

AD/CRYOGENIC RELIEF TESTING CART INSTRUCTIONS

WARNING, MUST READ BEFORE USE

- Do Not Use This Test Cart Without Permission From Cryogenic Department Head or Designee.
 - You Must Be Formally, Hand's On Trained Prior to Using This Relief Test Cart.
 - If You're Unsure, Stop and Ask For Directions
 - You and anyone in the area must wear hearing protection, face shield, and a hard hat.
 - Stand behind the control panel, not over the relief valve, keep all others away from the test cart area.
 - Do testing in an open well ventilated area.
 - Record relief data and test results on Relief Device Maintenance/Test Record Form.
1. If a Nitrogen gas cylinder is connected to PRVTC V2 and/or PRVTC V4 make sure they are valved out.
 2. Completely back out regulator PRVTC R1.
 3. Open valve V8 to vent any residual pressure in the manifold, then close it.
 4. Open vent valve V-11 to vent any pressure from the buffer tank.
 5. Check to make sure valve V6 is in the closed position
 6. Install the relief into one of the test ports on the buffer tank (PRVTC V14 or V15) using any necessary adapters that are rated for or > your test pressure. There shouldn't be more than two or three threads showing on any threaded fittings. Open valve and close vent valve.
 7. Fully back out regulators R-3 (Low Press.) and R-2 (High Press.)
 8. Turn on the appropriate pressure read-out PI-1 for Low Pressure (0-300 psig) or PI-3 for High Pressure (0-1500 psig).
 9. Open the vent for the pressure read out you will not be using.
 10. Open valve (PRVTC V17) to the PI-1 gauge if it's not already open.
 11. Close valves PRVTC7, V-10, V-11, unused test port valve, and vent valve on the pressure read out you will be using if they are not already closed.
 12. Hook up Nitrogen gas cylinder to PRVTC V2 and/or PRVTC V4 if not already hooked up and open valves.
 13. Set regulator PRVTC R1 to 25 – 50 psig above the pressure you'll be testing at.
 14. Set valve V-9 to the range you will be using Low (0-300 psig) or High (0-1500 psig).
 15. Set valve V-16 to the range you will be using Low (0-300 psig) or High (0-1500 psig).
 16. Slowly open valve V-6 to regulator manifold.
 17. Spray some liquid leak detector into the open end of the relief so you can determine when it starts to weep.
 18. Slowly dial in the regulator you'll be using, either Low (0-300 psig) or High (0-1500 psig).
 19. Watch the relief and record the pressure at which you first see bubbles coming out. Continue to dial up the pressure till the relief fully relieves, but **DO NOT EXCEED 116%** of the relief's rating. Record the pressure.
 20. Back out the regulator and vent pressure through V-11 till relief reseats.
 21. Repeat steps 18 and 19 for a total of 3 cycles recording weep pressure, relieving pressure, and reseal pressure for each cycle on the Relief Device Maintenance/Test Record Form.
 22. Isolate gas supply cylinders.
 23. Vent manifold gas by opening valve V-8, Vent down buffer tank using valve V-11, close them when done.
 24. Fully back out regulator PRVTC R1 and Turn off pressure readouts.
 25. Check gauge PI-1 to make sure test cart is depressurized.
 26. Close test port valve(s) on buffer tank and open vent valves. Remove relief and plug the test port to keep it clean inside.
 27. Attach a calibration sticker/tag to the valve indicating the test date, weep, discharge, and reset pressures and tester's initials.

Relief Device Testing Acceptance Criteria

- a) Relief Device shall first pass Visual Inspection Acceptance Criteria (subsection 6.1).
 - b) Relief Device start-to-discharge pressure shall be within +/-3% of marked value for settings above 70 psi, or within 2 psi for settings up to and including 70 psi. [per ASME BPVC Section VIII DIV.1, UG-126(d), 1989].
- Caution:** Relief devices which will not reseal at a pressure above the normal operating pressure of the vessel, but below relief set pressure, should not be returned to service without prior consultation with the group leader.