

E1039 Polarized Target Monitoring & Maintenance Guide

SpinQuest (E1039) Polarized Target group

Revised on 10/07/2022

Link to the spreadsheet to record the values:

<https://docs.google.com/spreadsheets/d/1EDTHSeUDGJ9b6beYizHEAJ8-Z1rAiQbZMgKhmlPLw8/>

(navigate to the tables using the labels at the bottom)

Outline

Target Shift Helper tasks can be categorized into two main sections in these slides:

➤ Target System Monitoring **A**

➤ Target Maintenance & ECL entry information **B**

(will be helpful if the elog entries can be made with the values **before 9am and after 5pm** if possible)

Also, please coordinate with the Target expert on shift to help with other routine maintenance tasks (eg: filling LN2 to purifier, filling gHe to outside tanks, etc.)

Please don't forget record the numbers on the spreadsheet below when you get readings for the elog entry:

<https://docs.google.com/spreadsheets/d/1EDTHSeUDGJ9b6beYizHEAJ8-Z1rAiQbZMgKhmloPLw8/>

(navigate to the tables using the labels at the bottom)

A Target System Monitoring

Navigate to : <https://e906-gat1.fnal.gov/data-summary/e1039/>

The screenshot shows a web browser window with the address bar containing the URL <https://e906-gat1.fnal.gov/data-summary/e1039/>. Below the browser, there is a navigation menu with several buttons. The buttons are arranged in a hierarchical structure. At the top level, there are two buttons: "Semi-Online Reco. Status" and "Online Reco. Status". Below these, there is a section titled "Slow Control Data" which contains four buttons: "ACNET", "Hodo HV", "Chamber HV", and "Hall Env". Below that is a section titled "Target Control Data" which contains five buttons: "All Parameters", "QT HMI", "Cryo Control", "Roots-Pump P & T", and "Roots-Pump LCW". At the bottom, there is a section titled "Tools". A red arrow points from the right side of the image to the "All Parameters" button, with the text "Click on 'All Parameters'" next to it.

A Target System Monitoring

Navigate to : <https://e906-gat1.fnal.gov/data-summary/e1039/>

All Target Parameters

[to]

From / /
 : :
 to / /
 : :



Click on "Auto Update"

QT LiqA	<input type="checkbox"/> PT501 <input type="checkbox"/> PT502 <input type="checkbox"/> PT503 <input type="checkbox"/> PD <input type="checkbox"/> LI501 <input type="checkbox"/> PT <input type="checkbox"/> TID <input type="checkbox"/> TI502 <input type="checkbox"/> TI504 <input type="checkbox"/> TI506 <input type="checkbox"/> TI508 <input type="checkbox"/> TI510 <input type="checkbox"/> FC501Q <input type="checkbox"/> FC501I <input type="checkbox"/> FCQ <input type="checkbox"/> FCI
QT LiqB	<input type="checkbox"/> PT501 <input type="checkbox"/> PT502 <input type="checkbox"/> PT503 <input type="checkbox"/> PD <input type="checkbox"/> LI501 <input type="checkbox"/> PT <input type="checkbox"/> TID <input type="checkbox"/> TI502 <input type="checkbox"/> TI504 <input type="checkbox"/> TI506 <input type="checkbox"/> TI508 <input type="checkbox"/> TI510 <input type="checkbox"/> FC501Q <input type="checkbox"/> FC501I <input type="checkbox"/> FCQ <input type="checkbox"/> FCI
QT Purifier	<input type="checkbox"/> T1A <input type="checkbox"/> Level B <input type="checkbox"/> Level A <input type="checkbox"/> PRTY_Calibrated <input type="checkbox"/> PRTY <input type="checkbox"/> PBB <input type="checkbox"/> PBA <input type="checkbox"/> PRTY_Calibrated_B_Out <input type="checkbox"/> PRTY_Calibrated_B_Mid <input type="checkbox"/> PRTY_Calibrated_A_Out <input type="checkbox"/> PTB <input type="checkbox"/> PRTY_Calibrated_A_Mid <input type="checkbox"/> Flow Controller Flow <input type="checkbox"/> Vfc <input type="checkbox"/> DPfc <input type="checkbox"/> Pfc <input type="checkbox"/> T2B <input type="checkbox"/> T1B <input type="checkbox"/> T2Amv <input type="checkbox"/> T1Amv <input type="checkbox"/> T2A <input type="checkbox"/> PTA
QT System	<input type="checkbox"/> Manifolds PT8 <input type="checkbox"/> Manifolds Magnet Dewar Level <input type="checkbox"/> Manifolds TCD_Smooth <input type="checkbox"/> Manifolds TX1 <input type="checkbox"/> Manifolds FMR <input type="checkbox"/> Manifolds Magnet Dewar Pressure <input type="checkbox"/> Manifolds PC1 <input type="checkbox"/> ODH EV-105-N <input type="checkbox"/> ODH TE-104N <input type="checkbox"/> ODH TE-107N <input type="checkbox"/> ODH TE-108N <input type="checkbox"/> ODH LL-106-N <input type="checkbox"/> ODH TE-109N <input type="checkbox"/> HR3 Enabled
Cryo Pressure	<input type="checkbox"/> IVC <input type="checkbox"/> Fridge/1000 <input type="checkbox"/> Fridge/100 <input type="checkbox"/> He3 Probe <input type="checkbox"/> Return Manifold <input type="checkbox"/> Main Return #1 <input type="checkbox"/> Roots-Pump Top <input type="checkbox"/> Roots-Pump Middle <input type="checkbox"/> Separator Return <input type="checkbox"/> Magnet Return <input type="checkbox"/> Main Return #2 <input type="checkbox"/> n/c
Cryo Purity	<input type="checkbox"/> He Purity
Cryo Fridge Valve	<input type="checkbox"/> He Level <input type="checkbox"/> Run Valve <input type="checkbox"/> Bypass Valve
Cryo Temperature	<input type="checkbox"/> Tank T <input type="checkbox"/> Tank B <input type="checkbox"/> Coil T <input type="checkbox"/> Coil B <input type="checkbox"/> Coil T1 <input type="checkbox"/> Coil T2 <input type="checkbox"/> Coil T3 <input type="checkbox"/> Coil T4 <input type="checkbox"/> Coil B1 <input type="checkbox"/> Coil B2 <input type="checkbox"/> Coil B3 <input type="checkbox"/> Coil B4 <input type="checkbox"/> IVC Bottom <input type="checkbox"/> IVC Top <input type="checkbox"/> Fridge Top <input type="checkbox"/> LHe FL Stinger <input type="checkbox"/> LHe FL #1 <input type="checkbox"/> LHe FL #2 <input type="checkbox"/> Sep. Line <input type="checkbox"/> Annealing A <input type="checkbox"/> Annealing B <input type="checkbox"/> Microwave A <input type="checkbox"/> Microwave B <input type="checkbox"/> Fridge #1 <input type="checkbox"/> Fridge #2 <input type="checkbox"/> Fridge #3 <input type="checkbox"/> Fridge #4 <input type="checkbox"/> Fridge #5 <input type="checkbox"/> Fridge #6 <input type="checkbox"/> Fridge #7 <input type="checkbox"/> Fridge #8 <input type="checkbox"/> QT 1A <input type="checkbox"/> QT 2A <input type="checkbox"/> QT 3A <input type="checkbox"/> QT 4A <input type="checkbox"/> QT 5A <input type="checkbox"/> QT 1B <input type="checkbox"/> QT 2B <input type="checkbox"/> QT 3B <input type="checkbox"/> QT 4B <input type="checkbox"/> QT 5B
Cryo Flow	<input type="checkbox"/> Magnet Return <input type="checkbox"/> Seperator Return <input type="checkbox"/> Main Return
Roots-Pump P&T	<input type="checkbox"/> P1 <input type="checkbox"/> P2 <input type="checkbox"/> P3 <input type="checkbox"/> T1 <input type="checkbox"/> T2 <input type="checkbox"/> T3
Roots-Pump LCW	<input type="checkbox"/> M1 <input type="checkbox"/> M2 <input type="checkbox"/> M3 <input type="checkbox"/> M4 <input type="checkbox"/> WFS1
ACNet	<input type="checkbox"/> F:NM4LCWFLOW <input type="checkbox"/> F:NM4LCWP1 <input type="checkbox"/> F:NM4LCWP2 <input type="checkbox"/> F:NM4LCWP3 <input type="checkbox"/> F:NM4LCWT1 <input type="checkbox"/> F:NM4LCWT2 <input type="checkbox"/> F:NM4LCWT3

No parameter is selected.

Target Magnet Insulation Vacuum IVC

A

Navigate to : <https://e906-gat1.fnal.gov/data-summary/e1039/>

Here you can enter how many hours you want to look for

All Target Parameters

You can change how frequent you want to update the plot by changing this value (5s or less is recommended)

For 1 h 0 m 0 s | Auto-Update in 8 / 30 sec | |
Chart Width 1200 px, Height 600 px, Y in Log Scale, Y in Scientific Notation |
No parameter is selected.

