



Air Extraction Valve (VA2) Seating Position Adjustment Procedure

These instructions do not purport to cover all details or variations in equipment nor to provide for every possible contingency to be met in connection with installation, operation or maintenance. Should further information be desired or should particular problems arise which are not covered sufficiently for the purchaser's purposes the matter should be referred to the GE Company

TABLE OF CONTENTS

LIST OF FIGURES

Figure 1.	.....	5
Figure 2.	.....	6
Figure 3.	.....	7
Figure 4.	.....	8
Figure 5.	.....	9
Figure 6.	.....	10
Figure 7.	Typical Installation.....	11

Read ALL Instructions and Warnings before beginning the following procedure.

*****WARNING*****

1. Before beginning this procedure, the Turbine should be stopped or on turning gear and components should be cooled to less than 100 Deg. F.
2. Do not replace travel stop bolts with a shorter, longer or different grade bolt. Bolt failure, causing bodily injury, or excessive valve/actuator leakage, may occur.
3. Before beginning this procedure examine the end of the "closed" travel stop bolt, (see Fig. 1) if there is a 2 stamped in the center of this bolt head, do not perform this procedure. If you are having trouble with a VA2 valve assembly stamped with a 2 please contact AC Controls' Chuck Andrews at (704) 545-4500 for recommendations on how to proceed.
4. Do not adjust travel stop while valve is closed and there is supply pressure to the actuator.

Tools needed to perform the following Procedure:

1. Wire Cutters
2. 2 - 3/4" Wrenches
3. Rubber Mallet
4. Infrared Temperature Gun
5. Number 2 Metal Punch
6. Permanent marker

Purpose:

VA2 valve assemblies may fail to open in 11 seconds, causing the turbine to trip. This procedure is a preventative measure to reduce the likelihood of this occurring, and should be performed on all four bleed valves, even if they have not caused a trip on the unit. If the travel stop has been previously adjusted from its original calibration point, or if the end of the bolt is stamped with a 2, this procedure may not be appropriate. You can visually check to see if the stop bolt has been previously adjusted as indicated in step 1 of the procedure below. If it appears that a previous adjustment has been made, please contact AC Controls' Chuck Andrews at (704) 545-4500 for recommendations on how to proceed. If the bolt is stamped with a "2", this procedure has already been completed and no action is needed.

Procedure

1. Baseline temperature readings should be recorded for the valve, downstream piping, and ambient temperature. Temperature readings should be taken at least one hour after the unit has been placed under load to allow sufficient time for the piping to cool after the valves close. Temperatures should be taken consistently from the same locations. After completion of the procedure, check the temperatures under similar ambient and load conditions as noted in step 5 below.

2. Locate the "closed" travel stop bolt. (See Figure 1) The "closed" travel stop bolt was originally marked with either "anti-sabotage inspectors lacquer", as shown in Figure 2, or wired, as shown in Figure 3. Check to see whether these appear to still be at their factory setting or not. If not please contact AC Controls' Chuck Andrews at (704) 545-4500 for recommendations on how to proceed. Examples of previous adjustment would be a break in the Lacquer or twisting of the wire. If it appears the unit is still at its original setting and the unit was wired, cut the wire loose with a pair of wire cutters and discard. There is no need to replace this wire after completion of this procedure.
3. With valve in the open/shutdown position, mark the actuator "closed" travel stop bolt in relation to the actuator housing. Please note that the mark should extend onto the end cover of the actuator. (See Figure 4 for "marking" example). The washer is free to rotate and will not provide an accurate point of reference. Valve position can be verified by visually looking at the position indicator, which reads either open or closed. If the valve is stuck closed with no air pressure on the cylinder it may be opened by tapping on the valve body with a rubber mallet.
4. Loosen locking nut on the actuator "closed" travel stop while holding the travel stop bolt stationary, so it doesn't change position. (See Figure 5 for locking nut identification) Turn the travel stop bolt clockwise 1-1/4 turns. Tighten the Locking Nut finger tight against the endcap. While holding the travel stop bolt stationary, so it doesn't change position, tighten the lock nut against the seal approximately one turn so that the rubber begins to bulge beyond the metal portion of the seal. The lock nut may be tightened up to one additional turn if there is any leakage at the adjusting bolt.
5. After performing this procedure the valve assembly should be evaluated upon the first following operation of the turbine to insure that the adjustment has not created excessive valve leakage. Leakage thru the valve can be determined after 1 hour under load by going to the valve and checking the downstream piping for a change in the temperature from the baseline data. Temperature readings should be taken (from the same locations as in step 1) on the valve, downstream piping, and ambient temperatures and compared to readings recorded under step 1. If the temperature is much greater than the baseline readings (at approximately same ambient day and load on the turbine) then the stop bolt should be adjusted, (counter-clockwise) in 1/4 turn increments before each startup until the temperature returns to a value close to the baseline temps, (within 50F with similar ambient conditions). This process may be done up to 4 times (up to a maximum of one complete turn). This should be done while the turbine is shut down. Make note of how many 1/4 turns are necessary to eliminate the leakage. Following this procedure the valve should be monitored during the first following shut down to insure the valve opens properly. If this step is necessary and the valve does not open properly during shut down or excessive leakage still occurs, contact AC Controls' Chuck Andrews at (704) 545-4500 for further recommendations.
6. Permanently mark the valve by stamping the number 2 onto the travel stop bolt head when the procedure has been completed. This will enable others in the future to easily ascertain whether the valve has been previously adjusted. (See figure 6).

