

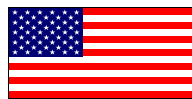
C.A. Richardson, Inc.
Est. 1853

Manufacturing Since 1853

330 Otis Street
P. O. Box 29
Mansfield, MA 02048
Ph 508-339-8600 Fax 508-339-4991

sales@carichardson.com

Certified to ISO 9001:2008



Steel Welding Flanges

effective August 1, 2014

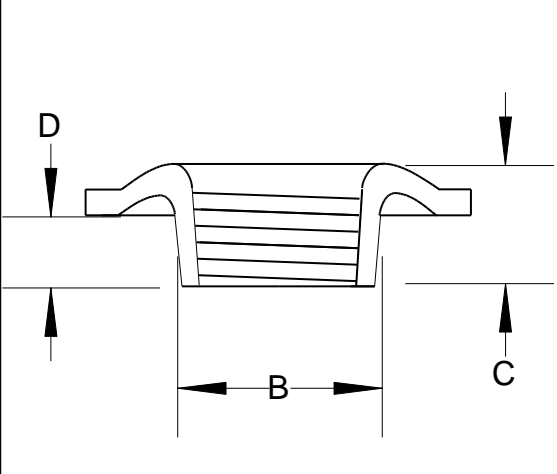
Description	Part Number	Thickness
1/8" - (1.125 OD)	ST-0125-S	0.134
1/8" - (1.750 OD)	ST-0125-F	0.134
1/4" - (1.125 OD)	ST-0250-S	0.134
1/4" - (1.750 OD)	ST-0250-F	0.134
3/8" - (1.125 OD)	ST-0375-S	0.134
3/8" - (1.750 OD)	ST-0375-F	0.134
1/2" - (1.750 OD)	ST-0500-F	0.134
1/2" - (2" OD)	ST-0500-L	0.134
3/4" - Curved	ST-0750-C	0.134
3/4" - Flat	ST-0750-F	0.134
1" - Flat	ST-1000-F	0.134
1" - Container	ST-1000-CT	0.134
1.250" - Heavy Duty - Flat	ST-1250-HD-F	0.134
1.250" - Curved	ST-1250-C	0.118
1.250" - Flat	ST-1250-F	0.118
1.500" - Curved	ST-1500-C	0.118
1.500" - Special Canada Curve	ST-1500-CA	0.118
1.500" - Flat	ST-1500-F	0.118
2.000" - Curved	ST-2000-C	0.130
2.000" - Special Canada Curve	ST-2000-CA	0.130
2.000" - Flat	ST-2000-F	0.130
2.000" Heavy Duty - Curved	ST-2000-HD-C	0.156
2.000" Heavy Duty - Flat	ST-2000-HD-F	0.156
2.000" Heavy Duty - Special	ST-2000-HD-SP	0.156

Miscellaneous Tank Fittings

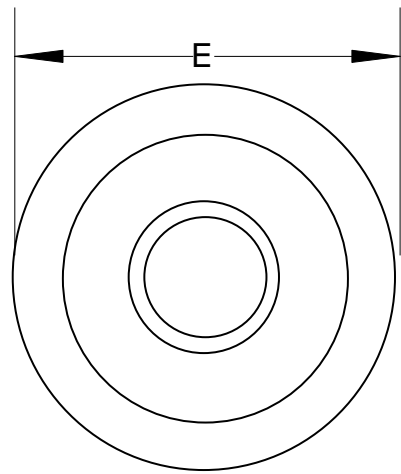
effective August 1, 2014

Description	Part Number	Thickness
1.25" L Style Leg Bracket	ST-L-LEG	0.150
1.25" Leg Bracket - ANTI-TILT	ST-L-LEG-AT	0.179
Lifting Lugs - 1-1/4" wide	ST-LUG	0.250
Steel Tie Down Plates	ST-TIEDOWN	0.118
Sending Unit Gauge Ring - Curved	ST-RING-C	0.180
Sending Unit Gauge Ring - Flat	ST-RING-F	0.180

