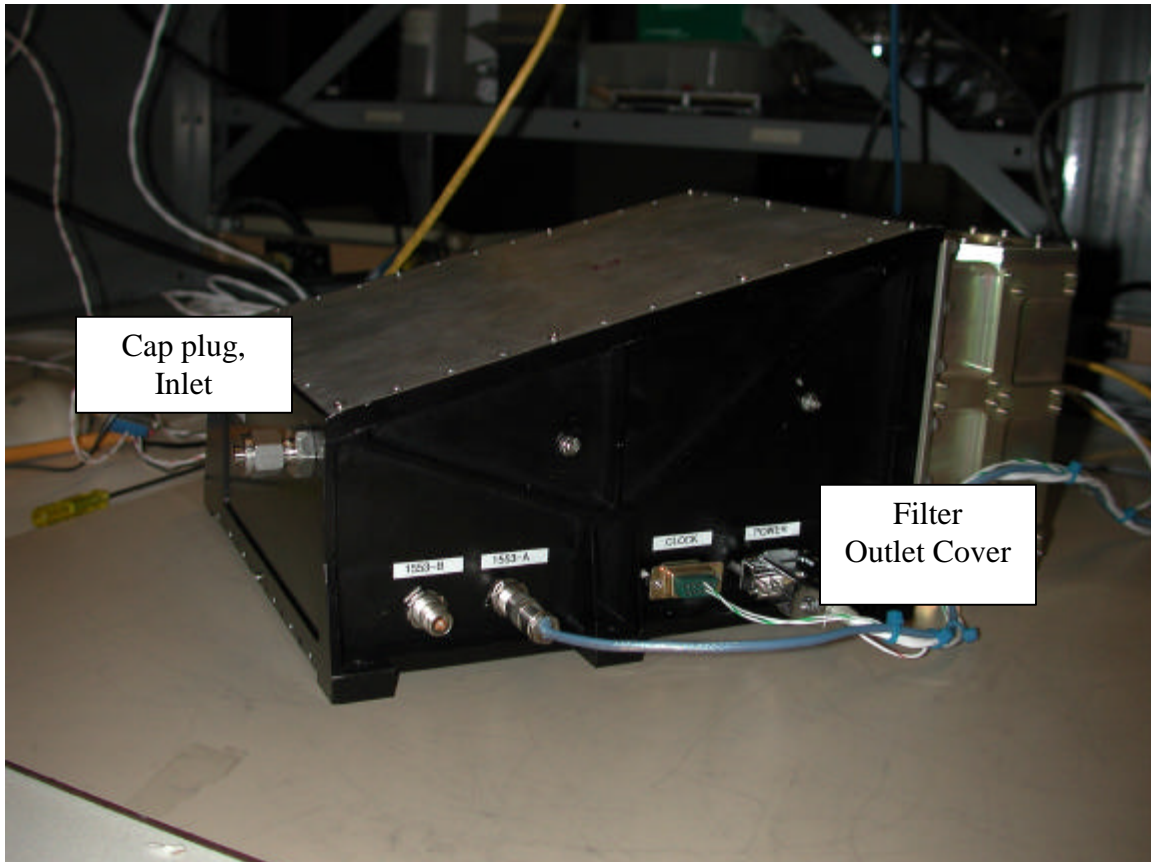
## 2.1. Preparing the Gas Line.

- 2.1.1. The following is a list of required items;
  - 2.1.1.1. Only high purity grade Nitrogen shall be used. (99.999% or better.)
  - 2.1.1.2. A Stainless Steel regulator is preferred, however a brass one can be used in this application.
  - 2.1.1.3. Stainless steel fittings are also preferred, but not required.
  - 2.1.1.4. Teflon Tubing, ¼”OD, length as required.
  - 2.1.1.5. 100 SCFH Maximum, flow gauge.
- 2.1.2. Install regulator to the Gas line on the GN2 Dewar.
- 2.1.3. Install one end of a piece of Teflon tubing(length as required) to the pressure regulator and the other end to the inlet side of the air flow metering valve The metering valve must be hard mounted in the vertical position.
- 2.1.4. Install Teflon tubing(length as required to go from the valve to the instrument in clean room/clean bench) to the outlet of the flow meter. At the other end of the tubing install the 2 micron Millipore filter using necessary fittings. Ensure inlet marking is on the inlet side of the nitrogen line.

- 2.1.5. Install another 2-3 inch Teflon tube on the output of the filter. Install a 1/4" swagelok female fitting at the free end of the 2-3inch Teflon tube. This end mates to the instrument purge port.
- 2.1.6. Set the pressure regulator to 8-10 psi. Set the flow meter to read 20 SCFH. Purge the line for 2 minutes
- 2.1.7. Shut off gas flow and install cap plug. Leave this set up dedicated for purging the CRATER unit(at MIT).

## 2.2. Preparing CRaTER Flight Unit.

- 2.2.1. Ensure proper ESD precautions are followed (wrist strap, ESD mat, ESD Coat, etc...)
- 2.2.2. Unit should be in a clean room or clean bench. ESD safe clean gloves should also be worn.
- 2.2.3. Ensure Power is off on the unit if it is in test.
- 2.2.4. Remove cap plug at inlet and also filter Outlet cover on the outlet.



- 2.2.5. Remove cover on nitrogen line and open gas flow valve. Check that the pressure is set to 8-10 psi. and the flow meter is set to 20 SCFH. Purge the line for two minutes. After two minutes shut off gas flow valve. Connect the nitrogen line to the Gn2 inlet on the CRaTER unit. Only slightly hand snug-do not tighten with wrench or over tighten with hands Open gas flow valve. Check outlet opening on the CRaTER instrument for flow.
- 2.2.6. Purge unit for 10 minutes.
- 2.2.7. After purge is complete, shut of nitrogen flow at the tank. Remove inlet tube fitting and replace vent cover and cap plugs on the unit and on the nitrogen line.
- 2.2.8. Store CRaTER Flight Unit in an ESD safe NMD bag material.

### 3. Quality Assurance Provision

- 3.1.** Brian- Add any QA notes you may want.....