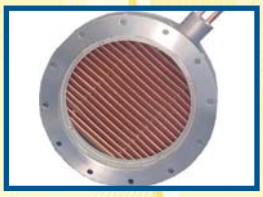
VACUUM EXCELLENCE DEFINED



Product Catalog

Welcome to GNB

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ISO 9001 Certified

Ken Harrison
President & CEO

Thomas Dobler
Customer Sales

Chris Long
CFO

Russ Hedman
Plant Manager

GNB is a company of technical experts serving other technology experts. Since our beginning in 1968 it has been our commitment to technology that has set us apart. During this time we have produced outstanding, innovative products that have met the most demanding applications in areas such as temperature extremes, large sizes, radiation levels, vacuum levels, vibration levels, and unique applications.

However GNB is more than just technology, we are passionate about building winning relationships. It is our corporate vision that customers will be so impressed that they say, “Wow! We want to do business with GNB again.”

Other vacuum product companies produce large catalogs and encourage customers to design their systems around the standardized products. However, customers may be paying for unnecessary features while suffering from poor performance in their specific application. Consequently, GNB is no ordinary vacuum products company. This brochure depicts a sampling of our most popular products, but it should be treated as an idea book—not an exhaustive product catalog. No matter what your application is, please give us a call; and we will gladly share our technical expertise with you.

Ordering Information

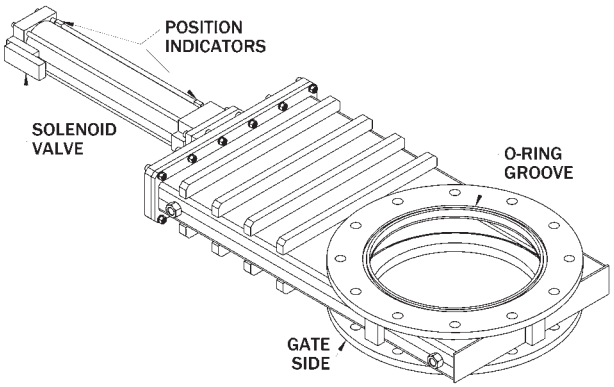
The example shown is a standard GNB Corporation gate valve with:

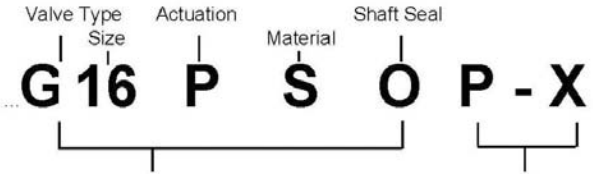
- 16 inch aperture clearance
- Electro pneumatic actuation
- 304 stainless steel composition
- O-ring shaft seal

It has the following options:

- Position indicators
- O-ring groove in the second flange

When ordering this valve, the GNB model number becomes the following...





Description

Valve Type

A	Angle
G	Gate
GL	Linkage gate
HDG	Heavy duty gate
P	Pendulum
PMG	Protective metal gate
RA	Roughing angle
RG	Roughing gate
TA	Throttle angle
TG	Throttle gate

Size

Clearance aperture inches
(ISO sizes listed in parentheses)

Actuation

C	Pneumatic side actuation
E	Electric
H	Hydraulic
L	Side lever
P	Pneumatic
W	Hand wheel

Material

A	Aluminum
M	Mild steel
S	304L stainless steel

Shaft Seal

B	Bellows
O	O-ring

Options

P	Position indicator
R	Roughing port
WG	Water cooled gate
WB	Water cooled body
WF	Water cooled flange
BL	Bodiless
X	For any of the following options: Clean out ports Second o-ring groove Flange: ASA, ISO, CF, KF, or custom design

A complete written description of any options is required on all purchase orders.

Gate Valves
ISO 100-320mm

Specifications

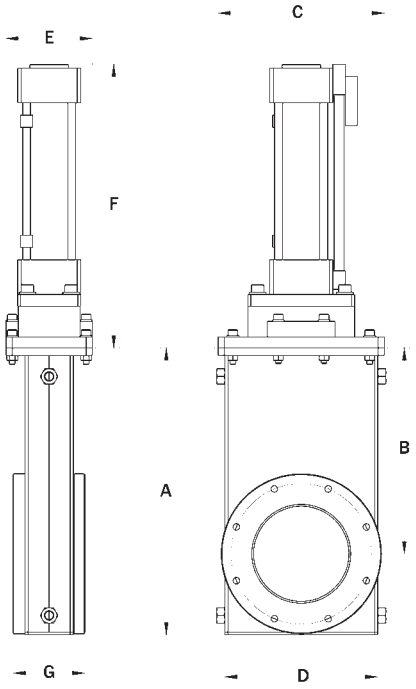
- Leak Rate: <1 x 10^{-9} std cc/sec He
- Vacuum Rating: 1 x 10^{-7} torr (1.3 x 10^{-7} mbar)
- Seals in either direction with max differential pressure across gate: 1.5 atm (1.47 bar)
- Max Operating Temperature: 400°F (200°C)
- Mounting Position: Any
- Solenoid: 24V DC/110V AC/ 220V AC
- Air to open/Air to close
- Air Pressure Required: 80-120 psig (5.5-8.3 bar)

Features

- Valve Body/Gate Construction: 304L Stainless Steel or Mild Steel
- Surface Finish: Glass Bead Blast, Grained, Electro-polished, or Painted Mild Steel
- Dual O-ring Sealed Shaft, 100K cycle life or Bellows
- Sealed rated up to 1 million cycles*
- Actuator: Electro-pneumatic, Electric, or Hydraulic
- Magnetic Position Indicators Standard
- Viton or Buna O-rings at Flange, Gate, Bonnet, and Shaft Lubricated for life – Not affected by contaminants
- No Springs – Long life mechanism designed for 2 million cycles
- Minimal Maintenance – Does not require removal of valve body

* Under clean vacuum conditions

Robust design for demanding applications, operates with 1 atm differential pressure across valve



REFERENCE NUMBER	BONNET SEAL	SIZE	PORT FLANGE	A in[mm]	B in[mm]	C in[mm]	D in[mm]	E in[mm]	F in[mm]	G in[mm]
G(ISO100)PSOP	VITON	4"	ISO100	11.66 [296.16]	8.36 [212.34]	6.75 [171.45]	6.21 [157.73]	3.50 [88.90]	11.38 [289.05]	2.91 [73.91]
G(ISO160)PSOP	VITON	6"	ISO160	16.50 [419.10]	12.08 [306.83]	9.5 [241.30]	8.72 [221.49]	4.13 [104.90]	13.68 [347.47]	3.59 [91.19]
G(ISO200)PSOP	VITON	8"	ISO200	20.04 [509.02]	14.43 [366.52]	12.25 [311.15]	11.38 [289.05]	4.63 [117.60]	15.38 [390.65]	3.93 [99.82]
G(ISO250)PSOP	VITON	10"	ISO250	25.69 [652.53]	18.44 [468.38]	15.50 [393.70]	14.37 [365.00]	4.50 [114.30]	19.01 [482.85]	4.19 [106.43]
G(ISO320)PSOP	VITON	12"	ISO320	29.70 [754.38]	21.31 [541.27]	17.13 [435.10]	16.03 [407.16]	4.50 [114.30]	19.88 [504.95]	4.47 [113.54]

