



BUCHANAN RUBBER LTD.

A MIDLAND INDUSTRIES COMPANY



VOL. 1



MIDLAND
INDUSTRIES

A NEW FAMILY OF COMPANIES WORKING TOGETHER

The new Midland Industries is a family of brands recognizable industry wide. With our history of outstanding customer service and innovation, Midland Industries is the perfect fit of customer driven solutions, smart technology and deep product selection - built on strong family values and traditions.

When finding the perfect fit matters, count on Midland Industries to exceed all expectations.



BUCHANAN RUBBER LTD.

BuchananRubber.com



AndersonMetals.com



**MID-AMERICA
FITTINGS, LLC.**

MidAmericaFittings.com



MidlandMetal.com

THE PERFECT FIT

For decades the Midland family has been the chosen manufacturer and supplier of fittings, valves, hose and accessories to distributors across North America. Today's Midland Industries and our family of companies is committed to helping our customer serve their customers better.

www.MidlandIndustries.com

Connect with us



FIND WHAT YOU NEED

LINE CARD.....	INTRO 3-4
FITTING ASSORTMENTS.....	INTRO 5
YOUR BRAND MARKETING	INTRO 6
CUSTOM CATALOG	INTRO 7
BRASSCATALOG.COM.....	INTRO 8
BIN LABELS.....	INTRO 9
OEM SOLUTIONS.....	INTRO 10
INFORMATION	130-136
INDEX	137-149

PIPE FITTINGS PGS 1-8

HOSE BARB FITTINGS PGS 9-17

GARDEN HOSE FITTINGS PGS 18-22

SAE 45° FLARE PGS 23-29

COMPRESSION FITTINGS PGS 30-34

D.O.T. PUSH-IN PGS 35-39

D.O.T. AIR BRAKE PGS 40-43

D.O.T. AIR BRAKE HOSE PGS 44-46

VALVES PGS 47-58

LEAD FREE BRASS NPLS PGS 59-63

LEAD FREE BRONZE PGS 64-71

SS NIPPLE PGS 72-76

SS FITTINGS PGS 77-84

STEEL NIPPLES PGS 85-102

MALLEABLE FITTINGS PGS 103-112

HIGH PRESSURE PGS 113-114

PNEUMATICS PGS 115-125

SANITARY FITTINGS PGS 126-129



MIDLAND INDUSTRIES

A new Family of Companies, now working Together.



BUCHANAN RUBBER LTD.



Toronto, Ontario/Montreal, Quebec/ Edmonton, Alberta/ Houston, Texas - Supplier of Industrial Hose, Cam and Groove & Crimplok couplings, Clamps and Sheet Rubber products to distributors across Canada and the USA. www.buchananrubber.com



MID-AMERICA FITTINGS



Overland Park, Kansas - Manufacturer of engineered, branded, USA made, industrial grade brass fittings, valves, and custom component parts in all shapes and styles. www.midamericafittings.com



MIDLAND METAL MFG.



Kansas City, MO/ Kerman, California - Supplier of brass fittings, valves, and accessories for hose, pipe and tube in brass, bronze, stainless steel, steel, malleable iron, and plastics, specializing in marketing tools and supply chain solutions. www.midlandmetal.com



ANDERSON METALS CORP. INC.



Kansas City, Missouri - Brass fitting manufacturer and supplier specializing in packaging, merchandising and retail programs and services. www.andersonmetals.com

Coming Soon: One online account management system to order all products from all locations.

PRODUCT LINE

BRASS FITTINGS

- Pipe Fittings
- Hose Barb Fittings
- Stainless Steel Hose Barb
- Push-On Barb Fittings
- Garden Hose Fittings
- 45° Flare Fittings
- Compression Fittings
- D.O.T Push-In Fittings
- Air Brake Fittings
- Drain Cocks



BRASS & BRONZE

- Brass Nipples
- Bronze Fittings
- Lead Free Bronze

BRASS VALVES

- Full Port Ball
- 3-Way Valves
- Gate Valves
- Y Strainer
- Check Valves
- Vacuum Breaker



STAINLESS STEEL VALVES

- 2000# Full Port
- Standard Port
- Full Port
- SS Mini Ball Valve
- Check Valves
- Strainer
- Carbon Steel

STAINLESS STEEL

- Stainless Nipples
- Stainless Fittings



STEEL & MALLEABLE

- Sch 40 Nipples
- Merchant Couplings
- Sch 80 Nipples
- EH XXS Nipples
- Groove Nipples
- Malleable Fittings
- Forged Steel Flanges
- Swages
- Bull & Plugs



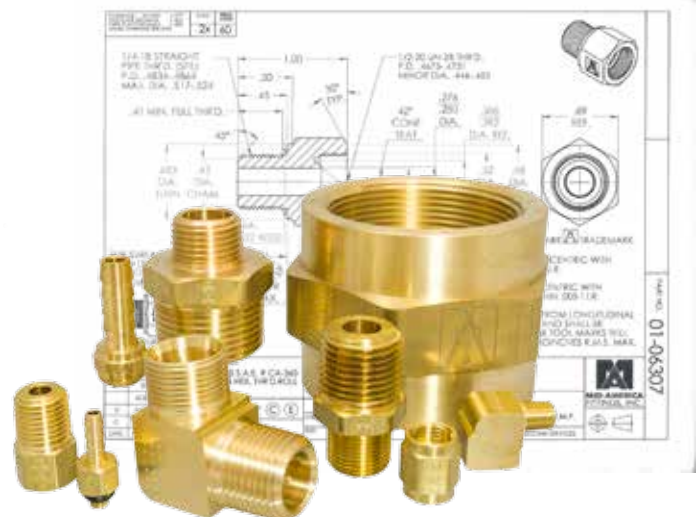
MISC.

- Spray Guns
- Nozzles
- Quick Disconnects
- Safety Valves
- Hydraulic QDS
- Safety Blow Gun
- Air Adjusting Valve
- Pistol Grip Blo-Gun
- Air Chucks
- Tank & Vent
- Gauges

U.S. MANUFACTURING



Manufacturer of engineered, branded, USA made, industrial grade brass fittings, valves, and custom component parts in all shapes and styles.





PIPE NIPPLES & FITTING ASSORTMENTS



- Lead Free Red Brass Pipe Fittings and Nipples
- Pipe Nipples- 44 top selling items; 1/8" thru 1"
- Pipe Fittings- 44 top selling items; 1/8" thru 1"

STAINLESS STEEL DISPLAYS NOW AVAILABLE TOO!

WWW.MIDLANDINDUSTRIES.COM

INTRO 5



ATTENTION SALES DEPARTMENT!

YOUR BRAND IS OUR BRAND

Midland strives to promote your brand and help build your business by being the silent partner in the background working to promote your brand. We do not put our name on anything, so we can put your name on everything - helping you build your brand and assisting you in marketing these products to your customers.

Use Midland's customized suite of **MARKETING TOOLS** to expand and grow your business! We offer all the resources for marketing, order gathering and shipping.

TO LEARN MORE, PLEASE CONTACT BUCHANAN RUBBER.

MARKETING



CUSTOM CATALOG

LEARN MORE ON INTRO PAGE 7

Print custom catalogs with your brand, your pricing and your contact information.



BRASSCATALOG.COM

LEARN MORE ON INTRO PAGE 8

Brasscatalog.com is an unbranded sales and marketing tool. Use it to provide your customers with specifications, pictures and pricing. With no reference to Midland. Your customers can access over 20,000 products by product category.

**ORDER
GATHERING**



CUSTOM BIN LABELS

LEARN MORE ON INTRO PAGE 9

Create & print personalized bin labels with your brand to affix to bin boxes. Helps with reorders and managing your warehouse.

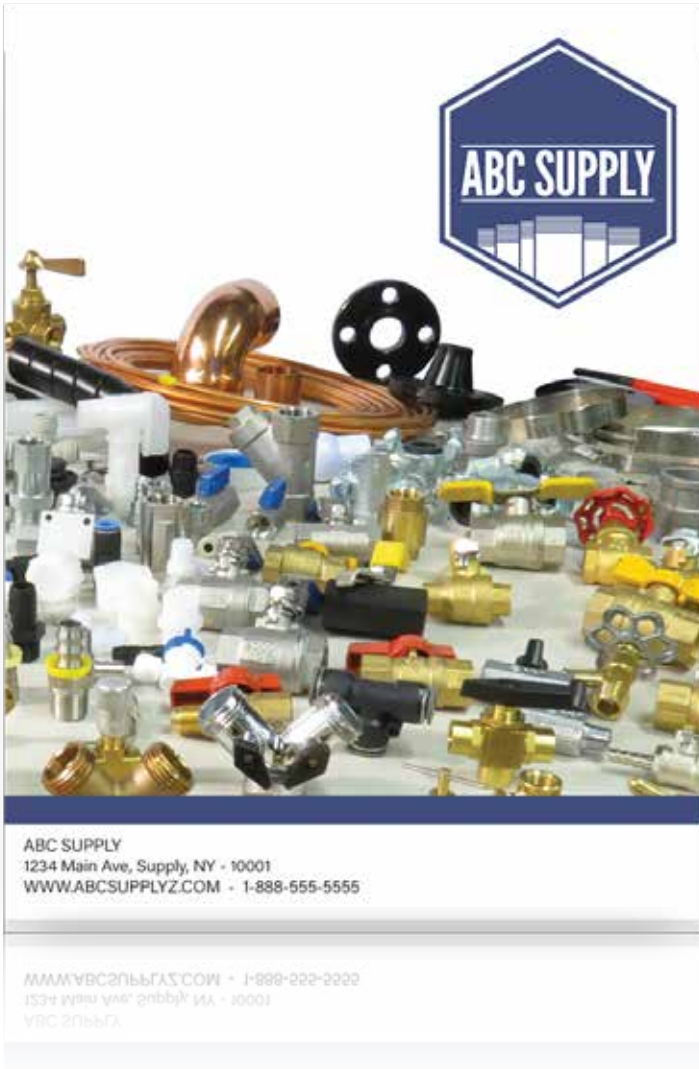
OEM



MIDLAND OEM SOLUTIONS

LEARN MORE ON INTRO PAGE 10

Midland can help the distributor work with Original Equipment Manufacturers and specify solutions.



**OPTION A (FREE):
CUSTOM DIGITAL**

Our designers will work with you to create a cover that incorporates your logo, colors and photos.

**OPTION B (\$16*):
CUSTOM COVER**

List price, net price or anywhere in between. You set the pricing that is right for you.

**OPTION C (\$27*):
CUSTOMIZED CATALOG**

Your company logo and contact information will print on the footer of each page.

GET STARTED TODAY

Contact us at: www.midlandmetal.com/marketing

*PRICES SHOWN ARE IN CANADIAN DOLLARS

CUSTOM CATALOG

Print custom catalogs with your brand, your pricing and your contact information.

A UNIQUE CATALOG AT A REASONABLE PRICE

Using Midland's newest catalog as a template, we can completely customize the look, contact information, and pricing to fit your company's needs. The process is simple and takes about a month to complete (times may vary due to the printer's schedule). Work with our designer to customize a catalog that is unique and properly represents your company.

UNION TEE

Part #	Thread size NPTF	A	B	C	Approx. Wt. Lbs.	List Price
28-024	1/8"	0.55	0.55	0.56	0.08	8024
28-025	1/4"	0.78	0.78	0.68	0.17	8025
28-026	3/8"	0.84	0.84	0.81	0.22	8026
28-027	1/2"	1.09	1.09	1.00	0.43	8027
28-028	3/4"	1.16	1.16	1.25	0.64	8028

129 2201P 205 23355 406Z 105 100-45A
SAE# 130438
311 101A 322 2201P 1700 203

UNION FORGED TEE

Part #	Thread size NPTF	A & B	Body Width	Approx. Wt. Lbs.	List Price
28-032	1/8"	0.56	0.50	0.06	8032
28-033	1/4"	0.71	0.68	0.13	8033
28-034	3/8"	0.81	0.81	0.16	8034
28-035	1/2"	1.00	1.00	0.27	8035
28-036	3/4"	1.16	1.25	0.53	8036
28-023	1"	1.42	1.50	.924	8023

1200P U7 1514F 1018

www.abcsupplyz.com Toll Free Phone 1-800-555-5555



PDF CATALOG

Full color or black/white PDF catalog online.

PRINT

Print by product category or page. Available in color or black/white.

GET STARTED TODAY

Contact us at: www.midlandmetal.com/marketing

BRASSCATALOG.COM

Brasscatalog.com is an unbranded sales and marketing tool. Use it to provide your customers with specifications, pictures and pricing. With no reference to Midland. Your customers can access over 20,000 products by product category.

Online, download or print a generic line card, pictorial index and product category pages with no reference to Midland Industries.



PERSONALIZED

Print labels with pictures and barcodes.

SCAN

Using the Midland Metal mobile app you can scan the labels to check stock and place orders.

CUSTOMER SERVICE

Put your custom labels on your customer's bins.

GET STARTED TODAY

Contact us at: www.midlandmetal.com/marketing

BIN LABELS ON DEMAND

Now you can create and print personalized Bin Labels on demand for any product that Midland carries. Labels can be customized with your logo or name. Multiple sizes available.

BIN LABELS FOR MIDLAND PRODUCTS

Looking for a way to keep your foot in the door with your customers? Try labeling their bins. Using easy-to-follow steps, you're able print labels with pictures and barcodes. Then, using the Midland app, scan the labels on the bins to place orders. Not only will you save time with stock replenishment, you will improve your relationship with your customers as well.

4" x 2"



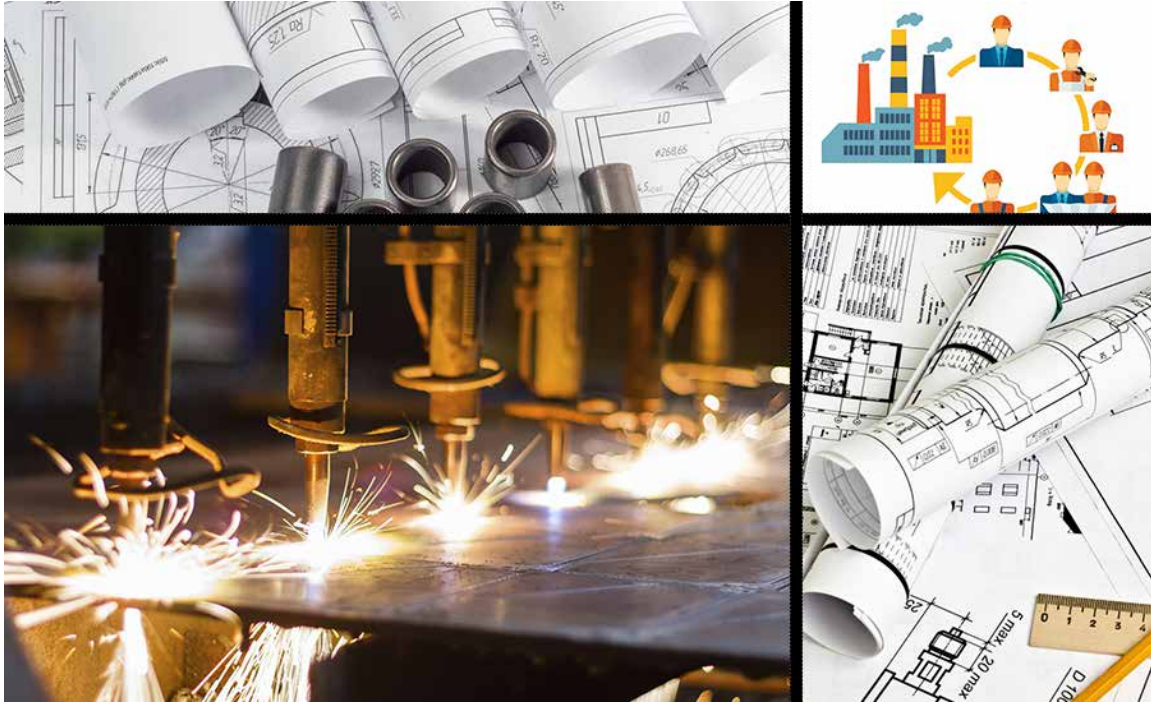
3.5" x 2"



2.625" x 1"



INTRO 9



MIDLAND OEM SOLUTIONS

In an ever changing global business environment, all applications are not created equal. As an OEM partner, Midland Metal can help the distributor work with Original Equipment Manufacturers and specify solutions in order to make informed purchasing decisions around technology, applications and relevant specification requirements.

Certain OEM applications require specific fittings, hoses, clamps and valves. For example, your application may require easier installation, a globally available product, or extended life among other critical features. No matter what the application, Midland is prepared to meet the demands of your end user business with our OEM solutions and equipment.

When you work with Midland, you are getting a Midland Metal designed product made worldwide within our contract factories in the US, Asia and Europe, assembled by dedicated employees. Therefore, as an OEM wholesale partner, Midland Metal can promise premier customer service, high quality manufacturing standards, on-time delivery and a philosophy of continuous improvement. This allows the distributor to remain competitive in the marketplace and achieve growth objectives on new and existing projects.

As part of the Midland OEM program, you can expect increased co-marketing opportunities, better market planning with our sales force, and improved customer engagement with co-managed objectives.

INNOVATIVE THINKING. INNOVATIVE SOLUTIONS. PARTNERING FOR YOUR SUCCESS!

Ask about our OEM Solutions – contact specials@midlandmetal.com to get started today.

PIPE



Pipe Size	1/16	1/8	1/4	3/8	1/2	3/4	1
Thread Size	1/16-27	1/8-27	1/4-18	3/8-18	1/2-14	3/4-14	1-11 ^{1/2}
Working Pressure	1200	1200	1200	1200	1200	1000	1000
Thread OD	1/4	3/8	1/2	5/8	3/4	1	1-1/4

•Typical Application

Grease, fuels, LP and Natural gas (available on special order), refrigeration, instrumentation and hydraulic systems.

•Pressure

Operating pressure up to 1200 PSI.

•Vibration

Fair resistance.

•Temperature Range

-65°F to +250°F (-53°C to +121°C).

•Used With

Brass, bronze, copper, steel, aluminum and iron pipe.

• Tolerance

+/- .02 on all dimensions. Dimension Data can change without notice. Please call us when dimensions are critical.

• Conformance

Meets specifications and standards of ASA, ASME and SAE

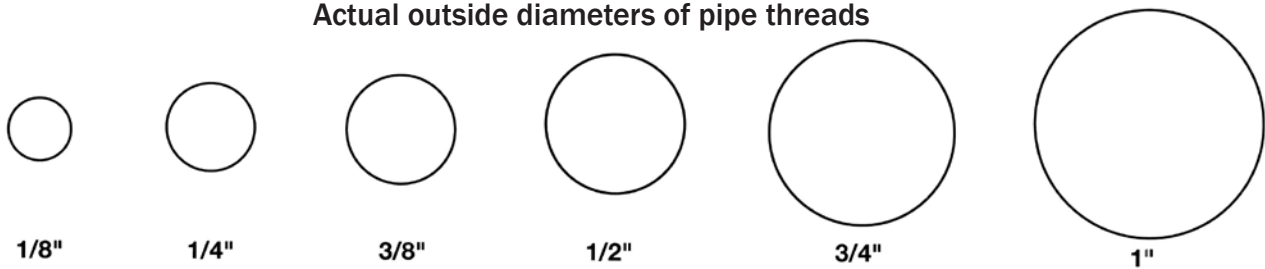
• Not lead free

• **“L” at the end of a Part# means Light Pattern**
- these fittings are completely interchangeable with full pattern fittings, but have been modified in some way. This modification is usually in the length of the pipe threads. Used in plumbing and light industrial applications.

•Assembly Instructions

- 1- Tighten approximately 2-1/2 turns past hand tight.
- 2- Fittings with Everseal tighten two turns past hand tight. Brittle materials require special cautions.

Actual outside diameters of pipe threads



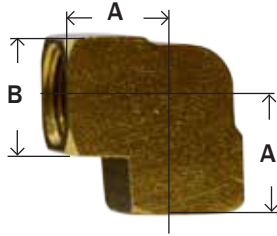
Actual Male Thread Profiles



PIPE
BRASS FITTINGS

90° FEMALE ELBOW

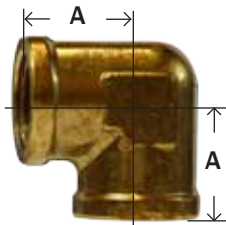
SAE# 130238



Part #	Thread Size NPTF	A	B	Approx. Wt. Lbs.	
28-001	1/8"	0.55	0.56	0.09	----
28-002	1/4"	0.78	0.68	0.13	----
28-003	3/8"	0.84	0.81	0.16	----
28-004	1/2"	1.09	1.00	0.34	----
28-005	3/4"	1.16	1.25	0.60	----
28-015B	3/8" x 1/4"	0.84	0.81	0.18	----
28-053B	1/2" x 1/4"	1.09	1.00	0.37	----
28-016B	1/2" x 3/8"	1.09	1.00	0.36	----

100 2200P 3500 302 200

900 FORGED FEMALE ELBOW

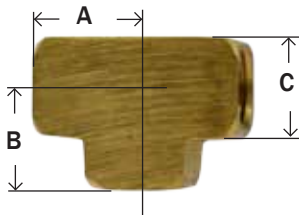


Part #	Thread size NPTF	A	Body Width	Approx. Wt. Lbs.	
28-009	1/8"	0.57	0.50	0.04	----
28-010	1/4"	0.70	0.68	0.10	----
28-011	3/8"	0.81	0.81	0.12	----
28-012	1/2"	1.00	1.00	0.23	----
28-013	3/4"	1.13	1.25	0.42	----
28-014	1/4" x 1/8"	0.72	0.65	0.12	----
28-015	3/8" x 1/4"	0.81	0.81	0.15	----
28-016	1/2" x 3/8"	1.00	1.00	0.28	----
28-017	1"	1.42	1.50	0.75	----

1200P E7 100AF 100B

UNION TEE

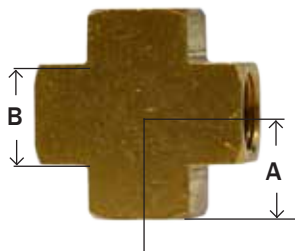
SAE# 130438



Part #	Thread size NPTF	A	B	C	Approx. Wt. Lbs.	
28-022	1/16"	0.55	0.55	0.58	0.11	----
28-024	1/8"	0.55	0.55	0.56	0.08	----
28-025	1/4"	0.78	0.78	0.68	0.17	----
28-026	3/8"	0.84	0.84	0.81	0.22	----
28-027	1/2"	1.09	1.09	1.00	0.43	----
28-028	3/4"	1.16	1.16	1.25	0.64	----

311 101A 322 2203P 3700 203

CROSS



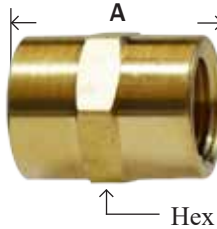
Part #	Thread size NPTF	A	B	Approx. Wt. Lbs.	
28-041	1/8"	0.55	0.56	0.10	----
28-042	1/4"	0.78	0.68	0.21	----
28-043	3/8"	0.84	0.81	0.25	----
28-044	1/2"	1.09	1.00	0.51	----
28-045	3/4"	1.16	1.25	0.75	----

2205P 3950 228 102A 102BE

PIPE
BRASS FITTINGS

COUPLING

SAE# 130138

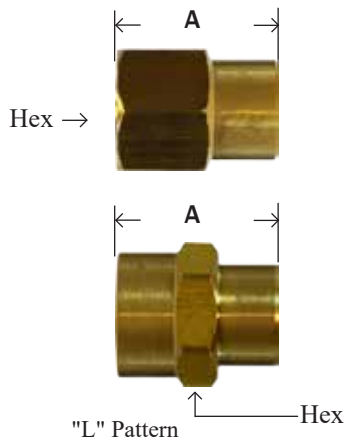


Part #	Thread size NPTF	A	Hex	Approx. Wt. Lbs.	
28-057	1/16"	0.75	0.44	0.02	
28-058L	1/8"	0.75	0.50	0.02	----
28-058	1/8"	0.75	0.56	0.03	----
28-059L	1/4"	0.88	0.63	0.03	----
28-059	1/4"	1.12	0.75	0.09	----
28-060L	3/8"	1.00	0.81	0.06	----
28-060	3/8"	1.12	0.87	0.10	----
28-061L	1/2"	1.19	0.93	0.09	----
28-061	1/2"	1.50	1.06	0.19	----
28-062L	3/4"	1.19	1.25	0.18	----
28-062	3/4"	1.53	1.25	0.24	----
28-063	1"	1.89	1.50	.357	----

207P 371 3300 103AH 103B

REDUCING COUPLING

SAE# 130138

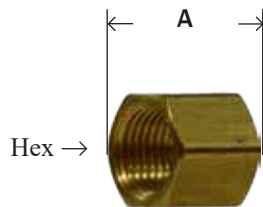


Part #	Thread size NPTF	A	Hex	Approx. Wt. Lbs.	
28-181L	1/4" x 1/8"	0.94	0.62	0.04	----
28-181	1/4" x 1/8"	0.97	0.75	0.08	----
28-182	3/8" x 1/8"	0.94	0.87	0.10	----
28-183L	3/8" x 1/4"	1.00	0.81	0.06	----
28-183	3/8" x 1/4"	1.16	0.87	0.12	----
28-180*	1/2" x 1/8"	1.19	0.93	0.15	----
28-184L	1/2" x 1/4"	1.11	1.00	0.10	----
28-184	1/2" x 1/4"	1.28	1.06	0.20	----
28-185L	1/2" x 3/8"	1.19	0.93	0.10	----
28-185	1/2" x 3/8"	1.38	1.06	0.20	----
28-186	3/4" x 1/8"	1.19	1.19	0.16	----
28-187	3/4" x 1/4"	1.19	1.19	0.17	----
28-188*	3/4" x 3/8"	1.32	1.37	0.20	----
28-189*	3/4" x 1/2"	1.19	1.18	0.14	----
28-178	1" x 1/2"	1.50	1.56	0.41	----
28-179	1" x 3/4"	1.56	1.56	0.39	----

*Not to SAE specs

377 3300 208P 108 119B 119AH

CAP



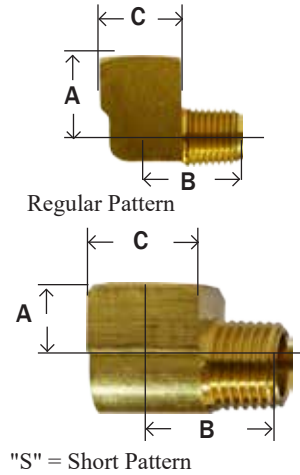
Part #	Thread size NPTF	A	Hex	Approx. Wt. Lbs.	
28-075	1/8"	0.47	0.56	0.03	----
28-076	1/4"	0.60	0.68	0.04	----
28-077	3/8"	0.69	0.81	0.06	----
28-078	1/2"	0.78	0.93	0.08	----
28-079	3/4"	0.94	1.25	0.16	----
28-080	1"	1.13	1.50	0.23	----

3129 213P 23129 108A 108B

PIPE
BRASS FITTINGS

90° STREET ELBOW

SAE# 130239

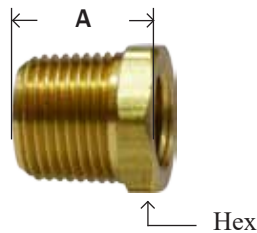


Part #	Thread size NPTF	A	B	C	Approx. Wt. Lbs.	
28-161	1/16"	0.69	0.60	0.47	0.04	----
28-156	1/8"	0.48	0.66	0.56	0.05	----
28-156S	1/8" short	0.34	0.57	0.50	0.03	----
28-157	1/4"	0.72	0.91	0.735	0.09	----
28-157S	1/4" short	0.45	0.78	0.68	0.07	----
28-158	3/8"	0.78	0.97	0.81	0.16	----
28-159	1/2"	1.03	1.25	1.00	0.33	----
28-160	3/4"	1.12	1.38	1.25	0.52	----

2202P 304 115 202 3400 116A

HEX BUSHING

SAE# 130140



Part #	Thread size NPTF MxF	A	Hex	Approx. Wt. Lbs.	
28-102L	1/4" x 1/8"	0.62	0.56	0.02	----
28-102	1/4" x 1/8"	0.75	0.56	0.04	----
28-103	3/8" x 1/8"	0.75	0.68	0.05	----
28-104L	3/8" x 1/4"	0.69	0.68	0.03	----
28-104	3/8" x 1/4"	0.75	0.75	0.05	----
28-105L	1/2" x 1/8"	0.81	0.81	0.08	----
28-105	1/2" x 1/8"	1.00	0.87	0.10	----
28-106L	1/2" x 1/4"	0.81	0.81	0.08	----
28-106	1/2" x 1/4"	1.00	0.87	0.11	----
28-107L	1/2" x 3/8"	0.81	0.81	0.05	----
28-107	1/2" x 3/8"	1.00	0.87	0.10	----
28-108	3/4" x 1/8"	0.94	1.06	0.20	----
28-109L	3/4" x 1/4"	0.94	1.06	0.18	----
28-110L	3/4" x 3/8"	0.94	1.06	0.15	----
28-111L	3/4" x 1/2"	0.94	1.06	0.11	----
28-111	3/4" x 1/2"	1.00	1.12	0.14	----
28-091	1" x 1/8"	1.15	1.37	0.29	----
28-112	1" x 1/4"	1.15	1.37	0.32	----
28-113	1" x 3/8"	1.12	1.37	0.30	----
28-114	1" x 1/2"	1.31	1.44	0.29	----
28-115	1" x 3/4"	1.31	1.37	0.20	----

373 3220 209P 110A 110B

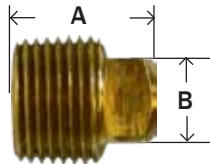
PIPE
BRASS FITTINGS

FACE BUSHING



Part #	Thread size NPTF MxF	A	Approx. Wt. Lbs.	
28-121	1/4" x 1/8"	0.45	0.01	----
28-122	3/8" x 1/8"	0.50	0.03	----
28-116	3/8" x 1/4"	0.50	0.02	----
28-090	1/2" x 1/8"	0.56	0.06	----
28-128	1/2" x 1/4"	0.56	0.05	----
28-117	1/2" x 3/8"	0.56	0.03	----
28-129	3/4" x 1/4"	0.62	0.11	----
28-130	3/4" x 3/8"	0.62	0.08	----
28-118	3/4" x 1/2"	0.64	0.03	----
28-120	1" x 1/2"	0.75	0.11	----
28-119	1" x 3/4"	0.77	0.10	----

SQUARE HEAD PLUG
1/8 - 1/2 Solid

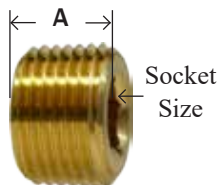


Part #	Thread size NPTF	A	B	Approx. Wt. Lbs.	
28-084	1/8"	0.58	0.27	0.02	----
28-085	1/4"	0.80	0.37	0.03	----
28-086	3/8"	0.80	0.43	0.06	----
28-087	1/2"	1.07	0.55	0.13	----
28-088**	3/4"	1.09	0.61	0.20	----
28-089**	1"	1.24	0.81	0.35	----

** Cored

3151 211P 109A 109B

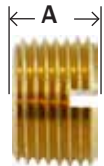
COUNTERSUNK HEX PLUG
3/4" taper thread



Part #	Thread size NPTF	A	Socket size	Approx. Wt. Lbs.	
28-092	1/16"	0.30	0.12	0.01	----
28-093	1/8"	0.30	0.18	0.01	----
28-094	1/4"	0.45	0.26	0.02	----
28-095	3/8"	0.45	0.31	0.03	----
28-096	1/2"	0.61	0.39	0.05	----
28-097	3/4"	0.62	0.56	0.10	----

3153 219P 109CS 118

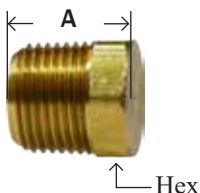
SLOTTED-HEAD PLUG



Part #	Thread size NPTF	A	Approx. Wt. Lbs.	
28-174	1/8"	0.31	0.01	----
28-175	1/4"	0.42	0.02	----
28-176	3/8"	0.45	0.05	----
28-177	1/2"	0.56	0.10	----

220P 3150 117A 117B

CORED HEX PLUGS

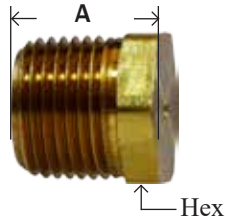


Part #	Thread size NPTF	A	Hex	Approx. Wt. Lbs.	
28-200	1/16"	0.48	0.38	0.01	----
28-201	1/8"	0.55	0.43	0.01	----
28-202	1/4"	0.62	0.56	0.02	----
28-203	3/8"	0.72	0.68	0.06	----
28-204	1/2"	0.81	0.87	0.09	----
28-205	3/4"	0.94	1.06	0.16	----
28-206	1"	1.16	1.37	0.28	----

218P 3152 121A 103 121B PPH 218P

PIPE
BRASS FITTINGS

SOLID HEX HEAD PLUGS



Part #	Thread size NPTF	A	Hex	Approx. Wt. Lbs.	
28-201S	1/8"	0.55	0.43	0.02	----
28-202S	1/4"	0.75	0.56	0.05	----
28-203S	3/8"	0.66	0.68	0.07	----
28-204S	1/2"	0.81	0.87	0.12	----
28-205S	3/4"	0.92	1.06	0.24	----
28-206S	1"	1.00	1.31	0.38	----

121AS

LOCKNUT

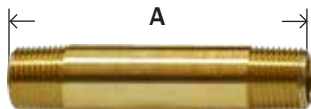
- Jam Nuts
- Straight pipe thread



Part #	Thread size NPSL	Hex	Thickness	Approx. Wt. Lbs.	
28-123	1/8"	0.68	0.19	0.02	----
28-124	1/4"	0.87	0.25	0.04	----
28-125	3/8"	1.00	0.31	0.04	----
28-126	1/2"	1.125	0.25	0.04	----
28-127	3/4"	1.38	0.38	0.09	----

210P 21102 111A 111B

LONG NIPPLE

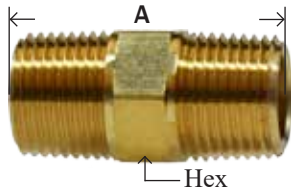


Part #	Thread size NPTF	A Length	Approx. Wt. Lbs.	
28-140	1/8"	1.50	0.03	----
28-141	1/8"	2.00	0.04	----
28-142	1/8"	2.50	0.06	----
28-143	1/8"	3.00	0.06	----
28-475	1/8"	3.50	0.07	----
28-144	1/4"	1.50	0.03	----
28-145	1/4"	2.00	0.05	----
28-146	1/4"	2.50	0.08	----
28-147	1/4"	3.00	0.10	----
28-481	1/4"	3.50	0.12	----
28-148	3/8"	1.50	0.06	----
28-149	3/8"	2.00	0.10	----
28-150	3/8"	2.50	0.10	----
28-151	3/8"	3.00	0.13	----
28-487	3/8"	3.50	0.17	----
28-152	1/2"	1.50	0.08	----
28-153	1/2"	2.00	0.12	----
28-154	1/2"	2.50	0.16	----
28-155	1/2"	3.00	0.20	----
28-493	1/2"	3.50	0.24	----
28-136	3/4"	1.50	0.12	----
28-497	3/4"	2.00	0.18	----
28-498	3/4"	2.50	0.23	----
28-499	3/4"	3.00	0.28	----

113B 113A 166 3327, 3328, 3329, 3330 3331 215PNL

PIPE
BRASS FITTINGS

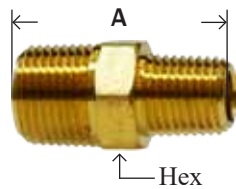
HEX NIPPLE



SAE# 130137					
Part #	Thread size NPTF	A	Hex	Approx. Wt. Lbs.	
28-210	1/16"	0.97	0.38	0.02	----
28-211L	1/8"	0.91	0.43	0.02	----
28-211	1/8"	0.97	0.43	0.03	----
28-212L	1/4"	1.12	0.56	0.04	----
28-212	1/4"	1.38	0.56	0.06	----
28-213L	3/8"	1.25	0.68	0.07	----
28-213	3/8"	1.41	0.68	0.07	----
28-214L	1/2"	1.50	0.87	0.11	----
28-214	1/2"	1.81	0.87	0.17	----
28-215L	3/4"	1.55	1.07	0.17	----
28-215	3/4"	1.96	1.13	0.23	----
28-216L	1"	1.75	1.39	0.22	----
28-216	1"	2.30	1.37	0.43	----

216P 3325 379 122AH 122B

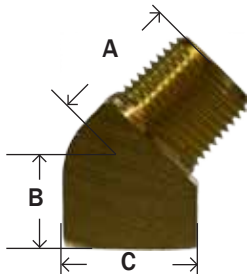
REDUCING HEX NIPPLE



SAE# 130137					
Part #	Thread size NPTF	A	Hex	Approx. Wt. Lbs.	
28-218	1/8" x 1/16"	1.00	0.56	0.05	----
28-220L	1/4" x 1/8"	1.00	0.56	0.04	----
28-220	1/4" x 1/8"	1.19	0.56	0.04	----
28-221L	3/8" x 1/8"	1.11	0.68	0.06	----
28-221	3/8" x 1/8"	1.22	0.68	0.07	----
28-222L	3/8" x 1/4"	1.19	0.68	0.06	----
28-222	3/8" x 1/4"	1.41	0.68	0.07	----
28-223L	1/2" x 1/4"	1.34	0.87	0.09	----
28-223	1/2" x 1/4"	1.62	0.87	0.12	----
28-224L	1/2" x 3/8"	1.41	0.87	0.11	----
28-224	1/2" x 3/8"	1.62	0.87	0.12	----
28-225L	3/4" x 1/2"	1.81	1.06	0.19	----
28-225	3/4" x 1/2"	1.50	1.06	0.15	----
28-227	1" x 3/4"	2.31	1.38	0.38	----

216P 3325 379 122AH 122B

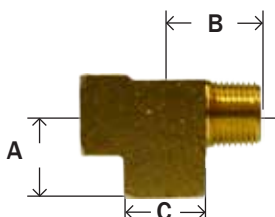
45° STREET ELBOW



SAE# 130339					
Part #	Thread size NPTF	B	A	C	Approx. Wt. Lbs.
28-230	1/8"	0.38	0.50	0.56	0.03
28-231	1/4"	0.56	0.72	0.68	0.09
28-232	3/8"	0.56	0.78	0.81	0.12
28-233	1/2"	0.75	1.00	1.00	0.20
28-234	3/4"	0.75	1.06	1.25	0.34

306 3350 2214P 224

STREET TEE/ SERVICE TEE/ MALE RUN TEE



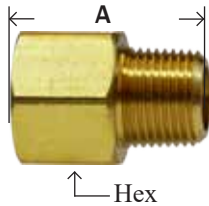
SAE# 130424					
Part #	Thread size NPTF	A	B	C	Approx. Wt. Lbs.
28-245	1/8"	0.55	0.66	0.56	0.08
28-246	1/4"	0.78	0.91	0.68	0.17
28-247	3/8"	0.84	0.97	0.81	0.22
28-248	1/2"	1.09	1.25	1.00	0.40
28-249	3/4"	1.16	1.39	1.25	0.60

225 2225P 3750 326 225 127A

PIPE
BRASS FITTINGS

EXTENDER ADAPTER

SAE# 130139

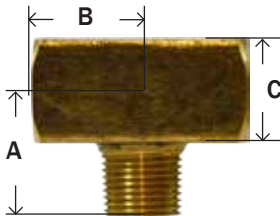


Part #	Thread size NPTF FxM	A	Hex	Approx. Wt. Lbs.	
28-190L	1/8" x 1/8"	0.83	0.50	0.03	----
28-190	1/8" x 1/8"	0.88	0.56	0.04	----
28-191L	1/4" x 1/8"	0.94	0.62	0.04	----
28-191	1/4" x 1/8"	1.06	0.75	0.07	----
28-192L	1/4" x 1/4"	1.00	0.62	0.04	----
28-192	1/4" x 1/4"	1.25	0.75	0.07	----
28-198	3/8" x 1/8"	1.00	0.81	0.06	----
28-193L	3/8" x 1/4"	1.12	0.81	0.08	----
28-193	3/8" x 1/4"	1.25	0.87	0.09	----
28-194L	3/8" x 3/8"	1.24	0.81	0.10	----
28-194	3/8" x 3/8"	1.25	0.87	0.11	----
28-197	1/2" x 1/8"	1.09	0.94	0.07	----
28-199	1/2" x 1/4"	1.46	1.06	0.08	----
28-195L	1/2" x 3/8"	1.19	0.93	0.09	----
28-195	1/2" x 3/8"	1.47	1.06	0.18	----
28-196L	1/2" x 1/2"	1.25	0.94	0.10	----
28-196	1/2" x 1/2"	1.66	1.06	0.12	----
28-207	3/4" x 3/8"	1.59	1.25	0.26	----
28-208	3/4" x 1/2"	1.69	1.37	0.14	----
28-208L	3/4" x 1/2"	1.22	1.25	0.13	----
28-209	3/4" x 3/4"	1.69	1.37	0.34	----

375 222P 3200 R1 120AH 120B

MALE BRANCH TEE

SAE# 130425

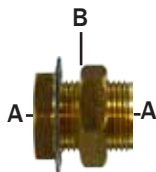


Part #	Thread size NPTF	A	B	C	Approx. Wt. Lbs.	
28-281	1/8"	0.66	0.55	0.56	0.08	----
28-282	1/4"	0.91	0.78	0.68	0.15	----
28-283	3/8"	0.97	0.84	0.81	0.22	----
28-284	1/2"	1.25	1.09	1.00	0.40	----
28-285	3/4"	1.38	1.16	1.25	0.62	----

T9 X106 23601 3600 2224P 226 329 128

**FEMALE PIPE X
FEMALE PIPE**

BULKHEAD / ANCHOR / FRAME COUPLINGS



Part #	Terminal Bolts/ Frame		Hole Size	Length (in.)	
	A	B			
28-299	1/8-27 NPTF	5/8-18 UNS	5/8	0.96	----
28-300	1/8-27 NPTF	5/8-18 UNS	5/8	1-1/2	----
28-301	1/4-18 NPTF	3/4-16 UNS	3/4	15/16	----
28-302	1/4-18 NPTF	3/4-16 UNS	3/4	1-1/2	----
28-315*	1/4-18 NPTF	3/4-16 UNS	3/4	1-1/2	----
28-303	3/8-18 NPTF	1-14 UNS	1	1-5/16	----
28-304	1/2-14 NPTF	1-1/8-14 UNS	1-1/8	1-1/2	----
28-311	3/4-14 NPTF	1-5/16-12	1-5/16	1-1/2	----
28-316**	1-11/12	1-5/8-14	1-5/8	1.68	----

* Same as 28-302 except with a larger mounting nut. **Without washer

HOSE BARB FITTINGS



• Temperature and Working Pressure Ranges

From -40°F to + 160°F at 150 PSI maximum.

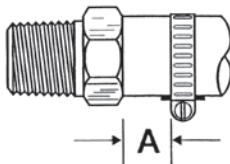
• Tolerance

+/- .02 on all dimensions. Dimension Data can change without notice. Please call us when dimensions are critical.

Note: These fittings are intended for use with hose clamp, similar type clamp or a crimped ferrule.

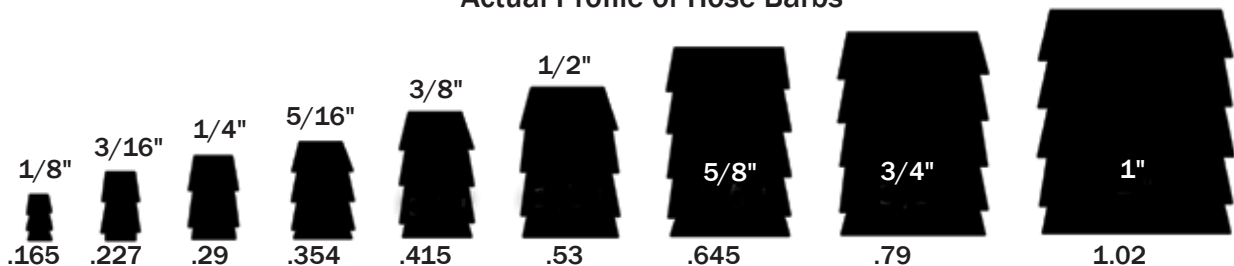
• Assembly Instructions

- 1- Cut hose cleanly and squarely to length.
- 2- Slide clamp on hose.
- 3- Lubricate hose. Push hose on fitting until hose bottoms against stop ring or hex.
- 4- Position hose clamp as shown below and secure with a screwdriver or wrench. Maintain "A" dimension noted below for proper clamp positioning.



Hose Size	A
3/16"	1/4"
1/4"	1/4"
5/16"	1/4"
3/8"	1/8"
1/2"	1/8"
5/8"	1/8"
3/4"	1/8"

Actual Profile of Hose Barbs

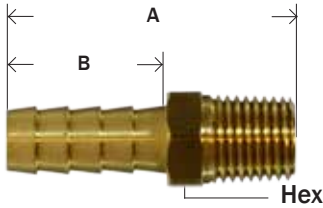


HOSE BARB

BRASS FITTINGS

RIGID MALE ADAPTER

- These are not Lead Free

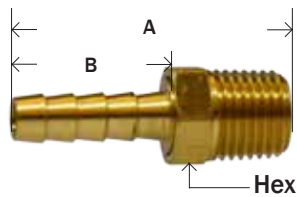
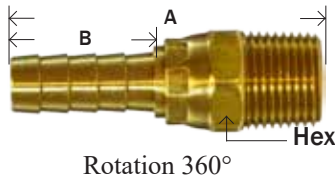


Part #	Hose I.D. x Male NPTF	A	B	Hex	Approx. Wt. Lbs.	
32-950	1/16" x 10/32"	0.90	0.45	0.38	0.01	----
32-951	1/16" x 1/16"	0.91	0.48	0.38	0.01	----
32-912	1/8" x 10/32"	0.92	0.48	0.38	0.01	----
32-300	1/8" x 1/16"	0.93	0.48	0.38	0.01	----
32-001 *	1/8" x 1/8"	1.19	0.69	0.43	0.02	----
32-027	1/8" x 1/4"	1.16	0.46	0.56	0.02	----
32-952	3/16" x 1/16"	1.20	0.75	0.38	0.02	----
32-002 *	3/16" x 1/8"	1.19	0.75	0.43	0.02	----
32-003 *	3/16" x 1/4"	1.37	0.69	0.56	0.04	----
32-953	3/16" x 3/8"	1.44	0.69	0.68	0.04	----
32-301	1/4" x 1/16"	1.44	0.88	0.43	0.02	----
32-004 *	1/4" x 1/8"	1.47	0.97	0.43	0.02	----
32-005 *	1/4" x 1/4"	1.72	0.97	0.56	0.04	----
32-006 *	1/4" x 3/8"	1.72	0.97	0.68	0.05	----
32-007	1/4" x 1/2"	1.72	0.81	0.87	0.10	----
32-954	1/4" x 3/4"	1.86	0.96	1.06	0.15	----
32-008 *	5/16" x 1/8"	1.47	0.97	0.43	0.02	----
32-009 *	5/16" x 1/4"	1.72	0.97	0.56	0.04	----
32-010 *	5/16" x 3/8"	1.76	0.97	0.68	0.06	----
32-390	5/16" x 1/2"	1.88	0.95	0.87	0.10	----
32-955	5/16" x 3/4"	1.95	0.95	1.06	0.15	----
32-011 *	3/8" x 1/8"	1.53	0.97	0.56	0.03	----
32-012 *	3/8" x 1/4"	1.75	0.97	0.56	0.05	----
32-013 *	3/8" x 3/8"	1.72	0.96	0.68	0.06	----
32-014 *	3/8" x 1/2"	1.87	0.97	0.87	0.09	----
32-026 *	3/8" x 3/4"	1.97	0.97	1.06	0.16	----
32-956	7/16" x 1/4"	1.75	0.97	0.56	0.05	----
32-957	7/16" x 3/8"	1.73	0.97	0.70	0.07	----
32-958	7/16" x 1/2"	1.87	0.97	0.88	0.10	----
32-302	1/2" x 1/8"	1.57	0.95	0.56	0.06	----
32-015 *	1/2" x 1/4"	1.72	0.97	0.56	0.04	----
32-016 *	1/2" x 3/8"	1.76	0.97	0.68	0.07	----
32-017 *	1/2" x 1/2"	1.87	0.96	0.87	0.11	----
32-018 *	1/2" x 3/4"	1.94	0.97	1.06	0.16	----
32-303	1/2" x 1"	2.31	0.99	1.37	0.33	----
32-304	5/8" x 1/4"	1.67	0.92	0.68	0.06	----
32-019 *	5/8" x 3/8"	1.76	0.97	0.68	0.08	----
32-020 *	5/8" x 1/2"	1.87	0.96	0.87	0.11	----
32-021 *	5/8" x 3/4"	1.87	0.96	1.06	0.14	----
32-305	5/8" x 1"	2.31	0.96	1.37	0.36	----
32-915	3/4" x 1/4"	1.64	0.87	0.81	0.11	----
32-306	3/4" x 3/8"	1.65	0.87	0.81	0.12	----
32-022 *	3/4" x 1/2"	1.87	0.96	0.87	0.14	----
32-023 *	3/4" x 3/4"	1.87	0.96	1.06	0.15	----
32-316	3/4" x 1"	2.55	1.15	1.37	0.38	----
32-307	1" x 1/2"	1.80	0.87	1.06	0.18	----
32-024 *	1" x 3/4"	2.19	1.19	1.06	0.32	----
32-025 *	1" x 1"	2.48	1.19	1.37	0.39	----
32-029	1-1/4" x 3/4"	2.37	1.19	1.37	0.35	----
32-028	1-1/4" x 1"	2.55	1.19	1.37	0.46	----

* Available in Stainless Steel,
Add SS to part#

HOSE BARB BRASS FITTINGS

SWIVEL MALE ADAPTER

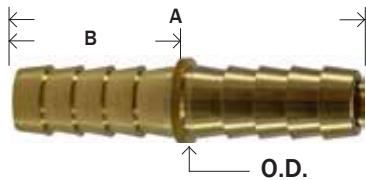


Part #	Hose I.D. x Male NPTF	A	B	Hex	Approx. Wt. Lbs.	
32-329	3/16" x 1/8"	2.00	0.78	0.56	0.06	----
32-331	3/16" x 1/4"	1.95	0.78	0.56	0.06	----
32-332	1/4" x 1/8"	2.19	0.97	0.56	0.06	----
32-349	1/4" x 1/4"	2.12	0.97	0.56	0.06	----
32-351	3/8" x 1/8"	2.12	0.97	0.56	0.07	----
32-201	3/8" x 1/4"	2.12	0.97	0.56	0.07	----
32-360	3/8" x 3/8"	2.12	0.97	0.69	0.08	----
32-355	1/2" x 3/8"	2.12	0.97	0.68	0.10	----
32-356	1/2" x 1/2"	2.33	0.97	0.87	0.14	----
32-357	3/4" x 3/4"	2.33	0.97	1.06	0.20	----
32-386	1" x 1"	2.88	1.19	1.38	0.40	----

SMS 103

Part #	Hose I.D. x Male NPTF	A	B	Hex	Approx. Wt. Lbs.	
32-200	1/4" x 1/4"	1.65	.89	0.56	0.04	----
32-202	3/8" x 3/8"	1.75	1.00	0.68	0.08	----

MENDER/ SPLICER



Part #	Hose I.D. x Hose I.D.	A	B	O.D.	Approx. Wt. Lbs.	
32-091 *	1/8"	0.98	0.45	0.31	0.01	----
32-092	3/16"	1.62	0.77	0.36	0.02	----
32-093 *	1/4"	2.00	0.96	0.37	0.02	----
32-079 *	1/4" x 1/8"	1.50	0.97	0.37	0.02	----
32-094 *	5/16"	2.00	0.96	0.39	0.02	----
32-090 *	5/16" x 1/4"	2.00	0.97	0.50	0.03	----
32-095 *	3/8"	2.00	0.97	0.51	0.04	----
32-960	3/8 x 1/8	1.58	1.00	0.50	0.03	----
32-961	3/8 x 3/16	1.75	1.00	0.50	0.03	----
32-080 **	3/8" x 1/4"	2.06	0.97	0.56	0.03	----
32-375 *	3/8" x 5/16"	2.00	0.97	0.50	0.03	----
32-096 *	1/2"	2.00	0.96	0.62	0.06	----
32-087 *	1/2" x 3/8"	2.06	0.97	0.71	0.06	----
32-097	5/8"	2.05	0.96	0.75	0.08	----
32-088	5/8" x 3/8"	2.06	0.97	0.75	0.06	----
32-376	5/8" x 1/2"	2.06	0.97	0.75	0.07	----
32-098 *	3/4"	2.50	1.15	0.87	0.10	----
32-089	3/4" x 1/2"	2.28	1.19	0.87	0.10	----
32-379	3/4" x 5/8"	2.02	0.96	0.87	0.10	----
32-380	1" x 3/4"	2.58	1.19	1.12	0.18	----
32-099	1"	3.00	1.44	1.02	0.23	----

MSB 122HBL HM 129 178 73 108

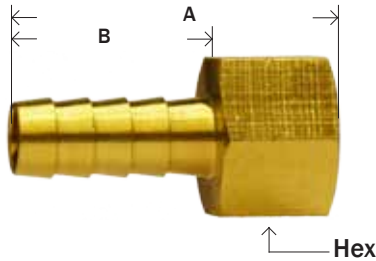


* Add SS to the end of the part number for Stainless.

