



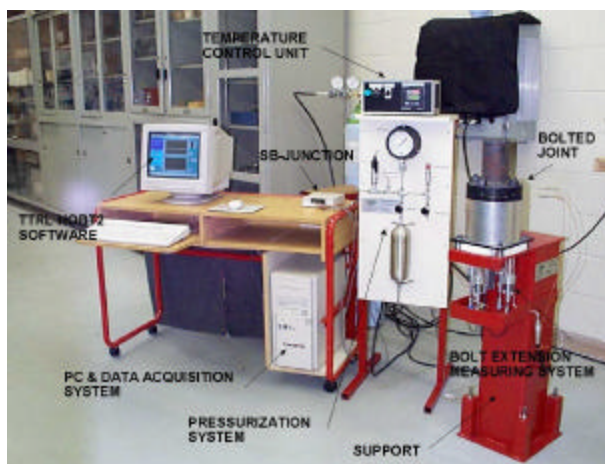
## Technical Bulletin

To: Sales Force Date: January 21, 2005  
From: Applications Engineering  
Subject: Hot Blowout Testing 2 (HOBT2) for the Layman

### **HOBT2** – (**HOt **Blow Out **Iest -Version **2****)****

**Introduction:** This test is used to attempt to determine the safe operating temperature for PTFE based gaskets. The test can be run at various internal pressures, in order to qualify the gasket for 150# class flanges, or 300#, etc. Garlock currently runs the test at 435 psig, to qualify for 150# flanges. (The max pressure for 150# flanges is 290 psig; flanges can be tested at 1.5 times the max.)

**Test procedure:** The test is run in three steps. The first gasket is compressed, pressurized to a defined pressure and held while temperature is steadily increased until it blows out. The temperature is accurately controlled, while bolt load is monitored throughout the test. Thus, differences from specimen to specimen are easily defined.



PTFE based gaskets are affected by thermal cycles, where they may lose some bolt load during each heat up and cool down cycle. Because bolt load retention is probably the most important property for PTFE gaskets, two more gaskets are tested, this time using three thermal cycles. The computer now takes the bolt load and blowout data from the tests and calculates a safe operating temperature. For an added margin of safety, the computer subtracts 100°F from that value.

**Understanding the results:** The simplest use of the data is to directly compare the values for various gaskets. Obviously, the higher the temperature value from the tests, the better. For example, on the brochure for Style 3594, we compare that style to a gasket that has the same materials of construction, but is a skived gasket, and the HOBT2 result is 310°F vs 425°F for the 3594. The GYLON process increased the temperature rating by 115 degrees!



But the competitive product is OK at lower temperatures, right? Maybe not. There is another, less obvious GYLON advantage shown with the HOBT2 results. There is an advantage to using a GYLON gasket even when the operating temperatures are below the rating for the competition. Remember, a higher HOBT2 result means that the GYLON maintains bolt load better than the competition. That means that even at 250°F, the GYLON will maintain more bolt load. Since the HOBT2 test uses only three thermal cycles, and since many applications could involve numerous cycles PER DAY, the long term loss of bolt load will eventually catch up with the lesser material.

Unfortunately, not all competitive products have lower HOBT2 values. In those cases, we can at least show that the Gen 2 styles are equal to the competition. That way, if price is the key issue, we can promote the Gen 2 styles, rather than lose the business to the competition.

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