



Superior Refrigeration Products

Harsco

Catalog No. R-2001

Superior...Supplying Quality Products To The ACR Industry Since 1938



Air Conditioning and Refrigeration Valves, Wrot and Flare

Fittings, and Accessories





Catalog No. R-2001

Air Conditioning and Refrigeration Valves, Wrot and Flare Fittings, and Accessories

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INTEGRA-SEAL® Ball Valves

WA Series (Welded)

WAS Series (Welded with Access Fitting)

Robotically Welded Body Joint! Full Size Ports for Unrestricted Flow!

The new line of **INTEGRA-SEAL®** ball valves employ the latest robotic welding technology. Every continuous welded body joint is 100% factory tested to ensure positively leak-free performance.

Dual Teflon* ball seals surround a polished brass or chrome plated steel ball at each end. A secondary seal becomes effective if foreign material scores the primary seal . . . even in extremely unfavorable conditions such as compressor burnout – a Superior exclusive!

INTEGRA-SEAL® ball valves are constructed using all forged brass body with copper tube extensions on all sizes. Mechanical internal forged stops ensure positive open or closed positions – another Superior exclusive! Full open to full close with ¼ turn.

All sizes incorporate a dual stem seal design utilizing Teflon packing compressed by an internal packing nut forming the primary seal. The unique seal cap design permits valve operation without removal of the seal cap and uses Teflon gaskets to provide a secondary seal – a third Superior

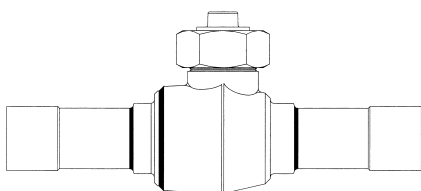
exclusive! There are no synthetic “O” rings. Ball internal relief port design ensures shut-off in either direction of flow . . . even during evacuation of the system. Full flow ports in all sizes ¾" through 3½".

All **INTEGRA-SEAL®** ball valves are non-directional flow and may be installed in any position.

*Registered Trademark of Dupont

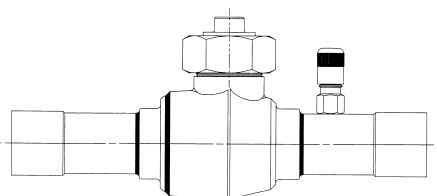
INTEGRA-SEAL®

WA Series

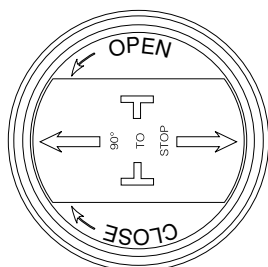


INTEGRA-SEAL®

WAS Series (with Access Fitting)



Seal Cap



Seal Cap

Exclusive Seal Cap design permits operation of valve without removal. Markings on cap top designates at-a-glance open or closed ball position.

Catalog Number	IBCA Number	With Access Fitting	Size (Inches)		Connection (ODS)	Ball Port Diameter	Weight (Pounds)	
			IBCA Number				WA	WAS
586WA-6ST	58651	586WAS-6ST	59726		¾"	0.50	0.7	0.77
586WA-8ST	58652	586WAS-8ST	59727		1½"	0.50	0.7	0.77
586WA-10ST	58564	586WAS-10ST	59728		5/8"	0.50	0.7	0.77
587WA-12ST	58659				¾"	0.75	1.0	N/A
587WA-14ST	58584	587WAS-14ST	59729		7/8"	0.75	1.0	1.10
591WA-11ST	58756	591WAS-11ST	59730		1½"	1.00	2.2	2.42
592WA-13ST	58790	592WAS-13ST	60072		1¾"	1.50	3.8	4.18
593WA-15ST	58793	593WAS-15ST	59731		1½"	1.50	3.8	4.18
594WA-21ST	58865	594WAS-21ST	59732		2½"	2.01	8.0	8.80
594WA-25ST**	57538				2½"	2.01	11.0	N/A
594WA-31ST**	57778				3½"	2.01	11.0	N/A
595WA-25ST	60235	595WAS-25ST	60316		2½"	2.44	15.0	15.80
596WA-31ST	59143	596WAS-31ST	59733		3½"	2.91	25.0	26.00
596WA-35ST**	59146				3½"	2.91	26.0	N/A
596WA-41ST**	59150				4½"	2.91	27.0	N/A

**Reduced Ports

METRIC SIZES AVAILABLE

586WAV-10MM	58928	Consult Factory For Availability of Access Fittings in Metric Sizes or For Other Sizes Not Shown	10MM	0.50	0.7	N/A
586WAV-12MM	58931		12MM	0.50	0.7	N/A
586WAV-15MM	58934		15MM	0.50	0.7	N/A
586WAV-16MM	58076		16MM	0.50	0.7	N/A
587WAV-18MM	58938		18MM	0.75	1.0	N/A
587WAV-22MM	58079		22MM	0.75	1.0	N/A
591WAV-28MM	59082		28MM	1.00	2.2	N/A
592WAV-35MM	59085		35MM	1.50	3.8	N/A
593WAV-42MM	59318		42MM	1.50	3.8	N/A



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INTEGRA-SEAL®

WA Series (Welded)

WAS Series (Welded with Access Fitting)

- Full refrigeration service temperature range of -40°F to +325°F (-40°C to +149°C).
- Forged brass body and seal cap
- Design Working Pressure: 500 psig (36 kg/cm²).
- U.L. and C-U.L. Listed File No. 3462 (N) except for metric sizes.
- WAS Series includes access fitting, strategically located on tube extension.
- No synthetic "O" ring seals. Double seal protection provides a Superior stem design.
- Polished brass or chrome plated steel ball.
- Seal cap design permits valve operation without removal of seal cap
- All **INTEGRA-SEAL®** ball valves are suitable for use with R11, R12, R22, R123, R125, R134A, R402A, R402B, R404A, R500, R502, and R507 and for industrial oxygen usages. (not U.L. Listed for oxygen). For gases or liquids not listed please consult factory.
- Spare Parts List, pgs. 64-65

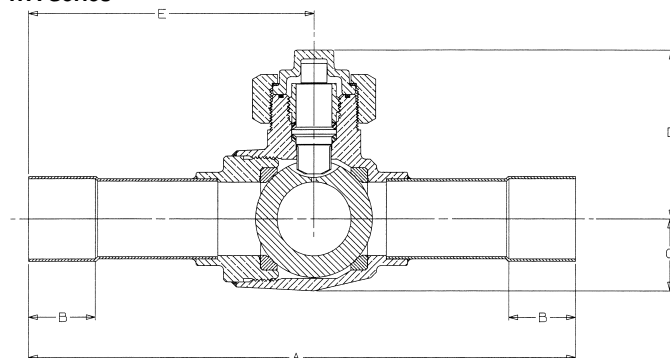
Catalog Number	With Access Fitting	Dimensions (Inches)						Maximum Width	C _V
		A	B	C	D	E	F		
586WA-6ST	586WAS-6ST	6.50	0.31	0.56	1.80	3.44	1.75	1.38	3.60
586WA-8ST	586WAS-8ST	6.50	0.38	0.56	1.80	3.44	1.75	1.38	7.40
586WA-10ST	586WAS-10ST	6.50	0.50	0.56	1.80	3.44	1.75	1.38	14.60
587WA-12ST		6.56	0.63	0.73	1.96	3.46	N/A	1.88	22.30
587WA-14ST	587WAS-14ST	6.56	0.75	0.73	1.96	3.46	2.00	1.88	30.00
591WA-11ST	591WAS-11ST	7.69	0.94	1.03	2.37	4.01	1.75	2.31	62.00
592WA-13ST	592WAS-13ST	8.88	1.00	1.42	2.73	4.49	2.21	3.19	110.00
593WA-15ST	593WAS-15ST	9.13	1.09	1.42	2.73	4.62	2.21	3.19	135.00
594WA-21ST	594WAS-21ST	9.88	1.34	1.85	3.11	5.07	2.57	4.06	270.00
594WA-25ST**		12.88	1.44	1.85	3.11	6.57	N/A	4.06	250.00
594WA-31ST**		13.75	1.63	1.85	3.11	7.01	N/A	4.06	240.00
595WA-25ST	595WAS-25ST	12.92	1.50	2.30	3.95	6.52	3.35	4.65	340.00
596WA-31ST	596WAS-31ST	16.31	1.69	2.75	4.35	8.32	3.63	5.63	480.00
596WA-35ST**		16.03	1.94	2.75	4.35	8.32	N/A	5.63	455.00
596WA-41ST**		16.03	1.94	2.75	4.35	8.32	N/A	5.63	430.00

**Reduced Ports

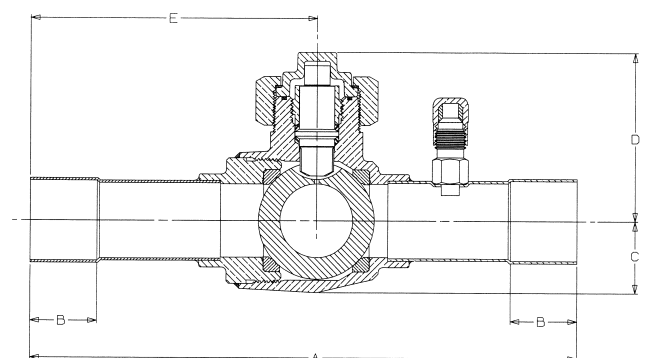
METRIC SIZES AVAILABLE

586WAV-10MM	Consult Factory For Availability of Access Fittings in Metric Sizes or For Other Sizes Not Shown	6.50	0.31	0.56	1.80	3.44	N/A	1.38	3.60
586WAV-12MM		6.50	0.38	0.56	1.80	3.44	N/A	1.38	7.40
586WAV-15MM		6.50	0.50	0.56	1.80	3.44	N/A	1.38	14.60
586WAV-16MM		6.50	0.50	0.56	1.80	3.44	N/A	1.38	14.60
587WAV-18MM		6.50	0.58	0.73	1.96	3.44	N/A	1.88	22.30
587WAV-22MM		6.41	0.67	0.73	1.96	3.38	N/A	1.88	30.00
591WAV-28MM		7.40	0.79	1.01	2.37	3.87	N/A	2.31	62.00
592WAV-35MM		8.88	1.00	1.42	2.73	4.50	N/A	3.19	110.00
593WAV-42MM		9.12	1.25	1.42	2.73	4.50	N/A	3.19	135.00

INTEGRA-SEAL® WA Series



INTEGRA-SEAL® WAS Series





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Line Valves - "Tuffy" Series

Diaphragm Packless Valves

All diaphragm packless valves contain metal diaphragms and backseat metal to metal when the valve is fully open. Controlled stem travel assures life-time diaphragm performance; balanced bearing surfaces and polished stem heads eliminate wear and assure smooth, easy operation. Flow is

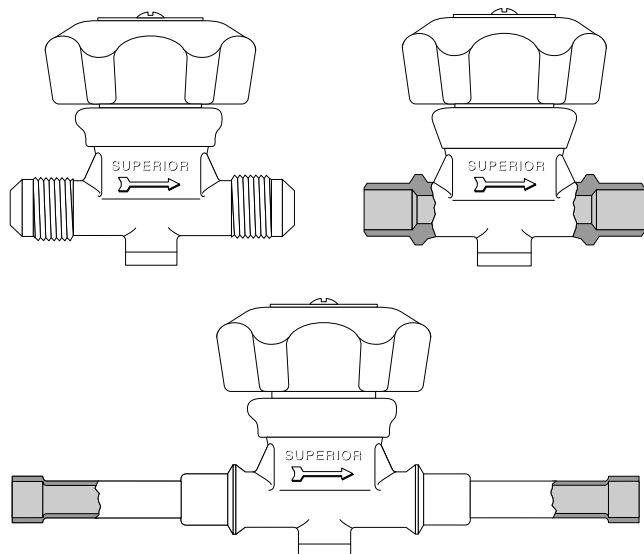
unrestricted. All OD solder connections for valves $\frac{7}{8}$ " and smaller are machined to an outside diameter equivalent to the next largest standard size of tubing. Because of their unique construction, Superior diaphragm packless valves can be soldered into the line without disassembly.

"Comfortgrip" nylon handwheels are furnished on all types of valves. Types 214, 215, and 216 Underwriters' Laboratories and Canadian Standards Association listed.

Vacuum Applications

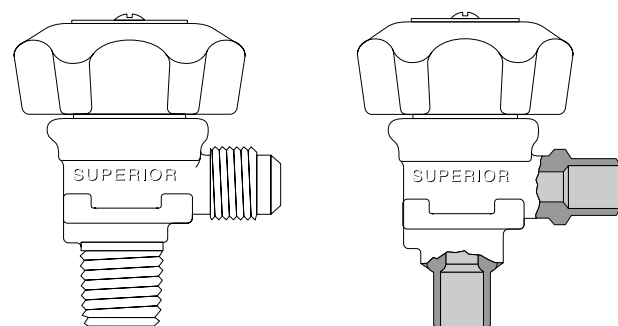
All Superior packless valves are excellent for vacuum service. $\frac{5}{8}$ " and smaller are regularly used for vacuums to 1 micron and the larger sizes are adequate for 10 microns.

"Tuffy" Line Valves



Catalog Number	IBCA Number	Size (Inches)		Weight (Pounds)	
		Inlet	Outlet		
"Tuffy" Standard		SAE	X	SAE	
214-4	56381	1/4		1/4	0.50
214-6	56384	3/8		3/8	0.50
215-8	56400	1/2		1/2	1.00
216-10	56409	5/8		5/8	1.00
"Tuffy" Standard		ODS	X	ODS	
214-4S	56382	1/4		1/4	0.50
214-6S	56385	3/8		3/8	0.50
215-8S	56401	1/2		1/2	1.00
216-10S	56410	5/8		5/8	1.00
"Tuffy" w/Tube Exts.		ODS	X	ODS	
214-4ST	56383	1/4		1/4	0.75
214-6ST	56387	3/8		3/8	0.75
215-8ST	56402	1/2		1/2	1.25
216-10ST	56411	5/8		5/8	1.25

"Tuffy" Angle Valves



Catalog Number	IBCA Number	Inlet	Size (Inches)	Outlet	Weight (Pounds)
"Tuffy" Angle		NPT	X	SAE	
114-4B	55906	1/4		1/4	0.50
114-6B	55909	1/4		3/8	0.50
"Tuffy" Angle-solder		ODS	X	ODS	
115-8S	55923	1/2		1/2	1.00



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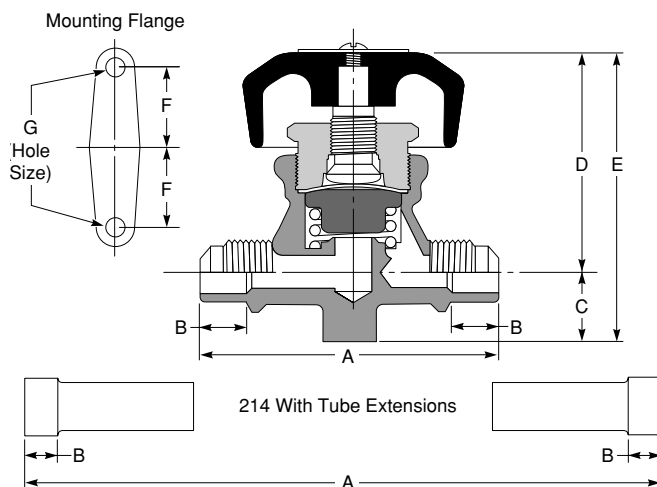
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Line Valves - "Tuffy" Series Diaphragm Packless Valves

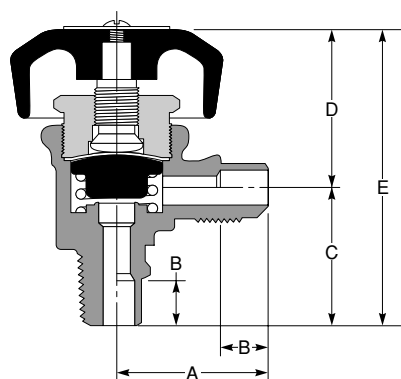
- Working Pressure: 1/4" thru 7/8": 500 psig
- Working Pressure: 1-1/8": 375 psig
- Body Construction: Forged Brass
- Seat Material: Nylon
- Diaphragm Construction: Stainless Steel
- Maximum Temperature: 275°F
- Minimum Temperature: -40°F
- U.L. and C-UL Listed File No. SA3462(N)
- Valves may be installed without disassembly. Wrap body with damp cloth or other suitable heat sinking material during soldering.
- All "Tuffy" Valves are suitable for use with R11, R12, R22, R123, R125, R134A, R402A, R402B, R404A, R500, R502, R507, and industrial oxygen usage. For gases and liquids not listed, please consult factory.
- Spare Parts List, pgs. 64-65

"Tuffy" Line Valves



Catalog Number	Dimensions (Inches)							C V
	A	B	C	D	E	F	G	
214-4	2 3/4	—	1 9/32	1 29/32	2 1/2	3/4	0.199	N/A
214-6	2 3/4	—	1 9/32	1 29/32	2 1/2	3/4	0.199	0.882
215-8	3 5/8	—	1 3/16	2 9/16	3 3/8	7/8	0.199	1.788
216-10	3 7/8	—	1 3/16	2 9/16	3 3/8	7/8	0.199	2.828
214-4S	2 3/4	5/16	1 9/32	1 29/32	2 1/2	3/4	0.199	N/A
214-6S	2 3/4	7/16	1 9/32	1 29/32	2 1/2	3/4	0.199	0.882
215-8S	3 5/8	9/16	1 3/16	2 9/16	3 3/8	7/8	0.199	1.788
216-10S	3 7/8	2 1/32	1 3/16	2 9/16	3 3/8	7/8	0.199	2.828
214-4ST	6	5/16	1 9/32	1 29/32	2 1/2	3/4	0.199	N/A
214-6ST	5 7/8	7/16	1 9/32	1 29/32	2 1/2	3/4	0.199	0.882
215-8ST	6 9/16	9/16	1 3/16	2 9/16	3 3/8	7/8	0.199	1.788
216-10ST	7 5/16	2 1/32	1 3/16	2 9/16	3 3/8	7/8	0.199	2.828

"Tuffy" Angle Valves



Catalog Number	Dimensions (Inches)							C V
	A	B	C	D	E	F	G	
114-4B	1 13/32	—	1 1/4	1 17/32	2 25/32	—	—	N/A
114-6B	1 13/32	—	1 1/4	1 17/32	2 25/32	—	—	0.450
115-8S	1 13/16	9/16	1 3/8	2	3 3/8	—	—	2.542



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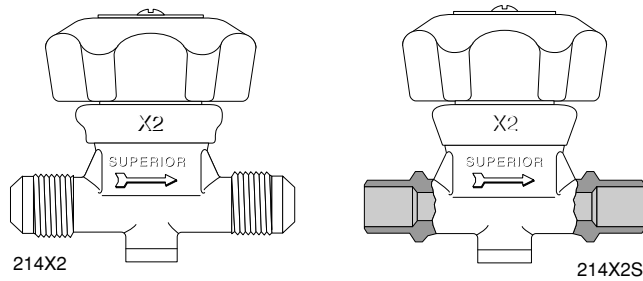
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Line Valves - “Tuffy” Series Diaphragm Packless Valves

“Tuffy” X2 Line Valve with “Sealzall” Moisture Seal

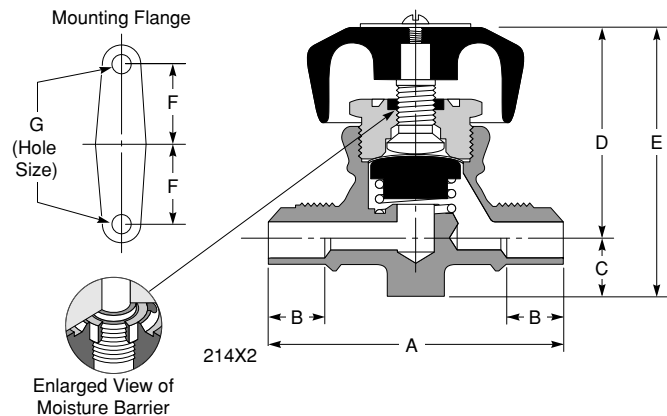
“Sealzall” positive moisture seal prevents condensation from seeping down between the valve stem and bonnet and eliminates valve “freeze-up.” Made of resilient Teflon, the “Sealzall” moisture barrier is firmly sealed into the valve bonnet. It will not turn with the opening and closing of the valve, and will remain in position to provide a permanent moisture barrier.

“Tuffy” X2 Line Valve with “Sealzall” Moisture Seal



Catalog Number	IBCA Number	Size (Inches)		Weight (Pounds)
		Inlet	Outlet	
		SAE	X	SAE
214X2-4	56389	1/4	1/4	0.50
		ODS	X	ODS
214X2-4S	56390	1/4	1/4	0.50
214X2-6S	56392	3/8	3/8	0.50

“Tuffy” X2 Line Valve with “Sealzall” Moisture Seal



Catalog Number	Dimensions (Inches)							C _v
	A	B	C	D	E	F	G	
214X2-4	2 3/4	—	1 9/32	1 29/32	2 1/2	3/4	0.199	N/A
214X2-4S	2 3/4	5/16	1 9/32	1 29/32	2 1/2	3/4	0.199	N/A
214X2-6S	2 3/4	7/16	1 9/32	1 29/32	2 1/2	3/4	0.199	0.882



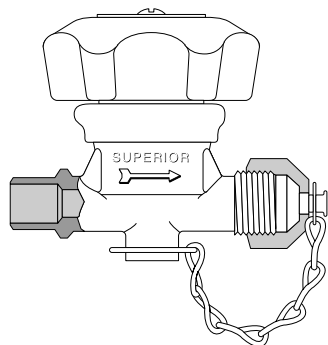
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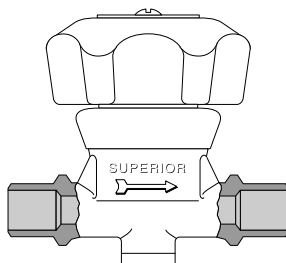
Line Valves - “Tuffy” Series Diaphragm Packless Valves

“Tuffy” Purge and Drain Valves



Catalog Number	IBCA Number	Inlet	Size (Inches)	Outlet	Weight (Pounds)
“Tuffy” Purge and Drain		ODS	X	SAE	
234A-4	56438	1/4		1/4	0.50
234A-6	56439	3/8		3/8	0.50

“Tuffy” Charging Valves



Catalog Number	IBCA Number	Inlet	Size (Inches)	Outlet	Weight (Pounds)
“Tuffy” Charging Valves		ODS	X	ODS	
216X7-10S	56416	5/8		5/8	1.00



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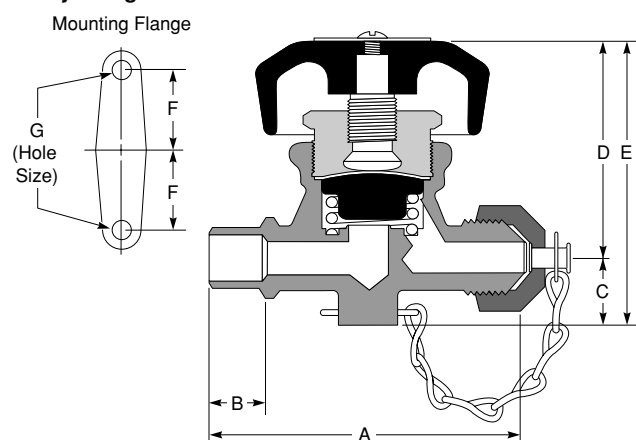
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Line Valves - “Tuffy” Series Diaphragm Packless Valves

Diaphragm Packless Globe Valves

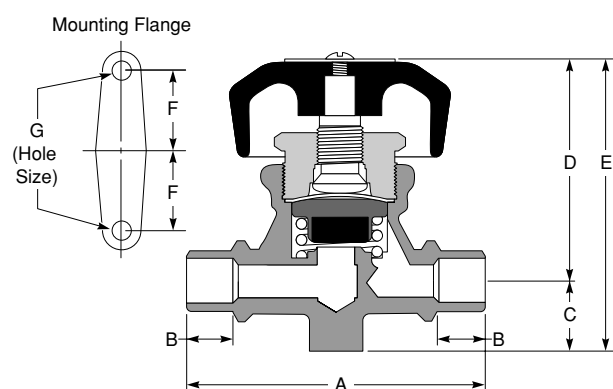
A low pressure drop is available in the 217 series forged brass diaphragm packless globe valves. The nylon seated stem assembly is inclined to provide maximum flow and minimum pressure drop. With this compact design, many headroom problems are eliminated.

“Tuffy” Purge and Drain Valves



Catalog Number	Dimensions (Inches)							C _V
	A	B	C	D	E	F	G	
234A-4	2 ³ / ₄	5 ⁵ / ₁₆	1 ⁹ / ₃₂	1 ²⁹ / ₃₂	2 ¹ / ₂	3 ³ / ₄	0.199	N/A
234A-6	2 ³ / ₄	7 ⁷ / ₁₆	1 ⁹ / ₃₂	1 ²⁹ / ₃₂	2 ¹ / ₂	3 ³ / ₄	0.199	0.882

“Tuffy” Line Valves



Catalog Number	Dimensions (Inches)							C _V
	A	B	C	D	E	F	G	
ODS X ODS								
216X7-10S	3 ⁵ / ₈	1 ¹ / ₁₆	1 ³ / ₁₆	2 ⁹ / ₁₆	3 ³ / ₈	7 ⁷ / ₈	0.199	2.828



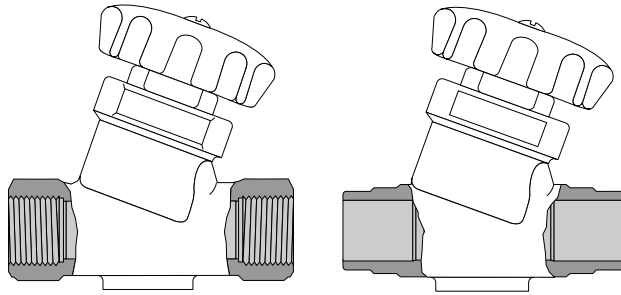
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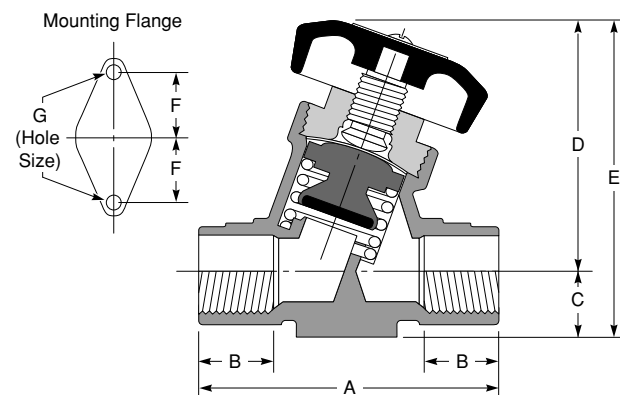
Line Valves - “Tuffy” Series Diaphragm Packless Valves

Diaphragm Packless Globe Valves



Catalog Number	IBCA Number	Size (Inches)		Weight (Pounds)
		Inlet	Outlet	
217-N	56419	FPT	X	2.25
		3/4	3/4	
217-14S	56421	ODS	X	1.75
		7/8	7/8	

Diaphragm Packless Globe Valves



Catalog Number	Dimensions (Inches)							C _v
	A	B	C	D	E	F	G	
217-N	3 ¹³ / ₁₆	3/4	13/16	3	3 ¹³ / ₁₆	1 ¹ / ₈	0.199	6.81
217-14S	3 ¹³ / ₁₆	15/16	13/16	3	3 ¹³ / ₁₆	1 ¹ / ₈	0.199	6.87



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LPD* Globe Valves

Globe and Angle Valves

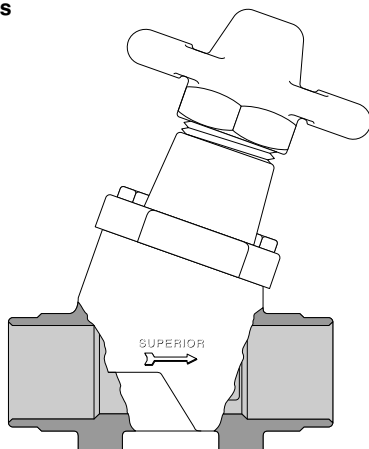
The LPD Globe Valves present to the industry a concept in forged brass valves in sizes $\frac{7}{8}$ " through $3\frac{5}{8}$ " which streamlines flow and minimizes pressure drop in an extremely compact design. Inclining the seat to a 70° angle minimizes turbulence and streamlines flow to help obtain the maximum capacity of modern, high performance refrigeration and air-conditioning systems.

The "C" series with special non-metallic bonnet gaskets and Teflon seat inserts permit the use of these valves in service temperatures as high as 400°F . Bolted bonnets, which are loosely assembled after factory testing, permit easy disassembly for soldering. Metal-to-metal alignment assures a perfect seal when bonnet is bolted.

A metal-to-metal back seat, when valve is fully open, permits repacking under pressure. A full floating swivel type seat holder and a durable Teflon seat insert assure long life and positive shut-off. The LPD Angle Valves are forged brass construction, and parts are interchangeable with comparable sizes of LPD globe line valves.

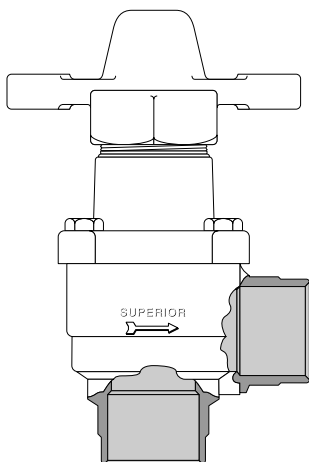
*LPD - Lowest pressure drop consistent with compact size.