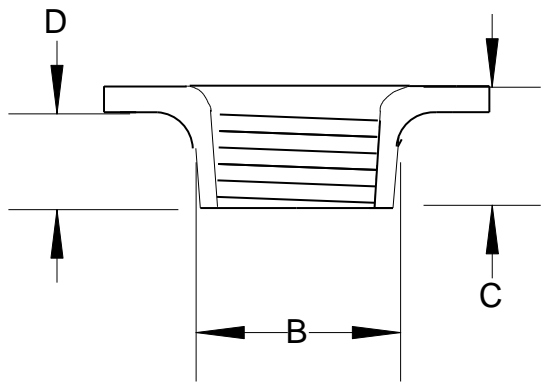
Steel Welding Flange Views



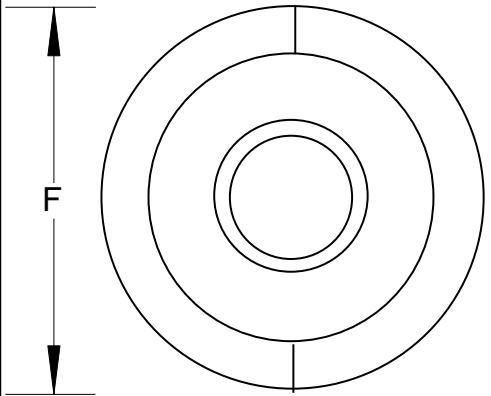
View A



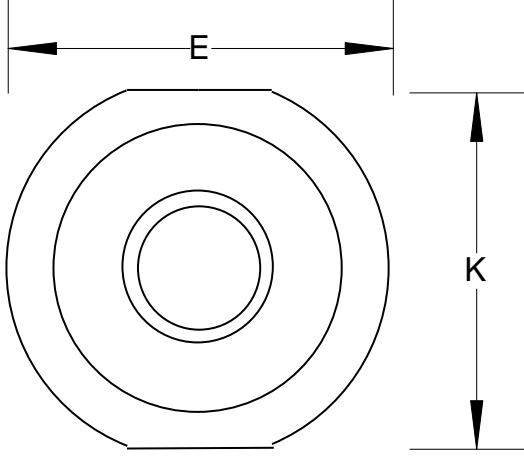
View B



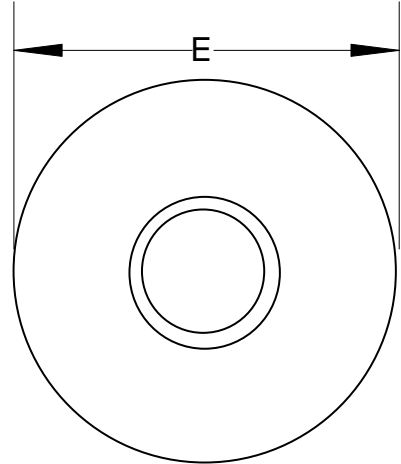
View D



View F



View C



View E

Views of steel welding flanges showing various configurations (for reference purposes only).