Gate Valves
ISO 400-1320mm

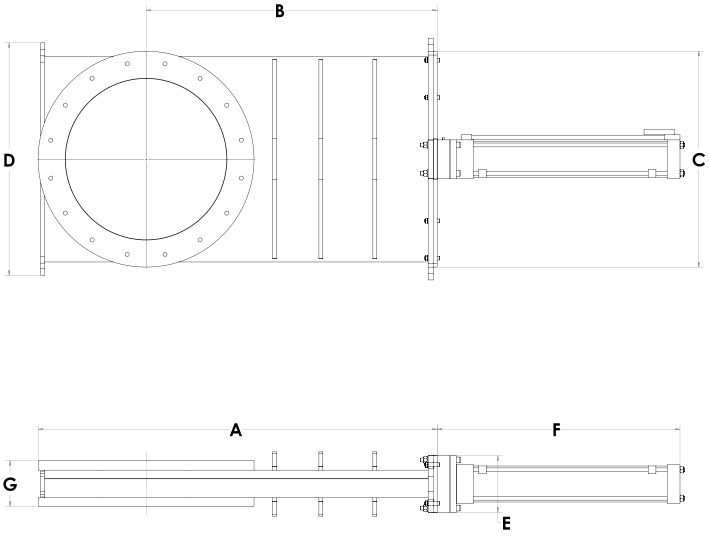
Specifications

- Leak Rate: <1 x 10^{-9} std cc/sec He
- Vacuum Rating: 1 x 10^{-7} torr (1.3 x 10^{-7} mbar)
- Seals in either direction with max differential pressure across gate: 1.5 atm (1.47 bar)
- Max Operating Temperature: 400°F (200°C)
- Mounting Position: Any
- Solenoid: 24V DC/110V AC/ 220V AC
- Air to open/Air to close
- Air Pressure Required: 80-120 psig (5.5-8.3 bar)

Features

- Valve Body/Gate Construction: 304L Stainless Steel or Mild Steel
- Surface Finish: Glass Bead Blast, Grained, Electro-polished, or Painted Mild Steel
- Dual O-ring Sealed Shaft, 100K cycle life or Bellows Sealed rated up to 1 million cycles*
- Actuator: Electro-pneumatic, Electric, or Hydraulic
- Magnetic Position Indicators Standard
- Viton or Buna O-rings at Flange, Gate, Bonnet, and Shaft
- Lubricated for life – Not affected by contaminants
- No Springs – Long life mechanism designed for 2 million cycles
- Minimal Maintenance – Does not require removal of valve body

* Under clean vacuum conditions

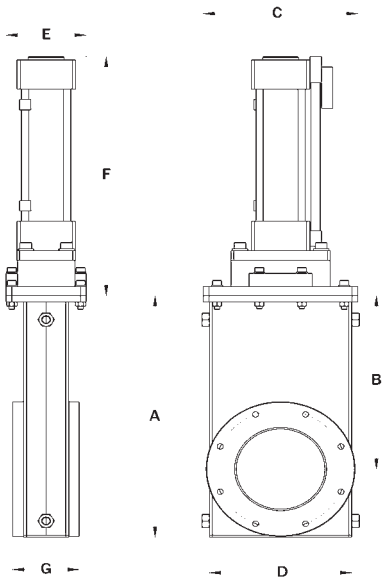


REFERENCE NUMBER	BONNET SEAL	SIZE	PORT FLANGE	A in[mm]	B in[mm]	C in[mm]	D in[mm]	E in[mm]	F in[mm]	G in[mm]
G(400)P	VITON	16”	ISO400	38.81 [986]	28.3 [719]	21.00 [533]	23.5 [597]	5.5 [140]	23.63 [600]	4.45 [113]
G(500)P	VITON	20”	ISO500	51.31 [1303]	37.56 [954]	25.38 [644]	27.5 [698]	5.5 [140]	29.88 [758]	4.51 [114]
G(630)P	VITON	26”	ISO630	56.4 [1432.6]	40.4 [1026.2]	30.75 [781.05]	35.4 [899.2]	6.9 [175.3]	33.38 [847.73]	6.5 [165.1]
G(800)P	VITON	32”	ISO800	81.0 [2057.4]	59.8 [1518.9]	45.50 [1155.70]	45.3 [1150.6]	8.5 [215.9]	46.13 [1171.58]	8.6 [218.4]
G(1000)P	VITON	40”	ISO1000	92.3 [2344.4]	68.1 [1729.7]	50.13 [1273.18]	53.1 [1348.7]	8.5 [215.9]	51.13 [1298.58]	8.6 [218.4]
G(1250)P	VITON	50”	ISO1250	120.0 [3048.0]	87.8 [2230.1]	63.82 [1621.03]	67.4 [1712.1]	10.4 [264.2]	64.63 [1641.48]	10.6 [269.2]
G(1320)P	VITON	52”	ISO1320	120.0 [3048.0]	87.8 [2230.1]	63.82 [1621.03]	67.4 [1712.1]	10.4 [264.2]	64.63 [1641.48]	10.6 [269.2]

Gate Valves
ASA 14”-52”

Specifications

- Leak Rate: <1 x 10^{-9} std cc/sec He
- Vacuum Rating: 1 x 10^{-7} torr (1.3 x 10^{-7} mbar)
- Seals in either direction with max differential pressure across gate: 1.5 atm (1.47 bar)
- Max Operating Temperature: 400°F (200°C)
- Mounting Position: Any
- Solenoid: 24V DC/110V AC/ 220V AC
- Air to open/Air to close
- Air Pressure Required: 80-120 psig (5.5-8.3 bar)



Features

- Valve Body/Gate Construction: 304L Stainless Steel or Mild Steel
- Surface Finish: Glass Bead Blast, Grained, Electro- polished, or Painted Mild Steel
- Dual O-ring Sealed Shaft, 100K cycle life or Bellows Sealed rated up to 1 million cycles*
- Actuator: Electro-pneumatic, Electric, or Hydraulic
- Magnetic Position Indicators Standard
- Viton or Buna O-rings at Flange, Gate, Bonnet, and Shaft
- Lubricated for life – Not affected by contaminants
- No Springs – Long life mechanism designed for 2 million cycles
- Minimal Maintenance – Does not require removal of valve body

* Under clean vacuum conditions

High Vacuum Gate Valves

Reliable Cycle Life

Low Maintenance

REFERENCE NUMBER	BONNET SEAL	SIZE /PORT FLANGE	A in[mm]	B in[mm]	C in[mm]	D in[mm]	E in[mm]	F in[mm]	G in[mm]
G14P	VITON/ BUNA	14”	36.77 [933.96]	26.27 [667.26]	21.80 [553.72]	21.00 [533.40]	6.92 [175.77]	21.96 [557.78]	4.62 [117.35]
G16P	VITON/ BUNA	16”	41.02 [1041.91]	29.27 [743.46]	23.80 [604.52]	23.50 [596.90]	6.92 [175.77]	23.48 [596.39]	4.50 [114.30]
G18P	VITON/ BUNA	18”	45.37 [1152.40]	32.87 [834.90]	25.00 [635.00]	25.00 [635.00]	8.06 [204.72]	27.13 [689.10]	6.0 [152.40]
G20P	VITON/ BUNA	20”	49.65 [1261.11]	35.90 [911.86]	27.67 [702.82]	27.50 [698.50]	8.31 [211.07]	30.38 [771.65]	6.50 [165.10]
G20DP	VITON/ BUNA	20.25”	49.65 [1261.11]	35.90 [911.86]	27.67 [702.82]	27.50 [698.50]	8.31 [211.07]	30.38 [771.65]	6.50 [165.10]
G24P	VITON/ BUNA	24”	56.41 [1432.81]	40.41 [1026.41]	35.42 [899.67]	32.00 [812.80]	9.31 [236.47]	33.13 [841.50]	6.53 [165.86]
G30P	VITON/ BUNA	30”	72.93 [1852.42]	53.55 [1360.17]	43.14 [1095.76]	38.75 [984.25]	13.44 [341.38]	40.75 [1035.05]	8.17 [207.52]
G36P	VITON/ BUNA	36”	83.55 [2122.17]	61.05 [1550.67]	49.14 [1248.16]	45.50 [1155.70]	13.44 [341.38]	46.13 [1171.70]	8.17 [207.52]
G40P	VITON/ BUNA	40”	93.42 [2372.87]	68.05 [1728.47]	53.14 [1349.76]	50.75 [1289.05]	13.62 [345.95]	50.88 [1292.35]	8.63 [219.20]
G48P	VITON/ BUNA	48”	109.78 [2788.41]	81.44 [2068.58]	64.46 [1637.28]	59.00 [1498.60]	14.59 [370.59]	62.11 [1577.59]	11.12 [282.45]
G52P	VITON/ BUNA	52”	119.22 [3028.19]	87.72 [2228.09]	67.39 [1711.71]	63.00 [1600.20]	17.57 [446.28]	63.26 [1606.80]	10.56 [268.22]

