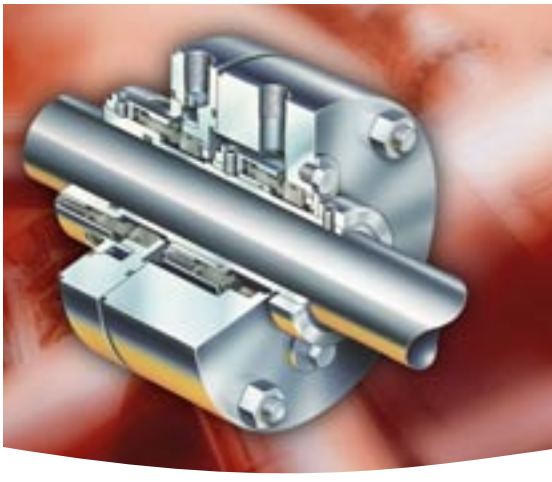
GSD Series
Dry running containment seals

GSD Series seals are dry running back up pusher seals for reliable containment seal performance when coupled with a traditional inboard seal in hydrocarbon services. GSD seals use scalloped groove technology to reduce contact loads and are fully compliant with API 682 / ISO 21049 Type A, Arrangement 2 requirements.



Features and Benefits

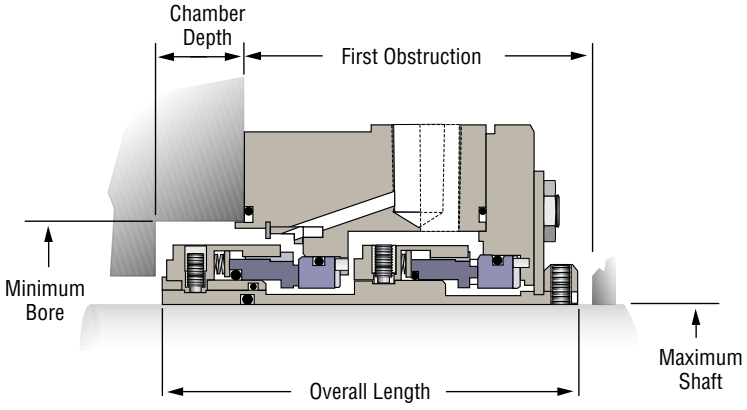
- Rotating carbon face uses scalloped groove Precision Face Topography to maintain reliable contacting seal performance under either wet or dry operation.
- Fitted with a contacting or non-contacting inboard seal, the low emission design helps meet the most stringent emissions requirements, especially in light hydrocarbon services when connected to a vapor recovery system.
- Unpressurized containment seal operation may include support system Plans 72, 75, 76 for simplified maintenance.
- High and low pressure liquid backup seal capability allows for safe and convenient equipment shut down if the primary seal fails at pressures up to 600 psi (41.4 bar).
- Components are interchangeable with standard QB Series designs where a dual wet QB seal can be reconfigured with minimal inventory expense by changing the rotating seal face, springs and adding a short spacer.
- Cartridge assembly simplifies installation for a quick and trouble-free start-up.
- Remote performance monitoring is available within the standard piping plans to report status of the primary seal and reduce downtime.

Operating Parameters

Pressure	Up to 600 psi (41.5 bar)
Temperature	-40 to 400°F (-40 to 204°C)
Specific Gravity	0.45 liquid and higher
Surface Speed	Up to 75 fps (23 m/s)
Shaft Sizes	1.000 to 3.500 inch (25.4 to 88.9 mm)

Materials of Construction

Metal Components	316 Stainless Steel, Alloy C-276, Alloy 20
Rotating Face	Carbon
Stationary Face	Silicon Carbide
Gaskets	Fluoroelastomer, Perfluoroelastomer
Springs	Alloy C-276