QT LiqA	<input type="checkbox"/> PT501 <input type="checkbox"/> PT502 <input type="checkbox"/> PT503 <input type="checkbox"/> PD <input type="checkbox"/> LI501 <input type="checkbox"/> PT <input type="checkbox"/> TID <input type="checkbox"/> TI502 <input type="checkbox"/> TI504 <input type="checkbox"/> TI506 <input type="checkbox"/> TI508 <input type="checkbox"/> TI510 <input type="checkbox"/> FC501Q <input type="checkbox"/> FC501I <input type="checkbox"/> FCQ <input type="checkbox"/> FCI
QT LiqB	<input type="checkbox"/> PT501 <input type="checkbox"/> PT502 <input type="checkbox"/> PT503 <input type="checkbox"/> PD <input type="checkbox"/> LI501 <input type="checkbox"/> PT <input type="checkbox"/> TID <input type="checkbox"/> TI502 <input type="checkbox"/> TI504 <input type="checkbox"/> TI506 <input type="checkbox"/> TI508 <input type="checkbox"/> TI510 <input type="checkbox"/> FC501Q <input type="checkbox"/> FC501I <input type="checkbox"/> FCQ <input type="checkbox"/> FCI
QT Purifier	<input type="checkbox"/> T1A <input type="checkbox"/> Level B <input type="checkbox"/> Level A <input type="checkbox"/> PRTY_Calibrated <input type="checkbox"/> PRTY <input type="checkbox"/> PBB <input type="checkbox"/> PBA <input type="checkbox"/> PRTY_Calibrated_B_Out <input type="checkbox"/> PRTY_Calibrated_B_Mid <input type="checkbox"/> PRTY_Calibrated_A_Out <input type="checkbox"/> PTB <input type="checkbox"/> PRTY_Calibrated_A_Mid <input type="checkbox"/> Flow Controller Flow <input type="checkbox"/> Vfc <input type="checkbox"/> DPfc <input type="checkbox"/> Pfc <input type="checkbox"/> T2B <input type="checkbox"/> T1B <input type="checkbox"/> T2Amv <input type="checkbox"/> T1Amv <input type="checkbox"/> T2A <input type="checkbox"/> PTA
QT System	<input type="checkbox"/> Manifolds PT8 <input type="checkbox"/> Manifolds Magnet Dewar Level <input type="checkbox"/> Manifolds TCD_Smooth <input type="checkbox"/> Manifolds TX1 <input type="checkbox"/> Manifolds FMR <input type="checkbox"/> Manifolds Magnet Dewar Pressure <input type="checkbox"/> Manifolds PC1 <input type="checkbox"/> ODH EV-105-N <input type="checkbox"/> ODH TE-104N <input type="checkbox"/> ODH TE-107N <input type="checkbox"/> ODH TE-108N <input type="checkbox"/> ODH LL-106-N <input type="checkbox"/> ODH TE-109N <input type="checkbox"/> HR3 Enabled
Cryo Pressure	<input checked="" type="checkbox"/> IVC <input type="checkbox"/> Fridge/1000 <input type="checkbox"/> Fridge/100 <input type="checkbox"/> He3 Probe <input type="checkbox"/> Return Manifold <input type="checkbox"/> Main Return #1 <input type="checkbox"/> Roots-Pump Top <input type="checkbox"/> Roots-Pump Middle <input type="checkbox"/> Separator Return <input type="checkbox"/> Magnet Return <input type="checkbox"/> Main Return #2 <input type="checkbox"/> n/c
Cryo Purity	<input type="checkbox"/> He Purity
Cryo Fridge Valve	<input type="checkbox"/> He Level <input type="checkbox"/> Run Valve <input type="checkbox"/> Bypass Valve
Cryo Temperature	<input type="checkbox"/> Tank T <input type="checkbox"/> Tank B <input type="checkbox"/> Coil T <input type="checkbox"/> Coil B <input type="checkbox"/> Coil T1 <input type="checkbox"/> Coil T2 <input type="checkbox"/> Coil T3 <input type="checkbox"/> Coil T4 <input type="checkbox"/> Coil B1 <input type="checkbox"/> Coil B2 <input type="checkbox"/> Coil B3 <input type="checkbox"/> Coil B4 <input type="checkbox"/> IVC Bottom <input type="checkbox"/> IVC Top <input type="checkbox"/> Fridge Top <input type="checkbox"/> LHe FL Stinger <input type="checkbox"/> LHe FL #1 <input type="checkbox"/> LHe FL #2 <input type="checkbox"/> Sep. Line <input type="checkbox"/> Annealing A <input type="checkbox"/> Annealing B <input type="checkbox"/> Microwave A <input type="checkbox"/> Microwave B <input type="checkbox"/> Fridge #1 <input type="checkbox"/> Fridge #2 <input type="checkbox"/> Fridge #3 <input type="checkbox"/> Fridge #4 <input type="checkbox"/> Fridge #5 <input type="checkbox"/> Fridge #6 <input type="checkbox"/> Fridge #7 <input type="checkbox"/> Fridge #8 <input type="checkbox"/> QT 1A <input type="checkbox"/> QT 2A <input type="checkbox"/> QT 3A <input type="checkbox"/> QT 4A <input type="checkbox"/> QT 5A <input type="checkbox"/> QT 1B <input type="checkbox"/> QT 2B <input type="checkbox"/> QT 3B <input type="checkbox"/> QT 4B <input type="checkbox"/> QT 5B
Cryo Flow	<input type="checkbox"/> Magnet Return <input type="checkbox"/> Separator Return <input type="checkbox"/> Main Return
Roots-Pump P&T	<input type="checkbox"/> P1 <input type="checkbox"/> P2 <input type="checkbox"/> P3 <input type="checkbox"/> T1 <input type="checkbox"/> T2 <input type="checkbox"/> T3
Roots-Pump LCW	<input type="checkbox"/> M1 <input type="checkbox"/> M2 <input type="checkbox"/> M3 <input type="checkbox"/> M4 <input type="checkbox"/> WFS1
ACNet	<input type="checkbox"/> F:NM4LCWFLOW <input type="checkbox"/> F:NM4LCWP1 <input type="checkbox"/> F:NM4LCWP2 <input type="checkbox"/> F:NM4LCWP3 <input type="checkbox"/> F:NM4LCWT1 <input type="checkbox"/> F:NM4LCWT2 <input type="checkbox"/> F:NM4LCWT3

Check this "IVC" box: Then a plot will automatically appear when the next "Auto-Update" cycle completes.