HOSE BARB

BRASS FITTINGS

RIGID FEMALE ADAPTER

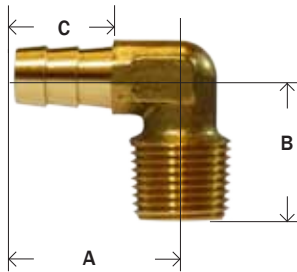


Part #	Hose I.D. x Female NPTF	A	B	Hex	Approx. Wt. Lbs.	
32-050	1/8" x 1/8"	0.96	0.46	0.50	0.02	----
32-317	1/8" x 1/4"	1.15	0.46	0.62	0.04	----
32-051	3/16" x 1/8"	1.10	0.68	0.50	0.02	----
32-062	3/16" x 1/4"	1.44	0.75	0.62	0.04	----
32-052	1/4" x 1/8"	1.35	0.93	0.50	0.02	----
32-053	1/4" x 1/4"	1.60	0.97	0.62	0.06	----
32-054	1/4" x 3/8"	1.65	1.03	0.75	0.04	----
32-441	1/4" x 1/2"	1.66	0.97	0.93	0.08	----
32-055	5/16" x 1/8"	1.47	0.97	0.56	0.04	----
32-056	5/16" x 1/4"	1.66	0.97	0.62	0.04	----
32-318	5/16" x 3/8"	1.66	0.97	0.75	0.06	----
32-320	5/16" x 1/2"	1.67	0.96	0.93	0.08	----
32-057	3/8" x 1/8"	1.47	0.97	0.56	0.04	----
32-058	3/8" x 1/4"	1.61	0.97	0.62	0.06	----
32-059	3/8" x 3/8"	1.63	1.00	0.81	0.08	----
32-063	3/8" x 1/2"	1.72	0.94	0.93	0.12	----
32-442	3/8" x 3/4"	1.97	0.97	1.18	0.20	----
32-449	1/2" x 1/8"	1.51	0.98	0.56	0.06	----
32-064	1/2" x 1/4"	1.66	0.96	0.62	0.08	----
32-060	1/2" x 3/8"	1.66	0.97	0.75	0.08	----
32-061	1/2" x 1/2"	1.76	0.96	0.93	0.12	----
32-443	1/2" x 3/4"	1.97	0.97	1.18	0.26	----
32-444	5/8" x 3/8"	1.66	0.97	0.75	0.08	----
32-445	5/8" x 1/2"	1.66	0.97	0.93	0.10	----
32-446	5/8" x 3/4"	1.97	0.97	1.18	0.21	----
32-447	3/4" x 1/2"	1.88	1.19	0.93	0.13	----
32-065	3/4" x 3/4"	2.19	1.21	1.18	0.22	----
32-049	1" x 3/4"	2.19	1.19	1.18	0.26	----
32-321	1" x 1"	2.32	1.19	1.44	0.35	----
32-448	1-1/4" x 1"	2.32	1.19	1.43	0.44	----

209A 128 29A 29F 126HB 126 FPB 105B-2 KF-RS 104 144

HOSE BARB BRASS FITTINGS

FORGED HOSE BARB 90° ELBOW



32-330

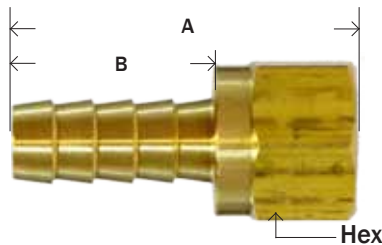
**Square Barstock Body

Part #	Hose I.D. x Male NPTF	A	B	C	Body Size	Approx. Wt. Lbs.	
32-308	3/16" x 1/8"	0.95	0.70	0.66	0.37	0.02	----
32-391	3/16" x 1/4"	1.00	0.84	0.63	0.46	0.10	----
32-038 *	1/4" x 1/8"	1.01	0.81	0.71	0.47	0.06	----
32-039 *	1/4" x 1/4"	1.01	0.87	0.63	0.47	0.06	----
32-309 **	1/4" x 3/8"	1.08	0.97	0.73	0.69	0.12	----
32-036	5/16" x 1/8"	1.01	0.81	0.63	0.47	0.04	----
32-040	5/16" x 1/4"	1.01	0.87	0.63	0.47	0.06	----
32-310	5/16" x 3/8"	1.06	0.94	0.63	0.50	0.06	----
32-046 *	3/8" x 1/8"	1.01	0.81	0.63	0.47	0.06	----
32-041 *	3/8" x 1/4"	1.02	0.88	0.65	0.47	0.06	----
32-042 *	3/8" x 3/8"	1.09	0.93	0.68	0.50	0.08	----
32-047 *	3/8" x 1/2"	1.11	1.09	0.63	0.59	0.10	----
32-048	1/2" x 1/4"	1.06	1.00	0.68	0.59	0.10	----
32-043 *	1/2" x 3/8"	1.06	1.09	0.69	0.59	0.10	----
32-311 *	1/2" x 1/2"	1.31	1.19	0.87	0.56	0.12	----
32-044	5/8" x 3/8"	1.12	1.06	0.61	0.56	0.12	----
32-045	5/8" x 1/2"	1.12	1.12	0.68	0.63	0.14	----
32-312	5/8" x 3/4"	1.46	1.26	0.93	1.06	0.32	----
32-313	3/4" x 1/2"	1.31	1.28	0.87	0.85	0.22	----
32-314 *	3/4" x 3/4"	1.46	1.26	0.91	1.06	0.32	----
32-330 **	3/4" x 1"	1.57	1.64	0.90	1.34	0.64	----
32-315	1" x 3/4"	1.60	1.40	0.95	1.06	0.32	----
32-319	1" x 1"	1.69	1.64	0.98	1.30	0.43	----

129 HBE1 KF-PS90 HE-1 29E 146

* Available in Stainless Steel, Add SS to part#

DUAL 45° / 37° FLARE SWIVEL



CRIMP STYLE

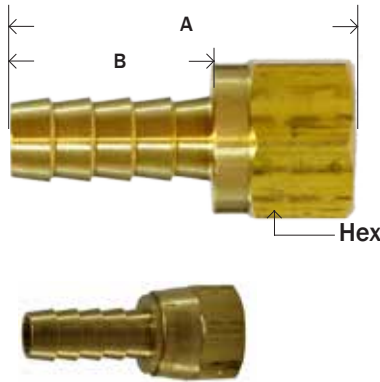
Part #	Hose ID x Dual Seat	Thread	A	B	Hex	Approx. Wt. Lbs.	
32-107	3/16" x 1/4"	7/16-20	1.34	0.75	0.56	0.04	----
32-107C**	3/16 X 1/4	7/16-20	1.42	0.78	0.56	0.04	----
32-337	1/4" x 1/4"	7/16-20	1.56	0.97	0.56	0.04	----
32-337C**	1/4" X 1/4"	7/16-20	1.60	0.97	0.56	0.04	----
32-102	1/4" x 5/16"	1/2-20	1.61	0.97	0.62	0.06	----
32-339	5/16" x 5/16"	1/2-20	1.60	0.97	0.62	0.06	----
32-340	3/8" x 1/2"	3/4-16	1.68	0.97	0.87	0.10	----
32-341	1/2" x 1/2"	3/4-16	1.68	0.97	0.87	0.10	----
32-341C**	1/2" X 1/2"	3/4-16	1.75	0.97	0.87	0.09	----
32-342	1/2" x 5/8"	7/8-14	1.76	0.97	1.00	0.12	----
32-394**	5/8" x 5/8"	7/8-14	1.83	0.97	1.00	0.14	----

** Swivel crimp style

KDS

HOSE BARB/ REUSABLE BRASS FITTINGS

FEMALE 45° FLARE SWIVEL



Part #	Hose I.D. x Female 45° Flare	UNF Thread	A	B	Hex	Approx. Wt. Lbs.	
32-326	3/16" x 3/16"	3/8-24	1.19	0.75	0.43	0.04	----
30-295**	3/16" x 3/8"	5/8-18	1.82	0.90	0.75	0.04	----
32-101	1/4" x 1/4"	7/16-20	1.57	0.97	0.56	0.04	----
32-103	1/4" x 3/8"	5/8-18	1.64	0.97	0.75	0.08	----
32-104	5/16" x 5/16"	1/2-20	1.61	0.97	0.62	0.05	----
32-327	5/16" x 3/8"	5/8-18	1.67	0.97	0.75	0.08	----
32-105	3/8" x 3/8"	5/8-18	1.64	0.97	0.75	0.08	----
32-105C**	3/8" x 3/8"	5/8-18	1.71	0.97	0.75	0.07	----
32-106	3/8" x 1/2"	3/4-16	1.81	0.97	0.87	0.10	----
32-100	1/2" x 1/2"	3/4-16	1.68	0.97	0.87	0.12	----
32-328	3/4" x 3/4"	1-1/16-14	2.00	0.97	1.25	0.20	----

29SAE 209ASF 146HBLFSV KF-NS 128 FSS 146 144

CRIMP STYLE

** Swivel crimp style (crimped on the outside of fitting)

304 STAINLESS STEEL HOSE NIPPLES



• Cast

Part #	Hose I.D. x Male Pipe	
73-951	1/4"	----
73-952	3/8"	----
73-953	1/2"	----
73-954	3/4"	----
73-955	1"	----
73-956	1-1/4"	----
73-957	1-1/2"	----
73-958	2"	----
73-959	2-1/2"	----
73-960	3"	----

304 STAINLESS STEEL REDUCING HOSE NIPPLES



• Cast

Part #	Hose I.D. x Male Pipe	
73-970	1/4" X 1/8"	----
73-971	3/8" X 1/4"	----
73-972	1/2" X 3/8"	----
73-973	1/2" X 1/4"	----
73-974	3/4" X 1/2"	----
73-975	1" X 3/4"	----
73-976	1" X 1/2"	----
73-977	1-1/4" X 1"	----
73-979	1-1/2" X 1-1/4"	----
73-980	1-1/2" X 1"	----
73-981	2" X 1-1/2"	----
73-982	2" X 1-1/4"	----

316 STAINLESS STEEL HOSE NIPPLES



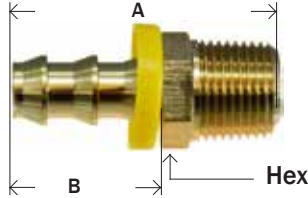
• Cast

Part #	Hose I.D. x Male Pipe	
973-951	1/4"	----
973-952	3/8"	----
973-953	1/2"	----
973-954	3/4"	----
973-955	1"	----
973-956	1-1/4"	----
973-957	1-1/2"	----
973-958	2"	----
973-959	2-1/2"	----
973-990	3"	----
973-991	4"	----

PUSH-ON FITTINGS

BRASS FITTINGS

MALE ADAPTER

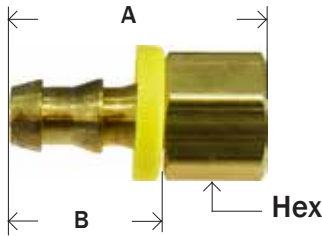


Part #	Hose I.D. x Male NPTF	A	B	Hex	Approx. Wt. Lbs.	
30-200 *	1/4" x 1/8"	1.43	0.87	0.50	0.04	----
30-201 *	1/4" x 1/4"	1.66	0.87	0.56	0.06	----
30-211	1/4" x 3/8"	1.66	0.87	0.68	0.06	----
30-208	1/4" x 1/2"	1.83	0.88	0.88	0.10	----
30-212	5/16" x 1/8"	1.42	0.77	0.43	0.04	----
30-213	5/16" x 1/4"	1.66	0.87	0.56	0.06	----
30-202	3/8" x 1/8"	1.53	0.97	0.50	0.04	----
30-203 *	3/8" x 1/4"	1.69	0.89	0.56	0.07	----
30-204 *	3/8" x 3/8"	1.76	0.97	0.68	0.08	----
30-205	3/8" x 1/2"	1.97	0.97	0.87	0.10	----
30-392	3/8" x 3/4"	1.97	0.92	1.06	0.16	----
30-216	1/2" x 1/4"	1.76	0.97	0.68	0.08	----
30-206 *	1/2" x 3/8"	1.76	0.97	0.68	0.09	----
30-207 *	1/2" x 1/2"	1.97	0.97	0.87	0.14	----
30-217	1/2" x 3/4"	1.97	0.97	1.06	0.16	----
30-218	1/2" x 1"	2.29	0.97	1.37	0.34	----
30-219	5/8" x 3/8"	2.34	1.50	0.75	0.12	----
30-209	5/8" x 1/2"	2.45	1.45	0.87	0.16	----
30-214	5/8" x 3/4"	2.45	1.45	1.06	0.18	----
30-215 *	3/4" x 1/2"	2.45	1.45	0.87	0.21	----
30-210 *	3/4" x 3/4"	2.45	1.45	1.06	0.20	----
30-238	1" x 3/4"	2.93	1.50	1.25	0.43	----

301 P990A HLM 100B-1 KA-MB 272 29PO 725 625 BPN 941 30182

* Available in Stainless Steel, Add SS to part#

RIGID FEMALE ADAPTER



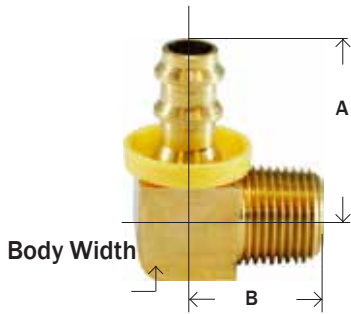
Part #	Hose I.D. x Female NPTF	A	B	Hex	Approx. Wt. Lbs.	
30-220	1/4" x 1/8"	1.35	0.87	0.50	0.02	----
30-221	1/4" x 1/4"	1.51	0.87	0.62	0.06	----
30-384	1/4" x 3/8"	1.51	0.77	0.75	0.06	----
30-391	5/16" x 1/8"	1.32	0.77	0.50	0.03	----
30-222	5/16" x 1/4"	1.51	0.87	0.62	0.06	----
30-393	3/8" x 1/8"	1.47	0.92	0.56	0.06	----
30-224	3/8" x 1/4"	1.61	0.97	0.62	0.06	----
30-225	3/8" x 3/8"	1.63	0.97	0.75	0.06	----
30-394	3/8" x 1/2"	1.66	0.92	0.93	0.12	----
30-397	3/8" x 3/4"	1.97	0.97	1.18	0.20	----
30-223	1/2" x 1/4"	1.76	1.02	0.68	0.08	----
30-226	1/2" x 3/8"	1.63	0.97	0.75	0.08	----
30-227	1/2" x 1/2"	1.77	0.97	0.93	0.14	----
30-396	1/2" x 3/4"	2.07	1.02	1.18	0.20	----
30-398	5/8" x 3/8"	2.24	1.55	0.75	0.10	----
30-229	5/8" x 1/2"	2.24	1.48	0.93	0.11	----
30-403	5/8" x 3/4"	2.26	1.44	1.19	0.20	----
30-399	3/4" x 1/2"	2.24	1.50	0.93	0.14	----
30-395	3/4" x 3/4"	2.55	1.50	1.18	0.24	----
30-400	1" x 3/4"	2.55	1.55	1.18	0.25	----
30-402	1" x 1"	2.68	1.55	1.43	0.37	----

30282 29FPO HLF 626 274 726 940

PUSH ON HOSE BARB

BRASS FITTINGS

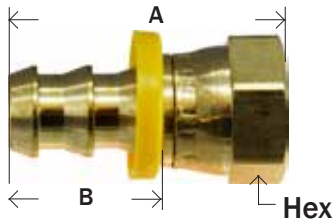
MALE ELBOW



Part #	Hose I.D. x Male NPTF	A	B	Body Width	Approx. Wt. Lbs.	
30-372	1/4" x 1/8"	0.98	0.75	0.50	0.04	----
30-373	1/4" x 1/4"	1.04	0.95	0.56	0.06	----
30-374	5/16" x 1/8"	1.02	0.94	0.50	0.06	----
30-375	5/16" x 1/4"	1.09	0.94	0.56	0.08	----
30-370	3/8" x 1/8"	1.11	0.75	0.50	0.10	----
30-371	3/8" x 1/4"	1.13	0.90	0.56	0.10	----
30-376	3/8" x 3/8"	1.21	0.92	0.70	0.12	----
30-377	3/8" x 1/2"	1.30	1.19	0.87	0.22	----
30-382	1/2" x 3/8"	1.32	1.02	0.70	0.13	----
30-378	1/2" x 1/2"	1.50	1.19	0.87	0.22	----
30-379	5/8" x 1/2"	1.98	1.19	0.87	0.26	----
30-383	3/4" x 1/2"	2.15	1.24	0.87	0.25	----
30-381	3/4" x 3/4"	2.07	1.28	1.06	0.34	----

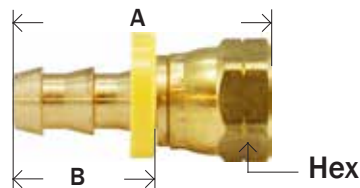
100-C 29EPO 273

SAE/JIC DUAL 45°/37° FEMALE SWIVEL



Part #	Hose I.D. x Dual Seat	UNF Thread	A	B	Hex	Approx. Wt. Lbs.	
30-230 *	1/4" x 1/4"	7/16-20	1.53	0.87	0.56	0.06	----
30-231	1/4" x 5/16"	1/2-20	1.53	0.87	0.62	0.04	----
30-232	5/16" x 5/16"	1/2-20	1.56	0.87	0.62	0.04	----
30-427	3/8" x 5/16"	1/2-20	1.74	0.87	0.62	0.06	----
30-233	3/8" x 1/2"	3/4-16	1.79	0.97	0.87	0.10	----
30-234 *	1/2" x 1/2"	3/4-16	1.77	0.97	0.87	0.10	----
30-235	1/2" x 5/8"	7/8-14	1.84	0.97	1.00	0.12	----
30-236	5/8" x 1/2"	3/4-16	2.27	1.45	0.87	0.18	----
30-237	5/8" x 5/8"	7/8-14	2.33	1.45	1.00	0.14	----
30-428	3/4" x 5/8"	7/8-14	2.33	1.45	1.00	0.20	----

45° SAE FLARE FEMALE SWIVEL



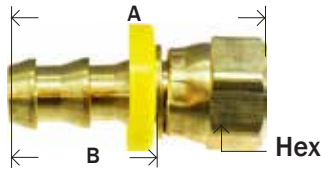
Part #	Hose I.D. x 45° Female Flare	UNF Thread	A	B	Hex	Approx. Wt. Lbs.	
30-250	1/4" x 1/4"	7/16-20	1.54	0.87	0.56	0.04	----
30-251	1/4" x 5/16"	1/2-20	1.57	0.87	0.62	0.04	----
30-253	1/4" x 3/8"	5/8-18	1.63	0.87	0.75	0.06	----
30-254	5/16" x 5/16"	1/2-20	1.58	0.87	0.68	0.06	----
30-260	5/16" x 3/8"	5/8-18	1.63	0.87	0.75	0.08	----
30-252	3/8" x 3/8"	5/8-18	1.73	0.97	0.75	0.10	----
30-257	3/8" x 1/2"	3/4-16	1.85	0.87	0.87	0.10	----
30-261	1/2" x 3/8"	5/8-18	1.92	1.05	0.75	0.10	----
30-255	1/2" x 1/2"	3/4-16	1.77	0.97	0.87	0.12	----
30-258	5/8" x 5/8"	7/8-14	2.35	1.45	1.00	0.14	----
30-259	3/4" x 3/4"	1-1/16-14	2.42	1.45	1.25	0.22	----

30882 728 P990-H 29AEP0 307 284 100S-4 KA-NS HSF 684 934

PUSH ON HOSE BARB

BRASS FITTINGS

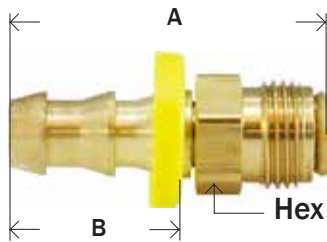
FEMALE 37° JIC FLARE SWIVEL



Part #	Hose I.D. x Female JIC	UNF Thread	A	B	Hex	Approx. Wt. Lbs.	
30-265	1/4" x 1/4"	7/16-20	1.54	0.87	0.56	0.04	----
30-264	1/4" x 3/8"	9/16-18	1.57	0.87	0.68	0.06	----
30-270	5/16" x 3/8"	9/16-18	1.60	0.82	0.68	0.06	----
30-266 *	3/8" x 3/8"	9/16-18	1.70	0.97	0.68	0.08	----
30-267	1/2" x 1/2"	3/4-16	1.78	0.97	0.87	0.10	----
30-268	5/8" x 5/8"	7/8-14	2.33	1.45	1.00	0.14	----
30-269 *	3/4" x 3/4"	1-1/16-12	2.40	1.45	1.25	0.22	----
30-429	1" x 1"	1-5/16-12	2.60	1.45	1.50	0.39	----

JF 944/934 29J1CPO HJF 688 738 288 100B-6 308 P990-F 30682 KA-NJ

INVERTED FLARE MALE SWIVEL



Part #	Hose I.D. x Male INV Flare	UNF Thread	A	B	Hex	Approx. Wt. Lbs.	
30-275	1/4" x 3/16"	3/8-24	1.52	0.87	0.37	0.04	----
30-276	1/4" x 1/4"	7/16-24	1.56	0.87	0.43	0.04	----
30-277	1/4" x 5/16"	1/2-20	1.62	0.87	0.50	0.04	----
30-280	5/16" x 5/16"	1/2-20	1.62	0.87	0.50	0.06	----
30-283	5/16" x 3/8"	5/8-18	1.63	0.87	0.62	0.06	----
30-284	3/8" x 5/16"	1/2-20	1.72	0.97	0.50	0.06	----
30-279	3/8" x 3/8"	5/8-18	1.76	0.97	0.62	0.06	----
30-282	1/2" x 1/2"	3/4-18	1.84	0.97	0.75	0.10	----
30-286	5/8" x 5/8"	7/8-18	2.50	1.57	0.87	0.14	----

290 100B-B KA-MF 1MS 947

GARDEN HOSE FITTINGS



• **Temperature and Working Pressure Ranges**

From +35°F to +100°F at 75 PSI maximum or the recommended working pressure of the garden hose. (Not to exceed 150 PSI.)

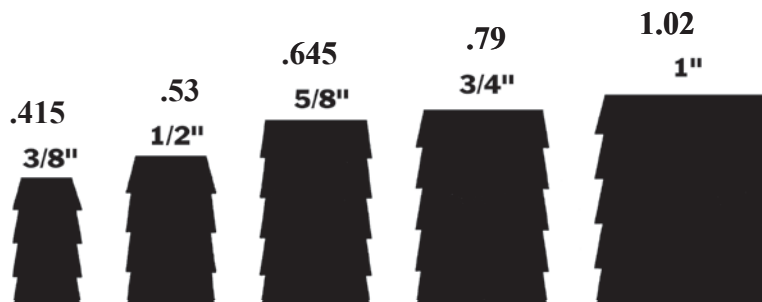
Note: All female connector ends should have a rubber washer inserted prior to usage.

FGH = Female Garden Hose threads
MGH = Male Garden Hose threads
 Male garden hose threads are all 3/4" with an outside diameter of 1.0625 and 11-1/2" threads per inch.



Male Garden Hose Profile

Actual Profile of Garden Hose Barbs



GARDEN HOSE
BRASS FITTINGS

SWIVEL - MGH X FGH

•WASHER INCLUDED

Internal Hex



Part #	MGH X FGH	A	Hex	Approx. Wt. Lbs.	
30-000**	3/4" x 3/4"	1.03	0.50*	0.26	----

* Internal Hex
* Not a live swivel
** available in swivel crimp style

SWIVEL - FGH X FEMALE PIPE

•WASHER INCLUDED



Part #	FGH x Female NPTF	A	Hex	Approx. Wt. Lbs.	
30-001	3/4" x 1/2"	1.20	1.00	0.11	----
30-006	3/4" x 3/4"	1.11	1.12	0.11	----

S1 HSU11 91Z 197S 98GHSV 5AS 21517 502 FS65

RIGID - FGH X FEMALE PIPE

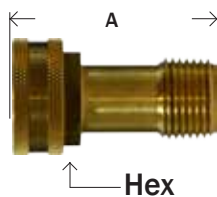


Part #	FGH x Female NPTF	A	Hex	Approx. Wt. Lbs.	
30-078	3/4" x 1/2"	1.06	1.18	0.10	----
30-083	3/4" x 3/4"	1.06	1.18	0.12	----

FS67 198 HU11 21507 501 99GH 5A H15PP

SWIVEL - FGH X MALE PIPE

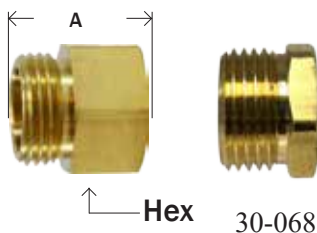
•WASHER INCLUDED



Part #	FGH x Male NPTF	A	Hex	Approx. Wt. Lbs.	
30-047	3/4" x 1/4"	2.04	0.75	0.13	----
30-048	3/4" x 3/8"	2.06	0.75	0.14	----
30-049	3/4" x 1/2"	2.06	0.87	0.18	----

504 89GH W1 62H4 88GH W1

RIGID - MGH X FEMALE PIPE

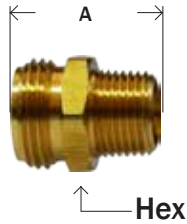


Part #	MGH X Female NPTF	A	Hex	Approx. Wt. Lbs.	
30-066	3/4" x 1/4"	1.10	1.06	0.09	----
30-067	3/4" x 3/8"	1.09	1.06	0.12	----
30-068	3/4" x 1/2"	0.81	1.06	0.10	----
30-073	3/4" x 3/4"	1.12	1.18	0.10	----
30-074	3/4" x 1"	1.36	1.37	0.19	----
30-075	1" x 1"	1.60	1.38	0.25	----

197 18R HU12 H11PP 18A 507 18H 81GH 21503 MF67

GARDEN HOSE BRASS FITTINGS

RIGID - MGH X MALE PIPE



Part #	MGH X Male NPTF	A	Hex	Approx. Wt. Lbs.	
30-054	3/4" x 1/4"	1.26	1.06	0.12	
30-053	3/4" x 3/8"	1.25	1.06	0.10	----
30-058*	3/4" x 1/2"	1.31	1.06	0.12	----
30-063**	3/4" x 3/4" x 1/2"	1.31	1.06	0.13	----
30-063BE***	3/4" x 3/4"	1.31	1.06	0.15	----
30-063S	3/4" x 3/4" Short	1.10	1.06	0.10	----
30-064	3/4" x 1"	1.88	1.37	0.35	----
30-065	1" x 1"	1.88	1.37	0.26	

No Tap

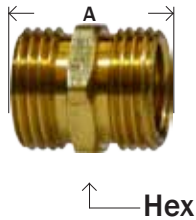
* (1/2 Swt = 5/8 O.D.)

** (Tapped 1/2 FIP)

*** (Tapped 1/2 FIP Both ends)

19R 196 H530 21501 508 HU22 514 71GH 19A

RIGID - MGH X MGH



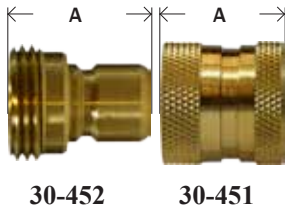
Part #	MGH X MGH	A	Hex	Approx. Wt. Lbs.	
30-098	3/4" x 3/4" (1/2" FIP)	1.22	1.06	0.13	----
30-099	3/4" x 3/4"	1.38	1.06	0.15	----
30-100*	1" x 3/4"	1.31	1.37	0.21	----
30-101	1" x 1"	1.38	1.37	0.23	

* 1-11-1/2

21500 509 75GH 23A H8 19R

QUICK DISCONNECT GARDEN HOSE COUPLERS

•WASHER INCLUDED



- Unvalved construction allows maximum Flow
- 150 PSI
- NBR Seals

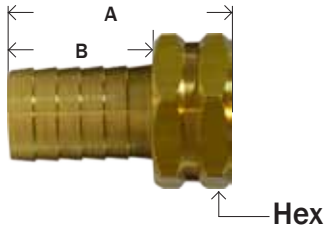
Part #	Size	A	Approx. Wt. Lbs.	
30-450	Complete	1.70	0.24	----
30-451	Female end	1.14	0.12	----
30-452	Male end	1.26	0.12	----
30-149	Recessed Washer	1.02	0.01	

LA73C

BARSTOCK BRASS GARDEN HOSE COUPLINGS

FEMALE SWIVEL ONLY

•WASHER INCLUDED



BRASS

Part #	Hose Barb x FGH	A	B	Hex	Approx. Wt. Lbs.	
30-031	3/8" x 3/4"	1.82	1.19	1.18	0.11	----
30-032	1/2" x 3/4"	1.82	1.19	1.18	0.12	----
30-033	5/8" x 3/4"	1.82	1.19	1.18	0.13	----
30-034	3/4" x 3/4"	1.82	1.19	1.18	0.15	----
30-044	1" x 3/4"	2.10	1.19	1.18	0.18	----
30-035	1" x 1"	2.28	1.47	1.50	0.18	----

STAINLESS STEEL 316

30-032SS	1/2" x 3/4"	1.82	1.19	1.18	0.12	----
30-033SS	5/8" x 3/4"	1.82	1.19	1.18	0.13	----
30-034SS	3/4" x 3/4"	1.82	1.19	1.18	0.15	----

GARDEN HOSE VALVES

BRASS FITTINGS

GARDEN HOSE COUPLING

• WASHER INCLUDED

BRASS



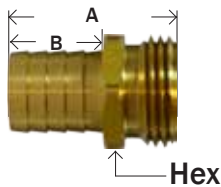
Part #	Hose Barb	
30-025	3/8"	----
30-027	1/2"	----
30-028	5/8"	----
30-029	3/4"	----
30-046	1"(3/4" threads)	----
30-030	1"	----

STAINLESS STEEL 316



30-027SS	1/2"	----
30-028SS	5/8"	----
30-029SS	3/4"	----

MALE END ONLY - Short Shank



Part #	Hose Barb x MGH	A	B	Hex	Approx. Wt. Lbs.	
30-469	1/4" x 3/4"	1.55	0.88	1.06	0.11	
30-471	1/2" x 3/4"	1.55	0.88	1.06	0.11	----
30-472	5/8" x 3/4"	1.56	0.88	1.06	0.12	----
30-473	3/4" x 3/4"	1.56	0.88	1.06	0.13	----

ZINC ALLOY HOSE SHUT-OFF W/ ONE LEVER

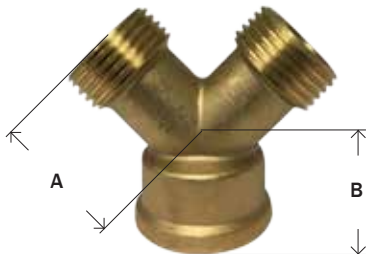
• WASHER INCLUDED



Part #	FGH x MGH	A	Approx. Wt. Lbs.	
30-631	3/4" x 3/4"	1.67	0.08	----

CAST BRASS HOSE - "Y" CONNECTOR

• WASHER INCLUDED



Part #	Size FGH x MGH(2)	A	B	Approx. Wt. Lbs.	
30-140	3/4"	1.40	0.67	0.22	----

86Y 21A

"Y" SHAPE ZINC ALLOY CONNECTOR W/ TWO LEVERS

• WASHER INCLUDED



Part #	Size FGH x MGH(2)	A	B	Approx. Wt. Lbs.	
30-626	3/4"	0.60	1.66	0.10	----

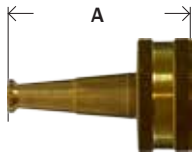
No Swivel

GARDEN HOSE NOZZLES

BRASS FITTINGS

2-1/2" BRASS NOZZLE

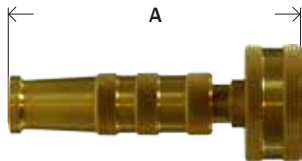
• WASHER INCLUDED



Part #	Size	A	Approx. Wt. Lbs.	
30-637	3/4"	2.50	0.14	----

3" CROSSED PATTERN BRASS NOZZLE

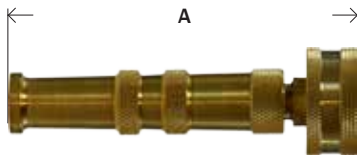
• WASHER INCLUDED



Part #	Size	A	Approx. Wt. Lbs.	
30-640	3/4"	2.89	0.25	----

4" CROSSED PATTERN BRASS NOZZLE

• WASHER INCLUDED



Part #	Size	A	Approx. Wt. Lbs.	
30-638	3/4"	3.80	0.50	----

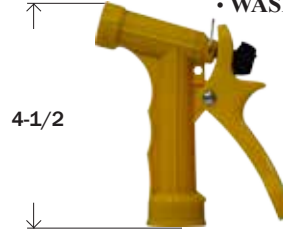
• WASHER INCLUDED



Adjustable Spray

Part #	Size	Description	
30-600	5-1/2"	Zinc Alloy spray nozzle with insulated handle soft grip and front thread protector	----

• WASHER INCLUDED



Part #	Size	Description	
30-630	4-1/2"	Plastic spray nozzle	----

SAE 45° FLARE



Tube O.D.	1/8	3/16	1/4	5/16	3/8	7/16	1/2	5/8	3/4
Thread Size-B	5/16-24	3/8-24	7/16-20	1/2-20	5/8-18	1 1/16-16	3/4-16	7/8-14	1-1/16-14

•Typical Application

LP and natural gas, flammable liquids, instrumentation, refrigeration, power steering, hydraulic and pneumatic systems.

•Working Pressure Ranges

Temperature and type of tubing used are important factors. However, the following table is a good guide for proper selection. Temperature 73°F with copper tubing:

PSI	Tube O.D. (in.)	Tube Wall (in.)
2800	1/8	.030
1900	3/16	.030
1400	1/4	.030
1200	5/16	.032
1000	3/8	.032
750	1/2	.032
650	5/8	.035
550	3/4	.035
450	7/8	.035

•Vibration

Good resistance - use long nut when greater vibration resistance is required.

•Temperature Range

-65°F to +250°F (-53°C to +121°C) range at maximum operating pressures.

•Used With

Copper, brass, aluminum and steel hydraulic tubing that can be flared.

• Tolerance

+/- .03 on all dimensions. Dimension data can change without notice. Please call us when dimensions are critical.

•Conformance

Meets specifications and standards of ASA, ASME, SAE and MS (Military standards).

Assembly Instructions

- 1- Cut tubing to desired length. Make sure all burrs are removed and ends are cut square.
- 2- Slide nut on tube. Threaded end "A" of nut must face out.
- 3- Flare end of tube with a 45° flaring tool.
 - a- Measure flare diameter.
 - b- Examine flare for excessive thin out.
- 4- Lubricate threads and assemble to fitting body. Nut should be turned hand tight.
- 5- Tighten assembly with wrench until a solid feeling is encountered. From that point, apply a one-sixth turn.

Note: Do not over-torque as it may damage the fitting or split the tubing at the flare.

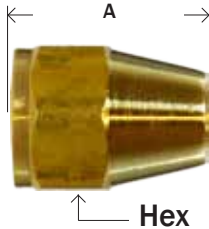
Actual O.D. of Flare Fittings



SAE 45° FLARE
BRASS FITTINGS

SHORT ROD NUT

SAE# 010110

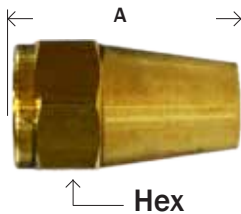


Part #	Thread Size UNF	Thread	A	Hex	Approx. Wt. Lbs.	
10-013	1/8"	5/16-24	0.50	0.37	0.01	----
10-014	3/16"	3/8-24	0.62	0.43	0.02	----
10-015	1/4"	7/16-20	0.75	0.56	0.03	----
10-015L	1/4"	7/16-20	0.75	0.50	0.03	----
10-016	5/16"	1/2-20	0.88	0.62	0.04	----
10-017L	3/8"	5/8-18	0.77	0.75	0.05	----
10-017	3/8"	5/8-18	1.00	0.75	0.04	----
10-018	7/16"	11/16-16	1.06	0.81	0.06	----
10-019L	1/2"	3/4-16	0.93	0.87	0.06	----
10-019	1/2"	3/4-16	1.12	0.87	0.09	----
10-020L	5/8"	7/8-14	1.08	1.00	0.10	----
10-020	5/8"	7/8-14	1.31	1.06	0.15	----
10-021	3/4"	1-1/16-14	1.50	1.25	0.24	----
10-022	7/8"	1-1/4-12	1.62	1.50	0.36	----
10-026	1"	1-3/8-12	1.81	1.62	0.44	----

20910 41FS 1110 N1 41FX 441S 'L'

LONG ROD NUT

SAE# 010111



Part #	Thread Size UNF	A	Hex	Approx. Wt. Lbs.	
10-001	1/8"	0.75	0.37	0.01	----
10-002	3/16"	0.81	0.43	0.02	----
10-003L	1/4"	0.98	0.55	0.03	----
10-003	1/4"	0.94	0.56	0.03	----
10-004	5/16"	1.12	0.62	0.04	----
10-005	3/8"	1.31	0.75	0.06	----
10-006	1/2"	1.62	0.87	0.12	----
10-007	5/8"	1.88	1.06	0.20	----
10-008	3/4"	2.19	1.25	0.34	----

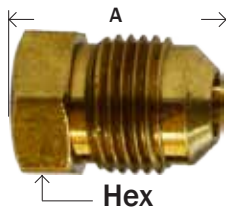
41FL N2 241 441 41

 **"L" means light pattern.**

-These fittings are completely interchangeable with full pattern fittings, but have been modified in some way. This modification is usually in the length of the pipe threads. Used in plumbing and light industrial applications.

SAE 45° FLARE BRASS FITTINGS

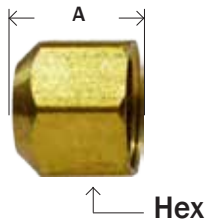
FLARED PLUG



Part #	Thread Size UNF	A	Hex	Approx. Wt. Lbs.	
10-062	1/8"	0.53	0.34	0.01	
10-063	3/16"	0.59	0.50	0.02	----
10-064 *	1/4"	0.69	0.43	0.02	----
10-065 *	5/16"	0.78	0.50	0.04	----
10-066 *	3/8"	0.88	0.62	0.06	----
10-067	1/2"	1.06	0.75	0.10	----
10-068	5/8"	1.19	0.87	0.14	----
10-069	3/4"	1.32	1.06	0.22	----

* Available in Stainless Steel. Add SS to the part# 58 639F PF 57 P2 2229 439

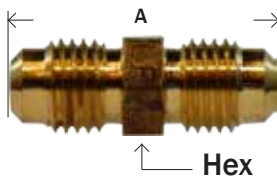
FLARED CAP



Part #	Thread Size UNF	A	Hex	Approx. Wt. Lbs.	
10-073	1/8"	0.46	0.37	0.02	
10-074	3/16"	0.47	0.50	0.02	----
10-075 *	1/4"	0.48	0.50	0.02	----
10-075EH	1/4"	0.54	0.57	0.02	
10-076	5/16"	0.62	0.62	0.04	----
10-077 *	3/8"	0.58	0.75	0.03	----
10-078	1/2"	0.69	0.81	0.14	----
10-079	5/8"	0.81	0.94	0.20	----
10-080	3/4"	1.17	1.37	0.30	----

* Available in Stainless Steel. Add SS to the part# 640F 41FC 56 N5 2129 54 440

UNION



SAE# 010101

Part #	Thread Size UNF	A	Hex	Approx. Wt. Lbs.	
10-104	1/8"	0.91	0.31	0.02	----
10-105	3/16"	1.06	0.37	0.02	----
10-106L	1/4"	1.19	0.43	0.03	----
10-106 *	1/4"	1.19	0.43	0.03	----
10-106EH	1/4"	1.55	0.56	0.05	
10-107	5/16"	1.34	0.50	0.05	----
10-108L	3/8"	1.50	0.62	0.09	----
10-108 *	3/8"	1.50	0.62	0.09	----
10-109L	1/2"	1.67	0.75	0.12	----
10-109	1/2"	1.81	0.75	0.14	----
10-110L	5/8"	2.00	0.87	0.20	----
10-110	5/8"	2.12	0.87	0.20	----
10-111	3/4"	2.44	1.06	0.35	----
10-112	7/8"	2.72	1.25	0.52	----

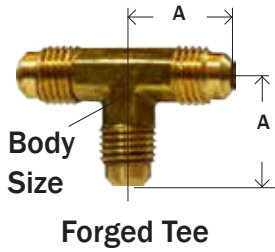
* Available in Stainless Steel. Add SS to the part#

42F U2

SAE 45° FLARE
BRASS FITTINGS

UNION TEE

SAE# 010401



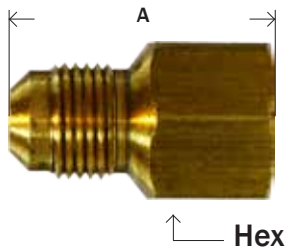
Part #	Thread Size UNF	A	Body Size	Approx. Wt. Lbs.	
10-157	1/8"	0.67	0.36	0.04	----
10-158	3/16"	0.75	0.36	0.06	----
10-159 **	1/4"	0.78	0.36	0.06	----
10-160 **	5/16"	0.91	0.44	0.10	----
10-161 **	3/8"	1.00	0.44	0.12	----
10-162	1/2"	1.16	0.59	0.19	----
10-163	5/8"	1.41	0.69	0.30	----
10-164	3/4"	1.64	0.88	0.53	----
10-165	7/8"	1.75	1.25	0.93	----

** Available in Stainless Steel. Add SS to the part#

244F T2 144F

FEMALE ADAPTER

SAE# 010103



Part #	Male Flare x Female NPTF	A	Hex	Approx. Wt. Lbs.	List Price
10-227	3/16" x 1/8"	0.97	0.56	0.03	----
10-228L	1/4" x 1/8"	1.03	0.56	0.03	----
10-228	1/4" x 1/8"	1.03	0.56	0.04	----
10-229L	1/4" x 1/4"	1.06	0.68	0.06	----
10-229	1/4" x 1/4"	1.23	0.68	0.07	----
10-230	1/4" x 3/8"	1.18	0.81	0.08	----
10-231	1/4" x 1/2"	1.31	0.94	0.06	----
10-232	5/16" x 1/8"	1.06	0.56	0.05	----
10-233	5/16" x 1/4"	1.28	0.68	0.08	----
10-234	3/8" x 1/8"	1.09	0.62	0.08	----
10-235L	3/8" x 1/4"	1.25	0.68	0.08	----
10-235	3/8" x 1/4"	1.31	0.81	0.08	----
10-236L	3/8" x 3/8"	1.25	0.81	0.08	----
10-236	3/8" x 3/8"	1.25	0.81	0.10	----
10-237L	3/8" x 1/2"	1.31	0.94	0.08	----
10-237	3/8" x 1/2"	1.60	1.00	0.16	----
10-238	3/8" x 3/4"	1.41	1.18	0.11	----
10-239	1/2" x 1/4"	1.37	0.75	0.10	----
10-240L	1/2" x 3/8"	1.38	0.81	0.12	----
10-240	1/2" x 3/8"	1.50	0.81	0.14	----
10-241L	1/2" x 1/2"	1.42	0.94	0.10	----
10-241	1/2" x 1/2"	1.75	1.00	0.12	----
10-242L	1/2" x 3/4"	1.40	1.10	0.16	----
10-242	1/2" x 3/4"	1.60	1.12	0.16	----
10-243	5/8" x 3/8"	1.24	0.87	0.12	----
10-244L	5/8" x 1/2"	1.51	0.86	0.15	----
10-244	5/8" x 1/2"	1.62	0.94	0.12	----
10-245	5/8" x 3/4"	1.65	1.12	0.17	----
10-246	3/4" x 1/2"	1.74	1.18	0.32	----
10-247	3/4" x 3/4"	1.75	1.18	0.22	----
10-248	7/8" x 3/4"	1.94	1.31	0.26	----

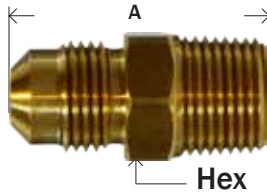
"L" means light pattern.

-These fittings are completely interchangeable with full pattern fittings, but have been modified in some way. This modification is usually in the length of the pipe threads. Used in plumbing and light industrial

SAE 45° FLARE
BRASS FITTINGS

MALE ADAPTER

SAE# 010102



Part #	Male Flare x Male NPTF	A	Hex	Approx. Wt. Lbs.	List Price
10-253	1/8" x 1/8"	0.92	0.43	0.02	----
10-254	3/16" x 1/8"	1.00	0.43	0.03	----
10-255L	1/4" x 1/8"	1.06	0.43	0.03	----
10-255 *	1/4" x 1/8"	1.06	0.43	0.04	----
10-255EH	1/4" x 1/8"	1.06	0.44	0.03	----
10-256L	1/4" x 1/4"	1.15	0.56	0.03	----
10-256 *	1/4" x 1/4"	1.25	0.56	0.04	----
10-257 *	1/4" x 3/8"	1.31	0.68	0.06	----
10-258	1/4" x 1/2"	1.44	0.87	0.11	----
10-259L	5/16" x 1/8"	1.15	0.50	0.04	----
10-259	5/16" x 1/8"	1.16	0.50	0.04	----
10-260L	5/16" x 1/4"	1.31	0.56	0.06	----
10-260	5/16" x 1/4"	1.34	0.56	0.06	----
10-261 *	5/16" x 3/8"	1.38	0.68	0.08	----
10-262	3/8" x 1/8"	1.25	0.62	0.07	----
10-263L	3/8" x 1/4"	1.31	0.62	0.06	----
10-263 *	3/8" x 1/4"	1.44	0.62	0.08	----
10-264L	3/8" x 3/8"	1.37	0.68	0.09	----
10-264 *	3/8" x 3/8"	1.42	0.68	0.09	----
10-265L	3/8" x 1/2"	1.44	0.89	0.12	----
10-265 *	3/8" x 1/2"	1.69	0.87	0.14	----
10-266	3/8" x 3/4"	1.81	1.06	0.18	----
10-267	1/2" x 1/4"	1.60	0.75	0.11	----
10-268L	1/2" x 3/8"	1.46	0.75	0.10	----
10-268	1/2" x 3/8"	1.62	0.75	0.12	----
10-269L	1/2" x 1/2"	1.62	0.87	0.13	----
10-269	1/2" x 1/2"	1.79	0.87	0.15	----
10-270	1/2" x 3/4"	1.75	1.06	0.22	----
10-271	5/8" x 1/4"	1.81	0.87	0.14	----
10-272L	5/8" x 3/8"	1.67	0.87	0.14	----
10-272	5/8" x 3/8"	1.81	0.87	0.18	----
10-273L	5/8" x 1/2"	1.80	0.87	0.11	----
10-273	5/8" x 1/2"	2.00	0.87	0.20	----
10-274	5/8" x 3/4"	1.85	1.06	0.21	----
10-275	3/4" x 1/2"	2.19	1.06	0.28	----
10-276	3/4" x 3/4"	2.08	1.06	0.28	----
10-277	7/8" x 1/2"	2.22	1.25	0.52	----
10-278	7/8" x 3/4"	2.35	1.25	0.41	----
10-279	1" x 3/4"	2.44	1.43	0.53	----
10-280	1" x 1"	2.44	1.43	0.53	----

* Available in Stainless Steel. Add SS to the part#

U1 48



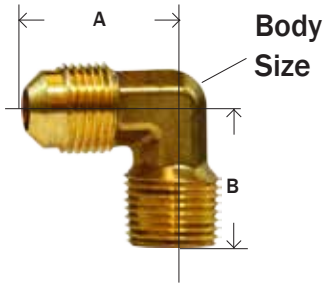
"L" means light pattern.

-These fittings are completely interchangeable with full pattern fittings, but have been modified in some way. This modification is usually in the length of the pipe threads. Used in plumbing and light industrial

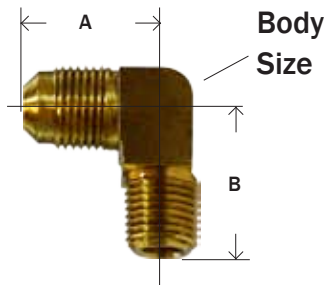
SAE 45° FLARE
BRASS FITTINGS

90° MALE ELBOW

SAE# 010202



Forged Elbow



Barstock Elbow

Part #	Male Flare x Male NPTF	A	B	Body Size	Approx. Wt. Lbs.	List Price
10-283	1/8" x 1/8"	0.63	0.73	0.37	0.04	----
10-283B*	1/8" x 1/8"	0.62	0.69	0.43	0.04	----
10-284	3/16" x 1/8"	0.75	0.75	0.38	0.04	----
10-284B*	3/16" x 1/8"	0.75	0.75	0.43	0.06	----
10-285	3/16" x 1/4"	0.81	0.88	0.44	0.08	----
10-286	1/4" x 1/8"	0.84	0.78	0.38	0.04	----
10-286L	1/4" x 1/8"	0.96	0.80	0.37	0.04	----
10-286B*	1/4" x 1/8"	0.81	0.78	0.47	0.05	----
10-287 **	1/4" x 1/4"	0.81	0.88	0.44	0.05	----
10-287B*	1/4" x 1/4"	0.91	0.93	0.59	0.08	----
10-288 **	1/4" x 3/8"	0.91	0.91	0.47	0.08	----
10-289	1/4" x 1/2"	1.03	1.09	0.59	0.10	----
10-290	5/16" x 1/8"	0.91	0.88	0.44	0.06	----
10-290B*	5/16" x 1/8"	0.91	0.78	0.52	0.06	----
10-291	5/16" x 1/4"	0.98	0.96	0.44	0.08	----
10-291B*	5/16" x 1/4"	0.95	0.92	0.62	0.08	----
10-292	5/16" x 3/8"	1.06	1.09	0.59	0.08	----
10-293	3/8" x 1/8"	1.00	0.91	0.53	0.08	----
10-293B*	3/8" x 1/8"	1.03	0.91	0.65	0.08	----
10-294	3/8" x 1/4"	1.01	0.89	0.48	0.08	----
10-294B*	3/8" x 1/4"	0.97	1.04	0.68	0.11	----
10-295 **	3/8" x 3/8"	1.00	0.88	0.47	0.10	----
10-295L	3/8" x 3/8"	0.95	0.89	0.46	0.11	----
10-295B*	3/8" x 3/8"	1.06	1.09	0.69	0.12	----
10-296 **	3/8" x 1/2"	1.10	1.09	0.59	0.12	----
10-297	3/8" x 3/4"	1.25	1.31	0.81	0.12	----
10-298	1/2" x 1/4"	1.19	1.00	0.59	0.12	----
10-298B*	1/2" x 1/4"	1.22	1.19	0.81	0.12	----
10-299	1/2" x 3/8"	1.10	1.00	0.59	0.13	----
10-299B*	1/2" x 3/8"	1.22	1.12	0.77	0.18	----
10-300	1/2" x 1/2"	1.16	1.13	0.59	0.14	----
10-300B*	1/2" x 1/2"	1.26	1.26	0.94	0.26	----
10-301	1/2" x 3/4"	1.42	1.25	0.81	0.24	----
10-311	5/8" x 1/4"	1.34	1.13	0.72	0.28	----
10-302	5/8" x 3/8"	1.35	1.22	0.72	0.20	----
10-302B*	5/8" x 3/8"	1.41	1.25	0.94	0.20	----
10-303	5/8" x 1/2"	1.35	1.22	0.72	0.20	----
10-303L	5/8" x 1/2"	1.29	1.11	0.70	0.20	----
10-303B*	5/8" x 1/2"	1.41	1.38	0.94	0.20	----
10-304	5/8" x 3/4"	1.44	1.31	0.81	0.25	----
10-305	3/4" x 1/2"	1.67	1.50	0.88	0.34	----
10-306	3/4" x 3/4"	1.67	1.63	0.88	0.30	----
10-306B*	3/4" x 3/4"	1.60	1.62	0.91	0.32	----
10-307	7/8" x 3/4"	1.75	1.68	1.00	0.44	----
10-308	1" x 3/4"	1.94	1.69	1.31	0.75	----
10-309	1" x 1"	1.94	1.75	1.25	0.78	----

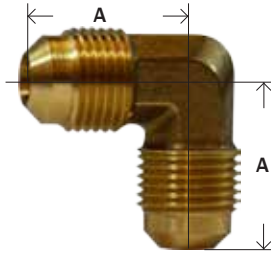
* Barstock

249F 49 E1 149F

** Available in Stainless Steel. Add SS to the part#

SAE 45° FLARE
BRASS FITTINGS

FORGED 90° FLARE ELBOW



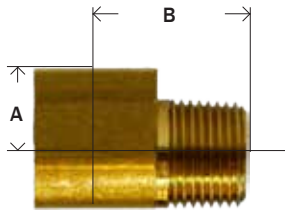
Part #	Thread Size UNF	A	Approx. Wt. Lbs.	List Price
10-404	1/8"	0.64	0.04	----
10-405	3/16"	0.75	0.06	----
10-406	1/4"	0.81	0.08	----
10-406B*	1/4"	0.89	0.04	----
10-407	5/16"	0.91	0.10	----
10-408	3/8"	1.00	0.10	----
10-409	1/2"	1.16	0.14	----
10-409B*	1/2"	1.23	0.22	----
10-410	5/8"	1.41	0.22	----
10-411	3/4"	1.66	0.68	----
10-412	7/8"	1.81	0.82	----

* Barstock

E2 155F

ELBOW

SAE# 040202



Part #	Inv. Flare X Male NPTF	A	B	Approx. Wt. Lbs.	List Price
12-057	1/8" x 1/8"	0.26	0.59	0.03	----
12-058	3/16" x 1/8"	0.26	0.61	0.03	----
12-059	1/4" x 1/8"	0.33	0.65	0.04	----
12-054*	1/4" x 1/8"	0.33	0.65	0.04	----
12-060	1/4" x 1/4"	0.28	0.82	0.06	----
12-061	5/16" x 1/8"	0.47	0.68	0.05	----
12-062	5/16" x 1/4"	0.45	0.85	0.08	----
12-082	5/16" x 3/8"	0.47	0.86	0.12	----
12-063	3/8" x 1/8"	0.54	0.76	0.14	----
12-064	3/8" x 1/4"	0.53	0.92	0.14	----
12-065	3/8" x 3/8"	0.50	0.94	0.12	----
12-114	1/2" x 1/4"	0.72	1.08	0.14	----
12-066	1/2" x 3/8"	0.59	1.03	0.16	----
12-067	1/2" x 1/2"	0.66	1.22	0.25	----
12-056	5/8" x 3/8"	0.67	1.09	0.20	----
12-068	5/8" x 1/2"	0.67	1.29	0.18	----
12-069	3/4" x 1/2"	0.80	1.39	0.42	----
12-080	7/8" x 3/4"	0.94	1.43	0.48	----
12-081	1" x 1"	1.02	1.69	0.60	----

400 2400 2491FHD 402 2491F 49W

COMPRESSION FITTINGS



These are NOT Lead Free

See pages 164-166 for Lead Free products

Tube O.D.	1/8	3/16	1/4	5/16	3/8	7/16	1/2	5/8	3/4	7/8
Thread Size-B	5/16-24	3/8-24	7/16-24	1/2-24	9/16-24	5/8-24	11/16-20	13/16-18	1-18	1-1/8-18
Working Pressure	400	400	300	300	200	200	200	150	100	75

• Typical Application

Use with copper, aluminum and thermoplastic tubing. Not recommended for steel tubing. Manufactured for low and medium pressure tubing connection work where excessive vibration or tube movement is not involved. Not recommended for application using gaseous media.

• Pressure

See table above for working pressures at 73°F.

• Vibration

Fair resistance - use long nut when greater vibration resistance is needed.

• Temperature Range

-65°F to +250°F (-53°C to +121°C) range at maximum operating pressures. (Refer to tubing temperature range.)

• Used With

Aluminum, copper, brass and plastic tubing. Plastic tubing requires insert. Not recommended for steel tubing.

• Tolerance

+/- .02 on all dimensions. Dimension data can change without notice. Please call us when dimensions are critical.

• Conformance

Meets specifications and standards of ASA, ASME and SAE.

• Assembly Instructions

- 1- Cut tubing to desired length.
- 2- Slide nut and then sleeve on tube. Threaded end "A" of nut must face toward fitting.
- 3- Insert tubing into fitting body. Be sure tubing is bottomed on fitting shoulder.
- 4- Lubricate threads and assemble nut to fitting body.
- 5- Tighten nut hand tight. From that point, tighten with a wrench the number of turns indicated in the chart below.

Tube Size	Additional Turns from Hand Tight
1/8" thru 1/4"	1-1/4"
5/16"	1-3/4"
3/8" thru 1"	2-1/4"

• "L" at the end of a Part# means **Light Pattern** - These fittings are completely interchangeable with full pattern fittings, but have been modified in some way. This modification is usually in the length of the pipe threads. Used in plumbing and light industrial applications.

