

INNOVATIVE ENGINEERING FOR CORROSION PROTECTION

GPT is pleased to offer a one-piece orifice plate design for pipeline flow restriction. The GPT one-piece orifice plate incorporates spring-energized PTFE spring energized radial face seals and elastomeric o-ring backup seals which are completely encapsulated in a composite seal retainer which makes the orifice plate one-piece and simple to install. This eliminates the need for conventional orifice plates, plate holders and separate gaskets. This orifice plate design substantially reduces residual flange/bolt stress in orifice flanges and improves overall sealing performance under even the most extreme operating conditions in all hydrocarbon production, injection and process applications. This design also provides corrosion resistance by electrically isolating if needed as well.

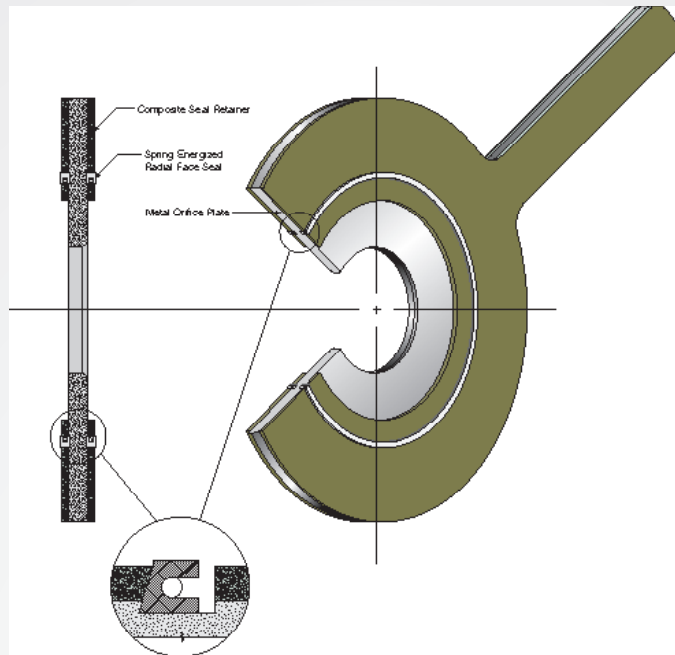


ORIFICE PLATE SYSTEM ADVANTAGES AND BENEFITS

- » *One-piece, self-contained plate and seal design (replaces and retrofits conventional plate and ring-joint plate holder designs)*
- » *Available for Orifice Fittings and Orifice Flanges (paddle style)*
- » *Flow Restriction Orifice Plates available with any Beta Orifice Size*
- » *Integrated Spring-energized radial face seals insure high-integrity / maintenance free / pressure-energized sealing*
- » *Integrated composite seal retainer mitigates galvanic corrosion in dissimilar metal fittings and flanges*
- » *Protects flanges from media-induced corrosion and flow-induced erosion in Orifice flanges*
- » *Decreases flange / bolt makeup stresses in Orifice flanges*
- » *Increases flange pressure sealing capabilities in Orifice flanges*
- » *Increases flange / bolt external (bending and tension) load bearing capabilities in Orifice flanges*
- » *Easy installation and removal*
- » *Reusable Orifice plate / seal retainer and seals*



GPT orifice plates are comprised of stainless steel plates bonded to a high-modulus, matrix-reinforced composite seal retainer. The GPT orifice plate's primary sealing mechanism is the combination of the fully-encapsulated, pressure-energized sealing elements compressed into the orifice plate's rigid seal retainer (all of which comprise the orifice plate's one-piece design). Once compressed and encapsulated in the composite seal retainer, these seals possess the ability to operate under even the most extreme chemical and mechanical forces (i.e. highly corrosive fluids/gases, extreme internal system pressures, temperatures, vibration/cavitation, external bending and tension loads). Because of the high modulus of elasticity of the composite seal retainer, the orifice plate possesses good recovery / memory characteristics which enables it to withstand long-term pressure / thermal cycling, high vibration / cavitation and joint relaxation.



PRIMARY FEATURES AND BENEFITS INCLUDE:

- » *No gasket required*
- » *Simple one piece design*
- » *Eliminates galvanic corrosion*
- » *Easy installation*
- » *Pressure-energized sealing*
- » *Withstands vibration/cavitation*

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