LPD Globe Valves 290C Series



Catalog Number	IBCA Number	Size (Inches)		Weight (Pounds)
		Inlet	Outlet	
290C-14S	56461	$\frac{7}{8}$	$\frac{7}{8}$	3.25
291C-11S	56462	$1\frac{1}{8}$	$1\frac{1}{8}$	3.50
292C-13S	56463	$1\frac{3}{8}$	$1\frac{3}{8}$	7.00
293C-15S	56464	$1\frac{5}{8}$	$1\frac{5}{8}$	7.25
294C-21S	56465	$2\frac{1}{8}$	$2\frac{1}{8}$	14.25
295C-25S	56466	$2\frac{5}{8}$	$2\frac{5}{8}$	32.00
296C-31S	56467	$3\frac{1}{8}$	$3\frac{1}{8}$	32.25
297C-35S	56468	$3\frac{5}{8}$	$3\frac{5}{8}$	37.7

LPD Globe Angle Valves 190C Series



Catalog Number	IBCA Number	Size (Inches)		Weight (Pounds)
		Inlet	Outlet	
190C-14S	56362	$\frac{7}{8}$	$\frac{7}{8}$	2.75
191C-11S	56363	$1\frac{1}{8}$	$1\frac{1}{8}$	2.75
192C-13S	56364	$1\frac{3}{8}$	$1\frac{3}{8}$	6.00
193C-15S	56365	$1\frac{5}{8}$	$1\frac{5}{8}$	5.25



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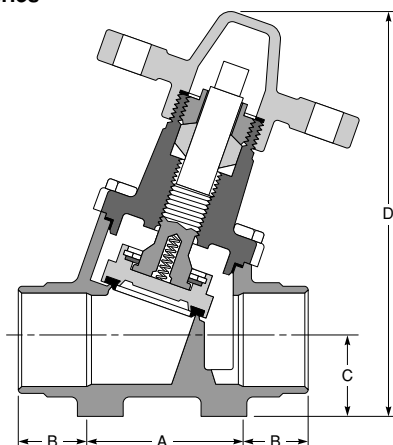
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LPD* Globe Valves Globe and Angle Valves

- Working Pressure: 500 psig
- Body Construction: Forged Brass or Brass and Copper
- Seat Material: Teflon
- Maximum Temperature: 400°F
- Minimum Temperature: -40°F
- Recommended Bolt Torque for Re-assembly: See Column "E"
- Globe Valves Are Suitable For Use With R-12, R-22, R-500, R-502, R-134A, R-123, R-125, R404A, R402B, and R402A. For Gases And Liquids Not Listed, Please Consult Factory.
- Metal-to-Metal Back Seat When Fully Open
- Can Repack Under Pressure
- Spare Parts List, pgs. 64-65

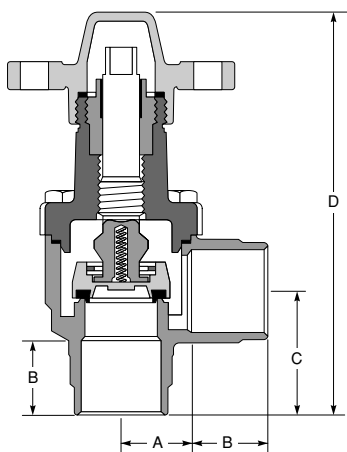
*LPD - Lowest pressure drop consistent with compact size.

LPD Globe Valves 290C Series



Catalog Number	Dimensions (Inches)				E (ft. lbs.)	C _V
	A	B	C	D		
290C-14S	1 ¹³ / ₁₆	1 ⁵ / ₁₆	3 ¹ / ₃₂	5 ¹ / ₄	12	10.60
291C-11S	1 ¹¹ / ₁₆	1	3 ¹ / ₃₂	5 ¹ / ₄	12	12.36
292C-13S	2 ⁵ / ₈	1 ¹ / ₁₆	1 ⁵ / ₁₆	7 ¹ / ₁₆	30	21.67
293C-15S	2 ⁵ / ₈	1 ¹ / ₁₆	1 ⁵ / ₁₆	7 ¹ / ₁₆	30	23.63
294C-21S	3 ³ / ₈	1 ¹ / ₂	1 ¹¹ / ₁₆	8	50	42.00
295C-25S	5 ¹ / ₈	1 ⁷ / ₈	2 ¹ / ₈	10	70	82.30
296C-31S	5 ¹ / ₈	1 ⁷ / ₈	2 ¹ / ₈	10	70	91.30
297C-35S	5 ¹ / ₈	1 ⁷ / ₈	2 ¹ / ₈	10	70	91.00

LPD Globe Angle Valves 190C Series



Catalog Number	Dimensions (Inches)				E (ft. lbs.)	C _V
	A	B	C	D		
190C-14S	1	1 ⁵ / ₁₆	1 ⁴¹ / ₆₄	5 ⁹ / ₁₆	12	—
191C-11S	1 ⁵ / ₁₆	1	1 ⁴¹ / ₆₄	5 ⁹ / ₁₆	12	15.15
192C-13S	1 ⁵ / ₁₆	1 ¹ / ₁₆	2	7 ¹¹ / ₃₂	30	—
193C-15S	1 ⁵ / ₁₆	1 ¹ / ₁₆	2	7 ¹¹ / ₃₂	30	—



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H-V Check Valves

Horizontal or Vertical Installation

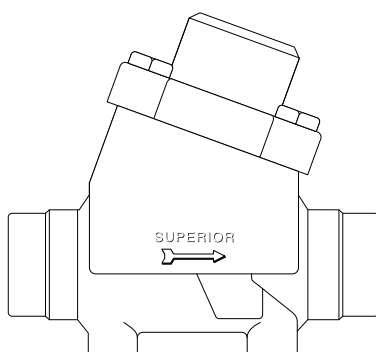
H-V Globe Check Valves

Globe check valves feature the time proven piston construction simplified for easy reassembly after soldering. The improved "C" series with special non-metallic bonnet gaskets and Teflon seat inserts permit the use of these valves in service temperatures as high as 400°F.

All H-V globe check valves are of all forged brass construction in the low pressure drop "Y" type design. Complete back pressure shutoff is achieved at low pressure. The angle style is forged brass or brass and copper construction, and parts are interchangeable with comparable size of line type.

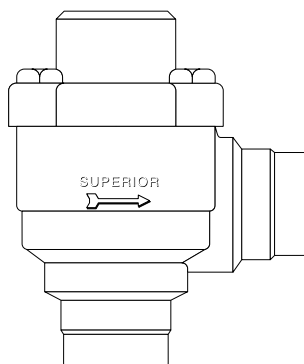
Note: Bolted bonnets are loosely assembled after testing to allow easy disassembly for soldering.

Line Check Valves



Catalog Number	IBCA Number	Size (Inches) ODS X ODS	Weight (Pounds)
Line Valve Type			
805C-14S	57348	7/8	2.50
806C-11S	57352	1 1/8	2.50
807C-13S	57336	1 3/8	5.00
808C-15S	57360	1 5/8	5.00
809C-21S	57364	2 1/8	12.75
884C-25S	57371	2 5/8	32.25
885C-31S	57372	3 1/8	32.25
886C-35S	57373	3 5/8	37.00

Angle Check Valves



Catalog Number	IBCA Number	Size (Inches) ODS X ODS	Tube Extensions	Weight (Pounds)
Angle Valve Type				
185C-14S	56355	7/8	No*	2.00
186C-11S	56356	1 1/8	No*	2.00
187C-13S	56358	1 3/8	No*	3.75
188C-15S	56359	1 5/8	No*	3.75

*Note: Can be supplied with tube extensions on special order for soldering into the line without disassembly.



Superior Refrigeration Products

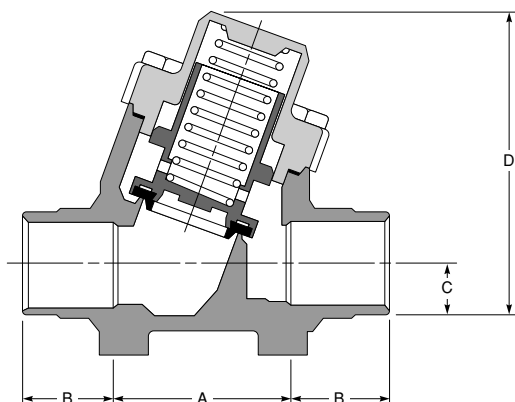
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H-V Check Valves Horizontal or Vertical Installation

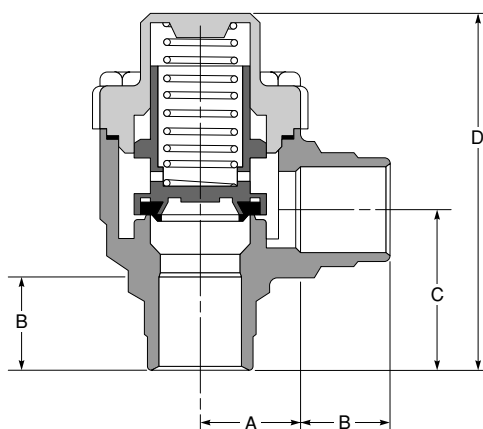
- Working Pressure: Up to 500 psig
- Construction: All Forged Brass
- Seat Material: Teflon
- Special Non-Metallic Bonnet Gasket
- Service Temperature Up to 400°F
- Low Pressure Drop "Y" Design
- Complete Back-Pressure Shut-Off at Low Pressure Differential
- Time Proven Piston Construction
- Install in Any Position But Upside Down
- Can Be Supplied With Tube Extensions, Thus Eliminating Disassembly
- U.L. and C-UL Recognized 805C Through 809C, File No. SA2989(N).
- Recommended Bolt Torque for Re-assembly, see Column "E"
- All Superior Check Valves are Suitable for Use With R11, R12, R22, R123, R125, R134A, R402A, R402B, R404A, R500, R502, and R507
- For Gases and Liquids Not Listed, Please Consult Factory.
- Spare Parts List, pgs. 64-65
- 1/2 lb. Differential Spring
- For Special Higher Differential Springs For All Check Valves, Please Consult Factory
- Suitable for Many Applications Such as Hot Gas Defrost

Line Check Valves



Catalog Number	Size	Dimensions (Inches)				E (ft. lb.)	C _V
		A	B	C	D		
805C-14S	7/8	1 13/16	1 5/16	3 1/32	3 19/32	12	10.60
806C-11S	1 1/8	1 11/16	1	3 1/32	3 19/32	12	12.36
807C-13S	1 3/8	2 5/8	1 1/16	1 5/16	4 9/16	30	21.67
808C-15S	1 5/8	2 5/8	1 1/16	1 5/16	4 9/16	30	23.63
809C-21S	2 1/8	3 3/8	1 1/2	1 1/16	5 7/8	50	42.00
884C-25S	2 5/8	5 1/8	1 7/8	2 1/8	7 3/4	70	82.30
885C-31S	3 1/8	5 1/8	1 7/8	2 1/8	7 3/4	70	91.30
886C-35S	3 5/8	5 1/8	1 7/8	2 1/8	7 3/4	70	91.00

Angle Check Valves



Catalog Number	Size	Dimensions (Inches)				E (ft. lb.)	C _V
		A	B	C	D		
185C-14S	7/8	1	1 5/16	1 4 1/64	3 43/64	12	—
186C-11S	1 1/8	1 5/16	1	1 4 1/64	3 43/64	12	15.15
187C-13S	1 3/8	1 5/16	1 1/16	2	4 7/16	30	—
188C-15S	1 5/8	1 5/16	1 1/16	2	4 7/16	30	—



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H-V Check Valves Horizontal or Vertical Installation

Type 802B Check Valves Series

(Patent 3,438,391)

This "Y" type of valve for years has been the most popular design in the refrigeration industry. The internal parts can easily be removed and reassembled after soldering. This basic "Y" type design reduces pressure drop to a very low level.

The Teflon seat insert rapidly conforms to the cone type of seating surface in the body. This

insures positive shut-off characteristics.

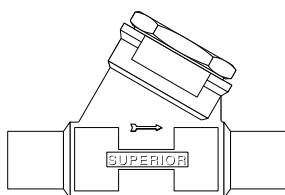
This valve minimizes leakage even at the lowest back pressure. A specially designed secondary seat backs up the primary seat, after approximately 10,000 cycles of operation the secondary seat becomes effective. This is done to insure even better shut-off characteristics as the valve wears into service.

Upon reassembly of the valve, positive shut-off

between the body cap and the body is assured by means of a special gasket seal.

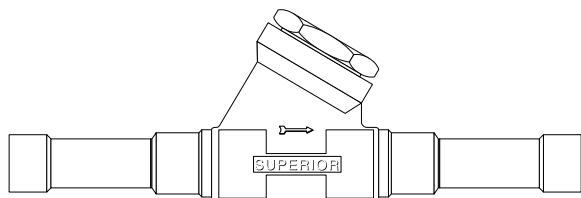
All Superior check valves have Teflon seats. These valves may be installed in any position, except upside down. U. L. and C-UL recognized 1/4" through 2 1/8".

Type 802B Check Valve Series



Catalog Number	IBCA Number	Size (Inches)	Weight (Pounds)
Flare X Flare			
802B-4	57328	1/4	0.50
802B-6	57331	3/8	0.50
802B-8	57334	1/2	0.50
ODS X ODS			
802B-4S	57329	1/4	0.50
802B-6S	57332	3/8	0.50
802B-8S	57335	1/2	0.50
803B-10S	57340	5/8	0.50
804A-14S	57344	7/8	1.00

Type 802B Check Valve Series ODS X ODS Tube Extensions*



Catalog Number	IBCA Number	Size (Inches)	Weight (Pounds)
802B-4ST	57330	1/4	0.50
802B-6ST	57333	3/8	0.50
802B-8ST	57336	1/2	0.75
803B-10ST	57341	5/8	0.75
804A-14ST	57345	7/8	1.00

*Tube extensions permit valve to be silver soldered directly to line without disassembly.



Superior Refrigeration Products

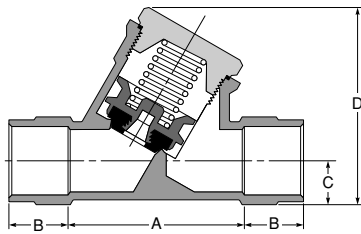
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H-V Check Valves Horizontal or Vertical Installation

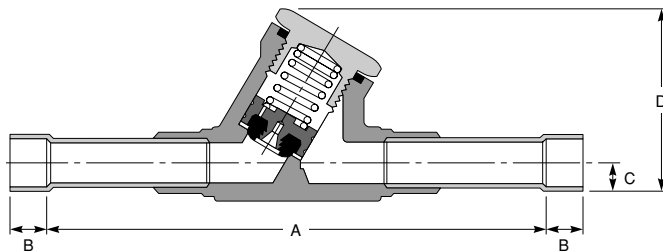
- Working Pressure: Up to 500 psig
- Construction: All Forged Brass
- Seat Material: Teflon
- Specially Designed Secondary Seat Backs Up Primary Seat
- Copper Gasket Between Body Cap and Body Assures Positive Shut-off
- Minimum Temperature: -40°F
- Maximum Temperature: 400°F
- Low Pressure Drop "Y" Design
- Tube Extensions Permit Valve to be Soldered Without Disassembly
- All U.L. and C-UL Recognized, File No. SA2989(N).
- Patent No. 3,438,391
- Recommended Bonnet Torque:
802/803 35 ft. lbs.
804 65 ft. lbs.
- All Superior Check Valves are Suitable for Use With R11, R12, R22, R123, R125, R134A, R402A, R402B, R404A, R500, R502, and R507
- For Gases and Liquids Not Listed, Please Consult Factory.
- Spare Parts List, pgs. 64-65
- For Special Higher Differential Springs For All Check Valves, Please Consult Factory
- Suitable for Many Applications Such as Hot Gas Defrost

Type 802B Check Valve Series



Catalog Number	Size	Dimensions (Inches)				C _V
		A	B	C	D	
Flare X Flare						
802B-4	1/4	2	1/2	15/32	2 1/16	N/A
802B-6	3/8	1 3/4	5/8	15/32	2 1/16	1.75
802B-8	1/2	1 1/2	3/4	15/32	2 1/16	3.2
ODS X ODS						
802B-4S	1/4	2 3/8	5/16	15/32	2 1/16	N/A
802B-6S	3/8	2 1/8	7/16	15/32	2 1/16	1.75
802B-8S	1/2	1 7/8	9/16	15/32	2 1/16	3.2
803B-10S	5/8	2	2 1/32	15/32	2 1/16	3.8
804A-14S	7/8	2 1/4	3/4	19/32	2 9/16	8.5

Type 802B Check Valve Series



Catalog Number	Size	Dimensions (Inches)				C _V
		A	B	C	D	
802B-4ST	1/4	5 5/8	5/16	15/32	2 1/16	N/A
802B-6ST	3/8	5 3/8	3/8	15/32	2 1/16	1.75
802B-8ST	1/2	5 3/16	3/8	15/32	2 1/16	3.2
803B-10ST	5/8	5 13/16	1/2	15/32	2 1/16	3.8
804A-14ST	7/8	6 1/4	3/4	19/32	2 9/16	8.5



Superior Refrigeration Products

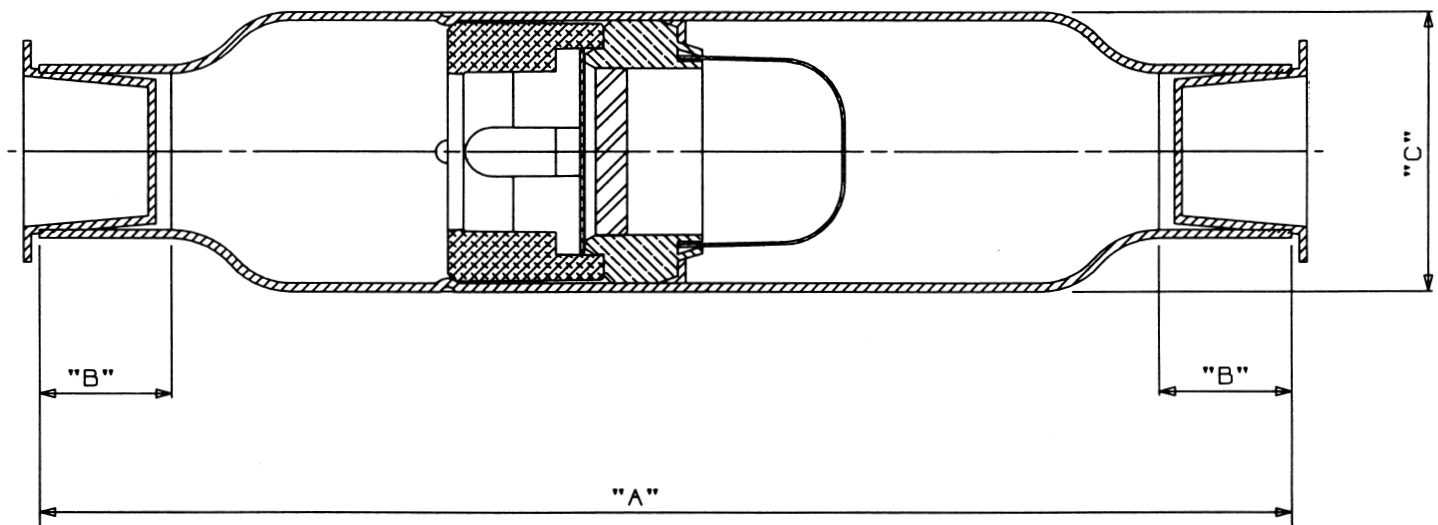
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900M Series

In-Line Check Valve

- Copper connection sizes $\frac{1}{4}$ " through $\frac{7}{8}$ ".
- Hermetically sealed spun copper body.
- 30 mesh screen to protect seat surface from debris.
- "Lapped" stainless steel disc and "lapped" brass seat assembly.
- Magnetic Actuation.
- Arrow indicates direction of flow.
- Minimal Pressure Drop.
- U.L. and C-U.L. Recognized, File No. SA2989(N)



Specifications

Catalog Number	IBCA Number	Nominal Size (in.)	Approximate Weight (lbs)	Dimensions			Strainer Mesh	Maximum Working Pressure	Maximum Working Pressure (kPa)	Burst Pressure (PSIG)	Cv	Leak Rate ccm/sec @ 60 psi
				Length A (in.)	Cup/Depth B (in.)	Diameter C (in.)						
900M-4S	60401	$\frac{1}{4}$	0.20	4.00	0.325	0.875	30	800	5516	4000	0.48	4.1 X 10-3
900M-6S	60402	$\frac{3}{8}$	0.20	4.00	0.385	0.875	30	800	5516	4000	1.38	4.1 X 10-3
900M-8S	60403	$\frac{1}{2}$	0.50	5.00	0.385	1.000	30	640	4413	3200	2.53	9.3 X 10-3
900M-10S	60404	$\frac{5}{8}$	0.50	5.00	0.530	1.000	30	640	4413	3200	4.59	9.3 X 10-3
900M-12S	60405	$\frac{3}{4}$	0.80	7.00	0.655	1.625	30	560	3861	2800	5.35	2.0 X 10-2
900M-14S	60406	$\frac{7}{8}$	0.80	7.00	0.780	1.625	30	560	3861	2800	8.05	2.0 X 10-2

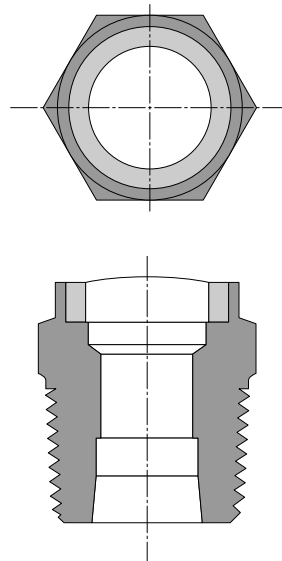
Contact Factory for Information on Larger Sizes.



Liquid Indicators and Sight Glasses

Bull's Eye Sight Glass

A sight glass for oil, liquid or gas.



Catalog Number	IBCA Number	NPT Size (Inches)	Weight (Pounds)
6433*	57241	1/2	1/4
6433-E	57244	3/4	1/4
6433S-G	57245	1 1/4	3/4
6433x1**	57871	1/2	1/4
819	57366	1 1/4	.84

Catalog Number	IBCA Number	Connections	Overall Length	Weight (Pounds)
50-10S	56899	5/8" ODS x 5/8" ODS	4 7/8"	1/4"

*With Flow Indicator

**With Red Flow Indicator



INTEGRA-SEAL® Dual Pressure Relief Valve Assembly Series 3155W

The Series 3155W Dual Pressure Relief Valve Assembly is a next generation product incorporating Superior's proven **INTEGRA-SEAL®** welded ball valve technology to further safeguard your system in the event of a pressure relief valve discharge.

This product provides you with the ability to maintain protection of your system with a back up pressure relief valve while enabling you to replace the other relief valve - all without dropping system pressure!

The new line of **INTEGRA-SEAL®** ball valves employs the latest robotic welding technology, and the valves have full size ports for unrestricted flow. Every continuous welded body joint is 100% factory tested to ensure positive leak-free performance.

Dual Teflon ball seals surround a polished brass ball at each end. A secondary seal becomes effective if foreign material scores the primary seal ... even unfavorable conditions such as compressor burnout—a Superior exclusive.

The Series 3155W Dual Pressure Relief Valve Assembly is constructed using an all forged brass body. High flow internals maximize flow capacity, another Superior exclusive. The stem and cap of the Series 3155W is located on the side of the valve to provide easy access with a wrench. Our time-tested seal cap design permits valve operation without seal cap removal, and stamped flow direction indicators on the seal cap indicate pressurized port at a glance.

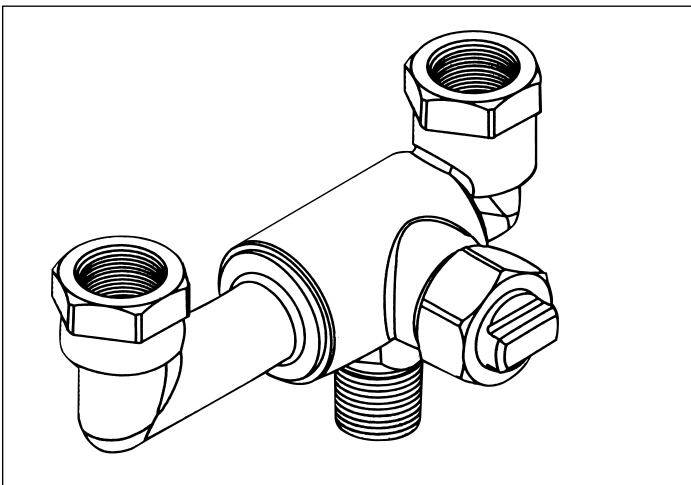
Mechanical internal machined stops ensure positive open or closed seal position with only a ¼ turn.

The Series 3155W incorporates a dual stem seal design utilizing Teflon packing compressed by an internal packing nut forming the primary seal. The unique seal cap design permits valve operation without removal of the seal cap and uses Teflon gaskets to provide a secondary seal—a third Superior exclusive. There are no synthetic "O" rings.

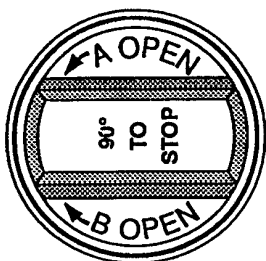
US Patent No. 5,671,911

Catalog Number	IBCA Number	Size (Inches) Inlet Connection (MPT)	Outlet Connection (FPT)	Ball Port Diameter	Weight (Pounds)
3155W-D	59526	½	½	.563 (14.30 mm)	1.5
3155W-E	60276	¾	¾	.75 (19.05 mm)	3.2
3155W-F	60277	1	1	1.00 (25.40 mm)	6.9

INTEGRA-SEAL® Series 3155W



Seal Cap



Seal Cap

Exclusive Seal Cap design permits operation of valve without removal. Markings on cap top designates at-a-glance pressurized port.



Superior Refrigeration Products

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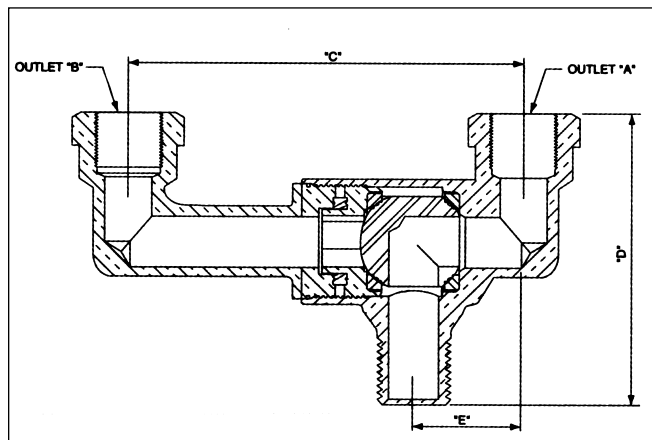
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INTEGRA-SEAL® Dual Pressure Relief Valve Assembly Series 3155W

- High flow internals for maximum flow capacity. A Superior exclusive!
- **INTEGRA-SEAL®** welded ball valve design allows removal or replacement of either relief valve while system is still pressurized, without loss of charge!
- Proven seal cap and stem design. No synthetic O-ring seal. Cap design permits valve operation without seal cap removal.
- The male inlet connection allows for easy installation onto receiver. No need for male adapters!
- Flow direction indicator on seal cap. Mechanical internal machined stops ensure positive open or closed seal position. Full open or close with only a ¼ turn.
- Dual Teflon ball seals at each end—secondary seal becomes effective if foreign material scores the primary seal. Another Superior exclusive!
- Every valve is 100% factory sealed and leak tested.
- Full refrigeration service temperature range of -40°F to +325°F (-40°C to +163°C). Design working pressure of 500 psig (34.47 bar).
- All forged brass body and polished brass ball.
- U. L. and C-UL Listed. File No. 3462 (N)
- All **INTEGRA-SEAL®** ball valves are suitable for use with R11, R12, R22, R123, R125, R1342, R402A, R402B, R404A, R500, R502, and R507. For gases or liquids not listed, please consult factory. US Patent No. 5,671,911

Catalog Number	Dimensions (Inches)			CV Port	
	C	D	E	Outlet A	Outlet B
3155W-D	4.69 (119.12mm)	3.350 (85.09mm)	1.26 (31.93mm)	5.629	5.556
3155W-E	5.31 (134.87mm)	3.90 (99.06mm)	1.49 (37.85mm)		
3155W-F	6.26 (159.0mm)	5.09 (129.29mm)	1.93 (49.02mm)		

INTEGRA-SEAL® Series 3155W



Use 3155W-D with Superior Relief Valves

Catalog No. 3020	½" MPTx¾" SAE
Catalog No. 3220	½" MPTx¾" SAE Angle

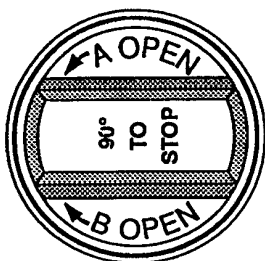
Use 3155W-E with Superior Relief Valves

Catalog No. 3030	½" NPTx½" FPT
Catalog No. 3045	¾" NPTx¾" FPT

Use 3155W-F with Superior Relief Valves

Catalog No. 3060	1" NPTx1" FPT
Catalog No. 3060x1	1" NPTx1¼" FPT

Seal Cap



Seal Cap

Exclusive Seal Cap design permits operation of valve without removal. Markings on cap top designates at-a-glance pressurized port.



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Pressure Relief Valves

“A” Series

Contact factory for information on internal compressor relief valve, series 5700.

Superior offers the most complete range of refrigeration relief valves in the industry. All valves have been designed, constructed and rated in accordance with ANSI/ASHRAE 15 Standard Safety Code for Mechanical Refrigeration and the Canadian Standards Association.

Each valve is stamped U.V./N.B. to indicate National Board certifications as to capacities. Certified National Board ratings are printed on the next page.

Minimum setting for all relief valves listed is 150 psi. These “A” series pressure relief valves are all Teflon seated, permitting their use in applications of either high or low

temperatures where many times the conventional rubber seated valves are completely unsatisfactory.

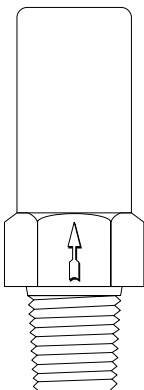
Catalog numbers indicate style and size of relief valve only - customer must specify pressure setting when ordering. Standard settings are 235, 300, 350, 400, 425, and 450 psig; settings from 150 up to 450 psig with certified discharge capacities are available at a slight additional cost.

Note: Prior to installation or during pressure vessel testing, Superior pressure relief valves should not be discharged. Any dirt in the system may embed in the seat and

prevent the pressure relief valve from resealing properly.