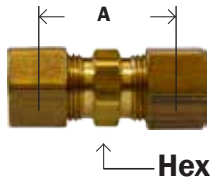
Actual Profile of Compression Threads



COMPRESSION
BRASS FITTINGS

UNION

SAE# 060101BA

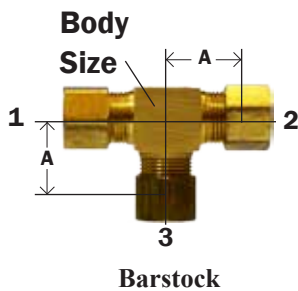
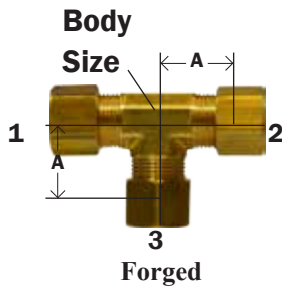


Part #	Size	A	Hex	Approx. Wt. Lbs.	
18-062	1/8"	0.64	0.31	0.03	----
18-063	3/16"	0.75	0.37	0.04	----
18-064L	1/4"	0.79	0.43	0.06	----
18-064	1/4"	0.81	0.43	0.06	----
18-065	5/16"	0.88	0.50	0.06	----
18-066L	3/8"	0.96	0.56	0.09	----
18-066	3/8"	0.98	0.56	0.10	----
18-067	7/16"	1.02	0.62	0.12	----
18-068L	1/2"	1.06	0.68	0.16	----
18-068	1/2"	1.25	0.68	0.16	----
18-069L	5/8"	1.43	0.81	0.24	----
18-069	5/8"	1.25	0.81	0.26	----
18-070	3/4"	1.41	1.00	0.35	----
18-071L	7/8"	1.03	1.12	0.34	----
18-071	7/8"	1.00	1.12	0.36	----
18-072	1"	1.78	1.38	0.58	----

M-62

TEE

SAE# 060401



Part #	Size	A	Body Size	Approx. Wt. Lbs.	
18-101	1/8"	0.61	0.37	0.04	----
18-101B*	1/8"	0.62	0.33	0.04	----
18-102	3/16"	0.59	0.36	0.08	----
18-102B*	3/16"	0.60	0.38	0.08	----
18-103	1/4"	0.63	0.36	0.10	----
18-103B*	1/4"	0.62	0.49	0.10	----
18-104	5/16"	0.72	0.50	0.13	----
18-104B*	5/16"	0.60	0.50	0.14	----
18-105	3/8"	0.75	0.50	0.16	----
18-105B*	3/8"	0.73	0.59	0.16	----
18-106	1/2"	0.94	0.59	0.22	----
18-106B*	1/2"	0.94	0.69	0.24	----
18-107	5/8"	1.06	0.69	0.28	----
18-108	3/4"	1.22	0.88	0.32	----
18-109	7/8"	1.25	0.94	0.34	----

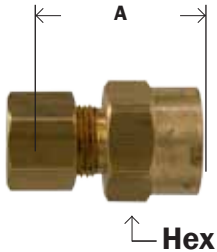
* Barstock

64 264C

COMPRESSION BRASS FITTINGS

FEMALE ADAPTER

SAE# 060103

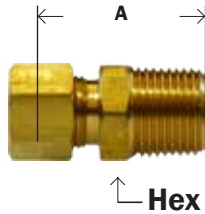


Part #	Comp. X Female NPTF	A	Hex	Approx. Wt. Lbs.	
18-142	1/8" x 1/8"	0.75	0.56	0.02	----
18-143	3/16" x 1/8"	0.78	0.56	0.04	----
18-144	3/16" x 1/4"	0.96	0.68	0.04	----
18-145L	1/4" x 1/8"	0.84	0.50	0.05	----
18-145	1/4" x 1/8"	0.78	0.56	0.05	----
18-146L	1/4" x 1/4"	0.88	0.62	0.09	----
18-146	1/4" x 1/4"	1.03	0.68	0.09	----
18-148	1/4" x 1/2"	1.02	0.87	0.12	----
18-149	5/16" x 1/8"	0.81	0.56	0.05	----
18-150	5/16" x 1/4"	0.91	0.62	0.06	----
18-152	3/8" x 1/8"	0.88	0.56	0.06	----
18-153L	3/8" x 1/4"	0.97	0.62	0.08	----
18-153	3/8" x 1/4"	1.06	0.68	0.08	----
18-154L	3/8" x 3/8"	1.03	0.75	0.08	----
18-154	3/8" x 3/8"	1.06	0.81	0.10	----
18-155	3/8" x 1/2"	1.12	1.00	0.08	----
18-156	3/8" x 3/4"	1.19	1.16	0.14	----
18-157	1/2" x 1/4"	1.09	0.68	0.10	----
18-158L	1/2" x 3/8"	0.94	0.81	0.12	----
18-158	1/2" x 3/8"	1.12	0.81	0.12	----
18-159L	1/2" x 1/2"	1.19	1.00	0.12	----
18-159	1/2" x 1/2"	1.31	1.00	0.12	----
18-160	1/2" x 3/4"	1.25	1.16	0.18	----
18-162L	5/8" x 1/2"	1.20	0.94	0.18	----
18-162	5/8" x 1/2"	1.38	1.00	0.18	----
18-163	5/8" x 3/4"	1.20	1.12	0.22	----
18-164	3/4" x 1/2"	1.25	1.06	0.26	----
18-165	3/4" x 3/4"	1.28	1.19	0.28	----
18-167	7/8" x 1/2"	1.28	1.19	0.32	----
18-166	7/8" x 3/4"	1.31	1.12	0.34	----

COMPRESSION
BRASS FITTINGS

MALE ADAPTER

SAE# 060102

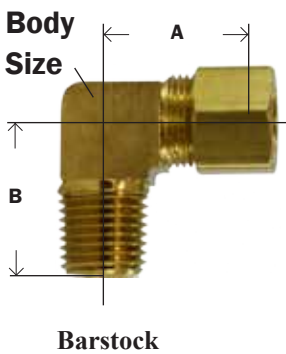
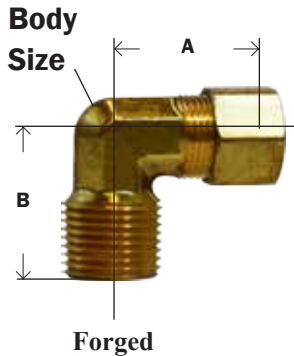


Part #	Comp. X Male NPTF	A	Hex	Approx. Wt. Lbs.	
18-175	1/8" x 1/16"	0.78	0.37	0.02	----
18-176	1/8" x 1/8"	0.78	0.43	0.04	----
18-177	3/16" x 1/8"	0.84	0.43	0.04	----
18-178	3/16" x 1/4"	0.94	0.56	0.06	----
18-179L	1/4" x 1/8"	0.88	0.56	0.04	----
18-179	1/4" x 1/8"	0.88	0.43	0.04	----
18-180L	1/4" x 1/4"	0.94	0.56	0.05	----
18-180	1/4" x 1/4"	1.06	0.56	0.06	----
18-181	1/4" x 3/8"	1.03	0.68	0.08	----
18-182	1/4" x 1/2"	1.09	0.81	0.10	----
18-183	5/16" x 1/8"	0.91	0.50	0.05	----
18-184L	5/16" x 1/4"	1.01	0.56	0.06	----
18-184	5/16" x 1/4"	1.09	0.56	0.06	----
18-185	5/16" x 3/8"	1.06	0.68	0.07	----
18-186	5/16" x 1/2"	1.14	0.87	0.10	----
18-187L	3/8" x 1/8"	0.94	0.56	0.06	----
18-187	3/8" x 1/8"	0.97	0.56	0.06	----
18-188L	3/8" x 1/4"	1.03	0.56	0.06	----
18-188	3/8" x 1/4"	1.16	0.56	0.07	----
18-189L	3/8" x 3/8"	1.09	0.68	0.08	----
18-189	3/8" x 3/8"	1.14	0.69	0.08	----
18-190L	3/8" x 1/2"	1.19	0.88	0.12	----
18-190	3/8" x 1/2"	1.34	0.87	0.13	----
18-191	3/8" x 3/4"	1.29	1.06	0.16	----
18-192	7/16" x 1/4"	1.06	0.62	0.10	----
18-204	7/16" x 3/8"	1.10	0.68	0.12	----
18-193L	1/2" x 1/4"	1.09	0.69	0.11	----
18-193	1/2" x 1/4"	1.22	0.68	0.11	----
18-194L	1/2" x 3/8"	1.16	0.68	0.12	----
18-194	1/2" x 3/8"	1.16	0.69	0.12	----
18-195L	1/2" x 1/2"	1.09	0.81	0.12	----
18-195	1/2" x 1/2"	1.41	0.87	0.19	----
18-196	1/2" x 3/4"	1.38	1.06	0.22	----
18-216	5/8" x 1/4"	1.21	0.87	0.22	----
18-197	5/8" x 3/8"	1.22	0.87	0.24	----
18-198	5/8" x 1/2"	1.12	0.81	0.24	----
18-199	5/8" x 3/4"	1.31	1.06	0.26	----
18-200	3/4" x 1/2"	1.44	1.00	0.26	----
18-201	3/4" x 3/4"	1.50	1.06	0.26	----
18-202	7/8" x 1/2"	1.18	1.12	0.26	----
18-203	7/8" x 3/4"	1.22	1.12	0.28	----
18-205	7/8" x 1"	1.67	1.37	0.32	----
18-206	1" x 3/4"	1.95	1.37	0.44	----
18-207	1" x 1"	2.00	1.38	0.48	----

COMPRESSION
BRASS FITTINGS

MALE ELBOW

SAE# 060202



Part #	Comp. X Male NPTF	A	B	Body Size	Approx. Wt. Lbs.	
18-219	1/8" x 1/16"	0.59	0.73	0.34	0.02	----
18-220	1/8" x 1/8"	0.59	0.75	0.34	0.02	----
18-220B*	1/8" x 1/8"	0.60	0.67	0.43	0.04	----
18-221	3/16" x 1/8"	0.63	0.72	0.34	0.04	----
18-221B*	3/16" x 1/8"	0.62	0.69	0.43	0.06	----
18-223	3/16" x 1/4"	0.60	0.81	0.39	0.05	----
18-223B*	3/16" x 1/4"	0.65	0.85	0.41	0.08	----
18-224	1/4" x 1/8"	0.60	0.75	0.37	0.06	----
18-224B*	1/4" x 1/8"	0.62	0.75	0.43	0.06	----
18-225	1/4" x 1/4"	0.65	0.94	0.36	0.08	----
18-225B*	1/4" x 1/4"	0.61	0.81	0.56	0.08	----
18-226	1/4" x 3/8"	0.75	0.91	0.47	0.08	----
18-227	1/4" x 1/2"	0.81	1.13	0.56	0.12	----
18-228	5/16" x 1/8"	0.66	0.75	0.47	0.06	----
18-228B*	5/16" x 1/8"	0.62	0.75	0.42	0.06	----
18-229	5/16" x 1/4"	0.66	0.81	0.47	0.07	----
18-229B*	5/16" x 1/4"	0.69	0.84	0.57	0.08	----
18-230	5/16" x 3/8"	0.75	0.91	0.47	0.10	----
18-231	5/16" x 1/2"	0.84	1.12	0.56	0.12	----
18-232	3/8" x 1/8"	0.72	0.66	0.39	0.06	----
18-232B*	3/8" x 1/8"	0.69	0.69	0.57	0.06	----
18-233	3/8" x 1/4"	0.75	0.82	0.46	0.08	----
18-233B*	3/8" x 1/4"	0.75	0.94	0.57	0.08	----
18-234	3/8" x 3/8"	0.81	0.94	0.46	0.10	----
18-234B*	3/8" x 3/8"	0.71	0.83	0.69	0.10	----
18-235	3/8" x 1/2"	0.87	1.12	0.56	0.14	----
18-235B*	3/8" x 1/2"	0.88	1.16	0.94	0.14	----
18-248	3/8" x 3/4"	1.03	1.19	0.81	0.18	----
18-248B*	3/8" x 3/4"	1.03	1.20	0.86	0.16	----
18-247	7/16" x 1/4"	0.84	1.00	0.56	0.14	----
18-236	1/2" x 1/4"	0.88	0.97	0.56	0.14	----
18-236B*	1/2" x 1/4"	0.85	0.94	0.07	0.17	----
18-237	1/2" x 3/8"	0.88	1.03	0.56	0.19	----
18-237B*	1/2" x 3/8"	0.94	1.12	0.70	0.19	----
18-238	1/2" x 1/2"	0.94	1.13	0.59	0.17	----
18-238B*	1/2" x 1/2"	0.94	1.31	0.86	0.17	----
18-239	1/2" x 3/4"	1.16	1.25	0.81	0.18	----
18-240	5/8" x 3/8"	1.06	1.12	0.68	0.18	----
18-241	5/8" x 1/2"	1.06	1.16	0.68	0.20	----
18-241B*	5/8" x 1/2"	1.06	1.31	0.86	0.20	----
18-242	5/8" x 3/4"	1.16	1.31	0.81	0.24	----
18-243	3/4" x 1/2"	1.19	1.31	0.94	0.26	----
18-245	3/4" x 3/4"	1.19	1.38	0.94	0.30	----
18-246	7/8" x 3/4"	1.25	1.38	0.94	0.35	----

* Barstock

69 269C BSE1 169C

D.O.T. PUSH-IN TUBE FITTINGS



Meets D.O.T. FMVSS 571.106 SAE J1131 Air Brake System Requirements

Benefits for Cost Savings & Engineering Project

- **Fast assembly:** No tools required. Simply push tubing in. Saves up to 75% of assembly time compared to standard air compression fittings. No loose parts to handle.
- **Fast disconnect:** Hold the collet collar with two fingers and pull out tube. No tools required.
- **Reusable:** Can be connected and disconnected several times.
- **Reliable sealing:** Using recommended tubing, full sealing is guaranteed.
- **Versatility:** Buna N O'ring standard. Viton and others available per request. Secure tube retention. Pulling on tubing only serves to tighten the connection.
- **Pre-Applied Teflon®** based pipe sealant on all male pipe threads, saving customer additional labor.
- **Full Flow Design,** provides more flow area than conventional fittings with internal tube supports even in the swivels.

DOT Fittings are constructed with an all brass captive eyelet which allows for maximum flow. The brass captive eyelet with extended length is floating and has a machined top end radius for easy installation of tubing. All male threads have a pre-applied Teflon® based pipe sealant to provide for easy assembly and leak proof seal.

• Materials:

Brass
"O" Ring: Buna - Nitrile (90 Durometer)
EP (Ethylene Propylene)

• Working Pressures & Temperature Ranges

Vacuum to 150 PSI
-40°F to 200° F (-40°C to +93°C)

D.O.T. PUSH-IN BRASS FITTINGS

UNION



Part #	Tube O.D.	Approx. Wt. Lbs.	
620532	5/32"	0.06	----
620400	1/4"	0.06	----
620600	3/8"	0.13	----
620604	3/8" x 1/4"	0.15	----
620800	1/2"	0.19	----
621000	5/8"	0.30	----
621200	3/4"	0.44	----

AQ62DOT 62PMT 1862 DQ62DOT

UNION TEE



Part #	Tube O.D.	Approx. Wt. Lbs.	
640400	1/4"	0.09	----
640600	3/8"	0.16	----
640800	1/2"	0.25	----
641000	5/8"	0.32	----
641200	3/4"	0.36	----

AQ64DOT 164PMT 1864 DQ64DOT

UNION ELBOW



Part #	Tube O.D.	Approx. Wt. Lbs.	
655320	5/32"	0.03	----
650400	1/4"	0.06	----
650600	3/8"	0.12	----
650800	1/2"	0.18	----

AQ65DOT 165PMT 1865 DQ65DOT

FEMALE CONNECTOR



Part #	Tube O.D. x Female NPTF	Approx. Wt. Lbs.	
660402	1/4" x 1/8"	0.06	----
660404	1/4" x 1/4"	0.10	----
660602	3/8" x 1/8"	0.11	----
660604	3/8" x 1/4"	0.11	----
660606	3/8" x 3/8"	0.17	----
660804	1/2" x 1/4"	0.14	----
660806	1/2" x 3/8"	0.16	----
660808	1/2" x 1/2"	0.25	----

AQ66DOT 66PMT 1866 DQ66DOT

D.O.T. PUSH-IN
BRASS FITTINGS

MALE CONNECTOR



Part #	Tube O.D. x Male NPTF	Approx. Wt. Lbs.	
685320	5/32" x 10/32"	0.02	----
685321	5/32" x 1/16"	0.02	----
685322	5/32" x 1/8"	0.02	----
680302	3/16" x 1/8"	0.02	----
680421	1/4" x 1/16"	0.02	----
680402	1/4" x 1/8"	0.03	----
680404	1/4" x 1/4"	0.04	----
680406	1/4" x 3/8"	0.07	----
680602	3/8" x 1/8"	0.06	----
680604	3/8" x 1/4"	0.07	----
680606	3/8" x 3/8"	0.06	----
680608	3/8" x 1/2"	0.13	----
680804	1/2" x 1/4"	0.11	----
680806	1/2" x 3/8"	0.12	----
680808	1/2" x 1/2"	0.14	----
681006	5/8" x 3/8"	0.18	----
681008	5/8" x 1/2"	0.18	----
681208	3/4" x 1/2"	0.20	----
681212	3/4" x 3/4"	0.20	----

AQ68DOT 68PM 1868 DQ68DOT 68PMT

MALE ELBOW



Forged

Part #	Tube O.D. x Male NPTF	Approx. Wt. Lbs.	
695302	5/32" x 1/16"	0.03	----
695322	5/32" x 1/8"	0.03	----
690302	3/16" x 1/8"	0.03	----
690402	1/4" x 1/8"	0.08	----
690404	1/4" x 1/4"	0.06	----
690406	1/4" x 3/8"	0.11	----
690602	3/8" x 1/8"	0.08	----
690604	3/8" x 1/4"	0.09	----
690606	3/8" x 3/8"	0.11	----
690608	3/8" x 1/2"	0.20	----
690804	1/2" x 1/4"	0.22	----
690806	1/2" x 3/8"	0.22	----
690808	1/2" x 1/2"	0.24	----
691006	5/8" x 3/8"	0.30	----
691008	5/8" x 1/2"	0.32	----
691208	3/4" x 1/2"	0.32	----
691212	3/4" x 3/4"	0.34	----

AQ69DOT 169PMTNS 1869 DQ69DOT

D.O.T. PUSH-IN
BRASS FITTINGS

MALE SWIVEL ELBOW



Forged

Part #	Tube O.D. x Male NPTF	Approx. Wt. Lbs.	
695322S	5/32" x 1/8"	0.07	----
690402S	1/4" x 1/8"	0.06	----
690404S	1/4" x 1/4"	0.10	----
690406S	1/4" x 3/8"	0.10	----
690602S	3/8" x 1/8"	0.10	----
690604S	3/8" x 1/4"	0.11	----
690606S	3/8" x 3/8"	0.12	----
690608S	3/8" x 1/2"	0.20	----
690804S	1/2" x 1/4"	0.16	----
690806S	1/2" x 3/8"	0.18	----
690808S	1/2" x 1/2"	0.26	----
691006S	5/8" x 3/8"	0.28	----
691008S	5/8" x 1/2"	0.30	----
691208S	3/4" x 1/2"	0.50	----
691212S	3/4" x 3/4"	0.56	----

AQ69DOTS 169PMT 1869 DQ69DOTS

FEMALE ELBOW



Forged

Part #	Tube O.D. x Female NPTF	Approx. Wt. Lbs.	
700402	1/4" x 1/8"	0.06	----
700404	1/4" x 1/4"	0.10	----
700406	1/4" x 3/8"	0.16	----
700602	3/8" x 1/8"	0.15	----
700604	3/8" x 1/4"	0.12	----
700606	3/8" x 3/8"	0.17	----
700806	1/2" x 3/8"	0.26	----
700808	1/2" x 1/2"	0.30	----

AQ70DOTS 1870 DQ70DOTS 170PMTNS

MALE SWIVEL RUN TEE



Forged

Part #	Tube O.D. x Male NPTF	Approx. Wt. Lbs.	
710402S	1/4" x 1/8"	0.09	----
710404S	1/4" x 1/4"	0.11	----
710604S	3/8" x 1/4"	0.15	----
710606S	3/8" x 3/8"	0.14	----
710804S	1/2" x 1/4"	0.24	----
710806S	1/2" x 3/8"	0.24	----
710808S	1/2" x 1/2"	0.30	----

AQ71DOTS 171PMT 1871 DQ71DOTS

D.O.T. PUSH-IN
BRASS FITTINGS

MALE 45° ELBOW



Forged

Part #	Tube O.D. x Male NPTF	Approx. Wt. Lbs.	
540402	1/4" x 1/8"	0.06	----
540404	1/4" x 1/4"	0.06	----
540602	3/8" x 1/8"	0.08	----
540604	3/8" x 1/4"	0.09	----
540606	3/8" x 3/8"	0.11	----
540608	3/8" x 1/2"	0.15	----
540804	1/2" x 1/4"	0.13	----
540806	1/2" x 3/8"	0.16	----
540808	1/2" x 1/2"	0.18	----
541006	5/8" x 3/8"	0.22	----
541008	5/8" x 1/2"	0.21	----
541208	3/4" x 1/2"	0.28	----
541212	3/4" x 3/4"	0.32	----

AQ54DOT 179MTNS 1880 DQ54DOT

MALE 45° SWIVEL ELBOW



Part #	Tube O.D. x Male NPTF	Approx. Wt. Lbs.	
540402S	1/4" x 1/8"	0.06	----
540404S	1/4" x 1/4"	0.09	----
540602S	3/8" x 1/8"	0.10	----
540604S	3/8" x 1/4"	0.11	----
540606S	3/8" x 3/8"	0.13	----
540804S	1/2" x 1/4"	0.14	----
540806S	1/2" x 3/8"	0.16	----
540808S	1/2" x 1/2"	0.18	----
541008S	5/8" x 1/2"	0.24	----

AQ54DOTS 179PMT 1880 DQ54DOTS

MALE BRANCH TEE



Forged

Part #	Tube O.D. x Male NPTF (1 x 2) x 3	Approx. Wt. Lbs.	
720302	3/16" x 1/8"	0.07	----
720402	1/4" x 1/8"	0.10	----
720404	1/4" x 1/4"	0.10	----
720604	3/8" x 1/4"	0.14	----
72060404	(3/8" x 1/4") x 1/4"	0.20	----
720606	3/8" x 3/8"	0.15	----
720804	1/2" x 1/4"	0.20	----
720806	1/2" x 3/8"	0.24	----
720808	1/2" x 1/2"	0.32	----
72100808	(5/8" x 1/2") x 1/2"	0.20	----

AQ72DOT 172PMTNS 1872 DQ72DOT

MALE SWIVEL BRANCH TEE



Part #	Tube O.D. x Male NPTF	Approx. Wt. Lbs.	
720402S	1/4" x 1/8"	0.12	----
720404S	1/4" x 1/4"	0.14	----
720602S	3/8" x 1/8"	0.19	----
720604S	3/8" x 1/4"	0.15	----
720606S	3/8" x 3/8"	0.17	----
720804S	1/2" x 1/4"	0.30	----
720806S	1/2" x 3/8"	0.34	----
720808S	1/2" x 1/2"	0.22	----

AQ72DOTS 172PMT 1872 DQ72DOTS

D.O.T. AIR BRAKE - NYLON TUBING



Tube O.D	1/4	3/8	1/2	5/8	3/4
Thread Size-B	7/16-24	17/32-24	11/16-20	13/16-18	1-18

•Typical Application

Air brake systems except where temperatures exceed +200°F or where battery acid can drip on tubing.

•Pressure

Maximum operating pressure of 150 PSI.

•Vibration

Fair resistance.

•Temperature Range

-40°F to +200°F (-40°C to +93°C).

•Material

Brass

•Used With

NT Nylon Tubing - SAE J844 Type A and B.

• Tolerance

+/- .02 on all dimensions. Dimension data can change without notice. Please call us when dimensions are critical

•Advantages

Easy to assemble (no tube preparation or flaring required.) Built in tube support. Fittings utilize a ribbed sleeve for compression and positive grip. May be used with copper tubing by replacing nut, sleeve and insert with long nut and spherical sleeve. Insert should be removed for copper tubing use.

•Conformance

Meets specifications and standards of SAE and DOT FMVSS 571,106.

•Assembly Instructions

- 1- Cut tubing to desired length.
- 2-Slide nut and then sleeve on tubing. Threaded end of nut "A" must face toward fitting body.
- 3-Insert tubing into the preassembled fitting. Be sure tubing is bottomed in fitting.
- 4- Tighten nut to required torque as indicated on chart.

Disassembling: Remove nut and pull tubing out of fitting body. Insert will remain in tubing.

Reassembly: Push tubing and insert into fitting body until it bottoms. Thread nut onto fitting body and torque as in step 4.

Tube Size	Additional Number of Turns from Hand-Tight
1/4	3
3/8, 1/2	4
5/8, 3/4	3-1/2

D.O.T. AIR BRAKE - NYLON TUBING

BRASS FITTINGS

SLEEVE

SAE# 100115



Part #	Tube O.D.	Approx. Wt. Lbs.	
38-000	3/16"		----
38-001	1/4"	0.01	----
38-002	3/8"	0.01	----
38-003	1/2"	0.01	----
38-004	5/8"	0.01	----
38-005	3/4"	0.01	----

60NAB 60NTA 1460

NUT

SAE# 100110



Part #	Tube O.D.	Approx. Wt. Lbs.	
38-009	3/16"		----
38-010	1/4"	0.02	----
38-011	3/8"	0.03	----
38-012	1/2"	0.05	----
38-013	5/8"	0.06	----
38-014	3/4"	0.09	----

61NAB 61NTA 1461

UNION

SAE# 100101BA



Part #	Tube O.D.	Approx. Wt. Lbs.	
38-018	3/16"		----
38-019	1/4"	0.07	----
38-020	3/8"	0.11	----
38-021	1/2"	0.20	----
38-022	5/8"	0.25	----
38-023	3/4"	0.40	----

62NAB 62NTA 1462

STAINLESS STEEL INSERT

• 300 series stainless

• For SAE# J844 TUBING



Part #	Tube O.D.	Approx. Wt. Lbs.	
38-035	1/4"	0.01	----
38-036	3/8"	0.01	----
38-037	1/2"	0.01	----
38-038	5/8"	0.01	----
38-039	3/4"	0.01	----

59A 63NTA

BRASS INSERT



Part #	Tube O.D.	Approx. Wt. Lbs.	
38-040	1/4"	0.01	----
38-041	3/8"	0.01	----
38-042	1/2"	0.01	----
38-043	5/8"	0.01	----
38-048	3/4"	0.02	----

TEE

SAE# 100401BA



Part #	Tube O.D.	Approx. Wt. Lbs.	
38-044	1/4"	0.12	----
38-045	3/8"	0.19	----
38-046	1/2"	0.36	----
38-047	5/8"	0.48	----

64NAB 264NTA 1464

D.O.T. AIR BRAKE - NYLON TUBING

BRASS FITTINGS

MALE ADAPTER

SAE# 100102BA



Part #	Tube O.D. x Male NPTF	Approx. Wt. Lbs.	
38-072	1/4" x 1/16"	0.05	----
38-073	1/4" x 1/8"	0.05	----
38-074	1/4" x 1/4"	0.06	----
38-075	1/4" x 3/8"	0.08	----
38-076	3/8" x 1/8"	0.07	----
38-077	3/8" x 1/4"	0.08	----
38-078	3/8" x 3/8"	0.10	----
38-079	3/8" x 1/2"	0.14	----
38-080	1/2" x 1/4"	0.13	----
38-081	1/2" x 3/8"	0.14	----
38-082	1/2" x 1/2"	0.18	----
38-087	1/2" x 3/4"	0.23	----
38-083	5/8" x 3/8"	0.17	----
38-084	5/8" x 1/2"	0.21	----
38-088	5/8" x 3/4"	0.25	----
38-085	3/4" x 1/2"	0.28	----
38-086	3/4" x 3/4"	0.30	----

68NAB 68NTA 1468

SWIVEL MALE ADAPTER



Part #	Tube O.D. x Male NPTF	Approx. Wt. Lbs.	
38-078S	3/8" x 3/8"	0.18	----
38-081S	1/2" x 3/8"	0.22	----

MALE ELBOW

SAE# 100202BA



Part #	Tube O.D. x Male NPTF	Approx. Wt. Lbs.	
38-091	1/4" x 1/8"	0.06	----
38-092	1/4" x 1/4"	0.08	----
38-093	1/4" x 3/8"	0.13	----
38-094	3/8" x 1/8"	0.09	----
38-095	3/8" x 1/4"	0.11	----
38-090	3/8" x 1/4" LONG	0.14	----
38-101	3/8" x 3/8"	0.14	----
38-102	3/8" x 1/2"	0.20	----
38-103	1/2" x 1/4"	0.16	----
38-104	1/2" x 3/8"	0.20	----
38-109	1/2" x 3/8" LONG	0.26	----
38-105	1/2" x 1/2"	0.29	----
38-106	5/8" x 3/8"	0.26	----
38-107	5/8" x 1/2"	0.32	----
38-110	5/8" x 3/4"	0.40	----
38-108	3/4" x 1/2"	0.43	----
38-111	3/4" x 3/4"	0.51	----

269NTA 1469

SWIVEL MALE ELBOW



Part #	Tube O.D. x Male NPTF	Approx. Wt. Lbs.	
38-101S	3/8" x 3/8"	0.28	----
38-104S	1/2" x 3/8"	0.32	----

D.O.T. AIR BRAKE - NYLON TUBING

BRASS FITTINGS

MALE RUN TEE

SAE# 100424BA

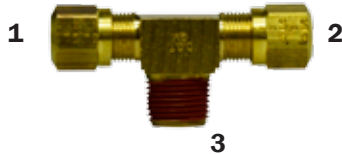


Part #	Tube O.D. x Male NPTF x Tube O.D. 1x2x3	Approx. Wt. Lbs.	
38-125	1/4" x 1/8" x 1/4"	0.10	----
38-126	1/4" x 1/4" x 1/4"	0.13	----
38-124	3/8" x 1/4" x 1/4"	0.14	----
38-127	3/8" x 1/4" x 3/8"	0.17	----
38-128	3/8" x 3/8" x 3/8"	0.20	----
38-129	1/2" x 3/8" x 1/2"	0.30	----

71NAB 271NTA 1471

MALE BRANCH TEE

SAE# 100425BA



Part #	Tube O.D. x Tube O.D. x Male NPTF 1x2x3	Approx. Wt. Lbs.	
38-136	1/4" x 1/4" x 1/8"	0.10	----
38-137	1/4" x 1/4" x 1/4"	0.13	----
38-138	3/8" x 3/8" x 1/8"	0.14	----
38-132	3/8" x 1/4" x 1/4"	0.15	----
38-139	3/8" x 3/8" x 1/4"	0.17	----
38-133	1/2" x 1/2" x 1/4"	0.26	----
38-140	3/8" x 3/8" x 3/8"	0.21	----
38-134	1/2" x 3/8" x 3/8"	0.26	----
38-141	1/2" x 1/2" x 3/8"	0.30	----
38-142	1/2" x 1/2" x 1/2"	0.37	----
38-143	5/8" x 5/8" x 1/2"	0.44	----

72NAB 272NTA 1472

45° ELBOW

SAE# 100302BA



Part #	Tube O.D. x Male NPTF	Approx. Wt. Lbs.	
38-148	1/4" x 1/8"	0.06	----
38-149	1/4" x 1/4"	0.08	----
38-150	3/8" x 1/8"	0.09	----
38-151	3/8" x 1/4"	0.11	----
38-152	3/8" x 3/8"	0.14	----
38-153	3/8" x 1/2"	0.24	----
38-157	1/2" x 1/4"	0.18	----
38-154	1/2" x 3/8"	0.19	----
38-155	1/2" x 1/2"	0.25	----
38-156	5/8" x 1/2"	0.30	----
38-158	3/4" x 1/2"	0.38	----

6945NAB 279NTA 1480

SWIVEL 45° ELBOW



Part #	Tube O.D. x Male NPTF	Approx. Wt. Lbs.	
38-152S	3/8" x 3/8"	0.20	----
38-154S	1/2" x 3/8"	0.24	----

D.O.T. AIR BRAKE REUSABLE HOSE/ FITTINGS



•Typical Application

Air Brake hose connections.
Meets SAE & DOT specifications
(FMVCS 10 GAL)

•Pressure

Determined by maximum working pressure for hose size.
Up to 125 psi

Temperature: -40°F to + 120° F (-40°C to +48°C)

•Advantages

Can be used for nearly any brake line. Easy to assemble with a good selection of hose end configurations. Brass material offers excellent resistance against corrosion.

• Tolerance

+/- .02 on all dimensions. Dimension data can change without notice. Please call us when dimensions are critical.

•Assembly Instructions

- 1- Slide nut and sleeve onto hose. Make sure bevel edge of sleeve faces out toward fitting.
- 2- Push hose into fitting until it bottoms.
- 3- Screw nut until contact is made with body hex.

NOTE: When reassembling fitting, body and nut should be inspected. Only reuse if in proper condition. Sleeves should never be reused.

SLEEVE

FERRULE



Part #	Hose I.D. Size	Approx. Wt. Lbs.	
38-300	3/8"	0.02	----
38-301	1/2"	0.02	----

#60HC 3380-A 0903610 367 60RB

NUT



Part #	Hose I.D. Size	Approx. Wt. Lbs.	
38-306	3/8"	0.04	----
38-307	1/2"	0.06	----

61RB #61HC 369 3380-B 0903624

D.O.T. AIR BRAKE - HOSE/ENDS

BRASS FITTINGS

UNION



Part #	Hose I.D.	Thread	Approx. Wt. Lbs.	
38-318	3/8"	31/32-20	0.32	----
38-319	1/2"	1-1/8-20	0.48	----

#62HC 3380B-Y0 362



Part #	Hose I.D.	Thread	Approx. Wt. Lbs.	
39-318	3/8"	31/32-20	0.32	----
39-319	1/2"	1-1/8-20	0.48	----

BODY ONLY

FEMALE CONNECTOR HOSE



Part #	Hose I.D. x Female ABS	Approx. Wt. Lbs.	
38-357	3/8" x 3/4-20	0.24	----
38-358	1/2" x 7/8-20	0.39	----

#66ABS 66RBSV 3380B-Y7 386



Part #	Hose I.D. x Female ABS	Approx. Wt. Lbs.	
39-357	3/8" x 3/4-20	0.24	----
39-358	1/2" x 7/8-20	0.38	----

BODY ONLY

ADAPTER FOR SWIVEL TYPE REUSABLE AND CRIMPED ON



Part #	Male ABS x Male Pipe	ABS Thread	Approx. Wt. Lbs.	
38-369	3/8" x 1/4"	3/4-20	0.05	----
38-368	3/8" x 3/8"	3/4-20	0.08	----
38-372	3/8" x 1/2"	3/4-20	0.12	----
38-370	1/2" x 3/8"	7/8-20	0.10	----
38-371	1/2" x 1/2"	7/8-20	0.12	----

#68ABS 1390 76RB 388

MALE ADAPTER



Part #	Hose I.D. x Male Pipe	Approx. Wt. Lbs.	
38-333	3/8" x 1/4"	0.22	----
38-334	3/8" x 3/8"	0.24	----
38-335	3/8" x 1/2"	0.26	----
38-336	1/2" x 3/8"	0.33	----
38-337	1/2" x 1/2"	0.36	----

#68HC 368 3380B-Y2 68RB

MALE ADAPTER



Part #	Hose I.D. x Male Pipe	Approx. Wt. Lbs.	
38-342	3/8" x 1/4"	0.32	----
38-343	3/8" x 3/8"	0.34	----
38-344	3/8" x 1/2"	0.38	----
38-345	1/2" x 3/8"	0.48	----
38-346	1/2" x 1/2"	0.52	----

#68HCS 3380B-Y3 68RBSG 378

DRAIN COCKS

BRASS FITTINGS

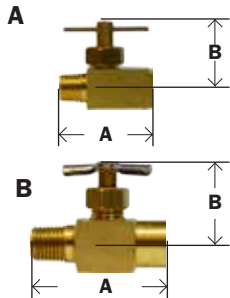
RADIATOR TYPE - External Seat



Part #	Male Pipe	Industry Number	Ind #	A	Hex	Approx. Wt. Lbs.	
46-085	1/8"	M-320-P	135	0.90	0.43	0.02	----
46-086	1/4"	M-321-P	145	1.00	0.56	0.04	----
46-087	3/8"	M-322-P	270	1.25	0.68	0.08	----
46-083	1/2"	108	108	1.48	0.87	0.12	----

320D 240 DC604 801

MALE X FEMALE PIPE



NBR seals -30°C to 120°C

Part #	Male Pipe X Female Pipe	Handle	Ind. #	A	B	Approx. Wt. Lbs.	
46-060	1/8"	A	M-305-P	1.18	1.09	0.10	----
46-061	1/4"	A	M-3055-P	1.60	1.14	0.18	----
46-061L	1/4" Light Pattern	B	M-3055-P	1.88	1.09	0.21	----

NV108P 2305 818 3120

FORGED BRASS BALL VALVE

• BRASS • 600WOG • FULL PORT



ISO 9002 Manufacturer FEATURES

1/4"-2" 600 PSI non-shock cold water, gas, oil -
150 PSI saturated steam

2-1/2"- 4" 400 PSI non-shock cold water, gas, oil

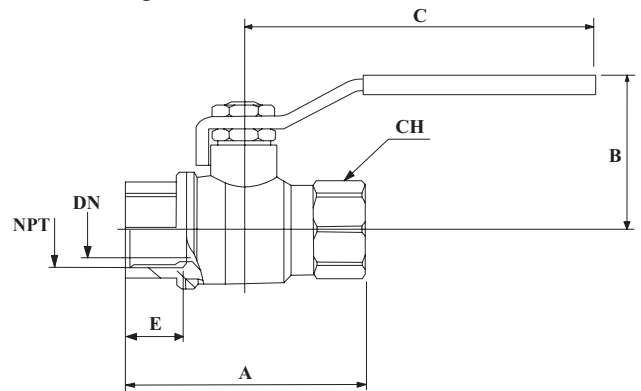
Made in China

- Suitable for full range of liquids and gases
- Minimal pressure drop due to large full size ports
- Bottom loaded, pressure retaining stem
- Pressure rated for 1/4"-2" at 600psi (42 bars) and 2-1/2"-4" at 400 psi WOG (non-shock) and 150 WSP (10.34 bars) saturated steam. Virgin PTFE stem packing seal, thrust washer and seats
- Yellow vinyl insulator on heavy duty plated carbon steel handles
- Fast 1/4 turn open or close operation
- Not Lead Free
- Good for gasoline

- Low operating torque
- Adjustable stem packing gland
- Maximum operating temperature: 302°F (150°C)
- Minimum operating temperature: -22°F (-30°C)
- Each valve individually tested
- Forged Brass - for more strength
- Threaded ends to ANSI B1.20.1
- Hard chromium plated solid ball
- Bottom entry, blow-out proof stem
- Deeper threads - for better connections



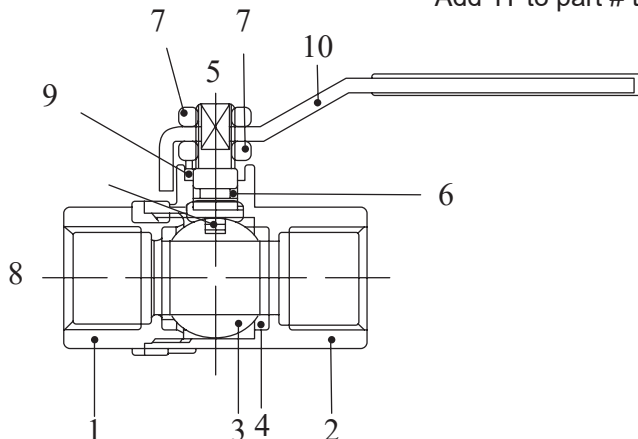
• Generic Handles



Part#	Size NPT	Dimension Inches						Weight	Box/Case	
		DN	A	B	C	E	CH			
940-171	1/4"	0.39	1.75	1.92	3.54	0.46	0.78	0.34	70/140	----
940-172	3/8"	0.41	1.75	1.92	3.54	0.46	0.78	0.30	70/140	----
940-173	1/2"	0.58	2.05	2.08	3.54	0.52	0.98	0.44	50/100	----
940-174	3/4"	0.75	2.36	2.30	3.78	0.56	1.20	0.67	30/60	----
940-175	1"	0.94	2.75	2.68	4.52	0.66	1.50	1.05	20/40	----
940-176	1-1/4"	1.26	3.30	3.14	4.52	0.70	1.82	1.50	12/24	----
940-177	1-1/2"	1.57	3.66	3.61	5.51	0.72	2.09	2.30	9/18	----
940-178	2"	1.97	4.18	3.68	5.51	0.74	2.62	3.38	6/12	----
940-179*	2-1/2"	2.52	5.38	4.76	8.66	1.01	3.36	7.61	4/8	----
940-180*	3"	2.95	6.04	5.08	8.66	1.11	3.86	11.10	2/4	----
940-181*	4"	3.89	7.38	5.86	9.00	1.22	4.89	12.12	1/2	----

* 400 PSI

* Add 'H' to part # to order handles *



POS	Components	Materials	N
1	Body	Forged Brass	1
2	End Connection	Forged Brass	1
3	Ball	CP Brass	1
4	Ball Seat	P.T.F.E.	2
5	Stem	Brass	1
6	Gland	Brass	1
7	Nut	Steel	1
8	Spring Inseat	Steel	1
9	Stem Seal	P.T.F.E.	1
10	Handle	Steel	1

• Not Lead Free AB1953 Compliant

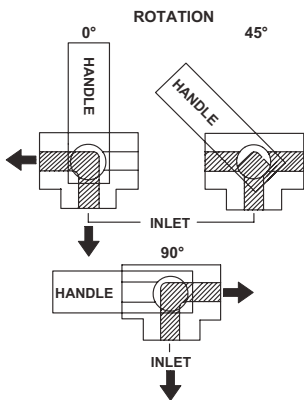
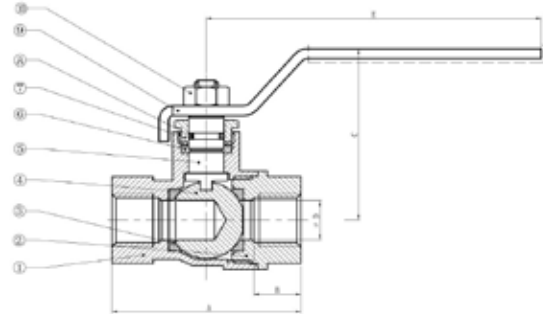
SIDE OUTLET 3-WAY BALL VALVE

- BRASS
- 600WOG
- FULL PORT

- Forged Brass
- 600 WOG
- Temp Rating 0-230°F



- Side outlet



- Full Port
- Blow-out proof stem
- double o-ring stem packing
- PTFE Seal
- Made in China
- Not lead free

Nomenclature & Materials

NO	Part Name	Material	Qty
1	Body	Brass	1
2	End Cap	Brass	1
3	Ball Seat	PTFE	1
4	Ball	Brass	1
5	Stem	Brass	2
6	Seal	PTFE	1
7	Impacted Nut	Brass	1
8	O-Ring	NBR	2
9	Lever Handle	Steel	1
10	Stem Nut	Steel	1

Part#	Size	I	H	D	L	A	WTG	Box/Case	
940-464	1/4"	1.89	1.73	0.39	3.58	0.47	0.51	50/100	----
940-465	3/8"	1.89	1.73	0.39	3.35	0.47	0.57	50/100	----
940-461	1/2"	2.11	1.80	0.50	3.58	0.51	0.65	30/60	----
940-462	3/4"	2.56	2.16	0.74	4.31	0.55	0.99	20/40	----

VACUUM BREAKER

- Male hose and female hose threads can be broken off for permanent attachment
- Set screw
- Vandal proof
- Rough brass construction
- Prevents back-siphonage on hoses to prevent potable water from getting contaminated
- Certified under ASSE Std. 1011
- UPC
- CSA



Part #	Size	
947-055	3/4" x 3/4"	----
947-055LF	3/4" x 3/4"	

BRASS GATE VALVE

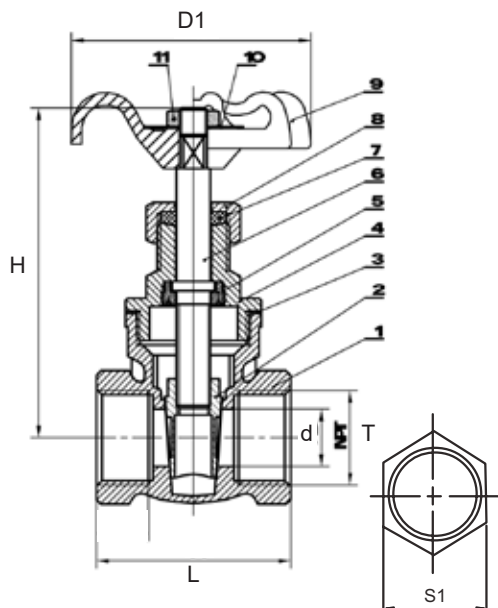
• BRASS • 200WOG • FULL PORT

- 200 WOG (cold water, oil, gas).
- 125 WSP (Saturated Steam).
- Full-port design for a better water flow.
- Screw-in Bonnet - Non-Rising Stem - Solid Wedge
- NPT Threaded ends to ANSI B1.20.1
- Cast iron handle.
- Each valve individually air tested under water.
- Good for diesel fuel.
- Made in Indonesia
- Not lead free
- Temp. 32°-320°F



BRASS GATE VALVES IPS

Part#	Size	L	H	D1	d	T	S1	Weight	Box/Case	
940-130	1/4	1.64	2.91	2.09	0.44	1/4-18 NPT	.85	0.60	10/120	----
940-131	3/8	1.71	2.91	2.09	0.48	3/8-18 NPT	.85	0.59	10/120	----
940-132	1/2	1.71	2.91	2.09	0.50	1/2-14 NPT	1.03	0.75	10/120	----
940-133	3/4	1.71	3.06	2.13	0.74	3/4-14 NPT	1.26	0.83	10/80	----
940-134	1	2.13	3.60	2.48	0.97	1-11.5 NPT	1.51	1.24	5/60	----
940-135	1-1/4	2.24	4.50	2.66	1.22	1-1/4-11.5 NPT	1.89	1.69	5/40	----
940-136	1-1/2	2.44	5.08	3.15	1.45	1-1/2-11.5 NPT	2.17	2.17	5/30	----
940-137	2	2.70	5.94	3.52	1.85	2-11.5 NPT	2.60	3.33	2/24	----
940-138	2-1/2	3.70	7.87	3.98	2.48	2-1/2-8 NPT	3.27	6.26	1/10	----
940-139	3	4.02	8.82	4.37	2.80	3-8 NPT	3.86	8.34	1/6	----
940-140	4	4.53	9.88	4.74	3.60	4-8 NPT	4.88	13.09	1/4	----



NO	Description	Material
1	Body	C85700
2	Disk	C85700
3	Seat	PTFE
4	Cap	C85700
5	Packing	C85700
6	Stem	C85700
7	Rubber Seat	NBR
8	Packing Nut	C85700
9	Handle	Cast Iron
10	Nameplate	AL
11	Stem Nut	SAE 1010R

Y-PATTERN STRAINER VALVES

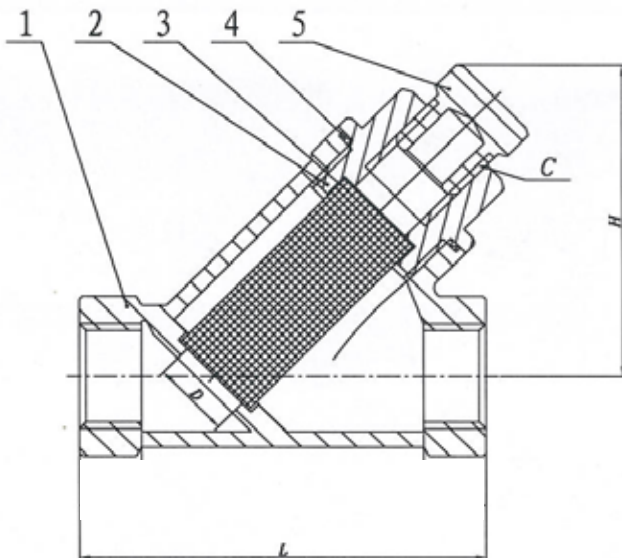
CLASS 150 BRASS Y-PATTERN STRAINER

- Forged Brass body, size 1/4"-3".
- Pressure rating: 150 WOG (water, oil, gas)/PN25
150 WSP (Saturated Steam)
- NPT Threaded ends to ANSI B1.20.1
- Protects regulators, pumps, meters and other controls from damage due to sediment scale, metal chips or other foreign materials.
- Screwed cap is threaded & gasketed.
- Tapped drain plug opening in cap.
- 304 stainless steel screen #20 mesh.
- Self cleaning.
- Self cleaning can be accomplished by opening the valve or plug connected to the blow-off outlet.
- Made in Indonesia
- NOT LEAD FREE
- w/20 Mesh Screen
- Temp 180°F



Part#	Size	L	H	C (Plug)	Weight	Box/Case	
940-521	1/4"	2.57	1.95	NPT 3/8	.53	10/100	----
940-522	3/8"	3.23	2.44	NPT 3/8	.71	12/48	----
940-523	1/2"	3.23	2.44	NPT 3/8	.66	12/48	----
940-524	3/4"	3.94	2.78	NPT 3/8	1.10	8/48	----
940-525	1"	4.53	3.19	NPT 1/2	1.71	8/32	----
940-526	1-1/4"	5.33	3.66	NPT 1/2	2.49	6/24	----
940-527	1-1/2"	6.20	3.82	NPT 1/2	3.24	2/16	----
940-528	2"	7.44	4.65	NPT 1/2	5.39	2/8	----
940-529	2-1/2"	9.50	5.39	NPT 3/4	9.56	1/6	----
940-530	3"	9.4	5.67	NPT 3/4	13.49	1/4	----

Add 'S' to part # for replacement screens



NO	Name	Material
1	BODY	C85700
2	BONNET	C85700
3	STRAINER	304 S.S.
4	SPRING SEAL	PTFE
5	END CAP	C85700

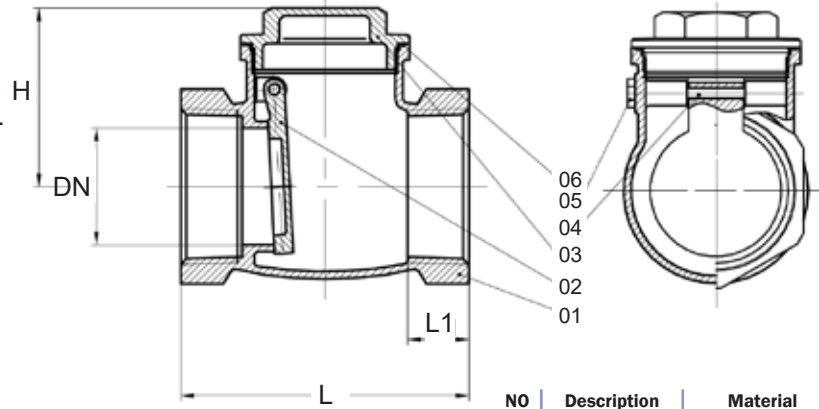
BRASS SWING CHECK VALVES VALVES

BRASS SWING CHECK VALVES

- Working pressure non-shock: 200 psi W.O.G. (cold water, oil, gas) 125 psi WSP (saturated steam)
- Swing type disc.
- Screwed Cap.
- Hard Seat.
- 90° Straight Pattern.
- Used to prevent reverse flow in commercial and industrial applications.
- Threaded ends to ANSI B1.20.1

- Integral seat.
- Temp range -5° - 150F°
- NOT LEAD FREE
- Cracking pressure 3-5 psi

- Made in Indonesia



NO	Description	Material
1	Body	C85700
2	Disc	C85700
3	Cap	C85700
4	Brass Bar	C85700
5	Screw	C85700
6	Gasket	Fibre H

CAST BRASS SWING CHECK VALVES IPS SCREWED ENDS

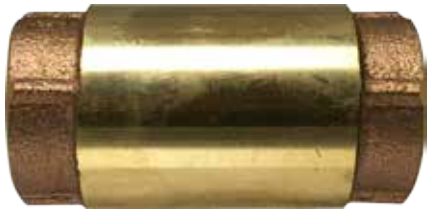
Part #	Size	L	H	L1	DN	Weight	Box/Case	
940-352	1/2	2.09	1.42	0.531	0.512	.41	10/100	----
940-353	3/4	2.36	1.56	0.579	0.728	.56	10/80	----
940-354	1	2.62	1.77	0.748	0.925	.73	5/60	----
940-355	1-1/4	3.19	2.07	0.748	1.201	1.36	5/40	----
940-356	1-1/2	3.54	2.16	0.846	1.417	1.56	5/30	----
940-357	2	4.21	2.74	0.886	1.772	2.58	2/20	----
940-358	2-1/2	5.14	3.09	1.063	2.224	4.55	1/15	----
940-359	3	5.77	3.80	1.102	2.579	6.53	1/6	----
940-360	4	6.84	4.25	1.102	3.602	10.18	1/4	----

BRASS CHECK VALVES

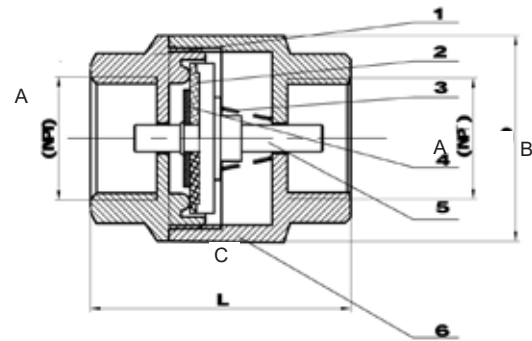
BRASS CHECK VALVES

S.S. SPRING LOADED BRONZE POPPET - For positive sealing & self-cleaning. Insures against leakage.

