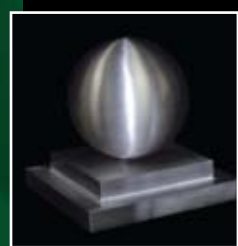


# ARCHITECTURAL HANDRAIL FITTINGS



MASTER CATALOG



# SHARPE PRODUCTS

VOLUME VII



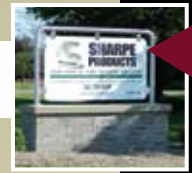
CUSTOM BENDING & ROLLING SERVICES



# TABLE OF CONTENTS

Letter From The President	3		<b>HEMISPHERES &amp; SPHERES</b>	
Meet The Sharpe Team	4		Hemispheres	36
Capabilities	5		Spheres	36
<b>PIPE &amp; TUBE ELBOWS</b>			<b>PIPE &amp; TUBE CAPS</b>	
Bent 90° Elbows	6		Domed Weld-on Caps	37
Bent 90° Elbows with 1 Tangent	8		Dished Disk Weld-on Caps	38
Bent 90° Elbows with Tangents	10		Type B – Bullet Drive-on Caps	38
Bent 180° Elbows	12		Type D – Dished Drive-on Caps	39
Economy Formed 35° Elbows	14		Type F – Flat Drive-on Caps	39
Economy Formed 45° Elbows	14		<b>WALL BRACKETS &amp; COMPONENTS</b>	
Economy Formed 55° Elbows	15		Formed 3/16" Wall Brackets	40
35°, 45°, & 55° Bent Elbows with Tangents	15		Formed 3/16" ADAAG Wall Brackets	40
125°, 135°, & 145° Bent Elbows	15		Formed 1/4" Wall Brackets	41
Economy Formed Elbows	16		Formed 1/4" NFPA 5000 Wall Brackets	41
1/8" Radius Elbows	16		Weld-On Brackets	41
Side Outlet Elbows	16		Extruded Aluminum Brackets	42
<b>ASSORTED CONNECTORS</b>			<b>RINGS</b>	
Type T – Tee Cope Connector	17		Round Bar Rings	44
Type S – Side Outlet Tee Cope Connector	18		Square Bar Rings	44
Type X – Side Outlet Cross Cope Connector	18		<b>SQUARE FITTINGS</b>	
Type B – Beveled Tee Cope Connector	18		Square Tube Bends	45
Mechanical Connectors: Single & Double Multi-Splice	19		Square Corners	46
Welding Connectors	20		Square Drive-on Caps	46
Dowels	20		Square Weld-on Caps	46
Serrated Aluminum Dowels	20		Square Newel Post Caps	47
<b>RAILING ENDS</b>			<b>CUSTOM BENDING &amp; ROLLING SERVICES</b>	
Rail Ends	21		Custom Ornamental Bending & Rolling	48
Stair Rail Ends	21		Architectural Custom Bends	49
U-End Loops	22		OEM Custom Bending & Rolling	50
Post Ends	22		Fiber Optic Tube Laser Services	51
<b>WALL RETURNS</b>			Tips for Designing a Custom Bend	52
Wall Returns	23		Tooling List (Bending Dies)	53
<b>POST SLEEVES</b>			<b>ADDITIONAL INFORMATION</b>	
EZ Sleeve	24		"Sharpe Thinkers" Membership Information	54
<b>FLANGES &amp; DISKS</b>			Terms and Conditions	54
Extra Heavy Flat Flanges	25		Notes	55
Flat Flanges	26			
Raised Flush Flanges	28			
Anchor Plates	29			
Raised Base Flanges	30			
Snap Cover Flange Base	32			
Raised Snap Cover Flanges	33			
Snap Cover Flanges	33			
Round Disks	34			

# LETTER FROM THE PRESIDENT



**YOUR PIPE & TUBE BENDING SOLUTION**

ISO 9001:2008 REGISTERED

[www.sharpeproducts.com](http://www.sharpeproducts.com)



*Paul Krickeberg,  
President*



MEMBER

Dear Valued Customer,

Welcome to Sharpe Products! For over 20 years Sharpe Products has been delivering high quality handrail fittings and custom bent pipe and tube products to customers nationwide.

This catalog contains our full line of quality, American-made stock architectural handrail components which include elbows, wall brackets, flanges, caps, and more at our low price guarantee. Looking for a custom bend? No problem! Our custom bending and rolling services can help you greatly reduce grinding and welding times for your projects. *Check out our custom ornamental bending and rolling services on page 48!*

We would like to take this opportunity to express our sincere appreciation to those who have been instrumental through the years in the growth and development of Sharpe Products. With your continued support we were able to once again expand our capabilities and are proud to now offer state-of-the-art *Fiber Optic Tube Laser Services!* This new tube laser service will allow for costly fabrication services to be completed in a more lean and efficient manner. *You can read more about this exciting addition on page 51 of the catalog!*

Please let us know if you need assistance with anything by emailing or calling us. The Sharpe Team is here for you providing quality products and great customer service.

Visit our website at [www.sharpeproducts.com](http://www.sharpeproducts.com) or call us at (800) 879-4418 for up-to-date pricing.

**THINK SHARPE & SAVE!**

- Low price guarantee on quality American-made products.
- Same day shipping on stock items ordered before 2:00 p.m. CST.
- Enhanced website navigation for easy on-line ordering.
- Minimum order: \$100; No restocking charges on returned stock items.
- Quantity discounts and "Sharpe Thinkers" member club discounts available. *(Details on pg. 54).*
- Custom bending and rolling, fabrication, and fiber optic tube laser services available.

Sincerely,

*Paul Krickeberg  
President*

**CUSTOM BENDING & FABRICATING • ARCHITECTURAL HANDRAIL FITTINGS**

2550 South 170<sup>th</sup> Street • New Berlin, WI 53151 • Ph: 262-754-0369 • 800-879-4418 • Fx: 262-754-0374



# MEET THE SHARPE TEAM

Welcome to Sharpe Products! With over 100 years of combined experience, Sharpe Products delivers not only exceptional and quality products, but top notch customer service. Each and every one of our team members plays an integral part in the company to make sure that all of our customers needs are met. Whether it's the behind the scenes project management, the production team creating your parts, or the pleasant customer service voice on the phone, each one of our team members is here to make sure that your experience with Sharpe is nothing but the best.

Sharpe's Account Executives will help you every step of the way to get you going on your project. They first familiarize themselves with your needs and the project at hand. Then they will assist you in choosing the appropriate parts necessary in making your project a success. Even after your order is placed, our account executives are here for you any time to answer your questions.

The Product Engineering and Development department conducts research on customer needs and on the latest building codes to come up with new and innovative designs for new products.

Our Tool and Die Engineers are responsible for planning the manufacturing of new products ensuring that they are produced efficiently, cost effectively, and according to our quality standards.

The Receiving Department is responsible for inspecting all inbound materials to be sure that all materials are of the highest quality before production is started.

The Production and Quality Team members are responsible for the production of parts that meet our quality standards. Verification of this quality is done throughout the production process.

The Shipping Department fills your order and properly packages it so that your product is shipped securely. They are also equipped to ship your package with any special requests you may have.

## THE SHARPE TEAM..WE'RE HERE FOR YOU!



Paul



Connie



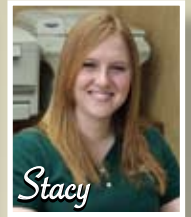
Dave



Sandy



Randy



Stacy



Robbie



Heather



Mike



Angie



Fred



Ryan



Mike



Glenn



Dan



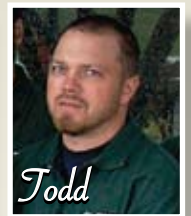
Patricio



Aaron



Kevin



Todd



Bob



Jon



Ron



Tom



Mike



Hue



Tony

# CAPABILITIES



Sharpe Products offers the largest selection of stock bends in the country! Choose from an impressive array of size and radii in steel, stainless steel, and aluminum. We offer same-day shipping on stock items ordered before 2pm CST.

We continually work to streamline our procedures and processes by implementing cost reduction strategies. Space saving turret forklifts, pull out tube storage racks, and eight overhead cranes ranging from 3-30 tons are just a few of the efficient, cost reducing tools we utilize at our facility. For the most up-to-date pricing, please check our website [www.sharpeproducts.com](http://www.sharpeproducts.com) or call us at 800-879-4418.

Sharpe Products is an ISO 9001:2008 Registered company, and in addition to stock architectural handrail fittings, custom bending and rolling services for large radius and multi-radii bends are also offered. By utilizing these services, you can reduce the cutting, welding, and grinding times of your job, which will reduce your project costs. With an inventory of over 600 bending dies, Sharpe Products boasts one of the largest inventories of bend tooling in the country. If we don't already have it, our in-house tool and die department can build it cost-effectively with shortened lead times. Welding capabilities also allow us to offer many fabricated products, both stock and custom.

To provide you with the very best in service and quality, we manufacture your parts with the latest technologies in the tube bending industry. With the use of our Nissin 3D tube bending machine, we have even more flexibility and ability to deliver your custom bent needs. Some of the Nissin's capabilities include: Multi-radii bends without additional tooling, little to no distance between bends, and angles over 180°. It is great for complex ornamental applications! A new addition to our capabilities is a state-of-the-art BLM Fiber Optic Tube Laser! This unique tube laser not only has increased production speed but also cuts copper, brass, bronze, and galvanized pipe in addition to the traditional materials such as steel, stainless steel, and aluminum. ***Read more about our Fiber Optic Tube Laser on page 51!***

The Sharpe Team is committed to making every customer a satisfied customer by delivering quality products, competitive pricing, on-time shipping, and great customer service.





# BENT 90° ELBOWS

Sharpe Products offers the largest selection of stock bends which includes, economy formed elbows (with a seam) as well as mandrel bent elbows that have no visible seam. We have stock elbows that range in sizes from 1" O.D. to 3-1/2" O.D. and come in steel, stainless steel and aluminum.

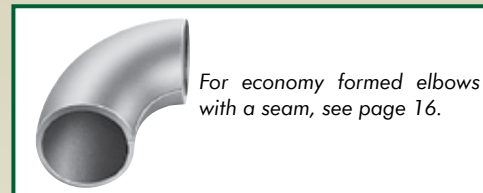
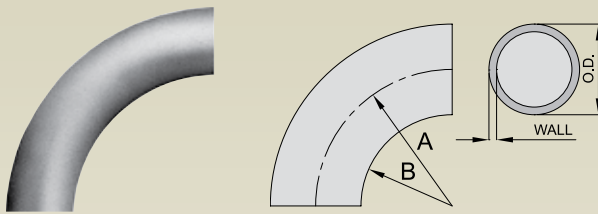
Stainless 1-1/4" pipe, 1-1/2" pipe, and 1-1/2" O.D. tubing elbows are bent with pre-polished material and may require some touch-up. All other elbows are supplied with a mill finish. Stock products are available for same-day shipping if ordered before 2pm CST.

For all other materials, sizes, radii, and finishes, please call for a quote. Quantity Discounts available and special discounts available for Sharpe Thinkers members.



## BENT 90° PIPE & TUBE ELBOWS

These mandrel bent elbows have no visible seam. Stainless 1-1/4" pipe, 1-1/2" pipe, and 1-1/2" O.D. tubing elbows are bent with pre-polished material and may require some touch-up. For additional sizes or radii call for a quote. Mandrel bent 35°, 45°, and 55° elbows are also available. For pricing on these elbows please call or visit our website at [www.sharpeproducts.com](http://www.sharpeproducts.com).



Pipe: 6063 Alloy – Tube: 6061 Alloy

304 Alloy

Pipe or Tube Outside Dia. (O.D.)	A= C.L.R.	B= I.R.	STEEL			ALUMINUM			STAINLESS		
			Wall Thickness	Part No.	Wt. Ea.	Wall Thickness	Part No.	Wt. Ea.	Wall Thickness	Part No.	Wt. Ea.
1"	2.50"	2"	.120" (11 Gage)	4125	0.37	.125"	5125	0.13	.065" (16 Gage)	6125	0.22
1"	3"	2.50"	.120" (11 Gage)	4135	0.44	.125"	5135	0.15	.065" (16 Gage)	6135	0.26
1.05" (3/4" Pipe)	1.50"	.98"	.113" (Sch 40)	205	0.22	.113" (Sch 40)	1205	0.08	.113" (Sch 40)	2205	0.22
1.05" (3/4" Pipe)	2"	1.475"	.113" (Sch 40)	215	0.30	.113" (Sch 40)	1215	0.10	.113" (Sch 40)	2215	0.30
1.05" (3/4" Pipe)	2.50"	1.975"	.113" (Sch 40)	225	0.37	.113" (Sch 40)	1225	0.13	.113" (Sch 40)	2225	0.37
1.05" (3/4" Pipe)	3"	2.475"	.113" (Sch 40)	235	0.44	.113" (Sch 40)	1235	0.15	.113" (Sch 40)	2235	0.45
1.25"	2.50"	1.875"	.120" (11 Gage)	4225	0.47	.125"	5225	0.17	.065" (16 Gage)	6225	0.27
1.25"	3"	2.375"	.120" (11 Gage)	4235	0.57	.125"	5235	0.20	.065" (16 Gage)	6235	0.33
1.25"	6"	5.375"	.120" (11 Gage)	4265	1.14	.125"	5265	0.39	.065" (16 Gage)	6265	0.66
1.315" (1" Pipe)	1.50"	.843"	.133" (Sch 40)	305	0.33	.133" (Sch 40)	1305	0.11	.133" (Sch 40)	2305	0.33
1.315" (1" Pipe)	2"	1.343"	.133" (Sch 40)	315	0.44	.133" (Sch 40)	1315	0.15	.133" (Sch 40)	2315	0.45
1.315" (1" Pipe)	2.50"	1.843"	.133" (Sch 40)	325	0.55	.133" (Sch 40)	1325	0.19	.133" (Sch 40)	2325	0.56
1.315" (1" Pipe)	3"	2.343"	.133" (Sch 40)	335	0.66	.133" (Sch 40)	1335	0.23	.133" (Sch 40)	2335	0.67
1.315" (1" Pipe)	4"	3.343"	.133" (Sch 40)	345	0.88	.133" (Sch 40)	1345	0.30	.133" (Sch 40)	2345	0.90
1.315" (1" Pipe)	5"	4.343"	.133" (Sch 40)	355	1.10	.133" (Sch 40)	1355	0.38	.133" (Sch 40)	2355	1.12
1.315" (1" Pipe)	6"	5.343"	.133" (Sch 40)	365	1.32	.133" (Sch 40)	1365	0.46	.133" (Sch 40)	2365	1.35
1.315" (1" Pipe)	7"	6.343"	.133" (Sch 40)	375	1.54	.133" (Sch 40)	1375	0.53	.133" (Sch 40)	2375	1.56

# BENT 90° ELBOWS



## BENT 90° ELBOWS (CONTINUED)

Pipe: 6063 Alloy – Tube: 6061 Alloy

304 Alloy

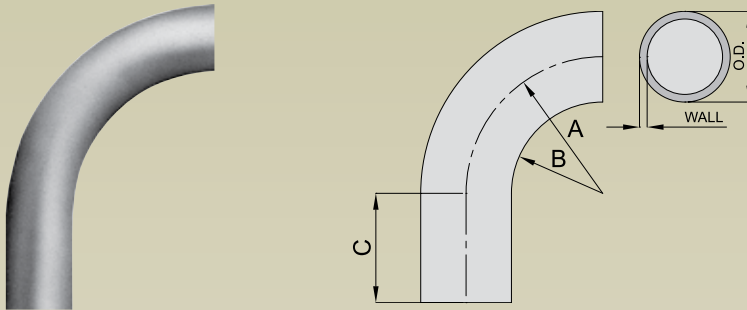
Pipe or Tube O.D.	A=C.L.R.	B=I.R.	STEEL			ALUMINUM			STAINLESS		
			Wall Thickness	Part No.	Wt. Ea.	Wall Thickness	Part No.	Wt. Ea.	Wall Thickness	Part No.	Wt. Ea.
1.50"	2"	1.25"	.120" (11 Gage)	4315	0.46	.125"	5315	0.17	.120" (11 Gage)	6315-11	0.26
1.50"	2.50"	1.75"							.065" (16 Gage)	6325	0.33
1.50"	2.50"	1.75"	.120" (11 Gage)	4325	0.58	.125"	5325	0.20	.120" (11 Gage)	6325-11	0.59
1.50"	2.75"	2"	.065" (16 Gage)	4825-16	0.36				.065" (16 Gage)	6825	0.36
1.50"	2.75"	2"	.120" (11 Gage)	4825	0.64	.125"	5825	0.23	.120" (11 Gage)	6825-11	0.64
1.50"	3"	2.25"	.120" (11 Gage)	4335	0.69	.125"	5335	0.23	.065" (16 Gage)	6335	0.40
1.50"	4"	3.25"	.120" (11 Gage)	4345	0.93	.125"	5345	0.32	.065" (16 Gage)	6345	0.53
1.50"	6"	5.25"	.120" (11 Gage)	4365	1.39	.125"	5365	0.50	.065" (16 Gage)	6365	0.79
1.66" (1 1/4" Pipe)	2.00"	1.17"	.140" (Sch 40)	415	0.60	.140" (Sch 40)	1415	0.21	.140" (Sch 40)	2415	0.61
1.66" (1 1/4" Pipe)	2.50"	1.67"	.140" (Sch 40)	425	0.74	.140" (Sch 40)	1425	0.26	.140" (Sch 40)	2425	0.76
1.66" (1 1/4" Pipe)	3"	2.17"	.140" (Sch 40)	435	0.89	.140" (Sch 40)	1435	0.31	.140" (Sch 40)	2435	0.91
1.66" (1 1/4" Pipe)	4"	3.17"	.140" (Sch 40)	445	1.19	.140" (Sch 40)	1445	0.41	.140" (Sch 40)	2445	1.22
1.66" (1 1/4" Pipe)	5"	4.17"	.140" (Sch 40)	455	1.49	.140" (Sch 40)	1455	0.52	.140" (Sch 40)	2455	1.52
1.66" (1 1/4" Pipe)	6"	5.17"	.140" (Sch 40)	465	1.79	.140" (Sch 40)	1465	0.62	.140" (Sch 40)	2465	1.83
1.66" (1 1/4" Pipe)	7"	6.17"	.140" (Sch 40)	475	2.08	.140" (Sch 40)	1475	0.72	.140" (Sch 40)	2475	2.11
1.66" (1 1/4" Pipe)	8"	7.17"	.140" (Sch 40)	485	2.38	.140" (Sch 40)	1485	0.83	.140" (Sch 40)	2485	2.41
1.66" (1 1/4" Pipe)	9"	8.17"	.140" (Sch 40)	495	2.68	.140" (Sch 40)	1495	0.93	.140" (Sch 40)	2495	2.71
1.66" (1 1/4" Pipe)	12"	11.17"	.140" (Sch 40)	4-12-5	3.57	.140" (Sch 40)	14-12-5	0.92	.140" (Sch 40)	24-12-5	3.61
1.90" (1 1/2" Pipe)	2.50"	1.55"	.145" (Sch 40)	525	0.89	.145" (Sch 40)	1525	0.31	.145" (Sch 40)	2525	0.91
1.90" (1 1/2" Pipe)	3"	2.05"	.145" (Sch 40)	535	1.07	.145" (Sch 40)	1535	0.37	.145" (Sch 40)	2535	1.09
1.90" (1 1/2" Pipe)	4"	3.05"	.145" (Sch 40)	545	1.42	.145" (Sch 40)	1545	0.49	.145" (Sch 40)	2545	1.45
1.90" (1 1/2" Pipe)	5"	4.05"	.145" (Sch 40)	555	1.78	.145" (Sch 40)	1555	0.62	.145" (Sch 40)	2555	1.82
1.90" (1 1/2" Pipe)	6"	5.05"	.145" (Sch 40)	565	2.13	.145" (Sch 40)	1565	0.74	.145" (Sch 40)	2565	2.18
1.90" (1 1/2" Pipe)	7"	6.05"	.145" (Sch 40)	575	2.49	.145" (Sch 40)	1575	0.87	.145" (Sch 40)	2575	2.52
1.90" (1 1/2" Pipe)	8"	7.05"	.145" (Sch 40)	585	2.85	.145" (Sch 40)	1585	0.99	.145" (Sch 40)	2585	2.88
1.90" (1 1/2" Pipe)	9"	8.05"	.145" (Sch 40)	595	3.20	.145" (Sch 40)	1595	1.11	.145" (Sch 40)	2595	3.24
1.90" (1 1/2" Pipe)	12"	11.05"	.145" (Sch 40)	5-12-5	4.27	.145" (Sch 40)	15-12-5	1.48	.145" (Sch 40)	25-12-5	4.32
2"	3"	2"	.120" (11 Gage)	4535	0.95	.125"	5535	0.33	.120" (11 Gage)	6535	0.96
2"	4"	3"	.120" (11 Gage)	4545	1.26	.125"	5545	0.44	.120" (11 Gage)	6545	1.29
2"	5"	4"	.120" (11 Gage)	4555	1.58	.125"	5555	0.55	.120" (11 Gage)	6555	1.61
2"	6"	5"	.120" (11 Gage)	4565	1.89	.125"	5565	0.66	.120" (11 Gage)	6565	1.93
2.375" (2" Pipe)	3"	1.813"	.154" (Sch 40)	635	1.44	.154" (Sch 40)	1635	0.50	.154" (Sch 40)	2635	1.45
2.375" (2" Pipe)	4"	2.813"	.154" (Sch 40)	645	1.92	.154" (Sch 40)	1645	0.66	.154" (Sch 40)	2645	1.95
2.375" (2" Pipe)	5"	3.813"	.154" (Sch 40)	655	2.40	.154" (Sch 40)	1655	0.83	.154" (Sch 40)	2655	2.42
2.375" (2" Pipe)	6"	4.813"	.154" (Sch 40)	665	2.88	.154" (Sch 40)	1665	1.00	.154" (Sch 40)	2665	2.91
2.375" (2" Pipe)	12"	10.813"	.154" (Sch 40)	6-12-5	5.74	.154" (Sch 40)	16-12-5	1.99	.154" (Sch 40)	26-12-5	5.81
2.50"	5"	3.75"	.120" (11 Gage)	4655	2.00	.125"	5655	0.69	.120" (11 Gage)	6655	2.04
2.875" (2 1/2" Pipe)	5"	3.563"	.203" (Sch 40)	755	3.79	.203" (Sch 40)	1755	1.31	.203" (Sch 40)	2755	3.87
3"	5"	3.50"	.120" (11 Gage)	4755	2.42	.125"	5755	0.84	.120" (11 Gage)	6755	2.47
3.50" (3" Pipe)	6"	4.25"	.120"	4865	3.40	.125"	5865	1.18	.120" (11 Gage)	6865	3.47



# BENT 90° ELBOWS - 1 TANGENT

## BENT 90° PIPE & TUBE ELBOWS WITH 1 TANGENT

These mandrel bent elbows have no visible seam. Stainless 1-1/4" pipe, 1-1/2" pipe, and 1-1/2" O.D. tubing elbows are bent with pre-polished material and may require some touch-up. Mandrel bent 35°, 45°, and 55° elbows are also available. For pricing on 35°, 45°, 55° elbows, and other additional sizes or radii please call for a quote.



Pipe: 6063 Alloy – Tube: 6061 Alloy

304 Alloy

Pipe or Tube Outside Dia. (O.D.)	A= C.L.R.	B= I.R.	C= Tangent	STEEL			ALUMINUM			STAINLESS		
				Wall Thickness	Part No.	Wt. Ea.	Wall Thickness	Part No.	Wt. Ea.	Wall Thickness	Part No.	Wt. Ea.
1"	2.50"	2"	2"	.120" (11 Gage)	4126	0.56	.125"	5126	0.19	.065" (16 Gage)	6126	0.33
1"	3"	2.50"	2"	.120" (11 Gage)	4136	0.63	.125"	5136	0.22	.065" (16 Gage)	6136	0.37
1.05" (3/4" Pipe)	1.50"	.98"	2"	.113" (Sch 40)	206	0.41	.113" (Sch 40)	1206	0.14	.113" (Sch 40)	2206	0.42
1.05" (3/4" Pipe)	2"	1.475"	2"	.113" (Sch 40)	216	0.48	.113" (Sch 40)	1216	0.17	.113" (Sch 40)	2216	0.49
1.05" (3/4" Pipe)	2.50"	1.975"	2"	.113" (Sch 40)	226	0.56	.113" (Sch 40)	1226	0.19	.113" (Sch 40)	2226	0.57
1.05" (3/4" Pipe)	3"	2.475"	2"	.113" (Sch 40)	236	0.63	.113" (Sch 40)	1236	0.22	.113" (Sch 40)	2236	0.64
1.25"	2.50"	1.875"	2"	.120" (11 Gage)	4226	0.72	.125"	5226	0.26	.065" (16 Gage)	6226	0.42
1.25"	3"	2.375"	2"	.120" (11 Gage)	4236	0.81	.125"	5236	0.28	.065" (16 Gage)	6236	0.47
1.25"	6"	5.375"	2"	.120" (11 Gage)	4266	1.38	.125"	5266	0.48	.065" (16 Gage)	6266	0.80
1.315" (1" Pipe)	1.50"	.843"	2"	.133" (Sch 40)	306	0.61	.133" (Sch 40)	1306	0.21	.133" (Sch 40)	2306	0.62
1.315" (1" Pipe)	2"	1.343"	2"	.133" (Sch 40)	316	0.72	.133" (Sch 40)	1316	0.25	.133" (Sch 40)	2316	0.73
1.315" (1" Pipe)	2.50"	1.843"	2"	.133" (Sch 40)	326	0.83	.133" (Sch 40)	1326	0.29	.133" (Sch 40)	2326	0.85
1.315" (1" Pipe)	3"	2.343"	2"	.133" (Sch 40)	336	0.94	.133" (Sch 40)	1336	0.33	.133" (Sch 40)	2336	0.96
1.315" (1" Pipe)	4"	3.343"	2"	.133" (Sch 40)	346	1.16	.133" (Sch 40)	1346	0.40	.133" (Sch 40)	2346	1.18
1.315" (1" Pipe)	5"	4.343"	2"	.133" (Sch 40)	356	1.38	.133" (Sch 40)	1356	0.48	.133" (Sch 40)	2356	1.41
1.315" (1" Pipe)	6"	5.343"	2"	.133" (Sch 40)	366	1.60	.133" (Sch 40)	1366	0.55	.133" (Sch 40)	2366	1.63
1.315" (1" Pipe)	7"	6.343"	2"	.133" (Sch 40)	376	1.82	.133" (Sch 40)	1376	0.63	.133" (Sch 40)	2376	1.84
1.50"	2"	1.25"	2"	.120" (11 Gage)	4316	0.77	.125"	5316	0.27	.120" (11 Gage)	6316-11	0.43
1.50"	2.50"	1.75"	2"	.120" (11 Gage)	4326	0.88	.125"	5326	0.30	.120" (11 Gage)	6326-11	0.88
1.50"	2.50"	1.75"	2"							.065" (16 Gage)	6326	0.50
1.50"	2.75"	2"	2"	.120" (11 Gage)	4826	0.93	.125"	5826	0.34	.120" (11 Gage)	6826-11	0.94
1.50"	2.75"	2"	2"	.065" (16 Gage)	4826-16	0.53				.065" (16 Gage)	6826	0.53
1.50"	3"	2.25"	2"	.120" (11 Gage)	4336	0.99	.125"	5336	0.34	.065" (16 Gage)	6336	0.56
1.50"	4"	3.25"	2"	.120" (11 Gage)	4346	1.23	.125"	5346	0.42	.065" (16 Gage)	6346	0.70
1.50"	6"	5.25"	2"	.120" (11 Gage)	4366	1.69	.125"	5366	0.61	.065" (16 Gage)	6366	0.96



