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WINTERS INSTRUMENTS

Diaphragm Seals

2011/07

Diaphragm Seals Product Catalogue



Why Winters?

We're There.

Global. Operating from 7 worldwide offices in Toronto, Calgary, Buffalo, Houston, Shanghai, Montevideo and Buenos Aires, Winters works closely with a vast network of distribution partners in over 80 countries to ensure that customers receive the instrumentation they require. This also allows Winters to provide local support to ensure our customers are individually serviced in the markets they operate in.

Cover All Markets. We work with customers in industries such as fluid power, wastewater, pharmaceutical, petrochemical, oil and gas, process control, HVAC, power generation, plumbing, food and beverage, agriculture, pulp and paper, and many others. In addition, many of Winters' products are manufactured, tested and certified in accordance to globally recognized third party agency requirements (3A, CSA, CRN, CE, Ex, FM, UL, NACE, RoHS).

High Field Support. Winters maintains field located regional sales managers who provide on-site visits and product support to distributors, end users and OEMs. Our customer service team is well trained in order management and can also provide telephone support on technical challenges. In addition to our world class customer service, Winters conducts training programs every quarter to provide our distribution partners with comprehensive sales tools and keep them up-to-date on new developments in instrumentation.

Winters Instruments is proud to be an ISO 9001:2008 registered manufacturer. We maintain complete control in our product offering of industrial instrumentation, from design, engineering and manufacturing, to servicing, calibration, repairs and product training for all markets.

Put simply, We're There.

Your Global Partner

Since 1953, Winters Instruments has been providing quality built instrumentation to all markets that require pressure and temperature measurement. Through the years, the company has grown in size and reputation and is now a leading, global manufacturer of industrial instrumentation. Our comprehensive product lines of pressure gauges, thermometers, diaphragm seals, transmitters, switches, and accessories are brought to market by an extensive network of distribution partners who share our successes of being trusted by some of the world's most recognized Fortune 500 companies and leading municipal organizations.



Diaphragm seals with threaded process connection



Diaphragm seals with flange process connection



Diaphragm seals for sanitary connection

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D36 - Medium pressure

Mounting

Direct or remote

Diaphragm Materials

- AISI 316L SS, welded, standard
- Option: - AISI 316L SS with PTFE coated
 - Tantalum
 - Hastelloy C276
 - Titanium
 - Monel 400
 - Others exotic materials

Body Materials

- AISI 304 SS, standard
- Option: - AISI 316SS
 - AISI 316L SS
 - AISI 316 SS with PTFE coated
 - Titanium
 - Hastelloy C276
 - Monel 400
 - Tantalum
 - Others exotic materials

Minimum Operating Pressure

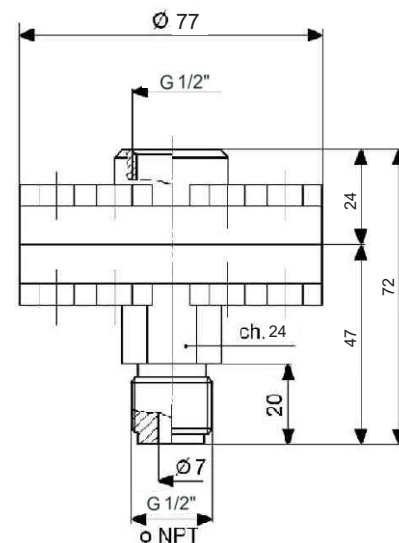
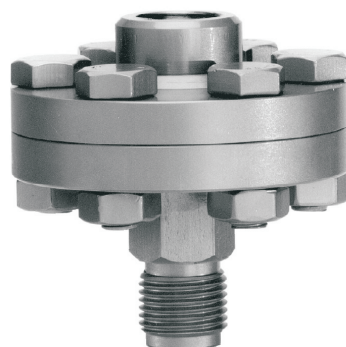
16 bar

Maximum Operating Pressure

400 bar

Process Connection

1/2" NPT standard



Ordering Code

D 3 6 - - - - -

Gauge Connection

G 1/2" B (F) 2 G
M20x1.5 (F) M 2

Process Connection

1/4" NPT 4 N
1/2" G B 2 G
3/8" BSPT 3 T
BSPP B
M20 x1.5 M 2

Diaphragm Materials

AISI 316L SS L
Monel 400 M
Hastelloy C H
AISI 316L SS with PTFE Coated (-1bar to 40bar with PTFE coating -20°C to 150°C with PTFE coating) P
Tantalum A
Titanium T
Others (Per customer request) Z

Lower Housing Materials

AISI 304 SS Y
AISI 316 SS S
AISI 316L SS L
Monel 400 M
Hastelloy C H
AISI 316 SS with PTFE Coated (-1bar to 40bar with PTFE coating -20°C to 150°C with PTFE coating) P
Titanium T
Others (Per customer request) Z

Options

See page 35 X X X

D37 - Low pressure

Mounting

Direct or remote

Diaphragm Materials

- AISI 316L SS, welded, standard
- Option: - AISI 316L SS with PTFE coated
 - Tantalum
 - Hastelloy C276
 - Titanium
 - Monel 400
 - Others exotic materials

Body Materials

- AISI 304 SS standard
- Option: - AISI 316 SS
 - AISI 316L SS
 - AISI 316 SS with PTFE coated
 - Titanium
 - Hastelloy C276
 - Monel 400
 - Tantalum
 - Others exotic materials

Minimum Operating Pressure

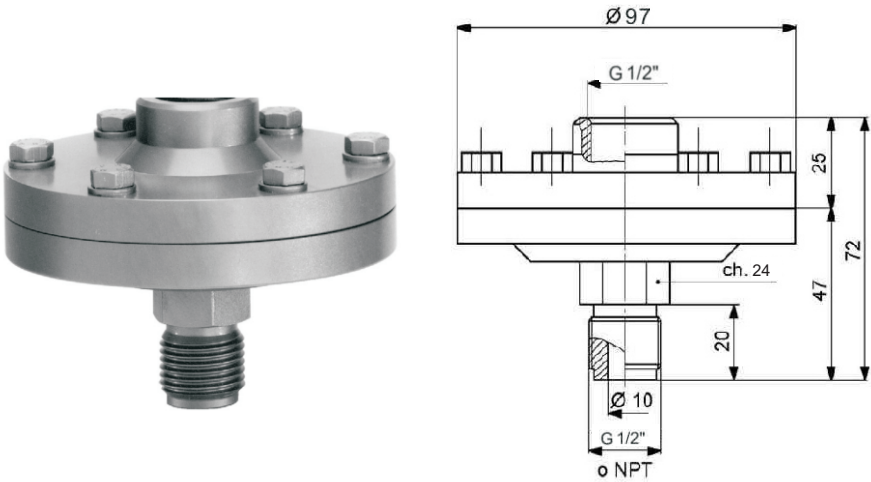
-1 bar

Maximum Operating Pressure

60 bar

Process Connection

1/2" NPT standard



Ordering Code

D 3 7 - - - - -

Gauge Connection

G 1/2" B (F) 2 G
M20x1.5 (F) M 2

Process Connection

1/4" NPT 4 N
1/2" G B 2 G
3/8" BSPT 3 T
BSPP B
M20 x1.5 M 2

Diaphragm Materials

AISI 316L SS
Monel 400
Hastelloy C
AISI 316L SS with PTFE Coated (-1bar to 40bar with PTFE coating -20°C to 150°C with PTFE coating)
Tantalum
Titanium
Others (Per customer request)

L
M
H
P
A
T
Z

Lower Housing Materials

AISI 304 SS
AISI 316 SS
AISI 316L SS
Monel
Hastelloy C
AISI 316 SS with PTFE Coated (-1bar to 40bar with PTFE coating -20°C to 150°C with PTFE coating)
Titanium
Others (Per customer request)

Y
S
L
M
H
P
T
Z

Options

See page 35

X X X

D38 - For differential pressure gauge PDD Series only

Mounting

Direct or remote

Diaphragm Materials

- AISI 316L SS, welded, standard
- Option: - AISI 316L SS with PTFE coated
 - Tantalum
 - Hastelloy C276
 - Titanium
 - Monel 400
 - Others exotic materials

Body Materials

- AISI 304 SS, standard
- Option: - AISI 316 SS
 - AISI 316L SS
 - AISI 316 SS with PTFE coated
 - Titanium
 - Hastelloy C276
 - Monel 400
 - Tantalum
 - Others exotic materials

Minimum Operating Pressure

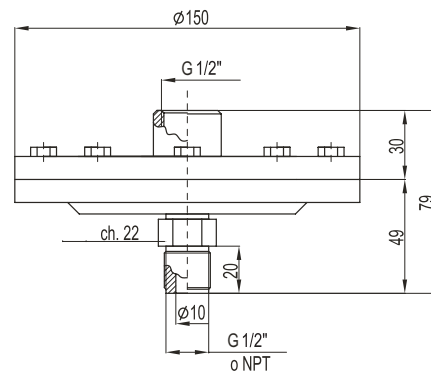
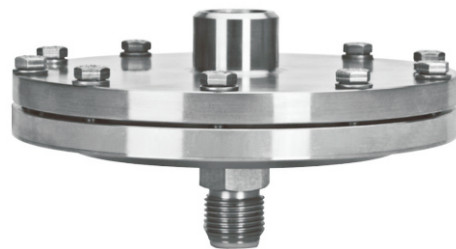
60 mbar

Maximum Operating Pressure

25 bar

Process Connection

G 1/2" B



Ordering Code

D38

Gauge Connection

G 1/2" B (F)