Steel Welding Flanges

Description	Thread Type	Part Number	Radius	Views	B	C	D	E	F	K	Mat'l Thick
1/8" - 27	NPTF	ST-0125-S	N/A	DE	0.510	0.295	0.156	1.125	N/A	N/A	0.134
1/8" - 27	NPTF	ST-0125-F	N/A	AB	0.471	0.284	0.050	1.750	N/A	N/A	0.134
1/4" - 18	NPTF	ST-0250-S	N/A	DE	0.650	0.325	0.180	1.125	N/A	N/A	0.134
1/4" - 18	NPTF	ST-0250-F	N/A	AB	0.605	0.295	0.060	1.745	N/A	N/A	0.134
3/8" - 18	NPTF	ST-0375-S	N/A	DE	0.790	0.400	0.275	1.124	N/A	N/A	0.134
3/8" - 18	NPTF	ST-0375-F	N/A	AB	0.740	0.315	0.065	1.743	N/A	N/A	0.134
1/2" - 14	NPTF	ST-0500-S	N/A	DE	0.973	0.460	0.330	1.400	N/A	N/A	0.134
1/2" - 14	NPTF	ST-0500-F	N/A	AB	0.900	0.403	0.160	1.745	N/A	N/A	0.134
3/4" - 14	NPTF	ST-0750-F	N/A	AB	1.110	0.460	0.140	2.360	N/A	N/A	0.134
3/4" - 14	NPTF	ST-0750-C	10"	AF	1.110	0.411	0.050	2.311	2.338	N/A	0.134
1" - 11 1/2 container	NPTF	ST-1000-CT	N/A	AB	1.358	0.435	0.065	2.295	N/A	N/A	0.134
1" - 11 1/2	NPTF	ST-1000-F	N/A	AB	1.372	0.480	0.210	2.346	N/A	N/A	0.134
1 1/4" - 11 1/2 HD	NPTF	ST-1250-HD-F	N/A	AC	1.742	0.534	0.333	2.860	N/A	2.650	0.134
1 1/4" - 11 1/2 curved	NPSC	ST-1250-C	18"	AC	1.710	0.480	0.220	2.840	N/A	2.654	0.118
1 1/4" - 11 1/2 flat	NPSC	ST-1250-F	N/A	AC	1.730	0.513	0.315	2.860	N/A	2.652	0.118
1-1/2" - 11 1/2 CA curved	NPSC	ST-1500-CA	11.5"	AC	1.938	0.500	0.230	3.250	N/A	3.100	0.118
1 1/2" - 11 1/2 curved	NPSC	ST-1500-C	18"	AC	1.954	0.500	0.250	3.265	N/A	3.100	0.118
1 1/2" - 11 1/2 flat	NPSC	ST-1500-F	N/A	AC	1.942	0.500	0.060	3.653	N/A	3.510	0.118
2" - 11 1/2 CA curve	NPSC	ST-2000-CA	11.5"	AC	2.460	0.600	0.369	3.648	N/A	3.582	0.130
2" - 11 1/2 curved	NPSC	ST-2000-C	13.25"	AC	2.460	0.600	0.375	3.670	N/A	3.600	0.130
2" - 11 1/2 flat	NPSC	ST-2000-F	N/A	AC	2.460	0.600	0.365	3.730	N/A	3.600	0.130
2" - 11 1/2 curved HD	NPSC	ST-2000-HD-C	19.25"	AC	2.480	0.850	0.600	3.825	N/A	3.710	0.156
2" - 11 1/2 flat HD	NPSC	ST-2000-HD-F	N/A	AC	2.480	0.850	0.545	3.840	N/A	3.725	0.156
2" - 11 1/2 special HD	NPSC	ST-2000-HD-SP	13"	AC	2.480	0.850	0.630	3.800	N/A	3.700	0.156

form 520 rev 02

These dimensions are for reference purposes only

Charles A. Richardson, Inc.

Manufacturing Since 1853

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Ph (508) 339-8600 fax (508) 339-4991

INTERNAL NPTF: American Standard Taper Pipe Thread for pressure tight joints for use without lubricant or sealant (Dryseal)

INTERNAL NPSC: Straight pipe threads in pipe couplings; used to form pressure tight joints when assembled with ANSI Standard external taper pipe thread and made up with lubricant or sealant.

Aluminum Welding Flanges - 6061 T6

effective August 1, 2014

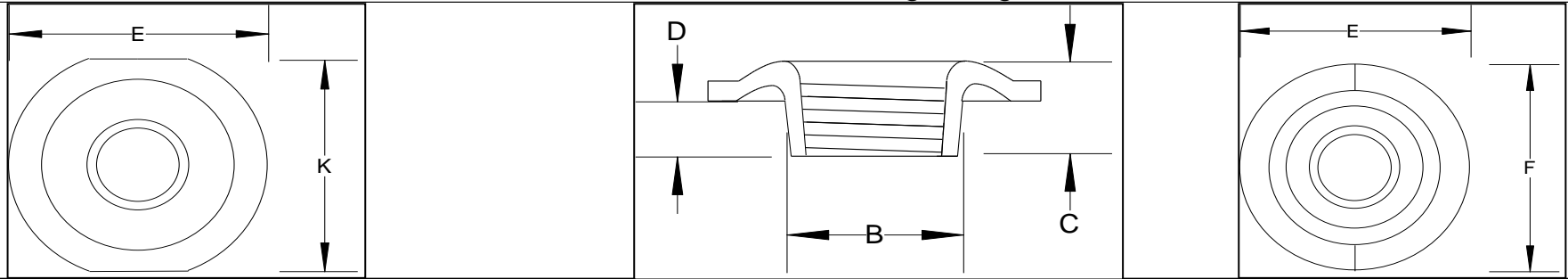
Description	Part Number	Thickness
1/8" - full round O.D.	AL-0125-R	0.160
1/4" - full round O.D.	AL-0250-R	0.160
3/8" - full round O.D.	AL-0375-R	0.160
3/8" - flats on O.D.	AL-0375-F	0.160
1/2" - full round O.D.	AL-0500-R	0.160
1/2" - flats on O.D.	AL-0500-F	0.160
3/4" - full round O.D.	AL-0750-R	0.160
1" - full round O.D.	AL-1000-R	0.160
1.250" - flats on O.D. - Curved	AL-1250-C	0.160
1.250" - flats on O.D. - Flat	AL-1250-F	0.160
1.500" - flats on O.D. - Curved	AL-1500-C	0.160
1.500" - flats on O.D. - Flat	AL-1500-F	0.160
2" - flats on O.D. - Flat	AL-2000-F	0.190

