SEALING SYSTEMS

Engineering Equipment for Sanitary Applications

Sanitary High Purity Diaphragms

EDITION 2018

SEALING SYSTEMS

Engineering Equipment for Sanitary Applications

Time-Tested Materials, Third Party Verified Performance.

1. The elastomer backing is manufactured from Newman's famous polymer-rich 2107 EPDM compound.
2. The TFM™ facing of the diaphragm is made from time proven modified fluoropolymer, the choice of the diaphragm valve industry for pharmaceutical applications and validated for years. Manufacturer certified USP Class VI.
3. Mechanical testing by third party industry experts to 500 steam cycles and over 100,000 valve cycles has demonstrated exceptional steam resistance and long term durability. Newman's backings are shown to impart outstanding sealing properties at the lowest bonnet torque values.

Certified Peace of Mind and Ground Breaking Traceability.

1. Each diaphragm meets the requirements of FDA CFR Title 21 177.2600 (elastomers) and paragraph 177.1550 (perfluorocarbons) and USP Class VI.
2. Setting a new standard for traceability and causing a stir across the industry, every diaphragm is fully batch traceable at the part level, an exclusive in the industry (patent pending). This means that you will know the exact style, size, composition and provenance of every diaphragm in your system, simply by looking at the back of the diaphragm.
3. Each diaphragm is backed by Newman's unbeatable 35 year history in manufacturing of premium elasto mer parts for the pharmaceutical industry.

Sealing Systems

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SEALING SYSTEMS
Engineering Equipment for Sanitary Applications

I.T.T Replacement Diaphragms

Elastomer Backed Two Piece TFM (PTFE)

Genuine 2107 EPDM
(Ethylene Propylene Diene Monomer)
Genuine 2107 EPDM is the material of choice for many food and biopharm processing applications, surpassing other EPDM's on the market for decades in performance and reliability. An excellent general purpose elastomer, resistant to many chemicals, polar solvents, many CIP solutions, and most aqueous-based systems. When used as a backing in two-piece diaphragms, 2107 has been shown to impart outstanding sealing properties at the lowest bonnet torque values, a substantial improvement over OEM parts.

Genuine Dyneon™ TFM (Modified PTFE)
with Elastomer Backing
Genuine Dyneon TFM™ from 3M® when used in conjunction with proprietary processing has resulted in the highest chemical resistance and the lowest permeability and makes it ideal for almost all processing conditions where extended service life is desired. It is resistant to almost all chemicals, solvents, and CIP solutions, and has been tested to 500 one-hour steam cycles/100,000 valve cycles in many valve configurations. It is ideal for continuous steam, hot WFI and processing areas.* These diaphragms are shipped together with a paired elastomer backing piece, either made of Newman 2107 EPDM or

Viton™ A for extended temperature service (special order).
Temperature Range (with EPDM backing): -20° F to 300° F*
Temperature Range (with Viton™ backing): -0° F to 450° F*

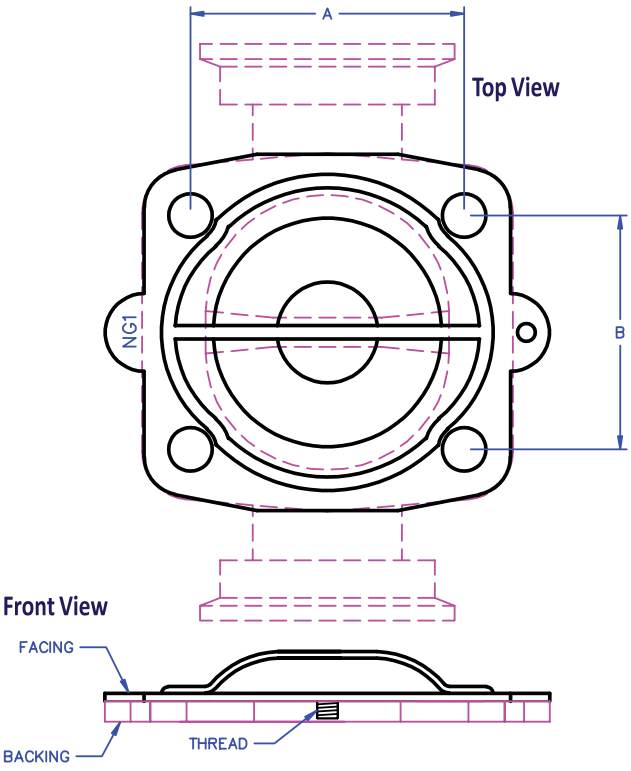
Certificates Available:

- **FDA Extraction Studies per 21CFR177.2600 (elastomers) and 21CFR177.1550 (PTFE)**
- **Testing according to USP Chapter <87> and Chapter <88> Class VI**
- **ADI Free**
- **RoHS Directive 2002/95/EC**

* Temperature Ranges are estimates only and vary based on application and system conditions. Steam pressure should be added accordingly to system temperatures. More extreme physical and chemical conditions reduce diaphragm longevity. OEM Valve limits should always be consulted and appropriate testing should always be performed before placing diaphragms into service.

