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Ultraflo Butterfly Valve

Factors Affecting Seating And Unseating Torque and Application Guidelines for Choosing Correct Service Factor.

General Factors Affecting Seating and Unseating Torque:

1. **Operating Frequency**
The first operation of a valve after a sustained period of closure will require above normal torque.

2. **Lubricating Characteristics of Flow Media**
Water is one of the best lubricants for metal-elastomer contact. Judge your flow media on this basis - better than or worse than water. Examples of lubricating media are: water, lubricating oils, aqueous process flow, beverage service, etc. Examples of non-lubricating media are: air, dry gases, dry bulk services, solvents, diesel oil, etc.

3. **Condition of Disc Edge and Seat**
An iron disc in corrosive service will corrode. This corrosion deposits a build-up on the disc edge and raises required torque. Similar flow media deposits on the seat material can increase torque or prevent proper valve operation.

4. **Temperature Extremes**
Sustained operating temperatures approaching the upper or lower limits of the seat material will increase required torque. Refer to the seat temperature range on "ULTRAFLO Seat Materials" page. Consult factory for anticipated torque increase of certain seat materials due to temperature extremes.

5. **Elastomer Swell**
Certain elastomers tend to swell from contact with some chemicals. This elastomer swell will increase required torque.

The wide selection of "ULTRAFLO Available Materials of Construction" allow you to choose the correct butterfly valve materials for your service. All of the above "Torque Affecting Factors" can be accommodated with the correct choice of materials. Consult "ULTRAFLO" for assistance in choosing the correct torque value for your service.

APPLICATION GUIDELINES FOR CHOOSING CORRECT TORQUE SERVICE FACTOR:

Experience has shown that actuators cannot be properly sized to a particular butterfly valve in a particular service by simply showing a "Wet and Dry Service" torque chart. For this reason, ULTRAFLO has performed extensive testing to assure that you neither oversize nor undersize your **Ultra Torque**™ Actuator. ULTRAFLO has provided TORQUE VALUES for four different service factors. These four service factors are described as follows:

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Torque values under Service Factor I are the result of short term testing with new equipment. Only select proportioning type UltraTorque™ actuators under this Service Factor, where shut-off requirements are not critical.

SERVICE FACTOR I

Values under this service factor should only be used for ideal conditions and proportioning service where full closure is not a requirement. To use the values under Service Factor I, the following requirements must be met:

- No flow media effect on seat materials
- No exceeding temperature range of seat materials
- Valve disc must be totally corrosion resistant to flow media
- Flow media must be self-lubricating
- Frequency of operation must be at least once every 24 hours

SERVICE FACTOR II

Values under this Service Factor are considered to be normal conditions for the operation of most butterfly valves. Selection of **UltraTorque**™ actuators based on values under Service Factor II should provide satisfactory results except in severe applications. To use values under this Service Factor, the following requirements must be met :

- Minor chemical effect on seat material
- Temperature well within seat material limitations
- Valve disc corrosion to be mild
- Flow media to be self-lubricating aqueous liquid
- Frequency of operation must be at least once every 30 days

Torque values under Service Factor II provide allowance for increases of a factor of two over tests in establishing frictional resistance of media-exposed elements.

SERVICE FACTOR III

Values under this Service Factor are considered to be severe operating conditions, or "Dry Service". To use values under this Service Factor, the following requirements are usually met:

- Severe chemical effect on seat material
- Temperature at extreme limitations of seat material
- Valve disc corrosion moderate to severe
- Flow media non-lubricating; air, gas or dry bulk service
- Frequency of operation uncontrollable or unknown

Torque values under Service Factor III provide allowance for increases of a factor of three over tests in establishing frictional resistance of media exposed elements.

GENERAL FACTORS AFFECTING SEATING AND UNSEATING TORQUE:

1. For pneumatic conveying of dry bulk materials, it is recommended that the valve be specified with a reduced diameter (under cut) disc, for lower operating torque. Note that valves with reduced diameter discs are rated for 65 psi maximum service. Please refer to information under "Transportation Industry" tab.

2. Please consult the material selection guide for trim recommendations. Please consult ULTRAFLO for proper sizing of UltraTorque™ actuators.

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