Diaphragm Seals

TYPE 12

- Features a flush mount diaphragm and all welded construction, ideal for food & beverage, pharmaceutical and sanitary markets
- Wetted parts and all welded housing are constructed of 316 stainless steel for greater strength and durability
- Minimum working pressure 0 to 30 psi through -30 inHg to 600 psig
- Accommodates process connection pipes from 1-1/2 inch through 3 inch sizes
- Accommodates 2-1/2, 4, 4-1/2 and 6 inch gauge sizes
- Clamped connection allows ease of installation and removal of seal for maintenance and cleaning
- Wetted materials polished to Ra 32 or better
- Consider gauge size, pressure range, media composition, ambient and operating temperature, and maximum working pressure when selecting
- For process temperatures over 212° F a capillary or cooling element is recommended, contact factory to order
- Fill fluid must be compatible with process media; i.e. Glycerine may become volatile in conjunction with a strong oxidizing agent such as chlorine, forms of oxygen or peroxide and nitric acids

PRODUCT SPECIFICATIONS	
Suitable Pressure Gauge Sizes	2-1/2, 4, 4-1/2 and 6 Inch Will also operate with most transducers, transmitters and pressure switches
Minimum Working Pressure	0 psig to 30 psig through -30 inHg to 600 psig
Maximum Working Pressure	Maximum Operating Pressure is Determined by the Clamping Device and Piping System – Please Consult Factory
Operating Temperature	Refer to fill fluid expansion factors table below

Note: NOSHOK pressure transmitters or transducers are not to be used in heat sterilization systems as stated in 3A Standard 74-03 paragraph D10.1.2

Diaphragm seal must be installed facing downward or in a vertical position for drainability. Do not install diaphragm seal facing in an upward position.

Fill Fluid Temperature Table

Fill Fluid	Temperature Range (°F)
Glycerine*	30 - 300
Silicone 200-10	-35 - 450
Silicone 704	30 - 520
Silicone 710	30 - 650
Silicone 550	-40 - 600
Silicone 510	-60 - 400
Fluorolube FS-5	-40 - 500
Silicone 200-350	0 - 300
Halocarbon Oil 6.3	-40 - 400
Ethylene Glycol	-30 - 300
Propylene Glycol	-50 - 200
Syltherm 800	-40 - 450
Mineral Oil	Note 1
Neobee M-20	-40 - 320

*Not recommended for use on vacuum applications
Note 1. To be advised

ORDERING INFORMATION								
TYPE	**12***							
INSTRUMENT CONNECTION SIZES	**02** **04**	1/4 inch NPT 1/2 inch NPT						
UPPER HOUSING MATERIAL	**S**	316 Stainless Steel						
DIAPHRAGM MATERIAL	**S**	316 Stainless Steel						
SANITARY PIPE SIZES	**12**	1-1/2 Inch	**16**	2 Inch	**20**	2-1/2 Inch	**24**	3 Inch
SANITARY SEAL CLAMPS & GASKETS								
SS LADISH TRI-CLAMP	**CR12**	1-1/2 Inch	**CR16**	2 Inch	**CR20**	2-1/2 Inch	**CR24**	3 Inch
BUNA GASKET	**BG12**	1-1/2 Inch	**BG16**	2 Inch	**BG20**	2-1/2 Inch	**BG24**	3 Inch
TEFLON GASKET	**TG12**	1-1/2 Inch	**TG16**	2 Inch	**TG20**	2-1/2 Inch	**TG24**	3 Inch

NOTE: For process temperatures over 212°F, a capillary or cooling element is recommended. Contact NOSHOK factory to order.

