

Metal & Teflon Lined Hose



Components & Controls, Inc.

493 Washington Avenue
Carlstadt, NJ 07072

201-438-9190 212-564-5541 Fax: 201-438-3356

www.componentsandcontrols.com



Components & Controls, Inc. Headquarters—Carlstadt, NJ

Table of Contents

	Page
Corrugated Metal Hose	
About CCI Metal Hose Assemblies.....	2
Anatomy of a Metal Hose.....	3
Stainless Steel Type 316L & 321.....	4
Stainless Steel Type 316L (Heavy Weight).....	5
Bronze.....	6
Monel.....	7
Tubular Wire Braid.....	8
Standard Fittings.....	9-12
Calculating Braid Strength and Coverage.....	13
Types of Motion.....	14
Teflon[®] Lined Hose	
About CCI Teflon [®] Hose Assemblies.....	15
Medium Pressure Convuluted Hose.....	16
Medium Pressure Convuluted Fittings.....	17-18
Medium Pressure Smooth Bore Hose.....	19
Medium Pressure Smooth Bore Fittings.....	20-21

Teflon[®] is a registered trademark of the DuPont Corporation.

About CCI Metal Hose Assemblies...

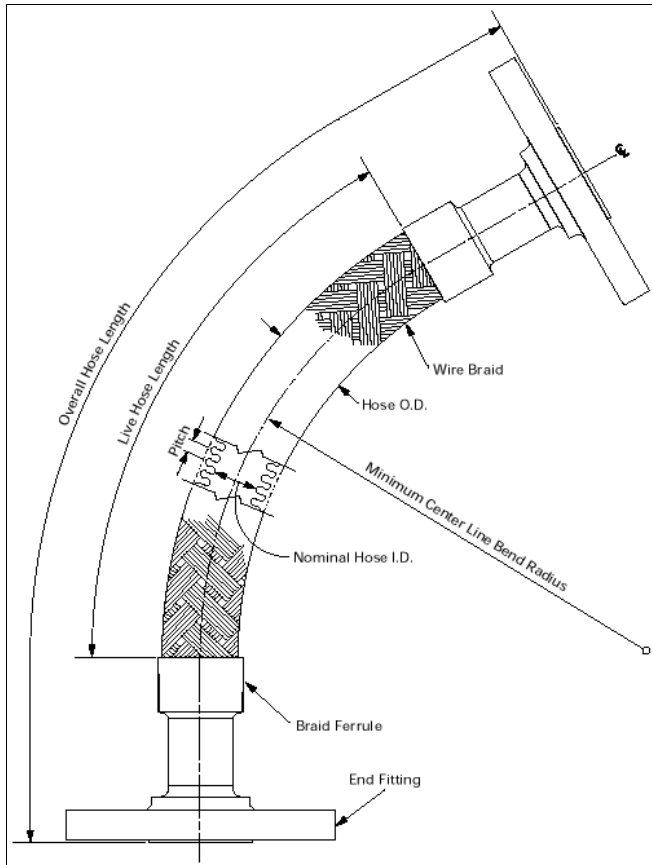
CCI corrugated metal hose assemblies are produced from the highest quality components. We use only the best hose core, braid and fittings to produce assemblies fit for years of service. Our hose assemblies are available in Bronze, type 316L and 321 Stainless Steel, Monel, Inconel, Hastelloy, Titanium and Carbon Steel.



Components & Controls, Inc. has been providing the Pharmaceutical, Medical and Power Generation industry with hose product since 1987. All fabrication and testing is conducted within our pending ISO-9002 qualified facility in order to insure that our products meet or exceed the industry recognized quality standards.

This section of our catalog includes the most commonly purchased metal hose assemblies—most of which are available for delivery within 24 hours. CCI also specializes in custom fabricated corrugated metal hose assemblies with a wide range of sizes and materials to meet your needs. If the hose you are looking for is not pictured in this catalog, please give us a call at 201-438-9190. One of our professionally trained hose specialists will assist you in creating a hose that meets your needs.

Anatomy of a Metal Hose...



CCI corrugated metal hose assemblies are manufactured using standard pitch, annular corrugated hose core. The advantage in using annular corrugated hose over helical hose is that it is not subject to torsional stress damage which results from longitudinal expansion of over-pressurized hose.

In order to prevent our corrugated hose assemblies from elongation due to increases in pressure, we use interwoven metallic wire braid as a restraint. The braid does not affect the flexibility of the hose, but rather, provides added support and dampens vibration. The addition of wire braid also increases the working pressure of the hose.

The flexibility of corrugated hose is determined by the thickness of the core material and braid, the number of corrugations per foot and the height of the corrugations. This type of hose is recommended for applications involving permanent bends or where leak prevention is a critical aspect. The service life of corrugated hose is dependent upon the severity of the flexing, media temperature, presence of corrosives, pressure and vibration. All of Components & Controls hose sales personnel are trained in determining the correct hose to meet all of these criteria and to insure that each hose will provide dependability throughout its service life.

Corrugated Metal Hose

STAINLESS STEEL TYPE 316L & 321

- All hose is Nitrogen or Hydrostatically tested for leak detection prior to shipment.
- Maximum working pressure (W.P.) at 70° F is 25% of the theoretical burst pressure, and the maximum test pressure is 1.5 times the maximum working pressure.
- When attaching end fittings, these values should be adjusted down to account for the method of joining.
- CCI recommends a 20% reduction in the stated pressures.

