HBLT User *Quick* Tips

- ***Warm up for 24 hours before calibration***

Large changes in temperature may affect the internal pressure sensor. The best accuracy is achieved and maintained when the HBLT is at its normal operating temperature when calibrated.

- ***Always leave the HBLT turned on.***

System accuracy and test repeatability will be improved when the HBLT is at its normal operating temperature – the same temperature that it was calibrated at. The HBLT consumes very little power when left in the idle state.

- ***Purge the HBLT every morning using a syringe or the Vacuum Purger***

Test repeatability will be improved if the HBLT is purged each day using either a syringe or a CDI Vacuum Purger.

The HBLT pressure control system works best when there is no air in the hydraulic circuit. The syringe or vacuum purger dramatically increases the size of any trapped air pockets allowing the flowing water to sweep them out the outlet port. It is extremely important to maintain the vacuum during the entire purge exhaust stroke for maximum effect.

- ***Put the fluid supply on same surface as the HBLT***

Placing the water reservoir too high or too lower puts a plus or minus head pressure on the inlet port. This affects the calibration and the starting pressure if there is a product attached to the outlet port.

- ***Insure that the water reservoir is vented.***

Venting the water reservoir prevents creating a vacuum inside the reservoir as the HBLT draws the fluid out. The reservoirs sold by Crescent Design have a small hole drilled in the thread area of the screw cap.

- ***Keep the water reservoir capped.***

If the reservoir water is not capped, dust, bacteria, and spores can settle into water causing premature filter replacement or contaminated water due to bacterial, fungal or algal growth. This is most important when the HBLT is not located in a clean room environment.

9932 Mesa Rim Rd. • Ste B • San Diego • CA • 92121 • 858-452-3240 • Fax 858-452-3241
www.crescentdesign.com

- ***Periodically clean the water reservoir.***

To prevent the accumulation of contaminates, empty and clean the water reservoir. Use a mild detergent to clean any material built up on the reservoir walls and the inside of the tubing. Insure that all detergent is rinsed from the reservoir and tubing. If the tubing is too difficult to clean, replace it.

- ***Only use fingers to operate the touch screen.***

The LCD screen is glass. Tapping the screen with a hard object can break the glass. The touch portion of the screen is plastic. Tapping this membrane with a hard object can cause the touch sensing membrane to fail and scratch the surface making reading the underlying LCD difficult.

- ***Document passcode information.***

If using a passcode, place a tag on the HBLT cover specifying how to retrieve the passcode when needed. Secure the passcode and provide a procedure to retrieve it that does not rely on a single individual. Document the individuals authorized to know the passcode. Counsel each individual on the proper use of the passcode.

- ***Document each HBLT configuration.***

Create a maintenance binder for each HBLT that contains the following information:

1. A copy of the service contract.
2. A copy each test's settings.
3. A copy of the engineering configuration settings.
4. A copy of the passcode retrieval process.
5. A copy of each printed calibration report.
6. A copy of the HBLT manual.
7. A copy of the software download procedure that includes the location of the Crescent Design HBLT serial cable and the software for the download.
8. A record of each customer support call.
9. A record of each maintenance event. Crescent Design returns a copy of this information when returning an HBLT after service.
10. A notes section that includes this document and notes on the operation and maintenance of the HBLT.

Either keep this binder with the HBLT, or place a label on the HBLT describing where to find the binder.

- ***Purge non-water liquids from the HBLT after use.***

If using glycerin or any liquid other than water during testing, purge the liquid from the HBLT and replace it with water. Some materials can leave a residue or particulates that can damage the seals.

- ***Never use hydraulic oil or other liquid that can damage the valve or cylinder seals.***

If in doubt, contact Crescent Design before using a new hydraulic medium.

- ***Maintenance should be done by Crescent Design personnel or qualified onsite maintenance personnel only.***

With the cover removed, there are several locations that pose a shock hazard. In addition, improper adjustments can result in damage to the HBLT. Always use electrostatic suppression procedures to prevent damage to the electronic components.

- ***Clean the touch panel with a soft dry cloth.***

Do not use any liquid cleaner. Harsh cleansers or abrasive cloths can damage the touch screen surface making the image difficult to see.

- ***Keep a ready supply of fuses near the HBLT.***

The 240 V fuse is a DigiKey F2424-ND, Mfg Part # 021801.6HXP.

The 120 V fuse is a DigiKey F2430-ND, Mfg Part # 02183.15HXP.

Keeping these fuses at hand prevents expensive down time in the event of an open fuse. If a replacement fuse continues to open, contact Crescent Design for customer support. This could mean that there is an electrical problem that requires repair before further use.

- ***When shipping the HBLT, package the HBLT following the instructions included with the RMA materials.***

Failing to properly package the HBLT for shipment can result in considerable damage to both the HBLT enclosure and components within the HBLT.

- ***Before shipping the HBLT, insure that the maintenance binder information is current.***

Insure the proper recording of each test and the engineering settings in the maintenance binder. While Crescent Design takes care to protect these settings, the customer is responsible for having a backup of this information.

- ***Minimize the compliance of any test fixture component.***

Do not allow the fixture to affect the test. This is especially true when using non-stainless steel extension tubes when building a flexible fixture. Plastic extension tubes can have a wide range of compliance characteristics. Use the most non-compliant tubing with the shortest length possible.

This is especially true when using the Smart Manifold in parallel mode. Each open port adds its total compliance to the hydraulic circuit making the compliance as much as ten times a single port's compliance.

- ***Use the Smart Manifold sequential mode when testing for burst.***

Since the test times are usually short for burst tests, using the sequential mode gives more accurate burst information and eliminates the need to hunt for the failed port.

- ***Use the Smart Manifold parallel mode when testing for fatigue.***

Since the test times are usually long for fatigue tests, using the parallel mode shortens the total test time. Because most of the time is spent cycling the pressure, the burst or leak hunt times are just a small proportion of the overall test time.

- ***Fasten all serial port cable connections with the shell screws.***

When using Pressure Manager or other remote software, securing the serial cable shell screws prevents the cable from loosening and causing data errors. This is especially true when using laptops because of the changing position of the laptop.

- ***Follow the USB to serial port adapter installation instructions exactly.***

Some USB devices require a software installation prior to plugging in the device for the first time. Otherwise, the operating system may install a generic driver in its place causing conflicts with the manufacturer's driver.

- ***Do not use, store or ship the HBLT in freezing temperatures.***

The water in the HBLT can freeze and expand destroying the pressure transducer. When storing or shipping the HBLT when there is the possibility of freezing temperatures, drain all the water from the HBLT. Insert the inlet connector with the hose removed into the inlet port. Purge the HBLT replacing the water with air. On the last couple of purge cycles, tilt the back of the HBLT up about 18" to allow the water in the pressure transducer to drain out during the purge.

The transducer itself can be stored and used down to -40 °C or -40 °F. However, the expanding ice can actually shatter the sensing element.