

TOP LINE

PROCESS EQUIPMENT COMPANY

A Full Line of
Stainless Steel Flow Control Equipment for the Food, Beverage,
Dairy, Cosmetics, Biotechnology, Pharmaceutical, and
Electronics Processing Industries



PUMPS · VALVES · FITTINGS · TUBING · GAUGES
SIGHT GLASSES · CLAMPS · HANGERS
CUSTOM SPECIALTIES · ACCESSORIES

www.toplineonline.com

Table of Contents

Bevel Seat Fittings.....	1-11
Clamp Fittings.....	12-21
Sanitary Butt-Weld Fittings.....	22-26
Tube O.D. Butt-Weld Fittings.....	27-30
BPE Fittings.....	31-46
Mini-Fittings.....	47-48
Large Diameter Tubing and Fittings.....	49-53
Valves.....	54-73
Tubing and Hangers.....	74-75
Strainers and Filters.....	76-77
Miscellaneous Fittings/Products (includes TI Fittings).....	78-82
Pumps.....	83-91
Custom Fittings and Fabrication.....	92

Bevel Seat Fittings



Top Line precision crafted Bevel Seat ACME Thread Union Fittings provide fast, sanitary and secure connections. Polished fittings meet or exceed FDA and 3A regulatory standards.

Bevel Seat Specifications

Size Range: 1" OD through 4" OD

Materials: 304 (Stock No. Prefix 34)
316L (Stock No. Prefix 36)

Finish: No. 7 – ID and OD (standard)
No. 5 – OD only (special)
No. 3 – ID only (special)
No. 1 – unpolished (special)

Ordering Specifications

Specify:

- Quantity
- Size
- Product Description
- Stock Number
- Material Type
- Polish Requirements

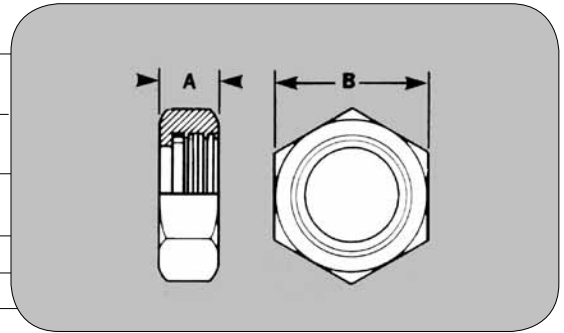
Cataloged part numbers are for Type 304 Stainless Steel

Example

Quantity	Size	Product Description	Stock Number	Material Type	Polish
↓	↓	↓	↓	↓	↓
<u>3 Each</u>	<u>2"</u>	<u>2C-90°</u>	<u>343520C</u>	<u>Type 304</u>	<u>No. 7</u>
<u>3 Each</u>	<u>2"</u>	<u>2C-90°</u>	<u>363520C</u>	<u>Type 316L</u>	<u>No. 7</u>

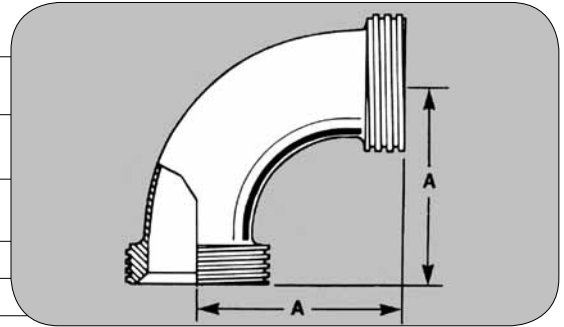
13H-HEX UNION NUT (3A)

SIZE (TUBE O.D.)	A	B	STOCK NO.
1	29/32	1-13/16	346510
1-1/2	31/32	2-13/32	346515
2	1-1/16	3	346520
2-1/2	1-3/16	3-19/32	346525
3	1-9/32	4-3/16	346530
4	1-1/2	5-7/16	346540



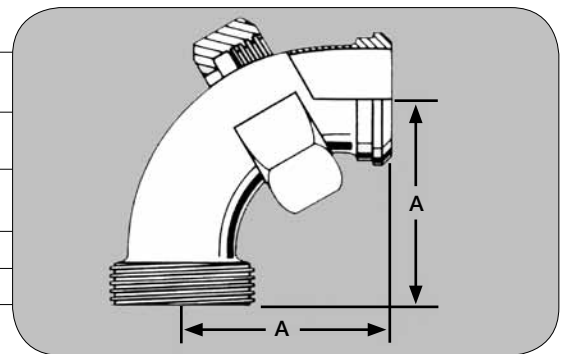
2C-90° SWEEP ELL (3A)

SIZE (TUBE O.D.)	A	STOCK NO.
1	2-3/16	343510C
1-1/2	2-31/32	343515C
2	3-23/32	343520C
2-1/2	4-27/32	343525C
3	5-29/32	343530C
4	8-1/16	343540C



2F-90° SWEEP ELL (3A)

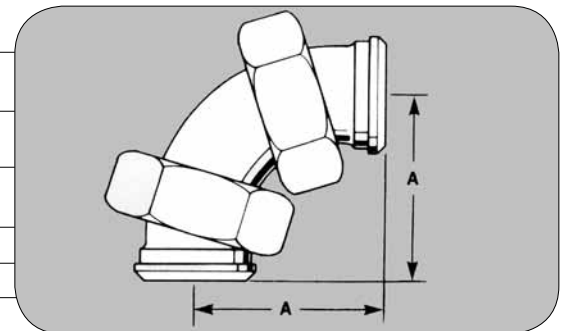
SIZE (TUBE O.D.)	A	STOCK NO.
1	2-3/16	343510F
1-1/2	2-31/32	343515F
2	3-23/32	343520F
2-1/2	4-27/32	343525F
3	5-29/32	343530F
4	8-1/16	343540F



HEX NUT INCLUDED

2E-90° SWEEP ELL (3A)

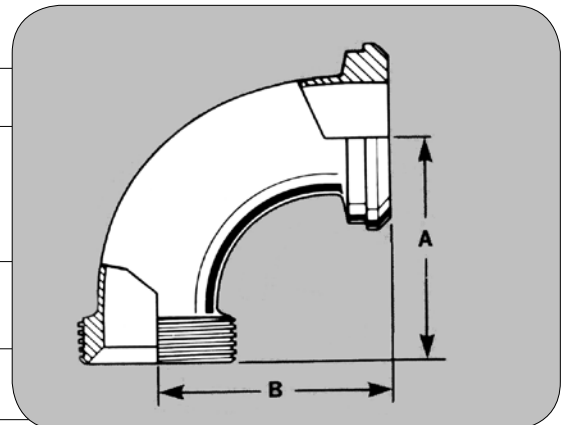
SIZE (TUBE O.D.)	A	STOCK NO.
1	2-3/16	343510E
1-1/2	2-31/32	343515E
2	3-23/32	343520E
2-1/2	4-27/32	343525E
3	5-29/32	343530E
4	8-1/16	343540E

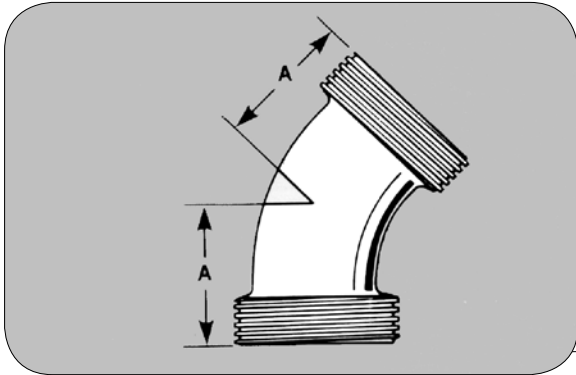


HEX NUTS INCLUDED

2F-31-90° CONCENTRIC REDUCING ELL (3A)

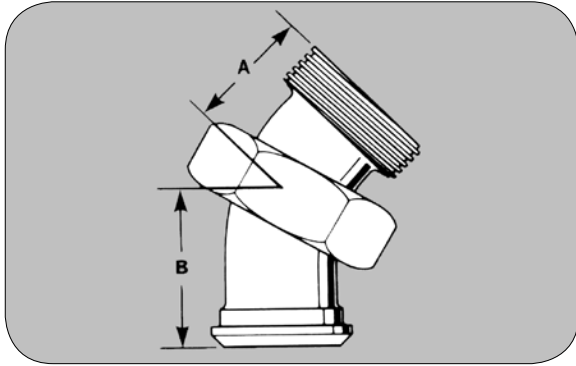
SIZE (TUBE O.D.)	A	B	STOCK NO.
1-1/2 X 1	2-3/16	1-15/16	343615
2 X 1	2-3/16	2-1/16	343620
2 X 1-1/2	2-31/32	2-13/16	343620A
2-1/2 X 1-1/2	2-31/32	2-13/16	343625
2-1/2 X 2	3-23/32	3-9/16	343625A
3 X 1-1/2	2-31/32	2-15/16	343630
3 X 2	3-23/32	3-11/16	343630A
3 X 2-1/2	4-27/32	4-7/16	343630B
4 X 2-1/2	4-27/32	4-9/16	343640
4 X 3	5-29/32	5-5/16	343640A





2K-45° SWEEP ELL (3A)

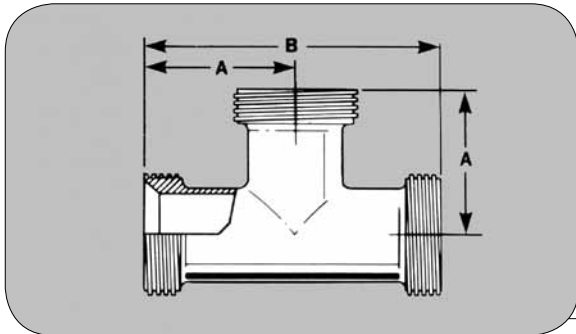
SIZE (TUBE O.D.)	A	STOCK NO.
1	1-5/16	343810
1-1/2	1-21/32	343815
2	2-1/8	343820
2-1/2	2-5/8	343825
3	3-1/8	343830
4	4-1/4	343840



2P-45° SWEEP ELL (3A)

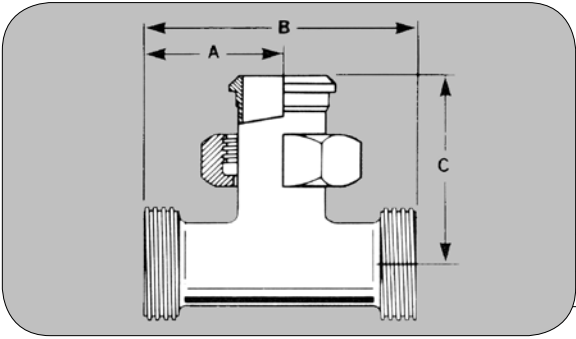
SIZE (TUBE O.D.)	A	B	STOCK NO.
1	1-5/16	2 -1/8	343910
1-1/2	1-21/32	2 -1/8	343915
2	2-1/8	2 -5/16	343920
2-1/2	2-5/8	2 -9/16	343925
3	3-1/8	2 -29/32	343930
4	4-1/4	3 -7/8	343940

HEX NUT INCLUDED



7 TEE (3A)

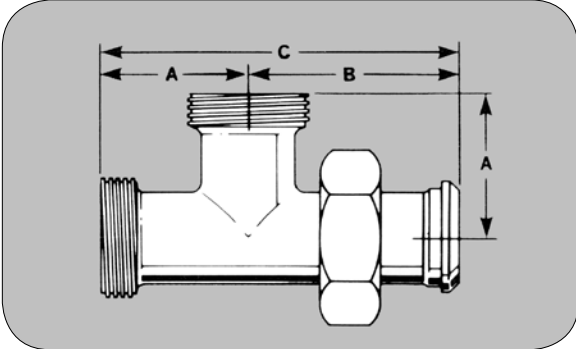
SIZE (TUBE O.D.)	A	B	STOCK NO.
1	1-13/16	3-5/8	344010
1-1/2	2-3/8	4-3/4	344015
2	2-25/32	5-9/16	344020
2-1/2	3-3/16	6-3/8	344025
3	3-1/2	7	344030
4	4-21/32	9-5/16	344040



7A TEE (3A)

SIZE (TUBE O.D.)	A	B	C	STOCK NO.
1	1-13/16	3-5/8	2-11/16	344010A
1-1/2	2-3/8	4-3/4	3-13/32	344015A
2	2-25/32	5-9/16	3-13/16	344020A
2-1/2	3-3/16	6-3/8	4-1/4	344025A
3	3-1/2	7	4-5/8	344030A
4	4-21/32	9-5/16	6-1/8	344040A

HEX NUT INCLUDED



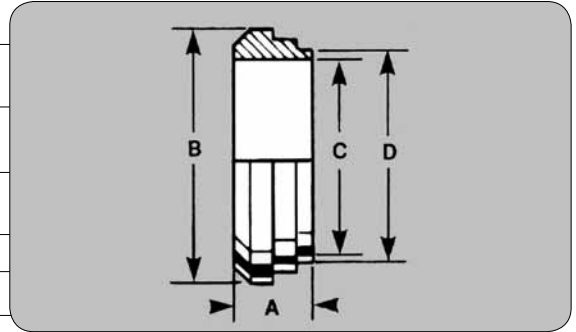
7B TEE (3A)

SIZE (TUBE O.D.)	A	B	C	STOCK NO.
1	1-13/16	2-11/16	4-1/2	344010B
1-1/2	2-3/8	3-13/32	5-25/32	344015B
2	2-25/32	3-13/16	6-19/32	344020B
2-1/2	3-3/16	4-1/4	7-7/16	344025B
3	3-1/2	4-5/8	8-1/8	344030B
4	4-21/32	6-1/8	10-25/32	344040B

HEX NUT INCLUDED

14PRF SHORT WELD FERRULE (3A)

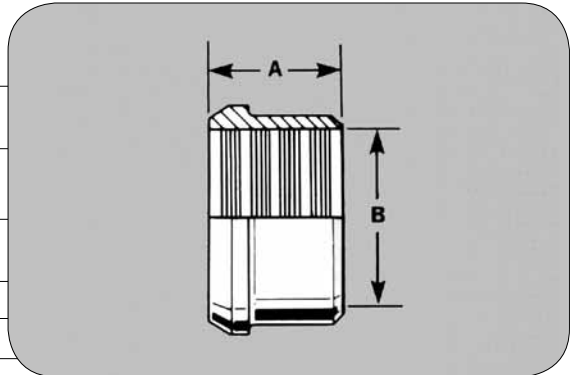
SIZE (TUBE O.D.)	A	B	C	D	STOCK NO.
1	11/16	1-5/16	55/64	1	344110B
1-1/2	23/32	1-27/32	1-23/64	1-1/2	344115B
2	23/32	2-3/8	1-55/64	2	344120B
2-1/2	27/32	2-29/32	2-23/64	2-1/2	344125B
3	29/32	3-7/16	2-55/64	3	344130B
4	1-7/32	4-1/2	3-13/16	4	344140B



14R-PLAIN RECESSLESS FERRULE (3A)

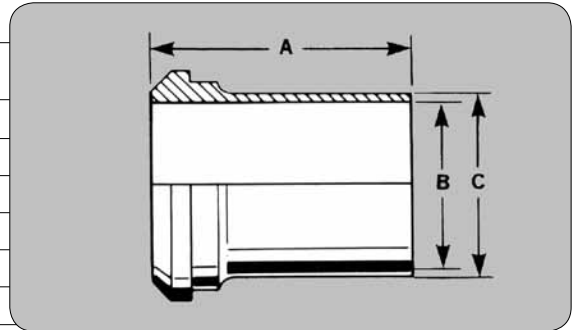
(For Expanding)

SIZE (TUBE O.D.)	A	B	STOCK NO.
1	3/4	1	344110R
1-1/2	1-1/8	1-1/2	344115R
2	1-5/16	2	344120R
2-1/2	1-3/8	2-1/2	344125R
3	1-7/16	3	344130R
4	1-1/2	4	344140R



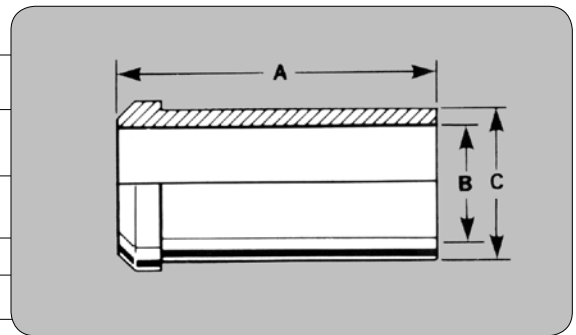
L14A7-PLAIN TUBE FERRULE (3A)

SIZE (TUBE O.D.)	A	B	C	STOCK NO.
1	1-3/8	29/32	1	344110A
1-1/2	1-1/2	1-13/32	1-1/2	344115A
2	1-1/2	1-7/8	2	344120A
2-1/2	1-3/4	2-3/8	2-1/2	344125A
3	1-3/4	2-7/8	3	344130A
4	1-3/4	3-27/32	4	344140A



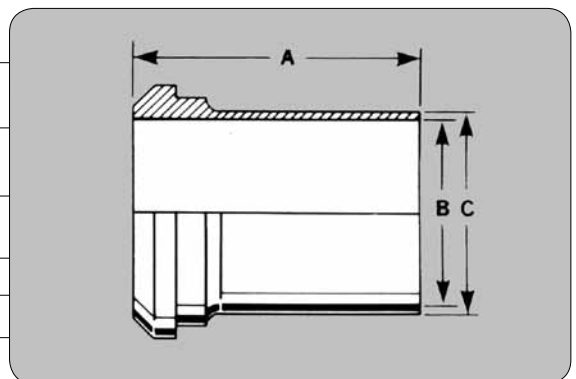
14W-PLAIN FERRULE, TANK SPUD (HEAVY) (3A)

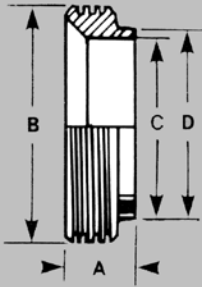
SIZE (TUBE O.D.)	A	B	C	STOCK NO.
1	2-3/8	29/32	1-5/32	344110W
1-1/2	2-17/32	1-13/32	1-43/64	344115W
2	2-25/32	1-7/8	2-3/16	344120W
2-1/2	3-1/16	2-3/8	2-45/64	344125W
3	3-17/32	2-7/8	3-7/32	344130W
4	4-5/16	3-13/16	4-1/4	344140W



14WL-PLAIN FERRULE, TANK SPUD (LIGHT) (3A)

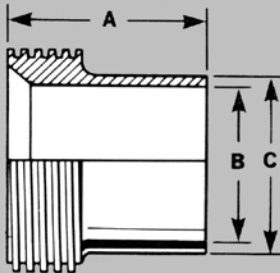
SIZE (TUBE O.D.)	A	B	C	STOCK NO.
1	2	29/32	1	344110WL
1-1/2	2-1/4	1-13/32	1-1/24	344115WL
2	2-1/2	1-7/8	2	344120WL
2-1/2	2-3/4	2-3/8	2-1/2	344125WL
3	3	2-7/8	3	344130WL
4	4	3-27/32	4	344140WL





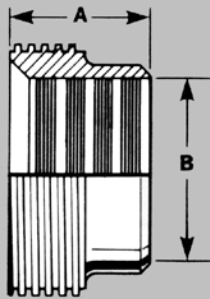
15TRF SHORT WELD FERRULE (3A)

SIZE (TUBE O.D.)	A	B	C	D	STOCK NO.
1	11/16	1-29/32	55/64	1	344210B
1-1/2	23/32	1-63/64	1-23/64	1-1/2	344215B
2	23/32	2-33/64	1-55/64	2	344220B
2-1/2	27/32	3-1/32	2-23/64	2-1/2	344225B
3	29/32	3-9/16	2-55/64	3	344230B
4	1-7/32	4-43/64	3-13/16	4	344240B



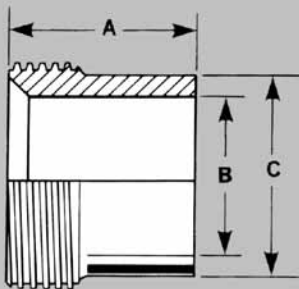
L15A7 THREADED TUBE FERRULE (3A)

SIZE (TUBE O.D.)	A	B	C	STOCK NO.
1	1-3/8	29/32	1	344210A
1-1/2	1-1/2	1-13/32	1-1/2	344215A
2	1-1/2	1-7/8	2	344220A
2-1/2	1-3/4	2-3/8	2-1/2	344225A
3	1-3/4	2-7/8	3	344230A
4	1-3/4	3-27/32	4	344240A



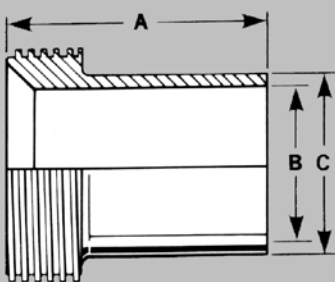
15R-THREADED RECESSLESS FERRULE (3A) (For Expanding)

SIZE (TUBE O.D.)	A	B	STOCK NO.
1	13/16	1	344210R
1-1/2	1-1/8	1-1/2	344215R
2	1-3/8	2	344220R
2-1/2	1-1/2	2-1/2	344225R
3	1-5/8	3	344230R
4	1-5/8	4	344240R



15W-THREADED FERRULE, TANK SPUD (HEAVY) (3A)

SIZE (TUBE O.D.)	A	B	C	STOCK NO.
1	1-1/2	29/32	1-1/4	344210W
1-1/2	1-5/8	1-13/32	1-3/4	344215W
2	1-3/4	1-7/8	2-5/16	344220W
2-1/2	1-3/4	2-3/8	2-7/8	344225W
3	1-13/16	2-7/8	3-3/8	344230W
4	2-1/8	3-27/32	4-1/4	344240W

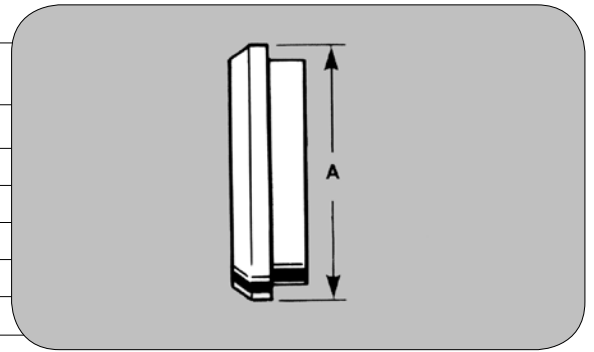


15WL-THREADED FERRULE, TANK SPUD (LIGHT) (3A)

SIZE (TUBE O.D.)	A	B	C	STOCK NO.
1	2	29/32	1	344210WL
1-1/2	2-1/4	1-13/32	1-1/2	344215WL
2	2-1/2	1-7/8	2	344220WL
2-1/2	2-3/4	2-3/8	2-1/2	344225WL
3	3	2-7/8	3	344230WL
4	4	3-27/32	4	344240WL

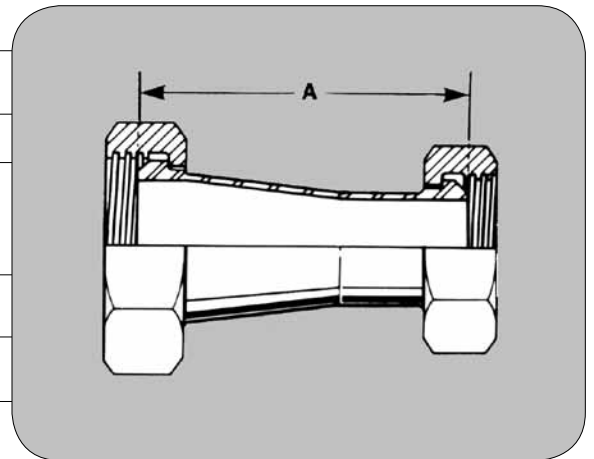
16A SOLID END CAP (3A)

SIZE (TUBE O.D.)	A	STOCK NO.
1	1-5/16	346810
1-1/2	1-27/32	346815
2	2-3/8	346820
2-1/2	2-29/32	346825
3	3-7/16	368230
4	4-1/2	346840



31-14F-CONCENTRIC TAPER REDUCER (3A)

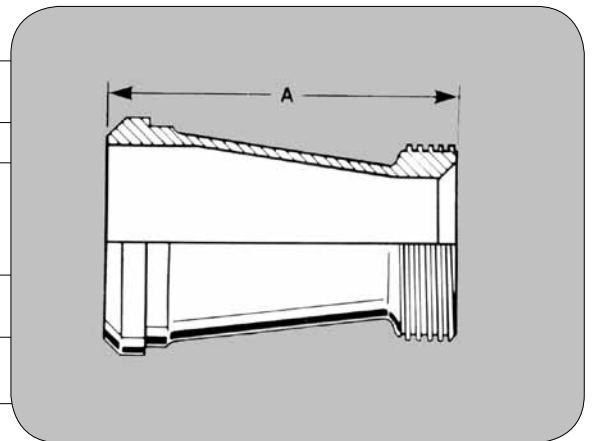
SIZE (TUBE O.D.)	A	STOCK NO.
1-1/2 X 1	4-3/32	344515
2 X 1	6-3/32	344520
2 X 1-1/2	4-7/32	344520A
2-1/2 X 1-1/2	6-11/32	344525
2-1/2 X 2	4-7/32	344525A
3 X 2	6-13/32	344530
3 X 2-1/2	4-19/32	344530A
4 X 2-1/2	8-31/32	344540
4 X 3	6-31/32	344540A



HEX NUTS INCLUDED

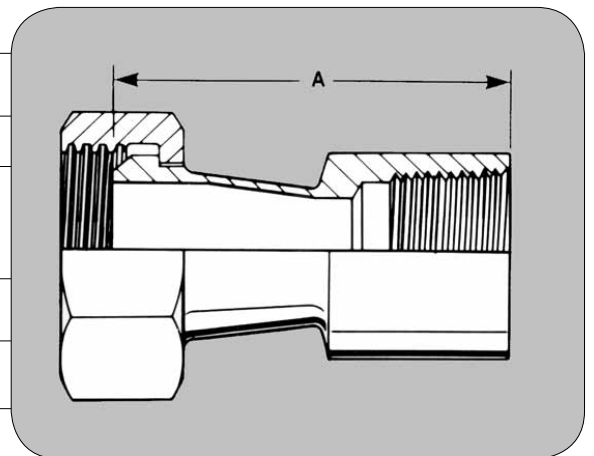
31-15F-CONCENTRIC TAPER REDUCER (3A)

SIZE (TUBE O.D.)	A	STOCK NO.
1-1/2 X 1	3-13/32	344615
2 X 1	5-13/32	344620
2 X 1-1/2	3-7/16	344620A
2-1/2 X 1-1/2	5-9/16	344625
2-1/2 X 2	3-9/16	344625A
3 X 2	5-5/8	344630
3 X 2-1/2	3-3/4	344630A
4 X 2-1/2	8-1/16	344640
4 X 3	6-1/8	344640A



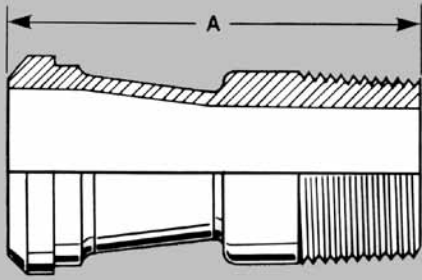
31-18F-TAPER REDUCER-ADAPTER

SIZE (TUBE O.D.)	A	STOCK NO.
1-1/2 X 1	4-1/16	344715
2 X 1	6-1/16	344720
2 X 1-1/2	4-11/32	344720A
2-1/2 X 1-1/2	6-15/32	344725
2-1/2 X 2*	4-3/8	344725A
3 X 2	6-7/16	344730
3 X 2-1/2*	4-27/32	344730A
4 X 2-1/2	9-5/32	344740
4 X 3	7-13/32	344740A



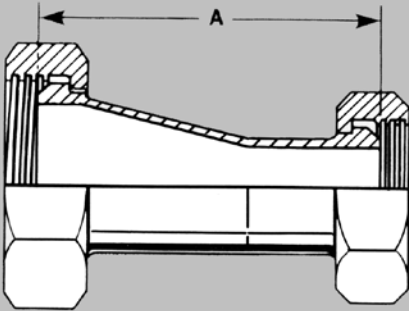
*HEX NUT INCLUDED ON THESE SIZES ONLY

31-19F-TAPER REDUCER-ADAPTER



SIZE (TUBE O.D.)	A	STOCK NO.
1-1/2 X 1	4-15/32	344815
2 X 1	6-15/32	344820
2 X 1-1/2	4-15/32	344820A
2-1/2 X 1-1/2	6-19/32	344825
2-1/2 X 2	4-21/32	344825A
3 X 2	6-23/32	344830
3 X 2-1/2	5-7/32	344830A
4 X 2-1/2	9-17/32	344840
4 X 3	7-23/32	344840A

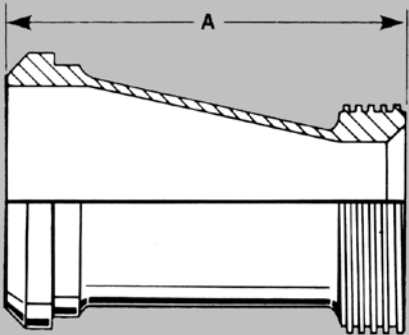
32-14F-ECCENTRIC TAPER REDUCER (3A)



SIZE (TUBE O.D.)	A	STOCK NO.
1-1/2 X 1	4-3/32	344915
2 X 1	6-3/32	344920
2 X 1-1/2	4-7/32	344920A
2-1/2 X 1-1/2	6-11/32	344925
2-1/2 X 2	4-7/32	344925A
3 X 2	6-13/32	344930
3 X 2-1/2	4-19/32	344930A
4 X 2-1/2	8-31/32	344940
4 X 3	6-31/32	344940A

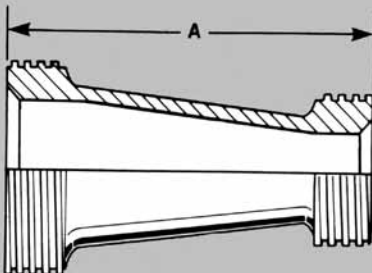
HEX NUTS INCLUDED

32-15F-ECCENTRIC TAPER REDUCER (3A)



SIZE (TUBE O.D.)	A	STOCK NO.
1-1/2 X 1	3-13/32	345015
2 X 1	5-13/32	345020
2 X 1-1/2	3-7/16	345020A
2-1/2 X 1-1/2	5-9/16	345025
2-1/2 X 2	3-9/16	345025A
3 X 2	5-5/8	345030
3 X 2-1/2	3-3/4	345030A
4 X 2-1/2	8-1/16	345040
4 X 3	6-1/8	345040A

31TT-REDUCER (3A)

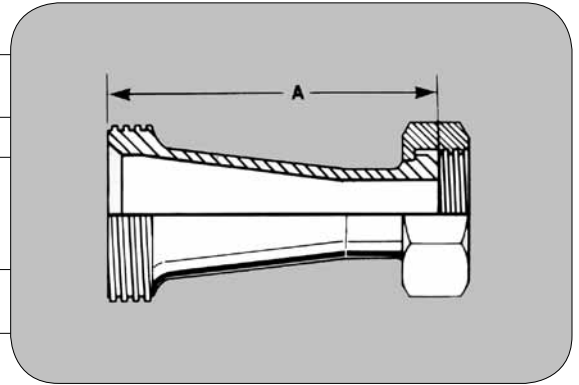


SIZE (TUBE O.D.)	A	STOCK NO.
1-1/2 X 1	3-13/32	345115
2 X 1	3-25/32	345120
2 X 1-1/2	3-7/16	345120A
2-1/2 X 1-1/2	3-29/32	345125
2-1/2 X 2	3-9/16	345125A
3 X 2	5-5/8	345130
3 X 2-1/2	5-13/32	345130A

31TP-TAPER REDUCER (3A)

SIZE (TUBE O.D.)	A	STOCK NO.
1-1/2 X 1	4-1/16	345215
2 X 1	4-1/16	345220
2 X 1-1/2	4-7/32	345220A
2-1/2 X 1-1/2	6-7/32	345225
2-1/2 X 2	4-7/32	345225A
3 X 2	6-9/32	345230
3 X 2-1/2	4-19/32	345230A

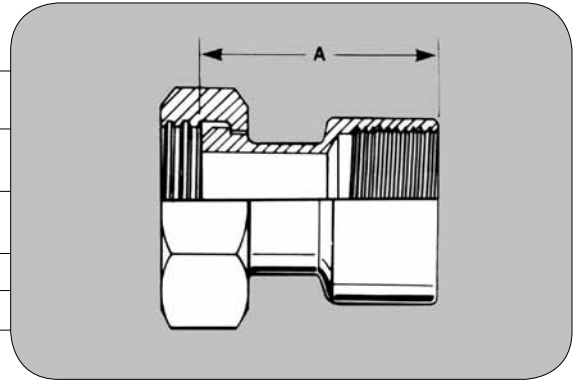
HEX NUT INCLUDED



14-18 ADAPTER (Acme Hex Nut to Female NPT)

SIZE (TUBE O.D.)	A	STOCK NO.
1	3-1/8	345410
1-1/2	3-1/4	345415
2	3-5/16	345420
2-1/2	4-1/16	345425
3	4-1/4	345430
4	4-5/16	345440

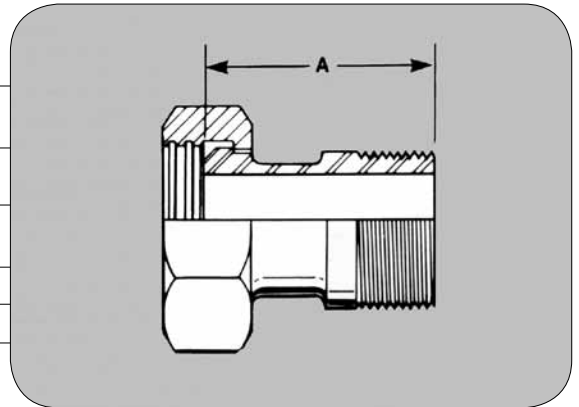
HEX NUT INCLUDED

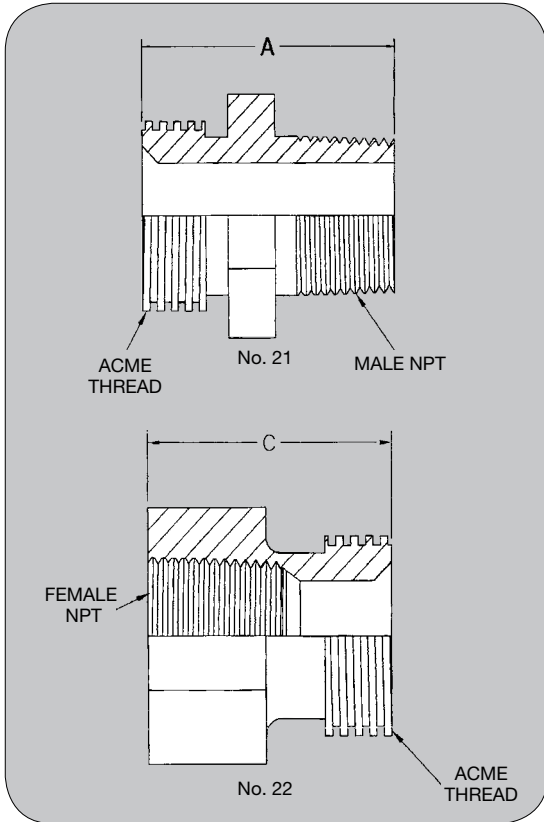


14-19 ADAPTER (Acme Hex Nut to Male NPT)

SIZE (TUBE O.D.)	A	STOCK NO.
1	3-1/8	345510
1-1/2	3-1/4	345515
2	3-5/16	345520
2-1/2	4-1/16	345525
3	4-1/4	345530
4	4-5/16	345540

HEX NUT INCLUDED

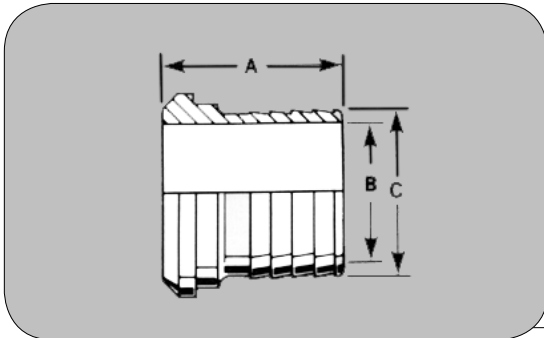




21 AND 22-ADAPTERS

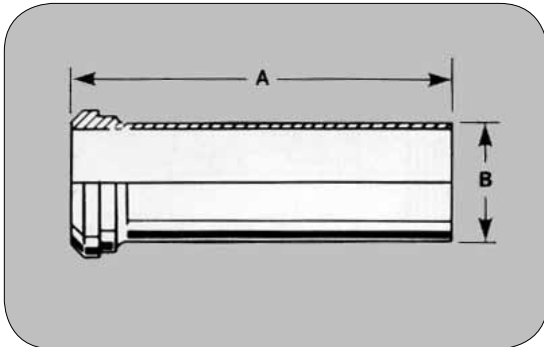
SIZE (TUBE O.D.)	NO. 21 A	NO. 22 C	STOCK NO. NO. 21	STOCK NO. NO. 22
1 X 3/4	2-3/16	1-5/8	345610	345710
1 X 1	2-1/4	2-1/16	345610A	345710A
1 X 1-1/2	2-3/8	2-1/2	345610B	345710B
1 X 2	2-5/8	2-1/2	345610C	345710C
1-1/2 X 3/4	2-3/16	1-5/8	345615	345715
1-1/2 X 1	2-5/16	1-5/8	345615A	345715A
1-1/2 X 1-1/4	2-7/16	2-1/2	345615B	345715B
1-1/2 X 1-1/2	2-7/16	2-1/4	345615C	345715C
1-1/2 X 2	2-5/8	2-1/2	345615D	345715D
2 X 1-1/4	2-15/32	1-21/32	345620	345720
2 X 1-1/2	2-15/32	1-21/32	345620A	345720A
2 X 2	2-21/32	2-11/32	345620B	345720B
2 X 2-1/2	3-1/8	1-27/32	345620C	345720C
2-1/2 X 1	2-21/32	1-27/32	345625	345725
2-1/2 X 1-1/2	2-25/32	1-27/32	345625A	345725A
2-1/2 X 2	2-25/32	1-27/32	345625B	345725B
2-1/2 X 2-1/2	3-9/32	2-3/32	345625C	345725C
3 X 3	3-1/2	2-3/16	345630	345730
4 X 4	3-13/16	2-5/8	345640	345740

NOTE: SANITARY SIZE SHOWN FIRST



14AHR-RUBBER HOSE ADAPTER

SIZE (TUBE O.D.)	A	B	C	STOCK NO.
1	1-11/16	13/16	1	345810
1-1/2	1-11/16	1-5/16	1-1/2	345815
2	2-5/16	1-13/16	2	345820
2-1/2	2-11/32	2-5/16	2-1/2	345825
3	3-1/2	2-13/16	3	345830
4	4	3-13/16	4	345840

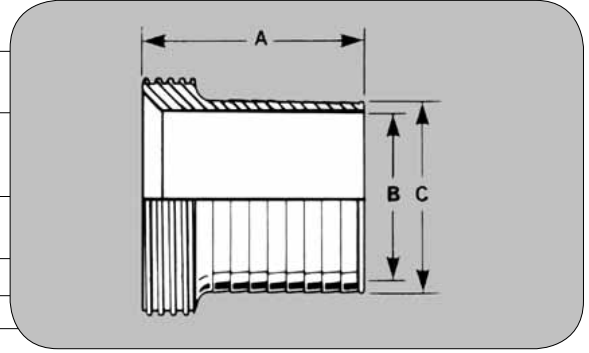


14AHT-TYGON HOSE ADAPTER

SIZE (TUBE O.D.)	A	B	STOCK NO.
1	4-11/16	1	345910
1-1/2	4-23/32	1-1/2	345915
2	4-23/32	2	345920
2-1/2	4-27/32	2-1/2	345925
3	4-29/32	3	345930
4	5-7/32	4	345940

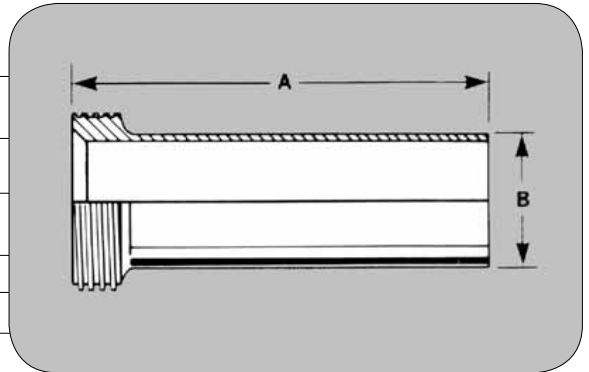
15AHR-RUBBER HOSE ADAPTER

SIZE (TUBE O.D.)	A	B	C	STOCK NO.
1	1-11/16	13/16	1	346010
1-1/2	1-11/16	1-5/16	1-1/2	346015
2	2-5/16	1-13/16	2	346020
2-1/2	3	2-5/16	2-1/2	346025
3	3-1/2	2-13/16	3	346030
4	4	3-13/16	4	346040



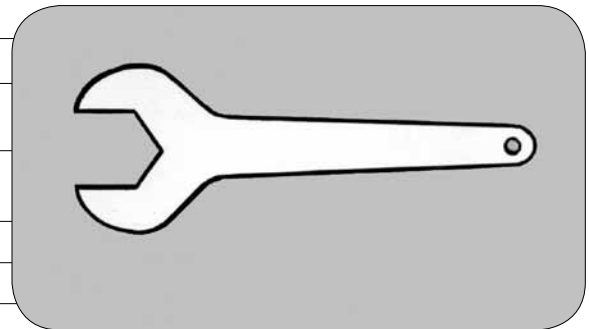
15AHT-TYGON HOSE ADAPTERS

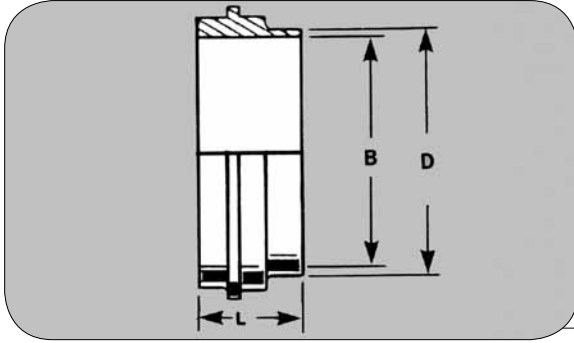
SIZE (TUBE O.D.)	A	B	STOCK NO.
1	4-11/16	1	346110
1-1/2	4-23/32	1-1/2	346115
2	4-23/32	2	346120
2-1/2	4-27/32	2-1/2	346125
3	4-29/32	3	346130
4	5-7/32	4	346140



25H ALUMINUM HEX WRENCH-SINGLE END

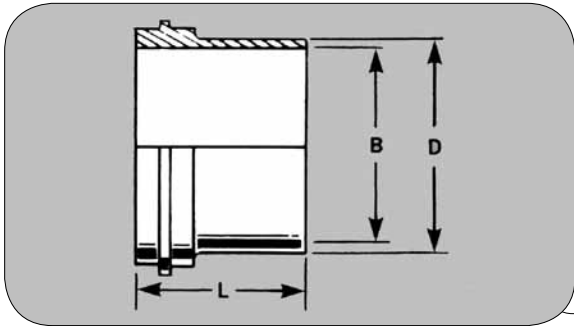
SIZE	STOCK NO.
1	346610
1-1/2	346615
2	346620
2-1/2	346625
3	346630
4	346640





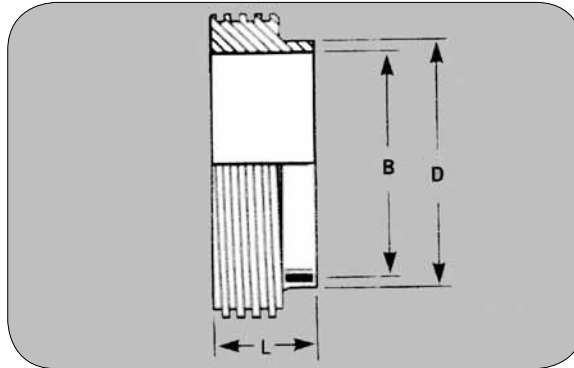
14PRFJP SHORT WELD FERRULE-JOHN PERRY (3A)

SIZE (TUBE O.D.)	D	B	L	STOCK NO.
1	1	7/8	11/16	3641B10
1-1/2	1-1/2	1-3/8	23/32	3641B15
2	2	1-7/8	23/32	3641B20
2-1/2	2-1/2	2-3/8	27/32	3641B25
3	3	2-7/8	29/32	3641B30
4	4	3-27/32	1-7/32	3641B40



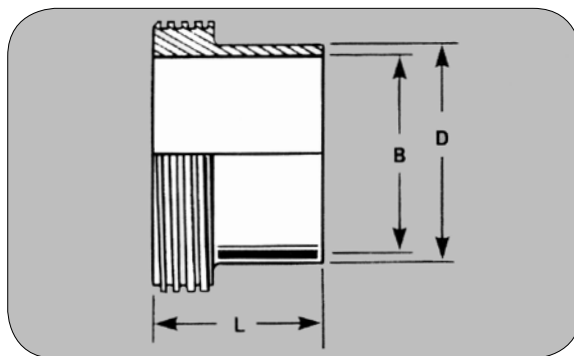
L14AJP PLAIN TUBE FERRULE-JOHN PERRY (3A)

SIZE (TUBE O.D.)	D	B	L	STOCK NO.
1	1	7/8	1-3/8	3641A10
1-1/2	1-1/2	1-3/7	1-1/2	3641A15
2	2	1-7/8	1-1/2	3641A20
2-1/2	2-1/2	2-3/8	1-3/4	3641A25
3	3	2-7/8	1-3/4	3641A30
4	4	3-27/32	1-3/4	3641A40



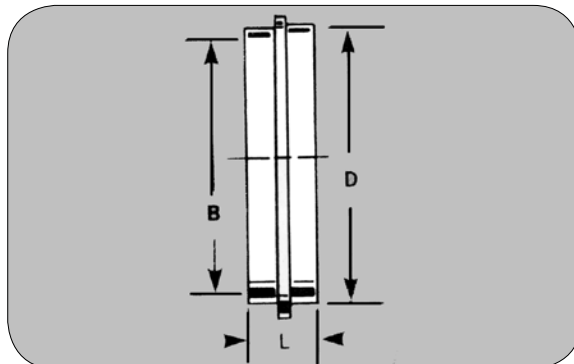
15TRFJP SHORT WELD FERRULE-JOHN PERRY (3A)

SIZE (TUBE O.D.)	D	B	L	STOCK NO.
1	1	7/8	11/16	3642B10
1-1/2	1-1/2	1-3/8	23/32	3642B15
2	2	1-7/8	23/32	3642B20
2-1/2	2-1/2	2-3/8	27/32	3642B25
3	3	2-7/8	29/32	3642B30
4	4	3-27/32	1-7/32	3642B40



L15AJP THREADED TUBE FERRULE-JOHN PERRY (3A)

SIZE (TUBE O.D.)	D	B	L	STOCK NO.
1	1	7/8	1-3/8	3642A10
1-1/2	1-1/2	1-3/8	1-1/2	3642A15
2	2	1-7/8	1-1/2	3642A20
2-1/2	2-1/2	2-3/8	1-3/4	3642A25
3	3	2-7/8	1-3/4	3642A30
4	4	3-27/32	1-3/4	3642A40



16AJP END CAP-JOHN PERRY (3A)

SIZE (TUBE O.D.)	D	B	L	STOCK NO.
1	1	1-21/64	15/32	366510
1-1/2	1-1/2	1-55/64	31/64	366515
2	2	2-25/64	17/32	366520
2-1/2	2-1/2	2-55/64	35/64	366525
3	3	3-25/64	39/64	366530
4	4	4-25/64	11/16	366540

Clamp Fittings

Top Line has been supplying high quality stainless steel products to the dairy, food, beverage, pharmaceutical and other process industries for over forty years. Our commitment to fine craftsmanship, responsible service and realistic pricing has led to our company's successive years of growth.

