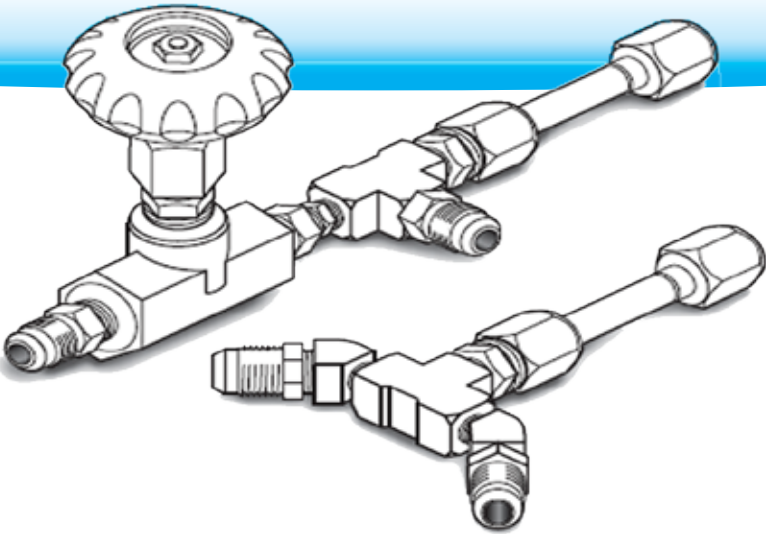


# "T" VALVE & "Y" CONNECTOR

## INFORMATION AND TECHNICAL MANUAL



**Custom**  
**BioGenic**  
**Systems**

[www.custombiogenics.com](http://www.custombiogenics.com)

150 Shafer Drive ♦ Romeo, MI 48065 ♦ USA

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**- IMPORTANT INFORMATION -**

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Serial Number \_\_\_\_\_

Model number \_\_\_\_\_

For Technical Assistance Call: 1.800.523.0072 (U.S. Only)

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## - SAFETY -

### **IMPORTANT!**

The following section on LIQUID NITROGEN SAFETY should be read carefully and followed completely, but is by no means a complete volume on the use of cryogenic liquids. All personnel should have a complete knowledge of the correct procedures, as well as the hazards of working with liquid nitrogen. Failure to do so could result in serious injury or death.

### **WARNING**

**LIQUEFIED GASES ARE EXTREMELY COLD LIQUIDS. LIQUID NITROGEN EXISTS AT -196°C. BECAUSE OF THESE TEMPERATURES, LIQUEFIED GASES WILL "BURN" IF THEY COME INTO CONTACT WITH SKIN. NEVER ALLOW DIRECT SKIN CONTACT WITH LIQUID NITROGEN OR SERIOUS BURNS WILL RESULT.**

**ALTHOUGH LIQUID NITROGEN ITSELF IS NON-TOXIC, WHEN RELEASED IN TO A CONFINED SPACE IT CAN DISPLACE OXYGEN CAUSING ASPHYXIATION. ENTERING AN OXYGEN DEFICIENT ROOM CAN CAUSE UNCONSCIOUSNESS WITHOUT WARNING. ALWAYS CHECK AIR QUALITY UPON ENTERING A ROOM WHERE CRYOGENIC LIQUIDS ARE BEING USED AND IF POSSIBLE, HAVE A RESPIRATOR AVAILABLE.**

**INTRODUCING EQUIPMENT WHICH IS AT ROOM TEMPERATURE INTO LIQUID NITROGEN IS ALWAYS SOMEWHAT HAZARDOUS. BEWARE OF SPLASHING AND "BOILING" WHICH MAY OCCUR. ALL PERSONNEL PERFORMING THESE OPERATIONS SHOULD BE FULLY INFORMED OF PROPER HANDLING PROCEDURES AND SHOULD ALWAYS WEAR A FACE SHIELD AND PROTECTIVE CLOTHING.**

**LIQUEFIED GASES SHOULD NEVER BE USED IN COMBINATION WITH OTHER SUBSTANCES WITHOUT KNOWING WHAT THE RESULT WILL BE. WHEN IN DOUBT, CONTACT A COMPETENT AUTHORITY.**

### **HANDLING**

Personnel handling liquefied gases should be thoroughly instructed as to the nature of these materials. Proper training is essential to safety and will ensure the accident-free use of this equipment.

Because of their low temperatures, liquefied gases will burn the skin much the same way as hot liquids can. For this reason, always wear the proper protective clothing when handling these materials. It is advised that during use, handlers of liquid nitrogen should protect themselves by wearing goggles or face shields, heavy rubber gloves large enough to allow quick removal and a heavy rubber apron. It is preferable that shoes worn at these times have high tops as to not permit accidentally spilled liquid from entering as well as pant legs which come down over the tops of shoes for further protection.