- Inline Lift Type - Resilient Discs - Spring Actuated - Threaded.
- Pressure rating: 200 WOG (water, oil, gas) / 125 WSP (Saturated Steam)
- Spring in stainless steel AISI 304. • Resilient washer hold/ disc in brass. • Forged Brass Body for 1/2"-2"
- Corrosion resistant material. • Can be used vertically or horizontally. • Opens & Closes with flow of media.
- No cracking pressure. • NOT LEAD FREE • Made in Indonesia



Temp Range
-10°C - 110°C
14°F - 248°F



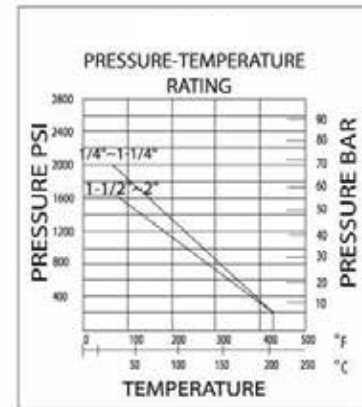
Brass Check Valve (Inches)

Part#	Size	Enters Pipe Size	A NPT	B	C	Weight	Box/Case	
944-428	1/4"	-	1/4"	1.00	2.29	.24	24/192	----
944-429	3/8"	-	3/8"	1.00	2.07	.23	10/100	----
944-430	1/2"	1-1/4"	1/2"	1.26	2.40	.42	10/100	----
944-431	3/4"	1-1/4"	3/4"	1.45	2.74	.53	10/80	----
944-432	1"	2"	1"	1.77	3.23	.80	6/60	----
944-433	1-1/4"	2-1/2"	1-1/4"	2.13	3.62	1.18	4/40	----
944-434	1-1/2"	3"	1-1/2"	2.29	4.04	1.40	5/30	----
944-435	2"	3-1/2"	2"	2.48	5.04	2.70	5/20	----

316 SS FULL PORT VALVES VALVES

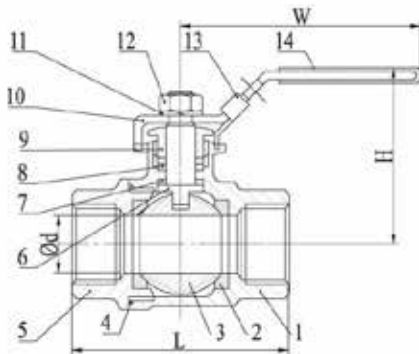
316 SS 2-PC BALL VALVE, FULL PORT, THREADED END, 2000 PSI

- Investment Castings for body and cap.
- Internal Entry blow-out proof stem.
- Pressure rating: 2000PSI.
- Threaded Ends: ANSI B2,1
- Material: CF8M (316SS)
- Pressure test: API 598
- Generic Handles



LOCKING HANDLE

Part#	Size	D	L	H	W	N.M	lbs/ pc	Case	
949-171	1/4"	0.36	2.13	2.13	4.33	.157	0.64	80	----
949-172	3/8"	0.50	2.13	2.16	4.33	.157	0.58	80	----
949-173	1/2"	0.59	2.24	2.28	4.53	.197	0.71	70	----
949-174	3/4"	0.79	2.76	2.40	4.53	.315	1.18	50	----
949-175	1"	0.98	3.50	3.03	6.04	.394	2.33	30	----
949-176	1-1/4"	1.25	4.12	3.19	6.04	.551	3.48	20	----
949-177	1-1/2"	1.50	4.05	3.54	6.10	.709	4.03	14	----
949-178	2"	1.96	4.90	4.25	6.10	.984	7.50	7	----



NO	Part	Material	QTY
1	BODY	316SS	1
2	BALL SEAT	PTFE	2
3	BALL	316SS	1
4	BODY SEAL	PTFE	1
5	CAP	316SS	1
6	STEM	SS316	1
7	THRUST WASHER	PTFE	1
8	PACKING	PTFE	1
9	GLAND NUT	SS304	1
10	HANDLE	SS304	1
11	WASHER	SS304	1
12	NUT	SS304	1
13	LOCK DEVICE	SS304	1
14	HANDLE COVER	PLASTIC	1

316 SS STANDARD PORT VALVES

ONE PIECE STANDARD PORT BALL VALVE

316 Stainless Steel
1000 PSI

- Manufactured for harsh environments with female NPT threads.
- Locking handle for greater security.
- Standard port has restricted flow.
- Made with corrosion resistant stainless steel materials.
- PTFE seat and seals.
- Investment Castings for Body and Cap.
- Internal Entry Blow-out proof stem.
- Pressure rating: 1000PSI (PN63)
- Threaded Ends: ANSI B2.1
- Material: CF8M
- Pressure Test: API 598
- Generic handles



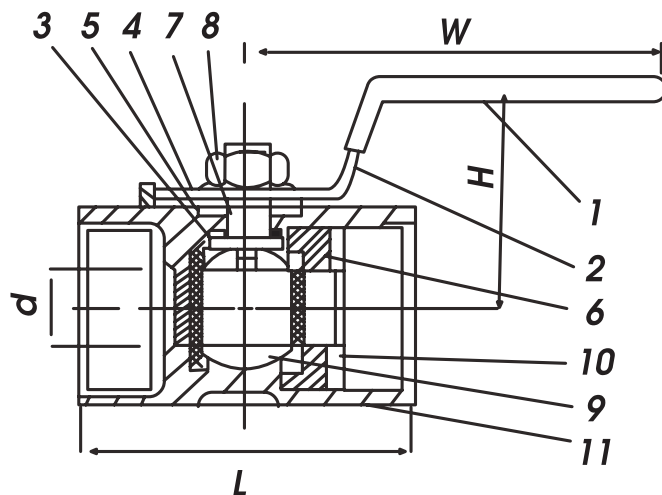
LOCKING HANDLE

Valves will accept a pad-lock on the handle.

dimensions (inches)

Part#	Size	D	L	H	W	Weight	Case	
949-101	1/4"	0.20	1.53	1.53	3.03	0.19	150	----
949-102	3/8"	0.27	1.74	1.53	3.03	0.23	150	----
949-103	1/2"	0.36	2.24	1.73	3.46	0.41	100	----
949-104	3/4"	0.50	2.32	1.89	3.46	0.63	70	----
949-105	1"	0.59	2.80	2.24	4.29	0.86	50	----
949-106	1-1/4"	0.79	3.07	2.32	4.29	1.34	30	----
949-107	1-1/2"	0.98	3.26	2.76	5.14	2.00	25	----
949-108	2"	1.25	3.94	2.24	6.50	2.88	15	----

Larger sizes available on special order basis



Item	Parts	Material
1	Plastic Cover	Plastic
2	Handle	AISI 304 SS
3	Thrust Washer	PTFE
4	Packing Ring	AISI 304 SS
5	Stem Packing	PTFE
6	Seat	PTFE
7	Seat	AISI 316 SS
8	Stem Nut	AISI 304 SS
9	Ball	316SS ASTM-A351 CF8M
10	Cap	316SS ASTM-A351 CF8M
11	Body	316SS ASTM-A351 CF8M

SS = Stainless Steel

316 SS TWO PIECE FULL PORT VALVES

VALVES

TWO PIECE FULL PORT BALL VALVE

316 Stainless Steel

1000 PSI

Materials: CFM8M (SS316)

Features:

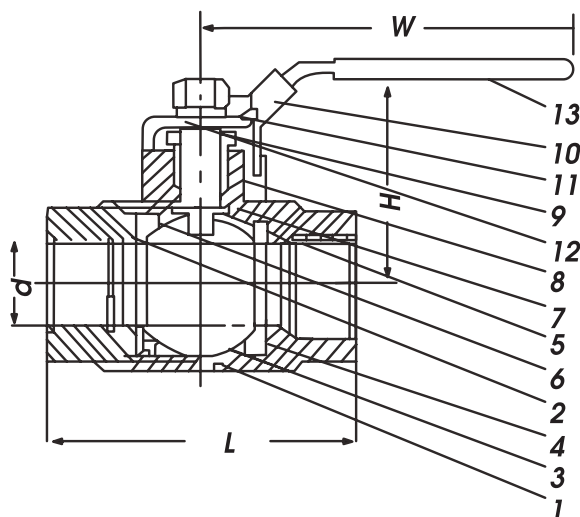
- Quality manufactured for harsh environments.
- Corrosion resistant.
- Investment Casting body
- Working pressure 1000 psi for W.O.G.
- Adjustable stem packing
- Pure teflon seals and seats
- Temperature range: -60 to 450°F
- Blow-out proof stem and safe pressure-reducing hole
- 100% leakage tested at 100 psi air under water
- Hydrostatic test pressure: 1500 psi
- Locking handle w/ blue generic sleeve
- 125 Steam rated
- Generic Handles



Valves will accept a pad-lock on the handle.

dimensions (inches)

Part#	Size	D	L	H	W	Weight	Case	
949-161	1/4"	0.36	2.13	2.13	4.33	0.51	80	----
949-162	3/8"	0.50	2.13	2.16	4.33	0.49	80	----
949-163	1/2"	0.59	2.24	2.28	4.17	0.69	70	----
949-164	3/4"	0.79	2.68	2.40	4.17	1.03	50	----
949-165	1"	0.98	3.15	2.50	4.88	1.40	30	----
949-166	1-1/4"	1.26	3.58	3.19	5.04	2.17	20	----
949-167	1-1/2"	1.49	4.05	3.54	6.10	3.33	12	----
949-168	2"	1.97	4.88	4.25	6.13	6.02	7	----
949-170	3"	3.15	7.28	5.71	9.06	21.01	2	----
949-180	4"	3.94	8.84	7.28	11.10	36.18	1	----



Item	Parts	Material
1	Body	316SS ASTM-A351 CF8M
2	Body Cap	316SS ASTM-A351 CF8M
3	Ball	316SS ASTM-A351 CF8M
4	Seat	Reinforced PTFE
5	Stem	AISI 316 SS
6	Seal	Reinforced PTFE
7	Thrust Washer	Reinforced PTFE
8	Packing	Reinforced PTFE
9	Gland Nut	AISI 304SS
10/11	Nut & Washer	AISI 304SS
12	Handle	AISI 304SS
13	Plastic Cover	Plastic

SS = Stainless Steel

316 SS MINI BALL VALVES VALVES

STAINLESS STEEL MIN BALL VALVES

- 316 Stainless Steel
- Working pressure 400PSI
- Working Temperature -10°C to 150°C



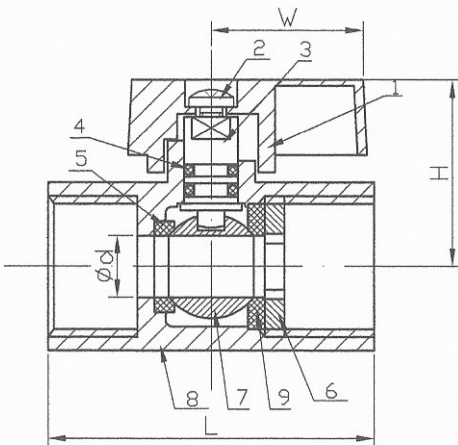
FEMALE PIPE x FEMALE PIPE

Part#	Size	W	D	H	L	Weight	Case	
46934SS	1/8"	.898	.197	.985	1.693	.18	150	----
46935SS	1/4"	.898	.276	.984	1.693	.21	150	----
46936SS	3/8"	.898	.276	.984	1.693	.19	150	----
46937SS	1/2"	.898	.362	1.114	1.811	.26	100	----



MALE PIPE x FEMALE PIPE

Part#	Size	W	D	H	L	Weight	Case	
46930SS	1/8"	.898	.197	.985	1.693	.18	150	----
46931SS	1/4"	.898	.276	.984	1.693	.18	150	----
46932SS	3/8"	.898	.276	.984	1.693	.19	150	----
46933SS	1/2"	.898	.362	1.114	1.811	.26	100	----



NO	Part	Material	QTY
1	LEVER	ALUMINIUM ALLOY	1
	HANDLES	PLASTIC	
2	BOLT	304	1
3	STEM	304/ 316	1
4	"O" RING	NBR	1~2
5	BALL SEAT (A)	PTFE	1
6	CAP	CF8/ CF8M	1
7	BALL	CF8/ CF8M	1
8	BODY	CF8/ CF8M	1
9	BALL SEAT (B)	PTFE	1

316 SS SPRING CHECK VALVES VALVES

SPRING CHECK VALVE

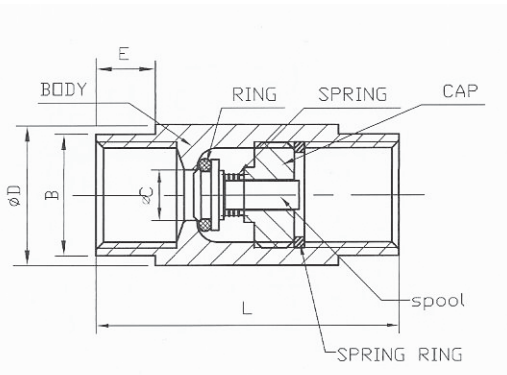
- Working Pressure: 1500PSI (PN100)
- Working Temperature: -10 -150°C
- Opening Pressure: 2~3PSI
- Suitable Medium: W.O.G.
- Threaded End: NPT
- Made in China

FEMALE PIPE x FEMALE PIPE



Part#	Size	L	C	D	B	E	lbs/ pc	Case	
949-451	1/4"	2.165	.217	.748	.699	.394	.19	200	----
949-452	3/8"	2.165	.295	.866	.787	.394	.21	160	----
949-453	1/2"	2.165	.413	1.063	.945	.472	.31	100	----
949-454	3/4"	2.677	.591	1.417	1.26	.472	.71	60	----
949-455	1"	3.268	.787	1.693	1.496	.591	1.14	36	----

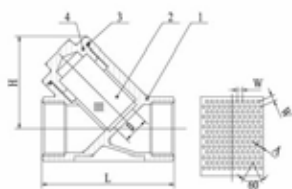
FLOWS MALE -> FEMALE



NO	Part	Material	QTY
1	BODY	316	1
2	RING	Rubber	1
3	SPRING	304	1
4	CAP	CF8M	1
5	SPOOL	304/316	1
6	SPRING RING	304	1

#316 SS Y STRAINER

- Investment Castings for Body
- Pressure Rating: 800PSI (PN40)
- Threaded Ends: ANSI B2.1
- Material: CF8M (#316 SS)
- Pressure Test: API 598
- Made in China



- 40 Mesh screen

Part #	Size	d	L	H	W	ØA	Lbs	
949-521	1/4"	.38"	2.53	51	1.69	1	0.44	----
949-522	3/8"	.48"	2.53	51	1.69	1	0.38	----
949-523	1/2"	.59"	2.53	51	1.76	1	0.46	----
949-524	3/4"	.79"	3.12	60	2.07	1	0.69	----
949-525	1"	.98"	3.57	72	2.67	1	1.27	----
949-526	1-1/4"	1.26"	4.17	77	2.9	1	1.74	----
949-527	1-1/2"	1.57"	4.71	87	3.23	1	2.38	----
949-528	2"	1.96"	5.49	102	3.88	1	3.57	----

	Part	Material	QTY
1	BODY	CF8M	1
2	SCREEN	SS316	1
3	JOINT GASKET	PTFE	1
4	BONNET	CF8M	1

HIGH PRESSURE FULL PORT 2-WAY VALVES

VALVES

FULL PORT Two-Way



* Reduced Port
+ 'L' flow pattern

Temp Rating = -22° - 212°F

Part Number	Thread	Working Pressure	
GE2-14-NPT	1/4" NPT	7250 PSI	----
GE2-38-NPT	3/8" NPT	7250 PSI	----
GE2-12-NPT	1/2" NPT	7250 PSI	----
GE2-34-NPT	3/4" NPT	5800 PSI	----
GE2-1-NPT	1" NPT	5075 PSI	----
GE2-114T-NPT*	1-1/4" NPT	5000 PSI	----
GE2-112T-NPT*	1-1/2" NPT	5000 PSI	----
GE2-2T-NPT	2" NPT	5000 PSI	----

Part Number	Thread	Working Pressure	
GE2-04-SAE	7/16-20 UNF	7250 PSI	----
GE2-06-SAE	9/16-18 UNF	7250 PSI	----
GE2-08-SAE	3/4-16 UNF	7250 PSI	----
GE2-12-SAE	1-1/16-12 UNF	5800 PSI	----
GE2-16-SAE	1-5/16-12 UNF	5000 PSI	----
GB2-20T-SAE+	1-5/8-12 UNF	5000 PSI	----
GB2-24T-SAE+	1-7/8-12 UNF	5000 PSI	----
GB2-32T-SAE+	2-1/2-12 UNF	5000 PSI	----

Construction: Steel Body, Ball, Stem
Zinc Chromate Plate
Buna "O" Rings (Viton on request)
Delrin Ball Seats

VISIT MIDLANDINDUSTRIES.COM

TO LEARN MORE ABOUT OUR NEW FAMILY OF COMPANIES



MIDLAND INDUSTRIES

A new Family of Companies, now working Together.



We hereby certify that to the best of our knowledge and belief the CDA 230 alloy seamless Red Brass Pipe from which our nipples are produced meet the requirements of ASTM Specifications B43 and is free of mercury contamination. The chemical analysis is 85% copper, 15% Zinc and conforms to federal Specifications WVN-351. Our brass nipples meet ANSI/ASTM B687-96 and MS51846 for standard brass nipples, and MS51872 for extra heavy brass nipples.

Threads: Nipples are threaded with American Standard taper pipe threads (NPT) in accordance with screw-thread standard for Federal Services Handbook H-58. ANSI B1.20.1

This product is certified by NSF to NSF/ANSI 61 for use in drinking water supplies of pH 6.5 and above.

- ASTM B43
- ANSI B1.20.1, WW-N-351
- ANSI/ ASTM B687-96
- NSF-61 Approved
- MS51846 STD Brass Nipples
- RoHS compliant

SEE OUR WEBSITE FOR SCH 80 BRASS
NIPPLES - EXTRA HEAVY

**STANDARD RED BRASS 85%
PIPE WITH THREADED ENDS SPECIFICATIONS:**

Pipe Size in Inches	Dimension in Inches			Allowable Pressure POUNDS PER SQUARE INCH				
	O.D.	I.D.	Wall Thickness	Standard Size (Inches)	@ 100° F	@ 200° F	@ 300° F	@ 400° F
1/8"	.405	.281	.062	1/8"	370	370	320	140
1/4"	.540	.376	.082	1/4"	870	870	760	330
3/8"	.675	.495	.090	3/8"	890	890	780	340
1/2"	.840	.626	.107	1/2"	900	900	790	340
3/4"	1.050	.822	.114	3/4"	810	810	710	310
1"	1.315	1.063	.126	1"	630	630	560	240
1-1/4"	1.660	1.368	.146	1-1/4"	690	690	610	260
1-1/2"	1.900	1.600	.150	1-1/2"	630	630	560	240
2"	2.375	2.063	.156	2"	540	540	480	210
2-1/2"	2.875	2.501	.187	2-1/2"	450	450	390	170
3"	3.500	3.062	.219	3"	510	510	450	190
3-1/2"	4.000	3.500	.250	3-1/2"	570	570	500	220
4"	4.500	4.000	.250	4"	510	510	440	190
4-1/2"	5.000	4.500	.250	5"	410	410	360	160
5"	5.563	5.063	.250	6"	340	340	300	130
6"	6.625	6.125	.250					

No-Lead 125LB seamless Threaded
Red Brass Nipples - 2200

**LEAD
FREE**



SCH 40 SEAMLESS
BRASS NIPPLES



1/8" - 27



1/8" DIAMETER SCH 40 SEAMLESS

Part #	Size	Box/Case	Approx. Wt. Lbs.	
40-001	Close (3/4")	25/400	0.02	----
40-002	x 1-1/2"	25/400	0.03	----
40-003	x 2"	25/400	0.04	----
40-004	x 2-1/2"	25/400	0.05	----
40-005	x 3"	25/400	0.06	----
40-006	x 3-1/2"	25/400	0.07	----
40-007	x 4"	25/400	0.08	----
40-008	x 4-1/2"	25/400	0.10	----
40-009	x 5"	25/400	0.11	----
40-010	x 5-1/2"	25/400	0.12	----
40-011	x 6"	25/400	0.13	----
40-012	x 7"	25/400	0.15	----
40-013	x 8"	25/400	0.17	----
40-014	x 9"	25/400	0.19	----
40-015	x 10"	25/400	0.21	----
40-017	x 12"	25/400	0.25	----
40-018	x 14"	1/1	0.29	----
40-019	x 16"	1/1	0.34	----



1/4" - 18



1/4" DIAMETER SCH 40 SEAMLESS

Part #	Size	Box/Case	Approx. Wt. Lbs.	
40-020	Close (7/8")	25/400	0.03	----
40-021	x 1-1/2"	25/400	0.05	----
40-022	x 2"	25/400	0.07	----
40-023	x 2-1/2"	25/400	0.09	----
40-024	x 3"	25/400	0.11	----
40-025	x 3-1/2"	25/400	0.13	----
40-026	x 4"	25/400	0.14	----
40-027	x 4-1/2"	25/400	0.16	----
40-028	x 5"	25/400	0.18	----
40-029	x 5-1/2"	25/400	0.20	----
40-030	x 6"	25/400	0.22	----
40-031	x 7"	25/200	0.25	----
40-032	x 8"	25/200	0.29	----
40-033	x 9"	25/200	0.33	----
40-034	x 10"	25/200	0.36	----
40-035	x 11"	25/200	0.40	----
40-036	x 12"	25/200	0.43	----

SCH 40 SEAMLESS BRASS NIPPLES



**LEAD
FREE**

3/8"-18

3/8" DIAMETER SCH 40 SEAMLESS

Part #	Size	Box/Case	Approx. Wt. Lbs.	
40-040	Close (1")	25/400	0.05	----
40-041	x 1-1/2"	25/400	0.08	----
40-042	x 2"	25/400	0.10	----
40-043	x 2-1/2"	25/400	0.13	----
40-044	x 3"	25/400	0.16	----
40-045	x 3-1/2"	25/400	0.18	----
40-046	x 4"	25/400	0.21	----
40-047	x 4-1/2"	25/300	0.23	----
40-048	x 5"	25/300	0.26	----
40-049	x 5-1/2"	25/300	0.29	----
40-050	x 6"	25/300	0.31	----
40-051	x 7"	25/200	0.36	----
40-052	x 8"	25/150	0.42	----
40-053	x 9"	25/150	0.47	----
40-054	x 10"	25/100	0.52	----
40-055	x 11"	25/100	0.57	----
40-056	x 12"	25/100	0.62	----



**LEAD
FREE**

1/2" - 14

1/2" DIAMETER SCH 40 SEAMLESS

Part #	Size	Box/Case	Approx. Wt. Lbs.	
40-060	Close (1-1/8")	25/400	0.09	----
40-061	x 1-1/2"	25/400	0.12	----
40-062	x 2"	25/400	0.16	----
40-063	x 2-1/2"	25/300	0.20	----
40-064	x 3"	25/300	0.23	----
40-065	x 3-1/2"	25/300	0.27	----
40-066	x 4"	25/200	0.31	----
40-067	x 4-1/2"	25/200	0.35	----
40-068	x 5"	25/200	0.39	----
40-069	x 5-1/2"	25/200	0.43	----
40-070	x 6"	25/200	0.47	----
40-071	x 7"	25/100	0.55	----
40-072	x 8"	25/100	0.62	----
40-073	x 9"	25/100	0.70	----
40-074	x 10"	25/75	0.78	----
40-075	x 11"	25/75	0.86	----
40-076	x 12"	25/75	0.94	----

SCH 40 SEAMLESS
BRASS NIPPLES



**LEAD
FREE**

3/4" - 14

3/4" DIAMETER SCH 40 SEAMLESS

Part #	Length	Box/Case	Approx. Wt. Lbs.	
40-080	Close (1- 3/8")	25/400	0.15	----
40-081	x 1-1/2"	25/400	0.16	----
40-082	x 2"	25/300	0.21	----
40-083	x 2-1/2"	25/300	0.27	----
40-084	x 3"	25/200	0.32	----
40-085	x 3-1/2"	25/200	0.37	----
40-086	x 4"	25/150	0.43	----
40-087	x 4-1/2"	25/150	0.48	----
40-088	x 5"	25/100	0.53	----
40-089	x 5-1/2"	25/100	0.59	----
40-090	x 6"	25/100	0.64	----
40-091	x 7"	25/75	0.75	----
40-092	x 8"	25/75	0.85	----
40-093	x 9"	25/75	0.96	----
40-094	x 10"	25/50	1.06	----
40-095	x 11"	25/50	1.17	----
40-096	x 12"	25/50	1.28	----
40-097	x 18"	1/1	1.92	----
40-098	x 24"	1/1	2.56	----
40-099	x 36"	1/1	3.84	----



**LEAD
FREE**

1" - 11 1/2

1" DIAMETER SCH 40 SEAMLESS

Part #	Length	Box/Case	Approx. Wt. Lbs.	
40-100	Close (1-1/2")	25/200	0.23	----
40-101	x 2"	25/200	0.30	----
40-102	x 2-1/2"	25/150	0.38	----
40-103	x 3"	25/150	0.45	----
40-104	x 3-1/2"	25/100	0.53	----
40-105	x 4"	25/100	0.60	----
40-106	x 4-1/2"	25/100	0.68	----
40-107	x 5"	25/75	0.75	----
40-108	x 5-1/2"	25/75	0.83	----
40-109	x 6"	25/50	0.94	----
40-110	x 7"	25/50	1.05	----
40-111	x 8"	25/50	1.20	----
40-112	x 9"	25/50	1.35	----
40-113	x 10"	25/50	1.50	----
40-114	x 11"	25/50	1.65	----
40-115	x 12"	20/40	1.80	----

SCH 40 SEAMLESS
BRASS NIPPLES



LEAD FREE

1 1/4" - 11 1/2"

1-1/4" DIAMETER SCH 40 SEAMLESS

Part #	Length	Box/Case	Approx. Wt. Lbs.	
40-120	Close (1-5/8")	25/100	0.36	----
40-121	x 2"	25/100	0.44	----
40-122	x 2-1/2"	25/100	0.56	----
40-123	x 3"	25/100	0.67	----
40-124	x 3-1/2"	25/100	0.78	----
40-125	x 4"	25/50	0.89	----
40-126	x 4-1/2"	25/50	1.00	----
40-127	x 5"	25/50	1.11	----
40-128	x 5-1/2"	25/50	1.22	----
40-129	x 6"	25/50	1.33	----
40-130	x 7"	25/50	1.56	----
40-131	x 8"	25/50	1.78	----
40-132	x 9"	25/50	2.00	----
40-133	x 10"	25/50	2.22	----
40-134	x 11"	25/50	2.45	----
40-135	x 12"	25/50	2.67	----
40-136	x 18"	1/1	4.00	----



LEAD FREE

1-1/2" - 11 1/2"

1-1/2" DIAMETER SCH 40 SEAMLESS

Part #	Length	Box/Case	Approx. Wt. Lbs.	
40-140	Close (1-3/4")	25/100	0.46	----
40-141	x 2"	25/100	0.53	----
40-142	x 2-1/2"	25/50	0.66	----
40-143	x 3"	25/50	0.79	----
40-144	x 3-1/2"	25/50	0.93	----
40-145	x 4"	25/50	1.06	----
40-146	x 4-1/2"	25/50	1.19	----
40-147	x 5"	20/40	1.32	----
40-148	x 5-1/2"	20/40	1.46	----
40-149	x 6"	20/40	1.59	----
40-150	x 7"	20/40	1.85	----
40-151	x 8"	20/40	2.12	----
40-152	x 9"	20/40	2.38	----
40-153	x 10"	20/40	2.65	----
40-154	x 11"	1/40	2.91	----
40-155	x 12"	1/15	3.18	----
40-156	x 18"	1/1	4.77	----

BRONZE FITTINGS



UL842, UL258, UL125,FM

Class 125 (150) For steam, water, gas, oil and air service

Standard specifications

Materials - ASTM B62-93 (85,5,5,5) C83600

Dimensions - ANSI B 16.15

Threads - ANSI B2.1 or BA 21 and Fed. WW-P-460C, MSS-SP-106, ANSI/ASME B1.20.1

- UL/ FM Approved
- ISO 9001:2000
- Not Lead Free
- RoHS Compliant

Bronze threaded fittings are manufactured from smooth-cored castings, designed to provide full flow with minimum restriction. All threads are accurately machined and gauged to ensure a perfect fit with the pipe. All fittings are individually tested under water to ensure quality. Bronze provides a tighter seal and is easier to install than other metals. Can be used for water, plumbing, heating, pneumatic and marine applications, able to resist the harmful effects of corrosion when coming into contact with salt water or fresh water polluted with mineral acids or peaty soils.

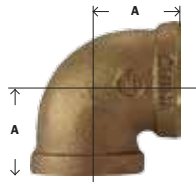
LEAD FREE BRASS FITTINGS

LEAD FREE



- Approved to ANSI/NSF 61-4 California AB 1953
- Meets Federal State Drinking Water Act, Lead Free Requirement
- Brass fittings conform to AWWA C800
- Brass castings conform to ASTM B584, UNS Alloy C8933
- Brass fittings dimensions conform to ASME B16.15
- NPT threads on all fittings conform to ASME B1.20.1
- Brass unions conform to specification A-A-59617
- Manufacturing facilities are ISO 9001:2008

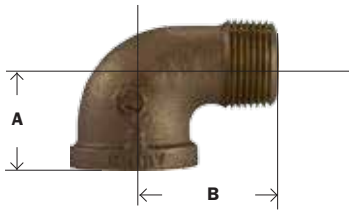
BRONZE/ LEAD FREE BRONZE
BRONZE FITTINGS



90° ELBOWS



Part #		Approx. Wt. Lbs.	Box/Case	Size	A	Approx. Wt. Lbs.	Part #	
44-100	----	0.08	50/600	1/8"	0.55	0.06	44-100LF	----
44-101	----	0.12	35/420	1/4"	0.72	0.10	44-101LF	----
44-102	----	0.17	90/360	3/8"	0.83	0.15	44-102LF	----
44-103	----	0.24	50/200	1/2"	1.03	0.25	44-103LF	----
44-104	----	0.34	35/105	3/4"	1.19	0.41	44-104LF	----
44-105	----	0.61	20/60	1"	1.43	0.69	44-105LF	----
44-106	----	0.95	20/40	1-1/4"	1.71	1.02	44-106LF	----
44-107	----	1.30	15/30	1-1/2"	1.87	1.36	44-107LF	----
44-108	----	2.07	8/16	2"	2.14	2.14	44-108LF	----
44-109	----	3.80	1/12	2-1/2"	2.74	3.79	44-109LF	----
44-110	----	4.76	1/4	3"	3.10	5.21	44-110LF	----
44-112	----	9.71	1/2	4"	3.80	8.59		

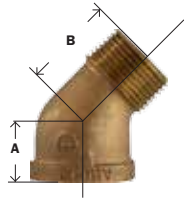


90° STREET ELLS



Part #		Approx. Wt. Lbs.	Box/Case	Size	A	B	Approx. Wt. Lbs.	Part #	
44-160	----	0.07	60/720	1/8"	0.55	0.92	0.06	44-160LF	----
44-161	----	0.11	35/420	1/4"	0.72	1.11	0.11	44-161LF	----
44-162	----	0.18	60/240	3/8"	0.83	1.24	0.16	44-162LF	----
44-163	----	0.24	60/180	1/2"	1.03	1.51	0.24	44-163LF	----
44-164	----	0.37	35/105	3/4"	1.19	1.66	0.38	44-164LF	----
44-165	----	0.67	45/90	1"	1.43	1.98	0.66	44-165LF	----
44-166	----	1.00	25/50	1-1/4"	1.71	2.26	0.99	44-166LF	----
44-167	----	1.37	9/27	1-1/2"	1.87	2.46	1.15	44-167LF	----
44-168	----	1.93	8/16	2"	2.14	2.98	2.07	44-168LF	----
44-169	----	4.05	5/10	2-1/2"	2.74	3.92	3.79	44-169LF	----
44-170	----	6.16	1/8	3"	3.10	4.45	6.38		

BRONZE/ LEAD FREE BRONZE BRONZE FITTINGS



45° STREET ELBOWS

LEAD
FREE



Part #		Approx. Wt. Lbs.	Box/Case	Size	A	B	Approx. Wt. Lbs.	Part #	
44-200	----	0.06	70/840	1/8"	0.26	0.43	0.06		
44-201	----	0.11	100/400	1/4"	0.35	0.56	0.09	44-201LF	----
44-202	----	0.13	100/400	3/8"	0.37	0.63	0.12	44-202LF	----
44-203	----	0.18	75/225	1/2"	0.45	0.79	0.22	44-203LF	----
44-204	----	0.28	40/120	3/4"	0.52	0.91	0.31	44-204LF	----
44-205	----	0.52	25/75	1"	0.60	1.07	0.52	44-205LF	----
44-206	----	0.77	10/40	1-1/4"	0.67	1.23	0.72	44-206LF	----
44-207	----	0.97	10/30	1-1/2"	0.70	1.31	1.05	44-207LF	----
44-208	----	2.04	12/24	2"	0.76	1.47	2.04	44-208LF	----



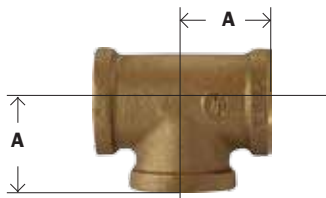
CROSSES

LEAD
FREE



Part #		Approx. Wt. Lbs.	Box/Case	Size	A	Approx. Wt. Lbs.	Part #	
44-391	----	0.20	60/240	1/4"	0.72	0.15	44-391LF	----
44-392	----	0.15	50/150	3/8"	0.83	0.25	44-392LF	----
44-393	----	0.45	30/90	1/2"	1.03	0.38	44-393LF	----
44-394	----	0.76	20/60	3/4"	1.19	0.59	44-394LF	----
44-395	----	1.04	15/30	1"	1.19	0.94	44-395LF	----
44-396	----	1.63	10/20	1-1/4"	1.71	1.43	44-396LF	----
44-397	----	2.10	8/16	1-1/2"	1.87	1.89	44-397LF	----
44-398	----	3.28	5/10	2"	2.14	2.95	44-398LF	----

BRONZE/ LEAD FREE BRONZE BRONZE FITTINGS

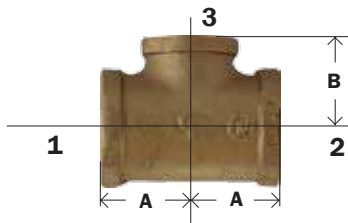


LEAD
FREE



TEES

Part #		Approx. Wt. Lbs.	Box/Case	Size	A	Approx. Wt. Lbs.	Part #	
44-250	----	0.11	120/480	1/8"	0.55	0.09	44-250LF	----
44-251	----	0.17	75/300	1/4"	0.72	0.13	44-251LF	----
44-252	----	0.25	45/180	3/8"	0.83	0.21	44-252LF	----
44-253	----	0.31	40/120	1/2"	1.03	0.35	44-253LF	----
44-254	----	0.50	35/70	3/4"	1.19	0.55	44-254LF	----
44-255	----	0.85	20/40	1"	1.43	0.92	44-255LF	----
44-256	----	1.29	14/28	1-1/4"	1.71	1.34	44-256LF	----
44-257	----	1.68	12/24	1-1/2"	1.87	1.82	44-257LF	----
44-258	----	2.70	8/16	2"	2.14	2.80	44-258LF	----
44-259	----	5.14	1/6	2-1/2"	2.74	4.70		
44-260	----	7.59	1/6	3"	3.10	6.69		
				4"			44-261LF	



LEAD
FREE



REDUCING TEES REDUCING ON THE BRANCH

Part #		Approx. Wt. Lbs.	Box/Case	Size (1 & 2) x 3	A	B	Approx. Wt. Lbs.	Part #	
44-276	----	0.24	40/160	1/2" x 1/4"	0.87	0.87	0.28	44-276LF	----
44-280	----	0.46	40/160	1/2" x 3/4"	2.42	1.155	0.48	44-280LF	----
44-282	----	0.43	25/100	3/4" x 1/4"	1.05	1.08	0.38	44-282LF	----
44-283	----	0.45	25/100	3/4" x 3/8"	1.00	1.00	0.46		
44-286	----	0.53	20/80	3/4" x 1/2"	1.08	1.11	0.40	44-286LF	----
44-291	----	0.60	15/60	1" x 1/2"	1.20	1.24	0.73	44-291LF	----
44-298	----	0.80	12/48	1" x 3/4"	1.30	1.31	0.71	44-298LF	----
44-301	----	0.85	20/40	1-1/4" x 1/2"	1.34	1.53	1.18	44-301LF	----
44-303	----	0.90	20/40	1-1/4" x 3/4"	1.30	1.31	1.08	44-303LF	----
44-306	----	1.21	20/40	1-1/4" x 1"	1.58	1.67	1.23	44-306LF	----
				2" x 1"			1.88	44-330LF	----
				2" x 1-1/4"			2.03	44-334LF	----



COUPLINGS

Part #		Approx. Wt. Lbs.	Box/Case	Size	A	Approx. Wt. Lbs.	Part #	
44-410	----	0.12	70/840	1/8"	0.80	0.06	44-410LF	----
44-411	----	0.11	40/480	1/4"	0.80	0.09	44-411LF	----
44-412	----	0.15	40/480	3/8"	1.05	0.13	44-412LF	----
44-413	----	0.18	60/240	1/2"	1.29	0.21	44-413LF	----
44-414	----	0.28	50/150	3/4"	1.43	0.32	44-414LF	----
44-415	----	0.45	25/100	1"	1.68	0.53	44-415LF	----
44-416	----	0.63	16/64	1-1/4"	1.86	0.73	44-416LF	----
44-417	----	0.82	18/36	1-1/2"	1.92	0.97	44-417LF	----
44-418	----	1.38	12/24	2"	2.20	1.51	44-418LF	----
44-419	----	2.63	1	2-1/2"	2.88	2.20		
44-420	----	3.80	1	3"	3.18	3.63	44-420LF	----



REDUCING COUPLINGS

Part #		Approx. Wt. Lbs.	Box/Case	Size	A	Approx. Wt. Lbs.	Part #	
44-430	----	0.08	70/840	1/4" x 1/8"	0.88	0.08	44-430LF	----
44-431	----	0.11	35/420	3/8" x 1/8"	0.92	0.10	44-431LF	
44-432	----	0.13	30/360	3/8" x 1/4"	0.92	0.11	44-432LF	----
44-433	----	0.16	75/300	1/2" x 1/8"	1.17	0.14		
44-434	----	0.16	75/300	1/2" x 1/4"	1.17	0.16	44-434LF	----
44-435	----	0.18	60/240	1/2" x 3/8"	1.17	0.17	44-435LF	----
44-436	----	0.23	45/180	3/4" x 1/4"	1.35	0.20	44-436LF	----
44-437	----	0.24	45/180	3/4" x 3/8"	1.35	0.23	44-437LF	----
44-438	----	0.23	60/180	3/4" x 1/2"	1.35	0.26	44-438LF	----
44-440	----	0.40	30/120	1" x 3/8"	1.56	0.40		
44-441	----	0.33	30/120	1" x 1/2"	1.56	0.38	44-441LF	----
44-442	----	0.44	25/100	1" x 3/4"	1.56	0.43	44-442LF	----
44-444	----	0.62	25/75	1-1/4" x 1/2"	1.77	0.60	44-444LF	----
44-445	----	0.64	25/75	1-1/4" x 3/4"	1.77	0.57	44-445LF	----
44-446	----	0.54	15/60	1-1/4" x 1"	1.77	0.65	44-446LF	----
44-447	----	0.80	20/60	1-1/2" x 1/2"	1.80	0.77	44-447LF	
44-448	----	0.83	15/60	1-1/2" x 3/4"	1.80	0.74	44-448LF	----
44-449	----	0.68	25/50	1-1/2" x 1"	1.80	0.83	44-449LF	----
44-450	----	0.99	12/48	1-1/2" x 1-1/4"	1.80	0.87	44-450LF	----
44-458	----	1.28	12/36	2" x 1/2"	2.03	1.07		
44-451	----	0.97	12/36	2" x 3/4"	2.03	1.25	44-451LF	----
44-452	----	1.40	12/36	2" x 1"	2.03	1.19	44-452LF	----
44-453	----	1.09	9/27	2" x 1-1/4"	2.03	1.22	44-453LF	----
44-454	----	3.60	9/27	2" x 1-1/2"	2.03	1.28	44-454LF	----
44-461	----	1.26	1	2-1/2" x 1-1/2"	3.15	1.94		
44-462	----	2.29	1	2-1/2" x 2"	3.15	2.37	44-462LF	----
44-456	----	2.49	1	3" x 2"	3.69	2.46		
44-463	----	3.92	1	3" x 2-1/2"	3.69	3.82		

BRONZE/ LEAD FREE BRONZE BRONZE FITTINGS



**LEAD
FREE**



CAPS

Part #		Approx. Wt. Lbs.	Box/Case	Size	A	Approx. Wt. Lbs.	Part #	
44-470	----	0.04	80/160	1/8"	0.53	0.03	44-470LF	----
44-471	----	0.06	80/960	1/4"	0.58	0.06	44-471LF	----
44-472	----	0.10	60/720	3/8"	0.66	0.09	44-472LF	----
44-473	----	0.13	75/300	1/2"	0.75	0.13	44-473LF	----
44-474	----	0.19	40/160	3/4"	0.87	0.21	44-474LF	----
44-475	----	0.30	25/100	1"	1.03	0.35	44-475LF	----
44-476	----	0.51	20/80	1-1/4"	1.10	0.52	44-476LF	----
44-477	----	0.66	18/54	1-1/2"	1.12	0.65	44-477LF	----
44-478	----	1.00	12/36	2"	1.35	1.14	44-478LF	----
44-480	----	2.74	1	3"	1.83	2.64		



**LEAD
FREE**



UNIONS

Part #		Approx. Wt. Lbs.	Box/Case	Size	A	Approx. Wt. Lbs.	Part #	
44-600	----	0.17	40/160	1/8"	1.18	0.13	44-600LF	----
44-601	----	0.25	40/160	1/4"	1.26	0.27	44-601LF	----
44-602	----	0.37	40/160	3/8"	1.50	0.39	44-602LF	----
44-603	----	0.52	50/100	1/2"	1.57	0.44	44-603LF	----
44-604	----	0.78	35/70	3/4"	1.89	0.59	44-604LF	----
44-605	----	1.18	20/40	1"	2.13	0.90	44-605LF	----
44-606	----	1.64	15/30	1-1/4"	2.36	1.33	44-606LF	----
44-607	----	2.08	10/20	1-1/2"	2.68	1.80	44-607LF	----
44-608	----	3.24	6/12	2"	2.99	2.66	44-608LF	----
44-609	----	5.31	4/8	2-1/2"	3.35	4.80		
44-610	----	6.94	4/8	3"	3.74	6.49		

BRONZE/ LEAD FREE BRONZE

BRONZE FITTINGS



Hex

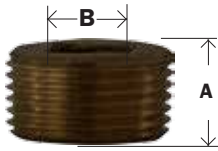


HEX BUSHINGS

Part #		Approx. Wt. Lbs.	Box/Case	Size	A	Hex	Approx. Wt. Lbs.	Part #	
44-500	----	0.02	120/1440	1/4" x 1/8"	0.58	0.66	0.03	44-500LF	----
44-501	----	0.06	75/900	3/8" x 1/8"	0.64	0.72	0.06	44-501LF	----
44-502	----	0.04	75/900	3/8" x 1/4"	0.64	0.75	0.04	44-502LF	----
44-503	----	0.10	150/600	1/2" x 1/8"	0.75	0.92	0.09	44-503LF	----
44-504	----	0.09	150/600	1/2" x 1/4"	0.75	0.93	0.10	44-504LF	----
44-505	----	0.08	150/600	1/2" x 3/8"	0.75	0.92	0.08	44-505LF	----
44-506	----	0.17	75/300	3/4" x 1/8"	0.87	1.15	0.17	44-506LF	----
44-507	----	0.15	75/300	3/4" x 1/4"	0.85	1.14	0.18	44-507LF	----
44-508	----	0.14	75/300	3/4" x 3/8"	0.85	1.14	0.17	44-508LF	----
44-509	----	0.14	75/300	3/4" x 1/2"	0.85	1.15	0.14	44-509LF	----
44-510*	----	0.23	50/200	1" x 1/4"	1.05	1.43	0.28	44-510LF*	----
44-511*	----	0.22	50/200	1" x 3/8"	1.05	1.50	0.26	44-511LF	----
44-512	----	0.25	50/200	1" x 1/2"	1.00	1.40	0.30	44-512LF	----
44-513	----	0.21	50/200	1" x 3/4"	1.00	1.43	0.21	44-513LF	----
44-514	----	0.34	30/120	1-1/4" x 1/4"	1.22	1.10	0.34		
44-515	----	0.35	30/120	1-1/4" x 3/8"	1.19	1.84	0.29		
44-516*	----	0.34	30/120	1-1/4" x 1/2"	1.14	1.33	0.39	44-516LF*	----
44-517	----	0.40	30/120	1-1/4" x 3/4"	1.08	1.75	0.43	44-517LF	----
44-518	----	0.33	30/120	1-1/4" x 1"	1.08	1.76	0.42	44-518LF	----
44-519*	----	0.47	25/75	1-1/2" x 1/4"	1.09	2.12	0.29	44-519LF	----
44-520*	----	0.45	25/75	1-1/2" x 3/8"	1.35	2.16	0.44	44-520LF	----
44-521*	----	0.44	25/75	1-1/2" x 1/2"	1.20	2.10	0.51	44-521LF*	----
44-522*	----	0.48	25/75	1-1/2" x 3/4"	1.20	2.12	0.54	44-522LF*	----
44-523	----	0.53	25/75	1-1/2" x 1"	1.14	2.08	0.57	44-523LF	----
44-524	----	0.45	25/75	1-1/2" x 1-1/4"	1.14	2.12	0.46	44-524LF	----
44-527*	----	0.67	20/60	2" x 1/2"	1.27	1.32	1.10	44-527LF	----
44-528*	----	0.74	20/60	2" x 3/4"	1.27	1.62	0.77	44-528LF	----
44-529*	----	0.76	20/60	2" x 1"	1.29	1.95	0.77	44-529LF*	----
44-530	----	0.86	20/60	2" x 1-1/4"	1.22	2.47	0.88	44-530LF	----
44-531	----	0.83	20/60	2" x 1-1/2"	1.22	2.50	0.71	44-531LF	----
44-532	----	1.16	15/30	2-1/2" x 1"	1.53	1.94	1.19		
44-534	----	1.36	15/30	2-1/2" x 1-1/2"	1.50	2.38	1.15	44-534LF	----
44-535	----	1.13	15/30	2-1/2" x 2"	1.43	2.97	1.12	44-535LF	----
44-537	----	1.82	12/24	3" x 1-1/2"	1.61	2.68	2.44		
44-538	----	2.33	12/24	3" x 2"	1.61	3.70	1.82	44-538LF	----
44-539	----	2.19	12/24	3" x 2-1/2"	1.53	3.70	2.11		
44-541	----	3.51	12/24	4" x 2"			3.86		
44-543	----	4.22	12/24	4" x 3"	2.01	4.62	3.56	44-543LF	----

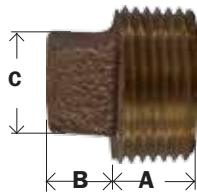
* Inside Hex

BRONZE/ LEAD FREE BRONZE BRONZE FITTINGS



BRONZE COUNTERSUNK PLUGS

Part #	Size	A	Socket Size	Box/Case	Approx. Wt. Lbs.	
44-633	1/2"	0.57	0.43	120/1440	0.06	----
44-634	3/4"	0.58	0.47	70/840	0.11	----
44-635	1"	0.75	0.59	20/240	0.22	----
44-636	1-1/4"	0.74	0.72	40/120	0.33	----
44-637	1-1/2"	0.79	0.72	30/90	0.50	----
44-638	2"	0.80	0.85	20/60	0.88	----
44-639	2-1/2"	1.08	1.25	1/1	1.56	----
44-640	3"	1.13	1.38	1/1	2.47	----
44-641	4"	1.22	2.12	1/1	3.21	----



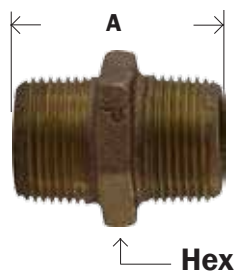
**LEAD
FREE**



CORED SQUARE HEAD PLUGS

Part #		Approx. Wt. Lbs.	Box/Case	Size	A	B	C	Approx. Wt. Lbs.	Part #	
44-650	----	0.02	300/3600	1/8"	0.27	0.24	0.28	0.02		
44-651	----	0.04	150/1800	1/4"	0.41	0.28	0.37	0.04	44-651LF	----
44-652	----	0.06	100/1200	3/8"	0.41	0.31	0.43	0.06		
44-653	----	0.10	50/600	1/2"	0.54	0.38	0.56	0.10	44-653LF	----
44-654	----	0.13	30/360	3/4"	0.55	0.44	0.62	0.13	44-654LF	----
44-655	----	0.25	20/240	1"	0.69	0.50	0.81	0.22	44-655LF	----
44-656	----	0.39	40/120	1-1/4"	0.71	0.56	0.93	0.32	44-656LF	----
44-657	----	0.57	30/90	1-1/2"	0.73	0.62	1.12	0.47	44-657LF	----
44-658	----	0.77	20/60	2"	0.76	0.68	1.31	0.68	44-658LF	----
44-659	----	1.25	16/32	2-1/2"	1.07	0.74	1.50	1.26		
44-660	----	2.02	16/32	3"	1.13	0.80	1.68	1.49		
44-662	----	3.20	6/12	4"	1.22	0.92	2.25	3.20		

HEX NIPPLES



Part #	Size	A	Hex	Box/Case	Approx. Wt. Lbs.	
44-720	1/8"	1.25	0.50	400/4800	0.05	----
44-721	1/4"	1.25	0.61	150/1800	0.06	----
44-722	3/8"	1.55	0.68	120/1440	0.11	----
44-723	1/2"	1.65	1.03	240/480	0.18	----
44-724	3/4"	1.77	1.21	80/320	0.24	----
44-725	1"	2.06	1.46	50/150	0.36	----
44-726	1-1/4"	2.12	1.81	50/100	0.47	----
44-727	1-1/2"	2.25	2.07	35/70	0.76	----
44-728	2"	2.50	2.41	20/40	1.50	----
44-729	2-1/2"	2.80	3.10	1	2.10	----

STAINLESS STEEL NIPPLES



SCHEDULE 40 WELDED

Stainless steel pipe nipples are manufactured from stainless steel pipe that conforms to specification ASTM A312/SA312.

All stainless steel nipples conform to specification ASTM A733. Threads conform to the requirements of ANSI B1.20.1.

304

The basic alloy. Type 304 (18-8) is an austenitic steel possessing a minimum of 18% chromium and 8% nickel, combined with a maximum of 0.08% carbon. It is a nonmagnetic steel which cannot be hardened by heat treatment, but instead, must be cold worked to obtain higher tensile strengths.

Because of its ability to withstand the corrosive action of various acids found in fruits, meats, milk, and vegetables, Type 304 is especially suited for all types of dairy equipment piping and valves, the brewing industry, the citrus and fruit juice industry, and in food processing applications. Also used for the dye tanks, pipelines buckets, dippers, etc. that come in contact with the lormic, acetic, and other organic acids used in the dyeing industry.

In the marine environment, because of its slightly higher strength and wear resistance than type 316 it is also used for nuts, bolts, screws, and other fasteners. It is also used for springs, cogs, and other components where both wear and corrosion resistance is needed.

Both #304 and #316 nipples are NSF/ANSI 372 and NSF/ANSI 61 compliant.



SCHEDULE 80 SEAMLESS

- SEAMLESS FOR UNRESTRICTED FLOW
- USE WITH AIR, WATER, OIL, NATURAL GAS, STEAM
- FITTINGS: USE THREADED CLASS 3000 HIGH-PRESSURE STAINLESS STEEL.
- ASTM A733 • ASTM A312 • ANSI/ ASME B1.20.1
- PSI 3000

316

For severe environments. Of course, there are many industrial processes that require a higher level of resistance to corrosion than Type 304 can offer. For these applications, Type 316 is the answer.

In type 316, the nickel content is increased slightly. What distinguishes Type 316 from Type 304 is the addition of molybdenum up to a maximum of 3%.

Molybdenum increases the corrosion resistance of this chromium-nickel alloy to withstand attack by many industrial chemicals and solvents, and, in particular, inhibits pitting caused by chlorides. As such, molybdenum is one of the single most useful alloying additives in the fight against corrosion.

Type 316 can withstand corrosive attack by sodium and calcium brines, hypochlorite solutions, phosphoric acid; and the sulfite liquors and sulfurous acids used in the paper pulp industry. This alloy, therefore, is specified for industrial equipment that handles the corrosive process chemicals used to produce inks, rayons, photographic chemicals, paper, textiles, bleaches, and rubber. Type 316 is also used extensively for surgical implants within the hostile environment of the body.

Type 316 is the main stainless used in the marine environment, with the exception of fasteners and other items where strength and wear resistance are needed, then Type 304 (18-8) is typically used.

SCH 40 STAINLESS STEEL NIPPLES

STAINLESS STEEL

#304

1/8" - 27

#316



1/8" DIAMETER SCH 40 WELDED



Part # 304 S.S.	Length	Box	Approx. Wt. Lbs.	Part # 316 S.S.
48-001	X Close (3/4")	25	0.01	49-001
48-002	x 1-1/2"	25	0.03	49-002
48-003	x 2"	25	0.04	49-003
48-004	x 2-1/2"	25	0.05	49-004
48-005	x 3"	25	0.06	49-005
48-006	x 3-1/2"	25	0.07	49-006
48-007	x 4"	25	0.07	49-007
48-008	x 4-1/2"	25	0.09	49-008
48-009	x 5"	25	0.10	49-009
48-010	x 5-1/2"	25	0.11	49-010
48-011	x 6"	25	0.12	49-011
48-015	x 10"	1	0.19	
	x 12"	1	0.24	49-017

1/4" - 18



1/4" DIAMETER SCH 40 WELDED



Part # 304 S.S.	Length	Box	Approx. Wt. Lbs.	Part # 316 S.S.
48-020	X Close (7/8")	25	0.02	49-020
48-021	x 1-1/2"	25	0.04	49-021
48-022	x 2"	25	0.06	49-022
48-023	x 2-1/2"	25	0.07	49-023
48-024	x 3"	25	0.09	49-024
48-025	x 3-1/2"	25	0.11	49-025
48-026	x 4"	25	0.13	49-026
48-027	x 4-1/2"	25	0.14	49-027
48-028	x 5"	25	0.16	49-028
48-029	x 5-1/2"	25	0.18	49-029
48-030	x 6"	25	0.19	49-030
48-031	x 7"	1	0.22	49-031
48-032	x 8"	1	0.25	49-032
	x 9"	1	0.31	49-033
48-034	x 10"	1	0.35	49-034
	x 11"	1	0.40	49-035
48-036	x 12"	1	0.44	49-036
	x 14"	1	0.46	49-037
	x 16"	1	0.47	49-038

If you don't see the size you're looking for, call us for part # and price.

SCH 40 STAINLESS STEEL NIPPLES

STAINLESS STEEL

#304

3/8"-18

#316



**3/8" DIAMETER
SCH 40 WELDED**



Part # 304 S.S.	Length	Box	Approx. Wt. Lbs.	Part # 316 S.S.
48-040	X Close (1")	25	0.03	49-040
48-041	x 1-1/2"	25	0.06	49-041
48-042	x 2"	25	0.07	49-042
48-043	x 2-1/2"	25	0.10	49-043
48-044	x 3"	25	0.12	49-044
48-045	x 3-1/2"	25	0.15	49-045
48-046	x 4"	25	0.17	49-046
48-047	x 4-1/2"	25	0.19	49-047
48-048	x 5"	25	0.22	49-048
48-049	x 5-1/2"	25	0.23	49-049
48-050	x 6"	25	0.26	49-050
48-052	x 8"	1	0.34	49-052
48-053	x 9"	1		
48-054	x 10"	1	0.43	49-054
48-056	x 12"	1		

1/2" - 14



**1/2" DIAMETER
SCH 40 WELDED**



Part # 304 S.S.	Length	Box	Approx. Wt. Lbs.	Part # 316 S.S.
48-060	X Close 1-1/8"	25	0.05	49-060
48-061	x 1-1/2"	25	0.07	49-061
48-062	x 2"	25	0.10	49-062
48-063	x 2-1/2"	25	0.14	49-063
48-064	x 3"	25	0.18	49-064
48-065	x 3-1/2"	25	0.20	49-065
48-066	x 4"	25	0.25	49-066
48-067	x 4-1/2"	25	0.28	49-067
48-068	x 5"	25	0.31	49-068
48-069	x 5-1/2"	25	0.34	49-069
48-070	x 6"	25	0.39	49-070
48-071	x 7"	1	0.41	
48-072	x 8"	1	0.52	49-072
48-073	x 9"	1	0.54	
48-074	10"	1	0.58	49-074
48-075	x 11"	1	0.64	
48-076	x 12"	1	0.69	

SCH 40 STAINLESS STEEL NIPPLES

STAINLESS STEEL

#304



3/4" - 14

3/4" DIAMETER
SCH 40 WELDED

#316



Part # 304 S.S.	Length	Box	Approx. Wt. Lbs.	Part # 316 S.S.
48-080	X Close (1-3/8")	25	0.08	49-080
48-081	x 1-1/2"	25	0.13	49-081
48-082	x 2"	25	0.14	49-082
48-083	x 2-1/2"	25	0.17	49-083
48-084	x 3"	25	0.22	49-084
48-085	x 3-1/2"	25	0.27	49-085
48-086	x 4"	25	0.32	49-086
48-087	x 4-1/2"	25	0.38	49-087
48-088	x 5"	25	0.40	49-088
48-089	x 5-1/2"	25	0.42	49-089
48-090	x 6"	25	0.48	49-090
48-091	x 7"	1	0.45	
48-092	x 8"	1	0.67	49-092
48-094	x 10"	1	0.94	49-094
48-096	x 12"	1	1.03	



1" - 11 1/2

1" DIAMETER
SCH 40 WELDED



Part # 304 S.S.	Length	Box	Approx. Wt. Lbs.	Part # 316 S.S.
48-100	X Close (1-1/2")	25	0.13	49-100
48-101	x 2"	25	0.20	49-101
48-102	x 2-1/2"	25	0.25	49-102
48-103	x 3"	25	0.33	49-103
48-104	x 3-1/2"	25	0.40	49-104
48-105	x 4"	25	0.47	49-105
48-106	x 4-1/2"	25	0.53	49-106
48-107	x 5"	25	0.55	49-107
48-108	x 5-1/2"	25	0.60	49-108
48-109	x 6"	25	0.71	49-109
48-110	x 7"	1	0.57	49-110
48-111	x 8"	1	1.02	49-111
48-113	x 10"	1	1.16	49-113
48-115	x 12"	1	1.31	

SCH 40 STAINLESS STEEL NIPPLES

STAINLESS STEEL



1 1/4" - 11 1/2"

1-1/4" DIAMETER SCH 40 WELDED



Part # 304 S.S.	Length	Box	Approx. Wt. Lbs.	Part # 316 S.S.
48-120	X Close (1-5/8")	10	0.17	49-120
48-121	x 2"	10	0.23	49-121
48-122	x 2-1/2"	10	0.35	49-122
48-123	x 3"	10	0.46	49-123
48-124	x 3-1/2"	10	0.52	49-124
48-125	x 4"	10	0.65	49-125
48-126	x 4-1/2"	10	0.53	49-126
48-127	x 5"	10	0.60	49-127
48-128	x 5-1/2"	10	0.61	49-128
48-129	x 6"	10	0.71	49-129



1-1/2" - 11 1/2"

1-1/2" DIAMETER SCH 40 WELDED



Part # 304 S.S.	Length	Box	Approx. Wt. Lbs.	Part # 316 S.S.
48-140	X Close x 1-3/4"	10	0.25	49-140
48-141	x 2"	10	0.32	49-141
48-142	x 2-1/2"	10	0.41	49-142
48-143	x 3"	10	0.52	49-143
48-144	x 3-1/2"	10	0.62	49-144
48-145	x 4"	10	0.73	49-145
48-146	x 4-1/2"	10	0.86	49-146
48-147	x 5"	10	0.95	49-147
48-148	x 5-1/2"	10	1.01	49-148
48-149	x 6"	10	1.19	49-149



2" DIAMETER SCH 40 WELDED



Part # 304 S.S.	Length	Box	Approx. Wt. Lbs.	Part # 316 S.S.
48-160	X Close (2")	10	0.37	49-160
48-161	x 2-1/2"	10	0.54	49-161
48-162	x 3"	10	0.65	49-162
48-163	x 3-1/2"	10	0.88	49-163
48-164	x 4"	10	1.02	49-164
48-165	x 4-1/2"	10	1.16	49-165
48-166	x 5"	10	1.29	49-166
48-167	x 5-1/2"	10	1.46	49-167
48-168	x 6"	10	1.57	49-168



150# 304 & 316 Stainless Steel Fittings

Our high quality standard pattern 150lb rated stainless steel threaded fittings are manufactured to the highest standards. All stainless steel fittings are monitored by our quality control personnel for strict compliance with applicable standards and specifications.

These stainless steel pipe fittings are excellent for uses that involve chemicals or liquids that may be corrosive. Along with fighting corrosion, a stainless steel pipe fitting will prevent contamination making it useful to many professionals.

- Use with air, water, oil, natural gas, steam
- NPT and FNPT threads conform to ASME B1.20.1
- Maximum Pressure: 300 psi @ 72 F; 150 psi @ 366 F for steam
- Maximum Steam Pressure: 150 psi
- Material Conforms to ASTM A-351. Class 150 Pressure Ratings
- Manufacturing facility is ISO 9001:2008
- 304 Stainless Steel is economically priced, chromium-nickel material that offers very good corrosion resistance. 316 Stainless Steel has higher nickel content and contains molybdenum for even better corrosion resistance.

HIGH PRESSURE 1000# BARSTOCK



1000#

- Stainless bar stock dimensions conform to MSS SP-114
- NPT threads conform to ASME B1.20.1
- Manufacturing facility is ISO 9001:2008
- Fittings meet applicable chemical & physical properties

HIGH PRESSURE 3000# FORGED

A182 and ANSI/ASME B16.11.