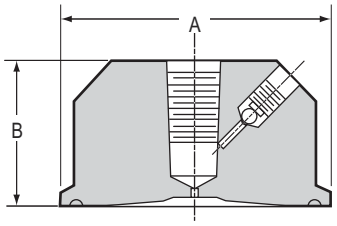
***Operating pressure is determined by the clamping device and piping system — Please consult factory.**

EXAMPLE **12 – 02 S – S – 20 – CR20 – BG20**

Model Selection	Type 12
Instrument Connection Size	1/4 Inch NPT
Upper Housing Material	316 Stainless Steel
Diaphragm Material	316 Stainless Steel
Sanitary Pipe Size	2-1/2 Inch
SS Ladish Tri-Clamp (Optional)	2-1/2 Inch Clamp
Gasket Material (Optional)	Buna gasket

OUTLINE DIMENSIONS

Type 12 Ladish Tri-Clamp Sanitary Seal



Nominal pipe size	1.5	2	3
Diaphragm Diameter Inches	1.4	1.9	2.4
A	1.984	2.516	3.579
B	1.25	1.25	1.25

Diaphragm Seals

TYPE 20

- Designed for applications requiring an NPT male threaded process connection and with a flush diaphragm
- Flush diaphragm construction prevents clogging and process material build-up
- Constructed with a 316 stainless steel housing and diaphragm for strength and durability
- Maximum pressure rating is 9,000 psi
- Available instrument connection sizes are 1/4 and 1/2 inch with a process connection size of 1/2 inch NPT male to 2 inch NPT male
- Consider gauge size, pressure range, media composition, ambient and operating temperature, and maximum working pressure when selecting
- For process temperatures over 212° F a capillary or cooling element is recommended, contact factory to order
- Fill fluid must be compatible with process media; i.e. Glycerine may become volatile in conjunction with a strong oxidizing agent such as chlorine, forms of oxygen or peroxide and nitric acids

PRODUCT SPECIFICATIONS	
Suitable Pressure Instrument	Will operate with most transducers, transmitters and pressure switches
Minimum Working Pressure	0 psig to 30 psig through 0 psig to 9,000 psig*
Maximum Working Pressure	9,000 psig @ 100 ºF
Operating Temperature	Refer to fill fluid expansion factors table below

* Depending on process connection size

Fill Fluid Temperature Table

Fill Fluid	Temperature Range (°F)
Glycerine*	30 - 300
Silicone 200-10	-35 - 450
Silicone 704	30 - 520
Silicone 710	30 - 650
Silicone 550	-40 - 600
Silicone 510	-60 - 400
Fluorolube FS-5	-40 - 500
Silicone 200-350	0 - 300
Halocarbon Oil 6.3	-40 - 400
Ethylene Glycol	-30 - 300
Propylene Glycol	-50 - 200
Syltherm 800	-40 - 450
Mineral Oil	Note 1
Neobee M-20	-40 - 320

*Not recommended for use on vacuum applications
Note 1. To be advised

ORDERING INFORMATION						
TYPE	**20**	9,000 psi				
INSTRUMENT CONNECTION SIZES	**02** **04**	1/4 inch NPT 1/2 inch NPT				
HOUSING MATERIAL	**S**	316 Stainless Steel				
DIAPHRAGM MATERIAL	**S**	316 Stainless Steel				
PROCESS CONNECTION SIZES	**04** **06**	1/2 Inch NPT 3/4 Inch NPT	**08** **12**	1 Inch NPT 1-1/2 Inch NPT	**16**	2 Inch NPT

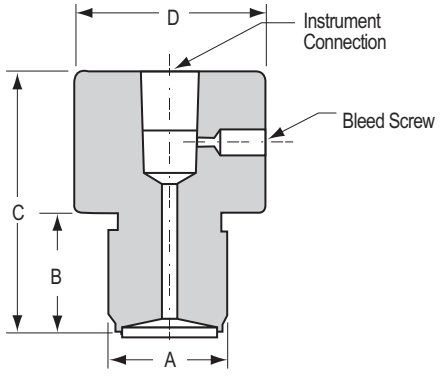
NOTE: For process temperatures over 212°F, a capillary or cooling element is recommended. Contact NOSHOK factory to order.