M20x1.5 (F)

2

G

M

2

Process Connection

1/2" NPT

1/2" G B

1/2" BSPP

2

N

2

G

2

B

Diaphragm Materials

AISI 316L SS standard

Monel

Hastelloy C

AISI 316L SS with PTFE coated (-1bar to 40bar with PTFE coating -20°C to 150°C with PTFE coating)

Tantalum

Titanium

Others (Per customer request)

L

M

H

P

A

T

Z

Lower Housing Materials

AISI 316 SS

AISI 316L SS

Monel

Hastelloy C

AISI 316 SS with PTFE coated (-1bar to 40bar with PTFE coating -20°C to 150°C with PTFE coating)

Titanium

Others (Per customer request)

S

L

M

H

P

T

Z

Diaphragm sealed gasket

Nitrilic rubber (NBR).standard

FPM(Viton)

Default

V

Options

See page 35

X

X

X

D55 - Welded type Male connection

Mounting

Direct or remote

Diaphragm Material

316L SS, welded

Welded Body Materials

- AISI 316 SS, standard
Option: - AISI 316L SS

Minimum Operating Pressure

From Vacuum for type B

Maximum Operating Pressure

To 600 bar for type A

Process Connection

- M20x1.5, standard
- G 1/2" B
- 1/2" NPT

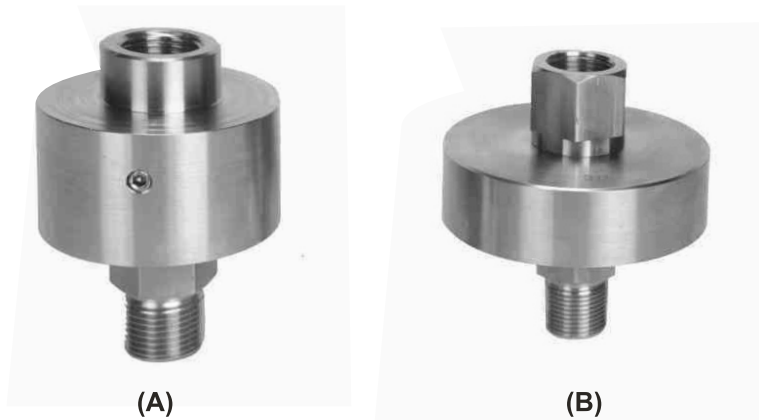
Range

For A type

From 4 bar to 600 bar

For B type

From vacuum to 100 bar



Ordering Code	D	5	5	-		-		-	
A type									
B type									
Gauge Connection									
G 1/2" B								2	G
M20x1.5								M	2
Process Connection									
1/2" (B) G								2	G
1/2" NPT								2	N
M20x1.5								M	2

D40 - Welded type Female connection

Housing Material

316 SS

Diaphragm Material

316L SS, welded

Minimum Operating Pressure

1 bar

Maximum Operating Pressure

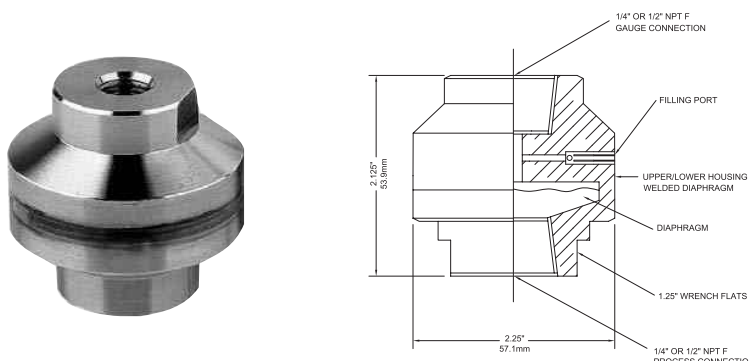
69 bar

Gauge Connection

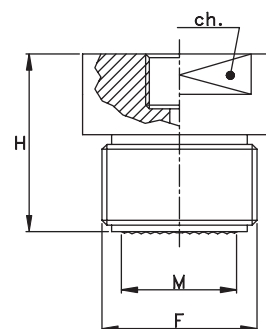
G 1/2" B (F) or M20x1.5 (F)

Process Connection

- 1/2" NPT (F), standard



Ordering Code	D	4	0	-		-		-	
A type									
B type									
Gauge Connection									
G 1/2" B								2	G
M20x1.5								M	2
Process Connection									
1/2" G B								2	G
1/2" NPT								2	N
M20x1.5								M	2



F	M	H	ch.
G 1" B	25	55	41
1" NPT	25	55	41
G 1 1/2" B	36	55	41
1 1/2" NPT	36	55	41
G 2" B	48	55	60
2" NPT	48	55	60

D 3 4 – – – – –

2 G
M 2

7	N
8	G

L

S
I

X X X



D 1 0 -

M20x1.5

2	N
2	G
M	2

D70 - #70 Diaphragm Seals

30" Vac to 2,500 psi (-100 to 15,850 kPa)



Process Gauge
attached to a #70 Seal

Description & Features:

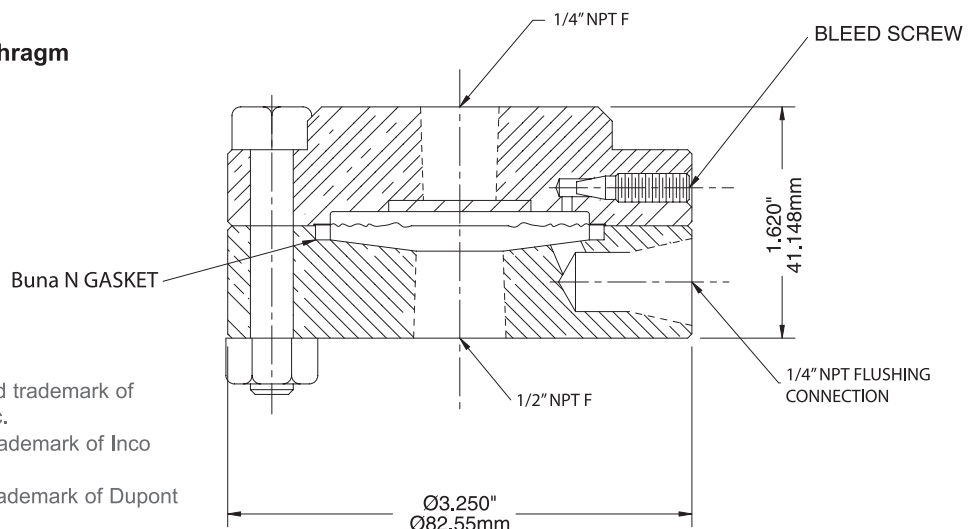
- Two piece construction and designed to withstand even the most severe process applications
- "Continuous use" seals - backing plate will prevent diaphragm from rupturing if pressure sensing instrument fails. Pressure will be held until instrument is replaced
- Diaphragm is separable for servicing and is available with a 1/8" NPT or 1/4" NPT flushing connection for removing any material which may clog the process connection
- Diaphragm is constructed of AISI 316L stainless steel and welded to the upper chamber of the seal for pressures 30 psi (200 kPa) and above; Viton® for ranges from 30" Hg Vacuum (-100 kPa) up to 100 psi (690 kPa)
- Viton® is highly recommended for applications less than 10 psi
- CRN registered
- 1 year warranty

Applications:

- Where the process fluid is corrosive or viscous and would clog instrument internals/solidify within the pressure gauge, switch or transmitter

Specifications	
Housing	316 SS, Monel®, Hastelloy® C
Construction	Two piece construction
Connection	Bottom: 1/4", 1/2", 3/4" and 1" NPT Top: 1/4" and 1/2" NPT
Process Temperature	-22°F to 212°F (-30°C to 100°C)
Other	Flushing connections available. Other materials such as Teflon®, PVC, Carbon steel, Alloy 20, Hastelloy® B, Titanium, Tantalum, etc. are available upon request

Stainless Steel Diaphragm



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 Monel® is a registered trademark of Inco Alloys International
 Teflon® is a registered trademark of Dupont Corporation
 Viton® is a registered trademark of DuPont Performance Elastomers

D70 - #70 Diaphragm Seals

Order Codes (products in bold are normally in stock)

