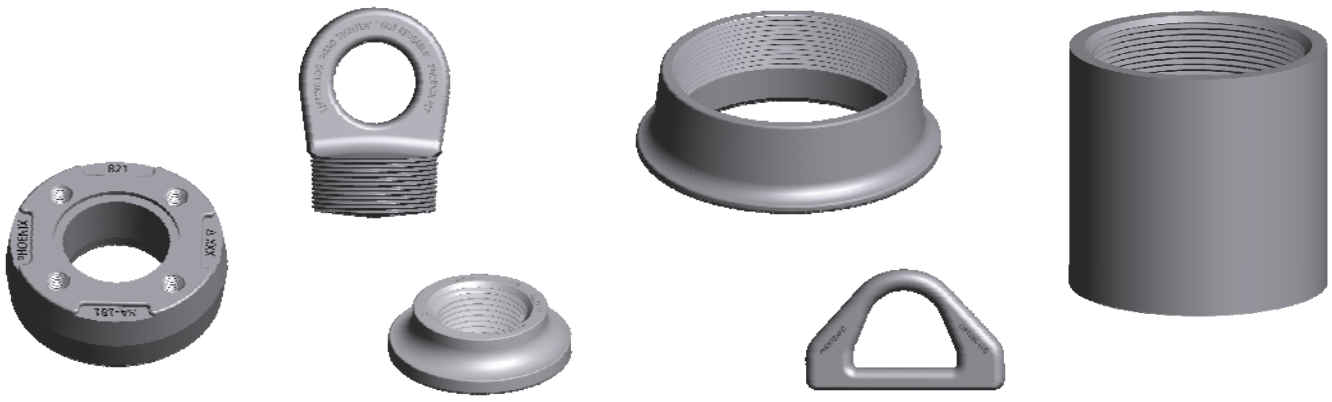
Founded 1882

PHOENIX®

Tank and Cylinder Fittings



FORGED WITH PRIDE IN THE USA

THE PHOENIX FORGE GROUP

Commanding a Higher Standard SM

PFC511

THE PHOENIX FORGE GROUP

Commanding a Higher Standard SM

CAPITOL MANUFACTURING COMPANY*
Crowley, LA

CAPPRODUCTS Ltd.*
Vanastra, ON

CONDUIT PIPE PRODUCTS CO.*
W. Jefferson, OH

*ISO 9001:2008

PHOENIX FORGING COMPANY*
Catasauqua, PA

PHOENIX HOTFORM COMPANY*
Allentown, PA

BARCO INDUSTRIES, INC.
Reading, PA

OUR PROMISE TO YOU

We promise to provide you with quality forged products, delivered on time and at a fair price. We can make this promise because only Phoenix offers you experience dating back to the 19th Century, state-of-the-art 20th Century manufacturing technologies, and 21st Century innovation.

When your production plans call for Forged Steel Fittings, Trans-O-Con transition pipe connections, Tank and Cylinder Fittings or custom forged products—contact The Phoenix Forge Group.

THE PHOENIX LEADERSHIP ADVANTAGE

Phoenix Forging is the nation's largest producer and distributor of Tank & Cylinder Fittings.
It pays to deal with the industry leader.

- FULL LINE SUPPLIER— Forged Steel Fittings—All Standard Styles & Sizes: Unions, Lifting Lugs, LPG Gage Adapters, Couplings, Thread Protectors, Pressed Steel Fittings and Custom Products.
- LARGE INVENTORY— Multi-Million Dollar Inventory and Next Day Shipment
- CUSTOM DESIGN— Our technical engineers, assisted by CAD/CAM capability, are available to assist you.
- TECHNICAL SUPPORT— Statistical calculations regarding application criteria available upon request.
- COMPUTER SERVICES— Computer assisted order entry, inventory control, database management system.
- QUALITY ASSURANCE PROGRAM— Material qualification, equipment maintenance and upgrading, statistical process control and gauge control are all included in a concentrated program to ensure production of superior quality products. **- ISO 9001 CERTIFICATION -**
- EXPERIENCE— Phoenix has over 100 years experience in manufacturing a wide variety of products.
- COMMUNICATIONS— State of the Art order placement & communications systems, including EDI, XML & e-commerce.
- ELECTRONIC MTR's— Immediate access to MTR's at www.phoenixforge.com.
- BAR CODING— All product has a standard Phoenix barcode. Custom barcoding available on request.
- UL RECOGNIZED PARTS
- CANADIAN REGISTRATION NUMBERS— View and download CRN's at www.phoenixforge.com.

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SPECIFICATIONS

Our flanges are manufactured in accordance with Underwriter's Laboratories and ASME Boiler and Pressure Code Section II and applicable portions of Section IV and VIII.

Material Specifications comply with ASTM A105/ASME SA105, ASTM A181-70A, SME SA 181-70 or applicable DOT specifications.

Our standard threaded product complies with ANSI/ASME B1.20.1-1983.

NPTF (Dry Seal) threads as well as other special threads are available.

Certifications are provided on the web at www.phoenixforge.com.

Canadian Provincial Registration numbers are available on the web at www.phoenixforge.com.

IDENTIFICATION AND MARKING

During the forging process, all Phoenix products are marked with the size, heat of steel, part number and Phoenix identification. These figures remain visible after installation.

Dimensional Tolerances—Hot Forged Welding Flanges

THICKNESS

Pipe Size: 1/8" to 1 1/2"	± 1/32"
Pipe Size: 2" to 4"	+ 3/64" -1/32"
Pipe Size: 5" to 8"	+ 1/16" -1/32"

DIAMETER OF HUB

Pipe Size: 1/8" to 2 1/2"	± 1/32"
Pipe Size: 3" to 3 1/2"	+ 3/64" -1/32"
Pipe Size: 4" to 8"	+ 1/16" -1/32"

OUTSIDE DIAMETER

Pipe Size: 1/8" to 1 1/4"	± 1/64"
Pipe Size: 1 1/2" to 3"	+ 1/32" -1/64"
Pipe Size: 3 1/2" to 6"	± 1/32"
Pipe Size: 8"	+ 3/64" -1/32"

DIAMETER OF PILOT

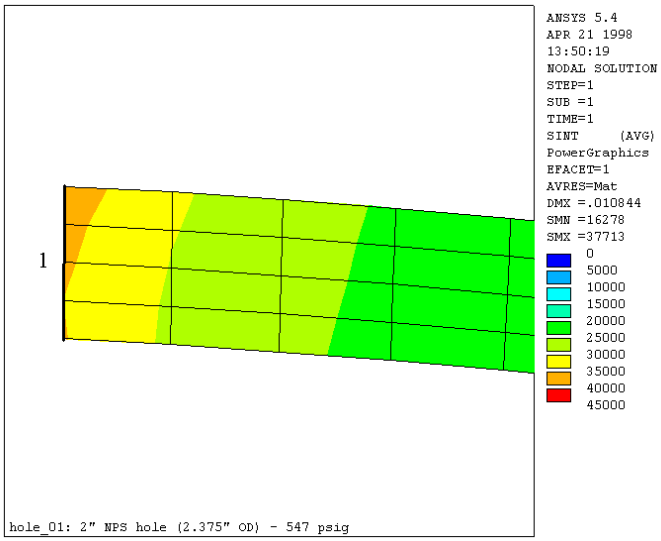
Pipe Size: 1/8" to 1"	± 1/32"
Pipe Size: 1 1/4" to 4"	+ 3/64" -1/32"

THREADING

All sizes ± One Thread

Phoenix Forged Welding Flanges and other related products are also available.