Top Line specializes in stainless steel materials – types 304, 316, and "L grades". In addition, Top Line can also manufacture fittings in AL6XN, Titanium, Hastelloy C, or other alloys if required.

Our modern, well-equipped manufacturing facilities are staffed by our skilled and dedicated craftsmen. Consistently meeting important tolerances and finish specifications is of primary concern to us. Before any products leave our plant they are subjected to rigid quality assurance checks.

Top Line should always be considered your first choice for both standard and custom fabricated stainless steel products.



Top Line precision crafted Clamp Fittings provide fast, sanitary and secure connections. Polished fittings meet or exceed FDA and 3A regulatory standards.

Clamp Fittings Specifications

- Size Range: 1" OD through 4" OD
- Materials: 304 (Stock No. Prefix 32)
316L (Stock No. Prefix 38)
- Finish: No. 7 – ID and OD (standard)
No. 5 – OD only (special)
No. 3 – ID only (special)
No. 1 – unpolished (special)

Polish specifications: 3A fittings meet or exceed 180 grit ID (32 Ra) and 150 grit OD.

Ordering Specifications

- Specify:
- Quantity
 - Size
 - Product Description
 - Stock Number
 - Material Type
 - Polish Requirements

Example

Quantity	Size	Product Description	Stock Number	Material Type	Polish
↕	↕	↕	↕	↕	↕
<u>3 Each</u>	<u>2"</u>	<u>2CMP-90°</u>	<u>32720-7</u>	<u>Type 304</u>	<u>No. 7</u>
<u>3 Each</u>	<u>2"</u>	<u>2CMP-90°</u>	<u>38720-7</u>	<u>Type 316</u>	<u>No. 7</u>

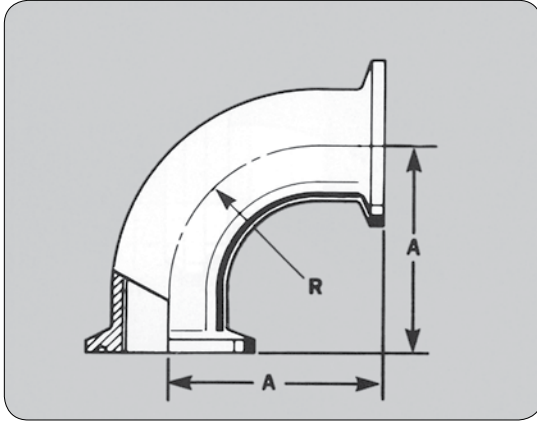
LIMITED WARRANTY

Top Line Process Equipment Company products are warranted to be free of defects in material or workmanship for a period of one year from date of shipment. Warranty covers those Top Line products used in an approved installation and maintained in strict accordance with recognized standard industry practice. If, after properly authorized return, Top Line determines that products are defective, Top Line may at its option, repair or replace such defective products.

Top Line shall not be liable for consequential, indirect or incidental damages. The above warranty is in lieu of all other warranties, expressed or implied.

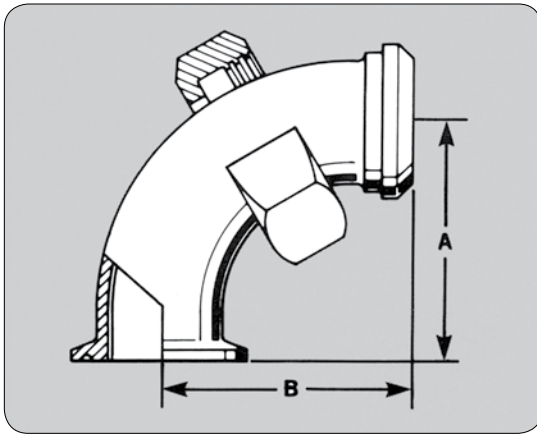
*Styles and dimensions are subject to change without notice.

2CMP 90° ELL (3A)



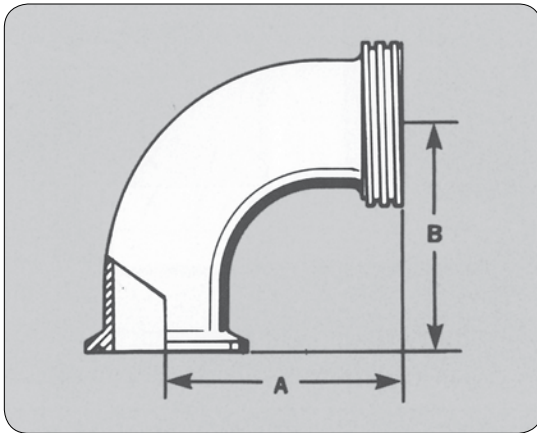
SIZE (TUBE O.D.)	A	R	STOCK NO.
1	2	1-1/2	32710
1-1/2	2-3/4	2-1/4	32715
2	3-1/2	3	32720
2-1/2	4-1/4	3-3/4	32725
3	5	4-1/2	32730
4	6-5/8	6	32740

2FMP-14 90° SWEEP ELL (3A)



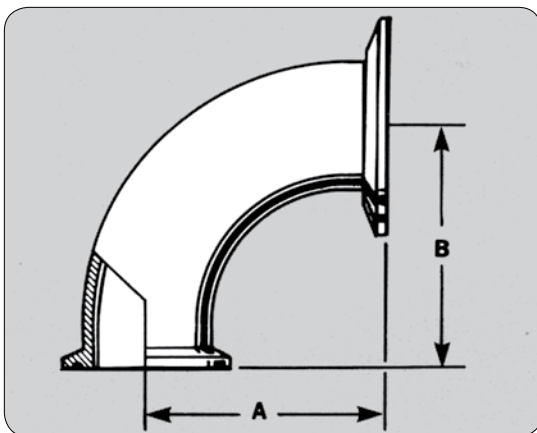
SIZE (TUBE O.D.)	A	B	STOCK NO.
1	2	2-3/16	327010
1-1/2	2-3/4	2-31/32	327015
2	3-1/2	3-23/32	327020
2-1/2	4-1/4	4-19/32	327025
3	5	5-13/32	327030
4	6-5/8	7-7/32	327040

2FMP-15 90° SWEEP ELL (3A)



SIZE (TUBE O.D.)	A	B	STOCK NO.
1	2	1-7/8	327110
1-1/2	2-31/32	2-3/4	327115
2	3-23/32	3-1/2	327120
2-1/2	4-19/32	4-1/4	327125
3	5-13/32	5	327130
4	7-7/32	6-5/8	327140

2CMP-31MP 90° CONCENTRIC REDUCING ELL



SIZE (TUBE O.D.)	A	B	STOCK NO.
2 X 1	2	2	327220
2 X 1	2-3/4	2-3/4	327220A
2-1/2 X 1	2-3/4	2-3/4	327225
2-1/2 X 2	3-1/2	3-1/2	327225A
3 X 1-1/2	2-3/4	2-3/4	327230
3 X 2	3-1/2	3-1/2	327230A
3 X 2-1/2	4-1/4	4-1/4	327230B
4 X 2-1/2	4-1/4	4-1/4	327240
4 X 3	5	5	327240A

NOTE: 1" CLAMP FITTINGS USE 1-1/2" CLAMPS

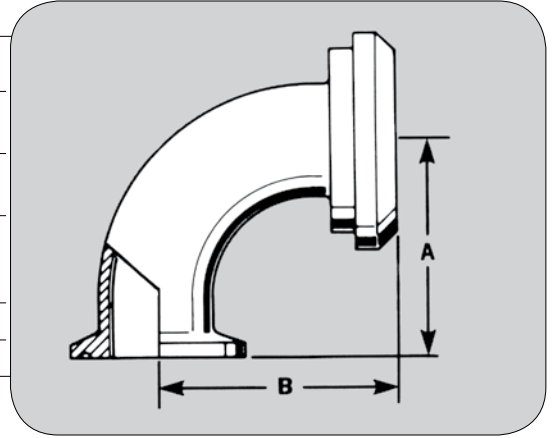
ELBOWS & TEES

CLAMP FITTINGS



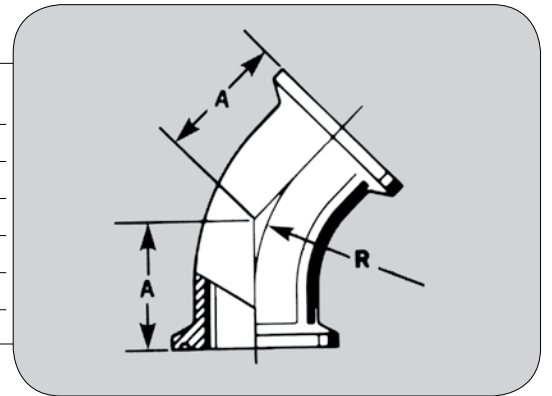
2FMP-31MP 90° ELL(3A)

SIZE (TUBE O.D.)	A	B	STOCK NO.
2 X 1	2	1-9/16	327420
2 X 1-1/2	2-3/4	2-5/16	327420A
2-1/2 X 1-1/2	2-3/4	2-5/16	327425
2-1/2 X 2	3-1/2	3-1/16	327425A
3 X 1-1/2	2-3/4	2-5/16	327430
3 X 2	3-1/2	3-1/16	327430A
3 X 2-1/2	4-1/4	3-13/16	327430B
4 X 2-1/2	4-1/4	3-13/16	327440
4 X 3	5	4-9/16	327440A



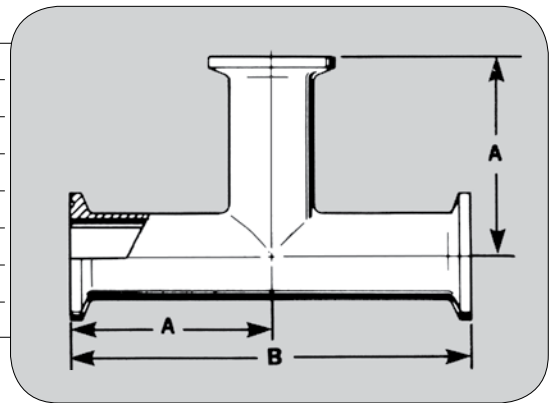
2KMP 45° ELL (3A)

SIZE (TUBE O.D.)	A	R	STOCK NO.
1	1-1/8	1-1/2	32810
1-1/2	1-7/16	2-1/4	32815
2	1-3/4	3	32820
2-1/2	2-1/16	3-3/4	32825
3	2-3/8	4-1/2	32830
4	3-1/8	6	32840



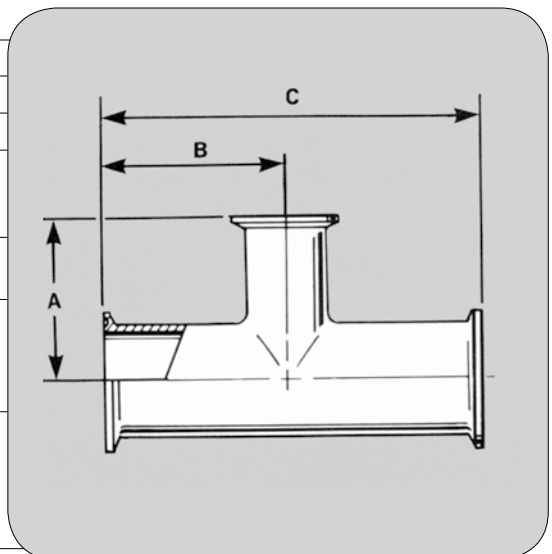
7MP TEE (3A)

SIZE (TUBE O.D.)	A	B	STOCK NO.
1	2-3/8	4-3/4	321110
1-1/2	2-3/4	5-1/2	321115
2	3-1/2	7	321120
2-1/2	3-1/2	7	321125
3	3-3/4	7-1/2	321130
4	4-1/2	9	321140



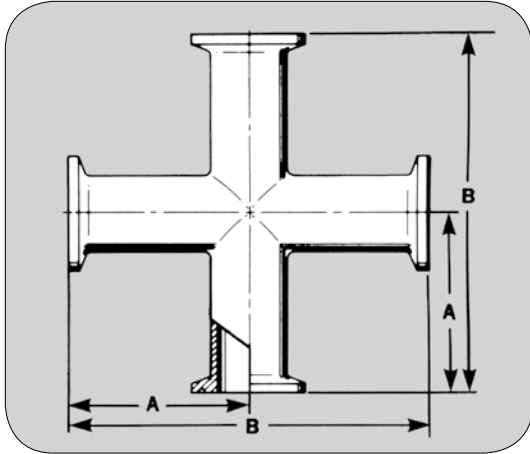
7RMP – REDUCING TEE (REDUCED SIZE ON BRANCH)

SIZE (TUBE O.D.)	A	B	C	STOCK NO.
1-1/2 X 1	1-7/8	2-5/32	5-1/8	321115R10
2 X 1	2-1/8	2-9/16	5-1/8	321120R10
2 X 1-1/2	2-13/32	2-9/16	5-1/8	321120R15
2-1/2 X 1	2-13/16	2-27/32	5-11/16	321125R10
2-1/2 X 1-1/2	2-13/16	3-27/32	5-11/16	321125R15
2-1/2 X 2	2-13/16	2-27/32	5-11/16	321125R20
3 X 1	3-1/16	3-3/32	6-3/16	321130R10
3 X 1-1/2	3-1/16	3-3/32	6-3/16	321130R15
3 X 2	3-1/16	3-3/32	6-3/16	321130R20
3 X 2-1/2	3-3/32	3-3/32	6-3/16	321130R25
4 X 1	4-7/8	4-1/16	8-1/8	321140R10
4 X 1-1/2	4-7/8	4-1/16	8-1/8	321140R15
4 X 2	4-7/8	4-1/16	8-1/8	321140R20
4 X 2-1/2	4-7/8	4-1/16	8-1/8	321140R25
4 X 3	4-7/8	4-1/16	8-1/8	321140R30

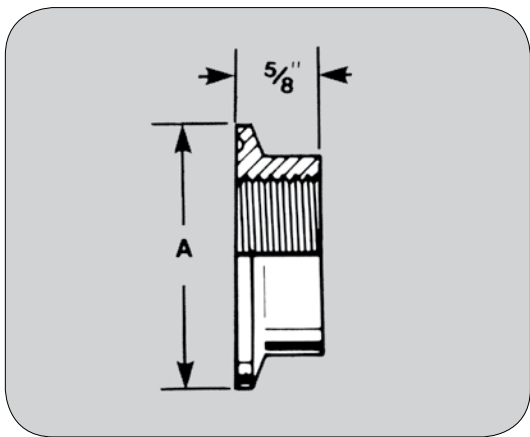


NOTE: 1" CLAMP FITTINGS USE 1-1/2" CLAMPS

9MP CROSS (3A)



SIZE (TUBE O.D.)	A	B	STOCK NO.
1	2-3/8	4-3/4	3210110
1-1/2	2-3/4	5-1/2	3210115
2	3-1/2	7	3210120
2-1/2	3-1/2	7	3210125
3	3-3/4	7-1/2	3210130
4	4-1/2	9	3210140



23BMP THERMOMETER CAP

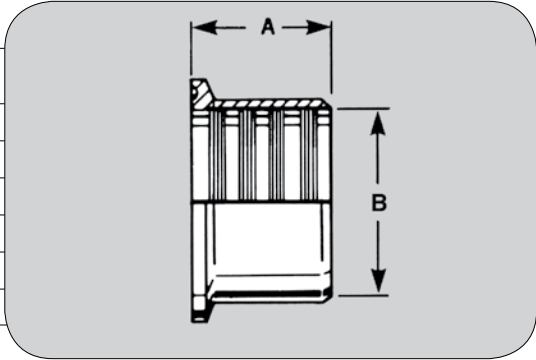
SIZE (TUBE O.D.)	A	STOCK NO.
1	1-63/64	329810B
1-1/2	1-63/64	329815B
2	2-33/64	329820B
2-1/2	3-3/64	329825B
3	3-37/64	329830B
4	4-11/16	329840B

NOTE: 1" TAPPED 1/2" NPT; ALL OTHERS 3/4" NPT

FERRULES

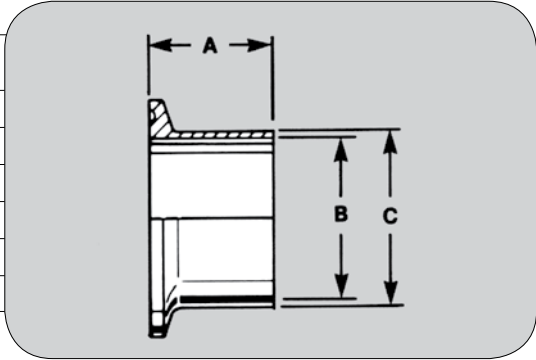
14RMP-RECESSLESS FERRULE (3A) (FOR EXPANDING)

SIZE (TUBE O.D.)	A	B	STOCK NO.
1	3/4	1	32110
1-1/2	1-1/8	1-1/2	32115
2	1-5/16	2	32120
2-1/2	1-3/8	2-1/2	32125
3	1-7/16	3	32130
4	1-1/2	4	32140



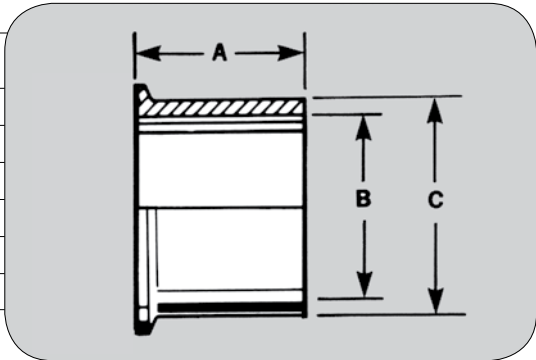
L14AM7 – BUTT WELDING FERRULE (3A)

SIZE (TUBE O.D.)	A	B	C	STOCK NO.
1	1-1/8	.870	1	327510
1-1/2	1-1/8	1.370	1-1/2	327515
2	1-1/8	1.870	2	327520
2-1/2	1-1/8	2.370	2-1/2	327525
3	1-1/8	2.870	3	327530
4	1-1/8	3.834	4	327540



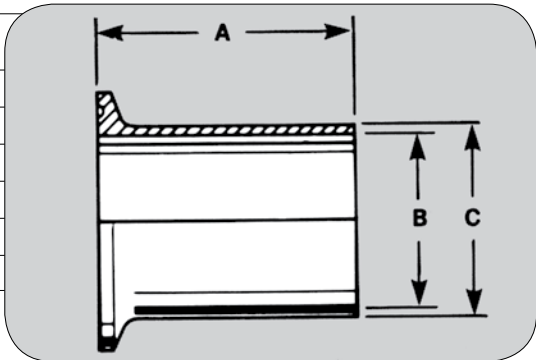
14MPW – TANK WELDING FERRULE (3A)

SIZE (TUBE O.D.)	A	B	C	STOCK NO.
1	1-5/8	.870	1.160	327610
1-1/2	1-5/8	1.370	1.676	327615
2	1-3/4	1.870	2.192	327620
2-1/2	1-3/4	2.370	2.708	327625
3	1-13/16	2.870	3.224	327630
4	2-1/8	3.834	4.256	327640



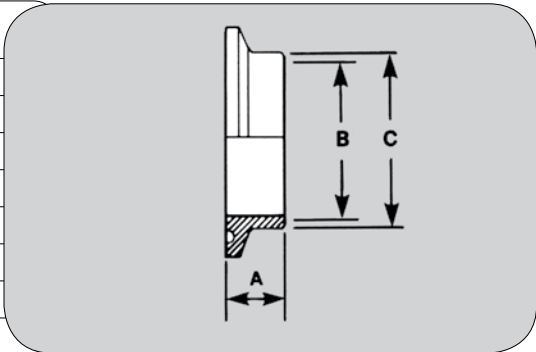
14WLMP – TANK WELDING SPUD-LIGHT (3A)

SIZE (TUBE O.D.)	A	B	C	STOCK NO.
1	3	.870	1	327710
1-1/2	3	1.370	1-1/2	327715
2	3	1.870	2	327720
2-1/2	3	2.370	2-1/2	327725
3	4	2.870	3	327730
4	4	3.834	4	327740

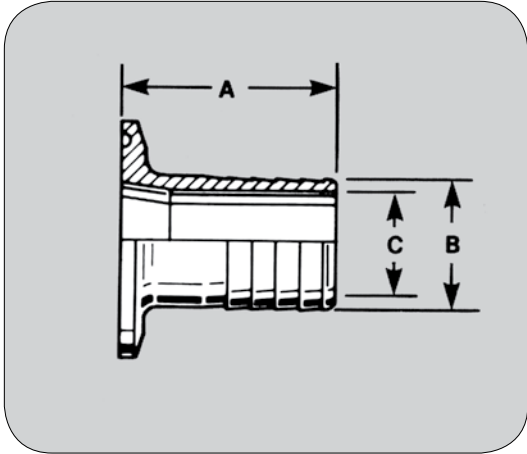


14WMP – SHORT WELDING FERRULE (3A)

SIZE (TUBE O.D.)	A	B	C	STOCK NO.
1	1/2	.870	1	32210
1-1/2	1/2	1.370	1-1/2	32215
2	1/2	1.870	2	32220
2-1/2	1/2	2.370	2-1/2	32225
3	1/2	2.870	3	32230
4	5/8	3.834	4	32240
6	3/4	5.782	6	32260
8	7/8	7.782	8	32280

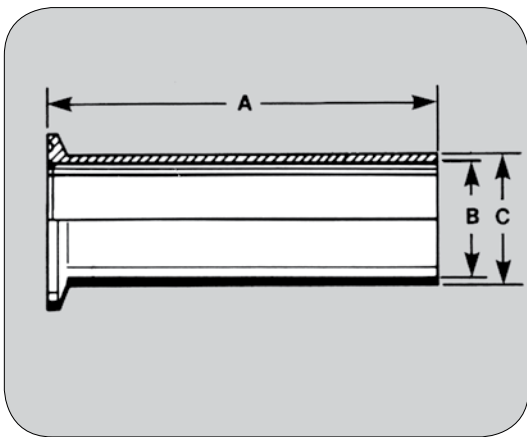


NOTE: 1" CLAMP FITTINGS USE 1-1/2" CLAMPS



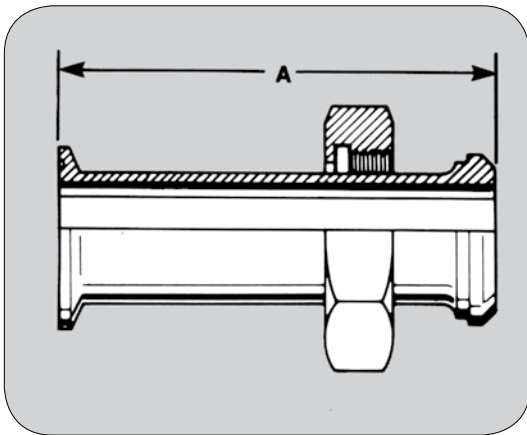
14MPHR – RUBBER HOSE ADAPTER

SIZE (TUBE O.D.)	A	B	C	STOCK NO.
1	1-11/16	1	13/16	327810
1-1/2	1-11/16	1-1/2	1-5/16	327815
2	2-5/16	2	1-13/16	327820
2-1/2	2-11/32	2-1/2	2-5/16	327825
3	3-3/32	3	2-27/32	327830
4	3-13/32	4	3-27/32	327840



14MPHT – TYGON HOSE ADAPTER

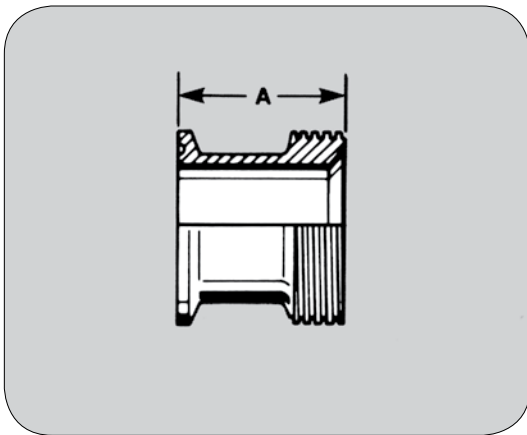
SIZE (TUBE O.D.)	A	B	C	STOCK NO.
1	4-1/2	7/8	1	327910
1-1/2	4-1/2	1-3/8	1-1/2	327915
2	4-1/2	1-7/8	2	327920
2-1/2	4-1/2	2-3/8	2-1/2	327925
3	4-1/2	2-7/8	3	327930
4	4-5/8	3-27/32	4	327940



17MP-14 – ADAPTER (3A)

SIZE (TUBE O.D.)	A	STOCK NO.
1	3	328010
1-1/2	3	328015
2	3	328020
2-1/2	3-1/2	328025
3	3-3/4	328030
4	4	328040

HEX NUT INCLUDED



17MP-15 – ADAPTER (3A)

SIZE (TUBE O.D.)	A	STOCK NO.
1	1-11/16	328110
1-1/2	1-23/32	328115
2	1-23/32	328120
2-1/2	1-27/32	328125
3	1-29/32	328130
4	2-11/32	328140

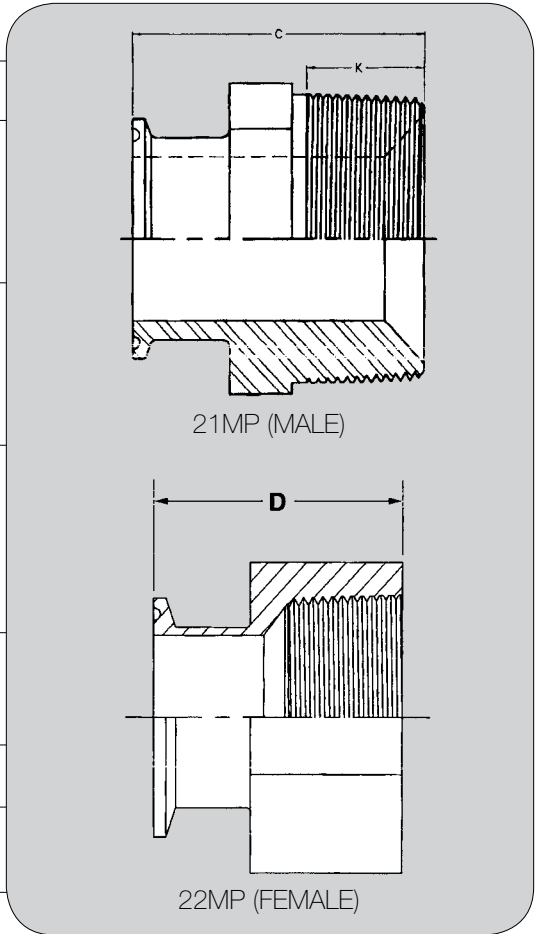
NOTE: 1" CLAMP FITTINGS USE 1-1/2" CLAMPS

ADAPTERS & REDUCERS

21MP AND 22MP – ADAPTERS (N.P.T. THREADS)

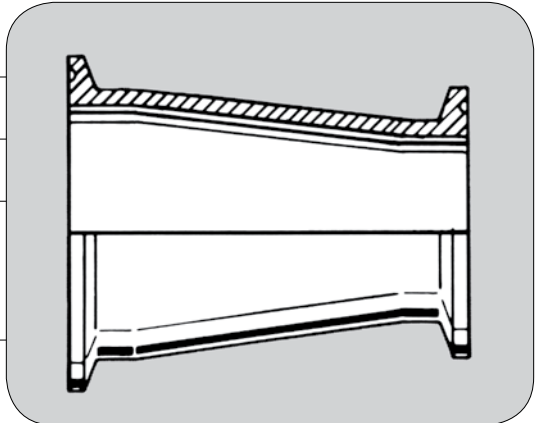
SIZE (TUBE O.D.)	NO. 21MP		NO. 22MP D	STOCK NUMBER	
	C	K		21MP	22MP
1 X 1/2	2-3/16	0.7815	1-5/8	3221005	32831005
1 X 3/4	2-3/16	0.7935	1-5/8	328210	328310
1 X 1	2-1/4	0.9845	1-5/8	328210A	328310A
1 X 1-1/4	2-7/16	1.0085	2-1/4	328210D	328310D
1 X 1-1/2	2-7/16	1.0252	2-1/4	328210B	328310B
1 X 2	2-5/8	1.0582	2-1/4	328210C	328310C
1-1/2 X 1/2	2-3/16	0.7815	1-5/8	32821505	32831505
1-1/2 X 3/4	2-3/16	0.7935	1-5/8	328215	328315
1-1/2 X 1	2-5/16	0.9845	1-5/8	328215A	328315A
1-1/2 X 1-1/4	2-7/16	1.0085	2-1/4	328215B	328315B
1-1/2 X 1-1/2	2-7/16	1.0252	2-1/4	328215C	328315C
1-1/2 X 2	2-5/8	1.0582	2-1/4	328215D	328315D
2 X 1/2	2-1/4	0.7815	1-11/16	32822005	32832005
2 X 3/4	2-9/32	0.7935	1-11/16	32822007	32832007
2 X 1	2-15/32	0.9845	1-11/16	328220D	32832010
2 X 1-1/4	2-15/32	1.0085	1-11/16	328220	328320
2 X 1-1/2	2-15/32	1.0252	1-11/16	328220A	328320A
2 X 2	2-21/32	1.0582	2-11/32	328220B	328320B
2 X 2-1/2	3-1/8	1.5712	2-13/32	328220C	328320C
2-1/2 X 1	2-25/32	0.9845	1-5/16	328225	328325
2-1/2 X 1-1/2	2-25/32	1.0252	1-21/32	328225A	328325A
2-1/2 X 2	2-25/32	1.0582	1-23/32	328225B	328325B
2-1/2 X 2-1/2	3-9/32	1.5712	1-23/32	328225C	328325C
3 X 2-1/2	3-1/2	1.5712	2-3/16	328230A	32833025
3 X 3	3-1/2	1.6337	2-3/16	328230	328330
4 X 2	3-13/16	1.0582	2-3/16	328240A	328340A
4 X 3	4-13/16	1.6337	2-3/16	328240B	328340B
4 X 4	3-13/16	1.7337	2-5/8	328240	328340

WHEN ADAPTER DIMENSIONS ARE GIVEN, SANITARY STYLE END IS ALWAYS INDICATED FIRST



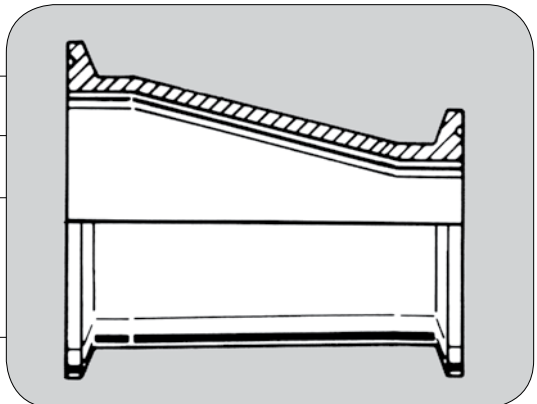
31-14MP – CONCENTRIC REDUCER (3A)

SIZE (TUBE O.D.)	OVERALL LENGTH	STOCK NO.	SIZE (TUBE O.D.)	OVERALL LENGTH	STOCK NO.
1-1/2 X 1	3	328415	3 X 2	5	328430A
2 X 1	5	328420	3 X 2-1/2	3	328430B
2 X 1-1/2	3	328420A	4 X 1	13-1/8	32844010
2-1/2 X 1	7	328425	4 X 1-1/2	11-1/8	32844015
2-1/2 X 1-1/2	5	328425A	4 X 2	9-1/8	328440
2-1/2 X 2	3	328425B	4 X 2-1/2	7-1/8	328440A
3 X 1	9	32843010	4 X 3	5-1/8	328440B
3 X 1-1/2	7	328430			

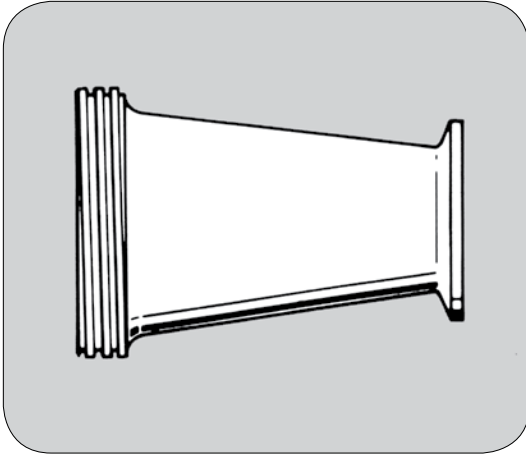


32-14MP – ECCENTRIC REDUCER (3A)

SIZE (TUBE O.D.)	OVERALL LENGTH	STOCK NO.	SIZE (TUBE O.D.)	OVERALL LENGTH	STOCK NO.
1-1/2 X 1	3	328515	3 X 2	5	328530A
2 X 1	5	328520	3 X 2-1/2	3	328530B
2 X 1-1/2	3	328520A	4 X 1	13-1/8	32854010
2-1/2 X 1	7	32852510	4 X 1-1/2	11-1/8	32854015
2-1/2 X 1-1/2	5	328525	4 X 2	9-1/8	328540
2-1/2 X 2	3	328525A	4 X 2-1/2	7-1/8	328540A
3 X 1	9	32853010	4 X 3	5-1/8	328540B
3 X 1-1/2	7	328530			

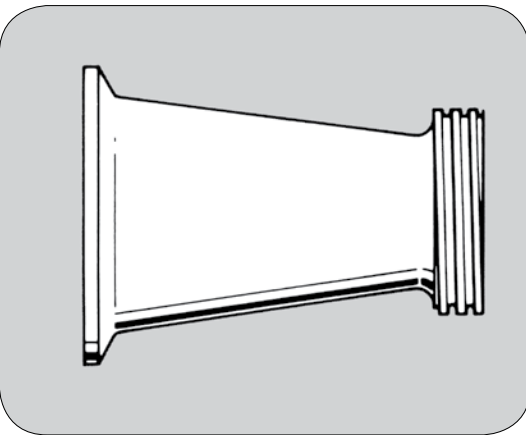


NOTE: 1" CLAMP FITTINGS USE 1-1/2" CLAMPS



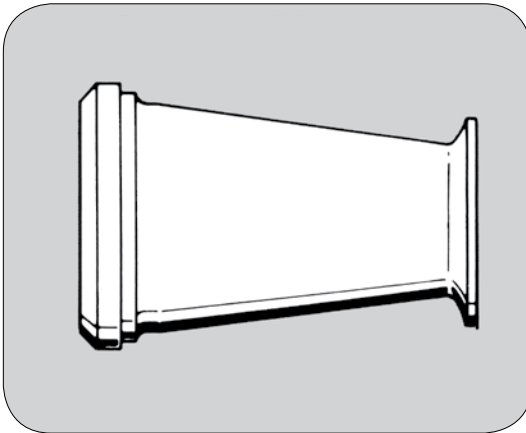
31TMP – ADAPTER - REDUCER-CONCENTRIC (3A)

SIZE (TUBE O.D.)	OVERALL LENGTH	STOCK NO.	SIZE (TUBE O.D.)	OVERALL LENGTH	STOCK NO.
1-1/2 X 1	3-7/32	329015	3 X 2	5-15/32	329030
2 X 1	5-7/32	329020	3 X 2-1/2	3-13/32	329030A
2 X 1-1/2	3-7/32	329020A	4 X 2-1/2	7-23/32	329040
2-1/2 X 1-1/2	5-11/32	329025	4 X 3	5-23/32	329040A
2-1/2 X 2	3-11/32	329025A			



31MPT – ADAPTER - REDUCER-CONCENTRIC (3A)

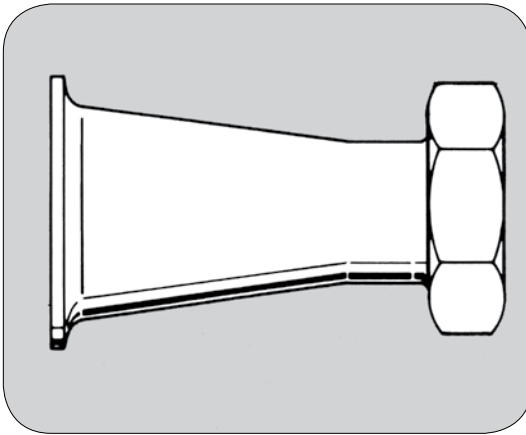
SIZE (TUBE O.D.)	OVERALL LENGTH	STOCK NO.	SIZE (TUBE O.D.)	OVERALL LENGTH	STOCK NO.
1-1/2 X 1	3-3/16	329315	3 X 2	5-7/32	329330
2 X 1	5-3/16	329320	3 X 2-1/2	3-11/32	329330A
2 X 1-1/2	3-7/32	329320A	4 X 2-1/2	7-15/32	329340
2-1/2 X 1-1/2	5-7/32	329325	4 X 3	5-17/32	329340A
2-1/2 X 2	3-7/32	329325A			



31PMP – REDUCING FERRULE-CONCENTRIC (3A)

SIZE (TUBE O.D.)	OVERALL LENGTH	STOCK NO.	SIZE (TUBE O.D.)	OVERALL LENGTH	STOCK NO.
*1-1/2 X 1	3-7/32	328615	3 X 2	5-13/32	328630
2 X 1	5-7/32	328620	3 X 2-1/2	3-13/32	328630A
2 X 1-1/2	3-7/32	328620A	4 X 2-1/2	7-23/32	328640
2-1/2 X 1-1/2	5-11/32	328625	4 X 3	5-23/32	328640A
2-1/2 X 2	3-11/32	328825A			

*HEX NUT INCLUDED (1-1/2" X 1")



31MPP – ADAPTER - REDUCER -CONCENTRIC (3A)

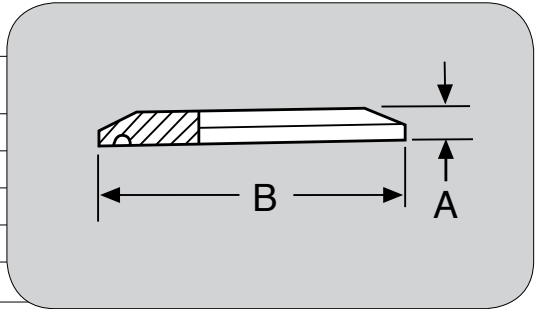
SIZE (TUBE O.D.)	OVERALL LENGTH	STOCK NO.	SIZE (TUBE O.D.)	OVERALL LENGTH	STOCK NO.
1-1/2 X 1	4-1/8	328815	3 X 2	6-13/32	328830
2 X 1	6-1/8	328820	3 X 2-1/2	4-21/32	328830A
2 X 1-1/2	4-7/32	328820A	4 X 2-1/2	8-25/32	328840
2-1/2 X 1-1/2	6-7/32	328825	4 X 3	6-15/16	328840A
2-1/2 X 2	4-13/32	328825A			

HEX NUT INCLUDED




NOTE: 1" CLAMP FITTINGS USE 1-1/2" CLAMPS

16AMP - SOLID END CAP (3A)

SIZE (TUBE O.D.)	A	B	STOCK NO.
1 & 1-1/2	.250	1.9843	329815
2	.250	2.516	329820
2-1/2	.250	3.047	329825
3	.250	3.579	329830
4	.312	4.682	329840



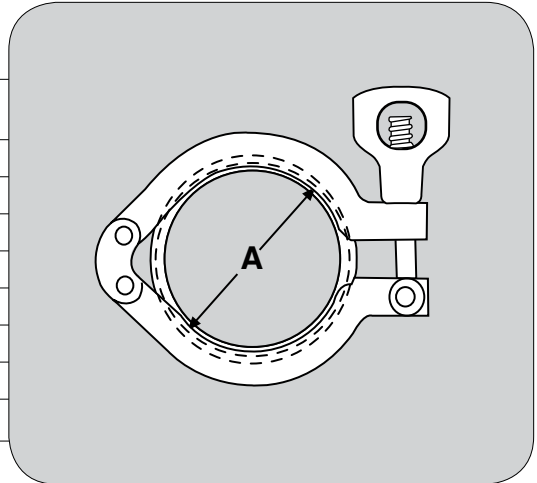
CLAMP GASKETS (1" O.D. TO 8" O.D.)(3A)

 O-RING 40MP-U BUNA N 40MP-UW BUNA WHITE 40MP-X SILICONE 40MP-E E.P.D.M. 40MP-G TEFLON 40MP-SFY VITON	 FLANGED (TYPE 2) 40MPF-U BUNA N 40MPF-X SILICONE 40MPF-E E.P.D.M. 40MPF-SFY VITON	 ENVELOPE (TYPE 3) A40MP-GR TEFLON ALSO AVAILABLE BEVEL SEAT JOHN PERRY
--	---	--

13MHHM - HEAVY DUTY CLAMP

SIZE RANGE: 1-1 1/2" TO 12" TUBE O.D.

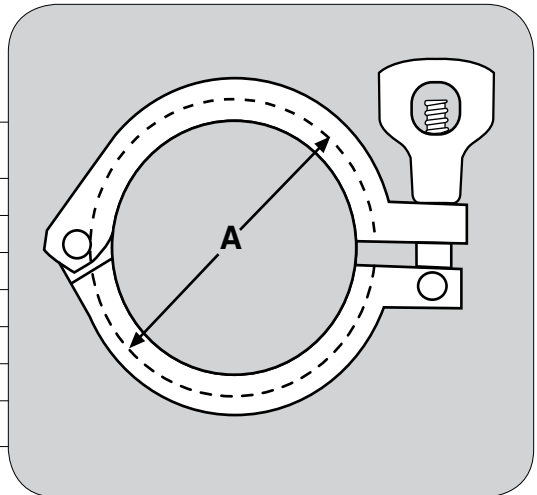
SIZE (TUBE O.D.)	A	STOCK NO.
1-1 1/2	2.140	329915
2	2.610	329920
2 1/2	3.141	329925
3	3.673	329930
4	4.776	329940
8	8.695	329980
10	10.695	3299100
12	-	3299120

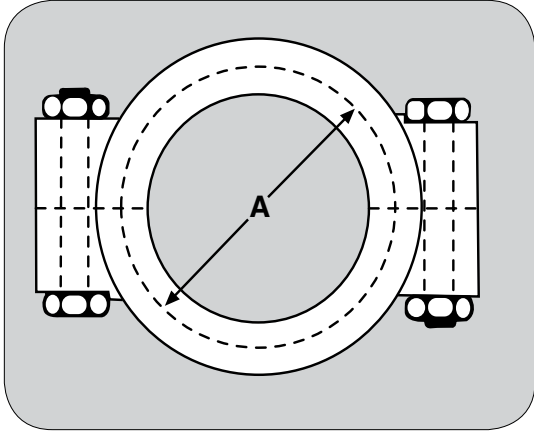


13LAH - HEAVY DUTY CLAMP

SIZE RANGE: 1/2" TO 8" TUBE O.D.

SIZE (TUBE O.D.)	A	STOCK NO.
1-1 1/2	2.140	3299915
2	2.610	3299920
2 1/2	3.141	3299925
3	3.673	3299930
4	4.776	3299940
6	6.695	3299960
8	8.700	3299980

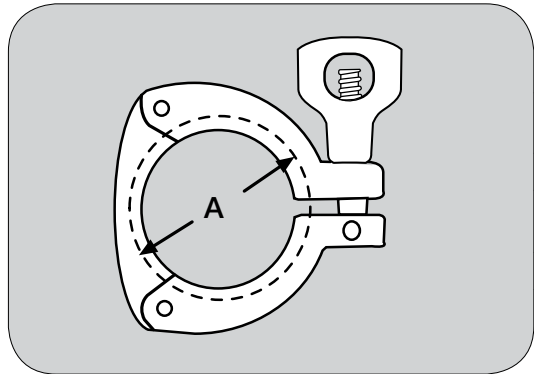




13MHP-HIGH PRESSURE CLAMP
 SIZE RANGE: 1 1/2" TO 6" TUBE O.D.

SIZE (TUBE O.D.)	A	STOCK NO.
1-1 1/2	2.046	329915HP
2	2.578	329920HP
2 1/2	3.110	329925HP
3	3.640	329930HP
4	4.744	329940HP
6	6.632	329960HP

WITH ALUMINUM BRONZE NUTS



13MHHS-HEAVY 3-SEGMENT CLAMP
 SIZE RANGE: 1-1 1/2" TO 4" TUBE O.D.

SIZE (TUBE O.D.)	A	STOCK NO.
1-1 1/2	2.140	3299153
2	2.610	3299203
2 1/2	3.141	3299253
3	3.673	3299303
4	4.776	3299403

Sanitary Butt Weld Fittings

Top Line has been supplying high quality stainless steel products to the dairy, food, beverage, pharmaceutical and other process industries for over forty years. Our commitment to fine craftsmanship, responsible service and realistic pricing has led to our company's successive years of growth.

Top Line specializes in stainless steel materials—types 304, 316 and “L grades”.

Our modern, well equipped manufacturing facilities are staffed by skilled and dedicated craftsmen. Consistently meeting important tolerances and finish specification is of primary concern to us. Before any products leave our plant they are subjected to rigid quality assurance checks.

Top Line should always be considered your first choice for both standard and custom fabricated stainless steel products.



Butt Weld Fittings Specifications

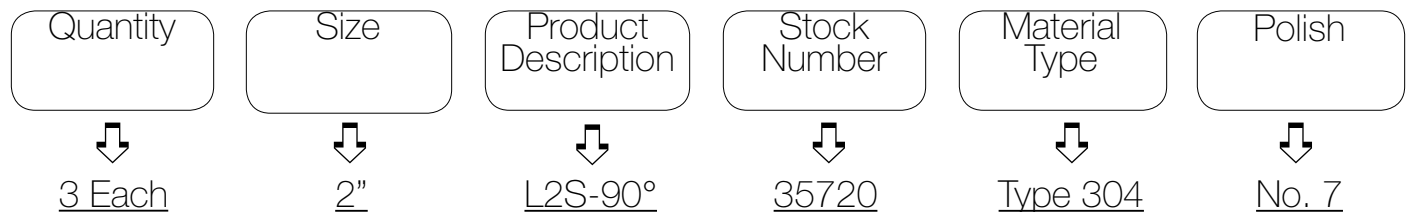
Size Range: 1" OD through 4" OD
 Materials: 304 (Stock No. Prefix 35)
 316L (Stock No. Prefix 39)
 Finish: No. 7 – ID and OD (standard)
 No. 5 – OD only (special)
 No. 3 – ID only (special)
 No. 1 – unpolished (special)

Ordering Specifications

Specify:

- Quantity
- Size
- Product Description
- Stock Number
- Material Type
- Polish Requirements

Example



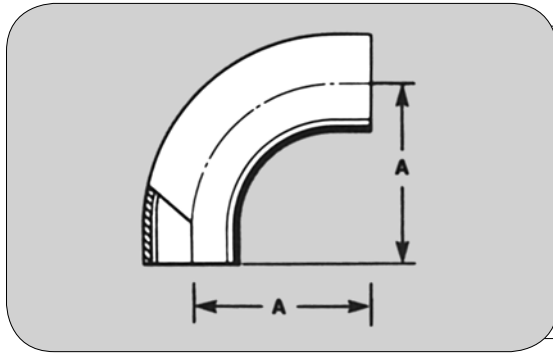
LIMITED WARRANTY

Top Line Process Equipment Company products are warranted to be free of defects in material or workmanship for a period of one year from date of shipment. Warranty covers those Top Line products used in an approved installation and maintained in strict accordance with recognized standard industry practice. If, after properly authorized return, Top Line determines that products are defective, Top Line may at its option, repair or replace such defective products.

Top Line shall not be liable for consequential, indirect or incidental damages. The above warranty is in lieu of all other warranties, expressed or implied.

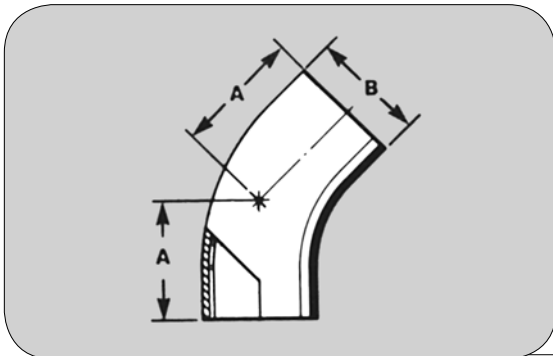
*Styles and dimensions are subject to change without notice.