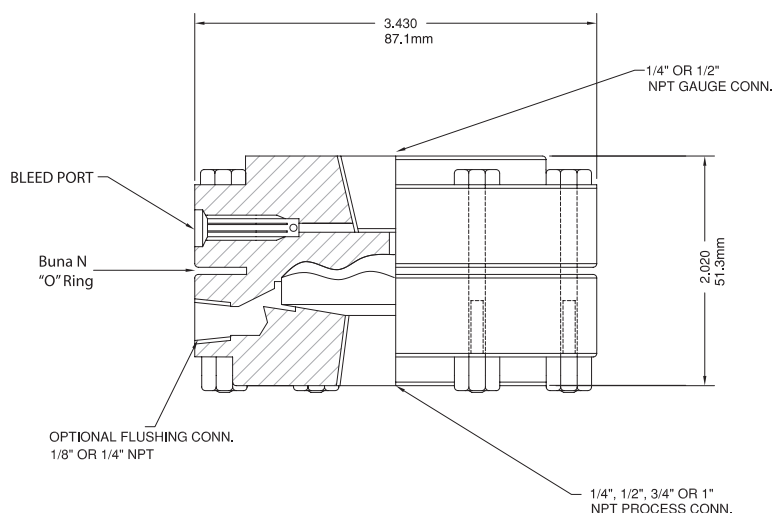
Lower Housing (Bottom)	
316 SS, 1/4" NPT conn.	D70954
316 SS, 1/2" NPT conn.	D70956
316 SS, 1/2" NPT conn. with flushing	D70957
316 SS, 3/4" NPT conn. with flushing	D70959
316 SS, 3/4" NPT conn.	D70963
316 SS, 1" NPT conn.	D70964
316 SS, 1" NPT conn. with flushing	D70965
316 SS, 1/4" NPT conn., Viton®	D70954V
316 SS, 1/2" NPT conn., Viton®	D70956V
316 SS, 1/2" NPT conn. with flushing, Viton®	D70957V
316 SS, 3/4" NPT conn. with flushing, Viton®	D70959V
316 SS, 3/4" NPT conn., Viton®	D70963V
316 SS, 1" NPT conn., Viton®	D70964V
316 SS, 1" NPT conn. with flushing, Viton®	D70965V
Monel®, 1/4" NPT conn.	D70954M
Monel®, 1/2" NPT conn.	D70956M
Monel®, 1/2" NPT conn. with flushing	D70957M
Monel®, 3/4" NPT conn. with flushing	D70959M
Monel®, 3/4" NPT conn.	D70963M
Monel®, 1" NPT conn.	D70964M
Monel®, 1" NPT conn. with flushing	D70965M
Hastelloy® C, 1/4" NPT conn.	D70954HASC
Hastelloy® C, 1/2" NPT conn.	D70956HASC
Hastelloy® C, 1/2" NPT conn. with flushing	D70957HASC
Hastelloy® C, 3/4" NPT conn. with flushing	D70959HASC
Hastelloy® C, 3/4" NPT conn.	D70963HASC
Hastelloy® C, 1" NPT conn.	D70964HASC
Hastelloy® C, 1" NPT conn. with flushing	D70965HASC

Upper Housing (Top)	
316 SS, 1/4" NPT conn., 316 SS diaphragm	D70950
316 SS, 1/4" NPT conn., Monel® diaphragm	D70950M
316 SS, 1/4" NPT conn., Hastelloy® C diaphragm	D70950HASC
316 SS, 1/4" NPT conn., Viton® diaphragm	D70951
316 SS, 1/2" NPT conn., 316 SS diaphragm	D70952
316 SS, 1/2" NPT conn., Monel® diaphragm	D70952M
316 SS, 1/2" NPT conn., Hastelloy® C diaphragm	D70952HASC
316 SS, 1/2" NPT conn., Viton® diaphragm	D70953

Option suffix for above order codes only:

SF-D = Silicone fill (seal only)
 FL-D = Fluorolube fill (seal only)
 Teflon® Protected Diaphragm

Note: Both upper and lower housing must be specified
 Example: D70950 - D70956



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 Monel® is a registered trademark of Inco Alloys International
 Teflon® is a registered trademark of Dupont Corporation
 Viton® is a registered trademark of DuPont Performance Elastomers

D70 - #70 Diaphragm Seals

Series Number (for custom, non-standard product)

	D	7	0	-			-			-			-			-				
SERIES																				
GAUGE CONNECTION																				
1/4" NPT female				4	N															
3/8" BSP female				3	B															
1/2" BSPT female				2	T															
M20 X 1.5 female				M	2															
PROCESS CONNECTION																				
1/4" NPT female				4	N															
3/8" BSP female				3	B															
1/2" BSPT female				2	T															
3/4"				5																
1"				1																
M20 X 1.5 female				M	2															
DIAPHRAGM MATERIALS																				
316SS									S											
316L SS									L											
Monel									M											
Hastelloy C									H											
Teflon									T											
Viton									V											
Other									Z											
LOWER HOUSING MATERIALS																				
316SS										S										
Monel										M										
Hastelloy C										H										
Others										Z										
FLUSHING CONNECTION																				
None (standard)																N				
1/4" NPT																4				
OPTIONS																				
1m SS Remote Capillary																			1	
1.6m SS Remote Capillary																			6	
2m SS Remote Capillary																			2	
3m SS Remote Capillary																			3	
4m SS Remote Capillary																			4	
5m SS Remote Capillary																			5	
8m SS Remote Capillary																			8	
Others																			X	
No Armour																				0
SS Armour																				S
Glycerine/water-filled (-10/120C)																				A
Silicone-filled (-20/200C)																				B
Silicone-filled (-90/100C)																				C
Halocarbon (-40/175C)																				D
Fluorolube-filled																				E
High Temperature Oil (-20/400C)																				F

D71 - #70 NACE Diaphragm Seals (Hastelloy® C)



Description & Features:

- Can be used on applications requiring a NACE compliant MR0103-2003 diaphragm seal
- 1 year warranty

Applications:

- Sour gas applications requiring instrumentation that meet NACE International Standards

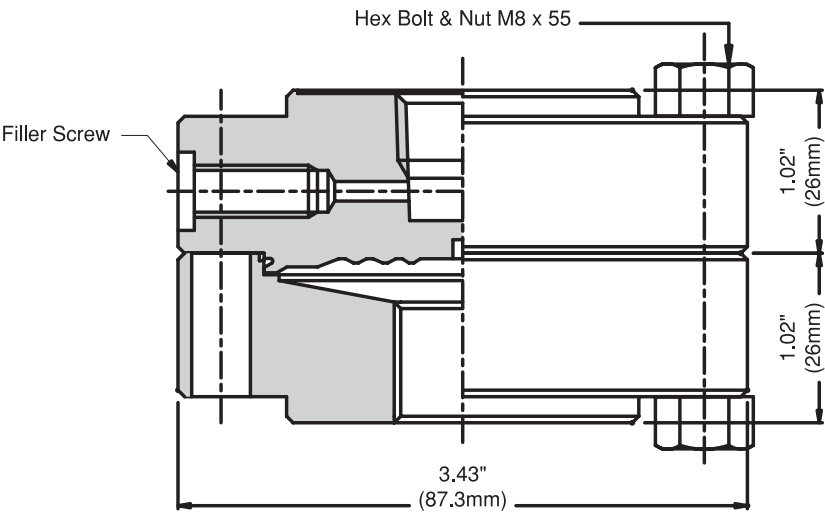
Specifications	
Housing	Hastelloy® C
Diaphragm	Hastelloy® C, welded
Construction	Two piece construction
Connection	Top: 1/4" and 1/2" NPT Bottom: 1/4", 1/2", 3/4" and 1" NPT
Process Temperature	-22°F to 212°F (-30°C to 100°C)
Other	Flushing connections available. Other materials available upon request.

Order Codes

Upper Housing (Top)	
Hast. C, 1/4" NPT conn., Hastelloy® C diaphragm	D71966HASC75
Hast. C, 1/2" NPT conn., Hastelloy® C diaphragm	D71967HASC75
Lower Housing (Bottom)	
Hastelloy® C, 1/4" NPT conn.	D71954HASC75
Hastelloy® C, 1/2" NPT conn.	D71956HASC75
Hastelloy® C, 1/2" NPT conn. with flushing	D71957HASC75
Hastelloy® C, 3/4" NPT conn. with flushing	D71959HASC75
Hastelloy® C, 3/4" NPT conn.	D71963HASC75
Hastelloy® C, 1" NPT conn.	D71964HASC75
Hastelloy® C, 1" NPT conn. with flushing	D71965HASC75

Option suffix for above order codes only:

SF-D = Silicone fill (seal only)
FL-D = Fluorolube fill (seal only)



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D71 - #70 NACE Diaphragm Seals (Stainless Steel)



Description & Features:

- Can be used on applications requiring a NACE compliant MR0175-2003 diaphragm seal
- 1 year warranty

Applications:

- Sour gas applications requiring instrumentation that meet NACE International Standards

Specifications	
Housing	316 SS
Diaphragm	316 SS, welded
Construction	Two piece construction
Connection	Top: 1/4" and 1/2" NPT Bottom: 1/4", 1/2", 3/4" and 1" NPT
Process Temperature	-22°F to 212°F (-30°C to 100°C)
Other	Flushing connections available. Other materials available upon request.

