

BUTTERFLY VALVE CYCLE TEST REPORT PER KF WRITTEN PROCEDURES AMBIENT PERFORMANCE TEST

Size - 3" - 150 Class
Valve Model - Series Visa-BG-0300423255-V
RT test number - KF1002
Prepared for - KF Industries Inc.
1500 SE 89th St
Oklahoma City Ok. 73143

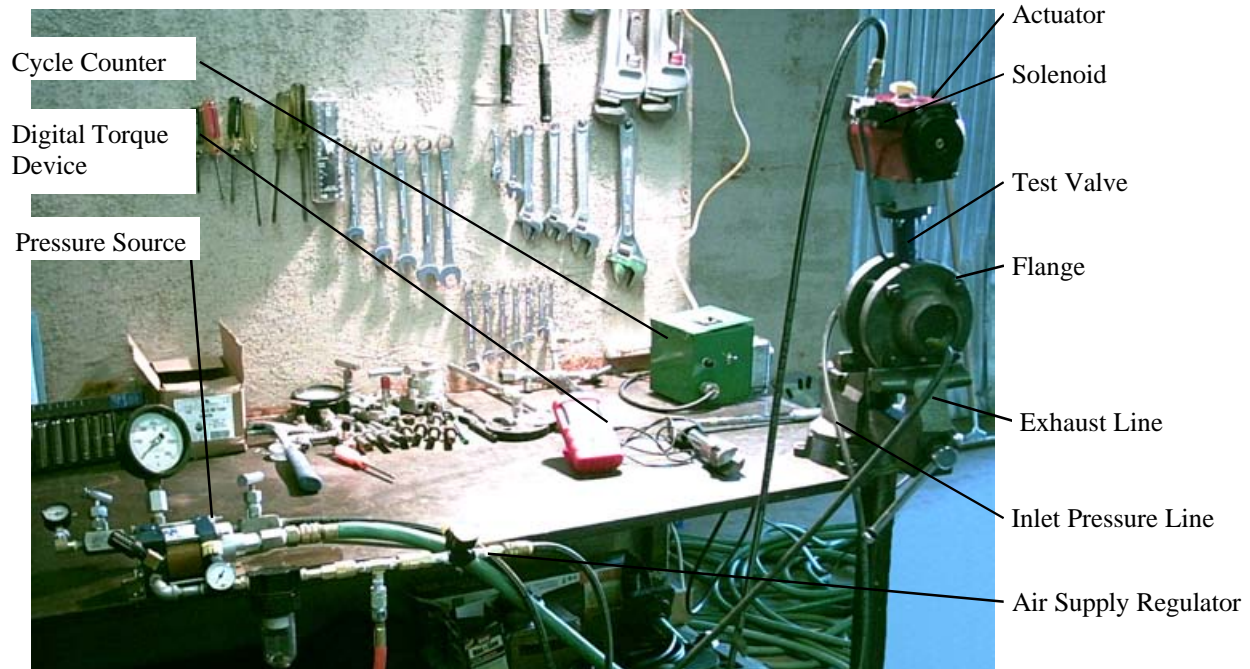


Testing Procedures:

1. Mount Actuator and install valve between Weld-Neck Flanges.
2. Secure Valve from moving.
3. Connect Cycle Counter and Solenoid.
4. Apply City Water Pressure (60 psi) to valve.
5. Operate Valve to ensure everything is in proper working condition.
6. Measure Torque to establish new valve baseline. Measure torque at 60 psi and at 200 psi and record.
7. Start Cycle counting with the valve flowing city water (60 psi). One cycle equals one full open stroke and one full closed stroke. When the valve closes it must have time to reach full city water pressure before opening.
8. Monitor valve for performance. Check valve to ensure that it is not leaking at city water pressure. When valve reaches 5000 cycles MOL stop test and measure torque. Measure torques at 60 psi and at 200 psi record at least 10 measurements. One measurement will be @ 200 psi for 15 minutes. Verify valve performance. The valve is not allowed to leak at any time. The valve must operate smoothly with the torque wrench. The actuator must be able to open and close the valve.
9. If the valve performs satisfactorily during the torque phase continue with the cycle testing as in item 7 until the valve either fails in some fashion or reaches 30,000 psi. Stop and record torques around every 5000 cycles.
10. Upon completion of the testing photograph the valve and any areas that may show wear, stress or other signs of use.

Test Set Up:

1. The test set up consists of two weld neck flanges that have been seal welded to form a cavity for the butterfly disc to swing freely and still compress the seat to its maximum position.
2. The flanges are tapped to allow for the introduction of water pressure on one side and the exhaust of water on the other side.
3. The actuator is powered by an air reservoir and electrical solenoid. The solenoid is attached to the cycle counter which is set for the fastest cycle time that allows the valve to achieve the test procedures.