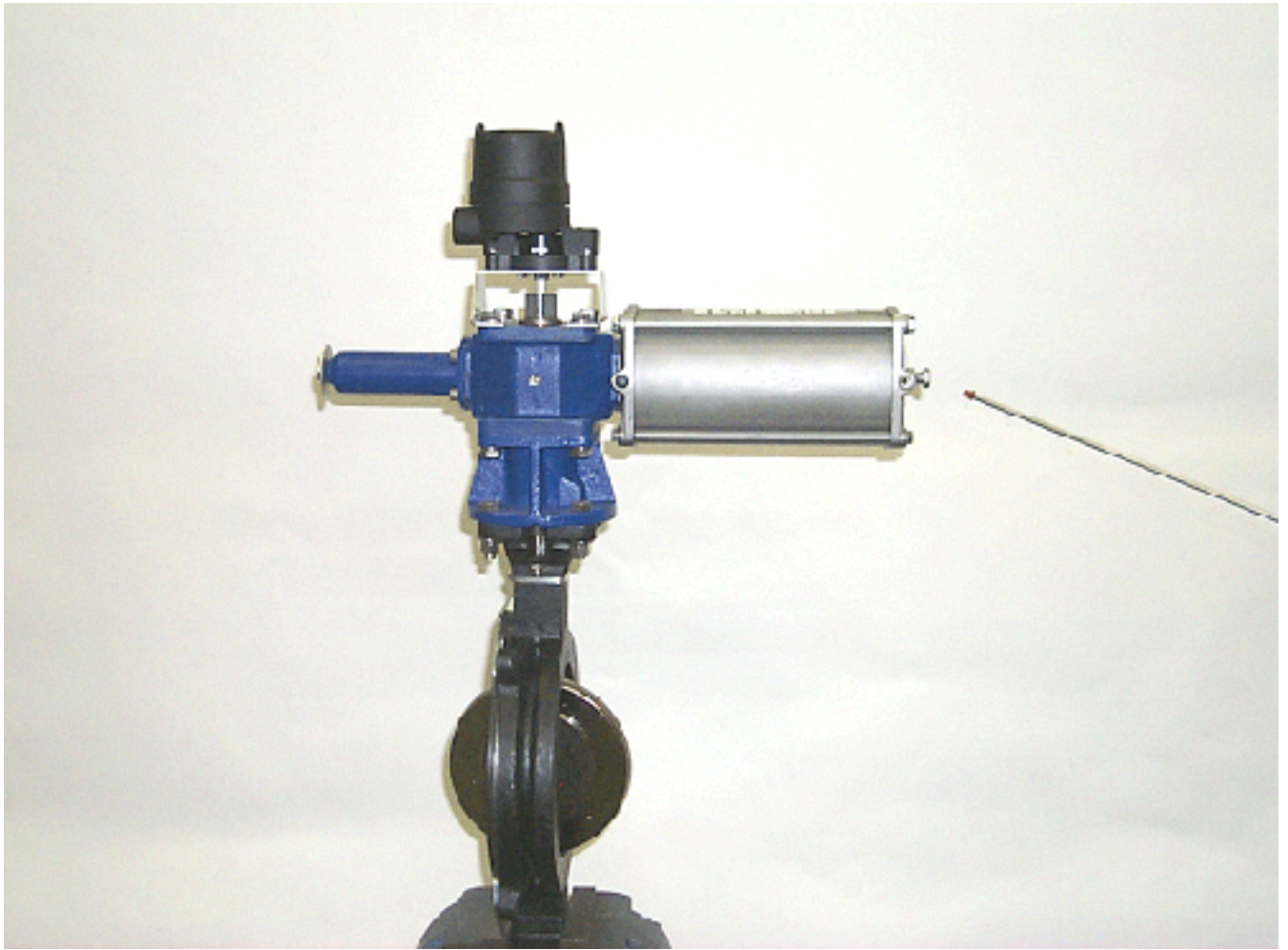


Figure 1.