L2S-90° TUBE BEND (3A)



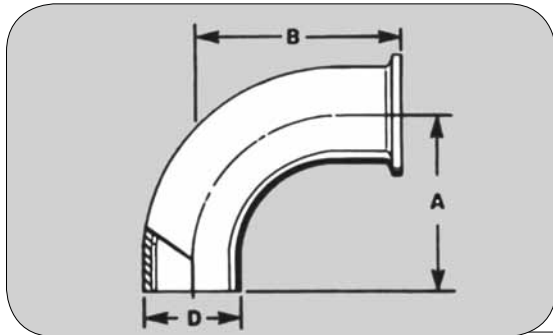
SIZE (TUBE O.D.)	A	STOCK NO.
1	2-1/16	35710
1 1/2	2-15/16	35715
2	4-1/16	35720
2 1/2	5-3/16	35725
3	6-5/16	35730
4	8-5/16	35740

L2KS-45° TUBE BEND (3A)



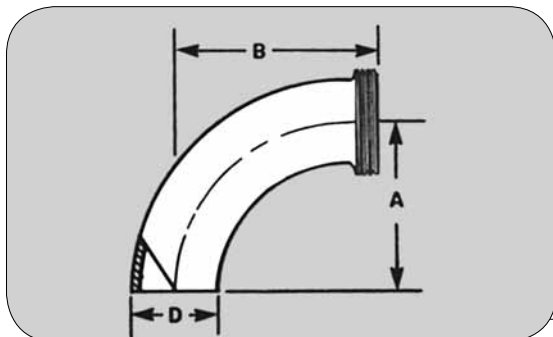
SIZE (TUBE O.D.)	A	B	STOCK NO.
1	1-3/16	1	35810
1 1/2	1-5/8	1-1/2	35815
2	2-5/16	2	35820
2 1/2	3	2-1/2	35825
3	3-11/16	3	35830
4	4-13/16	4	35840

L2CM-90° SWEEP ELL(3A)



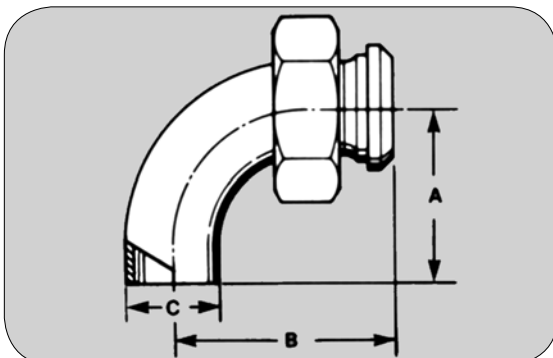
SIZE (TUBE O.D.)	A	B	D	STOCK NO.
1	2-1/16	2-9/16	1	3510510C
1-1/2	2-15/16	3-7/16	1-1/2	3510515C
2	4-1/16	4-9/16	2	3510520C
2-1/2	5-3/16	5-11/16	2-1/2	3510525C
3	6-5/16	6-13/16	3	3510530C
4	8-5/16	8-15/16	4	3510540C

L2C-90° ELL (3A)



SIZE (TUBE O.D.)	A	B	D	STOCK NO.
1-1/2	2-15/16	3-21/32	1-1/2	3510515T
2	4-1/16	4-25/32	2	3510520T
2-1/2	5-3/16	6-1/32	2-1/2	3510525T
3	6-5/16	7-7/32	3	3510530T
4	8-5/16	9-17/32	4	3510540T

L2F-90° SWEEP ELL (3A)



SIZE (TUBE O.D.)	A	B	C	STOCK NO.
1-1/2	2-15/16	3-21/32	1-1/2	3510615
2	4-1/16	4-25/32	2	3510620
2-1/2	5-3/16	6-1/32	2-1/2	3510625
3	6-5/16	7-7/32	3	3510630
4	8-5/16	9-17/32	4	3510640

HEX NUT INCLUDED

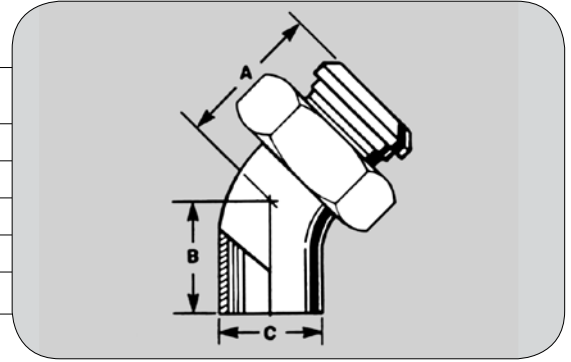
ELBOWS & TEES

SANITARY BUTT WELD FITTINGS



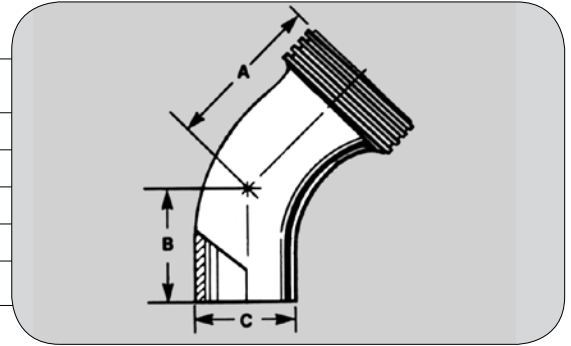
L2P-45° SWEEP ELL (3A)

SIZE (TUBE O.D.)	A	B	C	STOCK NO.
1-1/2	2-11/32	1-5/8	1-1/2	3510915
2	3-1/32	2-5/16	2	3510920
2-1/2	3-27/32	3	2-1/2	3510925
3	4-19/32	3-11/16	3	3510930
4	6-1/32	4-13/16	4	3510940



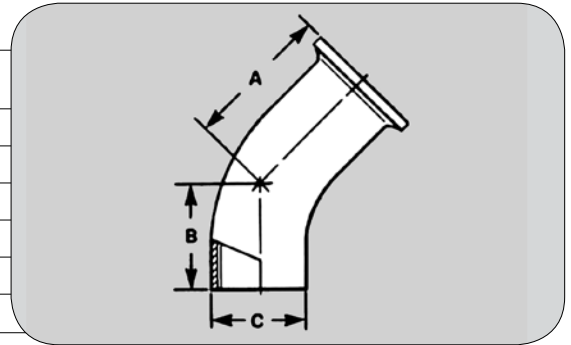
L2K-45° SWEEP ELL (3A)

SIZE (TUBE O.D.)	A	B	C	STOCK NO.
1-1/2	2-11/32	1-5/8	1-1/2	3510815T
2	3-1/32	2-5/16	2	3510820T
2-1/2	3-27/32	3	2-1/2	3510825T
3	4-19/32	3-11/16	3	3510830T
4	6-1/32	4-13/16	4	3510840T



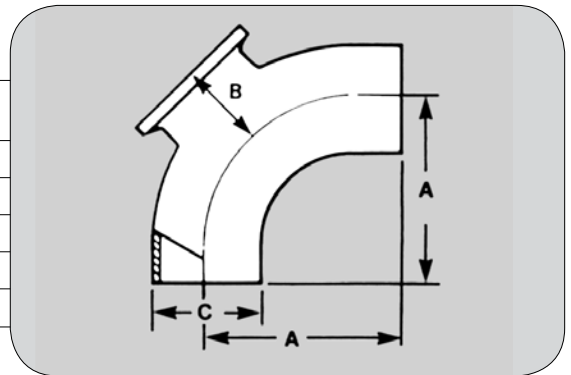
L2KM-45° SWEEP ELL (3A)

SIZE (TUBE O.D.)	A	B	C	STOCK NO.
1	1-11/16	1-3/16	1	3510810C
1-1/2	2-1/8	1-5/8	1-1/2	3510815C
2	2-13/16	2-5/16	2	3510820C
2-1/2	3-1/2	3	2-1/2	3510825C
3	4-3/16	3-11/16	3	3510830C
4	5-7/16	4-13/16	4	3510840C



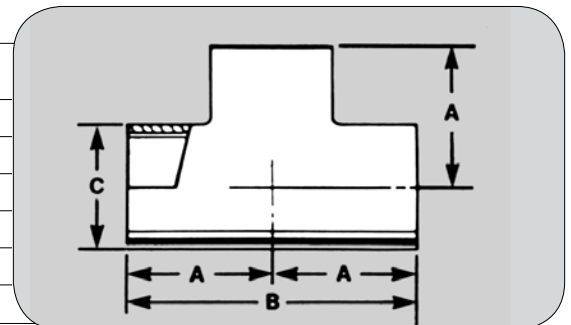
L2CP7-90° INSPECTION ELBOW

SIZE (TUBE O.D.)	A	B	C	STOCK NO.
1-1/2	2-15/16	1-3/8	1-1/2	3510715
2	4-1/16	1-5/8	2	3510720
2-1/2	5-3/16	1-7/8	2-1/2	3510725
3	6-3/16	2-1/8	3	3510730
4	8-3/16	2-3/4	4	3510740

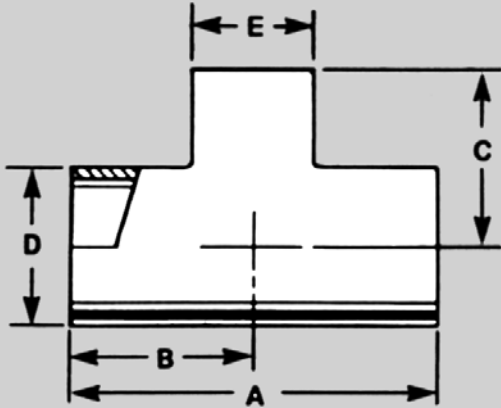


L7WWW-TEE (3A)

SIZE (TUBE O.D.)	A	B	C	STOCK NO.
1	1-1/8	2-1/4	1	351110
1-1/2	1-21/32	3-5/16	1-1/2	351115
2	2-1/16	4-1/8	2	351120
2-1/2	2-11/32	4-11/16	2-1/2	351125
3	2-19/32	5-3/16	3	351130
4	3-7/16	6-7/8	4	351140

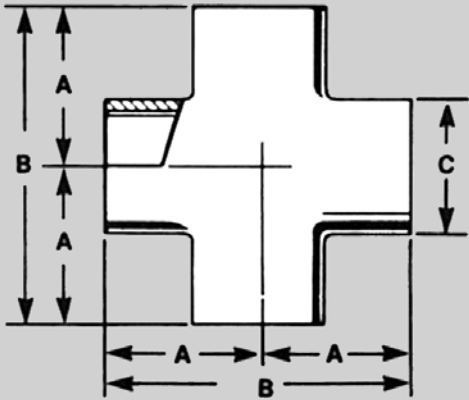


L7RWWW-REDUCING TEE (3A)



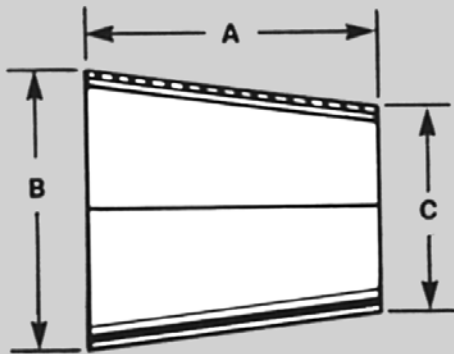
SIZE (TUBE O.D.)	A	B	C	D	E	STOCK NO.
1-1/2 X 1	3-5/16	1-21/32	1-3/8	1-1/2	1	351115R10
2 X 1	4-1/8	2-1/16	1-5/8	2	1	351120R10
2 X 1-1/2	4-1/8	2-1/16	1-29/32	2	1-1/2	351120R15
2-1/2 X 1	4-11/16	2-11/32	1-7/8	2-1/2	1	351125R10
2-1/2 X 1-1/2	4-11/16	2-11/32	2-5/32	2-1/2	1-1/2	351125R15
2-1/2 X 2	4-11/16	2-11/32	2-5/32	2-1/2	2	351125R20
3 X 1	5-3/16	2-19/32	2-13/32	3	1	351130R10
3 X 1-1/2	5-3/16	2-19/32	2-13/32	3	1-1/2	351130R15
3 X 2	5-3/16	2-19/32	2-9/16	3	2	351130R20
3 X 2-1/2	5-3/16	2-19/32	2-19/32	3	2-1/2	351130R25
4 X 1	6-7/8	3-7/16	2-29/32	4	1	351140R10
4 X 1-1/2	6-7/8	3-7/16	2-29/32	4	1-1/2	351140R15
4 X 2	6-7/8	3-7/16	3-1/16	4	2	351140R20
4 X 2-1/2	6-7/8	3-7/16	3-29/32	4	2-1/2	351140R25
4 X 3	6-7/8	3-7/16	3-29/32	4	3	351140R30

L9WWW-CROSS (3A)



SIZE (TUBE O.D.)	A	B	C	STOCK NO.
1	1-1/8	2-1/4	1	3511410
1-1/2	1-21/32	3-5/16	1-1/2	3511415
2	2-1/16	4-1/8	2	3511420
2-1/2	2-11/32	4-11/16	2-1/2	3511425
3	2-19/32	5-3/16	3	3511430
4	3-7/16	6-7/8	4	3511440

L31 CONCENTRIC REDUCER (3A)



SIZE (TUBE O.D.)	A	B	C	STOCK NO.
1-1/2 X 1	2	1-1/2	1	3511515
2 X 1	4	2	1	3511520A
2 X 1-1/2	2	2	1-1/2	3511520
2-1/2 X 1	6	2-1/2	1	351152510
2-1/2 X 1-1/2	4	2-1/2	1-1/2	3511525
2-1/2 X 2	2	2-1/2	2	3511525A
3 X 1	8	3	1	351153010
3 X 1-1/2	6	3	1-1/2	3511530
3 X 2	4	3	2	3511530A
3 X 2-1/2	2	3	2-1/2	3511530B
4 X 1	12	4	1	351154010
4 X 1-1/2	10	4	1-1/2	3511540
4 X 2	8	4	2	3511540A
4 X 2-1/2	6	4	2-1/2	3511540B
4 X 3	4	4	3	3511540C

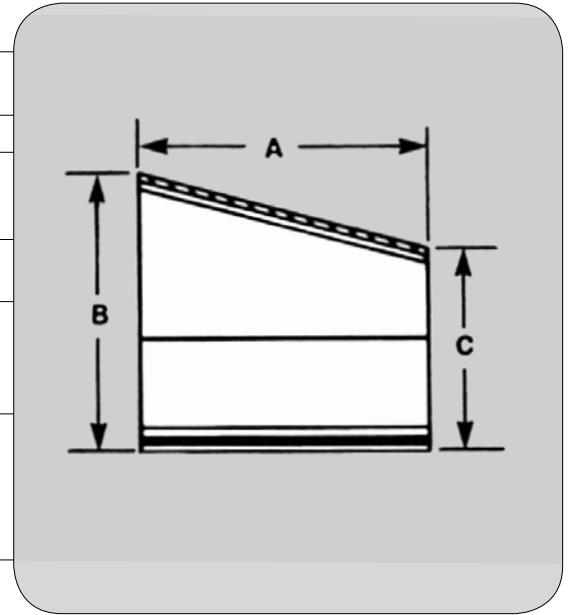
REDUCERS

SANITARY BUTT WELD FITTINGS



L32 ECCENTRIC REDUCER (3A)

SIZE (TUBE O.D.)	A	B	C	STOCK NO.
1-1/2 X 1	2	1-1/2	1	3512115
2 X 1	4	2	1	351212010
2 X 1-1/2	2	2	1-1/2	3512120
2-1/2 X 1	6	2-1/2	1	351212510
2-1/2 X 1-1/2	4	2-1/2	1-1/2	3512125
2-1/2 X 2	2	2-1/2	2	3512125A
3 X 1	8	3	1	351213010
3 X 1-1/2	6	3	1-1/2	3512130
3 X 2	4	3	2	3512130A
3 X 2-1/2	2	3	2-1/2	3512130B
4 X 1	12	4	1	351514010
4 X 1-1/2	10	4	1-1/2	3512140
4 X 2	8	4	2	3512140A
4 X 2-1/2	6	4	2-1/2	3512140B
4 X 3	4	4	3	3512140C



Tube O.D. Butt Weld Fittings

Top Line has been supplying high quality stainless steel products to the dairy, food, beverage, pharmaceutical and other process industries for over twenty-five years. Our commitment to fine craftsmanship, responsible service and realistic pricing has led to our company's successive years of growth.

Top Line specializes in stainless steel materials—types 304, 316 and “L grades”. Our modern, well equipped manufacturing facilities are staffed by skilled and dedicated craftsmen. Consistently meeting important tolerances and finish specification is of primary concern to us. Before any products leave our plant they are subjected to rigid quality assurance checks.

Top Line should always be considered your first choice for both standard and custom fabricated stainless steel products.



Butt Weld Fittings Specifications

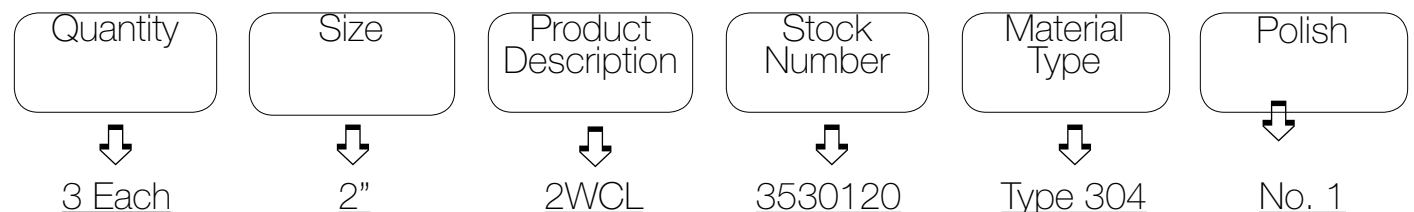
Size Range: 1" OD through 6" OD
Materials: 304 (Stock No. Prefix 35)
316L (Stock No. Prefix 39)
Finish: No. 1 – Unpolished (Standard)
No. 7 – Polished ID and OD

Ordering Specifications

Specify:

- Quantity
- Size
- Product Description
- Stock Number
- Material Type
- Polish Requirements

Example



LIMITED WARRANTY

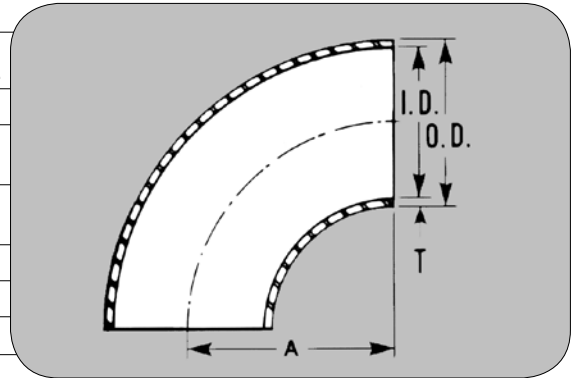
Top Line Process Equipment Company products are warranted to be free of defects in material or workmanship for a period of one year from date of shipment. Warranty covers those Top Line products used in an approved installation and maintained in strict accordance with recognized standard industry practice. If, after properly authorized return, Top Line determines that products are defective, Top Line may at its option, repair or replace such defective products.

Top Line shall not be liable for consequential, indirect or incidental damages. The above warranty is in lieu of all other warranties, expressed or implied.

*Styles and dimensions are subject to change without notice.

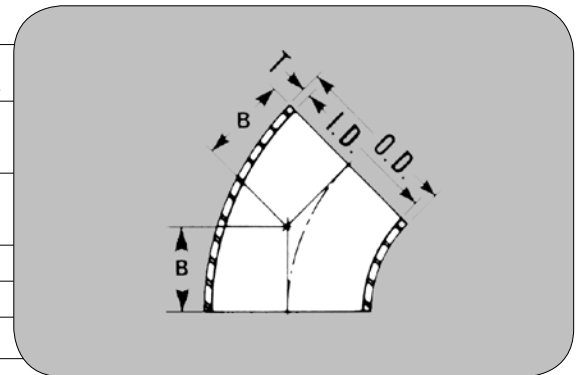
2WCL-L.R. 90° ELL

SIZE (TUBE O.D.)	O.D.	I.D.	T	A	STOCK NO.
3/4	.750	.620	.065	1-1/8	3530107V
1	1.000	.870	.065	1-1/2	3530110
1-1/2	1.500	1.370	.065	2-1/4	3530115
2	2.000	1.870	.065	3	3530120
2-1/2	2.500	2.370	.065	3-3/4	3530125
3	3.000	2.870	.065	4-1/2	3530130
4	4.000	3.834	.083	6	3530140
6	6.000	5.782	.109	9	3530160



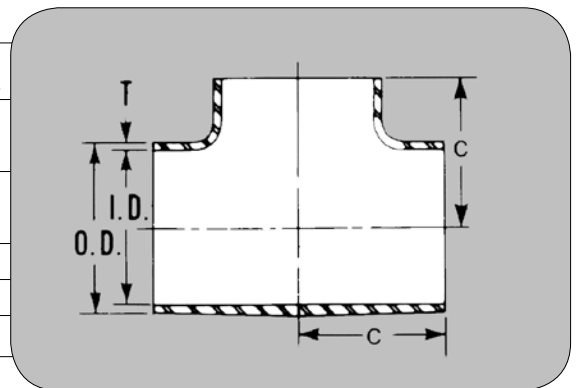
2WK-L.R. 45° ELL

SIZE (TUBE O.D.)	O.D.	I.D.	T	B	STOCK NO.
1	1.000	.870	.065	5/8	3530310
1-1/2	1.500	1.370	.065	15/16	3530315
2	2.000	1.870	.065	1-1/4	3530320
2-1/2	2.500	2.370	.065	1-9/16	3530325
3	3.000	2.870	.065	1-7/8	3530330
4	4.000	3.834	.083	2-1/2	3530340
6	6.000	5.782	.109	3-3/4	3530360



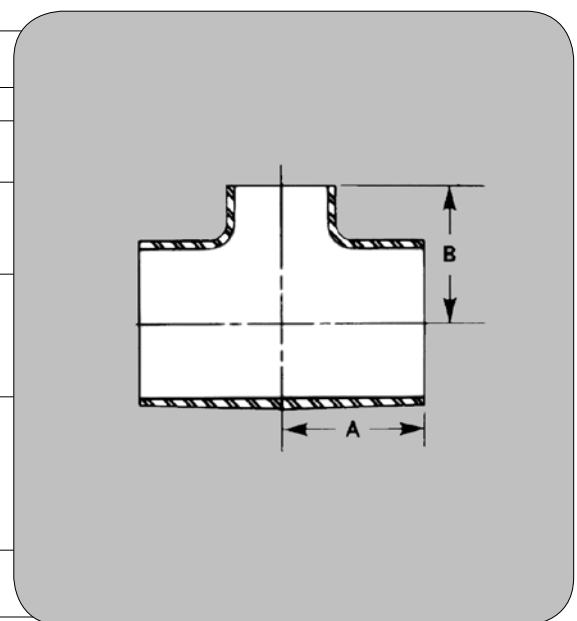
7W TEE

SIZE (TUBE O.D.)	O.D.	I.D.	T	C	STOCK NO.
1	1.000	.870	.065	1-7/8	3530610
1-1/2	1.500	1.370	.065	2-1/4	3530615
2	2.000	1.870	.065	3	3530620
2-1/2	2.500	2.370	.065	3	3530625
3	3.000	2.870	.065	3-1/4	3530630
4	4.000	3.834	.083	3-7/8	3530640
6	6.000	5.782	.109	5	3530660

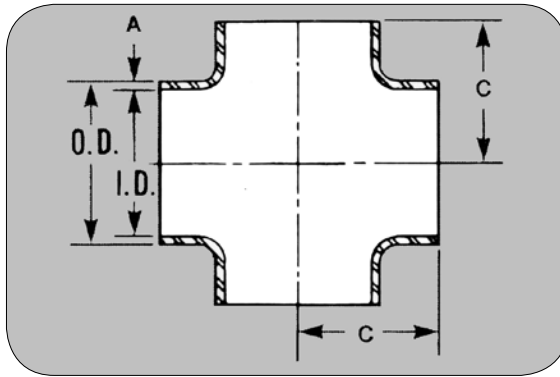


7WR REDUCING TEE

SIZE (TUBE O.D.)	A	B	STOCK NO.
1-1/2 X 1	2-1/4	2-1/8	3530515R-10
2 X 1	3	2-3/8	3530520R-10
2 X 1-1/2	3	2-1/2	3530520R-15
2-1/2 X 1	3	2-3/4	3530525R-10
2-1/2 X 1-1/2	3	2-3/4	3530525R-15
2-1/2 X 2	3	3-1/4	3530525R-20
3 X 1	3-1/4	3	3530530R-10
3 X 1-1/2	3-1/4	3	3530530R-15
3 X 2	3-1/4	3-1/2	3530530R-20
3 X 2-1/2	3-1/4	3-1/4	3530530R-25
4 X 1	3-7/8	4	3530540R-10
4 X 1-1/2	3-7/8	4	3530540R-15
4 X 2	3-7/8	4	3530540R-20
4 X 2-1/2	3-7/8	3-3/4	3530540R-25
4 X 3	3-7/8	3-3/4	3530540R-30
6 X 3	5	4-3/4	3530560R-30
6 X 4	5	4-7/8	3530560R-40

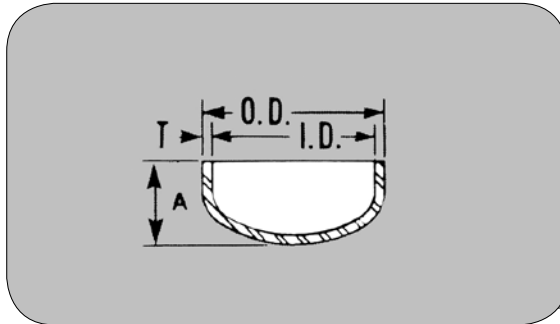


9W CROSS



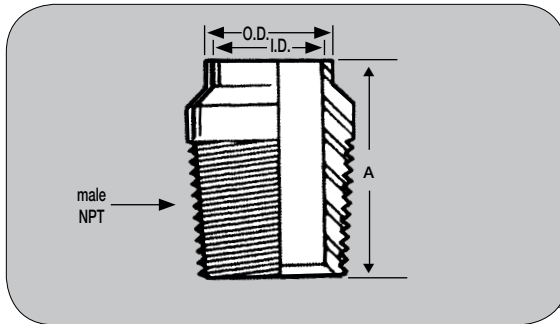
SIZE (TUBE O.D.)	O.D.	I.D.	A	C	STOCK NO.
1	1.000	.870	.065	1-7/8	3530410
1-1/2	1.500	1.370	.065	2-1/4	3530415
2	2.000	1.870	.065	3	3530420
2-1/2	2.500	2.370	.065	3	3530425
3	3.000	2.870	.065	3-1/4	3530430
4	4.000	3.834	.083	3-7/8	3530440
6	6.000	5.782	.109	5	3530460

16W CAP



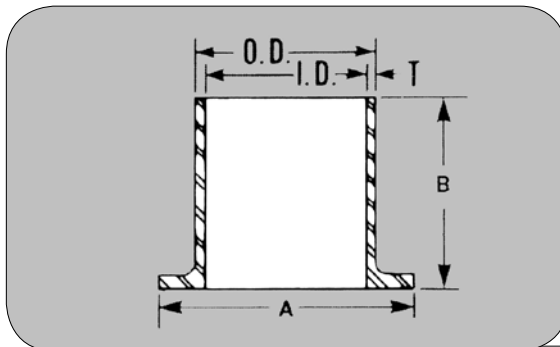
SIZE (TUBE O.D.)	O.D.	I.D.	T	A	STOCK NO.
1	1.000	.870	.065	3/8	3531610
1-1/2	1.500	1.370	.065	9/16	3531615
2	2.000	1.870	.065	3/4	3531620
2-1/2	2.500	2.370	.065	1	3531625
3	3.000	2.870	.065	1-1/4	3531630
4	4.000	3.834	.083	1-1/2	3531640

19WB ADAPTER



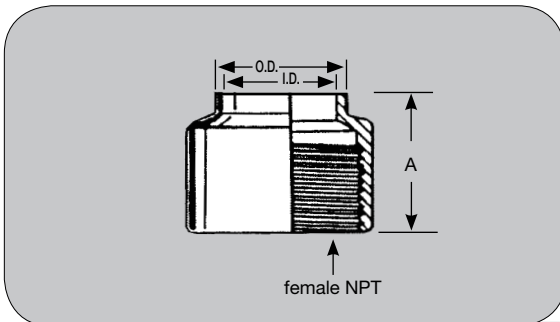
SIZE (TUBE O.D.)	O.D.	I.D.	A	STOCK NO.
1	1.000	.870	1-3/4	3531910
1-1/2	1.500	1.370	1-3/4	3531915
2	2.000	1.870	1-13/16	3531920
2-1/2	2.500	2.370	2-5/16	3531925
3	3.000	2.870	2-1/2	3531930
4	4.000	3.834	2-9/16	3531940

14VB STUB END



SIZE (TUBE O.D.)	O.D.	I.D.	T	A	B	STOCK NO.
1	1.000	.870	.065	2	1-5/8	3530710LS
1-1/2	1.500	1.370	.065	2-7/8	1-3/4	3530715LS
2	2.000	1.870	.065	3-5/8	1-1/2	3530720LS
2-1/2	2.500	2.370	.065	4-1/8	2	3530725LS
3	3.000	2.870	.065	5	2-1/4	3530730LS
4	4.000	3.834	.083	6-3/16	2-5/8	3530740LS
6	6.000	5.782	.109	8-1/2	3	3530760LS

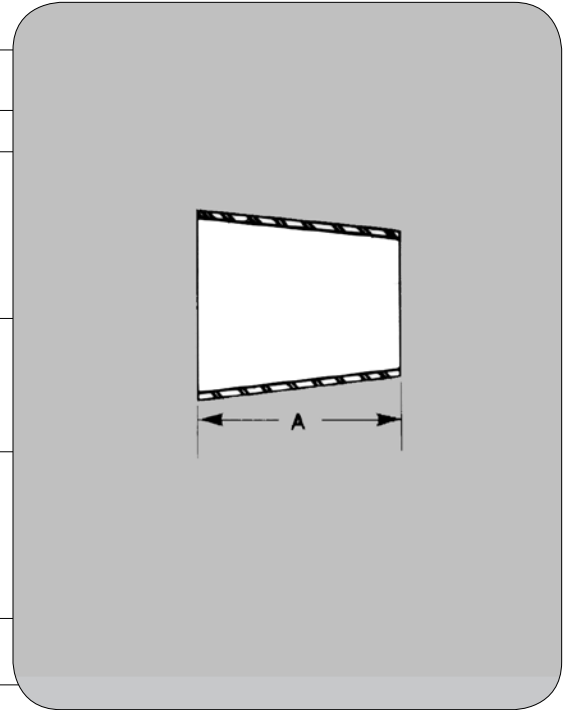
22WB ADAPTER



SIZE (TUBE O.D.)	O.D.	I.D.	A	STOCK NO.
1	1.00	0.870	1-3/4	3532210
1-1/2	1.50	1.370	1-3/4	3532215
2	2.00	1.870	1-3/4	3532220
2-1/2	2.50	2.370	2-1/4	3532225
3	3.00	2.870	2-1/2	3532230
4	4.00	3.834	2-5/8	3532240

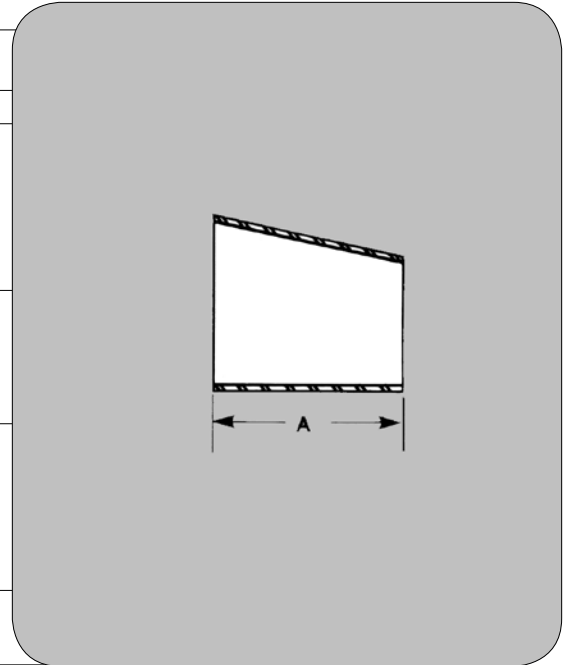
31W CONCENTRIC REDUCER

SIZE (TUBE O.D.)	A	STOCK NO.
1-1/2 X 1	2	3530815-10
2 X 1	4	3530820-10
2 X 1-1/2	2	3530820-15
2-1/2 X 1	6	3530825-10
2-1/2 X 1-1/2	4	3530825-15
2-1/2 X 2	2	3530825-20
3 X 1	8	3530830-10
3 X 1-1/2	6	3530830-15
3 X 2	4	3530830-20
3 X 2-1/2	2	3530830-25
4 X 1	12	3530840-10
4 X 1-1/2	10	3530840-15
4 X 2	8	3530840-20
4 X 2-1/2	6	3530840-25
4 X 3	4	3530840-30
6 X 3	6	3530860-30
6 X 4	4	3530860-40



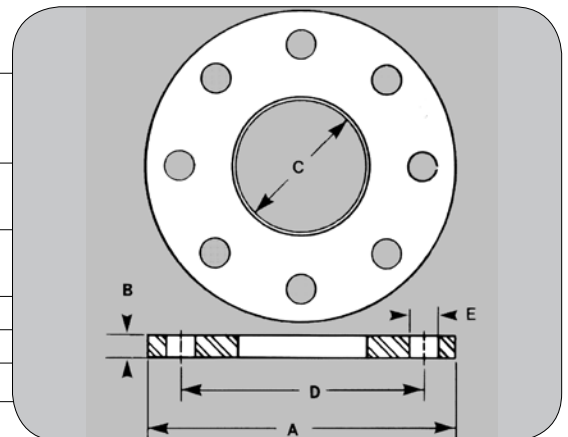
32W ECCENTRIC REDUCER

SIZE (TUBE O.D.)	A	STOCK NO.
1-1/2 X 1	2	3530915-10
2 X 1	4	3530920-10
2 X 1-1/2	2	3530920-15
2-1/2 X 1	6	3530925-10
2-1/2 X 1-1/2	4	3530925-15
2-1/2 X 2	2	3530925-20
3 X 1	8	3530930-10
3 X 1-1/2	6	3530930-15
3 X 2	4	3530930-20
3 X 2-1/2	2	3530930-25
4 X 1	12	3530940-10
4 X 1-1/2	10	3530940-15
4 X 2	8	3530940-20
4 X 2-1/2	6	3530940-25
4 X 3	4	3530940-30
6 X 3	6	3530960-30
6 X 4	4	3530960-40



38SL BACK-UP FLANGE (Ty 304 STAINLESS)

SIZE (TUBE O.D.)	OUTSIDE DIA. A	WALL THICKNESS B	INSIDE DIA. C	BOLT CIRCLE D	NO. & DIA OF BOLT HOLE E	STOCK NO.
1	4-1/4	3/8	1.063	3-1/8	4-5/8	335-1
1-1/2	5	3/8	1.563	3-7/8	4-5/8	355-15
2	6	7/16	2.063	4-3/4	4-3/4	355-2
2-1/2	7	7/16	2.563	5-1/2	4-3/4	355-25
3	7-1/2	1/2	3.063	6	4-3/4	355-3
4	9	1/2	4.063	7-1/2	8-3/4	355-4
6	11	9/16	6.063	9-1/2	8-7/8	355-6



1/2" AND 3/4" SIZES UPON REQUEST

BPE Fittings

Top Line precision crafted automatic weld fittings provide reliable components which are designed for today's high speed automatic welding equipment. Automatic weld fittings are provided with sanitary finishes that meet or exceed pharmaceutical process specifications. Top Line fittings are manufactured to dimensional specifications per ASME BPE.



BPE Fittings Specifications

Size Range: 1/2" OD through 6" OD

Materials: 316L (Stock No. Prefix 40) for Weld Connections
316L (Stock No. Prefix 48) for Clamp Connections

Ferrule Type: See page 45 for Type "A" & Type "B" ferrule differences

Finish:
No. 3 - 20RA ID/Mill OD (ASME BPE SF1)
No. 3 EP - 15 RA ID Electropolish/Mill OD (ASME BPE SF4)
No. 7 - 20RA ID/32RA OD (ASME BPE SF1)
No. 7EP - 15RA ID Electropolish/32RA OD (ASME BPE SF4)
No. 1 - Unpolished (ASME BPE SF0)
10RA ID available

Ordering Specifications

Specify:

- Quantity
- Size
- Product Description
- Stock Number
- Polish Requirements

Example

Quantity	Size	Product Description	Stock Number	Material Type	Polish
↓	↓	↓	↓	↓	↓
<u>3 Each</u>	<u>2"</u>	<u>TL2S-90°</u>	<u>40720-3</u>	<u>Type 316L</u>	<u>No. 3</u>

Please Note: -7 & -7EP parts are available, use these designations for suffix codes

ELBOWS

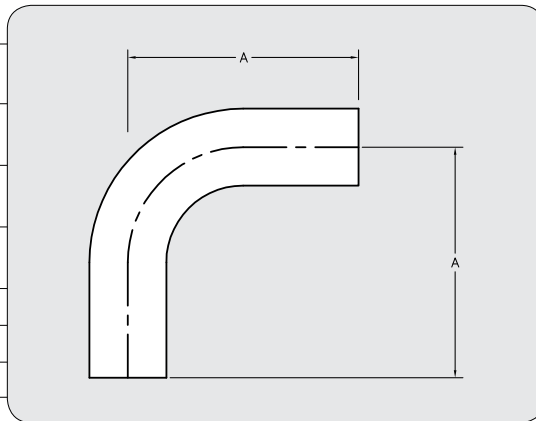
BPE FITTINGS



TL2S 90° ELL

ASME BPE#
DT-7

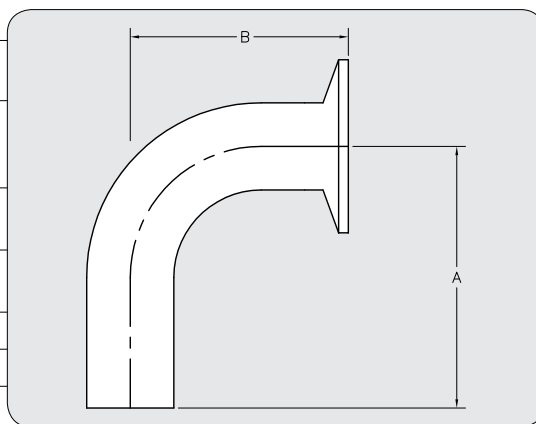
SIZE (TUBE O.D.)	A	STOCK NO. 20 RA ID	STOCK NO. 15 RA EP ID
1/2	3	40705 - 3	40705 - 3EP
3/4	3	40707 - 3	40707 - 3EP
1	3	40710 - 3	40710 - 3EP
1-1/2	3-3/4	40715 - 3	40715 - 3EP
2	4-3/4	40720 - 3	40720 - 3EP
2-1/2	5-1/2	40725 - 3	40725 - 3EP
3	6-1/4	40730 - 3	40730 - 3EP
4	8	40740 - 3	40740 - 3EP
6	11-1/2	40760 - 3	40760 - 3EP



TL2CMS 90° ELL

ASME BPE#
DT-12

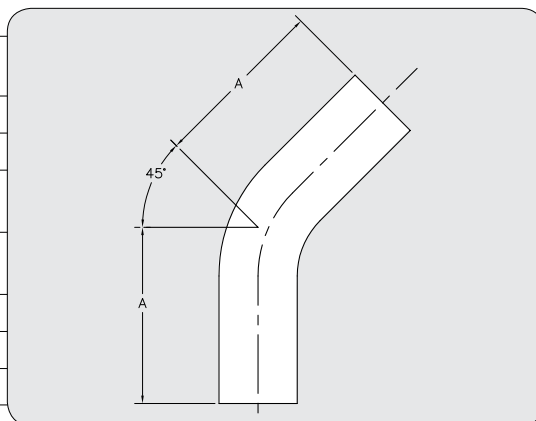
SIZE (TUBE O.D.)	TYPE	A	B	STOCK NO. 20 RA ID	STOCK NO. 15 RA EP ID
1/2	A	3	1-5/8	407MS05 - 3	407MS05 - 3EP
3/4	A	3	1-5/8	407MS07 - 3	407MS07 - 3EP
1	A	3	2	407MS10A - 3	407MS10A - 3EP
1	B	3	2	407MS10 - 3	407MS10 - 3EP
1-1/2	B	3-3/4	2-3/4	407MS15 - 3	407MS15 - 3EP
2	B	4-3/4	3-1/2	407MS20 - 3	407MS20 - 3EP
2-1/2	B	5-1/2	4-1/4	407MS25 - 3	407MS25 - 3EP
3	B	6-1/4	5	407MS30 - 3	407MS30 - 3EP
4	B	8	6-5/8	407MS40 - 3	407MS40 - 3EP
6	B	11-1/2	10-1/2	407MS60 - 3	407MS60 - 3EP



TL2KS 45° ELL

ASME BPE#
DT-8

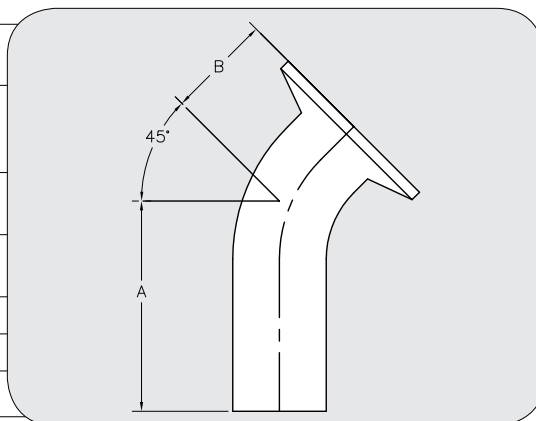
SIZE (TUBE O.D.)	A	STOCK NO. 20 RA ID	STOCK NO. 15 RA EP ID
1/2	2-1/4	40805 - 3	40805 - 3EP
3/4	2-1/4	40807 - 3	40807 - 3EP
1	2-1/4	40810 - 3	40810 - 3EP
1-1/2	2-1/2	40815 - 3	40815 - 3EP
2	3	40820 - 3	40820 - 3EP
2-1/2	3-3/8	40825 - 3	40825 - 3EP
3	3-5/8	40830 - 3	40830 - 3EP
4	4-1/2	40840 - 3	40840 - 3EP
6	6-1/4	40860 - 3	40860 - 3EP

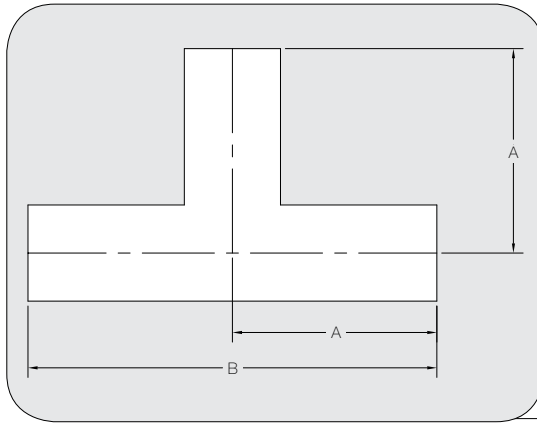


TL2KMS 45° ELL

ASME BPE#
DT-13

SIZE (TUBE O.D.)	TYPE	A	B	STOCK NO. 20 RA ID	STOCK NO. 15 RA EP ID
1/2	A	2-1/4	1	408MS05 - 3	408MS05 - 3EP
3/4	A	2-1/4	1	408MS07 - 3	408MS07 - 3EP
1	A	2-1/4	1-1/8	408MS10A - 3	408MS10A - 3EP
1	B	2-1/4	1-1/8	408MS10 - 3	408MS10 - 3EP
1-1/2	B	2-1/2	1-7/16	408MS15 - 3	408MS15 - 3EP
2	B	3	1-3/4	408MS20 - 3	408MS20 - 3EP
2-1/2	B	3-3/8	2-1/16	408MS25 - 3	408MS25 - 3EP
3	B	3-5/8	2-3/8	408MS30 - 3	408MS30 - 3EP
4	B	4-1/2	3-1/8	408MS40 - 3	408MS40 - 3EP
6	B	6-1/4	5-1/4	408MS60 - 3	408MS60 - 3EP

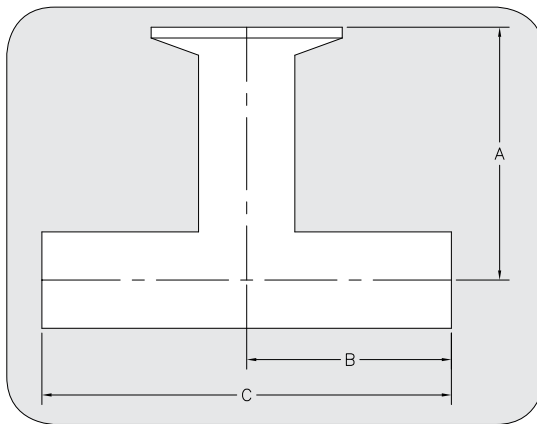




TL7WVVV TEE

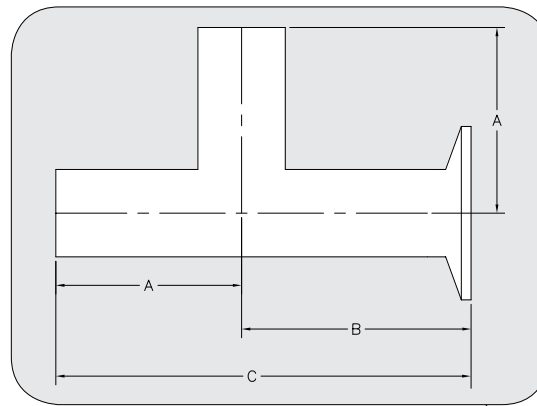
ASME BPE#
DT-9

SIZE (TUBE O.D.)	A	B	STOCK NO. 20 RA ID	STOCK NO. 15 RA EP ID
1/2	1-7/8	3-3/4	401105 - 3	401105 - 3EP
3/4	2	4	401107 - 3	401107 - 3EP
1	2-1/8	4-1/4	401110 - 3	401110 - 3EP
1-1/2	2-3/8	4-3/4	401115 - 3	401115 - 3EP
2	2-7/8	5-3/4	401120 - 3	401120 - 3EP
2-1/2	3-1/8	6-1/4	401125 - 3	401125 - 3EP
3	3-3/8	6-3/4	401130 - 3	401130 - 3EP
4	4-1/8	8-1/4	401140 - 3	401140 - 3EP
6	5-5/8	11-1/4	401160 - 3	401160 - 3EP



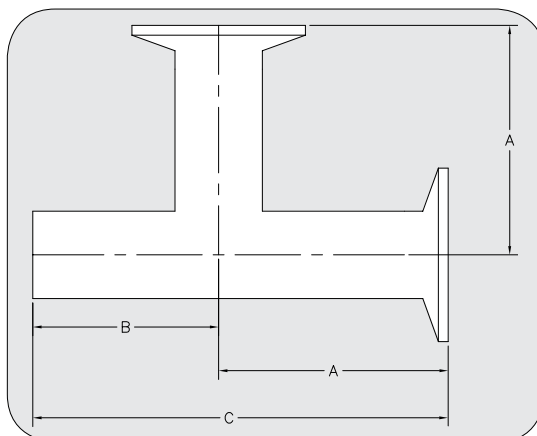
TL7WVM TEE

SIZE (TUBE O.D.)	TYPE	A	B	C	STOCK NO. 20 RA ID	STOCK NO. 15 RA EP ID
1/2	A	2-3/8	1-7/8	3-3/4	4011MB05 - 3	4011MB05 - 3EP
3/4	A	2-1/2	2	4	4011MB07 - 3	4011MB07 - 3EP
1	A	2-5/8	2-1/8	4-1/4	4011MB10A - 3	4011MB10A - 3EP
1	B	2-5/8	2-1/8	4-1/4	4011MB10 - 3	4011MB10 - 3EP
1-1/2	B	2-7/8	2-3/8	4-3/4	4011MB15 - 3	4011MB15 - 3EP
2	B	3-3/8	2-7/8	5-3/4	4011MB20 - 3	4011MB20 - 3EP
2-1/2	B	3-5/8	3-1/8	6-1/4	4011MB25 - 3	4011MB25 - 3EP
3	B	3-7/8	3-3/8	6-3/4	4011MB30 - 3	4011MB30 - 3EP
4	B	4-3/4	4-1/8	8-1/4	4011MB40 - 3	4011MB40 - 3EP
6	B	6-3/8	5-5/8	11-1/4	4011MB60 - 3	4011MB60 - 3EP