EXAMPLE **20 – 02 S – S – 06**

Model Selection	Type 20
Instrument Connection Size	1/4 Inch NPT
Housing Material	316 Stainless Steel
Diaphragm Material	316 Stainless Steel
Process Connection Size	3/4 Inch NPT

OUTLINE DIMENSIONS

Type 20 Front Flush Style Diaphragm Seal



A	B	C	D
1/2 NPT	0.8	1.9	1.50
3/4 NPT	0.8	1.8	1.63
1 NPT	1.1	2.5	1.75
1 1/2 NPT	1.2	2.0	2.00
2 NPT	1.2	2.4	2.63

Diaphragm Seals

TYPE 25/25H

- Designed to isolate the pressure measuring instrument from corrosive or viscous process media
- Utilize an all welded, all metallic housing design to eliminate potential leak paths
- Maximum pressure rating is 2,500 psi
- For use with gauges with dial sizes of 2-1/2 inches and smaller, and pressure ranges no less than 100 psig
- Housing and diaphragm offered in a variety of materials to suit most applications
- A flushing port is available to clean wetted areas and prevent process media build up
- Consider gauge size, pressure range, media composition, ambient and operating temperature, and maximum working pressure when selecting
- For process temperatures over 212° F a capillary or cooling element is recommended, contact factory to order
- Fill fluid must be compatible with process media; i.e. Glycerine may become volatile in conjunction with a strong oxidizing agent such as chlorine, forms of oxygen or peroxide and nitric acids

PRODUCT SPECIFICATIONS	
Suitable Pressure Gauge Sizes	2-1/2 Inch Will also operate with most transducers, transmitters and pressure switches
Minimum Working Pressure	**25:** 0 psig to 100 psig through 0 psig to 2,500 psig **25H:** 0 psig to 100 psig through 0 psig to 5,000 psig
Maximum Working Pressure	**25:** 2,500 psig @ 100 ºF **25H:** 5,000 psig @ 100 ºF
Operating Temperature	Refer to fill fluid expansion factors table below

Fill Fluid Temperature Table

Fill Fluid	Temperature Range (°F)
Glycerine*	30 - 300
Silicone 200-10	-35 - 450
Silicone 704	30 - 520
Silicone 710	30 - 650
Silicone 550	-40 - 600
Silicone 510	-60 - 400
Fluorolube FS-5	-40 - 500
Silicone 200-350	0 - 300
Halocarbon Oil 6.3	-40 - 400
Ethylene Glycol	-30 - 300
Propylene Glycol	-50 - 200
Syltherm 800	-40 - 450
Mineral Oil	Note 1
Neobee M-20	-40 - 320

*Not recommended for use on vacuum applications

Note 1. To be advised

ORDERING INFORMATION				
TYPE	**25**	2,500 psi	**25H**	5,000 psi
INSTRUMENT CONNECTION SIZES	**02** **04**	1/4 inch NPT 1/2 inch NPT		
UPPER HOUSING MATERIAL	**M** **P**	Monel 400 Carpenter 20	**S**	316 Stainless Steel
DIAPHRAGM MATERIAL	**H** **M**	Hastelloy C-276 Monel 400[1]	**P** **S**	Carpenter 20[1] 316 Stainless Steel
PROCESS CONNECTION SIZES	**02** **04**	1/4 Inch NPT 1/2 Inch NPT		
LOWER HOUSING MATERIAL	**H** **M**	Hastelloy C-276 Monel 400	**P** **S**	Carpenter 20 316 Stainless Steel
FLUSHING CONNECTION	**1F** **2F**	1/8 Inch NPT 1/4 Inch NPT		

1) When selecting a Monel or Carpenter 20 Diaphragm, the upper & lower housing must be the same material

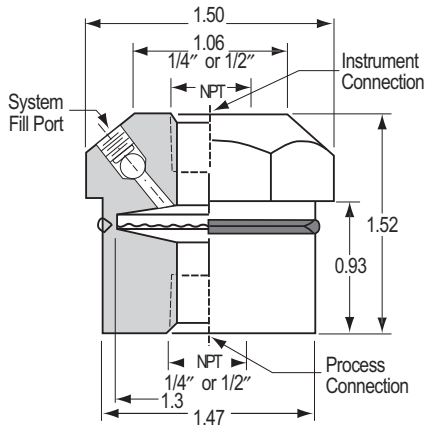
NOTE: For process temperatures over 212°F, a capillary or cooling element is recommended. Contact NOSHOK factory to order.