Important: A pressure relief valve is installed in a refrigeration system primarily to protect the receiver. Since it is not intended to be an overload or high pressure cutout, we recommend that the pressure relief valve be set at the working pressure marked on the receiver, regardless of the type of refrigerant used. The method for determining “set pressure” is outlined in ANSI/ASHRAE 15 Standard Safety Code for Mechanical Refrigeration, or write for Technical Bulletin 77-28-90.

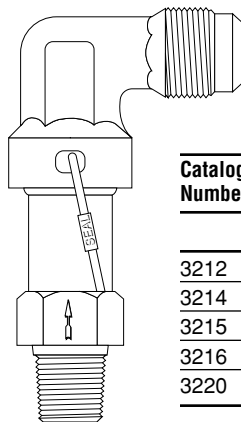
Atmospheric – Type 3000A



Catalog Number	Port Diameter	Size (Inches)		Weight (lb.)
		Inlet	Outlet	
NPT X				
3000	3/16	1/8	*	.25
3001	3/16	1/4	*	.25
3002	3/16	3/8	*	.25

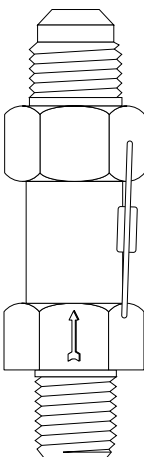
*Atmospheric – No External Connection

Angle – Type 3212A



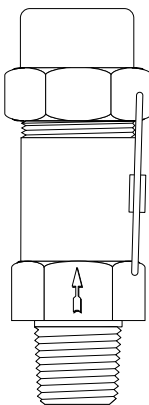
Catalog Number	Port Diameter	Size (Inches)		Weight (lb.)
		Inlet	Outlet	
		NPT	X SAE	
3212	3/16	1/4	3/8	.50
3214	3/16	3/8	3/8	.50
3215	3/16	3/8	1/2	.50
3216	9/32	3/8	1/2	.75
3220	9/32	1/2	5/8	.75

Straight-thru – Type 3012A



Catalog Number	Port Diameter	Size (Inches)		Weight (lb.)
		Inlet	Outlet	
		NPT	X SAE	
3012	3/16	1/4	3/8	.25
3014	3/16	3/8	3/8	.25
3015	3/16	3/8	1/2	.25
3016	9/32	3/8	1/2	.50
3020	9/32	1/2	5/8	.50

Female Connection – Type 3030A/3060A



Catalog Number	Port Diameter	Size (Inches)		Weight (lb.)
		Inlet	Outlet	
		NPT	X FPT	
3030	7/16	1/2	1/2	.75
3045	7/16	3/4	3/4	.75
3060	23/32	1	1	2.50
3075	23/32	1 1/4	1 1/4	2.75

Note: For I.B.C.A. Numbers, Consult Factory



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Pressure Relief Valves “A” Series

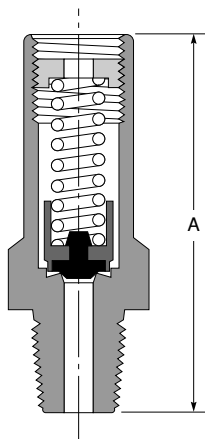
Contact factory for pressure settings above 500 psi.

- Minimum Setting: 150 psig
- Body Construction: Brass
- Seat Material: 100% Teflon
- Spring Material: Stainless Steel
- Minimum Temperature: -40°F
- Maximum Temperature: 325°F
- Initial Leak: Set Pressure ±3%
- Full Discharge: Initial Leak +10%
- Reseat: By 80% of Set Pressure
- ASME Certificate No.: 16,619
- Canadian Registration No.: 0G1043.5
- C.S.A. File No.: LR32768
- N.B. Certificate Nos.

3000A Series M54009
3020A Series M54010
3030A Series M54021
3060A Series M54032

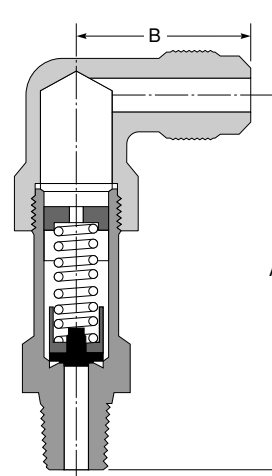
Discharge capacities shown in pounds air per minute.
To convert pounds air per minute to standard cubic feet per minute multiply by 13.1.

Atmospheric – Type 3000A



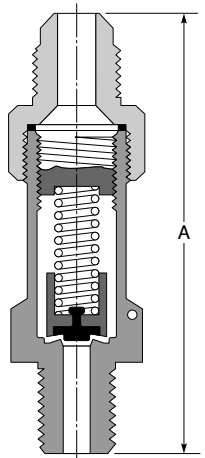
Pressure Setting	Discharge Capacity 3000, 3001, 3002
235	8.1
300	10.2
350	11.8
400	13.5
425	14.3
450	15.1
Dimensions (Inches)	
Catalog Number	A
3000	2 ⁵ / ₆₄
3001	2 ¹⁹ / ₆₄
3002	2 ¹³ / ₆₄

Angle – Type 3212A



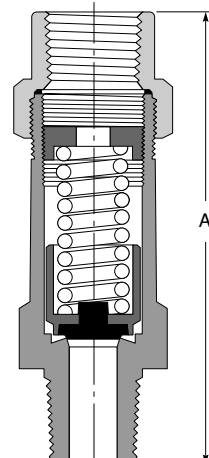
Pressure Setting	Discharge Capacity 3212, 3214, 3215	3216, 3220
235	8.1	16.1
300	10.2	20.3
350	11.8	23.6
400	13.5	26.8
425	14.3	28.4
450	15.1	30.1
Dimensions (Inches)		
Catalog Number	A	B
3212	2 ⁵⁹ / ₆₄	1 ¹³ / ₃₂
3214	2 ⁵⁹ / ₆₄	1 ¹³ / ₃₂
3215	2 ⁵⁹ / ₆₄	1 ¹³ / ₃₂
3216	2 ²¹ / ₃₂	1 ¹ / ₂
3220	2 ²⁷ / ₃₂	1 ⁵ / ₈

Straight-thru – Type 3012A



Pressure Setting	Discharge Capacity 3012, 3014, 3015	3016, 3020
235	8.1	16.1
300	10.2	20.3
350	11.8	23.6
400	13.5	26.8
425	14.3	28.4
450	15.1	30.1
Dimensions (Inches)		
Catalog Number	A	
3012	2 ⁶³ / ₆₄	
3014	2 ⁶³ / ₆₄	
3015	3 ⁷ / ₆₄	
3016	3 ⁸ / ₃₂	
3020	3 ¹ / ₂	

Female Connection – Type 3030A/3060A



Pressure Setting	Discharge Capacity 3030, 3045	3060, 3075
235	36.9	88.0
300	46.6	111.0
350	54.0	*
400	61.4	*
425	65.1	*
450	68.8	*
Dimensions (Inches)		
Catalog Number	A	
3030	3 ¹¹ / ₁₆	
3045	4	
3060	4 ⁷ / ₈	
3075	5 ¹ / ₈	

*Consult Factory for pressure settings above 300 psi.



Relief Valve Capacity Equations

■ To select a pressure relief valve it is necessary first to determine the discharge capacity required to protect the refrigerant-containing vessel under consideration. The ANSI/ASHRAE Standard 15 states that the required discharge capacity of a pressure relief valve used on such a vessel is directly proportional to the size of the vessel. Once the size of the vessel to be protected is known, the required discharge capacity of the pressure relief valve may then be determined by using the following formula:

$$C = fDL$$

Where C = minimum required discharge capacity of the pressure relief device in pounds of air per minute (kg/sec).
f = factor dependent upon type of refrigerant¹.
(See Table 1 below)
D = outside diameter of vessel in feet (m).
L = length of vessel in ft (m).

Table 1

Refrigerant

Value of f

*When used on the lowside of a limited-charge cascade system
(Value in parentheses is metric):*

R-23, R-170, R-744, R-1150, R-508A, R-508B	1.0(0.082)
R-13, R-13B1, R-503	2.0(0.163)
R-14	2.5(0.203)
<i>Other applications:</i>	
R-718	0.2(0.016)
R-717	0.5(0.041)
R-11, R-32, R-113, R-123, R-142b R-152a, R-290, R-600, R-600a, R-764	1.0(0.082)
R-12, R-22, R-114, R-124, R-134a, R-401A, R-401B, R-401C, R-405A, R-406A, R-407C R-407D, R-407E, R-409A, R-409B, R-411A, R-411B, R-411C, R-412A, R-414A, R-414B, R-500, R-1270	1.6(0.131)
R-143a, R-402B, R-403A, R-407A, R-408A, R-413A	2.0(0.163)
R-115, R-402A, R-403B, R-404A, R-407B, R-410A, R-410B, R-502, R-507A, R-509A	2.5(0.203)

■ Flow capacities of Superior pressure relief valves are expressed in either pounds of air per minute or standard cubic feet per minute. To convert pounds of air per minute to standard cubic feet per minute, multiply by 13.1.

To determine the pressure relief valve capacities at any pressure setting between 150 and 450 psig, use the following formula:

$$C = S(1.1P + 14.7)$$

Where C = Pressure relief valve capacity in pounds of air per minute.
P = Pressure setting of relief valve in psig.
S = Pressure relief valve flow factor.

Value of "S" flow factor for each pressure relief valve series are given in Table 2. Table 2 below gives the certified flow ratings in lbs air/min for all of the pressure relief valve series at the standard pressure settings.

Table 2

CERTIFIED FLOW RATINGS - for standard settings

Flow capacity as determined by the National Board of Boiler and Pressure Vessel Inspectors in accordance with A.S.M.E. Code, Section VIII, Division 1, and as required by ANSI/ASHRAE Standard 15: Safety Code For Mechanical Refrigeration.

Series		3000A	3020A	3030A	3060A
Flow Factor "S"		0.0296	0.059	0.135	0.322
Catalog No.		3000 3015	3016	3030	3060
		3001 3212	3020	3045	3075
		3002 3214	3216		
		3012 3215	3220		
Pressure Setting psig	235	8.1	16.1	36.9	88.0
	300	10.2	20.3	46.6	111.0
	350	11.8	23.6	54.0	
	400	13.5	26.8	61.4	
	425	14.3	28.4	65.1	
	450	15.1	30.1	68.8	

1. These values are taken directly from ANSI/ASHRAE Standard 15-1994, Section 9.7.5 and ANSI/ASHRAE 15c-2000, addendum to 15-1994.



Packed Angle Valves

Packed line valves are designed for a multitude of uses in refrigeration systems. When installed properly, these handy, forged brass, packed angle valves provide easy accessibility, and serviceability for the refrigeration system. All packed angle valves are provided with a brass seal cap.

The 605 series special receiver valve can be furnished with or without copper tube extensions. The tube extensions allow the valve to be silver-soldered into the line without fear of harming the packing. Valves supplied with tube extensions are recommended for liquid line use only.

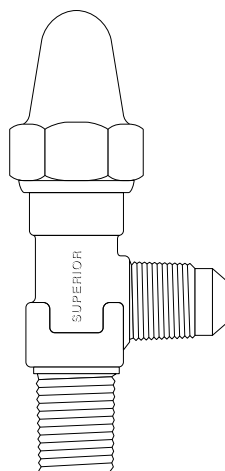
The 617A series charging and purging valves are designed to be installed on the branch or run of a solder-type tee. The valve can be readily positioned for easy access. These valves are shipped loosely assembled for easy removal of parts prior to soldering. Reassemble after installation with a standard $\frac{3}{8}$ " square wrench.

Specialty packed angle valves are designed specifically for the Refrigeration Rack industry. The 600AX7-JB is designed for use with the transducer, and offers connections to monitor and verify transducer

readings and pressures. The 600B-6U6 Oil Leveler valve offers a $\frac{3}{8}$ " SAE flare swivel for mounting on the oil leveler and a $\frac{3}{8}$ " SAE side outlet for oil line connection. The 600B-4U4 SORIT or EPR Pilot Isolation valve uses the same type of connections, in $\frac{1}{4}$ " SAE, as the 600B-6U6. The valve is designed for an inlet connection to the EPR or SORIT valve, and the outlet to connect to the pilot line of the suction header.

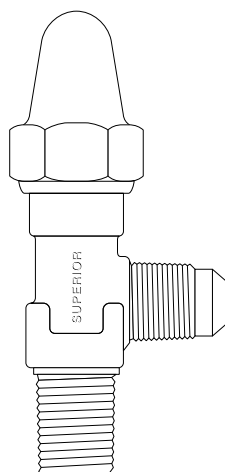
All Superior packed angle valves incorporate a special packing that has been developed for use with all refrigerants.

Packed Angle Valves - 600A Series



Catalog Number	IBCA Number	Size (Inches)			Socket for OD Tubing	Weight (Pounds)
		Bottom Inlet	Side Outlet			
		NPT	X	SAE		
600A-4B	57094	$\frac{1}{4}$	$\frac{1}{4}$	$\frac{1}{4}$		0.25
600A-4C	57095	$\frac{3}{8}$	$\frac{1}{4}$	$\frac{3}{8}$		0.25
600A-6B	57099	$\frac{1}{4}$	$\frac{3}{8}$	$\frac{1}{4}$		0.25
600A-6C	57100	$\frac{3}{8}$	$\frac{3}{8}$	$\frac{3}{8}$		0.25

Packed Angle Receiver Valves - 605 Series



Catalog Number	IBCA Number	Size (Inches)			Socket for OD Tubing	Weight (Pounds)
		Bottom Inlet	Side Outlet			
		NPT	X	SAE		
605-6D	57112	$\frac{1}{2}$	$\frac{3}{8}$	$\frac{1}{2}$		0.50
605-8B	57113	$\frac{1}{4}$	$\frac{1}{2}$	$\frac{1}{4}$		0.50
605-8C	57114	$\frac{3}{8}$	$\frac{1}{2}$	$\frac{3}{8}$		0.50
605-8D	57115	$\frac{1}{2}$	$\frac{1}{2}$	$\frac{1}{2}$		0.50
606B-10D*	57119	$\frac{1}{2}$	$\frac{5}{8}$	$\frac{1}{2}$		0.50
		NPT	X	FPT		
605-KB	57109	$\frac{1}{4}$	$\frac{1}{4}$	$\frac{1}{4}$		0.50
		NPT	X	ODS		
605-10S	57110	$\frac{1}{2}$	$\frac{5}{8}$	$\frac{5}{8}$		0.50
607-14S	57134	$\frac{3}{4}$	$\frac{7}{8}$	$\frac{5}{8}$		1.25

*Special Request - Consult Factory for Minimum Lot Size and Availability.



Superior Refrigeration Products

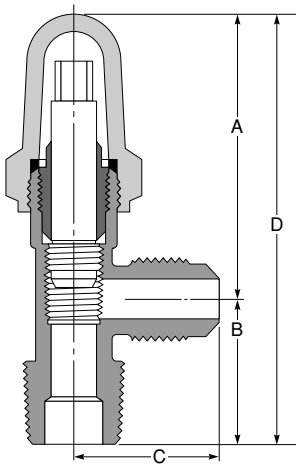
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Packed Angle Valves

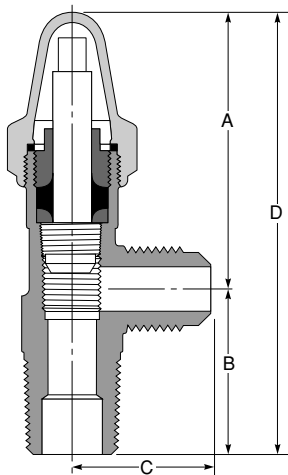
- Working Pressure: 500 psig
- Maximum Temperature: 300°F
- Minimum Temperature: -40°F
- Body Construction: Forged Brass
- Seal Cap Construction: Brass with Copper Gasket or Nylon Gasket
- U.L. and C-UL Listed File No. SA3462(N)
- Schrader Core on 600AX7-JB must be removed prior to soldering.
- All Packed Angle Valves are suitable for use with R11, R12, R22, R123, R125, R134A, R402A, R402B, R404A, R500, R502, and R507. For gases and liquids not listed, please consult factory.
- Spare Parts List, pgs. 64-65

Packed Angle Valves - 600A Series



Catalog Number	Dimensions (Inches)			
	A	B	C	D
600A-4B	2 ³ / ₃₂	1 ¹ / ₃₂	1 ¹ / ₃₂	3 ¹ / ₈
600A-4C	2 ³ / ₃₂	1 ¹ / ₃₂	1 ¹ / ₃₂	3 ¹ / ₈
600A-6B	2 ³ / ₃₂	1 ¹ / ₃₂	1 ¹ / ₃₂	3 ¹ / ₈
600A-6C	2 ³ / ₃₂	1 ¹ / ₃₂	1 ¹ / ₃₂	3 ¹ / ₈

Packed Angle Receiver Valves - 605 Series



Catalog Number	Dimensions (Inches)			
	A	B	C	D
605-6D	2 ¹ / ₂	1 ¹⁵ / ₃₂	1 ⁵ / ₁₆	3 ²¹ / ₃₂
605-8B	2 ¹ / ₂	1 ¹⁵ / ₃₂	1 ⁵ / ₁₆	3 ³¹ / ₃₂
605-8C	2 ¹ / ₂	1 ¹⁵ / ₃₂	1 ⁵ / ₁₆	3 ³¹ / ₃₂
605-8D	2 ¹ / ₂	1 ¹⁵ / ₃₂	1 ⁵ / ₁₆	3 ³¹ / ₃₂
605-10S	2 ¹ / ₂	1 ¹⁵ / ₃₂	1 ⁵ / ₁₆	3 ³¹ / ₃₂
605-KB	2 ¹ / ₂	1 ¹⁵ / ₃₂	1 ¹ / ₄	3 ³¹ / ₃₂
607-14S	3	1 ³ / ₄	1 ⁷ / ₁₆	4 ³ / ₄
606B-10D†	2 ⁵ / ₈	1 ³ / ₄	1 ⁷ / ₁₆	4 ³ / ₈

†Special Request - Consult Factory for Minimum Lot Size and Availability.

†Backseating Design



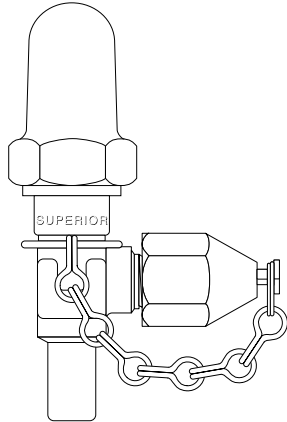
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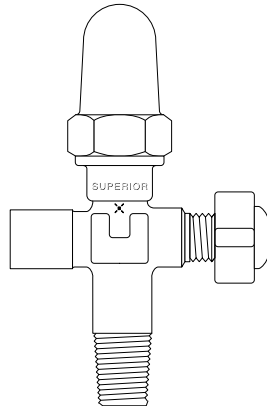
Packed Angle Valves

Packed Angle Charging and Purging Valves - 617A Series



Catalog Number	IBCA Number	Size (Inches)			Weight (Pounds)
		Bottom Inlet	Side Outlet		
		ODS	X	SAE	
617A-4S4	57163	1/4		1/4	0.25
617A-6S4	57164	3/8		1/4	0.25
617A-6S6	57165	3/8		3/8	0.25
617A-8S4	57166	1/2		1/4	0.375
617A-8S6	57167	1/2		3/8	0.375
617A-10S4	57161	5/8		1/4	0.375
617A-10S6	57162	5/8		3/8	0.375

Transducer Valve

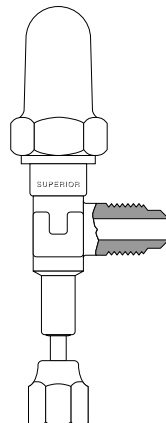


Catalog Number	IBCA Number	Inlet	Size (Inches)			Weight (Pounds)
			Outlet*		Outlet †	
		NPT/ODS	X	FPT	X	SAE
600AX7-JB	57107	¼		⅛		¼
						0.25

* 1/8" FPT Female Side Connection for Transducer Fitting Used to Monitor Pressure

† 1/4" SAE Flare Side Connection with Schrader Core for Manual Pressure Check with Gauge to Verify Transducer Readings

Oil Leveler/SORIT or EPR Pilot Isolation Valve



Catalog Number	IBCA Number	Size (Inches)			Weight (Pounds)
		Bottom Inlet	Side Outlet		
		fSAE	X	mSAE	
600B-4U4	59252	1/4		1/4	0.375
600B-6U6	59253	3/8		3/8	0.375



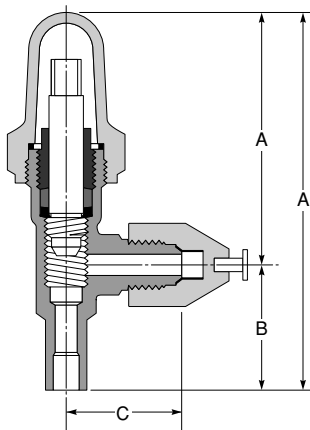
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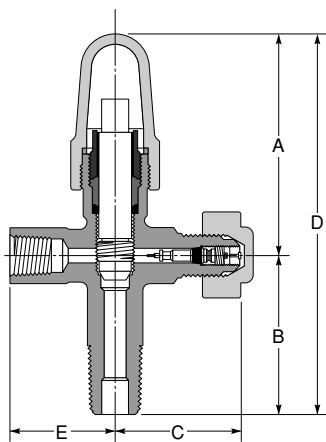
Packed Angle Valves

Packed Angle Charging and Purging Valves - 617A Series



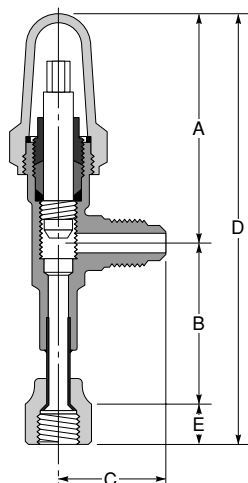
Catalog Number	Dimensions (Inches)			
	A	B	C	D
617A-4S4	2 ³ / ₃₂	1 ¹ / ₃₂	3 ¹ / ₃₂	3 ¹ / ₈
617A-6S4	2 ³ / ₃₂	1 ¹ / ₃₂	3 ¹ / ₃₂	3 ¹ / ₈
617A-6S6	2 ³ / ₃₂	1 ¹ / ₃₂	1 ³ / ₃₂	3 ¹ / ₈
617A-8S4	2 ³ / ₃₂	1 ¹ / ₃₂	3 ¹ / ₃₂	3 ¹ / ₈
617A-8S6	2 ³ / ₃₂	1 ¹ / ₃₂	1 ³ / ₃₂	3 ¹ / ₈
617A-10S4	2 ³ / ₃₂	1 ¹ / ₃₂	3 ¹ / ₃₂	3 ¹ / ₈
617A-10S6	2 ³ / ₃₂	1 ¹ / ₃₂	1 ³ / ₃₂	3 ¹ / ₈

Transducer Valve



Catalog Number	Dimensions (Inches)				
	A	B	C	D	E
600AX7-JB	2 ³ / ₃₂	1 ¹ / ₂	1 ⁵ / ₃₂	3 ¹⁹ / ₃₂	1

Oil Leveler/SORIT or EPR Pilot Isolation Valve



Catalog Number	Dimensions (Inches)				
	A	B	C	D	E
600B-4U4	2 ³ / ₃₂	1 ³¹ / ₃₂	1 ¹ / ₃₂	4 ¹⁵ / ₃₂	1 ³ / ₃₂
600B-6U6	2 ³ / ₃₂	1 ³¹ / ₃₂	1 ¹ / ₃₂	4 ¹⁹ / ₃₂	1 ⁷ / ₃₂

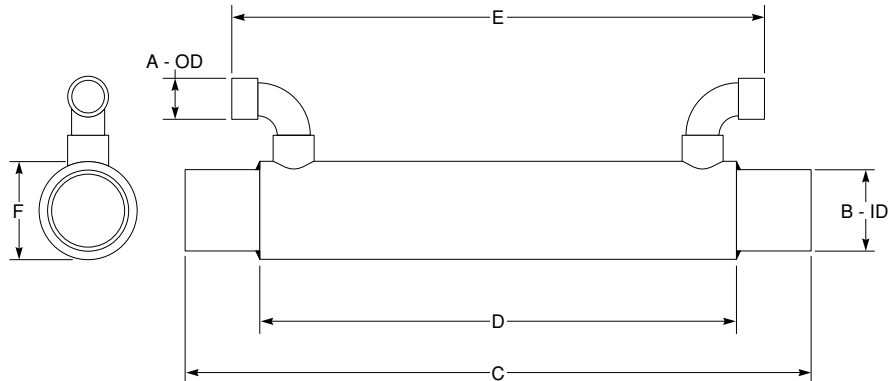


Straight Tube Heat Exchangers

Superheater II Features and Specifications

Superheater II straight tube heat exchangers include a range of internal straight fluted suction tubes from one to eight.

Superheater II heat exchangers are designed to permit a system engineer to select a specific heat exchanger model to provide a controlled amount of subcooling, and/or superheat, for any given refrigerant. Refer to Superior's "**Superheater II** Selection Guide" for selecting the proper model series graph for the appropriate refrigerant. The Selection/Performance curves plot subcooling versus evaporator capacity in BTUs per hour. Call or write the factory for our selection guide.



Features:

- All Copper Construction
- High Temperature Brazed Joints
- Exclusive Heat Transfer Surface
- Engineered for Subcooling Control
- Selected Performance for Specific Refrigerants
- U.L. Listed

Catalog Number	IBCA Number	ODS Connections		Nominal Horsepower	Over-all Length C (in.)	Shell Length D (in.)	E (in.)	Shell Diameter F (in.)	G (in.)	Approximate Weight (lbs.)	Suction Tube O.D. (in.)	Number of Tubes	Suction Gross Section Area (in. ²)	Suction Surface Area (ft ²)	Liquid Volume (in. ³)
		Liquid A (in.)	Suction B (in.)												
HXSV-1/2	51029	1/4	1/2	1/2	11 1/2	10	10 1/2	7/8	3/4	3/4	5/8	1	0.233	0.135	1.77
HXSV-3/4	51098	3/8	5/8	3/4	11 3/4	10	10 1/2	1 1/8	7/8	1	7/8	1	0.484	0.190	2.24
HXSV-1	51090	3/8	5/8	1	13 3/4	12	12 1/2	1 1/8	7/8	1 1/4	7/8	1	0.484	0.229	2.68
HXSV-1 1/2	51091	3/8	7/8	1 1/2	14 1/2	12	12 1/2	1 3/8	1 1/4	1 3/4	1 1/8	1	0.825	0.294	3.19
HXSV-2	51095	3/8	1 1/8	2	15	12	12 1/2	1 5/8	1 1/2	2 1/4	1 3/8	1	1.26	0.360	3.54
HXSV-3	51097	1/2	1 1/8	3	15	12	12 1/2	1 5/8	1 1/2	2 1/4	1 3/8	1	1.26	0.360	3.54
HXSV-5	51099	5/8	1 3/8	5	14 1/4	11	11 1/2	2 1/8	1 5/8	3	5/8	5	1.165	0.675	17.12
HXSV-7 1/2	51100	5/8	1 5/8	7 1/2	17	13	13 1/2	2 1/8	2	3 1/2	5/8	5	1.165	0.810	20.23
HXSV-10	51093	7/8	2 1/8	10	18	13	13 1/2	2 5/8	2 1/2	5 1/4	5/8	8	1.864	1.30	30.10
HXSV-15	51094	7/8	2 1/8	15	25	20	20 1/2	2 5/8	2 1/2	8	5/8	8	1.864	2.05	46.31
HXSV-20	51095	1 1/8	2 1/8	20	27	22	24	2 5/8	2 1/2	9	5/8	8	1.864	2.30	46.83



Superior Refrigeration Products

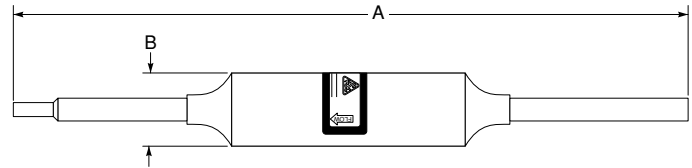
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Copper Filter-Driers

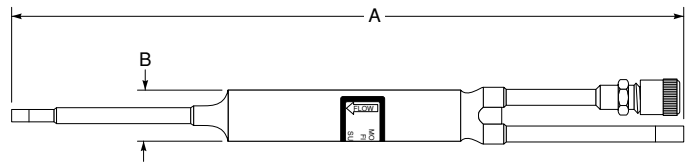
All Molecular Sieve Filter-Driers for Moisture and Acid Removal

Catalog Number	IBCA Number	Connection (Inches)	Dimensions (Inches)	
			A	B
SVM1	55072	1/4 OD (3/16 ID) X 0.089-0.092 Cap. Tube	7 3/8	3/4



Includes access valve for charging and/or evacuating system.

Catalog Number	IBCA Number	Connection (Inches)	Dimensions (Inches)	
			A	B
SVM1C	55073	1/4 OD (3/16 ID) X 0.089-0.092 Cap. Tube	7 3/8	3/4
SVM2C	55075	1/4 OD (3/16 ID) X 0.127-0.130 Cap. Tube	7 7/8	1



Catalog Number	IBCA Number	Refrigerant 12		Refrigerant 22		Recommended Nominal Tons	
		Water Capacity in Drops		Water Capacity in Drops		R-12	R-22
		75°F	125°F	75°F	125°F		
SVM1	55072	33.0	31.0	31.6	30.0	1/3	1/2
SVM1C	55073	33.0	31.0	31.6	30.0	1/3	1/2
SVM2C	55075	66.0	62.0	63.2	60.0	1	2



Filter and Drier Cartridges

For 4¾ Inch OD Steel Shells



Filter Cartridge Type FC-48

- Interchangeable with All Major Manufacturers' Cores
- Super Pleated Filter Media Provides More Filter Area of Tubular Filter Cores and 50% More Than Other Manufacturers' Pleated Cartridges.
- Filters Solid Contaminants Down to 10 microns.



High Capacity Type HC-48 and Char-Core® Type CD-48

- Interchangeable with All Major Manufacturers' Cores
- Solid Cake Design Molded from Blend of Activated Alumina and Molecular Sieve Provides Micronic Filtration with Minimum Pressure Drop.