# BENT 90° ELBOWS - 1 TANGENT



## BENT 90° ELBOWS - 1 TANGENT (CONTINUED)

Pipe: 6063 Alloy – Tube: 6061 Alloy

304 Alloy

Pipe or Tube Outside Dia. (O.D.)	A= C.L.R.	B= I.R.	C= Tangent	STEEL			ALUMINUM			STAINLESS		
				Wall Thickness	Part No.	Wt. Ea.	Wall Thickness	Part No.	Wt. Ea.	Wall Thickness	Part No.	Wt. Ea.
1.66" (1 1/4" Pipe)	2.50"	1.67"	2"	.140" (Sch 40)	426	1.13	.140" (Sch 40)	1426	0.39	.140" (Sch 40)	2426	1.15
1.66" (1 1/4" Pipe)	3"	2.17"	2"	.140" (Sch 40)	436	1.27	.140" (Sch 40)	1436	0.44	.140" (Sch 40)	2436	1.30
1.66" (1 1/4" Pipe)	4"	3.17"	2"	.140" (Sch 40)	446	1.57	.140" (Sch 40)	1446	0.54	.140" (Sch 40)	2446	1.60
1.66" (1 1/4" Pipe)	5"	4.17"	2"	.140" (Sch 40)	456	1.87	.140" (Sch 40)	1456	0.65	.140" (Sch 40)	2456	1.91
1.66" (1 1/4" Pipe)	6"	5.17"	2"	.140" (Sch 40)	466	2.17	.140" (Sch 40)	1466	0.75	.140" (Sch 40)	2466	2.21
1.66" (1 1/4" Pipe)	7"	6.17"	2"	.140" (Sch 40)	476	2.46	.140" (Sch 40)	1476	0.85	.140" (Sch 40)	2476	2.49
1.66" (1 1/4" Pipe)	8"	7.17"	2"	.140" (Sch 40)	486	2.76	.140" (Sch 40)	1486	0.96	.140" (Sch 40)	2486	2.79
1.66" (1 1/4" Pipe)	9"	8.17"	2"	.140" (Sch 40)	496	3.06	.140" (Sch 40)	1496	1.06	.140" (Sch 40)	2496	3.09
1.66" (1 1/4" Pipe)	12"	11.17"	2"	.140" (Sch 40)	4-12-6	3.95	.140" (Sch 40)	14-12-6	1.37	.140" (Sch 40)	24-12-6	4.00
1.90" (1 1/2" Pipe)	2.50"	1.55"	2"	.145" (Sch 40)	526	1.35	.145" (Sch 40)	1526	0.47	.145" (Sch 40)	2526	1.37
1.90" (1 1/2" Pipe)	3"	2.05"	2"	.145" (Sch 40)	536	1.52	.145" (Sch 40)	1536	0.53	.145" (Sch 40)	2536	1.55
1.90" (1 1/2" Pipe)	4"	3.05"	2"	.145" (Sch 40)	546	1.88	.145" (Sch 40)	1546	0.65	.145" (Sch 40)	2546	1.92
1.90" (1 1/2" Pipe)	5"	4.05"	2"	.145" (Sch 40)	556	2.24	.145" (Sch 40)	1556	0.77	.145" (Sch 40)	2556	2.28
1.90" (1 1/2" Pipe)	6"	5.05"	2"	.145" (Sch 40)	566	2.59	.145" (Sch 40)	1566	0.90	.145" (Sch 40)	2566	2.64
1.90" (1 1/2" Pipe)	7"	6.05"	2"	.145" (Sch 40)	576	2.94	.145" (Sch 40)	1576	1.02	.145" (Sch 40)	2576	2.98
1.90" (1 1/2" Pipe)	8"	7.05"	2"	.145" (Sch 40)	586	3.30	.145" (Sch 40)	1586	1.15	.145" (Sch 40)	2586	3.34
1.90" (1 1/2" Pipe)	9"	8.05"	2"	.145" (Sch 40)	596	3.66	.145" (Sch 40)	1596	1.27	.145" (Sch 40)	2596	3.70
1.90" (1 1/2" Pipe)	12"	11.05"	2"	.145" (Sch 40)	5-12-6	4.72	.145" (Sch 40)	15-12-6	1.64	.145" (Sch 40)	25-12-6	4.78
2"	3"	2"	2"	.120" (11 Gage)	4536	1.35	.125"	5536	0.47	.120" (11 Gage)	6536	1.38
2"	4"	3"	2"	.120" (11 Gage)	4546	1.66	.125"	5546	0.58	.120" (11 Gage)	6546	1.70
2"	5"	4"	2"	.120" (11 Gage)	4556	1.98	.125"	5556	0.69	.120" (11 Gage)	6556	2.02
2"	6"	5"	2"	.120" (11 Gage)	4566	2.30	.125"	5566	0.79	.120" (11 Gage)	6566	2.34
2.375" (2" Pipe)	3"	1.813"	5"	.154" (Sch 40)	636	2.96	.154" (Sch 40)	1636	1.03	.154" (Sch 40)	2636	2.99
2.375" (2" Pipe)	4"	2.813"	5"	.154" (Sch 40)	646	3.43	.154" (Sch 40)	1646	1.19	.154" (Sch 40)	2646	3.49
2.375" (2" Pipe)	5"	3.813"	5"	.154" (Sch 40)	656	3.92	.154" (Sch 40)	1656	1.36	.154" (Sch 40)	2656	3.96
2.375" (2" Pipe)	6"	4.813"	5"	.154" (Sch 40)	666	4.39	.154" (Sch 40)	1666	1.52	.154" (Sch 40)	2666	4.48
2.375" (2" Pipe)	12"	10.813"	5"	.154" (Sch 40)	6-12-6	7.28	.154" (Sch 40)	16-12-6	2.52	.154" (Sch 40)	26-12-6	7.35
2.50"	5"	3.75"	5"	.120" (11 Gage)	4656	3.27	.125"	5656	1.18	.120" (11 Gage)	6656	3.34
2.875" (2 1/2" Pipe)	5"	3.563"	5"	.203" (Sch 40)	756	6.21	.203" (Sch 40)	1756	2.15	.203" (Sch 40)	2756	6.33
3"	5"	3.50"	5"	.120" (11 Gage)	4756	3.95	.125"	5756	1.42	.120" (11 Gage)	6756	4.03
3.50" (3" Pipe)	6"	4.25"	5"	.120"	4866	5.21	.125"	5866	1.88	.120" (11 Gage)	6866	5.31

### QUANTITY DISCOUNTS AVAILABLE

1-99 Total Pieces	List Price	100-499 Total Pieces	Less 10%
500-999 Total Pieces	Less 15%	1000 + Pieces	Less 20%

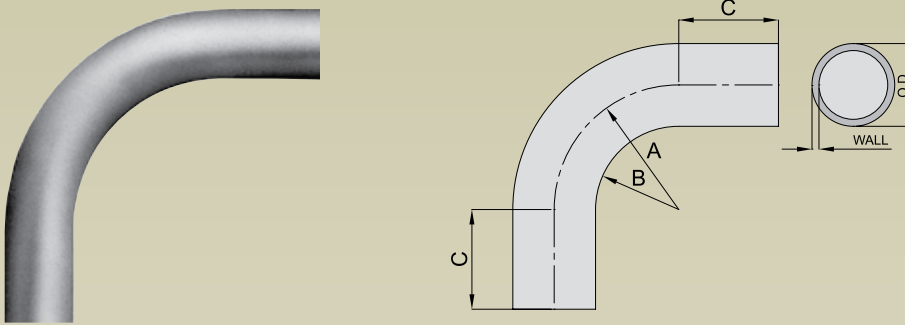
*Quantity Discounts Not Available on Disks.  
See Page 54 on How You Can Save an Additional 10% Discount by Becoming a "Sharpe Thinker"!*



# BENT 90° ELBOWS - TANGENTS

## BENT 90° PIPE & TUBE ELBOWS WITH TANGENTS

These mandrel bent elbows have no visible seam. Stainless 1-1/4" pipe, 1-1/2" pipe, and 1-1/2" O.D. tubing elbows are bent with pre-polished material and may require some touch-up. Mandrel bent 35°, 45°, and 55° elbows are also available. For pricing on 35°, 45°, 55° elbows, and other additional sizes or radii please call for a quote.



Pipe: 6063 Alloy – Tube: 6061 Alloy

304 Alloy

Pipe Tube Outside Dia. (O.D.)	A= C.L.R.	B= I.R.	C= Tangent	STEEL			ALUMINUM			STAINLESS		
				Wall Thickness	Part No.	Wt. Ea.	Wall Thickness	Part No.	Wt. Ea.	Wall Thickness	Part No.	Wt. Ea.
1"	2.50"	2"	2"	.120" (11 Gage)	4127	0.75	.125"	5127	0.26	.065" (16 Gage)	6127	0.44
1"	3"	2.50"	2"	.120" (11 Gage)	4137	0.82	.125"	5137	0.28	.065" (16 Gage)	6137	0.48
1.05" (3/4" Pipe)	1.50"	.98"	2"	.113" (Sch 40)	207	0.65	.113" (Sch 40)	1207	0.21	.113" (Sch 40)	2207	0.61
1.05" (3/4" Pipe)	2"	1.475"	2"	.113" (Sch 40)	217	0.67	.113" (Sch 40)	1217	0.23	.113" (Sch 40)	2217	0.68
1.05" (3/4" Pipe)	2.50"	1.975"	2"	.113" (Sch 40)	227	0.75	.113" (Sch 40)	1227	0.26	.113" (Sch 40)	2227	0.76
1.05" (3/4" Pipe)	3"	2.475"	2"	.113" (Sch 40)	237	0.82	.113" (Sch 40)	1237	0.29	.113" (Sch 40)	2237	0.83
1.25"	2.50"	1.875"	2"	.120" (11 Gage)	4227	0.96	.125"	5227	0.33	.065" (16 Gage)	6227	0.56
1.25"	3"	2.375"	2"	.120" (11 Gage)	4237	1.06	.125"	5237	0.37	.065" (16 Gage)	6237	0.61
1.25"	6"	5.375"	2"	.120" (11 Gage)	4267	1.63	.125"	5267	0.56	.065" (16 Gage)	6267	0.94
1.315" (1" Pipe)	1.50"	.843"	2"	.133" (Sch 40)	307	0.89	.133" (Sch 40)	1307	0.31	.133" (Sch 40)	2307	0.90
1.315" (1" Pipe)	2"	1.343"	2"	.133" (Sch 40)	317	1.00	.133" (Sch 40)	1317	0.35	.133" (Sch 40)	2317	1.01
1.315" (1" Pipe)	2.50"	1.843"	2"	.133" (Sch 40)	327	1.11	.133" (Sch 40)	1327	0.38	.133" (Sch 40)	2327	1.13
1.315" (1" Pipe)	3"	2.343"	2"	.133" (Sch 40)	337	1.22	.133" (Sch 40)	1337	0.42	.133" (Sch 40)	2337	1.25
1.315" (1" Pipe)	4"	3.343"	2"	.133" (Sch 40)	347	1.44	.133" (Sch 40)	1347	0.50	.133" (Sch 40)	2347	1.47
1.315" (1" Pipe)	5"	4.343"	2"	.133" (Sch 40)	357	1.66	.133" (Sch 40)	1357	0.57	.133" (Sch 40)	2357	1.68
1.315" (1" Pipe)	6"	5.343"	2"	.133" (Sch 40)	367	1.88	.133" (Sch 40)	1367	0.65	.133" (Sch 40)	2367	1.92
1.315" (1" Pipe)	7"	6.343"	2"	.133" (Sch 40)	377	2.10	.133" (Sch 40)	1377	0.73	.133" (Sch 40)	2377	2.12
1.50"	2"	1.25"	2"	.120" (11 Gage)	4317	1.05	.125"	5317	0.38	.120" (11 Gage)	6317-11	1.06
1.50"	2.50"	1.75"	2"	.120" (11 Gage)	4327	1.17	.125"	5327	0.41	.120" (11 Gage)	6327-11	1.11
1.50"	2.50"	1.75"	2"							.065" (16 Gage)	6327	0.67
1.50"	2.75"	2"	2"	.120" (11 Gage)	4827	1.23	.125"	5827	0.44	.120" (11 Gage)	6827-11	1.24
1.50"	2.75"	2"	2"	.065" (16 Gage)	4827-16	0.69				.065" (16 Gage)	6827	0.70
1.50"	3"	2.25"	2"	.120" (11 Gage)	4337	1.29	.125"	5337	0.45	.065" (16 Gage)	6337	0.73
1.50"	4"	3.25"	2"	.120" (11 Gage)	4347	1.52	.125"	5347	0.53	.065" (16 Gage)	6347	0.68
1.50"	6"	5.25"	2"	.120" (11 Gage)	4367	1.98	.125"	5367	0.71	.065" (16 Gage)	6367	1.13

# BENT 90° ELBOWS - TANGENTS



## BENT 90° ELBOWS – TANGENTS (CONTINUED)

Pipe or Tube Outside Dia. (O.D.)	A= C.L.R.	B= I.R.	C= Tangent	STEEL			ALUMINUM			304 Alloy		
				Wall Thickness	Part No.	Wt. Ea.	Wall Thickness	Part No.	Wt. Ea.	Wall Thickness	Part No.	Wt. Ea.
1.66" (1 1/4" Pipe)	2"	1.17"	2"	.140" (Sch 40)	417	1.35	.140" (Sch 40)	1417	0.47	.140" (Sch 40)	2417	1.37
1.66" (1 1/4" Pipe)	2.50"	1.67"	2"	.140" (Sch 40)	427	1.51	.140" (Sch 40)	1427	0.52	.140" (Sch 40)	2427	1.54
1.66" (1 1/4" Pipe)	3"	2.17"	2"	.140" (Sch 40)	437	1.66	.140" (Sch 40)	1437	0.57	.140" (Sch 40)	2437	1.69
1.66" (1 1/4" Pipe)	4"	3.17"	2"	.140" (Sch 40)	447	1.96	.140" (Sch 40)	1447	0.68	.140" (Sch 40)	2447	1.99
1.66" (1 1/4" Pipe)	5"	4.17"	2"	.140" (Sch 40)	457	2.25	.140" (Sch 40)	1457	0.78	.140" (Sch 40)	2457	2.30
1.66" (1 1/4" Pipe)	6"	5.17"	2"	.140" (Sch 40)	467	2.55	.140" (Sch 40)	1467	0.88	.140" (Sch 40)	2467	2.60
1.66" (1 1/4" Pipe)	7"	6.17"	2"	.140" (Sch 40)	477	2.84	.140" (Sch 40)	1477	0.99	.140" (Sch 40)	2477	2.87
1.66" (1 1/4" Pipe)	8"	7.17"	2"	.140" (Sch 40)	487	3.14	.140" (Sch 40)	1487	1.09	.140" (Sch 40)	2487	3.17
1.66" (1 1/4" Pipe)	9"	8.17"	2"	.140" (Sch 40)	497	3.44	.140" (Sch 40)	1497	1.19	.140" (Sch 40)	2497	3.48
1.66" (1 1/4" Pipe)	12"	11.17"	2"	.140" (Sch 40)	4-12-7	4.33	.140" (Sch 40)	14-12-7	1.50	.140" (Sch 40)	24-12-7	4.38
1.90" (1 1/2" Pipe)	2"	1.05"	2"	.145" (Sch 40)	517	1.62	.145" (Sch 40)	1517	0.56	.145" (Sch 40)	2517	1.64
1.90" (1 1/2" Pipe)	2.50"	1.55"	2"	.145" (Sch 40)	527	1.80	.145" (Sch 40)	1527	0.62	.145" (Sch 40)	2527	1.84
1.90" (1 1/2" Pipe)	3"	2.05"	2"	.145" (Sch 40)	537	1.98	.145" (Sch 40)	1537	0.68	.145" (Sch 40)	2537	2.02
1.90" (1 1/2" Pipe)	4"	3.05"	2"	.145" (Sch 40)	547	2.34	.145" (Sch 40)	1547	0.81	.145" (Sch 40)	2547	2.38
1.90" (1 1/2" Pipe)	5"	4.05"	2"	.145" (Sch 40)	557	2.69	.145" (Sch 40)	1557	0.93	.145" (Sch 40)	2557	2.75
1.90" (1 1/2" Pipe)	6"	5.05"	2"	.145" (Sch 40)	567	3.05	.145" (Sch 40)	1567	1.06	.145" (Sch 40)	2567	3.11
1.90" (1 1/2" Pipe)	7"	6.05"	2"	.145" (Sch 40)	577	3.40	.145" (Sch 40)	1577	1.18	.145" (Sch 40)	2577	3.44
1.90" (1 1/2" Pipe)	8"	7.05"	2"	.145" (Sch 40)	587	3.75	.145" (Sch 40)	1587	1.30	.145" (Sch 40)	2587	3.80
1.90" (1 1/2" Pipe)	9"	8.05"	2"	.145" (Sch 40)	597	4.12	.145" (Sch 40)	1597	1.43	.145" (Sch 40)	2597	4.16
1.90" (1 1/2" Pipe)	12"	11.05"	2"	.145" (Sch 40)	5-12-7	5.18	.145" (Sch 40)	15-12-7	1.80	.145" (Sch 40)	25-12-7	5.24
2"	3"	2"	2"	.120" (11 Gage)	4537	1.75	.125"	5537	0.61	.120" (11 Gage)	6537	1.79
2"	4"	3"	2"	.120" (11 Gage)	4547	2.07	.125"	5547	0.72	.120" (11 Gage)	6547	2.11
2"	5"	4"	2"	.120" (11 Gage)	4557	2.38	.125"	5557	0.82	.120" (11 Gage)	6557	2.43
2"	6"	5"	2"	.120" (11 Gage)	4567	2.70	.125"	5567	0.93	.120" (11 Gage)	6567	2.75
2.375" (2" Pipe)	3"	1.813"	5"	.154" (Sch 40)	637	4.48	.154" (Sch 40)	1637	1.55	.154" (Sch 40)	2637	4.53
2.375" (2" Pipe)	4"	2.813"	5"	.154" (Sch 40)	647	4.96	.154" (Sch 40)	1647	1.72	.154" (Sch 40)	2647	5.06
2.375" (2" Pipe)	5"	3.813"	5"	.154" (Sch 40)	657	5.44	.154" (Sch 40)	1657	1.89	.154" (Sch 40)	2657	5.50
2.375" (2" Pipe)	6"	4.813"	5"	.154" (Sch 40)	667	5.91	.154" (Sch 40)	1667	2.05	.154" (Sch 40)	2667	6.03
2.375" (2" Pipe)	12"	10.813"	5"	.154" (Sch 40)	6-12-7	8.80	.154" (Sch 40)	16-12-7	3.05	.154" (Sch 40)	26-12-7	8.88
2.50"	5"	3.75"	5"	.120" (11 Gage)	4657	4.45	.125"	5657	1.63	.120" (11 Gage)	6657	4.63
2.875" (2 1/2" Pipe)	5"	3.563"	5"	.203" (Sch 40)	757	8.62	.203" (Sch 40)	1757	2.99	.203" (Sch 40)	2757	8.79
3"	5"	3.50"	5"	.120" (11 Gage)	4757	5.49	.125"	5757	1.98	.120" (11 Gage)	6757	5.60
3.50" (3" Pipe)	6"	4.25"	5"	.120"	4867	7.01	.125"	5867	2.53	.120" (11 Gage)	6867	7.15

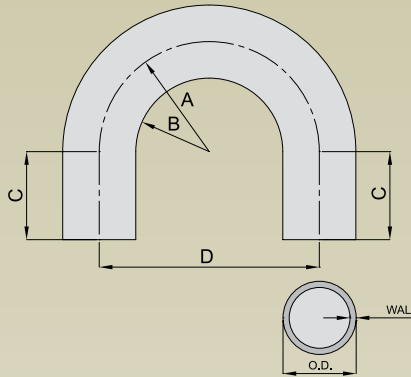
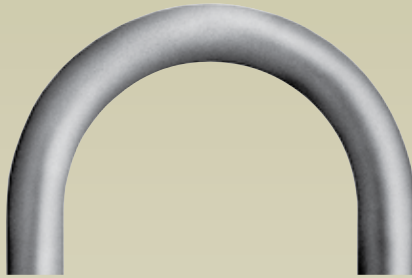
**NEED A CUSTOM BEND MADE?  
NO PROBLEM! SEE OUR CUSTOM BENDING  
SERVICES STARTING ON PAGE 48!**



# BENT 180° ELBOWS

## BENT 180° PIPE & TUBE ELBOWS

These mandrel bent elbows have no visible seam. Stainless 1-1/4" pipe, 1-1/2" pipe, and 1-1/2" O.D. tubing elbows are bent with pre-polished material and may require some touch-up. Mandrel bent 125°, 135°, and 145° elbows are also available. For pricing on 125°, 135°, 145° elbows, and other additional sizes or radii please call for a quote or visit our website at [www.sharpeproducts.com](http://www.sharpeproducts.com).



Pipe: 6063 Alloy – Tube: 6061 Alloy

304 Alloy

Pipe or Tube Outside Dia. (O.D.)	A= C.L.R.	B= I.R.	C= Tangent	D= C.L.D.	STEEL			ALUMINUM			STAINLESS		
					Wall Thickness	Part No.	Wt. Ea.	Wall Thickness	Part No.	Wt. Ea.	Wall Thickness	Part No.	Wt. Ea.
1"	2.50"	2"	2"	5"	.120" (11 Gage)	4128	1.11	.125"	5128	0.39	.065" (16 Gage)	6128	0.65
1"	3"	2.50"	2"	6"	.120" (11 Gage)	4138	1.26	.125"	5138	0.44	.065" (16 Gage)	6138	0.74
1.05" (3/4" Pipe)	1.50"	.98"	2"	3"	.113" (Sch 40)	208	0.60	.113" (Sch 40)	1208	0.29	.113" (Sch 40)	2208	0.83
1.05" (3/4" Pipe)	2"	1.475"	2"	4"	.113" (Sch 40)	218	0.97	.113" (Sch 40)	1218	0.34	.113" (Sch 40)	2218	0.98
1.05" (3/4" Pipe)	2.50"	1.975"	2"	5"	.113" (Sch 40)	228	1.15	.113" (Sch 40)	1228	0.39	.113" (Sch 40)	2228	1.13
1.05" (3/4" Pipe)	3"	2.475"	2"	6"	.113" (Sch 40)	238	1.26	.113" (Sch 40)	1238	0.44	.113" (Sch 40)	2238	1.28
1.25"	2.50"	1.875"	2"	5"	.120" (11 Gage)	4228	1.44	.125"	5228	0.50	.065" (16 Gage)	6228	0.83
1.25"	3"	2.375"	2"	6"	.120" (11 Gage)	4238	1.63	.125"	5238	0.56	.065" (16 Gage)	6238	0.94
1.25"	6"	5.375"	2"	12"	.120" (11 Gage)	4268	2.76	.125"	5268	0.96	.065" (16 Gage)	6268	1.60
1.315" (1" Pipe)	1.50"	.843"	2"	3"	.133" (Sch 40)	308	0.66	.133" (Sch 40)	1308	0.42	.133" (Sch 40)	2308	1.23
1.315" (1" Pipe)	2"	1.343"	2"	4"	.133" (Sch 40)	318	1.44	.133" (Sch 40)	1318	0.50	.133" (Sch 40)	2318	1.46
1.315" (1" Pipe)	2.50"	1.843"	2"	5"	.133" (Sch 40)	328	1.66	.133" (Sch 40)	1328	0.57	.133" (Sch 40)	2328	1.69
1.315" (1" Pipe)	3"	2.343"	2"	6"	.133" (Sch 40)	338	1.88	.133" (Sch 40)	1338	0.65	.133" (Sch 40)	2338	1.92
1.315" (1" Pipe)	4"	3.343"	2"	8"	.133" (Sch 40)	348	2.32	.133" (Sch 40)	1348	0.80	.133" (Sch 40)	2348	2.37
1.315" (1" Pipe)	5"	4.343"	2"	10"	.133" (Sch 40)	358	2.76	.133" (Sch 40)	1358	0.95	.133" (Sch 40)	2358	2.81
1.315" (1" Pipe)	6"	5.343"	2"	12"	.133" (Sch 40)	368	3.20	.133" (Sch 40)	1368	1.11	.133" (Sch 40)	2368	3.25
1.315" (1" Pipe)	7"	6.343"	2"	14"	.133" (Sch 40)	378	3.64	.133" (Sch 40)	1378	1.26	.133" (Sch 40)	2378	3.68
1.50"	2"	1.25"	2"	4"	.120" (11 Gage)	4318	1.52	.125"	5318	0.55	.120" (11 Gage)	6318-11	1.13
1.50"	2.50"	1.75"	2"	5"	.120" (11 Gage)	4328	1.76	.125"	5328	0.61	.120" (11 Gage)	6328-11	1.77
1.50"	2.50"	1.75"	2"	5"							.065" (16 Gage)	6328	1.00
1.50"	2.75"	2"	2"	5.5"	.120" (11 Gage)	4828	1.87	.125"	5828	0.67	.120" (11 Gage)	6828-11	1.88
1.50"	2.75"	2"	2"	5.5"	.065" (16 Gage)	4828-16	1.06				.065" (16 Gage)	6828	1.06
1.50"	3"	2.25"	2"	6"	.120" (11 Gage)	4338	1.99	.125"	5338	0.69	.065" (16 Gage)	6338	1.13
1.50"	4"	3.25"	2"	8"	.120" (11 Gage)	4348	2.45	.125"	5348	0.85	.065" (16 Gage)	6348	1.39
1.50"	6"	5.25"	2"	12"	.120" (11 Gage)	4368	3.38	.125"	5368	1.21	.065" (16 Gage)	6368	1.92

# BENT 180° ELBOWS



## BENT 180° ELBOWS (CONTINUED)

Pipe: 6063 Alloy – Tube: 6061 Alloy

304 Alloy

Pipe or Tube Outside Dia. (O.D.)	A= C.L.R.	B= I.R.	C= Tangent	D= C.L.D.	STEEL			ALUMINUM			STAINLESS		
					Wall Thickness	Part No.	Wt. Ea.	Wall Thickness	Part No.	Wt. Ea.	Wall Thickness	Part No.	Wt. Ea.
1.66" (1 1/4" Pipe)	2"	1.17"	2"	4"	.140" (Sch 40)	418	1.95	.140" (Sch 40)	1418	0.68	.140" (Sch 40)	2418	1.97
1.66" (1 1/4" Pipe)	2.50"	1.67"	2"	5"	.140" (Sch 40)	428	2.25	.140" (Sch 40)	1428	0.78	.140" (Sch 40)	2428	2.30
1.66" (1 1/4" Pipe)	3"	2.17"	2"	6"	.140" (Sch 40)	438	2.55	.140" (Sch 40)	1438	0.88	.140" (Sch 40)	2438	2.60
1.66" (1 1/4" Pipe)	4"	3.17"	2"	8"	.140" (Sch 40)	448	3.15	.140" (Sch 40)	1448	1.09	.140" (Sch 40)	2448	3.21
1.66" (1 1/4" Pipe)	5"	4.17"	2"	10"	.140" (Sch 40)	458	3.74	.140" (Sch 40)	1458	1.30	.140" (Sch 40)	2458	3.77
1.66" (1 1/4" Pipe)	6"	5.17"	2"	12"	.140" (Sch 40)	468	4.34	.140" (Sch 40)	1468	1.50	.140" (Sch 40)	2468	4.43
1.66" (1 1/4" Pipe)	7"	6.17"	2"	14"	.140" (Sch 40)	478	4.92	.140" (Sch 40)	1478	1.71	.140" (Sch 40)	2478	4.98
1.66" (1 1/4" Pipe)	8"	7.17"	2"	16"	.140" (Sch 40)	488	5.52	.140" (Sch 40)	1488	1.92	.140" (Sch 40)	2488	5.58
1.66" (1 1/4" Pipe)	9"	8.17"	2"	18"	.140" (Sch 40)	498	6.12	.140" (Sch 40)	1498	2.12	.140" (Sch 40)	2498	6.19
1.66" (1 1/4" Pipe)	12"	11.17"	2"	24"	.140" (Sch 40)	4-12-8	7.90	.140" (Sch 40)	14-12-8	2.74	.140" (Sch 40)	24-12-8	7.99
1.90" (1 1/2" Pipe)	2"	1.05"	2"	4"	.145" (Sch 40)	518	2.33	.145" (Sch 40)	1518	0.81	.145" (Sch 40)	2518	2.36
1.90" (1 1/2" Pipe)	2.50"	1.55"	2"	5"	.145" (Sch 40)	528	2.69	.145" (Sch 40)	1528	0.93	.145" (Sch 40)	2528	2.76
1.90" (1 1/2" Pipe)	3"	2.05"	2"	6"	.145" (Sch 40)	538	3.05	.145" (Sch 40)	1538	1.05	.145" (Sch 40)	2538	3.11
1.90" (1 1/2" Pipe)	4"	3.05"	2"	8"	.145" (Sch 40)	548	3.75	.145" (Sch 40)	1548	1.30	.145" (Sch 40)	2548	3.84
1.90" (1 1/2" Pipe)	5"	4.05"	2"	10"	.145" (Sch 40)	558	4.47	.145" (Sch 40)	1558	1.55	.145" (Sch 40)	2558	4.56
1.90" (1 1/2" Pipe)	6"	5.05"	2"	12"	.145" (Sch 40)	568	5.19	.145" (Sch 40)	1568	1.79	.145" (Sch 40)	2568	5.29
1.90" (1 1/2" Pipe)	7"	6.05"	2"	14"	.145" (Sch 40)	578	5.90	.145" (Sch 40)	1578	2.04	.145" (Sch 40)	2578	5.96
1.90" (1 1/2" Pipe)	8"	7.05"	2"	16"	.145" (Sch 40)	588	6.60	.145" (Sch 40)	1588	2.29	.145" (Sch 40)	2588	6.68
1.90" (1 1/2" Pipe)	9"	8.05"	2"	18"	.145" (Sch 40)	598	7.32	.145" (Sch 40)	1598	2.54	.145" (Sch 40)	2598	7.40
1.90" (1 1/2" Pipe)	12"	11.05"	2"	24"	.145" (Sch 40)	5-12-8	9.44	.145" (Sch 40)	15-12-8	3.28	.145" (Sch 40)	25-12-8	9.56
2"	3"	2"	2"	6"	.120" (11 Gage)	4538	2.70	.125"	5538	0.93	.120" (11 Gage)	6538	2.75
2"	4"	3"	2"	8"	.120" (11 Gage)	4548	3.33	.125"	5548	1.15	.120" (11 Gage)	6548	3.40
2"	5"	4"	2"	10"	.120" (11 Gage)	4558	3.96	.125"	5558	1.37	.120" (11 Gage)	6558	4.04
2"	6"	5"	2"	12"	.120" (11 Gage)	4568	4.59	.125"	5568	1.59	.120" (11 Gage)	6568	4.68
2.375" (2" Pipe)	3"	1.813"	5"	6"	.154" (Sch 40)	638	5.92	.154" (Sch 40)	1638	2.05	.154" (Sch 40)	2638	5.98
2.375" (2" Pipe)	4"	2.813"	5"	8"	.154" (Sch 40)	648	6.87	.154" (Sch 40)	1648	2.38	.154" (Sch 40)	2648	7.01
2.375" (2" Pipe)	5"	3.813"	5"	10"	.154" (Sch 40)	658	7.84	.154" (Sch 40)	1658	2.72	.154" (Sch 40)	2658	7.92
2.375" (2" Pipe)	6"	4.813"	5"	12"	.154" (Sch 40)	668	8.78	.154" (Sch 40)	1668	3.04	.154" (Sch 40)	2668	8.96
2.375" (2" Pipe)	12"	10.813"	5"	24"	.154" (Sch 40)	6-12-8	14.55	.154" (Sch 40)	16-12-8	5.04	.154" (Sch 40)	26-12-8	14.69
2.50"	5"	3.75"	5"	10"	.120" (11 Gage)	4658	6.53	.125"	5658	2.35	.120" (11 Gage)	6658	6.66
2.875" (2 1/2" Pipe)	5"	3.563"	5"	10"	.203" (Sch 40)	758	12.41	.203" (Sch 40)	1758	4.30	.203" (Sch 40)	2758	12.66
3"	5"	3.50"	5"	10"	.120" (11 Gage)	4758	7.90	.125"	5758	2.85	.120" (11 Gage)	6758	8.06
3.50" (3" Pipe)	6"	4.25"	5"	12"	.120"	4868	10.41	.125"	5868	3.75	.120" (11 Gage)	6868	10.62

**THINK SHARPE AND SAVE!  
BECOME A "SHARPE THINKER" MEMBER!**

Join the Sharpe Thinkers Club and you will receive an **ADDITIONAL 10% Discount** on all stock orders, regardless of quantity.

