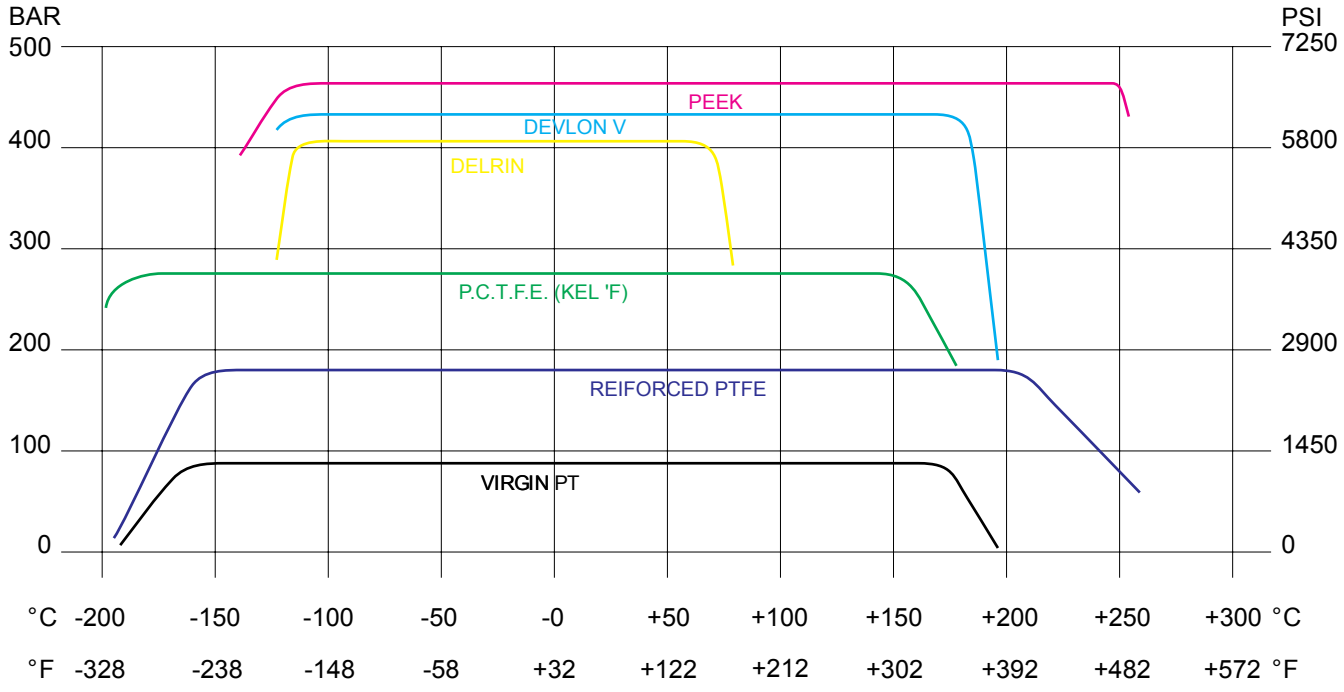
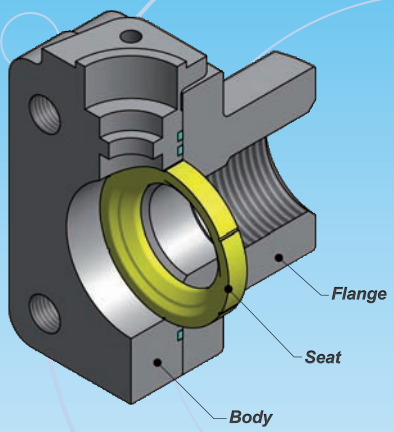
# PRESSURE/TEMPERATURE LIMITATIONS OF SOFT SEAT INSERT SEAT MATERIAL