1. Special Threaded Parts
2. Stainless Steel
3. Custom Designed Parts
4. Full Coupling Line
5. Machined "O" - Ring Products
6. Evacuation Dip Tubes
7. Dielectric Nylon Fittings
8. Screw Machine Parts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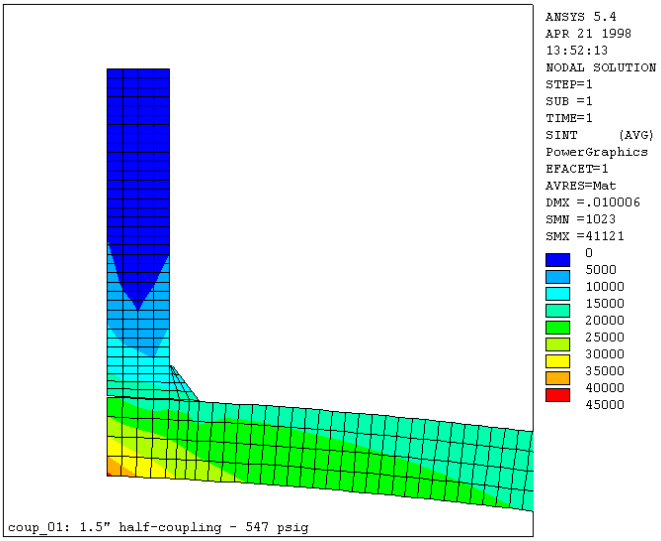
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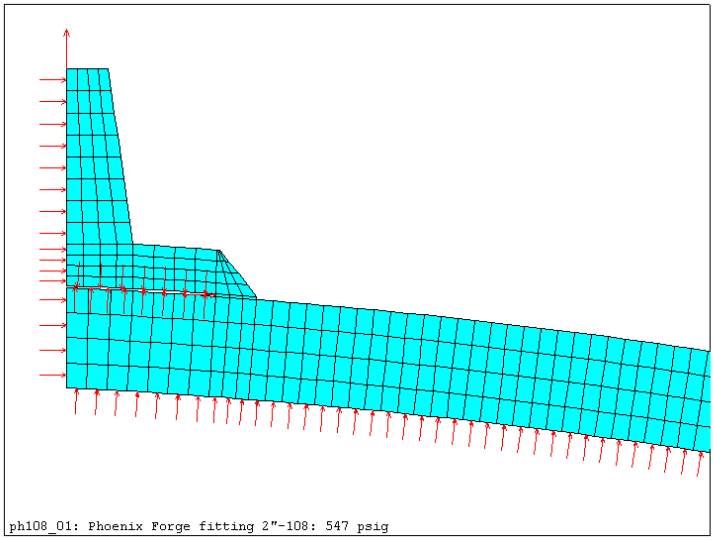
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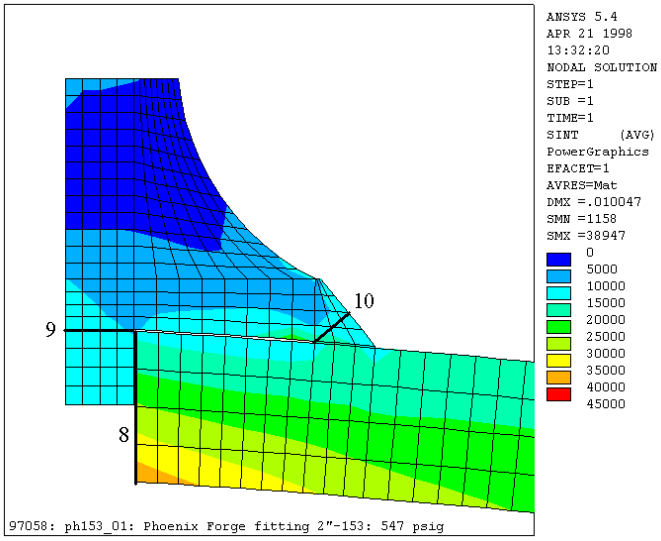
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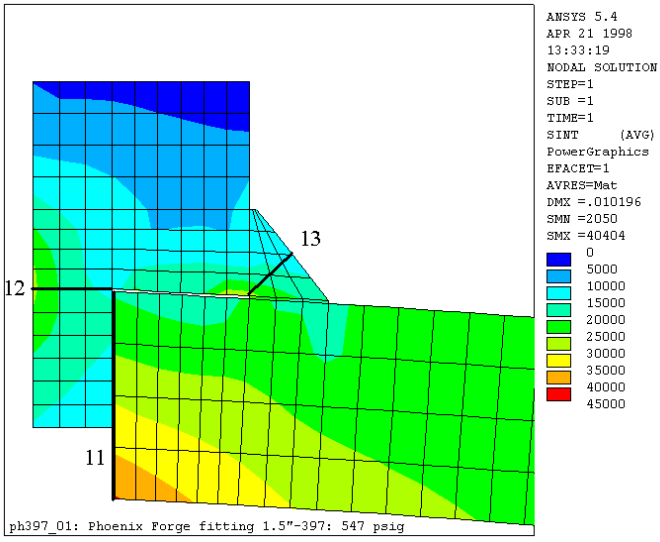
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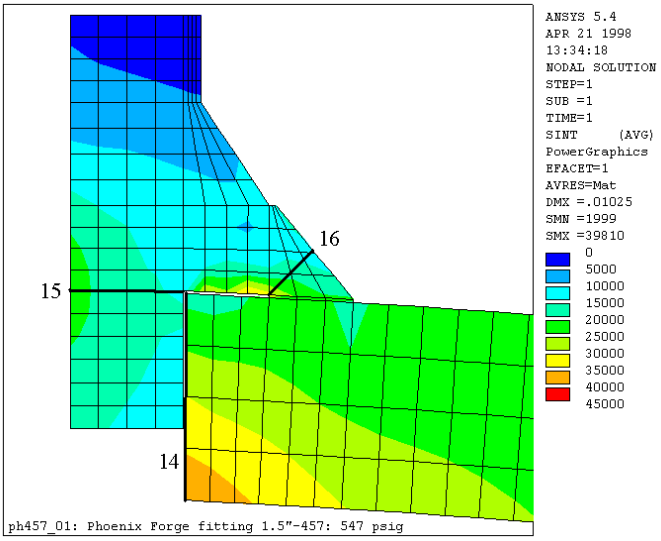
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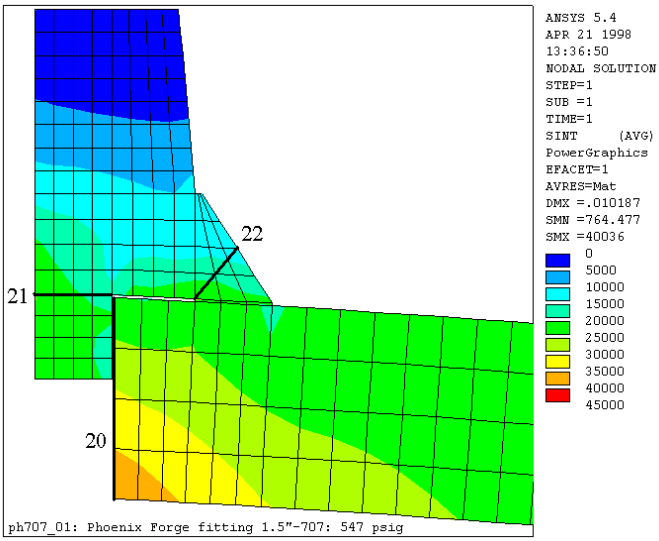
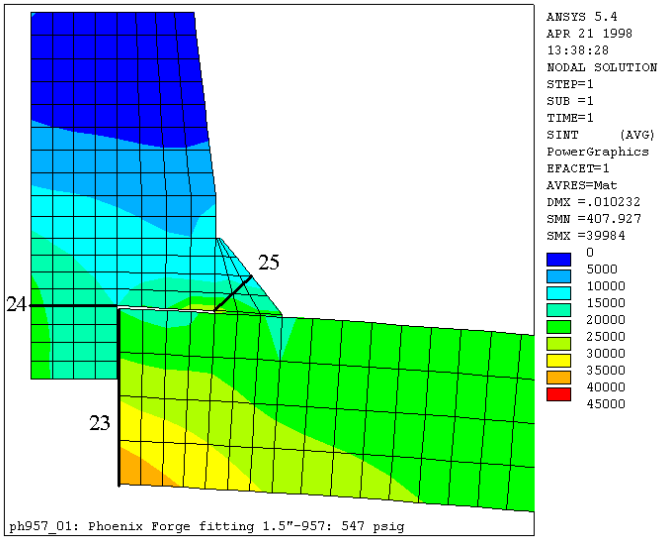