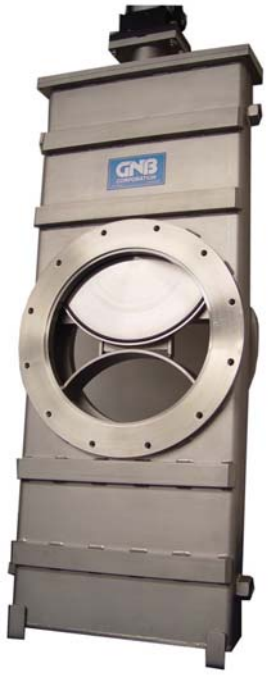
PMG Gate Valves

Protective Metal Guard Ring

Specifications

- Leak Rate: <1 x 10^{-9} std cc/sec He
- Vacuum Rating: 1 x 10^{-7} torr (1.3 x 10^{-7} mbar)
- Seals in either direction with max differential pressure across gate: 1.5 atm (1.47 bar)
- Max Operating Temperature: 400°F (200°C)
- Mounting Position: Any
- Solenoid: 24V DC/110V AC/ 220V AC
- Air to open/Air to close
- Air Pressure Required: 80-120 psig (5.5-8.3 bar)

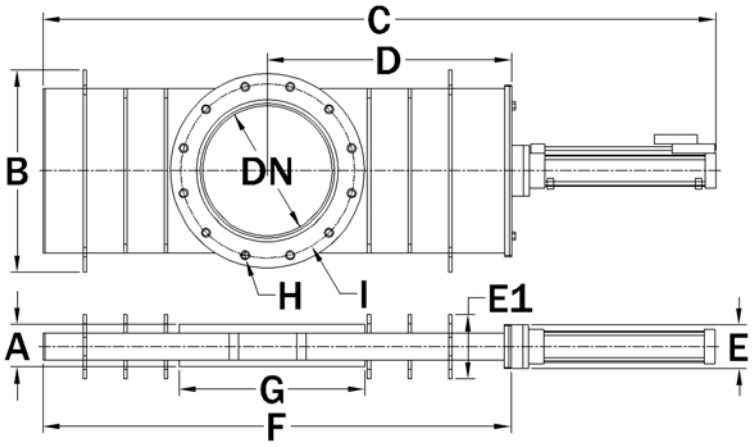
For Highly Contaminated Environments



Features

- Valve Body/Gate Construction: 304L Stainless Steel or Mild Steel
- Surface Finish: Glass Bead Blast, Grained, Electro- polished, or Painted Mild Steel
- Dual O-ring Sealed Shaft, 100K cycle life or Bellows Sealed rated up to 1 million cycles*
- Actuator: Electro-pneumatic, Electric, or Hydraulic
- Magnetic Position Indicators Standard
- Viton or Buna O-rings at Flange, Gate, Bonnet, and Shaft
- Lubricated for life – Not affected by contaminants
- No Springs – Long life mechanism designed for 2 million cycles
- Minimal Maintenance – Does not require removal of valve body

* Under clean vacuum conditions

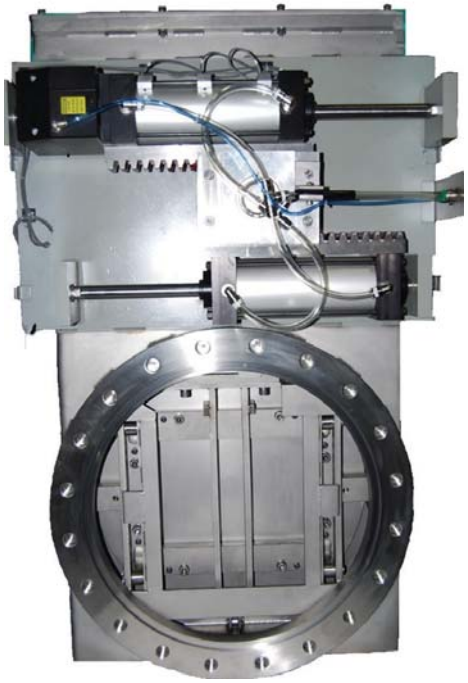


REFERENCE NUMBER	DN in[mm]	A in[mm]	B in[mm]	C in[mm]	D in[mm]	E in[mm]	E1 in[mm]	F in[mm]	G in[mm]	H qt/size	I in[mm]	WT Kg/lb
PMG6P	7.0 [178]	3.6 [90]	12.0 [305]	38.9 [989]	12.9 [327]	3.5 [89]	3.8 [95]	25.2 [640]	12.0 [304]	(8) 3/4-10	9.5 [241]	59/130
PMG8P	8.0 [203]	4.3 [110]	13.5 [343]	55.3 [1406]	25.5 [648]	4.3 [108]	4.1 [105]	40.5 [1028]	13.5 [343]	(8) 3/4-10	11.8 [299]	77/170
PMG12P*	12.0 [305]	4.5 [115]	17.8 [451]	64.2 [1630]	21.3 [540]	4.5 [114]	4.2 [107]	41.8 [1061]	16.7 [425]	(12) 7/16-14	15.6 [395]	159/350
PMG14P	14.0 [356]	4.6 [117]	21.8 [554]	72.4 [1839]	26.3 [667]	4.8 [121]	6.9 [176]	50.5 [1282]	21.0 [533]	(12) 1-8	18.8 [476]	204/450
PMG20P	20.0 [508]	7.4 [188]	29.3 [743]	109.8 [2788]	43.3 [1099]	6.8 [172]	8.6 [219]	79.6 [2022]	27.5 [699]	(20) 1.125-7	25.0 [635]	703/1550
PMG24P	24.0 [610]	10.2 [258]	40.5 [1029]	145.1 [3686]	58.9 [1495]	9.5 [241]	10.0 [254]	106.9 [2715]	36.5 [927]	(20) 7/8-9	29.5 [749]	1814/4000
PMG52P	52.0 [1321]	12.1 [308]	76.0 [1930]	249.4 [6335]	98.4 [2500]	12.3 [311]	20.6 [524]	184.7 [4690]	65.5 [1664]	(24) 1.25-7	58.0 [1473]	5443/12000

Gate Valves C-Style

Specifications

- Leak Rate: <1 x 10^{-9} std cc/sec He
- Vacuum Rating: 1 x 10^{-7} torr (1.3 x 10^{-7} mbar)
- Seals in either direction with max differential pressure across gate: 1.5 atm (1.47 bar)
- Max Operating Temperature: 400°F (200°C)
- Mounting Position: Any
- Solenoid: 24V DC/110V AC/ 220V AC
- Air to open/Air to close
- Air Pressure Required: 80-120 psig (5.5-8.3 bar)

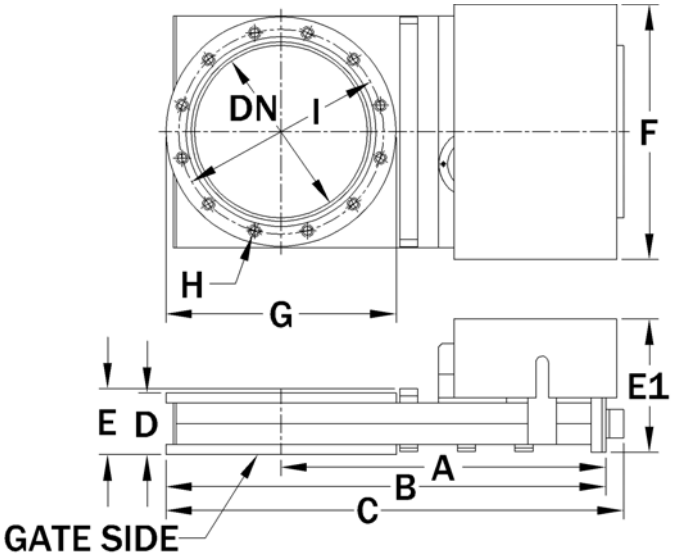


Protective cover not shown for clarity.