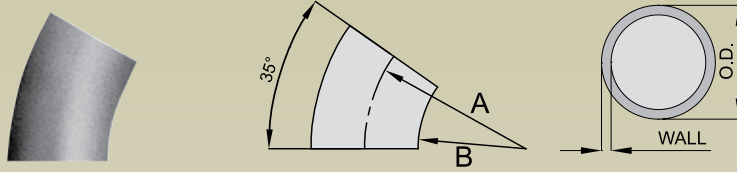
See Page 54 on how you can save an **ADDITIONAL 10% Discount** by Becoming a "Sharpe Thinker"!



# MISC. DEGREE ELBOWS

## ECONOMY FORMED 35° ELBOWS

The 35° degree elbows listed below have a seam. We also offer mandrel bent 35° elbows, which are seamless. Call for pricing and availability for seamless elbows or visit our website at [www.sharpeproducts.com](http://www.sharpeproducts.com).

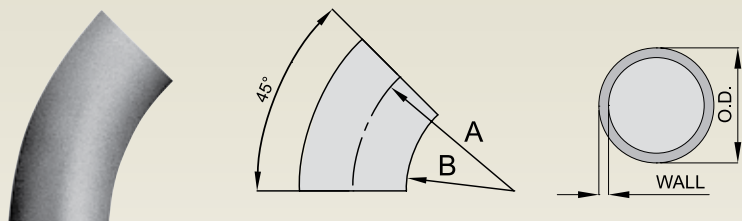


WALL THICKNESS		
STEEL	ALUMINUM	STAINLESS
10 Gage	.125"	11 Gage

Pipe or Tube Dia. (O.D.)	A=C.L.R.	B=I.R.	3003 Alloy		304 Alloy		304 Alloy	
			STEEL	ALUMINUM	STEEL	ALUMINUM	STAINLESS	STAINLESS
			Part No.	Wt. Ea.	Part No.	Wt. Ea.	Part No.	Wt. Ea.
1.315" (1" Pipe)	1.658"	1"	E315-35	0.14	E31535-AL	0.05		
1.315" (1" Pipe)	2.658"	2"	E335-35	0.23	E33535-AL	0.07		
1.50"	2.25"	1.50"	E4315-35	0.20	E431535-AL	0.07		
1.66" (1 1/4" Pipe)	1.83"	1"	E415-35	0.21	E41535-AL	0.07	E41535-SS	0.21
1.66" (1 1/4" Pipe)	2.455"	1.625"	E425-35	0.30	E42535-AL	0.10		
1.66" (1 1/4" Pipe)	2.83"	2"	E435-35	0.34	E43535-AL	0.12		
1.66" (1 1/4" Pipe)	3.83"	3"	E445-35	0.44	E44535-AL	0.15		
1.90" (1 1/2" Pipe)	1.95"	1"	E515-35	0.24	E51535-AL	0.08		
1.90" (1 1/2" Pipe)	2.25"	1.30"	RE505-35	0.29	RE50535-AL	0.10	RE50535-SS	0.29
1.90" (1 1/2" Pipe)	2.575"	1.625"	E525-35	0.33	E52535-AL	0.12		
1.90" (1 1/2" Pipe)	2.95"	2"	E535-35	0.39	E53535-AL	0.14		
2.375" (2" Pipe)	3"	1.813"	E635-35	0.49	E63535-AL	0.17	E63535-SS	0.50

## ECONOMY FORMED 45° ELBOWS

The 45° degree elbows listed below have a seam. We also offer mandrel bent 45° elbows, which are seamless. Call for pricing and availability for seamless elbows or visit our website at [www.sharpeproducts.com](http://www.sharpeproducts.com).



WALL THICKNESS		
STEEL	ALUMINUM	STAINLESS
10 Gage	.125"	11 Gage

Pipe or Tube Dia. (O.D.)	A=C.L.R.	B=I.R.	3003 Alloy		304 Alloy		304 Alloy	
			STEEL	ALUMINUM	STEEL	ALUMINUM	STAINLESS	STAINLESS
			Part No.	Wt. Ea.	Part No.	Wt. Ea.	Part No.	Wt. Ea.
1.315" (1" Pipe)	1.658"	1"	E315-45	0.18	E31545-AL	0.06		
1.315" (1" Pipe)	2.658"	2"	E335-45	0.29	E33545-AL	0.10		
1.50"	2.25"	1.50"	E4315-45	0.26	E431545-AL	0.09		
1.66" (1 1/4" Pipe)	1.83"	1"	E415-45	0.27	E41545-AL	0.09	E41545-SS	0.27
1.66" (1 1/4" Pipe)	2.455"	1.625"	E425-45	0.38	E42545-AL	0.13		
1.66" (1 1/4" Pipe)	2.83"	2"	E435-45	0.44	E43545-AL	0.15		
1.66" (1 1/4" Pipe)	3.83"	3"	E445-45	0.56	E44545-AL	0.19		
1.90" (1 1/2" Pipe)	1.95"	1"	E515-45	0.31	E51545-AL	0.11		
1.90" (1 1/2" Pipe)	2.25"	1.30"	RE505-45	0.37	RE50545-AL	0.13	RE50545-SS	0.37
1.90" (1 1/2" Pipe)	2.575"	1.625"	E525-45	0.43	E52545-AL	0.15		
1.90" (1 1/2" Pipe)	2.95"	2"	E535-45	0.50	E53545-AL	0.18		
2.375" (2" Pipe)	3"	1.813"	E635-45	0.63	E63545-AL	0.22	E63545-SS	0.64

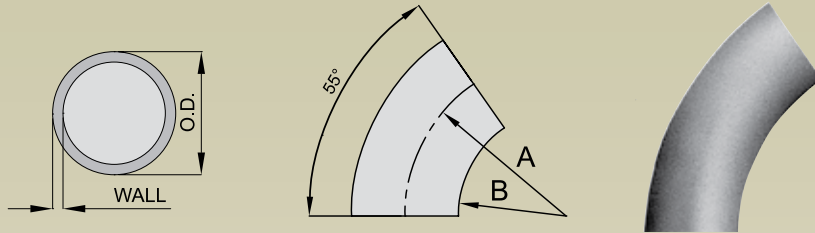
# MISC. DEGREE ELBOWS



## ECONOMY FORMED 55° ELBOWS

The 55° degree elbows listed below have a seam. We also offer mandrel bent 55° elbows, which are seamless. Call for pricing and availability for seamless elbows or visit our website at [www.sharpeproducts.com](http://www.sharpeproducts.com).

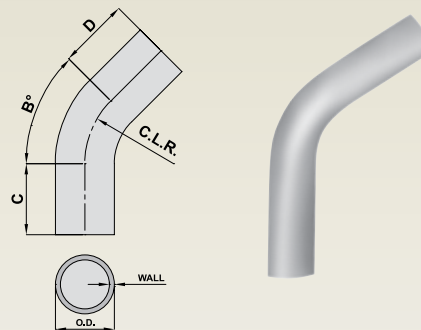
WALL THICKNESS		
STEEL	ALUMINUM	STAINLESS
10 Gage	.125"	11 Gage



Pipe or Tube Dia. (O.D.)	A=C.L.R.	B=I.R.	STEEL		3003 Alloy ALUMINUM		304 Alloy STAINLESS	
			Part No.	Wt. Ea.	Part No.	Wt. Ea.	Part No.	Wt. Ea.
1.315" (1" Pipe)	1.658"	1"	E315-55	0.21	E31555-AL	0.08		
1.315" (1" Pipe)	2.658"	2"	E335-55	0.35	E33555-AL	0.12		
1.50"	2.25"	1.50"	E4315-55	0.32	E431555-AL	0.11		
1.66" (1 1/4" Pipe)	1.83"	1"	E415-55	0.32	E41555-AL	0.11	E41555-SS	0.33
1.66" (1 1/4" Pipe)	2.455"	1.625"	E425-55	0.46	E42555-AL	0.16		
1.66" (1 1/4" Pipe)	2.83"	2"	E435-55	0.54	E43555-AL	0.18		
1.66" (1 1/4" Pipe)	3.83"	3"	E445-55	0.68	E44555-AL	0.23		
1.90" (1 1/2" Pipe)	1.95"	1"	E515-55	0.38	E51555-AL	0.13		
1.90" (1 1/2" Pipe)	2.25"	1.30"	RE505-55	0.45	RE50555-AL	0.16	RE50555-SS	0.46
1.90" (1 1/2" Pipe)	2.575"	1.625"	E525-55	0.53	E52555-AL	0.18		
1.90" (1 1/2" Pipe)	2.95"	2"	E535-55	0.61	E53555-AL	0.21		
2.375" (2" Pipe)	3"	1.813"	E635-55	0.76	E63555-AL	0.26	E63555-SS	0.79

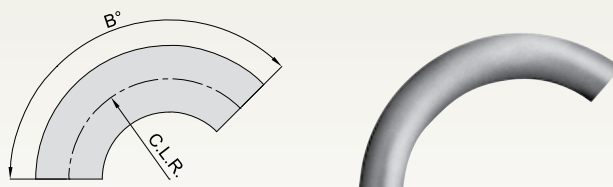
## 35°, 45°, & 55° ELBOWS WITH TANGENTS

These elbows are custom made and are quoted on a per project basis. When requesting a quote please specify the pipe or tube size, center line radius, degree of bend, and tangent dimensions. Please reference the drawing below. Choosing a centerline radius from our tooling list on page 52 will simplify your design process.



## 125°, 135°, & 145° BENT ELBOWS

These elbows are cut from our stock 180° bent elbows and can be shipped same-day. When ordering or requesting a quote for these elbows please reference the degree of elbow required with the correlating 180° elbow part number from pages 12 and 13 or on our website. These elbows can also be custom bent with tangents. Please call for pricing or to request a quote.

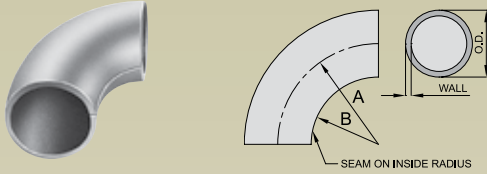




# FORMED & SIDE OUTLET ELBOWS

## ECONOMY FORMED ELBOWS

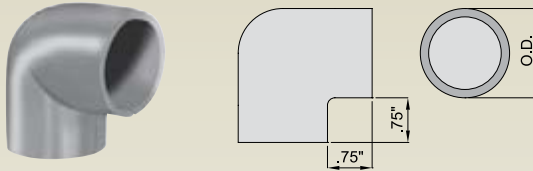
These economically priced elbows are some of our best sellers! They are formed out of 10 gage steel, .125" aluminum, and 11 gage stainless steel, and have a seam.



WALL THICKNESS		
STEEL	ALUMINUM	STAINLESS
10 Gage	.125"	11 Gage

Pipe or Tube Diameter (O.D.)	A=C.L.R.	B=I.R.	3003 Alloy		304 Alloy		304 Alloy	
			STEEL	ALUMINUM	STEEL	ALUMINUM	STAINLESS	STAINLESS
			Part No.	Wt. Ea.	Part No.	Wt. Ea.	Part No.	Wt. Ea.
1.315" (1" Pipe)	1.658"	1"	E315	0.35	E315-AL	0.13		
1.315" (1" Pipe)	2.658"	2"	E335	0.58	E335-AL	0.19		
1.50"	2.25"	1.50"	E4315	0.52	E4315-AL	0.18		
1.66" (1 1/4" Pipe)	1.83"	1"	E415	0.53	E415-AL	0.18	E415-SS	0.54
1.66" (1 1/4" Pipe)	2.455"	1.625"	E425	0.76	E425-AL	0.26		
1.66" (1 1/4" Pipe)	2.83"	2"	E435	0.88	E435-AL	0.30		
1.66" (1 1/4" Pipe)	3.83"	3"	E445	1.12	E445-AL	0.38		
1.90" (1 1/2" Pipe)	1.95"	1"	E515	0.62	E515-AL	0.21		
1.90" (1 1/2" Pipe)	2.25"	1.30"	RE505	0.74	RE505-AL	0.26	RE505-SS	0.70
1.90" (1 1/2" Pipe)	2.575"	1.625"	E525	0.86	E525-AL	0.30		
1.90" (1 1/2" Pipe)	2.95"	2"	E535	1.00	E535-AL	0.35		
2.375" (2" Pipe)	3"	1.813"	E635	1.25	E635-AL	0.43	E635-SS	1.28

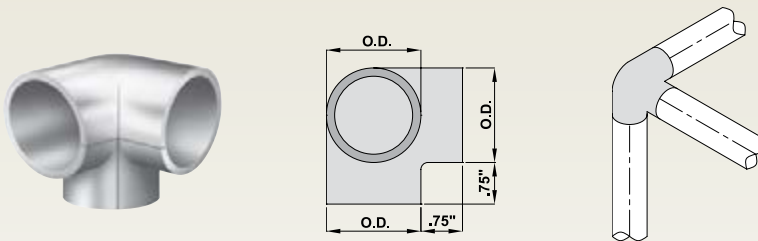
## 1/8" RADIUS ELBOW



WALL THICKNESS		
STEEL	ALUMINUM	STAINLESS
10 Gage	.125"	11 Gage

Pipe or Tube Diameter (O.D.)	Inside Radius	3003 Alloy		304 Alloy		304 Alloy	
		STEEL	ALUMINUM	STEEL	ALUMINUM	STAINLESS	STAINLESS
		Part No.	Wt. Ea.	Part No.	Wt. Ea.	Part No.	Wt. Ea.
1.66" (1 1/4" Pipe)	.125"	E405	0.60	E405-AL	0.25	E405-SS	0.61
1.90" (1 1/2" Pipe)	.125"	E505	0.80	E505-AL	0.30	E505-SS	0.82

## SIDE OUTLET ELBOWS



WALL THICKNESS		
STEEL	ALUMINUM	STAINLESS
10 Gage	.125"	11 Gage

Pipe or Tube Diameter (O.D.)	Wall Thickness	3003 Alloy		304 Alloy		304 Alloy	
		STEEL	ALUMINUM	STEEL	ALUMINUM	STAINLESS	STAINLESS
		Part No.	Wt. Ea.	Part No.	Wt. Ea.	Part No.	Wt. Ea.
1.50"	.120" (11 Gage)	SOE150*	0.58			SOE150-SS*	0.59
1.66" (1 1/4" Pipe)	.134" (10 Gage)	SOE166	0.70	SOE166-AL	0.30	SOE166-SS	0.71
1.90" (1 1/2" Pipe)	.134" (10 Gage)	SOE190	1.10	SOE190-AL	0.40	SOE190-SS	1.00

\*Denotes cast elbow with no seam.

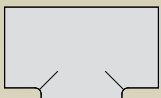


# COPE CONNECTORS

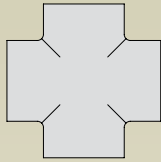


## TEE'S & CROSSES

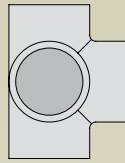
Pictured below are flush weld tee's and crosses commonly used when fabricating handrails. Sharpe Products does not supply these items. We carry more efficient and less expensive cope connector fittings. See the railing diagrams and individual part drawings below when determining the proper cope connectors necessary for your project.



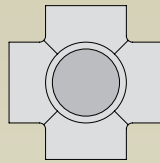
(1) TYPE T Replaces  
(1) TEE



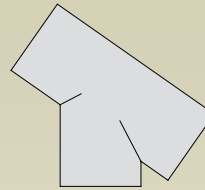
(2) TYPE T Replaces (1)  
CROSS



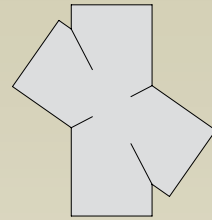
(2) TYPE S Replaces  
(1) SIDE OUTLET TEE



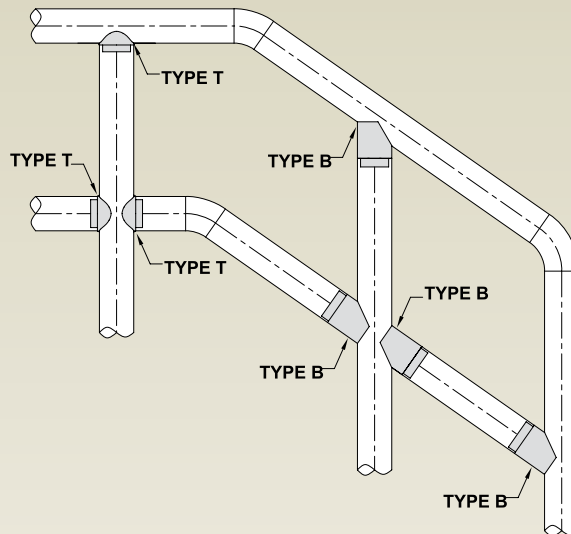
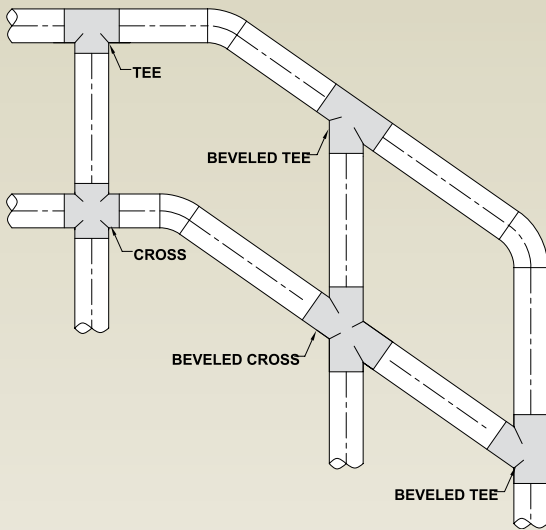
(2) TYPE S & (1) TYPE X  
Replaces  
(1) SIDE OUTLET CROSS



(1) TYPE B Replaces  
(1) BEVELED TEE

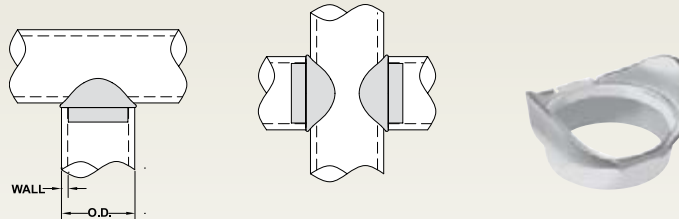


(2) TYPE B Replaces  
(1) BEVELED CROSS



## TYPE T-COPE CONNECTORS

Type T connectors are used to create tee joints and cross joints in a handrail system. To make a tee joint 1 tee cope connector is required. To make a cross joint 2 tee connectors are required.



3003 Alloy

304 Alloy

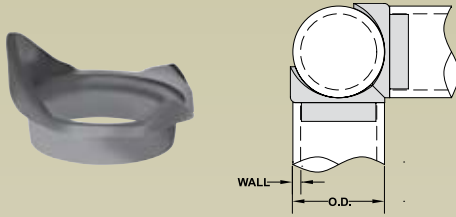
Pipe or Tube Diameter (O.D.)	Fits Wall Thickness	STEEL		ALUMINUM		STAINLESS	
		Part No.	Wt. Ea.	Part No.	Wt. Ea.	Part No.	Wt. Ea.
1.66" (1 1/4" Pipe)	.140" (Sch 40)	CC1642	0.08	CC1642-AL	0.03	CC1642-SS	0.08
1.90" (1 1/2" Pipe)	.145" (Sch 40)	CC1942	0.10	CC1942-AL	0.04	CC1942-SS	0.10



# COPE CONNECTORS

## TYPE S-SIDE OUTLET TEE COPE CONNECTOR

Two Type S connectors are used to make a side outlet tee.

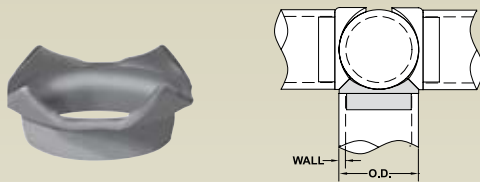


3003 Alloy

Pipe or Tube Diameter (O.D.)	Fits Wall Thickness	STEEL		ALUMINUM	
		Part No.	Wt. Ea.	Part No.	Wt. Ea.
1.66" (1 1/4" Pipe)	.140" (Sch 40)	CC1643	0.07	CC1643-AL	0.02
1.90" (1 1/2" Pipe)	.145" (Sch 40)	CC1943	0.09	CC1943-AL	0.03

## TYPE X-SIDE OUTLET CROSS COPE CONNECTOR

The side outlet cross cope connector is used in making side outlet cross joints. One Type X connector in addition to 2 Type S connectors are required.

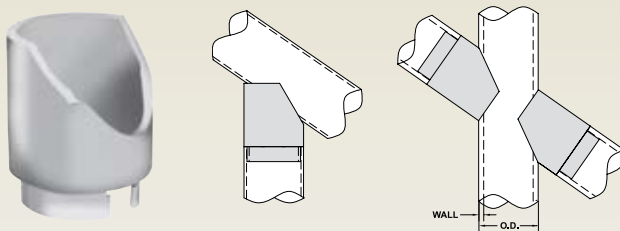


3003 Alloy

Pipe or Tube Diameter (O.D.)	Fits Wall Thickness	STEEL		ALUMINUM	
		Part No.	Wt. Ea.	Part No.	Wt. Ea.
1.66" (1 1/4" Pipe)	.140" (Sch 40)	CC1644	0.06	CC1644-AL	0.03
1.90" (1 1/2" Pipe)	.145" (Sch 40)	CC1944	0.08	CC1944-AL	0.04

## TYPE B-BEVELED TEE COPE CONNECTOR

To make a beveled tee joint 1 Type B connector is required. To make a beveled cross joint, 2 Type B connectors are required. Our Type B connectors are made from Sch. 40 pipe and a welding connector.



Slope of Stairway	Connector Bevel
30° - 32°	32°
36° - 40°	36°
42° - 48°	45°

3003 Alloy

304 Alloy

Pipe or Tube Diameter (O.D.)	Fits Wall Thickness	Bevel	STEEL		ALUMINUM		STAINLESS	
			Part No.	Wt. Ea.	Part No.	Wt. Ea.	Part No.	Wt. Ea.
1.66" (1 1/4" Pipe)	.140" (Sch 40)	32°	CC16432	0.23	CC16432-AL	0.08	CC16432-SS	0.23
1.66" (1 1/4" Pipe)	.140" (Sch 40)	36°	CC16436	0.23	CC16436-AL	0.08	CC16436-SS	0.23
1.66" (1 1/4" Pipe)	.140" (Sch 40)	45°	CC16445	0.23	CC16445-AL	0.08	CC16445-SS	0.23
1.90" (1 1/2" Pipe)	.145" (Sch 40)	32°	CC19432	0.27	CC19432-AL	0.09	CC19432-SS	0.27
1.90" (1 1/2" Pipe)	.145" (Sch 40)	36°	CC19436	0.27	CC19436-AL	0.09	CC19436-SS	0.27
1.90" (1 1/2" Pipe)	.145" (Sch 40)	45°	CC19445	0.27	CC19445-AL	0.09	CC19445-SS	0.27

# MECHANICAL CONNECTORS



Sharpe Products offers an assortment of mechanical and welding connectors to assist you in connecting your railing components. Mechanical connectors are versatile and easy to use. Welding connectors can save you time on welding and grinding times. These products are available in steel, aluminum, and stainless steel. Please check the part charts for the specific material that each connector is available in. Stock products are available for same-day shipping if ordered before 2pm CST.

Quantity discounts are available. Special discounts are also available for our Sharpe Thinkers members.

## MECHANICAL CONNECTORS: MULTI-SPLICE & DOUBLE MULTI-SPLICE

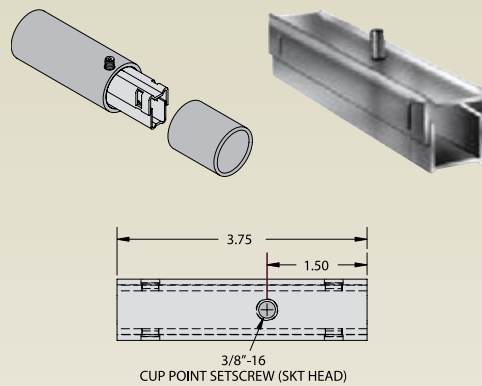
The multi-splice is the most versatile splice lock on the market. Multi-Splice works with all pipe and tube sizes with an I.D. ranging from 1.26" thru 1.61", which includes five of the most popular handrail sizes: 1-1/2" O.D. 11 gage, 1-1/2" O.D. 16 gage, 1-1/4" Sch 40, 1-1/4" Sch 10, and 1-1/2" Sch 40. Mechanical splices are used to connect two rail sections together. Single multi-splice can be used in expansion joints. Double splice locks are used for non-expandable joints. If you are working with pipe or tube with an inside diameter ranging from 1.26" thru 1.61" which is not listed below, please contact a customer representative who will help you select the appropriate multi-splice lock that you will need.

### MULTI-SPLICE

304 Alloy

Pipe or Tube Diameter	Wall Thickness	STEEL		STAINLESS	
		Part No.	Wt. Ea.	Part No.	Wt. Ea.
1.50"	.065" (16 Gage)	MS1516	0.43	MS1516-SS	0.44
1.50"	.120" (11 Gage)	MS1516	0.43	MS1516-SS	0.44
1.66" (1 1/4" Pipe)	.140" (Sch 40)	MS1516	0.43	MS1516-SS	0.44
1.66" (1 1/4" Pipe)	.109" (Sch 10)	MS1516	0.43	MS1516-SS	0.44
1.90" (1 1/2" Pipe)	.145" (Sch 40)	MS1900	0.44	MS1900-SS	0.45
1.50" O.D. thru 1 1/2" Pipe	I.D. 1.26" thru 1.61"	MS1519*	0.58	MS1519-SS*	0.59

\*MS1519 is supplied with 2 screw sizes so that it can be stocked and used for any of the above sizes.

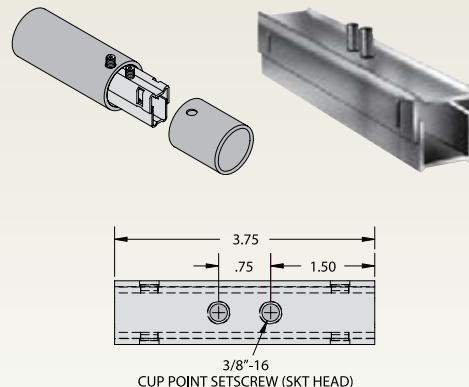


### DOUBLE MULTI-SPLICE

304 Alloy

Pipe or Tube Diameter	Wall Thickness	STEEL		STAINLESS	
		Part No.	Wt. Ea.	Part No.	Wt. Ea.
1.50"	.065" (16 Gage)	DMS1516	0.46	DMS1516-SS	0.47
1.50"	.120" (11 Gage)	DMS1516	0.46	DMS1516-SS	0.47
1.66" (1 1/4" Pipe)	.140" (Sch 40)	DMS1516	0.46	DMS1516-SS	0.47
1.66" (1 1/4" Pipe)	.109" (Sch 10)	DMS1516	0.46	DMS1516-SS	0.47
1.90" (1 1/2" Pipe)	.145" (Sch 40)	DMS1900	0.49	DMS1900-SS	0.50
1.50" O.D. thru 1 1/2" Pipe	I.D. 1.26" thru 1.61"	DMS1519*	0.50	DMS1519-SS*	0.61

\*DMS1519 is supplied with 2 screw sizes so that it can be stocked and used for any of the above sizes.