Cores for Recycle/Recovery Equipment Type RC-48 for 4¾" OD Steel Shell and Type RC35 for Superior 3CFA Brass Shell

- Molecular Sieve Content Provides Highest Moisture Capacities Available.
- Ultra High Filtering Capacity for Removal of Solid Contaminants.

Ratings for FC-48, HC-48, and CD-48

Catalog Number	IBCA Number	Surface Area (sq. in.)	Cartridge Length (Inches)	Weight (Pounds)	Volume (cu. in.)	Capacity Ratings (Drops of Water)					
						R12 (15 ppm)		R22 (60 ppm)		R134a (60 ppm)	
						75°F	125°F	75°F	125°F	75°F	125°F
FC-48	51066	150	5½	½	N/A	—	—	—	—	—	—
HC-48	51079	66	5½	1½	48	990	740	600	470	600	470
CD-48	51042	66	5½	1½	48	1087	803	530	425	530	425

Ratings for RC-48 and RC35

Catalog Number	IBCA Number	Surface Area (sq. in.)	Cartridge Length (Inches)	Weight (Pounds)	Volume (cu. in.)	Capacity Ratings (Drops of Water)					
						R12 (15 ppm)		R22 (60 ppm)		R134a (60 ppm)	
						75°F	125°F	75°F	125°F	75°F	125°F
RC-48	57671	66	5½	1½	48	1596	1190	1095	846	1040	840
RC35*	57691	62	5⅝	1½	35	1310	970	825	707	909	718

*Charcoal Activated



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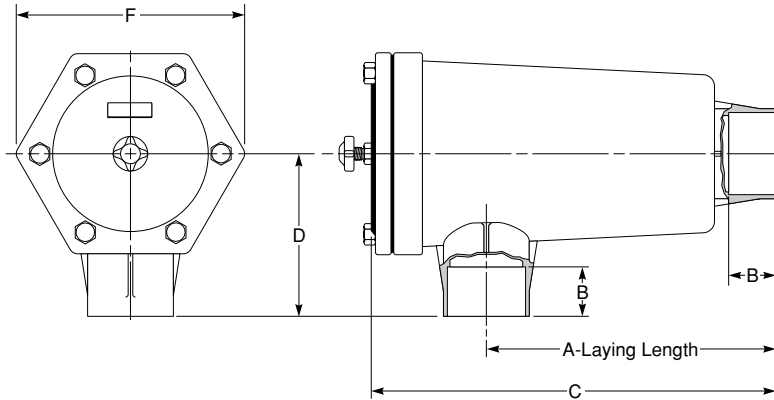
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Suction Line Filters

Type CFA Uni-Form® Shell and Replaceable Cartridges

- All-brass One-piece Shell
- May be Silver Brazed for Permanent Installation and Protection of System
- Minimal Space Required for Installation
- No Paint to Peel
- No Rust or Corrosion
- Single Cartridge Design
- Access Valve (¼-inch SAE) Readily Permits Pressure Drop Readings
- Corrosion Resistant Stainless Steel Bolts Permit Easy Access for Changing of Cartridges
- No Welds or Solder Joints, No Chance of Leaks!
- You'll Never Have to Cut it out Again . . . A Permanent Lifetime Value at Today's Cost!
- U.L. and C-UL Listed. File No. SA 2718 (N)



Shells Only - Cartridges Not Included

Catalog Number	IBCA Number	Conn. ODS (in.)	Includes Cartridge	Nominal Shell Dia. E (in.)	A (in.)	B (in.)	F (in.)	C (in.)	D (in.)	Weight (lb.)
2CFA-10S	56367	5/8	NO	2	5 ³¹ / ₃₂	1/2	4	7 ⁷ / ₈	2	6 ¹ / ₂
2CFA-12S	56368	3/4	NO	2	5 ³¹ / ₃₂	5/8	4	7 ⁷ / ₈	2	6 ¹ / ₂
2CFA-14S	56369	7/8	NO	2	6 ¹⁹ / ₃₂	3/4	4	8 ¹ / ₂	2 ⁵ / ₈	6 ¹ / ₂
2CFA-18S	56370	1 ¹ / ₈	NO	2	6 ¹⁹ / ₃₂	1	4	8 ¹ / ₂	2 ⁵ / ₈	6 ¹ / ₂
3CFA-8S*	56476	1/2	NO	3	6 ³ / ₄	3/8	4 ⁵ / ₈	9 ⁹ / ₁₆	2 ¹⁵ / ₁₆	9
3CFA-10S*	56470	5/8	NO	3	6 ³ / ₄	1/2	4 ⁵ / ₈	9 ⁹ / ₁₆	2 ¹⁵ / ₁₆	9
3CFA-14S	56471	7/8	NO	3	6 ³ / ₄	3/4	4 ⁵ / ₈	9 ⁹ / ₁₆	2 ¹⁵ / ₁₆	9
3CFA-18S	56472	1 ¹ / ₈	NO	3	7 ¹ / ₁₆	1	4 ⁵ / ₈	9 ⁹ / ₁₆	3 ¹ / ₄	9 ¹ / ₄
3CFA-22S	56473	1 ³ / ₈	NO	3	7 ³ / ₁₆	1 ¹ / ₈	4 ⁵ / ₈	9 ⁹ / ₁₆	3 ³ / ₈	9 ¹ / ₄
3CFA-26S	56474	1 ⁵ / ₈	NO	3	7 ³ / ₈	1 ³ / ₁₆	4 ⁵ / ₈	10	3 ⁹ / ₁₆	9 ¹ / ₂
3CFA-34S	56475	2 ¹ / ₈	NO	3	7 ⁵ / ₈	1 ⁵ / ₁₆	4 ⁵ / ₈	10 ⁹ / ₁₆	3 ¹³ / ₁₆	9 ³ / ₄
4CFA-14S*	56851	7/8	NO	4	7 ³ / ₈	3/4	5 ⁷ / ₈	10 ¹⁷ / ₃₂	3 ¹⁷ / ₃₂	14 ¹ / ₂
4CFA-18S*	56852	1 ¹ / ₈	NO	4	7 ³ / ₈	1	5 ⁷ / ₈	10 ¹⁷ / ₃₂	3 ³ / ₄	14 ¹ / ₂
4CFA-22S	56853	1 ³ / ₈	NO	4	7 ⁹ / ₁₆	1 ¹ / ₈	5 ⁷ / ₈	10 ⁷ / ₈	3 ⁷ / ₈	14 ¹ / ₂
4CFA-26S	56854	1 ⁵ / ₈	NO	4	7 ³ / ₄	1 ³ / ₁₆	5 ⁷ / ₈	11 ³ / ₁₆	4 ¹ / ₁₆	14 ¹ / ₂
4CFA-34S	56855	2 ¹ / ₈	NO	4	8	1 ⁵ / ₁₆	5 ⁷ / ₈	11 ³ / ₈	4 ⁵ / ₁₆	14 ³ / ₄
4CFA-42S	56856	2 ³ / ₈	NO	4	8 ⁷ / ₃₂	1 ⁷ / ₁₆	5 ⁷ / ₈	11 ¹⁷ / ₃₂	4 ⁷ / ₁₆	15 ¹ / ₄
5CFA-34S	56894	2 ¹ / ₈	NO	5	8 ³ / ₄	1 ⁵ / ₁₆	7 ¹ / ₄	12 ¹ / ₂	4 ³ / ₄	24
5CFA-42S	56895	2 ³ / ₈	NO	5	8 ⁷ / ₈	1 ⁷ / ₁₆	7 ¹ / ₄	12 ¹¹ / ₁₆	4 ⁷ / ₈	24
5CFA-50S	56896	3 ¹ / ₈	NO	5	8 ³ / ₁₆	1 ¹³ / ₁₆	7 ¹ / ₄	12 ³ / ₈	4 ⁹ / ₁₆	24

*Liquid Line Service Only

Replaceable Cartridges - Type F Filter

Catalog Number	IBCA Number	For Shell Number	Cartridge OD	Cartridge Length (in.)	Filter Area (in. ²)	Standard Package	Weight per Package (lb)
F25A	51071	2CFA	1 ²³ / ₃₂	6 ⁵ / ₁₆	66	12	4 ¹ / ₄
F35A	51072	3CFA	2 ⁵ / ₈	6 ²¹ / ₃₂	115	12	6
F45A	51073	4CFA	3 ¹⁷ / ₃₂	7 ³ / ₁₆	189	12	9 ³ / ₄
F55A	51074	5CFA	4 ¹ / ₁₆	8 ³ / ₁₆	270	12	11 ³ / ₄

Replacement Flange Gaskets

Catalog Number	IBCA Number	For Shell Number
AG2	51003	2CFA
AG3	51004	3CFA
AG4	51005	4CFA
AG5	51006	5CFA

Replaceable Cartridges - Type DF for Clean-up and Permanent Use

Catalog Number	IBCA Number	For Shell Number	Cartridge OD	Cartridge Length (in.)	Filter Area (in. ²)	Standard Package	Weight per Package (lb)
DF25A	51053	2CFA	1 ²³ / ₃₂	6 ¹¹ / ₃₂	66	12	5 ³ / ₄
DF35A	51059	3CFA	2 ⁵ / ₈	6 ²¹ / ₃₂	115	12	10 ¹ / ₂
DF45A	51060	4CFA	3 ¹⁷ / ₃₂	7 ⁷ / ₃₂	189	12	17 ¹ / ₄
DF55A	51061	5CFA	4 ¹ / ₁₆	8 ⁷ / ₃₂	270	12	24 ¹ / ₂



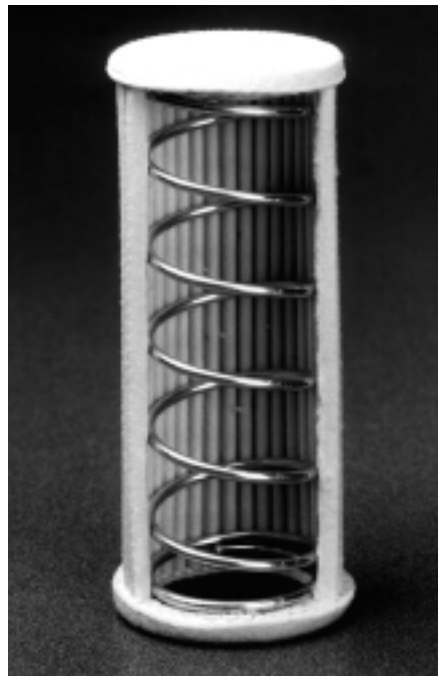
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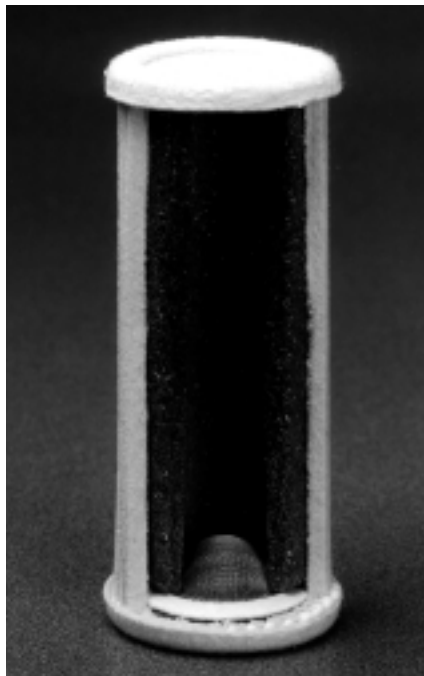
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Suction Line Filters

Type CFA Uni-Form® Shell and Replaceable Cartridges



Type F Filter Cartridge



Type DF Filter-Drier Cartridge

- Rated in Accordance with ARI Standard 730-86
- Filter or Filter Plus Drier Should be Changed when Pressure Drop Across Cartridge Increases Significantly
- Follow Compressor Manufacturer's Recommendations, or Request Superior's Clean-Up Bulletin

Selection and Ratings of Suction Line Shells and Cartridges for R12, R22, R502

Catalog Number	Conn. ODS (Inches)	Permanent Filter Cartridge and Surface Area	Temporary Clean-Up Cartridge and Surface Area	Maximum Tonnage Ratings														
				Evaporation Temperatures														
				-40°F			-20°F			0°F			20°F			40°F		
				Pressure Drop (psi)														
				0.5	0.5	0.5	1.0	1.0	1.0	1.5	1.5	1.5	2.0	2.0	2.0	3.0	3.0	
				Refrigerant Number														
R22	R502	R12	R22	R502	R12	R22	R502	R12	R22	R502	R12	R22	R502	R12	R22	R502		
2CFA-10S	0.625	F25A 66 sq. in.	DF25A 66 sq. in.	0.7	0.6	0.6	1.4	1.1	1.2	2.2	1.8	1.9	3.3	2.6	2.7	5.1	4.1	
2CFA-12S	0.750			1.1	0.9	1.0	2.1	1.6	1.8	3.3	2.6	2.8	4.9	3.9	4.1	7.5	6.1	
2CFA-14S	0.875			1.3	1.0	1.1	2.5	1.9	2.1	3.9	3.1	3.3	5.7	4.6	4.8	8.8	7.2	
2CFA-18S	1.125			2.0	1.5	1.7	3.7	2.9	3.2	5.9	4.7	5.0	8.8	7.0	7.3	13.5	11.0	
3CFA-14S	0.875	F35A 115 sq. in.	DF35A 115 sq. in.	1.4	1.1	1.2	2.6	2.1	2.2	4.2	3.3	3.5	6.1	4.9	5.1	9.4	7.7	
3CFA-18S	1.125			2.2	1.7	1.9	4.1	3.2	3.5	6.6	5.2	5.5	9.7	7.8	8.1	15.0	12.0	
3CFA-22S	1.375			3.5	2.7	3.0	6.6	5.2	5.6	10.5	8.3	8.8	15.5	12.4	13.0	24.0	19.3	
3CFA-26S	1.625			4.3	3.3	3.7	8.1	6.3	6.9	12.8	10.2	10.8	19.0	15.2	15.8	29.0	24.0	
3CFA-34S	2.125	F45A 189 sq. in.	DF45A 189 sq. in.	5.7	4.4	4.9	10.7	8.4	9.1	17.0	13.5	14.3	25.0	20.0	21.0	38.0	31.0	
4CFA-22S	1.375			3.7	2.9	3.2	7.0	5.5	5.9	11.0	8.8	9.3	16.3	13.0	13.6	25.0	20.0	
4CFA-26S	1.625			4.6	3.6	4.0	8.7	6.8	7.4	14.0	11.0	11.7	20.0	16.4	17.0	31.0	26.0	
4CFA-34S	2.125			7.8	6.0	6.7	14.6	11.5	12.4	23.0	18.5	19.6	34.0	28.0	29.0	53.0	43.0	
4CFA-42S	2.625	F55A 270 sq. in.	DF55A 270 sq. in.	9.5	7.3	8.1	17.8	14.0	15.1	29.0	23.0	24.0	42.0	34.0	35.0	64.0	52.0	
5CFA-34S	2.125			9.4	7.2	8.1	17.6	13.8	15.0	28.0	22.0	24.0	41.0	33.0	34.0	63.0	52.0	
5CFA-42S	2.625			12.4	9.6	10.7	23.0	18.2	20.0	37.0	29.0	31.0	54.0	44.0	45.0	84.0	68.0	
5CFA-50S	3.125			15.3	11.8	13.2	29.0	23.0	24.0	46.0	36.0	38.0	67.0	54.0	56.0	103.0	84.0	



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Suction Line Filters Type CFA Uni-Form® Shell and Replaceable Cartridges

New Refrigerants R134A and R404A

Selection and Ratings of Suction Line Shells and Cartridges

Catalog Number	Conn. ODS (Inches)	Permanent Filter Cartridge and Surface Area	Temporary Clean-up Cartridge and Surface Area	Maximum Tonnage Ratings								
				Evaporation Temperatures								
				-40°F	-20°F		0°F		20°F		40°F	
				Pressure Drop (psi)								
				0.5	0.5	1.0	1.0	1.5	1.5	2.0	2.0	3.0
				Refrigerant Number								
R404A	R134A	R404A	R134A	R404A	R134A	R404A	R134A	R404A				
2CFA-10S	0.625	F25A 66 sq. in.	DF25A 66 sq. in.	0.6	0.7	1.1	1.3	1.8	2.1	2.8	3.2	4.4
2CFA-12S	0.750			0.8	1.0	1.6	1.9	2.7	3.2	4.1	4.7	6.4
2CFA-14S	0.875			1.0	1.2	1.9	2.3	3.2	3.7	4.6	5.6	7.6
2CFA-18S	1.125			1.5	1.8	3.0	3.5	4.9	5.7	7.3	8.5	11.6
3CFA-14S	0.875	F35A 115 sq. in.	DF35A 115 sq. in.	1.1	1.3	2.1	2.5	3.4	4.0	5.1	6.0	8.1
3CFA-18S	1.125			1.7	2.0	3.3	3.9	5.4	6.3	8.1	9.4	12.8
3CFA-22S	1.375			2.7	3.2	5.2	6.2	8.7	10.0	12.9	15.1	20.5
3CFA-26S	1.625			3.3	3.9	6.4	7.6	10.6	12.3	15.8	18.4	25.0
3CFA-34S	2.125	F45A 189 sq. in.	DF45A 189 sq. in.	4.4	5.2	8.5	10.0	14.0	16.2	20.9	24.4	33.1
4CFA-22S	1.375			2.8	3.4	5.5	6.5	9.1	10.6	13.6	15.9	21.6
4CFA-26S	1.625			3.6	4.3	6.9	8.2	11.4	13.2	17.1	19.9	27.0
4CFA-34S	2.125			6.0	7.1	11.6	13.7	19.2	22.2	28.6	33.3	45.3
4CFA-42S	2.625	F55A 270 sq. in.	DF55A 270 sq. in.	7.3	8.7	14.2	16.7	23.4	27.1	34.9	40.7	55.3
5CFA-34S	2.125			7.2	8.6	14.0	16.5	23.1	26.7	34.5	40.1	54.6
5CFA-42S	2.625			9.5	11.4	18.5	21.8	30.5	35.3	45.6	53.0	72.1
5CFA-50S	3.125			11.8	14.2	23.0	27.2	38.0	44.0	56.8	66.1	89.9

Selection and Ratings of Permanent Suction Line Filter-Driers-Shell and Cartridge Type for R12, R22, R502

Catalog Number	Conn. ODS (Inches)	Permanent Filter Plus Drier Cartridge and Surface Area	Maximum Tonnage Ratings														
			Evaporation Temperatures														
			-40°F			-20°F			0°F			20°F			40°F		
			Pressure Drop (psi)														
			0.5	0.5	0.5	1.0	1.0	1.0	1.5	1.5	1.5	2.0	2.0	2.0	3.0	3.0	
			Refrigerant Number														
R22	R502	R12	R22	R502	R12	R22	R502	R12	R22	R502	R12	R22	R502				
2CFA-10S	0.625	DF25A 66 sq. in.	0.7	0.5	0.6	1.3	1.0	1.1	2.0	1.6	1.7	3.0	2.4	2.5	4.6	3.8	
2CFA-12S	0.750		1.0	0.7	0.8	1.8	1.4	1.5	2.9	2.3	2.4	4.2	3.4	3.5	6.5	5.3	
2CFA-14S	0.875		1.1	0.9	1.0	2.1	1.6	1.8	3.3	2.6	2.8	4.9	3.9	4.1	7.5	6.1	
2CFA-18S	1.125		1.4	1.1	1.2	2.7	2.1	2.3	4.3	3.4	3.6	6.3	5.1	5.3	9.7	7.9	
3CFA-14S	0.875	DF35A 115 sq. in.	1.3	1.0	1.1	2.5	1.9	2.1	3.9	3.1	3.3	5.8	4.6	4.8	8.9	7.2	
3CFA-18S	1.125		2.0	1.6	1.7	3.8	3.0	3.2	6.0	4.8	5.1	8.9	7.1	7.4	13.6	11.1	
3CFA-22S	1.375		2.9	2.2	2.5	5.4	4.2	4.6	8.6	6.8	7.3	12.7	10.2	10.6	19.5	15.9	
3CFA-26S	1.625		3.4	2.6	2.9	6.3	5.0	5.4	10.0	8.0	8.4	14.8	12.0	12.3	23.0	18.5	
3CFA-34S	2.125	DF45A 189 sq. in.	4.2	3.2	3.6	7.8	6.1	6.7	12.5	9.9	10.5	18.3	14.7	15.3	28.0	23.0	
4CFA-22S	1.375		3.3	2.5	2.8	6.1	4.8	5.2	9.8	7.8	8.2	14.4	11.5	12.0	22.0	18.0	
4CFA-26S	1.625		4.3	3.3	3.7	8.1	6.3	6.9	12.8	10.2	10.8	19.0	15.2	15.7	29.0	24.0	
4CFA-34S	2.125		6.3	4.9	5.4	11.8	9.3	10.0	18.8	14.9	15.8	28.0	22.0	23.0	43.0	35.0	
4CFA-42S	2.625	DF55A 270 sq. in.	6.5	5.0	5.6	12.2	9.5	10.3	19.3	15.4	16.3	29.0	23.0	24.0	44.0	36.0	
5CFA-34S	2.125		7.5	5.8	6.4	14.0	11.0	12.0	22.0	17.8	18.8	33.0	27.0	28.0	51.0	41.0	
5CFA-42S	2.625		9.0	7.0	7.8	17.0	13.3	14.4	27.0	22.0	23.0	40.0	32.0	33.0	61.0	50.0	
5CFA-50S	3.125		10.7	8.3	9.2	20.0	15.8	17.1	32.0	25.0	27.0	47.0	38.0	39.0	72.0	59.0	



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Suction Line Filters Type CFA Uni-Form® Shell and Replaceable Cartridges

New Refrigerants R134A and R404A

Selection and Ratings of Suction Line Shells and Cartridges

Catalog Number	Conn. ODS (Inches)	Permanent Filter Plus Drier Cartridge and Surface Area	Maximum Tonnage Ratings								
			Evaporation Temperatures								
			-40°F	-20°F		0°F		20°F		40°F	
			Pressure Drop (psi)								
			0.5	0.5	1.0	1.0	1.5	1.5	2.0	2.0	3.0
			Refrigerant Number								
		R404A	R134A	R404A	R134A	R404A	R134A	R404A	R134A	R404A	
2CFA-10S	0.625	DF25A 66 sq. in.	0.5	0.6	1.0	1.2	1.7	1.9	2.5	2.9	4.0
2CFA-12S	0.750		0.7	0.9	1.4	1.7	2.4	2.7	3.5	4.1	5.6
2CFA-14S	0.875		0.9	1.0	1.7	2.0	2.7	3.2	4.1	4.8	6.5
2CFA-18S	1.125		1.1	1.3	2.1	2.5	3.5	4.1	5.3	6.2	8.4
3CFA-14S	0.875		1.0	1.2	2.0	2.3	3.2	3.7	4.8	5.6	7.6
3CFA-18S	1.125	DF35A 115 sq. in.	1.5	1.9	3.0	3.6	5.0	5.8	7.4	8.6	11.0
3CFA-22S	1.375		2.2	2.6	4.3	5.1	7.1	8.2	10.6	12.4	16.8
3CFA-26S	1.625		2.6	3.1	5.0	5.9	8.3	9.6	12.4	14.4	19.6
3CFA-34S	2.125		3.2	3.8	6.2	7.3	10.3	11.9	15.3	17.8	24.3
4CFA-22S	1.375		2.5	3.0	4.9	5.9	8.0	9.3	12.0	14.0	19.0
4CFA-26S	1.625	DF45A 189 sq. in.	3.3	3.9	6.4	7.6	10.6	12.2	15.8	18.4	25.0
4CFA-34S	2.125		4.8	5.8	9.4	11.1	15.5	17.9	23.1	26.9	36.6
4CFA-42S	2.625		5.0	5.9	9.6	11.4	15.9	18.4	23.8	27.7	37.7
5CFA-34S	2.125		5.7	6.9	11.2	13.2	18.4	21.4	27.6	32.1	43.6
5CFA-42S	2.625	DF55A 270 sq. in.	6.9	8.3	13.5	15.9	22.3	25.8	33.3	38.7	52.7
5CFA-50S	3.125		8.2	9.8	16.0	18.8	26.4	30.5	39.4	45.9	62.4



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Suction Line Filters Type CFA Uni-Form® Shell and Replaceable Cartridges

New Refrigerant R507

Selection and Ratings of Suction Line Shells and Cartridges

Catalog Number	Conn. ODS (Inches)	Permanent Filter Cartridge and Surface Area	Temporary Clean-Up Cartridge and Surface Area	Maximum Tonnage Ratings				
				Evaporation Temperatures				
				-40°F	-20°F	0°F	20°F	40°F
				Pressure Drop (psi)				
				0.5	1.0	1.5	2.0	3.0
				Refrigerant Number				
				R507	R507	R507	R507	R507
2CFA-10S	0.625	F25A 66 sq. in.	DF25A 66 sq. in.	0.6	1.2	1.9	2.9	4.5
2CFA-12S	0.750			0.9	1.7	2.8	4.2	6.6
2CFA-14S	0.875			1.0	2.0	3.3	5.0	7.8
2CFA-18S	1.125			1.6	3.1	5.0	7.6	11.9
3CFA-14S	0.875	F35A 115 sq. in.	DF35A 115 sq. in.	1.1	2.2	3.5	5.3	8.3
3CFA-18S	1.125			1.8	3.4	5.6	8.4	13.2
3CFA-22S	1.375			2.8	5.4	8.9	13.4	21.1
3CFA-26S	1.625			3.4	6.7	10.9	16.4	25.7
3CFA-34S	2.125	F45A 189 sq. in.	DF45A 189 sq. in.	4.6	8.8	14.4	21.7	34.1
4CFA-22S	1.375			3.0	5.7	9.4	14.1	22.2
4CFA-26S	1.625			3.7	7.2	11.7	17.7	27.8
4CFA-34S	2.125			6.2	12.0	19.7	29.7	46.6
4CFA-42S	2.625	F55A 270 sq. in.	DF55A 270 sq. in.	7.6	14.7	24.0	36.2	56.9
5CFA-34S	2.125			7.5	14.5	23.7	35.8	56.2
5CFA-42S	2.625			9.9	19.2	31.3	47.2	74.2
5CFA-50S	3.125			12.4	23.9	39.1	58.9	92.4

New Refrigerant R507

Selection and Ratings of Suction Line Filter-Driers-Shell and Cartridge Type

Catalog Number	Conn. ODS (Inches)	Permanent Filter plus Drier Cartridge and Surface Area	Maximum Tonnage Ratings				
			Evaporation Temperatures				
			-40°F	-20°F	0°F	20°F	40°F
			Pressure Drop (psi)				
			0.5	1.0	1.5	2.0	3.0
			Refrigerant Number				
			R507	R507	R507	R507	R507
2CFA-10S	0.625	DF25A 66 sq. in.	0.5	1.1	1.7	2.6	4.1
2CFA-12S	0.750		0.8	1.5	2.4	3.7	5.8
2CFA-14S	0.875		0.9	1.7	2.8	4.3	6.7
2CFA-18S	1.125		1.2	2.2	3.6	5.5	8.6
3CFA-14S	0.875	DF35A 115 sq. in.	1.0	2.0	3.3	5.0	7.8
3CFA-18S	1.125		1.6	3.1	5.1	7.7	12.1
3CFA-22S	1.375		2.3	4.5	7.3	11.0	17.3
3CFA-26S	1.625		2.7	5.2	8.5	12.8	20.1
3CFA-34S	2.125	DF45A 189 sq. in.	3.3	6.5	10.5	15.9	25.0
4CFA-22S	1.375		2.6	5.1	8.3	12.5	19.6
4CFA-26S	1.625		3.4	6.6	10.9	16.4	25.7
4CFA-34S	2.125		5.0	9.7	15.9	24.0	37.6
4CFA-42S	2.625	DF55A 270 sq. in.	5.2	10.0	16.4	24.7	38.7
5CFA-34S	2.125		6.0	11.6	19.0	28.6	44.9
5CFA-42S	2.625		7.2	14.0	22.9	34.5	54.2
5CFA-50S	3.125		8.6	16.6	27.1	40.9	64.1



Suction Line Cores for CFA Shells

A25, A35, A45, and A55 Temporary Acid Removal Suction Line Cores For Temporary Installation in Place of "F" or "DF" Cartridges



The Acid Fighter is a temporary suction line core specifically designed to give you maximum acid removal performance in situations where extremely high acid conditions exist. When used in conjunction with a Superior DF filter drier cartridge, it gives you a "knockout" combination.

Note: The DF cartridge is still satisfactory for routine acid removal and system clean-up.

Features and Benefits of Acid Fighter Core

- Fewer system pump downs required to remove persistent acid condition.
- Fewer cores needed for system clean-up.
- The ability to remove other foreign materials: sludges, solids, oil residues, moisture, and other contaminants normally found in air-conditioning and refrigeration systems.
- More acid removal capability than other comparable suction line cores. This results from using a very special blend of field-proven desiccants.

- "Hot packaging" insures fully activated cores for field installation. Each core is individually packaged, as it comes from a vacuum oven, in a special heat-sealed foil bag to maintain the lowest residual moisture obtainable.
- Systems pressure drop is minimized because of large, open mesh, single core bonded construction, and large surface area.
- Maximum core permeability is due to uniformity of desiccant size and shape.
- Added compressor protection, because of a built-in double-mesh stainless steel screen on the outlet side of the core.
- Integral felt gaskets at each end of the core cushions core against shock and eliminates need for extra gaskets in the package.
- High mechanical crush strength of the core precludes powdering.

Ratings for Temporary Acid Removal Suction Line Cores - R12, R22, and R502*

(*Temporary refers to use during clean-up procedure while ΔP is being monitored.)