TL7WMW TEE

SIZE (TUBE O.D.)	TYPE	A	B	C	STOCK NO. 20 RA ID	STOCK NO. 15 RA EP ID
1/2	A	1-7/8	2-3/8	4-1/4	4011M05 - 3	4011M05 - 3EP
3/4	A	2	2-1/2	4-1/2	4011M07 - 3	4011M07 - 3EP
1	A	2-1/8	2-5/8	4-3/4	4011M10A - 3	4011M10A - 3EP
1	B	2-1/8	2-5/8	4-3/4	4011M10 - 3	4011M10 - 3EP
1-1/2	B	2-3/8	2-7/8	5-1/4	4011M15 - 3	4011M15 - 3EP
2	B	2-7/8	3-3/8	6-1/4	4011M20 - 3	4011M20 - 3EP
2-1/2	B	3-1/8	3-5/8	6-3/4	4011M25 - 3	4011M25 - 3EP
3	B	3-3/8	3-7/8	7-1/4	4011M30 - 3	4011M30 - 3EP
4	B	4-1/8	4-3/4	8-7/8	4011M40 - 3	4011M40 - 3EP
6	B	5-5/8	6-3/8	12	4011M60 - 3	4011M60 - 3EP



TL7WMM TEE

SIZE (TUBE O.D.)	TYPE	A	B	C	STOCK NO. 20 RA ID	STOCK NO. 15 RA EP ID
1/2	A	2-3/8	1-7/8	4-1/4	4011MMB05 - 3	4011MMB05 - 3EP
3/4	A	2-1/2	2	4-1/2	4011MMB07 - 3	4011MMB07 - 3EP
1	A	2-5/8	2-1/8	4-3/4	4011MMB10A - 3	4011MMB10A - 3EP
1	B	2-5/8	2-1/8	4-3/4	4011MMB10 - 3	4011MMB10 - 3EP
1-1/2	B	2-7/8	2-3/8	5-1/4	4011MMB15 - 3	4011MMB15 - 3EP
2	B	3-3/8	2-7/8	6-1/4	4011MMB20 - 3	4011MMB20 - 3EP
2-1/2	B	3-5/8	3-1/8	6-3/4	4011MMB25 - 3	4011MMB25 - 3EP
3	B	3-7/8	3-3/8	7-1/4	4011MMB30 - 3	4011MMB30 - 3EP
4	B	4-3/4	4-1/8	8-7/8	4011MMB40 - 3	4011MMB40 - 3EP
6	B	6-3/8	5-5/8	12	4011MMB60 - 3	4011MMB60 - 3EP

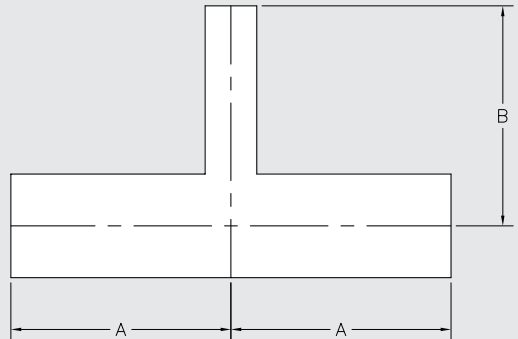
TEES

TL7RWWWW REDUCING TEE

ASME BPE#

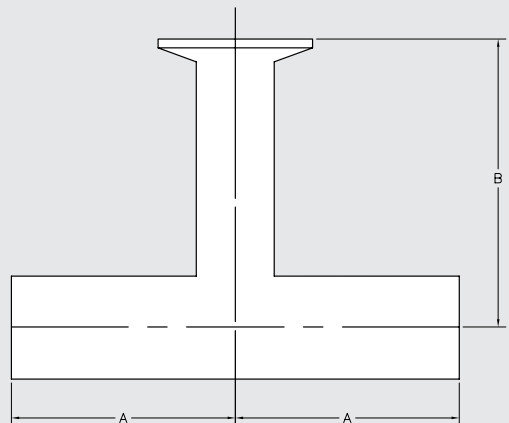
DT-10

SIZE	A	B	STOCK NO. 20 RA ID	STOCK NO. 15 RA EP ID
3/4 X 1/2	2	2	401107R05 - 3	401107R05 - 3EP
1 X 1/2	2-1/8	2-1/8	401110R05 - 3	401110R05 - 3EP
1 X 3/4	2-1/8	2-1/8	401110R07 - 3	401110R07 - 3EP
1-1/2 X 1/2	2-3/8	2-3/8	401115R05 - 3	401115R05 - 3EP
1-1/2 X 3/4	2-3/8	2-3/8	401115R07 - 3	401115R07 - 3EP
1-1/2 X 1	2-3/8	2-3/8	401115R10 - 3	401115R10 - 3EP
2 X 1/2	2-7/8	2-5/8	401120R05 - 3	401120R05 - 3EP
2 X 3/4	2-7/8	2-5/8	401120R07 - 3	401120R07 - 3EP
2 X 1	2-7/8	2-5/8	401120R10 - 3	401120R10 - 3EP
2 X 1-1/2	2-7/8	2-5/8	401120R15 - 3	401120R15 - 3EP
2-1/2 X 1/2	3-1/8	2-7/8	401125R05 - 3	401125R05 - 3EP
2-1/2 X 3/4	3-1/8	2-7/8	401125R07 - 3	401125R07 - 3EP
2-1/2 X 1	3-1/8	2-7/8	401125R10 - 3	401125R10 - 3EP
2-1/2 X 1-1/2	3-1/8	2-7/8	401125R15 - 3	401125R15 - 3EP
2-1/2 X 2	3-1/8	2-7/8	401125R20 - 3	401125R20 - 3EP
3 X 1/2	3-3/8	3-1/8	401130R05 - 3	401130R05 - 3EP
3 X 3/4	3-3/8	3-1/8	401130R07 - 3	401130R07 - 3EP
3 X 1	3-3/8	3-1/8	401130R10 - 3	401130R10 - 3EP
3 X 1-1/2	3-3/8	3-1/8	401130R15 - 3	401130R15 - 3EP
3 X 2	3-3/8	3-1/8	401130R20 - 3	401130R20 - 3EP
3 X 2-1/2	3-3/8	3-1/8	401130R25 - 3	401130R25 - 3EP
4 X 1/2	4-1/8	3-5/8	401140R05 - 3	401140R05 - 3EP
4 X 3/4	4-1/8	3-5/8	401140R07 - 3	401140R07 - 3EP
4 X 1	4-1/8	3-5/8	401140R10 - 3	401140R10 - 3EP
4 X 1-1/2	4-1/8	3-5/8	401140R15 - 3	401140R15 - 3EP
4 X 2	4-1/8	3-7/8	401140R20 - 3	401140R20 - 3EP
4 X 2-1/2	4-1/8	3-7/8	401140R25 - 3	401140R25 - 3EP
4 X 3	4-1/8	3-7/8	401140R30 - 3	401140R30 - 3EP
6 X 4	5-5/8	5-1/8	401160R40 - 3	401160R40 - 3EP



TL7RWWMM REDUCING TEE

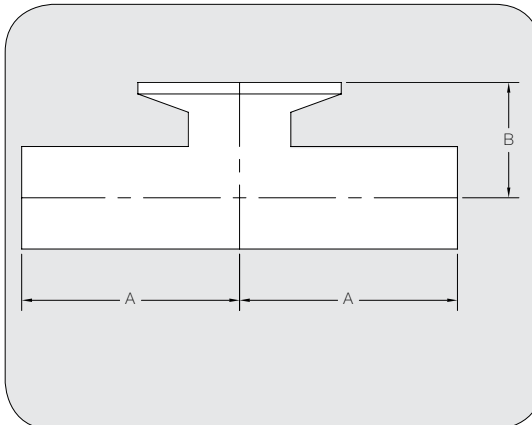
SIZE	TYPE	A	B	STOCK NO. 20 RA ID	STOCK NO. 15 RA EP ID
3/4 X 1/2	A/A	2	2-1/2	401107MB05 - 3	401107MB05 - 3EP
1 X 1/2	B/A	2-1/8	1-1/8	401110MB05 - 3	401110MB05 - 3EP
1 X 3/4	B/A	2-1/8	1-1/8	401110MB07 - 3	401110MB07 - 3EP
1-1/2 X 1/2	B/A	2-3/8	1-3/8	401115MB05 - 3	401115MB05 - 3EP
1-1/2 X 3/4	B/A	2-3/8	1-3/8	401115MB07 - 3	401115MB07 - 3EP
1-1/2 X 1	B/A	2-3/8	1-3/8	401115MB10A - 3	401115MB10A - 3EP
1-1/2 X 1	B/B	2-3/8	1-3/8	401115MB10 - 3	401115MB10 - 3EP
2 X 1/2	B/A	2-7/8	1-5/8	401120MB05 - 3	401120MB05 - 3EP
2 X 3/4	B/A	2-7/8	1-5/8	401120MB07 - 3	401120MB07 - 3EP
2 X 1	B/A	2-7/8	1-5/8	401120MB10A - 3	401120MB10A - 3EP
2 X 1	B/B	2-7/8	1-5/8	401120MB10 - 3	401120MB10 - 3EP
2 X 1-1/2	B/B	2-7/8	1-5/8	401120MB15 - 3	401120MB15 - 3EP
2-1/2 X 1/2	B/A	3-1/8	1-7/8	401125MB05 - 3	401125MB05 - 3EP
2-1/2 X 3/4	B/A	3-1/8	1-7/8	401125MB07 - 3	401125MB07 - 3EP
2-1/2 X 1	B/A	3-1/8	1-7/8	401125MB10A - 3	401125MB10A - 3EP
2-1/2 X 1	B/B	3-1/8	1-7/8	401125MB10 - 3	401125MB10 - 3EP
2-1/2 X 1-1/2	B/B	3-1/8	1-7/8	401125MB15 - 3	401125MB15 - 3EP
2-1/2 X 2	B/B	3-1/8	1-7/8	401125MB20 - 3	401125MB20 - 3EP
3 X 1/2	B/A	3-3/8	2-1/8	401130MB05 - 3	401130MB05 - 3EP
3 X 3/4	B/A	3-3/8	2-1/8	401130MB07 - 3	401130MB07 - 3EP
3 X 1	B/A	3-3/8	2-1/8	401130MB10A - 3	401130MB10A - 3EP
3 X 1	B/B	3-3/8	2-1/8	401130MB10 - 3	401130MB10 - 3EP
3 X 1-1/2	B/B	3-3/8	2-1/8	401130MB15 - 3	401130MB15 - 3EP
3 X 2	B/B	3-3/8	2-1/8	401130MB20 - 3	401130MB20 - 3EP
3 X 2-1/2	B/B	3-3/8	2-1/8	401130MB25 - 3	401130MB25 - 3EP
4 X 1/2	B/A	4-1/8	2-5/8	401140MB05 - 3	401140MB05 - 3EP
4 X 3/4	B/A	4-1/8	2-5/8	401140MB07 - 3	401140MB07 - 3EP
4 X 1	B/A	4-1/8	2-5/8	401140MB10A - 3	401140MB10A - 3EP
4 X 1	B/B	4-1/8	2-5/8	401140MB10 - 3	401140MB10 - 3EP
4 X 1-1/2	B/B	4-1/8	2-5/8	401140MB15 - 3	401140MB15 - 3EP
4 X 2	B/B	4-1/8	2-5/8	401140MB20 - 3	401140MB20 - 3EP
4 X 2-1/2	B/B	4-1/8	2-5/8	401140MB25 - 3	401140MB25 - 3EP
4 X 3	B/B	4-1/8	2-5/8	401140MB30 - 3	401140MB30 - 3EP
6 X 4	B/B	5-5/8	3-3/4	401160MB40 - 3	401160MB40 - 3EP



ASME BPE#

TL7WWMMS SHORT OUTLET TEE

DT-15



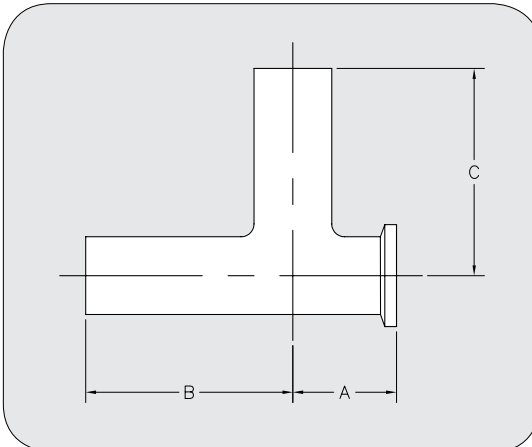
SIZE (TUBE O.D.)	TYPE	A	B	STOCK NO. 20 RA ID	STOCK NO. 15 RA EP ID
1/2	A	1-7/8	1	401105S - 3*	401105S - 3EP*
3/4	A	2	1-1/8	401107S - 3	401107S - 3EP
1	A	2-1/8	1-1/8	401110SA - 3	401110SA - 3EP
1	B	2-1/8	1-1/8	401110S - 3*	401110S - 3EP*
1-1/2	B	2-3/8	1-3/8	401115S - 3*	401115S - 3EP*
2	B	2-7/8	1-5/8	401120S - 3	401120S - 3EP
2-1/2	B	3-1/8	1-7/8	401125S - 3	401125S - 3EP
3	B	3-3/8	2-1/8	401130S - 3*	401130S - 3EP*
4	B	4-1/8	2-3/4	401140S - 3*	401140S - 3EP*
6	B	5-5/8	4-5/8	401160S - 3*	401160S - 3EP*

*DOES NOT MEET MINIMUM TANGENT LENGTHS IN ASME BPE TABLE DT-4

ASME BPE#

TL7WMSW SHORT OUTLET RUN TEE

DT-25



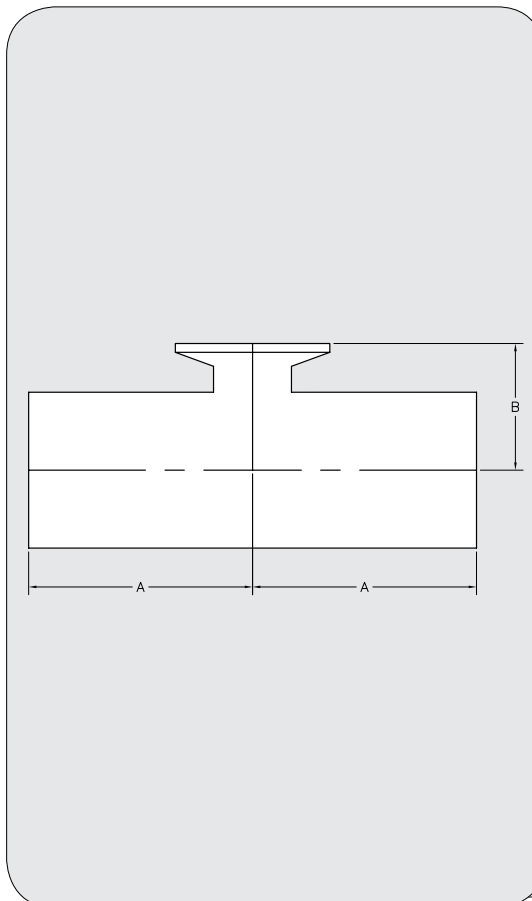
SIZE (TUBE O.D.)	TYPE	A	B	C	STOCK NO. 20RA ID	STOCK NO. 15RA EP ID
1/2	A	7/8	1-7/8	1-7/8	4011MS05-3*	4011MS05-3EP*
3/4	A	1	2	2	4011MS07-3	4011MS07-3EP
1	A	1-1/8	2-1/8	2-1/8	4011MS10A-3	4011MS10A-3EP
1	B	1-1/8	2-1/8	2-1/8	4011MS10-3*	4011MS10-3EP*
1-1/2	B	1-3/8	2-3/8	2-3/8	4011MS15-3*	4011MS15-3EP*
2	B	1-5/8	2-5/8	2-5/8	4011MS20-3	4011MS20-3EP
2-1/2	B	1-7/8	3-1/8	3-1/8	4011MS25-3	4011MS25-3EP
3	B	2-1/8	3-7/8	3-7/8	4011MS30-3*	4011MS30-3EP*
4	B	2-3/4	4-1/8	4-1/8	4011MS40-3*	4011MS40-3EP*
6	B	4-5/8	5-5/8	5-5/8	4011MS60-3*	4011MS60-3EP*

*DOES NOT MEET MINIMUM TANGENT LENGTHS IN ASME BPE TABLE DT-4

ASME BPE#

TL7RWWMS REDUCING SHORT OUTLET TEE

DT-14



SIZE (TUBE O.D.)	TYPE	A	B	STOCK NO. 20 RA ID	STOCK NO. 15 RA EP ID
3/4 X 1/2	A/A	2	1	401107RS05 - 3	401107RS05 - 3EP
1 X 1/2	B/A	2-1/8	1-1/8	401110RS05 - 3	401110RS05 - 3EP
1 X 3/4	B/A	2-1/8	1-1/8	401110RS07 - 3	401110RS07 - 3EP
1-1/2 X 1/2	B/A	2-3/8	1-3/8	401115RS05 - 3	401115RS05 - 3EP
1-1/2 X 3/4	B/A	2-3/8	1-3/8	401115RS07 - 3	401115RS07 - 3EP
1-1/2 X 1	B/A	2-3/8	1-3/8	401115RS10A - 3	401115RS10A - 3EP
1-1/2 X 1	B/B	2-3/8	1-3/8	401115RS10 - 3*	401115RS10 - 3EP*
2 X 1/2	B/A	2-7/8	1-5/8	401120RS05 - 3	401120RS05 - 3EP
2 X 3/4	B/A	2-7/8	1-5/8	401120RS07 - 3	401120RS07 - 3EP
2 X 1	B/A	2-7/8	1-5/8	401120RS10A - 3	401120RS10A - 3EP
2 X 1	B/B	2-7/8	1-5/8	401120RS10 - 3	401120RS10 - 3EP
2 X 1-1/2	B/B	2-7/8	1-5/8	401120RS15 - 3	401120RS15 - 3EP
2-1/2 X 1/2	B/A	3-1/8	1-7/8	401125RS05 - 3	401125RS05 - 3EP
2-1/2 X 3/4	B/A	3-1/8	1-7/8	401125RS07 - 3	401125RS07 - 3EP
2-1/2 X 1	B/A	3-1/8	1-7/8	401125RS10A - 3	401125RS10A - 3EP
2-1/2 X 1	B/B	3-1/8	1-7/8	401125RS10 - 3	401125RS10 - 3EP
2-1/2 X 1-1/2	B/B	3-1/8	1-7/8	401125RS15 - 3	401125RS15 - 3EP
2-1/2 X 2	B/B	3-1/8	1-7/8	401125RS20 - 3	401125RS20 - 3EP
3 X 1/2	B/A	3-3/8	2-1/8	401130RS05 - 3	401130RS05 - 3EP
3 X 3/4	B/A	3-3/8	2-1/8	401130RS07 - 3	401130RS07 - 3EP
3 X 1	B/A	3-3/8	2-1/8	401130RS10A - 3	401130RS10A - 3EP
3 X 1	B/B	3-3/8	2-1/8	401130RS10 - 3	401130RS10 - 3EP
3 X 1-1/2	B/B	3-3/8	2-1/8	401130RS15 - 3	401130RS15 - 3EP
3 X 2	B/B	3-3/8	2-1/8	401130RS20 - 3	401130RS20 - 3EP
3 X 2-1/2	B/B	3-3/8	2-1/8	401130RS25 - 3	401130RS25 - 3EP
4 X 1/2	B/A	4-1/8	2-5/8	401140RS05 - 3	401140RS05 - 3EP
4 X 3/4	B/A	4-1/8	2-5/8	401140RS07 - 3	401140RS07 - 3EP
4 X 1	B/A	4-1/8	2-5/8	401140RS10A - 3	401140RS10A - 3EP
4 X 1	B/B	4-1/8	2-5/8	401140RS10 - 3	401140RS10 - 3EP
4 X 1-1/2	B/B	4-1/8	2-5/8	401140RS15 - 3	401140RS15 - 3EP
4 X 2	B/B	4-1/8	2-5/8	401140RS20 - 3	401140RS20 - 3EP
4 X 2-1/2	B/B	4-1/8	2-5/8	401140RS25 - 3	401140RS25 - 3EP
4 X 3	B/B	4-1/8	2-5/8	401140RS30 - 3	401140RS30 - 3EP
6 X 4	B/B	5-5/8	3-3/4	401160RS40 - 3	401160RS40 - 3EP

*DOES NOT MEET MINIMUM TANGENT LENGTHS IN ASME BPE TABLE DT-4

CAPS, CROSSES & REDUCERS

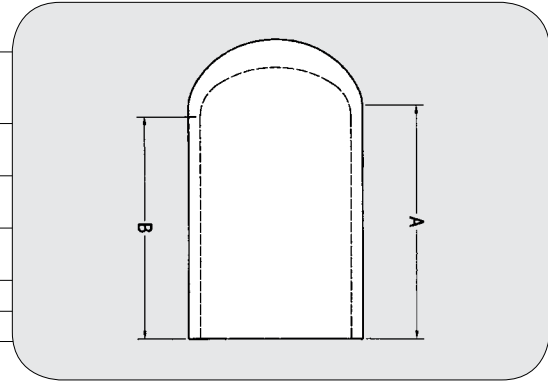
BPE FITTINGS



TL16W CAP

ASME BPE#
DT-30

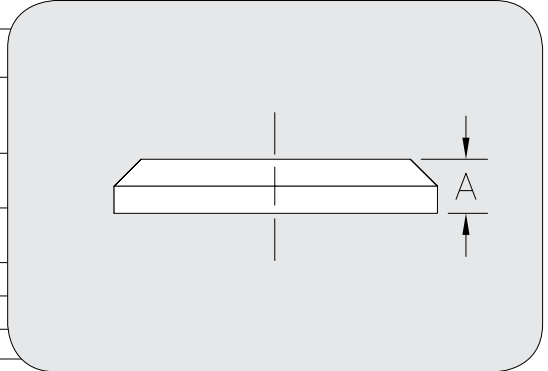
SIZE (TUBE O.D.)	A MINIMUM O.D. TANGENT LENGTH	B MINIMUM I.D. CONTROL PORTION	STOCK NO. 20 RA ID	STOCK NO. 15 RA EP ID
1/2	1-1/2	3/8	4031605 - 3	4031605 - 3EP
3/4	1-1/2	3/8	4031607 - 3	4031607 - 3EP
1	1-1/2	3/8	4031610 - 3	4031610 - 3EP
1-1/2	1-1/2	3/8	4031615 - 3	4031615 - 3EP
2	1-1/2	3/8	4031620 - 3	4031620 - 3EP
2-1/2	1-1/2	3/8	4031625 - 3	4031625 - 3EP
3	1-3/4	3/8	4031630 - 3	4031630 - 3EP
4	2	3/8	4031640 - 3	4031640 - 3EP



16AMP SOLID END CAP

ASME BPE#
DT-31

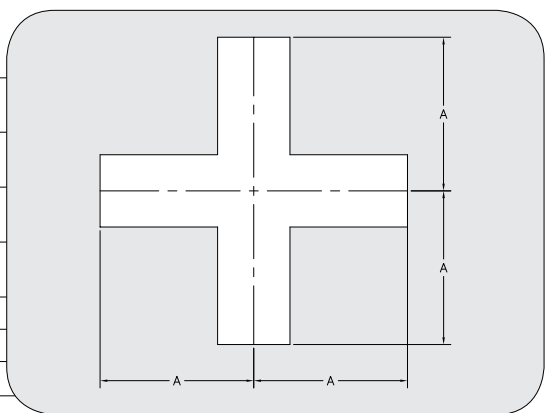
SIZE (TUBE O.D.)	TYPE	A	STOCK NO. 20 RA ID	STOCK NO. 15 RA EP ID
1/2	A	3/16	489805-3	489805-3EP
3/4	A	3/16	489807-3	489807-3EP
1	A	1/4	489810A-3	489810A-3EP
1	B	1/4	489810-3	489810-3EP
2	B	1/4	489815-3	489815-3EP
2	B	1/4	489820-3	489820-3EP
2-1/2	B	1/4	489825-3	489825-3EP
3	B	1/4	489830-3	489830-3EP
4	B	5/16	489840-3	489840-3EP
6	B	7/16	489860-3	489860-3EP



TL9WWWWW CROSS

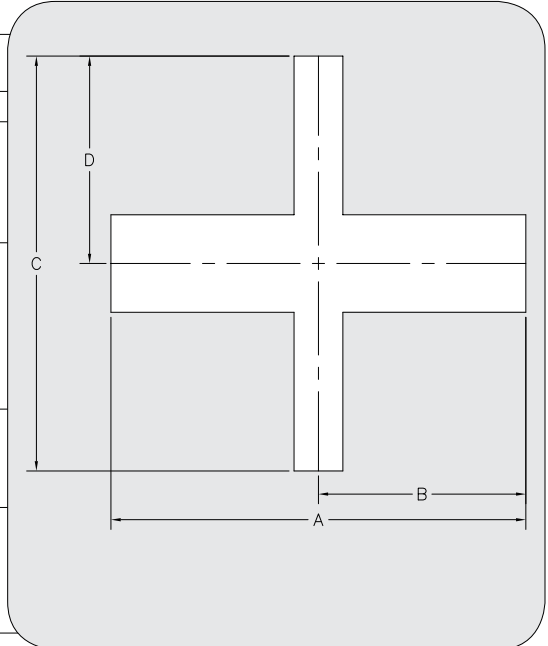
ASME BPE#
DT-9

SIZE (TUBE O.D.)	A	STOCK NO. 20 RA ID	STOCK NO. 15 RA EP ID
1/2	1-7/8	4011405 - 3	4011405 - 3EP
3/4	2	4011407 - 3	4011407 - 3EP
1	2-1/8	4011410 - 3	4011410 - 3EP
1-1/2	2-3/8	4011415 - 3	4011415 - 3EP
2	2-7/8	4011420 - 3	4011420 - 3EP
2-1/2	3-1/8	4011425 - 3	4011425 - 3EP
3	3-3/8	4011430 - 3	4011430 - 3EP
4	4-1/8	4011440 - 3	4011440 - 3EP
6	5-5/8	4011460 - 3	4011460 - 3EP



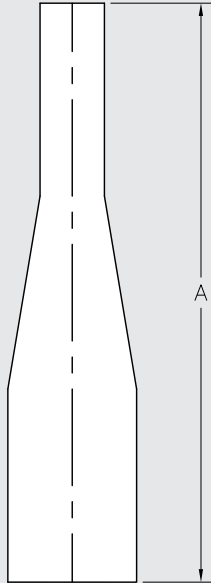
TL9RWWWWW REDUCING CROSS

SIZE (TUBE O.D.)	A	B	C	D	STOCK NO. 20 RA ID	STOCK NO. 15 RA EP ID
3/4 X 1/2	4-1/4	2-1/8	4-1/4	2-1/8	4011407R05 - 3	4011407R05 - 3EP
1 X 1/2	4-1/4	2-1/8	4-1/4	2-1/8	4011410R05 - 3	4011410R05 - 3EP
1 X 3/4	4-1/4	2-1/8	4-1/4	2-1/8	4011410R07 - 3	4011410R07 - 3EP
1-1/2 X 1/2	4-3/4	2-3/8	4-3/4	2-3/8	4011415R05 - 3	4011415R05 - 3EP
1-1/2 X 3/4	4-3/4	2-3/8	4-3/4	2-3/8	4011415R07 - 3	4011415R07 - 3EP
1-1/2 X 1	4-3/4	2-3/8	4-3/4	2-3/8	4011415R10 - 3	4011415R10 - 3EP
2 X 1/2	5-3/4	2-7/8	5-1/4	2-5/8	4011420R05 - 3	4011420R05 - 3EP
2 X 3/4	5-3/4	2-7/8	5-1/4	2-5/8	4011420R07 - 3	4011420R07 - 3EP
2 X 1	5-3/4	2-7/8	5-1/4	2-5/8	4011420R10 - 3	4011420R10 - 3EP
2 X 1-1/2	5-3/4	2-7/8	5-1/4	2-5/8	4011420R15 - 3	4011420R15 - 3EP
2-1/2 X 1	6-1/4	3-1/8	5-3/4	2-7/8	4011425R10 - 3	4011425R10 - 3EP
2-1/2 X 1-1/2	6-1/4	3-1/8	5-3/4	2-7/8	4011425R15 - 3	4011425R15 - 3EP
2-1/2 X 2	6-1/4	3-1/8	5-3/4	2-7/8	4011425R20 - 3	4011425R20 - 3EP
3 X 1	6-3/4	3-3/8	6-1/4	3-1/8	4011430R10 - 3	4011430R10 - 3EP
3 X 1-1/2	6-3/4	3-3/8	6-1/4	3-1/8	4011430R15 - 3	4011430R15 - 3EP
3 X 2	6-3/4	3-3/8	6-1/4	3-1/8	4011430R20 - 3	4011430R20 - 3EP
3 X 2-1/2	6-3/4	3-3/8	6-1/4	3-1/8	4011430R25 - 3	4011430R25 - 3EP
4 X 1	8-1/4	4-1/8	7-1/4	3-5/8	4011440R10 - 3	4011440R10 - 3EP
4 X 1-1/2	8-1/4	4-1/8	7-1/4	3-5/8	4011440R15 - 3	4011440R15 - 3EP
4 X 2	8-1/4	4-1/8	7-3/4	3-7/8	4011440R20 - 3	4011440R20 - 3EP
4 X 2-1/2	8-1/4	4-1/8	7-3/4	3-7/8	4011440R25 - 3	4011440R25 - 3EP
4 X 3	8-1/4	4-1/8	7-3/4	3-7/8	4011440R30 - 3	4011440R30 - 3EP



TL31 CONCENTRIC REDUCER

ASME BPE#
DT-11

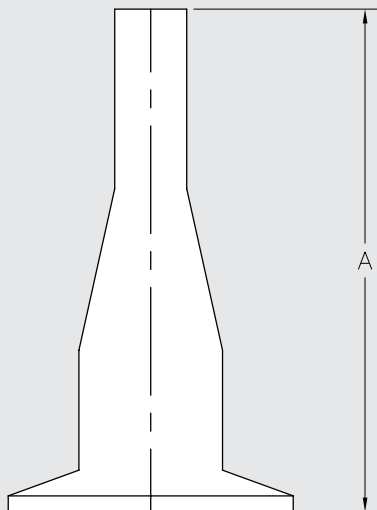


SIZE (TUBE O.D.)	A	STOCK NO. 20 RA ID	STOCK NO. 15 RA EP ID
3/4 X 1/2	4	401160705 - 3	401160705 - 3EP
1 X 1/2	4-1/2	401161005 - 3	401161005 - 3EP
1 X 3/4	4	401161007 - 3	401161007 - 3EP
1-1/2 X 1/2	5-1/2	401161505 - 3*	401161505 - 3EP*
1-1/2 X 3/4	5	401161507 - 3	401161507 - 3EP
1-1/2 X 1	5	401161510 - 3	401161510 - 3EP
2 X 1/2	7-3/4	401162005 - 3*	401162005 - 3EP*
2 X 3/4	7-1/4	401162007 - 3*	401162007 - 3EP*
2 X 1	7-1/4	401162010 - 3	401162010 - 3EP
2 X 1-1/2	5-1/4	401162015 - 3	401162015 - 3EP
2-1/2 X 1/2	9-3/4	401162505 - 3*	401162505 - 3EP*
2-1/2 X 3/4	9-1/4	401162507 - 3*	401162507 - 3EP*
2-1/2 X 1	9-1/4	401162510 - 3*	401162510 - 3EP*
2-1/2 X 1-1/2	7-1/4	401162515 - 3	401162515 - 3EP
2-1/2 X 2	5-1/2	401162520 - 3	401162520 - 3EP
3 X 1	11-1/4	401163010 - 3*	401163010 - 3EP*
3 X 1-1/2	9-1/4	401163015 - 3	401163015 - 3EP
3 X 2	7-1/2	401163020 - 3	401163020 - 3EP
3 X 2-1/2	5-1/2	401163025 - 3	401163025 - 3EP
4 X 1	15-1/2	401164010 - 3*	401164010 - 3EP*
4 X 1-1/2	13-1/2	401164015 - 3*	401164015 - 3EP*
4 X 2	11-3/4	401164020 - 3	401164020 - 3EP
4 X 2-1/2	9-3/4	401164025 - 3	401164025 - 3EP
4 X 3	7-3/4	401164030 - 3	401164030 - 3EP
6 X 4	10	401166040 - 3	401166040 - 3EP

* Not a BPE fitting

TL31M CONCENTRIC REDUCER

ASME BPE#
DT-26



SIZE (TUBE O.D.)	TYPE	A	STOCK NO. 20 RA ID	STOCK NO. 15 RA EP ID
3/4 X 1/2	A	3	40116M0705 - 3	40116M0705 - 3EP
1 X 1/2	A	3-1/2	40116M1005A - 3	40116M1005A - 3EP
1 X 1/2	B	3-1/2	40116M1005 - 3	40116M1005 - 3EP
1 X 3/4	A	3	40116M1007A - 3	40116M1007A - 3EP
1 X 3/4	B	3	40116M1007 - 3	40116M1007 - 3EP
1-1/2 X 1/2	B	4-1/2	40116M1505 - 3*	40116M1505 - 3EP*
1-1/2 X 3/4	B	4	40116M1507 - 3	40116M1507 - 3EP
1-1/2 X 1	B	4	40116M1510 - 3	40116M1510 - 3EP
2 X 1/2	B	6-1/2	40116M2005 - 3*	40116M2005 - 3EP*
2 X 3/4	B	6	40116M2007 - 3*	40116M2007 - 3EP*
2 X 1	B	6	40116M2010 - 3	40116M2010 - 3EP
2 X 1-1/2	B	4	40116M2015 - 3	40116M2015 - 3EP
2-1/2 X 1/2	B	8-1/2	40116M2505 - 3*	40116M2505 - 3EP*
2-1/2 X 3/4	B	8	40116M2507 - 3*	40116M2507 - 3EP*
2-1/2 X 1	B	8	40116M2510 - 3*	40116M2510 - 3EP*
2-1/2 X 1-1/2	B	6	40116M2515 - 3	40116M2515 - 3EP
2-1/2 X 2	B	4-1/4	40116M2520 - 3	40116M2520 - 3EP
3 X 1	B	10	40116M3010 - 3*	40116M3010 - 3EP*
3 X 1-1/2	B	8	40116M3015 - 3	40116M3015 - 3EP
3 X 2	B	6-1/4	40116M3020 - 3	40116M3020 - 3EP
3 X 2-1/2	B	4-1/4	40116M3025 - 3	40116M3025 - 3EP
4 X 1	B	14-1/8	40116M4010 - 3*	40116M4010 - 3EP*
4 X 1-1/2	B	12-1/8	40116M4015 - 3*	40116M4015 - 3EP*
4 X 2	B	10-3/8	40116M4020 - 3	40116M4020 - 3EP
4 X 2-1/2	B	8-3/8	40116M4025 - 3	40116M4025 - 3EP
4 X 3	B	6-3/8	40116M4030 - 3	40116M4030 - 3EP
6 X 4	B	9	40116M6040 - 3	40116M6040 - 3EP

* Not a BPE fitting

REDUCERS

BPE FITTINGS

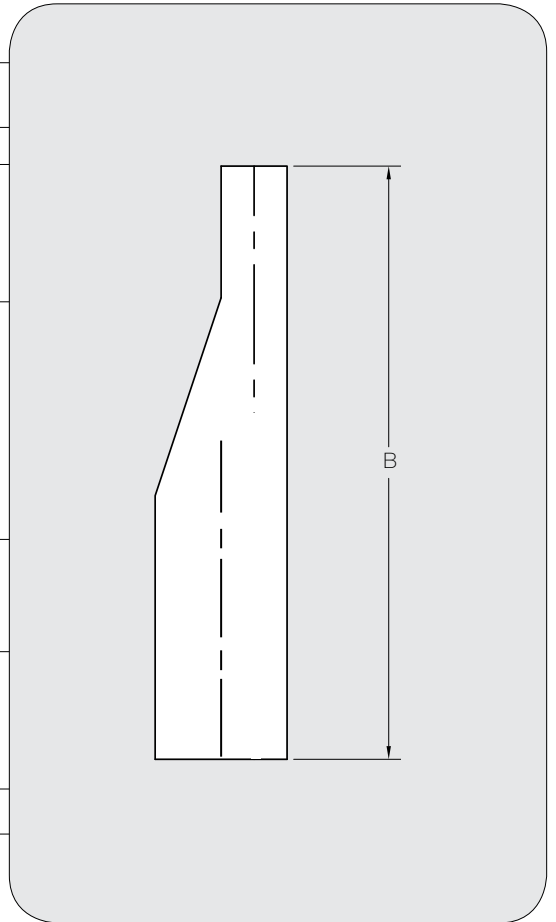


TL32 ECCENTRIC REDUCER

ASME BPE#
DT-11

SIZE (TUBE O.D.)	B	STOCK NO. 20 RA ID	STOCK NO. 15 RA EP ID
3/4 X 1/2	4	401220705 - 3	401220705 - 3EP
1 X 1/2	4-1/2	401221005 - 3	401221005 - 3EP
1 X 3/4	4	401221007 - 3	401221007 - 3EP
1-1/2 X 1/2	5-1/2	401221505 - 3*	401221505 - 3EP*
1-1/2 X 3/4	5	401221507 - 3	401221507 - 3EP
1-1/2 X 1	5	401221510 - 3	401221510 - 3EP
2 X 1/2	7-3/4	401222005 - 3*	401222005 - 3EP*
2 X 3/4	7-1/4	401222007 - 3*	401222007 - 3EP*
2 X 1	7-1/4	401222010 - 3	401222010 - 3EP
2 X 1-1/2	5-1/4	401222015 - 3	401222015 - 3EP
2-1/2 X 1/2	9-3/4	401222505 - 3*	401222505 - 3EP*
2-1/2 X 3/4	9-1/4	401222507 - 3*	401222507 - 3EP*
2-1/2 X 1	9-1/4	401222510 - 3*	401222510 - 3EP*
2-1/2 X 1-1/2	7-1/4	401222515 - 3	401222515 - 3EP
2-1/2 X 2	5-1/2	401222520 - 3	401222520 - 3EP
3 X 1	11-1/4	401223010 - 3*	401223010 - 3EP*
3 X 1-1/2	9-1/4	401223015 - 3	401223015 - 3EP
3 X 2	7-1/2	401223020 - 3	401223020 - 3EP
3 X 2-1/2	5-1/2	401223025 - 3	401223025 - 3EP
4 X 1	15-1/2	401224010 - 3*	401224010 - 3EP*
4 X 1-1/2	13-1/2	401224015 - 3*	401224010 - 3EP*
4 X 2	11-3/4	401224020 - 3	401224020 - 3EP
4 X 2-1/2	9-3/4	401224025 - 3	401224025 - 3EP
4 X 3	7-3/4	401224030 - 3	401224030 - 3EP
6 X 4	10	401226040 - 3	401226040 - 3EP

* Not a BPE fitting

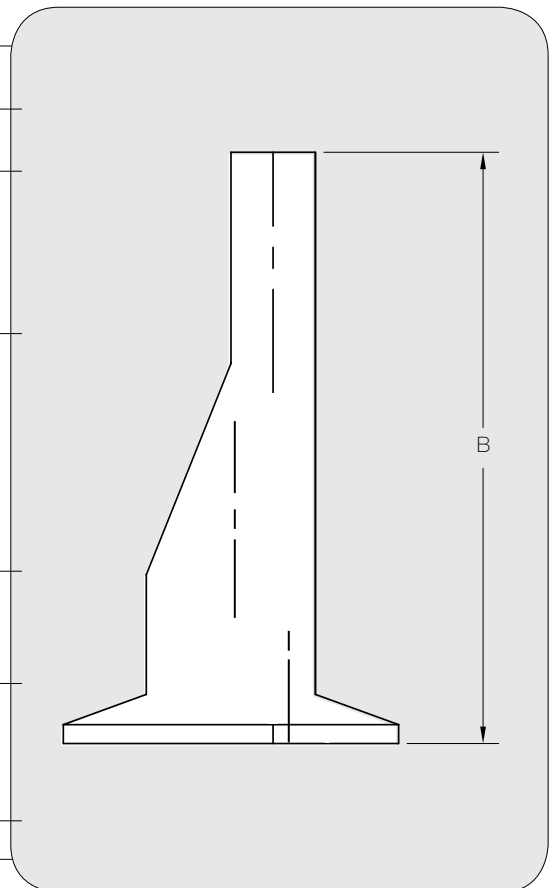


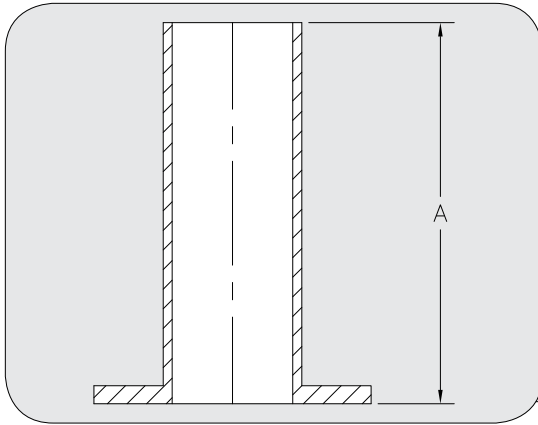
TL32M ECCENTRIC REDUCER

ASME BPE#
DT-26

SIZE (TUBE O.D.)	TYPE	B	STOCK NO. 20 RA ID	STOCK NO. 15 RA EP ID
3/4 X 1/2	A	3	40122M0705 - 3	40122M0705 - 3EP
1 X 1/2	A	3-1/2	40122M1005A - 3	40122M1005A - 3EP
1 X 1/2	B	3-1/2	40122M1005 - 3	40122M1005 - 3EP
1 X 3/4	A	3	40122M1007A - 3	40122M1007A - 3EP
1 X 3/4	B	3	40122M1007 - 3	40122M1007 - 3EP
1-1/2 X 1/2	B	4-1/2	40122M1505 - 3*	40122M1505 - 3EP*
1-1/2 X 3/4	B	4	40122M1507 - 3	40122M1507 - 3EP
1-1/2 X 1	B	4	40122M1510 - 3	40122M1510 - 3EP
2 X 1/2	B	6-1/2	40122M2005 - 3*	40122M2005 - 3EP*
2 X 3/4	B	6	40122M2007 - 3*	40122M2007 - 3EP*
2 X 1	B	6	40122M2010 - 3	40122M2010 - 3EP
2 X 1-1/2	B	4	40122M2015 - 3	40122M2015 - 3EP
2-1/2 X 1/2	B	8-1/2	40122M2505 - 3*	40122M2505 - 3EP*
2-1/2 X 3/4	B	8	40122M2507 - 3*	40122M2507 - 3EP*
2-1/2 X 1	B	8	40122M2510 - 3*	40122M2510 - 3EP*
2-1/2 X 1-1/2	B	6	40122M2515 - 3	40122M2515 - 3EP
2-1/2 X 2	B	4-1/4	40122M2520 - 3	40122M2520 - 3EP
3 X 1	B	10	40122M3010 - 3*	40122M3010 - 3EP*
3 X 1-1/2	B	8	40122M3015 - 3	40122M3015 - 3EP
3 X 2	B	6-1/4	40122M3020 - 3	40122M3020 - 3EP
3 X 2-1/2	B	4-1/4	40122M3025 - 3	40122M3025 - 3EP
4 X 1	B	14-1/8	40122M4010 - 3*	40122M4010 - 3EP*
4 X 1-1/2	B	12-1/8	40122M4015 - 3*	40122M4015 - 3EP*
4 X 2	B	10-3/8	40122M4020 - 3	40122M4020 - 3EP
4 X 2-1/2	B	8-3/8	40122M4025 - 3	40122M4025 - 3EP
4 X 3	B	6-3/8	40122M4030 - 3	40122M4030 - 3EP
6 X 4	B	9	40122M6040 - 3	40122M6040 - 3EP

* Not a BPE fitting

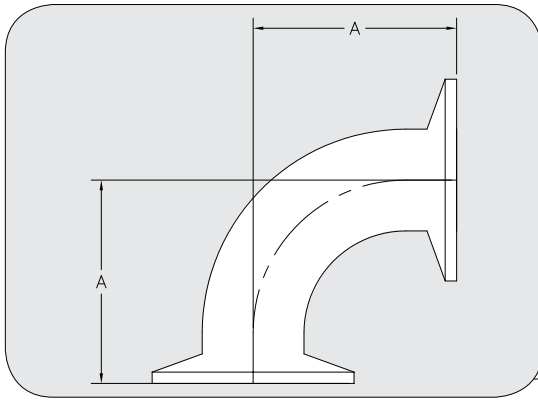




TL14VB STUB END*

SIZE (TUBE O.D.)	A	STOCK NO. 20 RA ID	STOCK NO. 15 RA EP ID
1/2	2	4030705 - 3LS	4030705 - 3LSEP
3/4	2	4030707 - 3LS	4030707 - 3LSEP
1	2-3/4	4030710 - 3LS	4030710 - 3LSEP
1-1/2	2-3/4	4030715 - 3LS	4030715 - 3LSEP
2	2-3/4	4030720 - 3LS	4030720 - 3LSEP
2-1/2	2-3/4	4030725 - 3LS	4030725 - 3LSEP
3	2-3/4	4030730 - 3LS	4030730 - 3LSEP
4	2-3/4	4030740 - 3LS	4030740 - 3LSEP
6	4	4030760 - 3LS	4030760 - 3LSEP

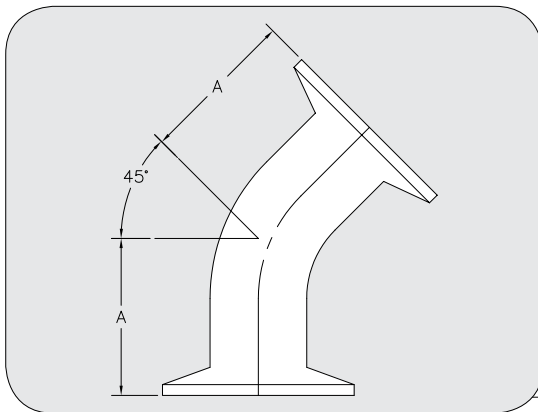
Clamp flange face is phonographed * Not a BPE fitting



2CMP 90° ELL

ASME BPE#
DT-16

SIZE (TUBE O.D.)	TYPE	A	STOCK NO. 20 RA ID	STOCK NO. 15 RA EP ID
1/2	A	1-5/8	48705-3	48705-3EP
3/4	A	1-5/8	48707-3	48707-3EP
1	A	2	48710A-3	48710A-3EP
1	B	2	48710-3	48710-3EP
1-1/2	B	2-3/4	48715-3	48715-3EP
2	B	3-1/2	48720-3	48720-3EP
2-1/2	B	4-1/4	48725-3	48725-3EP
3	B	5	48730-3	48730-3EP
4	B	6-5/8	48740-3	48740-3EP
6	B	10-1/2	48760-3	48760-3EP



2KMP 45° ELL

ASME BPE#
DT-17

SIZE (TUBE O.D.)	TYPE	A	STOCK NO. 20 RA ID	STOCK NO. 15 RA EP ID
1/2	A	1	48805-3	48805-3EP
3/4	A	1	48807-3	48807-3EP
1	A	1-1/8	48810A-3	48810A-3EP
1	B	1-1/8	48810-3	48810-3EP
1-1/2	B	1-7/16	48815-3	48815-3EP
2	B	1-3/4	48820-3	48820-3EP
2-1/2	B	2-1/16	48825-3	48825-3EP
3	B	2-3/8	48830-3	48830-3EP
4	B	3-1/8	48840-3	48840-3EP
6	B	5-1/4	48860-3	48860-3EP