SEALING SYSTEMS
Engineering Equipment for Sanitary Applications

Elastomer Backed Two Piece TFM (PTFE)



Part #	OEM Part #	AB		Thread
NIT-08-RX-E1G1	42175 1/4 TM Diaphragm	1.2 (31MM)	1.1 (28MM)	#4-40
NIT-15-RX-E1G1	42175 1/2 TM Diaphragm	1.4 (36MM)	1.3 (33MM)	#8-32
NIT-20-RX-E1G1	42175 3/4 TM Diaphragm	1.8 (44MM)	1.6 (40MM)	#8-32
NIT-25-RX-E1G1	42175 1 TM Diaphragm	2.1 (54MM)	1.8 (46MM)	#8-32
NIT-40-RX-E1G1	42175 1½ TM Diaphragm	2.8 (70MM)	2.6 (65MM)	#8-32
NIT-50-RX-E1G1	42175 2 TM Diaphragm	3.3 (83MM)	3.1 (78MM)	#8-32

SEALING SYSTEMS
Engineering Equipment for Sanitary Applications

Single Piece Diaphragms

Genuine 2107 EPDM
(Ethylene Propylene Diene Monomer)
Genuine Newman 2107 EPDM is the material of choice for many food and biopharm processing applications, surpassing other EPDM's on the market for decades in performance and reliability. An excellent general purpose elastomer, resistant to many chemicals, polar solvents, many CIP solutions, and most aqueous-based systems. Used for general processing, acid/alkalis, hot water and occasional steaming.* Low permeability to gases. Useful in higher pressure and vacuum applications.
Temperature Range: -20° F to 300° F*
Continuous Liquid Media:

Genuine VITON™ GF (FKM)™ GF is the ground-breaking material of choice Genuine Chemours Viton™ or more extreme food and biopharm processing conditions. An excellent overall elastomer, resistant to a wide variety of chemicals, many polar and non-polar solvents, CIP solutions and aqueous-based systems. Used for general processing, most acids and bases, hot water, and excellent steam resistance.* Low permeability to gases. Useful in higher pressure and vacuum applications where both the sealing properties of rubber and the chemical resistance of Teflon like materials are required.
Temperature Range: 18° F to 450° F*
Continuous Liquid Media: 0° F to 300° F

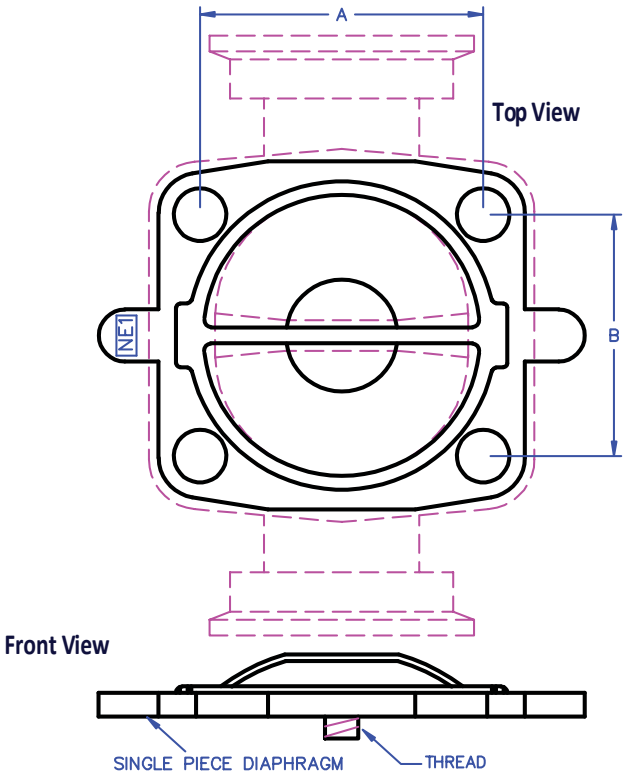
Certificates Available:

- **FDA Extraction Studies per 21CFR177.2600 (elastomers) and 21CFR177.1550 (PTFE)**
- **Testing according to USP Chapter <87> and Chapter <88> Class VI**
- **ADI Free**
- **RoHS Directive 2002/95/EC**

* Temperature Ranges are estimates only and vary based on application and system conditions. Steam pressure should be added accordingly to system temperatures. More extreme physical and chemical conditions reduce diaphragm longevity. OEM Valve limits should always be consulted and appropriate testing should always be performed before placing diaphragms into service.

