Maintenance Instruction for Adjusting Actuated Valve Stem Nut

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Gemini Valves feature a self compensating stem seal design which use a pair of Belleville Spring Washers that when energized (flattened) maintains a preload (squeeze) of the stem seal to stem providing an extended period of leak-tight service without any maintenance.

Depending on the application media, temperature, pressure and cycles, the stem seal may eventually wear to the point that the Belleville Spring Washers no longer can compensate for stem seal wear i.e. loosen (de-energize). Evidence of this can be seen by media seepage and eventually leakage from between the top of the valve body and the bottom of the actuator bracket. If left, damage to the valve / actuator materials may require replacement of the complete assembly vs. simple maintenance or replacement of the worn valve.

In most cases, readjustment of the stem nut may enable the valve to be returned to service. The following outlines the procedure to readjust the stem nut. Caution: Before attempting any adjustment, isolate the valve media from the valve being adjusted i.e. no media pressure should be present. Protective clothing and eyewear is recommended.

1. Prevent the stem from turning as the nut is tightened by inserting a wooden or plastic dowel through the valve, or if the valve is in-line (service), hold the 'flats' of the stem then tighten the stem nut until the Belleville Spring Washers have just become fully compressed (flattened). Although the stem nut may spin freely when first tightened, the torque needed to continue tightening will increase progressively after the stem nut contacts the drive key and the Belleville Spring Washers begin to deflect. The torque required to tighten further will increase sharply once the Belleville Spring Washers have become fully flattened. *Tightening beyond this point should not be attempted as damage to the stem seal will result.*

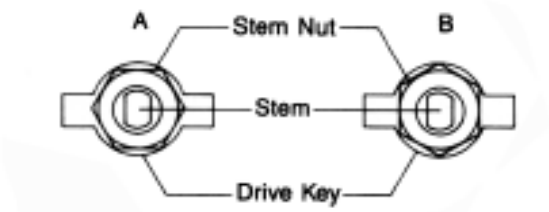
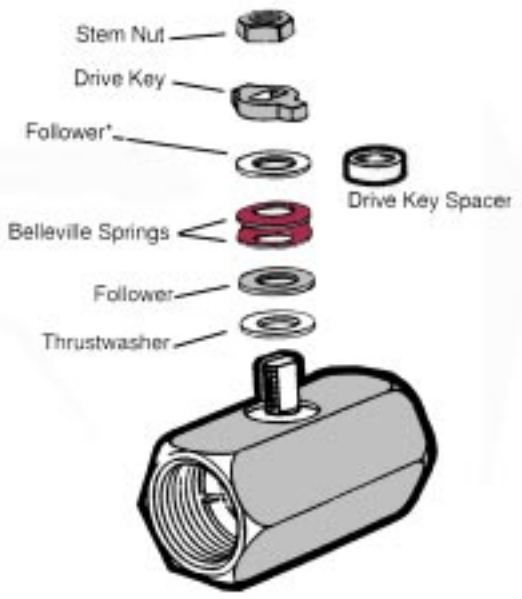


Figure 1



2. The correct orientation of the stem nut to the drive key is shown in Figure 1; this orientation is necessary to permit engagement with the twelve-point socket in the actuator pinion driver. In order to achieve the desired orientation, loosen the stem nut until the nut / drive key relationship corresponds to either 'A' or 'B' in Figure 1. This adjustment should require less than one-twelfth (1/12) turn of the nut.