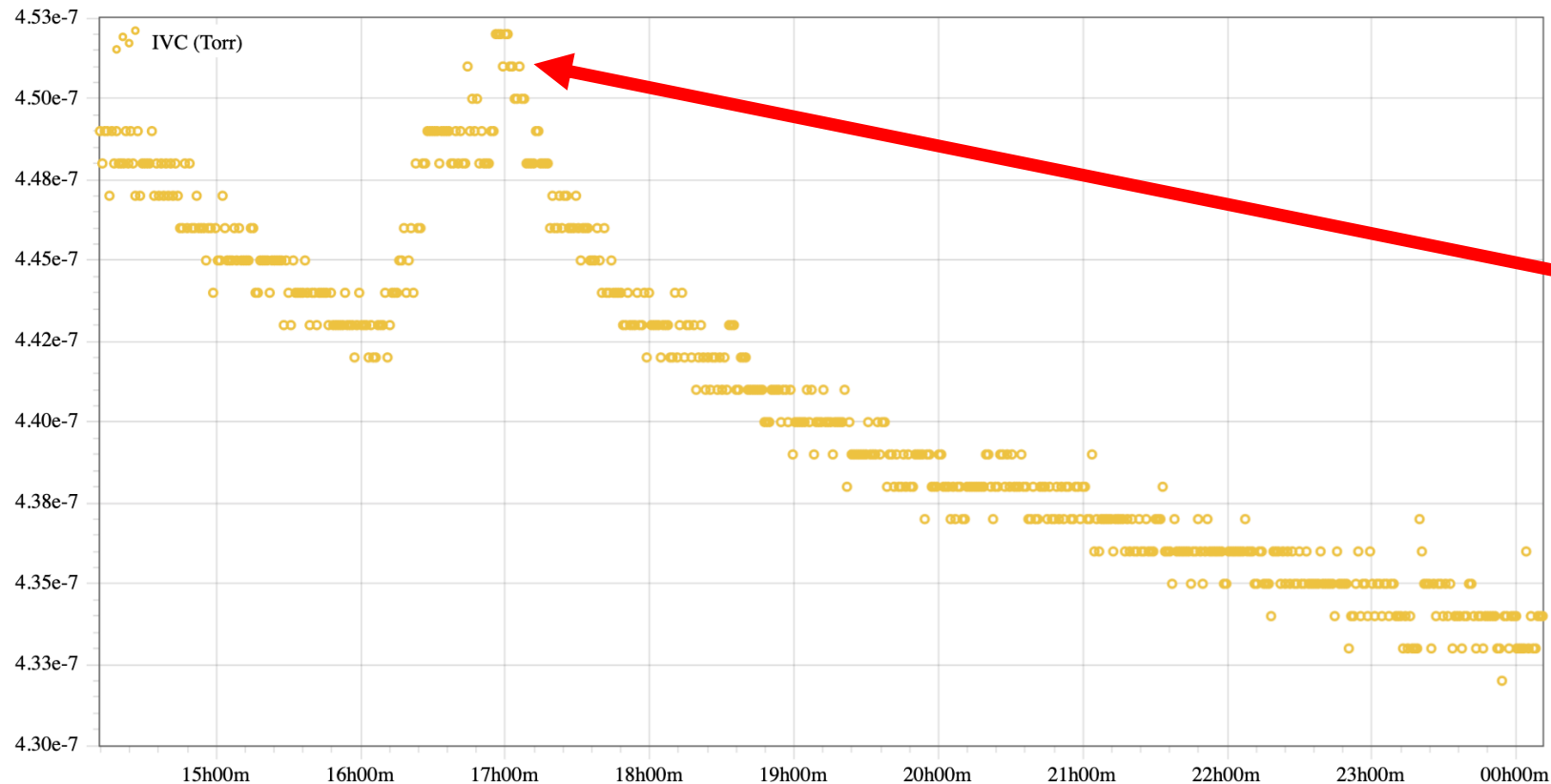
Target Magnet Insulation Vacuum IVC

A

Navigate to : <https://e906-gat1.fnal.gov/data-summary/e1039/>

For h m s | Auto-Update in sec | |
Chart Width px, Height px, Y in Log Scale, Y in Scientific Notation |
Last updated @ 2022/10/08 00:11:04

Last Record	IVC (Torr)
2022/10/08 00:10:59	4.34E-7



Check whether there is any peak(s) higher than 1×10^{-5} Torr. If you see any, please **immediately** inform the target expert on shift!

The peak in this plot is just an example. And, pay attention to the horizontal axis scaling!

QT Dewar Liquid He levels

A

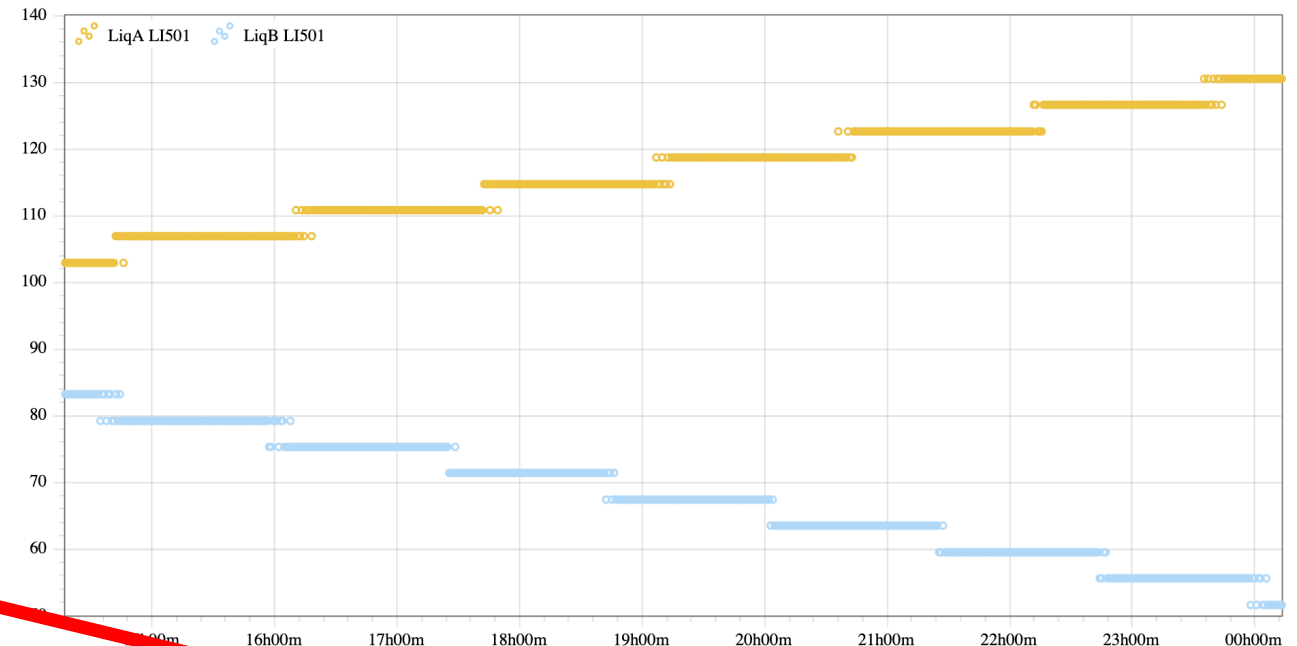
Navigate to : <https://e906-gat1.fnal.gov/data-summary/e1039/>

Check the both QT Dewar levels. If you see any of the two Dewar levels are below 40 L, please **immediately** inform the target expert on shift!

Check "LI501" boxes on "QT LiqA" and "QTLiqB" rows

For 10 h 0 m 0 s Auto-Update in 2 / 2 sec | Manual-Update |
Chart Width 1200 px, Height 600 px, Y in Log Scale, Y in Scientific Notation |
Fetching recorded data... Last updated @ 2022/10/08 00:17:23

Last Record	LiqA LI501	LiqB LI501
2022/10/08 00:13:08	130.5	51.6



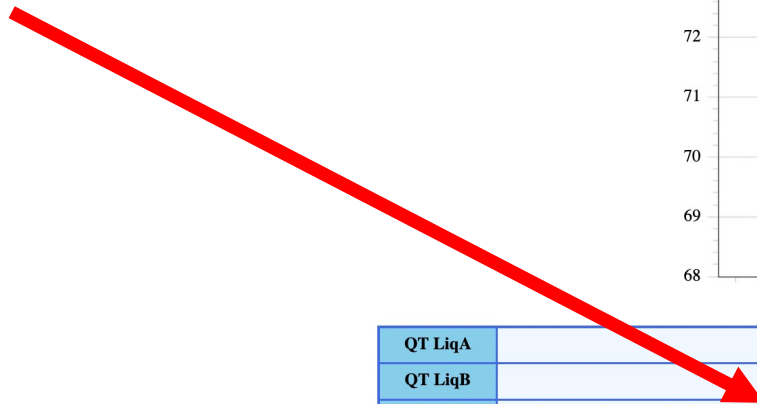
QT LiqA	<input type="checkbox"/> PT501 <input type="checkbox"/> PT502 <input type="checkbox"/> PT503 <input type="checkbox"/> PD <input checked="" type="checkbox"/> LI501 <input type="checkbox"/> PT <input type="checkbox"/> TID <input type="checkbox"/> TI502 <input type="checkbox"/> TI504 <input type="checkbox"/> TI506 <input type="checkbox"/> TI508 <input type="checkbox"/> TI510 <input type="checkbox"/> FC501Q <input type="checkbox"/> FC501I <input type="checkbox"/> FCQ <input type="checkbox"/> FCI
QT LiqB	<input type="checkbox"/> PT501 <input type="checkbox"/> PT502 <input type="checkbox"/> PT503 <input type="checkbox"/> PD <input checked="" type="checkbox"/> LI501 <input type="checkbox"/> PT <input type="checkbox"/> TID <input type="checkbox"/> TI502 <input type="checkbox"/> TI504 <input type="checkbox"/> TI506 <input type="checkbox"/> TI508 <input type="checkbox"/> TI510 <input type="checkbox"/> FC501Q <input type="checkbox"/> FC501I <input type="checkbox"/> FCQ <input type="checkbox"/> FCI
QT Purifier	<input type="checkbox"/> T1A <input type="checkbox"/> Level B <input type="checkbox"/> Level A <input type="checkbox"/> PRTY_Calibrated <input type="checkbox"/> PRTY <input type="checkbox"/> PBB <input type="checkbox"/> PBA <input type="checkbox"/> PRTY_Calibrated_B_Out <input type="checkbox"/> PRTY_Calibrated_B_Mid <input type="checkbox"/> PRTY_Calibrated_A_Out <input type="checkbox"/> PTB <input type="checkbox"/> PRTY_Calibrated_A_Mid <input type="checkbox"/> Flow Controller Flow <input type="checkbox"/> Vfc <input type="checkbox"/> DPfc <input type="checkbox"/> Pfc <input type="checkbox"/> T2B <input type="checkbox"/> T1B <input type="checkbox"/> T2Amv <input type="checkbox"/> T1Amv <input type="checkbox"/> T2A <input type="checkbox"/> PTA