Tandem QBQ/GSD

Dimensional Data *in inches*

Max. Shaft	Min. Bore	Chamber Depth	First Obstr.	Overall Length	Seal Size
1.000	2.463	1.188	4.000	4.938	1500
1.125	2.776	1.500	4.188	5.438	1625
1.250	2.901	1.500	4.188	5.438	1750
1.375	3.026	1.563	4.281	5.594	1875
1.500	3.151	1.563	4.469	5.781	2000
1.625	3.276	1.625	4.469	5.844	2125
1.750	3.401	1.625	4.469	5.844	2250
1.875	3.526	1.750	4.594	6.094	2375
2.000	3.651	1.750	4.594	6.094	2500
2.125	3.953	2.063	4.906	6.719	2625
2.250	4.078	2.063	4.906	6.719	2750
2.375	4.203	2.063	4.906	6.719	2875
2.500	4.328	2.063	5.063	6.875	3000
2.625	4.453	2.063	5.063	6.875	3125
2.750	4.578	2.063	5.063	6.875	3250
2.875	4.703	2.188	5.188	7.125	3375
3.000	4.818	2.188	5.188	7.125	3500
3.125	4.953	2.188	5.188	7.125	3625
3.250	5.078	2.188	5.188	7.125	3750
3.375	5.193	2.188	5.188	7.125	3875
3.500	5.318	2.188	5.188	7.125	4000

in millimeters

Max. Shaft	Min. Bore	Chamber Depth	First Obstr.	Overall Length
25.40	62.56	30.16	101.60	125.41
28.58	70.50	38.10	106.36	138.11
31.75	73.67	38.10	106.36	138.11
34.93	76.85	39.69	108.74	142.74
38.10	80.02	39.69	113.51	146.84
41.28	83.20	41.28	113.51	148.43
44.45	86.37	41.28	113.51	148.43
47.63	89.55	44.45	116.68	154.78
50.80	92.72	44.45	116.68	154.78
53.98	100.39	52.39	124.62	170.66
57.15	103.57	52.39	124.62	170.66
60.33	106.74	52.39	124.62	170.66
63.50	109.92	52.39	128.59	174.63
66.68	113.09	52.39	128.59	174.63
69.85	116.27	52.39	128.59	174.63
73.03	119.44	55.56	131.76	180.98
76.20	122.36	55.56	131.76	180.98
79.38	125.79	55.56	131.76	180.98
82.55	128.97	55.56	131.76	180.98
85.73	131.89	55.56	131.76	180.98
88.90	135.06	55.56	131.76	180.98

Note: For sizes and conditions not listed, contact your local Flowserve Representative.

FSD157eng REV 08-07 Printed in USA

To find your local Flowserve representative
and find out more about Flowserve Corporation
visit www.flowserve.com

Flowserve Corporation has established industry leadership in the design and manufacture of its products. When properly selected, this Flowserve product is designed to perform its intended function safely during its useful life. However, the purchaser or user of Flowserve products should be aware that Flowserve products might be used in numerous applications under a wide variety of industrial service conditions. Although Flowserve can provide general guidelines, it cannot provide specific data and warnings for all possible applications. The purchaser/user must therefore assume the ultimate responsibility for the proper sizing and selection, installation, operation, and maintenance of Flowserve products. The purchaser/user should read and understand the Installation Instructions included with the product, and train its employees and contractors in the safe use of Flowserve products in connection with the specific application.

While the information and specifications contained in this literature are believed to be accurate, they are supplied for informative purposes only and should not be considered certified or as a guarantee of satisfactory results by reliance thereon. Nothing contained herein is to be construed as a warranty or guarantee, express or implied, regarding any matter with respect to this product. Because Flowserve is continually improving and upgrading its product design, the specifications, dimensions and information contained herein are subject to change without notice. Should any question arise concerning these provisions, the purchaser/user should contact Flowserve Corporation at any one of its worldwide operations or offices.

© 2007 Flowserve Corporation

USA and Canada
Kalamazoo, Michigan USA
Telephone: 1 269 381 2650
Telefax: 1 269 382 8726

Europe, Middle East, Africa
Essen, Germany
Telephone: 49 201 3937-0
Telefax: 49 201 2200-561

Asia Pacific
Singapore
Telephone: 65 6544 6800
Telefax: 65 6214 0541

Latin America
Mexico City
Telephone: 52 55 5567 7170
Telefax: 52 55 5567 4224