SEALING SYSTEMS
Engineering Equipment for Sanitary Applications

Single Piece Diaphragms



Part #	EPDM	Viton™ GF	OEM Part # ITT PureFlo®	OEM Part# ITT Dia-Flo ®	A	B	Thread
NIT-08-RX-	E1-S	VG1-S	41502 1/4 17 EPDM Dia	N/A	1.2 (31MM)	1.1 (28MM)	#4-40
NIT-15-RX-	E1-S	VG1-S	41502 1/2 17 EPDM Dia	41502 1/2 17 EPDM Dia	1.5 (37MM)	1.3 (34MM)	#8-32
NIT-20-RX-	E1-S	VG1-S	41502 3/4 17 EPDM Dia	41502 3/4 17 EPDM Dia	1.8 (44MM)	1.6 (40MM)	#8-32
NIT-25-RX-	E1-S	VG1-S	41502 1 17 EPDM Dia	41502 1 17 EPDM Dia	2.1 (54MM)	1.8 (46MM)	#1/4-20
NIT-40-RX-	E1-S	VG1-S	41502 1½ 17 EPDM Dia	41502 1½ 17 EPDM Dia	2.7 (69MM)	2.6 (65MM)	#1/4-20
NIT-50-RX-	E1-S	VG1-S	41502 2 17 EPDM Dia	41502 2 17 EPDM Dia	3.3 (83MM)	3.1 (78MM)	#1/4-20

Gemu Replacement Diaphragms

SEALING SYSTEMS
Engineering Equipment for Sanitary Applications

Elastomer Backed Two Piece

Genuine 2107 EPDM
(Ethylene Propylene Diene Monomer)
Genuine 2107 EPDM is the material of choice for many food and biopharm processing applications, surpassing other EPDM's on the market for decades in performance and reliability. An excellent general purpose elastomer, resistant to many chemicals, polar solvents, many CIP solutions, and most aqueous-based systems.When used as a backing in two-piece diaphragms, 2107 has been shown to impart outstanding sealing properties at the lowest bonnet torque values, a substantial improvement over OEM parts

Genuine Dyneon™ TFM (Modified PTFE)
with Elastomer Backing
Genuine Dyneon™ TFM™ from 3M® when used in conjunction with proprietary processing has resulted in the highest chemical resistance and the lowest permeability and mak processing conditions where extended service life is desired. It is resistant to almost all chemicals, solvents, and CIP solutions, and has been tested to 500 one-hour steam cycles/100,000 valve cycles in many valve configurations. It is ideal for continuous steam, hot WFI and processing areas.*
These diaphragms are shipped together with a paired elastomer backing piece, either made of 2107 EPDM or Viton™ extended temperature service (special order).
Temperature Range (with EPDM backing): -20° F to 300° F*
Temperature Range (with Viton™ backing): -0° F to 450° F*

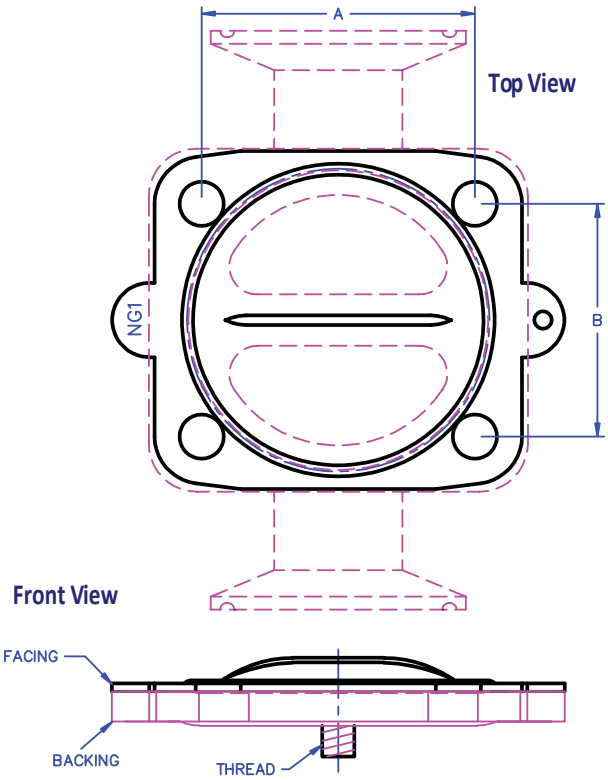
Certificates Available:

- **FDA Extraction Studies per 21CFR177.2600 (elastomers) and 21CFR177.1550 (PTFE)**
- **Testing according to USP Chapter <87> and Chapter <88> Class VI**
- **ADI Free**
- **RoHS Directive 2002/95/EC**

* Temperature Ranges are estimates only and vary based on application and system conditions. Steam pressure should be added accordingly to system temperatures. More extreme physical and chemical conditions reduce diaphragm longevity. OEM Valve limits should always be consulted and appropriate testing should always be performed before placing diaphragms into service.