QT Purifier Dewar LN2 level

A Navigate to : <https://e906-gat1.fnal.gov/data-summary/e1039/>

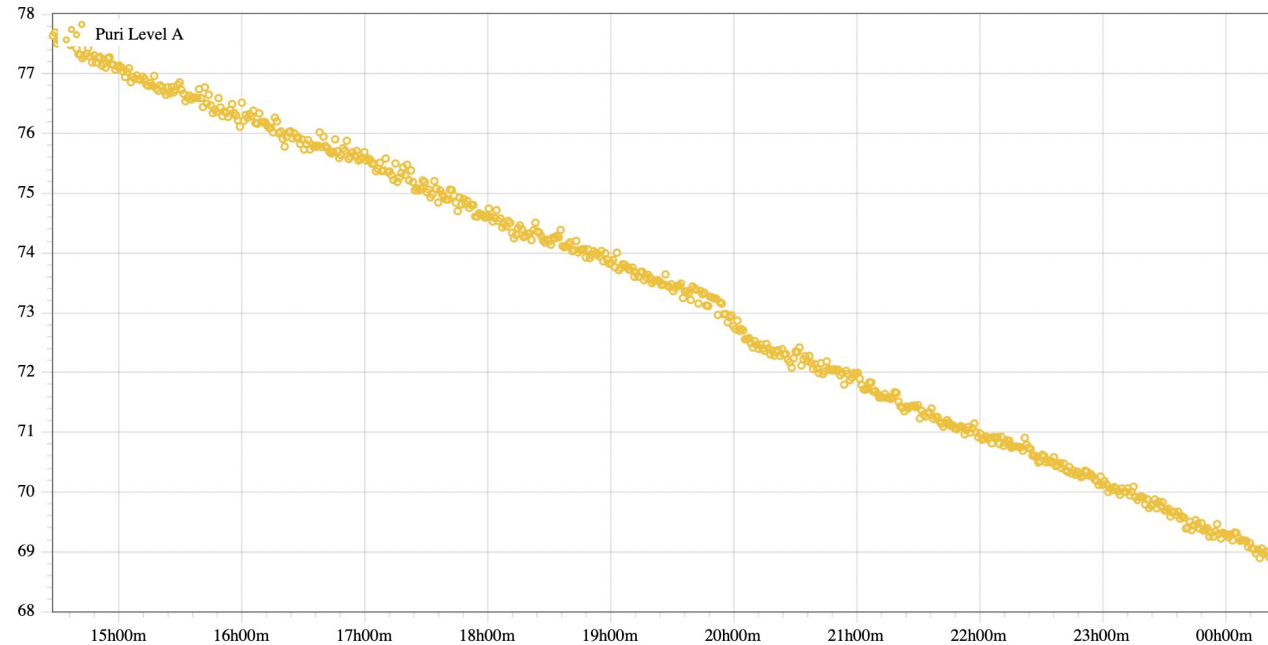
Check the QT Purifier LN2 Dewar levels. If you see the Dewar level is below 50%, please coordinate with the target expert on shift! to fill as soon as possible!

Check "Level A" box on "QT Purifier"



For 10 h 0 m 0 s | Auto-Update in 1 / 2 sec | Manual-Update |
Chart Width 1200 px, Height 600 px, Y in Log Scale, Y in Scientific Notation |
Last updated @ 2022/10/08 00:26:54

Last Record	Puri Level A
2022/10/08 00:22:26	68.96397



QT LiqA	<input type="checkbox"/> PT501 <input type="checkbox"/> PT502 <input type="checkbox"/> PT503 <input type="checkbox"/> PD <input type="checkbox"/> LI501 <input type="checkbox"/> PT <input type="checkbox"/> TID <input type="checkbox"/> TI502 <input type="checkbox"/> TI504 <input type="checkbox"/> TI506 <input type="checkbox"/> TI508 <input type="checkbox"/> TI510 <input type="checkbox"/> FC501Q <input type="checkbox"/> FC501I <input type="checkbox"/> FCQ <input type="checkbox"/> FCI
QT LiqB	<input type="checkbox"/> PT501 <input type="checkbox"/> PT502 <input type="checkbox"/> PT503 <input type="checkbox"/> PD <input type="checkbox"/> LI501 <input type="checkbox"/> PT <input type="checkbox"/> TID <input type="checkbox"/> TI502 <input type="checkbox"/> TI504 <input type="checkbox"/> TI506 <input type="checkbox"/> TI508 <input type="checkbox"/> TI510 <input type="checkbox"/> FC501Q <input type="checkbox"/> FC501I <input type="checkbox"/> FCQ <input type="checkbox"/> FCI
QT Purifier	<input type="checkbox"/> T1A <input type="checkbox"/> Level B <input checked="" type="checkbox"/> Level A <input type="checkbox"/> PRTY_Calibrated <input type="checkbox"/> PRTY <input type="checkbox"/> PBB <input type="checkbox"/> PBA <input type="checkbox"/> PRTY_Calibrated_B_Out <input type="checkbox"/> PRTY_Calibrated_B_Mid <input type="checkbox"/> PRTY_Calibrated_A_Out <input type="checkbox"/> PTB <input type="checkbox"/> PRTY_Calibrated_A_Mid <input type="checkbox"/> Flow Controller Flow <input type="checkbox"/> Vfc <input type="checkbox"/> DPfc <input type="checkbox"/> Pfc <input type="checkbox"/> T2B <input type="checkbox"/> T1B <input type="checkbox"/> T2Amv <input type="checkbox"/> T1Amv <input type="checkbox"/> T2A <input type="checkbox"/> PTA

Main LCW Inlet/Outlet P & T

A

Navigate to : <https://e906-gat1.fnal.gov/data-summary/e1039/>

Roots-Pump P&T	<input type="checkbox"/> P1 <input type="checkbox"/> P2 <input type="checkbox"/> P3 <input type="checkbox"/> T1 <input type="checkbox"/> T2 <input type="checkbox"/> T3
Roots-Pump LCW	<input type="checkbox"/> M1 <input type="checkbox"/> M2 <input type="checkbox"/> M3 <input type="checkbox"/> M4 <input type="checkbox"/> WFS1
ACNet	<input checked="" type="checkbox"/> F:NM4LCWFLOW <input checked="" type="checkbox"/> F:NM4LCWP1 <input type="checkbox"/> F:NM4LCWP2 <input checked="" type="checkbox"/> F:NM4LCWP3 <input checked="" type="checkbox"/> F:NM4LCWT1 <input checked="" type="checkbox"/> F:NM4LCWT2 <input type="checkbox"/> F:NM4LCWT3

Check the LCW flow, pressures and temperatures by checking the boxes as shown.

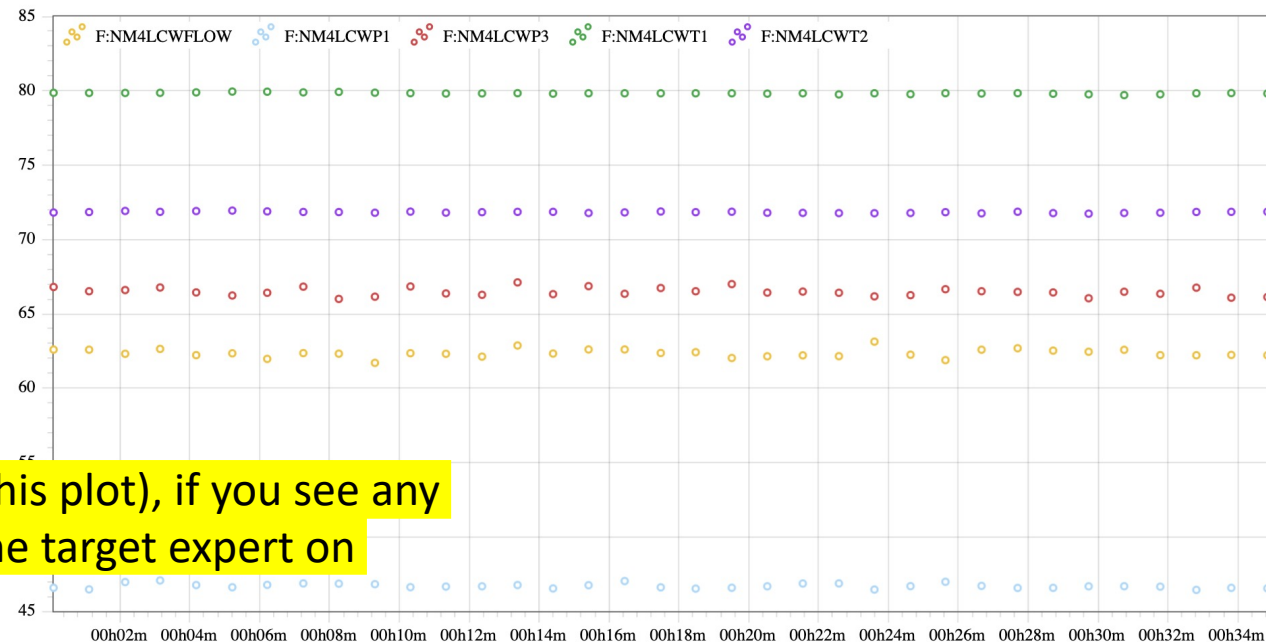
Please contact target expert on shift if you notice any of the following (in magnitude).