Features

- Valve Body/Gate Construction: 304L Stainless Steel or Mild Steel
- Surface Finish: Glass Bead Blast, Grained, Electro- polished, or Painted Mild Steel
- Dual O-ring Sealed Shaft, 100K cycle life*
- Rotary Actuator: Electro-pneumatic, Electric, or Hydraulic
- Magnetic Position Indicators Standard
- Viton or Buna O-rings at Flange, Gate, Bonnet, and Shaft
- Lubricated for life – Not affected by contaminants
- No Springs – Long life mechanism designed for 2 million cycles
- Minimal Maintenance – Does not require removal of valve body

* Under clean vacuum conditions



REFERENCE NUMBER	DN in[mm]	A in[mm]	B in[mm]	C in[mm]	D in[mm]	E in[mm]	E1 in[mm]	F in[mm]	G in[mm]	H qt/size	I in[mm]	WT Kg/lb
G6DC	7.13 [181]	13.0 [330]	18.5 [469]	21.9 [556]	4.4 [111]	4.4 [111]	6.8 [172]	12.3 [311]	11.0 [279]	(8) 3/4-10	9.5 [241]	30/[66]
G8C	8.0 [203]	16.6 [420]	23.3 [592]	24.6 [624]	4.2 [107]	4.2 [107]	8.5 [215]	13.7 [347]	13.5 [343]	(8) 3/4-10	11.8 [299]	70/[154]
G10DC	12.0 [304]	22.6 [573]	30.6 [776]	31.8 [808]	4.3 [109]	4.6 [117]	9.3 [236]	17.8 [451]	16.0 [406]	(12) 7/8-9	14.3 [362]	68/[150]
G18C	18.0 [457]	34.1 [865]	46.6 [1183]	46.6 [1183]	6.6 [168]	6.6 [168]	12.2 [310]	25.8 [656]	25.0 [635]	(16) 1.125-7	22.8 [578]	399/[878]
G20DC	21.12 [536]	36.5 [297]	49.1 [1246]	50.2 [1275]	7.8 [197]	8.5 [216]	14.2 [361]	27. [699]	27.5 [699]	(20) 1.125-7	25.0 [635]	344/[757]
G24C	24.0 [609]	45.5 [1155.7]	61.5 [1562]	61.5 [1562]	7.4 [189]	8.9 [227]	14.4 [366]	32.5 [826]	32.0 [813]	(20) 1.125-7	29.5 [749]	612/[1346]
G35C	35.0 [889]	61.7 [1567]	84.2 [2138]	84.2 [2138]	8.8 [224]	12.1 [308]	20.3 [515]	49.8 [1264]	45.0 [1143]	(28) 3/4-10	38.5 [978]	1814/[3991]

Angle Valves
ISO 100-320mm

Specifications

- Leak Rate: <1 x 10^{-9} std cc/sec He
- Vacuum Rating: 1 x 10^{-7} torr (1.3 x 10^{-7} mbar)
- Seals in either direction with max differential
- pressure across poppet: 1.0 atm (1.01 bar)*
- Max Operating Temperature: 400°F (200°C)
- Mounting Position: Actuator Up
- Solenoid: 24V DC Standard
- Air to open/Air to close
- Air Pressure Required: 80-120 psig (5.5-8.3 bar)

Features

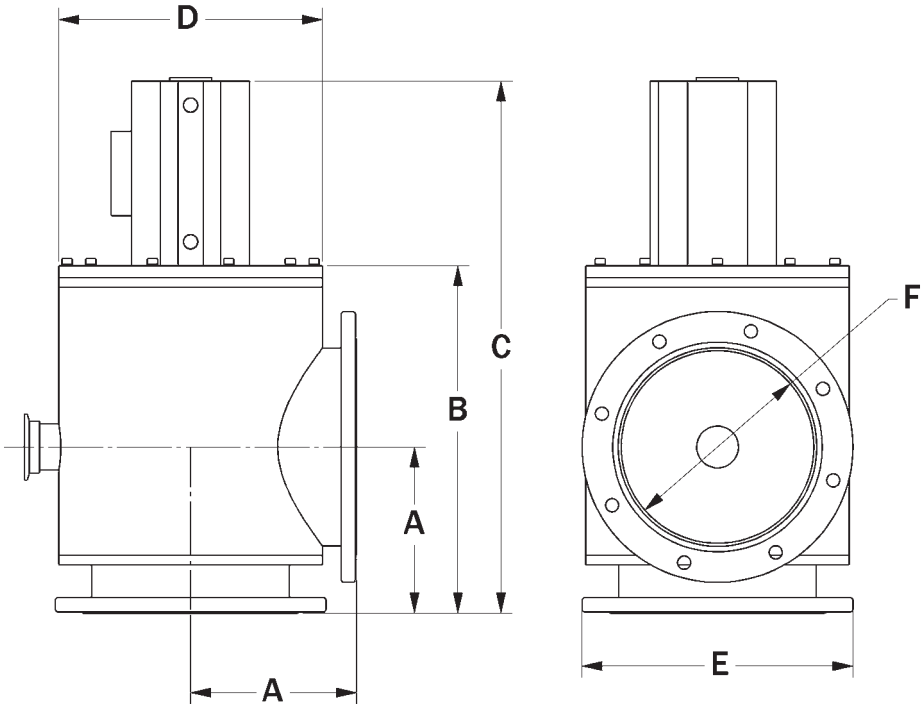
- Valve Body/Poppet Construction: 304L Stainless Steel or Mild Steel
- Surface Finish: Glass Bead Blast, Grained, Electro- polished, or Painted Mild Steel
- Actuator: Electro-pneumatic Standard Viton or Buna O-rings at Flange, Poppet, Bonnet, and Shaft
- Magnetic Position Indicators Standard
- Designed for reliable operation even in industrial environments

*For sizes up to 20" (500mm) Standard

High Vacuum Angle Valves

Reliable Cycle Life

Low Maintenance



REFERENCE NUMBER	BONNET SEAL	SIZE	PORT FLANGE	ROUGHING PORT	A in[mm]	B in[mm]	C in[mm]	D in[mm]	E in[mm]	F in[mm]
A(ISO100)PSBP	VITON	4"	ISO100	N/A	4.25 [107.95]	8.74 [222.00]	12.72 [323.09]	6.26 [159.00]	6.50 [165.1]	3.94 [100.08]
A(ISO160)PSBP	VITON	6"	ISO160	KF40	5.43 [137.92]	11.34 [288.04]	17.40 [441.96]	8.62 [218.95]	8.86 [225.04]	6.3 [160.02]
A(ISO200)PSBP	VITON	8"	ISO200	KF50	7.87 [199.90]	14.49 [368.05]	21.32 [541.53]	10.75 [273.05]	11.22 [284.99]	7.87 [199.90]
A(ISO250)PSBP	VITON	10"	ISO250	ISO63	8.19 [208.03]	17.00 [431.80]	29.17 [740.92]	12.99 [329.95]	13.19 [335.03]	9.84 [249.94]
A(ISO320)PSBP	VITON	12"	ISO320	ISO80	9.84 [249.94]	20.31 [515.87]	32.48 [825.00]	15.75 [400.05]	16.73 [424.94]	12.60 [320.04]