SEALING SYSTEMS
Engineering Equipment for Sanitary Applications

Elastomer Backed Two Piece



Part #	OEM Part #	A	B	Thread
NGU-25-RX-E1G1	600/025/M5E	2.1 (54MM)	1.8 (46MM)	1/4 - 20
NGU-40-RX-E1G1	600/040/M5E	2.8 (70MM)	2.6 (65MM)	1/4 - 20
NGU-50-RX-E1G1	600/050/M5E	3.2 (82MM)	3.1 (78MM)	1/4 - 20

SEALING SYSTEMS
Engineering Equipment for Sanitary Applications

Single Piece Diaphragms

Genuine 2107 EPDM
(Ethylene Propylene Diene Monomer)
Genuine Newman 2107 EPDM is the material of choice for many food and biopharm processing applications, surpassing other EPDM's on the market for decades in performance and reliability. An excellent general purpose elastomer, resistant to many chemicals, polar solvents, many CIP solutions, and most aqueous-based systems. Used for general processing, acid/alkalis, hot water and occasional steaming.*Low permeability to gases. Useful in higher pressure and vacuum applications.
Temperature Range: -20° F to 300° F*
Continuous Liquid Media: -20° F to 200° F

Genuine VITON™ GF (FKM)
Genuine Chemours Viton™ GF is the ground-breaking material of choice for more extreme food and biopharm processing conditions, only offered through. An excellent overall elastomer, resistant to a wide variety of chemicals, many polar and non-polar solvents, CIP solutions and aqueous-based systems. Used for general processing, most acids and bases, hot water, and excellent steam resistance.*Low permeability to gases. Useful in higher pressure and vacuum applications where both the sealing properties of rubber and the chemical resistance of Teflon materials are required.
Temperature Range: 18° F to 450° F*
Continuous Liquid Media: 18° F to 300° F

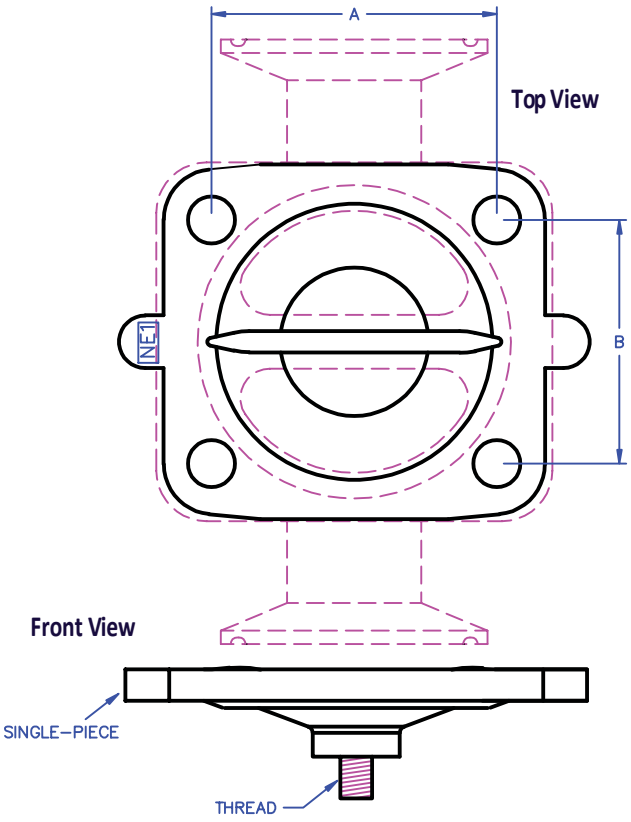
Certificates Available:

- **FDA Extraction Studies per 21CFR177.2600 (elastomers) and 21CFR177.1550 (PTFE)**
- **Testing according to USP Chapter <87> and Chapter <88> Class VI**
- **ADI Free**
- **RoHS Directive 2002/95/EC**

* Temperature Ranges are estimates only and vary based on application and system conditions. Steam pressure should be added accordingly to system temperatures. More extreme physical and chemical conditions reduce diaphragm longevity. OEM Valve limits should always be consulted and appropriate testing should always be performed before placing diaphragms into service.