TEES & CROSSES

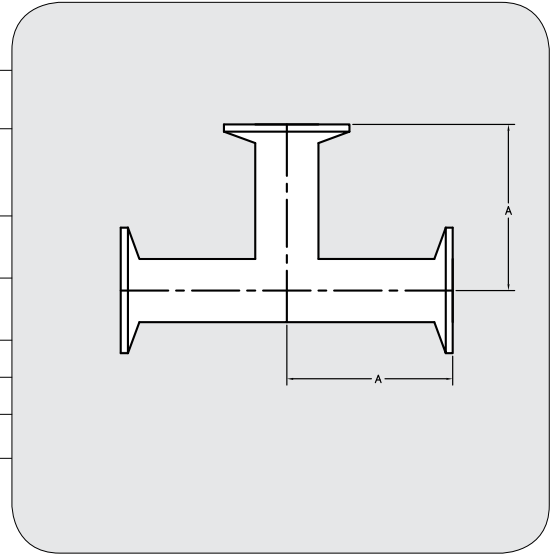
BPE FITTINGS



7MP STRAIGHT TEE

ASME BPE#
DT-18

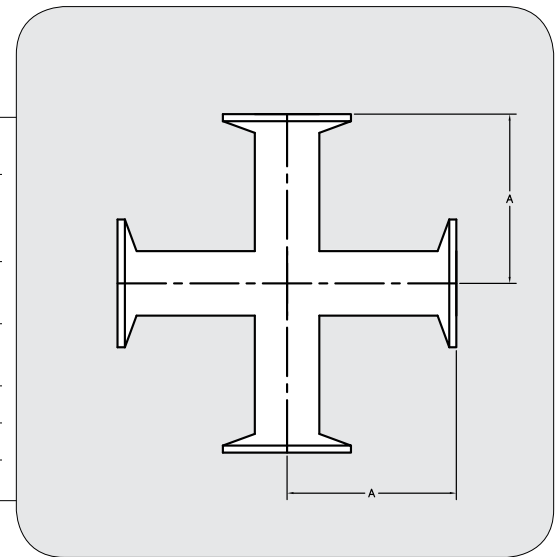
SIZE (TUBE O.D.)	TYPE	A	STOCK NO. 20 RA ID	STOCK NO. 15 RA EP ID
1/2	A	2 1/4	481105-3	481105-3EP
3/4	A	2 3/8	481107-3	481107-3EP
1	A	2 5/8	481110A-3	481110A-3EP
1	B	2 5/8	481110-3	481110-3EP
1 1/2	B	2 7/8	481115-3	481115-3EP
2	B	3 3/8	481120-3	481120-3EP
2 1/2	B	3 5/8	481125-3	481125-3EP
3	B	3 7/8	481130-3	481130-3EP
4	B	4 3/4	481140-3	481140-3EP
6	B	7 1/8	481160-3	481160-3EP



9MP CROSS

ASME BPE#
DT-18

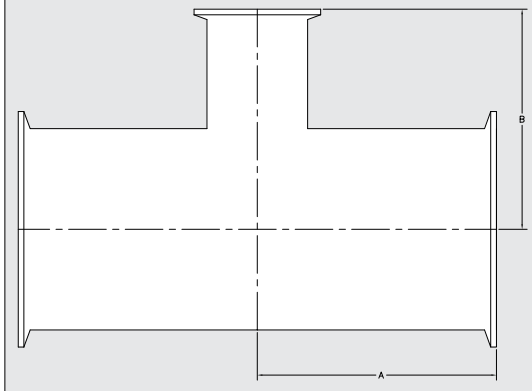
SIZE (TUBE O.D.)	TYPE	A	STOCK NO. 20 RA ID	STOCK NO. 15 RA EP ID
1/2	A	2 1/4	4810105-3	4810105-3EP
3/4	A	2 3/8	4810107-3	4810107-3EP
1	A	2 5/8	4810110A-3	4810110A-3EP
1	B	2 5/8	4810110-3	4810110-3EP
1 1/2	B	2 7/8	4810115-3	4810115-3EP
2	B	3 3/8	4810120-3	4810120-3EP
2 1/2	B	3 5/8	4810125-3	4810125-3EP
3	B	3 7/8	4810130-3	4810130-3EP
4	B	4 3/4	4810140-3	4810140-3EP
6	B	7 1/8	4810160-3	4810160-3EP



ASME BPE#

7RMP REDUCING TEE

DT-19

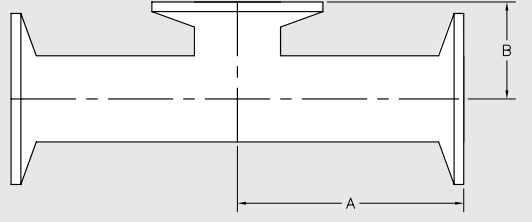


SIZE (TUBE O.D.)	TYPE	A	B	STOCK NO. 20 RA ID	STOCK NO. 15 RA EP ID
3/4 X 1/2	A/A	2-1/2	2-1/2	481107R05-3	481107R05-3EP
1 X 1/2	A/A	2-5/8	2-5/8	481110R05A-3	481110R05A-3EP
1 X 1/2	B/A	2-5/8	2-5/8	481110R05-3	481110R05-3EP
1 X 3/4	A/A	2-5/8	2-5/8	481110R07A-3	481110R07A-3EP
1 X 3/4	B/A	2-5/8	2-5/8	481110R07-3	481110R07-3EP
1-1/2 X 1/2	B/A	2-7/8	2-7/8	481115R05-3	481115R05-3EP
1-1/2 X 3/4	B/A	2-7/8	2-7/8	481115R07-3	481115R07-3EP
1-1/2 X 1	B/A	2-7/8	2-7/8	481115R10A-3	481115R10A-3EP
1-1/2 X 1	B/A	2-7/8	2-7/8	481115R10-3	481115R10-3EP
2 X 1/2	B/A	3-3/8	3-1/8	481120R05-3	481120R05-3EP
2 X 3/4	B/A	3-3/8	3-1/8	481120R07-3	481120R07-3EP
2 X 1	B/A	3-3/8	3-1/8	481120R10A-3	481120R10-A3EP
2 X 1	B/B	3-3/8	3-1/8	481120R10-3	481120R10-3EP
2 X 1-1/2	B/A	3-3/8	3-1/8	481120R15-3	481120R15-3EP
2-1/2 X 1/2	B/A	3-5/8	3-3/8	481125R05-3	481125R05-3EP
2-1/2 X 3/4	B/A	3-5/8	3-3/8	481125R07-3	481125R07-3EP
2-1/2 X 1	B/A	3-5/8	3-3/8	481125R10A-3	481125R10A-3EP
2-1/2 X 1	B/B	3-5/8	3-3/8	481125R10-3	481125R10-3EP
2-1/2 X 1-1/2	B/B	3-5/8	3-3/8	481125R15-3	481125R15-3EP
2-1/2 X 2	B/A	3-5/8	3-3/8	481125R20-3	481125R20-3EP
3 X 1/2	B/A	3-7/8	3-5/8	481130R05-3	481130R05-3EP
3 X 3/4	B/A	3-7/8	3-5/8	481130R07-3	481130R07-3EP
3 X 1	B/A	3-7/8	3-5/8	481130R10A-3	481130R10A-3EP
3 X 1	B/B	3-7/8	3-5/8	481130R10-3	481130R10-3EP
3 X 1-1/2	B/B	3-7/8	3-5/8	481130R15-3	481130R15-3EP
3 X 2	B/B	3-7/8	3-7/8	481130R20-3	481130R20-3EP
3 X 2-1/2	B/B	3-7/8	3-7/8	481130R25-3	481130R25-3EP
4 X 1/2	B/A	4-3/4	4-1/8	481140R05-3	481140R05-3EP
4 X 3/4	B/A	4-3/4	4-1/8	481140R07-3	481140R07-3EP
4 X 1	B/A	4-3/4	4-1/8	481140R10A-3	481140R10A-3EP
4 X 1	B/B	4-3/4	4-1/8	481140R10-3	481140R10-3EP
4 X 1-1/2	B/B	4-3/4	4-1/8	481140R15-3	481140R15-3EP
4 X 2	B/B	4-3/4	4-3/8	481140R20-3	481140R20-3EP
4 X 2-1/2	B/B	4-3/4	4-3/8	481140R25-3	481140R25-3EP
4 X 3	B/B	4-3/4	4-3/8	481140R30-3	481140R30-3EP
6 X 4	B/B	7-1/8	5-3/4	481160R40-3	481160R40-3EP

ASME BPE#

7MPS SHORT OUTLET TEE

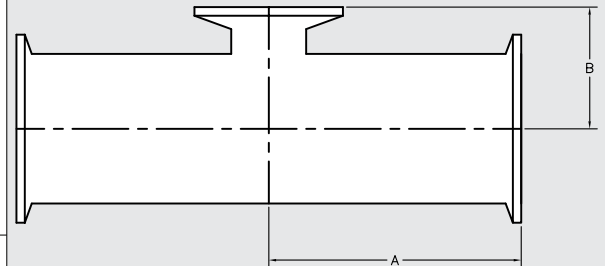
DT-27



SIZE (TUBE O.D.)	TYPE	A	B	STOCK NO. 20 RA ID	STOCK NO. 15 RA EP ID
1/2	A	2-1/4	1	481105S - 3	481105S - 3EP
3/4	A	2-3/8	1-1/8	481107S - 3	481107S - 3EP
1	A	2-5/8	1-1/8	481110SA - 3	481110SA - 3EP
1	B	2-5/8	1-1/8	481110S - 3	481110S - 3EP
1-1/2	B	2-7/8	1-3/8	481115S - 3	481115S - 3EP
2	B	3-3/8	1-5/8	481120S - 3	481120S - 3EP
2-1/2	B	3-5/8	1-7/8	481125S - 3	481125S - 3EP
3	B	3-7/8	2-1/8	481130S - 3	481130S - 3EP
4	B	4-3/4	2-3/4	481140S - 3	481140S - 3EP
6	B	7-1/8	4-5/8	481160S - 3	481160S - 3EP

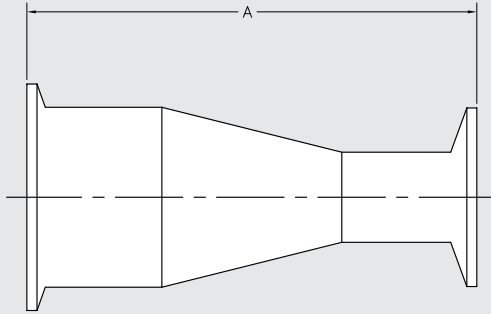
7RMPS REDUCING TEE

SIZE (TUBE O.D.)	TYPE	A	B	STOCK NO. 20 RA ID	STOCK NO. 15 RA EP ID
3/4 X 1/2	A/A	2-1/2	1	481107RS05-3	481107RS05-3EP
1 X 1/2	A/A	2-5/8	1-1/8	481110RS05A-3	481110RS05A-3E
1 X 1/2	B/A	2-5/8	1-1/8	481110RS05-3	481110RS05-3EP
1 X 3/4	A/A	2-5/8	1-1/8	481110RS07A-3	481110RS07A-3EP
1 X 3/4	B/A	2-5/8	1-1/8	481110RS07-3	481110RS07-3EP
1-1/2 X 1/2	B/A	2-7/8	1-3/8	481115RS05-3	481115RS05-3EP
1-1/2 X 3/4	B/A	2-7/8	1-3/8	481115RS07-3	481115RS07-3EP
1-1/2 X 1	B/A	2-7/8	1-3/8	481115RS10A-3	481115RS10A-3EP
1-1/2 X 1	B/B	2-7/8	1-3/8	481115RS10-3	481115RS10-3EP
2 X 1/2	B/A	3-3/8	1-5/8	481120RS05-3	481120RS05-3EP
2 X 3/4	B/A	3-3/8	1-5/8	481120RS07-3	481120RS07-3EP
2 X 1	B/A	3-3/8	1-5/8	481120RS10A-3	481120RS10A-3EP
2 X 1	B/B	3-3/8	1-5/8	481120RS10-3	481120RS10-3EP
2 X 1-1/2	B/B	3-3/8	1-5/8	481120RS15-3	481120RS15-3EP
2-1/2 X 1/2	B/A	3-5/8	1-7/8	481125RS05-3	481125RS05-3EP
2-1/2 X 3/4	B/A	3-5/8	1-7/8	481125RS07-3	481125RS07-3EP
2-1/2 X 1	B/A	3-5/8	1-7/8	481125RS10A-3	481125RS10A-3EP
2-1/2 X 1	B/B	3-5/8	1-7/8	481125RS10-3	481125RS10-3EP
2-1/2 X 1-1/2	B/B	3-5/8	1-7/8	481125RS15-3	481125RS15-3EP
2-1/2 X 2	B/B	3-5/8	1-7/8	481125RS20-3	481125RS20-3EP
3 X 1/2	B/A	3-7/8	2-1/8	481130RS05-3	481130RS05-3EP
3 X 3/4	B/A	3-7/8	2-1/8	481130RS07-3	481130RS07-3EP
3 X 1	B/A	3-7/8	2-1/8	481130RS10A-3	481130RS10A-3EP
3 X 1	B/B	3-7/8	2-1/8	481130RS10-3	481130RS10-3EP
3 X 1-1/2	B/B	3-7/8	2-1/8	481130RS15-3	481130RS15-3EP
3 X 2	B/B	3-7/8	2-1/8	481130RS20-3	481130RS20-3EP
3 X 2-1/2	B/B	3-7/8	2-1/8	481130RS25-3	481130RS25-3EP
4 X 1/2	B/A	4-3/4	2-5/8	481140RS05-3	481140RS05-3EP
4 X 3/4	B/A	4-3/4	2-5/8	481140RS07-3	481140RS07-3EP
4 X 1	B/A	4-3/4	2-5/8	481140RS10A-3	481140RS10A-3EP
4 X 1	B/B	4-3/4	2-5/8	481140RS10-3	481140RS10-3EP
4 X 1-1/2	B/B	4-3/4	2-5/8	481140RS15-3	481140RS15-3EP
4 X 2	B/B	4-3/4	2-5/8	481140RS20-3	481140RS20-3EP
4 X 2-1/2	B/B	4-3/4	2-5/8	481140RS25-3	481140RS25-3EP
4 X 3	B/B	4-3/4	2-5/8	481140RS30-3	481140RS30-3EP
6 X 4	B/B	7-1/8	3-3/4	481160RS40-3	481160RS40-3EP



ASME BPE#
DT-21

31-14MP CONCENTRIC REDUCER

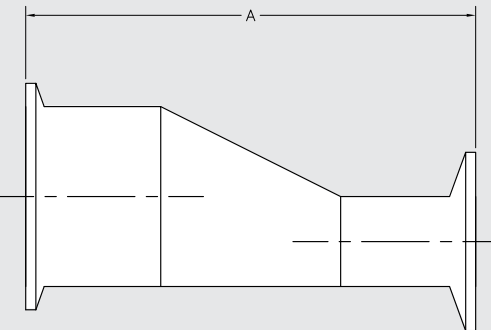


SIZE (TUBE O.D.)	TYPE	A	STOCK NO. 20 RA ID.	STOCK NO. 15 RA EP ID
3/4 X 1/2	A/A	2	4884-0705 - 3	4884-0705 - 3EP
1 X 1/2	A/A	2 1/2	4884-1005A - 3	4884-1005A - 3EP
1 X 1/2	B/A	2 1/2	4884-1005 - 3	4884-1005 - 3EP
1 X 3/4	A/A	2	4884-1007A - 3	4884-1007A - 3EP
1 X 3/4	B/A	2	4884-1007 - 3	4884-1007 - 3EP
1-1/2 X 1/2	B/A	3 1/2	4884-1505 - 3*	4884-1505 - 3EP*
1-1/2 X 3/4	B/A	3	4884-1507 - 3	4884-1507 - 3EP
1-1/2 X 1	B/A	3	4884-1510A - 3	4884-1510A - 3EP
1-1/2 X 1	B/B	3	4884-1510 - 3	4884-1510 - 3EP
2 X 1/2	B/A	5 1/2	4884-2005 - 3*	4884-2005 - 3EP*
2 X 3/4	B/A	5	4884-2007 - 3*	4884-2007 - 3EP*
2 X 1	B/A	5	4884-2010A - 3	4884-2010A - 3EP
2 X 1	B/B	5	4884-2010 - 3	4884-2010 - 3EP
2 X 1 1/2	B/B	3	4884-2015 - 3	4884-2015 - 3EP
2-1/2 X 1/2	B/A	7 1/2	4884-2505 - 3*	4884-2505 - 3EP*
2-1/2 X 3/4	B/A	7	4884-2507 - 3*	4884-2507 - 3EP*
2-1/2 X 1	B/A	7	4884-2510A - 3*	4884-2510A - 3EP*
2-1/2 X 1	B/B	7	4884-2510 - 3*	4884-2510 - 3EP*
2-1/2 X 1-1/2	B/B	5	4884-2515 - 3	4884-2515 - 3EP
2-1/2 X 2	B/B	3	4884-2520 - 3	4884-2520 - 3EP
3 X 1	B/A	9	4884-3010A - 3*	4884-3010A - 3EP*
3 X 1	B/B	9	4884-3010 - 3*	4884-3010 - 3EP*
3 X 1-1/2	B/B	7	4884-3015 - 3	4884-3015 - 3EP
3 X 2	B/B	5	4884-3020 - 3	4884-3020 - 3EP
3 X 2-1/2	B/B	3	4884-3025 - 3	4884-3025 - 3EP
4 X 1	B/A	13 1/8	4884-4010A - 3*	4884-4010A - 3EP*
4 X 1	B/B	13 1/8	4884-4010 - 3*	4884-4010 - 3EP*
4 X 1-1/2	B/B	11 1/8	4884-4015 - 3*	4884-4015 - 3EP*
4 X 2	B/B	9 1/8	4884-4020 - 3	4884-4020 - 3EP
4 X 2-1/2	B/B	7 1/8	4884-4025 - 3	4884-4025 - 3EP
4 X 3	B/B	5 1/8	4884-4030 - 3	4884-4030 - 3EP
6 X 4	B/B	7 5/8	4884-6040 - 3	4884-6040 - 3EP

*Not a BPE Fitting

ASME BPE#
DT-21

32-14MP ECCENTRIC REDUCER



SIZE (TUBE O.D.)	TYPE	A	STOCK NO. 20 RA ID.	STOCK NO. 15 RA EP ID
3/4 X 1/2	A/A	2	4885-0705 - 3	4885-0705 - 3EP
1 X 1/2	A/A	2 1/2	4885-1005A - 3	4885-1005A - 3EP
1 X 1/2	B/A	2 1/2	4885-1005 - 3	4885-1005 - 3EP
1 X 3/4	A/A	2	4885-1007A - 3	4885-1007A - 3EP
1 X 3/4	B/A	2	4885-1007 - 3	4885-1007 - 3EP
1-1/2 X 1/2	B/A	3 1/2	4885-1505 - 3*	4885-1505 - 3EP*
1-1/2 X 3/4	B/A	3	4885-1507 - 3	4885-1507 - 3EP
1-1/2 X 1	B/A	3	4885-1510A - 3	4885-1510A - 3EP
1-1/2 X 1	B/B	3	4885-1510 - 3	4885-1510 - 3EP
2 X 1/2	B/A	5 1/2	4885-2005 - 3*	4885-2005 - 3EP*
2 X 3/4	B/A	5	4885-2007 - 3*	4885-2007 - 3EP*
2 X 1	B/A	5	4885-2010A - 3	4885-2010A - 3EP
2 X 1	B/B	5	4885-2010 - 3	4885-2010 - 3EP
2 X 1 1/2	B/B	3	4885-2015 - 3	4885-2015 - 3EP
2-1/2 X 1/2	B/A	7 1/2	4885-2505 - 3*	4885-2505 - 3EP*
2-1/2 X 3/4	B/A	7	4885-2507 - 3*	4885-2507 - 3EP*
2-1/2 X 1	B/A	7	4885-2510A - 3*	4885-2510A - 3EP*
2-1/2 X 1	B/B	7	4885-2510 - 3*	4885-2510 - 3EP*
2-1/2 X 1-1/2	B/B	5	4885-2515 - 3	4885-2515 - 3EP
2-1/2 X 2	B/B	3	4885-2520 - 3	4885-2520 - 3EP
3 X 1	B/A	9	4885-3010A - 3*	4885-3010A - 3EP*
3 X 1	B/B	9	4885-3010 - 3*	4885-3010 - 3EP*
3 X 1-1/2	B/B	7	4885-3015 - 3	4885-3015 - 3EP
3 X 2	B/B	5	4885-3020 - 3	4885-3020 - 3EP
3 X 2-1/2	B/B	3	4885-3025 - 3	4885-3025 - 3EP
4 X 1	B/A	13 1/8	4885-4010A - 3*	4885-4010A - 3EP*
4 X 1	B/B	13 1/8	4885-4010 - 3*	4885-4010 - 3EP*
4 X 1-1/2	B/B	11 1/8	4885-4015 - 3*	4885-4015 - 3EP*
4 X 2	B/B	9 1/8	4885-4020 - 3	4885-4020 - 3EP
4 X 2-1/2	B/B	7 1/8	4885-4025 - 3	4885-4025 - 3EP
4 X 3	B/B	5 1/8	4885-4030 - 3	4885-4030 - 3EP
6 X 4	B/B	7 5/8	4885-6040 - 3	4885-6040 - 3EP

*Not a BPE Fitting

INSTRUMENT TEES

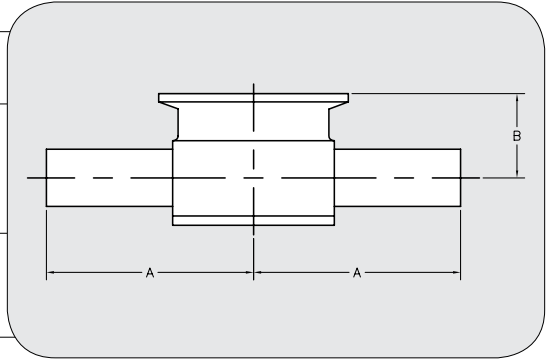
BPE FITTINGS



TL71WWMS INSTRUMENT TEES

ASME BPE#
DT-28

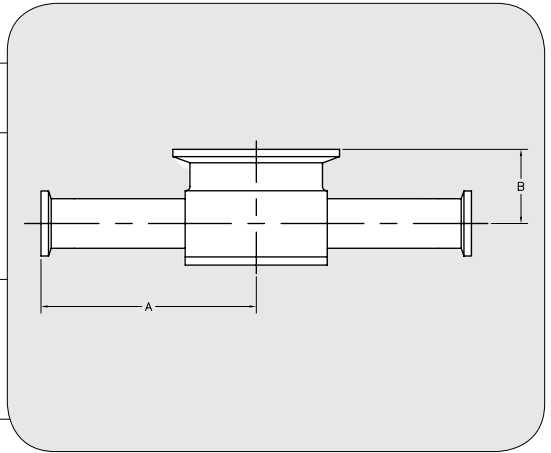
SIZE (TUBE O.D.)	TYPE	A	B	STOCK NO. 20 RA ID	STOCK NO. 15 RA EP ID
1/2 X 1-1/2	A	2-1/2	7/8	407105W15C-3	407105W15C-3EP
1/2 X 2	A	2-3/4	1	407105W20C-3	407105W20C-3EP
3/4 X 1-1/2	A	2-1/2	1	407107W15C-3	407107W15C-3EP
3/4 X 2	A	2-3/4	1-1/8	407107W20C-3	407107W20C-3EP
1 X 1-1/2	A	2-1/2	1-1/8	407110W15C-3	407110W15C-3EP
1 X 2	A	2-3/4	1-1/4	407110W20C-3	407110W20C-3EP
1-1/2 X 2	A	2-3/4	1-1/2	407115W20C-3	407115W20C-3EP

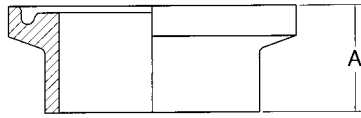


TL71MPS INSTRUMENT TEES

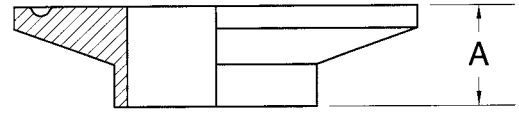
ASME BPE#
DT-29

SIZE (TUBE O.D.)	TYPE	A	B	STOCK NO. 20 RA ID	STOCK NO. 15 RA EP ID
1/2 X 1-1/2	A/B	3	7/8	487105W15C-3	487105W15C-3EP
1/2 X 2	A/B	3-1/4	1	487105W20C-3	487105W20C-3EP
3/4 X 1-1/2	A/B	3	1	487107W15C-3	487107W15C-3EP
3/4 X 2	A/B	3-1/4	1-1/8	487107W20C-3	487107W20C-3EP
1 X 1-1/2	A/A	3	1-1/8	487110W15CA-3	487110W15CA-3EP
1 X 1-1/2	B/B	3	1-1/8	487110W15C-3	487110W15C-3EP
1 X 2	A/B	3-1/4	1-1/4	487110W20CA-3	487110W20CA-3EP
1 X 2	B/B	3-1/4	1-1/4	487110W20C-3	487110W20C-3EP
1-1/2 X 2	B/B	2-3/4	1-1/2	487115W20C-3	487115W20C-3EP

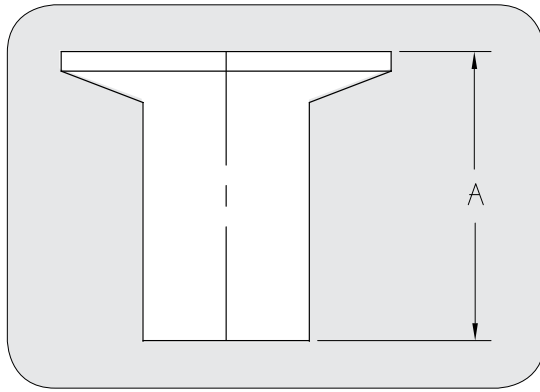




TYPE "A" FERRULE



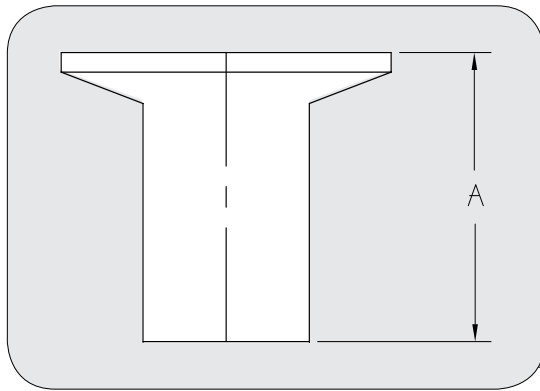
TYPE "B" FERRULE



TL14AM7 FERRULE

ASME BPE#
DT-22(A)

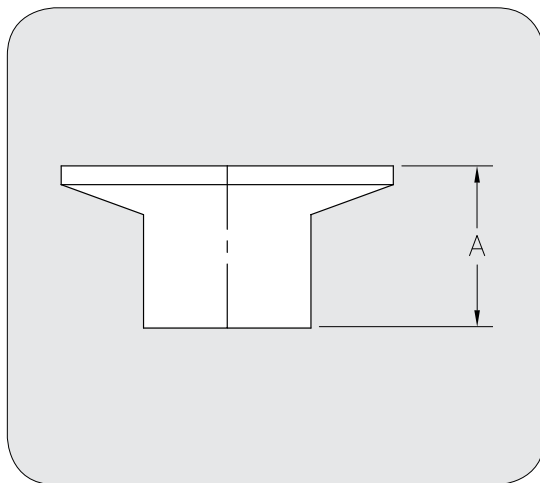
SIZE (TUBE O.D.)	TYPE	A	STOCK NO. 20 RA ID	STOCK NO. 15 RA EP ID
1/2 & 3/4	A	1-3/4	407507S	407507S - 3EP
1	A	1-3/4	407510SA	407510SA - 3EP
1	B	1-3/4	407510S	407510S - 3EP
1-1/2	B	1-3/4	407515S	407515S - 3EP
2	B	2-1/4	407520S	407520S - 3EP
2-1/2	B	2-1/4	407525S	407525S - 3EP
3	B	2-1/4	407530S	407530S - 3EP
4	B	2-1/4	407540S	407540S - 3EP
6	B	3	407560S	407560S - 3EP



L14AM7 BUTT WELD FERRULE BPE

ASME BPE#
DT-22(B)

SIZE (TUBE O.D.)	TYPE	A	STOCK NO. 20 RA ID	STOCK NO. 15 RA EP ID
1	A	1-1/8	487510A-7	487510A-7EP
1	B	1-1/8	487510-7	487510-7EP
1-1/2	B	1-1/8	487515-7	487515-7EP
2	B	1-1/8	487520-7	487520-7EP
2-1/2	B	1-1/8	487525-7	487525-7EP
3	B	1-1/8	487530-7	487530-7EP
4	B	1-1/8	487540-7	487540-7EP
6	B	1-1/2	487560-7	487560-7EP



14WMP SHORT WELD FERRUE BPE

ASME BPE#
DT-22(C)

SIZE (TUBE O.D.)	TYPE	A	STOCK NO. 20 RA ID	STOCK NO. 15 RA EP ID
1/2	A	1/2	48205-7	48205-7EP
3/4	A	1/2	48207-7	48207-7EP
1	A	1/2	48210A-7	48210A-7EP
1	B	1/2	48210-7	48210-7EP
1-1/2	B	1/2	48215-7	48215-7EP
2	B	1/2	48220-7	48220-7EP
2-1/2	B	1/2	48225-7	48225-7EP
3	B	1/2	48230-7	48230-7EP
4	B	5/8	48240-7	48240-7EP
6	B	3/4	48260-7	48260-7EP

U-BENDS

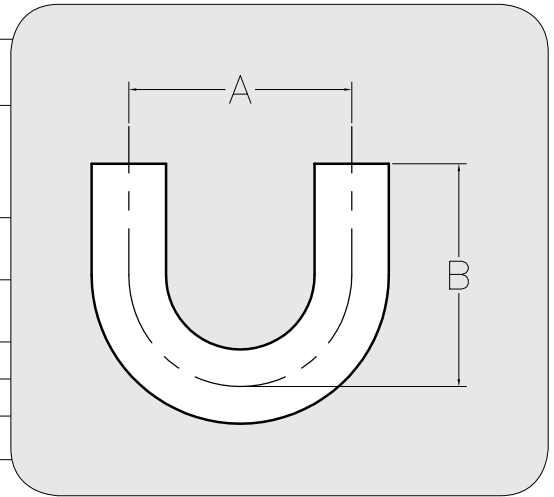
BPE FITTINGS



2WUL 180° U-BENDS

ASME BPE#
DT-23

SIZE (TUBE O.D.)	A	B	STOCK NO. 20 RA ID	STOCK NO. 15 RA EP ID
1/4*	4-1/2	2-5/8	40U02-3	40U02-3EP
3/8*	4-1/2	2-5/8	40U03-3	40U03-3EP
1/2*	4-1/2	3	40U05-3	40U05-3EP
3/4*	4-1/2	3	40U07-3	40U07-3EP
1	3	3	40U10-3	40U10-3EP
1-1/2	4-1/2	4-1/2	40U15-3	40U15-3EP
2	6	5	40U20-3	40U20-3EP
2-1/2	7-1/2	5-3/4	40U25-3	40U25-3EP
3	9	6-1/2	40U30-3	40U30-3EP
4	12'	8-1/2	40U40-3	40U40-3EP
6	18	11-1/2	40U60-3	40U60-3EP

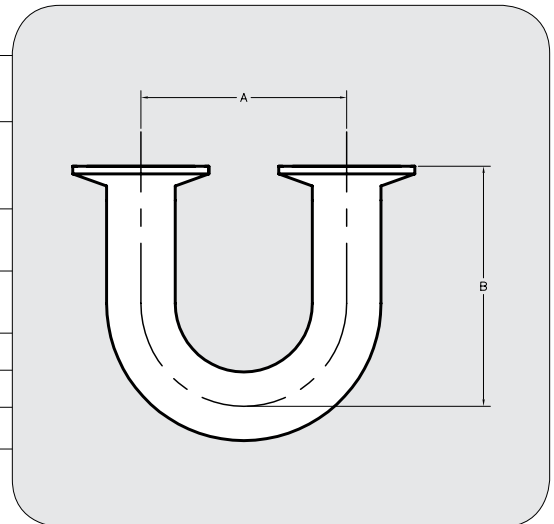


* DOES NOT MEET MINIMUM TANGENT LENGTHS IN ASME BPE TABLE DT-4

2WUMP 180° U-BENDS

ASME BPE#
DT-24

SIZE (TUBE O.D.)	TYPE	A	B	STOCK NO. 20 RA ID	STOCK NO. 15 RA EP ID
1/2	A	4-1/2	3-1/2	48U05-3	48U05-3EP
3/4	A	4-1/2	3-1/2	48U07-3	48U07-3EP
1	A	3	3-1/2	48U10A-3	48U10A-3EP
1	B	3	3-1/2	48U10-3	48U10-3EP
1-1/2	B	4-1/2	5	48U15-3	48U15-3EP
2	B	6	5-1/2	48U20-3	48U20-3EP
2-1/2	B	7-1/2	6-1/4	48U25-3	48U25-3EP
3	B	9	7	48U30-3	48U30-3EP
4	B	12	9-1/8	48U40-3	48U40-3EP
6	B	18	13	48U60-3	48U60-3EP



Mini Fittings (non-BPE)



Clamp Type Fittings

Special clamp type fittings are available to meet the stringent needs of the biotechnology, pharmaceutical, electronics and cosmetic industries. Produced of type 316L stainless steel, the units have an exceptionally fine 32RA ID & OD finish. Other finish to 10RA plus electropolish is available in the BPE Clamp Section.

SIZE (TUBE O.D.)	2CMP A	STOCK NO.	2KMP B	STOCK NO.	7MP C	D	STOCK NO.
1/2	3-1/2	38705-7	2-3/4	38805-7	2-5/8	5-1/4	381105-7
3/4	3-1/2	38707-7	2-3/4	38807-7	2-5/8	5-1/4	381107-7

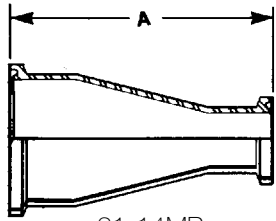
OUTSIDE DIA. (TUBE O.D.)	16AMP A	STOCK NO.	14WMP B	STOCK NO.	L14AM7 B	STOCK NO.
1/2 & 3/4	.187	389807	1/2	38205	1.125	387505
			1/2	38207	1.125	387507

GASKET

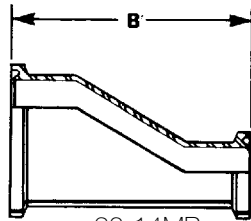
SIZE (TUBE O.D.)	A
1/2	.859
3/4	.859

13LAH-HEAVY DUTY CLAMP

SIZE (TUBE O.D.)	A	STOCK NO.
1/2 & 3/4	1-1/8	389905B



31-14MP
CONCENTRIC REDUCER

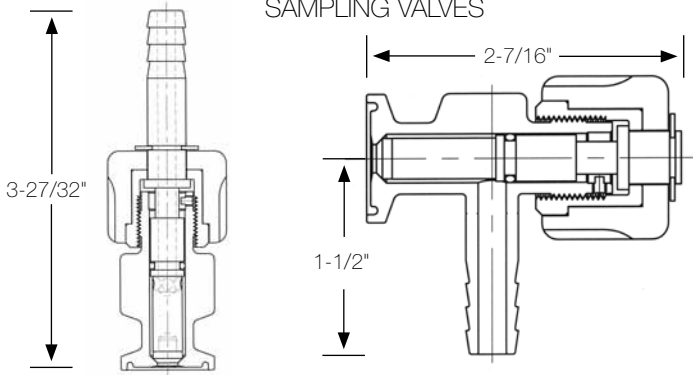


32-14MP
ECCENTRIC REDUCER

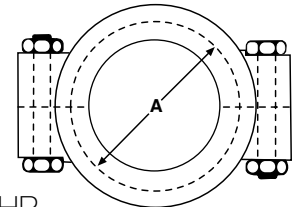
SIZE (TUBE O.D.)	31-14MP	32-14MP
	A	B
3/4 x 1/2	2	2
1 x 1/2	2-1/2	2-1/2
1 x 3/4	2	2
1-1/2 x 1/2	3-1/2	3-1/2
1-1/2 x 3/4	3	3
2 x 1/2	5-1/2	5-1/2
2 x 3/4	3	3

NOTE: SEE BPE SECTION E PAGE 12

SAMPLING VALVES



SEE VALVE SECTION



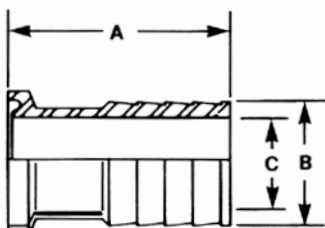
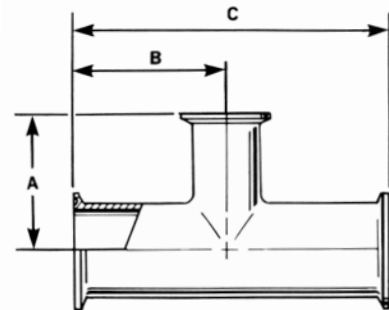
13MHP -
MINI HIGH PRESSURE CLAMP

SIZE	A	STOCK NO.
1/2	1-1/8	329907HP (304 SS)
3/4	1-1/8	329907HP (304 SS)

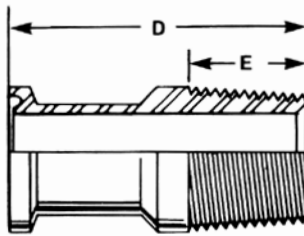
*316L AVAILABLE UPON REQUEST

7RMP - REDUCING TEE (Reduced Size on Branch)

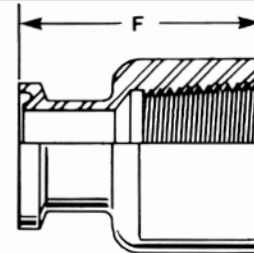
SIZE	A	B	C	STOCK NO.
3/4 x 1/2	2-1/2	2-1/2	5	381107R05-7
1 x 1/2	2-5/8	2-5/8	5-1/4	381110R05-7
1 x 3/4	2-5/8	2-5/8	5-1/4	381110R07-7
1-1/2 x 1/2	2-7/8	2-7/8	5-3/4	381115R05-7
1-1/2 x 3/4	2-7/8	2-7/8	5-3/4	381115R07-7
2 x 1/2	3-1/8	3-3/8	5-3/4	381120R05-7
2 x 3/4	3-1/8	3-3/8	6-3/4	381120R07-7



14MPHR-HOSE ADAPTER



21MP-MALE ADAPTER



22MP-FEMALE ADAPTER

SIZE (TUBE OD.)	14MPHR			STOCK NO.	21MP		22MP		
	A	B	C		D	E	STOCK NO.	F	STOCK NO.
1/2 x 1/8	1.500	.147	.062	387800	2.000	.3924	38820500	1.250	38830500
1/2 x 1/4	1.500	.312	.187	387800A	2.000	.5946	38820500A	1.500	38830500A
1/2 x 3/8	1.500	.405	.218	387800B	2.000	.6006	38820500B	1.500	38830500B
1/2 x 1/2	1.500	.540	.375	387805	2.000	.7815	38820505	1.500	38830505
1/2 x 3/4	1.500	.840	.625	387805A	2.000	.7935	38820507	1.625	38830507
3/4 x 1/8	1.500	.147	.062	3878007	2.000	.3924	38820700	1.250	38830700
3/4 x 1/4	1.500	.312	.187	387807A	2.000	.5946	38820700A	1.500	38830700A
3/4 x 3/8	1.500	.405	.218	387807B	2.000	.6006	38820700B	1.500	38830700B
3/4 x 1/2	1.500	.540	.375	387807C	2.000	.7815	38820705	1.500	38830700C
3/4 x 3/4	1.500	.840	.625	387807	2.000	.7935	38820707	1.625	38830707

Large Diameter Tubing and Fittings



Top Line offers single source service of quality 6 inch tubing and fittings. All major components are shipped promptly from our plant. Special order 8 inch, 10 inch, 12 inch, and other sizes are also available for unique applications. Call us with your inquiries.

Fitting Specifications

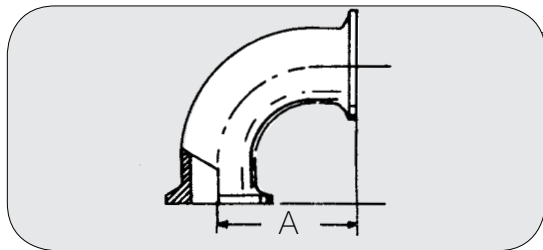
- 304, 304L, 316L
- A269, A774
- Polished, unpolished
- .109" wall thickness (6" & 8")
- .134" wall thickness (10" & 12")
- 6", 8", 10", & 12" O.D.

Tubing Specifications

- 304L, 316L
- A269, A778
- Polished, unpolished
- .109" wall x 20'
- 6", 8", 10", & 12" O.D.

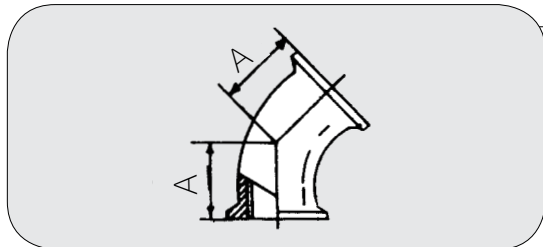
ELBOWS & TEES

LARGE DIAMETER TUBING



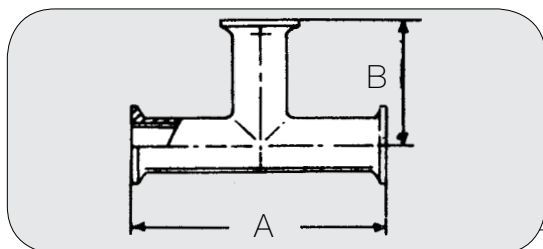
2CMP - 90° ELL

SIZE (TUBE O.D.)	A	STOCK NO.
6	9-3/4	32760-7
8	12-7/8	32780-7
10	15-7/8	327100-7
12	19	327120-7



2KMP - 45° ELL

SIZE (TUBE O.D.)	A	STOCK NO.
6	4-1/2	32860-7
8	5-7/8	32880-7
10	7-1/8	328100-7
12	8-1/2	328120-7

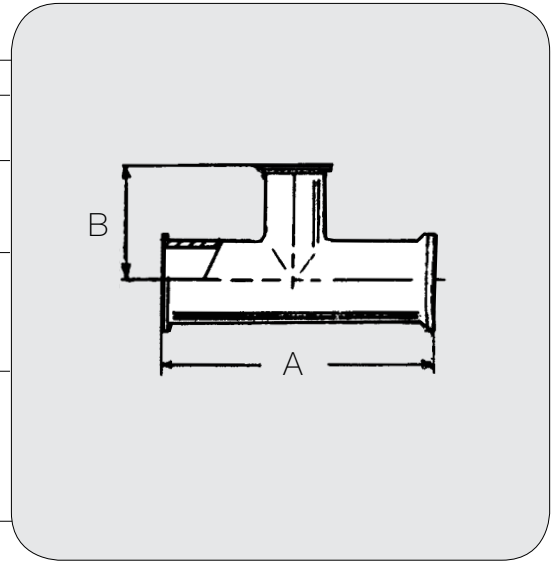


7MP - TEE

SIZE (TUBE O.D.)	A	B	STOCK NO.
6	11-1/2	5-3/4	321160-7
8	15-3/4	7-7/8	321180-7
10	18-3/4	10-1/4	3211100-7
12	22	11	3211120-7

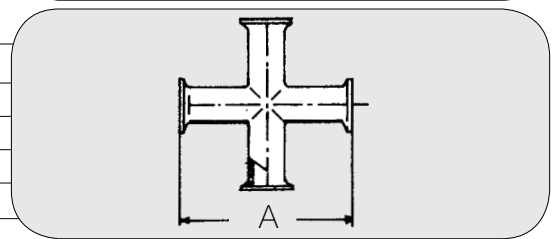
7RMP REDUCING TEE

SIZE (TUBE O.D.)	A	B	STOCK NO.
6 X 3	11-1/2	5-1/2	321160R30-7
6 X 4	11-1/2	5-5/8	321160R40-7
8 X 3	15-3/4	7-1/2	321180R30-7
8 X 4	15-3/4	7-5/8	321180R40-7
8 X 6	15-3/4	7-3/4	321180R60-7
10 X 3	18-3/4	9	3211100R30-7
10 X 4	18-3/4	9-1/8	3211100R40-7
10 X 6	18-3/4	9-1/4	3211100R60-7
10 X 8	18-3/4	9-3/8	3211100R80-7
12 X 3	22	10-1/2	3211120R30-7
12 X 4	22	10-5/8	3211120R40-7
12 X 6	22	10-3/4	3211120R60-7
12 X 8	22	10-7/8	3211120R80-7
12 X 10	22	10-7/8	3211120R100-7



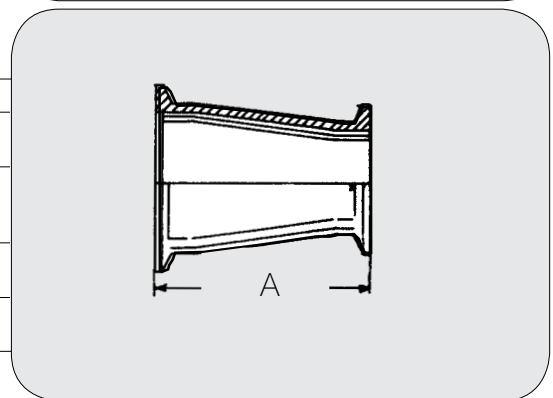
9MP CROSS

SIZE (TUBE O.D.)	A	STOCK NO.
6	11-1/2	3210160
8	15-3/4	3210180
10	18-3/4	32101100
12	22	32101120



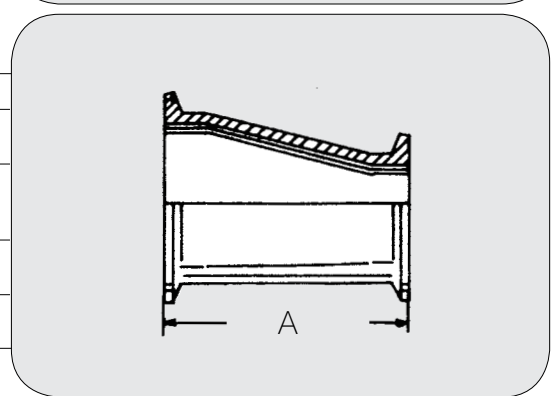
31-14MP CONCENTRIC REDUCER

SIZE (TUBE O.D.)	A	STOCK NO.
6 X 3	7-1/2	328460
6 X 4	5-1/2	328460A
8 X 3	7-3/8	328480
8 X 4	7-1/2	328480A
8 X 6	7-5/8	328480B
10 X 6	8-3/4	3284100
10 X 8	8-3/4	3284100A
12 X 8	9-7/8	3284120
12 X 10	9-7/8	3284120A



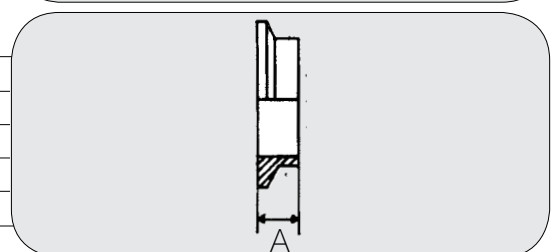
32-14MP ECCENTRIC REDUCER

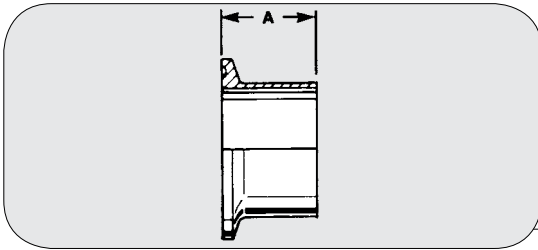
SIZE (TUBE O.D.)	A	STOCK NO.
6 X 3	7-1/2	328560
6 X 4	5-1/2	328560A
8 X 3	7-3/8	328580
8 X 4	7-1/2	328580A
8 X 6	7-5/8	328580B
10 X 6	8-3/4	3285100
10 X 8	8-3/4	3285100A
12 X 8	9-7/8	3285120
12 X 10	9-7/8	3285120A



