



**PrincetonCryo.com**  
Cryogenic Delivery and Storage Systems

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## MVE Chart Tech Tips

### PRODUCT INFORMATION

#### Chart MVE Doble Series Aluminum Tanks

The MVE Doble Series aluminum tanks are units designed for both vapor shipment and liquid storage. These tanks utilize the same components and vacuum technology that make our current range the best selling breeder units on the world market. The unique absorbent layer in the base of these storage tanks enables the tank to be charged with liquid nitrogen and can be employed as a dry shipper. When a Doble tank arrives at its destination, the tank can be filled with liquid nitrogen and used as a long term storage tank. The unit's name came from the versatility of the double design method to be used as both a vapor shipper and storage tank with "double" ("Doble" in Spanish) use.

The MVE Doble Series is available in various sizes:

Model	Canisters	Liters	Liquid/Vapor *Hold Time
Doble 11	6	11	6 wk liquid/3 wk vapor
Doble 20	6	20	18 wk liquid/3 wk vapor
Doble 28	6	28	7 wk liquid/3 wk vapor
Doble 34	6	32	14 wk liquid/4 wk vapor
Doble 47	6	46	10 wk liquid/3 wk vapor
Doble 47- 10	10	46	10 wk liquid/3 wk vapor

\* Estimated Hold Times



(from right) Doble 34, Doble 20, Doble 11, Doble 28,  
Doble 47

### Chart MVE QWick Series

The MVE QWick Series uses an absorbent material that can charge the vapor shipper in less than two hours. This is convenient for shipping samples the same day. A hydrophobic compound absorbs the liquid nitrogen and ensures dry spill-free shipping.

The MVE CryoShipper QWick Series has the same capacity and dimensions as the MVE Vapor Shipper Series.

Protective shipping cartons are available and may be used to ship samples with a "nonhazardous" classification throughout the world.

CryoShipper QWick 6/9 (SC 2/1V)	PN 14228962
CryoShipper QWick 10/100 (SC 4/2V)	PN 14138772
CryoShipper QWick 14/24 (Mini Moover)	PN 14275427
CryoShipper QWick 14/48 (SC 4/3V)	PN 14228874
CryoShipper QWick 9/500 (CryoShipper)	PN 1475515
CryoShipper QWick 10/950 (CryoShipper XC)	PN 14275558



### CryoShipper QWick Series

The Doble QWick Series is the same capacity and dimensions as the comparable Doble Series. The Doble QWick Series enables units to be charged with nitrogen and used both as a dry shipper and long term storage.

When the unit arrives at its final destination these tanks can be filled with liquid nitrogen and be used for long term storage. This may reduce the need to return shipments.

Doble QWick 10/660 (Doble 11)	PN 14275574
Doble QWick 20/660 (Doble 20)	PN 14275603
Doble QWick 17/2400 (Doble 28)	PN 14275620
Doble QWick 20/2100 (Doble 34)	PN 14275654
Doble QWick 14/4500 (Doble 47/6)	PN 14275671
Doble QWick 14/3500 (Doble 47/10)	PN 14275689



**Doble QWick 17/2400**

## HELPFUL HINTS / FAQs

### TEC3000 Hot Gas Bypass System Setting

Q: How can one stop the liquid nitrogen from exiting the bypass muffler?

A: The TEC3000 has the capability to change the hot gas bypass temperature set point. Increasing the bypass sensor's temperature set point will cause the controller to switch over to the filling cycle earlier, which should reduce or eliminate the liquid discharged from the bypass muffler, allowing the liquid to flow into the freezer.

Q. The bypass temperature set point has increased, but liquid nitrogen still exits the muffler. What would be the best approach?

A. If the bypass temperature setting is set as high as allowed by the TEC3000, and there is still liquid discharging from the muffler, the supply system may be efficient enough that the gas bypass is not required. If this is the case, you can disable the gas bypass.

It is also possible that the supply system may be equipped with too high of a pressure source. Chart recommends the freezer's pressure remain in the range of 22 to 35 PSI (1.5 to 2.4 bars). Disabling the hot gas bypass is the best approach to this issue as well.

## MVE Freezer Warranty

Q: What is the warranty for a Chart freezer?

A: All freezers have a two year warranty and a five year vacuum warranty. The sales date of the freezer determines the warranty start date.

## Upgrading a TEC2000 to a TEC3000 (Power Supply)

When upgrading a TEC2000 to a TEC3000, always use the Jerome Power Supply included in the Upgrade Kit.

Although previous TEC2000s may already have a power supply that is operating well, Chart recommends replacing the power supply supplied in the kit. This is essential for proper fill valve and level sensing functionality.

## ACCESSORIES

### Freezer Plumbing Inline Filter

The periodic maintenance schedule for replacing the inline filter is 12 months. Replacements may be ordered through Customer Service using P/N 11648945.

### Freezer Fill Solenoid

The periodic maintenance schedule for replacing the fill solenoid is 24 months. Replacements may be ordered through Customer Service using P/N 14224611S.