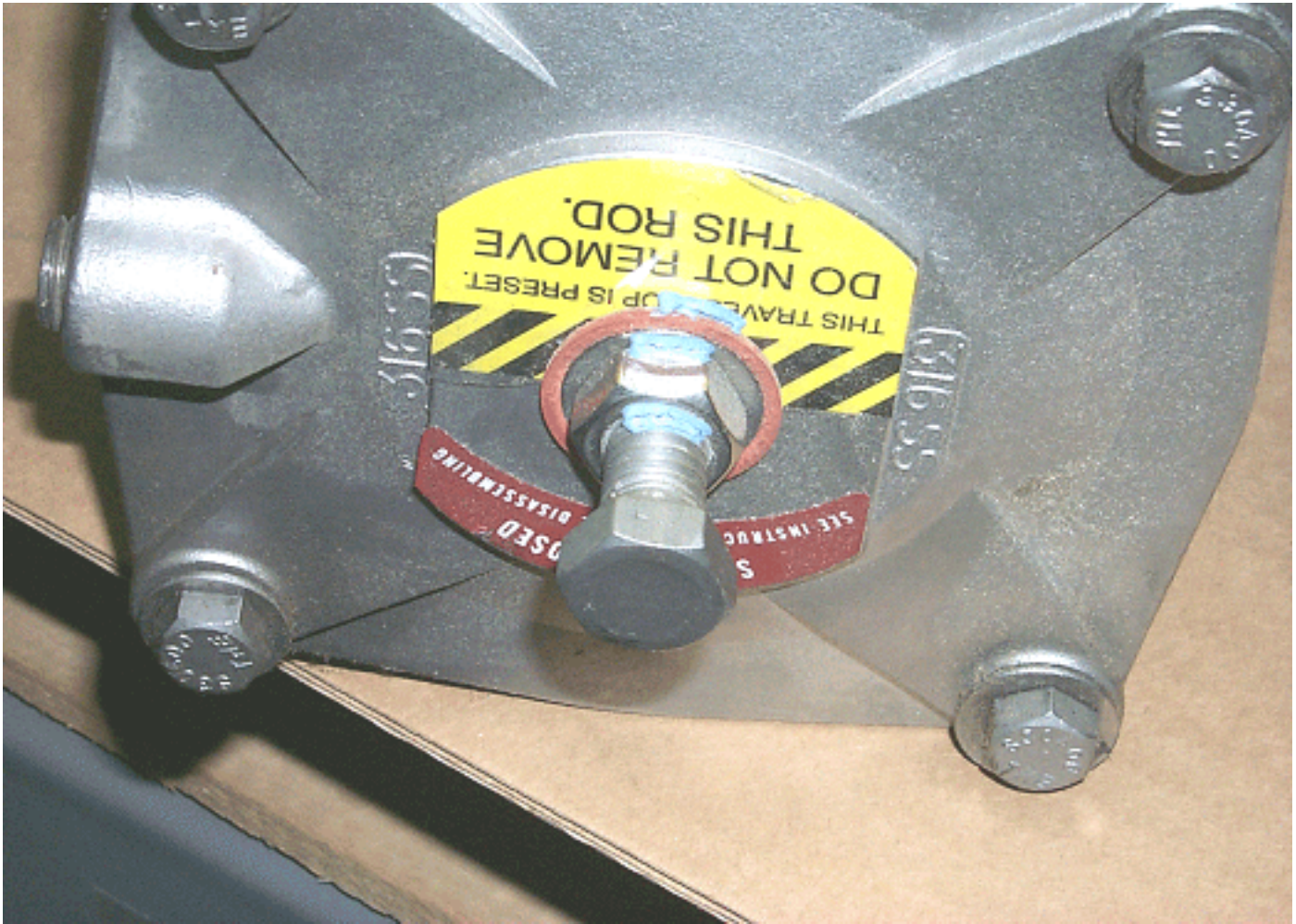


Figure 2.