14WMP SHORT WELD FERRULE

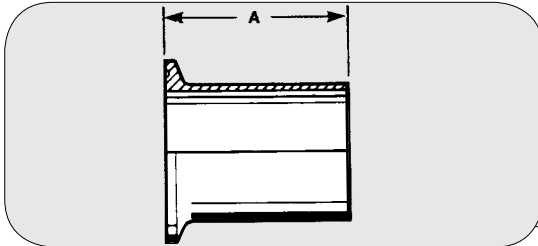
SIZE (TUBE O.D.)	A	STOCK NO.
6	3/4	32260
8	7/8	32280
10	7/8	322100
12	1	322120





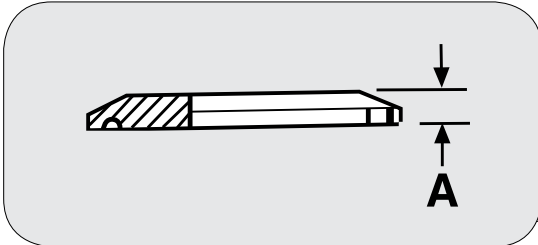
L14AM7 - BUTT WELDING FERRULE

SIZE (TUBE O.D.)	A	STOCK NO.
6	1-1/2	327560
8	1-1/2	327580
10	1-1/2	3275100
12	1-1/2	3275120



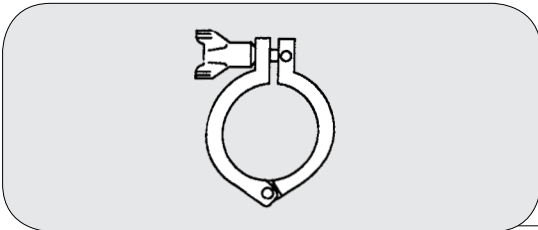
14WLMP - TANK WELDING SPUD-LIGHT

SIZE (TUBE O.D.)	A	STOCK NO.
6	6	327760-7
8	6	327780-7
10	6	3277100-7
12	6	3277120-7



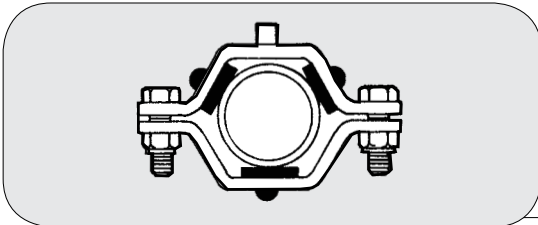
16AMP - SOLID END CAP

SIZE (TUBE O.D.)	A	STOCK NO.
6	1/2	329860
8	1/2	329880
10	1/2	3298100
12	1/2	3298120



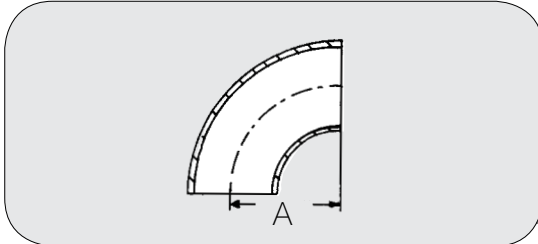
HEAVY DUTY CLAMP

SIZE (TUBE O.D.)	13LAH	13MHM	13MHP
6	3299960	N/A	329960HP
8	3299980	329980	N/A
10	N/A	3299100	N/A
12	N/A	3299120	N/A



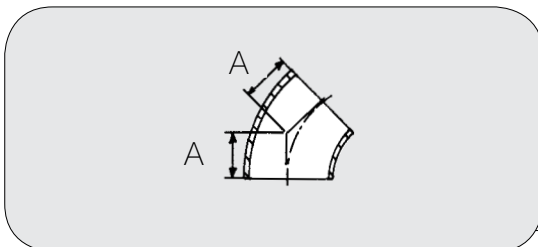
TUBING HANGER

SIZE (TUBE O.D.)	B24W	C24T	B24W W/ PP INSERT	C24T W/ PP INSERT
6	32D-60	32C-60	32D-60PP	32C-60PP
8	32D-80	32C-80	32D-80PP	32C-80PP
10	32D-100	32C-100	N/A	N/A
12	32D-120	32C-120	N/A	N/A



2WCL - 90° WELD ELL

SIZE (TUBE O.D.)	A	STOCK NO.
6	9	3530160
8	12	3530180
10	15	35301100
12	18	35301120



2WK - 45° WELD ELL

SIZE (TUBE O.D.)	A	STOCK NO.
6	3-3/4	3530360
8	5	3530380
10	6-1/4	35303100
12	7-1/2	35303120

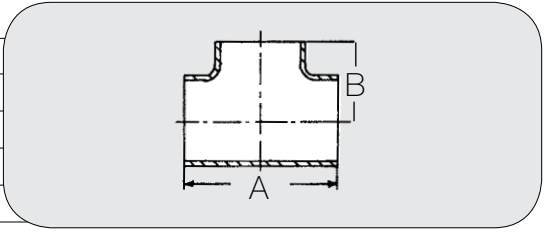
TEES, CROSSES & REDUCERS

LARGE DIAMETER FITTINGS



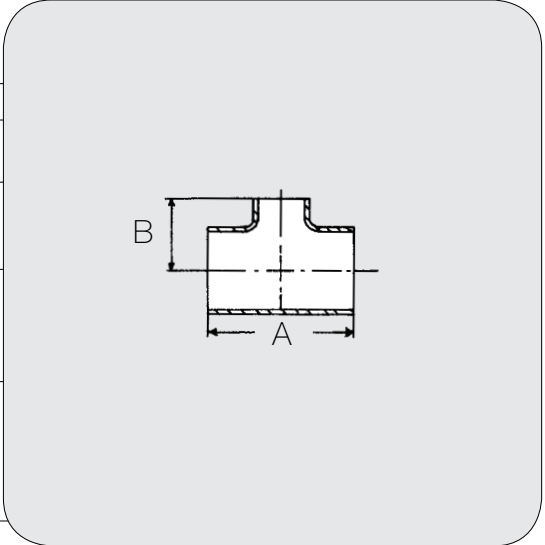
7W - WELD TEE

SIZE (TUBE O.D.)	A	B	STOCK NO.
6	10	5	3530660
8	14	7	3530680
10	17	8-1/2	35306100
12	20	10	35306120



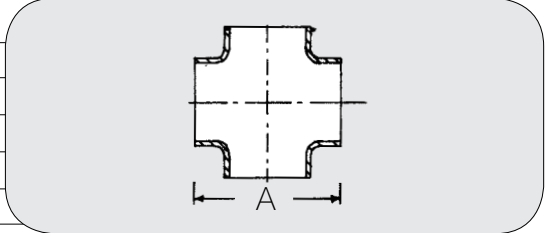
7WR - REDUCING WELD TEE

SIZE (TUBE O.D.)	A	B	STOCK NO.
6 X 3	10	5	3530560R-30
6 X 4	10	5	3530560R-40
8 X 3	14	7	3530580R-30
8 X 4	14	7	3530580R-40
8 X 6	14	7	3530580R-60
10 X 3	17	8-1/2	35305100R-30
10 X 4	17	8-1/2	35305100R-40
10 X 6	17	8-1/2	35305100R-60
10 X 8	17	8-1/2	35305100R-80
12 X 3	20	10	35305120R-30
12 X 4	20	10	35305120R-40
12 X 6	20	10	35305120R-60
12 X 8	20	10	35305120R-80
12 X 10	20	10	35305120R-100



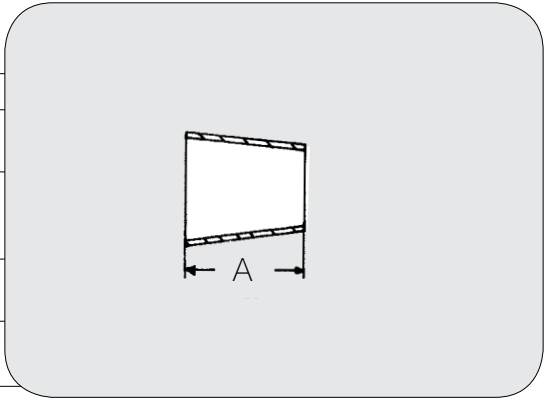
9W - WELD CROSS

SIZE (TUBE O.D.)	A	STOCK NO.
6	10	3530460
8	14	3530480
10	17	35304100
12	20	35304120



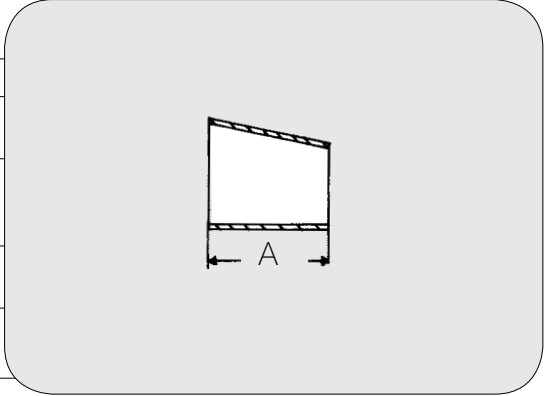
31W - CONCENTRIC WELD REDUCER

SIZE (TUBE O.D.)	A	STOCK NO.
6 X 3	6	3530860-30
6 X 4	4	3530860-40
8 X 3	6	3530880-30
8 X 4	6	3530880-40
8 X 6	6	3530880-60
10 X 6	7	35308100-60
10 X 8	7	35308100-80
12 X 8	8	35308120-80
12 X 10	8	35308120-100



32W - ECCENTRIC WELD REDUCER

SIZE (TUBE O.D.)	A	STOCK NO.
6 X 3	6	3530960-30
6 X 4	4	3530960-40
8 X 3	6	3530980-30
8 X 4	6	3530980-40
8 X 6	6	3530980-60
10 X 6	7	35309100-60
10 X 8	7	35309100-80
12 X 8	8	35309120-80
12 X 10	8	35309120-100



16W - WELD CAP



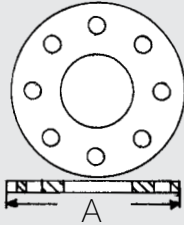
SIZE (TUBE O.D.)	A	STOCK
6	2	3531660S
8	2-1/2	3531680
10	3	35316100
12	-	-

14VB - STUB END



SIZE (TUBE O.D.)	A	STOCK
6	3	3530760LS
8	3	3530780LS
10	3-1/2	35307100LS
12	3	35307120LS

38SL - BACK-UP FLANGE



SIZE (TUBE O.D.)	A	STOCK
6	11	355-6
8	13	355-8
10	16	355-10
12	19	355-12

Top-Flo[®] Butterfly Valves

Top Line's Butterfly Valves stand above others in sanitary and fine chemical fields. The units incorporate advanced design characteristics with the finest craftsmanship and construction. The value they afford is unsurpassed.

Top Line Butterfly Valves underwent extensive testing and field evaluation prior to introduction. Experience and contributions from numerous technical and practical sources have enabled Top Line to assume a deserved leadership position.



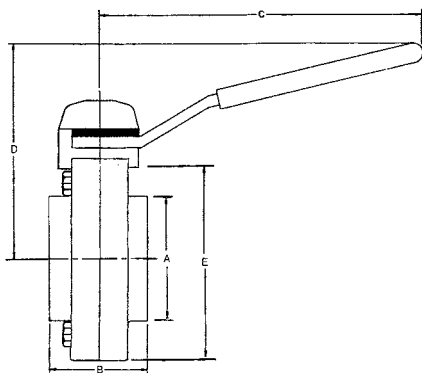
MECHANICAL SPECIFICATIONS

- Sizes - 1", 1-1/2", 2", 2-1/2", 3", 4" and 6"
- Materials – either type AISA 304 or Type AISA 316L stainless steel
- Seals available – Platinum Cured Silicone (standard), EPDM and Viton[®]
- Connections – clamp, butt weld and bevel seat (optional). Other connections available upon request
- Four Position Spring Loaded Flat Handle – open, closed and two intermediate settings.
- Pressure – 1" thru 4" to 145 PSI @ 68° F (20° C)
6" to 90 PSI @ 68°F (20 C)
- Vacuum – to 14.2 PSI @ 68° F (20° C)
- Temperature range - +15° to 200° F (-10° to 95° C)

IMPORTANT FEATURES

- 360 Degree Installation - valve may be installed in any position
- Design minimizes turbulence and maximizes fluid flow through
- Delrin Bushings assure extra smooth disc action
- Easy Field Service - few parts - no special tools
- Self Draining
- Wetted Surfaces have sanitary finish
- Air and Electric Actuators available
- Variety of Controls available
- USDA approved

Dimensional Specifications



"A"		"B"						"C"		"D"		"E"	
SIZE		WELD		CLAMP		BEVEL		W / C / B		W / C / B		W / C / B	
INCH	CM	INCH	CM	INCH	CM	INCH	CM	INCH	CM	INCH	CM	INCH	CM
1	2.540	1-7/8	4.763	3-1/2	8.890	3-1/2	8.890	7	17.78	3-7/8	9.843	3-1/8	7.937
1-1/2	3.810	1-7/8	4.763	3-1/2	8.890	3-5/16	8.414	7	17.78	4-1/8	10.478	3-1/8	7.937
2	5.080	2-1/16	5.245	3-3/4	9.525	3-1/2	8.890	7	17.78	4-3/8	11.113	3-7/8	9.906
2-1/2	6.350	2-1/8	5.397	3-13/16	9.684	3-13/16	9.684	7-1/2	19.05	4-5/8	11.748	4-5/8	11.684
3	7.620	2-7/16	6.191	4-1/8	10.478	4-1/4	10.795	7-1/2	19.05	4-7/8	12.383	5-3/16	13.208
4	10.160	3-1/8	7.937	4-13/16	12.224	5-3/16	13.176	7-1/2	19.05	5-3/8	13.653	6-11/16	17.018
6	15.240	3-1/8	7.937	6-1/8	15.558	N/A	N/A	7	17.78	6-3/8	16.193	8-1/2	21.600

"A" - Valve Size · "B" - Face to Face · "C" - Handle - Center to End · "D" - Center to Top of Handle · "E" - Body Diameter

Other Connections Available Upon Request
Exotic Materials Available

Replacement Seals
Standard: Platinum Cured Silicone
Optional: Viton[®] or EPDM



Top-Flo[®] Full Flow Ball Valves



Top Line's Ball Valve is engineered to be the finest in the industry. Each valve is built to exacting specifications and is constructed to perform flawlessly in the most hostile environment.

Top Line's Ball Valves are utilized by firms which demand the uncompromised ability to regulate flow - from full flow open to various degrees of closure.



Tank bottom valve with actuation

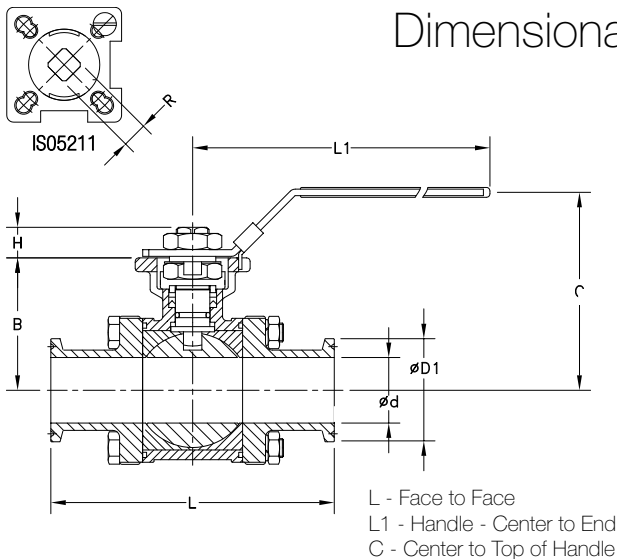
IMPORTANT FEATURES

- 360 Degree Installation - Valve may be installed in any position.
- Teflon cavity fillers are precision machined to maintain sanitary environment.
- Easy "In-line" servicing. Unique design allows valve ends to remain attached while servicing valve body.
- No special tools needed.
- Minimal turbulence - maximum flow through.
- USDA approved
- ISO5211 Mounting Pad

MECHANICAL SPECIFICATIONS

- Sizes - 1/2", 3/4", 1", 1-1/2", 2", 2 1/2", 3" and 4"
- Materials - 316 Stainless Steel
- Teflon seating
- Connections - Clamp & Butt-weld. Other connections available upon inquiry
- Infinite number of closure positions
- Locking handle
- Pressure - 1,000 psi at 70°F sizes 1/2 - 2
- 800 psi at 70°F sizes 2-1/2 - 4
- True port
- Air & electric actuators available
- Double Teflon stem packing

Dimensional Specifications



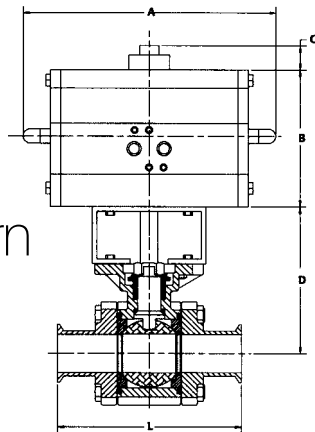
SIZE	B	C	H	d	D1	L	L1	R	ISO5211
1/2	1.58	2.78	.35	.37	.98	3.50	5.04	9MM	F03 F04
3/4	1.71	2.91	.35	.62	.98	3.98	5.04	9MM	F03 F04
1	2.05	3.36	.43	.87	1.98	4.49	6.54	11MM	F04 F05
1 1/2	2.59	3.92	.61	1.37	1.98	5.51	8.46	14MM	F05 F07
2	2.91	4.24	.61	1.87	2.54	6.14	8.46	14MM	F05 F07
2 1/2	3.66	5.74	.65	2.37	3.06	7.76	12.68	17MM	F07 F10
3	4.02	6.09	.65	2.87	3.58	9.02	12.68	17MM	F07 F10
4	5.20	7.40	.85	3.83	4.68	9.48	12.44	22MM	F10

2 1/2" - 4" Ball Valves have 6 stud bolts

Series 77 High Purity Ball Valves

Series 77 Ball Valves feature a high quality 316L investment casting. They are available with sanitary clamp or orbital tube OD ends. Select the cavity filled or non-cavity filled design. Superior leak protection is accomplished by using a patented live-loaded packing system featuring Bellville washers and double "V" ring packing. An ISO 5211 mounting pad is provided for easy automation.

Double Acting
or Spring Return
Pneumatic
Automated Ball Valve
Package

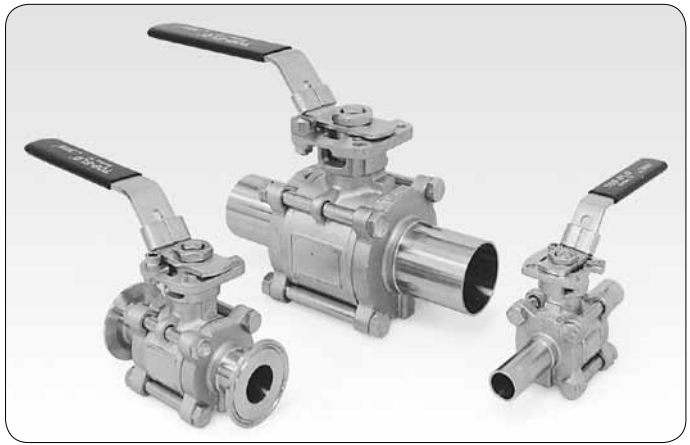


Non-Cavity Filled

Valve Size	A	B	C	D	L
1/2"	6.81	2.68	0.79	3.50	3.51
3/4"	7.50	3.39	0.79	3.66	4.00
1"	7.50	3.39	0.79	3.94	4.51
1-1/2"	8.23	4.45	0.79	5.07	5.52
2"	8.23	4.45	0.79	5.37	6.26
2-1/2"	8.23	4.45	0.79	6.28	6.85
3"	9.60	4.88	0.79	6.63	7.61
4"	9.96	5.28	0.79	7.26	8.90

Cavity Filled

Valve Size	A	B	C	D	L
1/2"	7.50	3.39	0.79	3.50	3.51
3/4"	8.23	4.45	0.79	3.66	4.00
1"	8.23	4.45	0.79	3.94	4.51
1-1/2"	8.23	4.45	0.79	5.07	5.52
2"	9.60	4.88	0.79	5.37	6.26
2-1/2"	11.30	6.18	0.79	6.28	6.85
3"	11.30	6.18	0.79	6.63	7.61
4"	12.56	6.93	0.79	7.26	8.90



Standard Features

Main valve components are made from 316L stainless steel

- Body, and ends are 316L CF3M ASTM A-351 investment cast stainless steel
- Ball is machined from 316L CF3M ASTM-A-351 cast stainless steel
- Stem is machined from ASTM A-493 316L bar stock

Full traceability on all wetted parts (MTR's)

Standard internal polish is 15 Ra and is polished to meet ASME BPE specification DT-12 and Table SF-6 as required.

Standard seats TFM (FDA, USP 23 Class VI)

- TFM (TFM is a trademark of Dyneon)

Stem packing TFM

Full port to I.D. of tubing for reduced pressured drop

Bottom entry 316L pyramidal live loaded blow out proof high cycle stem adjusts to temperature and pressure fluctuation

Locked stem nut to prevent loosening after continuous valve actuation

Dual anti-static devices on stem (contact between stem and ball, and stem and valve body)

ISO 5211 direct mounting pad

Direct mount actuation 1/2" to 4"

Handle locking device when manually actuated

3-piece body construction for ease of repair

Open bolt design to facilitate full external cleanability

Clamp, extended butt weld, or clamp by extended butt weld

- Clamp end requirements per ASME BPE 2002 DT-10, per table DT-2
- Extended butt weld - 316L CF3M ASTM A-351 controlled chemical composition to ASME BPE 2002 table DT-3 and dimensionally per ASME BPE 2002 tables DT-4 and DT-5

Excellent for:

- Pharmaceutical · Food and Beverage

Options

Flush bottom tank pad, I-line, Q-line, others available upon request.

Improved I.D. polish to 10 Ra and electropolishing available

Cavity filled seats in TFM

Non-cavity filled seats available in RTFE, 50/50 SS/TFE, Peck

Pneumatic or electric actuation available

Westlock & Stonel products

3-Piece Design

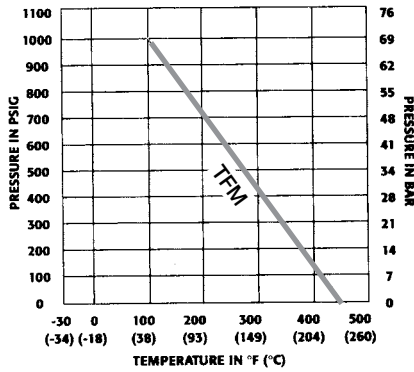
Valve Operating Torques		
	Non-Cavity Filled	Cavity Filled
1/2"	80	95
3/4"	89	100
1"	127	160
1-1/2"	210	410
2"	354	490
2-1/2"	580	1010
3"	755	1075
4"	1317	1400

NOTE: PTFE Seats. Consult factory when using other seat material.

No.	Part Name	Qty.	Material
1	Body	1	CF3M
2	End Cap	2	CF3M
3	Ball	1	SS316L
4	Seat	2	TFM
5	Joint Gasket	2	TFM
6	Stem Seal	1	TFM
7	Stem	1	SS316L
8	Gland Packing	*	TFM
9	Gland Packing	1	‡
10	Gland Bush	1	SS304
11	Belleville Washer	2	SS301
12	Stop Washer	1	SS304
13	Stem Nut	2	SS304
14	Stem Washer	1	SS304
15	Handle	1	SS304
16	Locking Device	1	SS304
17	Handle Sleeve	1	Vinyl
18	Bolt	#	SS304
19	Bolt Nut	§	SS304
20	Bolt Washer	§	SS304
21	Stop Pin	1	SS304
22	Pin Nut	1	SS304

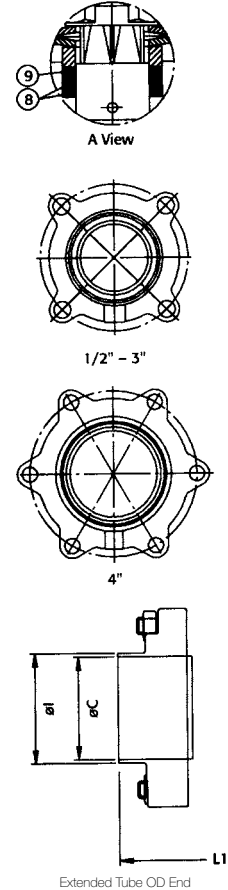
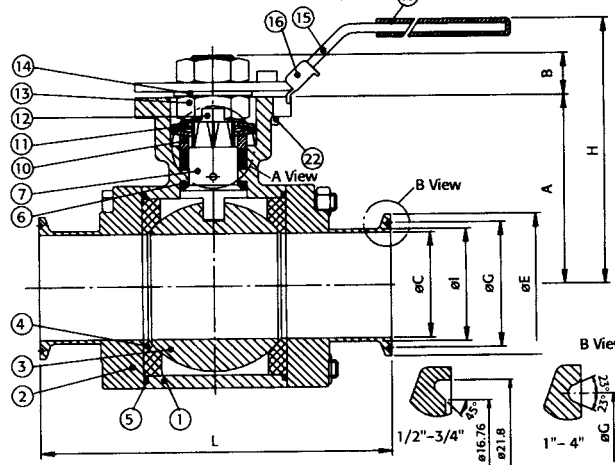
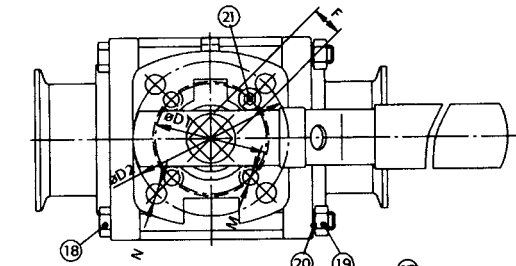
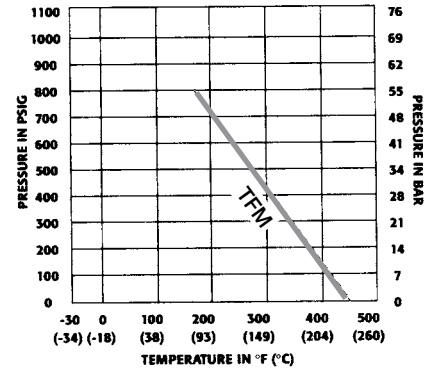
* For 1/2" to 2" - 2 pcs.; For 2-1/2" to 4" - 3 pcs.
 # For 1/2" to 3" - 4 pcs.; For 4" - 6 pcs.
 § For 1-1/2" to 2" - 4 pcs.; For 2-1/2" to 4" - 12 pcs.
 ‡ 25% glass fiber filled and PTFE
 1/2" to 2" single ended external thread
 2-1/2" to 4" double extended external thread

Pressure vs. Temperature Chart for valve 1/2" to 2"



NOTE: Use of sanitary clamp ends will affect pressure ratings.

Pressure vs. Temperature Chart for valve 2-1/2" to 4"



Value Size	Value Cv
1/2"	6
3/4"	9
1"	21
1-1/2"	37
2"	58
2-1/2"	93
3"	139
4"	232

- With or Without cavity filler
- Internal Polish Standard (15) RA

Dimension (IN)

Size	A	B	C dia	D1 dia	D2 dia	E dia	F	G dia.	I dia.	H	L	L1	M	N	ISO 5211
1/2"	1.66	0.34	0.37	1.42	1.65	0.99	0.35	N/A	0.50	3.03	3.51	5.50	0.24	0.28	F03/F04/F05
3/4"	1.89	0.33	0.62	1.42	1.65	0.99	0.35	N/A	0.75	3.27	4.00	5.75	0.24	0.28	F03/F04/F05
1"	2.23	0.45	0.87	1.64	1.97	1.98	0.43	1.71	1.00	3.74	4.51	6.25	0.24	0.28	F04/F05
1-1/2"	3.05	0.55	1.37	1.97	2.76	1.99	0.55	1.71	1.50	5.00	5.52	7.50	0.28	0.35	F05/F07
2"	3.35	0.55	1.87	1.97	2.76	2.52	0.55	2.20	2.00	5.28	6.26	8.50	0.28	0.35	F05/F07
2-1/2"	4.28	0.66	2.37	2.76	4.02	3.05	0.67	2.78	2.50	6.54	6.85	9.75	0.39	0.47	F07/F10
3"	4.63	0.70	2.87	2.76	4.02	3.58	0.67	3.28	3.00	6.93	7.61	10.50	0.39	0.47	F07/F10
4"	5.22	0.66	3.83	2.76	4.02	4.68	0.67	4.34	4.00	7.48	8.90	12.50	0.39	0.47	F07/F10

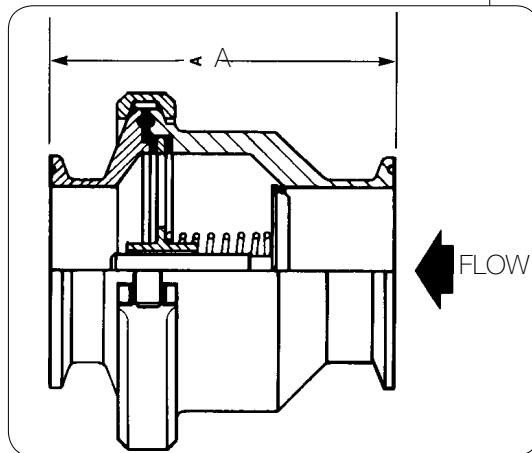
Top-Flo[®] 3A Concentric Check Valves



This finely crafted 316L stainless steel check valve offers maximum quality that meets all 3A standards. With a unique clamp design, a simple twist of the wing nut permits quick disassembly without tools. The stainless steel spring in this superior valve assures positive closure and smooth operation. This valve is designed for vertical as well as horizontal applications.

SIZE	A	STOCK NO.
1/2"	3-1/2"	384505VA
3/4"	3-1/2"	384507VA
1"	4-1/8"	384510VA
1 1/2"	4-9/16"	384515VA
2"	5-1/16"	384520VA
2 1/2"	5-3/8"	384525VA
3"	6-1/8"	384530VA
4"	8-1/8"	384540VA
6"	8-1/8"	384560VA

T45MP
Standard Disc
Type Check
Valve (3A)



SIZE	A	STOCK NO.
1/2"	3-1/2"	N/A
3/4"	3-1/2"	N/A
1"	4-1/8"	384510GFEA
1 1/2"	4-9/16"	384515GFEA
2"	5-1/16"	384520GFEA
2 1/2"	5-3/8"	384525GFEA
3"	6-1/8"	384530GFEA
4"	8-1/8"	384540GFEA
6"	8-1/8"	384560GFEA

T45MP
Guide Finger
Disc Type
Check Valve

FEATURES

- Suitable for C.I.P.
- Operating pressure to 150 psi
- Temperature from 30°F min. to 225°F max.
- Standard end connection-clamp type (butt weld & TI-Line upon request)
- Guide finger disc available upon request.
- Standard seals-FDA Viton (EPDM & other elastomers upon request)
- Internal finish-25 to 30ra average
- Material Test Reports provided upon request
- Eccentric Type available upon request
- For steam applications consult factory

Top-Flo[®] Plug Valves

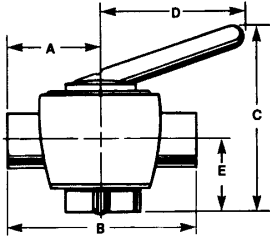


Plug valves are excellent sanitary devices with minimal pressure drops. The TOP FLO[®] Plug Valve features a tapered core assembly which allows easy cleaning while eliminating crevices which can lead to contamination. These valves are constructed with a special taper which has been carefully designed to reduce wedging and galling. These rugged valves are made of type 304 or 316L stainless steel and come in Clamp or Butt-Weld end connections. Other connections available upon request. Available in rubber or steel plugs.

Features

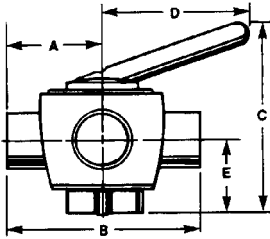
- Rubber (Silicone) or Stainless Steel Plug
- Materials Type 304 Stainless Steel
- Meets 3A Sanitary Finish
- Temperature to 100° F
- Bevel Seat Ends available on request
- 316 Stainless Steel available on request

Note: Plug Valves, because of their inherent design, are recommended only for low pressure applications ... 25 psi maximum; for use with non-hazardous products, and at temperatures not to exceed 100°F. They are subject to leakage almost from the initial time of installation because of normal operating, maintenance, and cleaning procedures. CAUTION: Butt-Weld End dimension is minimum center to face length and will require skillful welding techniques and proper cooling of valve body to prevent warpage.



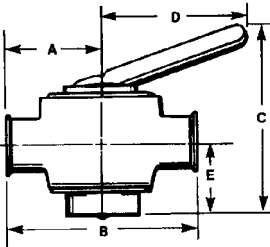
D10WW 2-WAY PLUG VALVE BUTT-WELD

Size (Tube O.D.)	A	B	C	D	E	Stock No. Stainless Steel Plug	Stock No. Rubber Plug
1	3-5/8	7-1/4	5-1/16	4-39/64	2-19/64	359610	359610R
1-1/2	2-29/32	7-13/16	6-7/16	5-5/8	2-13/32	359615	359615R
2	4-13/32	8-13/16	7-1/64	5-43/64	2-27/32	359620	359620R
2-1/2	5-1/8	10-1/4	8-51/64	5-59/64	3-25/64	359625	359625R
3	5-23/32	11-7/16	9-1/2	7-1/8	3-9/16	359630	359630R



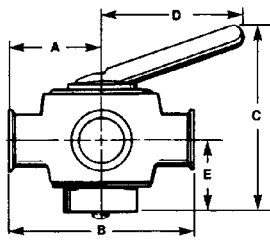
D11WWW 3-WAY PLUG VALVE BUTT-WELD

Size (Tube O.D.)	A	B	C	D	E	Stock No. Stainless Steel Plug	Stock No. Rubber Plug
1	3-5/8	7-1/4	5-1/16	4-39/64	2-19/64	359710	359710R
1-1/2	2-29/32	7-13/16	6-7/16	5-5/8	2-13/32	359715	359715R
2	4-13/32	8-13/16	7-1/16	5-43/64	2-27/32	359720	359720R
2-1/2	5-1/8	10-1/4	8-51/64	5-59/64	3-25/64	359725	359725R
3	5-23/32	11-7/16	9-1/2	7-1/8	3-9/16	359730	359730R



D10MP 2-WAY PLUG VALVE CLAMP

Size (Tube O.D.)	A	B	C	D	E	Stock No. Stainless Steel Plug	Stock No. Rubber Plug
1	2-9/16	4-9/16	5-1/16	4-39/64	2-19/64	329610	329610R
1-1/2	2-29/32	5-13/16	6-7/16	5-5/8	2-13/32	329615	329615R
2	3-13/32	6-13/16	7-1/16	5-43/64	2-27/32	329620	329620R
2-1/2	4-1/8	8-1/4	8-51/64	5-59/64	3-25/64	329625	329625R
3	4-23/32	9-7/16	9-1/2	7-7/8	3-9/16	329630	329630R



D11MP 3-WAY PLUG VALVE CLAMP

Size (Tube O.D.)	A	B	C	D	E	Stock No. Stainless Steel Plug	Stock No. Rubber Plug
1	2-9/16	4-9/16	5-1/16	4-39/64	2-19/64	329710	329710R
1-1/2	2-29/32	5-13/16	6-7/16	5-5/8	2-13/32	329715	329715R
2	3-13/32	6-13/16	7-1/16	5-43/64	2-27/32	329720	329720R
2-1/2	4-1/8	8-1/4	8-51/64	5-59/64	3-25/64	329725	329725R
3	4-23/32	9-7/16	9-1/2	7-7/8	3-9/16	329730	329730R

Top-Flo[®] Automated Flow Control Valves



DCX3 - DCX4 shut off and divert valves

General Characteristics

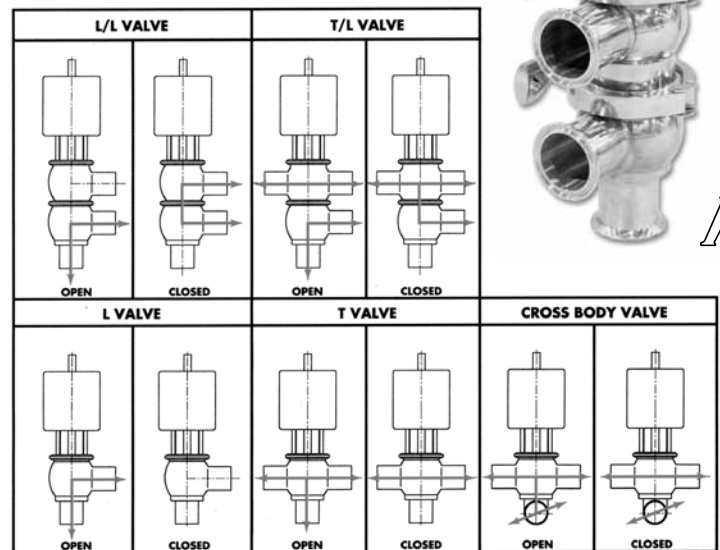
- High tech and sturdy air operated valve, with a floating plug seal, meeting stringent use criteria.
- An extra thick body of the actuator and of the valve, ensuring a good resistance to mechanical and thermal distortions.
- A modular design enabling the following configurations:
 - Shut off valve DCX3 L DCX3 T DCX3 X
 - Divert valve DCX4 L/L DCX4 T/L DCX4 L/T DCX4 LX
- PFA seals quality ensures a complete sealing at high temperature and a good resistance to aggressive products.
- Plastomer seal can be replaced by elastomer seal
- Single or double acting connection
- With plastomer seal, vertical setting up (especially for DCX4)

Dimensions

1" - 1-1/2" - 2" - 2-1/2" - 3" - 4" - 5" - 6" - 8" - 10"

Material

- Body: 316L stainless steel
- Shut-off unit: 316L stainless steel
- Manual or automatic operating devices: 304 stainless steel
- Plug seal: PFA and elastomer
- Stem seal: viton, EPDM, silicone



Various body designs

Dimensions are given as information. Subject to change without notice. Technical data mentioned on this document can vary according to technical changes. These technical data are an accurate information, but pictures, drawings, sketches of this document are not contractual.

Performance curve for DCX3 - DCX4 shut off and divert valves

Working conditions

The working conditions are established for valve normally closed (NC), normally open (NO), or double acting.

SIZE	1" to 2-1/2"	3"	4"	6"
Maximum pressure under the plug at 68° F	87 psi	87 psi	87 psi	87 psi

Air supply of the actuator

65 to 116 psi (filtered dry air)

Permissible maximum temperature

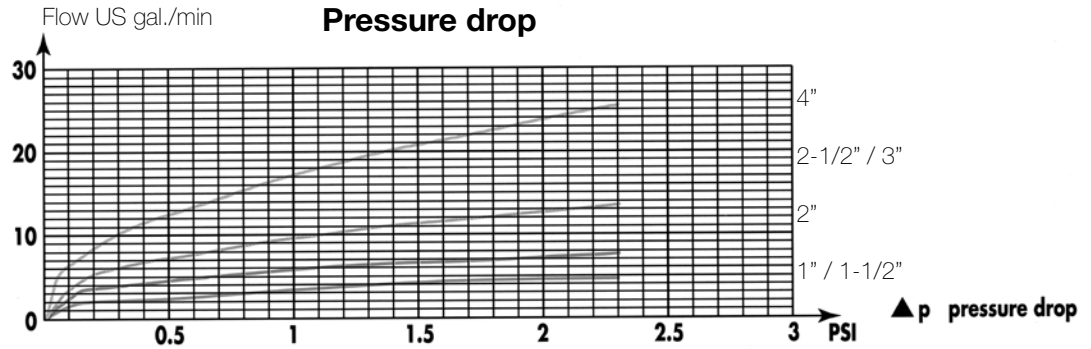
285° F

Vacuum resistance (absolute pressure)

5.8 psi or 12 inches of Hg

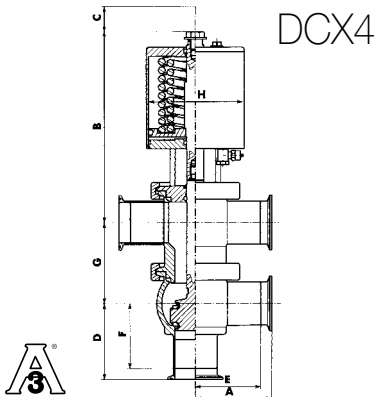
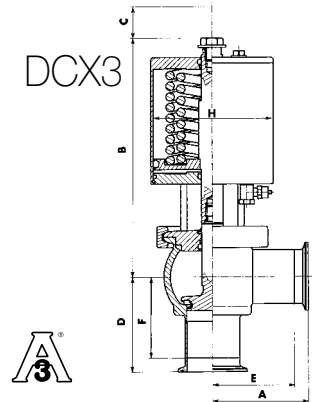
Test

Valves meet the requirements of the ISO 5208 norm.



Dimensions

SIZE	A	B	C	D	E	F	H
1"	2-1/2"	7-5/8"	11/16"	2-1/2"	2"	2"	3-1/4"
1-1/2"	2-3/4"	7-3/4"	13/16"	2-3/4"	2-1/4"	2-1/4"	3-1/4"
2"	3-1/2"	8-7/8"	1-3/16"	3-1/2"	3"	3"	4-5/16"
2-1/2"	3-1/2"	10-7/8"	1-3/8"	3-1/2"	3"	3"	6-5/16"
3"	3-3/4"	11-1/8"	1-3/8"	3-3/4"	3-1/4"	3-1/4"	6-5/16"
4"	5-3/4"	13-1/4"	1-9/16"	5-3/4"	5-1/8"	5-1/8"	8-1/8"
6"	7-13/16"	19-11/16"	4-21/64"	7-13/16"	7-1/16"	7-1/16"	10-5/8"



SIZE	A	B	C	D	E	F	G
1"	2-1/2"	7-5/8"	9/16"	2-1/2"	2"	2"	3-1/4"
1-1/2"	2-3/4"	7-3/4"	11/16"	2-3/4"	2-1/4"	2-1/4"	3-1/4"
2"	3-1/2"	8-7/8"	1-1/16"	3-1/2"	3"	3"	3-3/4"
2-1/2"	3-1/2"	10-7/8"	1-1/4"	3-1/2"	3"	3"	4-1/4"
3"	3-3/4"	11-1/8"	1-1/4"	3-3/4"	3-1/4"	3-1/4"	4-3/4"
4"	5-3/4"	13-1/4"	1-7/16"	5-3/4"	5-1/8"	5-1/8"	6-1/2"
6"	7-13/16"	19-11/16"	4-21/64"	7-13/16"	7-1/16"	7-1/16"	7-1/16"

DCX3A - Aseptic shut off valve

General characteristics

This valve has been designed to complete the range of the DCX3 shut off valve. The valve uses the same partial assemblies (actuator and valve body). An additional PTFE diaphragm on the upper part of the body allows to isolate completely the external components. Therefore, the parts, which are directly in contact with the fluid are:

- The body in 316L stainless steel, its sturdy construction and the wall surface finish allow an efficient sterilization at high temperature.
- The plug with the same floating PFA seal (from the technical point of view) as the VDCI valve, allows a perfect cleaning of the valve.
- The diaphragm made of PTFE plastomer is held tightly in place by a compressed top plate.
- Option: Plug and body machined, for a metal to metal sealing (without seal).
- For DCX4 sterilization of the stem through an upper guide bearing.

Working Conditions

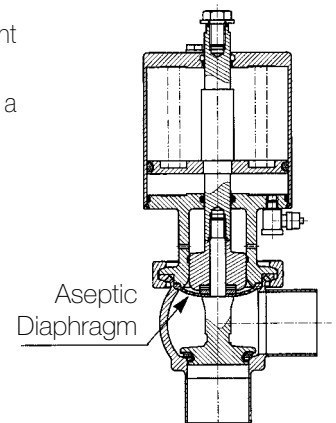
The maximum working pressure is 101 psi at 68° F.

Permissible maximum temperature

The valve accepts a sterilization temperature of 285°F, valve open, without operating the actuator.

Dimensions

Refer to the dimensions of DCX3 shut off valve

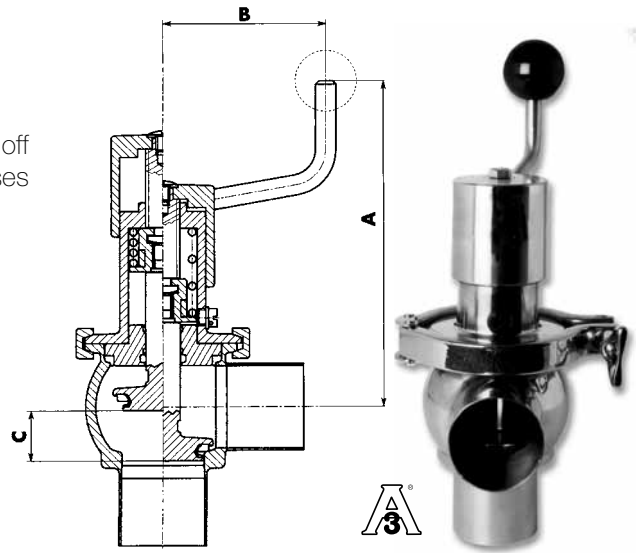


Manual shut off and divert valves

General characteristics

The manual operator device is adaptable for DCX3 and DCX4 shut off and divert valves, in place of the pneumatic actuator. This device uses standard body, plug and shut-off unit.

SIZE	A	B	C
1"	7-1/16"	3-3/4"	11/16"
1-1/2"	7-5/16"	3-3/4"	7/8"
2"	7-5/8"	3-3/4"	1-3/16"
2-1/2"	8-1/8"	3-3/4"	1-3/8"
3"	8-3/8"	3-3/4"	1-3/8"
4"	9-9/16"	3-3/4"	1-9/16"



Tank bottom shut off and divert valves

General Characteristics

- This valve has the same characteristics as the other shut off and divert valves, single or double acting (DCX3 or DCX4)
- Integral flange for welding to tank bottom
- Eliminates product retention area on tank bottom
- Single acting recommended for single sealing

Dimensions

1" - 1-1/2" - 2" - 2-1/2" - 3" - 4" - 6" - 8" - 10"

Material

- Body and plug: 316L stainless steel
- Plug seal: PFA
- Body seal: viton, EPDM, silicone
- Actuator: 304 stainless steel

Valve ends

- On tank: welded integral flange
- On tube: according to the norm, available with many different industry standards (SMS - DIN - CLAMP - tube, etc.)

Options

- Signal back equipment on the top of the actuator

Surface Finish

- External = RA max (150 grit)
- Internal = 32 RA max (180 grit)



Performances

Working conditions

The working conditions are established only for valve normally closed (NC).

SIZE	1" to 2-1/2"	3"	4"
Maximum pressure under the plug at 68° F	87 psi	87 psi	87 psi

Air supply of the actuator

75 to 116 psi
(filtered dry air)

Permissible maximum temperature

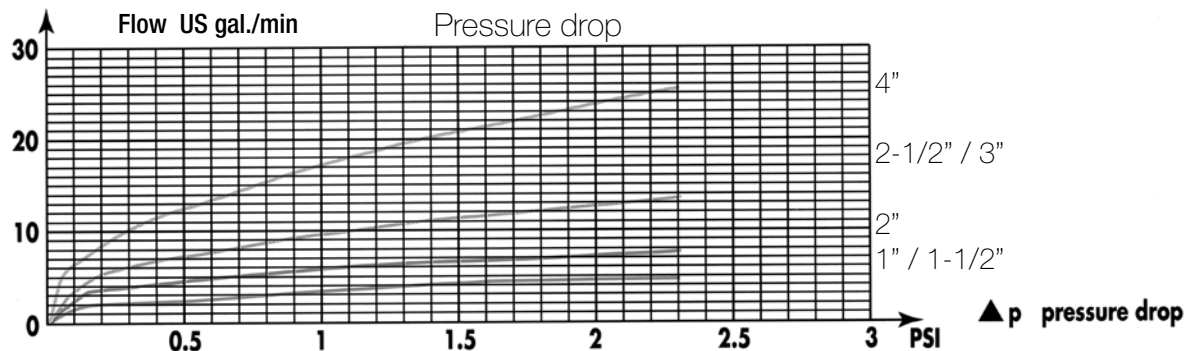
285° F

Vacuum resistance (absolute pressure)

5.8 psi or 12 inches of Hg

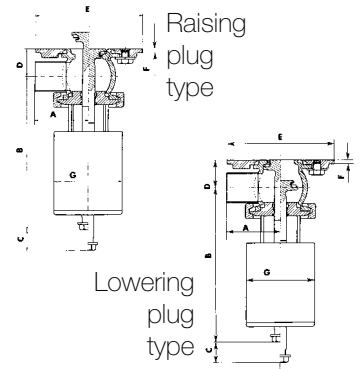
Test

Valves meet the requirements of the ISO 5208 norm.