Phoenix Pressure Vessel Fittings - Pressure Temperature Ratings Basis

The finite element analysis summarized in the above figures were performed to confirm the strength-equivalence between a standard Phoenix Forge Group ASME B16.11, Class 3000 threaded coupling and threaded fittings, when welded to a pressure vessel in accordance with Section VIII, Division I of the ASME Boiler and Pressure Vessel Code. The design temperature and other service conditions for all welding fittings are limited by various construction codes. Within these limits, The Phoenix Forge Group certifies its welding fittings identified as such, as Manufacturer's Standard per ASME Section VIII, Division I, paragraph UG-11 (a) (1).

When identified with a 3000 or a 3M the maximum allowable pressure for a fitting is that computed for Schedule 160 straight seamless pipe of equivalent material, as done in ASME B36.11. The wall thickness used in such computation shall be that tabulated in ASME B36.10M for the fitting nominal pipe size and schedule 160, reduced by applicable manufacturing tolerances and other allowances (e.g., threaded allowances). Any corrosion allowance and any variation in allowable stress due to temperature shall be applied to the pipe and fitting alike.

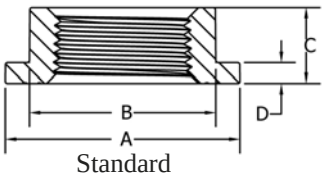
Note that the pressure-temperature ratings obtained in this manner are for the fitting, because the fitting to pipe or vessel attachment welds are governed by design codes such as ASME Section VIII, Divisional I, paragraph UW-16, which may impose more restrictive pressure -temperature limits.

NOTICE

It should be noted that this study is supportive only of the Phoenix Forge Group Pressure Vessel Fittings' proven designs. No consent is given to use Phoenix Pressure Vessel Fittings' proof of test or mathematical calculation to support other manufacturer's products which may be similar to Phoenix designs. Furthermore, it is cautioned that the use of these tests or calculations to support other manufacturer's products may be invalid because of differences in materials, fabrication processes or dimensions.

Tank and Cylinder Fittings

ASTM A 105/ASME SA 105
ASTM A 181-70/ASME SA 181-70



Standard
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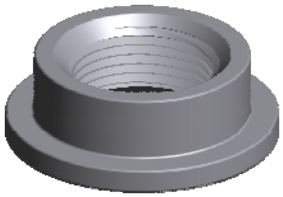
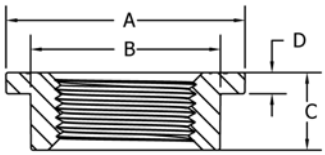
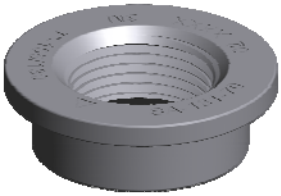


SERIES 100



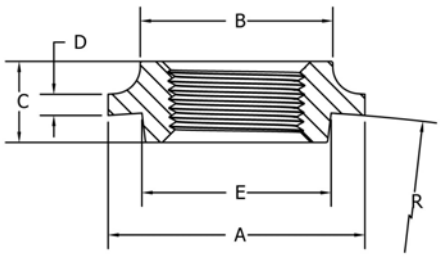
Inverted
Tapped from flange side

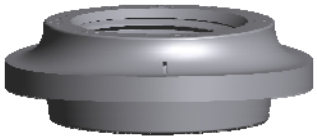


SERIES 125

FLAT TYPE

Pipe Size	Series Standard	Series Inverted	Approx Weight	A	B	C	D
1/8	100	125	0.04	1.188	.625	.281	.125
1/4	101	126	0.06	1.250	.750	.375	.156
3/8	102	127	0.08	1.375	.938	.375	.156
1/2	103	128	0.12	1.500	1.125	.579	.157
3/4	104	129	0.18	1.750	1.375	.625	.188
1	105	130	0.28	2.125	1.688	.688	.188
1-1/4	106	131	0.32	2.500	2.000	.688	.188
1-1/2	107	132	0.52	3.000	2.375	.812	.188
2	108	133	0.68	3.375	2.875	.812	.203
2-1/2	109	134	1.20	4.250	3.500	1.000	.188
3	110	135	1.44	5.000	4.125	1.000	.219
4	112	137	2.12	6.000	5.188	1.125	.250

