

One-Piece Orifice Plate

GPT

an EnPro Industries company

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 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.



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.



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

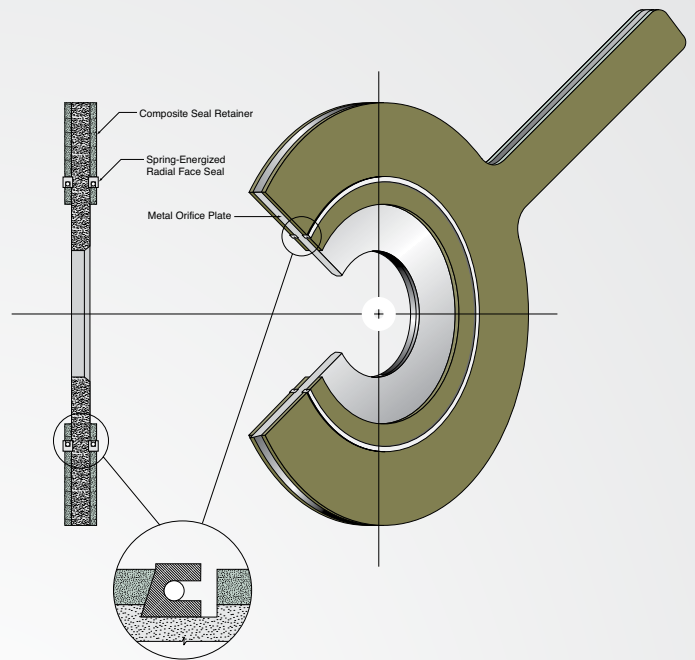
PHYSICAL PROPERTIES

			150	300	400	600	900	1500	2500
NPS	PT*	RT	OD	OD	OD	OD	OD	OD	OD
1/2"	.125	.260	1.813	2.063	2.063	2.063	2.438	2.438	2.688
3/4"	.125	.260	2.188	2.563	2.563	2.563	2.688	2.688	2.938
1"	.125	.260	2.563	2.813	2.813	2.813	3.063	3.063	3.313
1-1/4"	.125	.260	2.933	3.188	3.188	3.188	3.438	3.438	4.063
1-1/2"	.125	.260	3.313	3.688	3.688	3.688	3.813	3.813	4.563
2"	.125	.260	4.063	4.313	4.313	4.313	5.563	5.563	5.688
2-1/2"	.125	.260	4.813	5.063	5.063	5.063	6.438	6.438	6.563
3"	.125	.260	5.313	5.813	5.813	5.813	6.563	6.813	7.688
4"	.125	.260	6.813	7.063	6.938	7.563	8.063	8.188	9.188
5"	.125	.260	7.688	8.438	8.313	9.483	9.688	9.938	10.938
6"	.125	.260/.322	8.688	9.813	9.688	10.438	11.313	11.063	12.438
8"	.125	.260/.322	10.938	12.063	11.938	12.563	14.063	13.813	15.188
10"	.250	.437/.500	13.313	14.188	14.063	15.688	17.063	17.063	18.688
12"	.250	.437/.500	16.063	16.563	16.438	17.938	19.563	20.438	21.563
14"	.250	.437/.500	17.688	19.063	18.938	19.313	20.438	22.688	N/A
16"	.375	.625/.687	20.188	21.188	21.063	22.188	22.563	25.188	N/A
18"	.375	.625/.687	21.563	23.438	23.313	24.063	25.063	27.688	N/A
20"	.375	.625/.687	23.813	25.688	25.438	26.813	27.438	29.688	N/A
24"	.375	.625/.687	28.188	30.438	30.188	31.063	32.938	35.438	N/A

* Beta Ratios need to be specified to determine adequate plate thickness. Some I.D. may require review.

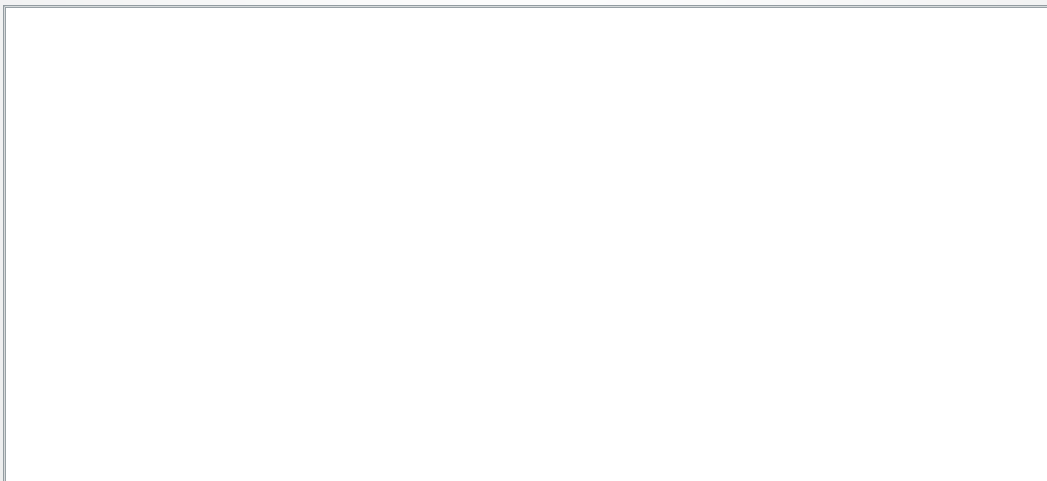
Dimensions (in inches)

- » NPS = Nominal Pipe Size
- » PT = Plate Thickness
- » RT = Retainer Thickness
- » OD = Outside Diameter



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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