

SANITARY FITTINGS

CSI offers Alfa Laval sanitary fittings for your food, dairy, or beverage processing application. Smooth, crevice-free interiors and secure, self-aligning joints are characteristic of our Tri-Clover® fittings. Each offers superior corrosion-resistance and unmatched service life. Designed and manufactured to ensure dimensional accuracy and structural integrity, our fittings are easy to install.

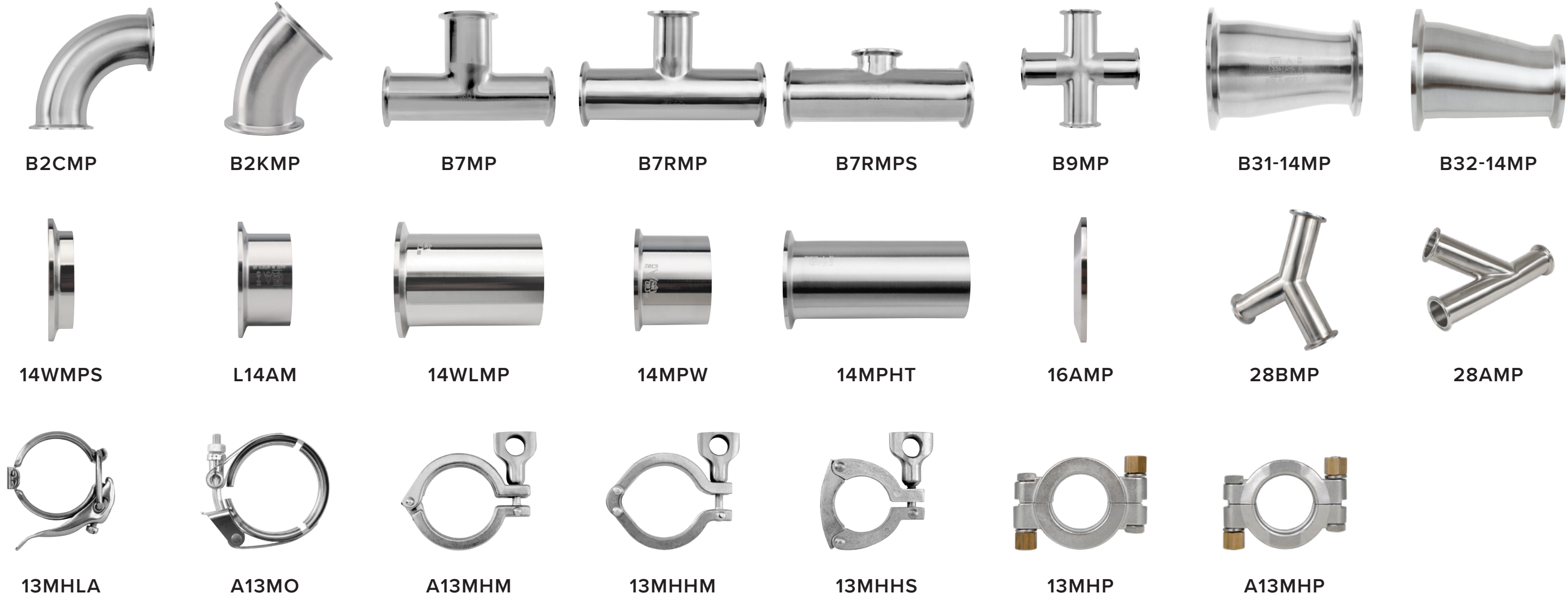


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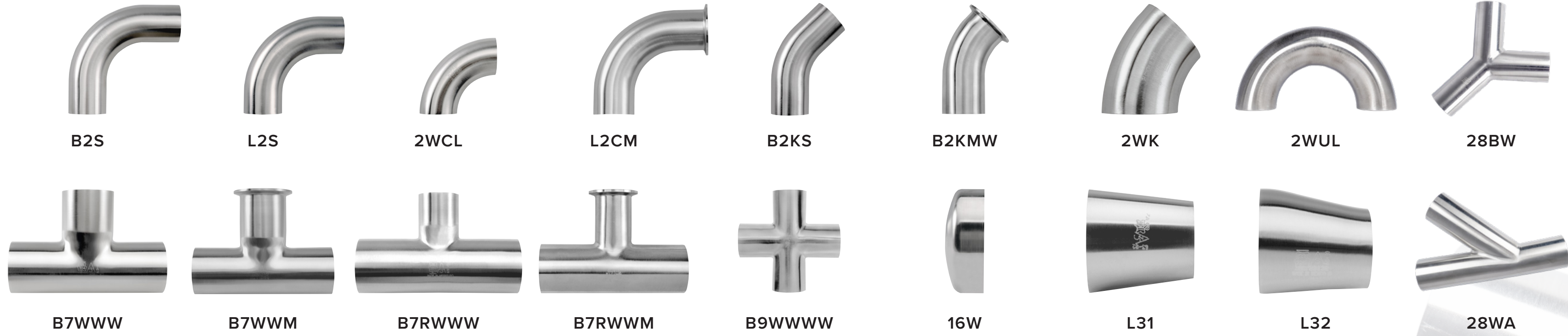


Master Distributor

TRI-CLAMP®



TRI-WELD®



HANGERS



ADAPTERS



ORDERING INFORMATION

When ordering, please specify the complete part number including: part no. designator, size, material and surface finish.

B2S - 1.5 - 304 - 7

↑ ↑ ↑ ↑
PART NO. DESIGNATOR SIZE MATERIAL SURFACE FINISH

FINISHES AVAILABLE

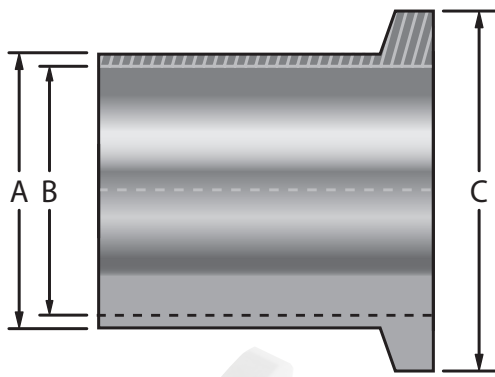
MATERIAL	7	PC	PL	PD	PM
304	X	N/A	N/A	N/A	N/A
316L	X	N/A	N/A	N/A	N/A

SURFACE FINISH CODES

CSI SURFACE FINISH CODE	ID OR PRODUCT CONTACT SURFACE FINISH MAXIMUM RA		ELECTROPOLISHED	OD OR PRODUCT NON-CONTACT SURFACE
	MICROINCHES	MICROMETERS		