Nominal I.D.	Number of Braids	Nominal O.D.	Maximum W.P. @ 70°F	Maximum Test Pressure	Theoretical Burst	Weight per Foot	Centerline Radius		Strip Thickness	Corrugations Count Min/Max
							Constant Flexing	Static Bend		
1/4"	0	0.50	180	270	-	0.09	5.00	1.00	0.010	106/110
	1	0.57	3203	4808	12812	0.17				
	2	0.64	5124	7686	20496	0.26				
3/8"	0	0.67	100	150	-	0.13	5.50	1.25	0.010	82/86
	1	0.74	2310	3465	9239	0.25				
	2	0.81	3696	5544	14784	0.36				
1/2"	0	0.82	80	120	-	0.23	6.00	1.50	0.012	82/86
	1	0.89	1344	2016	5376	0.34				
	2	0.96	2150	3225	8600	0.46				
3/4"	0	1.21	70	105	-	0.39	8.00	2.25	0.015	60/62
	1	1.28	990	1485	3960	0.59				
	2	1.35	1584	2376	6336	0.79				
1"	0	1.51	40	60	-	0.53	9.00	2.75	0.015	50/52
	1	1.58	714	1071	2856	0.75				
	2	1.65	1142	1713	4568	0.98				
1 1/4"	0	1.85	25	38	-	0.76	10.50	3.50	0.015	46/48
	1	1.93	664	996	2656	1.07				
	2	2.03	1062	1593	4248	1.37				
1 1/2"	0	2.19	20	30	-	0.84	12.00	4.00	0.015	42/44
	1	2.27	590	885	2359	1.23				
	2	2.35	944	1416	3776	1.63				
2"	0	2.70	15	23	-	1.04	15.00	5.00	0.015	44/46
	1	2.80	648	972	2592	1.73				
	2	2.90	1036	1554	4147	2.41				
2 1/2"	0	3.23	12	18	-	1.16	20.00	8.00	0.015	34/35
	1	3.33	484	726	1935	1.86				
	2	3.43	774	1161	3096	2.56				
3"	0	3.78	10	15	-	1.21	22.00	9.00	0.015	31/32
	1	3.88	395	592	1580	2.00				
	2	3.98	632	948	2528	2.80				
4"	0	4.85	8	12	-	1.69	27.00	13.00	0.015	29/30
	1	4.98	290	435	1159	2.68				
	2	5.10	464	696	1856	3.68				
5"	0	5.90	6	9	-	2.08	31.00	18.00	0.015	25/26
	1	6.03	239	358	955	2.60				
	2	6.15	382	573	1528	3.85				
6"	0	6.87	5	8	-	3.47	36.00	19.00	0.018	25/26
	1	7.10	166	249	666	4.75				
	2	7.12	265	398	1060	6.04				
8"	0	9.00	3	4.5	-	6.95	46.00	22.00	0.020	25/26
	1	9.26	25	490	1300	10.77				

Corrugated Metal Hose

STAINLESS STEEL TYPE 316L (Heavy Weight)

- All hose is Nitrogen or Hydrostatically tested for leak detection prior to shipment.
- Maximum working pressure (W.P.) at 70° F is 25% of the theoretical burst pressure, and the maximum test pressure is 1.5 times the maximum working pressure.
- When attaching end fittings, these values should be adjusted down to account for the method of joining.
- CCI recommends a 20% reduction in the stated pressures.

Nominal I.D.	Number of Braids	Nominal O.D.	Maximum W.P. @ 70°F	Maximum Test Pressure	Theoretical Burst	Weight per Foot	Centerline Radius		Strip Thickness	Corrugations Count Min/Max
							Constant Flexing	Static Bend		
1/2"	0	0.82	80	120	-	0.39	8.00	1.50	0.018	112/120
	1	0.92	2956	4433	11822	0.63				
	2	1.02	4729	7093	18915	0.87				
3/4"	0	1.21	70	105	-	0.48	8.00	2.00	0.018	79/85
	1	1.31	1724	2585	6894	0.79				
	2	1.41	2758	4136	11030	1.10				
1"	0	1.50	40	60	-	0.79	9.00	3.00	0.018	71/75
	1	1.60	1412	2118	5649	1.20				
	2	1.70	2260	3389	9038	1.61				
1 1/2"	0	2.17	20	30	-	1.36	10.00	3.25	0.020	54/56
	1	2.30	1194	1791	4777	2.11				
	2	2.42	1911	2866	7643	2.86				
2"	0	2.81	15	23	-	1.60	11.50	5.38	0.020	46/48
	1	2.94	795	1192	3178	2.46				
	2	3.06	1271	1907	5085	3.32				
3"	0	3.73	10	15	-	3.51	18.00	7.50	0.024	45/45
	1	3.76	508	761	2030	4.92				
	2	3.98	812	1218	3248	6.33				
4"	0	4.81	8	12	-	2.97	40.00	20.00	0.024	30/30
	1	4.94	303	455	1212	4.20				
	2	5.06	485	727	1939	5.43				
6"	0	6.90	5	8	-	3.77	95.00	24.00	0.024	26/26
	1	7.03	332	498	1328	5.46				
	2	7.15	531	797	2125	7.15				

Additional sizes available upon request.

Corrugated Metal Hose

BRONZE

- All hose is Nitrogen or Hydrostatically tested for leak detection prior to shipment.
- Maximum working pressure (W.P.) at 70° F is 25% of the theoretical burst pressure, and the maximum test pressure is 1.5 times the maximum working pressure.
- When attaching end fittings, these values should be adjusted down to account for the method of joining.
- CCI recommends a 20% reduction in the stated pressures.

Nominal I.D.	Number of Braids	Nominal O.D.	Maximum W.P. @ 70°F	Maximum Test Pressure	Theoretical Burst	Weight per Foot	Centerline Radius	
							Constant Flexing	Static Bend
1/4"	0	0.49	100	150	-	0.13	5.50	1.00
	1	0.57	1506	2259	6024	0.23		
	2	0.65	2410	3614	9638	0.33		
3/8"	0	0.67	50	75	-	0.25	6.00	1.25
	1	0.74	950	1425	3800	0.36		
	2	0.82	1520	2280	6080	0.47		
1/2"	0	0.82	40	60	-	0.38	7.00	1.50
	1	0.90	909	1363	3635	0.57		
	2	0.98	1454	2181	5816	0.76		
3/4"	0	1.21	30	45	-	0.50	8.00	2.25
	1	1.29	758	1137	3033	0.83		
	2	1.37	1213	1820	4853	1.16		
1"	0	1.51	20	30	-	0.68	10.00	3.00
	1	1.59	616	924	2465	1.12		
	2	1.67	986	1479	3944	1.56		
1 1/4"	0	1.85	15	23	-	0.80	12.00	3.50
	1	1.93	471	707	1885	1.31		
	2	2.01	754	1131	3016	1.82		
1 1/2"	0	2.18	10	15	-	1.03	13.50	4.00
	1	2.31	448	672	1792	1.73		
	2	2.43	717	1075	2867	2.43		
2"	0	2.75	8	12	-	1.81	17.00	5.00
	1	2.88	359	538	1434	2.73		
	2	3.00	574	860	2294	3.65		
2 1/2"	0	3.14	8	12	-	1.39	22.00	8.00
	1	3.27	350	525	1399	2.66		
	2	3.39	560	839	2238	3.93		
3"	0	3.55	8	12	-	1.44	24.00	12.00
	1	3.68	259	389	1037	2.84		
	2	3.80	415	622	1659	4.11		

Additional sizes available upon request.

Corrugated Metal Hose

MONEL

- All hose is Nitrogen or Hydrostatically tested for leak detection prior to shipment.
- Maximum working pressure (W.P.) at 70° F is 25% of the theoretical burst pressure, and the maximum test pressure is 1.5 times the maximum working pressure.
- When attaching end fittings, these values should be adjusted down to account for the method of joining.
- CCI recommends a 20% reduction in the stated pressures.