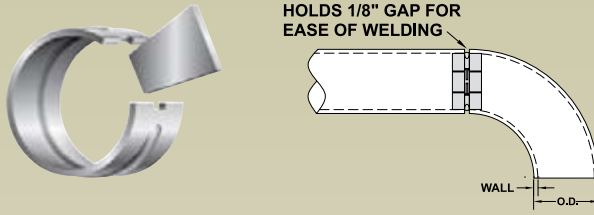




# WELDING CONNECTORS

## WELDING CONNECTORS

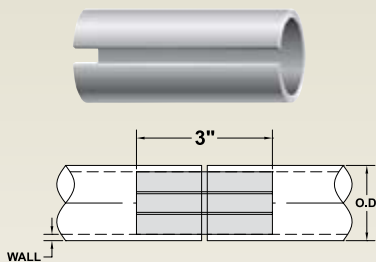
Welding connectors are designed to save welding time and reduce grind time. They align the pipe and hold an 1/8" gap for ease of welding and grinding.



Pipe or Tube Diameter (O.D.)	Fits Wall Thickness	STEEL		ALUMINUM		STAINLESS	
		Part No.	Wt. Ea.	Part No.	Wt. Ea.	Part No.	Wt. Ea.
1.315" (1" Pipe)	.109 (Sch 10)	WC132L	0.06	WC132L-AL	0.02	WC132L-SS	0.06
1.315" (1" Pipe)	.133 (Sch 40)	WC132	0.06	WC132-AL	0.02	WC132-SS	0.06
1.50"	.065" (16 Gage)	WC166	0.05	WC166-AL	0.02	WC166-SS	0.05
1.50"	.120" (11 Gage)	WC150	0.04	WC150-AL	0.01	WC150-SS	0.04
1.66" (1 1/4" Pipe)	.109 (Sch 10)	WC166L	0.05	WC166L-AL	0.02	WC166L-SS	0.05
1.66" (1 1/4" Pipe)	.140" (Sch 40)	WC166	0.05	WC166-AL	0.02	WC166-SS	0.05
1.90" (1 1/2" Pipe)	.109 (Sch 10)	WC190L	0.08	WC190L-AL	0.03	WC190L-SS	0.08
1.90" (1 1/2" Pipe)	.145" (Sch 40)	WC190	0.08	WC190-AL	0.03	WC190-SS	0.08
2.375" (2" Pipe)	.109 (Sch 10)	WC238L	0.11	WC238L-AL	0.04	WC238L-SS	0.11
2.375" (2" Pipe)	.154 (Sch 40)	WC238	0.11	WC238-AL	0.04	WC238-SS	0.11

## DOWELS

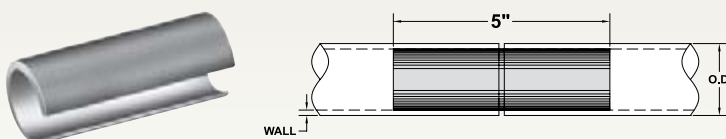
Dowels come in a 3" length and can be used at expansion joints in pipe rails by welding one end and using an epoxy glue on the other end.



Pipe or Tube Diameter (O.D.)	Fits Wall Thickness	STEEL		ALUMINUM		STAINLESS	
		Part No.	Wt. Ea.	Part No.	Wt. Ea.	Part No.	Wt. Ea.
1.50"	.065" (16 Gage)	DWL166	0.37	DWL166-AL	0.13	DWL166-SS	0.38
1.66" (1 1/4" Pipe)	.140" (Sch 40)	DWL166	0.37	DWL166-AL	0.13	DWL166-SS	0.38
1.90" (1 1/2" Pipe)	.145" (Sch 40)	DWL190	0.46	DWL190-AL	0.18	DWL190-SS	0.47
2.375" (2" Pipe)	.154" (Sch 40)	DWL238	0.75	DWL238-AL	0.26	DWL238-SS	0.77

## SERRATED ALUMINUM DOWELS

Serrated aluminum dowels come in 5" lengths. These dowels are to be used with structural adhesive. Material is stocked in 20 ft. lengths, please call for pricing on custom lengths.



Pipe or Tube Diameter (O.D.)	Fits Wall Thickness	ALUMINUM	
		Part No.	Wt. Ea.
1.66" (1 1/4" Pipe)	.140" (Sch 40)	SAD166	0.17
1.90" (1 1/2" Pipe)	.145" (Sch 40)	SAD190	0.23

# RAILING ENDS

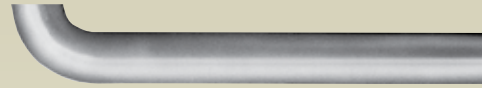
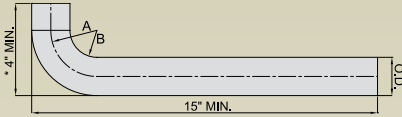


All railing ends are designed to reduce the number of welds needed to create a rail end. All stainless steel rail ends are bent with pre-polished #4 satin material and may require some touch-up. Stock products are available for same-day shipping if ordered before 2pm CST.

For pricing on special finishes, call to request a quote. Quantity discounts are available. Special discounts are also available for our Sharpe Thinkers members.

## RAIL ENDS

This rail end is used to return a rail to the wall while meeting the ADA requirements of a 12" level off. All stainless steel rail ends are bent with pre-polished material and may require some touch-up. Trimmed at the tangent point unless noted with an asterisk.



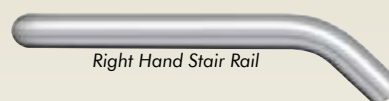
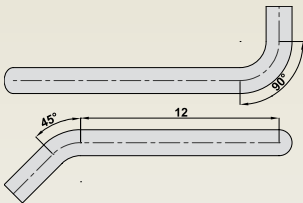
Pipe: 6063 Alloy  
Tube: 6061 Alloy  
304 Alloy

Pipe or Tube Diameter (O.D.)	Wall Thickness	A=C.L.R.	B=I.R.	STEEL		ALUMINUM		STAINLESS	
				Part No.	Wt. Ea.	Part No.	Wt. Ea.	Part No.	Wt. Ea.
1.50"	.065" (16 Gage)	2"	1.25"	*8001	2.69	*8003	0.95	*8005	1.59
1.50"	.120" (11 Gage)	2"	1.25"					*8006	2.83
1.50"	.065" (16 Gage)	2.50"	1.75"	8011	2.31	8013	0.83	8015	1.32
1.50"	.120" (11 Gage)	2.50"	1.75"					8016	2.29
1.66" (1 1/4" Pipe)	.140" (Sch 40)	2"	1.17"	*8002	3.40	*8004	1.25	*8017	3.73
1.66" (1 1/4" Pipe)	.140" (Sch 40)	2.50"	1.67"	8012	2.96	8014	1.02		
1.90" (1 1/2" Pipe)	.145" (Sch 40)	2.50"	1.55"	*8008	4.41	*8009	1.53	*8010	4.50

\*Supplied with a 4" minimum as shown in above diagram.

## STAIR RAIL ENDS

Stair rail ends are used to return a rail to the wall while meeting the ADA requirements of a 12" level off. The 45° bend allows you to trim to the slope of the stairway. This part will save you two welds over using traditional elbows. These rail ends are bent on a 2-1/2" centerline and come in right and left hand variations.



Pipe: 6063 Alloy  
Tube: 6061 Alloy  
304 Alloy

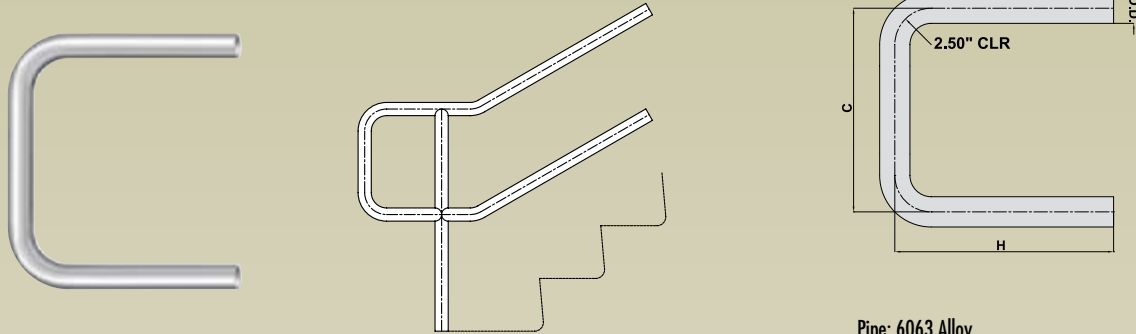
Pipe or Tube Diameter (O.D.)	Wall Thickness	Right / Left	STEEL		ALUMINUM		STAINLESS	
			Part No.	Wt. Ea.	Part No.	Wt. Ea.	Part No.	Wt. Ea.
1.50"	.065" (16 Gage)	Right	SRE150R16	2.24			SRE150R16-SS	2.26
1.50"	.065" (16 Gage)	Left	SRE150L16	2.24			SRE150L16-SS	2.26
1.50"	.120" (11 Gage)	Right	SRE150R	3.98	SRE150R-AL	1.43	SRE150R-SS	4.02
1.50"	.120" (11 Gage)	Left	SRE150L	3.98	SRE150L-AL	1.43	SRE150L-SS	4.02
1.66" (1 1/4" Pipe)	.140" (Sch 40)	Right	SRE166R	5.11	SRE166R-AL	1.77	SRE166R-SS	5.16
1.66" (1 1/4" Pipe)	.140" (Sch 40)	Left	SRE166L	5.11	SRE166L-AL	1.77	SRE166L-SS	5.16
1.90" (1 1/2" Pipe)	.145" (Sch 40)	Right	SRE190R	6.12	SRE190R-AL	2.12	SRE190R-SS	6.18
1.90" (1 1/2" Pipe)	.145" (Sch 40)	Left	SRE190L	6.12	SRE190L-AL	2.12	SRE190L-SS	6.18



# RAILING ENDS

## U-END LOOPS

U-End loops are used at the end of a 2-line railing. This end loop will save you 4 welds over using traditional elbows. All stainless U-End loops are bent with pre-polished #4 satin material and some touch-up may be required.

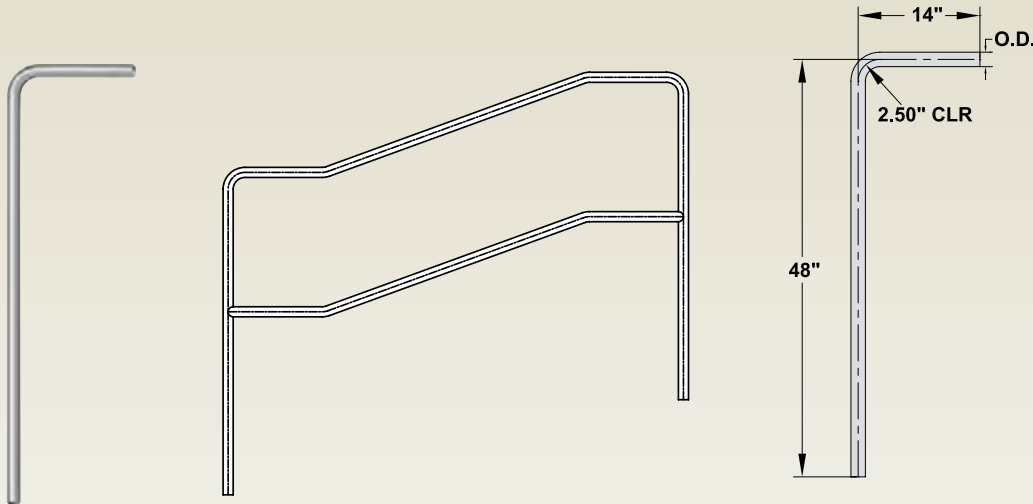


Pipe: 6063 Alloy  
Tube: 6061 Alloy      304 Alloy

Pipe or Tube Diameter (O.D.)	Wall Thickness	C=Center to Center	H = Height Center to End	STEEL		ALUMINUM		STAINLESS	
				Part No.	Wt. Ea.	Part No.	Wt. Ea.	Part No.	Wt. Ea.
1.50"	.120" (11 Gage)	12"	12"	UEL15012	4.99	UEL15012-AL	1.73	UEL15012-SS	5.04
1.50"	.120" (11 Gage)	15"	15"	UEL15015	6.32	UEL15015-AL	2.19	UEL15015-SS	6.38
1.66" (1 1/4" Pipe)	.140" (Sch 40)	12"	12"	UEL16612	6.42	UEL16612-AL	2.22	UEL16612-SS	6.48
1.66" (1 1/4" Pipe)	.140" (Sch 40)	15"	15"	UEL16615	8.12	UEL16615-AL	2.81	UEL16615-SS	8.2
1.90" (1 1/2" Pipe)	.145" (Sch 40)	12"	12"	UEL19012	7.67	UEL19012-AL	2.66	UEL19012-SS	7.75
1.90" (1 1/2" Pipe)	.145" (Sch 40)	15"	15"	UEL19015	9.71	UEL19015-AL	3.37	UEL19015-SS	9.81

## POST ENDS

Using these post ends will save you 2 welds over using traditional elbows to make a post. All stainless post ends are bent with pre-polished #4 satin material and some touch-up may be required. These posts can be installed in concrete using the EZ Sleeves on page 24.



Pipe: 6063 Alloy  
Tube: 6061 Alloy      304 Alloy

Pipe or Tube Diameter (O.D.)	Wall Thickness	STEEL		ALUMINUM		STAINLESS	
		Part No.	Wt. Ea.	Part No.	Wt. Ea.	Part No.	Wt. Ea.
1.50"	.120" (11 Gage)	PE150	8.98	PE150-AL	3.23	PE150-SS	9.08
1.66" (1 1/4" Pipe)	.140" (Sch 40)	PE166	11.55	PE166-AL	4.00	PE166-SS	11.67
1.90" (1 1/2" Pipe)	.145" (Sch 40)	PE190	13.82	PE190-AL	4.79	PE190-SS	13.95

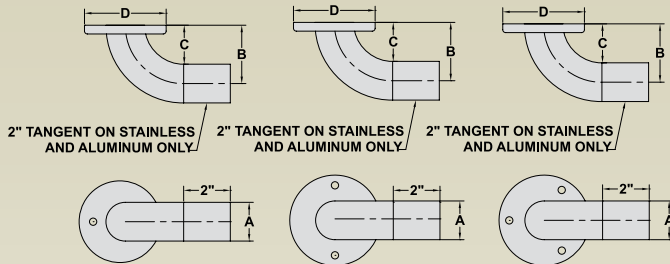
# WALL RETURNS



Stock products are available for same-day shipping if ordered before 2pm CST. For pricing on special finishes, call for a quote. Quantity discounts are available. Special discounts are also available for our Sharpe Thinkers members.

## WALL RETURNS

All wall returns are designed to meet minimum 1-1/2" clearance specified by many building codes and guidelines. These wall returns are available with an offset hole, or a 2 or 3 hole pattern. Stainless wall returns are supplied with a #4 satin finish. Aluminum wall returns are made with a 3003 alloy flange, elbow material alloy is specified in the chart below. Additional options such as special finishes, additional sizes, and other center lines can be custom ordered, please call to request a quote.



Pipe: 6063 Alloy  
Tube: 6061 Alloy

304 Alloy

A=Pipe or Tube Diameter	Wall Thickness	B=C.L.R.	Hole Pattern	C=Wall to Rail	D=Base Diameter	STEEL		ALUMINUM		STAINLESS	
						Part No.	Wt. Ea.	Part No.	Wt. Ea.	Part No.	Wt. Ea.
1.50"	.120" (11 Gage)	2.25	1 Offset	1.5"	3.5"	R4311	0.99	R5311	0.44	R6311	1.30
1.50"	.120" (11 Gage)	2.25	2	1.5"	3.875"	R4312	1.03	R5312	0.52	R6312	1.28
1.50"	.120" (11 Gage)	2.25	3	1.5"	3.875"	R4313	1.03	R5313	0.52	R6313	1.28
1.50"	.120" (11 Gage)	2.50"	1 Offset	1.75"	3.5"	R4321	0.99	R5321	0.44	R6321	1.30
1.50"	.120" (11 Gage)	2.50"	2	1.75"	3.875"	R4322	1.03	R5322	0.52	R6322	1.28
1.50"	.120" (11 Gage)	2.50"	3	1.75"	3.875"	R4323	1.03	R5323	0.52	R6323	1.28
1.50"	.120" (11 Gage)	3"	1 Offset	2.25"	3.5"	R4331	1.10	R5331	0.48	R6331	1.36
1.50"	.120" (11 Gage)	3"	2	2.25"	3.875"	R4332	1.14	R5332	0.56	R6332	1.34
1.50"	.120" (11 Gage)	3"	3	2.25"	3.875"	R4333	1.14	R5333	0.56	R6333	1.34
1.66" (1 1/4" Pipe)	.140" (Sch. 40)	2.50"	1 Offset	1.67"	3.5"	R421	1.08	R1421	0.50	R2421	1.56
1.66" (1 1/4" Pipe)	.140" (Sch. 40)	2.50"	2	1.67"	3.875"	R422	1.30	R1422	0.60	R2422	1.64
1.66" (1 1/4" Pipe)	.140" (Sch. 40)	2.50"	3	1.67"	3.875"	R423	1.30	R1423	0.60	R2423	1.64
1.66" (1 1/4" Pipe)	.140" (Sch. 40)	3"	1 Offset	2.17"	3.5"	R431	1.20	R1431	0.55	R2431	1.71
1.66" (1 1/4" Pipe)	.140" (Sch. 40)	3"	2	2.17"	3.875"	R432	1.42	R1432	0.65	R2432	1.79
1.66" (1 1/4" Pipe)	.140" (Sch. 40)	3"	3	2.17"	3.875"	R433	1.42	R1433	0.65	R2433	1.79
1.66" (1 1/4" Pipe)	.140" (Sch. 40)	3.25	1 Offset	2.42"	3.5"	R441	1.20	R1441	0.55	R2441	1.71
1.66" (1 1/4" Pipe)	.140" (Sch. 40)	3.25	2	2.42"	3.875"	R442	1.42	R1442	0.65	R2442	1.79
1.66" (1 1/4" Pipe)	.140" (Sch. 40)	3.25	3	2.42"	3.875"	R443	1.42	R1443	0.65	R2443	1.79
1.90" (1 1/2" Pipe)	.145" (Sch. 40)	2.50"	1 Offset	1.55"	3.5"	R521	1.27	R1521	0.61	R2521	1.78
1.90" (1 1/2" Pipe)	.145" (Sch. 40)	2.50"	2	1.55"	4.5"	R522	1.30	R1522	0.68	R2522	1.86
1.90" (1 1/2" Pipe)	.145" (Sch. 40)	2.50"	3	1.55"	4.5"	R523	1.30	R1523	0.68	R2523	1.86
1.90" (1 1/2" Pipe)	.145" (Sch. 40)	3"	1 Offset	2.05"	3.5"	R531	1.47	R1531	0.67	R2531	1.96
1.90" (1 1/2" Pipe)	.145" (Sch. 40)	3"	2	2.05"	4.5"	R532	1.50	R1532	0.74	R2532	2.04
1.90" (1 1/2" Pipe)	.145" (Sch. 40)	3"	3	2.05"	4.5"	R533	1.50	R1533	0.74	R2533	2.04
1.90" (1 1/2" Pipe)	.145" (Sch. 40)	3.25	1 Offset	2.3"	3.5"	R541	1.47	R1541	0.67	R2541	1.96
1.90" (1 1/2" Pipe)	.145" (Sch. 40)	3.25	2	2.3"	4.5"	R542	1.50	R1542	0.74	R2542	2.04
1.90" (1 1/2" Pipe)	.145" (Sch. 40)	3.25	3	2.3"	4.5"	R543	1.50	R1543	0.74	R2543	2.04

# POST SLEEVES

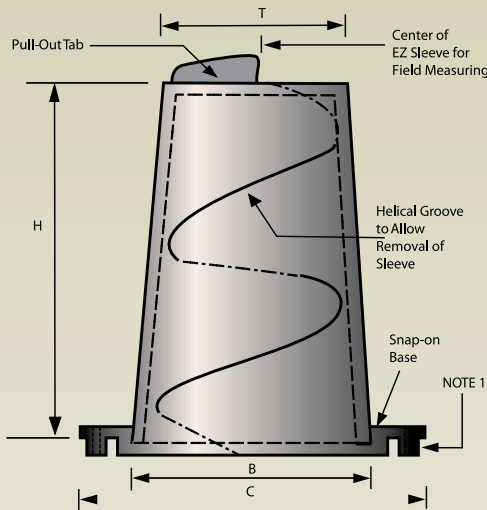


Avoid rust caused by steel sleeves, railings not properly coated, or posts that are not properly grouted. Sharpe Products sells EZ Sleeve, a removable plastic sleeve for forming quick, accurate, clean post holes in concrete. It forms a tapered hole with extra space to plumb posts. Ideal for railings, fences or other posts. EZ Sleeves are colored "safety orange" to safeguard against tripping.

The EZ Sleeve is lightweight and constructed of 1/16" thick plastic. Use the attached tab for precise field measuring and removal of sleeve. The sealed tapered tube with snap-on base keeps out debris and water.

## EZ SLEEVE

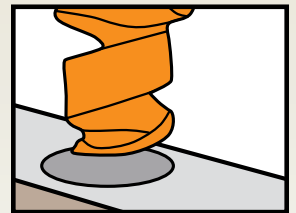
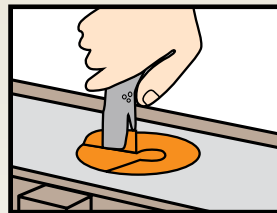
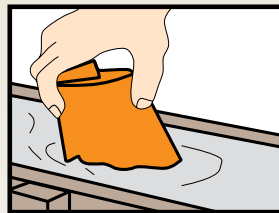
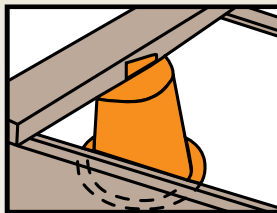
EZ sleeve is the ideal to form quick and clean post holes in concrete for installing railings, fences, or other posts.



Post Size	T	B	H	C	Part No.	Wt. Ea.
Up to 2.375" (2" Pipe) Up to 2.0" Square Tube	3.0"	3.5"	6.0"	4.75"	EZ3006	0.63
Up to 3.5" (3" Pipe) Up to 2.5" Square Tube	4.0"	5.0"	12.0"	7.0"	EZ4012	0.22

## HOW TO USE THE EZ SLEEVE

Either attach to concrete formwork and pour concrete or press into wet concrete. Pull tab, using a pair of pliers, just before installing posts. **DO NOT** pull out EZ sleeve until ready for installation. You can use it to verify field measurements and to keep out debris and water which can freeze and crack concrete.



### QUANTITY DISCOUNTS AVAILABLE

1-99 Total Pieces	List Price	100-499 Total Pieces	Less 10%
500-999 Total Pieces	Less 15%	1000 + Pieces	Less 20%

Quantity Discounts Not Available on Disks.  
See Page 54 on How You Can Save an Additional 10% Discount by Becoming a "Sharpe Thinker"!



# EXTRA HEAVY FLAT FLANGES

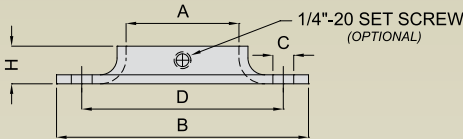


Our stock flanges come in 10 gage steel, .132" aluminum, and 11 gage stainless steel, except for snap-cover flanges and extra heavy flanges. We offer round disks in steel, aluminum, and stainless steel. Stock products are available for same-day shipping if ordered before 2pm CST. For pricing on special finishes, call for a quote.

Quantity discounts available and special discounts available for Sharpe Thinkers members on flanges. Discounts **DO NOT** apply for Round Disks.

## EXTRA HEAVY FLAT FLANGES

Our extra heavy flanges are similar to flat flanges but are made from a heavier material. These flanges come in steel, stainless steel, and aluminum and supplied with a mill finish. Aluminum flanges are to be used for cover flanges only. **All variations are available with a set screw which is located on the neck.**



7 Gage          3003 Alloy .187" Thick          304 Alloy .187" Thick

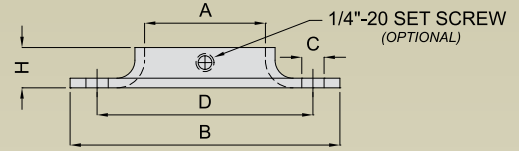
A = Pipe or Tube Outside Diameter	Mount Holes	Set Screw	H = Height	B = Base	C = Hole Dia.	D = Bolt Circle	STEEL		ALUMINUM		STAINLESS	
							Part No.	Wt. Ea.	Part No.	Wt. Ea.	Part No.	Wt. Ea.
1.50"	0	No	3/4"	4.25"			XFF1500	0.62	XFF1500-AL	0.24	XFF1500-SS	0.62
1.50"	2	No	3/4"	4.25"	5/16"	3.50"	XFF1502	0.62	XFF1502-AL	0.24	XFF1502-SS	0.62
1.50"	3	No	3/4"	4.25"	5/16"	3.50"	XFF1503	0.62	XFF1503-AL	0.24	XFF1503-SS	0.62
1.50"	4	No	3/4"	4.25"	5/16"	3.50"	XFF1504	0.62	XFF1504-AL	0.24	XFF1504-SS	0.62
1.50"	0	Yes	3/4"	4.25"			XFF1505	0.62	XFF1505-AL	0.24	XFF1505-SS	0.62
1.50"	2	Yes	3/4"	4.25"	5/16"	3.50"	XFF1506	0.62	XFF1506-AL	0.24	XFF1506-SS	0.62
1.50"	3	Yes	3/4"	4.25"	5/16"	3.50"	XFF1507	0.62	XFF1507-AL	0.24	XFF1507-SS	0.62
1.50"	4	Yes	3/4"	4.25"	5/16"	3.50"	XFF1508	0.62	XFF1508-AL	0.24	XFF1508-SS	0.62
1.66" (1 1/4" Pipe)	0	No	11/16"	4.25"			XFF1660	0.62	XFF1660-AL	0.24	XFF1660-SS	0.62
1.66" (1 1/4" Pipe)	2	No	11/16"	4.25"	5/16"	3.50"	XFF1662	0.62	XFF1662-AL	0.24	XFF1662-SS	0.62
1.66" (1 1/4" Pipe)	3	No	11/16"	4.25"	5/16"	3.50"	XFF1663	0.62	XFF1663-AL	0.24	XFF1663-SS	0.62
1.66" (1 1/4" Pipe)	4	No	11/16"	4.25"	5/16"	3.50"	XFF1664	0.62	XFF1664-AL	0.24	XFF1664-SS	0.62
1.66" (1 1/4" Pipe)	0	Yes	11/16"	4.25"			XFF1665	0.62	XFF1665-AL	0.24	XFF1665-SS	0.62
1.66" (1 1/4" Pipe)	2	Yes	11/16"	4.25"	5/16"	3.50"	XFF1666	0.62	XFF1666-AL	0.24	XFF1666-SS	0.62
1.66" (1 1/4" Pipe)	3	Yes	11/16"	4.25"	5/16"	3.50"	XFF1667	0.62	XFF1667-AL	0.24	XFF1667-SS	0.62
1.66" (1 1/4" Pipe)	4	Yes	11/16"	4.25"	5/16"	3.50"	XFF1668	0.62	XFF1668-AL	0.24	XFF1668-SS	0.62
1.90" (1 1/2" Pipe)	0	No	3/4"	4.25"			XFF1900	0.80	XFF1900-AL	0.31	XFF1900-SS	0.80
1.90" (1 1/2" Pipe)	2	No	3/4"	4.25"	5/16"	3.50"	XFF1902	0.80	XFF1902-AL	0.31	XFF1902-SS	0.80
1.90" (1 1/2" Pipe)	3	No	3/4"	4.25"	5/16"	3.50"	XFF1903	0.80	XFF1903-AL	0.31	XFF1903-SS	0.80
1.90" (1 1/2" Pipe)	4	No	3/4"	4.25"	5/16"	3.50"	XFF1904	0.80	XFF1904-AL	0.31	XFF1904-SS	0.80
1.90" (1 1/2" Pipe)	0	Yes	3/4"	4.25"			XFF1905	0.80	XFF1905-AL	0.31	XFF1905-SS	0.80
1.90" (1 1/2" Pipe)	2	Yes	3/4"	4.25"	5/16"	3.50"	XFF1906	0.80	XFF1906-AL	0.31	XFF1906-SS	0.80
1.90" (1 1/2" Pipe)	3	Yes	3/4"	4.25"	5/16"	3.50"	XFF1907	0.80	XFF1907-AL	0.31	XFF1907-SS	0.80
1.90" (1 1/2" Pipe)	4	Yes	3/4"	4.25"	5/16"	3.50"	XFF1908	0.80	XFF1908-AL	0.31	XFF1908-SS	0.80



# FLAT FLANGES

## FLAT FLANGES

Our flat flanges come in steel, stainless steel, and aluminum and are supplied with a mill finish. Aluminum flanges are to be used for cover flanges only. Available plain (no mount holes), and 2, 3, and 4 mount hole options. *All variations are available with a set screw which is located on the neck.* Set screws are not for structural purposes.