Miscellaneous Aluminum Fittings

effective August 1, 2014

Description	Part Number	Material
Aluminum Tie Down Plates	AL-TIEDOWN	5052
Sending Unit Gauge Ring - Curved	AL-RING-C	5052
Sending Unit Gauge Ring - Flat	AL-RING-F	5052

6061-T6 Aluminum Welding Flanges



Description	Thread	Part Number	Radius	B	C	D	E	F	K	mat'l thick
1/8" - 27	NPTF	AL-0125-R		0.475	0.330	0.080	1.763		N/A	0.160
1/4" - 18	NPTF	AL-0250-R		0.623	0.333	0.061	1.771		N/A	0.160
3/8" - 18	NPTF	AL-0375-F		0.768	0.340	0.080	1.771		1.642	0.160
3/8" - 18	NPTF	AL-0375-R		0.772	0.340	0.075	1.771		N/A	0.160
1/2" - 14	NPTF	AL-0500-F		0.925	0.418	0.135	1.782		1.654	0.160
1/2" - 14	NPTF	AL-0500-R-C	12.5"	0.923	0.436	0.166	1.761	1.771	N/A	0.160
1/2" - 14	NPTF	AL-0500-R		0.929	0.420	0.120	1.771		N/A	0.160
3/4" - 14	NPTF	AL-0750-R		1.130	0.480	0.168	2.371		N/A	0.160
1" - 11 1/2	NPTF	AL-1000-R		1.380	0.515	0.200	2.375		N/A	0.160
1 1/4" - 11 1/2	NPTF	AL-1250-C	18"	1.720	0.565	0.255	2.850		2.681	0.160
1 1/4" - 11 1/2	NPTF	AL-1250-F		1.742	0.545	0.260	2.875		2.825	0.160
1 1/2" - 11 1/2	NPTF	AL-1500-F		1.991	0.560	0.245	3.303		3.111	0.160
1 1/2" - 11 1/2	NPTF	AL-1500-C	18"	1.991	0.565	0.280	3.275		3.130	0.160
2" - 11 1/2	NPTF	AL-2000-F		2.475	0.875	0.530	3.845		3.710	0.190

These dimensions are for reference purposes only

form 511 rev 01

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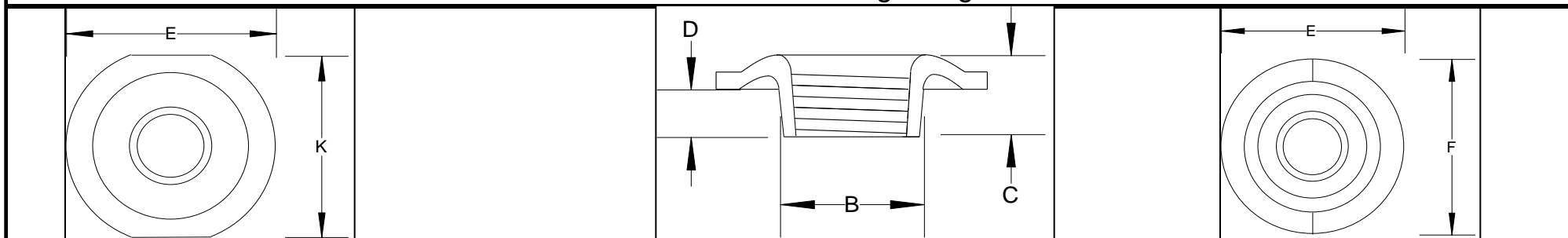
Ph (508) 339-8600 fax (508) 339-4991