7	32 RA	0.81 µm	NO	32 RA (0.81 µm)

TRI-CLAMP® DIMENSIONS

A (OD) INCHES	B (ID) INCHES	C INCHES	WALL THICKNESS INCHES/GAUGE
1/2	0.37	0.984	0.065 / 16 GA
3/4	0.62	0.984	0.065 / 16 GA
1	0.87	1.984	0.065 / 16 GA
1 1/2	1.37	1.984	0.065 / 16 GA
2	1.87	2.516	0.065 / 16 GA
2 1/2	2.37	3.047	0.065 / 16 GA
3	2.87	3.579	0.065 / 16 GA
4	3.87	4.682	0.083 / 14 GA



ALFA LAVAL SERVICE RATINGS* (PSI) FOR TRI-CLAMP® CONNECTIONS

TEMP (°F)	1/2-3/4 INCH	1-1 1/2 INCH	2 INCH	2 1/2 INCH	3 INCH	4 INCH	6 INCH
A13MHM (WING NUT TIGHTENED TO 25 IN. LB. OF TORQUE)							
70	—	500	450	400	350	300	150
250	—	300	250	200	175	150	75
13MHHM (WING NUT TIGHTENED TO 25 IN. LB. OF TORQUE)							
70	—	500	450	400	350	300	150
250	—	300	300	200	195	150	75
13MHHS (WING NUT TIGHTENED TO 25 IN. LB. OF TORQUE)							
70	2200	600	550	450	350	300	—
250	1200	300	275	225	175	150	—
13MHP (BOLTS TIGHTENED TO 20 FT. LB. OF TORQUE)							
70	—	1500	1000	1000	1000	800	300
250	—	1200	800	800	800	600	200
A13MO (1-3" TIGHTENED TO 20 IN. LB., 4" TO 30 IN. LB.)							
70	—	500	350	300	200	100	75
250	—	250	200	150	100	100	50
13MHLA (SCREW TIGHTENED TO MAXIMUM)							
70	—	150	150	150	150	100	—
250	—	125	125	125	125	75	—