Dimensions for tank bottom valves

SIZE	A	B	C	D	E	F	G
1"	2"	7-3/8"	1"	1-3/16"	5-1/2"	3/16"	3-1/4"
1-1/2"	2-1/4"	7-11/16"	1"	1-3/8"	5-1/2"	3/16"	3-1/4"
2"	3"	8-7/8"	1-3/16"	1-5/8"	5-1/2"	3/16"	4-5/16"
2-1/2"	3"	10-7/8"	1-3/8"	1-15/16"	7-7/16"	3/16"	6-5/16"
3"	3-1/4"	11-1/8"	1-3/8"	2-3/16"	7-7/16"	3/16"	6-5/16"
4"	5-1/8"	13-3/8"	1-9/16"	2-15/16"	9-13/16"	1/4"	8-1/8"



Small size shut off and divert valves

General Characteristics

- Compact body
- Heavy plug and body
- Easy disassembly

Dimensions

1/2" - 3/4" - 1"

Material

- Body: 316L stainless steel
- Plug: PFA
- Handle: PBT plastic material
- Actuator: 304 stainless steel

Operator devices

- Manual: Handle with a visual indicator for the opening of the valve
- Automated: Single or double acting pneumatic actuator

Valve ends

- Butt weld
- Clamp

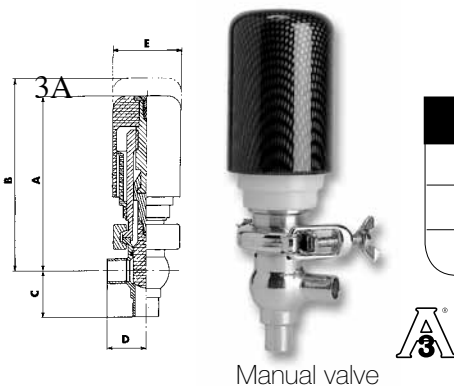
Surface finish

- External = 47 RA max (150 grit)
- Internal = 32 RA max (180 grit)

Working conditions

- Temperature = 275° F
- Sealing pressure = 240 psi
- Air supply of the actuator = 75 to 116 psi (dry filtered air)

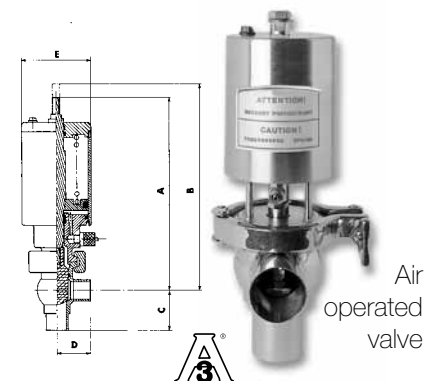
Dimensions



Manual valve

SIZE	A	B	C	D	E
1/2"	5-1/16"	5-1/2"	1-3/16"	1-1/8"	1-15/16"
3/4"	5-1/8"	5-9/16"	1-3/8"	1-3/16"	1-15/16"
1"	5-1/4"	5-13/16"	1-9/16"	1-7/16"	1-15/16"

SIZE	A	B	C	D	E
1/2"	6-3/4"	7-1/4"	1-3/16"	1-1/8"	2-3/8"
3/4"	6-3/4"	7-1/4"	1-3/8"	1-3/16"	2-3/8"
1"	7-3/8"	7-15/16"	1-9/16"	1-7/16"	2-13/16"



Air operated valve

Mix proof valve - VDCI-MC

General Characteristics

- High tech, mix proof valve, with two independent plugs meeting stringent use criteria.
- Fitted with an extra thick body of the actuator and of the valve, ensuring a good resistance to mechanical and thermal distortions.
- Possibility to actuate the two plugs independently and to clean the chamber area, plugs closed, thanks to a double wall leak detection channel.
- Partial balancing of the pressure under the lower plug thanks to a protected counterbalance.
- PFA seals ensure a complete sealing at high temperature and a good resistance to aggressive products (easily cleaned).
- The design of the VDCI allows the releasing pressure outside without any risk of mixing between the two parts of the valve, in case of overpressure against 145 psi under the lower plug.

Dimensions

1-1/2" - 2" - 2-1/2" - 3" - 4" - 5" - 6" - 8" - 10"

Material

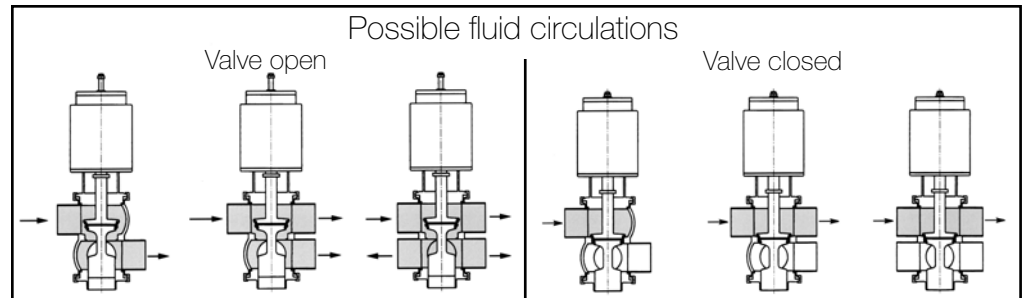
- Body: 316L stainless steel
- Shut-off unit: 316L stainless steel
- Actuator: 304 stainless steel
- Plug seal: PFA
- Stem seal: viton (according to FDA specifications)

Options

- Upper modular break away actuator to allow the lifting of the lower plug.
- Signal back equipment on the top of the actuator.
- Sterilization of the stem and of the counterbalance through upper and lower guide bearings, without changing the body.
- Tank bottom type.
- Proximity switches mounted onto the bracket.

Surface Finish

- External = 47 RA max (150 grit)
- Internal = 32 RA max (180 grit)



Performances for VDCI-MC mix proof valve

Working conditions

Maximum cleaning is dependent on the lifting stroke of the plugs and varies according to the different diameters.

The below sheet indicates the flows calculated according to the tests realized by the CETIM (French Laboratory) under a pressure of 116 psi. Min. / Max. flow range under a water pressure of 116 psi.

Size	Cleaning flow by lifting of the upper plug in ft ³ /h	Cleaning flow by lifting of the lower plug in ft ³ /h
1-1/2" - 2"	35 - 141	35 - 88
2-1/2" - 3"	53 - 176	35 - 141
4"	71 - 212	53 - 176
5" - 6"	176 - 282	71 - 212

Air supply of the actuator

Filtered dry air from 75 psi min. to 120 psi max. through Rilsan hose DN 1/4" OD x 1/8" ID (5/16" OD x 3/16" ID)

Fluid working pressure

120 psi under the plug, before releasing (whatever the way of the flow is)

Permissible maximum temperature

285° F (difference of temperature between the upper and the lower line: max. 195°F)

Vacuum resistance (absolute pressure)

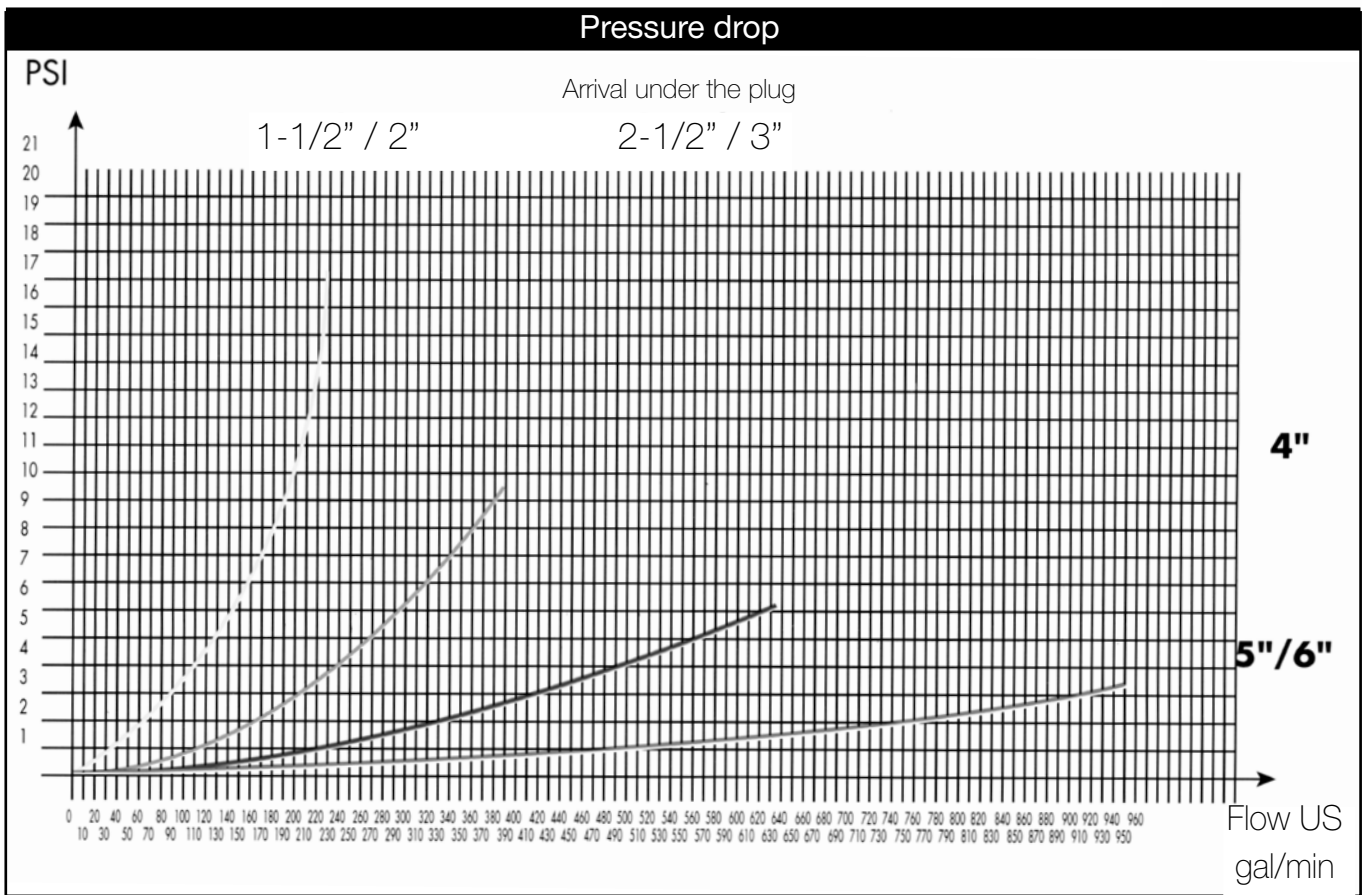
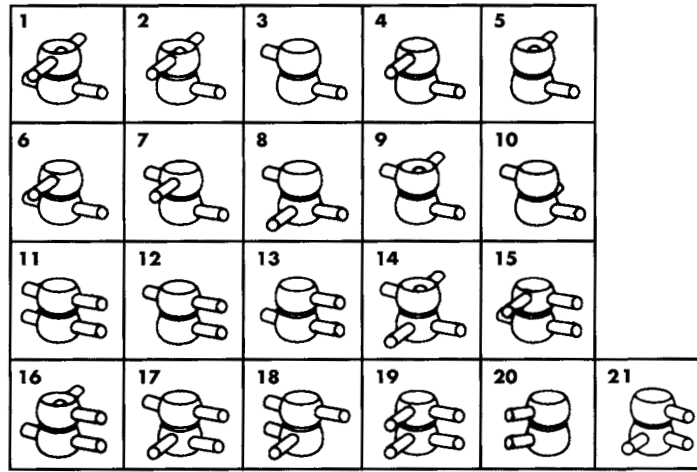
5.8 psi or 12 inches of Hg

Test

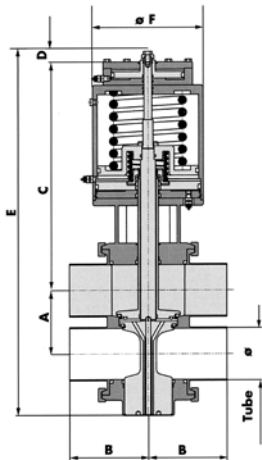
Valves meet the requirements of the ISO 5208 norm.

Various body designs

Dimensions are given as information. Subject to change without notice. Technical data mentioned on this document can vary according to technical changes. These technical data are an accurate information, but pictures, drawings, sketches of this document are not contractual.



Dimensions for VDCI mix proof valve



SIZE	A	B	C	D	E	F	WT. LB.
1-1/2"	2-3/16"	4-1/8"	12-13/16"	1-5/8"	19-7/8"	5-3/16"	49
2"	2-3/4"	4-1/8"	13-13/16"	1-5/8"	20-15/16"	5-3/16"	49
2-1/2"	3-3/8"	5-1/8"	14-9/16"	1-15/16"	24-3/16"	6-5/8"	84
3"	3-3/4"	5-1/8"	14-15/16"	1-15/16"	25-3/16"	6-5/8"	84
4"	4-15/16"	6-1/8"	17-1/2"	2-3/16"	29-1/2"	8-5/8"	165
5"	6-1/8"	7-7/8"	20-7/8"	2-3/8"	35-7/16"	10-3/4"	298
6"	7-1/8"	7-7/8"	21-5/8"	2-3/8"	37-5/8"	10-3/4"	298

Tank bottom mix proof valves

General Characteristics

- This valve completes the range of standard mix proof valves.
- Integral flange for welding to tank bottom.
- Eliminates product retention area on tank bottom.
- Central leakage detection.

Dimensions

2" - 2-1/2" - 3" - 4" - 6" - 8" - 10"

Material

- Body and plug: 316L stainless steel
- Plug seal: PFA
- Body seal: viton or EPDM
- Actuator: 304 stainless steel

Valve ends

- On tank: welded integral flange
- On tube: according to the norm, available with many different industry standards (SMS - DIN - CLAMP - tube - etc.)

Options

- Control box on the top of the actuator.

Surface Finish

- External = 47 RA max (150 grit)
- Internal = 32 RA max (180 grit)

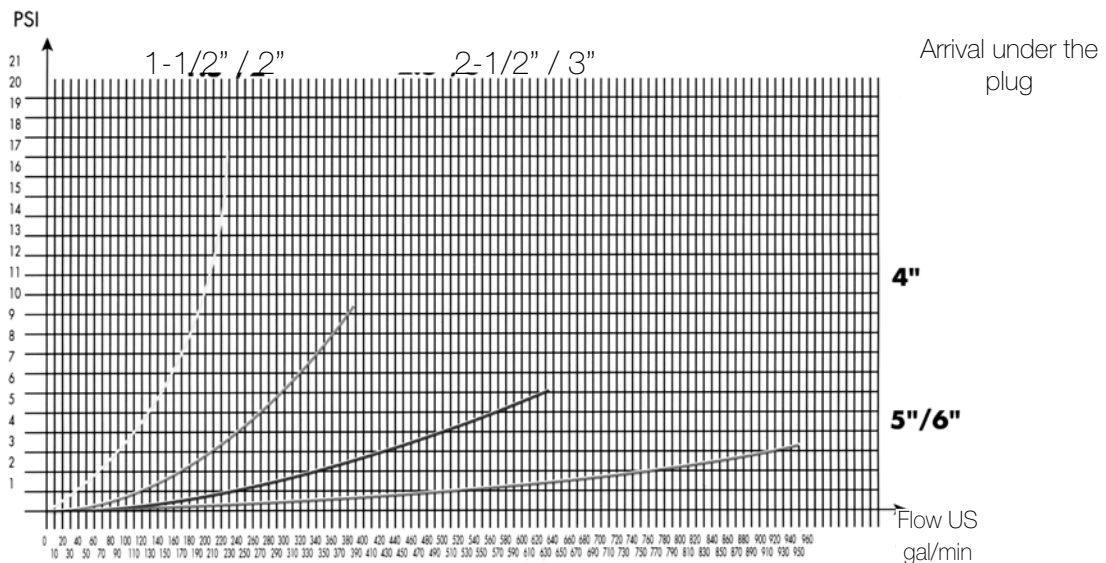
Tank bottom VDCI performance curve

Working conditions

Single acting compulsory for double sealing.

SIZE	2" to 2-1/2"	3"	4"
Effective pressure in psi	44	44	44

Pressure drop



Air supply of the actuator

Filtered dry air from 75 psi min. to 120 psi max. through Rilsan hose. DN 1/4" OD x 1/8" ID (5/16" OD x 3/16" ID)

Permissible maximum temperature

285° F (difference of temperature between the upper and the lower line: max. 195°F)

Vacuum resistance (absolute pressure)

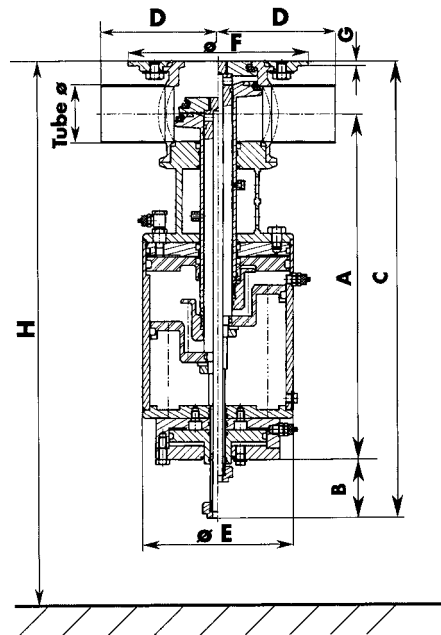
5.8 psi or 12 inches of Hg

Test

Valves meet the requirements of the ISO 5208 norm.

Tank bottom VDCI dimensions

Lowering plug type - Double sealing



Standard tank bottom - VDCI

SIZE	A	B	C	D	E	F	G
2"	13-3/8"	2-5/16"	17-9/16"	4-1/8"	5-1/16"	7"	3/16"
2-1/2"	14-15/16"	2-9/16"	19-13/16"	5-1/8"	6-5/8"	7-13/16"	3/16"
3"	15-3/16"	2-9/16"	20-1/4"	5-1/8"	6-5/8"	7-13/16"	3/16"
4"	17-1/2"	2-15/16"	23-5/8"	6-1/8"	8-5/8"	10-9/16"	5/16"

Aseptic tank bottom - VDCI

SIZE	A	B	C	D	E	F	G
2"	14"	2-5/16"	18-3/16"	4-1/8"	5-1/16"	7"	3/16"
2-1/2"	16-5/16"	2-9/16"	21-1/8"	5-1/8"	6-5/8"	7-13/16"	3/16"
3"	16-9/16"	2-9/16"	21-5/8"	5-1/8"	6-5/8"	7-13/16"	3/16"
4"	18-15/16"	2-15/16"	25-1/16"	6-1/8"	8-5/8"	10-9/16"	5/16"

Top-Flo[®] Hygienic Diaphragm Valves

Top-Flo[®] diaphragm valves are worthy of a category all its own. Our hygienic diaphragm valves compete with the leaders in the industry and we can provide many innovative process solutions. Top Line offers standard 2-Way, Zero DL[™] Divert, Zero DL[™] Point of Use, Zero DL[™] T-pattern, L-pattern, Sterile Access, actuation and accessories, forged or cast, and stainless steel bonnets.



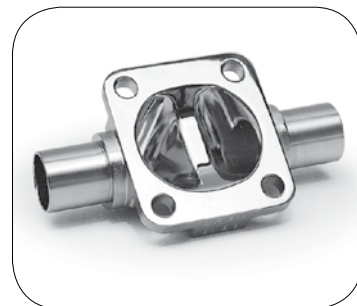
BioPro[®] Forged



The **BioPro[®] Forged** diaphragm valve is designed to achieve optimum performance and meet requirements for ultra pure environments within the Pharmaceutical and Bio-processing industries.

The **BioPro[®] Forged** bodies are manufactured in 316L stainless steel from wrought bar with minimal levels of ferrite to eliminate concerns for contamination or rouging commonly experienced within a hygienic piping system.

- Sizes available 1/2" to 6"



BioPro[®] Cast



The **BioPro[®] Cast** valves are commonly used for the dairy, food, beverage, brewery and hygienic consumer products industries, and select pharmaceutical applications.

BioPro[®] Cast bodies are manufactured in 316L stainless steel (A351 CF3M).

- Sizes available 1-1/2" to 6"

BioFlo[®] II Compact



The **BioFlo[®] II Compact** valve body is specifically designed for the prevention of media contamination in ultra pure applications within the bio-processing industry. **BioFlo[®] II Compact** valve bodies are available with 1/2" - 3/8" - 1/4" clamp or weld end connections.

BioFlo[®] II Compact valves are available in sizes with FDA and USP compliant EPDM or TFM diaphragms. Applications include sampling, drain ports, steam ports, and specialty fabrications.

Specialty Valves



In addition to the standard 2-way valves, TopLine is proud to offer **Zero DL[™] Specialty Valves**. Patterns offered include:

- T-Pattern
- L-Pattern
- Access Valves
- Tank Bottom
- Point-of-Use
- Divert

Actuation



Top Line Actuators provide the perfect solution to any valve automation requirement. **Top Line Actuators** are compact, lightweight and possess excellent throttling capabilities. The Top-Flo® valves are available with actuation to allow for remote operation of valves.

Actuation options include:

- Spring to open
- Spring to close
- Double acting
- Large selection of controls is available

Bonnet Assemblies



Top-Flo® 304 stainless steel and cast iron bonnets are made from lightweight investment castings. **Top-Flo®** stainless steel bonnets are electropolished externally providing a bright and sanitary exterior. Ergonomically designed PPS handwheels, highly visible indicators and sealed Intervals are standard with stainless steel bonnets. Stainless steel bonnets have built in adjustable close stop as standard.

O-ring seals in the handwheel and stem areas prevent contamination from entering through or exiting from the bonnet. All bolts are encapsulated, thus alleviating areas of entrapment during washdown of the system.

Top-Flo® bonnets can also be mounted with limit or proximity switches for position indicating. For cast valves and lesser applications, cast iron bonnets and cast iron epoxy coated bonnets are available.

Diaphragms



Each **Top-Flo® Diaphragm Valve** can be supplied with a wide variety of elastomer or TFM faced materials. All diaphragms are compliant with FDA codes and USPS standards and are fully traceable.

Diaphragms are molded in both the open and closed position dependant on type. All elastomer type diaphragms are attached to the compressor by a threaded stud. TFM diaphragms are attached by a bayonet type fixture that eliminates point loading, thus providing constant diaphragm compression across the weir resulting in a more uniform and reliable seal.

HANDWHEEL:

Designed for ease of operation and cleaning.

POSITION INDICATOR:

Highly visible fluorescent yellow.

BONNET ASSEMBLY:

Manufactured in 304 stainless steel, specifically designed to combat the rigors of washdown protocols, this unique feature comes as a standard in sizes 1/2" to 6".

BOLTING:

Accessible from all angles for ease of maintenance.

DIAPHRAGM:

A wide selection of fully traceable elastomers and TFM diaphragms in compliance with FDA and USP standards.

BODY:

Available in forged or investment cast, 316L stainless steel. Internal design provides for maximum efficiency and flow.

END CONNECTIONS:

Top Line offers a variety of end connections including Clamp, Tube OD and others upon request.

DRAINING CHARACTERISTICS:

All valve bodies are self draining. Hash marks are provided for proper orientation during installation.

ALL TOP-FLO® DIAPHRAGM VALVES FEATURE:

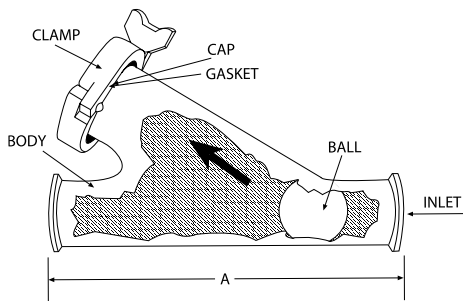
- Full traceability
- Self draining
- 316L stainless steel bodies (1.4435)
- Stainless steel or Cast Iron Bonnets with built in travel stops
- FDA / USP compliant diaphragms

Top Line Ball Check Valves

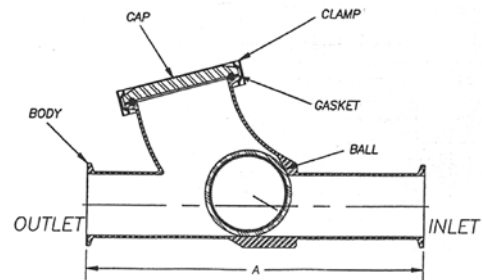
This finely crafted 316L stainless steel ball check valve offers maximum quality. Its unique design permits easy, unobstructed flow, yet quickly and securely forms a tight seal. The sealing ball moves effortlessly, assuring positive closure and opening with the slightest change in pressure conditions. This valve is designed for vertical applications.

Features:

- All wetted materials are in 316L stainless steel
- Ball available in Buna, Viton, and EPDM
- Clamp ends - standard
- Other ends available upon request
- 3A sanitary finish - standard



1-1/2" and 2" Style*



2-1/2" and 3" Style*

SIZE	A (mm)	A (inches)	PART NO.
1-1/2	218.3	8-19/32	384515A
2	256.4	10-3/32	384520A
2-1/2	292.1	11-1/2	384525AW
3	314.3	12-3/8	384530AW

Accessory Air Blow Check Valves

Features:

- Quick couple or FNPT air connection
- Buna, Viton, or EPDM stopper
- Clamp sizes 1-1/2 to 4"
- All 316L body construction

* excludes clamp which is 304SS



Top-Flo® Sample Valves



Top-Flo® sample valves are specially engineered to be the finest in the industry and incorporate many features and benefits not found on other sampling valves. Top-Flo® sampling valves come standard with minimal internal deadleg area designed into each valve, keeping hold up volume to a minimum for accurate samples every time. Right Angle or In-Line models available from stock in sizes 1/2" to 4" clamp end x hose barb.

Features and Benefits

- All 316L wetted part construction
- Standard finish to 25Ra ID
- Tapered virgin PTFE stem tip for positive closure
- FDA Viton stem seal
- Positive open stop to prevent accidental removal of stem from valve body
- Black Ultem® nut cover to prevent accidental burns from conveyed heat from hot products
- Tapered clamp connection to prevent possible product hold up area when installed in line
- Autoclaveable
- Fully traceable (material test reports)

Options

- Internal finish to 15Ra Electropolish
- FDA EPDM stem seal
- Weld end x hose barb
- Teflon nut cover
- USP Class VI

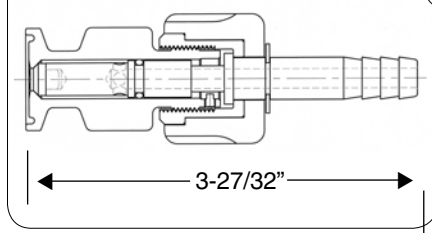
Service conditions

- Withstand pressures to 400 psi
- Temperatures from 0-300 deg F

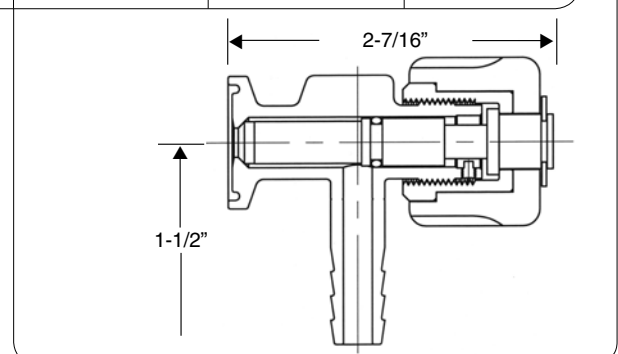
* For 1/2" clamp outlet, add TC suffix.
For details call factory.

Sizes Available

In-Line Type		
Clamp Connection	1/4" Hose Barb	3/8" Hose Barb
1/2"	380505-14IN	380505-38IN
3/4"	380507-14IN	380507-38IN
1"	380510-14IN	380510-38IN
1-1/2"	380515-14IN	380515-38IN
2"	380520-14IN	380520-38IN
2-1/2"	380525-14IN	380525-38IN
3"	380530-14IN	380530-38IN
4"	380540-14IN	380540-38IN



Right Angle Type			
Clamp Connection	1/4" Hose Barb	3/8" Hose Barb	1/2" Hose Barb*
1/2"	380505-14	380505-38	380505-12
3/4"	380507-14	380507-38	380507-12
1"	380510-14	380510-38	380510-12
1-1/2"	380515-14	380515-38	380515-12
2"	380520-14	380520-38	380520-12
2-1/2"	380525-14	380525-38	380525-12
3"	380530-14	380530-38	380530-12
4"	380540-14	380540-38	380540-12



TL60ARV Air Relief Valve

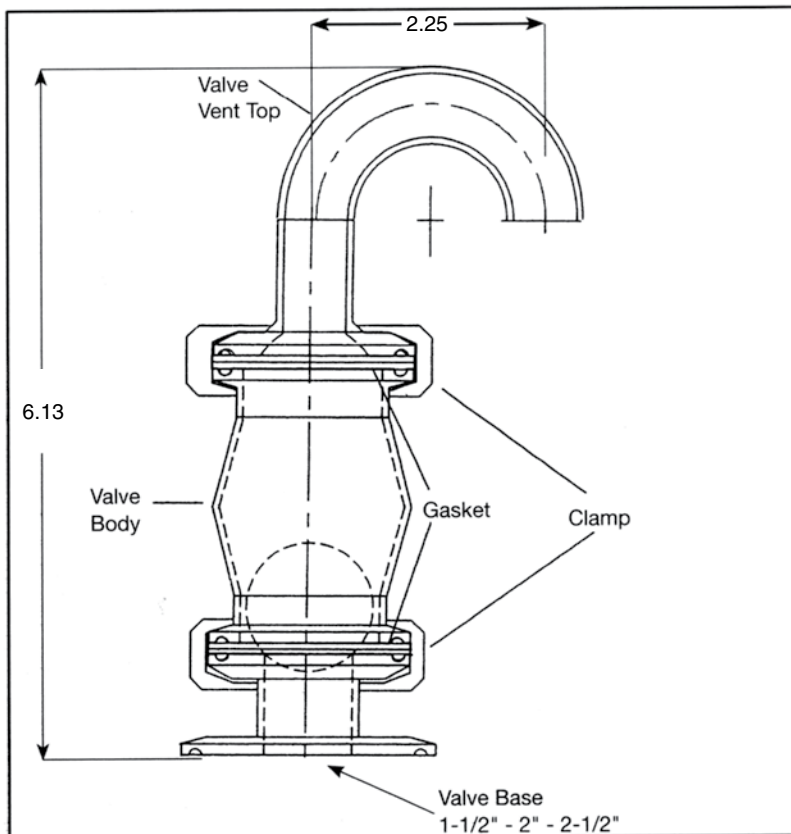


The TL60ARV Air Relief Valve is used primarily when removal of air from a line without loss of product is a concern. The design of the TL60ARV is simple: a ferrule, a housing with a plastic ball, and a vent pipe all connected using 2 standard heavy duty clamps. This design will not let air enter the line or container under negative pressure.

The TL60ARV is double seated. The lightweight ball is freely moving and depending on pressure conditions will close against upper or lower seat. This valve is not designed for use in operation with liquids having less than 1.0 specific gravity.

The valve can be mounted on the top of a pipeline or container to bleed a pipeline where an air pocket may have formed during operation.

Bleeding a pipe on the suction side of a pump will be automatic. Air binding will be prevented. These valves are found mounted on the top of the inlet pipe in front of the pump.



TL60 ARV Air Relief Valve 1-1/2"

Description	Part Number	Qty.
1-1/2" TL60ARV	386015ARV	
Vent Top	38601525VT	1
Body	38601525	1
Base - 1-1/2"	386015	1
Clamp	3299915	2
Gasket (Viton)	321010V	2
Ball	38601525B	1

TL60 ARV Air Relief Valve 2"

Description	Part Number	Qty.
2" TL60ARV	386020ARV	
Vent Top	38601525VT	1
Body	38601525	1
Base - 2"	386020	1
Clamp	3299915	2
Gasket (Viton)	321010V	2
Ball	38601525B	1

TL60 ARV Air Relief Valve 2-1/2"

Description	Part Number	Qty.
2-1/2" TL60ARV	386025ARV	
Vent Top	38601525VT	1
Body	38601525	1
Base - 2-1/2"	386025	1
Clamp	3299915	2
Gasket (Viton)	321010V	2
Ball	38601525B	1

Ordering Information

Steel gradeStainless steel, AISI 316L
 Ball.....Polypropylene
 FinishPolished to 32RA

Technical Data

Maximum product pressure 150 PSI
 Maximum temperature275°F
 Net weight 19 oz. (9.5 kg)
 For proper operation:
 • Product density must be 1.0 or higher
 • The valve must be mounted vertically

Pharmaceutical Tubing

10 RA Electropolished Stainless Steel

Top Line Electropolished tubing sets the standard for service in applications requiring finishes to 10 RA (avg.). Available in sizes from 1/2" to 4" OD, this full finished stainless steel tubing is available from stock in 20 foot lengths. All electropolished tubing is fully tested to ASTM A450 requirements.

MATERIALS: Stock tubing is 316L stainless steel. Other materials such as 304, 304L, and 316 stainless steel are also available on application.



CHEMICAL COMPOSITION	PERCENTAGE	316L	CHEMICAL COMPOSITION	PERCENTAGE	316L
Elements	Spec.	Typical	Elements	Spec.	Typical
(C) Carbon	0.035 max.	.020	(Si) Silicon	0.75 max.	.50
(Mn) Manganese	2.00 max.	1.70	(Ni) Nickel	10.0 - 15.0	10.2
(P) Phosphorus	0.040 max.	.029	(Cr) Chromium	16.0 - 18.0	16.4
(S) Sulfur	0.005-.017 max.	.013	(Mo) Molybdenum	2.0 - 3.0	2.10

FINISH

Electropolished Tubing is standard with a 10 RA avg. ID, bright annealed (mill) OD. Mechanically polished OD to 180 or 240 grit available on application. The same product is available with mechanically polished 20RA surface finish ID.

DIMENSIONAL TOLERANCES: (all tolerances in inches)						
SIZE (OD)	GAUGE	OUTSIDE DIAMETER		LENGTH	WALL	
		spec.	typical		spec.	typical
1/2"	16 (.065")	-.005/+0.005	-.000/+0.003	-1/8/+1/8	+/-15%	+/-3.0%
3/4"	16 (.065")	-.005/+0.005	-.000/+0.003	-1/8/+1/8	+/-15%	+/-3.0%
1"	16 (.065")	-.005/+0.005	-.000/+0.003	-1/8/+1/8	+/-15%	+/-3.0%
1 1/2"	16 (.065")	-.008/+0.002	-.006/+0.002	-0 + 1/8	+/-12.5%	+/-3.0%
2"	16 (.065")	-.011/+0.002	-.008/+0.002	-0 + 1/8	+/-12.5%	+/-3.0%
2 1/2"	16 (.065")	-.011/+0.002	-.008/+0.002	-0 + 1/8	+/-12.5%	+/-3.0%
3"	16 (.065")	-.012/+0.003	-.010/+0.002	-0 + 1/8	+/-12.5%	+/-3.0%
4"	14 (.083")	-.015/+0.003	-.012/+0.002	-0 + 1/8	+/-12.5%	+/-3.0%

ANNEALING

All tubing is Bright Annealed to a minimum of 1900 degrees F (1040 degrees C) and rapidly quenched.

CLEANING

All Top Line electropolished tubing is rinsed with low TOC de-ionized water. The tubing is then dry purged with 99.998% pure Nitrogen which is filtered to .003 micron at the point of use. The cleaning and packaging is done in a class 100 cleanroom.

PACKAGING

All Top Line electropolished tubing is packaged using protective 6 mil poly sleeving with air tight end caps. The tubing is then packaged in wood or Tri-Wall corrugated cartons for maximum protection during shipment.

Tubing & Hangers



Top Line maintains a large inventory of welded stainless steel tubing to meet your immediate needs. Our warehouse is able to quickly ship tubing in lengths up to 20 feet. Each tubing order is processed promptly and packaged in tri-wall corrugated cartons equipped with wooded ends to protect each piece from damage.

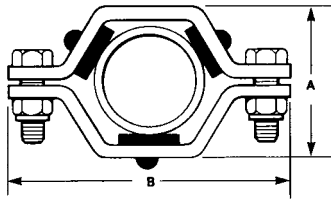
Applications which require only the finest in tubing, with close adherence to tolerances, readily prefer tubing from Top Line. We pride ourselves on providing the finest tubing at a competitive price. Tubing types 304/304L and 316/316L are available in sizes from 1/2" OD to 12" OD – produced to ASTM specifications A249, A269, A270 or A778. Other diameters, specifications and lengths are available on special order. Finishes available range from Bright Annealed (mill) to 240 grit mechanical ID and OD and meet all USDA and 3A sanitary standards. Pharmaceutical - Grade Tubing is also available from Top Line. See brochure titled "Pharmaceutical Tubing" for details.

Stainless Steel Tubing Specifications

SIZE (TUBE O.D.)	GAUGE	WALL	LBS/FT	STOCK NO.	
				304	316
1/2	16	.065	.3020	*N.S.	3105656
3/4	16	.065	.4755	*N.S.	3107656
1	18	.049	.4980	*N.S.	*N.S.
1	16	.065	.6490	3110654	3110656
1-1/2	18	.049	.7593	*N.S.	*N.S.
1-1/2	16	.065	.9962	3115654	3115656
2	18	.049	1.0210	*N.S.	*N.S.
2	16	.065	1.3430	3120654	3120656
2-1/2	16	.065	1.6900	3125654	3125656
3	16	.065	2.0370	3130654	3130656
4	14	.083	3.4720	3140834	3140836
6	12	.109	6.9000	3160194	3160196
8	12	.109	9.3000	3180194	3180196

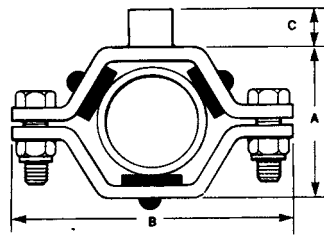
* N.S. - Non-stocked item

Top Line hangers install easily and provide secure mounting for a wide variety of tubing sizes.



B24W Tubing Hanger

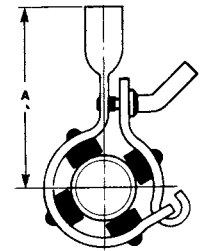
SIZE(TUBE O.D.)	A	B	STOCK NO.
1/2	2-1/8	3-13/16	32D-05
3/4	2-1/8	3-13/16	32D-07
1	2-1/8	3-15/16	32D-10
1-1/2	2-3/8	5	32D-15
2	2-1/2	5	32D-20
2-1/2	3-7/8	6-1/2	32D-25
3	3-15/16	6-1/2	32D-30
4	4-3/4	8-1/8	32D-40
6	6-3/4	9	32D-60



C24T Tubing Hanger

(w/ 3/8" - 18NPT thread)

SIZE(TUBE O.D.)	A	B	C	STOCK NO.
1/2	2-1/8	3-13/16	13/16	32C-05
3/4	2-1/8	3-13/16	13/16	32C-07
1	2-1/8	3-15/16	13/16	32C-10
1-1/2	2-3/8	5	13/16	32C-15
2	2-1/2	5	13/16	32C-20
2-1/2	3-7/8	6-1/2	13/16	32C-25
3	3-15/16	6-1/2	13/16	32C-30
4	4-3/4	8-1/8	13/16	32C-40
6	6-3/4	9	25/32	32C-60



A24FCF Tubing Hanger

(w/ 3/8" - 18NPT thread)

SIZE (TUBE O.D.)	A	STOCK NO.
1	4-1/8	32A2410
1-1/2	4-1/8	32A2415
2	4-1/8	32A2420
2-1/2	5	32A2425
3	5	32A2430
4	5-1/2	32A2440

Top-Flo[®] Filters and Strainers

Top-Flo[®] in-line stainless steel filters and strainers are specifically designed for the removal of unwanted particles from process line content providing added protection and longer service life for pumps, valves, heat exchangers and other processing equipment.

Constructed of corrosion-fighting 316L stainless steel, **Top-Flo[®]** in-line filters and strainers feature a sanitary design plus ease of installation and quick cleanup. These rugged, yet lightweight strainers are available in two lengths and are interchangeable with other comparable strainers.

The **Top-Flo[®]** strainer is ideally suited to hygienic process applications including dairy, food, beverage, pharmaceutical and biotech.



Top-Flo[®] Dimensions (inches)

	Connection Size	Length (in.)	Outer Assembly Diameter (in.)	Effective Filter Area (ft. ²)
Short	1	15-3/4	4	0.65
	1-1/2	15-3/4	4	0.65
	2	15-3/4	4	0.65
	2-1/2	15-3/4	4-1/2	0.75
	3	15-3/4	4-1/2	0.75
Long	1-1/2	35-3/8	4	1.95
	2	35-3/8	4	1.95
	2-1/2	35-3/8	4-1/2	2.25
	3	35-3/8	4-1/2	2.25

Top Line offers in-line strainers in short 15-3/4" OAL and long 35-3/8" OAL. Standard filters for fine particle removal - 765 micron to 40 micron offered. A reusable wire mesh overscreen is offered for strainers where larger particle removal - 1905 micron to 73 micron is needed.

Replacement Strainer Selection

Perforated Metal Strainer Single Screened						
Screen Part No.	Port Connections	Gauge	Hole Diameter (in.)	Holes Per Square Inch	% of Open Area	
Short	BTS-1020	1	14	1/4 / .250	9	58
	BTS-1020	1-1/2	14	1/4 / .250	9	58
	BTS-1020	2	14	1/4 / .250	9	58
	BTS-2530	2-1/2	12	1/4 / .250	9	58
	BTS-2530	3	12	1/4 / .250	9	58
Long	BTL-1020	1-1/2	14	1/4 / .250	9	58
	BTL-1020	2	14	1/4 / .250	9	58
	BTL-2530	2-1/2	12	1/4 / .250	9	58
	BTL-2530	3	12	1/4 / .250	9	58

1/8 / .125 hole diameter perforated back up tube upon request

Wire Cloth Mesh Over Screens

Screen Part No.	Square Mesh Size	Space Between Wires (in.)	Micron Rating	Percent of Open Area
OS16-XX	16	0.045	1130	50.7
OS20-XX	20	0.034	864	46.2
OS30-XX	30	0.021	533	40.8
OS40-XX	40	0.015	381	36.0
OS50-XX	50	0.011	279	30.3
OS60-XX	60	0.009	229	30.3
OS80-XX	80	0.007	178	31.4
OS100-XX	100	0.006	140	30.3
OS120-XX	120	0.005	117	30.7
OS150-XX	150	0.004	104	37.4

Prefix: S - Short, L - Long Suffix: 1020 - 1"-2", 2530 - 2-1/2"-3"
 Example: SOS16-2530 - Short Over Mesh, #16, for 2-1/2" and 3" Strainer

Replacement Filter Media Schedule

Media	Micron Rating*	Description
F40-XX	40	NON-WOVEN RAYON
F80-XX	80	POLYESTER SCREEN
F150-XX	150	POLYESTER SCREEN
F250-XX	250	SMOOTH WEAVE DACRON
F300-XX	300	COTTON CHEESE CLOTH
F350-XX	350	POLYESTER KNIT
F400-XX	400	PLAIN WEAVE POLYESTER
F500-XX	500	COTTON FLANNEL
F765-XX	765	NYLON LENO

*Average
 Prefix: S - Short, L - Long Suffix: 1020 - 1"-2", 2530 - 2-1/2"-3"
 Example: LF350-1020 - Long Filter Media, 350 Micron Polyester Knit for 1"-2" Filter



Filtration

Top-Flo® filters can be furnished with any one of seven filtering media down to 38 microns including non-woven rayon, cotton, cheesecloth, nylon mesh and woven nylon.



Fine or Medium Strainer

Complete with a backup tube and overscreen with small perforations or wire mesh for removing finer particles (73 to 1130 microns).

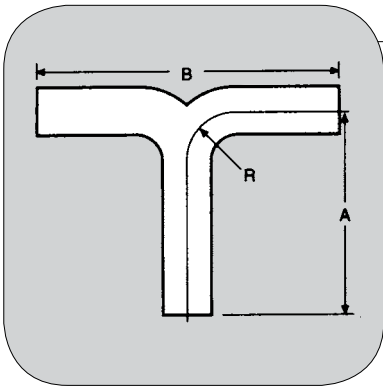


Coarse Strainer

Furnished with a single perforated screen for straining large particles.

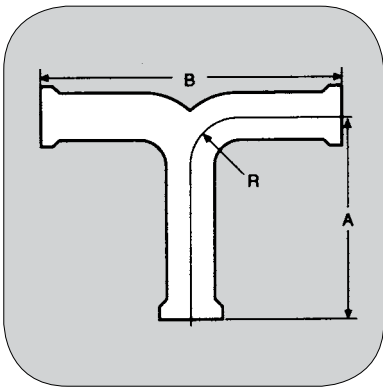
* Other materials and back-up tube sizes upon request.