Catalog Number	Connection ODS (Inches)	Temporary High Capacity Acid Removal Core, Surface Area and Dessicant Volume	Maximum Tonnage Ratings														
			Evaporation Temperatures														
			-40°F		-20°F			0°F			20°F			40°F			
			Pressure Drop (psi)														
			1.0	1.0	1.0	2.0	2.0	2.0	3.0	3.0	3.0	4.0	4.0	6.0	8.0	8.0	
			Refrigerant Number														
R22	R502	R12	R22	R502	R12	R22	R502	R12	R22	R502	R12	R22	R502	R12	R22	R502	
A25 IBCA 51008																	
2CFA-10S	0.625	35 sq. in. 13 cu. in.	0.89	0.69	0.78	1.68	1.32	1.44	2.67	2.13	2.28	3.92	3.17	4.09	6.95	5.70	
2CFA-12S	0.750		1.26	0.98	1.09	2.37	1.86	2.04	3.77	3.00	3.22	5.53	4.47	5.77	9.80	8.03	
2CFA-14S	0.875		1.55	1.20	1.34	2.91	2.29	2.50	4.62	3.68	3.95	6.79	5.49	7.09	12.04	9.86	
2CFA-18S	1.125		2.01	1.56	1.74	3.78	2.97	3.25	6.01	4.79	5.13	8.82	7.13	9.21	15.64	12.81	
A35 IBCA 51009																	
3CFA-8S	0.500	62 sq. in. 35 cu. in.	0.61	0.47	0.53	1.14	0.90	0.98	1.81	1.44	1.55	2.66	2.15	2.78	4.72	3.86	
3CFA-10S	0.625		0.89	0.69	0.78	1.68	1.32	1.44	2.67	2.13	2.28	3.92	3.17	4.09	6.95	5.70	
3CFA-14S	0.875		1.52	1.17	1.31	2.85	2.24	2.45	4.53	3.61	3.87	6.65	5.38	6.94	11.79	9.66	
3CFA-18S	1.125		2.24	1.73	1.94	4.20	3.30	3.61	6.67	5.32	5.70	9.80	7.92	10.23	17.37	14.24	
3CFA-22S	1.375		2.97	2.30	2.57	5.58	4.38	4.79	8.87	7.06	7.57	13.03	10.53	13.60	23.08	18.92	
3CFA-26S	1.625		3.64	2.82	3.16	6.84	5.37	5.88	10.87	8.66	9.28	15.97	12.90	16.67	28.29	23.19	
3CFA-34S	2.125		4.92	3.81	4.26	9.24	7.26	7.94	14.68	11.70	12.54	21.57	17.43	22.51	38.22	31.32	
A45 IBCA 51010																	
4CFA-14S	0.875	93 sq. in. 63 cu. in.	1.76	1.36	1.52	3.30	2.60	2.83	5.24	4.18	4.48	7.70	6.22	8.04	13.65	11.19	
4CFA-18S	1.125		2.80	2.16	2.42	5.25	4.12	4.51	8.34	6.65	7.13	12.26	9.90	12.80	21.72	17.80	
4CFA-22S	1.375		4.23	3.28	3.67	7.95	6.24	6.83	12.63	10.06	10.79	18.56	15.00	19.37	32.89	26.95	
4CFA-26S	1.625		5.11	3.96	4.43	9.60	7.54	8.25	15.25	12.15	13.03	22.41	18.11	23.39	39.71	32.54	
4CFA-34S	2.125		7.03	5.44	6.09	13.20	10.37	11.34	20.97	16.71	17.92	30.81	24.90	32.16	54.60	44.75	
4CFA-42S	2.625		7.43	5.75	6.44	13.95	10.96	11.98	22.17	17.66	18.93	32.56	26.31	33.99	57.71	47.29	
A55 IBCA 51011																	
5CFA-34S	2.125	123 sq. in. 90 cu. in.	9.19	7.11	7.96	17.26	13.55	14.82	27.41	21.84	23.41	40.27	32.54	42.03	71.36	58.48	
5CFA-42S	2.625		11.03	8.53	9.55	20.71	16.26	17.78	32.89	26.21	28.10	48.32	39.05	50.44	85.63	70.17	
5CFA-50S	3.125		12.58	9.73	10.89	23.62	18.54	20.28	37.52	29.89	32.05	55.11	44.54	57.53	97.67	80.04	

*When actual pressure drop exceeds above recommended ΔP, replace "A" core with "DF" core within 15 minutes.



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Suction Line Cores for CFA Shells

A25, A35, A45, and A55 Temporary Acid Removal Suction Line Cores

For Temporary Installation in Place of “F” or “DF” Cartridges

New Refrigerants R134A and R404A

Ratings for Temporary Acid Removal Suction Line Cores.*

Catalog Number	Connection ODS (Inches)	Temporary High Capacity Acid Removal Core, Surface Area and Dessicant Volume	Maximum Tonnage Ratings								
			Evaporation Temperatures								
			-40°F	-20°F		0°F		20°F		40°F	
			Pressure Drop (psi)								
			1.0	1.0	2.0	2.0	3.0	3.0	4.0	6.0	8.0
			Refrigerant Number								
			R404A	R134A	R404A	R134A	R404A	R134A	R404A	R134A	R404A
A25											
2CFA-10S	0.625	35 sq. in 13 cu. in.	0.69	0.83	1.34	1.58	2.21	2.56	3.31	4.72	6.05
2CFA-12S	0.750		0.97	1.16	1.89	2.23	3.12	3.62	4.67	6.65	8.53
2CFA-14S	0.875		1.19	1.43	2.32	2.74	3.83	4.44	5.73	8.17	10.47
2CFA-18S	1.125		1.55	1.86	3.02	3.56	4.98	5.77	7.45	10.61	13.60
A35											
3CFA-8S	0.500	62 sq. in 35 cu. in.	0.47	0.56	0.91	1.07	1.50	1.74	2.25	3.20	4.10
3CFA-10S	0.625		0.69	0.83	1.34	1.58	2.21	2.56	3.31	4.72	6.05
3CFA-14S	0.875		1.17	1.40	2.27	2.68	3.75	4.35	5.61	8.00	10.26
3CFA-18S	1.125		1.72	2.06	3.35	3.96	5.53	6.41	8.27	11.79	15.11
3CFA-22S	1.375		2.29	2.74	4.45	5.26	7.35	8.52	10.99	15.66	20.08
3CFA-26S	1.625		2.81	3.36	5.46	6.44	9.01	10.44	13.47	19.20	24.61
3CFA-34S	2.125		3.79	4.54	7.37	8.70	12.17	14.10	16.20	25.94	33.25
A45											
4CFA-14S	0.875	93 sq. in 63 cu. in.	1.35	1.62	2.63	3.11	4.35	5.04	6.50	9.26	11.87
4CFA-18S	1.125		2.15	2.58	4.19	4.95	6.92	8.01	10.34	14.74	18.89
4CFA-22S	1.375		3.26	3.91	6.34	7.49	10.47	12.13	15.66	22.32	28.61
4CFA-26S	1.625		3.94	4.72	7.66	9.04	12.64	14.65	18.91	26.95	34.55
4CFA-34S	2.125		5.42	6.49	10.53	12.44	17.39	20.15	26.00	37.05	47.50
4CFA-42S	2.625		5.73	6.85	11.13	13.14	18.37	21.29	27.48	39.16	50.20
A55											
5CFA-34S	2.125	123 sq. in 90 cu. in.	7.08	8.47	13.76	16.25	22.72	26.33	33.98	48.42	62.07
5CFA-42S	2.625		8.50	10.17	16.51	19.50	27.26	31.59	40.77	58.10	74.49
5CFA-50S	3.125		9.69	11.60	18.83	22.24	31.10	36.03	46.50	66.27	84.96

*When actual pressure drop exceeds above recommended ΔP , replace “A” core with “DF” core within 15 minutes.



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Ratings For New Refrigerant R507

Temporary Acid Removal Suction Line Cores*

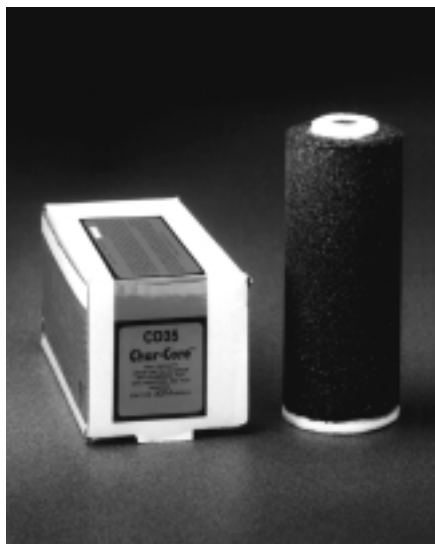
Catalog Number	Connection ODS (Inches)	Temporary High Capacity Acid Removal Core, Surface Area and Dessicant Volume	Maximum Tonnage Ratings								
			Evaporation Temperatures								
			-40°F	-20°F		0°F		20°F		40°F	
			Pressure Drop (psi)								
			1.0	1.0	2.0	2.0	3.0	3.0	4.0	6.0	8.0
			Refrigerant Number								
		R507		R507		R507		R507		R507	
A25											
2CFA-10S	0.625	35 sq. in 13 cu. in.	0.72		1.39		2.28		3.43		6.22
2CFA-12S	0.750		1.01		1.96		3.21		4.84		8.77
2CFA-14S	0.875		1.25		2.41		3.94		5.94		10.77
2CFA-18S	1.125		1.62		3.13		5.12		7.72		13.99
A35											
3CFA-8S	0.500	62 sq. in 35 cu. in.	0.49		0.94		1.54		2.33		4.22
3CFA-10S	0.625		0.72		1.39		2.28		3.43		6.22
3CFA-14S	0.875		1.22		2.36		3.86		5.82		10.55
3CFA-18S	1.125		1.80		3.48		5.69		8.58		15.55
3CFA-22S	1.375		2.39		4.62		7.56		11.40		20.65
3CFA-26S	1.625		2.93		5.67		9.27		13.97		25.32
3CFA-34S	2.125		3.96		7.66		12.52		18.87		34.20
A45											
4CFA-14S	0.875	93 sq. in 63 cu. in.	1.41		2.73		4.47		6.74		12.21
4CFA-18S	1.125		2.25		4.35		7.11		10.72		19.43
4CFA-22S	1.375		3.40		6.59		10.77		16.24		29.43
4CFA-26S	1.625		4.11		7.95		13.00		19.61		35.53
4CFA-34S	2.125		5.65		10.94		17.88		26.96		48.86
4CFA-42S	2.625		5.97		11.56		18.90		28.49		51.63
A55											
5CFA-34S	2.125	123 sq. in 90 cu. in.	7.39		14.29		23.37		35.23		63.85
5CFA-42S	2.625		8.87		17.15		28.04		42.27		76.62

*When actual pressure drop exceeds above recommended ΔP , replace "A" core with "DF" core within 15 minutes.



Liquid Line Cores for CFA Shells

CD35, CD45, and CD55 Char-Core® Liquid Line Cores



Features and Benefits of Char-Core® Liquid Line Cores

- Wax build-up is prevented due to a high percentage of activated charcoal desiccant providing optimum wax adsorption.
- This special formulated blend gives Char-Core® liquid line cores the ability to remove not only wax, but virtually all other contaminants found in air conditioning and refrigeration systems.
- Maximum core permeability due to uniformity of desiccant size and shape.
- System pressure drop is minimized (along with the possibility of flash gas), because of the large, open mesh, single core bonded construction, and large surface area.
- “Hot packaging” prepares cores for field installation. Each core is individually packaged, as it comes from a vacuum oven, in a special heat-sealed foil bag to maintain total dryness.
- High mechanical crush strength of the new Char-Core® exceeds industry minimum standards and precludes powdering.
- Added compressor protection with a built-in double mesh stainless screen on the outlet side of the core.
- Integral felt gaskets at each end of the Char-Core® cushions against shock and eliminates need for extra gaskets in the package.

Ratings for CD35 Liquid Line Char-Core®

Catalog Number	ODS (Inches)	R12			R22			R502			Tonnage Recommendations					
		Tons Flow 1#ΔP	Water Capacity		Tons Flow 1#ΔP	Water Capacity		Tons Flow 1#ΔP	Water Capacity		Comm. and Low Temperature			Air Conditioning		
			75°F	125°F		75°F	125°F		75°F	125°F	R12	R22	R502	R12	R22	R502
3CFA-8S	1/2	8.0	969	841	10.5	884	862	7.1	841	705	5	7 1/2	5	7 1/2	8	6
3CFA-10S	5/8	12.2			16.0			10.7			7 1/2	10	7 1/2	10	12	10
3CFA-14S	7/8	13.0			17.0			11.4			10	12	10	12	15	11
3CFA-18S	1 1/8	20.4			26.8			18.0			15	18	12	18	20	15
3CFA-22S	1 5/8	23.9			31.4			21.1			18	20	15	20	25	20

CD35 IBCA 51043

- High Capacity, Replaceable for the Removal of Wax, Moisture and Acids from Refrigeration and Air Conditioning Systems
- 65 sq. ins. of Filter Surface
- 35 cu. ins. of Desiccant
- Water Capacities in Drops Based on Equilibrium Point Dryness of:
15 ppm for R12, 60 ppm for R22, and 30 ppm for R502



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Liquid Line Cores for CFA Shells CD35, CD45, and CD55 Char-Core® Liquid Line Cores

Ratings for CD45 Liquid Line Char-Core®

Catalog Number	ODS (Inches)	R12			R22			R502			Tonnage Recommendations					
		Tons Flow 1#ΔP	Water Capacity		Tons Flow 1#ΔP	Water Capacity		Tons Flow 1#ΔP	Water Capacity		Comm. and Low Temperature			Air Conditioning		
			75°F	125°F		75°F	125°F		75°F	125°F	R12	R22	R502	R12	R22	R502
4CFA-14S	7/8	20.4	1724	1496	26.9	1572	1534	18.0	1496	1255	17	22	15	20	25	17
4CFA-18S	1 1/8	29.4			38.6			25.9			25	30	20	25	30	25
4CFA-22S	1 3/8	35.9			47.2			31.7			30	35	25	35	40	30
4CFA-26S	1 5/8	48.3			63.5			42.6			35	40	30	38	50	35
4CFA-34S	2 1/8	64.5			84.8			57.0			50	60	45	55	70	50

CD45 IBCA 51044

- High Capacity, Replaceable for the Removal of Wax, Moisture and Acids from Refrigeration and Air Conditioning Systems
- 93 sq. ins. of Filter Surface
- 63 cu. ins. of Desiccant
- Water Capacities in Drops Based on Equilibrium Point Dryness of:
15 ppm for R12, 60 ppm for R22, and 30 ppm for R502

Ratings for CD55 Liquid Line Char-Core®

Catalog Number	ODS (Inches)	R12			R22			R502			Tonnage Recommendations					
		Tons Flow 1#ΔP	Water Capacity		Tons Flow 1#ΔP	Water Capacity		Tons Flow 1#ΔP	Water Capacity		Comm. and Low Temperature			Air Conditioning		
			75°F	125°F		75°F	125°F		75°F	125°F	R12	R22	R502	R12	R22	R502
5CFA-18S*	1 1/8	46.9	2472	2145	61.7	2254	2200	41.4	2145	1800	35	45	30	40	50	35
5CFA-22S*	1 3/8	70.9			93.3			62.7			50	70	45	60	80	50
5CFA-26S*	1 5/8	80.1			105.3			70.7			55	75	50	65	85	55
5CFA-34S	2 1/8	91.4			120.2			80.7			65	85	55	70	100	60
5CFA-42S	2 5/8	92.3			120.9			81.3			—	—	—	—	—	—

*Not Available Yet

CD55 IBCA 51045

- High Capacity, Replaceable for the Removal of Wax, Moisture and Acids from Refrigeration and Air Conditioning Systems
- 123 sq. ins. of Filter Surface
- 91 cu. ins. of Desiccant
- Water Capacities in Drops Based on Equilibrium Point Dryness of:
15 ppm for R12, 60 ppm for R22, and 30 ppm for R502



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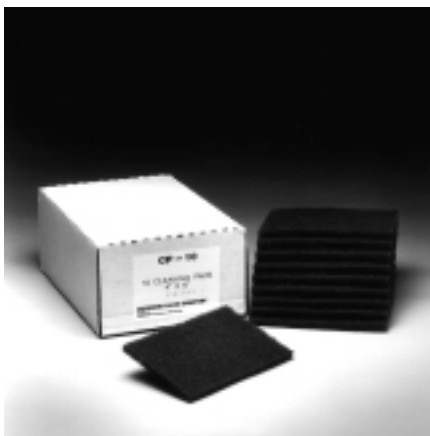
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Service Tools

Sand Cloth



Abrasive Cleaning Pads



Catalog Number	IBCA Number	Description
SCOM-180-5	55064	Open Mesh Cloth, 180 Grit, Fully Waterproof, 1½" Wide X 5 Yards
SCWR-120-10	55065	Sand Cloth, 120 Grit, Water Resistant, 1½" Wide X 10 Yards
SCWR-120-25	55066	Sand Cloth, 120 Grit, Water Resistant, 1½" Wide X 25 Yards
CP-10	51046	Cleaning Pad, 4" X 6", 10 per container

Water Bubbler

Steady Stream Non-Spurt Water Bubbler

This streamlined bubbler unit, fabricated from a stainless steel forging and heavily chromium plated, will enhance the appearance of any water cooler top or dispensing basin. It will deliver an almost unvarying outlet stream thru upstream pressure changes of 7 to 150 pounds WITHOUT ADJUSTMENT.

Its unique construction embodies a manual push-button on-and-off valve, a regulator and physical form and dimensions to meet all sanitary codes in ONE UNIT.

Weight 1½ lb.



Catalog Number	IBCA Number	Description
7-800S	58059	Water Bubbler
7-701S	58061	Replacement Sealed Cartridge
7-42	57313	Mounting Escutcheon
7-10A	57312	Gasket
SN-2	55069	Wrench



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Flare Fittings

For sizes not shown, please consult factory.

All Superior fittings are machined from brass forgings and relief annealed brass rod to assure uniform density, maximum strength, freedom from season cracking and total absence of seepage leaks. All flare threads are Unified and American Standard.

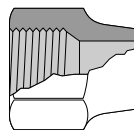
Fine Thread Series

All Superior fittings comply with the American Standard ANSI-B-70.1, the Air Conditioning and Refrigeration Institute Standard No. 720-55, and the Society of Automotive Engineers requirements for refrigeration and marine tube fittings.

Flare Nuts

N4

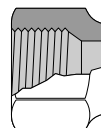
Forged Brass Long Nut



Catalog Number	IBCA Number	Std. Pkg.	Size (Inches)	Weight (Pounds)
F. Flare				
N4-4	50129	10	1/4	0.06
N4-6	50131	10	3/8	0.08
N4-8	50132	5	1/2	0.13
N4-10	50124	2	5/8	0.19
N4-12	50125	2	3/4	0.36

NS4

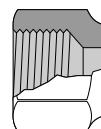
Forged Brass Short Nut



F. Flare				
NS4-3	50119	10	3/16	0.02
NS4-4	50120	25	1/4	0.04
NS4-5	50121	10	5/16	0.04
NS4-6	50122	25	3/8	0.06
NS4-8	50123	25	1/2	0.08
NS4-10	50116	10	5/8	0.18
NS4-12	50117	5	3/4	0.26
NS4-14	50118	2	7/8	0.28

NSR4

Forged Brass Short Reducing Nut

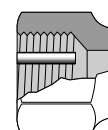


F. Flare to Tube				
NSR4-43	50104	5	1/4 x 3/16	0.04
NSR4-64	50106	10	3/8 x 1/4	0.06
NSR4-65	50107	10	3/8 x 5/16	0.06
NSR4-86	50108	10	1/2 x 3/8	0.10
NSR4-108	50101	5	5/8 x 1/2	0.13

Flare Nuts (Continued)

NST4, NSTR4

("STA-TITE") Flare Nut

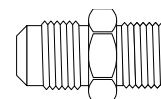


Catalog Number	IBCA Number	Std. Pkg.	Size (Inches)	Weight (Pounds)
Forged Brass Short Nut		F. Flare		
NST4-4	50113	5	1/4	0.04
NST4-6	50114	5	3/8	0.06
NST4-8	50115	10	1/2	0.08
NST4-10	50112	2	5/8	0.12
Forged Brass Reducing Short Nut		SAE Flare x Tube (O.D.)		
NSTR4-86	50111	25	1/2 x 3/8	0.10

Unions

U1

Male Flare x Male I.P.S.



Flare to npte				
U1-4A	50257	25	1/4 x 1/8	0.03
U1-4B	50258	25	1/4 x 1/4	0.05
U1-4C	50259	10	1/4 x 3/8	0.07
U1-4D	50260	10	1/4 x 1/2	0.11
U1-6A	50264	10	3/8 x 1/8	0.07
U1-6B	50265	10	3/8 x 1/4	0.08
U1-6C	50266	10	3/8 x 3/8	0.09
U1-6D	50267	10	3/8 x 1/2	0.14
U1-8B	50270	5	1/2 x 1/4	0.11
U1-8C	50271	10	1/2 x 3/8	0.11
U1-8D	50272	10	1/2 x 1/2	0.15
U1-8E	50273	5	1/2 x 3/4	0.21
U1-10B	50250	5	5/8 x 1/4	0.16
U1-10C	50251	5	5/8 x 3/8	0.16
U1-10D	50252	10	5/8 x 1/2	0.18
U1-10E	50253	5	5/8 x 3/4	0.24
U1-12D	50254	2	3/4 x 1/2	0.25
U1-12E	50255	2	3/4 x 3/4	0.33



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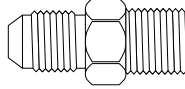
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Flare Fittings

For sizes not shown, please consult factory.

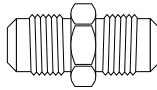
Unions (Continued)

U1X Extra Heavy Flare to Male Pipe Union



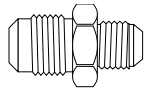
Catalog Number	IBCA Number	Std. Pkg.	Size (Inches)	Weight (Pounds)
Flare to npt				
U1X-4A	50274	2	1/4 x 1/8	0.04

U2 Double End Flare Union



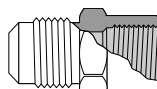
Flare				
U2-4	50286	25	1/4	0.04
U2-5	50287	10	5/16	0.06
U2-6	50288	25	3/8	0.09
U2-8	50289	10	1/2	0.15
U2-10	50283	10	5/8	0.22
U2-12	50284	2	3/4	0.37

UR2 Reducing Flare Union



Flare to Flare				
UR2-64	50210	10	3/8 x 1/4	0.07
UR2-84	50212	5	1/2 x 1/4	0.12
UR2-86	50213	10	1/2 x 3/8	0.14
UR2-106	50204	5	5/8 x 3/8	0.18
UR2-108	50205	5	5/8 x 1/2	0.19

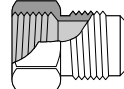
U3 Male Flare x Female I.P.S.



Flare to npt				
U3-4A	50298	10	1/4 x 1/8	0.04
U3-4B	50299	10	1/4 x 1/4	0.07
U3-4C	50300	5	1/4 x 3/8	0.08
U3-6A	50304	5	3/8 x 1/8	0.06
U3-6B	50305	5	3/8 x 1/4	0.09
U3-6C	50306	5	3/8 x 3/8	0.10
U3-6D	50307	5	3/8 x 1/2	0.16
U3-8C	50310	5	1/2 x 3/8	0.12
U3-8D	50311	5	1/2 x 1/2	0.18
U3-10D	50293	5	5/8 x 1/2	0.20
U3-10E	50294	2	5/8 x 3/4	0.36

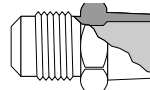
Unions (Continued)

UR3 Female Flare x Male Flare Adapter



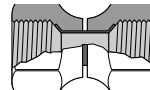
Catalog Number	IBCA Number	Std. Pkg.	Size (Inches)	Weight (Pounds)
Flare to Flare				
UR3-46	50222	10	1/4 x 3/8	0.04
UR3-48	50223	5	1/4 x 1/2	0.11
UR3-64	50227	20	3/8 x 1/4	0.09
UR3-68	50229	10	3/8 x 1/2	0.12
UR3-84	50232	10	1/2 x 1/4	0.11
UR3-86	50233	10	1/2 x 3/8	0.13
UR3-810	50230	10	1/2 x 5/8	0.19
UR3-108	50216	5	5/8 x 1/2	0.19
UR3-1210	50217	2	3/4 x 5/8	0.30

US3 Flare to Sweat Adapter



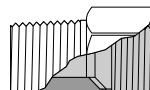
Flare to Solder				
US3-44	50237	10	1/4 x 1/4	0.03
US3-46	50238	5	1/4 x 3/8	0.03
US3-66	50239	10	3/8 x 3/8	0.06
US3-68	50240	5	3/8 x 1/2	0.06
US3-88	50243	5	1/2 x 1/2	0.11
US3-810	50241	2	1/2 x 5/8	0.10
US3-1010	50234	5	5/8 x 5/8	0.15
US3-1212	50236	5	3/4 x 3/4	0.25

US4 Flare Swivel Connector



F. Flare				
US4-4	50245	10	1/4	0.12
US4-6	50247	10	3/8	0.16
US4-8	50248	10	1/2	0.24
US4-10	50244	5	5/8	0.35

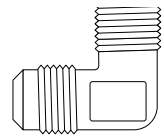
U5 Female Flare x Male Pipe Adapters



F. Flare x M.P.T.				
U5-4A	50317	5	1/4 x 1/8	0.06
U5-4B	50318	10	1/4 x 1/4	0.06

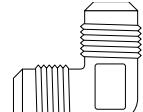
Elbows

E1 Male Flare x Male I.P.S.



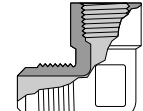
Catalog Number	IBCA Number	Std. Pkg.	Size (Inches)	Weight (Pounds)
Flare to npt				
E1-4A	50039	10	1/4 x 1/8	0.04
E1-4B	50040	10	1/4 x 1/4	0.08
E1-4C	50041	5	1/4 x 3/8	0.09
E1-6A	50045	5	3/8 x 1/8	0.08
E1-6B	50046	10	3/8 x 1/4	0.09
E1-6C	50047	10	3/8 x 3/8	0.11
E1-6D	50048	5	3/8 x 1/2	0.14
E1-8B	50049	5	1/2 x 1/4	0.13
E1-8C	50050	5	1/2 x 3/8	0.17
E1-8D	50051	10	1/2 x 1/2	0.17
E1-8E	50052	2	1/2 x 3/4	0.24
E1-10E	50035	2	5/8 x 3/4	0.26
E1-12E	50037	2	3/4 x 3/4	0.35

E2 Double End Flare Elbow



Flare				
E2-4	50056	5	1/4	0.07
E2-6	50058	5	3/8	0.10
E2-8	50059	5	1/2	0.14
E2-10	50053	2	5/8	0.21

E3 Male Flare x Female I.P.S.



Flare to npt				
E3-4A	50065	5	1/4 x 1/8	0.05
E3-4B	50066	5	1/4 x 1/4	0.13
E3-6C	50071	5	3/8 x 3/8	0.19
E3-8D	50075	2	1/2 x 1/2	0.33



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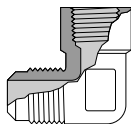
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Flare Fittings

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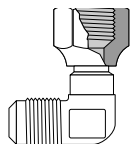
Elbows (Continued)

E4 Male Flare x Female Flare



Catalog Number	IBCA Number	Std. Pkg.	Size (Inches)	Weight (Pounds)
Flare to F. Flare				
E4-44	50077	5	1/4 x 1/4	0.13
E4-66	50078	2	3/8 x 3/8	0.24

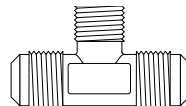
ES4 Forged Brass Swivel Elbow



Flare to F. Flare				
ES4-44	50029	2	1/4	0.13
ES4-66	50030	2	3/8	0.19
ES4-88	50032	2	1/2	0.22
ES4-1010	50028	2	5/8	0.31

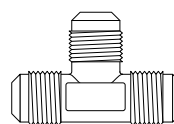
Tees

T1 Male Flare x I.P.S. on Branch



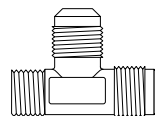
Catalog Number	IBCA Number	Std. Pkg.	Size (Inches)	Weight (Pounds)
Flare to Flare to npte				
T1-4A	50183	10	1/4 x 1/4 x 1/8	0.07
T1-4B	50184	10	1/4 x 1/4 x 1/4	0.09
T1-4C	50185	2	1/4 x 1/4 x 3/8	0.12

T2 Flare Tee



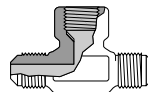
Flare				
T2-4	50194	10	1/4	0.07
T2-6	50196	10	3/8	0.17
T2-8	50197	5	1/2	0.20
T2-10	50192	2	5/8	0.30

T3 Male Flare x I.P.S. on Run



Flare to npte to Flare				
T3-4A	50198	5	1/4 x 1/8 x 1/4	0.08
T3-4B	50199	5	1/4 x 1/4 x 1/4	0.11

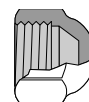
T6 Forged Brass Male to Female Flare Tee



Flare to Flare				
T6-4	50203	2	1/4 x 1/4 x 1/4	0.14

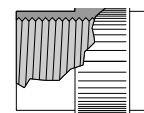
Caps

N5 Flare Seal Cap



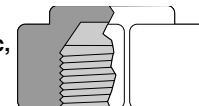
Catalog Number	IBCA Number	Std. Pkg.	Size (Inches)	Weight (Pounds)
F. Flare				
N5-4	50136	25	1/4	0.03
N5-5	50137	5	5/16	0.03
N5-6	50138	25	3/8	0.05
N5-8	50139	10	1/2	0.08
N5-10	50133	10	5/8	0.14
N5-12	50134	2	3/4	0.21

N6 Soft Seated Flare Seal Cap



F. Flare				
N6-4	50140	10	1/4	0.02
N6-6	50141	5	3/8	0.04
N6-4-M	50336	50	1/4	0.02

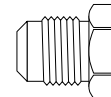
P9002-20 Flare Seal Cap/Plastic, Fingertight Sealing



SAE Flare				
P9002-20	55011		1/4	0.003

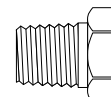
Plugs

P2 Flare Seal Plug



Flare				
P2-4	50149	10	1/4	0.03
P2-6	50151	10	3/8	0.06
P2-8	50152	10	1/2	0.09
P2-10	50146	5	5/8	0.14

P3 I.P.S. Plug



npte				
P3-A	50153	10	1/8	0.03
P3-B	50155	10	1/4	0.06
P3-C	50157	5	3/8	0.07
P3-D	50158	5	1/2	0.13
P3-E	50159	5	3/4	0.21



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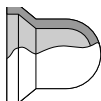
Flare Fittings

For sizes not shown, please consult factory.