*Service ratings are based on hydrostatic tests using standard-molded Buna-N material gaskets, with proper installation of ferrules, assembly of joints, and absence of shock pressure. Contact Alfa Laval for service of other type and material gaskets, and for ratings at higher temperatures. All ratings shown are dependent upon related components within the systems and proper installation. For temperatures above 250°F, we recommend using only 13MHP clamps. This information is only valid if Alfa Laval clamps, ferrules, and gaskets are used.

TRI-CLAMP® GASKET MATERIALS

CHARACTERISTIC	BUNA-N (U)	EPDM (E)	FLUOROELASTOMER (VITON) (SFY)	SILICONE (X)	PTFE (G)
HARDNESS (SHORE A)	70	70	70	70	—
TENSILE STRENGTH (PSI)	1875	1650	1212	1340	—
ELONGATION (%)	340	317	272	260	—
TEMPERATURE RANGE (°F)	-65 TO 200	-60 TO 300	-20 TO 350	-40 TO 450	-40 TO 200
ACID RESISTANCE	GOOD	GOOD TO EXCELLENT	GOOD TO EXCELLENT	POOR TO GOOD	GOOD TO EXCELLENT
ALKALI RESISTANCE	FAIR TO GOOD	GOOD TO EXCELLENT	POOR TO GOOD	POOR TO FAIR	EXCELLENT
RESISTANCE TO FATS/OILS	GOOD TO EXCELLENT	POOR	GOOD TO EXCELLENT	POOR TO GOOD	EXCELLENT
ABRASION RESISTANCE	EXCELLENT	GOOD	GOOD TO EXCELLENT	POOR	FAIR
COMPRESSION SET RESISTANCE	GOOD	FAIR	GOOD TO EXCELLENT	GOOD TO EXCELLENT	COLD FLOWS

BPE FITTINGS

CSI offers Alfa Laval fittings designed for use in the Pharmaceutical and Biotechnology industries, consisting of self-aligning Tri-Clamp® end connections and Tri-Weld® ends suitable for orbital welding equipment, manufactured in compliance with ASME BPE standards. Our Biopharmaceutical fittings are available in a wide range of surface finishes. They are individually capped and bagged, and each shipment includes MTRs.