Figure 3.



Figure 4.

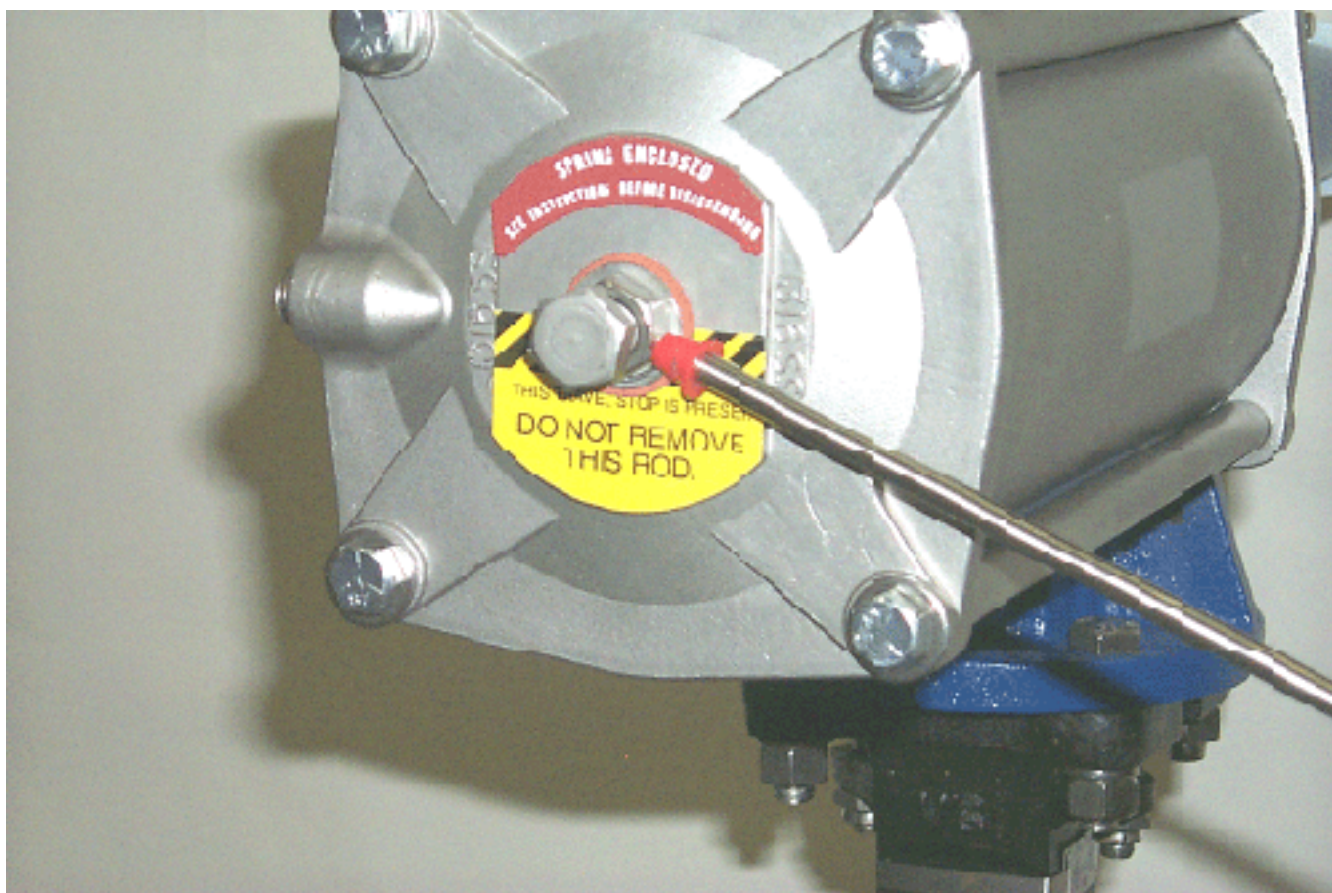


Figure 5.