- 1) If the flow is less than "30"
- 2) If P_in is less than "55"
- 3) If P_out is less than "30"
- 4) If T_in is higher than "90"
- 5) If T_out is higher than "100"

P1=P_out
P3=P_in
T1=T_out
T2=T_in

For 10 h 0 m 0 s Auto-Update in 2 / 2 sec | Manual-Update |
 Chart Width 1200 px, Height 600 px, Y in Log Scale, Y in Scientific Notation |
 Last updated @ 2022/10/08 00:35:31

Last Record	F:NM4LCWFLOW	F:NM4LCWP1	F:NM4LCWP3	F:NM4LCWT1	F:NM4LCWT2
2022/10/08 00:34:51	62.2131347656	46.5396910191	66.1285565712	79.8141479492	71.8643188477



Usually these curves should be flat (as shown in this plot), if you see any spikes, or unusual behavior, then please inform the target expert on shift immediately!

Magnet Thermocouples Temps.

A

Navigate to : <https://e906-gat1.fnal.gov/data-summary/e1039/>

Check the Magnet Thermocouple temperatures by checking the boxes as shown.

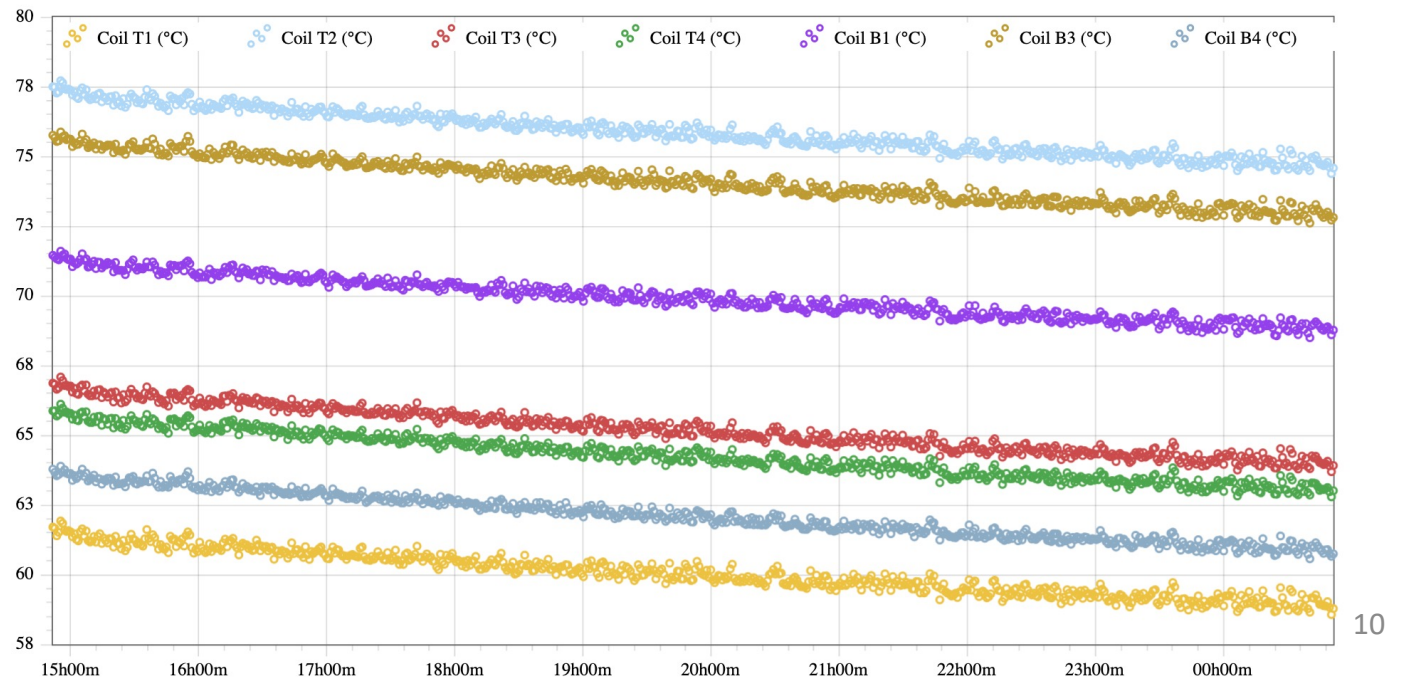
Please contact target expert on shift **immediately** if you notice any rapid increments / unusual behavior!

These curves should be going down towards 4 K during the cooldown (the gradient can vary based on how fast the cooldown process is going and then will be flattened).

Cryo Fridge Valve	<input type="checkbox"/> He Level <input type="checkbox"/> Run Valve <input type="checkbox"/> Bypass Valve
Cryo Temperature	<input type="checkbox"/> Tank T <input type="checkbox"/> Tank B <input type="checkbox"/> Coil T <input type="checkbox"/> Coil B <input checked="" type="checkbox"/> Coil T1 <input checked="" type="checkbox"/> Coil T2 <input checked="" type="checkbox"/> Coil T3 <input checked="" type="checkbox"/> Coil T4 <input checked="" type="checkbox"/> Coil B1 <input type="checkbox"/> Coil B2 <input checked="" type="checkbox"/> Coil B3 <input checked="" type="checkbox"/> Coil B4 <input type="checkbox"/> LHe FL #2 <input type="checkbox"/> Sep. Line <input type="checkbox"/> Annealing A <input type="checkbox"/> Annealing B <input type="checkbox"/> Microwave A <input type="checkbox"/> Microwave B <input type="checkbox"/> Fridge #1 <input type="checkbox"/> Fridge #2 <input type="checkbox"/> Fridge #3 <input type="checkbox"/> Fridge #4 <input type="checkbox"/> QT 3A <input type="checkbox"/> QT 4A <input type="checkbox"/> QT 5A <input type="checkbox"/> QT 1B <input type="checkbox"/> QT 2B <input type="checkbox"/> QT 3B <input type="checkbox"/> QT 4B
Cryo Flow	<input type="checkbox"/> Magnet Return <input type="checkbox"/> Separator Return <input type="checkbox"/> Main Return

For 10 h 0 m 0 s | Auto-Update in 1 / 2 sec | Manual-Update |
Chart Width 1200 px, Height 600 px, Y in Log Scale, Y in Scientific Notation |
Last updated @ 2022/10/08 00:51:23


Last Record	Coil T1 (°C)	Coil T2 (°C)	Coil T3 (°C)	Coil T4 (°C)	Coil B1 (°C)	Coil B3 (°C)	Coil B4 (°C)
2022/10/08 00:51:20	58.785538	74.581436	63.914185	63.010681	68.769440	72.807022	60.747894



B Target Shifts & elog entry

(It will be helpful if the elog entries can be made with the values before 9am and after 5pm if possible)

Thanks Steve! for helping setting this up



SpinQuest (E-1039)

Electronic Logbook

Logbook Members Projects Shifts

Logbook entries

Entries

Search

RSS

New Entry

Preferences

(sorted by Created) [Sort by Updated](#)

[Show Entries ID in collapsed mode](#)

[Show Sticky Entries First](#)

Category: (all) subcategories

Quick search:

< newer

[collapse all](#) [expand all](#)

Legend for symbols:  Private entry.  Entry has new

11:27

Target [zji]  Target Maintenance

14:47

Target [zji]  Target Maintenance

Create New Entry

Form:

Chamber Gas Walkthrough

Target Maintenance

default

Category:

--select category-- (required)

Private:

Entry will be visible only to authenticated users



SpinQuest (E-1039)

Shift Scheduler

Logbook Members Projects Shifts

Calendar

Schedule intervals

Shift quotas

Shifts by institution

Open shifts

My shifts

Who is on shift now

Shifts for August 2022

[week view](#) [<July 2022](#) [August 2022](#) [September 2022>](#)

Target Shift

Mon 01	Tue 02	Wed 03	Thu 04
Mon 08	Tue 09	Wed 10	Thu 11
Mon 15	Tue 16	Wed 17	Thu 18
Target Shift Mon-Sun 00:00-23:59			
Target Expert (0.0) Ishara Fernando			
Target Helper (0.0) Zhaohuizi Ji			

Please sign-up for target shifts!

B

Target Shifts & elog entry

List of tasks (current list: will be updated)

Number of gHe and gN2 bottles at the outside rack:

Record the number of gHe and gN2 bottles at the outside rack order gas bottles (gHe and gN2) if the counts are less than 2.

Also record here: <https://docs.google.com/spreadsheets/d/1EDTHSeUDGJ9b6beYizHEAJ8-Z1rAiQbZMgKhmlPLw8/edit>

Check gHe pressure and LN2 pressure of the outside tanks.