EXAMPLE **25 – 02 P – P – 04 P – 1F**

Model Selection	Type 25
Instrument Connection Size	1/4 Inch NPT
Upper Housing Material	Carpenter 20
Diaphragm Material	Carpenter 20
Process Connection Size	1/2 Inch NPT
Lower Housing Material	Carpenter 20
Flushing Connection (Optional)	1/8 Inch NPT

OUTLINE DIMENSIONS

Type 25/25H All Welded Standard Pressure Diaphragm Seal



Diaphragm Seals

TYPE 29

- An off-line seal with a threaded connection and all welded, all metallic housing design that does not utilize an o-ring or gasket
- Designed with a larger diameter diaphragm for higher displacement capability
- Maximum pressure rating is 2,500 psi
- A variety of upper and lower housing and diaphragm materials are available to suit most applications
- A flushing port is available to clean wetted areas and prevent process media build up
- Consider gauge size, pressure range, media composition, ambient and operating temperature, and maximum working pressure when selecting
- For process temperatures over 212° F a capillary or cooling element is recommended, contact factory to order
- Fill fluid must be compatible with process media; i.e. Glycerine may become volatile in conjunction with a strong oxidizing agent such as chlorine, forms of oxygen or peroxide and nitric acids

PRODUCT SPECIFICATIONS	
Suitable Pressure Gauge Sizes	2-1/2, 4 and 4-1/2 Inch Will also operate with most transducers, transmitters and pressure switches
Minimum Working Pressure	0 psig to 30 psig through 0 psig to 2,500 psig
Maximum Working Pressure	2,500 psig @ 100 ºF
Operating Temperature	Refer to fill fluid expansion factors table below

Fill Fluid Temperature Table

Fill Fluid	Temperature Range (°F)
Glycerine*	30 - 300
Silicone 200-10	-35 - 450
Silicone 704	30 - 520
Silicone 710	30 - 650
Silicone 550	-40 - 600
Silicone 510	-60 - 400
Fluorolube FS-5	-40 - 500
Silicone 200-350	0 - 300
Halocarbon Oil 6.3	-40 - 400
Ethylene Glycol	-30 - 300
Propylene Glycol	-50 - 200
Syltherm 800	-40 - 450
Mineral Oil	Note 1
Neobee M-20	-40 - 320

*Not recommended for use on vacuum applications
Note 1. To be advised

ORDERING INFORMATION				
TYPE	**29**	2,500 psi		
INSTRUMENT CONNECTION SIZES	**02** **04**	1/4 inch NPT 1/2 inch NPT		
UPPER HOUSING MATERIAL	**M** **P**	Monel 400 Carpenter 20	**S**	316 Stainless Steel
DIAPHRAGM MATERIAL	**H** **M**	Hastelloy C-276 Monel 400[1]	**P** **S**	Carpenter 20[1] 316 Stainless Steel
PROCESS CONNECTION SIZES	**02** **04**	1/4 Inch NPT 1/2 Inch NPT	**06** **08**	3/4 Inch NPT 1 Inch NPT
LOWER HOUSING MATERIAL	**H** **M**	Hastelloy C-276 Monel 400	**P** **S**	Carpenter 20 316 Stainless Steel
FLUSHING CONNECTION	**1F** **2F**	1/8 Inch NPT 1/4 Inch NPT		

1) When selecting a Monel or Carpenter 20 Diaphragm, the upper & lower housing must be the same material

NOTE: For process temperatures over 212°F, a capillary or cooling element is recommended. Contact NOSHOK factory to order.

EXAMPLE **29 – 02 S – S – 06 S – 1F**

Model Selection	Type 29
Instrument Connection Size	1/4 Inch NPT
Upper Housing Material	316 Stainless Steel
Diaphragm Material	316 Stainless Steel
Process Connection Size	3/4 Inch NPT
Lower Housing Material	316 Stainless Steel
Flushing Connection (Optional)	1/8 Inch NPT

OUTLINE DIMENSIONS

Type 29 High Displacement, All Welded Diaphragm Seal