Nominal I.D.	Number of Braids	Nominal O.D.	Maximum W.P. @ 70°F	Maximum Test Pressure	Theoretical Burst	Weight per Foot	Centerline Radius	
							Constant Flexing	Static Bend
1/4"	0	0.50	180	270	-	0.15	5.00	1.00
	1	0.58	2352	3528	9409	0.25		
	2	0.66	3764	5645	15054	0.35		
1/2"	0	0.82	80	120	-	0.28	6.00	1.50
	1	0.90	946	1419	3783	0.40		
	2	0.98	1513	2270	6053	0.52		
3/4"	0	1.21	70	105	-	0.52	8.00	2.25
	1	1.29	772	1158	3089	0.74		
	2	1.37	1236	1853	4942	0.96		
1"	0	1.51	40	60	-	0.69	9.00	2.75
	1	1.59	471	706	1883	0.91		
	2	1.67	753	1130	3013	1.13		
1 1/2"	0	2.19	20	30	-	0.96	12.00	4.00
	1	2.27	436	653	1742	1.40		
	2	2.35	697	1045	2787	1.84		
2"	0	2.70	15	23	-	1.50	15.00	5.00
	1	2.78	418	627	1671	2.18		
	2	2.86	668	1003	2674	2.86		
3"	0	3.78	10	15	-	1.69	22.00	9.00
	1	3.88	246	369	985	2.52		
	2	3.98	394	591	1576	3.35		

Corrugated Metal Hose

Tubular Wire Braid

STAINLESS STEEL 304 ¹				
Size	Construction	Braid Angle	% C	Weight per Foot
1/4"	24 X 5 X .014	40	89	0.08
3/8"	24 X 7 X .014	40	91	0.12
1/2"	24 X 7 X .014	40	82	0.12
3/4"	36 X 8 X .014	40	90	0.20
1"	36 X 9 X .014	40	85	0.23
1 1/4"	48 X 7 X .016	40	83	0.31
1 1/2"	48 X 9 X .016	40	87	0.40
2"	48 X 10 X .020	40	93	0.69
2 1/2"	48 X 10 X .020	40	85	0.69
3"	48 X 11 X .020	40	77	0.75
4"	96 X 8 X .020	37	86	1.05
5"	96 X 7 X .025	37	81	1.40
6"	96 X 8 X .025	41	83	1.70

STAINLESS STEEL 304 LH (Heavy Weight)				
Size	Construction	Braid Angle	% C	Weight per Foot
1/2"	24 X 7 X .020	40	96	0.24
3/4"	36 X 6 X .020	40	92	0.31
1"	36 X 8 X .020	40	95	0.41
1 1/2"	48 X 7 X .025	40	95	0.75
2"	48 X 8 X .025	40	92	0.86
3"	48 X 10 X .025	40	88	1.07
4"	96 X 8 X .020	37	86	1.04
6"	96 X 13 X .025	*	89	2.70

* Note: 6" Series is braided braid.

¹ Minimum tensile for Stainless Steel wire is 100,000

BRONZE ²				
Size	Construction	Braid Angle	% C	Weight per Foot
1/4"	24 X 4 X .016	40	84	0.10
3/8"	24 X 5 X .016	40	81	0.12
1/2"	24 X 8 X .016	40	94	0.19
3/4"	36 X 6 X .020	40	92	0.33
1"	36 X 8 X .020	40	95	0.44
1 1/4"	48 X 7 X .020	40	93	0.52
1 1/2"	48 X 6 X .025	40	89	0.69
2"	48 X 8 X .025	40	92	0.93
2 1/2"	48 X 11 X .025	40	97	1.27
3"	48 X 11 X .025	40	92	1.27

² Minimum tensile for Bronze wire is 44,000 psi.

MONEL ³				
Size	Construction	Braid Angle	% C	Weight per Foot
1/4"	24 X 4 X .016	40	84	0.10
1/2"	24 X 5 X .016	40	72	0.12
3/4"	36 X 6 X .016	40	82	0.22
1"	36 X 8 X .016	40	71	0.22
1 1/2"	48 X 9 X .016	40	87	0.44
2"	48 X 14 X .016	40	97	0.68
3"	48 X 11 X .020	40	82	0.83

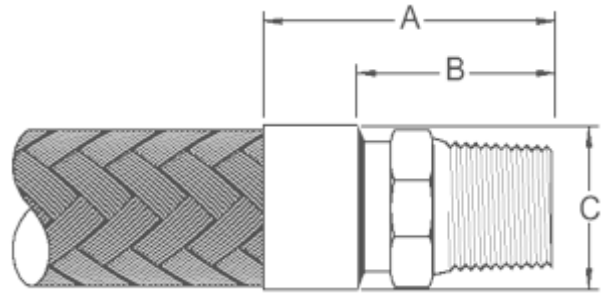
³ Minimum tensile for Monel wire is 70,000 psi.

Additional braid constructions and alloys are available upon request.

Corrugated Metal Hose

Standard Fittings

Hose I.D. & NPT Size	A	B	C
1/4"	1 13/16	1 3/16	3/4
3/8"	2 1/8	1 1/2	7/8
1/2"	2 5/16	1 9/16	1 1/8
3/4"	2 5/16	1 9/16	1 1/2
1"	2 9/16	1 13/16	1 3/4
1 1/4"	2 9/16	1 13/16	2 1/8
1 1/2"	2 3/4	2	2 1/2
2"	3 1/4	2 1/2	3 1/8
2 1/2"	4	3	3 9/16
3"	4	3	4 1/8
3 1/2" *	-	-	-
4"	5	4	4 1/8
5" *	-	-	-
6" *	-	-	-

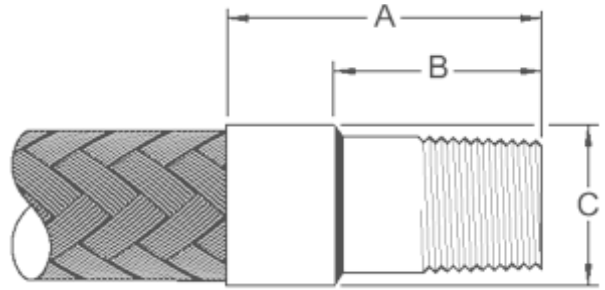


QMA — Hex Male Adapter

Threaded Male NPT end with Integral Hex for 1/4" thru 6" size hoses. Sizes 2" thru 6" available with Schedule 40/40S Octagon MI Collar.