Large Angle Valves

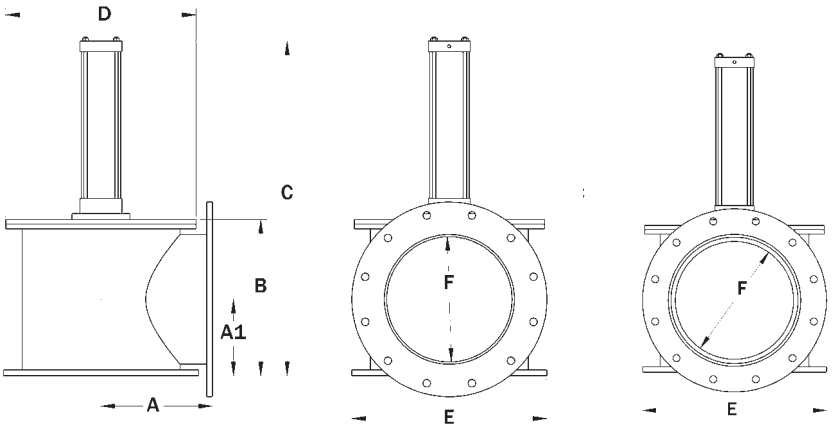
Specifications

- Leak Rate: <1 x 10^{-9} std cc/sec He
- Vacuum Rating: 1 x 10^{-7} torr (1.3 x 10^{-7} mbar)
- Seals in either direction with max differential
- pressure across poppet: 1.0 atm (1.01 bar)*
- Max Operating Temperature: 400°F (200°C)
- Mounting Position: Actuator Up
- Solenoid: 24V DC Standard
- Air to open/Air to close
- Air Pressure Required: 80-120 psig (5.5-8.3 bar)

Features

- Valve Body/Poppet Construction: 304L Stainless Steel or Mild Steel
- Surface Finish: Glass Bead Blast, Grained, Electro- polished, or Painted Mild Steel
- Actuator: Electro-pneumatic Standard Viton or Buna O-rings at Flange, Poppet, Bonnet, and Shaft
- Magnetic Position Indicators Standard
- Designed for reliable operation even in industrial environments

*For sizes up to 20" (500mm) Standard



ISO 400-630

REFERENCE NUMBER	BONNET SEAL	SIZE	PORT FLANGE	A in[mm]	A1 in[mm]	B in[mm]	C in[mm]	D in[mm]	E in[mm]	F in[mm]
A(ISO400)P	VITON	16"	ISO400	13.78 [350.01]	9.69 [246.13]	19.56 [496.82]	30.55 [775.97]	20.50 [520.70]	20.10 [510.54]	15.67 [398.02]
A(ISO500)P	VITON	20"	ISO500	14.57 [370.08]	12.46 [316.48]	24.56 [623.82]	39.86 [1012.44]	25.50 [647.70]	24.00 [609.60]	19.67 [499.62]
A(ISO630)P	VITON	24"	ISO630	17.50 [444.50]	17.50 [444.50]	33.31 [846.07]	63.88 [1622.55]	31.19 [792.23]	29.53 [750.06]	25.06 [636.52]
A(ISO800)P	VITON	32"	ISO800	24.00 [609.60	23.63 [600.20]	46.75 [1187.45]	90.00 [2286.00]	44.00 [1117.60]	36.22 [919.99]	31.50 [800.10]
A(ISO1000)P	VITON	40"	ISO1000	27.17 [690.12]	23.04 [585.22]	47.07 [1195.58]	69.75 [1771.65]	49.41 [1255.01]	44.09 [1119.89]	39.37 [1000.00]

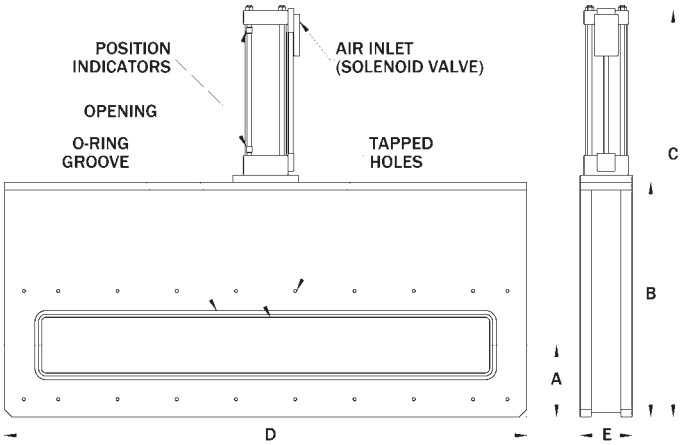
ASA 14-24

REFERENCE NUMBER	BONNET SEAL	SIZE	PORT FLANGE	A in[mm]	A1 in[mm]	B in[mm]	C in[mm]	D in[mm]	E in[mm]	F in[mm]
A14P	VITON	14"	ASA14	12 [304.80]	8.25 [209.55]	17.09 [434.09]	36.22 [919.99]	20.50 [520.70]	19.88 [504.95]	14 [355.60]
A16P	VITON	16"	ASA16	14 [355.60]	9.25 [234.95]	19.13 [485.90	38.50 [977.90]	22.75 [577.85]	23.50 [596.90]	16 [406.40]
A18P	VITON	18"	ASA18	14 [355.60]	10.31 [261.87]	21.13 [536.70]	42.26 [1073.40]	22.50 [571.50]	23.50 [596.90]	18 [457.20]
A20P	VITON	20"	ASA20	16 [406.40]	14.00 [355.60]	27.43 [696.72]	56.38 [1432.05]	27.41 [696.21]	27.50 [698.50]	20.50 [520.70]
A24P	VITON	24"	ASA24	19 [482.60]	17.50 [444.50]	33.31 [846.07]	63.88 [1622.55]	30.75 [781.05]	28.50 [723.90]	24.00 [609.60]
A35P	VITON	35"	ASA35	24 [609.60]	23.63 [600.20]	46.75 [1187.45]	90.00 [2286.00]	44.00 [1117.60]	41.75 [1060.45]	35.00 [889.00]

Slit Valves

Specifications

- Leak Rate: <1 x 10^{-9} std cc/sec He
- Vacuum Rating: 1 x 10^{-7} torr (1.3 x 10^{-7} mbar)
- Seals in either direction with max differential pressure across gate: 1.5 atm (1.47 bar)
- Max Operating Temperature: 400°F (200°C)
- Mounting Position: Any
- Solenoid: 24V DC/110V AC/ 220V AC
- Air to open/Air to close
- Air Pressure Required: 80-120 psig (5.5-8.3 bar)



Features

- Valve Body/Gate Construction: 6061 Aluminum or 304L Stainless Steel, Internals 304 SST
- Surface Finish: Glass Bead Blast, Grained, Electro- polished
- Dual O-ring Sealed Shaft w/feed through, 100K cycle life or Bellows Sealed rated up to 1 million cycles*
- Actuator: Electro-pneumatic, Electric, or Hydraulic
- Magnetic Position Indicators Standard
- Viton or Buna O-rings at Flange, Gate, Bonnet, and Shaft
- Lubricated for life – Not affected by contaminants
- No Springs – Long life mechanism designed for 2 million cycles
- Minimal Maintenance – Does not require removal of valve body
- Choose from standard sizes and configurations or contact a GNB representative for other options.

* Under clean vacuum conditions

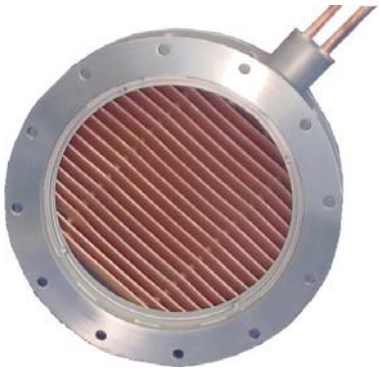
Transfer Valves • Load Lock • FPD • Process Solar Industry