SEALING SYSTEMS
Engineering Equipment for Sanitary Applications

Single Piece Diaphragms



Part #	EPDM	Viton™ GF	OEM Part #	A	B	Fastener
NGU-08-RX-	E2-S	VG1-S	600/008/M17 (3,16,13)	0.9 (22MM)	0.9 (22MM)	Button
NGU-10-RX-	E1-S	VG1-S	600/010/M17 (3,16,13)	1.5 (39MM)	1.7 (44MM)	M4 x .7
NGU-25-RX-	E1-S	VG1-S	600/025/M17 (3,16,13)	2.1 (54MM)	1.8 (46MM)	1/4 - 20
NGU-40-RX-	E1-S	VG1-S	600/040/M17 (3,16,13)	2.8 (70MM)	2.6 (65MM)	1/4 - 20
NGU-50-RX-	E1-S	VG1-S	600/050/M17 (3,16,13)	3.2 (82MM)	3.1 (78MM)	1/4 - 20

SEALING SYSTEMS

Engineering Equipment for Sanitary Applications

Single Piece Laminated Diaphragm

EPDM (Ethylene Propylene Diene Monomer)
Laminated TFM (Modified PTFE)
Single piece Diaphragms made from TFM laminated onto 2107 EPDM are chosen for Valves under 1" (DN25) where the chemical resistance of Teflon®(PTFE) is required. It is resistant to most chemicals, solvents, CIP solutions, hot WFI and steam.* Since two dissimilar materials are bonded together in this design, mechanical stresses can be formed during actuation. As a result, Diaphragms are only made for smaller size valves where the valve stroke is limited. Two-piece EPDM/TFM diaphragms are recommended for larger valve sizes. Test before using on higher pressure or vacuum systems.
Temperature Range: -20° F to 300° F*
Continuous Liquid Media: -20° F to 300° F

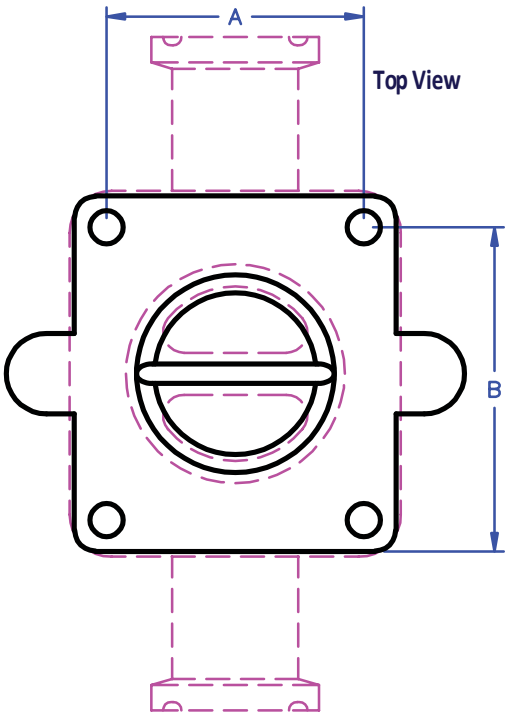
Certificates Available:

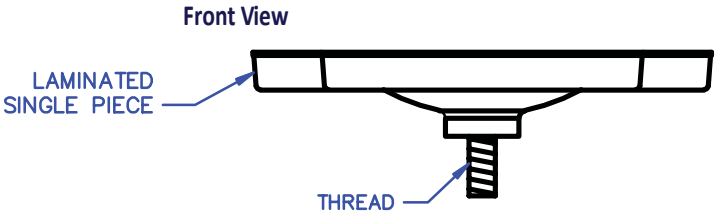
- **FDA Extraction Studies per 21CFR177.2600 (elastomers) and 21CFR177.1550 (PTFE)**
- **Testing according to USP Chapter <87> and Chapter <88> Class VI**
- **ADI Free**
- **RoHS Directive 2002/95/EC**

* Temperature Ranges are estimates only and vary based on application and system conditions. Steam pressure should be added accordingly to system temperatures. More extreme physical and chemical conditions reduce diaphragm longevity. OEM Valve limits should always be consulted and appropriate testing should always be performed before placing diaphragms into service.

