

MANSFIELD & GREEN

Type C Series

Diaphragm Seal Elements for Sanitary Applications

Mansfield & Green C Series diaphragm seals feature a simple, one-piece design with diaphragms fastened directly onto the instrument top housing. Type C seals are crafted of 316 stainless steel with quick-couples that meet **3A Standards** per specification 37-01 for use in sanitary piping applications in the food, beverage, pharmaceutical and other industries requiring extreme levels of purity.

Type C Series seal elements are designed to mount on tees or welding ferrules. Their design allows for fast, efficient removal and installation for flushing or changing process media, line cleanout and equipment washdown situations.

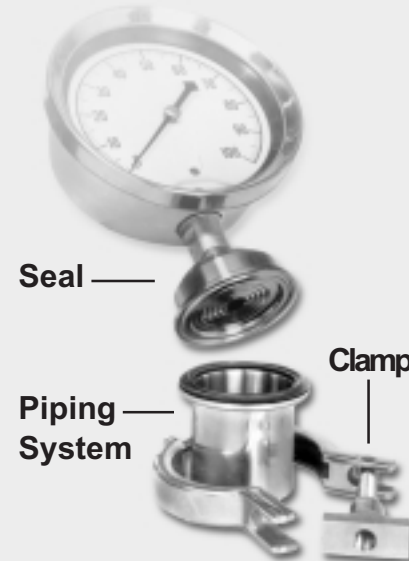
Seal pressure and temperature specifications are determined by the sanitary piping system limitations.



- ❑ *All Welded 316 SST Construction Meets 3A Standards*
- ❑ *Ideal for Food, Beverage, Pharmaceuticals or High Purity Applications*
- ❑ *Compatible with a Variety of Piping Systems*
 - *Ladish TriClover*
 - *Cherry-Burrell*
- ❑ *Quick Connection & Disconnection from Process*
 - *Ideal for Washdowns, Line Cleanout, Flushing or Changes to Process Media*

MANSFIELD & GREEN, C SERIES






Seal —

Piping System —

Clamp —

Accessories

Used with CSA, CSB & CSG Seals




No. 13-H3"
UNION NUT, HEX


Seals designed to meet 3-A standard requirements and to replace cap in specified sanitary pipe system. Pressure-temperature limitations of seal are determined by the appropriate sanitary piping system limits.

Specifications

Body Material 316 Stainless steel
 Instrument Connection 1/4" NPT or Stem for tubing
 Diaphragm Material 316 ELC Stainless Steel

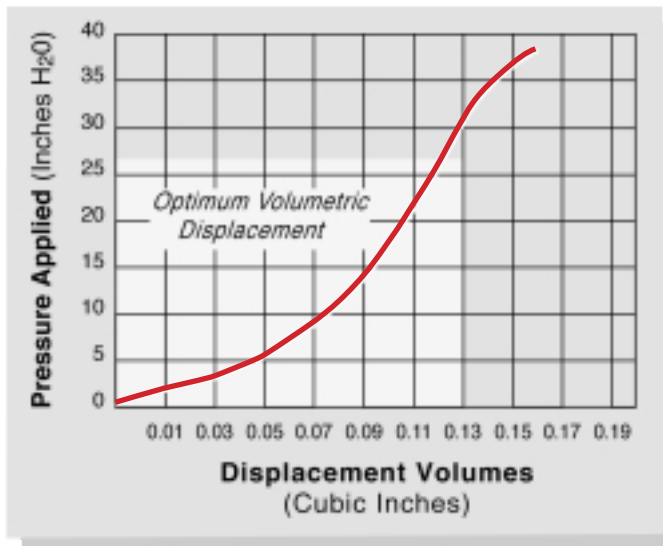


No. 13 CLAMP
USED WITH CSI, CST & CSQ SEALS



MODEL C SERIES SELECTION GUIDE

Seal Type	Piping System	Operating Pressure	Volumetric Displacement
CSA	Ladish Tri-Clover Bevel Seat Replaces 16 AT Hose Clamp	10 PSIG & Up	0.13 cu. in.
CSB	Ladish Tri-Clover Bevel Seal Replaces 16A Plain Cap	10 PSIG & Up	0.13 cu. in.
CSG	Ladish Tri-Clover Gasket Seal Replaces 16 AG Cap	10 PSIG & Up	0.13 cu. in.
CSI	Cherry-Burrell "I" Line CIP Seal Replaces 16 AL Cap	10 PSIG & Up	0.06 cu. in.
CST	Ladish Tri-Clamp	50 PSIG & Up	0.007 cu. in.
	GC "Fast Clamp" Cherry-Burrell "S" Clamp	10 PSIG & Up	0.06 cu. in.
	Seal Replaces 16A Cap	10 PSIG & Up	0.13 cu. in.
CSQ	Cherry-Burrell "Q" Line Seal Replaces 16 AQ Solid Cap	10 PSIG & Up	0.06 cu. in.