REFERENCE NUMBER	BONNET SEAL	SIZE	A in[mm]	B in[mm]	C in[mm]	D in[mm]	E in[mm]
G(2x20)P	VITON	2x20	3.58[90.93]	9.50[241.30]	19.63[498.60]	26.64[676.66]	4.37[111.00]
G(2x28)P	VITON	2x28	3.58[90.93]	9.50[241.30]	19.63[498.60]	36.04[915.42]	4.37[111.00]
G(2x45)P	VITON	2x45	3.83[97.28]	9.50[241.30]	19.88[504.95]	53.89[1368.81]	4.37[111.00]
G(2x61)P	VITON	2x61	3.83[97.28]	9.50[241.30]	19.88[504.95]	70.69[1795.53]	4.97[126.24]
G(2x92.5)P	VITON	2x92.5	3.83[97.28]	9.50[241.30]	19.88[504.95]	103.77[2635.76]	4.97[126.24]
G(4x20)P	VITON	4x20	4.66[118.36]	18.50[469.90]	31.13[790.70]	26.72[678.69]	5.37[136.40]
G(4x28)P	VITON	4x28	4.66[118.36]	18.50[469.90]	31.13[790.70]	36.12[917.45]	5.37[136.40]
G(4x45)P	VITON	4x45	5.16[131.06]	18.50[469.90]	31.63[803.40]	53.97[1370.84]	5.37[136.40]
G(4x61)P	VITON	4x61	5.16[131.06]	18.50[469.90]	31.63[803.40]	70.77[1797.56]	5.37[136.40]
G(4x92.5)P	VITON	4x92.5	5.16[131.06]	18.50[469.90]	31.63[803.40]	103.85[2637.79]	5.37[136.40]
G(6x20)P	VITON	6x20	5.74[145.80]	22.50[571.50]	37.63[955.80]	54.05[1372.87]	5.87[149.10]
G(6x28)P	VITON	6x28	5.74[145.80]	22.50[571.50]	37.63[955.80]	70.85[1799.59]	5.87[149.10]
G(6x45)P	VITON	6x45	6.24[158.50]	22.50[571.50]	37.63[955.80]	54.05[1372.87]	5.87[149.10]
G(6x61)P	VITON	6x61	6.24[158.50]	22.50[571.50]	37.63[955.80]	70.85[1799.59]	5.87[149.10]
G(6x92.5)P	VITON	6x95.5	6.24[158.50]	22.50[571.50]	37.63[955.80]	103.93[2639.82]	5.87[149.10]
G(8x20)P	VITON	8x20	6.82[173.23]	30.30[769.62]	48.28[1226.31]	26.95[684.53]	5.87[149.10]
G(8x28)P	VITON	8x28	6.82[173.23]	30.30[769.62]	48.28[1226.31]	36.35[923.29]	5.87[149.10]
G(8x45)P	VITON	8x45	7.32[185.93]	30.30[769.62]	48.28[1226.31]	54.20[1376.68]	6.56[166.62]
G(8x61)P	VITON	8x61	7.32[185.93]	30.30[769.62]	48.28[1226.31]	71.00[1803.40]	6.56[166.62]
G(8x92.5)P	VITON	8x92.5	7.32[185.93]	30.30[769.62]	48.28[1226.31]	104.80[2661.92]	6.56[166.62]

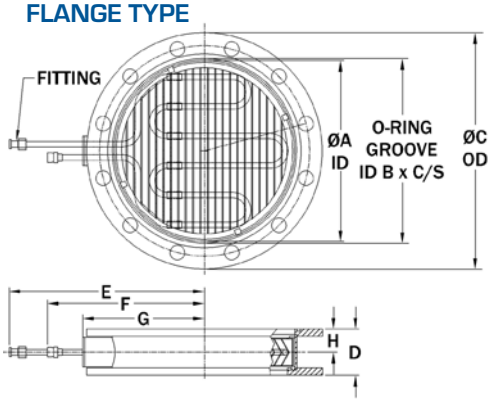
Multi-Coolant Baffles

Features

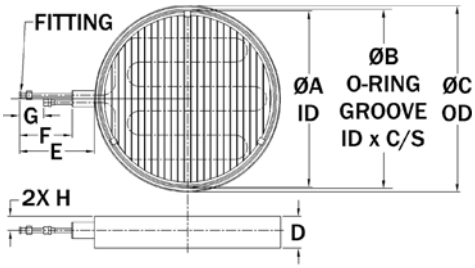
- Body construction: 304L Stainless Steel with Copper Chevrons
- Surface: Glass Bead Blast Finish at exterior and interior
- Opening sizes: 6.0– 35.0 inches ASA Flanges and larger per customer request
- Viton O-rings seals
- Leak Rate: <1 x 10^{-9} std cc/sec He
- Vacuum Rating: 1 x 10^{-7} torr (1.3 x 10^{-7} mbar)



FLANGE TYPE



RING TYPE



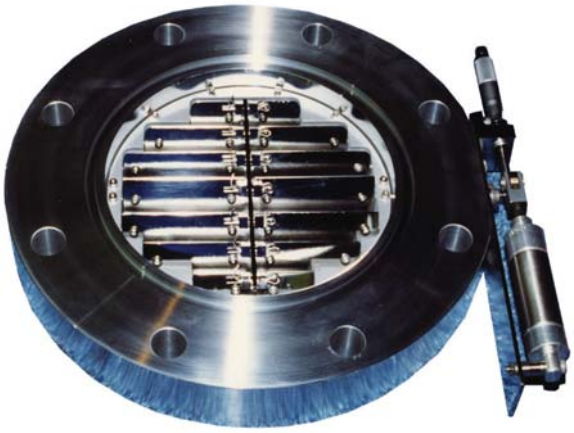
FLANGE TYPE	Flange Dimension - Inches[mm]				Baffle Dimensions - Inches [mm]							
Model	Opening ID A	O-ring Groove ID B x C/S	Bolt Circle	Hole Size	C	D	E	F	G	H	Fitting	Approx WT (lb)
MCB-6D	7.50 [190.5]	8.00 [203.2] x3/16	9.50 [241.3]	.78 [19.8]	11.00 [279.4]	3.29 [83.6]	12.00 [304.8]	9.00 [228.6]	7.00 [177.8]	1.65 [41.8]	3/8 VCR	30
MCB-8	8.00 [203.2]	9.25 [235.0] x1/4	11.75 [298.5]	.78 [19.8]	13.50 [342.9]	3.50 [88.9]	12.00 [304.8]	9.00 [228.6]	7.00 [177.8]	1.65 [41.8]	3/8 PARKER	30
MCB-10 (ISO 250)	10.28 [261.1]	--	12.205 [310.0]	.44 [11.0]	13.189 [335.0]	3.63 [92.2]	13.25 [336.6]	10.63 [270.0]	8.17 [207.5]	1.61 [41.0]	3/8 NPTF	40
MCB-10D	12.25 [311.1]	12.50 [317.5] x1/4	14.25 [362.0]	1.00 [25.4]	16.00 [406.4]	3.15 [80.0]	13.25 [336.6]	10.63 [270.0]	8.25 [209.6]	1.57 [40.0]	3/8 PARKER	50
MCB-12	12.25 [311.1]	12.50 [317.5] x3/16	17.00 [431.8]	.88 [22.4]	19.00 [482.6]	2.88 [73.0]	13.25 [336.6]	10.63 [270.0]	8.25 [209.6]	1.45 [37.0]	3/8 VCR	50
MCB-20D	21.75 [552.5]	22.12 [561.9] x1/4	25.00 [635.0]	1.25 [31.8]	27.50 [698.5]	3.94 [100.1]	20.75 [527.1]	17.75 [450.9]	14.25 [362.0]	1.75 [44.3]	1/2 PARKER	90