SEALING SYSTEMS
Engineering Equipment for Sanitary Applications

Single Piece Laminated Diaphragm





Part #	OEM Part #	A	B	Fastener
NGU-08-RX-E1L1	600/008/M5A (52)	0.9 (22MM)	0.9 (22MM)	Button
NGU-10-RX-E1L1	600/010/M5A (52)	1.5 (39MM)	1.7 (44MM)	M4 x .7
NGU-25-RX-E1L1	600/025/M5A (52)	2.1 (54MM)	1.8 (46MM)	1/4 - 20

SEALING SYSTEMS
Engineering Equipment for Sanitary Applications

SAUNDERS Replacement Diaphragms

Elastomer Backed Two Piece Diaphragms

Genuine 2107 EPDM
(Ethylene Propylene Diene Monomer)
Genuine 2107 EPDM is the material of choice for many food and biopharm processing applications, surpassing other EPDM's on the market for decades in performance and reliability. An excellent general purpose elastomer, resistant to many chemicals, polar solvents, many CIP solutions, and most aqueous-bases systems.When used as a backing in two-piece diaphragms, 2107 has been shown to impart outstanding sealing properties at the lowest bonnet torque values, a substantial improvement over OEM parts.

Genuine Dyneon TFM™ (Modified PTFE) with Elastomer Backing ™ Genuine Dyneon TFM from 3M®
when used in conjunction with proprietary processing has resulted in the highest chemical resistance and the lowest A for processing conditions where extended service life is desired. It is resistant to almost all chemicals, solvents, and CIP solutions, and has been tested to 500 one-hour steam cycles/100,000 valve cycles in many valve configurations. It is ideal for continuous steam, hot WFI and processing areas.* These diaphragms are shipped together with a paired elastomer backing piece, either made of 2107 EPDM or Viton extended temperature service (special order).
Temperature Range (with EPDM backing): -20° F to 300° F*
Temperature Range (with Viton™ backing): -0° F to 450° F*

Certificates Available:

- **FDA Extraction Studies per 21CFR177.2600 (elastomers) and 21CFR177.1550 (PTFE)**
- **Testing according to USP Chapter <87> and Chapter <88> Class VI**
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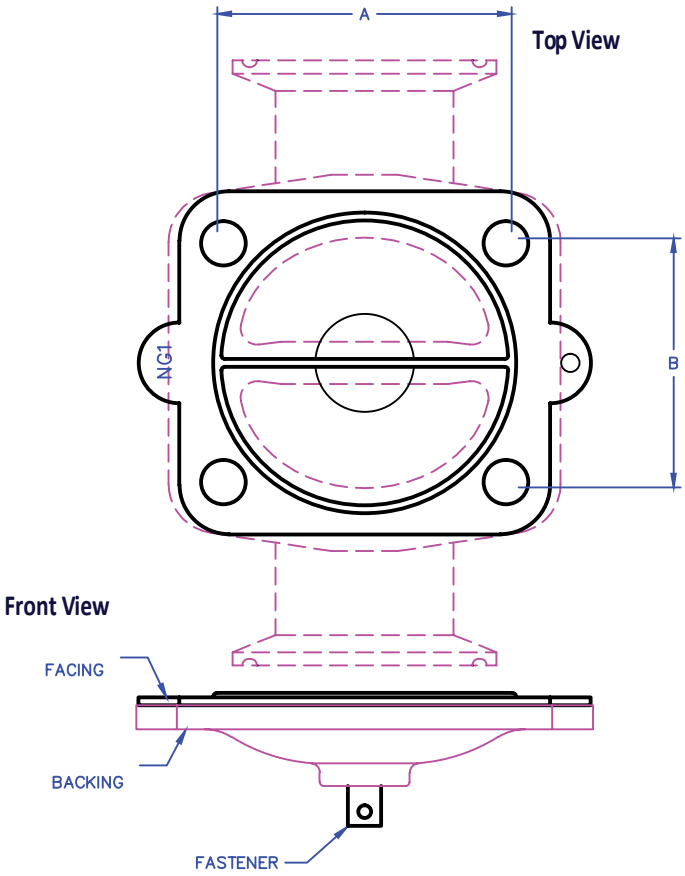
SEALING SYSTEMS
Engineering Equipment for Sanitary Applications

Elastomer Backed Two Piece Diaphragms



Part #	OEM Part #	A	B	Fastener
NSD-15-RX-E1G1	DA015S5 (.500")	1.435 (36MM)	1.313 (33MM)	Bayonet Style
NSD-20-RX-E1G1	DA020S5 (.750")	1.752 (44MM)	1.559 (40MM)	Bayonet Style
NSD-25-RX-E1G1	DA025S5 (1")	2.125 (54MM)	1.811 (46MM)	Bayonet Style
NSD-40-RX-E1G1	DA040S5 (1.5")	2.755 (70MM)	2.564 (65MM)	Bayonet Style
NSD-50-RX-E1G1	DA050S5 (2")	3.235 (82MM)	3.053 (78MM)	Bayonet Style