Also record here: <https://docs.google.com/spreadsheets/d/1EDTHSeUDGJ9b6beYizHEAJ8-Z1rAiQbZMgKhmlPLw8/edit>

Check QT HR3 gauges: <https://docs.google.com/spreadsheets/d/1EDTHSeUDGJ9b6beYizHEAJ8-Z1rAiQbZMgKhmlPLw8/edit>

Check QT liquid (Dewar/purifier) levels.

<https://docs.google.com/spreadsheets/d/1EDTHSeUDGJ9b6beYizHEAJ8-Z1rAiQbZMgKhmlPLw8/edit#gid=1727227200>

Check LCW main inlet, an outlet to NM4.

<https://docs.google.com/spreadsheets/d/1EDTHSeUDGJ9b6beYizHEAJ8-Z1rAiQbZMgKhmlPLw8/edit#gid=558588447>

Monitoring QT compressor LCW temperatures.

Alarm conditions: T_inlet > 95F or T_out > 115F: inform Target Expert.

Filling LN2 to the QT purifier using portable Dewar. Mark the date, time, and levels before and after filling.

- Need to be qualified with large portable liquified gas dewar handling training (FN000475 / OJ) **

Procedure: <https://confluence.its.virginia.edu/display/twist/Filling+LN2+on+Purifier+Dewar>

Create New Entry

Chamber Gas Walkthrough

Target Maintenance

✓ default

Use

Form:

Category:

--select category-- (required)

Private:

Entry will be visible only to authenticated users

Textile formatted:

Textile help

The next set of tasks are for the Root Pumps System.

B

Trainings needed on your ITNA

➤ Please contact Rick to add the following training modules to your ITNA.

FN000213 Compressed Gas Cylinder Safety

FN000304 Fall Protection

FN000654 Ladder User Safety

FN000271 Pressure Safety Orientation

FN000115 Cryogenic Safety (General)

FN000475 Large portable Dewar handling

Please don't forget record the numbers on the spreadsheet below when you get readings for the elog entry:

<https://docs.google.com/spreadsheets/d/1EDTHSeUDGJ9b6beYizHEAJ8-Z1rAiQbZMgKhmlPLw8/>

(navigate to the tables using the labels at the bottom)

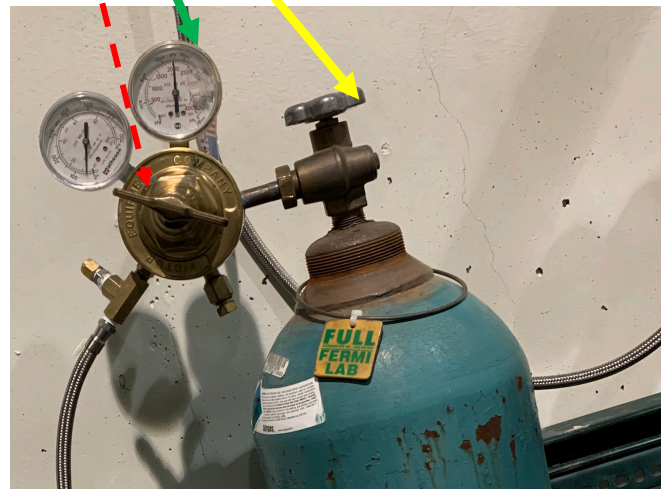
Checking the gHe bottles' levels on the west-wall of the cryoplatform



Location: Hall

Do not do this without FN000213/CR training

1. Close the regulator (by turning this handle anti-clockwise until you feel it freely rotating)
2. Open the Gas bottle using the rotating knob on the top of the bottle (turning anti-clockwise) to read the value of this meter on the right hand-side. Close the rotating knob (turning clockwise). once you are done reading the pressure.
3. If this level is low (or below 100psi) then replace cylinder(s) with new one(s).
Contact Target Expert on shift
Slide #16 shows the gas rack location
4. Make sure to close the bottle (tightening clockwise) and close the regulator (as step 1).



Check the number of LN2 portable Dewars outside the loading dock



- Check the number of “full” Dewars which are usually placed near this door (whereas the empty ones towards the East side of the loading dock door).
- On some of the Dewars there is a liquid level indicator on the top.
- If there isn't a liquid level indicator or it's not clear, then contact the target expert on shift.
- If the number of portable Dewars are less than or equal to 2, then please send an email to Kun Liu (liuk.pku@gmail.com) to order more.

Record the number of gHe and gN2 bottles at the outside rack



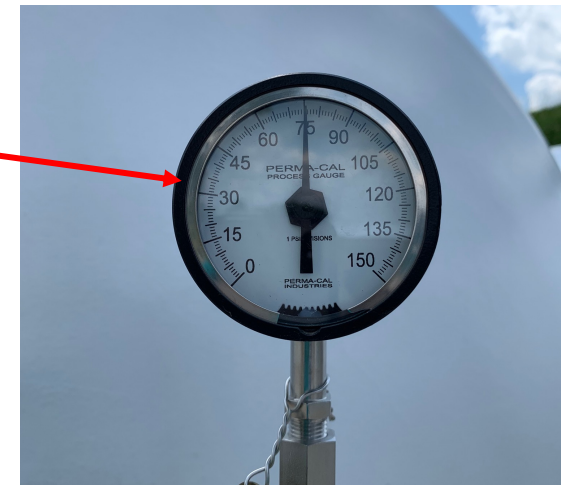
- Read the labels on each bottle to identify for gHe or gN2
- If the number of bottles from either type is less than 4, then please send an email to Kun Liu (liuk.pku@gmail.com) to order more bottles

Check gHe pressure and LN2 pressure of the outside tanks



LN2 Tank Pressure
(Notify Kun if the
indicator is less than
10)

liuk.pku@gmail.com



gHe Tank Pressure
(Notify Kun if the
pressure is less than
25 psi)

Filling gHe outside tanks using tube-trailer



Please contact the Target Expert on Shift to coordinate to fill gHe tanks using a tube trailer

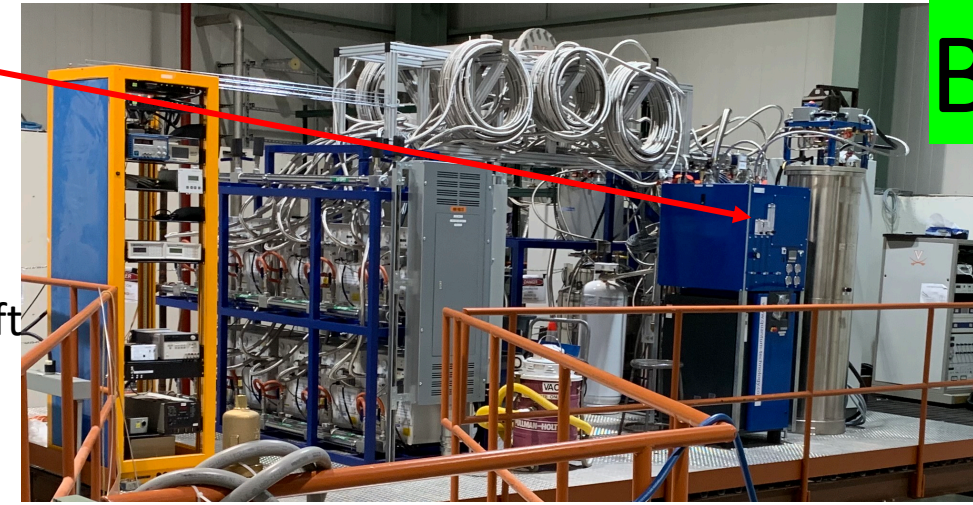
The filling procedure can be found here:

<https://seaquest-docdb.fnal.gov/cgi-bin/sso/ShowDocument?docid=10198>

Item #06

Check QT HR3 gauges

Location



B

If "MANUAL START" button is not green then please contact the Target expert on shift

