# Valve Torque Service Factor Guide Lines

There are many factors to be considered when determining the seating and unseating torque of butterfly valves for a particular service. The following guide should be used to help determine the correct torque. When trying to calculate the correct torque, the following 5 factors should be considered.

1. **Operating Frequency**
   If a butterfly valve remains closed for an extended period of time, then the initial opening of the valve will require above normal torque.

2. **Temperature**
   Any service that requires the butterfly valve to operate at the upper or lower extremes of the temperature rating of the resilient rubber compounds of the seat ,will increase the torque. Please refer to Flow Line "Technical Bulletin No. FL 2031" for the temperature ranges for the compounds offered.

3. **Line media Lubricity**
   The lubricating characteristics of the material passing through the valve will either have a positive or negative affect on the disc (metal) and the seat (rubber) contact points. The line media must be judged to have either a lubricating or non-lubricating affect on these contact points. Non lubricating media's will have a strong influence to increase the torque. Examples of non-lubricating media's are, dry bulk, dry gas, dry air, solvents such as acetone, or ethyl acetate. Examples of lubricating media's would be, water or lubricating oil.

4. **Chemical attack on the resilient seat**
   Resilient seats when combined with certain chemical compounds will have the affect of swelling. This swelling will always have a negative affect on the seat, therefore raising the valve torque. Another side affect of combining certain chemical compounds with resilient seats is that the seats may harden to a higher duorometer. This also will cause a higher than normal torque. Please refer to Flow Line "Technical Bulletin No. FL 5027" for help in choosing the correct valve trims.

5. **Condition of Disc**
   As with resilient seats care should be taken to ensure that the correct disc material (metal) is compatible to the line media. Flow Line disc edges are carefully polished so that when the disc enters the seat the lowest torque possible is created. Corrosion forming on the polished edge of the disc will then create a rise in torque. Also in media's such as dry bulk, the powder may stick to the polished edge of the disc also creating a rise in torque.