A=Pipe or Tube Outside Diameter	Mount Holes	Set Screw	H= Height	B= Base	C=Hole Dia.	D=Bolt Circle	10 Gage		3003 Alloy .132" Thick	304 Alloy 11 Gage		
							STEEL Part No.	Wt. Ea.	ALUMINUM Part No.	Wt. Ea.	STAINLESS Part No.	Wt. Ea.
1.315" (1" Pipe)	0	No	9/16"	3.75"			FF1320	0.39	FF1320-AL	0.14	FF1320-SS	0.35
1.315" (1" Pipe)	2	No	9/16"	3.75"	5/16"	3.00"	FF1322	0.39	FF1322-AL	0.14	FF1322-SS	0.35
1.315" (1" Pipe)	3	No	9/16"	3.75"	5/16"	3.00"	FF1323	0.39	FF1323-AL	0.14	FF1323-SS	0.35
1.315" (1" Pipe)	4	No	9/16"	3.75"	5/16"	3.00"	FF1324	0.39	FF1324-AL	0.14	FF1324-SS	0.35
1.315" (1" Pipe)	0	Yes	9/16"	3.75"			FF1325	0.39	FF1325-AL	0.14	FF1325-SS	0.35
1.315" (1" Pipe)	2	Yes	9/16"	3.75"	5/16"	3.00"	FF1326	0.39	FF1326-AL	0.14	FF1326-SS	0.35
1.315" (1" Pipe)	3	Yes	9/16"	3.75"	5/16"	3.00"	FF1327	0.39	FF1327-AL	0.14	FF1327-SS	0.35
1.315" (1" Pipe)	4	Yes	9/16"	3.75"	5/16"	3.00"	FF1328	0.39	FF1328-AL	0.14	FF1328-SS	0.35
1.50"	0	No	1/2"	3.75"			FF1500	0.39	FF1500-AL	0.14	FF1500-SS	0.35
1.50"	2	No	1/2"	3.75"	5/16"	3.00"	FF1502	0.39	FF1502-AL	0.14	FF1502-SS	0.35
1.50"	3	No	1/2"	3.75"	5/16"	3.00"	FF1503	0.39	FF1503-AL	0.14	FF1503-SS	0.35
1.50"	4	No	1/2"	3.75"	5/16"	3.00"	FF1504	0.39	FF1504-AL	0.14	FF1504-SS	0.35
1.50"	0	Yes	1/2"	3.75"			FF1505	0.39	FF1505-AL	0.14	FF1505-SS	0.35
1.50"	2	Yes	1/2"	3.75"	5/16"	3.00"	FF1506	0.39	FF1506-AL	0.14	FF1506-SS	0.35
1.50"	3	Yes	1/2"	3.75"	5/16"	3.00"	FF1507	0.39	FF1507-AL	0.14	FF1507-SS	0.35
1.50"	4	Yes	1/2"	3.75"	5/16"	3.00"	FF1508	0.39	FF1508-AL	0.14	FF1508-SS	0.35
1.66" (1 1/4" Pipe)	0	No	11/16"	3.75"			FF1660	0.40	FF1660-AL	0.15	FF1660-SS	0.37
1.66" (1 1/4" Pipe)	2	No	11/16"	3.75"	5/16"	3.00"	FF1662	0.40	FF1662-AL	0.15	FF1662-SS	0.37
1.66" (1 1/4" Pipe)	3	No	11/16"	3.75"	5/16"	3.00"	FF1663	0.40	FF1663-AL	0.15	FF1663-SS	0.37
1.66" (1 1/4" Pipe)	4	No	11/16"	3.75"	5/16"	3.00"	FF1664	0.40	FF1664-AL	0.15	FF1664-SS	0.37
1.66" (1 1/4" Pipe)	0	Yes	11/16"	3.75"			FF1665	0.40	FF1665-AL	0.15	FF1665-SS	0.37
1.66" (1 1/4" Pipe)	2	Yes	11/16"	3.75"	5/16"	3.00"	FF1666	0.40	FF1666-AL	0.15	FF1666-SS	0.37
1.66" (1 1/4" Pipe)	3	Yes	11/16"	3.75"	5/16"	3.00"	FF1667	0.40	FF1667-AL	0.15	FF1667-SS	0.37
1.66" (1 1/4" Pipe)	4	Yes	11/16"	3.75"	5/16"	3.00"	FF1668	0.40	FF1668-AL	0.15	FF1668-SS	0.37

# FLAT FLANGES



## FLAT FLANGES (CONTINUED)

A = Pipe or Tube Outside Diameter	Mount Holes	Set Screw	H = Height	B = Base	C = Hole Dia.	D = Bolt Circle	10 Gage			3003 Alloy	304 Alloy	
										.132" Thick	11 Gage	
							STEEL		ALUMINUM		STAINLESS	
Part No.	Wt. Ea.	Part No.	Wt. Ea.	Part No.	Wt. Ea.							
1.90" (1 1/2" Pipe)	0	No	11/16"	4.25"			FF1900	0.50	FF1900-AL	0.18	FF1900-SS	0.45
1.90" (1 1/2" Pipe)	2	No	11/16"	4.25"	5/16"	3.50"	FF1902	0.50	FF1902-AL	0.18	FF1902-SS	0.45
1.90" (1 1/2" Pipe)	3	No	11/16"	4.25"	5/16"	3.50"	FF1903	0.50	FF1903-AL	0.18	FF1903-SS	0.45
1.90" (1 1/2" Pipe)	4	No	11/16"	4.25"	5/16"	3.50"	FF1904	0.50	FF1904-AL	0.18	FF1904-SS	0.45
1.90" (1 1/2" Pipe)	0	Yes	11/16"	4.25"			FF1905	0.50	FF1905-AL	0.18	FF1905-SS	0.45
1.90" (1 1/2" Pipe)	2	Yes	11/16"	4.25"	5/16"	3.50"	FF1906	0.50	FF1906-AL	0.18	FF1906-SS	0.45
1.90" (1 1/2" Pipe)	3	Yes	11/16"	4.25"	5/16"	3.50"	FF1907	0.50	FF1907-AL	0.18	FF1907-SS	0.45
1.90" (1 1/2" Pipe)	4	Yes	11/16"	4.25"	5/16"	3.50"	FF1908	0.50	FF1908-AL	0.18	FF1908-SS	0.45
2.00"	0	No	3/4"	4.25"			FF2000	0.50	FF2000-AL	0.17	FF2000-SS	0.45
2.00"	2	No	3/4"	4.25"	5/16"	3.50"	FF2002	0.50	FF2002-AL	0.17	FF2002-SS	0.45
2.00"	3	No	3/4"	4.25"	5/16"	3.50"	FF2003	0.50	FF2003-AL	0.17	FF2003-SS	0.45
2.00"	4	No	3/4"	4.25"	5/16"	3.50"	FF2004	0.50	FF2004-AL	0.17	FF2004-SS	0.45
2.00"	0	Yes	3/4"	4.25"			FF2005	0.50	FF2005-AL	0.17	FF2005-SS	0.45
2.00"	2	Yes	3/4"	4.25"	5/16"	3.50"	FF2006	0.50	FF2006-AL	0.17	FF2006-SS	0.45
2.00"	3	Yes	3/4"	4.25"	5/16"	3.50"	FF2007	0.50	FF2007-AL	0.17	FF2007-SS	0.45
2.00"	4	Yes	3/4"	4.25"	5/16"	3.50"	FF2008	0.50	FF2008-AL	0.17	FF2008-SS	0.45
2.375" (2" Pipe)	0	No	3/4"	4.875"			FF2380	0.62	FF2380-AL	0.23	FF2380-SS	0.56
2.375" (2" Pipe)	2	No	3/4"	4.875"	3/8"	3.875"	FF2382	0.62	FF2382-AL	0.23	FF2382-SS	0.56
2.375" (2" Pipe)	3	No	3/4"	4.875"	3/8"	3.875"	FF2383	0.62	FF2383-AL	0.23	FF2383-SS	0.56
2.375" (2" Pipe)	4	No	3/4"	4.875"	3/8"	3.875"	FF2384	0.62	FF2384-AL	0.23	FF2384-SS	0.56
2.375" (2" Pipe)	0	Yes	3/4"	4.875"			FF2385	0.62	FF2385-AL	0.23	FF2385-SS	0.56
2.375" (2" Pipe)	2	Yes	3/4"	4.875"	3/8"	3.875"	FF2386	0.62	FF2386-AL	0.23	FF2386-SS	0.56
2.375" (2" Pipe)	3	Yes	3/4"	4.875"	3/8"	3.875"	FF2387	0.62	FF2387-AL	0.23	FF2387-SS	0.56
2.375" (2" Pipe)	4	Yes	3/4"	4.875"	3/8"	3.875"	FF2388	0.62	FF2388-AL	0.23	FF2388-SS	0.56
2.50"	0	No	7/8"	4.875"			FF2500	0.62	FF2500-AL	0.23	FF2500-SS	0.56
2.50"	2	No	7/8"	4.875"	3/8"	3.875"	FF2502	0.62	FF2502-AL	0.23	FF2502-SS	0.56
2.50"	3	No	7/8"	4.875"	3/8"	3.875"	FF2503	0.62	FF2503-AL	0.23	FF2503-SS	0.56
2.50"	4	No	7/8"	4.875"	3/8"	3.875"	FF2504	0.62	FF2504-AL	0.23	FF2504-SS	0.56
2.50"	0	Yes	7/8"	4.875"			FF2505	0.62	FF2505-AL	0.23	FF2505-SS	0.56
2.50"	2	Yes	7/8"	4.875"	3/8"	3.875"	FF2506	0.62	FF2506-AL	0.23	FF2506-SS	0.56
2.50"	3	Yes	7/8"	4.875"	3/8"	3.875"	FF2507	0.62	FF2507-AL	0.23	FF2507-SS	0.56
2.50"	4	Yes	7/8"	4.875"	3/8"	3.875"	FF2508	0.62	FF2508-AL	0.23	FF2508-SS	0.56

**THINK SHARPE AND SAVE!  
BECOME A "SHARPE THINKER" MEMBER!**

Join the Sharpe Thinkers Club and you will receive an **ADDITIONAL 10% Discount** on all stock orders, regardless of quantity.

See Page 54 on how you can save an **ADDITIONAL 10% Discount** by Becoming a "Sharpe Thinker"!

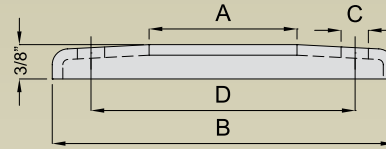
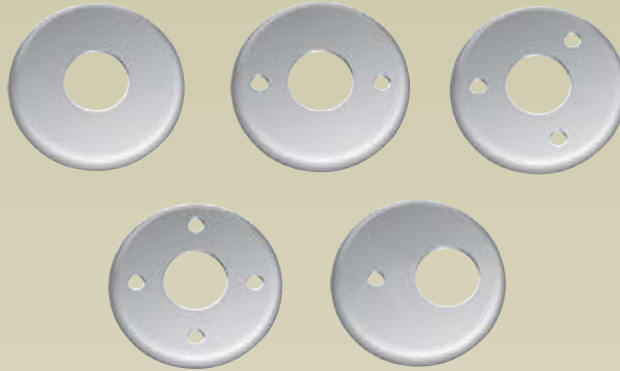




# RAISED FLUSH FLANGES

## RAISED FLUSH FLANGES

Raised flush flanges come in steel, stainless steel, and aluminum and are supplied with a mill finish. These flanges are available plain (no mount holes), offset with 1 screw hole, and 2, 3, and 4 mount hole options. *Raised flanges can be used with our anchor plates shown on page 29.* The coordinating anchor plate part number is listed in the chart below.



A=Pipe or Tube Outside Diameter	Mount Holes	B=Base	C=Hole Dia.	D=Bolt Circle	10 Gage		3003 Alloy .132" Thick		304 Alloy 11 Gage	
					STEEL		ALUMINUM		STAINLESS	
					Part No.	Wi. Ea.	Part No.	Wi. Ea.	Part No.	Wi. Ea.
1.315" (1" Pipe)	0	3.875"			RFF1320	0.45	RFF1320-AL	0.22	RFF1320-SS	0.40
1.315" (1" Pipe)	1	3.50"	5/16"		RFF1321	0.32	RFF1321-AL	0.14	RFF1321-SS	0.30
1.315" (1" Pipe)	2	3.875"	5/16"	3.00"	RFF1322	0.45	RFF1322-AL	0.22	RFF1322-SS	0.40
1.315" (1" Pipe)	3	3.875"	5/16"	3.00"	RFF1323	0.45	RFF1323-AL	0.22	RFF1323-SS	0.40
1.315" (1" Pipe)	4	3.875"	5/16"	3.00"	RFF1324	0.45	RFF1324-AL	0.22	RFF1324-SS	0.40
Anchor Plate	6	3.50"	5/16"	3.00"	AP350	0.46			AP350-SS	0.47
1.50"	0	3.875"			RFF1500	0.45	RFF1500-AL	0.22	RFF1500-SS	0.40
1.50"	1	3.50"	5/16"		RFF1501	0.32	RFF1501-AL	0.14	RFF1501-SS	0.30
1.50"	2	3.875"	5/16"	3.00"	RFF1502	0.45	RFF1502-AL	0.22	RFF1502-SS	0.40
1.50"	3	3.875"	5/16"	3.00"	RFF1503	0.45	RFF1503-AL	0.22	RFF1503-SS	0.40
1.50"	4	3.875"	5/16"	3.00"	RFF1504	0.45	RFF1504-AL	0.22	RFF1504-SS	0.40
Anchor Plate	6	3.50"	5/16"	3.00"	AP350	0.46			AP350-SS	0.47
1.66" (1 1/4" Pipe)	0	3.875"			RFF1660	0.44	RFF1660-AL	0.22	RFF1660-SS	0.40
1.66" (1 1/4" Pipe)	1	3.50"	5/16"		RFF1661	0.32	RFF1661-AL	0.14	RFF1661-SS	0.30
1.66" (1 1/4" Pipe)	2	3.875"	5/16"	3.00"	RFF1662	0.44	RFF1662-AL	0.22	RFF1662-SS	0.40
1.66" (1 1/4" Pipe)	3	3.875"	5/16"	3.00"	RFF1663	0.44	RFF1663-AL	0.22	RFF1663-SS	0.40
1.66" (1 1/4" Pipe)	4	3.875"	5/16"	3.00"	RFF1664	0.44	RFF1664-AL	0.22	RFF1664-SS	0.40
Anchor Plate	6	3.50"	5/16"	3.00"	AP350	0.46			AP350-SS	0.47
1.90" (1 1/2" Pipe)	0	4.50"			RFF1900	0.54	RFF1900-AL	0.19	RFF1900-SS	0.50
1.90" (1 1/2" Pipe)	1	3.50"	5/16"		RFF1901	0.30	RFF1901-AL	0.12	RFF1901-SS	0.41
1.90" (1 1/2" Pipe)	2	4.50"	5/16"	3.50"	RFF1902	0.54	RFF1902-AL	0.19	RFF1902-SS	0.50
1.90" (1 1/2" Pipe)	3	4.50"	5/16"	3.50"	RFF1903	0.54	RFF1903-AL	0.19	RFF1903-SS	0.50
1.90" (1 1/2" Pipe)	4	4.50"	5/16"	3.50"	RFF1904	0.54	RFF1904-AL	0.19	RFF1904-SS	0.50
Anchor Plate	6	4.00"	5/16"	3.50"	AP400	0.64			AP400-SS	0.65

# RAISED FLUSH FLANGES

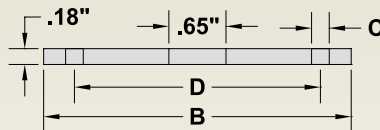
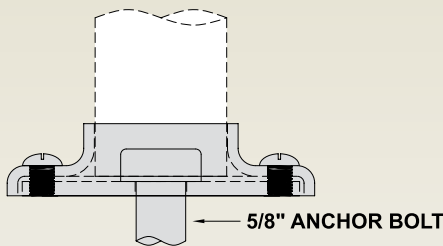


## RAISED FLUSH FLANGES (CONTINUED)

A = Pipe or Tube Outside Diameter	Mount Holes	B = Base	C = Hole Dia.	D = Bolt Circle	10 Gage		3003 Alloy .132" Thick		304 Alloy 11 Gage	
					STEEL		ALUMINUM		STAINLESS	
					Part No.	Wt. Ea.	Part No.	Wt. Ea.	Part No.	Wt. Ea.
2.00"	0	4.50"			RFF2000	0.52	RFF2000-AL	0.18	RFF2000-SS	0.52
2.00"	1	3.50"	5/16"		RFF2001	0.30	RFF2001-AL	0.10	RFF2001-SS	0.30
2.00"	2	4.50"	5/16"	3.50"	RFF2002	0.52	RFF2002-AL	0.18	RFF2002-SS	0.52
2.00"	3	4.50"	5/16"	3.50"	RFF2003	0.52	RFF2003-AL	0.18	RFF2003-SS	0.52
2.00"	4	4.50"	5/16"	3.50"	RFF2004	0.52	RFF2004-AL	0.18	RFF2004-SS	0.52
Anchor Plate	6	4.00"	5/16"	3.50"	AP400	0.64			AP400-SS	0.65
2.375" (2" Pipe)	0	4.875"			RFF2380	0.72	RFF2380-AL	0.24	RFF2380-SS	0.72
2.375" (2" Pipe)	1	3.50"	3/8"		RFF2381	0.54	RFF2381-AL	0.18	RFF2381-SS	0.50
2.375" (2" Pipe)	2	4.875"	3/8"	3.875"	RFF2382	0.72	RFF2382-AL	0.24	RFF2382-SS	0.72
2.375" (2" Pipe)	3	4.875"	3/8"	3.875"	RFF2383	0.72	RFF2383-AL	0.24	RFF2383-SS	0.72
2.375" (2" Pipe)	4	4.875"	3/8"	3.875"	RFF2384	0.72	RFF2384-AL	0.24	RFF2384-SS	0.72
Anchor Plate	6	4.50"	3/8"	3.875"	AP450	0.85			AP450-SS	0.85
2.50"	0	4.875"			RFF2500	0.72	RFF2500-AL	0.24	RFF2500-SS	0.72
2.50"	2	4.875"	3/8"	3.875"	RFF2502	0.72	RFF2502-AL	0.24	RFF2502-SS	0.72
2.50"	3	4.875"	3/8"	3.875"	RFF2503	0.72	RFF2503-AL	0.24	RFF2503-SS	0.72
2.50"	4	4.875"	3/8"	3.875"	RFF2504	0.72	RFF2504-AL	0.24	RFF2504-SS	0.72
Anchor Plate	6	4.50"	3/8"	3.875"	AP450	0.85			AP450-SS	0.85

## ANCHOR PLATES

Anchor plates are made to be used with raised flanges and raised flush flanges. The 6 hole bolt pattern allows you to mount with 2, 3, or 4 screws according to your requirements. Anchor plates are fastened to the ground with 5/8" anchor bolts. The flange then gets fastened to the anchor plate with the appropriate number of screws required. Part numbers for these anchor plates are also listed in the flange charts under the correlating flange sizes.



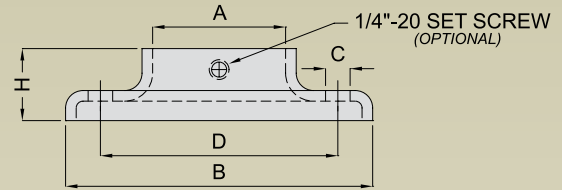
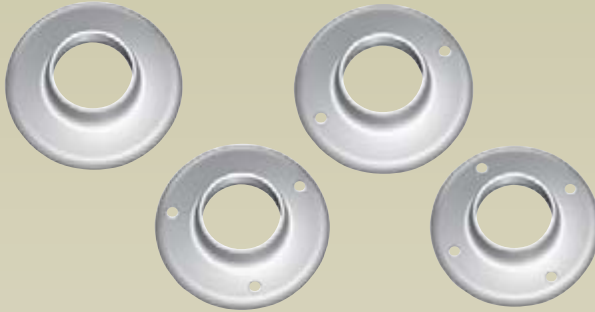
Fits Flange Base Size	B = Anchor Plate Dia.	C = Hole Dia.	D = Bolt Circle	10 Gage		304 Alloy 11 Gage	
				STEEL Part No.	Wt. Ea.	STAINLESS Part No.	Wt. Ea.
3.875"	3.50"	5/16"	3.00"	AP350	0.46	AP350-SS	0.47
4.50"	4.00"	5/16"	4.00"	AP400	0.64	AP400-SS	0.65
4.875"	4.50"	3/8"	4.50"	AP450	0.85	AP450-SS	0.85



# RAISED BASE FLANGES

## RAISED BASE FLANGES

Raised base flanges come in steel, stainless steel, and aluminum and are supplied with a mill finish. Aluminum flanges are to be used for cover flanges only. Available plain (no mount holes), and 2, 3, and 4 mount hole options. *Raised flanges can be used with our anchor plates shown on page 29.* The coordinating anchor plate part number is listed in the chart below. *All variations are available with a set screw which is located on the neck.* Set screws are not for structural purposes.



A = Pipe or Tube Outside Diameter	Mount Holes	Set Screw	H = Height	B = Base	C = Hole Dia.	D = Bolt Circle	10 Gage		3003 Alloy .132" Thick	304 Alloy 11 Gage		
							STEEL Part No.	Wt. Ea.	ALUMINUM Part No.	Wt. Ea.	STAINLESS Part No.	Wt. Ea.
1.315" (1" Pipe)	0	No	13/16"	3.875"			RF1320	0.50	RF1320-AL	0.18	RF1320-SS	0.45
1.315" (1" Pipe)	2	No	13/16"	3.875"	5/16"	3.00"	RF1322	0.50	RF1322-AL	0.18	RF1322-SS	0.45
1.315" (1" Pipe)	3	No	13/16"	3.875"	5/16"	3.00"	RF1323	0.50	RF1323-AL	0.18	RF1323-SS	0.45
1.315" (1" Pipe)	4	No	13/16"	3.875"	5/16"	3.00"	RF1324	0.50	RF1324-AL	0.18	RF1324-SS	0.45
1.315" (1" Pipe)	0	Yes	13/16"	3.875"			RF1325	0.50	RF1325-AL	0.18	RF1325-SS	0.45
1.315" (1" Pipe)	2	Yes	13/16"	3.875"	5/16"	3.00"	RF1326	0.50	RF1326-AL	0.18	RF1326-SS	0.45
1.315" (1" Pipe)	3	Yes	13/16"	3.875"	5/16"	3.00"	RF1327	0.50	RF1327-AL	0.18	RF1327-SS	0.45
1.315" (1" Pipe)	4	Yes	13/16"	3.875"	5/16"	3.00"	RF1328	0.50	RF1328-AL	0.18	RF1328-SS	0.45
Anchor Plate	6		3/16"	3.50"	5/16"	3.00"	AP350	0.46			AP350-SS	0.47
1.50"	0	No	13/16"	3.875"			RF1500	0.50	RF1500-AL	0.18	RF1500-SS	0.45
1.50"	2	No	13/16"	3.875"	5/16"	3.00"	RF1502	0.50	RF1502-AL	0.18	RF1502-SS	0.45
1.50"	3	No	13/16"	3.875"	5/16"	3.00"	RF1503	0.50	RF1503-AL	0.18	RF1503-SS	0.45
1.50"	4	No	13/16"	3.875"	5/16"	3.00"	RF1504	0.50	RF1504-AL	0.18	RF1504-SS	0.45
1.50"	0	Yes	13/16"	3.875"			RF1505	0.50	RF1505-AL	0.18	RF1505-SS	0.45
1.50"	2	Yes	13/16"	3.875"	5/16"	3.00"	RF1506	0.50	RF1506-AL	0.18	RF1506-SS	0.45
1.50"	3	Yes	13/16"	3.875"	5/16"	3.00"	RF1507	0.50	RF1507-AL	0.18	RF1507-SS	0.45
1.50"	4	Yes	13/16"	3.875"	5/16"	3.00"	RF1508	0.50	RF1508-AL	0.18	RF1508-SS	0.45
Anchor Plate	6		3/16"	3.50"	5/16"	3.00"	AP350	0.46		0.25	AP350-SS	0.47
1.66" (1 1/4" Pipe)	0	No	13/16"	3.875"			RF1660	0.50	RF1660-AL	0.18	RF1660-SS	0.45
1.66" (1 1/4" Pipe)	2	No	13/16"	3.875"	5/16"	3.00"	RF1662	0.50	RF1662-AL	0.18	RF1662-SS	0.45
1.66" (1 1/4" Pipe)	3	No	13/16"	3.875"	5/16"	3.00"	RF1663	0.50	RF1663-AL	0.18	RF1663-SS	0.45
1.66" (1 1/4" Pipe)	4	No	13/16"	3.875"	5/16"	3.00"	RF1664	0.50	RF1664-AL	0.18	RF1664-SS	0.45
1.66" (1 1/4" Pipe)	0	Yes	13/16"	3.875"			RF1665	0.50	RF1665-AL	0.18	RF1665-SS	0.45
1.66" (1 1/4" Pipe)	2	Yes	13/16"	3.875"	5/16"	3.00"	RF1666	0.50	RF1666-AL	0.18	RF1666-SS	0.45
1.66" (1 1/4" Pipe)	3	Yes	13/16"	3.875"	5/16"	3.00"	RF1667	0.50	RF1667-AL	0.18	RF1667-SS	0.45
1.66" (1 1/4" Pipe)	4	Yes	13/16"	3.875"	5/16"	3.00"	RF1668	0.50	RF1668-AL	0.18	RF1668-SS	0.45
Anchor Plate	6		3/16"	3.50"	5/16"	3.00"	AP350	0.46		0.25	AP350-SS	0.47

# RAISED BASE FLANGES



## RAISED BASE FLANGES (CONTINUED)

A=Pipe or Tube Outside Diameter	Mount Holes	Set Screw	H= Height	B= Base	C=Hole Dia.	D=Bolt Circle	10 Gage		3003 Alloy .132" Thick	304 Alloy 11 Gage		
							STEEL	ALUMINUM	STAINLESS	Part No.	Wt. Ea.	Part No.
1.90" (1 1/2" Pipe)	0	No	7/8"	4.50"			RF1900	0.64	RF1900-AL	0.21	RF1900-SS	0.55
1.90" (1 1/2" Pipe)	2	No	7/8"	4.50"	5/16"	3.50"	RF1902	0.64	RF1902-AL	0.21	RF1902-SS	0.55
1.90" (1 1/2" Pipe)	3	No	7/8"	4.50"	5/16"	3.50"	RF1903	0.64	RF1903-AL	0.21	RF1903-SS	0.55
1.90" (1 1/2" Pipe)	4	No	7/8"	4.50"	5/16"	3.50"	RF1904	0.64	RF1904-AL	0.21	RF1904-SS	0.55
1.90" (1 1/2" Pipe)	0	Yes	7/8"	4.50"			RF1905	0.64	RF1905-AL	0.21	RF1905-SS	0.55
1.90" (1 1/2" Pipe)	2	Yes	7/8"	4.50"	5/16"	3.50"	RF1906	0.64	RF1906-AL	0.21	RF1906-SS	0.55
1.90" (1 1/2" Pipe)	3	Yes	7/8"	4.50"	5/16"	3.50"	RF1907	0.64	RF1907-AL	0.21	RF1907-SS	0.55
1.90" (1 1/2" Pipe)	4	Yes	7/8"	4.50"	5/16"	3.50"	RF1908	0.64	RF1908-AL	0.21	RF1908-SS	0.55
Anchor Plate	6		3/16"	4.00"	5/16"	3.50"	AP400	0.64	AP400-AL	0.21	AP400-SS	0.65
2.00"	0	No	15/16"	4.50"			RF2000	0.64	RF2000-AL	0.21	RF2000-SS	0.55
2.00"	2	No	15/16"	4.50"	5/16"	3.50"	RF2002	0.64	RF2002-AL	0.21	RF2002-SS	0.55
2.00"	3	No	15/16"	4.50"	5/16"	3.50"	RF2003	0.64	RF2003-AL	0.21	RF2003-SS	0.55
2.00"	4	No	15/16"	4.50"	5/16"	3.50"	RF2004	0.64	RF2004-AL	0.21	RF2004-SS	0.55
2.00"	0	Yes	15/16"	4.50"			RF2005	0.64	RF2005-AL	0.21	RF2005-SS	0.55
2.00"	2	Yes	15/16"	4.50"	5/16"	3.50"	RF2006	0.64	RF2006-AL	0.21	RF2006-SS	0.55
2.00"	3	Yes	15/16"	4.50"	5/16"	3.50"	RF2007	0.64	RF2007-AL	0.21	RF2007-SS	0.55
2.00"	4	Yes	15/16"	4.50"	5/16"	3.50"	RF2008	0.64	RF2008-AL	0.21	RF2008-SS	0.55
Anchor Plate	6		3/16"	4.00"	5/16"	3.50"	AP400	0.64	AP400-AL	0.21	AP400-SS	0.65
2.375" (2" Pipe)	0	No	7/8"	4.875"			RF2380	0.72	RF2380-AL	0.24	RF2380-SS	0.68
2.375" (2" Pipe)	2	No	7/8"	4.875"	3/8"	3.875"	RF2382	0.72	RF2382-AL	0.24	RF2382-SS	0.68
2.375" (2" Pipe)	3	No	7/8"	4.875"	3/8"	3.875"	RF2383	0.72	RF2383-AL	0.24	RF2383-SS	0.68
2.375" (2" Pipe)	4	No	7/8"	4.875"	3/8"	3.875"	RF2384	0.72	RF2384-AL	0.24	RF2384-SS	0.68
2.375" (2" Pipe)	0	Yes	7/8"	4.875"			RF2385	0.72	RF2385-AL	0.24	RF2385-SS	0.68
2.375" (2" Pipe)	2	Yes	7/8"	4.875"	3/8"	3.875"	RF2386	0.72	RF2386-AL	0.24	RF2386-SS	0.68
2.375" (2" Pipe)	3	Yes	7/8"	4.875"	3/8"	3.875"	RF2387	0.72	RF2387-AL	0.24	RF2387-SS	0.68
2.375" (2" Pipe)	4	Yes	7/8"	4.875"	3/8"	3.875"	RF2388	0.72	RF2388-AL	0.24	RF2388-SS	0.68
Anchor Plate	6		3/16"	4.50"	3/8"	3.875"	AP450	0.85	AP450-AL	0.27	AP450-SS	0.85
2.50"	0	No	7/8"	4.875"			RF2500	0.72	RF2500-AL	0.24	RF2500-SS	0.68
2.50"	2	No	7/8"	4.875"	3/8"	3.875"	RF2502	0.72	RF2502-AL	0.24	RF2502-SS	0.68
2.50"	3	No	7/8"	4.875"	3/8"	3.875"	RF2503	0.72	RF2503-AL	0.24	RF2503-SS	0.68
2.50"	4	No	7/8"	4.875"	3/8"	3.875"	RF2504	0.72	RF2504-AL	0.24	RF2504-SS	0.68
2.50"	0	Yes	7/8"	4.875"			RF2505	0.72	RF2505-AL	0.24	RF2505-SS	0.68
2.50"	2	Yes	7/8"	4.875"	3/8"	3.875"	RF2506	0.72	RF2506-AL	0.24	RF2506-SS	0.68
2.50"	3	Yes	7/8"	4.875"	3/8"	3.875"	RF2507	0.72	RF2507-AL	0.24	RF2507-SS	0.68
2.50"	4	Yes	7/8"	4.875"	3/8"	3.875"	RF2508	0.72	RF2508-AL	0.24	RF2508-SS	0.68
Anchor Plate	6		3/16"	4.50"	3/8"	3.875"	AP450	0.85	AP450-AL	0.27	AP450-SS	0.85

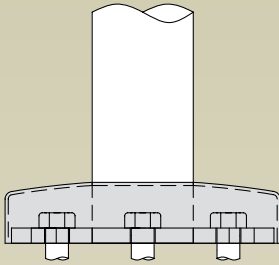


# SNAP COVER FLANGES

## SNAP COVER FLANGE SYSTEM

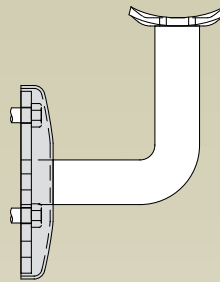
Our snap cover flange system provides a clean look while concealing the mounting hardware securely. They are used in a variety of applications such as posts, wall mounted rails, and handrail brackets. Shown below are sample diagrams of these applications. Please reference the listed pages with each diagram for other correlating railing components also available in this catalog.