Pressure vs. Volumetric Displacement (CST Series)

Displacement curves are provided to assist in selecting a diaphragm seal with minimal full span displacement bias effects. This graph is for reference only and may not accurately represent the maximum displacement that may be used. Contact AMETEK for exact specifications.

Application Note

Seal element pressure and temperature limits are determined by the sanitary piping system's limits.

ORDERING INFORMATION

TYPE CSB SERIES DIAPHRAGM SEALS

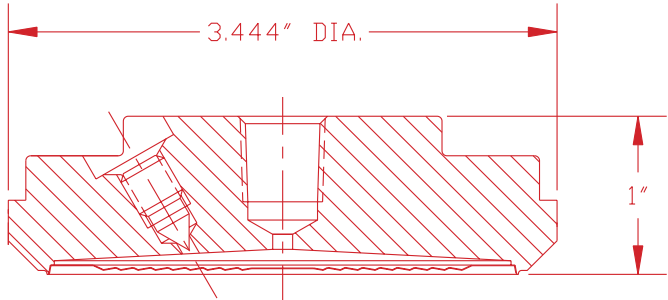
Specification Sheet SS-DS-5500-0600
 June 2000
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Order Number Description

<p>CSB</p> <p>4</p> <p>D</p> <p>A</p> <p>6</p> <p>L</p> <p>U</p> <p>-</p> <p>-</p> <p>-</p> <p>-</p> <p>-</p> <p>-</p> <p>-</p> <p>1</p> <p>-</p> <p>C</p> <p>F</p> <p>-</p> <p>CSB 4 D A 6 L U - - - - - 1 - C F -</p>	<p>Base Model Number- 1st thru 3rd Characters Type CSB Diaphragm Seal, Non-Gasketed</p> <p>Instrument Connection- 4th Character 0.25-inch NPT Female</p> <p>Process Connection- Size- 5th Character 3.0-inch</p> <p>Process Connection- Type- 6th Character Acme Thread, Hex Union Nut (13-H), for Ladish Tri-Clover Bevel Seat Seal replaces 16A Plain Cap</p> <p>Exposed Material- 7th Character 316 Stainless Steel</p> <p>Diaphragm Material- 8th Character 316L Low Carbon Stainless Steel</p> <p>Top, Bolting and Flange Options- 9th Character 316 Stainless Steel, Sanitary Top</p> <p>Schedule/Extension Length- 10th Character Not Used</p> <p>Coating Options- 11th Character Not Used</p> <p>Fill Fluids- 12th Character Customer Supplied Fluid (<u>MUST Supply MSDS with Shipment</u>) Mineral Oil Vegetable Oil (Food Grade) Not Used (<i>When selected, you cannot select a 13th or 14th Character</i>)</p> <p>Fill and Attach to Instrument- 13th Character (Customer Supplied) Gauge (≥ 30 psi/2 bar) Gauge (≤ 30 psi/2 bar)(Including combination gauges with Lower ranges) Switch Transducer Transmitter Smart Transmitter (<i>Special Order</i>) Not Used (<i>When selected, you cannot select a 12th or 14th Character</i>)</p> <p>Capillary Length- 14th Character Direct Connect Not Used</p> <p>Options- 15th Character With Certificate of Conformance With Instrument Tag (<i>Special Order</i>) Not Used</p>
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Sample Order Number
 CSB Series Sanitary Remote Seal, Non-Gasketed with a Tri-Clover Bevel Seat Seal. 0.25-inch NPT Instrument Connection, 3.0-inch Process Connection with Sanitary Clamp, 316L Low Carbon Stainless Steel Diaphragm and 316 Stainless Steel Sanitary Top. No Extension, No Coating and No Fill Fluids

Note:
 Diaphragm seals with "special order" components may not be returned for credit.