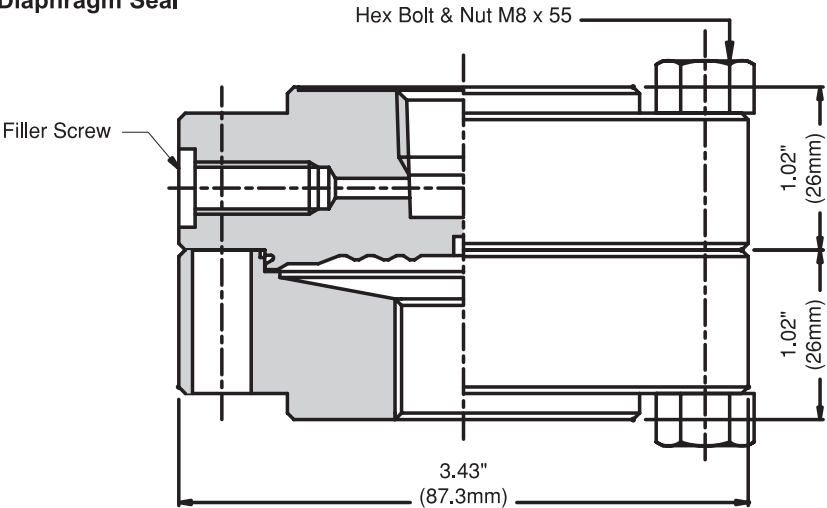
Order Codes

Upper Housing (Top)	
316 SS, 1/4" NPT conn., Monel® diaphragm	D7195003
316 SS, 1/2" NPT conn., Monel® diaphragm	D7195203
Lower Housing (Bottom)	
316 SS, 1/4" NPT conn.	D7195403
316 SS, 1/2" NPT conn.	D7195603
316 SS, 1/2" NPT conn. with flushing	D7195703
316 SS, 3/4" NPT conn. with flushing	D7195903
316 SS, 3/4" NPT conn.	D7196303
316 SS, 1" NPT conn.	D7196403
316 SS, 1" NPT conn. with flushing	D7196503

Option suffix for above order codes only:

- SF-D = Silicone fill (seal only)
- FL-D = Fluorolube fill (seal only)

#70 NACE Diaphragm Seal



Monel® is a registered trademark of Inco Alloys International

D71 - #70 NACE Diaphragm Seals

Series Number (for custom, non-standard product)

	D 7 1	-		-		-		-		-	
SERIES											
GAUGE CONNECTION											
1/4" NPT female			4	N							
3/8" BSP female			3	B							
1/2" BSPT female			2	T							
M20 X 1.5 female			M	2							
PROCESS CONNECTION											
1/4" NPT female			4	N							
3/8" BSP female			3	B							
1/2" BSPT female			2	T							
3/4"			5								
1"			1								
M20 X 1.5 female			M	2							
DIAPHRAGM MATERIALS											
316SS (<22 HRC)					S						
Hastelloy C					H						
LOWER HOUSING MATERIALS											
316SS (<22 HRC)						S					
Hastelloy C						H					
FLUSHING CONNECTION											
None (standard)							N				
1/4" NPT							4				
OPTIONS											
1m SS Remote Capillary								1			
1.6m SS Remote Capillary								6			
2m SS Remote Capillary								2			
3m SS Remote Capillary								3			
4m SS Remote Capillary								4			
5m SS Remote Capillary								5			
8m SS Remote Capillary								8			
Others								X			
No Armour									0		
SS Armour									S		
Glycerine/water-filled (-10/120C)										A	
Silicone-filled (-20/200C)										B	
Silicone-filled (-90/100C)										C	
Halocarbon (-40/175C)										D	
Fluorolube-filled										E	
High Temperature Oil (-20/400C)										F	

D39 - Flush diaphragm**Mounting**

Direct or remote

Diaphragm Materials

- AISI 316L SS, welded, standard

Option: - AISI 316L SS with PTFE coated

- Tantalum
- Hastelloy C276
- Monel 400
- Others exotic materials

Flange Materials

- AISI 304 SS, standard

Option: - AISI 316 SS

- AISI 316L SS
- AISI 316 SS with PTFE coated
- Titanium
- Hastelloy C276
- Monel 400
- Tantalum
- Others exotic materials

Pressure Ranges

Depending on diaphragm size and process conditions

Process ConnectionFlanges as per EN 1092-1 or ASME B 16.5,
also others standard versions are available on request**Ordering Code**

D	3	9	-			-				-		-		-			
---	---	---	---	--	--	---	--	--	--	---	--	---	--	---	--	--	--

Gauge Connection

G 1/2" B (F)

M20x1.5 (F)

2

M

G

2

Process Connection**ASME B 16.5-2009**

1"	150#	RF		0	5	R
1.5"	300#	FF		1	3	F
2"	600#	RTJ		2	6	J
2.5"	900#	RJ		5	9	T
3"	1500#			3	1	
	2500#				2	

DN in mm, PN in Mpa (per EN 1092-1)

DN20	PN 2.0 MPa	RF		B	M	R
DN25	PN 2.5 MPa	FF		D	K	F
DN40	PN 5.0 MPa	RTJ		E	L	J
DN50	PN 6.0 MPa	RJ		F	A	T
DN80	PN10.0 MPa			H	B	
	PN11.0 MPa				N	
	PN15.0 MPa				P	
	PN16.0 MPa				C	
	PN25.0 MPa				D	
	PN26.0 MPa				Q	
	PN40.0 MPa				E	
	PN42.0 MPa				R	
	PN63.0 MPa				F	
	PN100.0MPa				G	

Special

(Specify flange standard pressure rating)

Z Z Z

Diaphragm Materials

AISI 316 SS		S
AISI 316L SS		L
Monel		M
Hastelloy C		H
AISI 316L SS with PTFE coated (-1bar to 40bar with PTFE coating -20°C to 150°C with PTFE coating)		P
Tantalum		A
Others (Per customer request)		Z

Flange Materials

AISI 304 SS		Y
AISI 316 SS		S
AISI 316L SS		L
PTFE Coated		P

Options

See page 35

XXX

D51 - Welded internal diaphragm

Mounting

Direct or remote

Diaphragm Materials

- AISI 316L SS, welded, standard

Option: - AISI 316L SS with PTFE coated

- Tantalum
- Hastelloy C276
- Titanium
- Monel 400
- Others exotic materials

Wetted Parts Materials

- AISI 316 SS, standard

Option: - AISI 316L SS

- AISI 316 SS with PTFE coated
- Titanium
- Hastelloy C276
- Monel 400
- Tantalum
- Others exotic materials



Minimum Operating Pressure

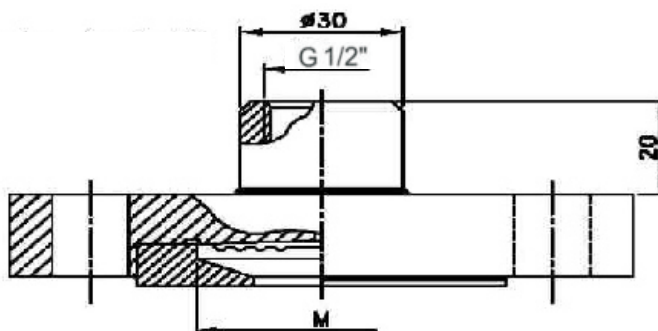
-1 bar

Maximum Operating Pressure

240 bar

Process Connection

Flanges as per EN 1092-1 or ASME B 16.5,
also others standard versions are available on request



D51 - Welded internal diaphragm

Ordering Code

D 5 1 - - - - -

Gauge Connection

G 1/2" B (F) 2 G
M20x1.5 (F) M 2

Process Connection

ASME B 16.5-2009

3/4"	150#	RF		3	5	R
1"	300#	FF		1	3	F
1.5"	600#	RTJ		5	6	J
2"	900#	RJ		8	9	T
	1500#				1	

DN in mm, PN in Mpa (per EN 1092-1)

DN15	PN 2.0 MPa	RF		A	L	R
DN25	PN 2.5 MPa	FF		D	K	F
DN20	PN 5.0 MPa	RTJ		B	K	J
DN25	PN10.0 MPa	RJ		C	E	T
DN40	PN11.0 MPa			D	N	
DN50	PN15.0 MPa			E	P	
	PN16.0 MPa				F	
	PN25.0 MPa				G	
	PN26.0 MPa				Q	
	PN40.0 MPa				H	
	PN42.0 MPa				R	
Special				Z	Z	Z

Diaphragm Material

AISI 316L SS		L
Monel		M
Hastelloy C		H
AISI 316L SS with PTFE coated (-1bar to 40bar with PTFE coating -20°C to 150°C with PTFE coating)		P
Tantalum		A
Titanium		T
Others (Per customer request)		Z

Flange Material

AISI 316 SS		S
AISI 316L SS		L
Monel		M
Hastelloy C		H
AISI 316 SS with PTFE coated (-1bar to 40bar with PTFE coating -20°C to 150°C with PTFE coating)		P
Tantalum		A
Titanium		T
Others (Per customer request)		Z

Options

See page 35 XXX

D44 - Bolted internal diaphragm

Mounting

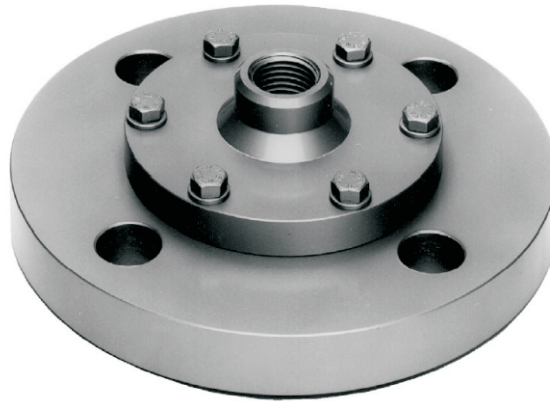
Direct or remote

Diaphragm Materials

- AISI 316L SS, welded, standard
- Option: - AISI 316L SS with PTFE coated
 - Tantalum
 - Hastelloy C276
 - Titanium
 - Monel 400
 - Others exotic materials

Body Materials

- Upper: 304 SS, standard
- Lower : - AISI 316SS
 - Option: - AISI 316L SS
 - AISI 316 SS with PTFE coating
 - Titanium
 - Hastelloy C276
 - Monel 400
 - Tantalum
 - Others exotic materials



Minimum Operating Pressure

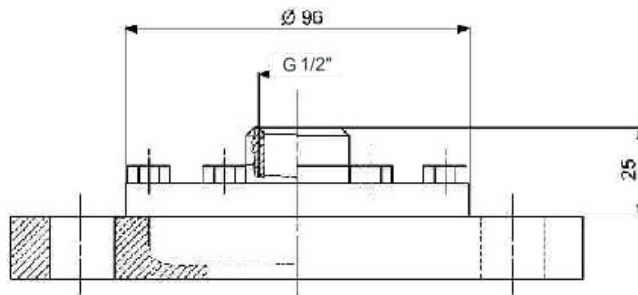
-1 bar

Maximum Operating Pressure

100 bar (-1 -40bar with PTFE coating)