3000#

- Use with air, water, oil, natural gas, steam
- Maximum Pressure:
 - Type 304 SS: 2,570 psi @ 72°F;
 - 1,965 psi @ 350°F for steam
 - Type 316 SS: 3,000 psi @ 72°F
 - 2810 psi @ 350°F for steam
- Pipe Nipples and Pipe: Use threaded Schedule 80 thickwall stainless steel

SCH 40 STAINLESS STEEL NIPPLES/ FITTINGS

STAINLESS STEEL

90° ELBOW 304 & 316 150#



Part # 304 S.S.		Size	Box	Approx. Wt. Lbs.	Part # 316 S.S.	
62-100	----	1/8"	25	0.06	63-100	----
62-101	----	1/4"	25	0.06	63-101	----
62-102	----	3/8"	25	0.11	63-102	----
62-103	----	1/2"	25	0.13	63-103	----
62-104	----	3/4"	25	0.20	63-104	----
62-105	----	1"	10	0.33	63-105	----
62-106	----	1-1/4"	10	0.55	63-106	----
62-107	----	1-1/2"	5	0.77	63-107	----
62-108	----	2"	5	1.10	63-108	----
62-109	----	2-1/2"	1	2.09	63-109	----
62-110	----	3"	1	2.84	63-110	----
62-112	----	4"	1	5.00	63-112	----

90° STREET ELBOW 304 & 316 150#



Part # 304 S.S.		Size	Box	Approx. Wt. Lbs.	Part # 316 S.S.	
62-160	----	1/8"	25	0.04	63-160	----
62-161	----	1/4"	25	0.07	63-161	----
62-162	----	3/8"	25	0.09	63-162	----
62-163	----	1/2"	25	0.15	63-163	----
62-164	----	3/4"	25	0.24	63-164	----
62-165	----	1"	10	0.31	63-165	----
62-166	----	1-1/4"	10	0.51	63-166	----
62-167	----	1-1/2"	5	0.84	63-167	----
62-168	----	2"	5	1.26	63-168	----
62-169	----	3"	1	4.16	63-170	----
		4"	1	7.61	63-171	----

VISIT MIDLANDINDUSTRIES.COM

TO LEARN MORE ABOUT OUR NEW FAMILY OF COMPANIES



MIDLAND INDUSTRIES

A new Family of Companies, now working Together.

304 & 316 150# SS FITTINGS

STAINLESS STEEL

45° ELBOW 304 & 316 150#



Part # 304 S.S.	List Price	Size	Box	Approx. Wt. Lbs.	Part # 316 S.S.	
62-180	----	1/8"	25	0.04	63-180	----
62-181	----	1/4"	25	0.07	63-181	----
62-182	----	3/8"	25	0.09	63-182	----
62-183	----	1/2"	25	0.13	63-183	----
62-184	----	3/4"	25	0.20	63-184	----
62-185	----	1"	10	0.33	63-185	----
62-186	----	1-1/4"	10	0.49	63-186	----
62-187	----	1-1/2"	5	0.66	63-187	----
62-188	----	2"	5	1.14	63-188	----
62-189	----	2-1/2"	1	2.82		
62-190	----	3"	1	2.91	63-190	----
62-191	----	4"	1	5.05	63-192	----

TEE 304 & 316 150#



Part # 304 S.S.		Size	Box	Approx. Wt. Lbs.	Part # 316 S.S.	
62-250	----	1/8"	25	0.07	63-250	----
62-251	----	1/4"	25	0.07	63-251	----
62-252	----	3/8"	25	0.11	63-252	----
62-253	----	1/2"	25	0.20	63-253	----
62-254	----	3/4"	25	0.29	63-254	----
62-255	----	1"	10	0.42	63-255	----
62-256	----	1-1/4"	5	0.66	63-256	----
62-257	----	1-1/2"	5	0.99	63-257	----
62-258	----	2"	3	1.43	63-258	----
62-259	----	2-1/2"	1	1.43		
62-260	----	3"	1	3.66	63-260	----
		4"	1	7.19	63-261	----

CROSS 304 & 316 150#



Part # 304 S.S.		Size	Box	Approx. Wt. Lbs.	Part # 316 S.S.	
		1/8"	25	0.06	63-390	----
62-391	----	1/4"	25	0.09	63-391	----
62-392	----	3/8"	25	0.13	63-392	----
62-393	----	1/2"	25	0.29	63-393	----
62-394	----	3/4"	10	0.44	63-394	----
62-395	----	1"	10	0.74	63-395	----
62-396	----	1-1/4"	5	1.25	63-396	----
62-397	----	1-1/2"	5	1.53	63-397	----
62-398	----	2"	1	2.28	63-398	----
		3"	1	5.46	63-400	----
		4"	1	9.41	63-401	----

304 & 316 150# SS FITTINGS

STAINLESS STEEL

HEX NIPPLE 304 & 316 150#



Part # 304 S.S	List Price	Size	Box	Approx. Wt. Lbs.	Part # 316 S.S.	List Price
62-720	----	1/8"	1	0.02	63-720	----
62-721	----	1/4"	1	0.04	63-721	----
62-722	----	3/8"	1	0.07	63-722	----
62-723	----	1/2"	1	0.11	63-723	----
62-724	----	3/4"	1	0.18	63-724	----
62-725	----	1"	1	0.22	63-725	----
62-726	----	1-1/4"	1	0.37	63-726	----
62-727	----	1-1/2"	1	0.46	63-727	----
62-728	----	2"	1	0.61	63-728	----

REDUCING HEX NIPPLE 304 & 316 150#



Part # 304 S.S	List Price	Size	Box	Approx. Wt. Lbs.	Part # 316 S.S.	List Price
62-740	----	1/4" x 1/8"	1	0.04	63-740	----
62-741	----	3/8" x 1/8"	1	0.07	63-741	----
62-742	----	3/8" x 1/4"	1	0.07	63-742	----
62-744	----	1/2" x 1/4"	1	0.09	63-744	----
62-745	----	1/2" x 3/8"	1	0.11	63-745	----
62-747	----	3/4" x 1/4"	1	0.15	63-747	----
62-748	----	3/4" x 3/8"	1	0.15	63-748	----
62-749	----	3/4" x 1/2"	1	0.15	63-749	----

COUPLING 304 & 316 150#



Part # 304 S.S	List Price	Size*	Box	Approx. Wt. Lbs.	Part # 316 S.S.	List Price
62-410	----	1/8"	25	0.03	63-410	----
62-411	----	1/4"	25	0.06	63-411	----
62-412	----	3/8"	25	0.07	63-412	----
62-413	----	1/2"	25	0.13	63-413	----
62-414	----	3/4"	25	0.18	63-414	----
62-415	----	1"	25	0.24	63-415	----
62-416	----	1-1/4"	10	0.44	63-416	----
62-417	----	1-1/2"	10	0.51	63-417	----
62-418	----	2"	5	0.79	63-418	----
62-419	----	2-1/2"	1	1.28	63-419	----
62-420	----	3"	1	1.87	63-420	----
62-421	----	4"	1	2.80	63-421	----

304 & 316 150# SS FITTINGS

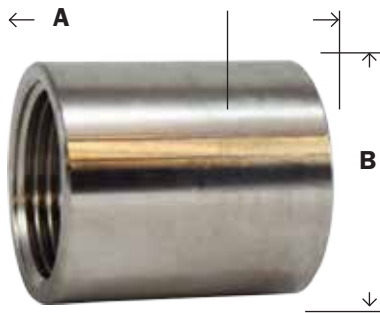
STAINLESS STEEL

REDUCING COUPLING 304 & 316 150#



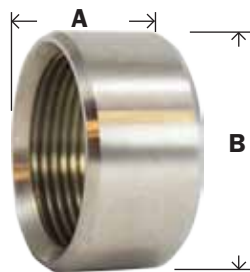
Part # 304 S.S.		Size	Box	Approx. Wt. Lbs.	Part # 316 S.S.	
62-430	----	1/4" x 1/8"	25	0.04	63-430	----
62-431	----	3/8" x 1/8"	25	0.04	63-431	----
62-432	----	3/8" x 1/4"	25	0.04	63-432	----
62-433	----	1/2" x 1/8"	25	0.09	63-433	----
62-434	----	1/2" x 1/4"	25	0.09	63-434	----
62-435	----	1/2" x 3/8"	25	0.09	63-435	----
62-455	----	3/4" x 1/8"	25	0.13	63-455	----
62-436	----	3/4" x 1/4"	25	0.11	63-436	----
62-437	----	3/4" x 3/8"	25	0.13	63-437	----
62-438	----	3/4" x 1/2"	25	0.15	63-438	----
		1" x 1/4"	25	0.25	63-459	----
62-440	----	1" x 3/8"	25	0.22	63-440	----
62-441	----	1" x 1/2"	25	0.24	63-441	----
62-442	----	1" x 3/4"	25	0.24	63-442	----
62-445	----	1-1/4" x 3/4"	10	0.33	63-445	----
62-446	----	1-1/4" x 1"	10	0.35	63-446	----
62-447	----	1-1/2" x 1/2"	10	0.40	63-447	----
62-448	----	1-1/2" x 3/4"	10	0.42	63-448	----
62-449	----	1-1/2" x 1"	10	0.44	63-449	----
62-450	----	1-1/2" x 1-1/4"	10	0.46	63-450	----
62-451		2" x 3/4"				
62-452	----	2" x 1"	5	0.57	63-452	----
62-453	----	2" x 1-1/4"	5	0.62	63-453	----
62-454	----	2" x 1-1/2"	5	0.62	63-454	----
62-428	----	3" x 1"	1	1.82		
62-456	----	3" x 2"	1	2.25		

OD MACHINED COUPLING 304 & 316 150#



Part # 304 S.S.	List Price	Size	A	B	Box	Approx. Wt. Lbs.	Part # 316 S.S.	
62-410B	----	1/8"	0.76	0.56	25	0.04	63-410B	----
62-411B	----	1/4"	0.94	0.71	25	0.04	63-411B	----
62-412B	----	3/8"	0.98	0.84	25	0.07	63-412B	----
62-413B	----	1/2"	1.33	1.01	25	0.09	63-413B	----
62-414B	----	3/4"	1.41	1.27	25	0.16	63-414B	----
62-415B	----	1"	1.69	1.54	10	0.21	63-415B	----
62-416B	----	1-1/4"	1.93	1.90	10	0.31	63-416B	----
62-417B	----	1-1/2"	1.93	2.16	5	0.41	63-417B	----
62-418B	----	2"	1.96	2.66	5	0.68	63-418B	----
62-420B	----	3"	3.23	3.76	1			

HALF COUPLING 304 & 316 150#



Part # 304 S.S.	List Price	Size	A	B	Box	Approx. Wt. Lbs.	Part # 316 S.S.	
62-770		1/8"						
62-771	----	1/4"	0.39	0.70	25	0.02	63-771	----
62-772	----	3/8"	0.45	0.82	25	0.02	63-772	----
62-773	----	1/2"	0.57	1.02	25	0.09	63-773	----
62-774	----	3/4"	0.67	1.22	25	0.11	63-774	----
62-775	----	1"	0.79	1.47	25	0.13	63-775	----
62-776	----	1-1/4"	0.86	1.88	10	0.24	63-776	----
62-777	----	1-1/2"	0.94	2.10	10	0.26	63-777	----
62-778	----	2"	1.06	2.60	5	0.44	63-778	----

304 & 316 150# SS FITTINGS

STAINLESS STEEL

UNION

304 & 316 150#

- Stainless Steel Seat



Part # 304 S.S.	List Price	Size	Box	Approx. Wt. Lbs.	Part # 316 S.S.	List Price
62-600	----	1/8"	25	0.09	63-600	----
62-601	----	1/4"	25	0.13	63-601	----
62-602	----	3/8"	25	0.22	63-602	----
62-603	----	1/2"	25	0.26	63-603	----
62-604	----	3/4"	25	0.46	63-604	----
62-605	----	1"	10	0.60	63-605	----
62-606	----	1-1/4"	5	0.90	63-606	----
62-607	----	1-1/2"	5	1.10	63-607	----
62-608	----	2"	1	1.81	63-608	----
62-610	----	3"	1	3.40	63-610	----

CAP - CAST

304 & 316 150#



Part # 304 S.S.		Size	Box	Approx. Wt. Lbs.	Part # 316 S.S.	
62-470	----	1/8"	25	0.02	63-470	----
62-471	----	1/4"	25	0.02	63-471	----
62-472	----	3/8"	25	0.04	63-472	----
62-473	----	1/2"	25	0.07	63-473	----
62-474	----	3/4"	25	0.11	63-474	----
62-475	----	1"	10	0.18	63-475	----
62-476	----	1-1/4"	10	0.29	63-476	----
62-477	----	1-1/2"	10	0.40	63-477	----
62-478	----	2"	10	0.60	63-478	----
62-480	----	3"	1	1.28	63-480	----
62-481	----	4"	1	1.54		

HEX CAP - BARSTOCK

304 & 316 150#



Part # 304 S.S.		Size	Box	Approx. Wt. Lbs.	Part # 316 S.S.	
62-075	----	1/8"	25	0.04	63-075	----
62-076	----	1/4"	25	0.09	63-076	----
62-077	----	3/8"	25	0.11	63-077	----
62-078	----	1/2"	25	0.13	63-078	----
62-079	----	3/4"	25	0.22	63-079	----
62-080	----	1"	10	0.22	63-080	----
62-081	----	1-1/4"	10	0.29	63-081	----
62-082	----	1-1/2"	5	0.40	63-082	----
62-083	----	2"	5	0.49	63-083	----

304 & 316 150# SS FITTINGS

STAINLESS STEEL

HEX BUSHING 304 & 316 150#



Part # 304 S.S.		Size M x F	Box	Approx. Wt. Lbs.	Part # 316 S.S.	
62-500	----	1/4" x 1/8"	25	0.04	63-500	----
62-501	----	3/8" x 1/8"	25	0.04	63-501	----
62-502	----	3/8" x 1/4"	25	0.04	63-502	----
62-503	----	1/2" x 1/8"	25	0.09		
62-504	----	1/2" x 1/4"	25	0.09	63-504	----
62-505	----	1/2" x 3/8"	25	0.11	63-505	----
62-506	----	3/4" x 1/8"	25	0.13	63-506	----
62-507	----	3/4" x 1/4"	25	0.15	63-507	----
62-508	----	3/4" x 3/8"	25	0.15	63-508	----
62-509	----	3/4" x 1/2"	25	0.15	63-509	----
62-557	----	1" x 1/8"	25	0.27		
62-510	----	1" x 1/4"	25	0.22	63-510	----
62-511	----	1" x 3/8"	25	0.24	63-511	----
62-512	----	1" x 1/2"	25	0.24	63-512	----
62-513	----	1" x 3/4"	25	0.24	63-513	----
62-515	----	1-1/4" x 3/8"	25	0.37		
62-516	----	1-1/4" x 1/2"	25	0.37	63-516	----
62-517	----	1-1/4" x 3/4"	25	0.37	63-517	----
62-518	----	1-1/4" x 1"	25	0.37	63-518	----
62-521	----	1-1/2" x 1/2"	25	0.44	63-521	----
62-522	----	1-1/2" x 3/4"	25	0.46	63-522	----
62-532	----	1-1/2" x 1"	25	0.49	63-523	----
62-524	----	1-1/2" x 1-1/4"	25	0.46	63-524	----
62-559	----	2" x 1/4"	10	0.95		
62-527	----	2" x 1/2"	10	0.66	63-527	----
62-528	----	2" x 3/4"	10	0.66	63-528	----
62-529	----	2" x 1"	10	0.66	63-529	----
62-530	----	2" x 1-1/4"	10	0.68	63-530	----
62-531	----	2" x 1-1/2"	10	0.68	63-531	----
62-536	----	2-1/2" x 1"	5	1.70		
62-534	----	2-1/2" x 1-1/2"	5	1.23	63-534	----
62-535	----	2-1/2" x 2"	5	1.21	63-535	----
		3" x 1"	5	2.20	63-550	----
62-537		3" x 1-1/2"	5	1.97	63-537	----
62-538	----	3" x 2"	5	1.72	63-538	----
62-539	----	3" x 2-1/2"	5	1.81		
		4" x 1-1/2"	5	3.92	63-540	----
		4" x 2"	1	3.72	63-541	----
62-543	----	4" x 3"	1	2.43	63-543	----

If you don't see the size you're looking for, call us for part # and price.

304 & 316 150# SS FITTINGS

STAINLESS STEEL

CORED SQUARE HEAD PLUG 304 & 316 150#



Part # 304 S.S.		Size	Box	Approx. Wt. Lbs.	Part # 316 S.S.	
62-670	----	1/8"	25	0.02	63-670	----
62-671	----	1/4"	25	0.03	63-671	----
62-672	----	3/8"	25	0.04	63-672	----
62-653	----	1/2"	25	0.06	63-653	----
62-654	----	3/4"	25	0.13	63-654	----
62-655	----	1"	25	0.20	63-655	----
62-656	----	1-1/4"	25	0.32	63-656	----
62-657	----	1-1/2"	10	0.41	63-657	----
62-658	----	2"	10	0.65	63-658	----
62-659	----	2-1/2"	1	1.04		
62-660	----	3"	1	0.88		

CORED HEX HEAD PLUG 304 & 316 150#



Part # 304 S.S.		Size	Box	Approx. Wt. Lbs.	Part # 316 S.S.	
62-630	----	1/8"	25	0.02	63-630	----
62-631	----	1/4"	25	0.02	63-631	----
62-632	----	3/8"	25	0.04	63-632	----
62-633	----	1/2"	25	0.07	63-633	----
62-634	----	3/4"	25	0.11	63-634	----
62-635	----	1"	25	0.20	63-635	----
62-636	----	1-1/4"	25	0.31	63-636	----
62-637	----	1-1/2"	10	0.44	63-637	----
62-638	----	2"	10	0.65	63-638	----
		4"	1	2.77	63-641	----

VISIT MIDLANDINDUSTRIES.COM

TO LEARN MORE ABOUT OUR NEW FAMILY OF COMPANIES



MIDLAND INDUSTRIES

A new Family of Companies, now working Together.



BLACK AND GALVANIZED STEEL NIPPLES

Product Specifications

Welded steel pipe nipples both galvanized and black in diameters ranging from 1/8" up to 4" in lengths from close to 12" and cut-pipe up to 120". -200°-150° Temp Rating.

Technical Specifications

Standards: Product complies with ASTM A-53, A-733 and ANSI B1.20.1 for threading, dimensions and pipe specifications.

Pipe: Complies with ASTM A-53 mill tested schedule 40 and 80 for both Welded & Seamless Meets ANSI B36.1. All pipe is hydrostatic tested. For pressure ratings, see the knowledge bank on our website.

Galvanized: Zinc coating applied by hot dipped. Galvanized complying with ASTM A-123, NSF approved, RoHS compliant.

Black: Protected against oxidation with varnish coating.

Cutting Procedure: All pipe is roller cut. A visual inspection of seams, excessive galvanizing, mid-welds, poor galvanizing, bends, roundness, under and over weight of the pipe is made at the time it is cut. This is done for every length of pipe. Pipe lengths are cut to a tolerance of + or - 1/16" of the actual length.

Threading Procedure:

All pipe is chaser thread cut to American Standard Tapered Pipe Thread standards. This is 3/4" taper per foot. Pipe is visually inspected for roundness of threads and other visual faults as it is removed from the threading machine.

SCHEDULE 80 XXS SEAMLESS



- ASTM A106 Grade B Seamless Pipe
- ASTM A 53
- WWN 351
- Standard NPT Tapered Pipe Threads as per ANSI B 1.20.1 Specification

XXS SEAMLESS



BLACK & GALVANIZED SCH 40 STEEL NIPPLES

1/8" - 27

Wall Thickness 0.068 - Grade B - Test Pressure
700 PSI - Thread Length 0.39



**1/8" DIAMETER
SCH 40 WELDED**



Part # Galv		Length	Box/Case	Approx. Wt. Lbs.	Part # Black	
56-001	----	X Close (3/4")	50/600	0.02	57-001	----
56-002	----	x 1-1/2"	50/600	0.03	57-002	----
56-003	----	x 2"	50/500	0.04	57-003	----
56-004	----	x 2-1/2"	100/400	0.06	57-004	----
56-005	----	x 3"	50/300	0.07	57-005	----
56-006	----	x 3-1/2"	50/300	0.08	57-006	----
56-007	----	x 4"	50/300	0.09	57-007	----
56-008	----	x 4-1/2"	50/300	0.10	57-008	----
56-009	----	x 5"	50/300	0.11	57-009	----
56-010	----	x 5-1/2"	50/300	0.12	57-010	----
56-011	----	x 6"	50/300	0.13	57-011	----
56-012	----	x 7"	50/300	0.15	57-012	----
56-013	----	x 8"	50/300	0.18	57-013	----
56-014	----	x 9"	50/300	0.21	57-014	----
56-015	----	x 10"	50/300	0.25	57-015	----
56-017	----	x 12"	50/300	0.29	57-017	----

1/4"-18

Wall Thickness 0.068 - Grade B - Test Pressure
700 PSI - Thread Length 0.39



**1/4" DIAMETER
SCH 40 WELDED**



Part # Galv		Length	Box/Case	Approx. Wt. Lbs.	Part # Black	
56-020	----	X Close (7/8")	50/600	0.04	57-020	----
56-021	----	x 1-1/2"	125/500	0.06	57-021	----
56-022	----	x 2"	125/500	0.06	57-022	----
56-023	----	x 2-1/2"	100/400	0.08	57-023	----
56-024	----	x 3"	50/300	0.10	57-024	----
56-025	----	x 3-1/2"	50/300	0.12	57-025	----
56-026	----	x 4"	50/300	0.14	57-026	----
56-027	----	x 4-1/2"	50/300	0.17	57-027	----
56-028	----	x 5"	50/300	0.19	57-028	----
56-029	----	x 5-1/2"	50/300	0.21	57-029	----
56-030	----	x 6"	50/300	0.23	57-030	----
56-031	----	x 7"	50/100	0.27	57-031	----
56-032	----	x 8"	50/100	0.31	57-032	----
56-033	----	x 9"	50/100	0.35	57-033	----
56-034	----	x 10"	50/100	0.40	57-034	----
56-035	----	x 11"	50/100	0.44	57-035	----
56-036	----	x 12"	50/100	0.48	57-036	----
56-038	----	x 18"	50/100	0.54		



**3/8" DIAMETER
SCH 40 WELDED**

Wall Thickness 0.091 - Grade B
- Test Pressure 700 PSI - Thread



Part # Galv		Length	Box/Case	Approx. Wt. Lbs.	Part # Black	
56-040	----	X Close (1")	50/600	0.05	57-040	----
56-041	----	x 1-1/2"	125/500	0.07	57-041	----
56-042	----	x 2"	125/500	0.08	57-042	----
56-043	----	x 2-1/2"	100/400	0.11	57-043	----
56-044	----	x 3"	50/300	0.13	57-044	----
56-045	----	x 3-1/2"	50/300	0.16	57-045	----
56-046	----	x 4"	50/300	0.19	57-046	----
56-047	----	x 4-1/2"	50/200	0.21	57-047	----
56-048	----	x 5"	50/150	0.24	57-048	----
56-049	----	x 5-1/2"	50/150	0.27	57-049	----
56-050	----	x 6"	50/100	0.29	57-050	----
56-051	----	x 7"	50/100	0.35	57-051	----
56-052	----	x 8"	50/100	0.40	57-052	----
56-053	----	x 9"	50/100	0.45	57-053	----
56-054	----	x 10"	50/100	0.51	57-054	----
56-055	----	x 11"	50/100	0.56	57-055	----
56-056	----	x 12"	50/100	0.62	57-056	----
56-430	----	x 18"	5/10	0.71	57-430	----
		x 24"	1/1	1.02	57-431	----
		x 36"	1/1	1.54	57-433	----



**1/2" DIAMETER
SCH 40 WELDED**

Wall Thickness 0.109 -
Grade B - Test Pressure 700
PSI - Thread Length 0.78



Part # Galv		Length	Box/Case	Approx. Wt. Lbs.	Part # Black	
56-060	----	X Close (1-1/8")	50/600	0.08	57-060	----
56-061	----	x 1-1/2"	125/500	0.08	57-061	----
56-062	----	x 2"	125/500	0.12	57-062	----
56-063	----	x 2-1/2"	100/400	0.15	57-063	----
56-064	----	x 3"	50/300	0.19	57-064	----
56-065	----	x 3-1/2"	50/300	0.23	57-065	----
56-066	----	x 4"	50/300	0.27	57-066	----
56-067	----	x 4-1/2"	50/200	0.30	57-067	----
56-068	----	x 5"	50/150	0.34	57-068	----
56-069	----	x 5-1/2"	50/150	0.38	57-069	----
56-070	----	x 6"	50/100	0.42	57-070	----
56-071	----	x 7"	50/100	0.49	57-071	----
56-072	----	x 8"	50/100	0.57	57-072	----
56-073	----	x 9"	50/100	0.65	57-073	----
56-074	----	x 10"	50/100	0.72	57-074	----
56-075	----	x 11"	50/100	0.80	57-075	----
56-076	----	x 12"	40/80	0.87	57-076	----
56-240	----	x 18"	1/3	1.29	57-240	----
56-241	----	x 24"	1/3	1.74	57-241	----
56-242	----	x 30"	1/3	2.16	57-242	----
56-243	----	x 36"	1/3	2.61	57-243	----
56-244	----	x 42"	1/3	3.03	57-244	----
56-245	----	x 48"	1/3	3.48	57-245	----
56-246	----	x 60"	1/3	4.35	57-246	----
56-247	----	x 72"	1/3	5.22	57-247	----

BLACK & GALVANIZED SCH 40 STEEL NIPPLES

3/4" DIAMETER SCH 40 WELDED



Wall Thickness 0.113 -
Grade B - Test Pressure
700 PSI - Thread Length
0.79



Part # Galv		Length	Box/Case	Approx. Wt. Lbs.	Part # Black	
56-080	----	X Close (1-3/8")	50/300	0.13	57-080	----
56-081	----	x 1-1/2"	125/250	0.10	57-081	----
56-082	----	x 2"	125/250	0.15	57-082	----
56-083	----	x 2-1/2"	50/250	0.20	57-083	----
56-084	----	x 3"	50/200	0.24	57-084	----
56-085	----	x 3-1/2"	50/150	0.29	57-085	----
56-086	----	x 4"	50/150	0.34	57-086	----
56-087	----	x 4-1/2"	50/150	0.39	57-087	----
56-088	----	x 5"	50/150	0.43	57-088	----
56-089	----	x 5-1/2"	60/120	0.48	57-089	----
56-090	----	x 6"	50/100	0.53	57-090	----
56-091	----	x 7"	50/100	0.63	57-091	----
56-092	----	x 8"	50/100	0.72	57-092	----
56-093	----	x 9"	40/80	0.82	57-093	----
56-094	----	x 10"	40/80	0.91	57-094	----
56-095	----	x 11"	30/60	1.01	57-095	----
56-096	----	x 12"	30/60	1.10	57-096	----
56-250	----	x 18"	1/3	1.63	57-250	----
56-251	----	x 24"	1/3	2.20	57-251	----
56-252	----	x 30"	1/3	2.73	57-252	----
56-253	----	x 36"	1/3	3.30	57-253	----
56-254	----	x 42"	1/3	3.83	57-254	----
56-255	----	x 48"	1/3	4.40	57-255	----
56-256	----	x 60"	1/3	5.50	57-256	----
56-257	----	x 72"	1/3	6.60	57-257	----

BLACK & GALVANIZED SCH 40 STEEL NIPPLES



1" DIAMETER SCH 40 WELDED

Wall Thickness 0.133 - Grade
B - Test Pressure 700 PSI -
Thread Length 0.98



Part # Galv		Length	Box/Case	Approx. Wt. Lbs.	Part # Black	
56-100	----	X Close (1-1/2")	50/200	0.16	57-100	----
56-101	----	x 2"	50/150	0.23	57-101	----
56-102	----	x 2-1/2"	50/150	0.29	57-102	----
56-103	----	x 3"	50/100	0.36	57-103	----
56-104	----	x 3-1/2"	50/100	0.43	57-104	----
56-105	----	x 4"	50/100	0.50	57-105	----
56-106	----	x 4-1/2"	50/100	0.56	57-106	----
56-107	----	x 5"	50/100	0.63	57-107	----
56-108	----	x 5-1/2"	50/100	0.70	57-108	----
56-109	----	x 6"	40/80	0.77	57-109	----
56-110	----	x 7"	25/50	0.90	57-110	----
56-111	----	x 8"	25/50	1.03	57-111	----
56-112	----	x 9"	15/30	1.17	57-112	----
56-113	----	x 10"	15/30	1.30	57-113	----
56-114	----	x 11"	15/30	1.44	57-114	----
56-115	----	x 12"	15/30	1.57	57-115	----
56-260	----	x 18"	1/3	2.34	57-260	----
56-261	----	x 24"	1/3	3.14	57-261	----
56-262	----	x 30"	1/3	3.91	57-262	----
56-263	----	x 36"	1/3	4.71	57-263	----
56-264	----	x 42"	1/3	5.48	57-264	----
56-265	----	x 48"	1/3	6.28	57-265	----
56-266	----	x 60"	1/3	7.85	57-266	----
56-267	----	x 72"	1/3	9.42	57-267	----

**1-1/4" DIAMETER
SCH 40 WELDED**

Wall Thickness 0.14 - Grade
B - Test Pressure 1300 PSI -
Thread Length 1.01



Part # Galv		Length	Box/Case	Approx. Wt. Lbs.	Part # Black	
56-120	----	X Close (1-5/8")	50/100	0.25	57-120	----
56-121	----	x 2"	50/100	0.32	57-121	----
56-122	----	x 2-1/2"	50/100	0.41	57-122	----
56-123	----	x 3"	50/100	0.50	57-123	----
56-124	----	x 3-1/2"	30/60	0.60	57-124	----
56-125	----	x 4"	30/60	0.69	57-125	----
56-126	----	x 4-1/2"	30/60	0.78	57-126	----
56-127	----	x 5"	25/50	0.87	57-127	----
56-128	----	x 5-1/2"	25/50	0.96	57-128	----
56-129	----	x 6"	25/50	1.06	57-129	----
56-130	----	x 7"	15/30	1.24	57-130	----
56-131	----	x 8"	15/30	1.42	57-131	----
56-132	----	x 9"	15/30	1.61	57-132	----
56-133	----	x 10"	15/30	1.79	57-133	----
56-134	----	x 11"	10/20	1.97	57-134	----
56-135	----	x 12"	10/20	2.16	57-135	----
56-270	----	x 18"	1/3	3.22	57-270	----
56-271	----	x 24"	1/3	4.32	57-271	----
56-272	----	x 30"	1/3	3.22	57-272	----
56-273	----	x 36"	1/3	6.48	57-273	----
56-275	----	x 48"			57-275	----

**1-1/2" DIAMETER
SCH 40 WELDED**

Wall Thickness 0.145 - Grade
B - Test Pressure 1300 PSI -
Thread Length 1.03



Part # Galv		Length	Box/Case	Approx. Wt. Lbs.	Part # Black	
56-140	----	X Close (1-3/4")	50/100	0.31	57-140	----
56-141	----	x 2"	40/80	0.37	57-141	----
56-142	----	x 2-1/2"	40/80	0.47	57-142	----
56-143	----	x 3"	40/80	0.58	57-143	----
56-144	----	x 3-1/2"	25/50	0.68	57-144	----
56-145	----	x 4"	25/50	0.78	57-145	----
56-146	----	x 4-1/2"	25/50	0.89	57-146	----
56-147	----	x 5"	25/50	1.10	57-147	----
56-148	----	x 5-1/2"	20/40	1.10	57-148	----
56-149	----	x 6"	15/30	1.20	57-149	----
56-150	----	x 7"	15/30	1.41	57-150	----
56-151	----	x 8"	15/30	1.62	57-151	----
56-152	----	x 9"	15/30	1.83	57-152	----
56-153	----	x 10"	1/20	2.04	57-153	----
56-154	----	x 11"	1/20	2.25	57-154	----
56-155	----	x 12"	1/20	2.46	57-155	----
56-280	----	x 18"	1/3	3.66	57-280	----
56-281	----	x 24"	1/3	4.92	57-281	----
56-282	----	x 30"	1/3	6.12	57-282	----
56-283	----	x 36"	1/3	7.38	57-283	----
56-285	----	x 48"	1/3	9.84	57-285	----
		x 60"			57-286	----



**2" DIAMETER
SCH 40 WELDED**

Wall Thickness 0.154 - Grade
B - Test Pressure 2500 PSI -
Thread Length 1.06



Part # Galv		Length	Box/Case	Approx. Wt. Lbs.	Part # Black	
56-160	----	X Close (2")	40/80	0.55	57-160	----
56-161	----	x 2-1/2"	25/50	0.70	57-161	----
56-162	----	x 3"	25/50	0.86	57-162	----
56-163	----	x 3-1/2"	1/30	1.01	57-163	----
56-164	----	x 4"	1/30	1.16	57-164	----
56-165	----	x 4-1/2"	1/25	1.31	57-165	----
56-166	----	x 5"	1/30	1.47	57-166	----
56-167	----	x 5-1/2"	1/30	1.62	57-167	----
56-168	----	x 6"	1/20	1.77	57-168	----
56-169	----	x 7"	1/20	2.08	57-169	----
56-170	----	x 8"	1/20	2.39	57-170	----
56-171	----	x 9"	1/10	2.70	57-171	----
56-172	----	x 10"	1/10	3.00	57-172	----
56-173	----	x 11"	1/10	3.31	57-173	----
56-174	----	x 12"	1/10	3.62	57-174	----
56-290	----	x 18"	1/3	5.39	57-290	----
56-291	----	x 24"	1/3	5.26	57-291	----
56-292	----	x 30"	1/3	7.03	57-292	----
56-293	----	x 36"	1/3	10.86	57-293	----
56-294	----	x 42"	1/3	12.63	57-294	----
56-295	----	x 48"	1/3	14.48	57-295	----
56-296	----	x 60"	1/3	18.10	57-296	----
56-297	----	x 72"	1/3	18.10	57-297	----



**2-1/2" DIAMETER
SCH 40 WELDED**

Wall Thickness 0.203 - Grade
B - Test Pressure 2500 PSI -
Thread Length 1.57



Part # Galv		Length	Box/Case	Approx. Wt. Lbs.	Part # Black	
56-180	----	X Close (2-1/2")	1/20	1.09	57-180	----
56-181	----	x 3"	1/20	1.33	57-181	----
56-182	----	x 3-1/2"	1/20	1.57	57-182	----
56-183	----	x 4"	1/20	1.82	57-183	----
56-184	----	x 4-1/2"	1/20	2.06	57-184	----
56-185	----	x 5"	1/20	2.30	57-185	----
56-186	----	x 5-1/2"	1/10	2.54	57-186	----
56-187	----	x 6"	1/10	2.78	57-187	----
56-188	----	x 7"	1/10	3.27	57-188	----
56-189	----	x 8"	1/10	3.75	57-189	----
56-190	----	x 9"	1/10	4.24	57-190	----
56-191	----	x 10"	1/8	4.72	57-191	----
56-192	----	x 11"	1/8	5.21	57-192	----
56-193	----	x 12"	1/8	5.69	57-193	----

BLACK & GALVANIZED SCH 40
STEEL NIPPLES



**3" DIAMETER
SCH 40 WELDED**

Wall Thickness 0.216 - Grade
B - Test Pressure 2500 PSI -
Thread Length 1.64



Part # Galv		Length	Box/Case	Approx. Wt. Lbs.	Part # Black	
56-200	----	X Close (2-5/8")	1/20	1.52	57-200	----
56-201	----	x 3"	1/20	1.76	57-201	----
56-202	----	x 3-1/2"	1/10	2.08	57-202	----
56-203	----	x 4"	1/10	2.39	57-203	----
56-204	----	x 4-1/2"	1/10	2.71	57-204	----
56-205	----	x 5"	1/10	3.03	57-205	----
56-206	----	x 5-1/2"	1/10	3.35	57-206	----
56-207	----	x 6"	1/10	3.66	57-207	----
56-208	----	x 7"	1/8	4.30	57-208	----
56-209	----	x 8"	1/8	4.93	57-209	----
56-210	----	x 9"	1/8	5.57	57-210	----
56-211	----	x 10"	1/5	6.20	57-211	----
56-212	----	x 11"	1/5	7.20	57-212	----
56-213	----	x 12"	1/5	7.47	57-213	----
		x 24"	1	14.94	57-311	----



**4" DIAMETER
SCH 40 WELDED**

Wall Thickness 0.237 - Grade
B - Test Pressure 2210 PSI -
Thread Length 1.74



Part # Galv		Length	Box/Case	Approx. Wt. Lbs.	Part # Black	
56-220	----	X Close (2-7/8")	1/10	2.00	57-220	----
56-221	----	3-1/2"	1/8	2.21		
56-223	----	x 4"	1/8	3.41	57-223	----
56-224	----	x 4-1/2"	1/6	3.86	57-224	----
56-225	----	x 5"	1/6	4.31	57-225	----
56-226	----	x 5-1/2"	1/6	4.76	57-226	----
56-227	----	x 6"	1/6	5.21	57-227	----
56-330	----	x 7"	1/5	6.48	57-330	----
56-229	----	x 8"	1/5	7.01	57-229	----
56-331	----	x 9"	1/5	7.54	57-331	----
56-332	----	x 10"	1/5	8.14	57-332	----
56-228	----	x 12"	1/4	8.54	57-228	----

NIPPLES & ASSORTMENTS

STEEL NIPPLES



6" DIAMETER SCH 40 WELDED

Wall Thickness 0.154 - Grade
B - Test Pressure 2500 PSI -
Thread Length 1.06



Part # Galv		Length	Box/Case	Approx. Wt. Lbs.	Part # Black	
56-300	----	X Close (3-1/8")	1/1	3.80	57-300	----
		x 4"	1/1	5.30	57-304	----
		x 6"	1/1	8.30	57-301	----
		x 8"	1/1	11.30	57-305	----
		x 10"			57-306	
		x 12"	1/1	17.20	57-308	----



8" DIAMETER SCH 40 WELDED

Wall Thickness 0.154 - Grade
B - Test Pressure 2500 PSI -
Thread Length 1.06

Part #	Length	Box/Case	Approx. Wt. Lbs.	
57-320	X Close (3-1/8")	1/1	5.80	----
57-322	x 6"	1/1	6.50	----
57-324	x 8"	1/1	11.30	----
57-326	x 10"	1/1	19.00	----
57-328	x 12"	1/1	28.55	----

1/4"-18



1/4" DIAMETER SCHEDULE 80 SEAMLESS

Wall Thickness 0.119 - Grade B - Test Pressure 850 PSI - Thread Length 0.59

Part #	Length	Box/Case	Approx. Wt. Lbs.	
59-020SMLS	x Close (7/8")	40 / 480	0.03	----
59-021SMLS	x 1-1/2"	100 / 400	0.06	----
59-022SMLS	x 2"	100 / 400	0.08	----
59-023SMLS	x 2-1/2"	80 / 320	0.10	----
59-024SMLS	x 3"	40 / 240	0.12	----
59-025SMLS	x 3-1/2"	40 / 240	0.15	----
59-026SMLS	x 4"	40 / 240	0.17	----
59-027SMLS	x 4-1/2"	40 / 120	0.19	----
59-028SMLS	x 5"	40 / 120	0.21	----
59-029SMLS	x 5-1/2"	40 / 80	0.24	----
59-030SMLS	x 6"	40 / 80	0.26	----
59-031SMLS	x 7"	40 / 80	0.30	----
59-032SMLS	x 8"	40 / 80	0.35	----
59-033SMLS	x 9"	40 / 80	0.39	----
59-034SMLS	x 10"	40 / 80	0.44	----
59-036SMLS	x 12"	40 / 80	0.53	----

BLACK SCH 80 SEAMLESS STEEL NIPPLES

3/8" - 18



3/8" DIAMETER SCHEDULE 80 SEAMLESS

Wall Thickness 0.126 - Grade B - Test Pressure 850 PSI - Thread Length 0.6

Part #	Length	Box/Case	Approx. Wt. Lbs.	
59-040SMLS	X Close (3/8")	40 / 480	0.05	----
59-041SMLS	x 1-1/2"	100 / 400	0.08	----
59-042SMLS	x 2"	100 / 400	0.11	----
59-043SMLS	x 2-1/2"	80 / 320	0.14	----
59-044SMLS	x 3"	40 / 240	0.17	----
59-045SMLS	x 3-1/2"	40 / 240	0.20	----
59-046SMLS	x 4"	40 / 240	0.23	----
59-047SMLS	x 4-1/2"	40 / 160	0.26	----
59-048SMLS	x 5"	40 / 120	0.29	----
59-049SMLS	x 5-1/2"	40 / 120	0.32	----
59-050SMLS	x 6"	40 / 80	0.35	----
59-052SMLS	x 8"	40/80	0.47	----
59-054SMLS	x 10"	40/80	0.53	----
59-056SMLS	x 12"	40/80	0.65	----

1/2" - 14



1/2" DIAMETER SCHEDULE 80 SEAMLESS

Wall Thickness 0.147 - Grade B - Test Pressure 850 PSI - Thread Length 0.78

Part #	Length	Box/Case	Approx. Wt. Lbs.	
59-060SMLS	X Close (1-1/8")	40 / 480	0.07	----
59-061SMLS	x 1-1/2"	100 / 400	0.11	----
59-062SMLS	x 2"	100 / 400	0.15	----
59-063SMLS	x 2-1/2"	80 / 320	0.20	----
59-064SMLS	x 3"	40 / 240	0.24	----
59-065SMLS	x 3-1/2"	40 / 240	0.29	----
59-066SMLS	x 4"	40 / 240	0.33	----
59-067SMLS	x 4-1/2"	40 / 160	0.38	----
59-068SMLS	x 5"	40 / 120	0.42	----
59-069SMLS	x 5-1/2"	40 / 120	0.47	----
59-070SMLS	x 6"	40 / 80	0.51	----
59-071SMLS	x 7"	40 / 80	0.60	----
59-072SMLS	x 8"	40 / 80	0.69	----
59-073SMLS	x 9"	40/80	0.73	----
59-074SMLS	x 10"	40 / 80	0.88	----
59-075SMLS	x 11"	32/64	0.96	----
59-076SMLS	x 12"	32 / 64	1.06	----

BLACK SCH 80 SEAMLESS STEEL NIPPLES



3/4" - 14

3/4" DIAMETER SCHEDULE 80 SEAMLESS

Wall Thickness 0.154 - Grade B - Test Pressure 850 PSI - Thread Length 0.79

Part #	Length	Box/Case	Approx. Wt. Lbs.	
59-080SMLS	X Close (1-3/8")	40/240	0.13	----
59-081SMLS	x 1-1/2"	100/200	0.15	----
59-082SMLS	x 2"	100/200	0.21	----
59-083SMLS	x 2-1/2"	40/160	0.27	----
59-084SMLS	x 3"	40/160	0.33	----
59-085SMLS	x 3-1/2"	40/120	0.39	----
59-086SMLS	x 4"	40/120	0.45	----
59-087SMLS	x 4-1/2"	40/120	0.51	----
59-088SMLS	x 5"	40/120	0.57	----
59-089SMLS	x 5-1/2"	48/96	0.64	----
59-090SMLS	x 6"	40/80	0.69	----
59-091SMLS	x 7"	40/80	0.82	----
59-092SMLS	x 8"	40/80	0.94	----
59-094SMLS	x 10"	32/64	1.19	----
59-096SMLS	x 12"	24/48	1.44	----



1" - 11 1/2

1" DIAMETER SCHEDULE 80 SEAMLESS

Wall Thickness 0.179 - Grade B - Test Pressure 850 PSI - Thread Length 0.98

Part #	Length	Box/Case	Approx. Wt. Lbs.	
59-100SMLS	X Close (1-1/2")	40 / 160	0.21	----
59-101SMLS	x 2"	40 / 120	0.30	----
59-102SMLS	x 2-1/2"	40 / 120	0.37	----
59-103SMLS	x 3"	40 / 80	0.47	----
59-104SMLS	x 3-1/2"	40 / 80	0.56	----
59-105SMLS	x 4"	40 / 80	0.65	----
59-106SMLS	x 4-1/2"	40 / 80	0.74	----
59-107SMLS	x 5"	40 / 80	0.83	----
59-108SMLS	x 5-1/2"	40 / 80	0.92	----
59-109SMLS	x 6"	32 / 64	1.01	----
59-110SMLS	x 7"	20 / 40	1.19	----
59-111SMLS	x 8"	20 / 40	1.37	----
59-112SMLS	x 9"	20 / 40	1.55	----
59-113SMLS	x 10"	12 / 24	1.74	----
59-114SMLS	x 11"	12 / 24	1.92	----
59-115SMLS	x 12"	12 / 24	2.10	----

BLACK SCH 80 SEAMLESS
STEEL NIPPLES


1-1/4" DIAMETER SCHEDULE 80 SEAMLESS

Wall Thickness 0.191 - Grade B - Test Pressure 1900 PSI - Thread Length 1.01

Part #	Length	Box/Case	Approx. Wt. Lbs.	
59-120SMLS	X Close (1-5/8")	40 / 80	0.31	----
59-121SMLS	x 2"	40 / 80	0.42	----
59-122SMLS	x 2-1/2"	40 / 80	0.52	----
59-123SMLS	x 3"	40 / 80	0.64	----
59-124SMLS	x 3-1/2"	24 / 48	0.77	----
59-125SMLS	x 4"	24 / 48	0.90	----
59-126SMLS	x 4-1/2"	24 / 48	1.02	----
59-127SMLS	x 5"	20 / 40	1.15	----
59-128SMLS	x 5-1/2"	20 / 40	1.27	----
59-129SMLS	x 6"	20 / 40	1.40	----
59-130SMLS	x 7"	20 / 40	1.65	----
59-131SMLS	x 8"	12 / 24	1.90	----
59-132SMLS	x 9"	12 / 24	2.15	----
59-133SMLS	x 10"	12 / 24	2.40	----
59-134SMLS	x 11"	8 / 16	2.65	----
59-135SMLS	x 12"	8 / 16	2.90	----


1-1/2" DIAMETER SCHEDULE 80 SEAMLESS

Wall Thickness 0.2 - Grade B - Test Pressure 1900 PSI - Thread Length 1.03

Part #	Length	Box/Case	Approx. Wt. Lbs.	
59-140SMLS	X Close (1-3/4")	40 / 80	0.41	----
59-141SMLS	x 2"	32 / 64	0.51	----
59-142SMLS	x 2-1/2"	32 / 64	0.64	----
59-143SMLS	x 3"	32 / 64	0.78	----
59-144SMLS	x 3-1/2"	20 / 40	0.94	----
59-145SMLS	x 4"	20 / 40	1.09	----
59-146SMLS	x 4-1/2"	20 / 40	1.23	----
59-147SMLS	x 5"	20 / 40	1.39	----
59-148SMLS	x 5-1/2"	16 / 32	1.54	----
59-149SMLS	x 6"	12 / 24	1.69	----
59-150SMLS	x 7"	12 / 24	2.00	----
59-151SMLS	x 8"	12 / 24	2.30	----
59-152SMLS	x 9"	12 / 24	2.61	----
59-153SMLS	x 10"	8 / 16	2.90	----
59-154SMLS	x 11"	8 / 16	3.20	----
59-155SMLS	x 12"	8 / 16	3.51	----

BLACK SCH 80 SEAMLESS
STEEL NIPPLES


2" DIAMETER SCHEDULE 80 SEAMLESS

Wall Thickness 0.218 - Grade B - Test Pressure 2500 PSI - Thread Length 1.06

Part #	Length	Box/Case	Approx. Wt. Lbs.	
59-160SMLS	X Close (2")	32/64	0.30	----
59-161SMLS	x 2-1/2"	20 / 40	0.80	----
59-162SMLS	x 3"	20 / 40	1.10	----
59-163SMLS	x 3-1/2"	12 / 24	1.31	----
59-164SMLS	x 4"	12 / 24	1.52	----
59-165SMLS	x 4-1/2"	12 / 24	1.72	----
59-166SMLS	x 5"	12 / 24	1.94	----
59-167SMLS	x 5-1/2"	12 / 24	2.15	----
59-168SMLS	x 6"	8 / 16	2.35	----
59-169SMLS	x 7"	8 / 16	2.78	----
59-170SMLS	x 8"	8 / 16	3.19	----
59-171SMLS	x 9"	1 / 8	3.62	----
59-172SMLS	x 10"	1 / 8	4.03	----
59-173SMLS	x 11"	1 / 8	4.44	----
59-174SMLS	x 12"	1 / 8	4.87	----
59-196SMLS	x 18"	1/1	7.22	----
59-197SMLS	x 24"	1/1	9.74	----
59-198SMLS	x 36"	1/1	14.61	----
59-199SMLS	x 48"	1/1	19.48	----


2-1/2" DIAMETER SCHEDULE 80 SEAMLESS

Wall Thickness 0.276 - Grade B - Test Pressure 2500 PSI - Thread Length 1.57

Part #	Length	Box/Case	Approx. Wt. Lbs.	
59-180SMLS	x Close (2-1/2")	1 / 16	1.25	----
59-181SMLS	x 3"	1 / 16	1.57	----
59-182SMLS	x 3-1/2"	1 / 16	1.82	----
59-183SMLS	x 4"	1 / 16	2.15	----
59-184SMLS	x 4-1/2"	1 / 16	1.75	----
59-185SMLS	x 5"	1 / 16	2.78	----
59-186SMLS	x 5-1/2"	1 / 8	2.25	----
59-187SMLS	x 6"	1 / 8	3.41	----
59-188SMLS	x 7"	1 / 8	3.89	----
59-189SMLS	x 8"	1 / 8	4.69	----
59-190SMLS	x 9"	1 / 8	5.34	----
59-191SMLS	x 10"	1 / 6	5.97	----
59-192SMLS	x 11"	1 / 6	4.89	----
59-193SMLS	x 12"	1 / 5	7.26	----

BLACK SCH 80 SEAMLESS
STEEL NIPPLES


3" DIAMETER SCHEDULE 80 SEAMLESS

Wall Thickness 0.3 - Grade B - Test Pressure 2500 PSI - Thread Length 1.64

Part #	Length	Box/Case	Approx. Wt. Lbs.	
59-200SMLS	X Close (2-5/8")	1 / 16	1.79	----
59-201SMLS	x 3"	1 / 16	2.11	----
59-202SMLS	x 3-1/2"	1 / 16	2.55	----
59-203SMLS	x 4"	1 / 8	2.89	----
59-204SMLS	x 4-1/2"	1 / 8	3.30	----
59-205SMLS	x 5"	1 / 8	3.73	----
59-206SMLS	x 5-1/2"	1 / 8	4.17	----
59-207SMLS	x 6"	1 / 8	4.57	----
59-208SMLS	x 7"	1 / 6	5.45	----
59-209SMLS	x 8"	1 / 6	6.29	----
59-210SMLS	x 9"	1 / 6	7.17	----
59-211SMLS	x 10"	1 / 4	8.01	----
59-212SMLS	x 11"	1 / 4	8.85	----
59-213SMLS	x 12"	1 / 4	9.72	----


4" DIAMETER SCHEDULE 80 SEAMLESS

Wall Thickness 0.337 - Grade B - Test Pressure 2800 PSI - Thread Length 1.74

Part #	Length	Box/Case	Approx. Wt. Lbs.	
59-220SMLS	X Close (2-7/8")	1 / 8	2.91	----
59-221SMLS	x 4"	1 / 6	4.26	----
59-223SMLS	x 5"	1 / 5	5.49	----
59-224SMLS	x 5-1/2"			
59-225SMLS	x 6"	1 / 5	6.72	----
59-226SMLS	x 7"	1/3	7.33	----
59-227SMLS	x 8"	1 / 3	9.23	----
59-228SMLS	9"			
59-229SMLS	x 10"	1 / 3	11.73	----
59-231SMLS	x 12"	1 / 3	14.24	----

BLACK EXTRA HEAVY XXS SEAMLESS STEEL NIPPLES



2" DIAMETER DIAMETER BLACK EXTRA HEAVY XXS SEAMLESS

Wall Thickness 0.436 - Grade B - Test Pressure 2500 PSI - Thread Length 1.06

Part #	Length	Box/Case	Approx. Wt. Lbs.	
59-160SMLSXX	x close	1 / 25	1.36	----
59-161SMLSXX	x 2-1/2"	1 / 20	1.67	----
59-162SMLSXX	x 3"	1 / 20	2.09	----
59-163SMLSXX	x 3-1/2"	1 / 12	2.51	----
59-164SMLSXX	x 4"	1 / 12	2.86	----
59-166SMLSXX	x 5"	1/12	3.04	----
59-168SMLSXX	x 6"	1 / 11	3.20	----
59-169SMLSXX	x 7"	1 / 8	4.35	----
59-170SMLSXX	x 8"	1 / 8	5.86	----
59-171SMLSXX	x 9"	1 / 8	6.58	----
59-172SMLSXX	x 10"	1 / 8	7.31	----
59-174SMLSXX	x 12"	1 / 8	9.34	----
59-179SMLSXX	x 24"	1 / 1	14.77	----

VISIT MIDLANDINDUSTRIES.COM

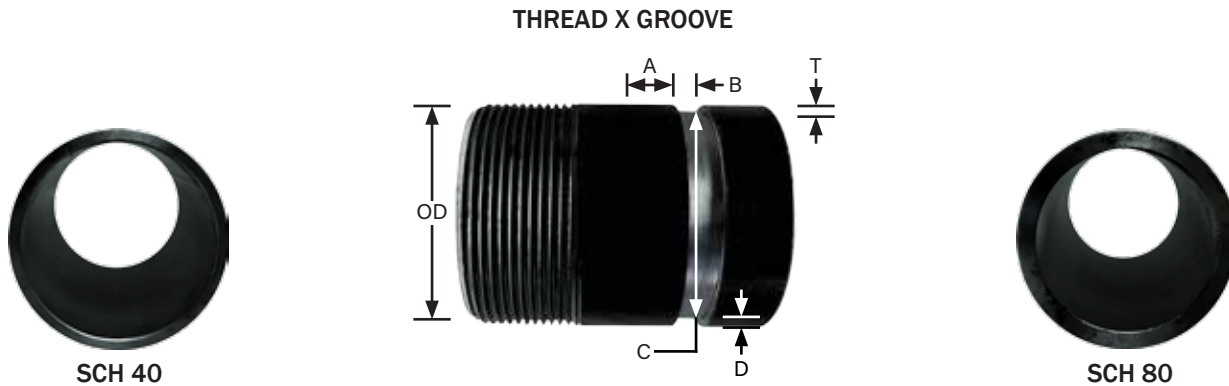
TO LEARN MORE ABOUT OUR NEW FAMILY OF COMPANIES



MIDLAND INDUSTRIES

A new Family of Companies, now working Together.

SCH 40 AND SCH 80 GROOVE NIPPLES



2" DIAMETER

Part #	List Price	Box	Wtg	Length	Wtg	Box	Part #
57162TV	----	50	0.70	x 3	1.03	40	59162TV
57164TV	----	30	0.97	x 4	1.40	24	59164TV
57168TV	----	20	1.64	x 6	2.41	16	59168TV
57170TV	----	20	2.15	x 8	3.20	16	59170TV
57172TV	----	10	2.80	x 10	3.65	8	59172TV
57174TV	----	10	3.45	x 12	4.01	8	59174TV

3" DIAMETER

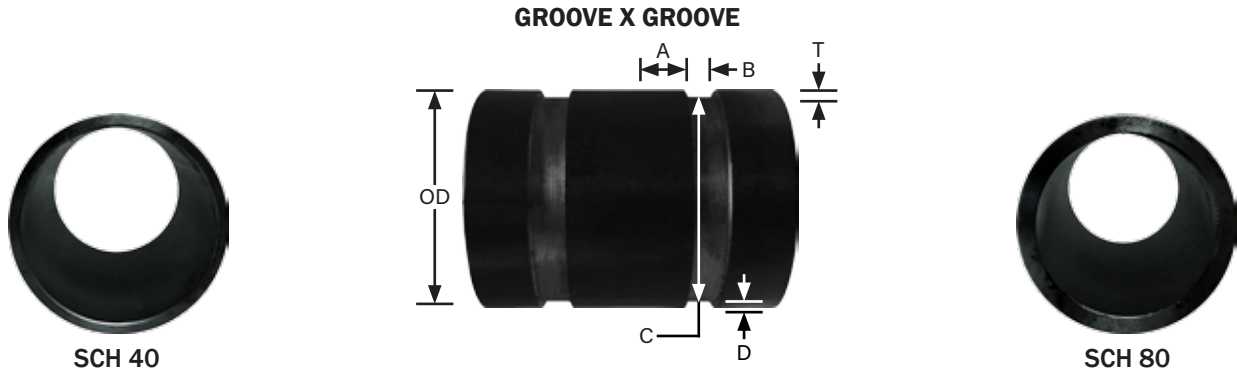
Part #	List Price	Box	Wtg	Length	Wtg	Box	Part #
57201TV	----	20	1.26	x 3	2.01	16	59201TV
57203TV	----	10	1.80	x 4	3.01	8	59203TV
57207TV	----	10	3.17	x 6	4.87	8	59207TV
57209TV	----	8	4.13	x 8	5.86	6	59209TV
57211TV	----	5	5.48	x 10	6.19	4	59211TV
57213TV	----	5	6.24	x 12	6.37	4	59213TV

4" DIAMETER

Part #	List Price	Box	Wtg	Length	Wtg	Box	Part #
57222TV	----	8	2.40	x 3	4.11	6	59222TV
57223TV	----	8	2.52	x 4	4.15	6	59221TV
57227TV	----	6	4.30	x 6	6.52	5	59225TV
57229TV	----	4	5.63	x 8	7.18	3	59229TV
57332TV	----	4	7.90	x 10	11.74	3	59231TV
57228TV	----	4	8.25	x 12	14.24	3	59227TV

Nominal IPS Pipe Size	O.D. Actual	Gasket Seat "A"	Groove Width "B"	Groove Diameter "C"	Actual Groove Depth "D"
2	2.375	0.625	0.312	2.250	0.062
3	3.500	0.625	0.312	3.344	0.078
4	4.500	0.625	0.375	4.334	0.083

BLACK SCH 40 AND SCH 80 SEAMLESS GROOVE NIPPLES



2" DIAMETER

Part #	Box	Wtg	Length	Wtg	Box	Part #
57162V	50	0.70	x 3	1.03	40	59162V
57164V	30	0.97	x 4	1.40	24	59164V
57168V	20	1.64	x 6	2.41	16	59168V
57170V	20	2.15	x 8	3.20	16	59170V
57172V	10	2.80	x 10	3.65	8	59172V
57174V	10	3.45	x 12	4.01	8	59174V

3" DIAMETER

Part #	Box	Wtg	Length	Wtg	Box	Part #
57201V	20	1.26	x 3	2.01	16	59201V
57203V	10	1.80	x 4	3.01	8	59203V
57207V	10	3.17	x 6	4.87	8	59207V
57209V	8	4.13	x 8	5.86	6	59209V
57211V	5	5.48	x 10	6.19	4	59211V
57213V	5	6.24	x 12	6.37	4	59213V

4" DIAMETER

Part #	Box	Wtg	Length	Wtg	Box	Part #
57223V	8	2.52	x 4	4.15	6	59221V
57227V	6	4.35	x 6	6.52	5	59225V
57229V	4	5.63	x 8	7.18	3	59227V
57332V	4	7.90	x 10	11.74	3	59229V
57228V	4	8.25	x 12	14.24	3	59231V

Nominal IPS Pipe Size	O.D. Actual	Gasket Seat "A"	Groove Width "B"	Groove Diameter "C"	Actual Groove Depth "D"
2	2.375	0.625	0.312	2.250	0.062
3	3.500	0.625	0.312	3.344	0.078
4	4.500	0.625	0.375	4.334	0.083

MERCHANT COUPLINGS

STEEL NIPPLES

Product Specifications

Welded steel couplings both galvanized and black in diameters from 1/8" up to 4".