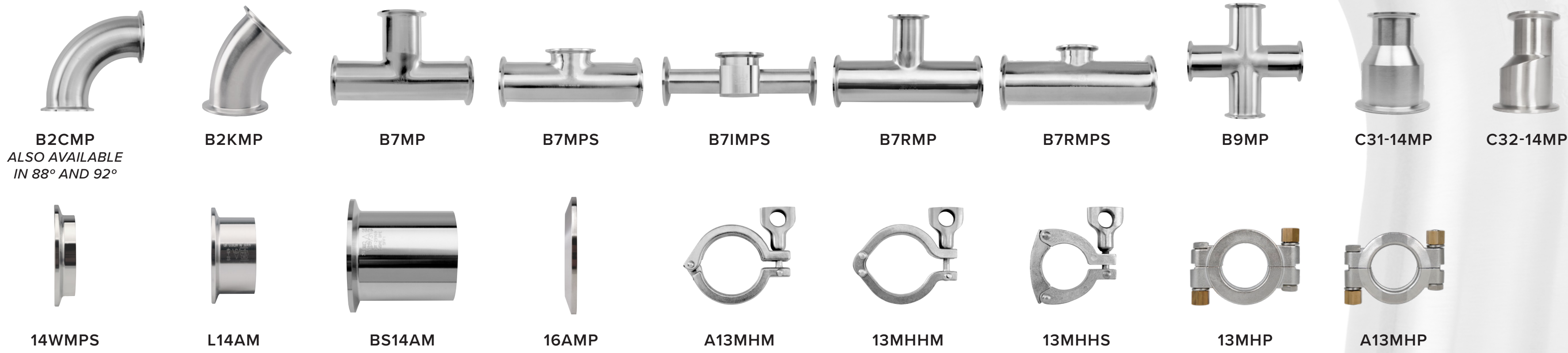


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TRI-CLAMP®



TRI-WELD®



MATERIAL TEST REPORTS (MTR) FOR FITTINGS ARE AVAILABLE ONLINE

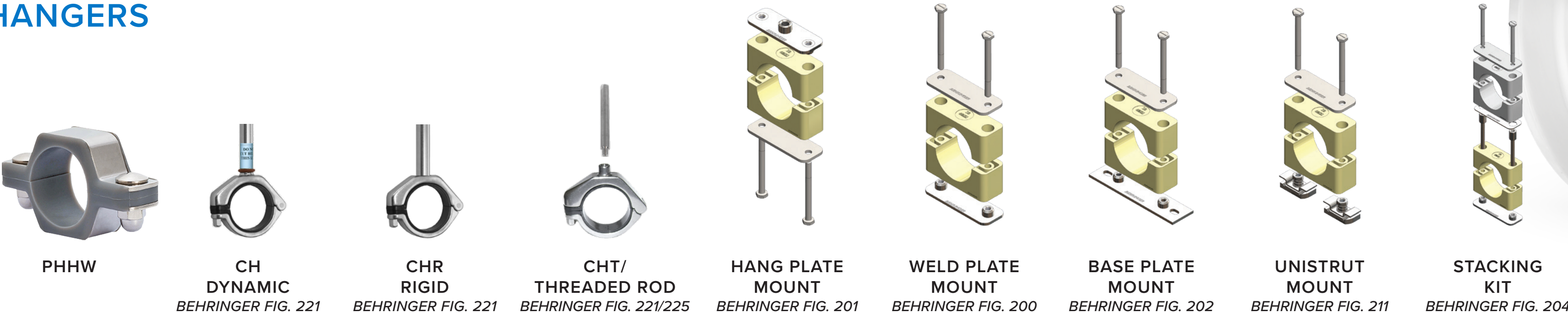
As one of the most comprehensive and technologically advanced certificates in the market, our Material Test Reports (MTRs) provide detailed information that takes traceability and validation to a new level.

Visit heatbase.alfalaval.com/MTR and type a 5-alpha character code (e.g. AAABC) called the serial ID, which you can find stenciled on each new 316SS fitting.

This website allows you to view and print the MTR or original heat certification from the raw material supplier that includes the following information:

- All heat certification numbers used to manufacture the fitting
- Date the fitting was manufactured
- The fitting's part number and description

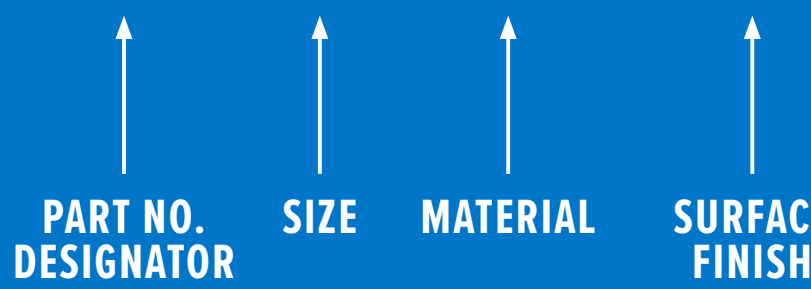
HANGERS



ORDERING INFORMATION

When ordering, please specify the complete part number including: part no. designator, size, material and surface finish.

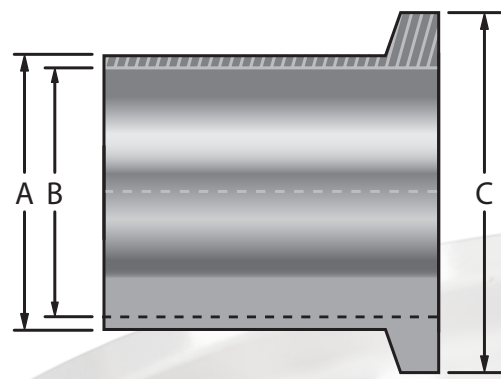
B2S - 1 - 316L - PL



FINISHES AVAILABLE				
MATERIAL	PC	PL	PD	PM
316L	X	X	X	X

SURFACE FINISH CODES					
CSI SURFACE FINISH CODE	BPE SURFACE FINISH CODE	ID OR PRODUCT CONTACT SURFACE FINISH MAXIMUM RA		ELECTROPOLISHED	OD OR PRODUCT NON-CONTACT SURFACE
		MICROINCHES	MICROMETERS		
PC	SF1	20 RA	0.51 µm	NO	MILL FINISH
PL	SF1	20 RA	0.51 µm	NO	32 RA (0.81 µm)
PD	SF4	15 RA	0.38 µm	YES	MILL FINISH
PM	SF4	15 RA	0.38 µm	YES	32 RA (0.81 µm)

