



## PROCEDURE

<b>Title</b>	<b>Hot GN2 Purge Process</b>
<b>Control No.:</b>	<b>15940</b>

**Purpose:** This procedure defines a generic process for purging a dosing unit using gaseous nitrogen (GN2). The exact procedure may be different from customer to customer based upon the variables at the customer site including but not limited to: environment, system use, and products being dosed. The customer must define what works best in their specific application.

**General:** "Purging" with GN2 is extremely important for the proper functioning of any cryogenic dosing system. Moisture-in the form of the product being dosed, or in the air can migrate into the dosing system and create ice when liquid nitrogen is introduced. When Ice forms, blockages form preventing the liquid nitrogen from being dispensed. Purging with hot gaseous nitrogen will thaw ice and evaporate the moisture that will minimize or eliminate the formation of ice.

**Procedure:** The introduction of gaseous nitrogen can be performed as follows:

1. Prior to filling the dosing unit with liquid nitrogen.
2. While the doser has liquid nitrogen in it. Note; liquid will be consumed (vaporized) with the introduction of the heated gas.
3. When the doser is not being used; non-dosed product being produced.
4. Quick defrosting of any ice
5. Longer term purging to create positive pressure within the doser thereby preventing moisture from entering.

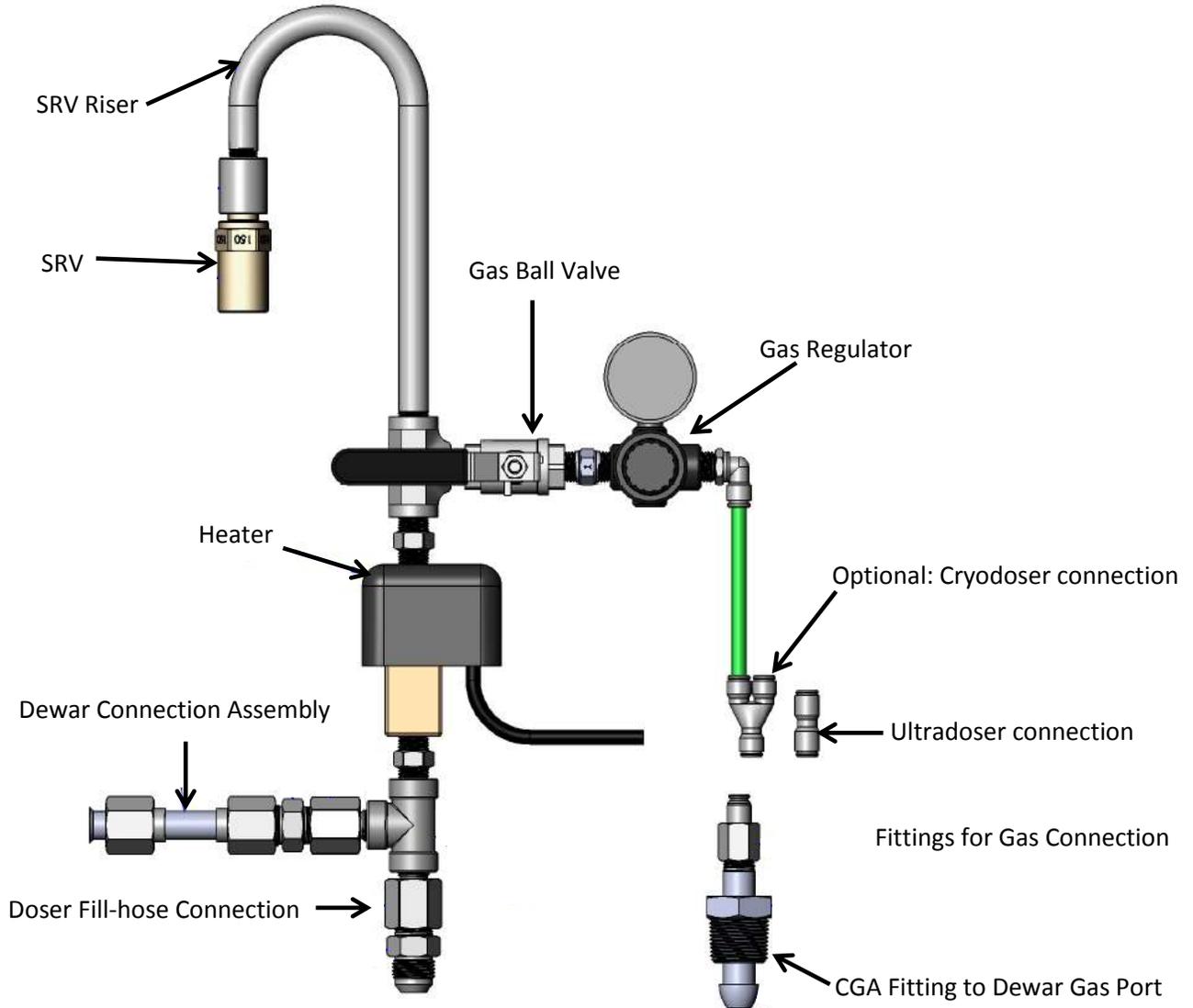
The standard procedure for a gaseous purge generally involves the following steps:

1. Closing the LN2 (blue handle) valve on the dewar liquid feed to prevent liquid nitrogen entering the doser.
2. Verifying gas to the purge kit is available (gas outlet of dewar or separate gas cylinder).
3. Connecting the power cord of the heater
4. Opening the globe valve on the purge kit
5. If running a longer term purge the gas pressure should be between 2 and 5psi.
6. If a short term (such as defrosting a nozzle), or to purge the doser vessel, a higher pressure may be used. 20psi to 40psi is suitable.
7. If defrosting the dosing head area, power needs to be applied to the solenoid valve. This is done in an attempt to raise the dosing stem and allow for gas flow.

**Note:** If the nozzle is frozen closed or the dosing stem is frozen, flow may not be created. This will increase the time necessary to defrost the parts.

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**Components:** The following drawing illustrates the standard components that make up the Dewar purge heater assembly.



**Figure 1.** Purge heater components

**Note:** This purge kit may be left on the dewar while the dosing unit is being used. However, it is important to close the GN2 valve and the heater should be unplugged.