Technical Specifications

Standards: Product complies with ASTM A865 and ANSI B1.20.1 for threading, dimensions and pipe specifications. Federal Spec WW-P-404

Pipe: Complies with ASTM A-53 milltested schedule 40 and 80. Meets ANSI B36.1. All pipe is hydrostatic tested.

Galvanized: Zinc coating applied by hot dipping. Galvanized complying with ASTM-A-123.

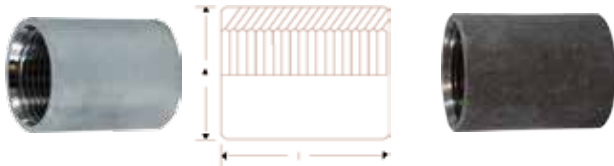
HALF MERCHANT COUPLINGS



- Straight threads thru 2"

Part # Galv		Size	Part # Black	
		1/8"	65-770H	
		1/4"	65-771H	----
		3/8"	65-772H	----
64-773H	----	1/2"	65-773H	----
64-774H	----	3/4"	65-774H	----
64-775H	----	1"	65-775H	----
64-776H	----	1-1/4"	65-776H	----
64-777H	----	1-1/2"	65-777H	----
64-778H	----	2"	65-778H	----
		2-1/2"	65-779H	----
64-780H	----	3"	65-780H	----
64-781H	----	4"	65-781H	----

MERCHANT COUPLINGS



- Straight threads thru 2"

Part # Galv		Size	Part # Black	
64-770	----	1/8"	65-770	----
64-771	----	1/4"	65-771	----
64-772	----	3/8"	65-772	----
64-773	----	1/2"	65-773	----
64-774	----	3/4"	65-774	----
64-775	----	1"	65-775	----
64-776	----	1-1/4"	65-776	----
64-777	----	1-1/2"	65-777	----
64-778	----	2"	65-778	----
64-779	----	2-1/2"	65-779	----
64-780	----	3"	65-780	----
64-781	----	4"	65-781	----
		5"	65-782	----
		6"	65-783	----

Also available:
Extra Heavy Merchant Couplings

MERCHANT COUPLINGS SPECIFICATIONS

Size	Outside Diam.	Length Inches	Weight 100 pcs approx.		Quantity per box	Threads per Inch	Threads	
			Pounds				Type	
1/8"	.59"	.78	3.5		1000	27	Straight	
1/4"	.73"	1.18	7.5		500	18	Straight	
3/8"	.86"	1.18"	9		600	18	Straight	
1/2"	1.063"	1-9/16"	13.0		100	14	Straight	
3/4"	1.313"	1-5/8"	28.3		50	14	Straight	
1"	1.576"	2"	40.1		30	11-1/2	Straight	
1-1/4"	1.900"	2-1/16"	49.5		25	11-1/2	Straight	
1-1/2"	2.200"	2-1/16"	71.48		25	11-1/2	Straight	
2"	2.750"	2-1/8"	112.0		20	11-1/2	Straight	
2-1/2"	3.250"	3-1/8"	231.2		8	8	Taper Tapped	
3"	4.000"	3-1/4"	353.8		5	8	Taper Tapped	
4"	5.000"	3-1/2"	471.8		4	8	Taper Tapped	
6"	7.32	4"	1000.05		4	8	Taper Tapped	

MALLEABLE FITTINGS



- Saturated steam pressure 150 PSI @ 350°F
- Max pressure 300 PSI @ 150°F
- Temp range -20°F to 350°F

ISO 9002 - CERTIFICATE OF QUALITY - UL/FM LISTED

Our quality fittings are made with care and attention to detail. With better molds we can reduce parting lines and rough edges resulting in better fluid flow. By using a low temperature galvanizing process the coating is more durable which means a longer lasting fitting. All Fittings are 100% Pressure Tested to 300# Class.

(Every fitting is subjected to an underwater fitness test to ensure the highest quality)

SPECIFICATIONS

- MATERIAL: ASTM A 197 - Cuppla Malleable Iron, ASTM A 153 - Hot dipped galvanizing • Coating ASTM A164 LS
- DIMENSIONS: ANSI B 16.3 - Malleable Iron threaded fittings, ANSI B 16.14 - Ferrous Pipe Plugs, Bushings etc..., ANSI B 16.39 - Malleable Iron threaded pipe unions.
- THREADS: ANSI B 2.1 or BS 21 ASME B1.20.1 • RoHS Compliant • Tapered Threads
- Pressure - Saturated steam 150 PSI @350°F: Max pressure 300 PSI - 150°F
- Temperature range -20 - 350°F

MALLEABLE IRON - ANSI B

16.3

F°	Class	Sizes	Sizes	Sizes
	150	1/4-1	1 1/4-2	2 1/4-3
	PSIG	300#	300#	300#
-200-150	300	2000	1500	1000
200	265	1785	1350	910
250	225	1575	1200	825
300	185	1360	1050	735
366*	150	1150	900	650

*Permissible for service temperature up to 366°F, reflecting the temperature of saturated steam at 150 psig.

STEEL FITTINGS



- 1010 Carbon Steel, 3/4 taper threads (see hydraulic section for 7/8 taper threads.)
- Finish or coating • Black Dipped in rust resistant
- Galvanized, Zinc Plated (Inside and Out)

300lb MALLEABLE FITTINGS



Max. pressure: 300 psi WOG @ 72°F; 150 psi WOG saturated steam

- Meet ANSI/ ASME B1.20.1 standards
- Black meet ASTM 197 standards

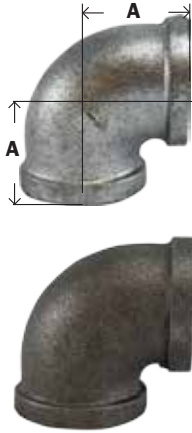
BULL PLUGS AND SWAGES



FLANGES

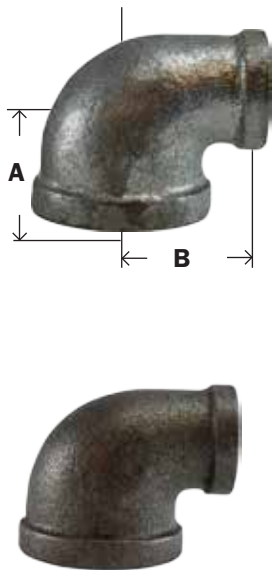


ELBOWS 90°



Part # Galvanized		Size	A	Box/ Case	Approx. Wt. Lbs.	Part # Black	
64-100	----	1/8"	0.69	50/600	0.07	65-100	----
64-101	----	1/4"	0.81	35/420	0.10	65-101	----
64-102	----	3/8"	0.95	90/360	0.16	65-102	----
64-103	----	1/2"	1.12	50/200	0.23	65-103	----
64-104	----	3/4"	1.31	35/105	0.35	65-104	----
64-105	----	1"	1.50	20/60	0.57	65-105	----
64-106	----	1-1/4"	1.75	20/40	0.86	65-106	----
64-107	----	1-1/2"	1.94	15/30	1.31	65-107	----
64-108	----	2"	2.25	8/16	1.79	65-108	----
64-109	----	2-1/2"	2.70	6/12	3.35	65-109	----
64-110	----	3"	3.08	4/8	5	65-110	----
64-112	----	4"	3.79	1/2	9.02	65-112	----
64-114	----	6"	5.13	1/1	23.68	65-114	----
		8"			41.1	65-115	----

REDUCING ELBOWS 90°



Part # Galvanized		Size	A	B	Box/ Case	Approx. Wt. Lbs.	Part # Black	
64-122	----	3/8" x 1/4"	0.88	0.90	90/360	0.16	65-122	----
64-123	----	1/2" x 1/4"	0.97	0.98	60/240	0.21	65-123	----
64-124	----	1/2" x 3/8"	1.04	1.03	60/240	0.24	65-124	----
64-126	----	3/4" x 3/8"	1.12	1.13	40/160	0.31	65-126	----
64-127	----	3/4" x 1/2"	1.20	1.22	40/160	0.44	65-127	----
64-130	----	1" x 1/2"	1.26	1.40	25/100	0.52	65-130	----
64-131	----	1" x 3/4"	1.37	1.45	50/100	0.58	65-131	----
64-133	----	1-1/4" x 3/4"	1.45	1.62	15/120	0.79	65-133	----
64-134	----	1-1/4" x 1"	1.58	1.67	10/40	0.80	65-134	----
64-136	----	1-1/2" x 3/4"	1.52	1.75	10/40	0.88	65-136	----
64-137	----	1-1/2" x 1"	1.65	1.80	10/40	1.07	65-137	----
64-138	----	1-1/2" x 1-1/4"	1.82	1.88	15/30	1.12	65-138	----
64-140	----	2" x 1"	1.73	2.02	14/28	1.41	65-140	----
64-141	----	2" x 1-1/4"	1.90	2.10	10/20	1.53	65-141	----
64-142	----	2" x 1-1/2"	2.02	2.16	10/20	1.65	65-142	----
64-145	----	2-1/2" x 1-1/2"	2.16	2.51	6/12	2.97	65-145	----
64-146	----	2-1/2" x 2"	2.39	2.60	6/12	3.18	65-146	----
64-148	----	3" x 1-1/2"	2.28	2.83	6/18	4.54	65-148	----
		3" x 2-1/2"	2.83	2.99	4/8	4.39	65-151	----
		3" x 2"	2.52	3.60	4/8	4.22	65-150	----

90° STREET ELBOWS



Part # Galvanized		Size	A	B	Box/ Case	Approx. Wt. Lbs.	Part # Black	
64-160	----	1/8"	0.69	1.00	60/720	.06	65-160	----
64-161	----	1/4"	0.80	1.17	35/420	.10	65-161	----
64-162	----	3/8"	0.95	1.48	40/240	.15	65-162	----
64-163	----	1/2"	1.10	1.59	60/180	.22	65-163	----
64-164	----	3/4"	1.28	1.85	35/105	.39	65-164	----
64-165	----	1"	1.47	2.10	35/105	.60	65-165	----
64-166	----	1-1/4"	1.75	2.57	25/50	.95	65-166	----
64-167	----	1-1/2"	1.90	2.63	9/27	1.37	65-167	----
64-168	----	2"	2.21	3.19	8/16	2.25	65-168	----
64-169	----	2-1/2"	2.65	3.78	5/10	3.32	65-169	----
64-170	----	3"	3.02	4.42	4/8	5.27	65-170	----
64-171	----	4"	3.72	5.57	2/4	8.94	65-171	----

BLACK AND GALVANIZED IRON #150
MALLEABLE FITTINGS

ELBOWS 45°



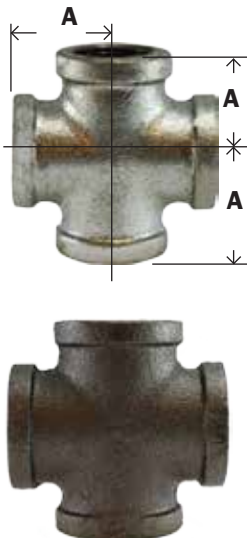
Part # Galvanized		Size	A	Box/ Case	Approx. Wt. Lbs.	Part # Black	
64-180	----	1/8"	0.63	50/600	.07	65-180	----
64-181	----	1/4"	0.73	30/360	.10	65-181	----
64-182	----	3/8"	0.80	75/300	.14	65-182	----
64-183	----	1/2"	0.88	50/200	.21	65-183	----
64-184	----	3/4"	0.98	40/120	.33	65-184	----
64-185	----	1"	1.12	20/60	.50	65-185	----
64-186	----	1-1/4"	1.29	20/40	.74	65-186	----
64-187	----	1-1/2"	1.43	10/30	1.01	65-187	----
64-188	----	2"	1.68	12/24	1.53	65-188	----
64-189	----	2-1/2"	1.95	9/18	2.78	65-189	----
64-190	----	3"	2.17	1/10	4.49	65-190	----
64-191	----	4"	2.61	2/4	7.44	65-191	----
64-192	----	6"	3.46	1/1	18.63	65-192	----
		8"			26.40	65-194	----

45° STREET ELBOWS



Part # Galvanized		Size	A	B	Box/ Case	Approx. Wt. Lbs.	Part # Black	
64-200	----	1/8"	0.63	0.83	70/840	.05	65-200	----
64-201	----	1/4"	0.73	0.94	40/480	.09	65-201	----
64-202	----	3/8"	0.80	1.03	100/400	.14	65-202	----
64-203	----	1/2"	0.86	1.30	75/225	.19	65-203	----
64-204	----	3/4"	0.96	1.48	40/120	.28	65-204	----
64-205	----	1"	1.10	1.69	25/75	.48	65-205	----
64-206	----	1-1/4"	1.26	1.87	10/40	.71	65-206	----
64-207	----	1-1/2"	1.40	2.05	10/30	1.02	65-207	----
64-208	----	2"	1.65	2.38	12/24	1.68	65-208	----
64-209	----	2-1/2"	1.95	2.72	6/12	2.69	65-209	----
64-210	----	3"	2.17	3.16	3/6	4.61	65-210	----
64-211	----	4"	2.61	3.90	2/4	7.74	65-211	----

CROSSES



Part # Galvanized		Size	A	Box/ Case	Approx. Wt. Lbs.	Part # Black	
64-390	----	1/8"	0.65	50/600	.14	65-390	----
64-391	----	1/4"	0.80	60/240	.17	65-391	----
64-392	----	3/8"	0.95	50/150	.26	65-392	----
64-393	----	1/2"	1.12	30/90	.42	65-393	----
64-394	----	3/4"	1.31	20/60	.64	65-394	----
64-395	----	1"	1.50	15/30	.98	65-395	----
64-396	----	1-1/4"	1.75	10/20	1.45	65-396	----
64-397	----	1-1/2"	1.94	8/16	1.90	65-397	----
64-398	----	2"	2.25	5/10	2.96	65-398	----
64-399	----	2-1/2"	2.71	4/8	5.49	65-399	----
64-400	----	3"	3.06	2/4	7.71	65-400	----
		4"		1/1	14.77	65-401	----

BLACK AND GALVANIZED IRON #150

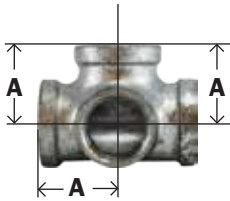
MALLEABLE FITTINGS

TEES



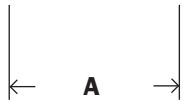
Part # Galvanized		Size	A	Box/Case	Approx. Wt. Lbs.	Part # Black	
64-250	----	1/8"	0.69	120/480	.11	65-250	----
64-251	----	1/4"	0.81	75/300	.15	65-251	----
64-252	----	3/8"	0.95	45/180	.22	65-252	----
64-253	----	1/2"	1.12	40/120	.36	65-253	----
64-254	----	3/4"	1.31	35/70	.48	65-254	----
64-255	----	1"	1.50	20/40	.83	65-255	----
64-256	----	1-1/4"	1.75	14/28	1.29	65-256	----
64-257	----	1-1/2"	1.94	12/24	1.66	65-257	----
64-258	----	2"	2.26	8/16	2.50	65-258	----
64-259	----	2-1/2"	2.70	4/8	4.45	65-259	----
64-260	----	3"	3.08	1/6	6.72	65-260	----
64-261	----	4"	3.79	1/2	11.31	65-261	----
64-262	----	6"	5.13	1/1	30.75	65-262	----
		8"			37.85	65-264	----

SIDE OUTLET TEES



Part # Galvanized		Size	A	Box/ Case	Approx. Wt. Lbs.	Part # Black	
64-383	----	1/2"	1.12	25/100	.39	65-383	----
64-384	----	3/4"	1.31	15/60	.58	65-384	----
64-385	----	1"	1.50	20/40	.88	65-385	----
64-386	----	1-1/4"	1.75	12/24	1.32	65-386	----
		1-1/2"	1.97	1/1	1.56	65-387	----
		2"	2.29	1/1	1.81	65-388	----

COUPLINGS



Part # Galvanized		Size	A	Box/ Case	Approx. Wt. Lbs.	Part # Black	
64-410	----	1/8"	0.96	70/840	.07	65-410	----
64-411	----	1/4"	1.06	40/480	.09	65-411	----
64-412	----	3/8"	1.16	40/480	.13	65-412	----
64-413	----	1/2"	1.34	60/240	.19	65-413	----
64-414	----	3/4"	1.52	50/150	.28	65-414	----
64-415	----	1"	1.67	25/100	.45	65-415	----
64-416	----	1-1/4"	1.93	16/64	.66	65-416	----
64-417	----	1-1/2"	2.15	18/36	.84	65-417	----
64-418	----	2"	2.54	12/24	1.39	65-418	----
64-419	----	2-1/2"	2.88	8/16	2.42	65-419	----
64-420	----	3"	3.18	1/12	3.49	65-420	----
64-421	----	4"	3.69	3/6	5.81	65-421	----
64-422	----	6"	4.23	1/2	28.62	65-422	----

BLACK AND GALVANIZED IRON #150
MALLEABLE FITTINGS

REDUCING COUPLINGS



Part # Galvanized		Size	A	Box/ Case	Approx. Wt. Lbs.	Part # Black	
64-430	----	1/4" x 1/8"	1.00	50/600	.07	65-430	----
64-431	----	3/8" x 1/8"	1.13	35/420	.09	65-431	----
64-432	----	3/8" x 1/4"	1.13	30/360	.11	65-432	----
64-433	----	1/2" x 1/8"	1.25	75/300	.13	65-433	----
64-434	----	1/2" x 1/4"	1.25	75/300	.11	65-434	----
64-435	----	1/2" x 3/8"	1.25	60/240	.15	65-435	----
64-439	----	3/4" x 1/8"	1.44	60/240	.18	65-439	----
64-436	----	3/4" x 1/4"	1.44	45/18	.19	65-436	----
64-437	----	3/4" x 3/8"	1.44	45/18	.21	65-437	----
64-438	----	3/4" x 1/2"	1.44	60/180	.25	65-438	----
64-459	----	1" x 1/4"	1.69	45/135	.34	65-459	----
64-440	----	1" x 3/8"	1.69	30/120	.35	65-440	----
64-441	----	1" x 1/2"	1.69	30/120	.36	65-441	----
64-442	----	1" x 3/4"	1.69	25/100	.39	65-442	----
64-460	----	1-1/4" x 3/8"	2.06	25/75	.55	65-460	----
64-444	----	1-1/4" x 1/2"	2.06	25/75	.53	65-444	----
64-445	----	1-1/4" x 3/4"	2.06	25/75	.57	65-445	----
64-446	----	1-1/4" x 1"	2.06	15/60	.61	65-446	----
64-443	----	1-1/2" x 3/8"	2.31	20/60	.71	65-443	----
64-447	----	1-1/2" x 1/2"	2.31	20/60	.69	65-447	----
64-448	----	1-1/2" x 3/4"	2.31	15/60	.71	65-448	----
64-449	----	1-1/2" x 1"	2.31	25/50	.78	65-449	----
64-450	----	1-1/2" x 1-1/4"	2.31	12/48	.87	65-450	----
64-458	----	2" x 1/2"	2.81	12/36	1.14	65-458	----
64-451	----	2" x 3/4"	2.81	12/36	1.14	65-451	----
64-452	----	2" x 1"	2.81	12/36	1.21	65-452	----
64-453	----	2" x 1-1/4"	2.81	9/27	1.19	65-453	----
64-454	----	2" x 1-1/2"	2.81	9/27	1.38	65-454	----
64-461	----	2-1/2" x 1-1/2"	3.25	20/40	2.07	65-461	----
64-462	----	2-1/2" x 2"	3.25	7/14	2.23	65-462	----
64-486	----	3" x 1-1/2"	3.69	6/12	3.23	65-486	----
64-456	----	3" x 2"	3.69	6/12	3.30	65-456	----
64-463	----	3" x 2-1/2"	3.69	5/10	3.55	65-463	----
64-464	----	4" x 2"	4.38	3/6	5.55	65-464	----
64-465	----	4" x 2-1/2"	4.38	3/6	5.90	65-465	----
64-457	----	4" x 3"	4.38	3/6	6.05	65-457	----
		6" x 4"	4.24	1/2	10.86	65-491	----

HEX BUSHING



Hex



* INSIDE HEX

Part # Galvanized		Size M x F	A	Hex	Box/ Case	Approx. Wt. Lbs.	Part # Black	
64-500	----	*1/4" x 1/8"	0.79	0.67	1/25	.03	65-500	----
64-501	----	*3/8" x 1/8"	0.79	0.75	1/25	.06	65-501	----
64-502	----	*3/8" x 1/4"	0.79	0.75	1/25	.05	65-502	----
64-503	----	1/2" x 1/8"	0.84	1.03	150/600	.09	65-503	----
64-504	----	1/2" x 1/4"				.08	65-504	----
64-505	----	1/2" x 3/8"	0.75	1.03	150/600	.07	65-505	----
64-506	----	3/4" x 1/8"	0.85	1.15	75/300	.14	65-506	----
64-507	----	3/4" x 1/4"	0.85	1.15	75/300	.13	65-507	----
64-508	----	3/4" x 3/8"	0.85	1.15	75/300	.12	65-508	----
64-509	----	3/4" x 1/2"	0.93	1.15	75/300	.10	65-509	----
64-510*	----	1" x 1/4"	1.13	1.12	50/200	.20	65-510*	----
64-511*	----	1" x 3/8"	1.13	1.12	50/200	.18	65-511*	----
64-512	----	1" x 1/2"	1.10	1.42	50/200	.21	65-512	----
64-513	----	1" x 3/4"	1.10	1.42	50/200	.17	65-513	----
64-514*	----	1-1/4" x 1/4"	1.24	1.12	30/120	.29	65-514*	----
64-515*	----	1-1/4" x 3/8"	1.24	1.12	30/120	.29	65-515*	----
64-516*	----	1-1/4" x 1/2"	1.24	1.24	30/120	.31	65-516*	----
64-517	----	1-1/4" x 3/4"	1.08	1.76	30/120	.35	65-517	----
64-518	----	1-1/4" x 1"	1.08	1.76	30/120	.29	65-518	----
64-519*	----	1-1/2" x 1/4"	1.30	1.12	25/75	.40	65-519*	----
64-520*	----	1-1/2" x 3/8"	1.30	1.12	25/75	.38	65-520*	----
64-521*	----	1-1/2" x 1/2"	1.30	1.34	25/75	.38	65-521*	----
64-522*	----	1-1/2" x 3/4"	1.30	1.44	25/75	.40	65-522*	----
64-523	----	1-1/2" x 1"	1.23	2.00	25/75	.45	65-523	----
64-524	----	1-1/2" x 1-1/4"	1.23	2.00	25/75	.34	65-524	----
64-526	----	2" x 1/4"	1.29	1.12	20/60	.57	65-526	----
64-525*	----	2" x 3/8"	1.28	1.12	20/60	.57	65-525*	----
64-527*	----	2" x 1/2"	1.39	1.34	20/60	.57	65-527*	----
64-528*	----	2" x 3/4"	1.39	1.63	20/60	.63	65-528*	----
64-529*	----	2" x 1"	1.39	1.77	20/60	.66	65-529*	----
64-530	----	2" x 1-1/4"	1.50	2.48	20/60	.74	65-530	----
64-531	----	2" x 1-1/2"	1.50	2.48	20/60	.61	65-531	----
64-546*	----	2-1/2" x 1/2"	1.51	1.34	15/30	.97	65-546*	----
64-547*	----	2-1/2" x 3/4"	1.51	1.63	15/30	.91	65-547*	----
64-532*	----	2-1/2" x 1"	1.51	1.95	15/30	.97	65-532*	----
64-533*	----	2-1/2" x 1-1/4"	1.51	2.39	15/30	1.03	65-533*	----
64-534	----	2-1/2" x 1-1/2"	1.51	2.98	15/30	1.16	65-534	----
64-535	----	2-1/2" x 2"	1.54	2.98	15/30	1.01	65-535	----
64-550	----	3" x 1"	1.61	1.95	12/24	1.41	65-550	----
64-549*	----	3" x 1-1/4"	1.61	2.39	12/24	1.42	65-549*	----
64-537*	----	3" x 1-1/2"	1.61	2.68	12/24	1.51	65-537*	----
64-538	----	3" x 2"	1.61	3.86	12/24	1.71	65-538	----
64-539	----	3" x 2-1/2"	1.61	3.86	12/24	1.68	65-539	----
		3-1/2" x 3"	1.86	4.20	5/10	2.17	65-555	----
64-551	----	4" x 3/4"	2.15	4.90	5/10	3.88	65-551	----
64-553*	----	4" x 1"	2.00	4.75	5/10	3.79	65-553*	----
64-552	----	4" x 1-1/4"	1.82	2.39	5/10	2.39	65-552	----
64-540	----	4" x 1-1/2"	1.82	2.68	5/10	2.39	65-540	----
64-541*	----	4" x 2"	1.82	3.31	5/10	2.52	65-541*	----
64-542*	----	4" x 2-1/2"	2.06	3.87	5/10	2.87	65-542*	----
64-543	----	4" x 3"	2.17	4.96	5/10	2.95	65-543	----
		5" x 4"	2.16	5.34	2/4	6.80	65-544	----
64-545*	----	6" x 4"	2.33	5.79	2/4	7.11	65-545*	----

BLACK AND GALVANIZED IRON #150

MALLEABLE FITTINGS

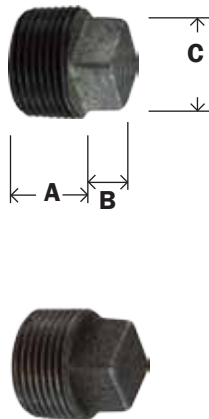
UNIONS



• Brass Seat

Part # Galvanized		Size	A	Box/Case	Approx. Wt. Lbs.	Part # Black	
64-600	----	1/8"	1.26	60/240	.17	65-600	----
64-601	----	1/4"	1.44	20/240	.25	65-601	----
64-602	----	3/8"	1.61	40/160	.37	65-602	----
64-603	----	1/2"	1.72	50/100	.52	65-603	----
64-604	----	3/4"	1.94	35/70	.78	65-604	----
64-605	----	1"	2.06	20/40	1.18	65-605	----
64-606	----	1-1/4"	2.26	15/30	1.64	65-606	----
64-607	----	1-1/2"	2.41	10/20	2.08	65-607	----
64-608	----	2"	2.75	6/12	3.24	65-608	----
64-609	----	2-1/2"	3.22	4/8	5.31	65-609	----
64-610	----	3"	3.50	4/8	6.94	65-610	----
64-611	----	4"	3.85	2/4	12.02	65-611	----

SQUARE HEAD PLUGS • Cored



Part # Galvanized		Size	A	B	C	Box/Case	Approx. Wt. Lbs.	Part # Black	
64-651	----	*1/8"	0.41	0.23	0.30	1/25	.02	65-650	----
64-652	----	*1/4"	0.48	0.28	0.38	1/25	.03	65-651	----
64-653	----	*3/8"	0.53	0.31	0.43	1/25	.04	65-652	----
64-654	----	1/2"	0.58	0.38	0.56	50/600	.08	65-653	----
64-654	----	3/4"	0.65	0.44	0.63	30/360	.13	65-654	----
64-655	----	1"	0.75	0.50	0.82	20/240	.22	65-655	----
64-656	----	1-1/4"	0.82	0.56	0.94	40/120	.33	65-656	----
64-657	----	1-1/2"	0.85	0.62	1.13	30/90	.41	65-657	----
64-658	----	2"	0.91	0.68	1.31	20/60	.68	65-658	----
64-659	----	2-1/2"	1.26	0.74	1.50	16/64	.89	65-659	----
64-660	----	3"	1.16	0.80	1.69	16/32	1.68	65-660	----
64-661	----	4"	1.22	1.00	2.28	6/12	3.02	65-661	----
		6"	1.85	1.13	5.97	5/10	11.41	65-662	----
		8"				1/1		65-664	----

CAPS



Part # Galvanized		Size	A	Box/Case	Approx. Wt. Lbs.	Part # Black	
64-470	----	1/8"	0.55	1/25	.03	65-470	----
64-471	----	1/4"	0.62	80/960	.07	65-471	----
64-472	----	3/8"	0.74	60/720	.08	65-472	----
64-473	----	1/2"	0.87	75/300	.13	65-473	----
64-474	----	3/4"	0.97	40/160	.18	65-474	----
64-475	----	1"	1.16	25/100	.30	65-475	----
64-476	----	1-1/4"	1.28	20/80	.47	65-476	----
64-477	----	1-1/2"	1.33	18/54	.66	65-477	----
64-478	----	2"	1.45	12/36	.99	65-478	----
64-479	----	2-1/2"	1.70	20/40	1.58	65-479	----
64-480	----	3"	1.80	12/24	2.51	65-480	----
64-481	----	4"	2.08	6/12	4.09	65-481	----
64-482	----	6"	2.55	2/4	5.18	65-482	----

BLACK AND GALVANIZED IRON #150

MALLEABLE FITTINGS

FLOOR FLANGES



Part # Galvanized		Size	A	Thickness	Hole Size	Box/ Case	Approx. Wt. Lbs.	Part # Black
64-692	----	1/2"	3.50	0.50	0.25	25/100	.63	65-692
64-693	----	3/4"	3.50	0.63	0.25	15/45	.73	65-693
64-694	----	1"	4.00	0.69	0.25	15/45	1.02	65-694
64-695	----	1-1/4"	4.00	0.75	0.25	15/30	1.00	65-695
64-696	----	1-1/2"	4.50	0.87	0.31	8/24	1.37	65-696
64-697	----	2"	5.50	1.00	0.31	8/16	2.11	65-697

UNION

- Brass Seat



Part #	Size	
69-600	1/8"	----
69-601	1/4"	----
69-602	3/8"	----
69-603	1/2"	----
69-604	3/4"	----
69-605	1"	----
69-606	1-1/4"	----
69-607	1-1/2"	----
69-608	2"	----

XH BULL PLUG

- Made from sch. 80 pipe.
- Zinc plated
- Hollow



Part #	Description	
90-001	1/4"	----
90-002	3/8"	----
90-003	1/2"	----
90-004	3/4"	----
90-005	1"	----
90-006	1-1/4"	----
90-007	1-1/2"	----
90-008	2"	----
93-001*	2"	----
90-213	2" w/ 1/4" TAP	----
90-212	2" w/ 1/2" TAP	----
93-212*	2"XXH w/1/2" TAP	----
90-009	2-1/2"	----
90-010	3"	----
90-215	3" w/ 1/2" TAP	----
90-011	4"	----

* XXH

STANDARD SCH. 40 SWAGE

MIP X MIP

- Zinc plated



Part #	Description	
93-113	1-1/4" x 1"	----
93-121	2" x 1"	----
93-122	2" x 1-1/4"	----
93-123	2" x 1-1/2"	----
93-124	2-1/2" x 2"	----
93-125	3" x 1"	----
93-127	3" x 1-1/2"	----
93-128	3" x 2"	----
93-129	3" x 2-1/2"	----
93-130	4" x 2"	----
93-131	4" x 3"	----
93-139	6" x 3"	----

SWAGES
SWAGES

SCH 80 XH SWAGES
MIP X MIP



* Hex Style



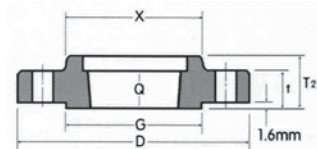
Part #	Description	
90-100*	1/4" x 1/8"	----
90-102*	1/2" x 1/4"	----
90-103*	1/2" x 3/8"	----
90-104*	3/8" x 1/4"	----
90-105*	3/4" x 1/4"	----
90-106*	3/4" x 3/8"	----
90-107*	3/4" x 1/2"	----
90-108*	1" x 1/4"	----
90-109*	1" x 3/8"	----
90-110*	1" x 1/2"	----
90-111*	1" x 3/4"	----
90-140	1-1/4" x 3/4"	----
90-141	1-1/4" x 1"	----
90-114	1-1/2" x 1/2"	----
90-115	1-1/2" x 3/4"	----
90-116	1-1/2" x 1"	----
90-117	1-1/2" x 1-1/4"	----
90-118	2" x 1/4"	----
90-119	2" x 1/2"	----
90-120	2" x 3/4"	----
90-121	2" x 1"	----
90-122	2" x 1-1/4"	----
90-123	2" x 1-1/2"	----
90-124	2-1/2" x 2"	----
90-125	3" x 1"	----
90-126	3" x 1-1/4"	----
90-127	3" x 1-1/2"	----
90-128	3" x 2"	----
90-129	3" x 2-1/2"	----
90-133	4" x 1"	----
90-130	4" x 2"	----
90-131	4" x 3"	----
90-132	6" x 4"	----
90-150	6" x 2"	----
90-152	6" x 3"	----

CLASS 150
FORGED STEEL FLANGES

ASTMA105
ASME SA105
ANSI B16.5

Forged Steel Flanges

• A105 Forged Steel • CLASS 150
(1-1/2 thru 6" available in #316 Stainless Steel add SS to part#)



**THREADED 1/16" RAISED FACE
FORGED STEEL FLANGE**

Part #	Size	
107-060	1/2"	----
107-061	3/4"	----
107-062	1"	----
107-063	1-1/4"	----
107-064	1-1/2"	----
107-065	2"	----
107-066	2-1/2"	----
107-067	3"	----
107-069	4"	----
107-071	6"	----
107-072	8"	----
107-073	10"	----
107-074	12"	----

Nominal Pipe Size	Depth of Socket in. Y	DRILLING			BOLTING				APPROXIMATE WEIGHT		
		Bolt Circle Diameter	Number of Holes	Diameter of Holes	Diameter of Bolts (inch)	Machine Bolt Length	Stud Bolt Length		Welding Neck LBS	Slip-on and Threaded LBS	Blind LBS
						Raised Face	Raised Face	Ring Joint			
1/2	.382	2.382	4	.618	1/2	2.00	2.252	-	1.146	1.036	1.036
3/4	.441	2.752	4	.618	1/2	2.00	2.50	-	2.028	1.653	1.389
1	.500	3.118	4	.618	1/2	2.252	2.50	3.00	2.425	1.893	2.094
1-1/4	.559	3.50	4	.618	1/2	2.252	2.752	3.252	3.086	3.086	3.086
1-1/2	.618	3.882	4	.618	1/2	2.50	2.752	3.252	3.99	3.109	3.571
2	.689	4.752	4	.752	5/8	2.752	3.252	3.752	6.173	4.982	5.82
2-1/2	.752	5.5	4	.752	5/8	3.00	3.50	4.00	9.436	7.562	8.951
3	.811	6.0	4	.752	5/8	3.00	3.50	4.00	11.42	8.818	11.023
4	.941	7.50	8	.752	5/8	3.00	3.50	4.00	16.138	12.677	16.535
6	1.059	9.50	8	.882	3/4	3.252	4.00	4.50	24.824	17.196	26.455
8	1.252	11.752	8	.882	3/4	3.50	4.252	4.752	39.683	28.66	44.092
10	1.311	14.252	12	1.00	7/8	4.00	4.50	5.00	55.116	37.699	66.139
12	1.559	17	12	1.00	7/8	4.00	4.752	5.252	85.936	61.024	97.003

HIGH PRESSURE SPRAYERS



STRAIGHT THROUGH QDS



FITTINGS AND SWIVELS



NOZZLES



SPRAY GUNS AND WANDS



NOZZLES

HIGH PRESSURE SPRAYER

QUICK DISCONNECT NOZZLE 5-PIECE KIT

Part #	GPM @ 4000PSI	
DX259520	2.0	----
DX259530	3.0	----
DX259540	4.0	----
DX259550	5.0	----
DX259560	6.0	----
DX259570	7.0	----



WEEPING SPRAY GUN

Rear entry spray gun, weeping, 5000 PSI, 10.5 GPM, 300F

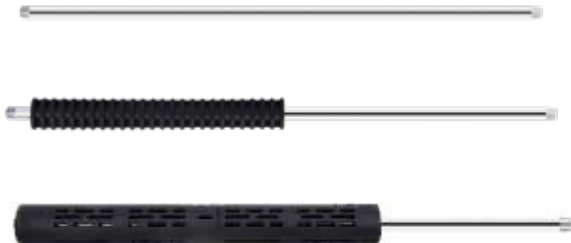
Weep style spray guns allow for a continuous flow of water by way of a small hole in the bottom of the gun that produces a slight leak, or a weeping effect. This helps prevent lines freezing in cold weather or scalding water temperatures in hot weather that could damage the pumps.



Part #	
DX5006	----

CHROMED STEEL WAND

1/4" MNPT x 1/4" Extension Wands, 10.5 GPM, 300F



Part #	Size	Grip	
DX4324	24"	No Grip	----
DX4336	36"	No Grip	----
DX4424	24"	Molded Grip	----
DX4436	36"	Molded Grip	----
DX4524VG	24"	Vented Grip	----
DX4536VG	36"	Vented Grip	----

SPRAY GUN WITH EXTENSION

Rear entry spray gun with 12" extension, 4000psi, 7gpm, 300F max



Part #	
DX5190	----

SPRAY GUN

Rear entry spray gun, 4000 PSI, 7 GPM, 212F max



Part #	Pressure	Flow	Temperature	
DX5090	4000	7	212	----
DX5022	4000	6.6	300	----
DX5005	5075	10.5	300	----

SPRAY GUN WITH EXTENSION

Rrear entry spray gun with 12" extension, 5075psi, 10.5gpm, 300F max



Part #	
DX5197	----

PNEUMATICS



QUICK DISCONNECTS



- Universal
- ARO 210
- Lincoln
- Industrial
- Automotive
- ST Series - High Flow

BREATHER VENTS, MUFFLERS



- Mufflers
- Snubbers
- In-line filters
- Breather vents
- Control valves
- Manifolds

PNEUMATIC ACCESSORIES



- Kits NEW
- Tire gauge
- Tank and vent valves
- Blow guns
- Air chucks
- Inflators

GAUGES



- Liquid filled & Dry
- Lower mount & center mount
- Water test
- Syphons

COUPLERS/ PLUGS

HIGH PRESSURE SPRAYER

STRAIGHT THROUGH STYLE

- Brass couplers have brass bodies and brass valves, 8 steel locking balls, Buna-N seal, and stainless steel springs
- Stainless steel couplers have stainless steel bodies, 8 stainless steel locking balls, Buna-N seal, and stainless steel springs
- Plugs are steel with green blue zinc plating or stainless steel
- Straight through design means there is no positive shut-off after disconnect
- Fully interchangeable with Parker, Hansen, Foster and Adams
- Use with liquids, hydraulic service, compressed air, gases, water and vacuum
- Ideal for applications such as high pressure water, steam washers, and carpet cleaners
- Max. Temp. 212°F for Couplers/ 300°F for Plugs • Max Flow: 10.5 GPM

FEMALE BRASS COUPLERS



Part #	Body Size	Thread Size	PSI	
86-035	1/4	1/4	4000	----
86-036	3/8	3/8	4000	----
86-037	1/2	1/2	4000	----

MALE STEEL PLUGS



Part #	Body Size	Thread Size	PSI	
86-040	1/4	1/4	4000	----
86-041	3/8	3/8	4000	----
86-042	1/2	1/2	4000	----

FEMALE STAINLESS STEEL PLUGS



Part #	Body Size	Thread Size	PSI	
86-045SS	1/4	1/4	6000	----
86-046SS	3/8	3/8	6000	----

FEMALE STEEL PLUGS



Part #	Body Size	Thread Size	PSI	
86-045	1/4	1/4	4000	----
86-046	3/8	3/8	4000	----
86-047	1/2	1/2	4000	----

**INDUSTRIAL
QUICK DISCONNECTS**

INDUSTRIAL INTERCHANGE

- Couplers are brass or plated steel body with brass or steel valves, 6 steel locking balls, NBR seal and stainless steel springs
- 6 Steel locking balls (1/2" body size has 8 steel locking balls)
- Plugs are brass or steel with green blue zinc plating
- Industry standard design for compressed air, water, grease, paint, limited vacuum and limited gases
- Manual retract for connecting and disconnecting
- Maximum working pressure is 250 PSI

BRASS FEMALE COUPLER



Part#	Body Size	Thread Size	
28-540	1/4"	1/4"	----
28-541	1/4"	3/8"	----

BRASS MALE COUPLER



Part#	Body Size	Thread Size	
28-552	1/4"	1/4"	----
28-553	1/4"	3/8"	----

STEEL FEMALE COUPLER



Part#	Body Size	Thread Size	
28-540S	1/4"	1/4"	----
28-541S	1/4"	3/8"	----
98-810	3/8"	1/4"	----
98-811	3/8"	3/8"	----
98-812	3/8"	1/2"	----
99-812	1/2"	1/2"	----
99-813	1/2"	3/4"	----

STEEL MALE COUPLER



Part#	Body Size	Thread Size	
28-552S	1/4"	1/4"	----
28-553S	1/4"	3/8"	----
98-823	3/8"	1/4"	----
98-824	3/8"	3/8"	----
98-825	3/8"	1/2"	----
99-825	1/2"	1/2"	----
99-826	1/2"	3/4"	----

BRASS HOSE ID COUPLER



Part#	Body Size	Barb Size	
28-562	1/4"	1/4"	----
28-564	1/4"	3/8"	----

STEEL HOSE ID COUPLER



Part#	Body Size	Barb Size	
28-562S	1/4"	1/4"	----
28-564S	1/4"	3/8"	----
98-840	3/8"	1/4"	----
98-841	3/8"	3/8"	----
99-841	1/2"	3/8"	----
99-843	1/2"	1/2"	----

INDUSTRIAL
QUICK DISCONNECTS

STEEL MALE PLUG



Part#	Body Size	Thread Size	
28-545	1/4"	1/8"	----
28-546	1/4"	1/4"	----
28-547	1/4"	3/8"	----
98-814	3/8"	1/4"	----
98-815	3/8"	3/8"	----
99-816	1/2"	1/2"	----
99-817	1/2"	3/4"	----

STEEL FEMALE PLUG



Part#	Body Size	Thread Size	
28-533	1/4"	1/8"	----
28-534	1/4"	1/4"	----
28-535	1/4"	3/8"	----
98-801	3/8"	1/4"	----
98-802	3/8"	3/8"	----
99-803	1/2"	1/2"	----
99-804	1/2"	3/4"	----

BRASS MALE PLUG



Part#	Body Size	Thread Size	
28-546B	1/4"	1/4"	----

STEEL HOSE ID PLUG



Part#	Body Size	Barb Size	
28-557	1/4"	1/4"	----
28-559	1/4"	3/8"	----
98-828	3/8"	3/8"	----
99-828	1/2"	3/8"	----
99-830	1/2"	1/2"	----

STEEL PUSH-ON HOSE PLUG



Part#	Body Size	Barb Size	
28-558	1/4"	1/4"	----
28-561	1/4"	3/8"	----
98-830	3/8"	3/8"	----

STEEL SWIVEL MALE PLUG



Part#	Body Size	Thread Size	
320-065	1/4"	1/4"	----

UNIVERSAL QUICK DISCONNECTS

UNIVERSAL SERIES COUPLERS

- Automatic Coupler means flow will cut off automatically at time of disconnect
- Brass Couplers have brass body and brass sleeve with brass valve, 6 steel locking balls, NBR seal and 6 stainless steel springs.
- Stainless Steel Couplers have stainless steel body and stainless steel sleeve with stainless steel valve, 6 steel locking balls, FKM seal, and stainless steel springs
- Coupler compatible with ARO 210, Parker Interchange and Industrial Interchange plugs
- Maximum working pressure is 250 PSI

BRASS FEMALE COUPLER



Part#	Body Size	Thread Size	
28-560	1/4"	1/4"	----

ARO 210 INTERCHANGE

- Couplers have brass bodies and brass valves, 6 steel locking balls, NBR seal, and stainless steel springs
- Plugs are steel with green blue zinc plating
- Couplers have a full opening tubular valve for maximum flow and a built-in sleeve guard to minimize accidental disconnect
- Maximum working pressure is 250 PSI

MALE PLUG



Part#	Body Size	Thread Size	
28-586	1/4"	1/8"	----
28-587	1/4"	1/4"	----

AUTOMOTIVE/ PARKER INTERCHANGE QUICK DISCONNECTS

AUTOMOTIVE/ PARKER INTERCHANGE (Tru-Flate)

- Brass couplers are brass bodies with brass valves, 6 steel locking balls, NBR seal, and stainless steel springs. Steel couplers are steel bodies with steel valves, 6 stainless steel locking balls, NBR seal, and stainless steel springs.
- Plugs are brass or steel with green blue zinc plating
- Unique design has been field proven as a long-lasting, high performance coupling especially when used with pneumatic tools
- Maximum working pressure is 300 PSI

BRASS MALE COUPLER



Part#	Body Size	Thread Size	
28-515	1/4"	1/8"	----
28-516	1/4"	1/4"	----
28-517	1/4"	3/8"	----

BRASS FEMALE COUPLER



Part#	Body Size	Thread Size	
28-507	1/4"	1/4"	----
28-508	1/4"	3/8"	----

STEEL FEMALE COUPLER



Part#	Body Size	Thread Size	
28-507S	1/4"	1/4"	----
28-525S	3/8"	1/4"	----
28-526S	3/8"	3/8"	----

BRASS FEMALE PLUG



Part#	Body Size	Thread Size	
28-501B	1/4"	1/4"	----

STEEL MALE PLUG



Part#	Body Size	Thread Size	
28-509	1/4"	1/8"	----
28-510	1/4"	1/4"	----
28-511	1/4"	3/8"	----
28-512	3/8"	1/4"	----
28-513	3/8"	3/8"	----

STEEL FEMALE PLUG



Part#	Body Size	Thread Size	
28-500	1/4"	1/8"	----
28-501	1/4"	1/4"	----
28-502	1/4"	3/8"	----
28-503	3/8"	1/4"	----
28-504	3/8"	3/8"	----

VALVES/ BLOW GUNS

PNEUMATIC ACCESSORIES

ASME CODED SAFETY VALVES

- Valves are manufactured to ASME standards and certified by the national board of boiler and pressure vessel inspectors.
- Bubble tight to 10% of set pop-off pressure.
- ASME safety valves are interchangeable with all other ASME valves of same size and pressure.
- Brass construction. Marked ASME, NB
- 1/ Blister card.



Part #	Male NPT	Pop-off Pressure	Air Flow	
87001	1/4"	70 PSI	70 CFM	----
87002	1/4"	125 PSI	120 CFM	----
87003	1/4"	150 PSI	140 CFM	----
87004	1/4"	200 PSI	170 CFM	----

Note: Valve resets after pressure drops 50%

SAFETY BLOW GUN

- N/P steel handle with plastic sleeve
- Brass Valve
- Zinc body
- Aluminum nozzle



90 PSI

1/8" Outlet

Part #	Size	
320-050	1/4" Inlet	----

5114 51-124 401 20430AD S148 D204-30 6475

HEX BALL FOOT CHUCK



Part #	Size	
46-600	1/4 FPT Live Air	----

PISTOL GRIP BLO-GUN

Material

- Body: POM (engineering plastic)
- Nozzle: nickel plated carbon steel
- Blue Handle Color

Features

- Simple construction, economic
- Global thread connection
- Durable and versatile applications
- 4 inch nozzle



150 PSI

Part #	Size	
320-035	1/4"	----

DUAL HEAD ANGLE FOOT AIR CHUCK



Dual Head Straight Foot Air Chuck 1/4"FNPT For inner duals;both ends lock on valve core threads,the length is 6.66",the head is Zinc-alloy,and the nut is brass with chrome plated.

Part #	Size	
320-005	1/4	----

GAUGES

PNEUMATIC ACCESSORIES

STAINLESS CASE

Liquid filled gauges enhance the reliability and integrity of the measuring system for long periods. The glycerine filling helps dampen the effects of vibration and pulsation. It also lubricates the movement which extends the life of the gauge. ALL CONNECTIONS ARE BRASS.



- Liquid Filled Gauges with a stainless case are used for protection in harsh environments.
- Stainless Steel Case
- Copper Alloy Wetted parts
- Polycarbonate window
- \pm 1.5% of span accuracy
- Temp. Range -104°F to 158°F

2-1/2" FACE 1/4" LOWER MOUNT

Part #	PSI	
80-061	0-15	----
80-062	0-30	----
80-063	0-60	----
80-064	0-100	----
80-065	0-160	----
80-066	0-200	----
80-067	0-300	----
80-068	0-400	----
80-069	0-600	----
80-100	0-1000	----
80-101	0-1500	----
80-102	0-2000	----
80-103	0-3000	----
80-104	0-5000	----
80-105	0-10000	----
80-080	30-0 Vacuum	----
80-081	-30 to +30	----



THREAD TO CONNECT, DRYBREAK NO-SPILL QUICK CONNECT

- Brass Body
- Steel Wing Nut
- Buna-Seal (-40° to +250°F)

Aeroquip 5100
Parker 6100
Snaptite B78



- Bonded Face Seal
- External ORing Alleviates Full Connection

Part #	Body Size	Female NPT	Max PSI	
61-150	3/4	1/2	3000	----
61-152	3/4	3/4	3000	----
61-153	1	1	3000	----
61-154	1-1/4	1-1/4	2750	----
61-155	1-1/2	1-1/2	2500	----

Part #	Body Size	Female NPT	Max PSI	
61-050	3/4	1/2	3000	----
61-052	3/4	3/4	3000	----
61-053	1	1	3000	----
61-054	1-1/4	1-1/4	2750	----
61-055	1-1/2	1-1/2	2500	----

FEATURES - ISO A and ISO B

- Poppet valves to prevent uncoupled leakage
- Critical parts are induction hardened for durability
- Dependable ball-locking mechanism holds the mating halves together
- Socket and plug are precision machined from solid barstock
- Standard nitrile seals temp range -40°F to +250°F



ISO-A FEMALE PIPE COUPLER

Part #	Body Size	NPT	
ANV-14-F	1/4"	1/4"	----
ANV-38-F	3/8"	3/8"	----
ANV-12-F	1/2"	1/2"	----
ANV-34-F	3/4"	3/4"	----
ANV-1-F	1"	1"	----

ISO 7241-1 ISO-A Interchange (Connected)				
Body Size	Steel Coupler/ Plug			
	Maximum Working		Burst	
	PSI	Bar	PSI	Bar
1/4"	5,000	345	18,270	1,200
3/8"	4,000	275	18,270	1,200
1/2"	4,000	275	16,500	1,100
3/4"	4,000	275	14,800	1,000
1"	4,000	275	12,400	850



ISO-A FEMALE PIPE PLUG

Part #	Body Size	NPT	
ANV-14-M	1/4"	1/4"	----
ANV-38-M	3/8"	3/8"	----
ANV-12-M	1/2"	1/2"	----
ANV-34-M	3/4"	3/4"	----
ANV-1-M	1"	1"	----

INTERCHANGE DATA:

- Parker 6600, Aeroquip/ Eaton FD56, Dixon 'K' Series.
- Hansen HA 15000, Safeway S56

ISO 7241-1 Series B ISO-B Interchange (Connected)								
Body Size	Steel Coupler/ Plug				Brass Coupler/ Plug			
	Max. Working		Burst		Max. Working		Burst	
	PSI	Bar	PSI	Bar	PSI	Bar	PSI	Bar
1/4"	5,000	345	22,500	1,550	3,000	200	15,000	1,000
3/8"	4,000	275	16,500	1,150	2,500	175	12,000	800
1/2"	4,000	275	16,000	1,100	2,500	175	11,500	750
3/4"	4,000	275	16,500	1,150	2,000	150	12,000	800
1"	4,000	275	16,000	1,100	1,500	100	8,500	800

INTERCHANGE DATA:

- Parker 60 Series, Snap-tite 72 series, Dixon 'H' series
- Hansen HK - series, Aeroquip/ Eaton FDH5

B=BRASS



BRASS - HNV SERIES PLUG



BRASS - HNV SERIES COUPLER



ISO-B FEMALE PIPE COUPLER

Part #	Body Size	NPT	
HNV-14-F	1/4"	1/4"	----
HNV-14-F-B	1/4"	1/4"	----
HNV-38-F	3/8"	3/8"	----
HNV-38-F-B	3/8"	3/8"	----
HNV-12-F	1/2"	1/2"	----
HNV-12-F-B	1/2"	1/2"	----
HNV-34-F	3/4"	3/4"	----
HNV-34-F-B	3/4"	3/4"	----
HNV-1-F	1"	1"	----
HNV-1-F-B	1"	1"	----



ISO-B FEMALE PIPE PLUG

Part #	Body Size	NPT	
HNV-14-M	1/4"	1/4"	----
HNV-14-M-B	1/4"	1/4"	----
HNV-38-M	3/8"	3/8"	----
HNV-38-M-B	3/8"	3/8"	----
HNV-12-M	1/2"	1/2"	----
HNV-12-M-B	1/2"	1/2"	----
HNV-34-M	3/4"	3/4"	----
HNV-34-M-B	3/4"	3/4"	----
HNV-1-M	1"	1"	----
HNV-1-M-B	1"	1"	----

FEATURES

- Steel construction, zinc plated trivalent finish. Hardened Nipples and sleeves and solid barstock construction for maximum resistance to damage from hydraulic and mechanical shock.
- This Anti-Blowout Nitrile/ PTFE bonded seal is designed to prevent blow out or damage during severe service conditions.
- Durable ball-locking mechanism assures reliable connection everytime.
- Temp Range -65° to +250°

ISO 16028

FLUSH FACE				
Body Size	Steel Coupler/ Plug Coupled			
	Maximum Working		Burst	
	PSI	Bar	PSI	Bar
1/4"	5,000	345	18,270	1,200
3/8"	4,000	275	18,270	1,200
1/2"	4,000	275	16,500	1,100
5/8"	4,000	275	14,800	1,000
3/4"	4,000	275	12,400	850
1"	3,000	200	12,600	850

FF Series
HTMC
74C



FEMALE PIPE COUPLER

Part #	Body Size	NPT	
FF-14-F	1/4"	1/4"	----
FF-38-F	3/8"	3/8"	----
FF-12-F	1/2"	1/2"	----
FF-3812-F	3/8"	1/2"	----
FF-1234-F	1/2"	3/4"	----
FF-1012F	5/8"	3/4"	----
FF-3416-F	3/4"	1"	----
FF-34-F	3/4"	3/4"	----
FF-1-F	1"	1"	----

FF Series
HTMN
74N



FEMALE PIPE PLUG

Part #	Body Size	NPT	
FF-14-M	1/4"	1/4"	----
FF-38-M	3/8"	3/8"	----
FF-12-M	1/2"	1/2"	----
FF-3812-M	3/8"	1/2"	----
FF-1234-M	1/2"	3/4"	----
FF-3416-M	3/4"	1"	----
FF-34-M	3/4"	3/4"	----
FF-1-M	1"	1"	----

FLAT FACE THREAD LOCK - VEP QUICK COUPLING

SPECIFICATIONS

Body Size (in)	1/2(12)	3/4(34)	1(1)	1-1/2(24)
Rated Pressure (PSI)	7000	7000	6000	5000
Rated Flow (GPM)	12	50	88	152
Temperature Range	-20°C +120°C			

Standard seal material is **NBR**

Test Fluid-Oil = 200 SUS

APPLICATIONS

- Widely used in public equipment
- Portable construction equipment.
- Hydraulic tools
- Vehicles

FEATURES

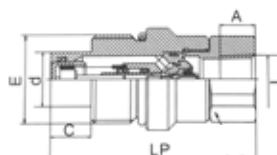
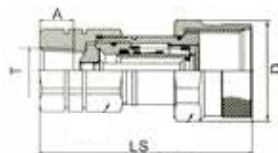
- New valve design provides better resistance from high flow and the pressure of impulse, thus providing advanced performance.
- Special nipple design for connecting under pressure, allows connection and disconnection with high residual pressures.
- The LSQ-VEP series employs a threaded sleeve locking mechanism, mates with matching male threads on the coupler.
- New plating treatment provides advanced anti-rust performance.
- LSQ-VEP series couplings employ flush valving when connecting or disconnecting, therefore only a small amount of fluid can be lost during disconnecting or air inclusion during reconnection.
- The Anti-Blowout bonded seal is designed to prevent blow-out or damage during severe service conditions.
- Machined form solid steel barstock for durability. Compatible with most other VEP series.
- **O-Ring SAE Boss Thread available with import lead time (same list price)**

FEMALE COUPLER

Part #	LS	D	A	NPT	
LSQ-VEP-12-SF	4.09	1.13	0.67	1/2	----
LSQ-VEP-34-SF	4.49	2.13	0.79	3/4	----
LSQ-VEP-1-SF	5.28	2.33	0.83	1	----
LSQ-VEP-20-SF	5.71	2.72	0.83	1-1/4	----
LSQ-VEP-24-SF	7.41	3.63	0.83	1-1/2	----

FEMALE PLUG

Part #	LS	D	A	NPT	
LSQ-VEP-12-PF	4.09	1.13	0.67	1/2	----
LSQ-VEP-34-PF	4.49	2.13	0.79	3/4	----
LSQ-VEP-1-PF	5.28	2.33	0.83	1	----
LSQ-VEP-20-PF	5.71	2.72	0.83	1-1/4	----
LSQ-VEP-24-PF	7.41	3.63	0.83	1-1/2	----



QUICK DISCONNECT HYDRAULIC ADAPTERS

AG - Series Agricultural Interchange (Connected)				
Nominal Size	Steel Coupler/ Plug			
	Maximum Working		Burst	
	PSI	Bar	PSI	Bar
1/4"	4,000	275	21,000	1,500
3/8"	4,000	275	23,100	1,600
1/2"	4,000	275	16,500	1,100
3/4"	3,000	200	10,300	700
1"	3,000	200	13,000	900

FEATURES

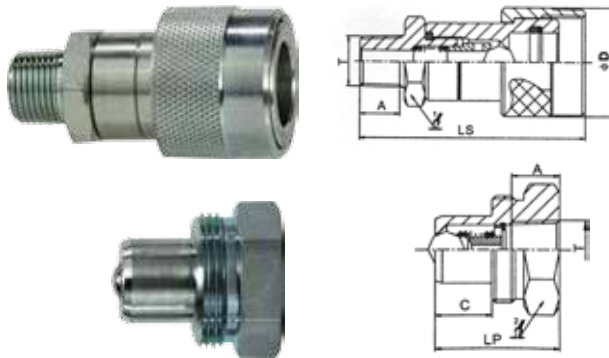
- Heavy duty heat treated poppet: valves are standard with rugged, specially-designed seals made of nitrite for leak-free performance in the toughest application.
- High-strength steel valve guides designed for high flow rates and made extra tough for agricultural service.
- Dependable hardened chrome alloy steel locking balls. Heat treated plugs and sleeves.
- Standard seals temp range -40°F to +250°F

THREAD LOCK HYDRAULIC JACK COUPLING

APPLICATIONS

- Thread lock couplings with their threaded union locking system and precision ball-type check valves are designed for extreme high pressure applications such as portable hydraulic jacks.