ORDERING INFORMATION

TYPE CST SERIES DIAPHRAGM SEALS

Order Number Description

CST	Base Model Number- 1st thru 3rd Characters Type CST Diaphragm Seal, Non-Gasketed
2 4	Instrument Connection- 4th Character 0.5-inch NPT Female (not available with 1.5-inch Process Connection) 0.25-inch NPT Female
B C D	Process Connection- Size- 5th Character 1.5-inch, for use with Ladish Tri-Clover Clamp 2.0-inch, for use with GC Fast Clamp or Cherry-Burrell S Clamp 3.0-inch, for use with 16A Cap
A	Process Connection- Type- 6th Character Hinged Clamp (13-LA)
6	Exposed Material- 7th Character 316 Stainless Steel
L	Diaphragm Material- 8th Character 316L Low Carbon Stainless Steel
U	Top, Bolting and Flange Options- 9th Character 316 Stainless Steel Sanitary Top
-	Schedule/Extension Length- 10th Character Not Used
-	Coating Options- 11th Character Not Used
C M V -	Fill Fluids- 12th Character Customer Supplied Fluid (<u>MUST Supply MSDS with Shipment</u>) Mineral Oil Vegetable Oil (Food Grade) Not Used (<i>When selected, you cannot select a 13th or 14th Character</i>)
G L S T Y Z -	Fill and Attach to Instrument- 13th Character (Customer Supplied) Gauge (≥ 30 psi/2 bar) Gauge (≤ 30 psi/2 bar)(Including combination gauges with Lower ranges) Switch Transducer Transmitter Smart Transmitter (<i>Special Order</i>) Not Used (<i>When selected, you cannot select a 12th or 14th Character</i>)
1 -	Capillary Length- 14th Character Direct Connect Not Used
C F -	Options- 15th Character With Certificate of Conformance With Instrument Tag (<i>Special Order</i>) Not Used

CST 4 B A 6 L U - - - - -

Sample Order Number

CST Series Remote SanitarySeal, Non-Gasketed with 0.25-inch NPT Instrument Connection, 1.5-inch Process Connection with Sanitary Clamp and 316L Low Carbon Diaphragm. No Extension, No Coating and No Fill Fluids

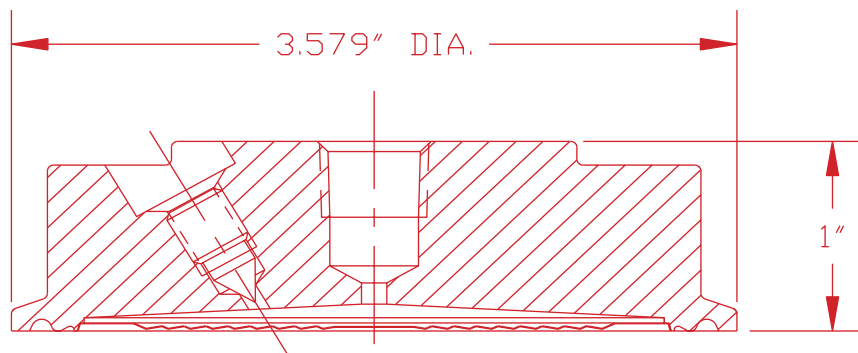
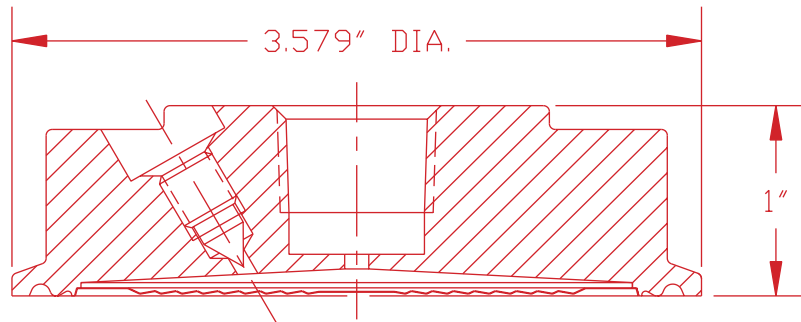
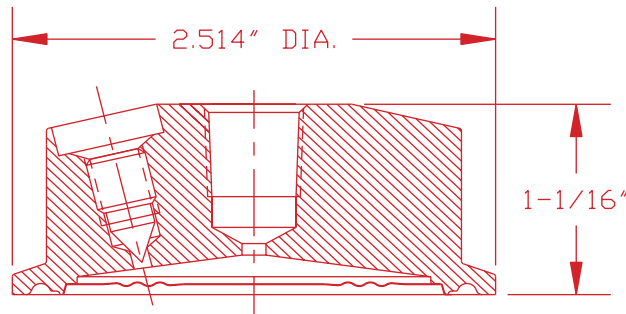
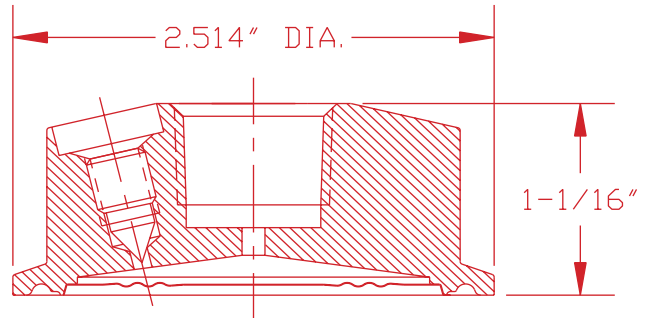
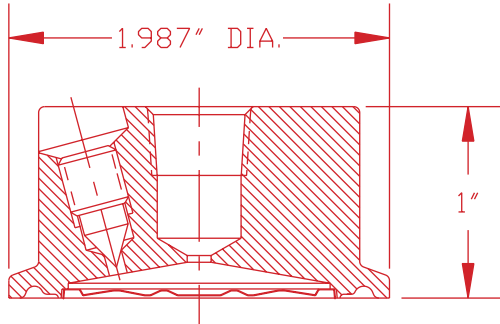
Note:

Diaphragm seals with "special order" components may not be returned for credit.

ORDERING INFORMATION

Specification Sheet SS-DS-5500-0600
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TYPE CST SERIES DIAPHRAGM SEALS





PRODUCT QUOTATION TEMPLATE

Specification Sheet SS-DS-5500-0600
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PROCESS APPLICATION SPECIFICATIONS

Specify Application Type (Check ONE)

- Corrosive
- Economy
- Fugitive Emission
- General Purpose
- Jacketed Pipeline
- Low Pressure
- Low Pressure Transmitter
- Sanitary
- Tank
- Other (Please Specify) _____

Specify Mounting Type (Check ONE)

- Flange Attached
- Thread Attached
- In-Line Flow Thru (Thread Attached Connection)
- In-Line Flow Thru (Welded by User)
- In-Line Flow Thru (Welded by User, Pipe Supplied, Schedule Dependent)
- In-Line Flow Thru (For Pipe Sizes 0.75 to 3.0-inch Diameters)
- In-Line Flow Thru (For Pipe Sizes 3.0 to 8.0-inch Diameters)
- Sanitary (Please Specify) _____
- Other (Please Specify) _____

Specify Operating Temperature (Designate °F or °C)

(Circle °F or °C)

Specify Operating Pressure (Designate PSI, Bar)

(Circle PSI or Bar)

Specify Process Application (Check ONE)

- | | |
|--|--|
| <input type="checkbox"/> Low Pressure | <input type="checkbox"/> Saddle Mount |
| <input type="checkbox"/> Vacuum | <input type="checkbox"/> Thread Attached |
| <input type="checkbox"/> General Purpose | <input type="checkbox"/> Butt Welded |
| <input type="checkbox"/> Removable Bottom (without fluid loss) | <input type="checkbox"/> Small Pipe |
| <input type="checkbox"/> Tantalum Clad Bottom | <input type="checkbox"/> Large Pipe |
| <input type="checkbox"/> High Pressure | <input type="checkbox"/> Jacketed Pipeline |
| <input type="checkbox"/> EPC Clean Air Act | <input type="checkbox"/> Severe Service |

Requires Flushing Connection (Check ONE)

- Yes
- No

Specify Special Considerations

PRODUCT QUOTATION TEMPLATE

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SEAL OPTIONS AND MODEL DESIGNATION

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18
C																	
Base Model and Gasket Type			Instrument Connection	Process Connection Size	Process Connection Type	Exposed Material	Diaphragm Material	Top, Bolting & Flange Ring Material	Schedule/Extension Length	Coating Option	Fill Fluids	Fill and Attach to Instrument	Capillary System			Options	

NOTES

Any Diaphragm Seal Models that use an option that is denoted in the specification sheet as (Special Order) may not be returned for credit.

CAUTION

All diaphragm seal assemblies and components must be selected with full consideration of process fluids, pressure and temperature compatability to prevent misapplication. An improper selection may result in a system failure and possible property damage or injury to personnel.

Fill Fluid Properties

FLUID	TEMPERATURE LIMITS		SPECIFIC GRAVITY @ 25°C	VISCOSITY CENTISTOKES
	°F	°C		
Mineral Oil	30° to 300°F	-1° to 150°C	0.87	40.2 @ 100°F
Vegetable Oil (Food Grade)	40° to 360°F	5° to 182°C	0.92	75.0 @ 70°F

Note: Always obtain a complete specification from the Fill Fluid manufacturer before specifying a fill fluid.

Special Care

Fill fluids should be carefully selected by considering their physical properties at the extremes of the ambient and process temperature which they will be subjected.



AMETEK is a leading global manufacturer of electrical and electromechanical products for niche markets. Listed on the New York Stock Exchange (AME) since 1930, AMETEK's annual sales are approaching \$1billion. Operations are in North America, Europe and Asia, with about one-third of sales to markets outside the United States.

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Manufacturer**

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