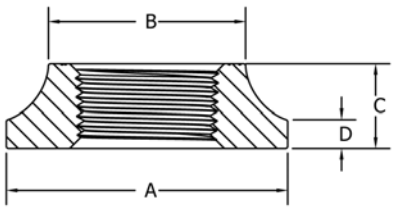


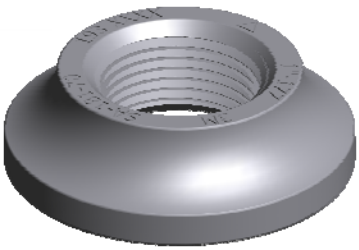


SERIES 150

STANDARD HEAVY CURVED TYPE WITH PILOT

Pipe Size	Series	Approx Weight	A	B	C	D	E	R
3/4	150A	0.26	2.062	1.437	.625	.196	1.344	7.000
1	150	0.36	2.375	1.781	.750	.196	1.750	15.000
1-1/4	151	0.46	2.750	2.156	.750	.196	1.875	10.000
1-1/2	152	0.58	3.125	2.406	.750	.196	2.344	15.000
2	153	0.66	3.375	2.875	.812	.196	2.719	15.000
2-1/2	154	1.12	4.250	3.438	1.000	.125	3.062	22.000
3	155	1.36	4.875	4.094	1.000	.219	3.688	22.000
4	157	1.86	5.812	5.125	1.250	.218	4.750	26.000
5	158	3.50	7.125	6.250	1.375	.250	5.812	42.000
6	159	4.88	8.250	7.375	1.437	.250	6.875	28.000
8	160	8.14	10.500	9.500	1.562	.250	9.000	48.000

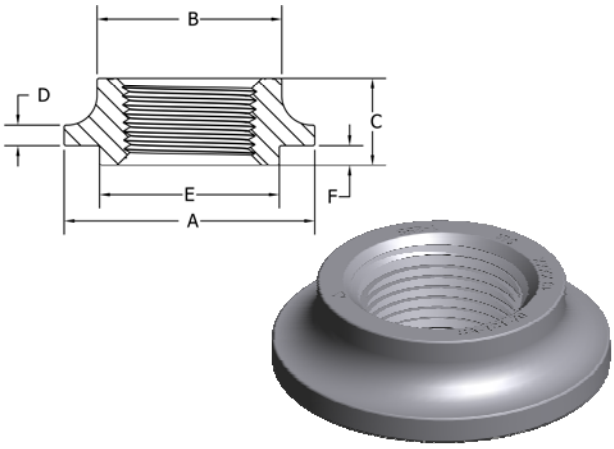




SERIES 175

EXTRA HEAVY FLAT TYPE SERIES

Pipe Size	Series	Approx Weight	A	B	C	D
1/4	175A	0.26	2.000	1.250	.750	.191
3/8	175B	0.24	2.000	1.250	.750	.191
1/2	175	0.30	2.000	1.250	.750	.188
3/4	176	0.44	2.250	1.500	.728	.250
1	177	0.56	2.500	1.750	.750	.250
1-1/4	178	0.64	2.875	2.062	.750	.250
1-1/2	179	0.84	3.250	2.375	.750	.250
2	180	1.00	3.750	2.875	.750	.250
2-1/2	181	1.68	4.250	3.500	1.000	.250
3	182	2.92	5.500	4.250	1.000	.250
4	184	4.10	6.500	5.375	1.125	.250
5	185	7.82	8.062	6.688	1.406	.313
6	186	8.38	8.500	7.625	1.500	.406

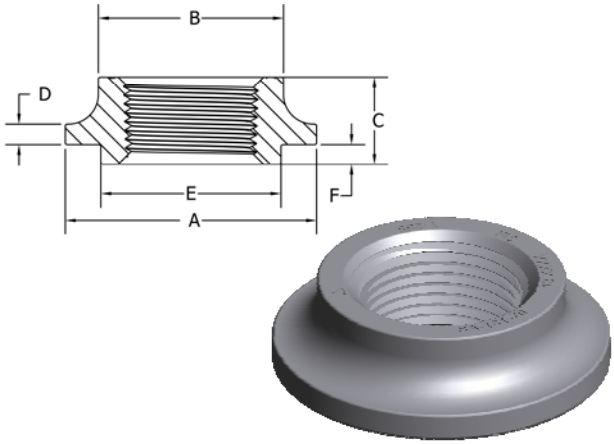


SERIES 250

STANDARD FLAT TYPE WITH PILOT

Pipe Size	Series	Approx Weight	A	B	C	D	E	F
1/8	250	0.10	1.375	.875	.469	.094	.843	.082
1/4	251	0.12	1.500	1.000	.500	.140	.968	.125
3/8	252	0.14	1.625	1.062	.500	.140	.937	.125
1/2	253	0.18	1.812	1.118	.625	.156	1.156	.156
3/4	254	0.26	2.062	1.438	.750	.156	1.343	.156
1	255	0.40	2.375	1.750	.830	.195	1.703	.188
1-1/4	256	0.46	2.500	2.125	.875	.196	1.938	.188
1-1/2	257	0.62	3.031	2.375	.875	.204	2.312	.187
2	258	0.64	3.375	2.875	.812	.188	2.688	.188
2-1/2	259	0.96	4.063	3.312	1.000	.093	3.187	.188
3	260	1.10	4.625	3.938	1.000	.219	3.688	.188
3-1/2	261	1.45	5.125	4.438	1.000	.219	4.188	.188
4	262	2.10	5.812	4.938	1.250	.219	4.750	.188

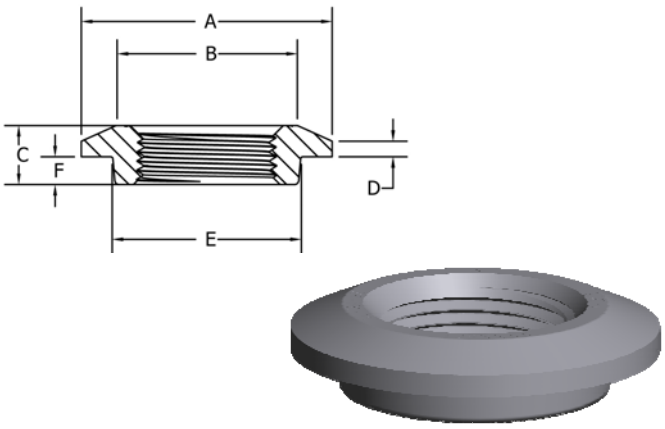
ASTM A304L/316L - Manufactured to A-182 Spec