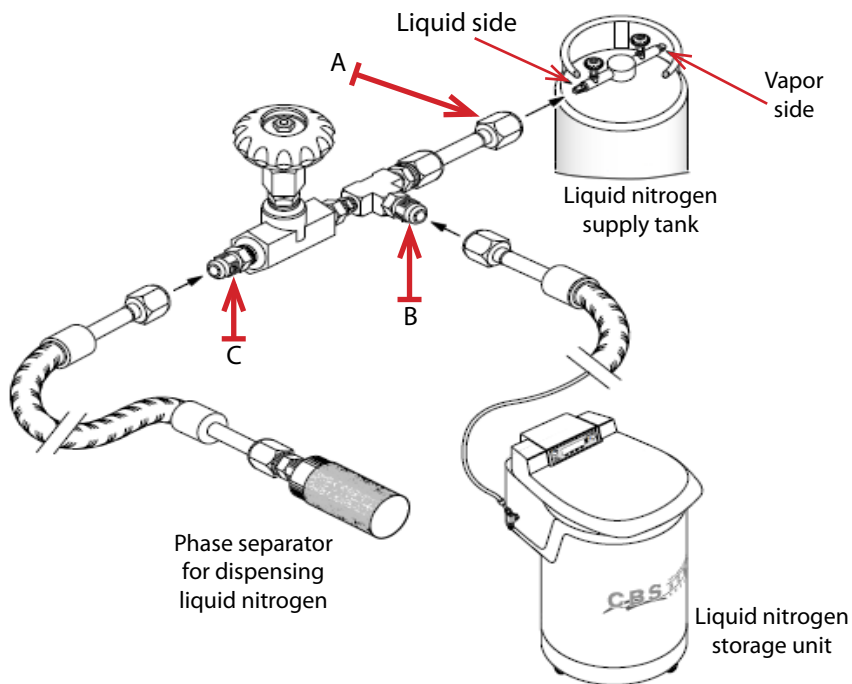
Also because of the extremely low temperatures, liquid nitrogen should only be handled and transported in approved containers. Many materials become brittle and may shatter when put into contact with liquid nitrogen and other cryogenic liquids.

### **FIRST AID**

In the event a person is burned by liquefied gas, the following first aid treatment should be given while awaiting the arrival of medics or a doctor:

1. If the material has contacted skin or eyes, flood those areas with large quantities of unheated water and protect frozen areas with loose, bulky, dry and sterile dressings.
2. If the skin is blistered or there is a chance that the eyes have been affected, seek medical help immediately.

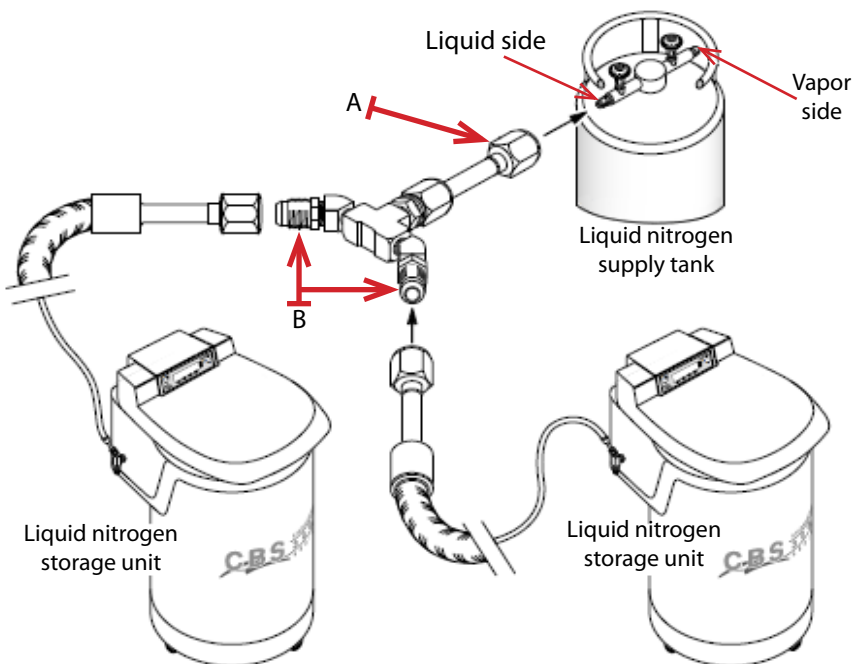
## - "T" VALVE INSTALLATION SCHEMATIC -



Use the diagram to correctly hook-up the "T" Valve. Fitting "A" connects to the liquid side of the supply tank only; fitting "B" connects to a liquid nitrogen storage unit via an approved liquid nitrogen transfer hose; and fitting "C" connects to a phase separator - also via an approved liquid nitrogen transfer hose - for use in dispensing liquid nitrogen into dewars or other open-top containers.

**CAUTION:** Before making a liquid transfer be sure that protective eyeglasses and gloves are worn. If the transfer is to an open top vessel, the transfer pressure should be as low as possible and a phase separator should be used to prevent splashing and hose whip. All personnel should have complete knowledge of the correct procedures as well as the hazards of working with liquid nitrogen. Failure to do so could result in serious injury or death.

## -“Y” CONNECTOR INSTALLATION SCHEMATIC-



This diagram shows the proper connection for a “Y” connector assembly. Fitting “A” connects to the liquid side of the supply tank only; both “B” fittings connect to liquid nitrogen storage units via approved liquid nitrogen transfer hoses.

**CAUTION:** Do not leave either end of the “Y” connector un-capped when opening the supply valve to allow liquid nitrogen to flow to the storage devices. If only one storage containers is being fed from the “Y” connector it is necessary to cap the second arm of the “Y” to prevent liquid from flowing freely through an open end. All personnel should have complete knowledge of the correct procedures, as well as the hazards of working with liquid nitrogen. Failure to do so could result in serious injury or death.





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**TY.TM0609**

**Revision: A**

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