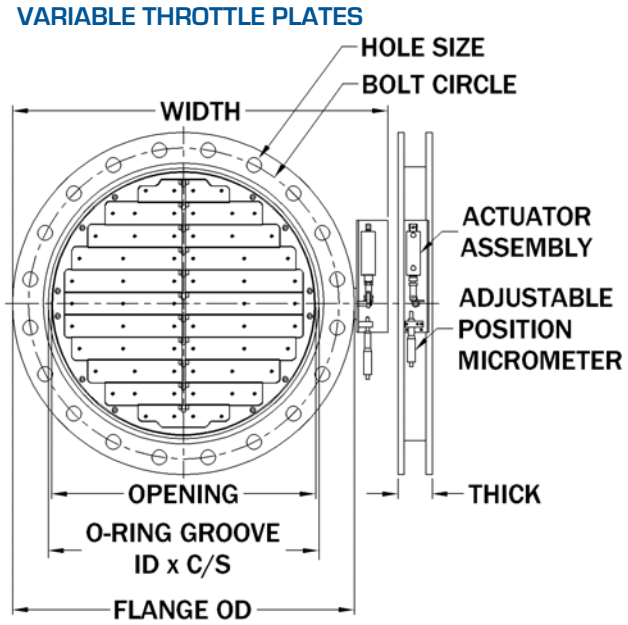
RING TYPE	Baffle Dimensions - Inches [mm]									
Model	Opening ID A	O-ring Groove ID x C/S	OD C	D	E	F	G	H	Fitting	Approx WT (lb)
MCB-6D	7.50 [190.5]	8.00 [203.2] x3/16	8.50 [215.9]	2.82 [71.5]	7.75 [196.9]	5.00 [127.0]	3.00 [76.2]	1.40 [35.4]	3/8 VCR	30
MCB-8	8.00 [203.2]	8.15 [207.0] x1/8	8.63 [219.1]	2.63 [66.7]	7.69 [195.3]	5.00 [127.0]	3.00 [76.2]	1.30 [32.9	3/8 PARKER	30
MCB-12	12.25 [311.1]	12.50 [317.5] x3/16	13.25 [336.6]	2.88 [73.0]	6.62 [168.3]	5.00 [127.0]	2.60 [66.0]	1.42 [36.1]	3/8 PARKER	50
MCB-16D	18.00 [457.2]	18.31 [465.2] x1/4	19.63 [498.6]	4.00 [101.6]	10.97 [278.6]	8.38 [212.8]	3.00 [76.2]	1.75 [44.3]	1/2 PARKER	92
MCB-20D	21.75 [552.5]	22.12 [561.9] x1/4	23.00 [584.2]	3.94 [100.1]	9.25 [235.0]	6.50 [165.1]	3.00 [76.2]	1.75 [44.3]	1/2 PARKER	90
MCB-24	24.00 [609.6]	25.06 [636.5] x1/4	26.00 [660.4]	3.94 [100.1]	9.25 [235.0]	6.25 [158.8]	2.75 [69.9]	1.75 [44.3]	1/2 PARKER	150
MCB-32	32.50 [825.5]	32.81 [833.5] x1/4	33.75 [857.3]	5.25 [133.4]	8.50 [215.9]	6.50 [165.1]	2.00 [50.8]	2.38 [60.3]	1/2 PARKER	175
MCB-35	35.50 [901.7]	35.81 [909.6] x1/4	36.75 [933.5]	5.25 [133.4]	10.00 [254.0]	7.00 [177.8]	3.00 [76.2]	2.38 [60.3]	1/2 PARKER	310

Variable Throttle Plates

Features

- Body construction: 304L Stainless Steel with Copper Chevrons
- Surface: Glass Bead Blast Finish at exterior and interior
- Opening sizes: 6.0– 35.0 inches ASA Flanges and larger per customer request
- Viton O-rings seals
- Leak Rate: <1 x 10^{-9} std cc/sec He
- Vacuum Rating: 1 x 10^{-7} torr (1.3 x 10^{-7} mbar)



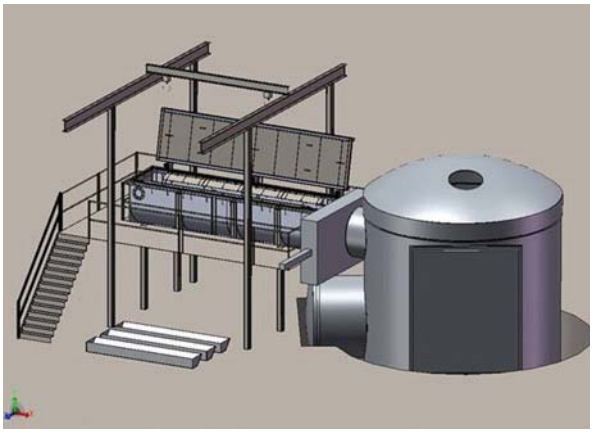


	Throttle Plate Dimension-Inches [mm]							
Model	Opening ID	O-ring Groove ID B x C/S	Flange OD C	Bolt Circle	Hole Size	Width	Thick	Approx WT (lb)
TP-8 (ISO 200)	8.39 [213.0]	–	11.22 [285.0]	10.236 [260.0]	(12) 43 [11.0]	13.63 [346.1]	2.34 [59.4]	50
TP-10 (ISO 250)	10.28 [261.0]	–	13.19 [335.0]	12.205 [310.0]	(12) 5/16-18	14.79 [375.6]	1.75 [44.5]	50
TP-16	16.00 [406.4]	18.50 [469.9]x3/8	23.50 [596.9]	21.25 [539.8]	(16) 1.13 [28.6]	25.57 [649.4]	2.75 [69.9]	100
TP-18	18.00 [457.2]	18.50 [469.9]x3/8	25.00 [635.0]	22.75 [577.9]	(16) 1.13 [28.6]	27.07 [687.6]	2.75 [69.9]	150
TP-20	21.25 [539.8]	21.75 [552.5]x3/8	27.50 [698.5]	25.00 [635.0]	(20) 1.25 [31.8]	30.18 [766.5]	2.75 [69.9]	120
TP-32 (ISO 800)	31.50 [800.1]	–	36.22 [920.0]	35.039 [890.0]	(24) .56 [14.2]	38.83 [986.3]	3.00 [76.2]	250
TP-35	35.00 [889.0]	36.50 [927.1]x3/8	41.75 [1060.5]	38.50 [977.9]	(28) .88 [22.4]	44.86 [1139.5]	3.00 [76.2]	250

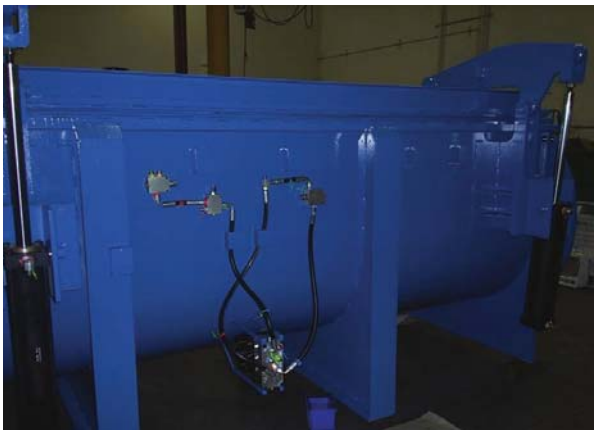
Metallurgical Products and Applications

Features

- Material: Stainless Steel or Mild Steel
- Actuation: Hydraulic, Pneumatic, Electric
- Cooling: Water-cooled Gates, Guard Rings, Flanges and Bodies
- Engineering: Retrofit existing systems with Feeders, Valves, Cranes and Mezzanines
- Valve Types: Circular, Rectangular, Slit, Flapper and Bodiless

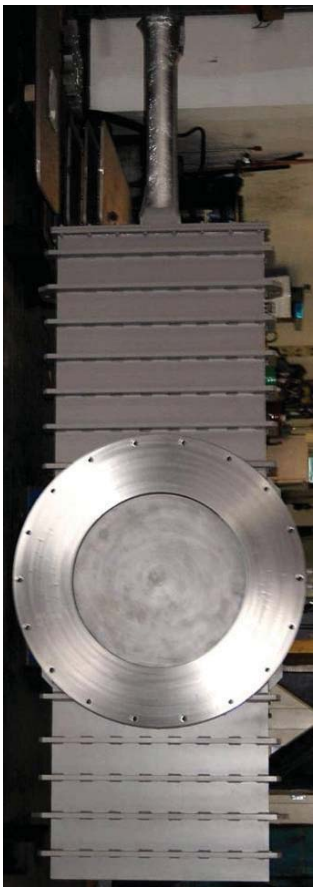


Products for Re-melting, Forging and Casting



Vibratory Feeder Chambers and Systems

Bodiless Gate Valve



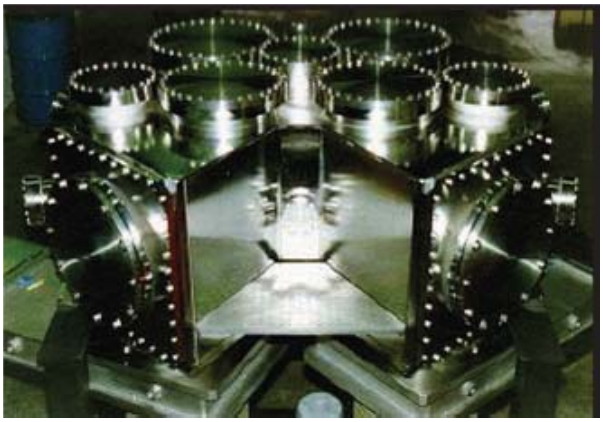
Water-cooled Protective Guard-ring Valve