• Ball Type.



SPECIFICATIONS

Body Size	1/4(14)	3/8(38)
Rated Pressure	10,000	
Rated Flow (GPM)	3	6
Temperature Range	-20°C +120°C	

Standard seal material is NBR

MALE COUPLER

Part #	LS	D	Hex	A	NPT	
KZE-B-14-SM	2.40	1.14	0.87	0.55	1/4	----
KZE-B-38-SM	2.91	1.38	0.98	0.57	3/8	----

FEMALE COUPLER

Part #	LS	D	Hex	A	NPT	
KZE-B-14-PF	1.30	0.44	0.75	0.51	1/4	----
KZE-B-38-PF	1.38	0.63	1.26	0.55	3/8	----

CRIMPLOK SANITARY FITTINGS
SANITARY FITTINGS

SANITARY FITTINGS



CRIMPLOK CLAMP END X HOSE SHANK SS316 

316 Stainless Steel Polished to a surface finish of 32 Ra and meets 3A 63-03 standard for sanitary fittings. For use with CRIMPLOK Sanitary Ferrules (SFCE-XXXXX-SS304)



Part#	Size	Lbs	Std Pack	
SFCE-100CR-SS316	1"	0.49	100	----
SFCE-150CR-SS316	1-1/2"	0.63	100	----
SFCE-200CR-SS316	2"	1.20	60	----
SFCE-250CR-SS316	2-1/2"	1.34	25	----
SFCE-300CR-SS316	3"	2.24	16	----
SFCE-400CR-SS316	4"	3.79	9	----

CRIMPLOK BEVEL SEAT FEMALE X HOSE SHANK SS316 

316 Stainless Steel Polished to a surface finish of 32 Ra and meets 3A 63-03 standard for sanitary fittings. For use with CRIMPLOK Sanitary Ferrules (SFCE-XXXXX-SS304). Uses Hex Nuts (SFHN) and Bevel Seat Gaskets (SFG-XXX-EPDM)



Part#	Size	Lbs	Std Pack	
SFBSF-100CR-SS316	1"	0.33	22	----
SFBSF-150CR-SS316	1-1/2"	0.77	22	----
SFBSF-200CR-SS316	2"	1.26	19	----
SFBSF-250CR-SS316	2-1/2"	2.07	19	----
SFBSF-300CR-SS316	3"	2.67	16	----
SFBSF-400CR-SS316	4"	4.12	9	----

CRIMPLOK SANITARY FITTINGS

SANITARY FITTINGS

HOSE ADAPTER CLAMP END X LONG HOSE SHANK SS304

304 Stainless Steel Polished to a surface finish of 32 Ra and meets 3A 63-03 standard for sanitary fittings. Mainly used in brewery and winery industries. For use with Sanitary Single Pin Clamp (SFSPC) and Sanitary Clamp Gaskets (SFG)



Part#	Size	Lbs	Std Pack	
SFHACE-100-SS304	1"	0.35	60	----
SFHACE-150-SS304	1-1/2"	0.55	100	----
SFHACE-200-SS304	2"	0.86	50	----
SFHACE-250-SS304	2-1/2"	0.99	50	----
SFHACE-300-SS304	3"	1.26	16	----
SFHACE-400-SS304	4"	2.03	20	----

"TUBE" HOSE ADAPTER CLAMP END SS316 X SHORT HOSE SHANK

316 Stainless Steel Polished to a surface finish of 32 Ra and meets 3A 63-03 standard for sanitary fittings. Mainly used in brewery and winery industries. For use with Sanitary Single Pin Clamp (SFSPC) and Sanitary Clamp Gaskets (SFG)



Part#	Size	Lbs	Std Pack	
SFHACE-100038-SS316	1" x 3/8"	0.18	20	----
SFHACE-100050-SS316	1" x 1/2"	0.21	20	----
SFHACE-100075-SS316	1" x 3/4"	0.22	20	----
SFHACE-100100-SS316	1" x 1"	0.23	20	----
SFHACE-150100-SS316	1-1/2" x 1"	0.20	20	----
SFHACE-150150-SS316	1-1/2" x 1-1/2"	0.22	20	----
SFHACE-200150-SS316	2" x 1-1/2"	0.35	20	----
SFHACE-200200-SS316	2" x 2"	0.37	20	----

SINGLE PIN CLAMP SS304

304 Stainless Steel with Cross Hole Wing Nut. For use with CRIMPLOK Sanitary Fittings (SFCE-XXXCR-SS316 and SFHACE-XXX/XXXX-SS304/SS316)



Part#	Size	Lbs	Std Pack	
SFSPC-150-SS304	1-1/2"	0.40	100	----
SFSPC-200-SS304	2"	0.62	100	----
SFSPC-250-SS304	2-1/2"	0.71	50	----
SFSPC-300-SS304	3"	0.79	50	----
SFSPC-400-SS304	4"	0.99	30	----

CRIMPLOK SANITARY FITTINGS

SANITARY FITTINGS

HEX NUT FOR BEVEL SEAT SS304

304 Stainless Steel
For use with SFBSF series Sanitary Fittings



Part#	Size	Lbs	Std Pack	
SFHN-100-SS304	1"	0.29	20	----
SFHN-150-SS304	1-1/2"	0.53	20	----
SFHN-200-SS304	2"	0.88	20	----
SFHN-250-SS304	2-1/2"	1.32	40	----
SFHN-300-SS304	3"	1.88	25	----
SFHN-400-SS304	4"	3.64	10	----

END CAP SS316

316 Stainless Steel Polished to a surface finish of 32 Ra and meets 3A 63-03 standard for sanitary fittings.
For use with CRIMPLOK Sanitary Fittings (SFCE-XXXCR-SS316 and SFHACE-XXX/XXXX-SS304/SS316)



Part#	Size	Lbs	Std Pack	
SFEC-150-SS316	1" & 1-1/2"	0.18	50	----
SFEC-200-SS316	2"	0.30	50	----
SFEC-250-SS316	2-1/2"	0.44	50	----
SFEC-300-SS316	3"	0.62	50	----
SFEC-400-SS316	4"	1.31	20	----

SANITARY FERRULES SS304

304 Stainless Steel Polished to 64R surface finish
For use with SFCE and SFBSF Sanitary Fittings



Part#	Size	Lbs	Ferrule ID (in.)	Wall Thickness (in.)	Length (in.)	Std Pack	
SFCF-10130-SS304	1"X1-30/64"	0.31	1.4688	0.103	1.95	100	----
SFCF-10134-SS304	1"X1-34/64"	0.33	1.5313	0.103	1.95	100	----
SFCF-10147-SS304	1"X1-47/64"	0.40	1.7344	0.103	1.95	100	----
SFCF-15204-SS304	1-1/2"X2-4/64"	0.46	2.0625	0.108	1.98	70	----
SFCF-15207-SS304	1-1/2"X2-7/64"	0.49	2.1094	0.108	1.98	60	----
SFCF-15210-SS304	1-1/2"X2-10/64"	0.49	2.1563	0.108	1.98	60	----
SFCF-20236-SS304	2"X2-36/64"	0.71	2.5625	0.123	2.27	50	----
SFCF-20241-SS304	2"X2-41/64"	0.75	2.6406	0.123	2.27	50	----
SFCF-20247-SS304	2"X2-47/64"	0.79	2.7344	0.123	2.27	40	----
SFCF-25307-SS304	2-1/2"X3-7/64"	0.95	3.1094	0.123	2.27	20	
SFCF-30358-SS304	3"X3-58/64"	1.96	3.9063	0.148	3.37	18	----
SFCF-30363-SS304	3"X3-63/64"	2.01	3.9844	0.148	3.37	18	----
SFCF-40446-SS304	4"X4-46/64"	2.54	4.7188	0.148	3.69	8	----
SFCF-40462-SS304	4"X4-62/64"	2.76	4.9688	0.148	3.69	7	----

CRIMPLOK SANITARY FITTINGS

SANITARY FITTINGS

WHITE BUNA GASKET

Meets FDA CFR21-177 (COLOR: 1 RED DOT)

Temperature Range: -30C to +110C (-22F to +230F)

For use with CRIMPLOK sanitary fittings (SFCE-XXXCR-SS316 and SFHACE-XXX/XXXX-SS304/SS316)



Part#	Size	Lbs	Std Pack	
SFG-100-WH	1"	0.011	300	----
SFG-150-WH	1-1/2"	0.012	500	----
SFG-200-WH	2"	0.013	500	----
SFG-250-WH	2-1/2"	0.016	400	----
SFG-300-WH	3"	0.021	300	----
SFG-400-WH	4"	0.032	200	----

CLEAR SILICONE GASKET

Meets FDA CFR21-177

Temperature Range: -35C to +180C (-31F to +356F)

For use with CRIMPLOK sanitary fittings (SFCE-XXXCR-SS316 and SFHACE-XXX/XXXX-SS304/SS316)



Part#	Size	Lbs	Std Pack	
SFG-100-SILC	1"	0.011	300	----
SFG-150-SILC	1-1/2"	0.012	500	----
SFG-200-SILC	2"	0.013	500	----
SFG-250-SILC	2-1/2"	0.016	400	----
SFG-300-SILC	3"	0.021	300	----
SFG-400-SILC	4"	0.032	200	----

Threading Information

BSPP	British Standard Pipe Parallel
BSPT	British Standard Pipe Taper
CHT	American Standard Fire Hose Thread (1" National Hose Thread is Chemical Hose Thread , also known as Booster Hose Thread)
GHT	Garden Hose Thread (FGH - Female Garden Hose) (MGH - Male Garden Hose)
IPS	Iron Pipe Straight Thread
IPT	Iron Pipe Thread
JIC	Joint Industrial Committee
NH or NST	American Standard Fire Hose Coupling Thread (National Hose thread also known as National Standard Thread)
NPT	American Standard Taper Pipe Thread (National Pipe Tapered)
NPTF	American Standard Taper Pipe Fuel Dryseal Thread (National Pipe Tapered)(Dryseal)
NPSH	American Standard Straight Pipe for Hose Couplings (National Pipe Straight Hose)
NPSM	American Standard Straight Mechanical Joints (National Pipe Straight Mechanical)

Association Abbreviations

SAE International (SAE) is a professional organization for mobility engineering professionals in the aerospace, automotive, and commercial vehicle industries. The Society is a standards development organization for the engineering of powered vehicles of all kinds, including cars, trucks, boats, aircraft, and others.

AGA - American **G**as **A**ssociation

JIC - Joint Industrial **C**ommittee

ASA - American **S**tatistical **A**ssociation

ASME - American **S**ociety of **M**echanical **E**ngineers

Need help identifying a fitting?

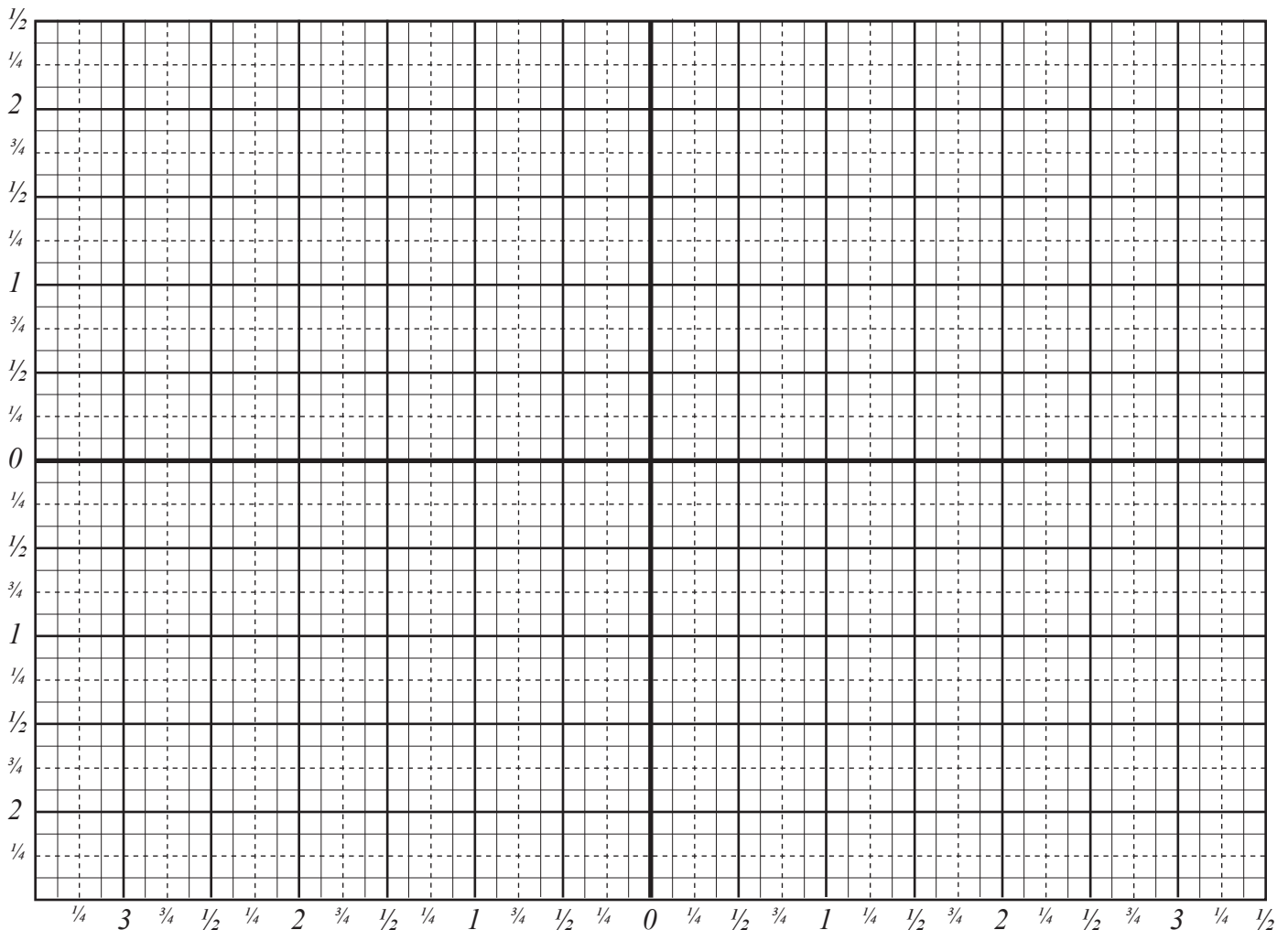
Let our engineering team assist you!

Step 1 - Determine material. (Brass, Steel, Stainless, etc...)

Step 2 - Check Threads. (See Intro page 20 for threading types)

Step 3 - Measure Outer Diameter(O.D.) , Inner Diameter (I.D.), Length and any other relevant measurement.

Step 4 - If you have the fitting with you, place it on the grid below and take a photo. If the fitting cannot be placed on the grid please use any photo available.



Step 5- Email photo of fitting along with information collected to :

sales@midlandmetal.com

Please allow up to 1 business day for a response. If the request is urgent please call 1-800-821-5725

CORROSION RESISTANCE VALUES
for Plastic Tubing

Ratings based on tests at 70°F and should not be exposed to higher temperature without testing

F-5000 Poly Vinyl Chloride

U-2000 Polyurethane

E-1000 Low Density Polyethylene

N-6000 Nylon

P-1100 Polypropylene

D-4000 EVA

T-7000 Teflon

U-8000 Special Plasticizers PVC

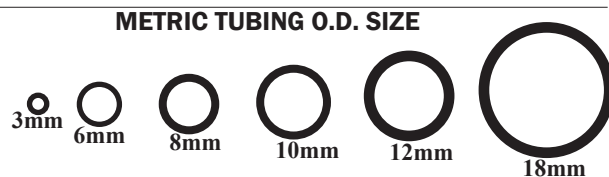
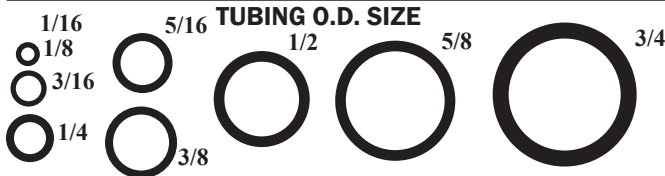
G-Good

L-Limited

P-Poor

N-Not Tested

FUELS:	F	U	E	N	P	D	T	U	ACIDS & BASES	F	U	E	N	P	D	T
Butane (1).....	G	G	L	G	L	G	G	N	Acetic, 50%.....	G	P	P	L	G	P	G
Diesel Fuel.....	L	G	L	G	L	P	N	G	Boric.....	G	G	G	G	G	G	G
Gasoline (regular).....	L	G	P	G	L	N	G	G	Carbolic (phenol).....	P	G	G	P	G	P	N
Kerosene.....	L	G	P	G	G	P	G	G	Fatty.....	G	G	P	G	G	N	G
Methane (nat. gas)(1).....	G	G	L	G	G	N	N	N	Formic, 90%.....	G	P	G	P	G	G	G
Propane (1).....	G	G	L	G	L	N	N	N	Hydrochloric, 10%.....	G	G	G	L	G	G	G
OTHERS:									Hydrochloric, 25%.....	G	L	G	P	G	L	G
Acetylene.....	N	G	G	G	G	N	N	N	Hydrochloric, 50%.....	G	L	G	P	G	L	G
Ammonia gas.....	P	G	G	G	G	G	N	N	Hydrocyanic, 50%.....	L	P	G	P	G	G	G
Ammonium salts.....	G	G	G	G	G	G	N	N	Maleic.....	G	P	G	G	G	N	N
Amyl acetate.....	P	P	L	G	P	P	G	N	Nitric, 10%.....	G	P	G	L	G	L	G
Aniline.....	P	P	L	L	G	P	G	N	Nitric, 30%.....	G	P	G	P	L	L	G
Animal oils.....	G	G	P	G	G	N	G	G	Oleic.....	L	G	L	G	G	P	N
Bleach, 7%.....	G	P	G	L	L	N	N	G	Phosphoric, 25%.....	G	L	G	G	G	G	N
Bromine.....	L	G	P	P	P	P	G	N	Sulfuric, 30%.....	G	L	G	L	G	L	G
Butandiol.....	G	G	G	G	G	N	N	N	Sulfuric, 70%.....	L	P	P	P	G	P	G
Calcium salts incl. Chloride....	G	G	G	G	G	N	G	G	Sulfuric, 98%.....	P	P	P	P	G	P	G
Chlorine gas, dry.....	G	G	P	P	P	P	N	N	Sulfurous, 30%.....	G	P	G	L	G	N	G
Dibutyl phthalate.....	N	P	L	G	L	P	N	G	Tannic.....	G	P	G	G	G	N	G
Glucose.....	G	G	G	G	G	G	G	G	Ammonium hydroxide, 25%....	P	G	L	G	G	G	N
Glycerine.....	G	G	G	G	G	G	N	G	Potassium hydroxide, 25%.	L	G	G	G	G	G	G
Hydrogen peroxide 10%....	G	G	G	G	G	G	G	G	Sodium hydroxide, 50%....	G	G	G	G	G	L	G
Hydrogen peroxide 25%....	L	G	G	P	G	G	G	G	SOLVENTS:							
Hydrogen sulfide.....	G	P	G	L	G	N	G	N	Acetone.....	P	P	G	G	L	P	G
Isocyanates.....	N	G	G	G	N	P	N	N	Benzene.....	P	L	P	G	P	P	G
Lead salts (3).....	G	G	G	G	G	N	N	N	Carbon tetrachloride.....	P	L	L	L	P	P	G
Magnesium salts.....	G	G	G	G	G	N	G	N	Chloroform.....	P	P	P	L	P	P	G
Mercury.....	G	G	G	G	G	G	N	N	Cyclohexanone.....	P	P	P	G	L	P	G
Milk.....	G	G	G	G	G	G	N	G	Dimethylformamide.....	P	P	L	N	G	N	N
Mineral Oil.....	G	G	L	G	L	P	G	G	Dioxane.....	N	N	P	G	L	N	N
Nitrous Oxide (1).....	G	G	L	G	G	N	N	N	Ethyl acetate.....	P	L	G	G	L	P	G
Oxygen (1).....	G	G	G	G	G	G	G	G	Ethyl alcohol (1).....	L	G	G	L	G	G	G
Ozone, ambient.....	G	G	L	G	L	N	N	G	Ethyl ether.....	L	L	G	G	L	P	N
Paint, oil base.....	L	G	L	G	G	N	N	G	Ethylene glycol.....	G	G	G	G	G	G	N
Polyglycols.....	G	G	G	G	G	N	N	N	Formaldehyde.....	G	G	G	G	G	L	N
Potassium salts.....	G	G	G	G	G	N	G	N	Freon - 12'.....	L	L	G	G	L	N	G
Pydraul.....	P	P	P	G	N	N	N	N	Methyl alcohol.....	L	G	G	L	G	N	N
Pyridine.....	P	L	G	L	G	N	G	N	Methylene chloride.....	P	P	L	G	L	P	N
Salt Water.....	G	G	G	G	G	G	G	G	Methyl ethyl ketone.....	P	P	G	G	L	P	N
Silver Nitrate.....	G	G	G	G	G	G	G	N	Naphthas (2).....	P	G	P	G	L	P	G
Skydrol.....	P	P	P	G	N	N	N	N	Tolulene.....	P	G	P	G	L	P	N
Soap solution (conc.).....	G	G	L	G	G	N	G	G	Trichlorethylene.....	P	P	P	L	P	P	G
Sodium salts.....	G	G	G	G	G	N	G	G	Turpentine.....	G	G	P	G	L	P	G
Sodium thiosulphate.....	G	G	G	G	G	N	G	G	Xylene.....	P	G	P	G	L	P	N
Styrene.....	P	G	P	G	N	N	N	G	HYDRAULIC FLUIDS:							
Trisodium phosphate.....	G	G	N	G	G	G	N	G	Diester base grease.....	N	G	P	G	L	P	N
Ucon oil.....	G	G	G	G	N	N	N	N	Petroleum base grease.....	G	G	L	G	L	P	N
Urea.....	G	G	G	G	G	N	G	G	Phosphate ester.....	L	P	P	G	G	N	N
Vegetable oils (1).....	G	G	G	G	G	P	N	G	Polyol ester.....	P	N	P	G	G	N	N
Water at 730F.....	G	G	G	G	G	G	G	G	Water-glycol.....	G	G	G	G	G	N	N
Water at 1400F.....	L	G	G	G	G	G	G	G	SAE motor oils.....	G	G	G	G	G	N	N
Water at 1700F.....	P	L	N	L	G	P	N	G	Machine oil.....	G	G	L	G	L	N	N
Whiskey, wine (1).....	N	G	G	G	G	G	N	G	MIL-L-7808 H.....	G	G	L	G	G	N	N
Zinc Chloride.....	G	G	G	G	G	G	G	N	Brake Fluid.....	N	N	N	N	N	N	N



Conversion chart

Fraction / Decimal / mm

Fraction	Decimal	mm
1/64	0.0156	0.3969
1/32	0.0313	0.7938
3/64	0.0469	1.1906
1/16	0.0625	1.5875
5/64	0.0781	1.9844
3/32	0.0938	2.3813
7/64	0.1094	2.7781
1/8	0.125	3.175
9/64	0.1406	3.5719
5/32	0.1563	3.9688
11/64	0.1719	4.3656
3/16	0.1875	4.7625
13/64	0.2031	5.1594
7/32	0.2188	5.5563
15/64	0.2344	5.9531
1/4	0.25	6.35
17/64	0.2656	6.7469
9/32	0.2813	7.1438
19/64	0.2969	7.5406
5/16	0.3125	7.9375
21/64	0.3281	8.3344
11/32	0.3438	8.7313
23/64	0.3594	9.1281
3/8	0.375	9.525
25/64	0.3906	9.9219
13/32	0.4063	10.3188
27/64	0.4219	10.7156
7/16	0.4375	11.1125
29/64	0.4531	11.5094
15/32	0.4688	11.9063
31/64	0.4844	12.3031
1/2	0.5	12.7

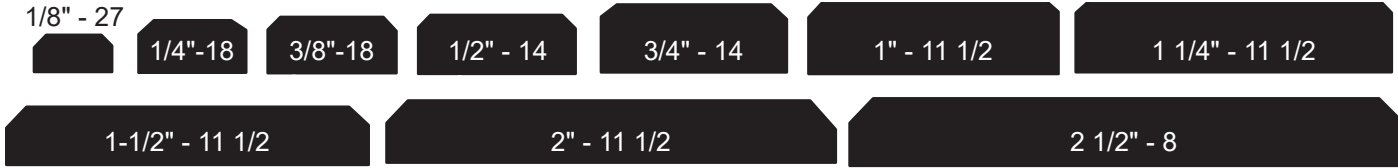
Fraction	Decimal	mm
33/64	0.5156	13.0969
17/32	0.5313	13.4938
35/64	0.5469	13.8906
9/16	0.5625	14.2875
37/64	0.5781	14.6844
19/32	0.5938	15.0813
39/64	0.6094	15.4781
5/8	0.625	15.875
41/64	0.6406	16.2719
21/32	0.6563	16.6688
43/64	0.6719	17.0656
11/16	0.6875	17.4625
45/64	0.7031	17.8594
23/32	0.7188	18.2563
47/64	0.7344	18.6531
3/4	0.75	19.05
49/64	0.7656	19.4469
25/32	0.7813	19.8438
51/64	0.7969	20.2406
13/16	0.8125	20.6375
53/64	0.8281	21.0344
27/32	0.8438	21.4313
55/64	0.8594	21.8281
7/8	0.875	22.225
57/64	0.8906	22.6219
29/32	0.9063	23.0188
59/64	0.9219	23.4156
15/16	0.9375	23.8125
61/64	0.9531	24.2094
31/32	0.9688	24.6063
63/64	0.9844	25.0031
1	1	25.4

	Midland	Parker	Tomco	Amflo	Breco	Milton	Dixon	Hansen	Foster	
Industrial Interchange 1/4	28560	UC304F-4	UC2-16	C60		745				
	28579	UC304M-4	UC2-15	C61		746				
	28589	UC304M-6	UC2-20	C61-03						
	28551	B22A	M180	C20-01	B2CM1-B		DC2101	900	2903	
	28552	B22	M181	C21	B2CM2-B	716M	DC21	1100	3103	
	28553	B22E	M182	C21-03	B2CM3-B	719M	DC2103	1300	3303	
	28539	B23A	M183	C20-21	B2CF1-B		DC2021	800	2803	
	28540	B23	M184	C20	B2CF2-B	715M	DC20	1000	3003	
	28541	B23E	M185	C20-23	B2CF3-B	718M	DC2023	1200	3203	
	28562	B20-3B	M186	C20-42	B2CS2-B	717M	DC2042			
	28564	B20-5B	M187		B2CS3-B	717-6M	DC2044	1700	3703	
	28565	B20-3BP	M189	C20-42L	B2CPS2-B	1717-4M	DC2042L	1600P	1513	
	28566	B20-5BP	M190	C20-44L	B2CPS3-B	1717-6M	DC2044L	1700P	1713	
	28545	H0C	1802	CP21-01	BB2M1-S	726	DCP2101	12	12-3	
	28546	H2C	1804	CP21	BB2M2-S	727	DCP21	10	10-3	
	28547	H2C-E	1806	CP21-03	BB2M3-S	733	DCP2103	14	14-3	
	28533	H1C	1803	CP20-21	BB2F1-S	729	DCP2021	13	13-3	
	28534	H3C	1805	CP20	BB2F2-S	728	DCP20	11	11-3	
	28535	H3C-E	1807	CP20-23	BB2F3-S	732	DCP2023	15	15-3	
	28557	H8C	1824	CP21-42	BB2S2-S	736	DCP2142	16	16-3	
	28559	H9C	1826	CP21-44	BB2S3-S	736-6	DCP2144	17	17-3	
	28558	H8CP	1850	CP21-42L	BB2PS2-S	1736-4	DCP2142L		51-3	
	28561	H9CP	1860	CP21-44L	BB2PS3-S	1736-6	DCP2144L		71-3	
	Parker Interchange (Tru-Flate) 1/4	28515	B12A	A2180	C1-01	B2JM1-B		DC101	B21QS-12M	TF2903
		28516	B12	A2181	C1	B2JM2-B	786	DC1	B21QS-25M	TF3103
		28517	B12E	A2182	C1-03	B2JM3-B	789	DC103	B21QS-37M	TF3303
		28506	B13A	A2183	C2-21	B2JF1-B		DC221	B21QS-12F	TF2803
		28507	B13	A2184	C2	B2JF2-B	785	DC2	B21QS-25F	TF3003
28508		B13E	A2185	C2-23	B2JF3-B	788	DC223	B21QS-37F	TF3203	
28528		B10-3B	A2186	C2-42	B2JS2-B	786-4	DC242	B21QS-25H	TF3603	
28530		B10-5B	A2188	C2-44	B2JS3-B	786-6	DC244	B21QS-37H	TF3703	
28531		B10-3BP	A2189	C2-42L	B2JPS2-B	1786-4	DC242L	B21QS-25HP	TF1513	
28532		B10-5BP	A2190	C2-44L	B2JPS3-B	1786-6	DC244L	B21QS-37HP	TF1713	
28509		0C	2152	CP1-01	BJ2M1-S		DCP101		TF12	
28510		2C	2154	CP1	BJ2M2-S	783	DCP1	21AP-25M	TF10	
28511		2C-E	2156	CP1-03	BJ2M3-S		DCP103	21AP-37M	TF14	
28500		1C	2153	CP2-21	BJ2F1-S		DCP221		TF13	
28501		3C	2155	CP2	BJ2F2-S	784	DCP2	21AP-25F	TF11	
28502		3C-E		CP2-23	BJ2F3-S		DCP223	21AP-37F	TF15	
28518		8C	2164	CP1-42	BJ2S2-S	783-4	DCP142	21AP-25H	TF16	
28520		9C	2166	CP1-44	BJ2S3-S	783-6	DCP144	21AP-37H	TF17	
28521		8CP	2150	CP1-42L	BJ2PS2-S	1783-4	DCP142L		TF51	
28522		9CP	2160	CP1-44L	BJ2PS3-S	1783-6	DCP144L		TF71	
Aro 210 Interchange 1/4		28592		A102		B20M1-B				
		28593	B52	A101	C45	B20M2-B	776	DC37	20AS-25M	210-3103
		28594	B52E	A107		B20M3-B		DC3703	20AS-37M	210-3303
		28583		A103		B20F1-B				
		28584	B53	A100	C38B	B20F2-B	775	DC38	20AS25F	210-3003
		28585	B53E	A106		B20F3-B		DC3823	20AS37F	210-3203
		28601		A104		B20S2-B	776-4	DC3842		
		28603		A105		B20S3-B	776-6	DC3844		
	28586		202		B02M1-S				210-12	
	28587	A2C	200	CP37	B02M2-S	777	DCP37	20AP-25M	210-10	
	28577		302		B02F1-S					
	28578	A3C	300	CP38	B02F2-S	778	DCP38		210-11	
	28595	A8C	400	CP37-42	B02S2-S	777-7	DCP3742			
	28597		500		B02S3-S	777-6	DCP3744			
ST Series/High Flow 1/4, 3/8	28667	BST-1M	ST1M	CST1B	1STM1-B				12MS	
	28665	BST-2M	ST2M	CST3B	2STM2-B	1762	STMC2	2-S15	25MS	
	28666	BST-3M	ST3M	CST5B	3STM3-B		STMC3	3-S20	38MS	
	28668	BST-4M	ST4M	CST7B	4STM4-B		STMC4	4-S25	50MS	
	28669	BST-6M	ST6M				STMC6	6-S30	75MS	
	28670	BST-8M	ST8M				STMC8	8-S35	100MS	
	28671	BST-1	ST1	CST2B	1STF1-B				12FS	
	28651	BST-2	ST2	CST4B	2STF2-B	1761	STFC2	2-S16	25FS	
	28652	BST-3	ST3	CST6B	3STF3-B		STFC3	3-S21	38FS	
	28672	BST-4	ST4	CST8B	4STF4-B		STFC4	4-S26	50FS	
	28673	BST-6	ST6				STFC6	6-S31	75FS	
	28674	BST-8	ST8				STFC8	8-S36	100FS	
	28675	ST-N1M	SP1M-S	CPST1	ST1M1-S				12MP	
	28639	ST-N2M	SP2M-S	CPST3	ST2M2-S	1763	STMP2	2-T15	25MP	
	28640	ST-N3M	SP3M-S	CPST5	ST3M3-S		STMP3	3-T20	38MP	
	28676	ST-N4M	SP4M-S	CPST7	ST4M4-S		STMP4	4-T25	50MP	
	28677	ST-N6M	SP6M-S				STMP6	6-T30	75MP	
	28678	ST-N8M	SP8M-S				STMP8	8-T35	100MP	
	28688	ST-N1	SP1-S	CPST2	ST1F1-S					
	28619	ST-N2	SP2-S	CPST4	ST2F2-S	1764	STFP2	2-T16	25FP	
28620	ST-N3	SP3-S	CPST6	ST3F3-S		STFP3	3-T21	38FP		
28679	ST-N4	SP4-S	CPST8	ST4F4-S		STFP4	4-T26	50FP		
28680	ST-N6	SP5-S				STFP6	6-T31	75FP		
28681	ST-N8	SP6-S				STFP8	8-T3	100FP		
Lincoln Interchange 1/4	28682		1102							
	28683	B72	1101	C27	B-2LM2-B	794	DC27		LM3103	
	28684	B73	1100	C28	B-2LF2-B	790	DC28		LM3003	
	28685		1106							
	28686	L2C	1109	CP27	B-L2M2-S	791	DCP27		LM10	
	28687	L3C	1110	CP28	B-L2F2-S	792	DCP28		LM11	
	98823	24C	T410	C25-02	B-3CM2-S	1834	DC2502	410	4104	
	98824	24	T430	C25	B-3CM3-S	1836	DC25	430	4304	
	98810	25C	T400	C26-22	B-3CF2-S	1833	DC2622	400	4004	
	98811	25	T420	C26	B-3CF3-S	1835	DC26	420	4204	
Industrial Interchange 3/8	98814	H0E	T40	CP25-02	B-B3M2-S	1839	DCP2502	40	40-4	
	98815	H2E	T42	CP25	B-B3M3-S	1837	DCP25	42	42-4	
	98801	H1E	T41	CP26-22	B-B3F2-S	1840	DCP2622	41	41-4	
	98802	H3E	T43	CP26	B-B3F3-S	1838	DCP26	43	43-4	

Thread Chart

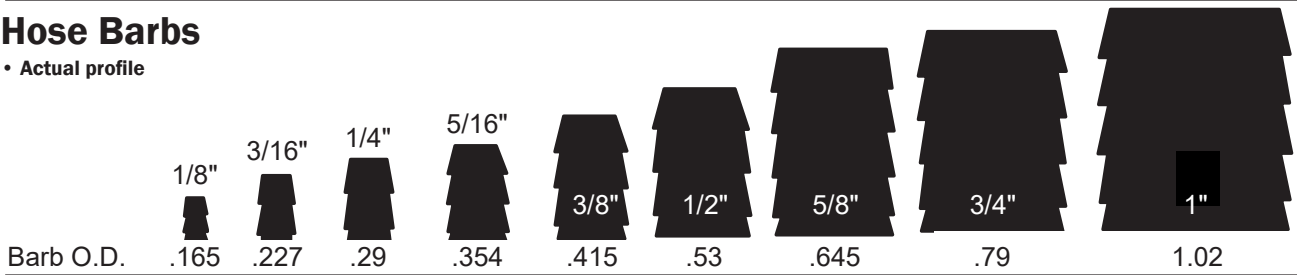
DASH SIZE	2	3	4	5	6	7	8	10	12	14	16	20	24	32	40	48
O.D. TUBING SIZE	1/8	5/32	1/4	5/16	3/8	7/16	1/2	5/8	3/4	7/8	1	1-1/4	1-1/2	2	2-1/2	3
STANDARD PIPE SIZE N.P.T.F. (DRYSEAL)*	1/8-27		1/4-18		3/8-18		1/2-14		3/4-14		1-11 1/2	1 1/4-11 1/2	1 1/2-11 1/2	2-11 1/2	2 1/2-8	3-8
S.A.E. 45° FLARE	5/16-24	3/8-24	7/16-20	1/2-20	5/8-18	11/16-16	3/4-16	7/8-14	1 1/16-14	1 1/4-12	1 3/8-12					
INVERTED FLARE	5/16-24	3/8-24	7/16-24	1/2-20	5/8-18	11/16-18	3/4-18	7/8-18	1 1/16-16							
J.I.C. 37° FLARE	5/16-24	3/8-24	7/16-20	1/2-20	9/16-18		3/4-16	7/8-14	1 1/16-12	1 3/16-12	1 5/16-12	1 5/8-12	1 7/8-12	2 1/2-12	3-12	3 1/2-12
COMPRESSION FLARELESS	5/16-24	3/8-24	7/16-24	1/2-24	9/16-24	5/8-24	11/16-20	13/16-18	1-18	1 1/8-18						
COMPRESSION (PLASTIC TUBE)	5/16-24	3/8-24	3/8-24	7/16-24	1/2-24		11/16-20									
AIR BRAKE - PLASTIC TUBE			7/16-24		17/32-24		11/16-20	13/16-18	1-18							
AIR BRAKE - COPPER TUBE			7/16-24	1/2-24	17/32-24		11/16-20	13/16-18	1-18							
DOUBLE COMPRESSION STEEL	5/16-24	3/8-24	7/16-24	1/2-20	9/16-20		11/16-16									
COMPRESSION (HIGH PRESSURE)	5/16-24	3/8-24	7/16-20	1/2-20	9/16-18		3/4-16	7/8-14	1 1/16-12	1 3/16-12	1 5/16-12	1 5/8-12	1 7/8-12	2 1/2-12		
S.A.E. O-RING INTERNAL O-RING	5/16-24	3/8-24	7/16-20	1/2-20	9/16-18		3/4-16	7/8-14	1 1/16-12	1 3/16-12	1 5/16-12	1 5/8-12	1 7/8-12	2 1/2-12		
NPSM SWIVEL THREAD	1/8-27		1/4-18		3/8-18		1/2-14		3/4-14		1-11 1/2	1 1/4-11 1/2	1 1/2-11 1/2	2-11 1/2		
FLAT FACE THREAD			9/16-18		11/16-16		13/16-16	1-14	1 3/16-12		1 7/16-12	1 11/16-12	2-12			
BRITISH THREAD BSPP/BSPT	1/8-28		1/4-19		3/8-19		1/2-14		3/4-14		1-11	1 1/4-11	1 1/2-11	2-11		
METRIC THREAD	10 M10X1.0	12 M12x1.5	14 M14x1.5	16 M16x1.5	18 M18x1.5	20 M20x1.5	22 M22x1.5	24 M24x1.5	26 M26x1.5	27 M27x2.0	30 M30x2.0	33 M33x2.0	36 M36x2.0	42 M42x2.0	48 M48x2.0	
CODE 61 FLANGE HEAD O.D							1.19	1.335	1.50		1.75	2.00	2.38	2.81	3.31	4.00
CODE 62 FLANGE HEAD O.D							1.25		1.62		1.88	2.12	2.50	3.12		

Pipe Threads



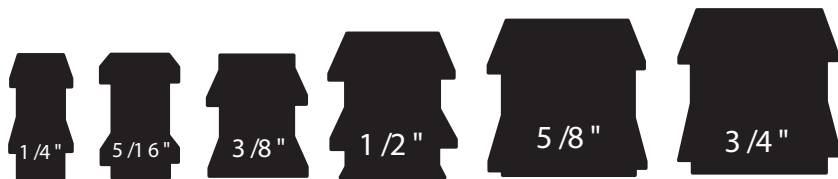
Hose Barbs

• Actual profile



Push-On Barbs

• Actual profile

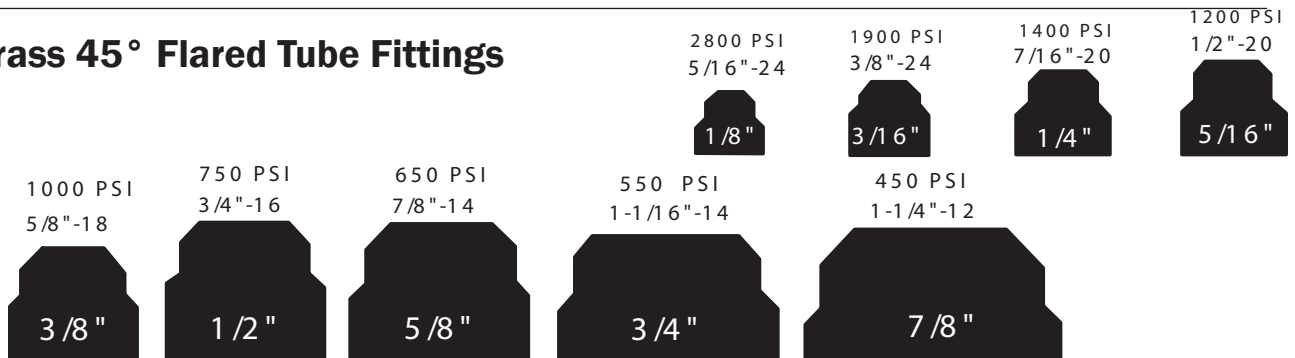


Garden Hose Fittings

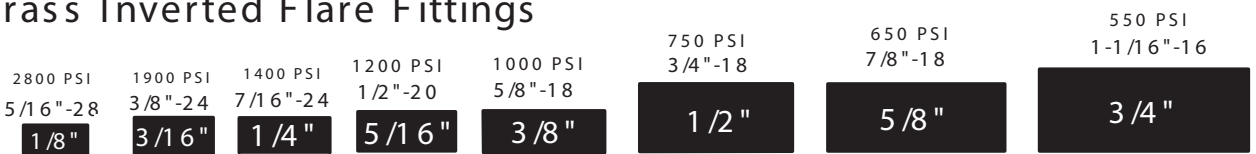
Male Garden Hose Threads are 3/4" with O.D. of 1.0625 and 11-1/2 threads per inch



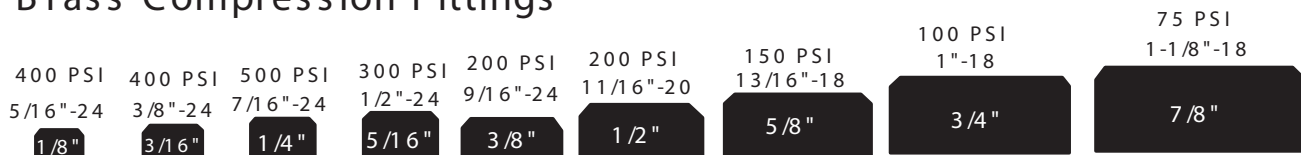
Brass 45° Flared Tube Fittings



Brass Inverted Flare Fittings



Brass Compression Fittings



Tubeing O.D. Size



10-001	24	10-165	26	10-284	28	12-081	29	18-181	33	18-245	34
10-002	24	10-227	26	10-285	28	12-082	29	18-182	33	18-246	34
10-003	24	10-228	26	10-286	28	12-114	29	18-183	33	18-247	34
10-004	24	10-229	26	10-287	28	18-062	31	18-184	33	18-248	34
10-005	24	10-230	26	10-288	28	18-063	31	18-185	33	28-001	2
10-006	24	10-231	26	10-289	28	18-064	31	18-186	33	28-002	2
10-007	24	10-232	26	10-290	28	18-065	31	18-187	33	28-003	2
10-008	24	10-233	26	10-291	28	18-066	31	18-188	33	28-004	2
10-013	24	10-234	26	10-292	28	18-067	31	18-189	33	28-005	2
10-014	24	10-235	26	10-293	28	18-068	31	18-190	33	28-009	2
10-015	24	10-236	26	10-294	28	18-069	31	18-191	33	28-010	2
10-016	24	10-237	26	10-295	28	18-070	31	18-192	33	28-011	2
10-017	24	10-238	26	10-296	28	18-071	31	18-193	33	28-012	2
10-018	24	10-239	26	10-297	28	18-072	31	18-194	33	28-013	2
10-019	24	10-240	26	10-298	28	18-101	31	18-195	33	28-014	2
10-020	24	10-241	26	10-299	28	18-102	31	18-196	33	28-015	2
10-021	24	10-242	26	10-300	28	18-103	31	18-197	33	28-016	2
10-022	24	10-243	26	10-301	28	18-104	31	18-198	33	28-017	2
10-026	24	10-244	26	10-302	28	18-105	31	18-199	33	28-022	2
10-062	25	10-245	26	10-303	28	18-106	31	18-200	33	28-024	2
10-063	25	10-246	26	10-304	28	18-107	31	18-201	33	28-025	2
10-064	25	10-247	26	10-305	28	18-108	31	18-202	33	28-026	2
10-065	25	10-248	26	10-306	28	18-109	31	18-203	33	28-027	2
10-066	25	10-253	27	10-307	28	18-142	32	18-204	33	28-028	2
10-067	25	10-254	27	10-308	28	18-143	32	18-205	33	28-041	2
10-068	25	10-255	27	10-309	28	18-144	32	18-206	33	28-042	2
10-069	25	10-256	27	10-311	28	18-145	32	18-207	33	28-043	2
10-073	25	10-257	27	10-404	29	18-146	32	18-216	33	28-044	2
10-074	25	10-258	27	10-405	29	18-148	32	18-219	34	28-045	2
10-075	25	10-259	27	10-406	29	18-149	32	18-220	34	28-057	3
10-076	25	10-260	27	10-407	29	18-150	32	18-221	34	28-058	3
10-077	25	10-261	27	10-408	29	18-152	32	18-223	34	28-059	3
10-078	25	10-262	27	10-409	29	18-153	32	18-224	34	28-060	3
10-079	25	10-263	27	10-410	29	18-154	32	18-225	34	28-061	3
10-080	25	10-264	27	10-411	29	18-155	32	18-226	34	28-062	3
10-104	25	10-265	27	10-412	29	18-156	32	18-227	34	28-063	3
10-105	25	10-266	27	12-054	29	18-157	32	18-228	34	28-075	3
10-106	25	10-267	27	12-056	29	18-158	32	18-229	34	28-076	3
10-107	25	10-268	27	12-057	29	18-159	32	18-230	34	28-077	3
10-108	25	10-269	27	12-058	29	18-160	32	18-231	34	28-078	3
10-109	25	10-270	27	12-059	29	18-162	32	18-232	34	28-079	3
10-110	25	10-271	27	12-060	29	18-163	32	18-233	34	28-080	3
10-111	25	10-272	27	12-061	29	18-164	32	18-234	34	28-084	5
10-112	25	10-273	27	12-062	29	18-165	32	18-235	34	28-085	5
10-157	26	10-274	27	12-063	29	18-166	32	18-236	34	28-086	5
10-158	26	10-275	27	12-064	29	18-167	32	18-237	34	28-087	5
10-159	26	10-276	27	12-065	29	18-175	33	18-238	34	28-088	5
10-160	26	10-277	27	12-066	29	18-176	33	18-239	34	28-089	5
10-161	26	10-278	27	12-067	29	18-177	33	18-240	34	28-090	5
10-162	26	10-279	27	12-068	29	18-178	33	18-241	34	28-091	4
10-163	26	10-280	27	12-069	29	18-179	33	18-242	34	28-092	5
10-164	26	10-283	28	12-080	29	18-180	33	18-243	34	28-093	5

28-094	5	28-160	4	28-227	7	28-545	118	30-200	15	30-267	17
28-095	5	28-161	4	28-230	7	28-546	118	30-201	15	30-268	17
28-096	5	28-174	5	28-231	7	28-547	118	30-202	15	30-269	17
28-097	5	28-175	5	28-232	7	28-552	117	30-203	15	30-270	17
28-102	4	28-176	5	28-233	7	28-553	117	30-204	15	30-275	17
28-103	4	28-177	5	28-234	7	28-557	118	30-205	15	30-276	17
28-104	4	28-178	3	28-245	7	28-558	118	30-206	15	30-277	17
28-105	4	28-179	3	28-246	7	28-559	118	30-207	15	30-279	17
28-106	4	28-180	3	28-247	7	28-560	119	30-208	15	30-280	17
28-107	4	28-181	3	28-248	7	28-561	118	30-209	15	30-282	17
28-108	4	28-182	3	28-249	7	28-562	117	30-210	15	30-283	17
28-111	4	28-183	3	28-281	8	28-564	117	30-211	15	30-284	17
28-112	4	28-184	3	28-282	8	28-586	119	30-212	15	30-286	17
28-113	4	28-185	3	28-283	8	28-587	119	30-213	15	30-295	14
28-114	4	28-186	3	28-284	8	30-000	19	30-214	15	30-370	16
28-115	4	28-187	3	28-285	8	30-001	19	30-215	15	30-371	16
28-116	5	28-188	3	28-299	8	30-006	19	30-216	15	30-372	16
28-117	5	28-189	3	28-300	8	30-025	21	30-217	15	30-373	16
28-118	5	28-190	8	28-301	8	30-027	21	30-218	15	30-374	16
28-119	5	28-191	8	28-302	8	30-028	21	30-219	15	30-375	16
28-120	5	28-192	8	28-303	8	30-029	21	30-220	15	30-376	16
28-121	5	28-193	8	28-304	8	30-030	21	30-221	15	30-377	16
28-122	5	28-194	8	28-311	8	30-031	20	30-222	15	30-378	16
28-123	6	28-195	8	28-315	8	30-032	20	30-223	15	30-379	16
28-124	6	28-196	8	28-316	8	30-033	20	30-224	15	30-381	16
28-125	6	28-197	8	28-475	6	30-034	20	30-225	15	30-382	16
28-126	6	28-198	8	28-481	6	30-035	20	30-226	15	30-383	16
28-127	6	28-199	8	28-487	6	30-044	20	30-227	15	30-384	15
28-128	5	28-200	5	28-493	6	30-046	21	30-229	15	30-391	15
28-129	5	28-201	5	28-497	6	30-047	19	30-230	16	30-392	15
28-130	5	28-202	5	28-498	6	30-048	19	30-231	16	30-393	15
28-136	6	28-203	5	28-499	6	30-049	19	30-232	16	30-394	15
28-140	6	28-204	5	28-500	120	30-053	20	30-233	16	30-395	15
28-141	6	28-205	5	28-501	120	30-054	20	30-234	16	30-396	15
28-142	6	28-206	5	28-502	120	30-058	20	30-235	16	30-397	15
28-143	6	28-207	8	28-503	120	30-063	20	30-236	16	30-398	15
28-144	6	28-208	8	28-504	120	30-064	20	30-237	16	30-399	15
28-145	6	28-209	8	28-507	120	30-065	20	30-238	15	30-400	15
28-146	6	28-210	7	28-508	120	30-066	19	30-250	16	30-402	15
28-147	6	28-211	7	28-509	120	30-067	19	30-251	16	30-403	15
28-148	6	28-212	7	28-510	120	30-068	19	30-252	16	30-427	16
28-149	6	28-213	7	28-511	120	30-073	19	30-253	16	30-428	16
28-150	6	28-214	7	28-512	120	30-074	19	30-254	16	30-429	17
28-151	6	28-215	7	28-513	120	30-075	19	30-255	16	30-450	20
28-152	6	28-216	7	28-515	120	30-078	19	30-257	16	30-451	20
28-153	6	28-218	7	28-516	120	30-083	19	30-258	16	30-452	20
28-154	6	28-220	7	28-517	120	30-098	20	30-259	16	30-469	21
28-155	6	28-221	7	28-533	118	30-099	20	30-260	16	30-471	21
28-156	4	28-222	7	28-534	118	30-100	20	30-261	16	30-472	21
28-157	4	28-223	7	28-535	118	30-101	20	30-264	17	30-473	21
28-158	4	28-224	7	28-540	117	30-140	21	30-265	17	30-600	22
28-159	4	28-225	7	28-541	117	30-149	20	30-266	17	30-626	21