Stainless Steel Welding Flanges

effective August 1, 2014

Description	Part Number	Thickness
1/4" (1-1/8" OD) - Type 316L	SS-0250-16-S	0.134
1/4" (1-3/4" OD) - Type 316L	SS-0250-16-F	0.134
3/8" (1-3/4" OD) - Type 316L	SS-0375-16-F	0.134
1/2" (1-3/4" OD) - Type 316L	SS-0500-16-F	0.134
3/4" - Curved - Type 316L	SS-0750-16-C	0.134
3/4" - Flat - Type 316L	SS-0750-16-F	0.134
1" - Curved - Type 316L	SS-1000-16-C	0.134
1" - Flat - Type 316L	SS-1000-16-F	0.134
1.250" - Curved - Type 316L	SS-1250-16-C	0.134
1.250" - Flat - Type 316L	SS-1250-16-F	0.134
1.500" - Curved - Type 316L	SS-1500-16-C	0.134
1.500" - Flat - Type 316L	SS-1500-16-F	0.134
Sending Unit Gauge Ring - 304L	SS-RING-F	0.135
L Style Leg Bracket - Type 304L	SS-L-LEG	0.120

Stainless Steel Welding Flanges



Description	Thread	Part Number	Radius	B	C	D	E	F	K	mat'l thick
Type 316-L										
1/4"-18	NPTF	SS-0250-16-S		0.665	0.320	0.194	1.114	N/A	N/A	0.134
1/4"-18	NPTF	SS-0250-16-F		0.620	0.315	0.065	1.754	N/A	N/A	0.134
3/8"-18	NPTF	SS-0375-16-F		0.755	0.325	0.065	1.736	N/A	N/A	0.134
1/2"-14	NPTF	SS-0500-16-F		0.900	0.395	0.120	1.740	N/A	N/A	0.134
3/4"-14 curved	NPTF	SS-0750-16-C	10"	1.100	0.468	0.210	2.346	2.370	N/A	0.134
3/4"-14 flat	NPTF	SS-0750-16-F		1.120	0.455	0.174	2.350	N/A	N/A	0.134
1"-11 1/2 flat	NPTF	SS-1000-16-F		1.370	0.480	0.182	2.340	N/A	N/A	0.134
1 1/4"-11 1/2 curved	NPTF	SS-1250-16-C	13"	1.720	0.505	0.215	2.818	N/A	2.607	0.134
1 1/4"-11 1/2 flat	NPTF	SS-1250-16-F		1.745	0.558	0.304	2.847	N/A	2.630	0.134
1 1/2"-11 1/2 curved	NPTF	SS-1500-16-C	10.5"	1.958	0.525	0.266	3.080	N/A	3.250	0.134
1 1/2"-11 1/2 flat	NPTF	SS-1500-16-F		1.990	0.560	0.266	3.240	N/A	3.038	0.134

These dimensions are for reference purposes only

form 512 rev 03

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Manufacturing Since 1853

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Mansfield, MA 02048

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Ph (508) 339-8600 fax (508) 339-4991

Additional Information

We manufacture these fittings in the U.S.A. from prime raw material.

Prompt delivery can *usually* be made on all stock items. However, please allow as much lead-time as possible.

Orders totaling less than \$100.00 are subject to a processing charge of \$15.00.

Prices quoted are F.O.B. our plant in Mansfield, Massachusetts.

Prices are in U.S. dollars with payment to be in U.S. dollars.



CERTIFICATE

TUV USA Inc.

hereby certifies that

Charles A. Richardson

330 Otis Street

Mansfield, MA 02048 USA

has established and applies a quality system for

**The Manufacture of Metal Stampings and the Service
of Mechanical Zinc Plating**

Proof has been furnished that the requirements according to

ISO 9001:2008

are fulfilled.

Further clarifications regarding the scope of this certificate and the applicability of
ISO 9001:2008 requirements may be obtained by consulting the organization.

Certificate Registration No.

11-2177

Effective: March 27, 2012

Expires: March 26, 2015

Diana L. Sweeney
Quality Systems Division

Date of issue: March 27, 2012



TGA-ZQ-37-95-00-0