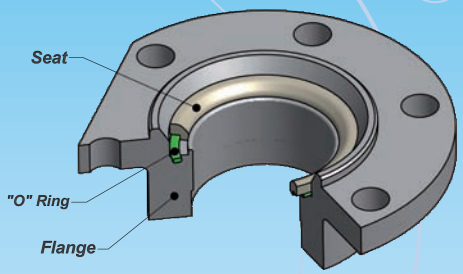
## TRUNNION M0UNT

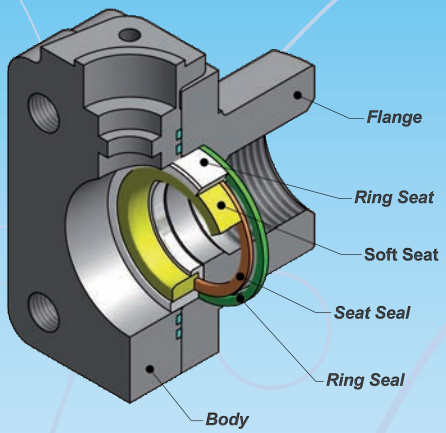


STARLINE
forged steel ball valves

# SEATS AND SEALS MATERIALS




## SEAT MATERIALS

| STARLINE CODE | | MATERIAL TYPE | TEMPERATURE RANGE °C | TEMPERATURE RANGE °F | APPLICATION | RECCOMENDATIONS |
|---|---|---|---|---|---|---|
| STANDARD | S | REINFORCED **PTFE** 20% Carbon + 5% Graphite | -190 +260 | -310 +500 | Medium pressure Low/High temperature | Higher temperature and Pressure than Virgin PTFE. Good for Steam Service |
| | T | VIRGIN **PTFE** | -196 +200 | -319 +392 | Low pressure Low torque – Low temperature | All services subject to temperature limitation. |
| | B | REINFORCED **PTFE +BRONZE** | -196 +250 | -310 +482 | Medium pressure Low/High temperature | Auto lubricant properties – recommended for steam |
| HIGH PERFORMANCE | N | **DEVLON – V** POLYAMIDE – NYLON | -100 +155 | -148 +311 | High pressure High temp – Low temperature | H2S and Hydrocarbons |
| | G | **GRAPHITE** | -90 +350 | -130 +662 | Low pressure – High temperature | Not suitable for high cycles or automated valves. |
| | D | **DELRIN** ACETAL RESIN | -70 +95 | -94 +203 | High pressure Low temperature | Hydrocarbons. Nace. $Co_2$. Do not use for oxigen |
| | P | **PEEK** POLYETHER KETONE | -80 +250 | -62 +482 | High pressure High temperature | Hydrocarbons. Nace. For Tobacco and Nuclear Service |
| | E | **VESPEL SP 21** POLYIMIDE | -200 + 260 | -328 +500 | High pressure High temperature | Good Chemical Resistance. For Gas, Oil, Petroleum. Not for Steam |
| | U | **UHMWPE** POLYETHILENE | -150 +150 | -240 +300 | Low pressure Low torque | Food and Tobacco industries. Nuclear service |
| | K | **KEL'F** PCTFE | -196 +150 | -319 +302 | High pressure Low temperature | Like virgin ptfe but improved resistance to nitric acid, hydrofluoric acid and liquid oxygen. |
| | Y | **PFA** | -60 +250 | -76 +482 | Medium pressure Low/Medium temperature | Lower Porosity – Particularly Good to Avoid Polymerisation |
| | M | **METAL SEAT** (tungsten carbide or chrome carbide) | -200 +500 | -328 +932 | High pressure – High temperature | Abrasion and high temperature applications |

## SEAL MATERIALS

| STARLINE CODE | | MATERIAL TYPE | | TEMPERATURE RANGE °C | | APPLICATION |
|---|---|---|---|---|---|---|
| "O" RINGS | N | **NITRILE** | **NBR** | -30 | +120 CONTINUOS +150 INTERMITTENT | Water |
| | H | **HYDROGENATED NITRILE** | **HNBR** | -46 | +160 CONTINUOS +180 INTERMITTENT | H2S, crude oil, hydrocarbons, small concentration of methanols |
| | E | **MODIFIED HYDROGENATED NITRILE** | **HNBR-LT** | -55 | +160 CONTINUOS +180 INTERMITTENT | H2S, crude oil, hydrocarbons, small concentrations of methanols |
| | V | **FLUOROELASTOMERS** (VITON B) | **FKM** | -20 | +220 CONTINUOS +230 INTERMITTENT | Sour gas, hydrocarbons |
| | V | **FLUOROELASTOMERS** (VITON AED) | **FKM** | -29 | +230 CONTINUOS +250 INTERMITTENT | Sour gas, hydrocarbons |
| | V | **FLUOROELASTOMERS** (VITON GLT) | **FKM** | -46 (-40 continuous) | +220 CONTINUOS +250 INTERMITTENT | Sour gas, hydrocarbons |
| | C | **PERFLUOROELASTOMERS** (CHEMRAZ 526) | **FFKM** | -25 | +315 CONTINUOS +350 INTERMITTENT | Sour gas, hydrocarbons, high % of methanol |
| | K | **PERFLUOROELASTOMERS** (KALREZ) | **FFKM** | -25 | +325 | Sour gas and corrosive fluids |
| | A | **AFLAS** | **FEPM** | +5 | +200 | Amine / Methanol service |
| | I | **SILICON+PFA** | | -60 | +250 | Low temperature applications/ Good Chemical Resistance |
| SPECIAL | G | **EXPANDED GRAPHITE** | | -240 | +680 | Used on Metal Seated High Temperature valves |
| | L | **LIPSEAL** | | -196 | +260 | Good for Chemical Resistance |