Bonnets

B1

Flare Bonnet (Copper)



Catalog Number	IBCA Number	Std. Pkg.	Size (Inches)	Weight (Pounds)
Flare				
B1-4	50003	25	1/4	0.001
B1-6	50005	5	3/8	0.004
B1-8	50006	5	1/2	0.008

Gaskets

B2

Flare Gasket (Copper)

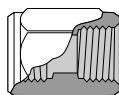


Flare				
B2-4	50012	25	1/4	0.001
B2-5	50013	5	5/16	0.001
B2-6	50014	25	3/8	0.002
B2-8	50015	25	1/2	0.002
B2-10	50009	10	5/8	0.003
B2-12	50010	10	3/4	0.004

Couplings

U4

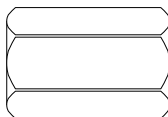
Flare Connector



F. Flare				
U4-4	50314	10	1/4	0.08
U4-6	50315	10	3/8	0.13
U4-8	50316	5	1/2	0.19

PC

Hex. Pipe Coupling

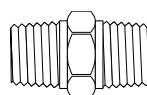


Female Pipe				
PC-J	50142	5	1/8	0.03
PC-K	50143	10	1/4	0.08
PC-L	50144	5	3/8	0.10
PC-M	50145	5	1/2	0.20

Nipples

U10

Hex. Pipe Nipple

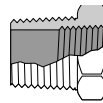


Male Pipe				
U10-A	50276	5	1/8	0.03
U10-B	50278	10	1/4	0.06
U10-C	50280	5	3/8	0.08
U10-D	50281	5	1/2	0.15
U10-E	50282	5	3/4	0.18

Bushings

R1

Hex. Pipe Bushing

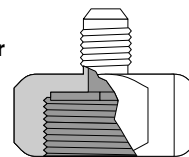


npte to npti				
R1-AB	50161	5	1/8 x 1/4	0.05
R1-BA	50162	10	1/4 x 1/8	0.02
R1-CB	50163	10	3/8 x 1/4	0.04
R1-DB	50164	10	1/2 x 1/4	0.08
R1-DC	50165	10	1/2 x 3/8	0.05
R1-EC	50166	5	3/4 x 3/8	0.11
R1-ED	50167	10	3/4 x 1/2	0.09

Adapters

K1

Cylinder Valve Adapter and Gaskets

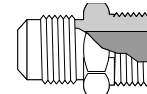


Catalog Number	IBCA Number	Std. Pkg.	Size (Inches)	Weight (Pounds)
npsm to Flare				
K1-1	50090	10	3/4 x 1/4	0.16
K1-3	50091	10	3/4 x 3/8	0.19
K1-5	50092	2	3/4 x 1/2	0.19
K1-8	50093	2	1/2 x 1/4	0.15
P10-E	51679	3/4 Gasket for K1-1, K1-3, K1-5		
P10-F	51680	1/2 Gasket for K1-8		

Fusible Fittings

FU

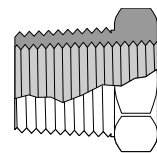
Fusible Metal Union* (275°, 212°, 162°)



Flare to npte				
FU-4B-275°	50082	2	1/4 x 1/4	0.04
FU-6C-275°	50086	2	3/8 x 3/8	0.09
FU-6D-275°	50089	2	3/8 x 1/2	0.10
FU-4B-212°	50081	2	1/4 x 1/4	0.04
FU-6C-212°	50085	2	3/8 x 3/8	0.09
FU-6D-212°	50088	2	3/8 x 1/2	0.10
FU-6C-162°	50084	2	3/8 x 3/8	0.09

97, 98, 92, 93

Fusible Metal Plug* (275°, 212°, 162°)



Flare to npte				
97-275	50331		1/8	0.04
98-275	50335		1/4	0.06
92-275	50325		3/8	0.08
93-275	50328		1/2	0.16
97-212	50330		1/8	0.04
98-212	50334		1/4	0.06
92-212	50324		3/8	0.08
93-212	50327		1/2	0.16
92-162	50323		3/8	0.08
93-162	50326		1/2	0.16

Other fusible melting temperatures available upon special order.

*Underwriters' Laboratories, Inc. Listed



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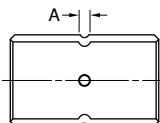
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Wrot Copper Fittings

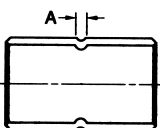
Couplings

100 Staked Stop Wrot Coupling Copper to Copper



Catalog No.	IBCA No.	Dimensions (Inches)		Weight (lbs.)
		OD Size	A	
W10142	30672	5/16	3/32	0.006
W10143	30896	3/8	3/32	0.008
W10144	30898	1/2	3/32	0.014
W10145	30900	5/8	3/32	0.026
W10157	30902	3/4	3/32	0.040
W10146	30904	7/8	3/32	0.061
W10147	30908	1 1/8	3/32	0.104
W10148	30910	1 3/8	3/32	0.150
W10149	30914	1 5/8	3/32	0.217
W10150	30916	2 1/8	3/32	0.401
W10151	30918	2 3/8	3/32	0.624
W10152	30920	3 1/8	3/32	0.970
W10153	30922	3 5/8	3/32	1.390
W10154	30924	4 1/8	3/32	2.040

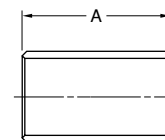
100RS Rolled Stop Coupling Copper to Copper



Catalog No.	IBCA No.	Dimensions (Inches)		Weight (lbs.)
		OD Size	A	
W1001	30662	3/16	1/16	0.003
W1003	30666	1/4	1/16	0.004
5/16	30672	5/16	1/16	0.006
W1009	30678	3/8	3/32	0.008
W1017	30686	1/2	3/32	0.014
W1022	30694	5/8	3/32	0.026
W1028	30702	3/4	3/32	0.040
W1034	30712	7/8	3/32	0.061
W1047	30730	1 1/8	3/32	0.104
W1055	30746	1 3/8	3/32	0.150
W1063	30764	1 5/8	3/32	0.217
W1072	30782	2 1/8	3/32	0.401
W1082	30798	2 3/8	3/32	0.624
W1092	30814	3 1/8	3/32	0.970
W10100	30830	3 5/8	3/32	0.390
W10107	30838	4 1/8	3/32	2.040

Couplings (Continued)

101 Wrot Coupling Without Stop Copper to Copper



Catalog No.	IBCA No.	Dimensions (Inches)		Weight (lbs.)
		OD Size	A	
W1901	30948	3/8	23/32	0.008
W1902	30950	1/2	55/64	0.014
W1903	30952	5/8	1 3/32	0.028
W1904	30954	3/4	1 21/64	0.040
W1905	30956	7/8	1 19/32	0.060
W1906	30960	1 1/8	1 29/32	0.104
W1907	30956	1 3/8	2 1/32	0.150
W1908	30964	1 5/8	2 17/64	0.217
W1909	30966	2 1/8	2 49/64	0.401
W1910	30968	2 3/8	3 1/32	0.624
W1911	30970	3 1/8	3 13/32	0.970
3 5/8	30972	3 5/8	3 29/32	1.390
W1913	30974	4 1/8	4 13/32	1.990



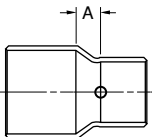
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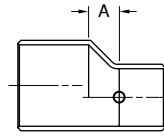
Wrot Copper Fittings

Couplings (Continued) 101R Wrot Reducing Coupling Copper to Copper



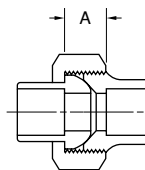
Catalog No.	IBCA No.	Dimensions (Inches)		Weight (lbs.)
		OD Size	A	
W1004	30668	1/4 x 3/16	3/32	0.005
W1010	30680	3/8 x 5/16	3/32	0.008
W1011	30684	3/8 x 1/4	5/32	0.008
W1019	30688	1/2 x 3/8	3/16	0.017
W1021	30692	1/2 x 1/4	1/4	0.017
W1023	30696	5/8 x 1/2	5/32	0.028
W1025	30698	5/8 x 3/8	1/4	0.020
W1027	30700	5/8 x 1/4	23/64	0.026
W1029	30704	3/4 x 5/8	5/32	0.035
W1030	30706	3/4 x 1/2	7/32	0.037
W1031	30708	3/4 x 3/8	5/16	0.033
W1035	30714	7/8 x 3/4	3/16	0.064
W1036	30716	7/8 x 5/8	3/16	0.059
W1037	30718	7/8 x 1/2	21/64	0.050
W1038	30720	7/8 x 3/8	7/16	0.053
W1049	30734	1 1/8 x 7/8	13/32	0.103
W1050	30736	1 1/8 x 3/4	3/8	0.100
W1051	30738	1 1/8 x 5/8	7/16	0.105
W1052	30740	1 1/8 x 1/2	1/2	0.094
W1056	30748	1 3/8 x 1 1/8	5/16	0.144
W1058	30752	1 3/8 x 7/8	15/32	0.130
W1060	30756	1 3/8 x 5/8	41/64	0.177
W1064	30766	1 5/8 x 1 3/8	11/32	0.210
W1065	30768	1 5/8 x 1 1/8	7/16	0.220
W1067	30772	1 5/8 x 7/8	21/32	0.218
W1069	30776	1 5/8 x 5/8	25/32	0.209
W1073	30784	2 1/8 x 1 5/8	13/32	0.386
W1074	30786	2 1/8 x 1 3/8	21/32	0.369
W1075	30788	2 1/8 x 1 1/8	25/32	0.382
W1077	30790	2 1/8 x 7/8	1	0.397
W1079	30792	2 1/8 x 5/8	1 1/8	0.402
W1083	30800	2 5/8 x 2 1/8	15/32	0.612
W1084	30802	2 5/8 x 1 5/8	7/8	0.660
W1085	30804	2 5/8 x 1 3/8	15/16	0.648
W1086	30806	2 5/8 x 1 1/8	1 1/8	0.640
W1093	30816	3 1/8 x 2 5/8	1/2	0.902
W1094	30818	3 1/8 x 2 1/8	13/16	0.950
W1095	30820	3 1/8 x 1 5/8	1 5/32	1.040
W10101	30832	3 5/8 x 3 1/8	1/2	1.360
W10108	30840	4 1/8 x 3 5/8	17/32	1.960
W10109	30842	4 1/8 x 3 1/8	7/8	1.950
W10110	30844	4 1/8 x 2 5/8	1 1/8	2.020
61S41S	30862	6 1/8 x 4 1/8	1 3/16	4.762

Couplings (Continued) 110 Wrot Eccentric Coupling Copper to Copper



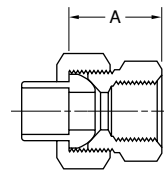
Catalog No.	IBCA No.	Dimensions (Inches)		Weight (lbs.)
		OD Size	A	
W1849	31044	1 1/8 x 7/8	13/32	0.110
W1856	31046	1 3/8 x 1 1/8	1/2	0.160

Unions 102 Wrot Union Copper to Copper



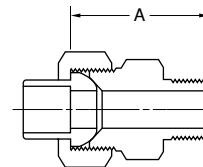
Catalog No.	IBCA No.	Dimensions (Inches)		Weight (lbs.)
		OD Size	A	
W8001	33576	3/8	13/32	0.120
W8002	33578	1/2	27/64	0.170
W8003	33580	5/8	1/2	0.113
W8004	33582	7/8	21/32	0.255
W8005	33584	1 1/8		
A11205	33585	1 3/8		
A11206	33586	1 5/8		
A11207	33587	2 5/8		

102F Wrot Union Copper to Female NPT



Catalog No.	IBCA No.	Dimensions (Inches)		Weight (lbs.)
		OD Size	A	
1/2 x 3/8	55246	1/2 x 3/8	15/16	0.210

102M Wrot Union Copper to Male NPT



Catalog No.	IBCA No.	Dimensions (Inches)		Weight (lbs.)
		OD Size	A	
3/8 x 1/4	55249	3/8 x 1/4	1 13/16	0.180



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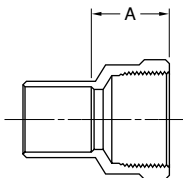
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Wrot Copper Fittings

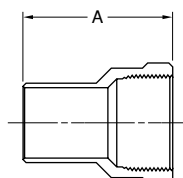
Adapters

103 Wrot Female Adapter Copper to Female NPT



Catalog No.	IBCA No.	Dimensions (Inches)		Weight (lbs.)
		OD Size	A	
W1207	30100	1/4 x 1/8	7/16	0.024
W1215	30110	3/8 x 1/4	15/32	0.030
W1225	30120	1/2 x 3/8	19/32	0.060
W1231	30130	5/8 x 1/2	7/8	0.090
W1246	30150	7/8 x 3/4	23/32	0.128
W1263	30160	1 1/8 x 1	31/32	0.199
W1271	30170	1 3/8 x 1 1/4	1 5/32	0.290
W1279	30180	1 5/8 x 1 1/2	1 5/8	0.420
W1287	30190	2 1/8 x 2	1 1/4	0.650
W1296	30200	2 5/8 x 2 1/2	1 1/2	1.200

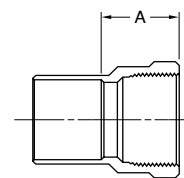
1032 Wrot Female Street Adapter Fitting to Female NPT



Catalog No.	IBCA No.	Dimensions (Inches)		Weight (lbs.)
		OD Size	A	
W1531	30236	5/8 x 1/2	1 3/8	0.096
W1546	30242	7/8 x 3/4	1 11/16	0.138
W1563	30248	1 1/8 x 1	1 31/32	0.199
W1564	34287	1 1/8 x 1 3/4		
W1571	30254	1 3/8 x 1 1/4	2 5/32	0.322
W1579	30260	1 5/8 x 1 1/2	2 7/16	0.500
W1587	30266	2 1/8 x 2	2 19/32	0.658

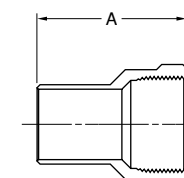
Adapters (Continued)

103R Wrot Reducing Female Adapter Copper to Female NPT



Catalog No.	IBCA No.	Dimensions (Inches)		Weight (lbs.)
		OD Size	A	
W1205	30140	1/4 x 3/8	5/8	0.050
W1206	30106	1/4 x 1/4	1/2	0.030
W1212	30112	3/8 x 1/2	25/32	0.080
W1214	30114	3/8 x 3/8	21/32	0.050
W1216	30116	3/8 x 1/8	11/32	0.020
W1224	30124	1/2 x 1/2	7/8	0.080
W1226	30126	1/2 x 1/4	7/16	0.030
W1230	30134	5/8 x 3/4	9/32	0.107
W1232	30136	5/8 x 3/8	9/16	0.050
W1233	30138	5/8 x 1/4	9/16	0.060
W1238	30142	3/4 x 3/4	7/8	0.130
W1239	30144	3/4 x 1/2	3/4	0.090
W1245	30154	7/8 x 1	1 7/32	0.231
W1247	30156	7/8 x 1/2	1 1/16	0.111
W1264	30166	1 1/8 x 3/4	43/64	0.171
W1265	30168	1 1/8 x 1/2	11/16	0.230
W1270	30172	1 3/8 x 1 1/2	1 19/64	0.420
W1272	30174	1 3/8 x 1	55/64	0.241
W1278	30182	1 5/8 x 2	1 7/16	0.668
W1280	30184	1 5/8 x 1 1/4	7/8	0.336
21x1 1/2	30292	2 1/8 x 1 1/2	1 3/16	0.730

1032R Wrot Reducing Female Street Adapter Fitting to Female NPT



Catalog No.	IBCA No.	Dimensions (Inches)		Weight (lbs.)
		OD Size	A	
W1532	32038	5/8 x 3/8	1 1/8	0.041



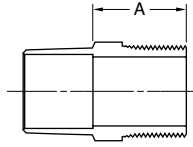
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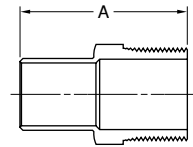
Wrot Copper Fittings

Adapters (Continued) 104 Wrot Male Adapter Copper to Male NPT



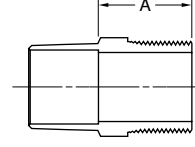
Catalog No.	IBCA No.	Dimensions (Inches)		Weight (lbs.)
		OD Size	A	
W1115	30290	3/8 x 1/4	15/32	0.027
W1125	30300	1/2 x 3/8	7/8	0.049
W1131	30310	5/8 x 1/2	19/32	0.066
W1146	30330	7/8 x 3/4	13/16	0.116
W1163	30342	1 1/8 x 1	27/32	0.201
W1171	30354	1 3/8 x 1 1/4	1 1/2	0.372
W1179	30368	1 5/8 x 1 1/2	1 9/16	0.429
W1187	30378	2 1/8 x 2	1 11/32	0.794
W1196	30388	2 5/8 x 2 1/2	1 21/32	1.270
W1199	30400	3 1/8 x 3	1 25/32	2.270
W1150	30410	4 1/8 x 4	1 29/32	3.340

1042 Wrot Male Street Adapter Fitting to Male NPT



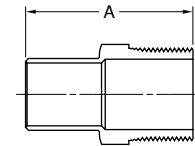
Catalog No.	IBCA No.	Dimensions (Inches)		Weight (lbs.)
		OD Size	A	
W1431	30436	5/8 x 1/2	1 7/16	0.074
W1446	30444	7/8 x 3/4	1 27/32	0.130
W1463	30452	1 1/8 x 1	2 5/32	0.230
W1471	30460	1 3/8 x 1 1/4	2 1/2	0.410
W1487	30480	2 1/8 x 2	2 13/16	0.740
3/8 x 1/4	30424	3/8 x 1/4	1 3/8	0.065

Adapters (Continued) 104R Wrot Reducing Male Adapter Copper to Male NPT



Catalog No.	IBCA No.	Dimensions (Inches)		Weight (lbs.)
		OD Size	A	
W1105	30282	1/4 x 3/8	3/4	0.045
W1106	30284	1/4 x 1/4	7/16	0.033
W1113	30292	3/8 x 1/2	7/8	0.075
W1114	30294	3/8 x 3/8	63/64	0.049
W1116	30296	3/8 x 1/8	17/32	0.014
W1123	30302	1/2 x 3/4	1 11/32	0.140
W1124	30304	1/2 x 1/2	15/16	0.070
W1126	30306	1/2 x 1/4	5/8	0.040
W1129	30314	5/8 x 1	1 19/32	0.240
W1130	30316	5/8 x 3/4	13/16	0.132
W1132	30318	5/8 x 3/8	3/4	0.060
W1133	30320	5/8 x 1/4	5/8	0.070
W1138	30324	3/4 x 3/4	1 1/8	0.130
W1139	30326	3/4 x 1/2	1 1/16	0.080
W1145	30336	7/8 x 1	1 31/64	0.250
W1147	30338	7/8 x 1/2	59/64	0.110
W1161	30344	1 1/8 x 1 1/2	1 29/32	0.540
W1162	30346	1 1/8 x 1 1/4	1 21/32	0.390
W1164	30348	1 1/8 x 3/4	1 3/32	0.200
W1165	30350	1 1/8 x 1/2	29/32	0.140
W1170	30358	1 3/8 x 1 1/2	1 45/64	0.520
W1172	30360	1 3/8 x 1	1 1/4	0.300
W1178	30370	1 5/8 x 2	1 25/32	0.780
W1180	30372	1 5/8 x 1 1/4	1 27/64	0.430
W1181	30374	1 5/8 x 1	1 15/32	0.560
W1188	30380	2 1/8 x 1 1/2	1 5/8	0.740
W1189	30382	2 1/8 x 1 1/4	1 3/4	0.700
W1197	30390	2 5/8 x 2	1 9/64	0.931

1042R Wrot Reducing Male Street Adapter Fitting to Male NPT



Catalog No.	IBCA No.	Dimensions (Inches)		Weight (lbs.)
		OD Size	A	
W1447	30448	7/8 x 1/2	1 23/32	0.100



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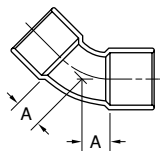
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Wrot Copper Fittings

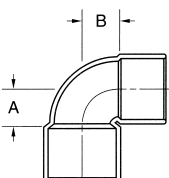
Elbows

106 Wrot 45° Elbow Copper to Copper



Catalog No.	IBCA No.	Dimensions (Inches)		Weight (lbs.)
		OD Size	A	
W3005	31082	1/4	1/8	0.005
W3012	31086	3/8	15/64	0.011
W3021	31090	1/2	1/4	0.020
W3026	31096	5/8	17/64	0.030
W3030	31102	3/4	7/16	0.060
W3034	31106	7/8	3/8	0.080
W3044	31120	1 1/8	13/32	0.150
W3050	31128	1 3/8	33/64	0.230
W3055	31134	1 5/8	19/32	0.340
W3059	31140	2 1/8	25/32	0.620
W3063	31148	2 5/8	7/8	0.970
W3067	31156	3 1/8	63/64	1.440
W3070	31126	3 5/8	1 5/32	2.140
W3073	31168	4 1/8	1 11/64	3.100

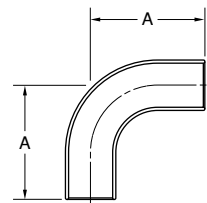
107C Wrot 90° Elbow-Short Radius Copper to Copper



Catalog No.	IBCA No.	Dimensions (Inches)		Weight (lbs.)
		OD Size	A	
W2003	31260	1/4	1/4	0.006
W2009	31262	3/8	3/8	0.012
W2017	31266	1/2	1/2	0.024
W2022	31272	5/8	9/16	0.040
W2028	31280	3/4	7/8	0.060
W2034	31288	7/8	13/16	0.100
W2047	31296	1 1/8	1 1/16	0.180
W2084	31306	1 3/8	1 1/16	0.280
W2085	31314	1 5/8	1 7/32	0.400
W2086	31322	2 1/8	1 1/2	0.750
W2087	31330	2 5/8	1 3/4	1.180
W2088	31338	3 1/8	2	1.880
W2090	31352	4 1/8	2 19/32	4.220

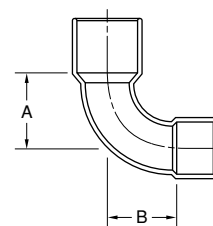
Elbows

105 Wrot 90° Street Elbow-Long Radius Fitting to Fitting



Catalog No.	IBCA No.	Dimensions (Inches) OD Size	A	Weight (lbs.)
W2659	31944	2 1/8	4 3/8	1.156

107R Wrot 90° Reducing Elbow-Long Radius Copper to Copper



Catalog No.	IBCA No.	Dimensions (Inches)			Weight (lbs.)
		OD Size	A	B	
W2719	31674	1/2 x 3/8	41/64	39/64	0.026
W2723	31678	5/8 x 1/2	3/4	11/16	0.040
W2729	31686	3/4 x 5/8	31/32	7/8	0.080
W2735	31694	7/8 x 3/4	1 5/32	1 1/16	0.120
W2736	31696	7/8 x 5/8	7/8	7/8	0.090
W2737	31698	7/8 x 1/2	27/32	11/16	0.070
W2749	31710	1 1/8 x 7/8	1 1/4	1 9/16	0.170
W2058	31724	1 3/8 x 7/8	1 5/16	1 3/16	0.230
W2064	31732	1 5/8 x 1 3/8	2 1/4	2	0.470
W2065	31734	1 5/8 x 1 1/8	1 37/64	1 19/32	0.350
W2073	31742	2 1/8 x 1 5/8	2 5/16	2 3/16	0.770
W2083	—	2 5/8 x 2 1/8	1 7/8	1 1/2	1.128



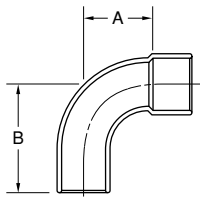
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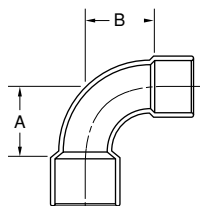
Wrot Copper Fittings

Elbows (Continued) 107L2 Wrot 90° Street Elbow-Long Radius Fitting to Copper



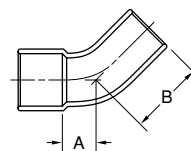
Catalog No.	IBCA No.	Dimensions (Inches)			Weight (lbs.)
		OD Size	A	B	
1/4	31790	1/4	1/2	7/8	0.008
W2809	31792	3/8	3/4	1 1/8	0.016
W2817	31796	1/2	3/4	1 3/16	0.033
W2822	31802	5/8	7/8	1 7/16	0.056
W2828	31810	3/4	1 1/8	1 13/16	0.087
W2834	31816	7/8	1 5/8	2	0.120
W2847	31830	1 1/8	1 1/2	2 15/32	0.224
W2350	31838	1 3/8	1 7/8	2 29/32	0.388
W2355	31844	1 5/8	2 3/16	3 5/16	0.560
W2359	31850	2 1/8	3	4 3/8	1.156
W2363	31856	2 5/8	3 3/4	5 5/32	1.970
W2368	31862	3 1/8	4 5/8	6 11/32	3.135
W2393	31868	3 5/8	5 1/4	7 7/32	4.700
W2395	31874	4 1/8	5 7/8	8 9/32	7.110

107L Wrot 90° Elbow-Long Radius Copper to Copper



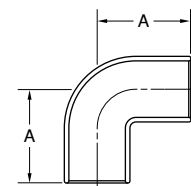
Catalog No.	IBCA No.	Dimensions (Inches)			Weight (lbs.)
		OD Size	A	B	
W2715	31664	1/4	1/2	1/2	0.008
W2710	31666	5/16	9/16	9/16	0.013
W2716	31668	3/8	3/4	3/4	0.016
W2717	31672	1/2	3/4	3/4	0.033
W2722	31676	5/8	7/8	7/8	0.056
W2728	31684	3/4	1 1/8	1 1/8	0.087
W2734	31692	7/8	1 3/16	1 3/16	0.120
W2747	31708	1 1/8	1 1/2	1 1/2	0.224
W2055	31720	1 3/8	1 7/8	1 7/8	0.388
W2063	31730	1 5/8	2 3/16	2 3/16	1.560
W2072	31740	2 1/8	3	3	1.156
W2082	31750	2 5/8	3 3/4	3 3/4	1.970
W2092	31756	3 1/8	4 5/8	4 5/8	3.135
W2093	31762	3 5/8	5 1/4	5 1/4	4.700
W2095	31770	4 1/8	5 7/8	5 7/8	7.110

Elbows (Continued) 1062 Wrot 45° Street Elbow Fitting to Copper



Catalog No.	IBCA No.	Dimensions (Inches)			Weight (lbs.)
		OD Size	A	B	
W3312	31186	3/8	9/32	4 1/64	0.011
W3321	31190	1/2	9/32	27/32	0.020
W3326	31194	5/8	5/16	27/32	0.030
W3330	31198	3/4	27/64	1 1/16	0.060
W3334	31202	7/8	13/32	1 3/16	0.080
W3344	31206	1 1/8	7/16	1 7/16	0.150
W3350	31212	1 3/8	17/32	1 9/16	0.240
W3355	31216	1 5/8	19/32	1 3/4	0.340
W3359	31220	2 1/8	25/32	2 3/16	0.630
W3363	31224	2 5/8	29/32	2 7/16	0.980
W3373	31236	4 1/8	1 9/32	3 1/2	3.200

105C Wrot 90° Street Elbow-Short Radius Fitting to Fitting



Catalog No.	IBCA No.	Dimensions (Inches)			Weight (lbs.)
		OD Size	A	B	
W2612	31452	3/8	27/32		0.012
W2626	31460	5/8	1 1/32		0.050
3/4	31908	3/4	1 1/4		0.070
W2634	31468	7/8	1 5/32		0.100
W2644	31472	1 1/8	1 21/32		0.180
W2684	31476	1 3/8	1 7/8		0.280



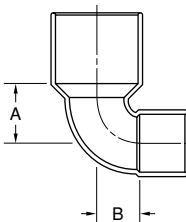
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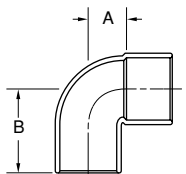
Wrot Copper Fittings

Elbows (Continued) 107CR Wrot 90° Reducing Elbow-Short Radius Copper to Copper



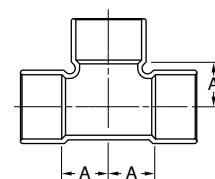
Catalog No.	IBCA No.	OD Size	Dimensions (Inches)		Weight (lbs.)
			A	B	
W2019	31268	1/2 x 3/8	15/32	3/8	0.026
W2023	31274	5/8 x 1/2	7/16	3/8	0.040
W2025	31276	5/8 x 3/8	17/32	3/8	0.030
W2029	31282	3/4 x 5/8	15/32	7/8	0.080
W2036	31290	7/8 x 5/8	39/64	15/32	0.080
W2051	31300	1 1/8 x 5/8	13/32	7/8	0.120
W2049	31298	1 1/8 x 7/8	3/4	19/32	0.150
W2056	31308	1 3/8 x 1 1/8	7/8	11/16	0.230
W2077	31316	1 5/8 x 1 3/8	1 1/16	7/8	0.340
W2078	31324	2 1/8 x 1 5/8	1 9/16	1 7/32	0.600
25S21S	31332	2 5/8 x 2 1/8	1 7/8	1 1/2	1.060

107C2 Wrot 90° Street Elbow-Short Radius Fitting to Copper



Catalog No.	IBCA No.	OD Size	Dimensions (Inches)		Weight (lbs.)
			A	B	
W2305	31390	1/4	1/4	5/8	0.006
W2312	31392	3/8	3/8	3/4	0.012
W2321	31396	1/2	1/2	15/16	0.024
W2326	31400	5/8	9/16	1 13/16	0.050
W2330	31404	3/4	7/8	1 1/2	0.060
W2334	31408	7/8	13/16	1 5/8	0.100
W2344	31412	1 1/8	1 1/16	2 1/32	0.180
W2384	31416	1 3/8	7/8	1 29/32	0.280
W2385	31420	1 5/8	1 13/32	2 3/8	0.390
W2386	31424	2 1/8	1 19/32	2 31/32	0.760
W2387	31428	2 5/8	1 3/4	3 11/32	1.180
W2388	31432	3 1/8	2	3 29/32	1.860
W2389	31436	3 5/8	2 1/4	4 11/32	2.700
W2390	31440	4 1/8	2 19/64	4 7/8	4.200

