

CRYO

# 'DStat' Directly Cooled Cryostat Insert

Storage Dewar  
Mount Cryostats

**Efficiency:**

<0.020 l/hr static LHe loss rate

**Versatility:**

FITS ANY STORAGE DEWAR

Top Loading easy sample change

**Operating temperature range:**

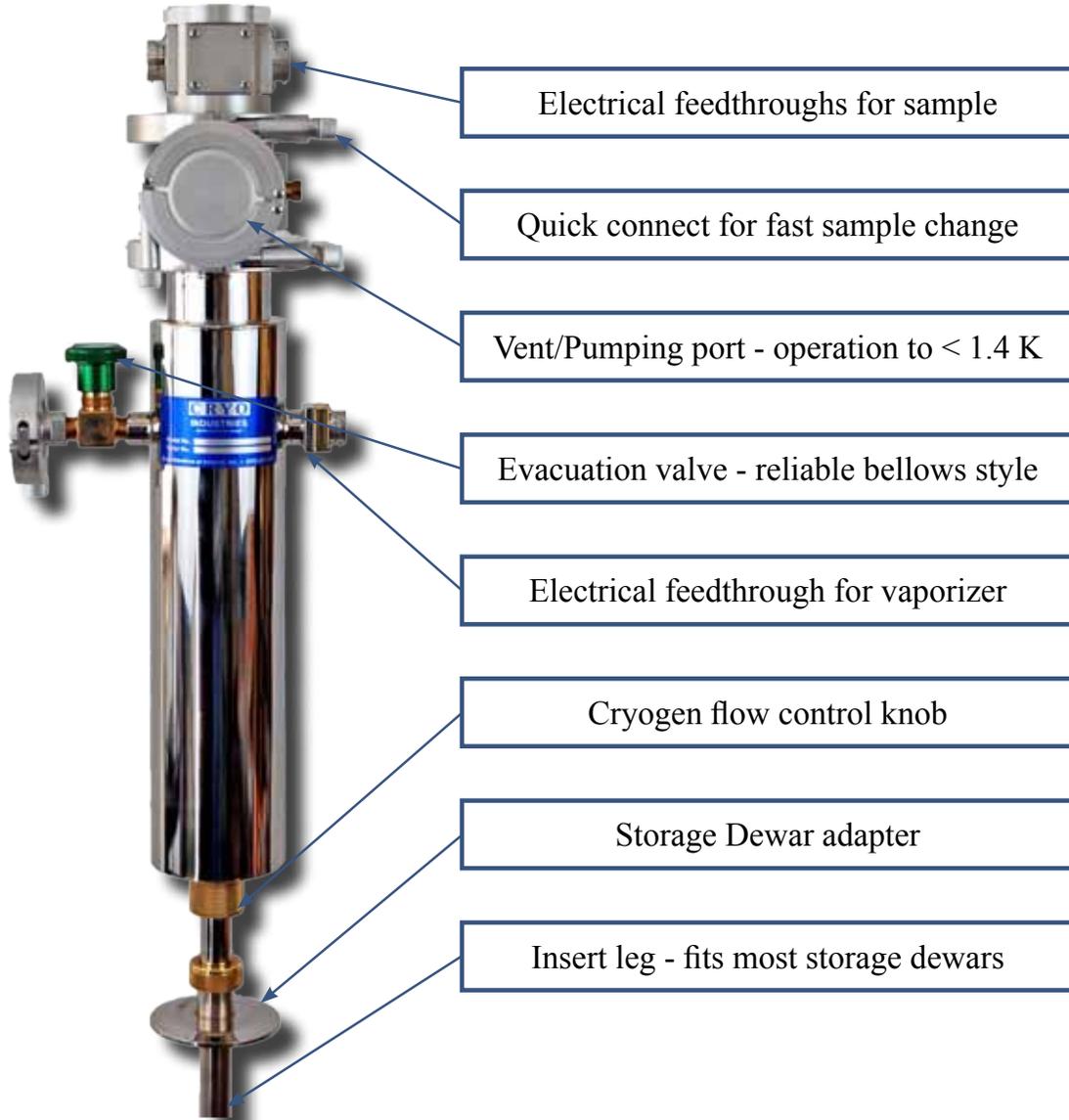
<1.4 K to 325 K (500 K optional)