Process Connection

Flanges as per EN 1092-1 or ASME B 16.5,
also others standard versions are available on request



D44 - Bolted internal diaphragm

Ordering Code

D	4	4	-			-				-		-			-			
---	---	---	---	--	--	---	--	--	--	---	--	---	--	--	---	--	--	--

Gauge Connection

G 1/2" B (F)		2	G
M20x1.5 (F)		M	2

Process Connection

ASME B 16.5-2009

1/2"	150#	RF		2	5	R
3/4"	300#	FF		3	3	F
1"	600#	RTJ		1	6	J
1.5"	900#	RJ		5	9	T
2"	1500#			8	1	

DN in mm, PN in Mpa (per EN 1092-1)

DN15	PN 2.0 MPa	RF		A	L	R
DN20	PN 5.0 MPa	FF		B	K	F
DN25	PN10.0 MPa	RTJ		C	E	J
DN40	PN11.0 MPa	RJ		D	N	T
DN50	PN15.0 MPa			E	P	
	PN16.0 MPa				F	
	PN25.0 MPa				G	
	PN26.0 MPa				Q	
	PN40.0 MPa				H	
	PN42.0 MPa				R	
Special				Z	Z	Z

Diaphragm Material

AISI 316 SS		S
AISI 316L SS		L
Monel		M
Hastelloy C		H
AISI 316L SS with PTFE coated (-1bar to 40bar with PTFE coating -20°C to 150°C with PTFE coating)		P
Tantalum		A
Titanium		T
Others (Per customer request)		Z

Lower Housing Material

AISI 316 SS		S
AISI 316L SS		L
Monel		M
Hastelloy C		H
AISI 316 SS with PTFE coated (-1bar to 40bar with PTFE coating -20°C to 150°C with PTFE coating)		P
Tantalum		A
Titanium		T
Others (Per customer request)		Z

Options

See page 35		X X X
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D41 - Extended diaphragm

Mounting

Direct or remote

Diaphragm Materials

- AISI 316L SS, welded, standard
- Option: - AISI 316L SS with PTFE coated
 - Tantalum
 - Hastelloy C276
 - Titanium
 - Monel 400
 - Others exotic materials

Wetted Parts Materials

- AISI 316 SS, standard
- Option: - AISI 316L SS
 - AISI 316 SS with PTFE coated
 - Titanium
 - Hastelloy C276
 - Monel 400
 - Tantalum
 - Others exotic materials

Extension Length

On request to a max of 120mm

Minimum Operating Pressure

1 bar

Maximum Operating Pressure

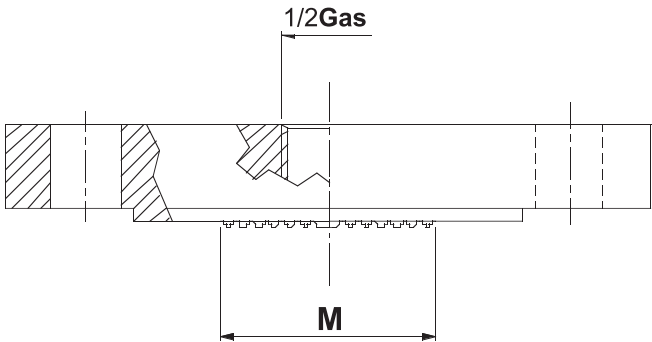
160 bar

Process Connection

Flanges as per EN 1092-1 or ASME B 16.5,
also others standard versions are available on request

Filling liquid

Silicone fluid for operating tempereature included between
-30and +200°C
Diathermic fluid for operating tetemperature>200°C



DN	PN	M (mm)
40	4/160	36
50	2.5/160	48
65	≤ 2.5/160	58
80	≤ 2.5/160	75

DN	CLASS	M (mm)
1"1/2	150 /2500	36
2"	150 /2500	48
2"1/2	150 /2500	58
3"	150 /2500	75

D41 - Extended diaphragm

Ordering Code

D 4 1 - - - - - - - -

Gauge Connection

G 1/2" B (F) 2 G
M20x1.5 (F) M 2

Process Connection

ASME B 16.5-2009

1.5"	150#	RF		1	5	R
2"	300#	FF		2	3	F
2.5"	600#	RTJ		5	6	J
3"	900#	RJ		3	9	T
	1500#	LF			1	L
	2500#				2	

DN in mm, PN in bar (per EN 1092-1)

DN40	PN 2.5 bar	RF		4	K	R
DN50	PN 4 bar	FF		5	L	F
DN65	PN 6 bar	RTJ		6	A	J
DN80	PN 10 bar	RJ		8	B	T
	PN 16 bar	LF			N	L
	PN 25 bar				P	
	PN 40 bar				C	
	PN 63 bar				D	
	PN 100 bar				Q	
	PN 160 bar				E	
Special				Z	Z	Z

Extension Length (mm)

Without Extension		0 0 0
10		0 1 0
20		0 2 0
50		0 5 0
60		0 6 0
100		1 0 0
120		1 2 0
Others (Per customer request)		Z Z Z

Diaphragm Material

AISI 316L SS		L
Monel		M
Hastelloy C		H
AISI 316L SS with PTFE coated (-1bar to 40bar with PTFE coating -20°C to 150°C with PTFE coating)		P
Tantalum		A
Titanium		T
Others (Per customer request)		Z

Wetted Parts (Excluded Diaphragm Material)

AISI 316 SS		S
AISI 316L SS		L
Monel		M
Hastelloy C		H
AISI 316 SS with PTFE coated (-1bar to 40bar with PTFE coating -20°C to 150°C with PTFE coating)		P
Tantalum		A
Titanium		T
Others (Per customer request)		Z

Flange Materials

AISI 304 SS		Y
AISI 316 SS		S
AISI 316L SS		L
Monel		M
Hastelloy C		H
AISI 316 SS with PTFE coated (-1bar to 40bar with PTFE coating -20°C to 150°C with PTFE coating)		P
Tantalum		A
Titanium		T
Others (Per customer request)		Z

Options

See page 35 XXX

D43 - I Section

Mounting

Direct or remote

Diaphragm Materials

- AISI 316L SS, welded, standard

Option: - AISI 316L SS with PTFE coated

- Tantalum

- Hastelloy C276

- Titanium

- Monel 400

- Others exotic materials

Body Materials

Upper Part: - AISI 304 SS, standard

Lower Part: - AISI 316 SS, standard

Option: - AISI 316 SS with PTFE coated

Minimum Operating Pressure

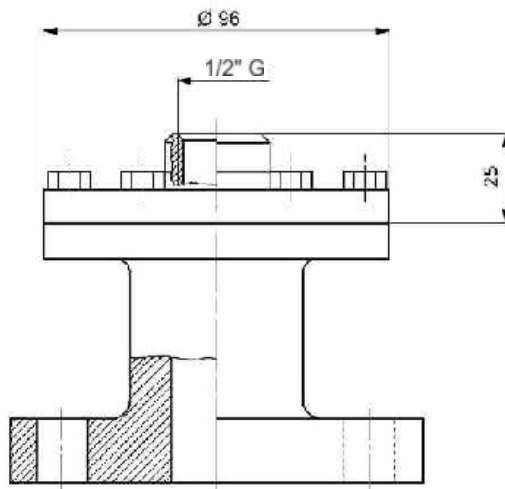
-1 bar

Maximum Operating Pressure

60 bar (-1 - 40 bar with PTFE coating)

Process Connection

Flanges as per EN 1092-1 or ASME B 16.5,
also others standard versions are available on request



D43 - I Section

Ordering Code

D	4	3	-			-				-			-			-			
---	---	---	---	--	--	---	--	--	--	---	--	--	---	--	--	---	--	--	--

Gauge Connection

G 1/2" B (F)		2	G
M20x1.5 (F)		M	2

Process Connection

ASME B 16.5-2009

1/2 "	150#	RF.....	2	5	R
3/4 "	300#	FF.....	3	3	F
1"		RTJ.....	1		J
1.5"			5		
2"			8		

DN in mm, PN in Mpa (per EN 1092-1)

DN15	PN 2.0 MPa	RF	A	L	R
DN20	PN 5.0 MPa	FF	B	K	F
DN25	PN 6.0 MPa		C	E	
DN40			D		
DN50			E		
Special			Z	Z	Z

Diaphragm Material

AISI 316L SS	L
Monel	M
Hastelloy C	H
AISI 316L SS with PTFE coated (-1bar to 40bar with PTFE coating -20°C to 150°C with PTFE coating)	P
Tantalum	A
Titanium	T
Others (Per customer request)	Z

Lower Housing Materials

AISI 304 SS	Y
AISI 316 SS	S
AISI 316L SS	L
AISI 316 SS with PTFE coated (-1bar to 40bar with PTFE coating -20°C to 150°C with PTFE coating)	P
Others (Per customer request)	Z

Options

See page 35	XXX
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D45 - For differential pressure gauges of PDD series only