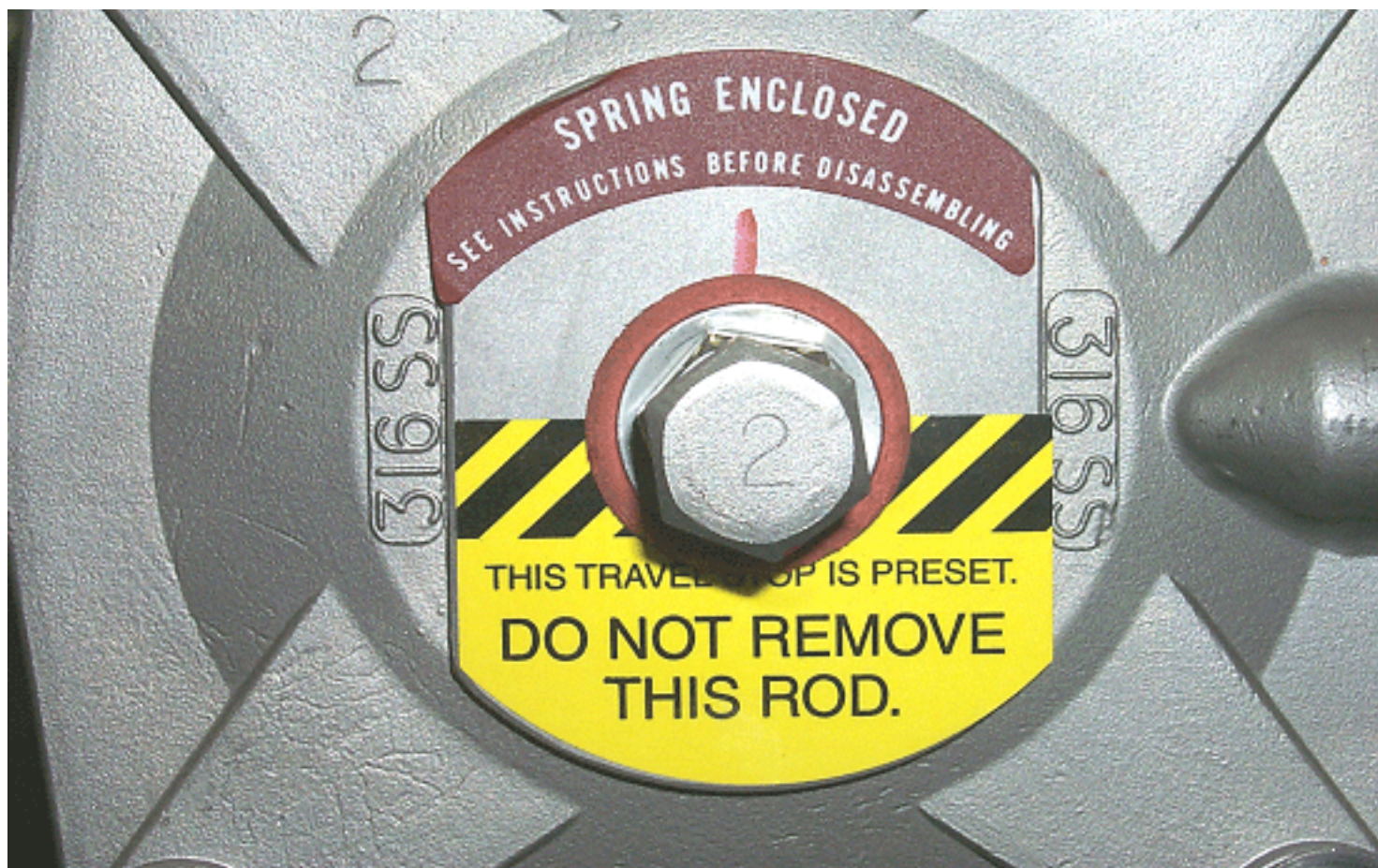


Figure 6.



Figure 7. Typical Installation



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