SERIES 250
STAINLESS

STAINLESS STEEL FLAT TYPE WITH PILOT

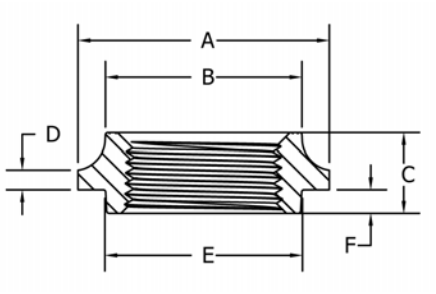
Pipe Size	Series	Approx Weight	A	B	C	D	E	F
1/4	251	0.12	1.500	1.000	.500	.140	.968	.125
3/8	252	0.14	1.625	1.062	.500	.140	.937	.125
1/2	253	0.18	1.812	1.118	.625	.156	1.156	.156
3/4	254	0.26	2.062	1.438	.750	.156	1.343	.156
1	255	0.40	2.375	1.750	.830	.195	1.703	.188
1-1/4	256	0.46	2.500	2.125	.875	.196	1.938	.188
1-1/2	257	0.62	3.031	2.375	.875	.204	2.312	.187
2	258	0.64	3.375	2.875	.812	.188	2.688	.188
3	260	1.10	4.625	3.938	1.000	.219	3.688	.188

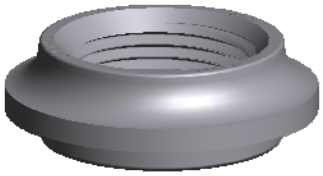


SERIES 300

BOILER FLANGE WITH PILOT

Pipe Size	Series	Approx Weight	A	B	C	D	E	F
1/8	300	0.08	1.312	.812	.406	.094	.875	.125
1/4	301	0.08	1.312	.812	.406	.094	.875	.125
3/8	302	0.12	1.438	1.062	.469	.094	1.188	.188
1/2	303	0.14	1.625	1.188	.468	.140	1.125	.188
3/4	304	0.20	2.000	1.375	.468	.140	1.312	.188
1	305	0.26	2.250	1.625	.531	.140	1.687	.250
1-1/4	306	0.30	2.562	1.938	.562	.140	1.938	.250
1-1/2	307	0.42	2.937	2.312	.578	.156	2.250	.250
2	308	0.46	3.375	2.750	.593	.156	2.625	.250

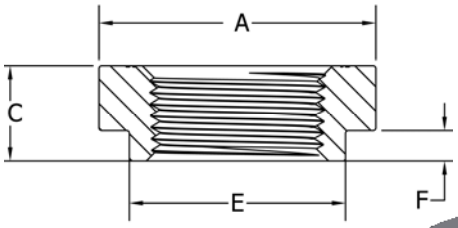


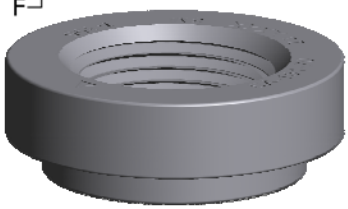


SERIES 380

LIGHTWEIGHT FLAT TYPE WITH PILOT

Pipe Size	Series	Approx Weight	A	B	C	D	E	F
1/8	380	0.06	1.188	.750	.406	.094	.750	.125
1/4	381	0.06	1.188	.875	.438	.094	.750	.156
3/8	382	0.06	1.312	.938	.438	.094	.938	.156
1/2	383	0.08	1.438	1.063	.469	.094	1.063	.188
3/4	384	0.10	1.625	1.250	.468	.156	1.375	.156
1	385	0.20	2.000	1.562	.641	.156	1.562	.188
1-1/4	386	0.26	2.375	1.937	.641	.156	1.937	.188
1-1/2	387	0.32	2.688	2.188	.641	.156	2.188	.188
2	388	0.36	3.125	2.625	.734	.156	2.625	.250

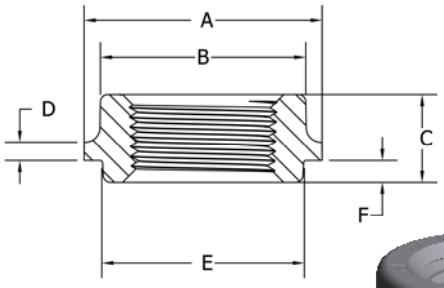


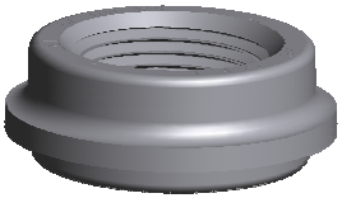


SERIES 390

MODIFIED LIGHTWEIGHT FLAT TYPE WITH PILOT

Pipe Size	Series	Approx Weight	A	C	E	F
1/4	391	0.12	1.438	.406	.938	.125
3/8	392	0.12	1.438	.438	.938	.156
1/2	393	0.12	1.438	.469	1.062	.188
3/4	394	0.14	1.625	.531	1.375	.250
1	395	0.28	2.000	.688	1.316	.219
1-1/4	396	0.36	2.375	.688	1.938	.250
1-1/2	397	0.50	2.688	.750	2.188	.250
2	398	0.60	3.125	.781	2.625	.250

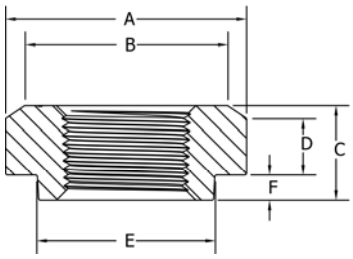


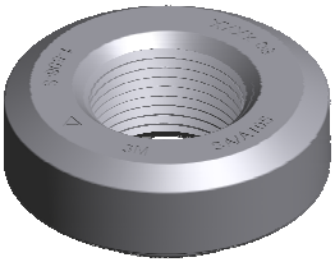


SERIES 450

TRIMMED FLAT TYPE WITH PILOT

Pipe Size	Series	Approx Weight	A	B	C	D	E	F
3/8	452	0.10	1.312	1.063	.500	.156	.968	.125
3/4	454	0.18	1.750	1.438	.656	.156	1.344	.156
1	455	0.32	2.031	1.750	.750	.156	1.718	.187
1-1/2	457	0.46	2.687	2.375	.750	.188	2.313	.188
2	458	0.62	3.125	2.875	.906	.250	2.688	.250