Mounting

Direct or remote

Diaphragm Materials

- AISI 316L SS, welded, standard

Option: - AISI 316L SS with PTFE coated

- Tantalum

- Hastelloy C276

- Titanium

- Monel 400

- Others exotic materials

Body Materials

Upper Part: - AISI 304 SS, standard

Lower Part: - AISI 316L SS, standard

Option: - AISI 316 SS with PTFE coated

Minimum Operating Pressure

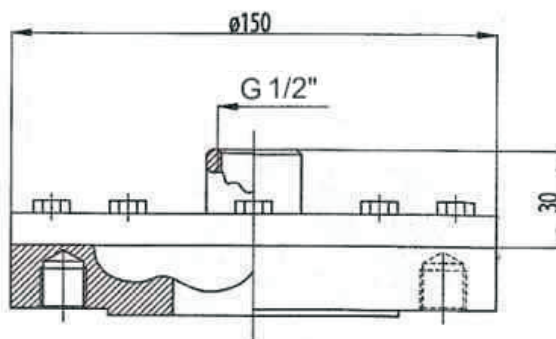
60 mbar

Maximum Operating Pressure

25 bar

Process Connection

Flanges as per EN 1092-1 or ASME B 16.5,
also others standard versions are available on request



Diaphragm diameter mm 130
(ref. to DN 40 PN 16)

D45 - For differential pressure gauges of PDD series only

Ordering Code

D	4	5	-			-				-			-			-			
---	---	---	---	--	--	---	--	--	--	---	--	--	---	--	--	---	--	--	--

Gauge Connection

G 1/2" B (F)		2	G
M20x1.5 (F)		M	2

Process Connection

ASME B 16.5-2009

1/2"	150#	RF		2	5	R
3/4"	300#	FF		3	3	F
1"	600#	RTJ		1	6	J
1.5"	900#	LF		5	9	L
2"	1500#			8	1	

DN in mm, PN in Mpa (per EN 1092-1)

DN15	PN 2.0 MPa	RF		A	L	R
DN20	PN 5.0 MPa	FF		B	K	F
DN25	PN 6.0 MPa	RTJ		C	E	J
DN40	PN10.0 MPa	LF		D	F	L
DN50	PN11.0 MPa			E	N	
	PN15.0 MPa				P	
	PN16.0 MPa				G	
	PN25.0 MPa				H	
	PN26.0 MPa				Q	
	PN40.0 MPa				J	
	PN42.0 MPa				R	
Special				Z	Z	Z

Diaphragm Material

AISI 316L SS		L
Monel		M
Hastelloy C		H
AISI 316L SS with PTFE coated (-1bar to 40bar with PTFE coating -20°C to 150°C with PTFE coating)		P
Tantalum		A
Titanium		T
Others (Per customer request)		Z

Flange Materials

AISI 316L SS, standard		L
AISI 316 SS with PTFE coated (-1bar to 40bar with PTFE coating -20°C to 150°C with PTFE coating)		P

Diaphragm sealed gasket

Nitrilic rubber (NBR). standard		Default
FPM(Viton)		V

Options

Spacer ring with double flush 1/2"NPT		V 6 2
See page 35		X X X

D33 - Saddle flange

Mounting

Direct or remote

Diaphragm Materials

- AISI 316L SS, welded, standard
- Option: - AISI 316L SS with PTFE coated
 - Tantalum
 - Hastelloy C276
 - Titanium
 - Monel 400
 - Others exotic materials

Wetted Parts Materials

- AISI 316 SS, standard
- Option: - AISI 316L SS
 - AISI 316 SS with PTFE coated
 - Titanium
 - Hastelloy C276
 - Monel 400
 - Tantalum
 - Others exotic materials

Minimum Operating Pressure

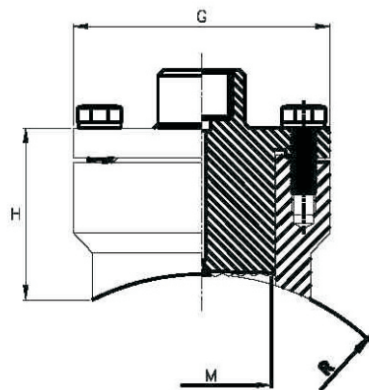
6 bar

Maximum Operating Pressure

250 bar

Process Connection

Flanges as per EN 1092-1 or ASME B 16.5, also others standard versions are available on request



DN	M	R	G	H	DN	M	R	G	H
2"	36	30.2	76	65	10"	48	136.6	88	56
3"	48	44.5	88	70	12"	48	162	88	56
4"	48	57.2	88	65	14"	48	177.9	88	55
6"	48	84.2	88	60	16"	48	203.2	88	55
8"	48	109.6	88	58					

D33 - Saddle flange

Ordering Code

D33- - - - -

Gauge Connection

G 1/2" B (F) 2 G

M20x1.5 (F) M 2

Diaphragm Materials

AISI 316L SS..... L

Monel M

Hastelly C H

AISI 316L SS with PTFE coated (-1bar to 40bar with PTFE coating -20°C to 150°C with PTFE coating)... P

Tantalum A

Titanium T

Others (Per customer request) Z

Lower Housing Materials

AISI 304 SS Y

AISI 316 SS S

AISI 316L SS L

Duplex SS 2205 D

Monel M

Hastelloy C H

Teflon Lined P

Titanium T

Others (Per customer request) Z

Pipe Size

2" 1

3" 2

4" 3

6" 4

8" 5

10" 6

12" 7

14" 8

16" 9

Options

See page 35 XXX

D81 - In-line

Mounting

Direct or remote

Diaphragm Material

AISI 316L SS, welded flush to body

Body Material

AISI 316L SS

Nominal pressure

PN 4 to 400

Class 150 to 6000



Pressure ranges

Flanges according to EN 1092-1

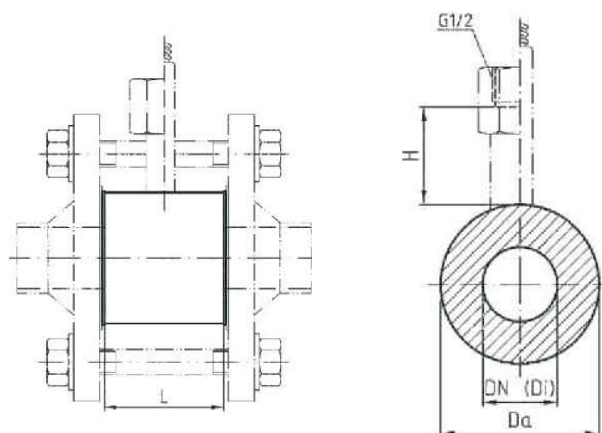
DN	PN	Minimum pressure range (in bar) for following dial size		
		63mm	100mm	160mm
25	4-400	1.6	2.5	—
40	4-400	1.6	2.5	4
50	4-400	1.6	2.5	2.5
65	4-400	1.6	2.5	2.5
80	4-400	1.6	2.5	2.5

Flanges according to ASME B 16.5

DN	Class	Minimum pressure range (in bar) for dial size		
		63mm	100mm	160mm
1"	150-6,000	1.6	2.5	—
1.5"	150-6,000	1.6	2.5	4
2"	150-6,000	1.6	2.5	2.5
3"	150-6,000	1.6	2.5	2.5
4"	150-6,000	1.6	2.5	2.5

Process Connection

Flanges as per EN 1092-1 or ASME B 16.5,
also others standard versions are available on request



Dimensions (in mm)

Flange connection according to EN 1092-1

DN	Di	PN	Da	L	H
25	28.5	4-400	68	100	29
40	43.1	4-400	88	100	29
50	54.5	4-400	100	100	29
65	70.3	4-400	120	100	29
80	82.5	4-400	138	60	29
100	107.1	4-400	160	60	29

Options

Coating, Cooling element (>80°C)

Capillary tube, Other filling liquids

Flange connection according to ASME B 16.5

DN	Di	PN	Da	L	H
1"	28.5	150-6,000	50	100	29
1.5"	43.1	150-6,000	73.2	100	29
2"	54.5	150-6,000	91.9	100	29
3"	82.5	150-6,000	127	100	29
4"	107.1	150-6,000	157.2	60	29

D81 - In - line

Ordering Code

D

8

1

-

-

-

-

-

Gauge Connection

G 1/2" B (F)

M20x1.5 (F)

2

M

G

2

Process Connection

ASME B 16.5-2009

1" Class 150 to 6000

1.5"

2"

3"

4"

0

9

1

2

3

4

DN in mm, PN in bar (per EN 1092-1)

DN25 PN 4 to 400

DN40

DN50

DN65

DN80

DN100

Special

D

W

E

F

H

I

J

Z

Z

(Specify flange standard pressure rating)

Diaphragm Material

AISI 316L SS

L

Body Material

AISI 316L SS

L

Options

See page 35

X

X

X

D52 - Cell type

Mounting
Remote

Diaphragm Materials

- AISI 316L SS, welded, standard
- Option: - AISI 316L SS with PTFE coated
 - Tantalum
 - Hastelloy C276
 - Titanium
 - Monel 400
 - Others exotic materials

Body

- AISI 316L SS

note: the requirement for special materials is guaranteed by the diaphragm according to the above indicated specifications.

