Top Entry Valves

#1 (PTFE)
General application seat material, exhibiting lowest operating torque and excellent resistance to chemical attack. (Figure 1) Reference Chart 1

#2 (RPTFE)
Most commonly specified seat material, and used as the basis for published torque values. Maintains the excellent chemical resistance of unfilled Teflon® (PTFE) with increased resistance to wear and abrasion resulting in longer life. (Figure 1) Reference Chart 2

#3 (RPTFE w/Inner Ring)
Features a metallic inner ring to improve abrasion resistance particularly in high solids or throttling applications. Maintains the other features of the #2 seat. (Figure 2) Reference Chart 2

#7 (API 607 Cert. PTFE) to 450°F
This seat design has been successfully tested to the requirements of API 607, fourth edition. The PTFE seat is fully confined by a metallic seat holder which provides a secondary seal in the event of the loss of the primary PTFE seal due to a fire. As the seat seal material is PTFE, chemical and torque characteristics will be the same as in the #1 seats. (Figure 3) Reference Chart 1

#A (API 607 Cert. RPTFE) to 500°F
This seat design has been successfully tested to the requirements of API 607, fourth edition. The RPTFE seat is fully confined by a metallic seat holder which provides a secondary seal in the event of the loss of the primary PTFE seal due to a fire. The seat holder can perform the same function as the inner ring found in the #3 and #5 seats making this design appropriate for abrasive and throttling applications. As the seat seal material is RPTFE, chemical and torque characteristics will be the same as in the #2 and #3 seats. (Figure 3) Reference Chart 2

#5 (55% Bronze/5% Moly BRTFE)
Specifically intended for steam applications. Also applicable to abrasive and throttling applications because of the heavy loading of reinforcing materials and the presence of the inner ring. However, chemical compatibility may be a limiting factor in the application of this seat. (Figure 2) Reference Chart 3

"D" (60% Stainless Steel SRTFE)
Intended for abrasive and throttling applications because of the heavy loading of reinforcing materials and the completely confined seat. (Figure 2) Reference Chart 2

#6 (UHMWPE)
Ultra High Molecular Weight Polyethylene offers good abrasion resistance making it suitable for use in high solids or slurry applications. These seats are completely confined by a metallic seatholder enhancing their performance in abrasive services. This seat is frequently specified in services where fluorine off-gassing in even the slightest amounts is objectionable. Examples of these services are food, tobacco processing, and nuclear services. (Figure 2) Reference Chart 4
Reference Chart 5
Peek Seats
P-T Ratings

Reference Chart 6
Carbon-Graphite Seats
P-T Ratings
Reference Chart 3

#5 Seat P-T Ratings

Reference Chart 4

UHMWPE Seats P-T Ratings
Reference Chart 1
PTFE Seats
P-T Ratings

Reference Chart 2
RPTFE Seats
P-T Ratings
"U" (UHMWPE)
Exhibits the same characteristics as the #6 seat with the exception that it utilizes the inner seat ring to enhance performance in abrasive services. UHMWPE should be used with caution in the presence of solvents, and the operating torque can be expected to be 30% higher than that of the teflon based seat materials. (Figure 1) Reference Chart 4

#8 (PEEK)
PEEK (PolyEtherEtherKetone) offers a high strength alternative to RPTFE, resistant to creep and cold flow. This seat offers good abrasion resistance. Higher in cost, this material offers similar chemical resistance to PTFE but should be checked on application. Operating torque tends to be 40% higher than RPTFE. Ball stop recommended. (Figure 2) Reference Chart 5

#B (Carbon Reinforced, PEEK)
Carbon Reinforced PEEK provides improved abrasion resistance when compared to the unfilled variety. Higher in cost, this material offers a broader temperature range than RPTFE with similar chemical resistance but should be checked on application. Operating torque tends to be 40% higher than RPTFE. Ball stop recommended. (Figure 2) Reference Chart 5

#4 (Carbon Graphite)
Designed for high temperature applications. A ball stop is required in applications above 500°F. Maximum service temperature is limited to 750°F in oxidizing applications. This seat is like all rigid seat materials does not necessarily provide “bubble tight” shut-off. Most test standards have allowable leakage rates or list “classes” of shut-off for this type of seat. Be aware of the system design requirements when specifying this or any rigid seat. Ball stop recommended. (Figure 1) Reference Chart 6

#H (High Temperature Graphite) Designed for very high temperature applications. A ball stop is required in applications above 500°F. Maximum service temperature is limited to 1000°F. This seat is like other rigid seat materials does not provide “bubble tight” shut-off. This seat is not as abrasion resistant as the #4 version. Be aware of the system design requirements when specifying this or any rigid seat. Ball stop recommended. (Figure 1) Reference Chart 6

#9 (Ceramic)
Working in conjunction with a ceramic ball, this seat outperforms all other materials in throttling and abrasive applications. It possesses excellent chemical resistance. Cost is very high, and unless experience dictates its use, other alternatives should be evaluated first. A ball stop is recommended for all applications. This seat is like all rigid seat materials does not necessarily provide “bubble tight” shut-off. Most test standards have allowable leakage rates or list “classes” of shut-off for this type of seat. Be aware of the system design requirements when specifying this or any rigid seat. (Figure 4) Reference Chart 7