SEALING SYSTEMS
Engineering Equipment for Sanitary Applications

Single Piece Diaphragms

Genuine 2107 EPDM
(Ethylene Propylene Diene Monomer)
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Low permeability to gases. Useful in higher pressure and vacuum applications.
Temperature Range: -20° F to 300° F*
Continuous Liquid Media: -20° F to 200° F

Genuine VITON™ GF (FKM)
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An excellent overall elastomer, resistant to a wide variety of chemicals, many polar and non-polar solvents, CIP solutions and aqueous-based systems.
Used for general processing, most acids and bases, hot water, and excellent steam resistance.* Low permeability to gases. Useful in higher pressure and vacuum applications where both the sealing properties of rubber and the chemical resistance of Teflon® like materials are required.
Temperature Range: 18° F to 450° F*
Continuous Liquid Media: 0° F to 300° F

Certificates Available:

- **FDA Extraction Studies per 21CFR177.2600 (elastomers) and 21CFR177.1550 (PTFE)**
- **Testing according to USP Chapter <87> and Chapter <88> Class VI**
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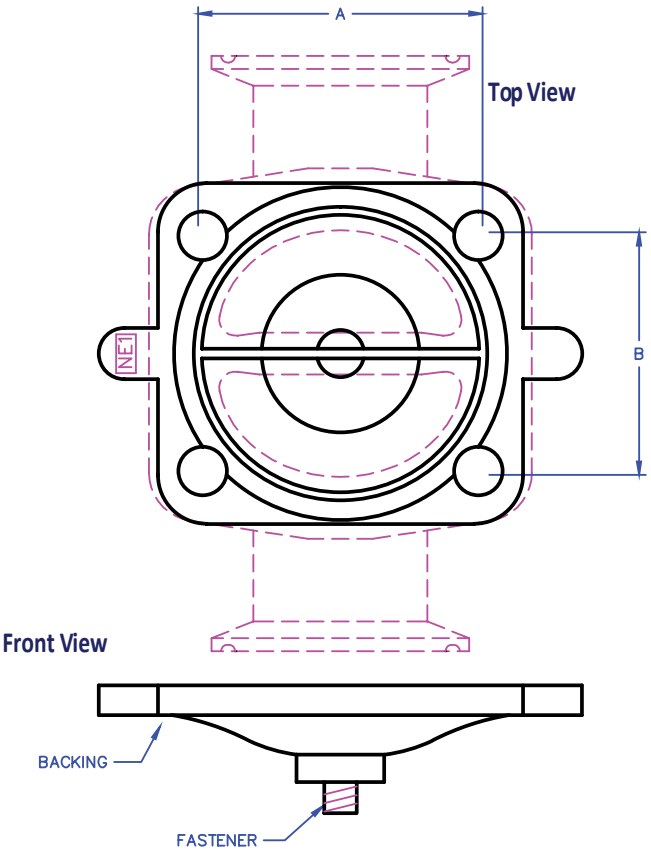
SEALING SYSTEMS
Engineering Equipment for Sanitary Applications

Single Piece Diaphragms



Part #	OEM Part #	A	B	Fastener
NSD-08-RX-E1-SB	DP008E2 (.250")	1.025 (26MM)	0.905 (23MM)	Button
NSD-08-RX-E1-ST	DP008E2 (.250")	1.025 (26MM)	0.905 (23MM)	M3 x .5
NSD-15-RX-E1-S	DA015E3 (.500")	1.435 (36MM)	1.313 (33MM)	Button
NSD-20-RX-E1-S	DA020E3 (.750")	1.752 (44MM)	1.559 (40MM)	Button
NSD-25-RX-E1-S	DA025E3 (1")	2.125 (54MM)	1.811 (46MM)	1/4 - 20
NSD-40-RX-E1-S	DA040E3 (1.5")	2.755 (70MM)	2.564 (65MM)	1/4 - 20
NSD-50-RX-E1-S	DA050E3 (2")	3.235 (82MM)	3.053 (78MM)	1/4 - 20

New Aquasyn Replacement Diaphragms

SEALING SYSTEMS
Engineering Equipment for Sanitary Applications

Single Piece Diaphragms

S-Style SP Replacement Diaphragm for Saunders® Four-Bolt Round Valves

EPDM (Ethylene Propylene Diene Monomer)
Laminated TFM (Modified PTFE)
Single piece NewFlo™ Diaphragms made from TFM laminated onto 2107 EPDM are chosen for Saunders® Sampling Valves where the chemical resistance of Teflon™ (PTFE) is required.
It is resistant to most chemicals, solvents, CIP solutions, hot WFI and steam. Test before using on higher pressure or vacuum systems.
Temperature Range: -20º F to 300º F*
Continuous Liquid Media: -20º F to 300º F