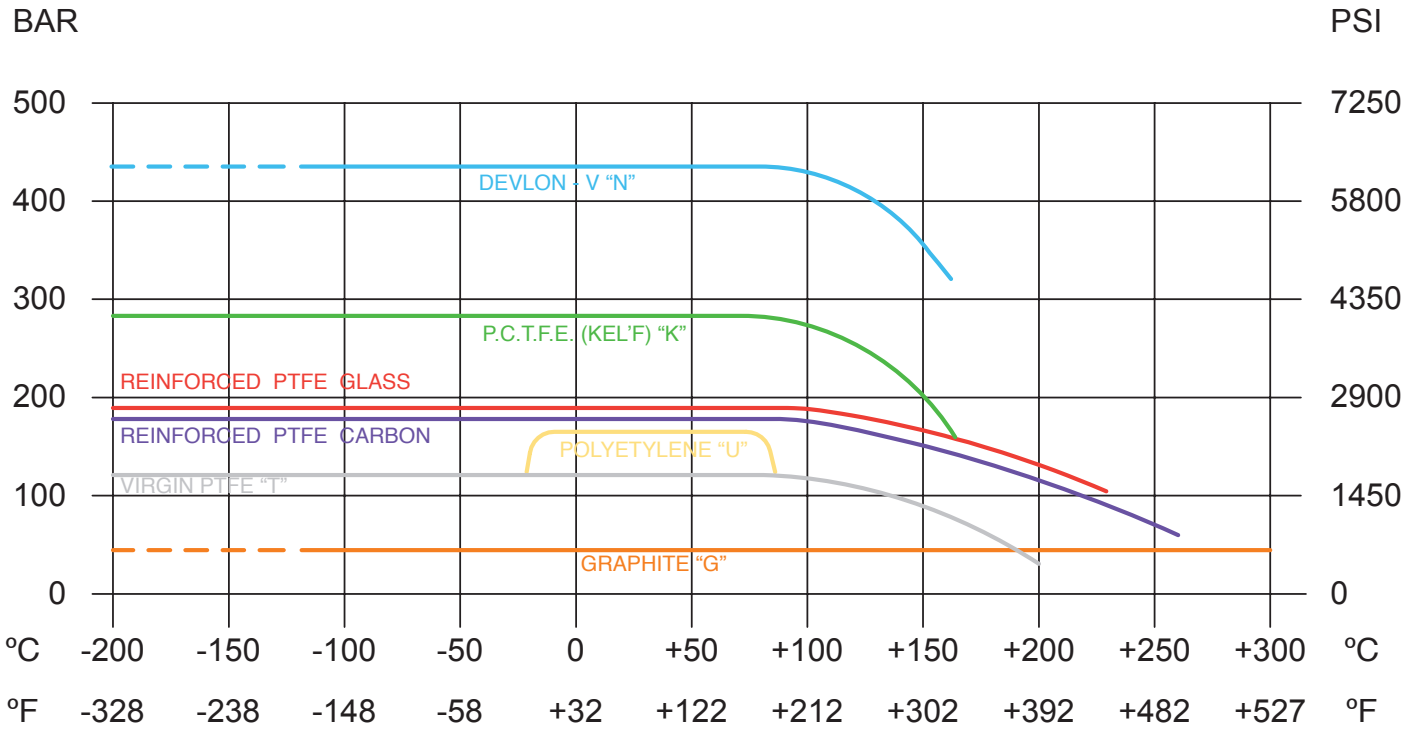
## FIRE SAFE SEAL

| STARLINE CODE | MATERIAL TYPE | TEMPERATURE RANGE °C | | APPLICATION |
|---|---|---|---|---|
| G | **GRAPHITE** | -200 | +400 | All - excluding clean services |

Values indicated are the original values given by the manufacturers. Additional limitation to these values shall be considered based on the size of valve, seat construction and valve operating pressure.

## SEAT PRESSURE/TEMPERATURE RATING - FLOATING

This table express the Seat material resistance as declared by the original manufacturers. The values are to be mixed with the other parameters such as other non metallic seals as well as temperature limitations on metals used as per by ASME B16.34




THE ASME PRESSURE CLASS RATING OF THE VALVE IS NOT TO BE EXCEEDED.

# FLOATING

## VIRGIN PEEK SEAT MATERIAL
## " P "