LINE SPLITTER-WELD



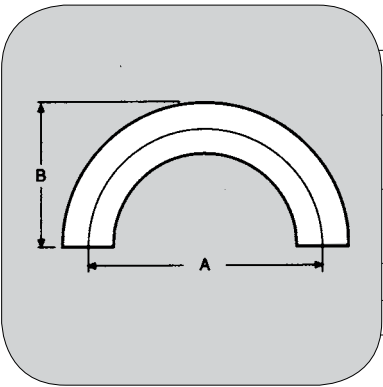
SIZE (TUBE O.D.)	A	B	R	STOCK NO.
1-1/2	2-9/16	6-1/2	2-1/4	35515-7
2	3-3/8	8	3	35520-7
2-1/2	5-3/8	10-3/4	3-3/4	35525-7
3	6	12	4-1/2	35530-7
4	8	16	5-1/4	35540-7

LINE SPLITTER-CLAMP



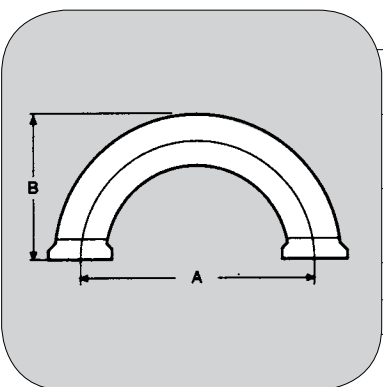
SIZE (TUBE O.D.)	A	B	R	STOCK NO.
1-1/2	3-1/16	7-1/2	2-1/4	32515-7
2	3-7/8	9	3	32520-7
2-1/2	5-7/8	11-3/4	3-3/4	32525-7
3	6-1/2	13	4-1/2	32530-7
4	8-5/8	17-1/4	5-1/4	32540-7

2WUL RETURN BENDS- 180° - WELD



SIZE (TUBE O.D.)	A	B	STOCK NO.
1	3	2	35910-7
1-1/2	4-1/2	3	35915-7
2	6	4	35920-7
2-1/2	7-1/2	5	35925-7
3	9	6	35930-7
4	12	8	35940-7

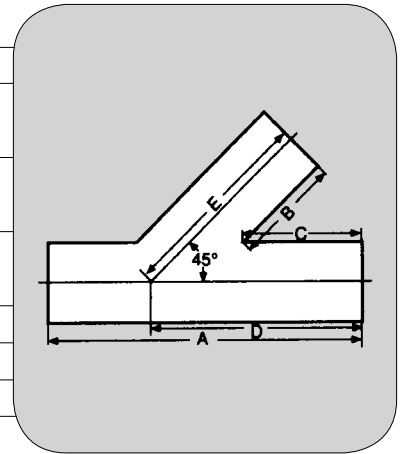
2WUMP RETURN BENDS- 180° - CLAMP



SIZE (TUBE O.D.)	A	B	STOCK NO.
1	3	2-1/2	32910-7
1-1/2	4-1/2	3-1/2	32915-7
2	6	4-1/2	32920-7
2-1/2	7-1/2	5-1/2	32925-7
3	9	6-1/2	32930-7
4	12	8-5/8	32940-7

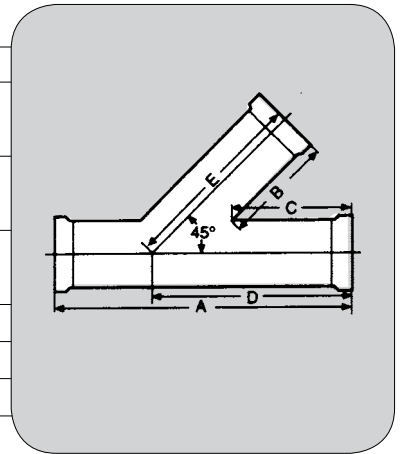
LATERAL "Y" 45° - WELD

SIZE	A	B	C	D	E	STOCK NO.
1/2	3	1-23/32	1-1/4	1-3/4	2-5/8	351705-7
3/4	3	1-23/32	1-1/4	1-3/4	2-5/8	351707-7
1	4-1/2	1-3/4	1-1/4	2-7/16	2-15/16	351710-7
1-1/2	4-1/2	1-3/4	1-1/4	3-1/16	3-13/16	351715-7
2	5-5/8	2-5/8	1-7/8	4-5/16	5-1/16	351720-7
2-1/2	6-7/8	3-3/8	2-3/8	5-3/8	6-3/8	351725-7
3	8	4	2-13/16	6-13/32	7-19/32	351730-7
4	12	5-3/8	3-13/16	8-11/16	10-3/16	351740-7
6	21	10-11/32	7-1/4	14-1/2	17-19/32	351760-7



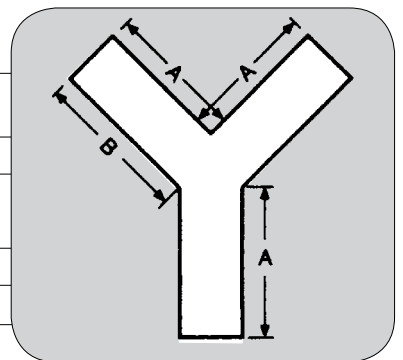
LATERAL "Y" 45° - CLAMP

SIZE	A	B	C	D	E	STOCK NO.
1/2	4	2-7/32	1-3/4	2-1/4	3-1/8	321705-7
3/4	4	2-7/32	1-3/4	2-1/4	3-1/8	321707-7
1	5-1/2	2-1/4	1-3/4	2-15/16	3-7/16	321710-7
1-1/2	5-1/2	2-1/4	1-3/4	3-9/16	4-5/16	321715-7
2	6-5/8	3-1/8	2-3/8	4-13/16	5-9/16	321720-7
2-1/2	7-7/8	3-7/8	2-7/8	5-7/8	6-7/8	321725-7
3	9	4-1/2	3-5/16	6-29/32	8-3/32	321730-7
4	13-1/4	6	4-7/16	9-5/16	10-13/16	321740-7
6	22-1/2	11-3/32	8	15-1/4	18-11/32	321760-7



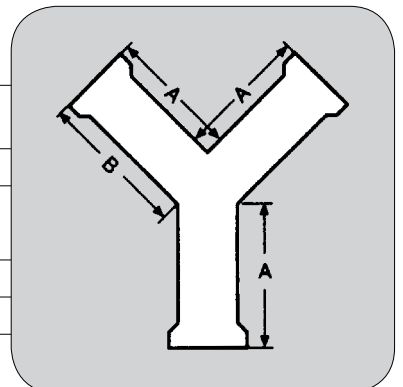
TRUE "Y" 90° - WELD

SIZE (TUBE O.D.)	A	B	STOCK NO.
1-1/2	2	2-7/16	351815-7
2	2-5/8	3-1/4	351820-7
2-1/2	3-3/8	4-1/8	351825-7
3	4	4-7/8	351830-7
4	5-3/8	6-9/16	351840-7

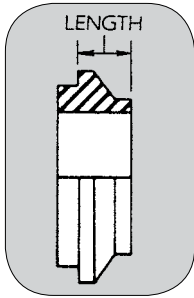


TRUE "Y" 90° - CLAMP

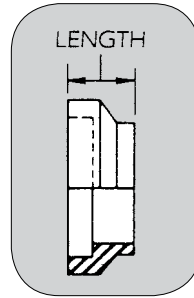
SIZE (TUBE O.D.)	A	B	STOCK NO.
1-1/2	2-1/2	2-15/16	321815-7
2	3-1/8	3-3/4	321820-7
2-1/2	3-7/8	4-5/8	321825-7
3	4-1/2	5-3/8	321830-7
4	6	7-3/16	321840-7



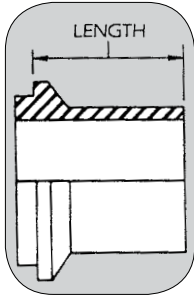
TI-Line Fittings



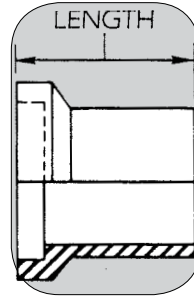
MALE, WELDING		
STOCK NO.	TUBE O.D.	
14WI	SIZE	LENGTH
32410	1	19/32
32415	1-1/2	3/4
32420	2	25/32
32424	2-1/2	27/32
32430	3	29/32
32440	4	1-1/32



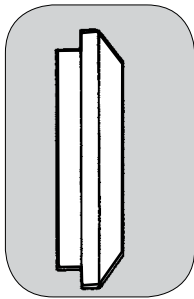
FEMALE, WELDING		
STOCK NO.	TUBE O.D.	
15WI	SIZE	LENGTH
32510	1	25/32
32515	1-1/2	15/16
32520	2	1-1/32
32524	2-1/2	1-5/32
32530	3	1-7/32
32540	4	1-11/32



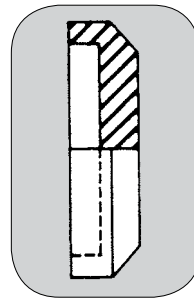
MALE, WELDING, LONG		
STOCK NO.	TUBE O.D.	
14WLI	SIZE	LENGTH
32751014I	1	1-9/16
32751514I	1-1/2	1-27/32
32752014I	2	2-1/16
32752514I	2-1/2	2-3/16
32753014I	3	2-3/8
32754014I	4	2-11/16



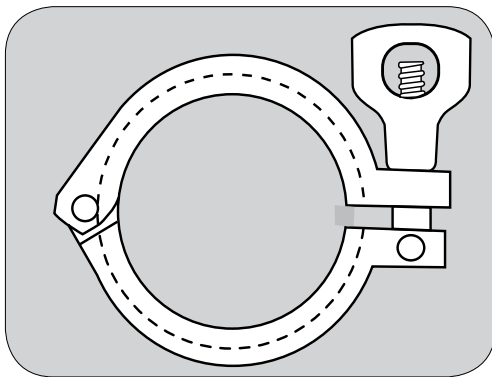
FEMALE, WELDING, LONG		
STOCK NO.	TUBE O.D.	
15WLI	SIZE	LENGTH
32751015I	1	1-3/4
32751515I	1-1/2	2-1/32
32752015I	2	2-5/16
32752515I	2-1/2	2-1/2
32753015I	3	2-11/16
32754015I	4	3



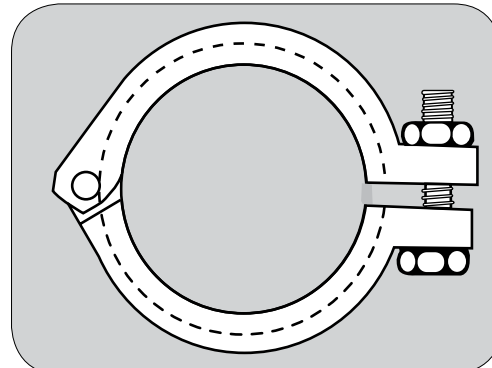
MALE	
STOCK NO.	SIZE
16AI-14I	
32981014I	1
32981514I	1-1/2
32982014I	2
32982514I	2-1/2
32983014I	3
32984014I	4



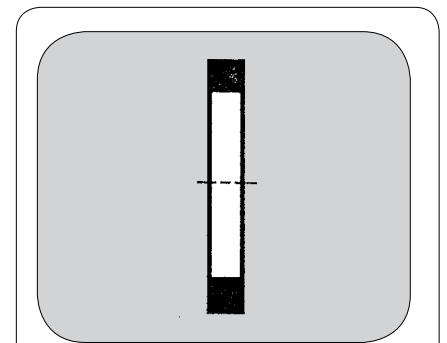
FEMALE	
STOCK NO.	SIZE
16AI-15I	
32981015I	1
32981515I	1-1/2
32982015I	2
32982515I	2-1/2
32983015I	3
32984015I	4



13IS - TI-LINE HEAVY DUTY CLAMP Size Range: 1" to 4" Tube O.D.	
SIZE (TUBE O.D.)	STOCK NO.
1-1/2	329915W
2	329920W
2 1/2	329925W
3	329930W
4	329940W



13I - TI-LINE - BOLTED CLAMP Size Range: 1" to 4" Tube O.D.	
SIZE (TUBE O.D.)	STOCK NO.
1-1/2	329915HPW
2	329920HPW
2 1/2	329925HPW
3	329930HPW
4	329940HPW
6	329940HPW



TI-LINE GASKETS
1" O.D. to 6" O.D.

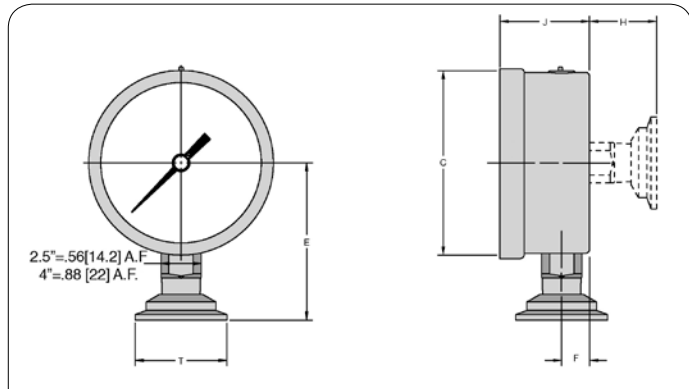
STOCK NO.	
40IH	Buna N
40IE	EPDM
40IV	Viton
40IT	Teflon

NOTE: 1" CLAMP FITTINGS USE 1 1/2" CLAMPS

Top-Flo[®] Hygienic Pressure Gauges



Top-Flo[®] Hygienic Pressure Gauges have been specifically designed for applications in the food and dairy, pharmaceutical and biotechnical industries. These gauges meet 3A, USDA and FDA sanitary standards.



DIAL SIZE	TRI-CLAMP SIZE	C	E	F	H	J	T
2-1/2: (63)	1 1/2" 2"	2.68 (68) 2.68 (68)	2.64 (67) 2.64 (67)	0.37 (9.5) 0.37 (9.5)	1.52 (38.5) 1.52 (38.5)	1.20 (30.5) 1.20 (30.5)	1.98 (50.5) 2.51 (64.0)
4" (100)	1 1/2" 2"	4.18 (106.2) 4.18 (106.2)	3.35 (85) 3.35 (85)	0.46 (11.8) 0.46 (11.8)	1.52 (38.5) 1.52 (38.5)	1.32 (33.5) 1.32 (33.5)	1.98 (50.5) 2.51 (64.0)

Ranges

			DIAL FACE			
			2-1/2"		4"	
			1-1/2" CLAMP	2" CLAMP	1-1/2" CLAMP	2" CLAMP
PSI	BAR	MOUNT	4500 •	•	•	4566 •
30"HG/30	-1/2	BOTTOM BACK	•	•	•	•
0/30	0/2	BOTTOM BACK	4501 •	4533 •	4517 •	4549 4557
0/60	0/2	BOTTOM BACK	4502 •	4534 •	4518 •	4550 4558
0/100	0/7	BOTTOM BACK	4503 •	4535 •	4519 •	4551 4559
0/160	0/11	BOTTOM BACK	4504 •	4536 •	4520 •	4552 4560
0/200	0/11	BOTTOM BACK	4506 •	4537 •	4521 •	4553 4561
0/300	0/11	BOTTOM BACK	4507 •	•	4522 •	4554 4562
0/400	0/11	BOTTOM BACK	4508 •	•	4523 •	4555 4563
0/600	0/11	BOTTOM BACK	•	•	4524 •	4556 4564
0/1000	4	BOTTOM BACK	•	•	•	• 4565

Options available upon request:

- Other pressure ranges
- No fill (dry)

SPECIFICATIONS

- Case: polished AISI 304 SS
- Ring: polished AISI 304 SS
- Dial sizes: 2-1/2" and 4"
- Process connection (D): electro polished AISI 316 SS with 1-1/2" and 2" clamp connections
- Diaphragm: electro polished AISI 316 L SS
- Window: laminated safety glass
- Pointer: black anodized aluminum
- Case fill: glycerine
- Seal fill: oil for food service
- Process temperature: 150° max
- Accuracy:
 - as per ASME B40.100 + 1%
 - as per ASME B40.100 + 1.6%

Sanitary Sight Glasses



Top Line's In-Line sight glasses were engineered to be the best in the industry. The bolt style allows for fast, continuous inspection from all angles. The flange style sight glass incorporates a large viewing window for easy flow inspection. Top Line In-Line sight glasses are available in sizes 1/2" to 4".

Features:

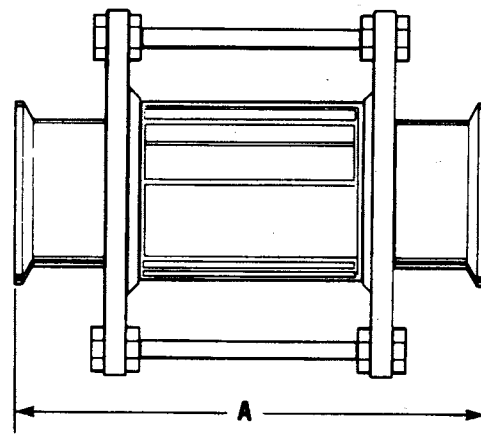
- Clear acrylic tube insert
- Constructed of 304 or 316L stainless steel
- Clamp end connections - standard
- FDA white buna gaskets - standard
- Suitable for CIP and fully drainable

Options:

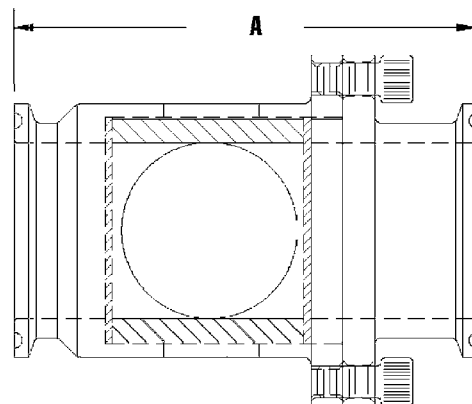
- Pyrex® glass insert
- Shielded bolt style - clear acrylic protective shell providing additional protection from falling objects
- Bevel seat, TI-Line, and weld connections available upon request
- FDA EPDM or FDA Viton gaskets upon request

Size (Tube O.D.)	Dims. A	Top Line Part #	
		Bolt Style	Bolt Style w/Shield
1/2"	n/a	n/a	n/a
3/4"	n/a	n/a	n/a
1"	5-7/8"	321910B	321910BSG
1-1/2"	5-7/8"	321915B	321915BSG
2"	5-7/8"	321920B	321920BSG
2-1/2"	6-3/8"	321925B	321925BSG
3"	7-1/2"	321930B	321930BSG
4"	7-5/8"	321940B	321940BSG

*for 316L, change "2" to "8"



Size (Tube O.D.)	Dims. A	Top Line Part #
1/2"	3"	381905C
3/4"	3"	381907C
1"	3-5/8"	381907C
1-1/2"	3-5/8"	381915C
2"	3-5/8"	381920C
2-1/2"	3-5/8"	381925C
3"	3-5/8"	381930C
4"	3-5/8"	381940C



Centrifugal Pumps

Model TF-C Series



TF-C ↑ ①	216 ↑ ②	M ↑ ③	D ↑ ④
①	PUMP SERIES TF-C Close Coupled		
②	CASING SIZE		
	② Inlet Size 2"	⑫ Outlet Size 12"	⑧ Maximum Impeller Dia. 8"
<p>Note:</p> <ul style="list-style-type: none"> • TF-C Series furnished complete with legs unless otherwise specified on order. • Casing Gaskets: BUNA - is standard. If other type is required, specify on order. • Enlarged inlet: When ordering pump with enlarged inlet state inlet size, i.e., TF-C218MD with 3" inlet. 			
③	PORT CONNECTIONS		
	<p>M - Clamp T - Acme Bevel Seat Thread S - NPT Female Thread F - Flanged W - Weld</p>		
TYPE OF SEAL/STANDARD MATERIAL:			
④	<p>D - External balanced sanitary seal DG - External balanced seal with clamped-in seat (sanitary) E - Water cooled balanced double seal F - External balanced seal w/cascading water</p>		

Determining the model number of your pump is easy as 1-2-3-4.

Motor Data is not included as part of 4-step ordering number.

Provide the following information:

- Horsepower and RPM
- Electrical phase and voltage
- Washdown is standard

If motor is furnished from another source, supply the following:

- Horsepower
- RPM
- NEMA frame size

Remember to order needed accessories:

- Check Valve
- Seal Kits and Parts
- Gaskets
- Clamps
- Hangers
- Butterfly Valves
- Ball Valves

Top-Flo® TF-C Series Centrifugal Pumps



Model No.	TF-C114	TF-C216	TF-C218	TF-C328
Inlet	1½" or 2"	2" or 2½"	2" or 3"	3" or 4"
Outlet	1½"	1½"	1½"	2"
Max. Imp.	4"	6"	8"	8"

PUMP SPECIFICATIONS

Pump Casings:

- Volute type - Standard.
- Inlet-oversizing as noted in chart above.

Pump Connections:

SANITARY:

- Clamp
- Bevel Seat (ACME)

INDUSTRIAL:

- Threaded
- Flanged

Pump Construction Materials:

- All wetted parts - 316 SS.
- Seals - Carbon (other seals available)
- Casing Gasket - BUNA-N (Standard)
- Viton & Teflon are available.

Pump Finishes:

- Polished or Electropolished

Pump Seals:

- Available in D, E, and F styles

Motor, Electrical:

- 3 Phase - 230/460 volts - 1750 & 3500 rpm.
- Single Phase - 115/230 volts - 1750 & 3500 rpm.

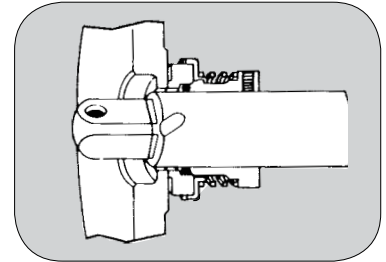
Motor Housings:

- TEFC (Totally Enclosed Fan Cooled)
- Easy Clean
- Other styles available on request

For light duty transfer requirements, see Top Line brochure on the TF-C100.

SEAL SPECIFICATIONS

TYPE D
External
Balanced
Seal
(Sanitary)



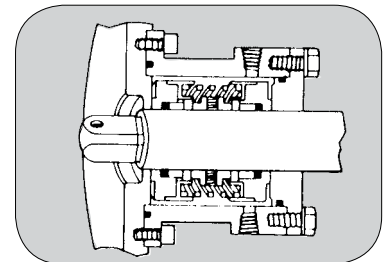
This versatile seal has numerous applications but yet is extremely durable. Dairy products, soft vegetables, beverages and even acid cleaning solutions and detergents are among the recommended uses.

TYPE DG

External Balanced Seal with Clamped-in Seat (Sanitary)

The DG seal uses the standard Type D rotating seal components with a reversible silicon carbide, tungsten carbide or ceramic seat. Typical applications include liquid sugar, beverage syrup, chocolate and abrasive products.

TYPE E
Water Cooled
Balanced
Double Seal
(Sanitary)



Type E is designed to withstand heavy duty vacuum applications (to 28" Hg), tacky products, slurries, or pumped products which may exceed 212°F. The seal chamber can be pressurized to permit use of drain piping for coolants and sealants. Coolant or sealant can be circulated through the seal chamber under very low pressure when used to cool the seal face or seal against vacuum.

TYPE F – (Sanitary)

Seal same as Type D seal except includes a water cascade (not shown).

All sanitary seals meet 3A accepted practices.

TOP-FLO[®] pumps are top performers using numerous features

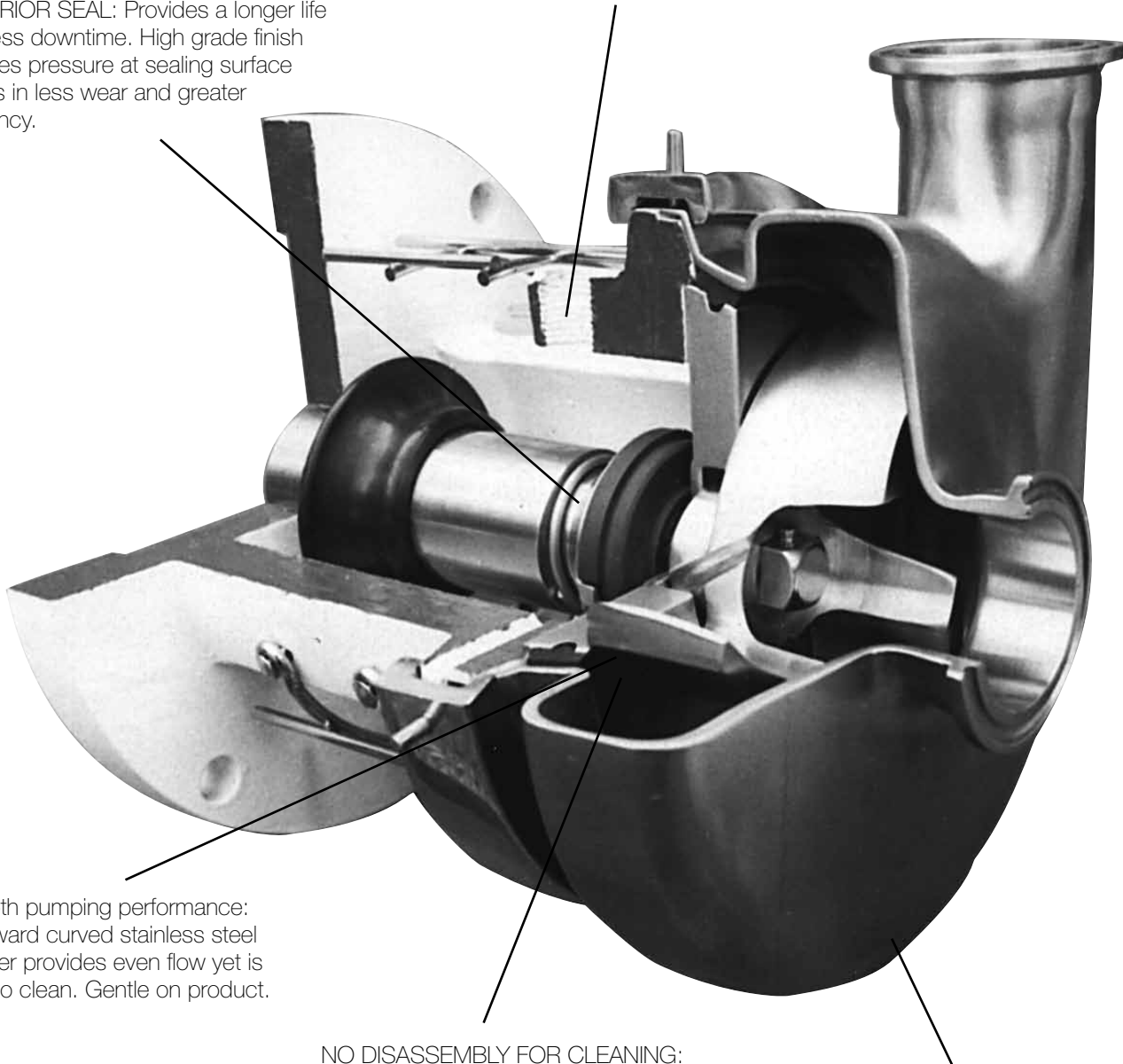
SUPERIOR SEAL: Provides a longer life and less downtime. High grade finish reduces pressure at sealing surface results in less wear and greater efficiency.

TYPE F SEAL: Water cascade attachment is recommended for pumping tacky or hot products up to 212° F, and for vacuum applications to 14" Hg.

Smooth pumping performance: Backward curved stainless steel impeller provides even flow yet is easy to clean. Gentle on product.

NO DISASSEMBLY FOR CLEANING: Unique groove-in-shaft design directs sanitizer to all critical areas. A must for clean-in-place applications.

CASING: Finely polished casing suitable to meet numerous requirements. Casing available in a wide selection of port connections to meet a variety of piping systems.



Viscosity and Specific Gravity Table for Various Products

Product	Specific Gravity	Viscosity
Acetic Acid		
5%	1.01	
10%	1.01	31.7 SSU @ 59° F
50%	1.06	33 SSU @ 59° F
80%	1.08	35 SSU @ 59° F
Animal Fat	0.9	130 SSU @ 115° F 50 SSU @ 200° F
Barbecue Sauce	1.05	11,500 SSU @ 40-75° F
Beer	1.02	32 SSU @ 68° F
Blood - Animal	.93-.98	15,000 SSU @ 55° F
Butter	.93-.98	15,000 SSU @ 55° F 440 SSU @ 90° F 220 SSU @ 115° F
Coconut Oil	0.92	125 SSU @ 106° F
Corn Oil 0.92	135 SSU @ 130° F	54 SSU @ 212° F
Corn Starch Solutions		
22 Baume	1.18	150 SSU @ 70° F 130 SSU @ 100° F
24 Baume	1.2	600 SSU @ 70° F 440 SSU @ 100° F
25 Baume	1.21	1400 SSU @ 70° F 800 SSU @ 100° F
Cottage Cheese	1.02	4,300 SSU
Dressing		
Cream (Sweet)	1	73 SSU
	.99	140 SSU
	.99	215 SSU
Egg Yolk 1.12	21,500 @ 35° F	
Gelatin	1.01	1,380 - 2,580 SSU @ 160° F
Glucose 1.35 - 1.44	35M - 100M SSU	@ 100° F 4M - 11M @ 150° F

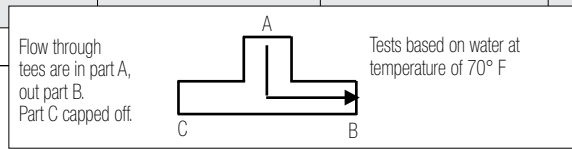
Product	Specific Gravity	Viscosity
Honey	1.3	1250 - 1425 SSU @ 100° F
Ice Cream Mix	1.15	1050 SSU @ ° F
Lard	0.96	287 @ 100° F
Linseed Oil	.92-.94	143 @ 100° F 93 @ 130° F
Malt Syrup	1.41	85,400 SSU @ 77° F
Maple Syrup	1.37	2,000 SSU @ ° F
Margarine	0.93	13,900 SSU @ 84° F
Milk	1.02 - 1.05	31.5 @ 68° F
Molasses		
A. First	1.4 - 1.46	1300 - 23,500 SSU @ 100° F 700 - 8160 SSU @ 130° F
B. Second	1.43 - 1.48	6535 - 61,180 SSU @ 100° F 3058 - 15294 SSU @ 130° F
C. Blackstrap	1.46 - 1.49	12,190 - 255M @ 100° F
Mustard	1	17,000 SSU @ 85° F
Olive Oil	.91 - .92	200 SSU @ 100° F
Peanut Butter	1.2	77,400 SSU @ 110 - 140° F
Sesame Seed Oil	0.92	184 SSU @ 100° F 110 @ 130° F
Soy Bean Oil	0.91	500 SSU @ 44° F
Tomato Paste	1.14	60M - 80 M SSU 21M SSU approx.
Water	1	31 SSU @ 68° F

How Capacity Affects Friction

The following table was developed to indicate loss of head due to friction – in feet loss per fitting or in feet loss per foot of tubing – through stainless steel tubing and sanitary fittings.

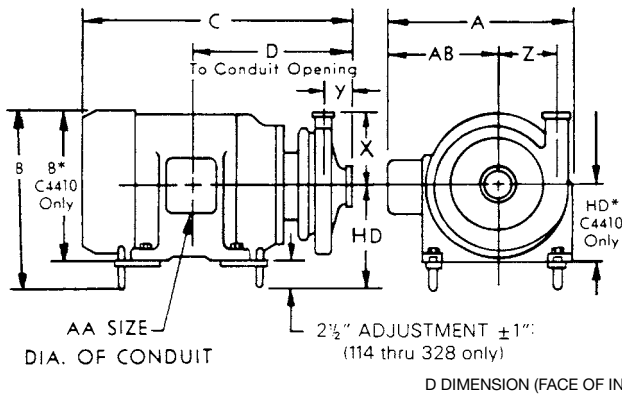
Friction Loss in Sanitary OD Tubing and Fittings

Capacity in U.S. G.P.M.	O.D. Tube Size																	
	1" I.D.=.870"			1-1/2" I.D.=1.370"			2" I.D.=1.870"			2-1/2" I.D.=2.370"			3" I.D.=2.870"			4" I.D.=3.834"		
	Tubing	Elbow	Tee	Tubing	Elbow	Tee	Tubing	Elbow	Tee	Tubing	Elbow	Tee	Tubing	Elbow	Tee	Tubing	Elbow	Tee
2	.01	.01	.1															
4	.025	.02	.2															
5	.035	.025	.25															
10	.12	.06	.4	.02	.01	.15	.005	.015	.1									
15	.25	.1	.8	.04	.02	.25	.013	.02	.15									
20	.43	.22	1.5	.06	.03	.3	.02	.025	.2	.005	.02	.1	.003	.02	.06			
25	.66	.4	2.3	.08	.04	.4	.025	.03	.25	.006	.03	.15	.004	.03	.08			
30	.93	.7	3.3	.105	.06	.55	.035	.05	.3	.008	.05	.2	.005	.04	.1			
35	1.22	1.25	5.2	.135	.09	.8	.04	.06	.4	.011	.06	.25	.006	.05	.13			
40				.17	.11	1.0	.05	.08	.5	.015	.07	.3	.007	.06	.15			
45				.21	.16	1.3	.063	.1	.6	.02	.09	.35	.008	.065	.18			
50				.25	.2	1.6	.073	.12	.7	.022	.1	.4	.01	.07	.2			
60				.34	.35	2.2	.1	.18	.9	.03	.12	.45	.015	.08	.25			
80				.57	.76	3.7	.16	.3	1.5	.05	.15	.55	.02	.1	.4			
100				.85	1.35	5.8	.23	.44	2.3	.075	.18	.6	.03	.11	.5	.008	.04	.1
120				1.18	2.05	9.1	.32	.64	3.3	.105	.21	1.0	.04	.13	.6	.01	.05	.15
140							.42	.85	4.5	.14	.23	1.25	.05	.16	.8	.013	.06	.2
160							.54	1.13	5.8	.17	.28	1.6	.07	.2	1.1	.015	.07	.25
180							.67	1.45	7.4	.205	.31	2.0	.08	.21	1.3	.02	.08	.3
200							.81	1.82	9.0	.245	.35	2.5	.1	.26	1.6	.025	.09	.4
220							.95	2.22	11.0	.29	.41	3.0	.12	.3	1.9	.028	.1	.5
240							1.10	2.63	13.5	.34	.48	3.7	.14	.33	2.2	.035	.11	.55
260										.39	.53	4.5	.165	.39	2.5	.04	.115	.6
280										.45	.61	5.3	.19	.42	2.8	.045	.12	.65
300										.515	.7	6.2	.22	.5	3.1	.05	.13	.7
350										.68	1.05	8.5	.28	.67	4.1	.07	.15	.9
400										.86	1.55	11.0	.36	.88	5.2	.085	.18	1.2
450										1.05	2.25	13.5	.44	1.1	6.6	.105	.2	1.5
500													.54	1.4	8.0	.13	.23	1.75
550													.64	1.7	9.5	.15	.27	2.1
600													.75	2.05	10.2	.175	.3	2.5
650													.87	2.41	13.0	.2	.34	2.8
700													1.0	2.8	15.0	.23	.4	3.4
750																.26	.43	3.8
800																.3	.5	4.4
850																.33	.56	5.
900																.37	.62	5.7
950																.41	.7	6.3
1000																.45	.8	7.0
1100																.53	1.06	8.6

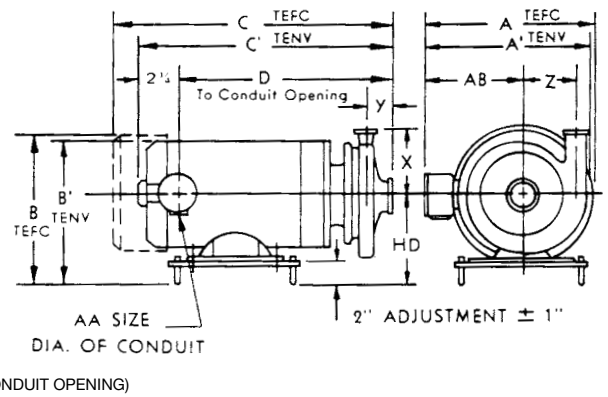


Source: National Association of Food and Dairy Equipment Manufacturers.

TOP-FLO[®] TF-C Series Close-Coupled Pump Dimensions



180 to 280 Frame Motors



56 and 140 Frame Motors

Pump Dimensions ("Easy-Clean" totally-enclosed motor)

Pump Model	Suction	Discharge	X*	X**	Y*	Y**	Z
TF-C114	1-1/2	1-1/2	3-5/8	3-7/8	1-19/32	1-27/32	2-5/8
TF-C216	2	1-1/2	4-1/2	4-3/4	1-29/32	1-5/32	3-11/16
TF-C218	2	1-1/2	5-1/2	5-3/4	1-23/32	1-31/32	4-3/4
TF-C328	3	2	5-1/2	5-3/4	2-7/32	2-23/32	4-3/4

Pump and Motor Dimensions with "Easy-Clean" Totally Enclosed Motors

Pump Model	Frame	A	A ¹	B	B ¹	C*	C ^{1*}	C**	C ^{1**}	D*	D**	HD	AA	AB
TF-C114	56C	10-1/16	9-5/8	9-3/16	8-3/4	17-7/16	16-1/16	17-11/16	16-5/16	13-5/16	13-9/16	5-1/2	1/2	6-3/8
	184TC	11-7/8		11-11/16		21-1/8		21-3/8		13-13/16	14-1/16	7	3/4	7-3/16
TF-C216	56C	10-1/16	9-5/8	9-3/16	8-3/4	18-1/8	16-3/4	18-3/8	17	14	14-1/4	5-1/2	1/2	6-3/8
	184TC	11-7/8		11-11/16		21-7/8		22-1/8		14-9/16	14-13/16	7	3/4	7-3/16
	215TC	14-1/2		13-3/16		25-9/16		25-13/16		16-11/16	16-15/16	7-3/4	1	9-1/16
	256TC	16-7/16		15-1/4	29-15/16	30-3/16		18-11/16	18-15/16	8-3/4	1-1/4	10		
TF-C218	145TC	10-1/16	9-5/8	8-3/4	19-1/4	17-7/8	19-1/2	18-1/2	15-1/8	15-3/8	5-1/2	1/2	6-3/8	
	184TC	11-7/8		11-11/16		22-1/4		22-1/2		14-15/16	15-3/16	7	3/4	7-3/16
	215TC	14-1/2		13-3/16		25-13/16		26-1/16	16-15/16	17-3/16	7-3/4	1	9-1/16	10
	256TC	16-7/16		15-1/4		31-1/16		31-5/16		19-13/16	20-1/16	8-3/4	1-1/4	
	284TC	19-5/16	16-3/4	32	32-1/4	20-3/16	20-7/16	9-1/2	1-1/2	12-1/16				
TF-C328	145TC	10-1/16	9-5/8	9-3/16	8-3/4	19-7/8	18-1/2	20-3/8	19	15-3/4	16-1/4	15-1/2	1/2	6-3/8
	184TC	11-7/8		11-11/16		22-3/4		23-1/4		15-7/16	15-15/16	7	3/4	7-3/16
	215TC	14-1/2		13-3/16		26-5/16		26-13/16		17-7/16	17-15/16	7-3/4	1	9-1/16
	256TC	16-7/16		15-1/4		31-11/16		32-3/16		20-7/16	20-15/16	8-3/4	1-1/4	10
	284TC	19-5/16	16-3/4	32-5/8		33-1/8				20-13/16	21-5/16	9-1/2	1-1/2	12-1/16
	286TC	19-5/16	16-3/4	34-3/8		34-7/8				21-13/16	22-5/16	9-1/2	1-1/2	12-1/16

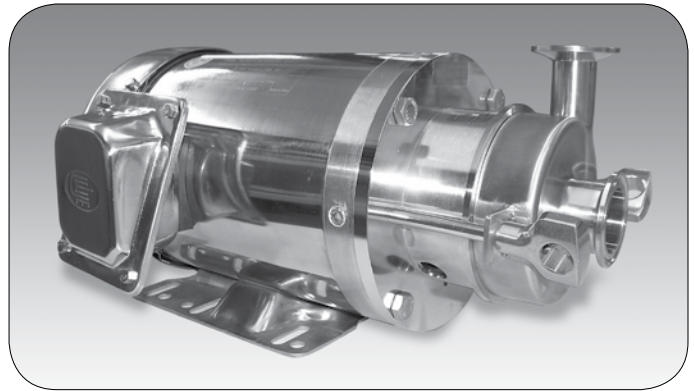
* With clamp connections
** With threaded bevel-seat connections

Dimensions are appropriate and for guidance only. ON applications where exact dimensions are required, request a certified print from Top Line.

NOTES: 1 - Dimensions for single phase #140 frame motors 1-7/32" longer.

* - These dimensions are for pumps using standard "C" Flange Motors * - TF-C Series pumps will not accept TSC Frame Motors.

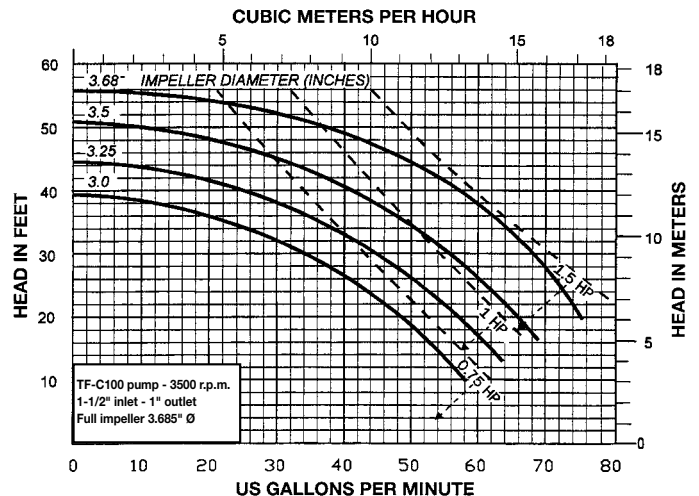
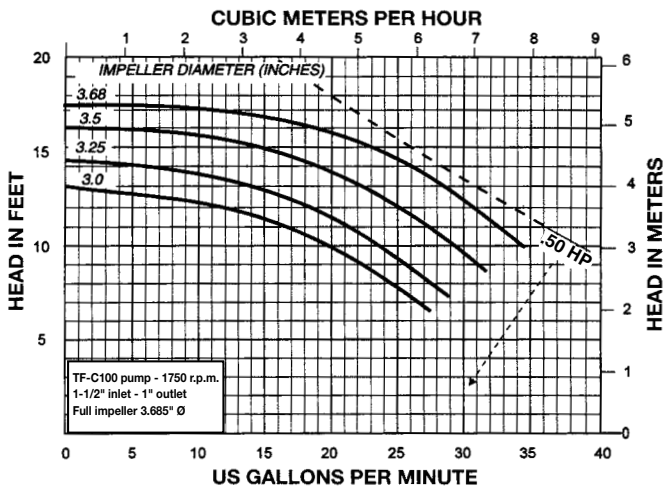
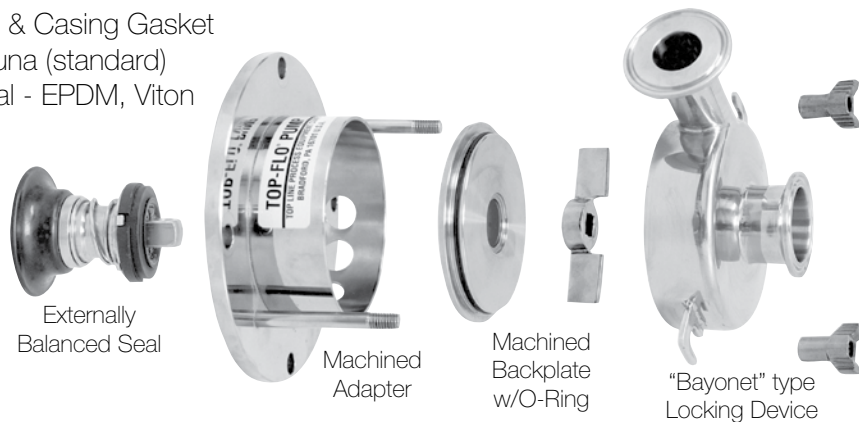
Top-Flo[®] TF-C100 Centrifugal Pump



The TOP-FLO[®] TF-C100 centrifugal pump is ideal for use in small and medium size process applications in the dairy, food, beverage, pharmaceutical and other sanitary process industries.

Specifications

- Pump Casing
 - Circular Type
- Pump Connections
 - 1 1/2" Inlet x 1" Outlet
 - Clamp type - Standard
- Pump Construction materials
 - All Wetted Parts - Type 316L
 - Balance Type 304
 - Carbon Seal
 - O-Ring & Casing Gasket
 - FDA Buna (standard)
 - Optional - EPDM, Viton
- 3A Approved
- Pump Finish
 - Polished ID/OD 32Ra
- Pump Impeller
 - Max 3.685" Diameter
- Pump Seal
 - External Balanced
 - Sanitary Single Mechanical




*Styles and dimensions are subject to change without notice.


Top-Flo® Pump Replacement Kits



From time to time, centrifugal pump sealing components need to be replaced. TOP-FLO® Centrifugal pump replacement part kits are specifically designed to fit in the pumps of not only TOP-FLO® pumps but those of major pump suppliers. These components are rugged and will provide the necessary sealing conditions under a wide range of conditions.

In addition to the pump replacement kits, Top Line offers a complete line of replacement parts. From impellers to leg brackets, Top Line should be your first choice for replacement parts.

	KIT NO. 1			
	Contains	Kit Number (Buna)	Kit Number (Viton)	Model #
	1 - Casing Gasket	5629K-1	5629V-1	TF-C100-1
	1 - O-Ring Seal	5649K-1	5649V-1	TF-C114-1
	1 - Carbon Seal	5669K-1	5669V-1	TF-C216-1
	1 - Impeller Pin	5689K-1	5689V-1	TF-C218-1
		5689K-1	5689V-1	TF-C328-1

	KIT NO. 2			
	Contains	Kit Number (Buna)	Kit Number (Viton)	Model #
	3 - Casing Gaskets	5629K-2	5629V-2	TF-C100-2
	3 - O-Ring Seals	5649K-2	5649V-2	TF-C114-2
	3 - Carbon Seals	5669K-2	5669V-2	TF-C216-2
		5689K-2	5689V-2	TF-C218-2
		5689K-2	5689V-2	TF-C328-2

	KIT NO. 3			
	Contains	Kit Number (Buna)	Kit Number (Viton)	Model #
	1 - Cup	5629K-3	5629V-3	TF-C100-3
	1 - O-Ring Seal	5649K-3	5649V-3	TF-C114-3
	1 - Carbon Seal	5669K-3	5669V-3	TF-C216-3
	1 - Spring	5689K-3	5689V-3	TF-C218-3
		5689K-3	5689V-3	TF-C328-3



TOP-FLO® TF-C Series Centrifugal Pump



DATASHEET

Customer _____ Contact _____ Date _____

Sizing Data Required

Product _____ Temperature _____ Min. ° F _____ Max. ° F

Viscosity (Centipoise) _____ Pounds per hour _____

Gallons per minute _____ Total Head _____ ft. _____ psi

Corrosive Material: Yes No Type _____

Inlet Line (Be sure this is standard tubing size, not sch 5 or sch 10)

Tubing size _____ inches Total Elbows _____

Vertical Drop _____ feet Total Tees _____

Total Valves _____

Casing Drain: Yes No Straight: Yes No Elbow: Yes No Size _____

Corrosive Material: Yes No Type _____

Discharge Line (Be sure this is standard tubing size, not sch 5 or sch 10)

Tubing size _____ inches Total Elbows _____ Heaters, Type _____

Vertical Drop _____ feet Total Tees _____ Filters, Type _____

Horizontal Run _____ feet Total Valves _____ Heat Exch: Plate _____ Tube _____

Note: Clamp connections are standard. If other connect is required, Specify. _____

Discharge Valve: Butterfly Yes No Ball Yes No Disc Check Yes No Other _____

If Top Line supplies pump motor, the following is required:

Voltage _____ Hertz _____ Phase _____ Washdown _____ TEFC _____ Explosion Proof _____

Fill out the following after pump and motor are sized:

Pump:

Model _____

Casing Size _____

Impeller Size _____

Seal Type _____

Motor:

Type _____

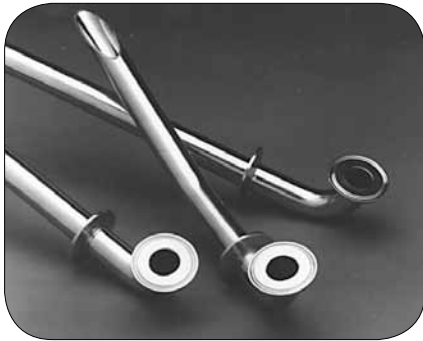
Horsepower _____

RPM _____

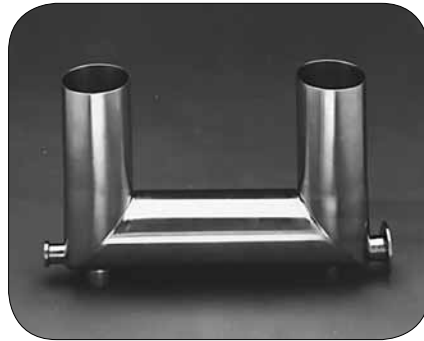
Frame Size _____

Voltage _____ Hertz _____ Phase _____

Top-Flo[®] Specialty Fabrication



DIP TUBES



MITERED U-BEND



TUBE ASSEMBLIES

TOP LINE's skilled craftsmen and specialized equipment combine to produce a wide variety of custom fabricated stainless steel process flow components. All specials are made to customer requirements and are available in a wide variety of sanitary finishes. Fast service is assured.



SPECIALTY FINISHING

ALSO

- Special Tees
- Custom Fittings
- Manifolds
- Machined Parts
- Special Finishes
- Flange Adapters



CUSTOM TEE
ASSEMBLIES

From simple to complex, TOP LINE's Specialty Fabrication Shop can make the part you need. We pride ourselves on our superior craftsmanship and prompt service.



. . . the source for
all your product needs
in the process industries

Contact your Top Line Representative for Assistance

Office: P.O. Box 264 · Bradford, PA 16701

Plant: 21 Valley Hunt Drive · Lewis Run, PA 16738

800-458-6095

814-362-4626

Fax: 814-362-4453

Top Line has been supplying high quality stainless steel products to the dairy, food, beverage, pharmaceutical and other process industries for over forty years. Our commitment to fine craftsmanship, responsible service and realistic pricing has led to our company's successive years of growth.

Top Line specializes in stainless steel materials – types 304, 316, and “L grades”. Our modern, well equipped manufacturing facilities are staffed by skilled and dedicated craftsmen. Consistently meeting important tolerances and finish specifications is of primary concern to us. Before any products leave our plant they are subjected to rigid quality assurance checks.

Top Line should always be considered your first choice for both standard and custom fabricated stainless steel products.

Limited Warranty

Top Line Process Equipment Company products are warranted to be free of defects in material or workmanship for a period of one year from date of shipment. Warranty covers those Top Line products used in an approved installation and maintained in strict accordance with recognized standard industry practice. If, after properly authorized return, Top Line determines that products are defective, Top Line may at its option, repair or replace such defective products.

Top Line shall not be liable for consequential, indirect or incidental damages. The above warranty is in lieu of all other warranties, expressed or implied.