Material: Brass / Carbon Steel / Stainless Steel

Hose I.D. & NPT Size	A	B	C
1/4"	2 1/8	1 1/2	3/4
3/8"	2 1/8	1 1/2	7/8
1/2"	2 3/4	2	1 1/8
3/4"	2 3/4	2	1 1/2
1"	2 3/4	2	1 3/4
1 1/4"	2 3/4	2	2 1/8
1 1/2"	3 1/4	2 1/2	2 1/2
2"	3 1/4	2 1/2	3 1/8
2 1/2"	4	3	3 9/16
3"	4	3	4 1/8
3 1/2" *	-	-	-
4"	5	4	5 1/8
5" *	-	-	-
6" *	-	-	-

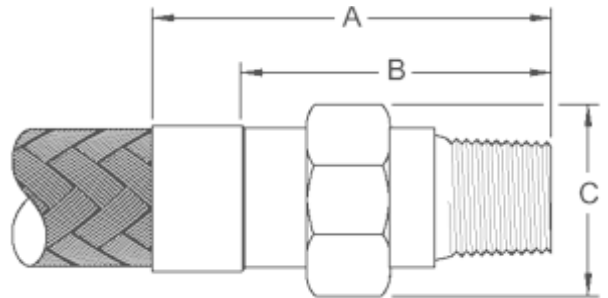


LMA — Male Adapter

Threaded Male NPT end for 1/4" thru 6" size hoses.

Material: Brass / Carbon Steel / Stainless Steel

Hose I.D. & NPT Size	A	B	C
1/4"	2 7/8	2 1/4	1 9/16
3/8"	3 3/16	2 9/16	1 3/4
1/2"	3 7/16	2 11/16	2
3/4"	3 15/16	3 3/16	2 3/8
1"	4 3/16	3 7/16	2 3/4
1 1/4"	4 5/8	3 7/8	3 5/16
1 1/2"	5 1/8	4 3/8	3 3/4
2"	5 7/16	4 11/16	4 7/16
2 1/2"	6 7/8	5 7/8	5 1/2
3"	7 1/16	6 1/16	6 5/16



MUN — Male Union

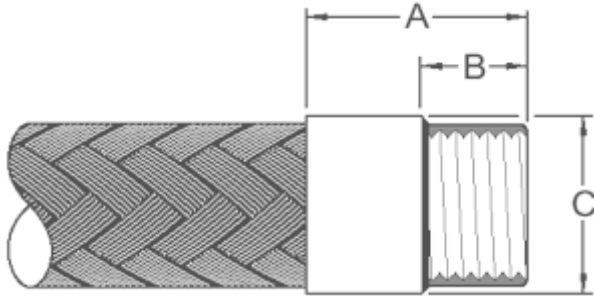
Threaded Male NPT to Female Union end for 1/4" thru 3" size hoses.

Material: Carbon Steel / Stainless Steel

* - Consult Factory for Dimensional Information.

Corrugated Metal Hose

Standard Fittings

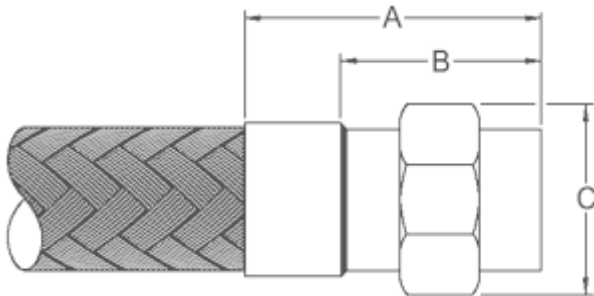


Hose I.D. & NPT Size	A	B	C
1/4"	1 1/4	5/8	3/4
3/8"	1 1/4	5/8	7/8
1/2"	1 1/2	3/4	1 1/8
3/4"	1 9/16	13/16	1 1/2
1"	1 3/4	1	1 3/4
1 1/4"	1 3/4	1	2 1/8
1 1/2"	1 13/16	1 1/16	2 1/2
2"	2	1 1/4	3 1/8
2 1/2"	2 1/2	1 1/2	3 9/16
3"	2 5/8	1 5/8	4 1/8
4"	2 7/8	1 7/8	5 1/8

RFA — Female Adapter

Threaded Female NPT Half Coupling end for 1/4" thru 4" size hoses.

Material: Copper / Carbon Steel / Stainless Steel

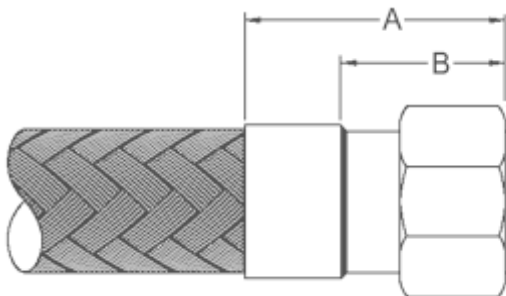


Hose I.D. & NPT Size	A	B	C
1/4"	2 1/4	1 5/8	1 1/2
3/8"	2 7/16	1 11/16	1 1/2
1/2"	2 11/16	1 15/16	1 3/4
3/4"	2 11/16	1 15/16	2 1/8
1"	3 1/4	2 1/2	2 7/16
1 1/4"	3 3/8	2 5/8	3
1 1/2"	3 11/16	2 15/16	3 15/16
2"	3 7/8	3 1/8	4 1/8
2 1/2"	4 3/4	3 3/4	5
3"	5 1/8	4 1/8	6

FUN — Female Union

Threaded Female NPT to Male Union end for 1/4" thru 3" size hoses.

Material: MI / Brass / Carbon Steel / Stainless Steel



Hose I.D. & NPT Size	A	B
1/4"	2 1/8	1 1/2
3/8"	2 1/8	1 1/2
1/2"	2 1/4	1 1/2
3/4"	2 1/4	1 1/2
1"	2 3/4	2
1 1/4"	2 3/4	2
1 1/2"	3 1/4	2 1/2
2"	3 1/4	2 1/2

JIC — Female 37° JIC Swivel Adapter

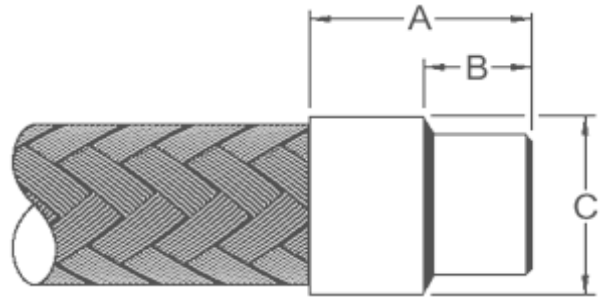
Swivel Nut with Sleeve and AN or JIC end with 37° Flare for 1/4" thru 2" size hoses.