**Superconducting Cryostat:**

2 or 5 Telsa magnet (optional)



# 'DStat' Directly Cooled Cryostat Insert



## Sample Probe Assembly

- 2 to 4 electrical feedthrough ports
- Copper Baffles
- Concentricity spacer
- Fiber optics ports (optional)
- Sample holder with heater and temperature sensor



# 'DStat' Directly Cooled Cryostat Insert

The 'Dstat' is a versatile storage dewar insert (leg is in the dewar and cryostat sits outside on top of the storage dewar) with top loading variable temperature sample in helium vapor, except for the 'DStat' Magnet model, which is sample in static exchange gas.

One of the unique features of the Cryo Industries 'DSTAT' is that this style of insert allows for large sample tube sizes, since the sample zone is outside on top of the dewar and therefore size is not restricted by the I.D. of the dewar neck.



The standard DSTAT SM-2243-DC has a 2.00" sample tube and is very efficient. Cool down losses will depend on the added masses, but should be approximately 0.75 liters of

liquid helium for initial cooldown without any added masses. The temperature stability is very good at +/- 0.001K from 6K to 300K. The sample tube may be filled with LHe to also provide exact LHe temperature.

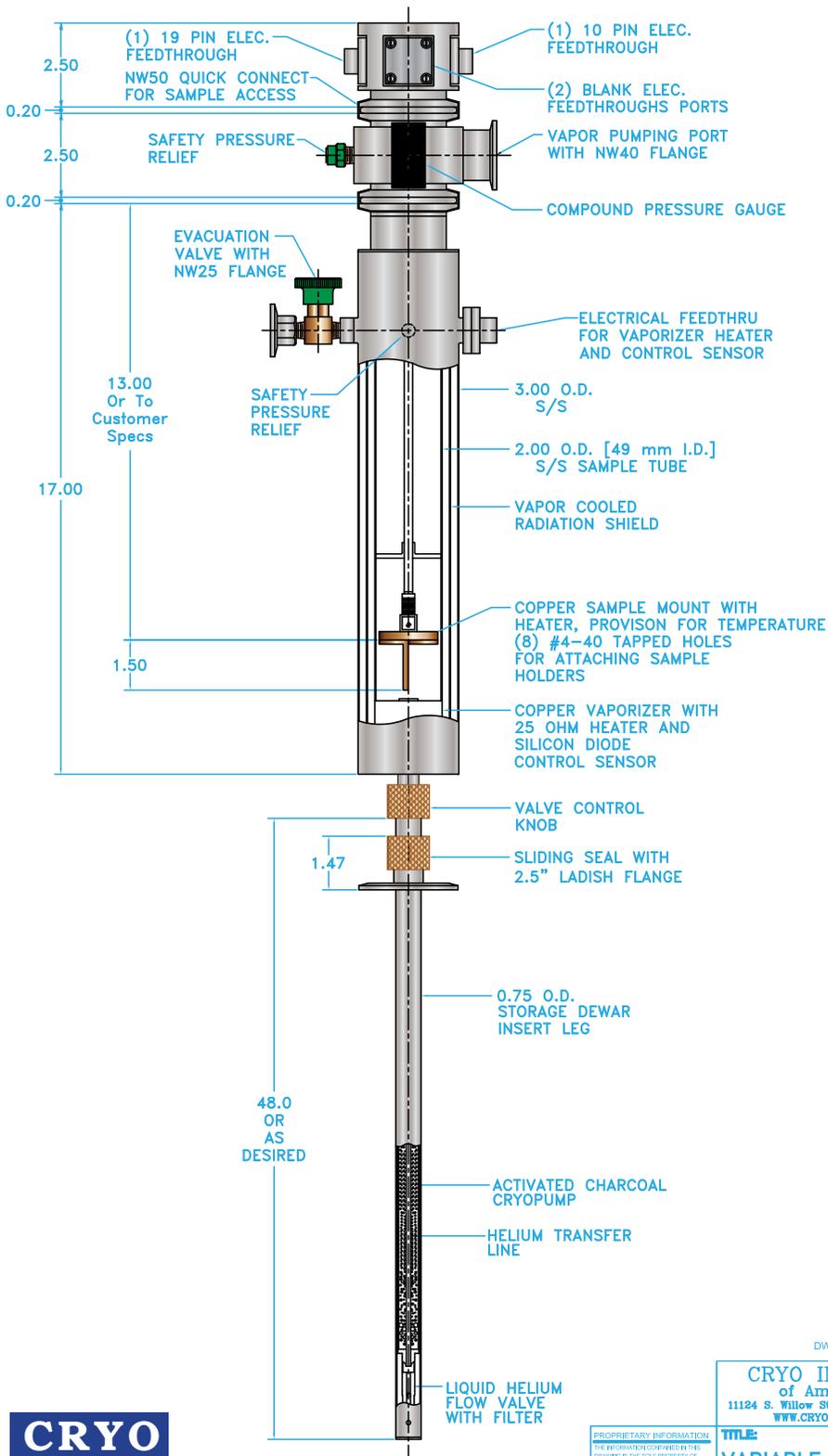
All DStat designs offer an exchange gas insert option that fits inside the DStats' sample tube to give ultimate temperature stability. The sample would then sit inside the removable static exchange gas tube. The DStat with the exchange gas sample tube has approximately 0.25" smaller diameter than DStats' flowing vapor sample tube.