### POST APPLICATION



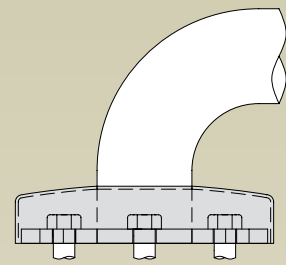
For Post Ends, Please See Page 22.

### HANDRAIL BRACKET APPLICATION



For Wall Bracket Components such as Bracket Saddles and Bar Bends, Please See Page 43.

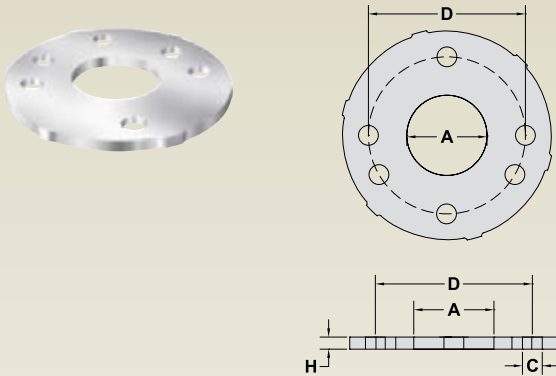
### WALL MOUNT APPLICATION



For Bent 90° Elbows with Tangents, Please See Pages 8-11.

## SNAP COVER FLANGE BASE

Snap cover flange bases are available in steel, stainless steel, and aluminum. The 6 hole bolt pattern allows you to mount with 2, 3, or 4 screws according to your requirements. Snap-cover base works with both the snap-cover flange and the raised snap cover flange which are found on page 33.



3003 Alloy

304 Alloy

A = Pipe or Tube Diameter	C = Mount Hole Size	D = Bolt Circle	STEEL			ALUMINUM			STAINLESS		
			Part No.	Wt. Ea.	H = Thickness	Part No.	Wt. Ea.	H = Thickness	Part No.	Wt. Ea.	H = Thickness
0.50"	1/4"	2 1/4"	SCB050	0.35	0.18"	SCB050-AL	0.32	0.18"	SCB050-SS	0.37	0.1345"
0.625"	1/4"	2 1/4"	SCB063	0.24	0.18"	SCB063-AL	0.32	0.18"	SCB063-SS	0.37	0.1345"
0.75"	1/4"	2 1/4"	SCB075	0.34	0.18"	SCB075-AL	0.32	0.18"	SCB075-SS	0.40	0.1345"
1.00"	1/4"	2 1/4"	SCB100	0.35	0.18"	SCB100-AL	0.32	0.18"	SCB100-SS	0.34	0.1345"
1.25"	1/4"	2 1/4"	SCB125	0.40	0.18"	SCB125-AL	0.32	0.18"	SCB125-SS	0.40	0.1345"
1.315" (1" Pipe)	1/4"	2 1/4"	SCB132	0.26	0.18"	SCB132-AL	0.10	0.18"	SCB132-SS	0.21	0.1345"
1.50" O.D.	1/4"	2 1/4"	SCB150	0.26	0.18"	SCB150-AL	0.10	0.18"	SCB150-SS	0.21	0.1345"
1.66" (1 1/4" Pipe)	3/8"	3 1/4"	SCB166	0.74	0.18"	SCB166-AL	0.26	0.18"	SCB166-SS	0.68	0.1345"
1.90" (1 1/2" Pipe)	3/8"	3 1/4"	SCB190	0.71	0.18"	SCB190-AL	0.25	0.18"	SCB190-SS	0.68	0.1345"
2" O.D.	3/8"	3 1/4"	SCB200	0.71	0.18"	SCB200-AL	0.25	0.18"	SCB200-SS	0.68	0.1345"

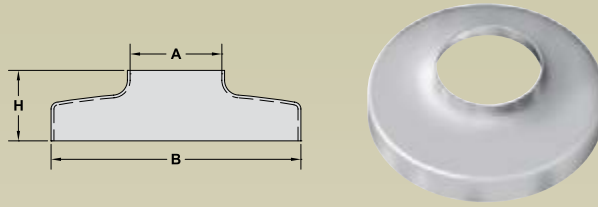


# SNAP COVER FLANGES



## RAISED SNAP COVER FLANGE

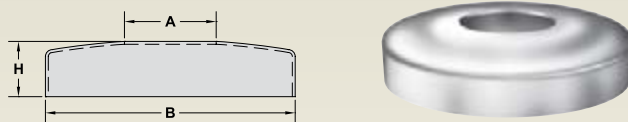
Our raised snap cover flanges are stamped out of .049" material and are to be used with the snap-cover base shown on page 32.



A=Pipe or Tube Diameter	B=Base Diameter	H= Height	STEEL		3003 Alloy ALUMINUM		304 Alloy STAINLESS	
			Part No.	Wt. Ea.	Part No.	Wt. Ea.	Part No.	Wt. Ea.
1.315 (1" Pipe)	3.25"	1.28"	RSCF132	0.17	RSCF132-AL	0.07	RSCF132-SS	0.17
1.50" O.D.	3.25"	1.28"	RSCF150	0.17	RSCF150-AL	0.07	RSCF150-SS	0.17
1.66" (1 1/4" Pipe)	4.5"	1.28"	RSCF166	0.29	RSCF166-AL	0.14	RSCF166-SS	0.30
1.90 (1 1/2" Pipe)	4.5"	1.28"	RSCF190	0.29	RSCF190-AL	0.14	RSCF190-SS	0.30
2" O.D.	4.5"	1.28"	RSCF200	0.29	RSCF200-AL	0.14	RSCF200-SS	0.30

## SNAP COVER FLANGES

Our snap cover flanges are stamped out of .049" material and are to be used with the snap-cover base shown on page 32. This snap cover flange system provides a clean look by securely concealing the mounting hardware.



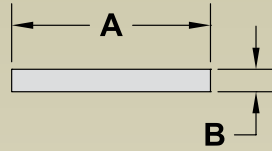
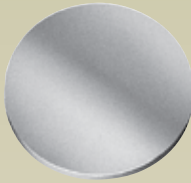
A=Pipe or Tube Diameter	B= Base Dia.	H= Height	STEEL		3003 Alloy ALUMINUM		304 Alloy STAINLESS	
			Part No.	Wt. Ea.	Part No.	Wt. Ea.	Part No.	Wt. Ea.
0.50"	3.25"	0.5"	SCF050	0.24	SCF050-AL	0.18	SCF050-SS	0.24
0.625"	3.25"	0.5"	SCF063	0.24	SCF063-AL	0.06	SCF063-SS	0.14
0.75"	3.25"	0.5"	SCF075	0.24	SCF075-AL	0.06	SCF075-SS	0.24
1.00"	3.25"	0.5"	SCF100	0.24	SCF100-AL	0.16	SCF100-SS	0.15
1.25"	3.25"	0.5"	SCF125	0.13	SCF125-AL	0.05	SCF125-SS	0.13
1.315" (1" Pipe)	3.25"	0.85"	SCF132	0.15	SCF132-AL	0.06	SCF132-SS	0.15
1.50" O.D.	3.25"	0.85"	SCF150	0.15	SCF150-AL	0.06	SCF150-SS	0.15
1.66" (1 1/4" Pipe)	4.5"	0.85"	SCF166	0.27	SCF166-AL	0.13	SCF166-SS	0.28
1.90" (1 1/2" Pipe)	4.5"	0.85"	SCF190	0.27	SCF190-AL	0.13	SCF190-SS	0.28
2" O.D.	4.5"	0.85"	SCF200	0.27	SCF200-AL	0.13	SCF200-SS	0.28



# ROUND DISKS

## ROUND DISKS

Disks are available in steel, stainless steel, and aluminum and are supplied with a mill finish. Special finishes can be supplied, please call for a quote. 1/8" and 3/16" aluminum disks are 3003 Alloy and 1/4" aluminum disks are 5052 Alloy. Quantity discounts and special discounts for Sharpe Thinkers members **DO NOT** apply on round disks.



304 Alloy

A=Diameter	B=Thickness	STEEL		ALUMINUM		STAINLESS	
		Part No.	Wt Ea.	Part No.	Wt Ea.	Part No.	Wt Ea.
1"	1/8"	9000	0.03	9200	0.01	9400	0.03
1"	3/16"	9001	0.04	9201	0.02	9401	0.04
1"	1/4"	9002	0.06	9202	0.02	9402	0.06
1.25"	1/8"	9006	0.04	9206	0.02	9406	0.04
1.25"	3/16"	9007	0.07	9207	0.02	9407	0.07
1.25"	1/4"	9008	0.09	9208	0.03	9408	0.09
1.315" (1" Pipe)	1/8"	9009	0.05	9209	0.02	9409	0.05
1.315" (1" Pipe)	3/16"	9010	0.07	9210	0.03	9410	0.07
1.315" (1" Pipe)	1/4"	9011	0.10	9211	0.03	9411	0.1
1.50"	1/8"	9012	0.06	9212	0.02	9412	0.06
1.50"	3/16"	9013	0.09	9213	0.03	9413	0.09
1.50"	1/4"	9014	0.13	9214	0.04	9414	0.13
1.66" (1 1/4" Pipe)	1/8"	9018	0.07	9218	0.03	9418	0.07
1.66" (1 1/4" Pipe)	3/16"	9019	0.11	9219	0.04	9419	0.11
1.66" (1 1/4" Pipe)	1/4"	9022	0.15	9222	0.05	9422	0.15
1.75"	1/8"	9020	0.09	9220	0.03	9420	0.09
1.75"	3/16"	9021	0.13	9221	0.04	9421	0.13
1.90" (1 1/2" Pipe)	1/8"	9023	0.10	9223	0.04	9423	0.1
1.90" (1 1/2" Pipe)	3/16"	9024	0.15	9224	0.05	9424	0.15
1.90" (1 1/2" Pipe)	1/4"	9025	0.20	9225	0.07	9425	0.2
2"	1/8"	9026	0.11	9226	0.04	9426	0.11
2"	3/16"	9027	0.17	9227	0.06	9427	0.17
2"	1/4"	9028	0.22	9228	0.08	9428	0.22
2.375" (2" Pipe)	1/8"	9029	0.16	9229	0.05	9429	0.16
2.375" (2" Pipe)	3/16"	9030	0.24	9230	0.08	9430	0.24
2.375" (2" Pipe)	1/4"	9031	0.31	9231	0.11	9431	0.32
2.50"	1/8"	9032	0.17	9232	0.06	9432	0.18
2.50"	3/16"	9033	0.26	9233	0.09	9433	0.26
2.50"	1/4"	9034	0.33	9234	0.12	9434	0.35

# ROUND DISKS



## ROUND DISKS (CONTINUED)

304 Alloy

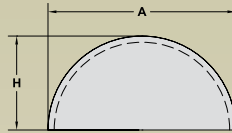
A=Diameter	B=Thickness	STEEL		ALUMINUM		STAINLESS	
		Part No.	Wt Ea.	Part No.	Wt Ea.	Part No.	Wt Ea.
2.75"	1/8"	9035	0.21	9235	0.07	9435	0.21
2.75"	3/16"	9036	0.32	9236	0.11	9436	0.32
2.75"	1/4"	9037	0.42	9237	0.15	9437	0.43
2.875" (2 1/2" Pipe)	1/8"	9041	0.23	9241	0.08	9441	0.23
2.875" (2 1/2" Pipe)	3/16"	9042	0.35	9242	0.12	9442	0.35
2.875" (2 1/2" Pipe)	1/4"	9043	0.46	9243	0.16	9443	0.46
3"	1/8"	9044	0.25	9244	0.09	9444	0.25
3"	3/16"	9045	0.38	9245	0.13	9445	0.38
3"	1/4"	9046	0.51	9246	0.17	9446	0.45
3.25"	1/8"	9047	0.29	9247	0.10	9447	0.30
3.25"	3/16"	9048	0.44	9248	0.15	9448	0.45
3.25"	1/4"	9049	0.59	9249	0.20	9449	0.59
3.50" (3" Pipe)	1/8"	9050	0.34	9250	0.12	9450	0.34
3.50" (3" Pipe)	3/16"	9051	0.51	9251	0.18	9451	0.52
3.50" (3" Pipe)	1/4"	9052	0.68	9252	0.24	9452	0.69
4" (3 1/2" Pipe)	1/8"	9053	0.45	9253	0.15	9453	0.46
4" (3 1/2" Pipe)	3/16"	9054	0.67	9254	0.23	9454	0.68
4" (3 1/2" Pipe)	1/4"	9055	0.89	9255	0.31	9455	0.91
4.25"	3/16"	9056	0.75	9256	0.26	9456	0.76
4.25"	1/4"	9057	1.01	9257	0.35	9457	1.02
4.50" (4" Pipe)	1/8"	9058	0.56	9258	0.19	9458	0.57
4.50" (4" Pipe)	3/16"	9059	0.85	9259	0.29	9459	0.85
4.50" (4" Pipe)	1/4"	9060	1.13	9260	0.39	9460	1.14
5"	1/8"	9061	0.70	9261	0.24	9461	0.70
5"	3/16"	9062	1.04	9262	0.36	9462	1.05
5"	1/4"	9063	1.39	9263	0.48	9463	1.41
6"	1/8"	9064	1.00	9264	0.35	9464	1.01
6"	3/16"	9065	1.50	9265	0.52	9465	1.52
6"	1/4"	9066	2.00	9266	0.69	9466	2.02
6.625" (6" Pipe)	1/8"	9068	1.22	9268	0.42	9468	1.23
6.625" (6" Pipe)	3/16"	9069	1.83	9269	0.63	9469	1.85
6.625" (6" Pipe)	1/4"	9070	2.44	9270	0.84	9470	2.47
7"	1/8"	9071	1.36	9271	0.47	9471	1.38
7"	3/16"	9072	2.05	9272	0.71	9472	2.07
7"	1/4"	9073	2.73	9273	0.94	9473	2.76
8"	1/8"	9077	1.78	9277	0.62	9477	1.80
8"	3/16"	9078	2.67	9278	0.92	9478	2.70
8"	1/4"	9079	3.56	9279	1.23	9479	3.60
9"	1/4"	9082	4.51	9282	1.56	9482	4.56
10"	1/4"	9085	5.57	9285	1.93	9485	5.62



# HEMISPHERES & SPHERES

## HEMISPHERES

Hemispheres are available in steel, stainless steel, and aluminum and are supplied with a mill finish. These are used for a variety of ornamental applications. For additional sizes, materials, and finishes please call for a quote.



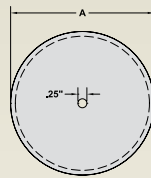
*WALL THICKNESS			
OUTSIDE DIAMETER	STEEL	ALUMINUM	STAINLESS
8", 10", & 12"	11 Gage	.125"	12 Gage

A = Outside Diameter	H = Height	3003 Alloy		304 Alloy			
		STEEL	ALUMINUM	STEEL	ALUMINUM		
Part No.	Wt. Ea.	Part No.	Wt. Ea.	Part No.	Wt. Ea.		
1 1/2"	3/4"	H150	0.13	H150-AL	0.04	H150-SS	0.10
2"	1"	H200	0.20	H200-AL	0.07	H200-SS	0.21
2 1/2"	1 1/4"	H250	0.32	H250-AL	0.11	H250-SS	0.33
3"	1 1/2"	H300	0.48	H300-AL	0.15	H300-SS	0.49
3 1/2"	1 3/4"	H350	0.63	H350-AL	0.22	H350-SS	0.65
4"	2"	H400	0.80	H400-AL	0.35	H400-SS	1.08
5"	2 1/2"	H500	1.35	H500-AL	0.47	H500-SS	1.44
6"	3"	H600	1.60	H600-AL	0.55	H600-SS	1.65
8"*	4"	H800	3.50	H800-AL	1.2	H800-SS	3.7
10"*	5"	H1000	5.00	H1000-AL	1.8	H1000-SS	5.4
12"*	6"	H1200	7.00	H1200-AL	2.8	H1200-SS	7.3

\*See Wall Thickness chart at top of page for 8", 10" and 12" hemispheres.

## SPHERES

Spheres are available in steel, stainless steel, and aluminum and are supplied with a mill finish. These hollow spheres are made by welding two hemispheres together and then the weld seam is ground flush. They also come with a 1/4" hole on one end which is required for production. 8", 10", and 12" spheres are spun and have a 1/4" thru-hole. Great for a variety of ornamental applications. For additional sizes, materials, and finishes please call for a quote.



A = Outside Diameter	3003 Alloy		304 Alloy			
	STEEL	ALUMINUM	STEEL	ALUMINUM		
Part No.	Wt. Ea.	Part No.	Wt. Ea.	Part No.	Wt. Ea.	
1 1/2"	S150	0.28	S150-AL	0.08	S150-SS	0.22
2"	S200	0.40	S200-AL	0.15	S200-SS	0.42
2 1/2"	S250	0.65	S250-AL	0.23	S250-SS	0.68
3"	S300	0.95	S300-AL	0.34	S300-SS	1.00
3 1/2"	S350	1.30	S350-AL	0.47	S350-SS	1.36
4"	S400	2.15	S400-AL	0.76	S400-SS	2.26
5"	S500	2.80	S500-AL	0.99	S500-SS	2.94
6"	S600	3.20	S600-AL	1.44	S600-SS	4.10
8"*	S800	6.90	S800-AL	2.50	S800-SS	7.20
10"*	S1000	10.0	S1000-AL	3.60	S1000-SS	10.60
12"*	S1200	14.5	S1200-AL	5.50	S1200-SS	17.00

\*See Wall Thickness chart at top of page for 8", 10" and 12" spheres.

# PIPE & TUBE CAPS



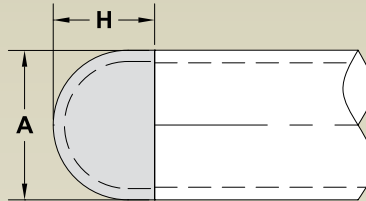
Our caps come in steel, stainless steel, and aluminum. All caps are supplied with a mill finish. Stock products are available for same-day shipping if ordered before 2pm CST.

For pricing on special finishes, please call to request a quote. Quantity Discounts available and special discounts available for Sharpe Thinkers members.

## DOMED WELD-ON CAPS

Our domed weld-on caps are available in steel, stainless steel, and aluminum and are made out of 10 gage material, except as noted with asterisk. These caps are supplied with a mill finish. For additional sizes, materials, and finishes please call for a quote.

WALL THICKNESS		
STEEL	ALUMINUM	STAINLESS
10 Gage	.132"	11 Gage



A= Pipe or Tube Diameter	H= Height	STEEL		3003 Alloy ALUMINUM		304 Alloy STAINLESS	
		Part No.	Wt. Ea.	Part No.	Wt. Ea.	Part No.	Wt. Ea.
1"	5/8"	9100	0.05	9800	0.02	9900	0.50
1.050" (3/4" Pipe)	9/16"	9101	0.05	9801	0.02	9901	0.05
1.25"	7/8"	9102	0.11	9802	0.04	9902	0.11
1.315" (1" Pipe)	1"	9103	0.13	9803	0.05	9903	0.13
1.50"	1 1/16"	9104	0.15	9804	0.05	9904	0.15
1.66" (1 1/4" Pipe)	7/8"	AK211	0.14	AKA211	0.05		
1.66" (1 1/4" Pipe)	1 1/8"	9105	0.19	9805	0.07	9905	0.19
1.90" (1 1/2" Pipe)	7/8"	AK212	0.20	AKA212	0.07		
1.90" (1 1/2" Pipe)	1 1/8"	9106	0.23	9806	0.08	9906	0.23
2"	1 1/4"	9107	0.26	9807	0.09	9907	0.27
2.375" (2" Pipe)	1 3/8"	9108	0.30	9808	0.12	9908	0.31
2.50"	1 5/16"	9109	0.31	9809	0.13	9909	0.31
2.875" (2 1/2" Pipe)	1 1/4"	9110	0.46	9810	0.16	9910	0.47
3"	1 7/16"	9111	0.46	9811	0.17	9911	0.47
3.50" (3" Pipe)	1 1/4"	9112	0.54	9812	0.19	9912	0.55
4" (3 1/2" Pipe)	1 1/2"	9113	0.73	9813	0.25	9913	0.74
4.50" (4" Pipe)	1 5/8"	9114	0.90	9814	0.31	9914	0.92
5.563" (5" Pipe)	3"	9116*	4.60				
6.625" (6" Pipe)	3 1/2"	9117*	6.90				
8.625" (8" Pipe)	4"	9119*	11.8				
10.75" (10" Pipe)	5"	9121*	20.8				

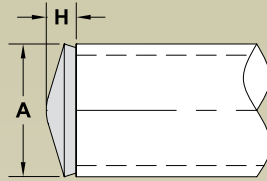
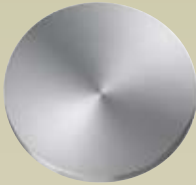
\*These are forged caps with a Schedule 40 thickness. Covered with a rust protective green paint.



# PIPE & TUBE CAPS

## DISHED DISK WELD-ON CAPS

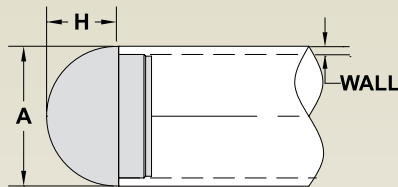
Dished disk weld-on caps are available in steel, stainless steel, and aluminum and are made out of 3/16" thick material. These caps are supplied with a mill finish. For additional sizes, materials, and finishes please call for a quote.



A = Pipe or Tube Diameter	H = Height	STEEL		3003 Alloy ALUMINUM		304 Alloy STAINLESS	
		Part No.	Wt. Ea.	Part No.	Wt. Ea.	Part No.	Wt. Ea.
1.315" (1" Pipe)	.375"	DD132	0.07	DD132-AL	0.03	DD132-SS	0.07
1.50"	.375"	DD150	0.09	DD150-AL	0.03	DD150-SS	0.09
1.66" (1 1/4" Pipe)	.375"	DD166	0.11	DD166-AL	0.04	DD166-SS	0.11
1.90" (1 1/2" Pipe)	.375"	DD190	0.15	DD190-AL	0.05	DD190-SS	0.15
2.00"	.375"	DD200	0.17	DD200-AL	0.06	DD200-SS	0.17
2.375" (2" Pipe)	.375"	DD238	0.24	DD238-AL	0.08	DD238-SS	0.24

## TYPE B-BULLET DRIVE-ON CAPS

The Type B-bullet drive-on cap is a one piece construction except for the 1" pipe size. These caps are available in steel and aluminum and are supplied with a mill finish. For additional sizes, materials, and finishes please call for a quote.



A = Pipe or Tube Diameter	Fits Wall Thickness	H = Height	STEEL		5052 Alloy ALUMINUM	
			Part No.	Wt. Ea.	Part No.	Wt. Ea.
1.315" (1" Pipe)	.133" (Sch 40)	1"	DOC132B	.20	DOC132B-AL	.07
1.50"	.120" (11 Gage)	1"	DOC150B	.21	DOC150B-AL	.07
1.66" (1 1/4" Pipe)	.109" (Sch 10)	1"	DOC166B10	.25	DOC166B-AL	.08
1.66" (1 1/4" Pipe)	.140" (Sch 40)	1"	DOC166B	.25		
1.90" (1 1/2" Pipe)	.109" (Sch 10)	7/8"	DOC190B10	.33	DOC190B-AL	.10
1.90" (1 1/2" Pipe)	.145" (Sch 40)	7/8"	DOC190B	.33		

### QUANTITY DISCOUNTS AVAILABLE

1-99 Total Pieces List Price 100-499 Total Pieces Less 10%  
 500-999 Total Pieces Less 15% 1000 + Pieces Less 20%

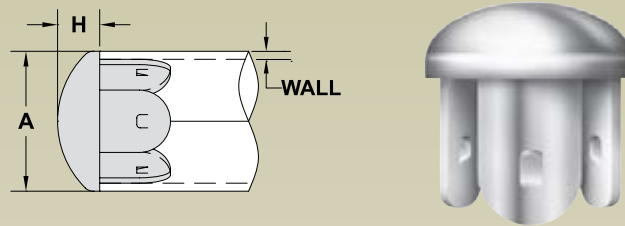
*Quantity Discounts Not Available on Disks.  
 See Page 54 on How You Can Save an Additional 10% Discount by Becoming a "Sharpe Thinker"!*

# PIPE & TUBE CAPS



## TYPE D-DISHED DRIVE-ON CAPS

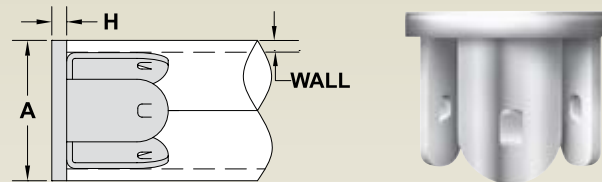
Type D-dished drive-on caps are available in steel, stainless steel, and aluminum. Stainless steel and aluminum Type D caps are supplied with a #4 satin finish. For additional sizes, materials, and finishes please call for a quote.



A=Pipe or Tube Diameter	Fits Wall Thickness	H=Height	3003 Alloy		304 Alloy			
			STEEL	ALUMINUM	STEEL	ALUMINUM		
			Part No.	Wt. Ea.	Part No.	Wt. Ea.	Part No.	Wt. Ea.
1.50"	.065" (16 Gage)	1/2"	DOC150D16	.09	DOC150D-AL	.03	DOC150D16-SS	.09
1.50"	.120" (11 Gage)	1/2"	DOC150D	.09	DOC150D-AL	.03	DOC150D-SS	.09
1.66" (1 1/4" Pipe)	.140" (Sch 40)	1/2"	DOC166D	.10	DOC166D-AL	.03	DOC166D-SS	.10
1.90" (1 1/2" Pipe)	.145" (Sch 40)	1/2"	DOC190D	.11	DOC190D-AL	.04	DOC190D-SS	.11
2"	.120" (11 Gage)	1/2"	DOC200D	.11	DOC200D-AL	.04	DOC200D-SS	.11

## TYPE F-FLAT DRIVE-ON CAPS

Type F-flat drive-on caps are available in steel, stainless steel, and aluminum and are supplied with a mill finish. For additional sizes, materials, and finishes please call for a quote.