Material: Carbon Steel / Stainless Steel

Corrugated Metal Hose

Standard Fittings

Hose I.D. & Pipe Size	A	B	C
1/4"	1 5/8	1	3/4
3/8"	1 5/8	1	7/8
1/2"	2 1/4	1 1/2	1 1/8
3/4"	2 3/4	2	1 1/2
1"	2 3/4	2	1 3/4
1 1/4"	2 3/4	2	2 1/8
1 1/2"	2 3/4	2	2 1/2
2"	2 3/4	2	3 1/8
2 1/2"	3	2	3 9/16
3"	3	2	4 1/8
3 1/2" *	-	-	-
4"	3	2	5 1/8
5" *	-	-	-
6" *	-	-	-

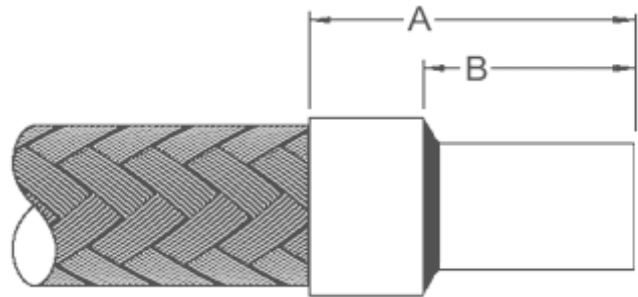


BWE – Weld End

Schedule 40/40S Pipe End beveled at 37.5° for 1/2" thru 6" size hoses.

Material: Carbon Steel / Stainless Steel

Tubing Size	A	B
1/4"	2 1/8	1 1/2
3/8"	2 1/8	1 1/2
1/2"	2 3/4	2
3/4"	3	2
1"	3	2
1 1/4"	3	2
1 1/2"	3 1/2	2 1/2
2"	3 1/2	2 1/2
2 1/2" *	-	-
3" *	-	-
3 1/2" *	-	-
4" *	-	-
5" *	-	-
6" *	-	-



TBE – Tube End

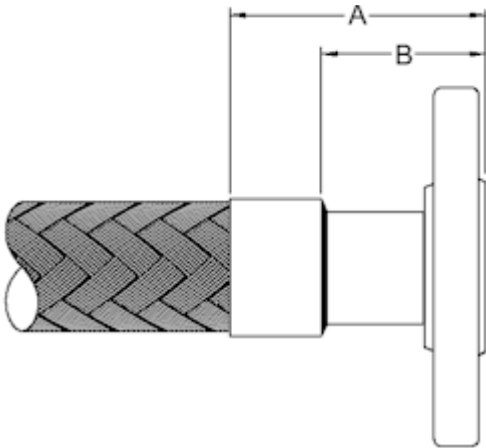
Tubing End for 1/4" thru 2" size hoses.

Material: Copper / Carbon Steel / Stainless Steel

* - Consult Factory for Dimensional Information.

Corrugated Metal Hose

Standard Fittings



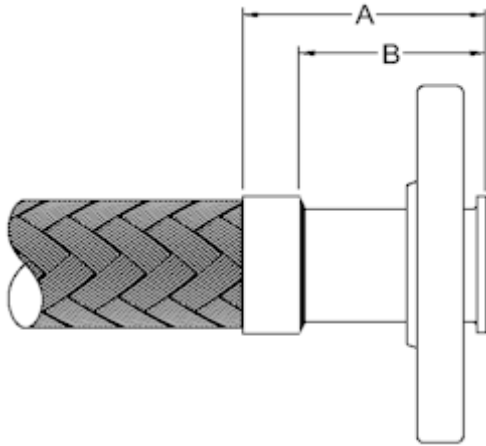
Flange IPS *	150#		300#	
	A	B	A	B
1/2"	2 1/2	1 3/4	2 3/4	2
3/4"	2 1/2	1 3/4	2 7/8	2 1/8
1"	2 5/8	1 7/8	3	2 1/4
1 1/4"	2 3/4	2	3	2 1/4
1 1/2"	3	2 1/4	3 1/4	2 1/2
2"	3 1/8	2 3/8	3 3/8	2 5/8
2 1/2"	3 1/2	2 1/2	3 7/8	2 7/8
3"	3 5/8	2 5/8	4 1/8	3 1/8
4"	3 7/8	2 7/8	4 1/2	3 1/2

* Additional sizes available upon request.

RGE — Fixed Flange

150 lb. or 300 lb. Slip-on Flanges with spacer nipple for 1/2" thru 4" size hoses.

Material: Carbon Steel / Stainless Steel



Flange IPS *	150#/300#	
	A	B
1/2"	2 3/4	2
3/4"	2 3/4	2
1"	2 3/4	2
1 1/4"	2 3/4	2
1 1/2"	2 3/4	2
2"	3 1/4	2 1/2
2 1/2"	3 1/2	2 1/2
3"	3 1/2	2 1/2
4"	4	3

* Additional sizes available upon request.

OGE — Floating Flange

150 lb. or 300 lb. Flanges with Stub Ends for 1/2" thru 4" size hoses.

Material: Carbon Steel / Stainless Steel

Corrugated Metal Hose

Calculating Braid Strength and Coverage

The following formulas are used when calculating braid coverage for hoses and their theoretical burst pressure:

Variables for Braid Construction

These are the variables associated with braid construction:

- C = Number of Carriers
- W = Number of Wires on each Carrier
- D = Wire Diameter (in inches)
- A = Braid Angle (in degrees)
- O = Outside Diameter of Hose (in inches, equivalent to Inside Diameter of Braid)
- I = Inside Diameter of Hose (in inches)
- S = Tensile Strength of Wire (lbs/in²)

Theoretical Tensile Strength and Burst Pressure of Braid

Theoretical Burst Pressure of Braid (lbs.) -

$$T = C \times W \times (D/2)^2 \times \pi \times S \times \cos(A)$$

Theoretical Burst Pressure of Braid (lbs./in²) -

$$B = T / E$$

where E = the cross effective thrust area of the hose (in²)

Assume that E = the cross-sectional area described by the mean diameter of the hose, and therefore,

$$E = ((I + O) / 4)^2 \times \pi$$

Braid Coverage (V)

Coverage V = The percentage of the outside diameter of the hose which is covered by braid

Coverage P = The percentage of the outside diameter of the hose which is covered by braid from only those carriers traveling in the same direction (or, one half of the total number of carriers).

$$P = (C \times W \times D) / (2 \times \cos(A) \times (O + 2 \times D) \times \pi)$$

$$V = 1 - (1 - P)^2$$

Multiple Braided Hose

It is inappropriate to assume that additional layers of braid will be applied with the same braid angle and/or at the same tension as the first. *Always consult the manufacturer whenever a hose application requires multiple braids.*

Corrugated Metal Hose

Types of Motion

Random Motion

Random Motion is unpredictable and occurs from the manual handling of a hose assembly. Care must be taken when handling corrugated metal hose assemblies in order to prevent over-bending and external abrasion of the wire braid. An available armor covering of interlocked casing can provide protection against these types of occurrences.

Axial Motion

Axial Motion occurs when a hose is extended or compressed along its longitudinal axis. This type of motion is restricted to unbraided corrugated metal hose and is limited to small movements over short lengths of hose.