The vibrational levels of LHe cryostats are always very low. In general vibration is not an issue with LHe cryostat systems. In a LHe sample in vapor flow cryostat (like a DStat) any vibration present in the cryostat would come from the dynamic flow as it flows over the sample and the amount of vibration is controlled by how the sample holder hangs and is held concentric in the sample tube.

## DStat Specifications

Efficiency:	<ul style="list-style-type: none"> <li>• 0.02 l/hr static LHe loss rate</li> <li>~0.10 l/hr LHe operational</li> </ul>
'One Button' Operation:	Change temperature using the heater only or Computerized Flow Control (Optional)
Versatility:	<ul style="list-style-type: none"> <li>• Fits any storage dewar (0.75 inch insert leg) (0.5 inch or 12 mm insert leg optional)</li> <li>• Top Loading easy sample change</li> <li>• Exchange samples in seconds</li> </ul>
Operating Temperature Range:	Standard 'DStat': <1.4 K to 325 K (500 K optional) Magnet 'DStat': 4.2 K to 325 K (500 K optional)
Temperature Stable:	+/- 0.001 K - 4.2 K to 325 K +/- 0.010 K - 1.4 to 4.2 K
Superconducting Magnet Option:	2 or 5 Telsa magnet

# 'DStat' Directly Cooled Cryostat Drawing



DWG. NO. SM-2243-DC

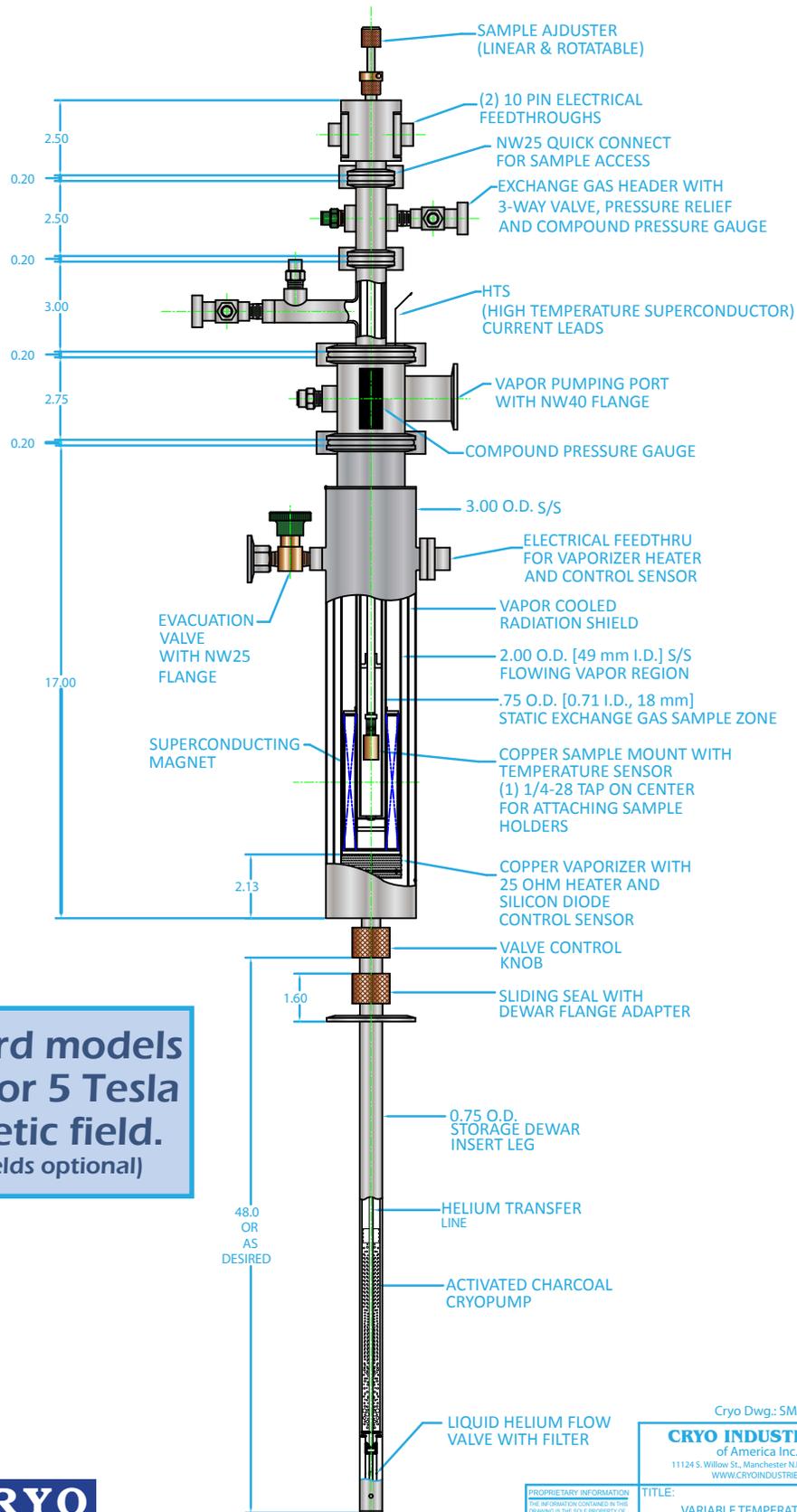
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**TITLE:**  
**VARIABLE TEMPERATURE STORAGE DEWAR INSERT**

**CRYO**

# Directly Cooled 'DStat' Magnet Insert Drawing



**Standard models with 2 or 5 Tesla magnetic field. (other fields optional)**



Cryo Dwg.: SM-2248-DC

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TITLE:  
VARIABLE TEMPERATURE STORAGE DEWAR INSERT WITH SUPERCONDUCTING MAGNET

# **CRYO Industries of America, Inc.**

'performance by design'

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- Cryogenic Radiometer
- X-Ray Diffraction
- High Tc Superconductors
- Hall Effect
- Diamond Cell
- ESR/EPR
- NMR/MRI
- Microscopy
- STM/AFM

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