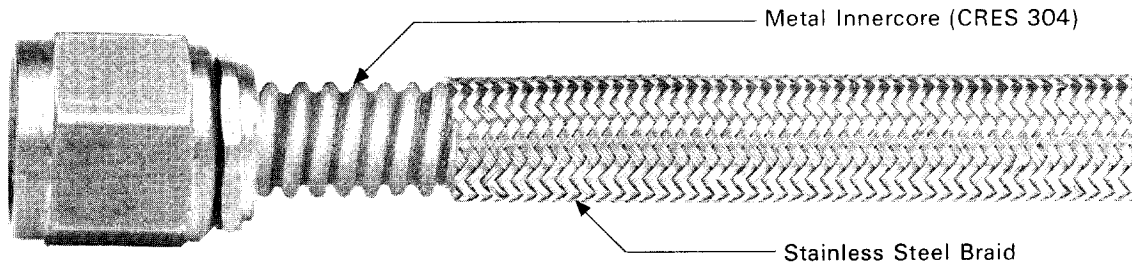




PREECE INC.
ENGINEERING
BULLETIN

CONVOLUTED METAL
 HOSE ASSEMBLIES
 Bulletin PEB-15



APPLICATIONS AND ENGINEERING INFORMATION

A medium pressure annular convoluted metal hose innercore with stainless steel braid. Fittings are welded to the innercore and braid. This hose is used where flexibility is required but the temperatures are too extreme for Teflon or thermoplastic materials which operate in the range of -65°F to $+450^{\circ}\text{F}$ (-54°C to $+232^{\circ}\text{C}$). Pressures shown in the columns below are based on ambient temperature $+70^{\circ}\text{F}$ ($+21^{\circ}\text{C}$). Higher temperatures require these calculations to be reduced. Please consult our plant.

TEMPERATURE RANGE: -325°F to $+850^{\circ}\text{F}$ (-198°C to $+454^{\circ}\text{C}$)

CONSTRUCTION

INNERCORE: Metal convoluted liner (Annular construction)
REINFORCEMENT: Corrosion resistant stainless steel wire braid (Type 300)
FITTINGS: Elbows are manufactured with smooth turns to minimize pressure drop.

MILITARY SPECIFICATIONS

Welding to Mil-W-8611
 Electropolish to Ordnance Specification OD52533

SPECIAL DESIGNS

Preece Inc. has designed and fabricated many complex configurations and flange end fittings for marine, aerospace and aircraft industries. For special requirements please contact our plant.

DIMENSIONS AND PRESSURE RATINGS

HOSE PART NUMBER	I.D. NOMINAL		O.D. NOMINAL		BEND RADIUS (Static)		BEND RADIUS (Flexing)		OPERATING PRESSURE		PROOF PRESSURE		BURST PRESSURE		WEIGHT	
	in	mm	in	mm	in	mm	in	mm	psi	bar	psi	bar	psi	bar	lbs/ft	kg/m
501- 4	.25	6.3	.53	13.5	.75	19.1	4.75	120	2000	138	3000	207	8000	552	.18	.267
501- 6	.38	9.4	.68	17.3	1.00	25.4	5.25	133	1500	104	2250	155	6000	414	.25	.372
501- 8	.50	12.7	.88	22.4	1.38	35.1	5.75	146	1000	69	1500	104	4000	276	.32	.476
501-12	.75	19.1	1.20	30.5	1.87	47.5	7.75	197	600	41	900	62	2400	165	.45	.670
501-16	1.00	25.4	1.55	39.4	2.50	63.5	9.00	229	500	34	750	52	2000	138	.60	.893
501-20	1.25	31.8	1.85	47.0	3.00	76.2	10.50	267	400	28	600	41	1600	110	.87	1.296
501-24	1.50	39.1	2.24	56.9	3.50	88.9	11.75	298	350	24	525	36	1400	96	1.10	1.637
501-32	2.00	50.1	2.80	71.1	4.50	114.3	15.00	381	200	14	300	21	800	55	1.65	2.456

HOSE ASSEMBLY NUMBERING SYSTEM

Example 1

STRAIGHT TO STRAIGHT FITTING

ASSEMBLIES WITH STRAIGHT FITTINGS. EACH END USE DASH SIZE DESIGNATION.

501000 8C 0145

BASIC ASSEMBLY NO. _____ ASSEMBLY LENGTH 14 $\frac{1}{2}$ " LAST DIGIT IN $\frac{1}{8}$ INCH INCREMENTS
 SIZE ($\frac{1}{2}$ " OD Tube Size) _____ FITTING MATERIAL DESIGNATION

Example 2

STRAIGHT TO 90° ELBOW FITTING

ASSEMBLIES WITH ELBOW FITTING ONE END AND STRAIGHT FITTING ONE END USE DASH SIZE DESIGNATION.