Process Connection

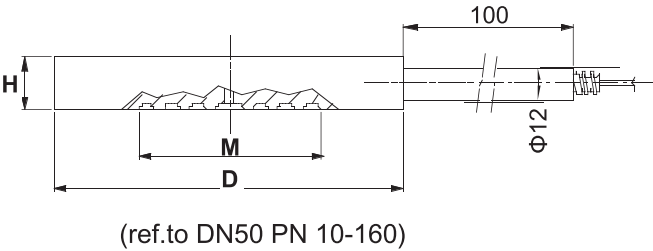
Flanges as per EN 1092-1 or ASME B 16.5, also others standard versions are available on request

Filling liquid

silicone fluid for operating temperature included between -30 and +200°C

Service conditions

pressure 100 mbar -160 bar for electronic instrumentation;
pressure 1-160 bar for pressure gauges;
temperature -30 - +300°C for stainless steel diaphragm;
temperature -30 - +120°C for exotic material diaphragm

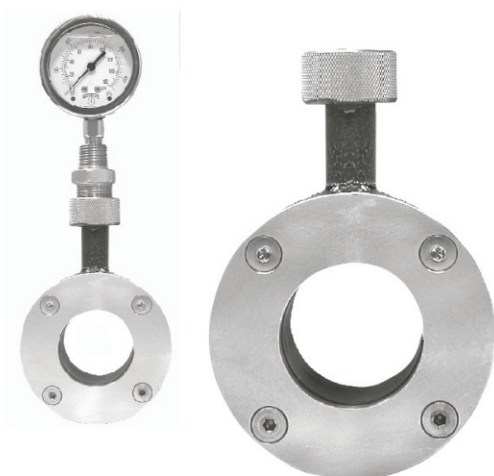


DN	PN	M	D	H
50	10-60	48	102	20
80	10-60	75	138	20

DN	CLASS	M	D	H
2	150-500	48	92	20
3	150-500	75	127	20

D52 - Cell type

D	5	2	-		-		-		-		-			
Gauge Connection														
G 1/2" B (F)				2	G									
M20x1.5 (F)				M	2									
Process Connection														
ASME B 16.5-2009														
2"	150#	RF		2	5	R								
3"	300#	FF		3	3	F								
	600#	RTJ			6	J								
	900#	RJ			9	T								
	1500#				1									
	2500#				2									
DN in mm, PN in Mpa (per EN 1092-1)														
DN50	PN 2.5 MPa	RF		F	K	R								
DN80	PN 5.0 MPa	FF		H	L	F								
	PN 6.0 MPa	RTJ			A	J								
	PN10.0 MPa	RJ			B	T								
	PN11.0 MPa				N									
	PN15.0 MPa				P									
	PN16.0 MPa				C									
Special				Z	Z	Z								
(Specify flange standard pressure rating)														
Diaphragm Material														
AISI 316L SS						L								
Monel						M								
Hastelloy C						H								
Tantalum						A								
Titanium						T								
Others (Per customer request)						Z								
Flange Materials														
AISI 316L SS						L								
Options														
See page 35														
X X X														

D84 - #60 Isolation Ring*30" HgVac to 1.000 psi*

Note: Pressure gauge
sold separately

Description & Features:

- Various materials/configurations available to fit your specific application
- Easy removal of gauge or switch for calibration, repair or replacement without interrupting process flow
- 1 year warranty

Applications:

- This wafer style isolation ring is ideal for measuring pressures of viscous or solid media, utilizing a flow-through system that eliminates clogging or pressure blocking from occurring

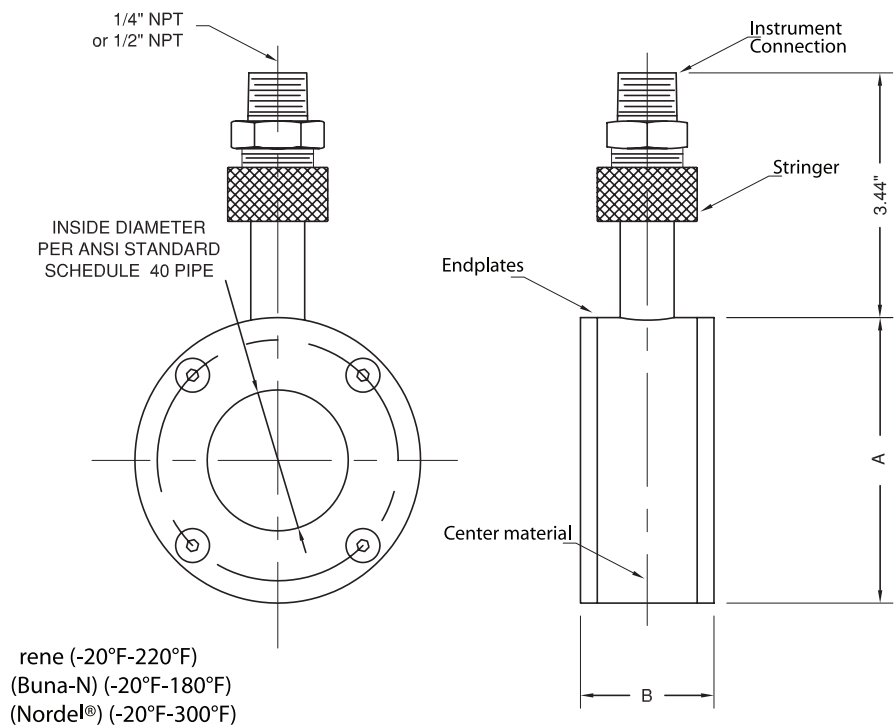
Order Codes

Specifications		
Pressure Range	Vacuum to 1,000 psi	
Sensor Type	WIR	Wafer style, nests inside bolt circle
	RIR	Full flange
	QIR	Tri-Clover sanitary quick connect
	FIR	Special construction
	SIR	Screw on connections
	VIR	Victaulic connections
Sizes	1" - 24"	1" (25mm) up to 24" (609mm). Consult factory for larger sizes
Centre Section	C	Carbon Steel
	S	316 SS
	C20	Carpenter-20
	CK	Carbon Steel / Kynar® coated
End Plates	A	Acetal
	S	316 SS
	TEF	Teflon®
	K	Kynar®
	H	Hastelloy® C
	T	Titanium
Elastomer (Sleeve)	U	UHMW / Ultra High Molecular Weight Polyethylene
	N	Neoprene (-20°F to 220°F)
	B	Nitrile (Buna-N) (-20°F to 180°F)
	E	EPDM (Nordel®) (-20°F to 300°F)
	V	Fluoroelastomer (Viton®). Available with optional Teflon® coating (-20°F to 375°F)
Stinger Material	CP	Chlorosulfonated Polyethylene (Hypalon®) (-20°F to 250°F)
	B	Brass
Fill Fluid	S	SS
	SF	Silicone fluid (-40°F-400°F)
	V	Food Grade Silicone (Optional)

Hastelloy® is a registered trademark of Haynes International, Inc.
Hypalon® is a registered trademark of DuPont Performance Elastomers
Kynar® is a registered trademark of Elf Atochem North America
Nordel® is a registered trademark of DuPont Dow Elastomers
Teflon® is a registered trademark of Dupont Corporation
Viton® is a registered trademark of DuPont Performance Elastomers

D84 - #60 Isolation Ring

Isolation Ring (Wafer Style)



Measurements		
Size	ØA	B
1"	2.50	1.87
1.5"	3.25	1.87
2"	4.00	1.87
2.5"	4.75	1.87
3"	5.25	1.87
4"	6.75	2.12
5"	7.62	2.25
6"	8.62	2.25
8"	10.87	2.25
10"	13.25	2.81
12"	16.00	3.12
14"	17.62	3.12
16"	20.12	3.12
18"	21.50	3.12
20"	23.75	3.12
24"	32.00	3.12

D84 - #60 Isolation Ring

Series Number (how to order)

	D81	-		-		-		-		-	
SERIES											
GAUGE CONNECTION											
1/4" NPT female			4	N							
3/8" BSP female			3	B							
1/2" BSPT female			2	T							
M20 X 1.5 female			M	2							
PROCESS CONNECTION											
DN 25				A							
DN 40				B							
DN 50				C							
DN 65				D							
DN 80				E							
DN 100				F							
ASME 1"				G							
ASME 1.5"				H							
ASME 2"				J							
ASME 3"				K							
ASME 4"				L							
DIAPHRAGM MATERIAL											
304SS					Y						
316SS					S						
316L SS					L						
Monel					M						
Hastelloy C					H						
Teflon coated					T						
Others					Z						
BODY MATERIAL											
304SS						Y					
316SS						S					
Monel						M					
Hastelloy C						H					
Others						Z					
OPTIONS											
1m SS Remote Capillary										1	
1.6m SS Remote Capillary										6	
2m SS Remote Capillary										2	
3m SS Remote Capillary										3	
4m SS Remote Capillary										4	
5m SS Remote Capillary										5	
8m SS Remote Capillary										8	
Others										X	
No Armour										0	
SS Armour										S	
Glycerine/water-filled (-10/120C)											A
Silicone-filled (-20/200C)											B
Silicone-filled (-90/100C)											C
Halocarbon (-40/175C)											D
Fluorolube-filled											E
High Temperature Oil (-20/400C)											F

D46 - DIN 11851 or SMS standard screwed fitting

Mounting

Direct or remote

Diaphragm Material

AISI 316L SS, welded, standard

Body Material

AISI 316 SS

Minimum Operating Pressure

2.5 bar

Maximum Operating Pressure

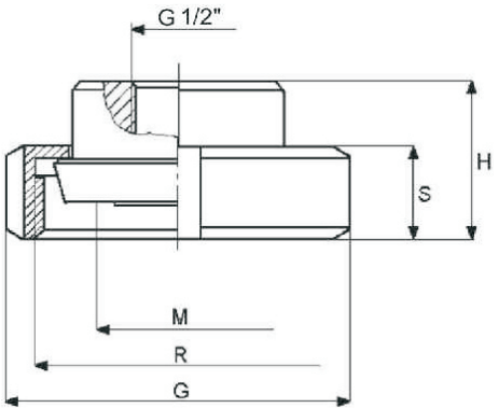
40 bar

Process Connection

Nut as per DIN 11851-DN 32, 40, 50
(DN 25 on request only)
Nut as per SMS-DN 38 (1 1/2"), 51 (2")
Nut as per other international standards
(RJT-BS, ISS-IDF) on request only

