

Custom Crimp Test Bench

Preventative Maintenance and Operational Tips

This document contains the necessary information to effectively manage and maintain a Custom Crimp test bench. The models that are relevant to this procedure are as follows:

BE 1500E
BE 2500E
BE 3500E
IND 350/1500E
IND 350/2500E
IND 350/3500E
IND 350/4000E
IND 350

Special Order Benches may also fall under these guidelines as they commonly use many of the same components. Contact Custom Crimp to determine if the test bench in question falls under relevance for this procedure.

Preventative Maintenance

There are several items and procedures that can positively impact the quality and lifetime of a test bench. Monitoring and performing these tasks can help prevent damage to important and expensive components on the test bench. The list of tasks and procedures are as follows:

- 1) Check the level of the air tool oil every 2 weeks. The air tool oil is located in the lubricator. The lubricator is shown in the picture below. While air tool oil is not specifically necessary for the hydraulic pump, it does help the air solenoid valves and the air regulator properly function over time. If the level is low or empty, refill with any standard air tool oil.



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- 2) Check the water filter or water strainer every 3-4 weeks. All benches are shipped with either a water filter or a water strainer. Some models may have both. It is important to check these to ensure they are not dirty or obstructed. If the filters are found to be dirty, replace the filter bag in the water filter. Custom Crimp carries additional water filter bags if needed (P/N: 4BA98). If the strainer is dirty, remove the plug in the end of the dead end of the filter. The strainer should come out along with any dirt or sentiment. If the strainer filter screen is still fairly clean after washing, it can be reused. Replacement filter screens can be found at McMaster-Carr (P/N: 43935KXXX). 150 mesh or small is recommended.



- 3) Another important task is to check the cleanliness of the supply water. Supply water can either be city water hook up or a reservoir system likely filled with a well or city water supply. While the filter bag and strainer will work to keep dirt and sentiment out of the water, they will not stop harmful chemicals or hard water.

The hydraulic pump is a very sensitive piece of equipment and the quality of water can have a large impact on the lifetime and effectiveness of the pump. City water supplies potentially need to have a filtration systems installed, at least on one shop outlet, to remove items such as iron from the water. Iron can cause heavy amounts of rust in the pump. When the system is not operated for a few days, the iron can begin to settle in the pump and collect into sentiment sized particles. These particles can destroy the hydraulic seals and scratch the hydraulic piston. Once the hydraulic piston is damaged, new hydraulic seals will not last more than a couple weeks at best. If the water being used is in question, have the water checked. Also read the pump guidelines and see what is recommended for the hydraulic pump. The pump user manual and instructions are provided with the bench.

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- 4) Air supply is also important to monitor. The air supply to the bench should never exceed 100 psi. The test benches are designed to work at 80-85 max to get the maximum hydraulic pressure. Exceeding 100 psi can permanently damage the dump valve, leading to a costly fix or replacement.

Dry air also needs to be monitored. None of the components in the air supply line to the pump, including the air filter, air lubricator, air regulator, air solenoids, dump valve diaphragm, and air drive in the pump, work well with water. Humid or water saturated lines will instantly begin to corrode the internal components of all the air system components. The pump is especially important to protect because its air drive will corrode and seize up. This can lead to expensive repairs and inconvenient down time. It is recommend to install an air dryer to the shop air if not already installed.

Operational Tips

- 5) Anti-seize high pressure grease is a highly recommended item. The test bench comes with adaptors to connect to the manifold block. These adaptors are used over and over again and respond very well to anti-seize grease. The grease will increase the lifespan of the adaptors as well as protect against galling. Stainless steel is susceptible to galling because of the soft, gummy material. Once the adaptors are galled, odds are they will need to be replaced and adaptors can be expensive.
- 6) Bleeding the air from the test hose specimen is an important task. Bleeding the air from the hose before testing is important because trapped air takes a long time to compress. Failure to properly bleed the hose or bleed the hose at all will result in excessively long test times. Long pressurizing times lead to excess wear on the hydraulic pump. High cycle rates and long cycle times add up quickly and shorten the lifetime of the hydraulic seals.

In addition to wearing the hydraulic pump out faster, failure to bleed the air from the test hose can cause a 1 minute test last up to 20-30 minutes. Air is compressible so most of test time will be spent compressing air instead of testing the hose. Compressed air is also explosive so hose failures can be much more violent.

- 7) High cycle rates and long cycle times are important to watch for. Both of these issues can cause the lifespan of your pump to be diminished. Bleeding the air from the hose diligently can help prevent these situations but sometimes the issue can't be avoided. Long hose lengths of approximately 25ft or longer can cause longer cycle times because of the long length of hose that can expand. Hoses of 1 in. or larger diameter also have longer cycle times which can be difficult to avoid.

High cycle rates can be avoided easier, however. The best way to lower the cycle rate is to start each test at zero air pressure or close to zero (10-20 psi). This will keep the pump from cycling extremely fast at the beginning of a test. Working the regulator in a moderate pace up to the required amount allows for a smoother operation for the pump. This can help with the pump lifespan.

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- 8) The hydraulic pump is the most expensive and most sensitive component on the test bench. It is important to read the operational manual that is provided from the manufacturer. Understanding the pump requirements and paying attention to the pumps needs will have a positive result on the pump's life. The operational manual is included in the paperwork sent with the test bench. If the information is misplaced or lost, contact Custom Crimp. A copy can be sent over.
- 9) Nano wax or Mist and Shine can be used to clean the front polycarbonate window. It will clean the dirt and grime from the window with damaging and scratching.
- 10) Turn the water spigot off when the bench is not in use. If a failure occurs with the electronic solenoid on/off valve and the valve is stuck open, the water will not stop running. This can cause small flooding, especially left overnight or over the weekend. Turning the spigot off during idle times is a good habit.