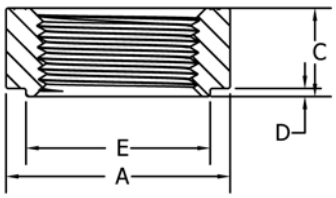


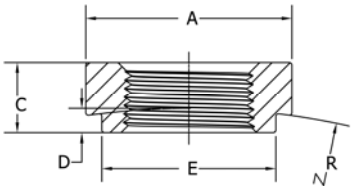


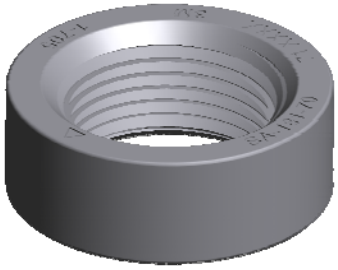
SERIES 500

L.P.G. FLANGE WITH PILOT

Pipe Size	Series	Approx Weight	A	B	C	D	E	F
3/4	504	0.40	1.875	1.438	.875	.500	1.500	.250
1	505	0.48	2.125	1.656	.906	.500	1.750	.250
1-1/4	506	0.54	2.375	2.000	.937	.560	2.000	.250



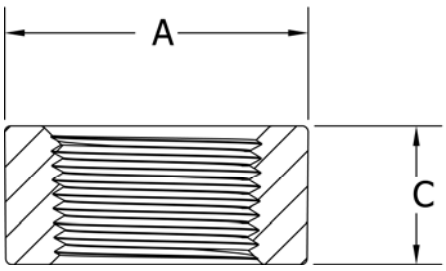


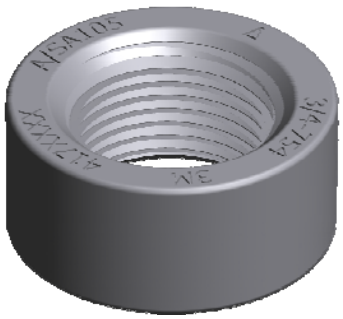


SERIES 700

COUPLING TYPE FLANGE WITH PILOT

Pipe Size	Series	Approx Weight	A	C	D	E	R
1/4	701	0.14	1.188	.562	.062	.921	NA
3/8	702	0.12	1.188	.562	.062	.921	NA
1/2	703	0.10	1.250	.562	.062	.921	NA
3/4	704	0.14	1.500	.563	.063	1.172	NA
1	705	0.20	1.750	.688	.063	1.437	NA
1	705-7R	0.30	2.000	.688	.238	1.688	7.000
1-1/4	706-7R	0.38	2.375	.688	.250	1.938	7.000
1-1/4	706	0.28	2.125	.688	.125	1.812	12.000
1-1/2	707	0.40	2.500	.750	.218	2.188	12.000
2	708	0.56	3.000	.781	.218	2.562	12.000
2-1/2	709	1.24	3.750	1.000	.188	3.125	18.000
3	710	1.36	4.250	1.063	.188	3.812	18.000

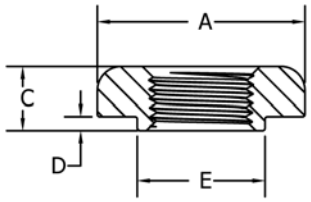


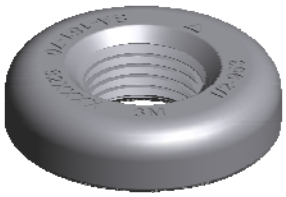


SERIES 750

COUPLING TYPE FLANGE

Pipe Size	Series	Approx Weight	A	C
1/4	751	*	1.000	0.688
3/8	752	*	1.188	0.688
1/2	753	.16	1.250	0.688
3/4	754	*	1.500	0.688
1	755	*	1.750	0.781
1-1/4	756	*	2.250	0.813
1-1/2	757	.57	2.500	0.813
2	758	.81	3.000	0.875
2-1/2	759	*	3.620	1.312
3	760	2.35	4.250	1.375
4	762	4.37	5.500	1.500

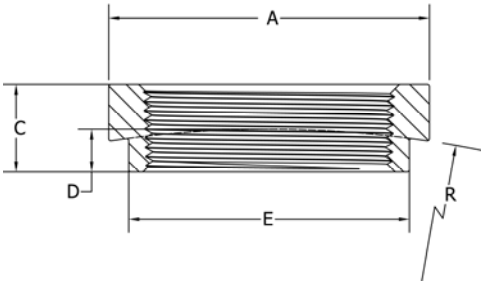


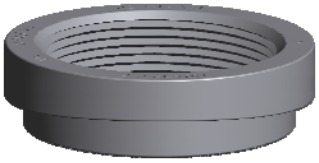


SERIES 950

COMPOSITE FLAT FLANGE WITH PILOT

Pipe Size	Series	Approx Weight	A	C	D	E
1/4	951	0.20	1.625	.500	.109	1.000
1/2	953	0.18	1.625	.500	.109	1.000

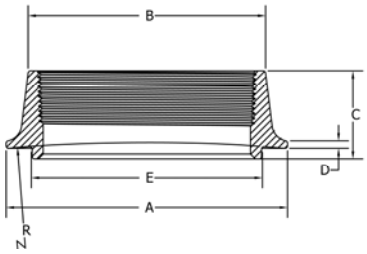


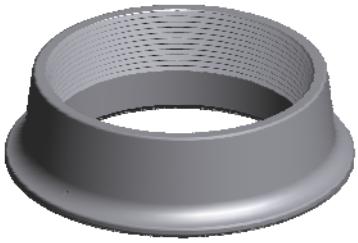


SERIES 958 R

COMPOSITE CURVED FLANGE WITH PILOT

Pipe Size	Series	Approx Weight	A	C	D	E	R
1-1/2	957	0.56	2.688	.781	.266	2.266	7.500
2	958	0.50	3.000	.828	.406	2.625	10.000

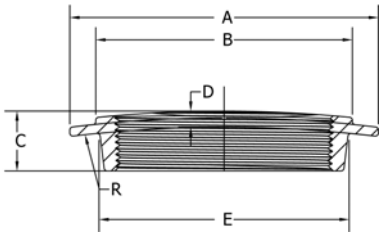




HI-FIVE

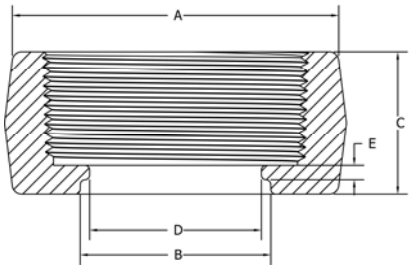
Pipe Size	Series	Approx Weight	A	B	C	D	E	R
5	158-A	5.00	7.125	6.000	2.250	.188	5.812	42.000

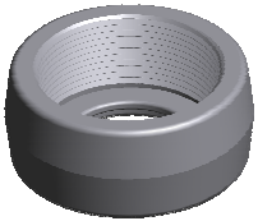
NOTE: Standard Tolerances do not apply.