Laminated

Part #	OEM Part #	A	B	Fastener
NSD-08-RX-E1L1-B	DA008PS5	1.03 (26MM)	0.9 (22MM)	Button
NSD-08-RX-E1L1-ST	DP008P2	1.03 (26MM)	0.9 (22MM)	M3x.5

Non - Laminated

Part #	OEM Part #	A	B	Fastener
NSD-08-RX-E1L1-B	DA008PS5	1.03 (26MM)	0.9 (22MM)	Button

Certificates Available:

- **FDA Extraction Studies per 21CFR177.2600 (elastomers) and 21CFR177.1550 (PTFE)**
- **Testing according to USP Chapter <87> and Chapter <88> Class VI**
- **ADI Free**
- **RoHS Directive 2002/95/EC**
- **Other certifications available upon request**

S-Style SP Replacement Diaphragm for Saunders® Two-Bolt Round Valves

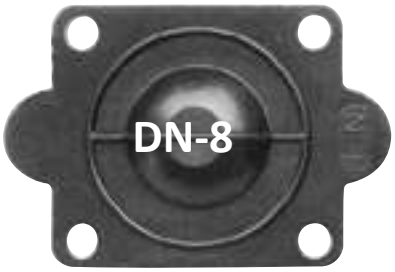
Non - Laminated

Part #	OEM Part #	A	Fastener
NSD-10R-RX-E1-SB	DA010E2	1.03 (26MM)	Button

* Temperature Ranges are estimates only and vary based on application and system conditions. Steam pressure should be added accordingly to system temperatures. More extreme physical and chemical conditions reduce diaphragm longevity. OEM Valve limits should always be consulted and appropriate testing should always be performed before placing diaphragms into service.

SEALING SYSTEMS

Engineering Equipment for Sanitary Applications



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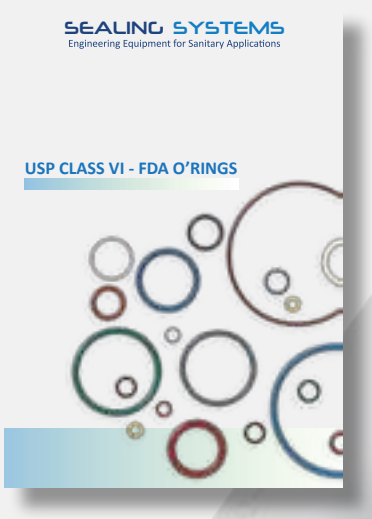

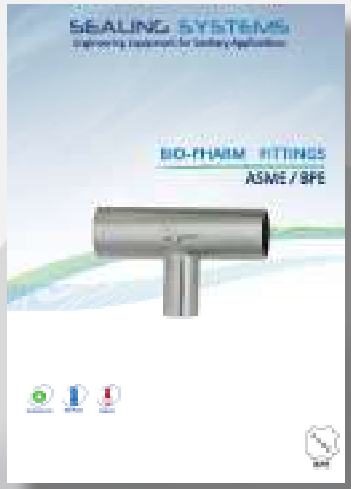

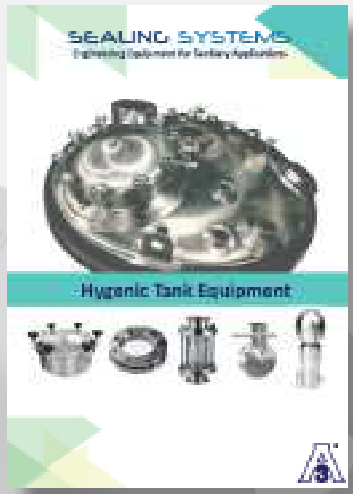

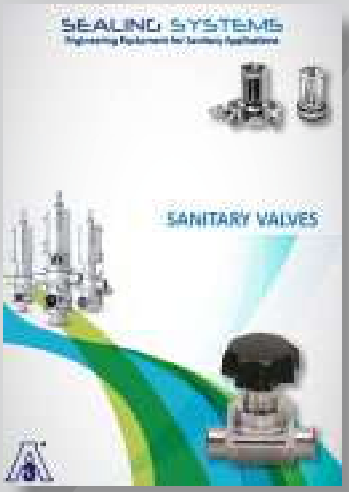

www.sealingsystems.gr