501001 4C 0134

BASIC ASSEMBLY NO. _____ ASSEMBLY LENGTH 13 $\frac{1}{2}$ " LAST DIGIT IN $\frac{1}{8}$ INCH INCREMENTS
 SIZE ($\frac{1}{4}$ " OD Tube Size) _____ FITTING MATERIAL DESIGNATION

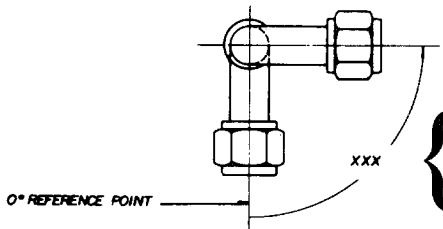
Example 3

90° ELBOW TO 90° ELBOW FITTING

ASSEMBLIES WITH ELBOWS EACH END USE LETTER CODE FOR SIZE DESIGNATION

501003 F 0173 C 090

BASIC ASSEMBLY NO. _____ ANGULAR ROTATION IN DEGREES (MEASURED COUNTER CLOCKWISE)
 SIZE ($\frac{1}{4}$ " Tube Size) _____ FITTING MATERIAL DESIGNATION
 _____ ASSEMBLY LENGTH 17 $\frac{3}{8}$ " LAST DIGIT IN $\frac{1}{8}$ INCH INCREMENTS



ANGULAR ROTATION IN DEGREES MEASURED COUNTERCLOCKWISE WHEN USING ELBOW CONFIGURATIONS ON BOTH ENDS

TUBE SIZE (O.D.)	$\frac{1}{4}$ "	$\frac{3}{8}$ "	$\frac{1}{2}$ "	$\frac{3}{4}$ "	1"	1 $\frac{1}{4}$ "	1 $\frac{1}{2}$ "	2"
DASH SIZE	-4	-6	-8	-12	-16	-20	-24	-32
LETTER CODE	F	H	J	L	M	N	P	R

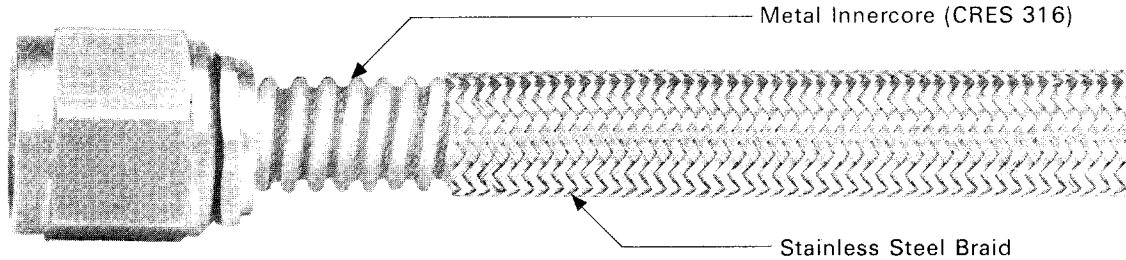
MATERIAL DESIGNATION
C = Innercore (CRES 304)
Fittings (CRES 304)
Braid (CRES 304/321)

BASIC HOSE ASSEMBLY PART NO.	DESCRIPTION		FITTING A	FITTING B	ASSEMBLY LENGTH	BASIC HOSE ASSEMBLY PART NO.	DESCRIPTION		FITTING A	FITTING B	ASSEMBLY LENGTH
	FITTING A	FITTING B					FITTING A	FITTING B			
501000	STRAIGHT SWIVEL, AN CONNECTION	STRAIGHT SWIVEL, AN CONNECTION				501006	STRAIGHT SWIVEL, FLARELESS CONNECTION	STRAIGHT SWIVEL, FLARELESS CONNECTION			
501001	STRAIGHT SWIVEL, AN CONNECTION	90° SWIVEL, AN CONNECTION				501007	STRAIGHT SWIVEL, FLARELESS CONNECTION	90° SWIVEL, FLARELESS CONNECTION			
501002	STRAIGHT SWIVEL, AN CONNECTION	45° SWIVEL, AN CONNECTION				501008	STRAIGHT SWIVEL, FLARELESS CONNECTION	45° SWIVEL, FLARELESS CONNECTION			
501003	90° SWIVEL, AN CONNECTION	90° SWIVEL, AN CONNECTION				501009	90° SWIVEL, FLARELESS CONNECTION	90° SWIVEL, FLARELESS CONNECTION			
501004	45° SWIVEL, AN CONNECTION	45° SWIVEL, AN CONNECTION				501010	45° SWIVEL, FLARELESS CONNECTION	45° SWIVEL, FLARELESS CONNECTION			
501005	90° SWIVEL, AN CONNECTION	45° SWIVEL, AN CONNECTION				501011	90° SWIVEL, FLARELESS CONNECTION	45° SWIVEL, FLARELESS CONNECTION			



PREECE INC.
ENGINEERING
BULLETIN

CONVOLUTED METAL
HOSE ASSEMBLIES
Bulletin PEB-16



APPLICATIONS AND ENGINEERING INFORMATION

A light weight, very flexible, metal hose innercore (helical convolution) with stainless steel wire braid reinforcement. Fittings are welded to the inner liner and braid. Typical applications would be for ground support. This hose is used where flexibility is required but the temperatures are too extreme for Teflon and thermoplastic material which operate in the range of -65°F to $+450^{\circ}\text{F}$ (-54°C to $+232^{\circ}\text{C}$). Pressures shown in the columns are based on ambient temperature $+70^{\circ}\text{F}$ ($+20^{\circ}\text{C}$). Higher temperatures require these calculations to be reduced. Please consult our plant.