LOW PROFILE

Pipe Size	Series	A	B	C	D	E	R
4	875	6.312	5.250	1.225	.328	5.250	26.000
5	878	7.312	6.375	1.375	.375	6.375	42.000





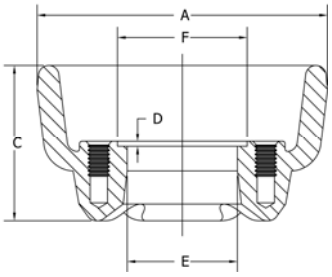
MONITORING FLANGE

Pipe Size	Series	Approx Weight	A	B	C	D	E
3	837	3.68	4.250	2.500	1.875	2.250	.187

3” NPT inside top.
Bottom bore to suit 2” Schedule 40 pipe.
NOTE: Standard Tolerances do not apply.

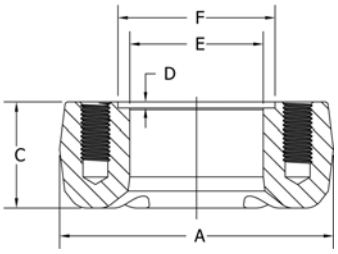
Forged Float Gage Adapters

Specify Phoenix Float Gage Adapters:
* Meets ASME SA-181-70 * Markings on top surface * Permanent Traceability



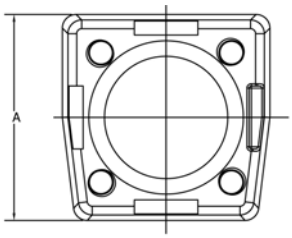
JUNIOR RECESSED

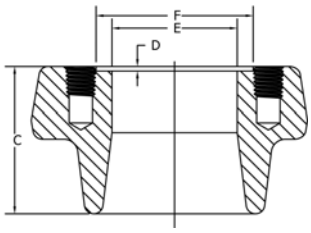
Series	Approx Weight	A	C	D	E	F
820	1.88	3.531	1.906	.062	1.340	1.578



JUNIOR DONUT

Series	Approx Weight	A	C	D	E	F
821	1.12	2.750	1.062	.062	1.340	1.578

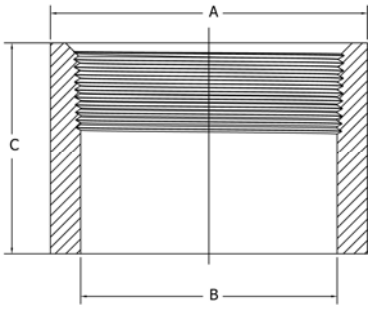




SENIOR

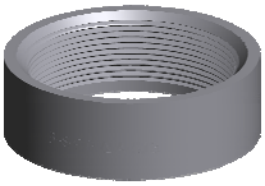
Series	Approx Weight	A	C	D	E	F
826	2.04	2.812	1.968	.062	1.670	2.094

HEAVY WALL T.O.E. STRUCTURAL COUPLINGS 2” - 8”



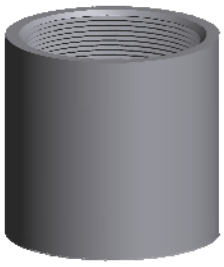
SERIES A-FULL COUPLINGS

Pipe Size	Series	Approx Weight	Min Wall	A	B	C
3	3-845A	5.26	.480	4.250	3.250	3.250
4	3-847A	7.20	.480	5.250	4.250	3.500
5	3-848A	8.96	.470	6.250	5.250	3.750



SERIES B-HALF COUPLINGS

Pipe Size	Series	Approx Weight	Min Wall	A	B	C
3	3-845B	2.36	.480	4.250	3.250	1.562
4	3-847B	3.26	.480	5.250	4.250	1.687
5	3-848B	3.84	.470	6.250	5.250	1.750
6	3-849B	6.16	.545	7.500	6.250	1.875
8	3-850B	10.64	.673	9.750	8.250	2.000



SERIES C-FIREGUARD COUPLINGS

Pipe Size	Series	Approx Weight	Min Wall	A	B	C
2	3-843C	4.88	.421	3.000	2.125	5.000
3	3-845C	8.16	.480	4.250	3.250	5.000
4	3-847C	10.40	.480	5.250	4.250	5.000
5	3-848C	12.24	.470	6.250	5.250	5.000
6	3-849C	18.10	.545	7.500	6.250	5.000
8	3-850C	28.36	.673	9.750	8.250	5.000

SERIES D-FIREGUARD COUPLINGS

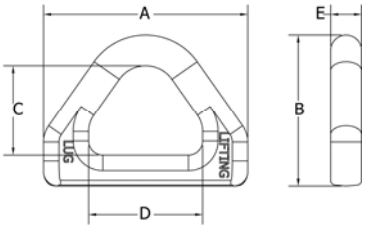
Pipe Size	Series	Approx Weight	Min Wall	A	B	C
2	3-843D	5.70	.375	2.875	2.125	7.000
3	3-845D	8.36	.375	4.000	3.250	7.000
4	3-847D	10.62	.375	5.000	4.250	7.000
6	3-849D	14.74	.375	7.000	6.250	7.000

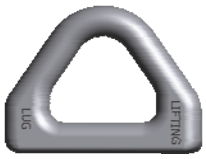
Material Specification:
DOM/Seamless Tubing
Meets A-513A & A-519
Grade SAE 1026

Inquire about:

- Custom Lengths
- Special Threading
- Full Couplings

LIFTING LUGS

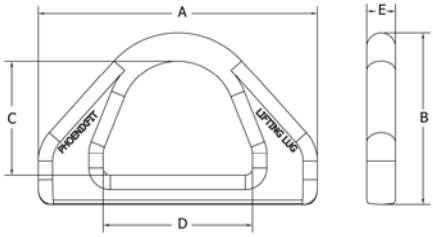




MINI SERIES 2-898-MIN

Series	Approx Weight	A	B	C	D	E
2-898-MIN	0.30	2.687	2.000	1.188	1.500	.406

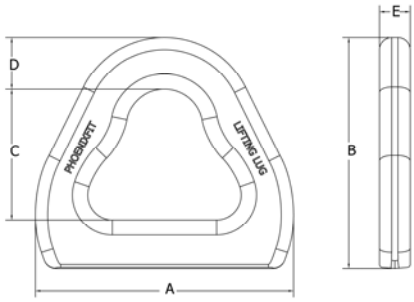
Maximum load capacity per lug: 4850 lbs.