Testing Results:

Description: 3” - 150 Class Valve Model - Series Visa-BG-0300423255-V

Cycle Test valve per KF procedures until valve either reaches 30,000 cycles or fails.

Results:

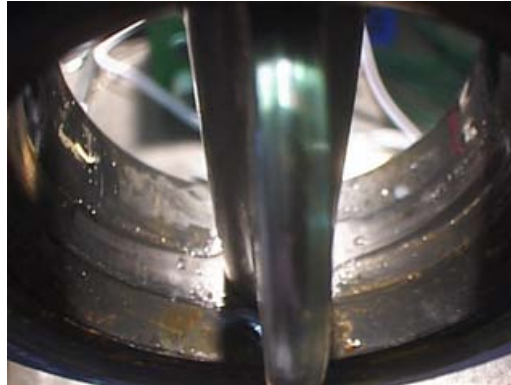
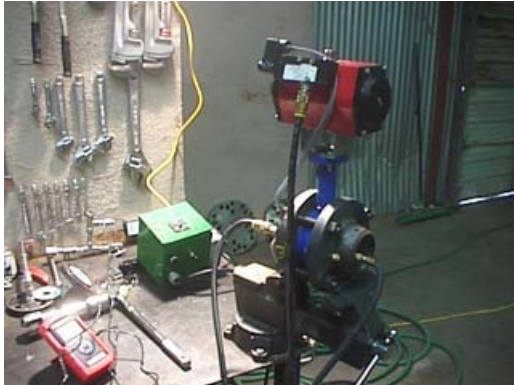
1. The Valve performed very well passing all set criteria. The valve cycled with out any visible signs of distress. The valve held pressure at both city water pressure (60 psi) and working pressure (200 psi) during all phases of the test. The Torque Values remained consistent throughout the test.

Torque Results:

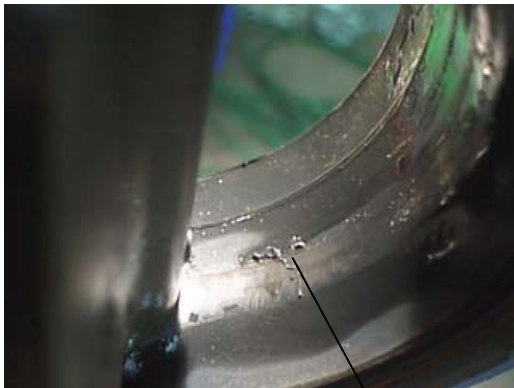
	New Valve Zero Cycles	4700 cycles	11455 cycles	16800 cycles	20288 cycles	25196 cycles	30012 cycles
Close to Open 60 psi	9.4	12.1	9.4	12.1	7.9	8.1	7.9
Open to Close 60 psi	19.1	19.5	17.8	16.8	17.5	17.0	18.8
Close to Open 60 psi	7.9	8.7	9.4	9.6	7.8	7.6	5.8
Open to Close 60 psi	15.2	17.8	17.3	16.8	15.2	15.9	15.2
Close to Open 200 psi	8.7	7.9	7.9	8.9	12.1 15 min	11.5 15 min	8.9 15 min
Open to Close 200 psi	17.8	18.3	19.9	17.3	18.3	17.8	20.4
Close to Open 200 psi	9.1 15 min	10.5 15 min	10.5 15 min	10.0 15 min	9.8	9.4	6.3
Open to Close 200 psi	18.4	16.2	20.7	17.8	18.3	18.1	18.3
Close to Open 200 psi	8.8	7.9	8.9	7.9	8.9	8.4	6.3
Open to Close 200 psi	18.8	18.5	16.6	14.7	16.8	16.4	18.8



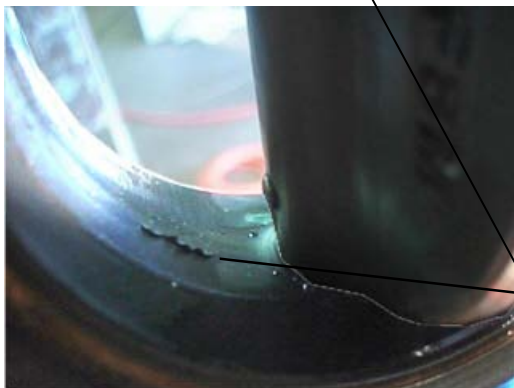
Pictures



Normal wear on the seat. Bottom Side



Note the worn area. This did not affect performance. Top Side



This appeared to be part of the flashing on the molded seat. It was removed very easily and did not appear to be an imperfection in the seat. Top Side