Angular Motion

Angular Motion occurs when one end of a hose assembly is deflected in a simple bend with the ends not remaining parallel.

Formula:

$$L = \pi R \varnothing / 180 + 2(S)$$

Where,

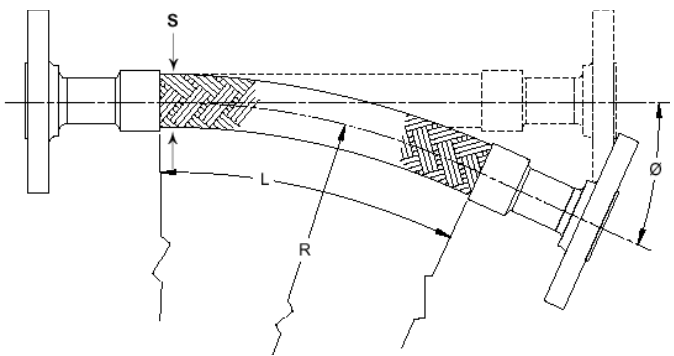
L = Live Hose Length (in inches)

π = 3.1415

R = Minimum Centerline Bend Radius for Constant Flexing (in inches)

\varnothing = Angular Deflection (in degrees)

S = Outside Diameter of Hose



Offset Motion

Offset Motion occurs when one end of a hose assembly is deflected in a plane perpendicular to the longitudinal axis with the ends remaining parallel.

Formula:

$$L = \sqrt{20R + T} \quad L_p = \sqrt{L^2 - T^2}$$

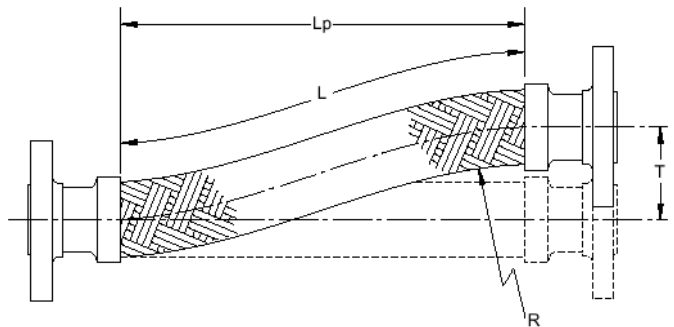
Where,

L = Live Hose Length (in inches)

L_p = Projected Live Hose Length (in inches)

R = Minimum Centerline Bend Radius for Constant Flexing (in inches)

T = Offset Motion to one side of the Centerline (in inches)



About CCI Teflon[®] Hose Assemblies...

CCI Teflon[®] hose assemblies are assembled in house to insure that we provide the best quality hoses to our customers. We use only the best Teflon[®] hose and fittings to produce assemblies able to withstand the test of time and everyday use. Our Teflon hose assemblies are available in Stainless Steel hose with a multitude of fitting options



Teflon[®] hose has many advantages ranging from its flexibility and strength to its ability to function in a wide temperature range. It is highly resistant to a wide range of chemicals and water and displays a non-stick quality which helps insure to integrity of chemicals transferred through it. CCI Teflon[®] hose assemblies can be used in a wide range of industrial applications including the Automotive, Chemical, Electronics/Semiconductor and HVAC industries.

This section of our catalog includes the most commonly purchased Teflon[®] hose assemblies—most of which are available for delivery within 24 hours. CCI specializes in custom Teflon[®] hose assemblies with a wide range of sizes and materials to meet your needs. If the hose you are looking for is not pictured in this catalog, please give us a call at 201-438-9190. One of our professionally trained hose specialists will assist you in creating a hose that meets your needs.

Teflon[®] is a registered trademark of the DuPont Corporation.

Teflon[®] Lined Hose

Medium Pressure Convoluted Hose

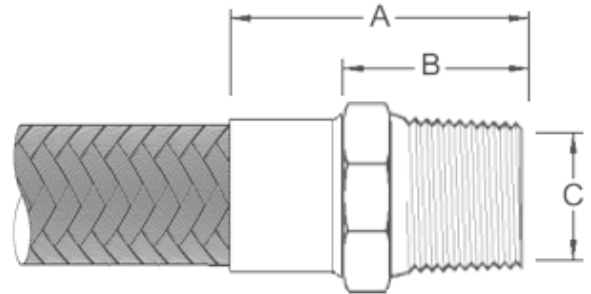
CONVOLUTED TRANSFER HOSE					
Nominal I.D. (Inches)	Nominal O.D. (Inches)	Operating Pressure (PSI)	Burst Pressure (PSI)	Bend Radius (Inches)	Weight per Foot
3/8"	0.59	1000	4000	1.00	0.12
1/2"	0.76	1250	5000	1.50	0.20
5/8"	0.91	1400	5600	2.00	0.38
3/4"	1.07	1100	4400	2.50	0.33
1"	1.34	1000	4000	3.00	0.43
1 1/4"	1.57	1000	4000	3.50	0.53
1 1/2"	1.81	750	3000	4.50	0.65
2"	2.32	500	2000	5.25	0.73

FULL VACUUM CONVOLUTED TRANSFER HOSE					
Nominal I.D. (Inches)	Nominal O.D. (Inches)	Operating Pressure (PSI)	Burst Pressure (PSI)	Bend Radius (Inches)	Weight per Foot
1 1/2"	1.85	750	3000	7.5	0.89
2"	2.42	500	2000	10	1.19
3"	3.68	250	1000	15	2.30
4"	4.85	150	600	24	3.50

Teflon[®] Lined Hose

Medium Pressure Convuluted Fittings

Hose Size	Thread	A	B	C
-06				
-08	1/2 - 14	2.70	1.52	0.40
-12	3/4 - 14	2.70	1.65	0.63
-16	1 - 11 1/2	2.90	1.85	0.85
-20	1 1/4 - 11 1/2	3.50	2.04	1.07
-24	1 1/2 - 11 1/2	3.70	2.13	1.31
-32	2 - 11 1/2	3.90	2.35	1.76

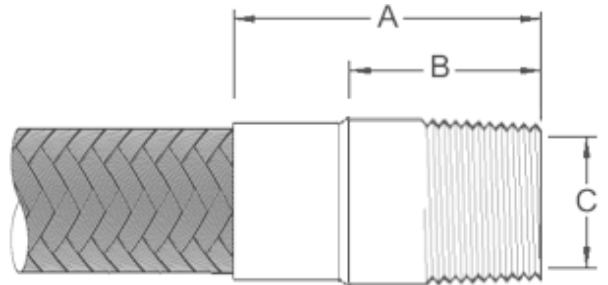


Hex Male Pipe Adapter

Threaded Male NPT end with Integral Hex for -06 thru -32 size hoses.

