*Add a scene at the beginning of the video (30 sec):*

*Black background with white text:*

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Main procedures:

**STEP 1:** Take off insulations.

**STEP 2:** Drain Ga

**STEP 3:** Drain plumbing lines

**STEP 4:** Disconnect sensors from the terminal

**STEP 5:** Remove sensors and dissemble the tank

**STEP 6:** Clean up (not shown in this video)

Before the takedown:

1. Plug in fumehood heaters until the fumehood is ~35C.
2. Stop the rotation and switch off the servo control.
3. Raise the magnet, put on jacks, and close off magnet chilling loops
4. Enter sleep mode: heat pad power set to 10W; Lab chiller set to 35C.

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00:11 - 00:15, (cut)

Subtitle: **STEP 1:** Take off the insulation (saran wrap)

00:35 - 00:40, (cut), 01:22-01:30

Subtitle: Take off the insulation (aerogel and Insulfrax)

01:30 - 01:35, (cut), 01:59-02:10, (cut)

Subtitle: Cut off zip-ties

02:20 - 02:32, (cut),

Subtitle: **STEP 2:** Take off the bottom valve plug and install a quick disconnector. The valve remains closed

02:48 - 03:01

Subtitle: Turn on the gallium transfer hose heater and flush the hose with Argon gas.

03:01- 03:13

Subtitle: Heat up the tubings near the bottom of the Ga storage and all the transfer lines.

03:14 - 03:24, (cut)

Subtitle: Connect the heated gallium transfer hose to the tank valve and the flow valve located on the left side of the fume hood. Open all the valves, turn on the pump, and start pumping gallium!

04:43 - 04:47

Subtitle: When the gallium is drained from the tank, disconnect the hose and shut off the valve.

04:47- 04:58

Subtitle: Disconnect the hose from the storage and shut off the valve. Flush the tank and the hose with Argon to push excess gallium out.

04:59 - 05:09

Subtitle: **STEP 3:** Turn off the lab chiller and rooftop chiller, close off the chilling loop.

05:09 - 05:31

Subtitle: Peel off the New Pig adhesive drain protector. Connect hose to the bottom of RoMag and drain the chiller loop.

05:31 - 05:38

Subtitle: Once the chiller loop is drained, take off the filtering station.

05:38 - 05:55, (cut)

Subtitle: Remove and dissemble the expansion tank and its tubings.

06:00 - 06:28 (speed up x1.5), (cut)

Subtitle: Unscrew the bleeder plug and screws on the top of the heat exchanger.

06:49 - 06:54, (cut), 07:05 - 07:15,

Subtitle: Once the draining is done, remove the hoses attached to the heat exchanger.

07:15 - 07:20

Subtitle: Remove the top heat exchaneger

07:20 - 08:21, (cut),

Subtitle: **STEP 4:** Remove the rest of the saran wrap, and disconnect the sensors and power from the device terminal.

08:42 - 09:13

Subtitle: Remove the inner layer aerogel blanket.

09:13 - 09:50 (Speed up x1.5)

Subtitle: We had some leak from the top lid. But it’s time to remove all the sidewall thermistors. Also remove the holiday emergency heating tape.

09:50 - 10:11

Subtitle: Carefully carry the tank down.

10:11- 10:41

Subtitle: **STEP 5:** Unscrew the top lid sensor holders.

10:41 - 10:49

Subtitle: thermal grease is everywhere!

10:49 - 11:16, (cut)

Subtitle: Use a needle-nose plier slowly wiggling out the thermistors with care.

11:50 - 12:14

Subtitle: If it gets stuck, use a heater to heat up the regions next to the sensors on the top lid to unfreeze the gallium.

12:14 - 12:20, (cut)

Subtitle: Heat up the top lid, then take a piece of wood block, (located at the cabinet next to the sink), and use a mallet hammer to knock the top lid until it loosens.

12:38 - 13:00

Subtitle: Unscrew the Doppler probe holders, and carefully heat up the area around it.

13:00 - 13:40

Subtitle: Use a wide-nose plier and place a piece a paper between the plier and sensor, slowly pull it out with care. Do the same for all the Doppler probes and plugs.

13:40 - 13:53

Subtitle: Take off the bottom valve, roughly clean the interior with hot water to unfreeze the bottom. The tank should be placed within a gallium recycle bucket.

13:53 - 14:10

Subtitle: Flip the tank and take off the bottom lid using the same method as to the top lid.

14:10 - 14:12

Subtitle: Finally, remove the o-rings from both top and bottom lids and prepare for a thorough cleaning.

*Add a black scene with white text (~30 sec) in the end:*

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Thing to be aware of during the cleaning (**STEP 6**)

1. No gallium should go down to the drain. Clean all the gallium contaminated stuff inside the pink gallium recycle buckets.
2. Gently use soap and hot water for the copper and stainless steel parts. Apply alcohol and acetone to get rid of grease and marks. Do not apply acetone on any plastics.
3. Use ultrasonic cleaner for smaller screws and parts.
4. Use a scraper to clean the gallium from the floor and any surface after it freezes.
5. Organize and place everything back to its original storage location, and record the location information.

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