30-630 22	32-055 12	32-315 13	32-958 10	38-090 42	38-334 45
30-631 21	32-056 12	32-316 10	32-960 11	38-091 42	38-335 45
30-637 22	32-057 12	32-317 12	32-961 11	38-092 42	38-336 45
30-638 22	32-058 12	32-318 12	38-000 41	38-093 42	38-337 45
30-640 22	32-059 12	32-319 13	38-001 41	38-094 42	38-342 45
32-001 10	32-060 12	32-320 12	38-002 41	38-095 42	38-343 45
32-002 10	32-061 12	32-321 12	38-003 41	38-101 42	38-344 45
32-003 10	32-062 12	32-326 14	38-004 41	38-102 42	38-345 45
32-004 10	32-063 12	32-327 14	38-005 41	38-103 42	38-346 45
32-005 10	32-064 12	32-328 14	38-009 41	38-104 42	38-357 45
32-006 10	32-065 12	32-329 11	38-010 41	38-105 42	38-358 45
32-007 10	32-079 11	32-330 13	38-011 41	38-106 42	38-368 45
32-008 10	32-080 11	32-331 11	38-012 41	38-107 42	38-369 45
32-009 10	32-087 11	32-332 11	38-013 41	38-108 42	38-370 45
32-010 10	32-088 11	32-337 13	38-014 41	38-109 42	38-371 45
32-011 10	32-089 11	32-339 13	38-018 41	38-110 42	38-372 45
32-012 10	32-090 11	32-340 13	38-019 41	38-111 42	39-318 45
32-013 10	32-091 11	32-341 13	38-020 41	38-124 43	39-319 45
32-014 10	32-092 11	32-342 13	38-021 41	38-125 43	39-357 45
32-015 10	32-093 11	32-349 11	38-022 41	38-126 43	39-358 45
32-016 10	32-094 11	32-351 11	38-023 41	38-127 43	40-001 60
32-017 10	32-095 11	32-355 11	38-035 41	38-128 43	40-002 60
32-018 10	32-096 11	32-356 11	38-036 41	38-129 43	40-003 60
32-019 10	32-097 11	32-357 11	38-037 41	38-132 43	40-004 60
32-020 10	32-098 11	32-360 11	38-038 41	38-133 43	40-005 60
32-021 10	32-099 11	32-375 11	38-039 41	38-134 43	40-006 60
32-022 10	32-100 14	32-376 11	38-040 41	38-136 43	40-007 60
32-023 10	32-101 14	32-379 11	38-041 41	38-137 43	40-008 60
32-024 10	32-102 13	32-380 11	38-042 41	38-138 43	40-009 60
32-025 10	32-103 14	32-386 11	38-043 41	38-139 43	40-010 60
32-026 10	32-104 14	32-390 10	38-044 41	38-140 43	40-011 60
32-027 10	32-105 14	32-391 13	38-045 41	38-141 43	40-012 60
32-028 10	32-106 14	32-394 13	38-046 41	38-142 43	40-013 60
32-029 10	32-107 13	32-441 12	38-047 41	38-143 43	40-014 60
32-036 13	32-200 11	32-442 12	38-048 41	38-148 43	40-015 60
32-038 13	32-201 11	32-443 12	38-072 42	38-149 43	40-017 60
32-039 13	32-202 11	32-444 12	38-073 42	38-150 43	40-018 60
32-040 13	32-300 10	32-445 12	38-074 42	38-151 43	40-019 60
32-041 13	32-301 10	32-446 12	38-075 42	38-152 43	40-020 60
32-042 13	32-302 10	32-447 12	38-076 42	38-153 43	40-021 60
32-043 13	32-303 10	32-448 12	38-077 42	38-154 43	40-022 60
32-044 13	32-304 10	32-449 12	38-078 42	38-155 43	40-023 60
32-045 13	32-305 10	32-912 10	38-079 42	38-156 43	40-024 60
32-046 13	32-306 10	32-915 10	38-080 42	38-157 43	40-025 60
32-047 13	32-307 10	32-950 10	38-081 42	38-158 43	40-026 60
32-048 13	32-308 13	32-951 10	38-082 42	38-300 44	40-027 60
32-049 12	32-309 13	32-952 10	38-083 42	38-301 44	40-028 60
32-050 12	32-310 13	32-953 10	38-084 42	38-306 44	40-029 60
32-051 12	32-311 13	32-954 10	38-085 42	38-307 44	40-030 60
32-052 12	32-312 13	32-955 10	38-086 42	38-318 45	40-031 60
32-053 12	32-313 13	32-956 10	38-087 42	38-319 45	40-032 60
32-054 12	32-314 13	32-957 10	38-088 42	38-333 45	40-033 60

40-034	60	40-095	62	40-154	63	44-298	67	44-471	69	44-605	69
40-035	60	40-096	62	40-155	63	44-301	67	44-472	69	44-606	69
40-036	60	40-097	62	40-156	63	44-303	67	44-473	69	44-607	69
40-040	61	40-098	62	44-100	65	44-306	67	44-474	69	44-608	69
40-041	61	40-099	62	44-101	65	44-391	66	44-475	69	44-609	69
40-042	61	40-100	62	44-102	65	44-392	66	44-476	69	44-610	69
40-043	61	40-101	62	44-103	65	44-393	66	44-477	69	44-633	71
40-044	61	40-102	62	44-104	65	44-394	66	44-478	69	44-634	71
40-045	61	40-103	62	44-105	65	44-395	66	44-480	69	44-635	71
40-046	61	40-104	62	44-106	65	44-396	66	44-500	70	44-636	71
40-047	61	40-105	62	44-107	65	44-397	66	44-501	70	44-637	71
40-048	61	40-106	62	44-108	65	44-398	66	44-502	70	44-638	71
40-049	61	40-107	62	44-109	65	44-410	68	44-503	70	44-639	71
40-050	61	40-108	62	44-110	65	44-411	68	44-504	70	44-640	71
40-051	61	40-109	62	44-112	65	44-412	68	44-505	70	44-641	71
40-052	61	40-110	62	44-160	65	44-413	68	44-506	70	44-650	71
40-053	61	40-111	62	44-161	65	44-414	68	44-507	70	44-651	71
40-054	61	40-112	62	44-162	65	44-415	68	44-508	70	44-652	71
40-055	61	40-113	62	44-163	65	44-416	68	44-509	70	44-653	71
40-056	61	40-114	62	44-164	65	44-417	68	44-510	70	44-654	71
40-060	61	40-115	62	44-165	65	44-418	68	44-511	70	44-655	71
40-061	61	40-120	63	44-166	65	44-419	68	44-512	70	44-656	71
40-062	61	40-121	63	44-167	65	44-420	68	44-513	70	44-657	71
40-063	61	40-122	63	44-168	65	44-430	68	44-514	70	44-658	71
40-064	61	40-123	63	44-169	65	44-431	68	44-515	70	44-659	71
40-065	61	40-124	63	44-170	65	44-432	68	44-516	70	44-660	71
40-066	61	40-125	63	44-200	66	44-433	68	44-517	70	44-662	71
40-067	61	40-126	63	44-201	66	44-434	68	44-518	70	44-720	71
40-068	61	40-127	63	44-202	66	44-435	68	44-519	70	44-721	71
40-069	61	40-128	63	44-203	66	44-436	68	44-520	70	44-722	71
40-070	61	40-129	63	44-204	66	44-437	68	44-521	70	44-723	71
40-071	61	40-130	63	44-205	66	44-438	68	44-522	70	44-724	71
40-072	61	40-131	63	44-206	66	44-440	68	44-523	70	44-725	71
40-073	61	40-132	63	44-207	66	44-441	68	44-524	70	44-726	71
40-074	61	40-133	63	44-208	66	44-442	68	44-527	70	44-727	71
40-075	61	40-134	63	44-250	67	44-444	68	44-528	70	44-728	71
40-076	61	40-135	63	44-251	67	44-445	68	44-529	70	44-729	71
40-080	62	40-136	63	44-252	67	44-446	68	44-530	70	46-060	46
40-081	62	40-140	63	44-253	67	44-447	68	44-531	70	46-061	46
40-082	62	40-141	63	44-254	67	44-448	68	44-532	70	46-083	46
40-083	62	40-142	63	44-255	67	44-449	68	44-534	70	46-085	46
40-084	62	40-143	63	44-256	67	44-450	68	44-535	70	46-086	46
40-085	62	40-144	63	44-257	67	44-451	68	44-537	70	46-087	46
40-086	62	40-145	63	44-258	67	44-452	68	44-538	70	46-600	121
40-087	62	40-146	63	44-259	67	44-453	68	44-539	70	48-001	73
40-088	62	40-147	63	44-260	67	44-454	68	44-541	70	48-002	73
40-089	62	40-148	63	44-276	67	44-456	68	44-543	70	48-003	73
40-090	62	40-149	63	44-280	67	44-458	68	44-600	69	48-004	73
40-091	62	40-150	63	44-282	67	44-461	68	44-601	69	48-005	73
40-092	62	40-151	63	44-283	67	44-462	68	44-602	69	48-006	73
40-093	62	40-152	63	44-286	67	44-463	68	44-603	69	48-007	73
40-094	62	40-153	63	44-291	67	44-470	69	44-604	69	48-008	73

48-009	73	48-081	75	48-153	76	49-045	74	49-125	76	56-028	86
48-010	73	48-082	75	48-155	76	49-046	74	49-126	76	56-029	86
48-011	73	48-083	75	48-160	77	49-047	74	49-127	76	56-030	86
48-015	73	48-084	75	48-161	77	49-048	74	49-128	76	56-031	86
48-020	73	48-085	75	48-162	77	49-049	74	49-129	76	56-032	86
48-021	73	48-086	75	48-163	77	49-050	74	49-140	76	56-033	86
48-022	73	48-087	75	48-164	77	49-052	74	49-141	76	56-034	86
48-023	73	48-088	75	48-165	77	49-054	74	49-142	76	56-035	86
48-024	73	48-089	75	48-166	77	49-060	74	49-143	76	56-036	86
48-025	73	48-090	75	48-167	77	49-061	74	49-144	76	56-038	86
48-026	73	48-091	75	48-168	77	49-062	74	49-145	76	56-040	87
48-027	73	48-092	75	48-169	77	49-063	74	49-146	76	56-041	87
48-028	73	48-094	75	48-170	77	49-064	74	49-147	76	56-042	87
48-029	73	48-096	75	48-171	77	49-065	74	49-148	76	56-043	87
48-030	73	48-100	75	48-172	77	49-066	74	49-149	76	56-044	87
48-031	73	48-101	75	48-174	77	49-067	74	49-151	76	56-045	87
48-032	73	48-102	75	49-001	73	49-068	74	49-153	76	56-046	87
48-034	73	48-103	75	49-002	73	49-069	74	49-160	77	56-047	87
48-036	73	48-104	75	49-003	73	49-070	74	49-161	77	56-048	87
48-040	74	48-105	75	49-004	73	49-072	74	49-162	77	56-049	87
48-041	74	48-106	75	49-005	73	49-074	74	49-163	77	56-050	87
48-042	74	48-107	75	49-006	73	49-080	75	49-164	77	56-051	87
48-043	74	48-108	75	49-007	73	49-081	75	49-165	77	56-052	87
48-044	74	48-109	75	49-008	73	49-082	75	49-166	77	56-053	87
48-045	74	48-110	75	49-009	73	49-083	75	49-167	77	56-054	87
48-046	74	48-111	75	49-010	73	49-084	75	49-168	77	56-055	87
48-047	74	48-113	75	49-011	73	49-085	75	49-169	77	56-056	87
48-048	74	48-115	75	49-017	73	49-086	75	49-170	77	56-060	87
48-049	74	48-120	76	49-020	73	49-087	75	56-001	86	56-061	87
48-050	74	48-121	76	49-021	73	49-088	75	56-002	86	56-062	87
48-052	74	48-122	76	49-022	73	49-089	75	56-003	86	56-063	87
48-053	74	48-123	76	49-023	73	49-090	75	56-004	86	56-064	87
48-054	74	48-124	76	49-024	73	49-092	75	56-005	86	56-065	87
48-056	74	48-125	76	49-025	73	49-094	75	56-006	86	56-066	87
48-060	74	48-126	76	49-026	73	49-100	75	56-007	86	56-067	87
48-061	74	48-127	76	49-027	73	49-101	75	56-008	86	56-068	87
48-062	74	48-128	76	49-028	73	49-102	75	56-009	86	56-069	87
48-063	74	48-129	76	49-029	73	49-103	75	56-010	86	56-070	87
48-064	74	48-131	76	49-030	73	49-104	75	56-011	86	56-071	87
48-065	74	48-135	76	49-031	73	49-105	75	56-012	86	56-072	87
48-066	74	48-140	76	49-032	73	49-106	75	56-013	86	56-073	87
48-067	74	48-141	76	49-033	73	49-107	75	56-014	86	56-074	87
48-068	74	48-142	76	49-034	73	49-108	75	56-015	86	56-075	87
48-069	74	48-143	76	49-035	73	49-109	75	56-017	86	56-076	87
48-070	74	48-144	76	49-036	73	49-110	75	56-020	86	56-080	88
48-071	74	48-145	76	49-037	73	49-111	75	56-021	86	56-081	88
48-072	74	48-146	76	49-038	73	49-113	75	56-022	86	56-082	88
48-073	74	48-147	76	49-040	74	49-120	76	56-023	86	56-083	88
48-074	74	48-148	76	49-041	74	49-121	76	56-024	86	56-084	88
48-075	74	48-149	76	49-042	74	49-122	76	56-025	86	56-085	88
48-076	74	48-151	76	49-043	74	49-123	76	56-026	86	56-086	88
48-080	75	48-152	76	49-044	74	49-124	76	56-027	86	56-087	88

56-088	88	56-151	90	56-225	92	57-001	86	57-062	87	57-124	90
56-089	88	56-152	90	56-226	92	57-002	86	57-063	87	57-125	90
56-090	88	56-153	90	56-227	92	57-003	86	57-064	87	57-126	90
56-091	88	56-154	90	56-228	92	57-004	86	57-065	87	57-127	90
56-092	88	56-155	90	56-229	92	57-005	86	57-066	87	57-128	90
56-093	88	56-160	91	56-240	87	57-006	86	57-067	87	57-129	90
56-094	88	56-161	91	56-241	87	57-007	86	57-068	87	57-130	90
56-095	88	56-162	91	56-242	87	57-008	86	57-069	87	57-131	90
56-096	88	56-163	91	56-243	87	57-009	86	57-070	87	57-132	90
56-100	89	56-164	91	56-244	87	57-010	86	57-071	87	57-133	90
56-101	89	56-165	91	56-245	87	57-011	86	57-072	87	57-134	90
56-102	89	56-166	91	56-246	87	57-012	86	57-073	87	57-135	90
56-103	89	56-167	91	56-247	87	57-013	86	57-074	87	57-140	90
56-104	89	56-168	91	56-250	88	57-014	86	57-075	87	57-141	90
56-105	89	56-169	91	56-251	88	57-015	86	57-076	87	57-142	90
56-106	89	56-170	91	56-252	88	57-017	86	57-080	88	57-143	90
56-107	89	56-171	91	56-253	88	57-020	86	57-081	88	57-144	90
56-108	89	56-172	91	56-254	88	57-021	86	57-082	88	57-145	90
56-109	89	56-173	91	56-255	88	57-022	86	57-083	88	57-146	90
56-110	89	56-174	91	56-256	88	57-023	86	57-084	88	57-147	90
56-111	89	56-180	91	56-257	88	57-024	86	57-085	88	57-148	90
56-112	89	56-181	91	56-260	89	57-025	86	57-086	88	57-149	90
56-113	89	56-182	91	56-261	89	57-026	86	57-087	88	57-150	90
56-114	89	56-183	91	56-262	89	57-027	86	57-088	88	57-151	90
56-115	89	56-184	91	56-263	89	57-028	86	57-089	88	57-152	90
56-120	90	56-185	91	56-264	89	57-029	86	57-090	88	57-153	90
56-121	90	56-186	91	56-265	89	57-030	86	57-091	88	57-154	90
56-122	90	56-187	91	56-266	89	57-031	86	57-092	88	57-155	90
56-123	90	56-188	91	56-267	89	57-032	86	57-093	88	57-160	91
56-124	90	56-189	91	56-270	90	57-033	86	57-094	88	57-161	91
56-125	90	56-190	91	56-271	90	57-034	86	57-095	88	57-162	91
56-126	90	56-191	91	56-272	90	57-035	86	57-096	88	57-163	91
56-127	90	56-192	91	56-273	90	57-036	86	57-100	89	57-164	91
56-128	90	56-193	91	56-275	90	57-040	87	57-101	89	57-165	91
56-129	90	56-200	92	56-280	90	57-041	87	57-102	89	57-166	91
56-130	90	56-201	92	56-281	90	57-042	87	57-103	89	57-167	91
56-131	90	56-202	92	56-282	90	57-043	87	57-104	89	57-168	91
56-132	90	56-203	92	56-283	90	57-044	87	57-105	89	57-169	91
56-133	90	56-204	92	56-285	90	57-045	87	57-106	89	57-170	91
56-134	90	56-205	92	56-290	91	57-046	87	57-107	89	57-171	91
56-135	90	56-206	92	56-291	91	57-047	87	57-108	89	57-172	91
56-140	90	56-207	92	56-292	91	57-048	87	57-109	89	57-173	91
56-141	90	56-208	92	56-293	91	57-049	87	57-110	89	57-174	91
56-142	90	56-209	92	56-294	91	57-050	87	57-111	89	57-180	91
56-143	90	56-210	92	56-295	91	57-051	87	57-112	89	57-181	91
56-144	90	56-211	92	56-296	91	57-052	87	57-113	89	57-182	91
56-145	90	56-212	92	56-297	91	57-053	87	57-114	89	57-183	91
56-146	90	56-213	92	56-300	93	57-054	87	57-115	89	57-184	91
56-147	90	56-220	92	56-330	92	57-055	87	57-120	90	57-185	91
56-148	90	56-221	92	56-331	92	57-056	87	57-121	90	57-186	91
56-149	90	56-223	92	56-332	92	57-060	87	57-122	90	57-187	91
56-150	90	56-224	92	56-430	87	57-061	87	57-123	90	57-188	91

57-189	91	57-271	90	62-081	82	62-395	79	62-500	83	62-636	84
57-190	91	57-272	90	62-082	82	62-396	79	62-501	83	62-637	84
57-191	91	57-273	90	62-083	82	62-397	79	62-502	83	62-638	84
57-192	91	57-275	90	62-100	77	62-398	79	62-503	83	62-653	84
57-193	91	57-280	90	62-101	77	62-410	80	62-504	83	62-654	84
57-200	92	57-281	90	62-102	77	62-411	80	62-505	83	62-655	84
57-201	92	57-282	90	62-103	77	62-412	80	62-506	83	62-656	84
57-202	92	57-283	90	62-104	77	62-413	80	62-507	83	62-657	84
57-203	92	57-285	90	62-105	77	62-414	80	62-508	83	62-658	84
57-204	92	57-286	90	62-106	77	62-415	80	62-509	83	62-659	84
57-205	92	57-290	91	62-107	77	62-416	80	62-510	83	62-660	84
57-206	92	57-291	91	62-108	77	62-417	80	62-511	83	62-670	84
57-207	92	57-292	91	62-109	77	62-418	80	62-512	83	62-671	84
57-208	92	57-293	91	62-110	77	62-419	80	62-513	83	62-672	84
57-209	92	57-294	91	62-112	77	62-420	80	62-515	83	62-720	80
57-210	92	57-295	91	62-160	77	62-421	80	62-516	83	62-721	80
57-211	92	57-296	91	62-161	77	62-428	81	62-517	83	62-722	80
57-212	92	57-297	91	62-162	77	62-430	81	62-518	83	62-723	80
57-213	92	57-300	93	62-163	77	62-431	81	62-521	83	62-724	80
57-220	92	57-301	93	62-164	77	62-432	81	62-522	83	62-725	80
57-223	92	57-304	93	62-165	77	62-433	81	62-524	83	62-726	80
57-224	92	57-305	93	62-166	77	62-434	81	62-527	83	62-727	80
57-225	92	57-306	93	62-167	77	62-435	81	62-528	83	62-728	80
57-226	92	57-308	93	62-168	77	62-436	81	62-529	83	62-740	80
57-227	92	57-311	92	62-169	77	62-437	81	62-530	83	62-741	80
57-228	92	57-320	93	62-180	79	62-438	81	62-531	83	62-742	80
57-229	92	57-322	93	62-181	79	62-440	81	62-532	83	62-744	80
57-240	87	57-324	93	62-182	79	62-441	81	62-534	83	62-745	80
57-241	87	57-326	93	62-183	79	62-442	81	62-535	83	62-747	80
57-242	87	57-328	93	62-184	79	62-445	81	62-536	83	62-748	80
57-243	87	57-330	92	62-185	79	62-446	81	62-537	83	62-749	80
57-244	87	57-331	92	62-186	79	62-447	81	62-538	83	62-770	81
57-245	87	57-332	92	62-187	79	62-448	81	62-539	83	62-771	81
57-246	87	57-430	87	62-188	79	62-449	81	62-543	83	62-772	81
57-247	87	57-431	87	62-189	79	62-450	81	62-557	83	62-773	81
57-250	88	57-433	87	62-190	79	62-451	81	62-559	83	62-774	81
57-251	88	61-050	123	62-191	79	62-452	81	62-600	82	62-775	81
57-252	88	61-052	123	62-250	79	62-453	81	62-601	82	62-776	81
57-253	88	61-053	123	62-251	79	62-454	81	62-602	82	62-777	81
57-254	88	61-054	123	62-252	79	62-455	81	62-603	82	62-778	81
57-255	88	61-055	123	62-253	79	62-456	81	62-604	82	63-075	82
57-256	88	61-150	123	62-254	79	62-470	82	62-605	82	63-076	82
57-257	88	61-152	123	62-255	79	62-471	82	62-606	82	63-077	82
57-260	89	61-153	123	62-256	79	62-472	82	62-607	82	63-078	82
57-261	89	61-154	123	62-257	79	62-473	82	62-608	82	63-079	82
57-262	89	61-155	123	62-258	79	62-474	82	62-610	82	63-080	82
57-263	89	62-075	82	62-259	79	62-475	82	62-630	84	63-081	82
57-264	89	62-076	82	62-260	79	62-476	82	62-631	84	63-082	82
57-265	89	62-077	82	62-391	79	62-477	82	62-632	84	63-083	82
57-266	89	62-078	82	62-392	79	62-478	82	62-633	84	63-100	77
57-267	89	62-079	82	62-393	79	62-480	82	62-634	84	63-101	77
57-270	90	62-080	82	62-394	79	62-481	82	62-635	84	63-102	77

63-103	77	63-401	79	63-507	83	63-658	84	64-137	104	64-257	106
63-104	77	63-410	80	63-508	83	63-670	84	64-138	104	64-258	106
63-105	77	63-411	80	63-509	83	63-671	84	64-140	104	64-259	106
63-106	77	63-412	80	63-510	83	63-672	84	64-141	104	64-260	106
63-107	77	63-413	80	63-511	83	63-720	80	64-142	104	64-261	106
63-108	77	63-414	80	63-512	83	63-721	80	64-145	104	64-262	106
63-109	77	63-415	80	63-513	83	63-722	80	64-146	104	64-383	106
63-110	77	63-416	80	63-516	83	63-723	80	64-148	104	64-384	106
63-112	77	63-417	80	63-517	83	63-724	80	64-160	104	64-385	106
63-160	77	63-418	80	63-518	83	63-725	80	64-161	104	64-386	106
63-161	77	63-419	80	63-521	83	63-726	80	64-162	104	64-390	105
63-162	77	63-420	80	63-522	83	63-727	80	64-163	104	64-391	105
63-163	77	63-421	80	63-523	83	63-728	80	64-164	104	64-392	105
63-164	77	63-430	81	63-524	83	63-740	80	64-165	104	64-393	105
63-165	77	63-431	81	63-527	83	63-741	80	64-166	104	64-394	105
63-166	77	63-432	81	63-528	83	63-742	80	64-167	104	64-395	105
63-167	77	63-433	81	63-529	83	63-744	80	64-168	104	64-396	105
63-168	77	63-434	81	63-530	83	63-745	80	64-169	104	64-397	105
63-170	77	63-435	81	63-531	83	63-747	80	64-170	104	64-398	105
63-171	77	63-436	81	63-534	83	63-748	80	64-171	104	64-399	105
63-180	79	63-437	81	63-535	83	63-749	80	64-180	105	64-400	105
63-181	79	63-438	81	63-537	83	63-771	81	64-181	105	64-410	106
63-182	79	63-440	81	63-538	83	63-772	81	64-182	105	64-411	106
63-183	79	63-441	81	63-540	83	63-773	81	64-183	105	64-412	106
63-184	79	63-442	81	63-541	83	63-774	81	64-184	105	64-413	106
63-185	79	63-445	81	63-543	83	63-775	81	64-185	105	64-414	106
63-186	79	63-446	81	63-550	83	63-776	81	64-186	105	64-415	106
63-187	79	63-447	81	63-600	82	63-777	81	64-187	105	64-416	106
63-188	79	63-448	81	63-601	82	63-778	81	64-188	105	64-417	106
63-190	79	63-449	81	63-602	82	64-100	104	64-189	105	64-418	106
63-192	79	63-450	81	63-603	82	64-101	104	64-190	105	64-419	106
63-250	79	63-452	81	63-604	82	64-102	104	64-191	105	64-420	106
63-251	79	63-453	81	63-605	82	64-103	104	64-192	105	64-421	106
63-252	79	63-454	81	63-606	82	64-104	104	64-200	105	64-422	106
63-253	79	63-455	81	63-607	82	64-105	104	64-201	105	64-430	107
63-254	79	63-459	81	63-608	82	64-106	104	64-202	105	64-431	107
63-255	79	63-470	82	63-610	82	64-107	104	64-203	105	64-432	107
63-256	79	63-471	82	63-630	84	64-108	104	64-204	105	64-433	107
63-257	79	63-472	82	63-631	84	64-109	104	64-205	105	64-434	107
63-258	79	63-473	82	63-632	84	64-110	104	64-206	105	64-435	107
63-260	79	63-474	82	63-633	84	64-112	104	64-207	105	64-436	107
63-261	79	63-475	82	63-634	84	64-114	104	64-208	105	64-437	107
63-390	79	63-476	82	63-635	84	64-122	104	64-209	105	64-438	107
63-391	79	63-477	82	63-636	84	64-123	104	64-210	105	64-439	107
63-392	79	63-478	82	63-637	84	64-124	104	64-211	105	64-440	107
63-393	79	63-480	82	63-638	84	64-126	104	64-250	106	64-441	107
63-394	79	63-500	83	63-641	84	64-127	104	64-251	106	64-442	107
63-395	79	63-501	83	63-653	84	64-130	104	64-252	106	64-443	107
63-396	79	63-502	83	63-654	84	64-131	104	64-253	106	64-444	107
63-397	79	63-504	83	63-655	84	64-133	104	64-254	106	64-445	107
63-398	79	63-505	83	63-656	84	64-134	104	64-255	106	64-446	107
63-400	79	63-506	83	63-657	84	64-136	104	64-256	106	64-447	107

64-448	107	64-521	108	64-661	109	65-151	104	65-264	106	65-450	107
64-449	107	64-522	108	64-692	110	65-160	104	65-383	106	65-451	107
64-450	107	64-523	108	64-693	110	65-161	104	65-384	106	65-452	107
64-451	107	64-524	108	64-694	110	65-162	104	65-385	106	65-453	107
64-452	107	64-525	108	64-695	110	65-163	104	65-386	106	65-454	107
64-453	107	64-526	108	64-696	110	65-164	104	65-387	106	65-456	107
64-454	107	64-527	108	64-697	110	65-165	104	65-388	106	65-457	107
64-456	107	64-528	108	64-770	103	65-166	104	65-390	105	65-458	107
64-457	107	64-529	108	64-771	103	65-167	104	65-391	105	65-459	107
64-458	107	64-530	108	64-772	103	65-168	104	65-392	105	65-460	107
64-459	107	64-531	108	64-773	103	65-169	104	65-393	105	65-461	107
64-460	107	64-532	108	64-774	103	65-170	104	65-394	105	65-462	107
64-461	107	64-533	108	64-775	103	65-171	104	65-395	105	65-463	107
64-462	107	64-534	108	64-776	103	65-180	105	65-396	105	65-464	107
64-463	107	64-535	108	64-777	103	65-181	105	65-397	105	65-465	107
64-464	107	64-537	108	64-778	103	65-182	105	65-398	105	65-470	109
64-465	107	64-538	108	64-779	103	65-183	105	65-399	105	65-471	109
64-470	109	64-539	108	64-780	103	65-184	105	65-400	105	65-472	109
64-471	109	64-540	108	64-781	103	65-185	105	65-401	105	65-473	109
64-472	109	64-541	108	65-100	104	65-186	105	65-410	106	65-474	109
64-473	109	64-542	108	65-101	104	65-187	105	65-411	106	65-475	109
64-474	109	64-543	108	65-102	104	65-188	105	65-412	106	65-476	109
64-475	109	64-545	108	65-103	104	65-189	105	65-413	106	65-477	109
64-476	109	64-546	108	65-104	104	65-190	105	65-414	106	65-478	109
64-477	109	64-547	108	65-105	104	65-191	105	65-415	106	65-479	109
64-478	109	64-549	108	65-106	104	65-192	105	65-416	106	65-480	109
64-479	109	64-550	108	65-107	104	65-194	105	65-417	106	65-481	109
64-480	109	64-551	108	65-108	104	65-200	105	65-418	106	65-482	109
64-481	109	64-552	108	65-109	104	65-201	105	65-419	106	65-486	107
64-482	109	64-553	108	65-110	104	65-202	105	65-420	106	65-491	107
64-486	107	64-600	109	65-112	104	65-203	105	65-421	106	65-500	108
64-500	108	64-601	109	65-114	104	65-204	105	65-422	106	65-501	108
64-501	108	64-602	109	65-115	104	65-205	105	65-430	107	65-502	108
64-502	108	64-603	109	65-122	104	65-206	105	65-431	107	65-503	108
64-503	108	64-604	109	65-123	104	65-207	105	65-432	107	65-504	108
64-504	108	64-605	109	65-124	104	65-208	105	65-433	107	65-505	108
64-505	108	64-606	109	65-126	104	65-209	105	65-434	107	65-506	108
64-506	108	64-607	109	65-127	104	65-210	105	65-435	107	65-507	108
64-507	108	64-608	109	65-130	104	65-211	105	65-436	107	65-508	108
64-508	108	64-609	109	65-131	104	65-250	106	65-437	107	65-509	108
64-509	108	64-610	109	65-133	104	65-251	106	65-438	107	65-510	108
64-510	108	64-611	109	65-134	104	65-252	106	65-439	107	65-511	108
64-511	108	64-651	109	65-136	104	65-253	106	65-440	107	65-512	108
64-512	108	64-652	109	65-137	104	65-254	106	65-441	107	65-513	108
64-513	108	64-653	109	65-138	104	65-255	106	65-442	107	65-514	108
64-514	108	64-654	109	65-140	104	65-256	106	65-443	107	65-515	108
64-515	108	64-655	109	65-141	104	65-257	106	65-444	107	65-516	108
64-516	108	64-656	109	65-142	104	65-258	106	65-445	107	65-517	108
64-517	108	64-657	109	65-145	104	65-259	106	65-446	107	65-518	108
64-518	108	64-658	109	65-146	104	65-260	106	65-447	107	65-519	108
64-519	108	64-659	109	65-148	104	65-261	106	65-448	107	65-520	108
64-520	108	64-660	109	65-150	104	65-262	106	65-449	107	65-521	108

65-522	108	65-659	109	73-979	14	90-108	111	98-823	117	620604	36
65-523	108	65-660	109	73-980	14	90-109	111	98-824	117	620800	36
65-524	108	65-661	109	73-981	14	90-110	111	98-825	117	621000	36
65-525	108	65-662	109	73-982	14	90-111	111	98-828	118	621200	36
65-526	108	65-664	109	80-061	122	90-114	111	98-830	118	640400	36
65-527	108	65-692	110	80-062	122	90-115	111	98-840	117	640600	36
65-528	108	65-693	110	80-063	122	90-116	111	98-841	117	640800	36
65-529	108	65-694	110	80-064	122	90-117	111	99-803	118	641000	36
65-530	108	65-695	110	80-065	122	90-118	111	99-804	118	641200	36
65-531	108	65-696	110	80-066	122	90-119	111	99-812	117	650400	36
65-532	108	65-697	110	80-067	122	90-120	111	99-813	117	650600	36
65-533	108	65-770	103	80-068	122	90-121	111	99-816	118	650800	36
65-534	108	65-771	103	80-069	122	90-122	111	99-817	118	655320	36
65-535	108	65-772	103	80-080	122	90-123	111	99-825	117	660402	36
65-537	108	65-773	103	80-081	122	90-124	111	99-826	117	660404	36
65-538	108	65-774	103	80-100	122	90-125	111	99-828	118	660602	36
65-539	108	65-775	103	80-101	122	90-126	111	99-830	118	660604	36
65-540	108	65-776	103	80-102	122	90-127	111	99-841	117	660606	36
65-541	108	65-777	103	80-103	122	90-128	111	99-843	117	660804	36
65-542	108	65-778	103	80-104	122	90-129	111	107-060	112	660806	36
65-543	108	65-779	103	80-105	122	90-130	111	107-061	112	660808	36
65-544	108	65-780	103	86-035	116	90-131	111	107-062	112	680302	37
65-545	108	65-781	103	86-036	116	90-132	111	107-063	112	680402	37
65-546	108	65-782	103	86-037	116	90-133	111	107-064	112	680404	37
65-547	108	65-783	103	86-040	116	90-140	111	107-065	112	680406	37
65-549	108	69-600	110	86-041	116	90-141	111	107-066	112	680421	37
65-550	108	69-601	110	86-042	116	90-150	111	107-067	112	680602	37
65-551	108	69-602	110	86-045	116	90-152	111	107-069	112	680604	37
65-552	108	69-603	110	86-046	116	90-212	110	107-071	112	680606	37
65-553	108	69-604	110	86-047	116	90-213	110	107-072	112	680608	37
65-555	108	69-605	110	87001	121	90-215	110	107-073	112	680804	37
65-600	109	69-606	110	87002	121	93-001	110	107-074	112	680806	37
65-601	109	69-607	110	87003	121	93-113	110	320-005	121	680808	37
65-602	109	69-608	110	87004	121	93-121	110	320-035	121	681006	37
65-603	109	73-951	14	90-001	110	93-122	110	320-050	121	681008	37
65-604	109	73-952	14	90-002	110	93-123	110	320-065	118	681208	37
65-605	109	73-953	14	90-003	110	93-124	110	540402	39	681212	37
65-606	109	73-954	14	90-004	110	93-125	110	540404	39	685320	37
65-607	109	73-955	14	90-005	110	93-127	110	540602	39	685321	37
65-608	109	73-956	14	90-006	110	93-128	110	540604	39	685322	37
65-609	109	73-957	14	90-007	110	93-129	110	540606	39	690302	37
65-610	109	73-958	14	90-008	110	93-130	110	540608	39	690402	37
65-611	109	73-959	14	90-009	110	93-131	110	540804	39	690404	37
65-650	109	73-960	14	90-010	110	93-139	110	540806	39	690406	37
65-651	109	73-970	14	90-011	110	93-212	110	540808	39	690602	37
65-652	109	73-971	14	90-100	111	98-801	118	541006	39	690604	37
65-653	109	73-972	14	90-102	111	98-802	118	541008	39	690606	37
65-654	109	73-973	14	90-103	111	98-810	117	541208	39	690608	37
65-655	109	73-974	14	90-104	111	98-811	117	541212	39	690804	37
65-656	109	73-975	14	90-105	111	98-812	117	620400	36	690806	37
65-657	109	73-976	14	90-106	111	98-814	118	620532	36	690808	37
65-658	109	73-977	14	90-107	111	98-815	118	620600	36	691006	37

691008..... 37	940-461 48	949-454 57	10-229L..... 26	18-221B..... 34	28-212L..... 7
691208..... 37	940-462 48	949-455 57	10-235L..... 26	18-223B..... 34	28-213L..... 7
691212..... 37	940-464 48	949-521 57	10-236L..... 26	18-224B..... 34	28-214L..... 7
695302..... 37	940-465 48	949-522 57	10-237L..... 26	18-225B..... 34	28-215L..... 7
695322..... 37	940-521 50	949-523 57	10-240L..... 26	18-228B..... 34	28-216L..... 7
700402..... 38	940-522 50	949-524 57	10-241L..... 26	18-229B..... 34	28-220L..... 7
700404..... 38	940-523 50	949-525 57	10-242L..... 26	18-232B..... 34	28-221L..... 7
700406..... 38	940-524 50	949-526 57	10-244L..... 26	18-233B..... 34	28-222L..... 7
700602..... 38	940-525 50	949-527 57	10-255EH..... 27	18-234B..... 34	28-223L..... 7
700604..... 38	940-526 50	949-528 57	10-255L..... 27	18-235B..... 34	28-224L..... 7
700606..... 38	940-527 50	973-951 14	10-256L..... 27	18-236B..... 34	28-225L..... 7
700806..... 38	940-528 50	973-952 14	10-259L..... 27	18-237B..... 34	28-501B..... 120
700808..... 38	940-529 50	973-953 14	10-260L..... 27	18-238B..... 34	28-507S..... 120
720302..... 39	940-530 50	973-954 14	10-263L..... 27	18-241B..... 34	28-525S..... 120
720402..... 39	944-428 52	973-955 14	10-264L..... 27	18-248B..... 34	28-526S..... 120
720404..... 39	944-429 52	973-956 14	10-265L..... 27	28-015B..... 2	28-540S..... 117
720604..... 39	944-430 52	973-957 14	10-268L..... 27	28-016B..... 2	28-541S..... 117
720606..... 39	944-431 52	973-958 14	10-269L..... 27	28-053B..... 2	28-546B..... 118
720804..... 39	944-432 52	973-959 14	10-272L..... 27	28-058L..... 3	28-552S..... 117
720806..... 39	944-433 52	973-990 14	10-273L..... 27	28-059L..... 3	28-553S..... 117
720808..... 39	944-434 52	973-991 14	10-283B..... 28	28-060L..... 3	28-562S..... 117
940-130 49	944-435 52	72060404..... 39	10-284B..... 28	28-061L..... 3	28-564S..... 117
940-131 49	947-055 48	72100808..... 39	10-286B..... 28	28-062L..... 3	30-027SS..... 21
940-132 49	949-101 54	18-145L..... 32	10-286L..... 28	28-102L..... 4	30-028SS..... 21
940-133 49	949-102 54	18-146L..... 32	10-287B..... 28	28-104L..... 4	30-029SS..... 21
940-134 49	949-103 54	18-153L..... 32	10-290B..... 28	28-105L..... 4	30-032SS..... 20
940-135 49	949-104 54	18-154L..... 32	10-291B..... 28	28-106L..... 4	30-033SS..... 20
940-136 49	949-105 54	18-158L..... 32	10-293B..... 28	28-107L..... 4	30-034SS..... 20
940-137 49	949-106 54	18-159L..... 32	10-294B..... 28	28-109L..... 4	30-063BE..... 20
940-138 49	949-107 54	18-162L..... 32	10-295B..... 28	28-110L..... 4	30-063S..... 20
940-139 49	949-108 54	18-179L..... 33	10-295L..... 28	28-111L..... 4	32-105C..... 14
940-140 49	949-161 55	18-180L..... 33	10-298B..... 28	28-156S..... 4	32-107C..... 13
940-171 47	949-162 55	18-184L..... 33	10-299B..... 28	28-157S..... 4	32-337C..... 13
940-172 47	949-163 55	18-187L..... 33	10-300B..... 28	28-181L..... 3	32-341C..... 13
940-173 47	949-164 55	18-188L..... 33	10-302B..... 28	28-183L..... 3	38-078S..... 42
940-174 47	949-165 55	18-189L..... 33	10-303B..... 28	28-184L..... 3	38-081S..... 42
940-175 47	949-166 55	18-190L..... 33	10-303L..... 28	28-185L..... 3	38-101S..... 42
940-176 47	949-167 55	18-193L..... 33	10-306B..... 28	28-190L..... 8	38-104S..... 42
940-177 47	949-168 55	18-194L..... 33	10-406B..... 29	28-191L..... 8	38-152S..... 43
940-178 47	949-170 55	18-195L..... 33	10-409B..... 29	28-192L..... 8	38-154S..... 43
940-179 47	949-171 53	10-003L..... 23	18-064L..... 31	28-193L..... 8	44-100LF..... 65
940-180 47	949-172 53	10-015L..... 23	18-066L..... 31	28-194L..... 8	44-101LF..... 65
940-181 47	949-173 53	10-017L..... 23	18-068L..... 31	28-195L..... 8	44-102LF..... 65
940-352 51	949-174 53	10-019L..... 23	18-069L..... 31	28-196L..... 8	44-103LF..... 65
940-353 51	949-175 53	10-020L..... 23	18-071L..... 31	28-201S..... 6	44-104LF..... 65
940-354 51	949-176 53	10-075EH..... 25	18-101B..... 31	28-202S..... 6	44-105LF..... 65
940-355 51	949-177 53	10-106EH..... 25	18-102B..... 31	28-203S..... 6	44-106LF..... 65
940-356 51	949-178 53	10-106L..... 25	18-103B..... 31	28-204S..... 6	44-107LF..... 65
940-357 51	949-180 55	10-108L..... 25	18-104B..... 31	28-205S..... 6	44-108LF..... 65
940-358 51	949-451 57	10-109L..... 25	18-105B..... 31	28-206S..... 6	44-110LF..... 65
940-359 51	949-452 57	10-110L..... 25	18-106B..... 31	28-208L..... 8	44-160LF..... 65
940-360 51	949-453 57	10-228L..... 26	18-220B..... 34	28-211L..... 7	44-161LF..... 65

44-162LF..... 65	44-420LF..... 68	44-522LF..... 70	57170TV 100	59-047SMLS... 94	59-113SMLS... 95
44-163LF..... 65	44-430LF..... 68	44-523LF..... 70	57170V..... 101	59-048SMLS... 94	59-114SMLS... 95
44-164LF..... 65	44-431LF..... 68	44-524LF..... 70	57172TV 100	59-049SMLS... 94	59-115SMLS... 95
44-165LF..... 65	44-432LF..... 68	44-527LF..... 70	57172V..... 101	59-050SMLS... 94	59-120SMLS... 96
44-166LF..... 65	44-434LF..... 68	44-528LF..... 70	57174TV 100	59-052SMLS... 94	59-121SMLS... 96
44-167LF..... 65	44-435LF..... 68	44-529LF..... 70	57174V..... 101	59-054SMLS... 94	59-122SMLS... 96
44-168LF..... 65	44-436LF..... 68	44-530LF..... 70	57201TV 100	59-056SMLS... 94	59-123SMLS... 96
44-201LF..... 66	44-437LF..... 68	44-531LF..... 70	57201V..... 101	59-060SMLS... 94	59-124SMLS... 96
44-202LF..... 66	44-438LF..... 68	44-534LF..... 70	57203TV 100	59-061SMLS... 94	59-125SMLS... 96
44-203LF..... 66	44-441LF..... 68	44-535LF..... 70	57203V..... 101	59-062SMLS... 94	59-126SMLS... 96
44-204LF..... 66	44-442LF..... 68	44-538LF..... 70	57207TV 100	59-063SMLS... 94	59-127SMLS... 96
44-205LF..... 66	44-444LF..... 68	44-543LF..... 70	57207V..... 101	59-064SMLS... 94	59-128SMLS... 96
44-206LF..... 66	44-445LF..... 68	44-600LF..... 69	57209TV 100	59-065SMLS... 94	59-129SMLS... 96
44-207LF..... 66	44-446LF..... 68	44-601LF..... 69	57209V..... 101	59-066SMLS... 94	59-130SMLS... 96
44-208LF..... 66	44-447LF..... 68	44-602LF..... 69	57211TV 100	59-067SMLS... 94	59-131SMLS... 96
44-250LF..... 67	44-448LF..... 68	44-603LF..... 69	57211V..... 101	59-068SMLS... 94	59-132SMLS... 96
44-251LF..... 67	44-449LF..... 68	44-604LF..... 69	57213TV 100	59-069SMLS... 94	59-133SMLS... 96
44-252LF..... 67	44-450LF..... 68	44-605LF..... 69	57213V..... 101	59-070SMLS... 94	59-134SMLS... 96
44-253LF..... 67	44-451LF..... 68	44-606LF..... 69	57222TV 100	59-071SMLS... 94	59-135SMLS... 96
44-254LF..... 67	44-452LF..... 68	44-607LF..... 69	57223TV 100	59-072SMLS... 94	59-140SMLS... 96
44-255LF..... 67	44-453LF..... 68	44-608LF..... 69	57223V..... 101	59-073SMLS... 94	59-141SMLS... 96
44-256LF..... 67	44-454LF..... 68	44-651LF..... 71	57227TV 100	59-074SMLS... 94	59-142SMLS... 96
44-257LF..... 67	44-462LF..... 68	44-653LF..... 71	57227V..... 101	59-075SMLS... 94	59-143SMLS... 96
44-258LF..... 67	44-470LF..... 69	44-654LF..... 71	57228TV 100	59-076SMLS... 94	59-144SMLS... 96
44-276LF..... 67	44-471LF..... 69	44-655LF..... 71	57228V..... 101	59-080SMLS... 95	59-145SMLS... 96
44-280LF..... 67	44-472LF..... 69	44-656LF..... 71	57229TV 100	59-081SMLS... 95	59-146SMLS... 96
44-282LF..... 67	44-473LF..... 69	44-657LF..... 71	57229V..... 101	59-082SMLS... 95	59-147SMLS... 96
44-286LF..... 67	44-474LF..... 69	44-658LF..... 71	57332TV 100	59-083SMLS... 95	59-148SMLS... 96
44-291LF..... 67	44-475LF..... 69	46-061L..... 46	57332V..... 101	59-084SMLS... 95	59-149SMLS... 96
44-298LF..... 67	44-476LF..... 69	46930SS 56	59-020SMLS... 93	59-085SMLS... 95	59-150SMLS... 96
44-301LF..... 67	44-477LF..... 69	46931SS 56	59-021SMLS... 93	59-086SMLS... 95	59-151SMLS... 96
44-303LF..... 67	44-478LF..... 69	46932SS 56	59-022SMLS... 93	59-087SMLS... 95	59-152SMLS... 96
44-306LF..... 67	44-500LF..... 70	46933SS 56	59-023SMLS... 93	59-088SMLS... 95	59-153SMLS... 96
44-330LF..... 67	44-501LF..... 70	46934SS 56	59-024SMLS... 93	59-089SMLS... 95	59-154SMLS... 96
44-334LF..... 67	44-502LF..... 70	46935SS 56	59-025SMLS... 93	59-090SMLS... 95	59-155SMLS... 96
44-391LF..... 66	44-503LF..... 70	46936SS 56	59-026SMLS... 93	59-091SMLS... 95	59-160SMLS... 97
44-392LF..... 66	44-504LF..... 70	46937SS 56	59-027SMLS... 93	59-092SMLS... 95	59-160SMLSXXX.99
44-393LF..... 66	44-505LF..... 70	540402S 39	59-028SMLS... 93	59-094SMLS... 95	59-161SMLS.....97
44-394LF..... 66	44-506LF..... 70	540404S 39	59-029SMLS... 93	59-096SMLS... 95	59-161SMLSXXX.99
44-395LF..... 66	44-507LF..... 70	540602S 39	59-030SMLS... 93	59-100SMLS... 95	59-162SMLS.....97
44-396LF..... 66	44-508LF..... 70	540604S 39	59-031SMLS... 93	59-101SMLS... 95	59-162SMLSXXX.99
44-397LF..... 66	44-509LF..... 70	540606S 39	59-032SMLS... 93	59-102SMLS... 95	59162TV100
44-398LF..... 66	44-510LF..... 70	540804S 39	59-033SMLS... 93	59-103SMLS... 95	59162V.....101
44-410LF..... 68	44-511LF..... 70	540806S 39	59-034SMLS... 93	59-104SMLS... 95	59-163SMLS.....97
44-411LF..... 68	44-512LF..... 70	540808S 39	59-036SMLS... 93	59-105SMLS... 95	59-163SMLSXXX.99
44-412LF..... 68	44-513LF..... 70	541008S 39	59-040SMLS... 94	59-106SMLS... 95	59-164SMLS.....97
44-413LF..... 68	44-516LF..... 70	57162TV 100	59-041SMLS... 94	59-107SMLS... 95	59-164SMLSXXX.99
44-414LF..... 68	44-517LF..... 70	57162V..... 101	59-042SMLS... 94	59-108SMLS... 95	59164TV100
44-415LF..... 68	44-518LF..... 70	57164TV 100	59-043SMLS... 94	59-109SMLS... 95	59164V.....101
44-416LF..... 68	44-519LF..... 70	57164V..... 101	59-044SMLS... 94	59-110SMLS... 95	59-165SMLS.....97
44-417LF..... 68	44-520LF..... 70	57168TV 100	59-045SMLS... 94	59-111SMLS... 95	59-166SMLS.....97
44-418LF..... 68	44-521LF..... 70	57168V..... 101	59-046SMLS... 94	59-112SMLS... 95	59-166SMLSXXX.99

59-167SMLS.....97	59-207SMLS... 98	63-416B..... 81	72080S 39	GE2-04-SAE ... 58
59-168SMLS.....97	59207TV 100	63-417B..... 81	86-045SS..... 116	GE2-06-SAE ... 58
59-168SMLSXXX.99	59207V..... 101	63-418B..... 81	86-046SS..... 116	GE2-08-SAE ... 58
59168TV100	59-208SMLS... 98	64-773H 103	947-055LF..... 48	GE2-112T-NPT58
59168V.....101	59-209SMLS... 98	64-774H 103	ANV-12-F 123	GE2-114T-NPT58
59-169SMLS.....97	59209TV 100	64-775H 103	ANV-12-M..... 123	GE2-12-NPT ... 58
59-169SMLSXXX.99	59209V..... 101	64-776H 103	ANV-14-F 123	GE2-12-SAE ... 58
59-170SMLS.....97	59-210SMLS... 98	64-777H 103	ANV-14-M..... 123	GE2-14-NPT ... 58
59-170SMLSXXX.99	59-211SMLS... 98	64-778H 103	ANV-1-F 123	GE2-16-SAE ... 58
59170TV100	59211TV 100	64-780H 103	ANV-1-M..... 123	GE2-1-NPT 58
59170V.....101	59211V..... 101	64-781H 103	ANV-34-F 123	GE2-2T-NPT ... 58
59-171SMLS.....97	59-212SMLS... 98	65-770H 103	ANV-34-M..... 123	GE2-34-NPT ... 58
59-171SMLSXXX.99	59-213SMLS... 98	65-771H 103	ANV-38-F 123	GE2-38-NPT ... 58
59-172SMLS.....97	59213TV 100	65-772H 103	ANV-38-M..... 123	HNV-12-F 123
59-172SMLSXXX.99	59213V..... 101	65-773H 103	DX259520..... 114	HNV-12-F-B ... 123
59172TV100	59-220SMLS... 98	65-774H 103	DX259530..... 114	HNV-12-M..... 123
59172V.....101	59-221SMLS... 98	65-775H 103	DX259540..... 114	HNV-12-M-B.. 123
59-173SMLS.....97	59221TV 100	65-776H 103	DX259550..... 114	HNV-14-F 123
59-174SMLS.....97	59221V..... 101	65-777H 103	DX259560..... 114	HNV-14-F-B ... 123
59-174SMLSXXX.99	59222TV 100	65-778H 103	DX259570..... 114	HNV-14-M..... 123
59174TV100	59-223SMLS... 98	65-779H 103	DX4324..... 114	HNV-14-M-B.. 123
59174V.....101	59-224SMLS... 98	65-780H 103	DX4336..... 114	HNV-1-F 123
59-179SMLSXXX.99	59-225SMLS... 98	65-781H 103	DX4424..... 114	HNV-1-F-B 123
59-180SMLS... 97	59225TV 100	690402S 38	DX4436..... 114	HNV-1-M..... 123
59-181SMLS... 97	59225V..... 101	690404S 38	DX4524VG..... 114	HNV-1-M-B.... 123
59-182SMLS... 97	59-226SMLS... 98	690406S 38	DX4536VG..... 114	HNV-34-F 123
59-183SMLS... 97	59-227SMLS... 98	690602S 38	DX5005..... 114	HNV-34-F-B ... 123
59-184SMLS... 97	59227TV 100	690604S 38	DX5006..... 114	HNV-34-M..... 123
59-185SMLS... 97	59227V..... 101	690606S 38	DX5022..... 114	HNV-34-M-B.. 123
59-186SMLS... 97	59-228SMLS... 98	690608S 38	DX5090..... 114	HNV-38-F 123
59-187SMLS... 97	59-229SMLS... 98	690804S 38	DX5190..... 114	HNV-38-F-B ... 123
59-188SMLS... 97	59229TV 100	690806S 38	DX5197..... 114	HNV-38-M..... 123
59-189SMLS... 97	59229V..... 101	690808S 38	FF-1012F..... 124	HNV-38-M-B.. 123
59-190SMLS... 97	59-231SMLS... 98	691006S 38	FF-1234-F 124	KZE-B-14-PF..... 125
59-191SMLS... 97	59231TV 100	691008S 38	FF-1234-M..... 124	KZE-B-14-SM..... 125
59-192SMLS... 97	59231V..... 101	691208S 38	FF-12-F 124	KZE-B-38-PF..... 125
59-193SMLS... 97	62-410B..... 81	691212S 38	FF-12-M..... 124	KZE-B-38-SM..... 125
59-196SMLS... 97	62-411B..... 81	695322S 38	FF-14-F 124	LSQ-VEP-12-PF..... 124
59-197SMLS... 97	62-412B..... 81	710402S 38	FF-14-M..... 124	LSQ-VEP-12-SF..... 124
59-198SMLS... 97	62-413B..... 81	710404S 38	FF-1-F 124	LSQ-VEP-1-PF..... 124
59-199SMLS... 97	62-414B..... 81	710604S 38	FF-1-M..... 124	LSQ-VEP-1-SF..... 124
59-200SMLS... 98	62-415B..... 81	710606S 38	FF-3416-F 124	LSQ-VEP-20-PF..... 124
59-201SMLS... 98	62-416B..... 81	710804S 38	FF-3416-M..... 124	LSQ-VEP-20-SF..... 124
59201TV 100	62-417B..... 81	710806S 38	FF-34-F 124	LSQ-VEP-24-PF..... 124
59201V..... 101	62-418B..... 81	710808S 38	FF-34-M..... 124	LSQ-VEP-24-SF..... 124
59-202SMLS... 98	62-420B..... 81	720402S 39	FF-3812-F 124	LSQ-VEP-34-PF..... 124
59-203SMLS... 98	63-410B..... 81	720404S 39	FF-3812-M..... 124	LSQ-VEP-34-SF..... 124
59203TV 100	63-411B..... 81	720602S 39	FF-38-F 124	SFBSF-100CR-SS316..... 126
59203V..... 101	63-412B..... 81	720604S 39	FF-38-M..... 124	SFBSF-150CR-SS316..... 126
59-204SMLS... 98	63-413B..... 81	720606S 39	GB2-20T-SAE. 58	SFBSF-200CR-SS316..... 126
59-205SMLS... 98	63-414B..... 81	720804S 39	GB2-24T-SAE. 58	SFBSF-250CR-SS316..... 126
59-206SMLS... 98	63-415B..... 81	720806S 39	GB2-32T-SAE. 58	SFBSF-300CR-SS316..... 126

SFBSF-400CR-SS316.....	126	SFHN-150-SS304	128
SFCE-100CR-SS316.....	126	SFHN-200-SS304	128
SFCE-100CR-SS316.....	127	SFHN-250-SS304	128
SFCE-150CR-SS316.....	126	SFHN-300-SS304	128
SFCE-150CR-SS316.....	127	SFHN-400-SS304	128
SFCE-200CR-SS316.....	126	SFSPC-150-SS304.....	127
SFCE-200CR-SS316.....	127	SFSPC-200-SS304.....	127
SFCE-250CR-SS316.....	126	SFSPC-250-SS304.....	127
SFCE-250CR-SS316.....	127	SFSPC-300-SS304.....	127
SFCE-300CR-SS316.....	126	SFSPC-400-SS304.....	127
SFCE-300CR-SS316.....	127		
SFCE-400CR-SS316.....	126		
SFCE-400CR-SS316.....	127		
SFCF-10130-SS304	128		
SFCF-10134-SS304	128		
SFCF-10147-SS304	128		
SFCF-15204-SS304	128		
SFCF-15207-SS304	128		
SFCF-15210-SS304	128		
SFCF-20236-SS304	128		
SFCF-20241-SS304	128		
SFCF-20247-SS304	128		
SFCF-30358-SS304	128		
SFCF-30363-SS304	128		
SFCF-40446-SS304	128		
SFCF-40462-SS304	128		
SFEC-150-SS316.....	128		
SFEC-200-SS316.....	128		
SFEC-250-SS316.....	128		
SFEC-300-SS316.....	128		
SFEC-400-SS316.....	128		
SFG-100-SILC	129		
SFG-100-WH	129		
SFG-150-SILC	129		
SFG-150-WH	129		
SFG-200-SILC	129		
SFG-200-WH	129		
SFG-250-SILC	129		
SFG-250-WH	129		
SFG-300-SILC	129		
SFG-300-WH	129		
SFG-400-SILC	129		
SFG-400-WH	129		
SFHACE-100038-SS316	127		
SFHACE-100050-SS316	127		
SFHACE-100075-SS316	127		
SFHACE-100100-SS316	127		
SFHACE-150100-SS316	127		
SFHACE-150150-SS316	127		
SFHACE-200150-SS316	127		
SFHACE-200200-SS316	127		
SFHN-100-SS304	128		



BUCHANAN RUBBER LTD

A MIDLAND INDUSTRIES COMPANY

Toronto, Ontario/ Edmonton, Alberta/ Montreal, Quebec/ Houston, Texas

Phone: 1-888-775-HOSE (4673)

Fax: 1-888-990-HOSE (4673)

Email: Sales@BuchananRubber.com

Email: WesternSales@BuchananRubber.com