TRI-CLAMP® DIMENSIONS			
A (OD) INCHES	B (ID) INCHES	C INCHES	WALL THICKNESS INCHES/GAUGE
1/2	0.37	0.984	0.065 / 16 GA
3/4	0.62	0.984	0.065 / 16 GA
1	0.87	1.984	0.065 / 16 GA
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4	3.87	4.682	0.083 / 14 GA



ASME BPE PART DT TABLE REFERENCE					
PART NO. DESIGNATOR	BPE-2019 DT TABLE NO.	BPE-2009 DT TABLE NO.	PART NO. DESIGNATOR	BPE-2019 DT TABLE NO.	BPE-2009 DT TABLE NO.
B2CMP	DT-4.1.1-3	DT-16	C31M	DT-4.1.3-2	N/A
B2KMP	DT-4.1.1-6	DT-17	C32	DT-4.1.3-1	N/A
B7MP	DT-4.1.2-4	DT-18	C32M	DT-4.1.3-2	N/A
B7MPS	DT-4.1.2-5	DT-27	B2S	DT-4.1.1-1	DT-7
B7IMPS	DT-4.1.2-11	DT-29	B2CMW	DT-4.1.1-2	DT-12
B7RMP	DT-4.1.2-8	DT-19	B2KS	DT-4.1.1-4	DT-8
B7RMPS	DT-4.1.2-9	DT-20	B2KMW	DT-4.1.1-5	DT-13
B9MP	DT-4.1.2-4	DT-18	B7WWW	DT-4.1.2-1	DT-9
14WMPS	DT-4.1.4-1	DT-22	B7WWMS	DT-4.1.2-2	DT-15
BS14AM	DT-4.1.4-1	DT-22	B7IWWMS	DT-4.1.2-10	DT-28
L14AM	DT-4.1.4-1	DT-22	B7WMSW	DT-4.1.2-3	DT-25
16AMP	DT-4.1.5-2	DT-31	B7RWWW	DT-4.1.2-6	DT-10
C31-14MP	DT-4.1.3-3	N/A	B7RWWMS	DT-4.1.2-7	DT-14
C32-14MP	DT-4.1.3-3	N/A	B9WWWW	DT-4.1.2-1	DT-9
C31	DT-4.1.3-1	N/A	B16W	DT-4.1.5-1	DT-30

TRI-CLAMP GASKET MATERIALS					
CHARACTERISTIC	BUNA-N (U)	EPDM (E)	FLUOROELASTOMER (VITON) (SFY)	SILICONE (X)	PTFE (G)
HARDNESS (SHORE A)	70	70	70	70	—
TENSILE STRENGTH (PSI)	1875	1650	1212	1340	—
ELONGATION (%)	340	317	272	260	—
TEMPERATURE RANGE (°F)	-65 TO 200	-60 TO 300	-20 TO 350	-40 TO 450	-40 TO 200
ACID RESISTANCE	GOOD	GOOD TO EXCELLENT	GOOD TO EXCELLENT	POOR TO GOOD	GOOD TO EXCELLENT
ALKALI RESISTANCE	FAIR TO GOOD	GOOD TO EXCELLENT	POOR TO GOOD	POOR TO FAIR	EXCELLENT
RESISTANCE TO FATS/OILS	GOOD TO EXCELLENT	POOR	GOOD TO EXCELLENT	POOR TO GOOD	EXCELLENT
ABRASION RESISTANCE	EXCELLENT	GOOD	GOOD TO EXCELLENT	POOR	FAIR
COMPRESSION SET RESISTANCE	GOOD	FAIR	GOOD TO EXCELLENT	GOOD TO EXCELLENT	COLD FLOWS