Vacuum Chambers

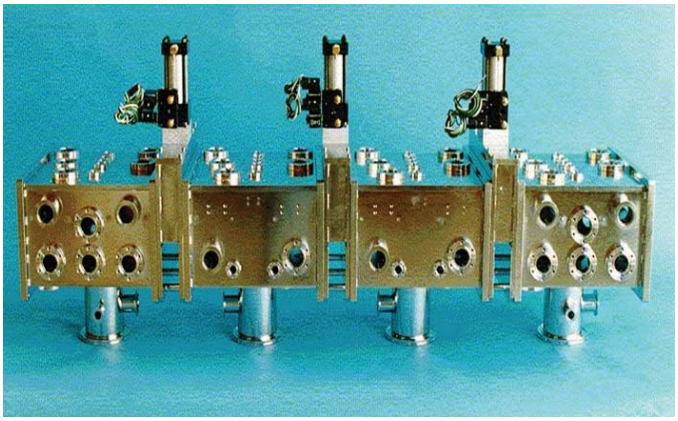
Features

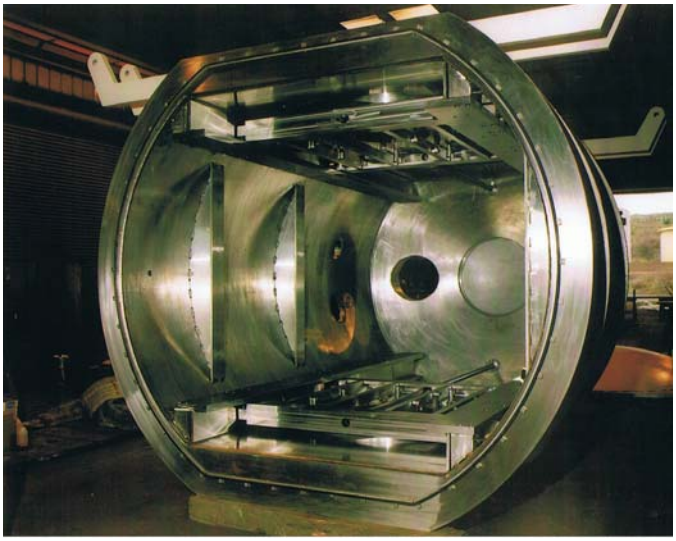
- Material: 304L Stainless Steel, Mild Steel and Aluminum
- Shapes: Cylindrical, Box, Inline or customer design
- Cooling: Water Channel, Water-cooled Flanges, Dual-walled.
- Surface Finish: Glass Bead Blast, Grained, Electro-polished, Machined, or Painted
- Sealing: O-ring or all metal sealing
- Size: 3-30ft (1M-6M) or larger with different flanges per customer request
- Vacuum Range: high vacuum to ultra-high vacuum
- Bake outs & RGA available
- Leak Rate: $<1 \times 10^{-9}$ std cc/sec He
- Vacuum Rating: 1×10^{-7} torr (1.3×10^{-7} mbar)
- Temperature Range: ≤ +400 °F (+200 °C) w/ water cool jackets per customer request

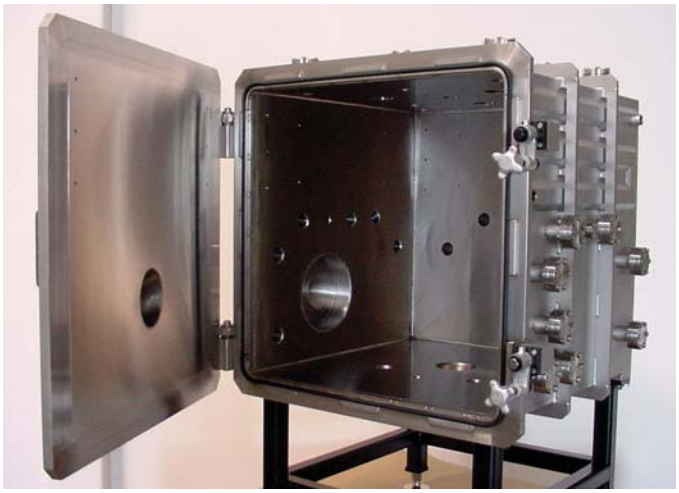
GNB designs Vacuum Chambers for durability, performance, and value. Choose from standard sizes and features or contact us for custom options.

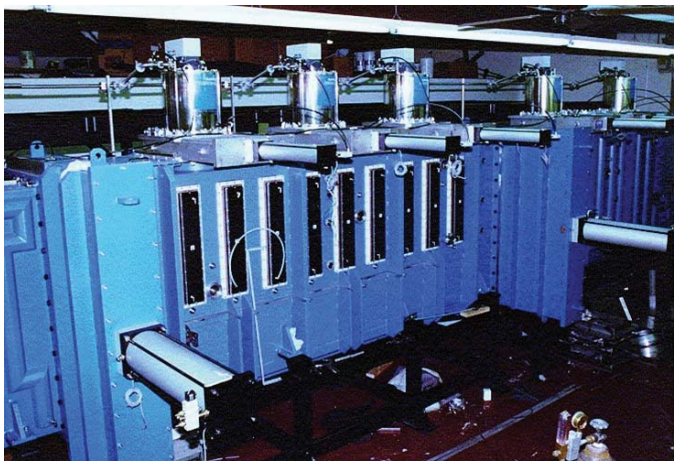


Free Consulting On Chambers
Short Lead Times
Competitive Pricing









GNB Manufacturing

GNB Corporation has 45 years of manufacturing excellence in the Vacuum Science Industry. In those years we've manufactured hundreds of custom Chambers and Valves of varied materials. Our manufacturing expertise coupled with years of engineering knowledge and state-of-the-art equipment delivers uncompromised quality to each project. Take a moment to review our resources and let us know how we can add value to your next project.

Manufacturing Summary

CNC Milling: Capability to: 168"sq. (4267mm sq.)
Turning: Capability to: 108" (2743mm)
Cutting: 5 Axis Waterjet 12ft. x 8ft. (3657mm x 2438mm) Saws to 13" (330mm)
Blasting: Walk-In Cabinet, 15ft. x 12ft. x 12ft. (4572mm x 3657mm x 3657mm)
Lifting Capacity: 30 Tons (27 Metric Tons)
Welding:

- 15 Weld Stations
- MIG & TIG Welding, Materials: Aluminum, Stainless Steel, Mild Steel
- AWS CWI on Staff
- ASME U-Stamp

GNB Clean Room

GNB has available a new work area in which the air quality is highly regulated in order to protect sensitive equipment from contamination. The new GNB Clean Room has important features ideal for the complete chamber assembly processes.

ISO Class 8 clean room size:	12,500 sq ft.	Class 100,000
ISO Class 5 clean room size:	1,400 sq ft.	Class 100

Clean room equipment:

- Hotsy electric hot pressure washer 2,000 psi 4GPM up to 180°f with two 100-gallon supply tanks
- Culligan water deionizer system with a 35x20 cleaning station
- Two gantry cranes one 5 ton and a 3 ton
- CO_2 Cleaner
- 4-ton electric forklift
- dssLC Series MASS Spectrometer system (RGA)

ISO Class 5 Clean Room

Helium Leak Testing

De-Ionizer Hot Pressure Wash System

Weld Area

Bake-Out Equipment

GNB Corporation

3200 Dwight Rd, Suite 100

Elk Grove, CA, USA 95758

Phone: (916) 395-3003

Fax: (916) 395-3363

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