Tees 111 Wrot Tee Copper to Copper to Copper



Catalog No.	IBCA No.	OD Size	Dimensions (Inches)			Weight (lbs.)
			A	B	C	
W40302	32602	3/16	3/16	3/16	3/16	0.007
W40306	32606	1/4	13/64	13/64	7/32	0.015
W40313	32622	5/16	7/32	7/32	9/32	0.020
W4000	32640	3/8	17/64	17/64	1/4	0.028
W4001	32668	1/2	5/16	5/16	3/8	0.047
W4006	32700	5/8	21/64	21/64	11/32	0.050
W4017	32732	3/4	7/16	7/16	1/2	0.100
W4031	32768	7/8	1/2	1/2	17/32	0.160
W4048	32818	1 1/8	21/32	21/32	21/32	0.291
W4068	32866	1 3/8	7/8	7/8	25/32	0.405
W4084	32910	1 5/8	1 5/32	1 5/32	1 5/32	0.710
W40102	32970	2 1/8	1 3/8	1 3/8	1 3/8	1.290
W40123	33030	2 5/8	1 21/32	1 21/32	1 11/16	1.900
W40152	33124	3 1/8	1 7/8	1 7/8	1 11/16	2.750
W40190	33250	3 5/8	3 5/32	3 5/32	2 1/4	4.170
W40200	33258	4 1/8	2 13/32	2 13/32	2 9/16	6.620



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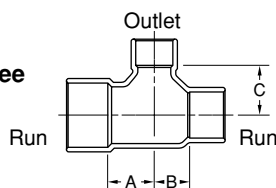
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Wrot Copper Fittings

Tees (Continued)

111R, RR, or BH* Wrot Reducing Tee Copper to Copper to Copper



Catalog No.	IBCA No.	Dimensions (Inches) OD Size	A	B	Weight C	(lbs.)
3S3S4S	32604	3/16 x 3/16 x 1/4	17/64	17/64	7/32	0.015
W40368	32610	1/4 x 1/4 x 3/8	13/32	13/32	1/4	0.028
4S4MS4S	33492	1/4 x 1/4 FIT x 1/4	13/64	13/64	7/32	0.015
W40308	32612	1/4 x 1/4 x 3/16	13/64	13/64	7/32	0.015
5S5S4S	32626	5/16 x 5/16 x 1/4	7/32	7/32	11/32	0.020
5S4S4S	32630	5/16 x 1/4 x 1/4	7/32	11/32	11/32	0.020
W4016	32642	3/8 x 3/8 x 5/8	21/32	21/32	11/32	0.063
W4005	32644	3/8 x 3/8 x 1/2	15/32	15/32	3/8	0.047
W40324	32648	3/8 x 3/8 x 1/4	17/64	17/64	13/32	0.028
W40330	32656	3/8 x 1/4 x 3/8	17/64	13/32	1/4	0.028
W40332	32664	3/8 x 1/4 x 1/4	17/64	13/32	13/32	0.028
W4015	32672	1/2 x 1/2 x 5/8	17/32	17/32	11/32	0.063
W4002	32674	1/2 x 1/2 x 3/8	5/16	5/16	15/32	0.047
W40350	32678	1/2 x 1/2 x 1/4	5/16	5/16	39/64	0.047
W4003	32684	1/2 x 3/8 x 1/2	5/16	15/32	3/8	0.047
W4004	32686	1/2 x 3/8 x 3/8	5/16	15/32	15/32	0.047
W40358	32688	1/2 x 3/8 x 1/4	5/16	15/32	5/8	0.047
W40363	32694	1/2 x 1/4 x 1/2	5/16	9/16	3/8	0.047
W4067	32702	5/8 x 5/8 x 1 1/8	15/16	15/16	3/4	0.320
W4047	32704	5/8 x 5/8 x 7/8	33/64	33/64	15/32	0.120
W4029	32706	5/8 x 5/8 x 3/4	21/32	21/32	1/2	0.100
W4007	32708	5/8 x 5/8 x 1/2	5/16	5/16	13/32	0.060
W4008	32710	5/8 x 5/8 x 3/8	9/32	9/32	13/32	0.060
W4014	32712	5/8 x 5/8 x 1/4	9/32	9/32	1/2	0.060
W4009	32716	5/8 x 1/2 x 5/8	3/8	17/32	11/32	0.060
W4010	32718	5/8 x 1/2 x 1/2	5/16	1/2	13/32	0.060
W4011	32720	5/8 x 1/2 x 3/8	9/32	1/2	13/32	0.060
W4012	32724	5/8 x 3/8 x 5/8	3/8	21/32	11/32	0.060
W4013	32728	5/8 x 3/8 x 3/8	9/32	5/8	13/32	0.060
W4046	32736	3/4 x 3/4 x 7/8	11/16	11/16	17/32	0.150
W4018	32738	3/4 x 3/4 x 5/8	27/64	27/64	1/2	0.100
W4020	32742	3/4 x 3/4 x 3/8	27/64	27/64	23/32	0.100
W4023	32750	3/4 x 5/8 x 1/2	27/64	5/8	21/32	0.100
W4025	32754	3/4 x 1/2 x 3/4	7/16	23/32	1/2	0.100
W4026	32756	3/4 x 1/2 x 5/8	27/64	23/32	1/2	0.100
W4027	32758	3/4 x 1/2 x 1/2	27/64	23/32	21/32	0.100
W4065	32770	7/8 x 7/8 x 1 1/8	3/4	3/4	17/32	0.202
W4032	32772	7/8 x 7/8 x 3/4	1/2	1/2	3/4	0.150
W4033	32774	7/8 x 7/8 x 5/8	25/64	25/64	19/32	0.140
W4034	32776	7/8 x 7/8 x 1/2	25/64	25/64	11/16	0.130
W4035	32778	7/8 x 7/8 x 3/8	25/64	25/64	3/4	0.140

*R=Reducing on Outlet
RR=Reducing on Run
BH=Larger Diameter Outlet

Catalog No.	IBCA No.	OD Size	Dimensions (Inches) A	B	C	Weight (lbs.)
W4041	32790	7/8 x 5/8 x 7/8	1/2	25/32	17/32	0.500
W4042	32792	7/8 x 5/8 x 3/4	1/2	25/32	3/4	0.150
W4043	32794	7/8 x 5/8 x 5/8	25/64	5/8	19/32	0.130
W4045	32798	7/8 x 5/8 x 3/8	25/64	5/8	3/4	0.140
W40231	32804	7/8 x 1/2 x 5/8	25/64	23/32	19/32	0.140
W40101	32820	1 1/8 x 1 1/8 x 1 1/8	1 1/4	1 1/4	1 1/32	0.660
W4082	32822	1 1/8 x 1 1/8 x 1 1/8	1 5/32	1 5/32	32/32	0.460
W4049	32824	1 1/8 x 1 1/8 x 7/8	1/2	1/2	5/8	0.223
W4051	32828	1 1/8 x 1 1/8 x 5/8	23/64	23/64	11/16	0.186
W4052	32830	1 1/8 x 1 1/8 x 1/2	23/64	23/64	13/16	0.186
W4055	32836	1 1/8 x 7/8 x 1 1/8	21/32	53/64	21/32	0.290
W4056	32838	1 1/8 x 7/8 x 7/8	1/2	11/16	5/8	0.220
W4057	32840	1 1/8 x 7/8 x 3/4	1/2	11/16	15/16	0.223
W4058	32842	1 1/8 x 7/8 x 5/8	23/64	9/16	11/16	0.186
W4061	32856	1 1/8 x 5/8 x 1 1/8	21/32	5/64	21/32	0.290
W4062	32858	1 1/8 x 5/8 x 7/8	1/2	15/16	5/8	0.223
W4063	32860	1 1/8 x 5/8 x 5/8	23/64	13/16	11/16	0.185
W40122	32868	1 3/8 x 1 3/8 x 2 1/8	1 3/4	1 3/4	1 3/8	1.290
W40100	32870	1 3/8 x 1 3/8 x 1 1/8	1 3/16	1 3/16	1 5/32	0.690
W4069	32872	1 3/8 x 1 3/8 x 1 1/8	3/4	3/4	25/32	0.391
W4070	32874	1 3/8 x 1 3/8 x 7/8	5/8	5/8	25/32	0.297
W4071	32876	1 3/8 x 1 3/8 x 5/8	1/2	1/2	25/32	0.256
W4072	32878	1 3/8 x 1 3/8 x 1/2	1/2	1/2	25/32	0.256
W4073	32882	1 3/8 x 1 1/8 x 1 1/8	7/8	7/8	25/32	0.405
W4074	32884	1 3/8 x 1 1/8 x 1 1/8	3/4	3/4	25/32	0.384
W4075	32886	1 3/8 x 1 1/8 x 7/8	5/8	5/8	25/32	0.297
W4076	32888	1 3/8 x 1 1/8 x 5/8	1/2	1/2	25/32	0.256
W4077	32890	1 3/8 x 1 1/8 x 1/2	1/2	1/2	25/32	0.256
W4078	32894	1 3/8 x 7/8 x 1 3/8	7/8	7/8	25/32	0.405
W4079	32896	1 3/8 x 7/8 x 1 1/8	3/4	3/4	25/32	0.391
W4080	32898	1 3/8 x 7/8 x 7/8	5/8	5/8	25/32	0.287
W4081	32900	1 3/8 x 7/8 x 5/8	1/2	1/2	25/32	0.256
W4083	32904	1 3/8 x 5/8 x 1 3/8	7/8	7/8	25/32	0.405
W40121	32912	1 5/8 x 1 5/8 x 2 1/8	1 37/64	1 37/64	1 3/8	1.290
W4085	32914	1 5/8 x 1 5/8 x 1 3/8	31/32	31/32	1 1/16	0.640
W4086	32916	1 5/8 x 1 5/8 x 1 1/8	27/32	27/32	1 1/16	0.610
W4087	32918	1 5/8 x 1 5/8 x 7/8	11/16	11/16	31/32	0.570
W4088	32920	1 5/8 x 1 5/8 x 5/8	9/16	9/16	31/32	0.470
W4090	32924	1 5/8 x 1 5/8 x 1 5/8	1 7/32	1 3/16	1 7/32	0.690
W4091	32926	1 5/8 x 1 3/8 x 1 3/8	31/32	1 3/16	1 1/16	0.640
W4092	32928	1 5/8 x 1 3/8 x 1 1/8	27/32	27/32	1 1/16	0.600
W4093	32930	1 5/8 x 1 3/8 x 7/8	11/16	7/8	31/32	0.560
W4094	32932	1 5/8 x 1 3/8 x 5/8	9/16	13/16	31/32	0.470
W4095	32936	1 5/8 x 1 1/8 x 1 5/8	1 5/32	1 1/4	1 5/32	0.690
W4096	32938	1 5/8 x 1 1/8 x 1 3/8	31/32	1 5/16	1 1/16	0.640
W4097	32940	1 5/8 x 1 1/8 x 1 1/8	27/32	1 1/8	1 1/16	0.610
W4098	32942	1 5/8 x 1 1/8 x 7/8	11/16	1	31/32	0.560
W40237	32944	1 5/8 x 1 1/8 x 5/8	9/16	13/16	31/32	0.470
W4099	32948	1 5/8 x 7/8 x 1 5/8	1 5/32	1 19/64	1 5/32	0.680
W40239	32950	1 5/8 x 7/8 x 1 3/8	31/32	1 1/4	1 1/16	0.640
W40240	32952	1 5/8 x 7/8 x 1 1/8	27/32	1 5/16	1 1/16	0.600
W40238	32954	1 5/8 x 7/8 x 7/8	11/16	1 1/32	31/32	0.550
W40243	32956	1 5/8 x 7/8 x 5/8	9/16	15/16	31/32	0.470



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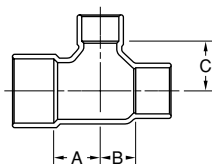
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Wrot Copper Fittings

Tees (Continued)

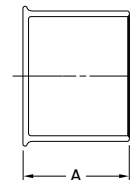
111R, RR, or BH* Wrot Reducing Tee Copper to Copper to Copper



Catalog No.	IBCA No.	OD Size	Dimensions (Inches)		C	Weight (lbs.)
			A	B		
W40244	32960	1 $\frac{5}{8}$ x $\frac{5}{8}$ x 1 $\frac{5}{8}$	1 $\frac{5}{32}$	1 $\frac{31}{64}$	1 $\frac{5}{32}$	0.670
W40144	32972	2 $\frac{1}{8}$ x 2 $\frac{1}{8}$ x 2 $\frac{5}{8}$	2	2	1 $\frac{11}{16}$	1.900
W40103	32974	2 $\frac{1}{8}$ x 2 $\frac{1}{8}$ x 1 $\frac{1}{8}$	1 $\frac{1}{32}$	1 $\frac{1}{32}$	1 $\frac{11}{32}$	1.080
W40104	32976	2 $\frac{1}{8}$ x 2 $\frac{1}{8}$ x 1 $\frac{3}{8}$	3 $\frac{1}{32}$	3 $\frac{1}{32}$	1 $\frac{3}{8}$	1.030
W40105	32978	2 $\frac{1}{8}$ x 2 $\frac{1}{8}$ x 1 $\frac{1}{4}$	1 $\frac{3}{16}$	1 $\frac{3}{16}$	1 $\frac{5}{16}$	0.900
W40106	32980	2 $\frac{1}{8}$ x 2 $\frac{1}{8}$ x $\frac{7}{8}$	1 $\frac{1}{16}$	1 $\frac{1}{16}$	1 $\frac{1}{4}$	0.920
W40107	32982	2 $\frac{1}{8}$ x 2 $\frac{1}{8}$ x $\frac{5}{8}$	$\frac{5}{8}$	$\frac{5}{8}$	1 $\frac{1}{4}$	0.860
W40109	32984	2 $\frac{1}{8}$ x 1 $\frac{1}{8}$ x 2 $\frac{1}{8}$	1 $\frac{1}{8}$	1 $\frac{37}{64}$	1 $\frac{1}{8}$	1.300
W40110	32986	2 $\frac{1}{8}$ x 1 $\frac{1}{8}$ x 1 $\frac{1}{8}$	1 $\frac{3}{32}$	1 $\frac{19}{64}$	1 $\frac{11}{32}$	1.080
W40111	32988	2 $\frac{1}{8}$ x 1 $\frac{1}{8}$ x 1 $\frac{1}{8}$	3 $\frac{1}{32}$	1 $\frac{3}{16}$	1 $\frac{1}{8}$	1.030
W40112	32990	2 $\frac{1}{8}$ x 1 $\frac{1}{8}$ x 1 $\frac{1}{8}$	1 $\frac{3}{16}$	1 $\frac{1}{16}$	1 $\frac{5}{16}$	0.950
W40113	32992	2 $\frac{1}{8}$ x 1 $\frac{1}{8}$ x $\frac{7}{8}$	1 $\frac{1}{16}$	1 $\frac{1}{16}$	1 $\frac{1}{4}$	0.900
W40115	32998	2 $\frac{1}{8}$ x 2 $\frac{1}{8}$ x 2 $\frac{1}{8}$	1 $\frac{3}{32}$	1 $\frac{25}{32}$	1 $\frac{1}{8}$	1.300
W40116	33000	2 $\frac{1}{8}$ x 1 $\frac{3}{8}$ x 1 $\frac{5}{8}$	1 $\frac{1}{32}$	1 $\frac{3}{8}$	1 $\frac{11}{32}$	1.090
W40117	33002	2 $\frac{1}{8}$ x 1 $\frac{1}{8}$ x 1 $\frac{1}{8}$	3 $\frac{1}{32}$	1 $\frac{3}{16}$	1 $\frac{1}{8}$	1.030
W40118	33004	2 $\frac{1}{8}$ x 1 $\frac{1}{8}$ x 1 $\frac{1}{8}$	1 $\frac{3}{16}$	1 $\frac{9}{16}$	1 $\frac{5}{16}$	1.000
W40119	33006	2 $\frac{1}{8}$ x 1 $\frac{3}{8}$ x $\frac{7}{8}$	1 $\frac{1}{16}$	1 $\frac{5}{32}$	1 $\frac{1}{4}$	0.900
W40245	33012	2 $\frac{1}{8}$ x 1 $\frac{1}{8}$ x 2 $\frac{1}{8}$	1 $\frac{1}{8}$	1 $\frac{25}{32}$	1 $\frac{1}{8}$	1.290
W40247	33016	2 $\frac{1}{8}$ x 1 $\frac{1}{8}$ x 1 $\frac{1}{8}$	2 $\frac{7}{32}$	1 $\frac{9}{32}$	1 $\frac{11}{32}$	0.900
W40124	33034	2 $\frac{5}{8}$ x 2 $\frac{5}{8}$ x 2 $\frac{1}{8}$	1 $\frac{1}{16}$	1 $\frac{1}{16}$	1 $\frac{11}{16}$	1.660
W40125	33036	2 $\frac{5}{8}$ x 2 $\frac{5}{8}$ x 1 $\frac{1}{8}$	1 $\frac{3}{16}$	1 $\frac{3}{16}$	1 $\frac{19}{32}$	1.410
W40126	33038	2 $\frac{5}{8}$ x 2 $\frac{5}{8}$ x 1 $\frac{1}{8}$	1	1	1 $\frac{39}{64}$	1.320
W40127	33040	2 $\frac{5}{8}$ x 2 $\frac{5}{8}$ x 1 $\frac{1}{8}$	$\frac{7}{8}$	$\frac{7}{8}$	1 $\frac{1}{8}$	1.340
W40128	33042	2 $\frac{5}{8}$ x 2 $\frac{5}{8}$ x $\frac{7}{8}$	$\frac{3}{4}$	$\frac{3}{4}$	1 $\frac{31}{64}$	1.250
W40129	33044	2 $\frac{5}{8}$ x 2 $\frac{5}{8}$ x $\frac{5}{8}$	$\frac{1}{2}$	$\frac{1}{2}$	1 $\frac{1}{2}$	1.060
W40130	33046	2 $\frac{5}{8}$ x 2 $\frac{1}{8}$ x 2 $\frac{5}{8}$	1 $\frac{21}{32}$	2	1 $\frac{11}{16}$	1.890
W40131	33048	2 $\frac{5}{8}$ x 2 $\frac{1}{8}$ x 2 $\frac{1}{8}$	1 $\frac{1}{16}$	2 $\frac{3}{64}$	1 $\frac{11}{16}$	1.630
W40132	33050	2 $\frac{5}{8}$ x 2 $\frac{1}{8}$ x 1 $\frac{1}{8}$	1 $\frac{3}{16}$	1 $\frac{1}{4}$	1 $\frac{19}{32}$	1.410
W40138	33064	2 $\frac{5}{8}$ x 1 $\frac{1}{8}$ x 2 $\frac{1}{8}$	1 $\frac{1}{16}$	2 $\frac{15}{32}$	1 $\frac{11}{16}$	1.630
W40139	33066	2 $\frac{5}{8}$ x 1 $\frac{1}{8}$ x 1 $\frac{1}{8}$	1 $\frac{3}{16}$	2 $\frac{19}{64}$	1 $\frac{19}{32}$	1.400
W40220	33076	2 $\frac{5}{8}$ x 1 $\frac{1}{8}$ x 2 $\frac{1}{8}$	1 $\frac{21}{32}$	2 $\frac{31}{32}$	1 $\frac{11}{16}$	1.890
W40221	33092	2 $\frac{5}{8}$ x 1 $\frac{1}{8}$ x 2 $\frac{1}{8}$	1 $\frac{21}{32}$	3 $\frac{7}{32}$	1 $\frac{11}{16}$	1.860
W40222	33108	2 $\frac{5}{8}$ x $\frac{7}{8}$ x 2 $\frac{5}{8}$	1 $\frac{21}{32}$	3 $\frac{1}{16}$	1 $\frac{11}{16}$	1.870
W40151	33128	3 $\frac{1}{8}$ x 3 $\frac{1}{8}$ x 2 $\frac{5}{8}$	1 $\frac{11}{16}$	1 $\frac{11}{16}$	1 $\frac{31}{32}$	2.420
W40150	33130	3 $\frac{1}{8}$ x 3 $\frac{1}{8}$ x 2 $\frac{1}{8}$	1 $\frac{1}{16}$	1 $\frac{1}{16}$	1 $\frac{31}{32}$	2.270
W40149	33132	3 $\frac{1}{8}$ x 3 $\frac{1}{8}$ x 1 $\frac{1}{8}$	1 $\frac{3}{16}$	1 $\frac{3}{16}$	1 $\frac{29}{32}$	2.050
W40148	33134	3 $\frac{1}{8}$ x 3 $\frac{1}{8}$ x 1 $\frac{1}{8}$	3 $\frac{1}{32}$	3 $\frac{1}{32}$	1 $\frac{59}{64}$	1.920
W40147	33136	3 $\frac{1}{8}$ x 3 $\frac{1}{8}$ x 1 $\frac{1}{8}$	$\frac{7}{8}$	$\frac{7}{8}$	1 $\frac{59}{64}$	1.900
W40146	33138	3 $\frac{1}{8}$ x 3 $\frac{1}{8}$ x $\frac{7}{8}$	$\frac{3}{4}$	$\frac{3}{4}$	1 $\frac{19}{16}$	1.690
W40158	33146	3 $\frac{1}{8}$ x 2 $\frac{5}{8}$ x 2 $\frac{5}{8}$	1 $\frac{11}{16}$	2 $\frac{13}{32}$	1 $\frac{31}{32}$	2.400
W40156	33150	3 $\frac{1}{8}$ x 2 $\frac{5}{8}$ x 1 $\frac{1}{8}$	1 $\frac{3}{16}$	1 $\frac{1}{8}$	1 $\frac{29}{32}$	2.000
31S25S14S	33156	3 $\frac{1}{8}$ x 2 $\frac{5}{8}$ x $\frac{7}{8}$	$\frac{3}{4}$	1 $\frac{17}{32}$	1 $\frac{13}{16}$	1.670
W40165	33164	3 $\frac{1}{8}$ x 2 $\frac{1}{8}$ x 2 $\frac{5}{8}$	1 $\frac{11}{16}$	2 $\frac{23}{32}$	1 $\frac{31}{32}$	2.370
31S15S15S	33186	3 $\frac{1}{8}$ x 1 $\frac{1}{8}$ x 1 $\frac{1}{8}$	1 $\frac{3}{16}$	2 $\frac{25}{32}$	1 $\frac{29}{32}$	1.960
W40198	33262	4 $\frac{1}{8}$ x 4 $\frac{1}{8}$ x 3 $\frac{1}{8}$	2 $\frac{1}{32}$	2 $\frac{1}{32}$	2 $\frac{1}{2}$	5.660
W40197	33264	4 $\frac{1}{8}$ x 4 $\frac{1}{8}$ x 2 $\frac{1}{8}$	1 $\frac{25}{32}$	1 $\frac{25}{32}$	2 $\frac{19}{32}$	5.260
W40196	33266	4 $\frac{1}{8}$ x 4 $\frac{1}{8}$ x 2 $\frac{1}{8}$	1 $\frac{1}{2}$	1 $\frac{1}{2}$	2 $\frac{7}{16}$	4.910
W40192	33274	4 $\frac{1}{8}$ x 4 $\frac{1}{8}$ x $\frac{7}{8}$	1 $\frac{3}{32}$	1 $\frac{3}{32}$	2 $\frac{5}{16}$	2.168
W40205	33284	4 $\frac{1}{8}$ x 3 $\frac{1}{8}$ x 2 $\frac{1}{8}$	1 $\frac{25}{32}$	2 $\frac{29}{32}$	2 $\frac{19}{32}$	5.080
W40204	33286	4 $\frac{1}{8}$ x 3 $\frac{1}{8}$ x 2 $\frac{1}{8}$	1 $\frac{1}{2}$	2 $\frac{23}{32}$	2 $\frac{7}{16}$	4.710
41S25S25S	33304	4 $\frac{1}{8}$ x 2 $\frac{5}{8}$ x 2 $\frac{5}{8}$	1 $\frac{25}{32}$	3 $\frac{5}{16}$	2 $\frac{19}{32}$	5.100

Plugs and Caps

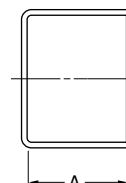
116 Wrot Fitting End Plug For Fitting



Catalog No.	IBCA No.	Dimensions (Inches)		Weight (lbs.)
		OD Size	A	
A1556	32028	1 $\frac{1}{8}$	1 $\frac{13}{16}$	0.060

Plugs and Caps (Continued)

117 Wrot Tube Cap For Tube End



Catalog No.	IBCA No.	Dimensions (Inches)		Weight (lbs.)
		OD Size	A	
W7002	30620	$\frac{1}{4}$	$\frac{9}{32}$	0.003
W7004	30622	$\frac{3}{8}$	$\frac{3}{8}$	0.005
W7006	30624	$\frac{1}{2}$	1 $\frac{15}{32}$	0.009
W7007	30626	$\frac{5}{8}$	$\frac{5}{8}$	0.016
W7008	30628	$\frac{3}{4}$	$\frac{7}{8}$	0.030
W7009	30630	$\frac{7}{8}$	5 $\frac{59}{64}$	0.040
W7011	30632	1 $\frac{1}{8}$	1 $\frac{15}{16}$	0.060
W7012	30634	1 $\frac{1}{8}$	1 $\frac{1}{8}$	0.100
W7013	30636	1 $\frac{1}{8}$	1 $\frac{3}{16}$	0.150
W7014	30638	2 $\frac{1}{8}$	1 $\frac{7}{32}$	0.260
W7015	30640	2 $\frac{5}{8}$	1 $\frac{33}{64}$	0.450
W7016	30642	3 $\frac{1}{8}$	1 $\frac{23}{32}$	0.690
W7017	30644	3 $\frac{5}{8}$	1 $\frac{7}{8}$	0.970
W7018	30646	4 $\frac{1}{8}$	1 $\frac{63}{64}$	1.340



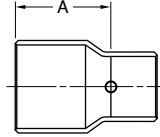
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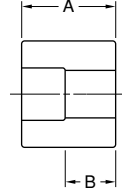
Wrot Copper Fittings

Fitting Reducers 118 Wrot Fitting Reducer Fitting to Copper



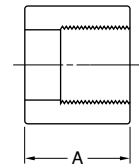
Catalog No.	IBCA No.	Dimensions (Inches)		Weight (lbs.)
		OD Size	A	
W1302	32040	1/4 x 1/8	33/64	0.004
W1306	32042	3/8 x 1/4	1/2	0.007
W1312	32044	1/2 x 3/8	17/32	0.014
W1314	32046	1/2 x 1/4	5/8	0.106
W1315	32048	5/8 x 1/2	23/32	0.027
W1317	32050	5/8 x 3/8	47/64	0.023
W1320	32054	3/4 x 5/8	25/32	0.033
W1321	32056	3/4 x 1/2	29/32	0.035
W1322	32058	3/4 x 3/8	15/16	0.034
W1325	32062	7/8 x 3/4	15/16	0.060
W1326	32064	7/8 x 5/8	1	0.060
W1327	32066	7/8 x 1/2	1 1/16	0.040
W1328	32044	7/8 x 3/8	1 1/8	0.050
W1337	32072	1 1/8 x 7/8	1 3/16	0.100
W1338	32074	1 1/8 x 3/4	1 7/32	0.090
W1339	32076	1 1/8 x 5/8	1 9/32	0.100
W1340	32078	1 1/8 x 1/2	1 3/8	0.090
W1343	32082	1 3/8 x 1 1/8	1 1/4	0.150
W1345	32084	1 3/8 x 7/8	1 11/32	0.120
W1347	32086	1 3/8 x 5/8	1 5/32	0.150
W1350	32090	1 5/8 x 1 3/8	1 19/64	0.210
W1351	32092	1 5/8 x 1 1/8	1 17/32	0.200
W1353	32094	1 5/8 x 7/8	1 11/16	0.200
W1355	32096	1 5/8 x 5/8	1 7/8	0.190
W1358	32102	2 1/8 x 1 5/8	1 11/16	0.380
W1359	32104	2 1/8 x 1 3/8	1 15/16	0.340
W1360	32106	2 1/8 x 1 1/8	2 1/8	0.360
W1362	32108	2 1/8 x 7/8	2 11/32	0.380
W1364	32110	2 1/8 x 5/8	2 7/16	0.390
W1367	32114	2 5/8 x 2 1/8	1 5/16	0.620
W1368	32116	2 5/8 x 1 5/8	2 1/4	0.640
W1369	32118	2 5/8 x 1 3/8	2 5/16	0.610
W1370	32120	2 5/8 x 1 1/8	2 17/32	0.600
W1376	32126	3 1/8 x 2 5/8	2 3/32	0.870
W1377	32128	3 1/8 x 2 1/8	2 33/64	0.950
W1378	32130	3 1/8 x 1 5/8	2 11/16	0.960
W1379	32132	3 1/8 x 1 3/8	2 25/32	1.020
W1381	32136	3 5/8 x 3 1/8	2 1/4	1.280
W1382	32138	3 5/8 x 2 5/8	2 7/16	1.320
W1383	32140	3 5/8 x 2 1/8	2 51/64	1.380
W1386	32144	4 1/8 x 3 5/8	2 23/32	1.850
W1387	32146	4 1/8 x 3 1/8	2 15/16	1.870
W1388	32148	4 1/8 x 2 5/8	3 7/32	1.970
W1389	32150	4 1/8 x 2 1/8	3 17/32	2.060
A2008	32154	5 1/8 x 4 1/8	3 11/32	3.240

Fitting Reducers (Continued) 119 Wrot Flush Type Fitting Reducer Fitting to Copper



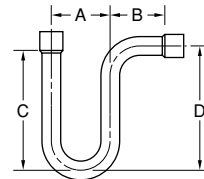
Catalog No.	IBCA No.	Dimensions (Inches)			Weight (lbs.)
		OD Size	A	B	
W1706	30530	3/8 x 1/4	3/8	1/16	0.008
W1712	30532	1/2 x 3/8	3/8	1/16	0.012
W1715	30536	5/8 x 1/2	9/16	3/16	0.022
W1717	30538	5/8 x 3/8	1/2	3/16	0.037
W1720	30542	3/4 x 5/8	5/8	1/8	0.030
W1722	30546	3/4 x 3/8	5/8	5/16	0.077
W1725	30548	7/8 x 3/4	3/4	1/8	0.040
W1726	30550	7/8 x 5/8	3/4	1/4	0.080
W1737	30556	1 1/8 x 7/8	29/32	5/32	0.120
W1738	30558	1 1/8 x 3/4	39/32	9/32	0.180
W1739	30560	1 1/8 x 5/8	29/32	13/32	0.220
W1743	30564	1 3/8 x 1 1/8	3 1/32	1/16	0.160
W1750	30570	1 5/8 x 1 3/8	1 3/32	1/8	0.210
W1758	30580	2 1/8 x 1 5/8	1 11/32	1/4	0.660