Buffer tank pressure



Check for the labels P10, P6, P8, P40, P41 and record on the spreadsheet

Check QT liquid (Dewar/purifier) levels

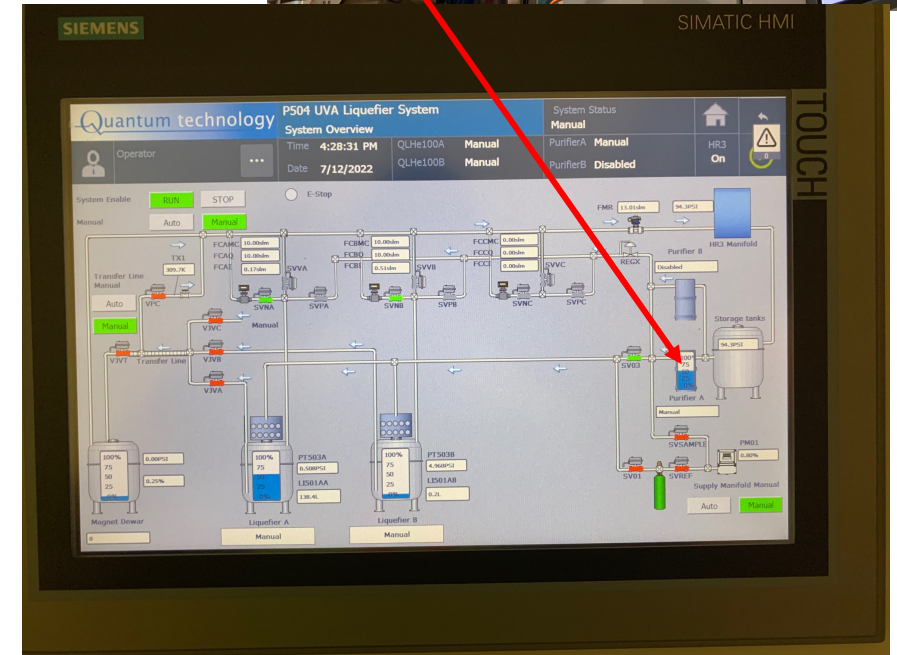
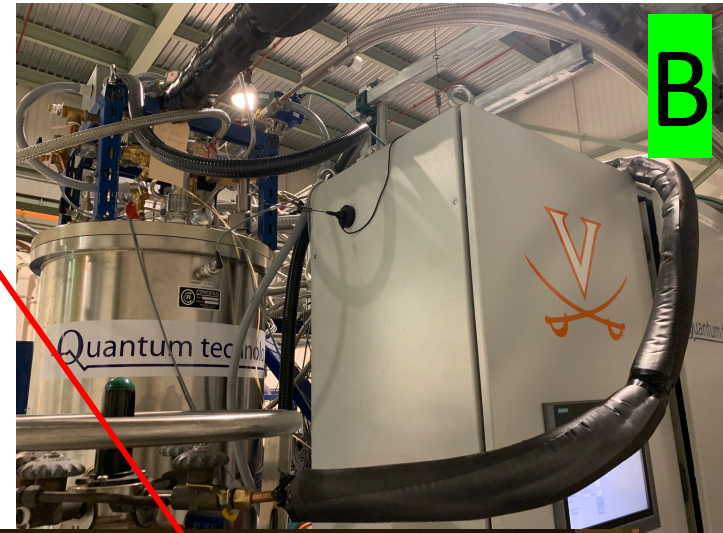
B

Item #07

LHe levels

Do Not handle these large LN2 Dewars if you don't have FN0000473/OJ training

You do Not required this training for reading LHe levels



★ LHe Dewars A and B

Liquid levels can be read using this meter on each Dewar separately

Steps to fill LN2 to the purifier Dewar if it's below 50% <https://confluence.its.virginia.edu/display/twist/Filling+LN2+on+Purifier+Dewar>

Please contact Target Expert shift contact before performing fill/replace LN2 Dewar

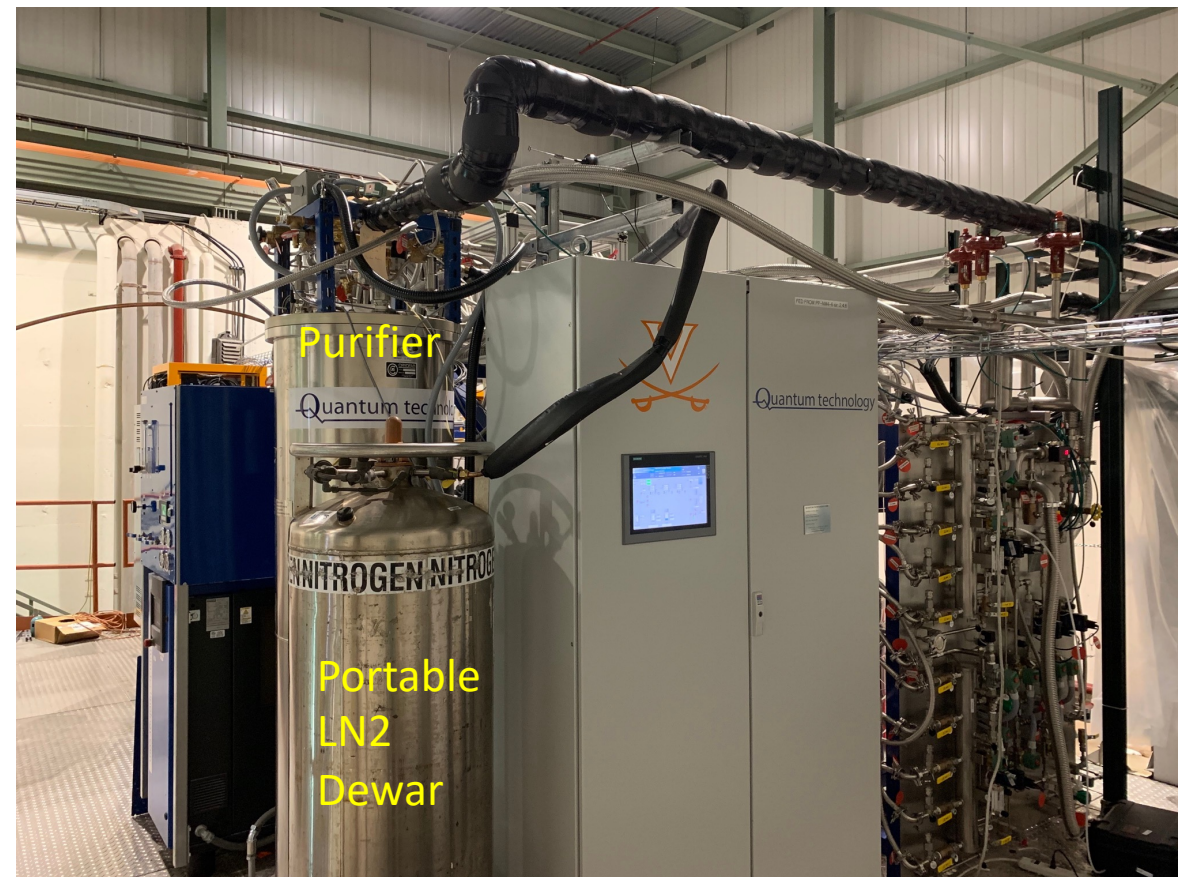
Filling LN2 to the purifier

Item #07 If the LN2 level in the purifier is below 40%
> Contact the Target Expert on shift to fill
 from a portable Dewar

Steps to fill LN2 to the purifier Dewar can be found on

<https://confluence.its.virginia.edu/display/twist/Filling+LN2+on+Purifier+Dewar>

Also, the Target Expert on shift will assist you if needed.



Please contact Target Expert shift contact before performing fill/replace LN2 Dewar

Do Not handle these large LN2 Dewars if you don't have
FN0000473/OJ training

Monitoring QT compressor LCW temperatures

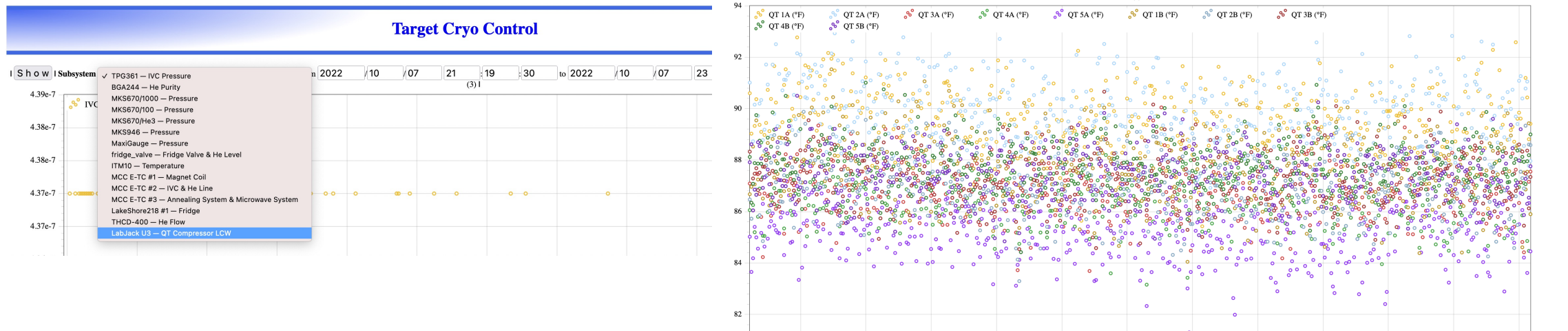
Navigate to: <https://e906-gat1.fnal.gov/data-summary/e1039> then select “Cryo Control” under “Target Control Data” Section.

Select the “LabJack U3 – QT Compressor LCW” from the drop down menu under “Subsystem” field selection.