A=Pipe or Tube Diameter	Fits Wall Thickness	H=Height	3003 Alloy		304 Alloy			
			STEEL	ALUMINUM	STEEL	ALUMINUM		
			Part No.	Wt. Ea.	Part No.	Wt. Ea.	Part No.	Wt. Ea.
1.50"	.065" (16 Gage)	3/16"	DOD15016	.15	DOD150-AL	.05	DOD15016-SS	.15
1.50"	.120" (11 Gage)	3/16"	DOD150	.15	DOD150-AL	.05	DOD150-SS	.15
1.66" (1 1/4" Pipe)	.140" (Sch 40)	3/16"	DOD166	.17	DOD166-AL	.06	DOD166-SS	.17
1.90" (1 1/2" Pipe)	.145" (Sch 40)	3/16"	DOD190	.20	DOD190-AL	.07	DOD190-SS	.20
2"	.120" (11 Gage)	3/16"	DOD200	.23	DOD200-AL	.08	DOD200-SS	.23

**THINK SHARPE AND SAVE!  
BECOME A "SHARPE THINKER" MEMBER!**

Join the Sharpe Thinkers Club and you will receive an **ADDITIONAL 10% Discount** on all stock orders, regardless of quantity.

See Page 54 on how you can save an **ADDITIONAL 10% Discount** by Becoming a "Sharpe Thinker"!



# FORMED 3/16" WALL BRACKETS

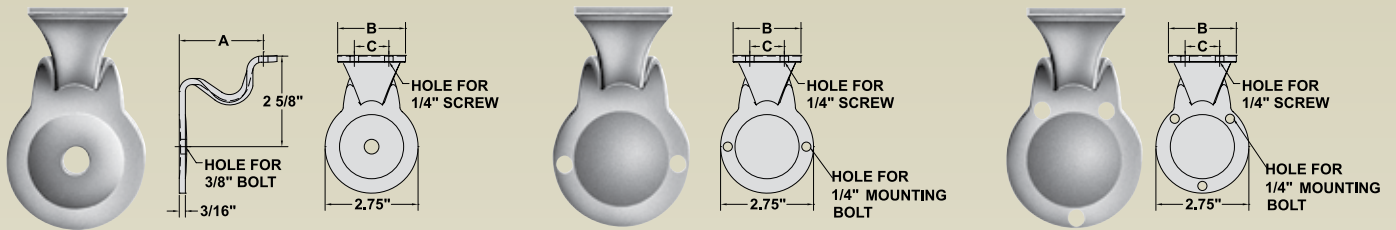
Our stock wall brackets are either stamped, cast, or extruded and are available in steel, stainless steel, or aluminum. Stock products are available for same-day shipping if ordered before 2pm CST.

For pricing on fabricated brackets, custom bar bends, and special finishes, please call to request a quote. Quantity Discounts available and special discounts available for Sharpe Thinkers members.



## FORMED 3/16" WALL BRACKETS

These formed 3/16" wall brackets are available with 1 hole, 2 hole, and 3 hole mounting options. A rail can be welded to the bracket or mounted to the bracket using the two 1/4" holes in the saddle. Stainless steel brackets are supplied with a #4 satin finish.



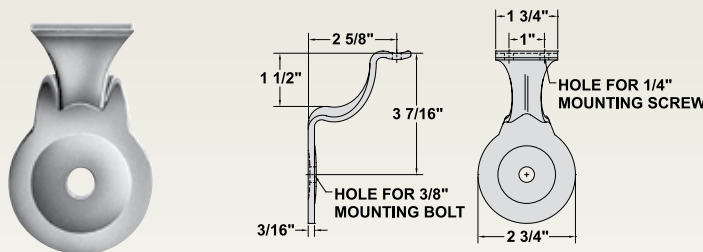
304 Alloy

Wall Mount Holes	A=C.L.	STEEL		STAINLESS	
		Part No.	Wt. Ea.	Part No.	Wt. Ea.
1	2.25"	7210	0.54	7210-SS4	0.55
1	2.50"	7200	0.54	7200-SS4	0.55
2	2.50"	7202	0.54	7202-SS4	0.55
3	2.50"	7203	0.54	7203-SS4	0.55
1	3"	7300	0.56	7300-SS4	0.57
2	3"	7302	0.56	7302-SS4	0.57
3	3"	7303	0.56	7303-SS4	0.57

	B=Saddle Length	C=Hole Centers
Steel	2"	1"
S/S 304	2.125"	1.375"

## FORMED 3/16" WALL BRACKETS DIMENSIONED FOR ADAAG

This 3/16" wall bracket is designed to provide 1-1/2" horizontal and vertical clearance to meet requirements and recommendations of the Americans with Disabilities Act Accessibility Guidelines (ADAAG). Stainless brackets are supplied with a #4 satin finish.



Wall Mount Holes	A=C.L.	STEEL		STAINLESS	
		Part No.	Wt. Ea.	Part No.	Wt. Ea.
1	2.625"	7250	0.53	7250-SS4	0.58

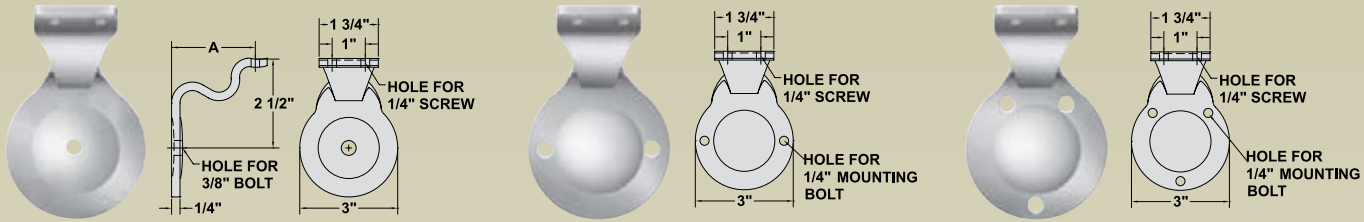


# FORMED 1/4" WALL BRACKETS



## FORMED 1/4" BRACKETS

These formed 1/4" wall brackets are available with 1 hole, 2 hole, or 3 mounting options and are supplied with either a round or flat saddle. A rail can be welded to the bracket or mounted to the bracket using the two 1/4" holes in the saddle. Bracket is supplied with a mill finish. Aluminum brackets are also available with a #4 satin finish upon request, please call for pricing.



5052 Alloy

Wall Mount Holes	A = C.L.	STEEL				ALUMINUM			
		Round Saddle		Flat Saddle		Round Saddle		Flat Saddle	
		Part No.	Wt. Ea.	Part No.	Wt. Ea.	Part No.	Wt. Ea.	Part No.	Wt. Ea.
1	2.25"	7325R.25	0.75	7325F.25	0.75	7325R.25-AL	0.25	7325F.25-AL	0.23
1	2.50"	7325R	0.75	7325F	0.75	7325R-AL	0.25	7325F-AL	0.5
2	2.50"	7322R	0.75	7322F	0.75	7322R-AL	0.25	7322F-AL	0.25
3	2.50"	7323R	0.75	7323F	0.75	7323R-AL	0.25	7323F-AL	0.25
1	3"	7330R	0.75	7330F	0.75	7330R-AL	0.25	7330F-AL	0.25
2	3"	7332R	0.75	7332F	0.75	7332R-AL	0.25	7332F-AL	0.25
3	3"	7333R	0.75	7333F	0.75	7333R-AL	0.25	7333F-AL	0.25

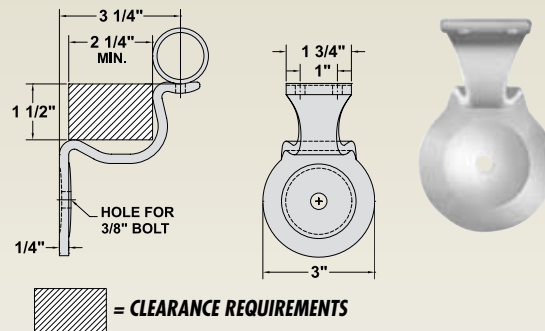
## FORMED 1/4" BRACKETS DIMENSIONED FOR NFPA 5000

These brackets are designed to provide 2-1/4" minimum clearance between the handrail and the wall, which is required by the NFPA 5000 code.

BRACKET SHOWN WITH 1-1/2" O.D. TUBE

Mount Holes	A = C.L.	5052 Alloy STEEL		304 Alloy ALUMINUM		304 Alloy STAINLESS	
		Part No.	Wt. Ea.	Part No.	Wt. Ea.	Part No.	Wt. Ea.
1	3.25"	7335R	0.75	7335R-AL	0.40	7335R-SS4*	1.25

\*Stainless bracket is 3/16" thick.

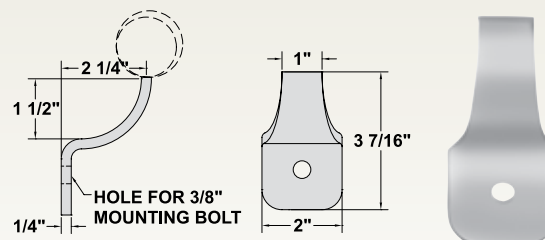


## WELD-ON BRACKETS

These weld-on brackets are designed to provide 1-1/2" minimum clearance between handrail and bracket arm which is required by many codes. It is for welded applications and will work with round and flat rails. Stainless brackets are provided with #4 satin finish.

Mount Holes	A = C.L.	5052 Alloy STEEL		304 Alloy ALUMINUM		304 Alloy STAINLESS	
		Part No.	Wt. Ea.	Part No.	Wt. Ea.	Part No.	Wt. Ea.
1	2.25"	7410	0.55	7410-AL	0.20	7410-SS4*	0.42

\*Stainless bracket is 3/16" thick.

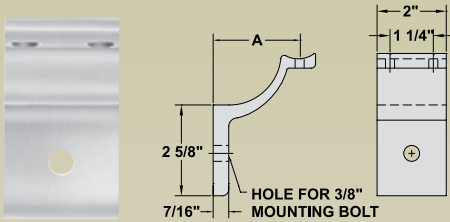




# EXTRUDED & CAST WALL BRACKETS

## EXTRUDED ALUMINUM BRACKETS

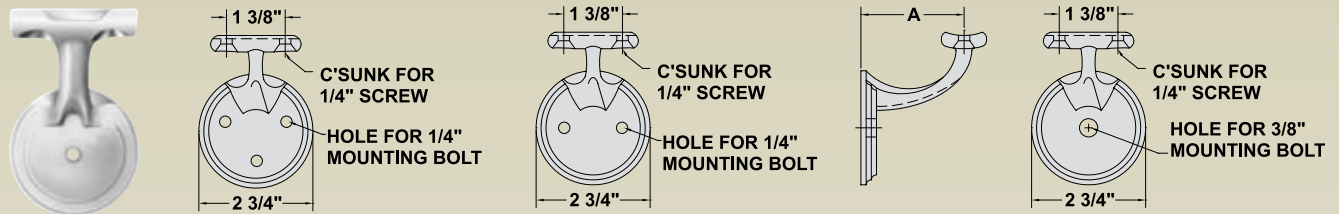
A rail can be welded to the bracket or mounted to the extruded bracket by using the two 1/4" holes in the saddle. This bracket is supplied with a mill finish. Material is stocked in 20' lengths, call to request a quote for pricing for straight footage.



A=C.L.	6063 Alloy ALUMINUM Round Saddle		6063 Alloy ALUMINUM Flat Saddle	
	Part No.	Wt. Ea.	Part No.	Wt. Ea.
2.5"	EAB250R	.39	EAB250F	.38
3"	EAB300R	.43	EAB300F	.41

## TYPE L-CAST WALL BRACKETS

These brackets can be welded to the rail or mounted to the rail using the two 1/4" holes in the saddle. Aluminum and stainless brackets are supplied with a #4 satin finish. For other finishes, call for pricing and availability.

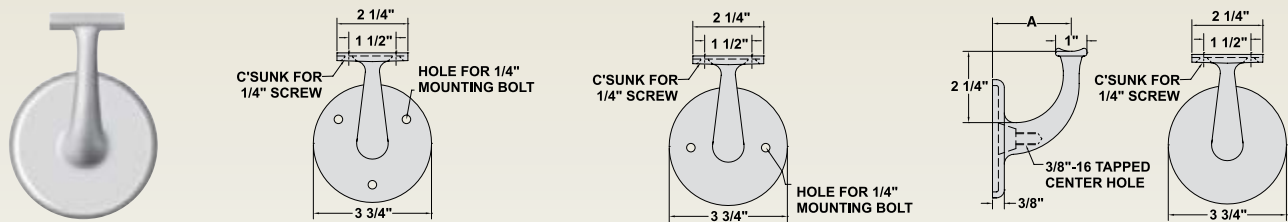


Wall Mount Holes	A=C.L.	MALLEABLE Round Saddle		MALLEABLE Flat Saddle		ALUMINUM Round Saddle		ALUMINUM Flat Saddle		STAINLESS STEEL Universal Saddle	
		Part No.	Wt. Ea.	Part No.	Wt. Ea.	Part No.	Wt. Ea.	Part No.	Wt. Ea.	Part No.	Wt. Ea.
1	2.50"	CMB250R	0.69	CMB250F	0.69	CAB250R	0.26	CAB250F	0.26	CSB250U	0.86
2	2.50"	CMB252R	0.69	CMB252F	0.69	CAB252R	0.26	CAB252F	0.26	CSB252U	0.86
3	2.50"	CMB253R	0.69	CMB253F	0.69	CAB253R	0.26	CAB253F	0.26	CSB253U	0.86
1	3"	CMB300R*	0.99	CMB300F*	0.99	CAB300R*	0.30	CAB300F*	0.30	CSB300U	0.89
2	3"	CMB302R*	0.99	CMB302F*	0.99	CAB302R*	0.30	CAB302F*	0.30	CSB302U	0.89
3	3"	CMB303R*	0.99	CMB303F*	0.99	CAB303R*	0.30	CAB303F*	0.30	CSB303U	0.89

\*Denotes brackets with 3-1/4" base size.

## TYPE H-HEAVY CAST BRACKETS

Heavy cast brackets are available in malleable iron, aluminum, and stainless steel. These brackets have a universal saddle suitable for use with round or square rails. Aluminum and stainless brackets are supplied with a satin finish. For other finishes, call for pricing and availability.



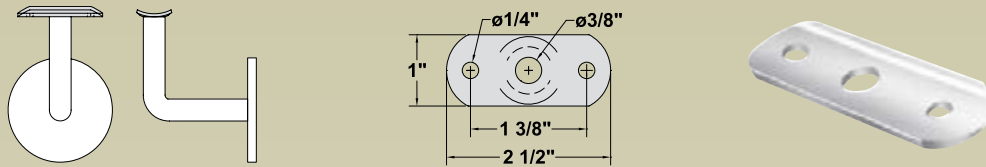
Wall Mount Holes	A=C.L.	MALLEABLE		ALUMINUM		STAINLESS	
		Part No.	Wt. Ea.	Part No.	Wt. Ea.	Part No.	Wt. Ea.
1 Concealed	2.50"	HCMB251U	1.27	H CAB251U	0.40	HCSB251U	1.25
2	2.50"	HCMB252U	1.27	H CAB252U	0.40	HCSB252U	1.25
3	2.50"	HCMB253U	1.27	H CAB253U	0.40	HCSB253U	1.25
1 Concealed	3"	HCMB301U	1.28	H CAB301U	0.43	HCSB301U	1.28
2	3"	HCMB302U	1.28	H CAB302U	0.43	HCSB302U	1.28
3	3"	HCMB303U	1.28	H CAB303U	0.43	HCSB303U	1.28

# WALL BRACKET COMPONENTS



## BRACKET SADDLES

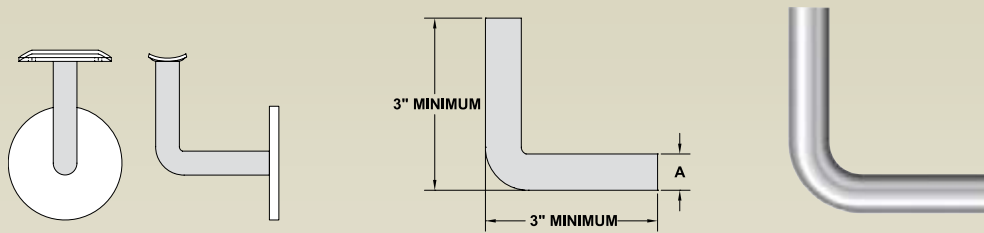
Bracket saddles are supplied with a mill finish. These bracket saddles fit 1-1/2" O.D. up to 2" O.D.



STEEL		ALUMINUM		STAINLESS	
Part No.	Wt. Ea.	Part No.	Wt. Ea.	Part No.	Wt. Ea.
BS	0.06	BS-AL	0.02	BS-SS	0.06

## BAR BENDS

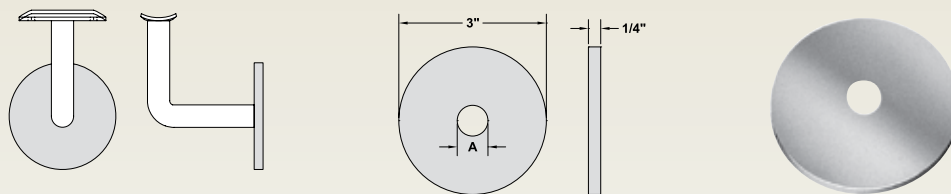
Bar bends are available in 1/2", 5/8", and 3/4" diameter round bar. The ends on bar bends are not trimmed and have legs that are at least 3" long. Call for pricing on custom bent bar bends.



A = Bar Diameter	STEEL		ALUMINUM		STAINLESS	
	Part No.	Wt. Ea.	Part No.	Wt. Ea.	Part No.	Wt. Ea.
1/2"	BB50	0.27	BB50-AL	0.09	BB50-SS	0.28
5/8"	BB63	0.42	BB63-AL	0.15	BB63-SS	0.43
3/4"	BB75	0.59	BB75-AL	0.20	BB75-SS	0.60

## BRACKET BASES-3" X 1/4" THICK

Bracket bases are 1/4" thick and 3" diameter. Available with 1/2", 5/8", or 3/4" center holes.



A = Center Hole Dia.	STEEL		ALUMINUM		STAINLESS	
	Part No.	Wt. Ea.	Part No.	Wt. Ea.	Part No.	Wt. Ea.
1/2"	9046-50	0.51	9246-50	0.17	9446-50	0.45
5/8"	9046-63	0.51	9246-63	0.17	9446-63	0.45
3/4"	9046-75	0.51	9246-75	0.17	9446-75	0.45



## RINGS

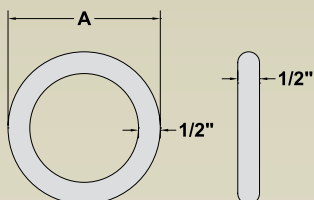
These rings can be used in fences, railings, and other various ornamental and architectural applications. Stock products are available for same-day shipping if ordered before 2pm CST.

For pricing on special finishes, call for a quote. Quantity discounts available and special discounts available for Sharpe Thinkers members.



### ROUND BAR RINGS

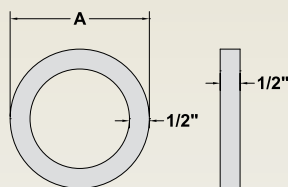
Round bar rings are available in steel, stainless steel, and aluminum and are supplied with a mill finish. All round bar rings are made from 1/2" diameter solid round bar and come in diameters from 2-1/2" to 6" O.D. For additional sizes, materials, and finishes please call for a quote.



A=Outside Diameter	Round Bar Diameter	STEEL		6063 Alloy ALUMINUM		304 Alloy STAINLESS	
		Part No.	Wt. Ea.	Part No.	Wt. Ea.	Part No.	Wt. Ea.
2.50"	1/2"	RDR250	0.35	RDR250-AL	0.13	RDR250-SS	0.35
3.00"	1/2"	RDR300	0.44	RDR300-AL	0.16	RDR300-SS	0.44
3.50"	1/2"	RDR350	0.52	RDR350-AL	0.19	RDR350-SS	0.52
4.00"	1/2"	RDR400	0.61	RDR400-AL	0.22	RDR400-SS	0.61
5.00"	1/2"	RDR500	0.79	RDR500-AL	0.29	RDR500-SS	0.79
6.00"	1/2"	RDR600	0.96	RDR600-AL	0.35	RDR600-SS	0.96

### SQUARE BAR RINGS

Square bar rings are available in steel and aluminum and supplied with a mill finish. All square bar rings are made from 1/2" square bar and come in 2-1/2" to 6" O.D. For additional sizes, materials, and finishes please call for a quote.



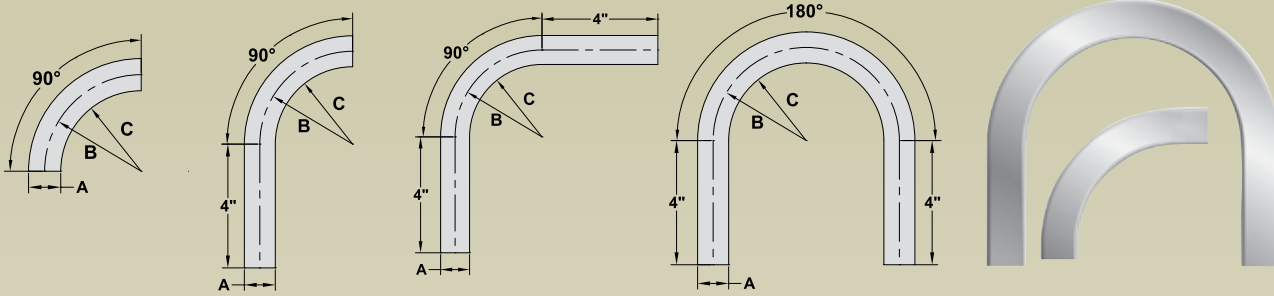
A=Outside Diameter	Square Bar Size	STEEL		6063 Alloy ALUMINUM	
		Part No.	Wt. Ea.	Part No.	Wt. Ea.
2.50"	1/2"	SQR250	0.45	SQR250-AL	0.16
3.00"	1/2"	SQR300	0.56	SQR300-AL	0.20
3.50"	1/2"	SQR350	0.67	SQR350-AL	0.24
4.00"	1/2"	SQR400	0.78	SQR400-AL	0.28
5.00"	1/2"	SQR500	1.00	SQR500-AL	0.36
6.00"	1/2"	SQR600	1.22	SQR600-AL	0.44

# SQUARE FITTINGS



## SQUARE TUBE BENDS

Square tube bends are only stocked in steel 11 gage (.120 wall) material. 35°, 45°, and 55° elbows are also available. For additional sizes and materials please call for a quote.



A=Square Tube Size	Description	B= C.L.R.	C= I.R.	STEEL	
				Part No.	Wt. Ea.
1"	90° NO TANGENTS	3"	2.50"	SQ1005	0.57
1"	90° W/ (1) 4" TANGENT	3"	2.50"	SQ1006	1.04
1"	90° W/ (2) 4" TANGENTS	3"	2.50"	SQ1007	1.52
1"	180° W/ (2) 4" TANGENTS	3"	2.50"	SQ1008	2.09
1.25"	90° NO TANGENTS	3"	2.375"	SQ1255	0.71
1.25"	90° W/ (1) 4" TANGENT	3"	2.375"	SQ1256	1.31
1.25"	90° W/ (2) 4" TANGENTS	3"	2.375"	SQ1257	1.91
1.25"	180° W/ (2) 4" TANGENTS	3"	2.375"	SQ1258	2.62
1.5"	90° NO TANGENTS	4.50"	3.75"	SQ1505	1.31
1.5"	90° W/ (1) 4" TANGENT	4.50"	3.75"	SQ1506	2.04
1.5"	90° W/ (2) 4" TANGENTS	4.50"	3.75"	SQ1507	2.78
1.5"	180° W/ (2) 4" TANGENTS	4.50"	3.75"	SQ1508	4.08
2"	90° NO TANGENTS	8"	7"	SQ2005	3.09
2"	90° W/ (1) 4" TANGENT	8"	7"	SQ2006	4.07
2"	90° W/ (2) 4" TANGENTS	8"	7"	SQ2007	5.05
2"	180° W/ (2) 4" TANGENTS	8"	7"	SQ2008	8.13

### QUANTITY DISCOUNTS AVAILABLE

1-99 Total Pieces	List Price	100-499 Total Pieces	Less 10%
500-999 Total Pieces	Less 15%	1000 + Pieces	Less 20%

*Quantity Discounts Not Available on Disks.  
See Page 54 on How You Can Save an Additional 10% Discount by Becoming a "Sharpe Thinker"!*

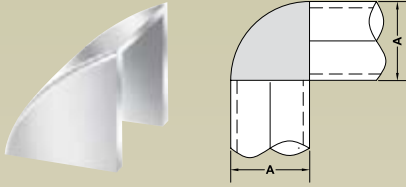
**NEED A CUSTOM BEND MADE?  
NO PROBLEM! SEE OUR CUSTOM BENDING  
SERVICES STARTING ON PAGE 48!**



# SQUARE FITTINGS

## SQUARE CORNERS

Square corners are available in steel, stainless steel, and aluminum and are supplied with a mill finish. Ideal for applications in which sharp corners are not desired. Simplifies fabrication by allowing you to square cut tubing instead of mitering.

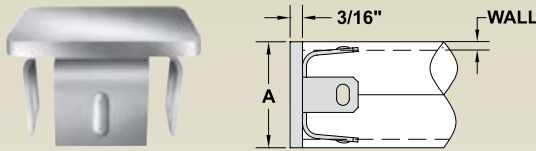


A=Square Tube Size	3003 Alloy		304 Alloy		304 Alloy	
	STEEL		ALUMINUM		STAINLESS	
	Part No.	Wt. Ea.	Part No.	Wt. Ea.	Part No.	Wt. Ea.
1"	SQC100	0.05	SQC100-AL	0.02	SQC100-SS	0.05
1.25"	SQC125	0.09	SQC125-AL	0.03	SQC125-SS	0.09

A=Square Tube Size	3003 Alloy		304 Alloy		304 Alloy	
	STEEL		ALUMINUM		STAINLESS	
	Part No.	Wt. Ea.	Part No.	Wt. Ea.	Part No.	Wt. Ea.
1.50"	SQC150	0.14	SQC150-AL	0.05	SQC150-SS	0.14
2"	SQC200	0.24	SQC200-AL	0.08	SQC200-SS	0.24

## SQUARE DRIVE-ON CAPS

Square drive-on caps are available in steel, and aluminum and are supplied with a mill finish.

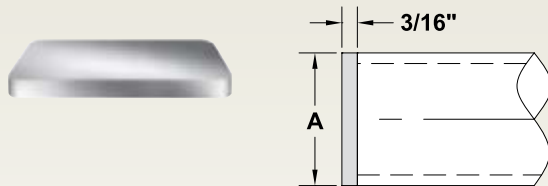


A=Square Tube Size	Wall Thickness	3003 Alloy		3003 Alloy	
		STEEL		ALUMINUM	
		Part No.	Wt. Ea.	Part No.	Wt. Ea.
1" x 1"	11 Gage (.120)	SDOD100	.08	SDOD100-AL	.03
1.25" x 1.25"	11 Gage (.120)	SDOD125	.11	SDOD125-AL	.04

A=Square Tube Size	Wall Thickness	3003 Alloy		3003 Alloy	
		STEEL		ALUMINUM	
		Part No.	Wt. Ea.	Part No.	Wt. Ea.
1.50" x 1.50"	11 Gage (.120)	SDOD150	.14	SDOD150-AL	.05
2" x 2"	11 Gage (.120)	SDOD200	.23	SDOD200-AL	.08

## SQUARE WELD-ON CAPS

Square weld-on caps are available in steel, stainless steel, and aluminum and are supplied with a mill finish.



A=Square Tube Size	3003 Alloy		304 Alloy		304 Alloy	
	STEEL		ALUMINUM		STAINLESS	
	Part No.	Wt. Ea.	Part No.	Wt. Ea.	Part No.	Wt. Ea.
1" x 1"	SWOD100	0.01	SWOD100-AL	0.01	SWOD100-SS	0.01
1.25" x 1.25"	SWOD125	0.08	SWOD125-AL	0.03	SWOD125-SS	0.08

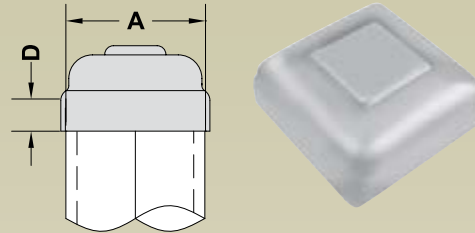
A=Square Tube Size	3003 Alloy		304 Alloy		304 Alloy	
	STEEL		ALUMINUM		STAINLESS	
	Part No.	Wt. Ea.	Part No.	Wt. Ea.	Part No.	Wt. Ea.
1.50" x 1.50"	SWOD150	0.11	SWOD150-AL	0.04	SWOD150-SS	0.11
2" x 2"	SWOD200	0.19	SWOD200-AL	0.07	SWOD200-SS	0.20

# SQUARE FITTINGS



## SQUARE NEWEL POST CAPS

Square newel post caps are available in steel, stainless steel, and aluminum and are supplied with a mill finish. All newel caps are stamped out of 18 gage (.049) material. When using aluminum tubing, corners of tubing may need to be ground to drive on caps over the outside of tube.