Bushings 1193 Wrot Flush Type Bushing Fitting to Female NPT



Catalog No.	IBCA No.	Dimensions (Inches)		Weight (lbs.)
		OD Size	A	
A7813	30600	5/8 x 1/4	9/16	0.023
A7812	30602	5/8 x 1/8	9/16	0.036

P-Trap 123 Wrot Suction-Line P-Trap Copper to Copper



Catalog No.	IBCA No.	OD Size	Dimensions (Inches)				Weight (lbs.)
			A	B	C	D	
W60999	32000	5/8	2 1/4	2 3/16	2 5/32	3 47/64	0.200
W61008	32002	3/4	3	2 7/8	5 9/32	6	0.480
W61000	32004	7/8	3 1/2	2 3/4	5 7/32	5 3/16	0.590
W61001	32006	1 1/8	3 17/32	2 11/32	5 1/8	5 3/32	1.090
W61002	32008	1 3/8	5	3 1/2	5 1/4	7	1.890
W61003	32010	1 5/8	5	3 1/2	7 3/4	8 19/16	2.040
W61009	32012	2 1/8	6	4 1/8	8 5/8	9 7/8	3.710



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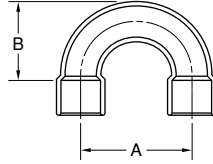
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www.sherwoodvalve.com • E-mail: info@superiorvalve.com

Wrot Copper Fittings

Return Bends

138 Wrot Return Bend Copper to Copper



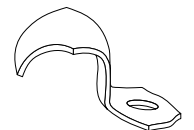
Catalog No.	ICBA No.	OD Size	Dimensions (Inches)		Weight (lbs.)
			A	B	
W6020	32302	3/8 x 1 1/2 C	1 1/2	5/16	0.029
W6041	32314	1/2 x 3 C	3	1 3/4	0.085
W6036	32316	1/2 x 2 C	2	1 1/4	0.066
W6032	32320	1/2 x 1 1/2 C	1 1/2	1	0.053
W6060	32330	5/8 x 3 C	3	1 13/16	0.130
W6058	32332	5/8 x 2 1/2 C	2 1/2	1 9/16	0.110
W6051	32344	5/8 x 1 1/16 C	1 1/16	1 3/32	0.070
5/8 x 1 1/2 C	32346	5/8 x 1 1/2 C	1 1/2	1 1/16	0.070
3/4 x 2 1/4 C	32352	3/4 x 2 1/4 C	2 1/4	1 5/8	0.140
W6092	32364	7/8 x 2 1/2 C	2 1/2	1 11/16	0.190
W60111	32368	1 1/8 x 3 1/4 C	3 1/4	2 3/16	0.350
W60110	32370	1 1/8 x 3 C	3	2 1/16	0.330
13Sx4C	32374	1 3/8 x 4 C	4	2 11/16	0.560
13Sx3C	32378	1 3/8 x 3 C	3	2 3/8	0.460
W60140	32384	2 1/8 x 5 1/2 C	5 1/2	3 3/16	1.750

120 Copper Tube Strap Double Hole



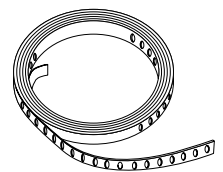
Catalog No.	ICBA No.	Dimensions (Inches) OD Size	Weight (lbs.)
A1203	32410	1/4	0.005
A1278	32412	3/8	0.007
A1366	32414	1/2	0.008
A2529	32416	5/8	0.009
A1467	32418	3/4	0.011
A2574	32420	7/8	0.012
A2614	32422	1 1/8	0.014
A2650	32424	1 3/8	0.041
A2675	32426	1 5/8	0.048
A2708	32428	2 1/8	0.063

120S Copper Tube Strap Single Hole Heavy Weight



Catalog No.	ICBA No.	Dimensions (Inches) OD Size	Weight (lbs.)
1/4	32410	1/4	0.007
3/8	32442	3/8	0.009
1/2	32414	1/2	0.012
5/8	32416	5/8	0.014

125 Perforated Copper Strap 3/4" Wide



Catalog No.	ICBA No.	Dimensions (Inches)	Weight (lbs.)
A1211	32402	3/4 x 25 Foot Roll	1.800



Joining Processes (Soldering)

Soldering and Brazing Copper Tube

Soldering and Brazing with capillary solder joint fittings is the most common system for joining copper tube. The American Welding Society defines soldering as a joining process which takes place below 840° and brazing as a similar process which occurs above 840°.

The basic theory and technique of soldering and brazing are the same for all diameters. The variables are: the amount of time, heat and filler metal required to complete a designed joint. A good joint is the product of a person well trained in the craft who knows and respects the materials and methods used.

Basic Steps in Joining Process

Measuring

Measuring the length of the tube must be accurate. If the tube is too short it will not reach all the way into the socket of the fitting and a proper joint cannot be made.

Cutting

Cutting tube can be accomplished in a number of different ways to produce a satisfactory square-end cut. The tube can be cut with a disc type tube cutter, a hacksaw, abrasive wheels, or stationary and portable band-saws. Care must be taken that the tube is not deformed while being cut. Regardless of the cutting method used, the cut must be square with the run of the tube so that it will seat properly in the fitting socket.

Reaming

Most methods of cutting leave a small burr on the end of the tube. Unless these rough edges are removed erosion-corrosion may occur due to local turbulence and increased velocities in the tube. Tools used to ream tube ends include the reaming blade on the tube cutter half-round or round files, a pocket knife, or suitable deburring tool. With annealed tube, care must be taken not to get the tube end out-of-round by applying too much pressure. Both the inside and outside of the tube may require removal of the burr. A properly reamed piece of tube will provide a smooth surface for better flow.

Cleaning

Cleaning is quickly and easily done. The removal of oxides and surface soil is crucial if filler material is to flow properly. Oxides, surface soil and oil can interfere with the strength of the joint and this may result in the joint's failure. Mechanical cleaning is a simple operation. The end of the tube should be cleaned using sand cloth or nylon abrasive pads for a distance only slightly more than the depth of the fitting socket. The socket of the fitting should also be cleaned using sand cloth, abrasive pads, or properly sized fitting brushes. The same precautions, as when reaming the tube should be observed.

Copper is a soft metal; if too much material is removed, a loose fit will result and interfere with satisfactory capillary action in making the joint. The capillary space between tube and fitting is approximately 0.004-in. Solder or brazing filler metal can fill this gap by capillary action. This spacing is critical for the filler metal to flow into the gap and form a strong joint. Chemical cleaning may be utilized, providing the tube and fittings are thoroughly rinsed, according to the manufacturer's recommendations furnished with the cleaner. This will neutralize any acidic conditions that may exist. The surfaces, once cleaned, should not be touched with bare hands or oily gloves. Skin oils, lubricating oils and grease impair solder flow and wetting.

Temperature Ranges

Up to this point, the joining process is the same for both soldering and brazing. The choice for soldering or brazing will depend upon operating conditions. Solder joints are generally used where the system temperatures do not exceed 250°F and brazed joints can be used where greater strengths are required, or where system temperatures are as high as 350°F. In actual practice, most soldering is done at temperatures about 350°F to 550°F, while brazing is done at temperatures ranging from 1100°F to 1550°F.

Because of the differences in the soldering and brazing processes, each will be discussed separately.

Soldering

Applying Flux

A non-aggressive soldering flux is recommended. Stir the flux before use. A good flux will dissolve and remove traces of residual oxides from the surfaces to be joined, protect the surfaces from re-oxidation during heating and promote the wetting of the surfaces by the solder. A thin, even coating of flux should be applied with a brush to both tube and fitting. Avoid the use of fingers to apply flux. Chemicals in the flux can be harmful if carried to the eyes or open cuts.

Types of Solder

There are a variety of solders available that will produce sound, leak-tight joints. Solders that are used for piping applications contain tin and varying amounts of either antimony, copper, lead or silver. Choice of solder will depend upon application and local codes. For potable water systems, solders which do not contain lead are the best choice.

Assembly

After both surfaces are properly fluxed, they should be assembled by placing the fitting on the tube, making sure the tube seats against the base of the fitting socket. A slight twisting

motion is suggested to ensure even coverage by the flux. Remove the excess flux with a rag. Because of the heat that is required during soldering and brazing, only cotton rags should be used. Complete all prepared joints within a single work day. Care must be taken to assure that the tube and fittings are properly supported with a reasonable, uniform capillary space around the entire circumference of the joint. Uniformity of capillary space will ensure good filler metal penetration of the guidelines if successful joint making are followed. Excessive joint clearance can cause the filler metal to crack under stress or vibration.

Heating

Because of the open flame and high temperatures required for soldering and the flammability of the gases used, safety precautions must be observed. The heat is generally applied by use of an air/fuel torch. These torches can use acetylene or a variety of LP gases. Electric resistance pliers can also be used.

Heating should begin with the flame perpendicular to the tube. This preheat will conduct the initial heat into the socket for even distribution of heat inside and out. Preheating depends upon the size of the joint — experience will indicate the proper amount of time. The flame should now be moved onto the fitting. Move the flame from the fitting socket onto the tube a distance equal to the fitting socket. Touch the solder to the joint. If the solder does not melt, remove it and continue the heating process. Be careful not to overheat or direct the flame into the fitting cup. This action can cause the flux to burn and destroy its effectiveness. When the melting temperature has been reached, heat may be applied to the base of the cup to aid capillary action in drawing the solder into the cup.

Applying Solder

When the tube is in a horizontal position, start applying the solder slightly off-center of the bottom of the joint. Proceed across the bottom of the fitting and up to the top-center position. Return to the point of beginning, overlap the starting point and then proceed up the incompleting side to the top. Again, overlapping the solder. Molten solder will be drawn into the joint by capillary action regardless if the solder is being fed upward, downward or horizontally.

Cooling and Cleaning

After the joint has been completed, natural cooling is best. Shock cooling may cause unnecessary stresses on the joint and may result in eventual failure. Clean off any remaining flux with a wet rag.



Joining Processes (Brazing)

Brazing

Applying Flux

The fluxes used for brazing copper joints are different in composition from soldering fluxes. They cannot, and should not, be used interchangeably.

Brazing fluxes are water based. Similar to soldering fluxes, brazing fluxes dissolve and remove residual oxides from the metal surfaces, they protect the metal surfaces from re-oxidation during heating and they promote the wetting of the surfaces to be joined by the brazing filler metal. Fluxes also provide the technician with an indication of temperature. Application of the flux is the same as when soldering. If the outside of the fitting and the heat affected area of the tube are covered with flux, it will prevent oxidation and greatly improve the appearance of the joint.

Brazing Filler Metals

There are two general types of brazing filler metals used for joining copper tube: BCuP (Brazing-Copper -Phosphorus) and BAg (Brazing-Silver). These brazing filler metals are classified according to their components. BCuP filler metals are preferred for joining copper tube and fittings. The phosphorus in these filler metals acts as a fluxing agent and the lower percentage of silver makes them relatively low cost fillers metals. When using copper tube, wrought copper fittings and BCuP brazing filler metal, fluxing is an option due to the self-fluxing action of the phosphorus present in all components of the brazed joint.

The choice of brazing filler metals depends upon four main factors:

- dimensional tolerance of the joint
- type and material of fitting (cast or wrought)
- desired appearance
- cost

Heating

Oxy/fuel torches are generally used when brazing because of the higher temperatures required. Due to recent innovations in air/fuel torch tip design, they can now be used on a wider variety of sizes for soldering and brazing.

When working with temperatures this high, safety precautions must be followed and care taken to protect both the operator and the materials being used.

The heating operation is the same as for soldering. First preheat the tube and then the tube and fitting. When the brazing filler metal starts to melt, apply the heat at the base of the fitting socket to help draw the brazing filler metal in by capillary action.

Applying Brazing Filler Metal

Remember to allow the heat of the joint to melt the filler metal. Do not melt the filler metal with the torch. The melted filler metal will be drawn into the joint by capillary action. It is very important that the flame be in continuous motion and should not be allowed to remain on any one point long enough to burn through the tube or fitting. When the joint is complete, a continuous fillet should be visible completely around the joint. If the filler metal fails to flow, or has the tendency to ball-up, it indicates oxidation on the metal surfaces or insufficient heat on the parts to be joined. If the filler metal refuses to enter the joint and tends to flow over the outside of either part of the joint, it indicates that this part is overheated or that the other part is underheated.

Cooling and Cleaning

When the joint is complete, allow it to cool naturally. Flux residues can be removed by washing with hot water and brushing with a stainless steel wire brush.

Summary

If the parts to be joined are properly prepared, properly heated and correct filler metal is used, the finished joint should be sound. Soldered or brazed copper piping systems, when installed properly, will provide years of safe and reliable service. Proper training of the correct installation techniques, such as those just covered, will give the technician the ability to achieve consistently reliable soldered and brazed joints in all diameters.

Prepared with technical assistance from the Copper Development Association.



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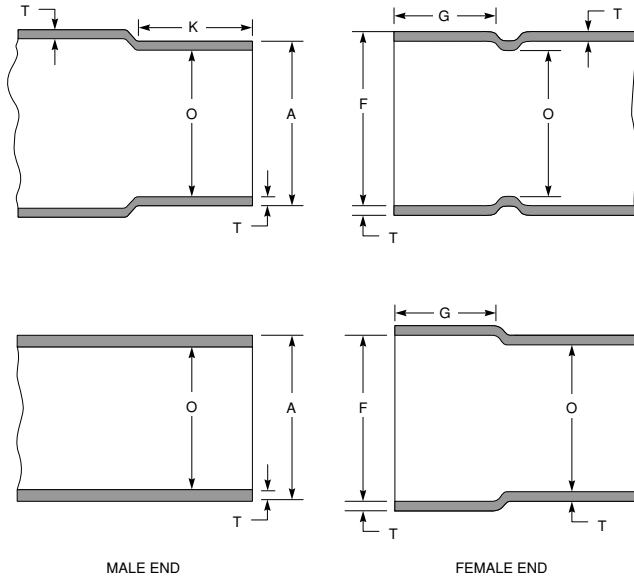
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Engineering Data

Wrot Copper Fittings

Wrot Copper and Bronze/Solder-Joint Pressure Fittings



Wrot Copper and Bronze/Solder-Joint Pressure Fittings*

Solder-Joint Ends Dimensions (Inches)

Std. Water Tube Size	Male End			Female End			Metal Thickness T Min.	Inside Diameter of Fitting O Min.
	OD A		Length K Min.	ID F		Depth G Min.		
	Min.	Max.		Min.	Max.			
1/8	0.248	0.251	0.38	0.252	0.256	0.31	0.022	0.18
1/4	0.373	0.376	0.38	0.377	0.381	0.31	0.026	0.30
3/8	0.497	0.501	0.44	0.502	0.506	0.38	0.031	0.39
1/2	0.622	0.626	0.56	0.627	0.631	0.50	0.036	0.52
5/8	0.747	0.751	0.69	0.752	0.756	0.62	0.038	0.63
3/4	0.872	0.876	0.81	0.877	0.881	0.75	0.041	0.74
1	1.122	1.127	0.97	1.128	1.132	0.91	0.046	0.98
1 1/4	1.372	1.377	1.03	1.378	1.382	0.97	0.050	1.23
1 1/2	1.621	1.627	1.16	1.628	1.633	1.09	0.055	1.47
2	2.121	2.127	1.41	2.128	2.133	1.34	0.064	1.94
2 1/2	2.621	2.627	1.53	2.628	2.633	1.47	0.074	2.42
3	3.121	3.127	1.72	3.128	3.133	1.66	0.083	2.89
3 1/2	3.621	3.627	1.97	3.628	3.633	1.91	0.093	3.37
4	4.121	4.127	2.22	4.128	4.133	2.16	0.101	3.84
5	5.121	5.127	2.72	5.128	5.133	2.66	0.115	4.70
6	6.121	6.127	3.22	6.128	6.133	3.09	0.130	5.72
8	8.119	8.127	4.09	8.128	8.133	3.97	0.186	7.55

Wrot Copper and Bronze/Solder-Joint Drainage Fittings *

Solder-Joint Ends Dimensions (Inches)

Size	Male End			Female End			Metal Thickness T Min.	Inside Diameter of Fitting O Min.
	OD A		Length K Min.	ID F		Depth G Min.		
	Min.	Max.		Min.	Max.			
1¼	1.372	1.377	0.56	1.378	1.382	0.50	0.040	1.29
1½	1.621	1.627	0.62	1.628	1.633	0.56	0.042	1.53
2	2.121	2.127	0.69	2.128	2.133	0.62	0.042	2.01
3	3.121	3.127	0.81	3.128	3.133	0.75	0.045	2.98
4	4.121	4.127	1.06	4.128	4.133	1.00	0.058	3.93

*Extracted from American National Standard Wrought-Copper and Wrought-Bronze Solder-Joint Pressure Fittings (ANSI B16.22) with the permission of the publisher. The American Society of Mechanical Engineers, 345 East 47th St., New York, N.Y.

Copper Tube - Standard Dimensions and Weights

Nominal Tube Size (Inches)	OD Types	Inside Diameter (Inches)				Wall Thickness (Inches)				Pounds per Linear Foot*			
	K-L-M-DWV (Inches)	Type K	Type L	Type M	Type DWV	Type K	Type L	Type M	Type DWV	Type K	Type L	Type M	Type DWV
1/4	0.375	0.305	0.315	—	—	0.035	0.03	0.025	—	0.145	0.126	0.106	—
3/8	0.50	0.402	0.43	—	—	0.049	0.035	0.025	—	0.269	0.198	0.145	—
1/2	0.625	0.527	0.545	—	—	0.049	0.04	0.028	—	0.344	0.285	0.204	—
5/8	0.75	0.652	0.666	—	—	0.049	0.042	0.030	—	0.418	0.362	0.263	—
3/4	0.875	0.745	0.785	—	—	0.065	0.045	0.032	—	0.641	0.455	0.328	—
1	1.125	0.995	1.025	—	—	0.065	0.05	0.035	—	0.839	0.655	0.465	—
1 1/4	1.375	1.245	1.265	1.291	1.295	0.065	0.055	0.042	0.04	1.04	0.884	0.682	0.65
1 1/2	1.625	1.481	1.505	1.527	1.541	0.072	0.06	0.049	0.042	1.36	1.14	0.94	0.809
2	2.125	1.959	1.985	2.009	2.041	0.083	0.07	0.058	0.042	2.06	1.75	1.46	1.07
2 1/2	2.625	2.435	2.465	2.495	—	0.095	0.08	0.065	—	2.93	2.48	2.03	—
3	3.125	2.907	2.945	2.981	3.035	0.109	0.09	0.072	0.045	4.00	3.33	2.68	1.69
3 1/2	3.625	3.385	3.425	3.459	—	0.12	0.10	0.083	—	5.12	4.29	3.58	—
4	4.125	3.857	3.905	3.935	4.009	0.134	0.11	0.095	0.058	6.51	5.38	4.66	2.87
5	5.125	4.875	4.875	4.907	4.981	0.16	0.125	0.109	0.072	9.67	7.61	6.66	4.43
6	6.125	5.741	5.845	5.881	5.959	0.192	0.14	0.122	0.083	13.90	10.20	8.92	6.10
8	8.125	7.583	7.725	7.785	—	0.271	0.20	0.17	—	25.90	19.30	16.50	—

*Slight variations from these weights must be expected in practice.



Engineering Data

Wrot Copper Fittings

Wrot Copper Fittings

Large Diameter Welded Design

- **Fitting Material:**
Copper Alloy #122, Phosphorus
Deoxidized-High Residual Phosphorus
(DHP). Composition: 99% Copper;
0.015-0.04% Phosphorus.
- **Weld Material:**
Silicon Bronze. Meets Specification
American Welding Society (AWS) A5.7-69
and American Metals Society (AMS)
4616 B.
- **Weld Specifications:**
Tensile Strength: Up to 58,000 psi
Yield Strength: Up to 25,000 psi
Elongation in 2": 53 to 55%
Hardness: 80 to 100 Brinell (500 kg Load)
Temperature: Melt 1832°F, Flow 1931°F
- **Dimensions and Specifications:**
Welded fittings are produced in
accordance with specifications shown in
American National Standard (ANSI)
B16.22 for wrought copper and bronze
solder-joint pressure fittings.
- **Testing:**
Each fitting is individually tested with air
under water. The bursting pressure of
the weld exceeds that of straight,
seamless ASTM B88-70 Type "L" copper
water tube, annealed, of comparable
diameter.
- **Method of Joining:**
Electric Weld

Copper Tube Calculated Bursting Pressure

Nominal Tube Size (Inches)	OD (Inches) Types K-L	ID (Inches)		Wall Thickness (Inches)		Bursting Pressure (lb. per sq. in.)			
		Type K	Type L	Type K	Type L	Type K		Type L	
						Hard (Drawn)	Soft (Annealed)	Hard (Drawn)	Soft (Annealed)
1/4	0.375	0.305	0.315	0.035	0.030	6,700	5,600	5,800	4,800
3/8	0.500	0.402	0.430	0.049	0.035	7,100	5,900	5,000	4,200
1/2	0.625	0.527	0.545	0.049	0.040	5,600	4,700	4,600	3,800
5/8	0.750	0.652	0.666	0.049	0.042	4,700	3,900	4,000	3,400
3/4	0.875	0.745	0.785	0.065	0.045	5,300	4,500	3,700	3,100
1	1.125	0.995	1.025	0.065	0.050	4,200	3,500	3,200	2,700
1 1/4	1.375	1.245	1.265	0.065	0.055	3,400	2,800	2,900	2,400
1 1/2	1.625	1.481	1.505	0.072	0.060	3,200	2,700	2,700	2,200
2	2.125	1.959	1.985	0.083	0.070	2,800	2,300	2,400	2,000
2 1/2	2.625	2.435	2.465	0.095	0.080	2,600	2,200	2,200	1,800
3	3.125	2.907	2.945	0.109	0.090	2,500	2,100	2,100	1,700
3 1/2	3.625	3.385	3.425	0.120	0.100	2,400	2,000	2,000	1,700
4	4.125	3.857	3.905	0.134	0.110	2,300	1,900	1,900	1,600
5	5.125	4.805	4.875	0.160	0.125	2,200	1,900	1,800	1,500
6	6.125	5.741	5.845	0.192	0.140	2,300	1,900	1,600	1,400
8	8.125	7.583	7.725	0.271	0.200	2,400	2,000	1,800	1,500

Calculating Bursting Pressure

Bursting pressures are calculated using the following formula for thin, hollow cylinders under tension.

$$P = \frac{2tS}{D}$$

where:

- P = Bursting Pressure, lb. per sq. in.
- t = Wall Thickness, inches
- D = Outside Tube Diameter, inches
- S = Tensile Strength:
36,000 lb. per sq. in. for hard tubes
30,000 for soft tubes

With a safety factor of 5, maximum working pressures allowable by common usage up to 150°F can be taken at 1/5 above the bursting pressures.



Superior Refrigeration Products

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Spare Parts List

I. “Tuffy” Diaphragm Packless Valves

Catalog Series	114, 214 214X2	115, 116 215, 216	216X7	217	234A
Spring	P204-11	P216-11	P216-11	P217-11	P204-11
Lower Stem	P214-20	P216-10	P115X3-21N	P217-21N	P214-20
Upper Stem	P214-7	P1032-7	P1032-7	P1032-7	P214-7
Diaphragms	P5502-6-6 (2)	P215-6 (Set)	P215-6 (Set)	P200-6 (Set)	P5502-6-6 (2)
Bonnet	P214-3	P206-3	P206-3	P201-3	P214-3
Handwheel	P1244-8R	P1070-8R	P1070-8R	P1070-8R	P1244-8R
Handwheel Screw	P200-14C	P200-14C	P200-14C	P200-14C	P200-14C
Cap and Chain	—	—	—	—	P234A-23-4

II. LPD Globe Valves

Catalog Series	190, 191 290, 291	192, 193 292, 293	294	295, 296 297
Bonnet Gasket	P290C-14	P292C-14	P294C-14	P295C-14
Cap Screws (4)	P290C-12	P292C-12	P11505-12SS	P295C-12
Packing Washer	P606-5	P492-5	P492-5	P492-5
Packing	P490-6	P492-6	P492-6	P492-6
Seal Cap Gasket	P490-19N	P492-19	P492-19	P492-19
Packing Nut	P606-3	P292-4	P292-4	P292-4
Stem Assembly	P290C-24	P292C-24	P294C-24	P295C-24
Seal Cap	P290-4	P292-3	P292-3	P292-3
Bonnet	P290C-2	P292C-2	P292C-2	P295C-2
Sub Assembly*	P290C-31	P292C-31	P294C-31	P295C-31
Spare Parts Kit**	P290C-32	P293C-32	P294C-32	P297C-32

* Sub Assembly includes Packing Washer, Packing, Seal Cap Gasket, Packing Nut, Stem Assembly, Seal Cap, and Bonnet

**Spare Parts Kit includes Bonnet Gasket, Packing Washer, Packing, Seal Cap Gasket, and Stem Assembly



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Spare Parts List

III. H.V. Check Valves

Catalog Series	802 803	804	185, 186 805, 806	187, 188 807, 808	809	884, 885 886
Seat Assembly	P802A-24T	P804A-24T	P805C-24	P807C-24	P809C-24	P884C-30
Bonnet	P802B-2	P804A-2	P805C-2	P807C-2	P809C-2	P884C-2
Bonnet Gasket	P802-12	P804A-12	P290C-14	P292C-14	P294C-14	P295C-14
Spring	P802X1-11D	P802X1-11D	P805A-11	P807A-11	P809A-11	P884-11
Bonnets Bolts (4)	—	—	P290C-12	P292C-12	P11506-12SS	P295C-12

IV. Packed Angle Valves

Catalog Series	600A 600B	600AX7	617A	605	606B	607
Seal Cap	P600A-4	P600A-4	P600A-4	P605-4	P600A-4	P606-4
Seal Cap Gasket	P600A-11	P600A-11	P600A-11	P605-11	P600A-11	P606-11
Stem	P600A-2	P600A-2	P600A-2	P605-2	P503-2	P606-2
Packing Nut	P600-3	P600-3	P600-3	P605-3	P600-3	P606-3
Packing	P600-6B	P600-6B	P600-6B	P605-6B	P600-6B	P490-6
Packing Washer	P600-5	P600-5	P600-5	P605-5	P600-5	P606-5
¼ Cap & Chain	—	—	P617A-23-4	—	—	—
¾ Cap & Chain	—	—	P617A-23-6	—	—	—
Schrader Core	—	—	P290X1-26	—	—	—
Outlet Cap	—	—	P9002-20	—	—	—

V. INTEGRA-SEAL® Ball Valves - W Series / WA Series

Catalog Series	586WA 587WA	591WA, 592WA 593WA, 594WA
Seal Cap Nut	P587B-67	P590-67
Seal Cap	P586WA-31	P591WA-31
Slip Ring	P587WA-43	P590-43
Seal Cap Gasket	P587B-20T	P3060X5-20T
Stem	P587WA-2	P591WA-2
Packing Nut	P586WA-4	P591WA-4
Top Packing	P586-6-1	P590-6
Bottom Packing	P586-6-2	P590-6

VI. Suction Line Filters

Catalog Series	2CFA	3CFA	4CFA	5CFA
Spring	P11204-11	P11304-11	P11404-11	P11504-11
Bolts (6)	P11204-12SS	P11304-12SS	P11404-12SS	P11506A-12SS
Cover	P11204-2	P11304-2	P11404-2	P11505B-2
End Cap	P11344-6	P11344-6	P11344-6	P11344-6
Access Valve	P11304-56	P11304-56	P11304-56	P11304-56
Gasket	AG2	AG3	AG4	AG5



Codes, Regulations, and Specifications

Superior refrigeration and air conditioning components are made to various regulations and standards that currently exist in our industry. Where codes or specifications exist, Superior assures each product manufactured meets the maximum conditions of such codes. In cases where there are no code requirements, our manufacturing specifications require even tighter controls to insure the optimum in good engineering practice. Briefly outlined below is a description of the various codes to which our products are manufactured; detailed information or data is available upon request.

Underwriters' Laboratories, Inc. and Canadian Standards Association.

We have submitted and obtained certified listings on many of our standard products. U.L. and C.S.A. listings are on file for such items as the hermetic eye sight glass, driers, fuse plugs, cylinder valves, flare fittings, etc. Many of these items have been approved for working pressures far greater than found in normal refrigeration applications. For instance, our hermetic eye sight glass is U.L. approved for working pressures up to 500 psi (2,500 psi minimum bursting pressure).

Local and Municipal Codes.

There are many municipal governing bodies that establish stringent codes for products used within their local area. Where Superior products are sold and used in these areas, the necessary approvals have been obtained.

ANSI/ASHRAE 15 American National Standard for Mechanical Refrigeration.

This code outlines specific requirements for the testing of pressure relief valves. Note the relief valves cataloged on pages 22 and 23 are the most complete and diversified line of approved relief valves available in the industry. In addition to relief valves, all other items in this catalog which come under the jurisdiction of this safety code are built to comply with its requirements.

ANSI-B70.1 American National Standard for Refrigeration Flare Type Fittings.

This code outlines very accurately all the dimensions required on refrigeration flare type fittings. Only fittings that comply with this code should be used in refrigeration work to insure you the best performance.

Society of Automotive Engineers.

All requirements previously established by the SAE were incorporated in the ANSI-B70.1.

ANSI-B57.1 Compressed Gas Cylinder Valve Outlet and Inlet Connections.

Superior products comply completely with the requirements of this standard. Superior staff sit on various cylinder gas committees charged with modifications and improvements to this code.

Air Conditioning and Refrigeration Institute Standards.

These standards are closely adhered to in our manufacturing operation to make certain that all Superior products meet the specifications and ratings outlined in the code.

Pamphlet S-1, Compressed Gas Association, Inc., Safety Relief Device Standards.

All Superior safety devices are built in accordance with CGA's recommendations. For a complete cross reference of Superior part numbers with CGA safety device numbers, contact the factory.



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