Material: Carbon Steel / Stainless Steel

Hose Size	Thread	A	B	C
-24	1 1/2 - 11 1/2		2.51	1.27
-32	2 - 11 1/2	4.75	3.26	1.73
-48	3 - 8	5.38	2.50	2.63
-64	4 - 8	5.38	2.69	3.63

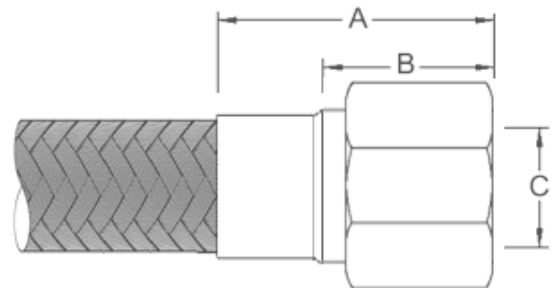


Male Pipe Adapter

Threaded Male NPT end for -24 thru -64 size hoses.

Material: Carbon Steel / Stainless Steel

Hose Size	Thread	A	B	C
-06	1/2" - 14	2.70	1.52	0.40
-08	3/4" - 14	2.70	1.65	0.63
-12	1" - 11 1/2	2.90	1.85	0.85
-16	1 1/4" - 11 1/2	3.50	2.04	1.07
-20	1 1/2" - 11 1/2	3.70	2.13	1.31
-24	2" - 11 1/2	3.90	2.35	1.76
-32	1 1/2" - 11 1/2	3.70	2.13	1.31



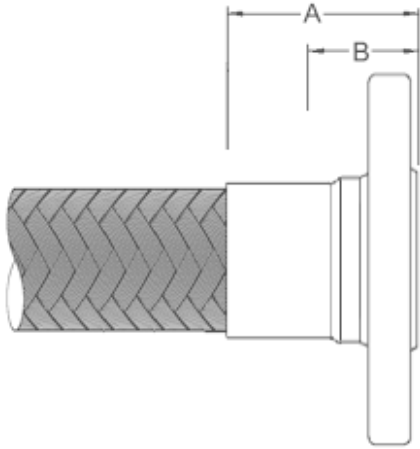
Female Swivel - JIC Adapter

Swivel Nut with Sleeve and JIC end for -06 thru -32" size hoses.

Material: Carbon Steel / Stainless Steel

Teflon[®] Lined Hose

Medium Pressure Convuluted Fittings

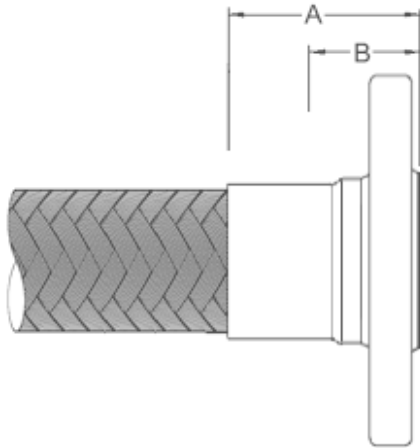


Hose Size	A	B
-08	2.50	1.39
-12	2.77	1.64
-16	2.85	1.72
-20	3.35	1.84
-24	3.56	2.17
-32	3.86	2.31
-48	5.38	2.50
-64	5.38	2.69

Flange Retainer

150 lb. or 300 lb. Insert Flanges with or without collars for -08 thru -64 size hoses.

Material: SS with Carbon Steel / All Stainless Steel



Hose Size	A	B
-08	2.67	1.48
-12	2.97	1.76
-16	3.08	1.84
-20	3.58	1.98
-24	3.93	2.35
-32	4.12	2.50
-48	5.46	2.54
-64	5.46	2.73

Teflon[™] Lined Flange Retainer

150 lb. or 300 lb. Teflon Lined Insert Flanges with or without collars for -08 thru -64 size hoses.

Material: SS with Carbon Steel / All Stainless Steel

Teflon[®] Lined Hose

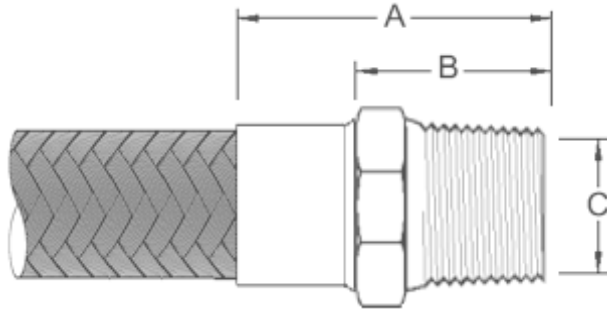
Medium Pressure Smooth Bore Hose

.030 TUBE WALL W/300 SERIES SS BRAID (Conductive & Non-Conductive)							
Hose Size	Average I.D. (Inches)	Average O.D. (Inches)	Operating Pressure (PSI)	Burst Pressure (PSI)	Bend Radius (Inches)	Weight per Foot	Maximum Continuous Length (Inches)
3/16"	0.125	0.250	3000	12000	2	0.047	300
1/4"	0.187	0.312	3000	12000	2	0.077	400
5/16"	0.250	0.375	3000	12000	3	0.098	300
3/8"	0.312	0.445	2500	10000	4	0.110	300
7/16"	0.375	0.503	2250	9000	4.5	0.124	300
1/2"	0.405	0.549	2000	8000	5.2	0.124	200
5/8"	0.500	0.648	1500	6000	6.5	0.154	180
3/4"	0.625	0.778	1200	4800	7.7	0.170	150
7/8"	0.750	0.885	1100	4400	8.2	0.198	100
1"	0.875	1.030	1000	4000	9	0.273	100
1 1/8"	1.000	1.135	900	3600	10	0.305	75
1 1/4"	1.125	1.290	750	3000	16	0.350	75

.040 TUBE WALL W/300 SERIES SS BRAID (Conductive & Non-Conductive)							
Hose Size	Average I.D. (Inches)	Average O.D. (Inches)	Operating Pressure (PSI)	Burst Pressure (PSI)	Bend Radius (Inches)	Weight per Foot	Maximum Continuous Length (Inches)
1/4"	0.188	0.323	3000	12000	2	0.077	360
5/16"	0.250	0.386	3000	12000	3	0.098	270
3/8"	0.313	0.447	2500	10000	4	0.114	270
7/16"	0.381	0.513	2250	9000	4.5	0.122	270
1/2"	0.406	0.565	2000	8000	5.2	0.141	180
5/8"	0.500	0.664	1500	6000	6.5	0.174	162
3/4"	0.630	0.789	1250	5000	7.5	0.255	135
1"	0.878	1.050	1000	4000	9	0.299	90
1 1/4"	1.128	1.310	750	3000	16	0.468	67.5