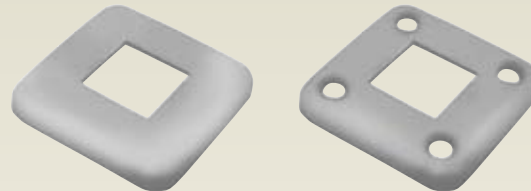
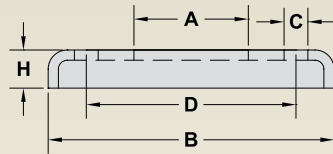
3003 Alloy

304 Alloy

A= Square Tube Size	D= Drive-on Depth	STEEL		ALUMINUM		STAINLESS	
		Part No.	Wt. Ea.	Part No.	Wt. Ea.	Part No.	Wt. Ea.
.75"	1/4"	NC075	0.02	NC075-AL	0.01	NC075-SS	0.02
1"	1/4"	NC100	0.04	NC100-AL	0.02	NC100-SS	0.04
1.25"	5/16"	NC125	0.07	NC125-AL	0.03	NC125-SS	0.07
1.50"	5/16"	NC150	0.09	NC150-AL	0.03	NC150-SS	0.09
2"	3/8"	NC200	0.11	NC200-AL	0.04	NC200-SS	0.11
2.50"	1/2"	NC250	0.20	NC250-AL	0.06	NC250-SS	0.2
3"	1/2"	NC300	0.28	NC300-AL	0.09	NC300-SS	0.29
3.50"	1/2"	NC350	0.36	NC350-AL	0.12	NC350-SS	0.37
4"	5/8"	NC400	0.44	NC400-AL	0.15	NC400-SS	0.45
5"	5/8"	NC500	0.50	NC500-AL	0.17	NC500-SS	0.51

## SQUARE FLANGES

Square flanges are available in steel and aluminum. Aluminum flanges are stamped out of .125" material, and steel square flanges are stamped out of 10 gage material. Flanges for rectangular tubing also available. For additional sizes and other special materials please call for a quote.



3003 Alloy

A=Tube Size	Holes	B=Base	C=Hole Dia.	D=Hole Distance	H=Height	STEEL		ALUMINUM	
						Part No.	Wt. Ea.	Part No.	Wt. Ea.
0.75"	0	3.00" Sq.				SQFF0750	0.48	SQFF0750-AL	0.14
0.75"	4	3.00" Sq.	5/16"	2.0"	3/8"	SQFF0754	0.46	SQFF0754-AL	0.13
1.00"	0	3.00" Sq.				SQFF1000	0.42	SQFF1000-AL	0.16
1.00"	4	3.00" Sq.	5/16"	2.0"	3/8"	SQFF1004	0.41	SQFF1004-AL	0.15
1.25"	0	3.00" Sq.				SQFF1250	0.40	SQFF1250-AL	0.13
1.25"	4	3.00" Sq.	5/16"	2.0"	3/8"	SQFF1254	0.38	SQFF1254-AL	0.13
1.50"	0	3.75" Sq.				SQFF1500	0.58	SQFF1500-AL	0.19
1.50"	4	3.75" Sq.	5/16"	2.75"	3/8"	SQFF1504	0.57	SQFF1504-AL	0.18
1.75"	0	3.75" Sq.				SQFF1750	0.52	SQFF1750-AL	0.18
1.75"	4	3.75" Sq.	5/16"	2.75"	3/8"	SQFF1754	0.50	SQFF1754-AL	0.19
2"	0	3.75" Sq.				SQFF2000	0.60	SQFF2000-AL	0.17
2"	4	3.75" Sq.	5/16"	2.75"	3/8"	SQFF2004	0.58	SQFF2004-AL	0.16



# CUSTOM ORNAMENTAL BENDING & ROLLING

Along with our full line of handrail components, Sharpe Products also offers custom bending and rolling services. By utilizing these services, you can reduce the cutting, welding, and grinding times of your job, which can greatly reduce your projects cost. We have experience in bending steel, stainless steel, aluminum, brass, bronze, copper, and much more!

Sharpe Products has an impressive inventory of over 600 bending dies. By having a wide selection of dies in our inventory we can pass on money saving benefits to you, our customer, by eliminating costly tooling charges for your custom bending project. In times where your radius dimension is critical, our tooling offers you an opportunity in getting the most accurate railing to meet your needs.

The Sharpe Team treats all of our jobs as critical ones, thus making our lead times short. Call today to get your custom quote!



## CUSTOM ORNAMENTAL & ARCHITECTURAL BENDING SERVICES

Our custom bending services allow customers to bend a railing all in one piece, saving time consuming cutting, welding, and grinding times on your project. Bending services are also great for applying ornamental elements to your railing. Our NC and CNC bending machines can handle up to 6" O.D. Below are some examples of how our customers use our custom bending services to save time and money.



## ROLLING CAPABILITIES

Our custom rolling services allow you to acquire large radius bends for your railings. We can roll up to 4-1/2" O.D. and radii from 10 times the outside diameter and larger. Two of Sharpe's CNC bending machines have tube generation capabilities. This means that we can apply bends and rolls to one piece of material without changing machines.



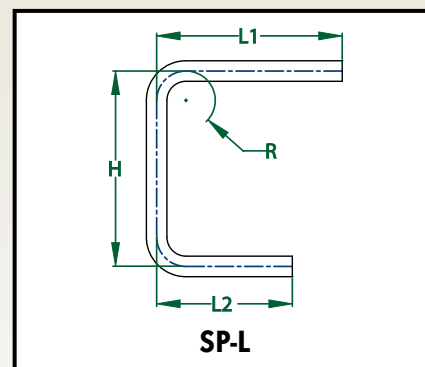
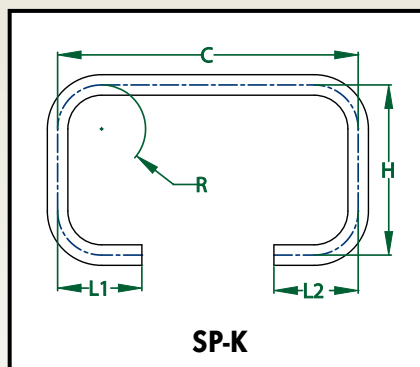
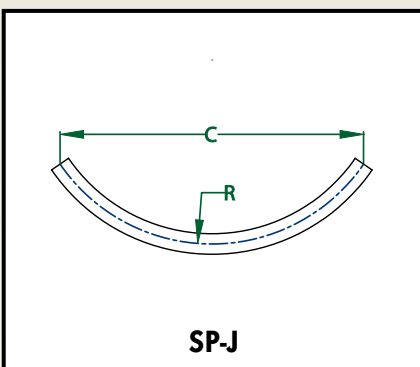
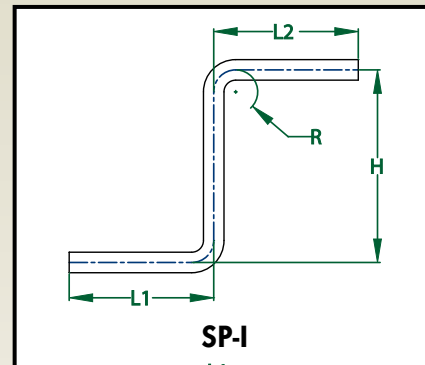
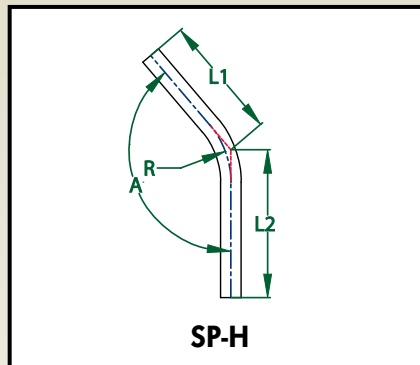
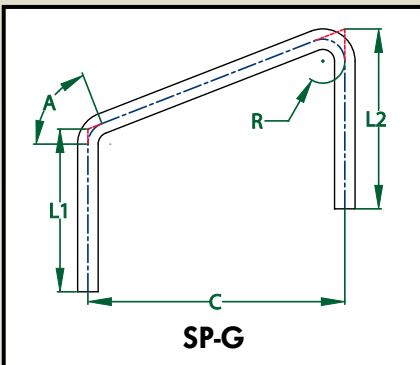
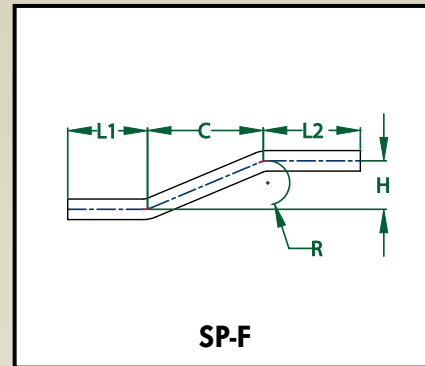
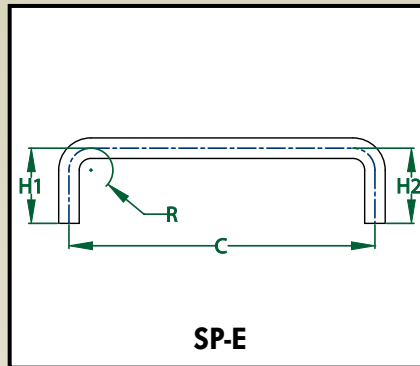
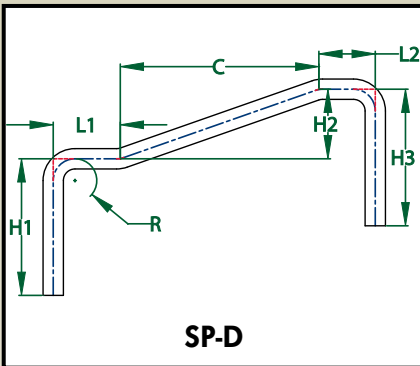
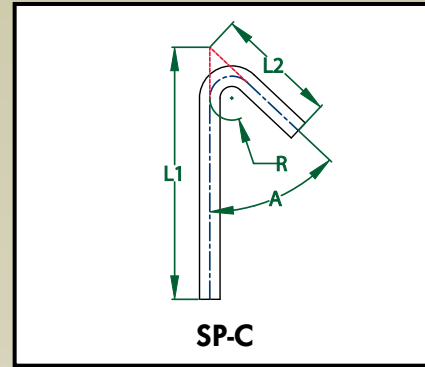
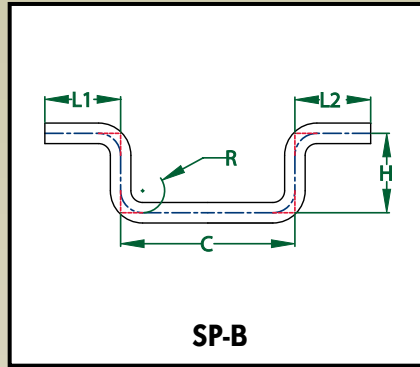
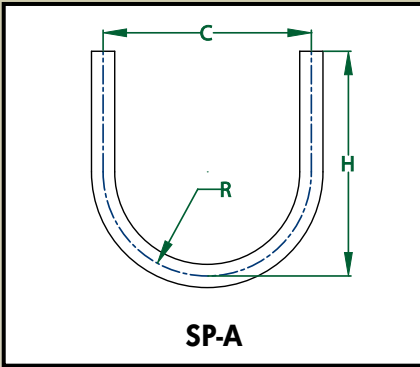


# ARCHITECTURAL CUSTOM BENDS



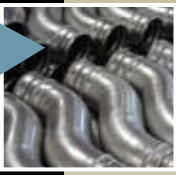
## COMMONLY REQUESTED CUSTOM BENDS

The shapes listed below are of the most requested. You can also send us your own sketch along with the specs of the project. Sharpe Products can supply shapes in many pipe and tube sizes, various materials, finishes, and various radii. For fast pricing on any of these items, please call, fax or e-mail our Estimating Department for a quote.



For fast pricing on any of these items, please call, fax or e-mail our Estimating Department.

1-800-879-4418 • Fax: 262-754-0374 • E-mail: [estimating@sharpeproducts.com](mailto:estimating@sharpeproducts.com)



## OEM CUSTOM BENDING & ROLLING

Unique or repeat, we have the capabilities to meet your pipe and tube bending needs! In addition to custom handrail bending, Sharpe Products also serves many OEMs (Original Equipment Manufacturers) in a variety of industries including the automotive, medical, retail, and furniture.

By using state-of-the-art CNC all-electric tube bending machinery and tube inspection equipment, our team produces and delivers custom bent parts in a cost effective and time efficient manner. Our experienced Sharpe Bending Team is ready to make your custom bent parts in steel, stainless steel, aluminum and more! Prototypes to high volume production runs welcome!

Listed below are just a few of the leading edge tube bending machinery and technologies that our team uses to make high quality and cost effective custom bent pipe and tube products for our customers.

### 1-1/4" O.D. NISSIN 3D BENDER

The Nissin 3D bender uses single die technology that allows flexibility in part design unmatched by traditional forms of bending by creating multi-radii bends without additional tooling and little to no distance between bends. Other advantages of this technology is tube roundness and thickness are maintained as it passes through the die, and the ability to produce angles greater than 180°.

### 1-1/4", 3", 3-1/2", & 5" O.D. CNC ALL-ELECTRIC BENDERS

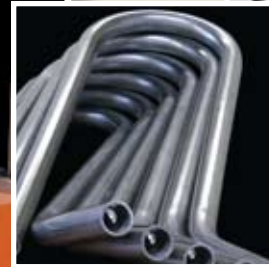
CNC all-electric bending machines have unique capabilities such as high accuracy and repeatability, resulting in high quality parts, reduced set-up times, and reduced scrap. The combination of all our electric benders provides the capability to bend pipe and tube up to 5" O.D. These machines include multi-radius stacking and rolling, and hole punching capabilities.

### 1-1/2" O.D. CNC TWIN HEAD COMPRESSION BENDER

The CNC Twin Head Compression bender can bend up to 1-1/2" O.D. This bender forms two bends simultaneously, and is ideal for high speed manufacturing of symmetrical shapes. Handles, furniture, and frames of many varieties are typical applications for this type of bending.

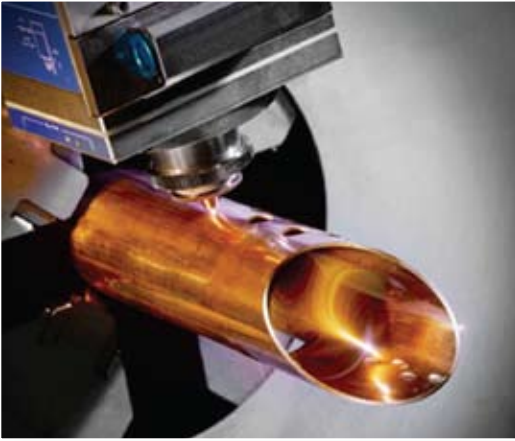
### TUBE INSPECT S

Specifically designed for the tube bending industry, the Tube Inspect S inspects bent parts in seconds and sends needed corrections directly to the bending machine if needed. This results in shortened set-up times and a more accurate set-up of parts.



To learn more about Sharpe's bending services or to see videos of our bending machines, visit our website at [www.sharpeproducts.com/capabilities\\_services.html](http://www.sharpeproducts.com/capabilities_services.html)

# FIBER OPTIC TUBE LASER SERVICES



This state-of-the-art 3,000 watt BLM fiber optic tube laser has many advantages over traditional CO2 tube lasers with its unique cutting capabilities and its increased production speed. With the addition of the fiber optic tube laser to our already lean CNC all-electric bending machines we now take traditionally costly fabrication services and process them in a much more time efficient and cost effective way. Saving you time and money on your custom projects.

## CAPACITY FOR THE FIBER OPTIC TUBE LASER

This tube laser can handle up to 6" O.D. round tube and up to 5" square tube. When considering our fiber optic tube laser services for your custom projects, please note that **material CANNOT exceed 10.2 lbs. a foot.**

## MATERIAL CAPABILITIES

With its unique ability to process highly reflective materials the fiber optic tube laser can not only cut the traditional materials such as steel and stainless steel, it can also cut copper, brass, bronze, and galvanized pipe. Aluminum up to 3/8" thick can also be cut. **Cutting up to 3/8" aluminum does have some limitations due to outside diameter dimensions. Please call for more information on these restrictions.**

## HANDRAIL & ORNAMENTAL APPLICATIONS

Making copes, notches, holes and more has never been so easy! In seconds the fiber optic tube laser can make cut-offs, coped ends, put in holes, and much more. Virtually any geometric designs can be rapidly created and easily cut.

## SQUARE TUBE CUTTING

Make cuts, notches, slots, holes, and more in square tubing up to 5" in a variety of materials.





# TIPS FOR DESIGNING CUSTOM BENDS

To get you started with your custom bending ideas, below are some of our customer's most frequently asked questions put into easy to understand explanations. We hope this helps you when working on your next custom bending project.

The diagrams on page 49 show examples of some of the most requested custom bent shapes. If you do not see what fits your needs, please call or e-mail us and inquire about the shape you need for your project. The Sharpe Team is here to help you make your project a success!



## TIP #1

**Choosing a C.L.R. (Center Line Radius):** With Sharpe's large inventory of tool bend dies, it is likely we already have a die to meet your bending needs. In cases where there is flexibility in the center line radius, choosing an existing die from the tooling list on page 53 will save on tooling costs and lead times. A general rule to remember is center line radii tighter than 1-1/2 times the tube diameter will increase labor costs.

## TIP #2

**Straight Length Between Bends:** Typical bending processes with parts that have more than one bend, require a straight length between the bends. Standard tooling can accommodate parts that allow a distance between bends of at least 3 times the tube diameter. Parts from 1-1/4" O.D. and smaller bent on a radius that is 3 times diameter are the exception to this rule.

## TIP #3

**Specifying Tolerances:** When designing a part there can be a tendency to be safe with dimensional tolerances when specifying your needs, but for cost efficiency it is best to keep them only as tight as necessary. Our standard tolerances are (+/-) 1/16" on linear dimensions, and (+/-) 1/2° on angles. Specifying tighter tolerances will make the project more labor intensive and possibly increase your costs.

## TIP #4

**Wall Thickness:** Keep wall thickness in mind when designing your parts. Many times it is thought that the thinner the wall thickness the less cost there will be in making the part. This is not always the case. Actually, thinner wall tubing may require MORE labor to bend because in some instances it may not be able to hold the roundness of the tube as it is bent and you can end up with results such as ripples or wrinkling within the bend of the tube. In some cases the additional labor costs outweigh the material savings, therefore it may or may not be beneficial to use a thinner wall material.

## TIP #5

**Submitting Drawings:** When submitting a drawing of your part, some important information that we need is the type of material (steel, stainless steel, aluminum, etc.) diameter, wall thickness, and the preferred C.L.R. (Center Line Radius). Sharpe Products can accept the following formats for drawings: .PDF, .STP, .IGS, .DWG, and .DFX. If you do not have a traditional drawing and can only supply us with a sketch, you can either fax (262-754-0374) or e-mail us (estimating@sharpeproducts.com) them. If you have any questions or problems sending us your file, please feel free to contact us at 800-879-4418 or e-mail us at estimating@sharpeproducts.com.

## NOTES

---



---



---



---



---



---

# TOOLING LIST



## TOOLING LIST FOR SPECIALTY BENDING

Need pricing on custom bending or have an inquiry about the tooling list below? Call us at **800-879-4418** or e-mail us at [estimating@sharpeproducts.com](mailto:estimating@sharpeproducts.com). Most custom bending jobs have lead times of one week to start bending, which allows us to offer you quick turnaround times for your project.

Outside Dia.	Pipe Size	Center Line Radius
1/4" (.25")		3/4" (.75"), 1 1/4" (1.25")
5/16" (.3125")		1 1/16" (1.0625"), 1 1/4" (1.25"), 1 9/16" (1.5625")
3/8" (.375")		3/4" (.75"), 15/16" (.9375"), 1 1/8" (1.125"), 1 1/4" (1.25"), 1 5/16" (1.3125") 1 7/8" (1.875")
.405"	1/8"	2 1/4" (2.25")
1/2" (.5")		15/16" (.9375"), 1", 1 1/4" (1.25"), 1 1/2" (1.5"), 1 3/4" (1.75"), 2", 2 1/4" (2.25"), 2 1/2" (2.5"), 2 11/16" (2.6875"), 4"
.54"	1/4"	1 1/8" (1.125"), 1 1/2" (1.5"), 2 1/2" (2.5")
9/16" (.5625")		1 1/2" (1.5"), 1 5/8" (1.625"), 2 1/2" (2.5"), 5"
5/8" (.625")		3/4" (.75"), 27/32" (.844"), 1 3/16" (1.1875"), 1 15/16" (1.9375"), 3", 3 1/8" (3.125")
.675"	3/8"	2 1/4" (2.25"), 2 1/2" (2.5"), 3"
11/16" (.6875")		1 3/4" (1.75")
3/4" (.75")		1 1/16" (1.0625"), 1 1/8" (1.125"), 1 3/16" (1.1875"), 1 1/4" (1.25"), 1 3/8" (1.375") 1 7/16" (1.4375"), 1 1/2" (1.5"), 1 11/16" (1.6875"), 1 3/4" (1.75"), 1 7/8" (1.875") 2", 2 1/4" (2.25"), 2 3/8" (2.375"), 2 1/2" (2.5"), 2 5/8" (2.625"), 2 3/4" (2.75") 3", 3 1/2" (3.5"), 4", 4 7/8" (4.875")
.84"	1/2"	2 1/2" (2.5"), 3 1/16" (3.0625"), 4 1/4" (4.25")
7/8" (.875")		1", 1 1/8" (1.125"), 1 1/4" (1.25"), 1 1/2" (1.5"), 1 3/4" (1.75"), 2", 2 1/8" (2.125") 2 1/4" (2.25"), 2 1/2" (2.5"), 2 9/16" (2.5625"), 3"
1"		1 1/2" (1.5"), 2", 2 1/4" (2.25"), 2 1/2" (2.5"), 2 3/4" (2.75"), 3", 3 1/2" (3.5"), 3 13/16" (3.8125"), 4", 4 13/16" (4.8125"), 5", 6", 10 1/2" (10.5")
1.05"	3/4"	1 1/8" (1.125"), 1 1/2" (1.5"), 2 1/4" (2.25"), 2 1/2" (2.5"), 3", 3 3/4" (3.75"), 4", 4 1/2" (4.5") 5 1/4" (5.25"), 9"
1 1/8" (1.125")		2", 2 1/8" (2.125"), 2 1/4" (2.25"), 2 5/16" (2.3125"), 2 1/2" (2.5"), 2 3/4" (2.75"), 3", 3 1/2" (3.5"), 4", 4 1/2" (4.5"), 8 3/4" (8.75")
1 1/4" (1.25")		2", 2 1/4" (2.25"), 2 1/2" (2.5"), 3", 3 1/2" (3.5"), 3 5/8" (3.625"), 3 3/4" (3.75"), 4", 4 1/2" (4.5"), 5 1/4" (5.25"), 6"
1.315"	1"	1 5/16" (1.3125"), 1 1/2" (1.5"), 2", 2 1/2" (2.5"), 2 5/8" (2.625"), 3", 4", 4 5/8" (4.625"), 5", 6", 6 7/8" (6.875"), 7 1/2" (7.5"), 8 1/2" (8.5")
1 3/8" (1.375")		1 1/2" (1.5"), 2", 2 1/2" (2.5"), 3", 3 1/2" (3.5"), 3 3/4" (3.75"), 4", 5"
1 1/2" (1.5")		1 5/8" (1.625"), 2", 2 1/4" (2.25"), 2 1/2" (2.5"), 2 3/4" (2.75"), 2 15/16" (2.9375"), 3", 3 1/2" (3.5"), 4", 4 3/4" (4.75"), 5", 6", 7 1/4" (7.25"), 9"
1 5/8" (1.625")		2 1/2" (2.5"), 2 13/16" (2.8125"), 3", 3 1/2" (3.5"), 4", 5 5/8" (5.625"), 5 7/8" (5.875"), 7"
1.66"	1 1/4"	2", 2 1/2" (2.5"), 2 11/16" (2.6875"), 3", 3 1/2" (3.5"), 4", 4 1/2" (4.5"), 5", 6", 7", 7 1/2", 8", 9", 12"
1 3/4" (1.75")		2 1/2" (2.5"), 3", 3 1/2" (3.5"), 3 15/16" (3.9375"), 4", 4 1/4" (4.25"), 5 1/2" (5.5"), 6", 7"
1.9"	1 1/2"	2 1/2" (2.5"), 3", 4", 4 1/2" (4.5"), 5", 5 3/4" (5.75"), 6", 7", 7 1/2" (7.5"), 8", 9"
2"		2 1/2" (2.5"), 2 7/8" (2.875"), 3", 3 1/4" (3.25"), 4", 5", 6", 10"
2 1/8" (2.125")		3", 3 15/16" (3.9375"), 6", 8"
2 1/4" (2.25")		4 3/4" (4.75"), 6 1/2" (6.5")
2 3/8" (2.375")	2"	3", 4", 4 7/8" (4.875"), 5 3/16" (5.1875"), 6", 7 1/8" (7.125"), 8 1/2" (8.5"), 10 3/4" (10.75"), 12"
2 1/2" (2.5")		3 3/4" (3.75"), 5", 5 1/16" (5.0625"), 5 1/4" (5.25"), 6 1/4" (6.25")
2 3/4" (2.75")		3 7/8" (3.875"), 4 1/2" (4.5"), 8 1/4" (8.25")
2 7/8" (2.875")	2 1/2"	3 7/8" (3.875"), 5"
3"		4", 4 1/2" (4.5"), 5", 6 3/8" (6.375")
3 1/4" (3.25")		4 1/2" (4.5")
3 1/2" (3.5")	3"	5", 6", 8 1/2" (8.5"), 9", 10 3/4" (10.75"), 14 3/4" (14.75")
4"	3 1/2"	4", 12", 16"



## SHARPE THINKERS MEMBERSHIP

### THINK SHARPE AND SAVE!

The Sharpe Thinkers Club was developed to create partnerships between Sharpe and its customers. By working together, we are able to continually expand our product lines to better meet your needs. Providing this membership to our customers is an additional way for you to save on stock orders while investing in new product research and development.

Sharpe Thinkers members pay an annual fee of \$200. This fee is invested into the development of new products. In appreciation of your investment, you will receive an additional 10% discount on all stock orders, regardless of quantity.

### HOW TO JOIN:

You can call us at (800) 879-4418 to join. You will immediately see your discount on your invoices.

### SHARPE THINKERS MEMBERSHIP DISCOUNT SCHEDULE:

1-99 Total Pieces: 10% off

100-499 Total Pieces: 20% off

500-999 Total Pieces: 25% off

1,000+ Total Pieces: 30% off

*Discounts are not available on Round Disks.*

## TERMS & CONDITIONS

### MINIMUM ORDER:

\$100.00

### PRICING & QUOTATION:

Prices are binding for immediate acceptance only. All pricing and quotations made by this company or its agents are subject to change without notice subject to prior sale and unless otherwise agreed are binding only for immediate acceptance. All sales are made subject to strikes, accidents or other causes beyond our control.

### QUANTITY DISCOUNT SCHEDULE:

1-99 Total Pieces: LIST PRICE

100-499 Total Pieces: LESS 10%

500-999 Total Pieces: LESS 15%

1,000+ Total Pieces: LESS 20%

*Discounts are not available on Round Disks.*

### CUSTOM ORDERS:

Custom part runs have a quantity tolerance of +/- 10% of the quantity ordered. Additional charges may be applied for orders that need an exact quantity.

### SHIPPING:

Every order shipped the same day subject to stock. All orders F.O.B. our warehouse in New Berlin, WI.

### TERMS OF PAYMENT:

1% 10 days net 30 to approved credit. New accounts will be shipped C.O.D. (cash, certified check or money order may apply) until credit is approved. A \$30.00 service fee will be charged for each returned check. We also accept Visa and MasterCard.



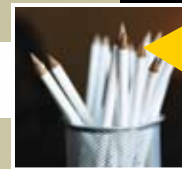
### RETURNS:

For stock items, a return authorization number is required to return material. Returns must be made within 60 days from the invoice date. Materials must be in saleable condition. Sharpe Products does not charge a restocking fee unless otherwise stated on your order acknowledgement or invoice. Non-stock items will require a written order and a deposit in advance. Cancellation of these orders will require written authorization from Sharpe Products, and may be subject to a charge for time and expenses incurred up to time of cancellation.

### FREIGHT CLAIMS:

All claims should be made directly with the freight company. Please call us for any assistance.

# NOTES



ADDITIONAL INFO

A large, empty area on the page consisting of numerous horizontal lines, intended for writing notes.



---

**YOUR PIPE & TUBE BENDING SOLUTION!**

2550 S. 170th Street | New Berlin, Wisconsin 53151

Ph: 262-754-0369 or 800-879-4418 | Fx: 262-754-0374 | E-mail: [sales@sharpeproducts.com](mailto:sales@sharpeproducts.com) | [www.sharpeproducts.com](http://www.sharpeproducts.com)