SMALL SERIES 2-900-LUG

Series	Approx Weight	A	B	C	D	E
2-900-LUG	0.90	4.875	3.000	2.000	2.609	.500

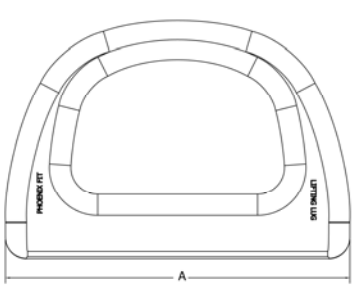
Maximum load capacity per lug: 6800 lbs.
***Available in 304L**



MEDIUM SERIES 2-899-MLL

Series	Approx Weight	A	B	C	D	E
2-899-MLL	2.38	5.250	4.718	2.618	1.100	.625

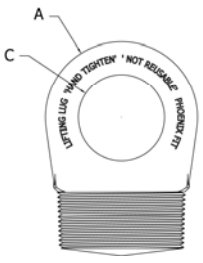
Maximum load capacity per lug: 20,000 lbs.

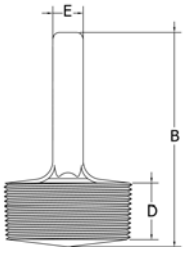


LARGE SERIES 2-901-LLL

Series	Approx Weight	A	B	C	D	E
2-901-LLL	6.26	8.000	5.531	3.125	1.000	.906

Maximum load capacity per lug: 16,500 lbs.





2” NPT THREADED SERIES 3-903-2-TLL

Series	Approx Weight	A	B	C	D	E
3-903-2-TLL	2.08	R 1.405	4.000	R .796	1.000	.562

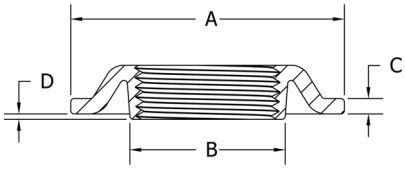
Maximum load capacity per lug: 11,450 lbs.

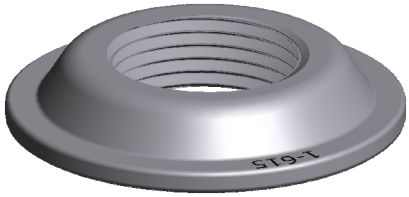
4” NPT THREADED SERIES 3-902-TLL

Series	Approx Weight	A	B	C	D	E
3-902-TLL	9.36	R 2.500	6.341	R 1.500	1.000	1.000

Maximum load capacity per lug: 28,000 lbs.

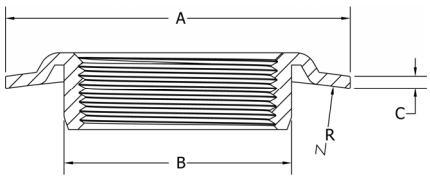
Pressed Steel Fittings





FLAT TYPE*

Pipe Size	Series	Approx Weight	A	B	C	D
1/2	613	0.08	1.745	0.900	.134	0.160
3/4	614	0.16	2.360	1.110	.134	0.140
1	615	0.14	2.346	1.372	.134	0.210
1-1/4	616	0.20	2.860	1.742	.134	0.333
1-1/2	617	0.32	3.653	1.942	.118	0.060
2	618	0.32	3.730	2.460	.130	0.365
2	648	0.44	3.840	2.480	.156	0.545



CURVED TYPE

Pipe Size	Series	Approx Weight	A	B	C	R
1-1/2	637	0.24	3.265	1.954	.118	13
2	638	0.32	3.670	2.460	.130	13
2	658	0.44	3.825	2.480	.156	14
2	668	0.44	3.800	2.480	.156	11

Thread Protectors

Thread Protectors are manufactured from tin plated steel for durability, flexibility and corrosion resistance.

Pipe Sizes	1/8",	1/4",	3/8",	1/2",	3/4",	1",	1 1/4",	1 1/2",	2",	2 1/2",	3",	3 1/2",	4",	5",	6",	8"

The Isolator® Bushing

The Isolator® from Phoenix Forging offers significant advantages over other anode protection devices used in underground tanks.

- Unique design minimizes cross-threading.
- Extremely lightweight, resilient and easy to install.
- Slightly offset design for quick and easy flange entry.
- No-burr construction for a smoother, tighter fit.
- Oversized, reinforced tabs for extra strength during installation.
- Top quality flanges and bushings from one source.

The Following are Registered Trademarks of The Phoenix Forge Group

Int. Cls.: 6 and 40
Prior U.S. Cls.: 13, 103, and 106

United States Patent and Trademark Office

Reg. No. 1,783,836
Registered July 27, 1993

TRADEMARK
SERVICE MARK
PRINCIPAL REGISTER

PHOENIX FORGING COMPANY INC.
(PENNSYLVANIA CORPORATION)
FRONT AND CHAPEL STREETS
CATASAUQUA, PA 18032

FOR: FORGED METAL PRODUCTS; NAMELY METAL TANK FLANGES AND PIPE CONNECTORS, IN CLASS 6 (U.S. CL. 13).
FIRST USE 0-0-1943; IN COMMERCE 0-0-1943.

FOR: FORGING METAL GOODS TO THE ORDER AND SPECIFICATION OF OTHERS, IN CLASS 40 (U.S. CLS. 103 AND 106).
FIRST USE 0-0 1943; IN COMMERCE 0-0-1943.

SER. NO. 74-234, 442, FILED 12-31-1991.
AMOS T. MATTHEWS, JR., EXAMANING ATTORNEY

OTHER REGISTERED TRADEMARKS:
PHOENIXFIT®
HYDRO FLIGHT®
HY-PLUS®
HI-FIVE®
ISOLATOR® BUSHING
TRANS-O-CON®

® PHOENIX FORGING COMPANY INC.

® PHOENIX FITTINGS COMPANY

® PHOENIX HOTFORM COMPANY

® PHOENIX HOTFORM COMPANY, ALTERNATE SYMBOL

FORGED WITH PRIDE IN THE USA

SERVICE MARK:
COMMANDING A HIGHER STANDARD℠

TRADE ASSOCIATIONS:
PRESSURE VESSEL MANUFACTURERS ASSOCIATION
STI/SPFA—STEEL TANK INSTITUTE/STEEL PLATE FABRICATORS ASSOCIATION
THE PVF ROUNDTABLE
FORGING INDUSTRY ASSOCIATION
AMERICAN SUPPLY ASSOCIATION
INDUSTRIAL PIPING DIVISION—ASA
STAFDA—SPECIALTY TOOL & FASTENERS DISTRIBUTION ASSOCATION
AMERICAN HARDWARE MANUFACTURERS ASSOCIATION
ASME—AMERICAN SOCIETY OF MECHANICAL ENGINEERS
ASTM—AMERICAN SOCIETY TESTING MATERIALS
MSS—MANUFACTURING STANDARDIZATION SOCIETY
SME—SOCIETY OF MANUFACTURING ENGINEERS