Filling Liquid

Food compatible fluid



Unit:mm

Product Code	DN	M	R	G	S	H
D46 DIN 11851	32	30	Rd 58x1/6	70	21	35
	40	36	Rd 65x1/6	78	21	38
	50	48	Rd 78x1/6	92	22	39
D46 SMS	38 (1 1/2")	36	Rd 60x1/6	74	25	38
	51 (2")	36	Rd 70x1/6	84	26	39

Ordering Code D 4 6 – – –

Gauge Connection

G 1/2" B (F) 2 G
M20x1.5 (F) M 2

Process Connection

DIN11851 - DN 32 D 3
DIN11851 - DN 40 D 4
DIN11851 - DN 50 D 5
SMS - DN 38(1.5") S 3
SMS - DN 51(2") S 5

D47 - DIN 11851 or SMS, RTJ - BS, ISS - IDF standard male screwed fitting

Mounting

Direct or remote

Diaphragm Material

AISI 316L SS, welded, standard

Body Material

AISI 316 SS

Minimum Operating Pressure

2.5 bar

Maximum Operating Pressure

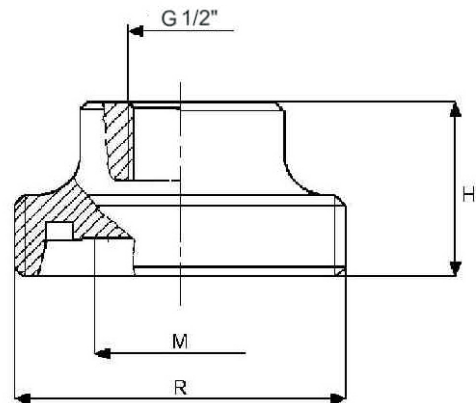
40 bar

Process Connection

Fixed connection as per DIN 11851-DN 32, 40, 50 (DN 25 on request only)
Fixed connection as per SMS-DN 38 (1 1/2"), 51 (2")
Fixed connection as per other international standards (RJT-BS, ISS-IDF) on request only

Filling Liquid

Food compatible fluid



Unit:mm

Product Code	DN	M	R	H
D47 DIN 11851	32	30	Rd 58x1/6	34
	40	36	Rd 65x1/6	34
	50	48	Rd 78x1/6	34
D47 SMS	38 (1 1/2")	36	Rd 60x1/6	36
	51 (2")	36	Rd 70x1/6	36

Ordering Code **D 4 7** - - -

Gauge Connection

G 1/2" B (F) **2** **G**
M20x1.5 (F) **M** **2**

Process Connection

DIN11851 - DN 32
DIN11851 - DN 40
DIN11851 - DN 50
SMS - DN 38(1.5")
SMS - DN 51(2")

D 3
D 4
D 5
S 3
S 5

X X X(See page35) **Options**

D20 - Tri - clamp

Mounting

Direct or remote

Diaphragm Material

AISI 316L SS, welded, standard

Body Material

AISI 316 SS

Minimum Operating Pressure

2.5 bar

Maximum Operating Pressure

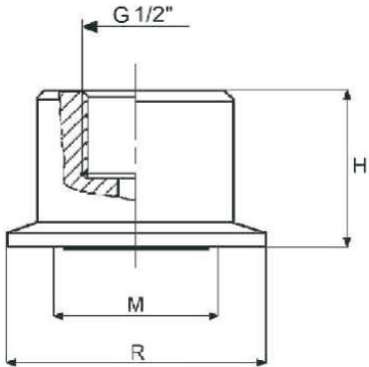
16 bar

Process Connection

Tri-Clamp DN 1.5", 2" and 2.5"

Filling Liquid

Food compatible fluid



Ordering Code		D	2	0	-			-		
Gauge Connection					2	M	G	2		
G 1/2" B (F)										
M20x1.5 (F)										
Tri-Clamp										
DN	1.5"							A		
DN	2"							B		
DN	2.5"							C		

Unit:mm

Product Code	DN	M	R	H
D20 Tri-CLAMP	1.5"	30	50,5	30
	2	36	64	30
	2.5"	48	77,5	30

D49 - Homogenizer flange

Mounting

Direct

Diaphragm Material

AISI 316L SS, welded

Body Material

AISI 316L SS

Minimum Operating Pressure

100bar

Maximum Operating Pressure

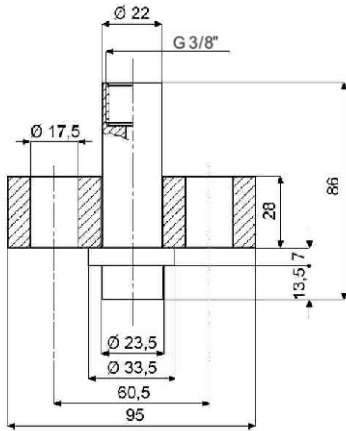
600bar

Connection Fixing

Two-holed specific flange in AISI 304 SS

Filling liquid

Food compatible fluid



Diaphragm Seal Options

Special options

	Code
1m SS Remote Capillary	1
1.6m SS Remote Capillary	6
2m SS Remote Capillary	2
3m SS Remote Capillary	3
4m SS Remote Capillary	4
5m SS Remote Capillary	5
8m SS Remote Capillary	8
Others	X
No Armor	0
SS Armor	S
Glycerine / Water Filled (Temperature limits -10/120°C)	A
Silicone Filled (Temperature limits -20/200°C)	B
Silicone Filled (Temperature limits -90/100°C)	C
Halocarbon (Temperature limits -40/175°C)	D
Fluorolube Filled	E
High temperature oil (Temperature limits -20/400°C)	F
Food compatible fluid	G



with capillary



without capillary

Sheet DS1

Accuracy classes of instruments with diaphragm seal according to working temperature

Working temperature °C		Diaphragm seal accuracy class	Pressure gauge accuracy class	Final accuracy class
15/25		0.6 / direct fitting	1	1.6
		1 / remote fitting	1	2
T1 10/15 T2 25/70	1 / direct fitting		1	2
	1.5 / remote fitting		1	2.5
T3 -30/10 T4 70/150	1.5 / direct fitting		1	2.5
	2 / remote fitting		1	3
T5 150/250	2 / direct fitting		1	3
	3 / remote fitting		1	4
Filling fluid silicon fluid diathermic fluid food compatible fluid fluorid fluid(for oxygen services)			Accuracy class	See sheet DS1
			Working temperature	15/25°C
T1	10/15°C			
T2	25/70°C			
T3	-30/10°C			
T4	70/150°C			
T5	150/250°C			
Working pressure note: when a diaphragm seal is fitted to a differential pressure gauge, maximum working pressure is 40 bar, the minimum is 0.6 bar				

Note: Diaphragm seals are calibrated at 22 °C ambient

Project Highlights

Oil & Gas

Chevron	USA
Irving Oil Refinery	Canada
PARCO Oil Refinery	Pakistan
PDVSA	Venezuela
Qatar Petroleum	Qatar
Saudi Aramco	Saudi Arabia
Shell Oil	USA
Suncor Energy	Canada
Texaco	USA

Petro-Chemical

Coastal Chem	USA
Gwill Chemical Plant	Canada
Mobil	USA
Nanjing DSM Petrochemical	China
National Refinery Limited	Pakistan
Sinopec	China

Automotive

BF Goodrich	USA
Chevrolet	USA
Ford Motor Company	Canada
General Motors	Canada

Power Generation

Dayawan Nuclear Power Plant	China
General Electric	USA
Korean Electric Company	South Korea
New Zealand Thermal Power Plant	New Zealand
Ontario Hydro	Canada
Sembcorp Utilities	China

Food & Beverage

Anheuser-Busch	USA
Coca-Cola	Puerto Rico
Heinz	Canada
Hue Brewery	Vietnam
Kraft Foods	USA
Nestle	Thailand

HVAC

BCE Place	Canada
Burj Dubai	UAE
Kansas City Airport	USA
Pearson International Airport	Canada
Prince of Wales Hospital	Hong Kong

Aerospace & Transport

Air Canada	Canada
Air New Zealand	New Zealand
Canadian National Railway	Canada
Singapore Mass Rapid Transit	Singapore
US Air Force	USA

Industrial

3M	USA
Celulosa Arauco	Chile
Colgate-Palmolive	Vietnam
Dupont	USA
Procter & Gamble	Canada/Vietnam

Government

Department of Defence	Canada
US Coast Guard	USA
US Defense Department	USA
US Navy	USA

Pharmaceutical

Bristol-Myers Squibb	Puerto Rico
Connaught Laboratories	Canada
GlaxoSmithKline	Canada
Merck Sharp & Dohme	USA/Canada
Pfizer	USA/Puerto Rico

Water/Waste Water Treatment

Anchorage Water & Wastewater	USA
Bertam Water Treatment Plant	Malaysia
Chesapeake Utilities	USA
Petronas Dugun Water Supply	Malaysia
Siu Ho Wan Water Treatment	China