Teflon[®] Lined Hose

Medium Pressure Smooth Bore Fittings

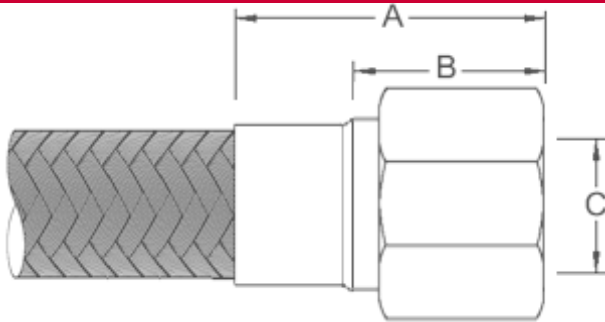


Hose Size	Thread	A	B	C
-03	1/8 - 27	1.26	0.80	0.095
-04	1/8 - 27	1.26	0.80	0.156
-04	1/4 - 18	1.47	1.02	0.156
-05	1/4 - 18	1.47	1.02	0.207
-06	1/4 - 18	1.60	1.05	0.277
-06	3/8 - 18	1.63	1.08	0.277
-08	3/8 - 18	1.68	1.08	0.358
-08	1/2 - 14	1.93	1.32	0.358
-10	1/2 - 14	2.05	1.35	0.469
-12	3/4 - 14	2.21	1.44	0.594
-16	1 - 11 1/2	2.56	1.65	0.812

Hex Male Pipe Adapter

Threaded Male NPT end with Integral Hex for -03 thru -16 size hoses.

Material: Brass / Stainless Steel



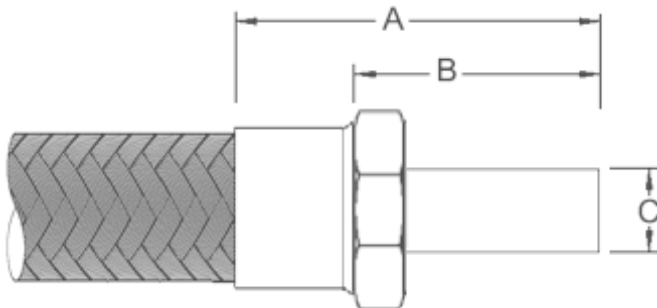
Hose Size	Thread	A	B	C
-03	3/8 - 24	1.31	0.50	0.095
-04	7/16 - 20	1.33	0.50	0.156
-05	1/2 - 20	1.40	0.56	0.207
-06 ¹	9/16 - 18	1.56	0.63	0.277
-06 ²	5/8 - 18	1.56	1.00	0.277
-08	3/4 - 16	1.72	0.69	0.358
-10	7/8 - 14	1.99	0.77	0.469
-12 ¹	1 1/16 - 12	2.13	0.79	0.594
-12 ²	1 1/16 - 14	1.97	1.22	0.594
-16	1 5/16 - 12	2.37	0.84	0.812

Female Swivel - JIC/SAE Adapter

Swivel Nut with Sleeve and JIC or SAE end for -03 thru -16 size hoses.

Material: Brass / Stainless Steel

¹ Indicates JIC only
² Indicates SAE only



Hose Size	A	B	C
-04	1.53	1.08	1/4" O.D. Tube
-06	1.76	1.21	3/8" O.D. Tube
-08	2.09	1.48	1/2" O.D. Tube
-12	2.53	1.76	3/4" O.D. Tube
-16	2.84	1.93	1" O.D. Tube

Tube End Adapter

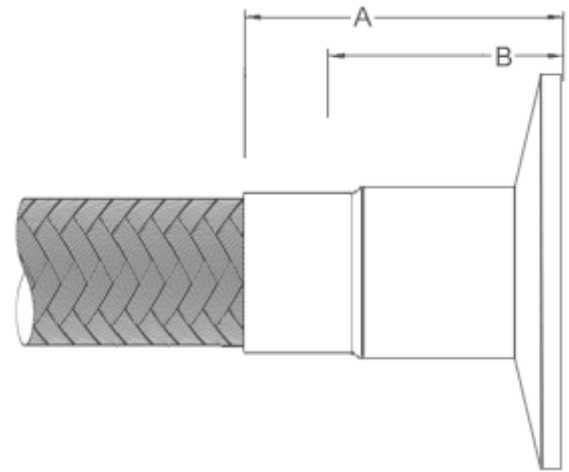
Tube end with Integral Hex for -04 thru -16 size hoses.

Material: Brass / Stainless Steel

Teflon[®] Lined Hose

Medium Pressure Smooth Bore Fittings

Hose Size	A	B
-16	1.85	0.94

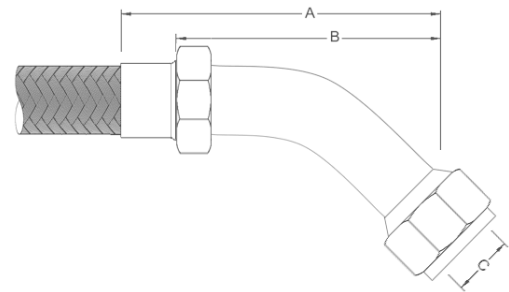


Sanitary Adapter

Sanitary Adapter fitting for -16 hoses.

Material: Stainless Steel

Hose Size	Thread	A	B	C
-04	7/16 - 20	1.69	1.25	1/4
-05	1/2 - 20	1.85	1.44	5/16
-06	5/8 - 18	2.13	1.63	3/8
-08	3/4 - 16	2.44	1.88	1/2

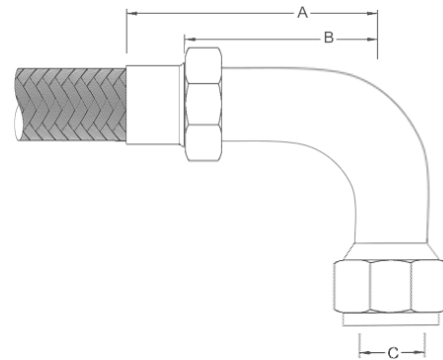


45° Female Swivel SAE Adapter

Swivel Nut with Sleeve and SAE end at a 45° Angle for -04 thru -08 size hoses.

Material: Carbon Steel

Hose Size	Thread	A	B	C
-04	7/16 - 20	1.42	1.0	1/4
-05	1/2 - 20	1.55	1.1	5/16
-06	5/8 - 18	1.80	1.3	3/8
-08	3/4 - 16	2.10	1.5	1/2
-10	7/8 - 14	2.47	1.8	5/8



90° Female Swivel SAE Adapter

Swivel Nut with Sleeve and SAE end at a 90° Angle for -04 thru -10 size hoses.

Material: Carbon Steel

NOTES

NOTES