Leave the default times as it is and hit “Show” button

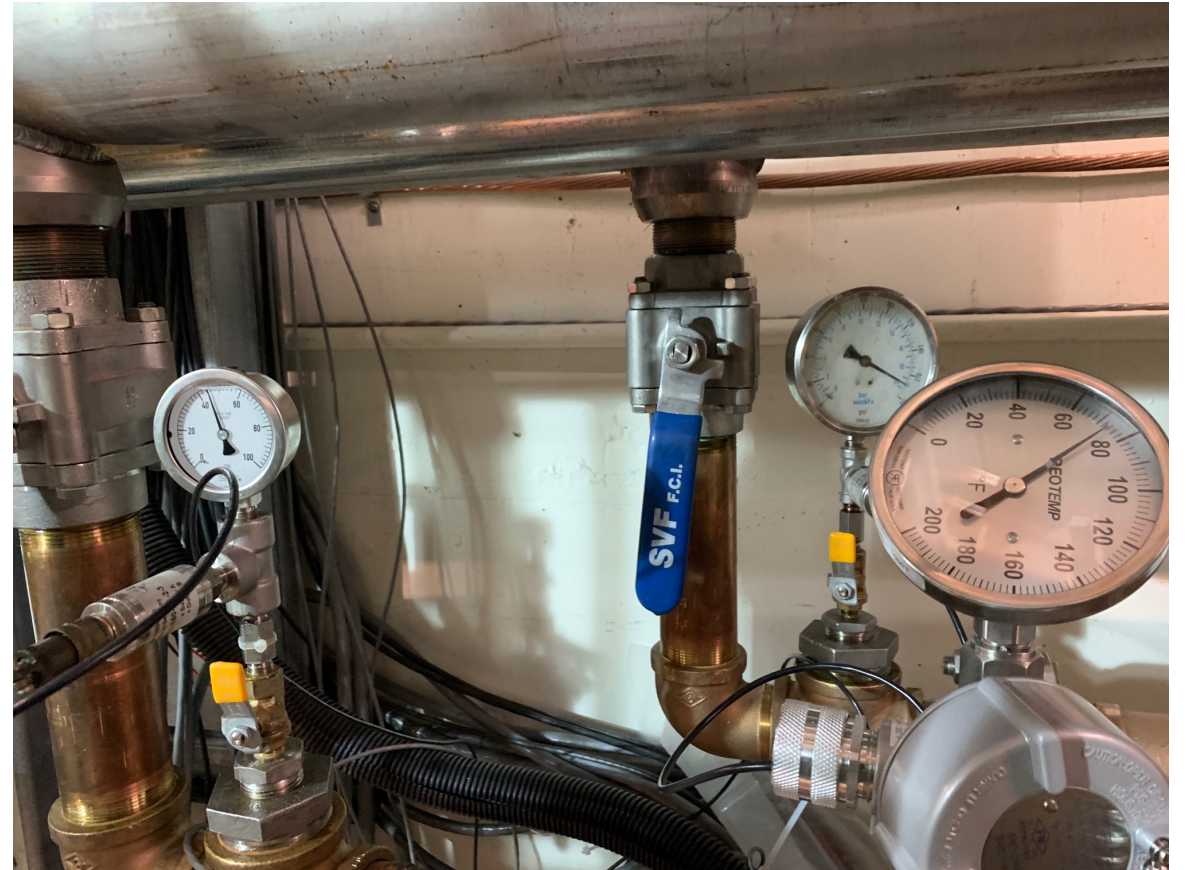
[Direct link: https://e906-gat1.fnal.gov/data-summary/e1039/target-cryo-cont.php?subsys=LabJack+U3&Y0=2022&M0=10&D0=07&h0=21&m0=22&s0=00&Y1=2022&M1=10&D1=07&h1=23&m1=22&s1=00&show_type=Plot&SF=0]

Look at the plot and confirm that the last recording time is within one minute and all the temperature readings are below the limit (115 F).



Check LCW main inlet, an outlet to NM4

If you are on the cryoplatfrom, take the stairs (towards the lower level) and stop mid-way when you see these gauges towards the East-wall of the hall. You will see labels "LCW Supply" and "LCW Return" on those two separate piping.



Both "LCW Supply" and "LCW Return" has a pressure gauge and a temperature gauge. Mark those values on the spreadsheet.

Check LCW inlet and outlet parameters to the ROOTS

When you are on the cryoplatfrom proceed to the end of the wall on the west-side as shown on the pictures.

You will see two water panels (top & bottom). There are 5 yellow handles on each panel.

Read the values on each meter
Inlet meters: manual
Outlet: digital

Also, read the main supply pressure gauge towards the left of the panels.

Mark the vales on the spreadsheet



Check ROOTS pumps pressure and temperature using HMI

Location(s)

1. At the control-room
2. On the cryoplatform



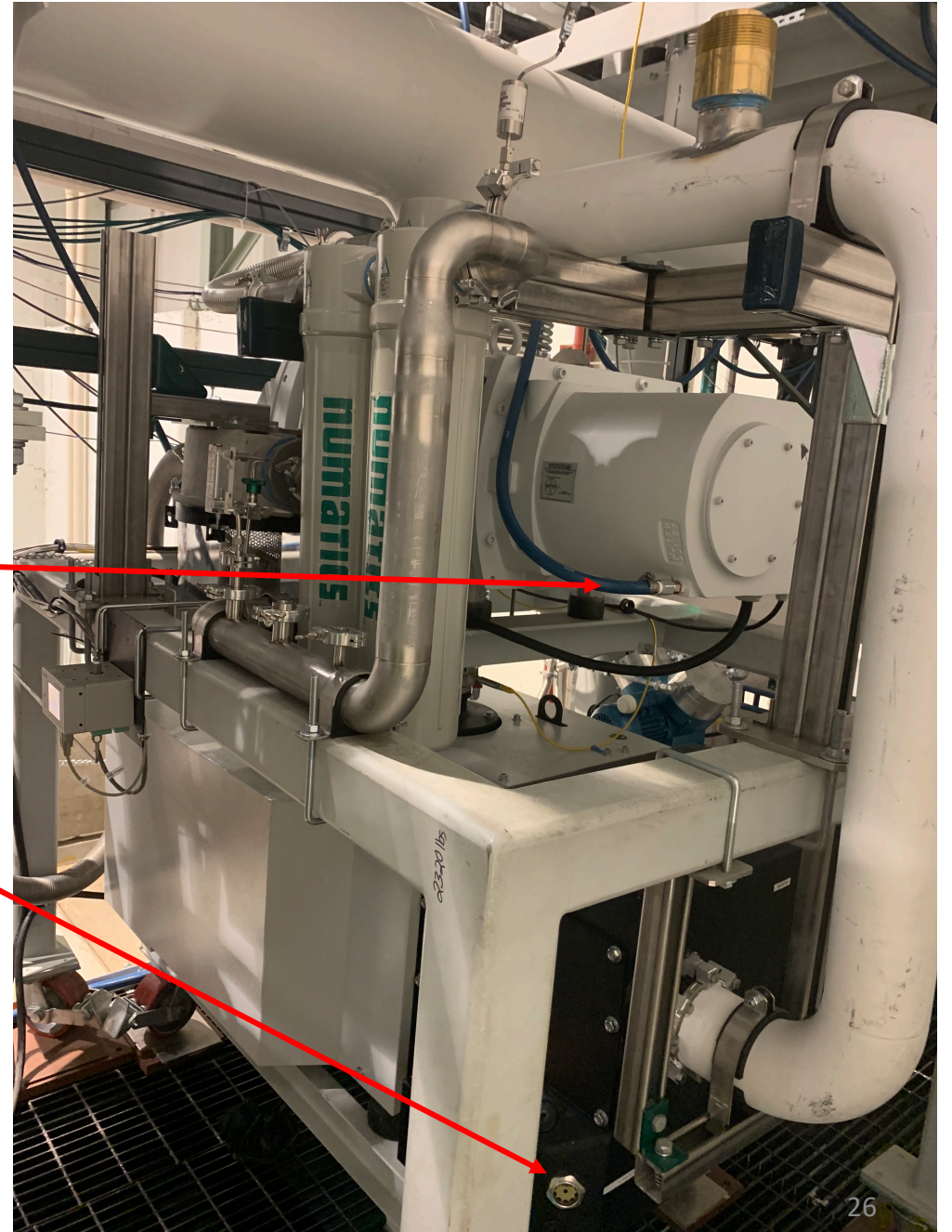
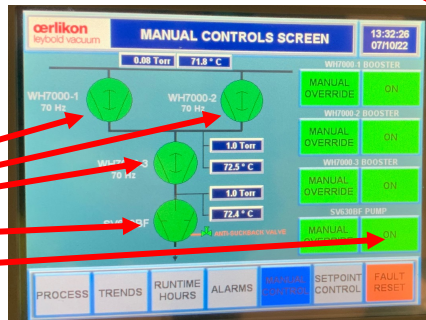
Mark these pressure and temperature values on the spreadsheet as shown in the display

Check oil levels of all 4 pumps

There are 4 pumps in the ROOTs pumps setup

- Check the oil level on each pump
- Oil-level indicators
- When the pumps are running > Level should be around the middle
- When the pumps are not running > Level should be close to "full"

If a pump is running, then you will see the corresponding indicator (circle) is "green" and ON/OFF status on right hand



Notify Target Expert shift contact if the levels are different from the above mentioned levels.