TEMPERATURE RANGE: -325°F to $+850^{\circ}\text{F}$ (-198°C to $+454^{\circ}\text{C}$)

CONSTRUCTION

INNERCORE: Metal convoluted liner (Helical Construction)
REINFORCEMENT: Corrosion resistant stainless steel wire braid (Type 300)
FITTINGS: Elbows are manufactured with smooth turns to minimize pressure drop.

MILITARY SPECIFICATIONS

Welding to Mil-W-8611
 Electropolishing to Ordnance Specification OD52533

SPECIAL DESIGNS

Preece Inc. has designed and fabricated many complex configurations and flange end fittings for marine, aerospace and aircraft industries. For special requirements please contact our plant.

DIMENSIONS AND PRESSURE RATINGS

HOSE PART NUMBER	I.D. NOMINAL		O.D. NOMINAL		BEND RADIUS (Static)		BEND RADIUS (Flexing)		OPERATING PRESSURE		PROOF PRESSURE		BURST PRESSURE		WEIGHT	
	in	mm	in	mm	in	mm	in	mm	psi	bar	psi	bar	psi	bar	lbs/ft	kg/m
502- 4	.25	6.4	.45	11.4	.75	19.1	2.25	57.2	1000	69	1500	104	4000	276	.12	.178
502- 6	.38	9.7	.63	16.0	1.25	31.8	2.75	69.9	900	62	1350	93	3600	248	.17	.253
502- 8	.50	12.7	.75	19.1	1.50	38.1	3.00	76.2	800	55	1200	83	3200	221	.22	.327
502-10	.63	16.0	.90	22.9	1.63	41.4	4.00	101.6	700	48	1050	72	2800	193	.29	.431
502-12	.75	19.1	1.10	27.9	1.75	44.5	5.00	127.0	500	35	750	52	2000	138	.39	.580
502-16	1.00	25.4	1.30	33.0	2.00	50.8	6.50	165.1	400	28	600	41	1600	110	.48	.714
502-20	1.25	31.8	1.68	42.7	3.00	76.2	8.00	203.2	300	21	450	31	1200	83	.62	.923
502-24	1.50	38.1	2.00	50.8	3.50	88.9	9.50	241.3	200	14	300	21	800	55	.89	1.325
502-32	2.00	50.8	2.50	63.5	5.00	127.0	11.00	279.4	100	7	150	10	400	28	1.24	1.846

HOSE ASSEMBLY NUMBERING SYSTEM

Example 1

STRAIGHT TO STRAIGHT FITTING

ASSEMBLIES WITH STRAIGHT FITTINGS EACH END USE DASH SIZE DESIGNATION.

502000 8A 0145

BASIC ASSEMBLY NO. _____ ASSEMBLY LENGTH 14 5/8" LAST DIGIT IN 1/8 INCH INCREMENTS
 SIZE (1/2" OD Tube Size) _____ FITTING MATERIAL DESIGNATION

Example 2

STRAIGHT TO 90° ELBOW FITTING

ASSEMBLIES WITH ELBOW FITTING ONE END AND STRAIGHT FITTING ONE END USE DASH SIZE DESIGNATION.

502001 4A 0134

BASIC ASSEMBLY NO. _____ ASSEMBLY LENGTH 13 1/2" LAST DIGIT IN 1/8 INCH INCREMENTS
 SIZE (1/4" OD Tube Size) _____ FITTING MATERIAL DESIGNATION

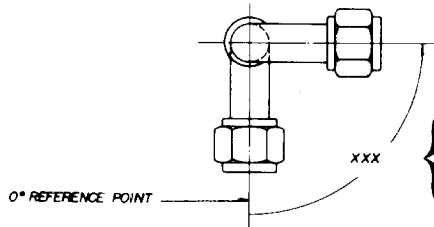
Example 3

90° ELBOW TO 90° ELBOW FITTING

ASSEMBLIES WITH ELBOWS EACH END USE LETTER CODE FOR SIZE DESIGNATION

502003 F 0173 A 090

BASIC ASSEMBLY NO. _____ ANGULAR ROTATION IN DEGREES (MEASURED COUNTERCLOCKWISE)
 SIZE (1/4" Tube Size) _____ FITTING MATERIAL DESIGNATION
 _____ ASSEMBLY LENGTH 17 3/8" LAST DIGIT IN 1/8 INCH INCREMENTS



ANGULAR ROTATION IN DEGREES MEASURED COUNTERCLOCKWISE WHEN USING ELBOW CONFIGURATIONS ON BOTH ENDS

TUBE SIZE (O.D.)	1/4"	3/8"	1/2"	5/8"	3/4"	1"	1 1/4"	1 1/2"	2"
DASH SIZE	-4	-6	-8	-10	-12	-16	-20	-24	-32
LETTER CODE	F	H	J	K	L	M	N	P	R

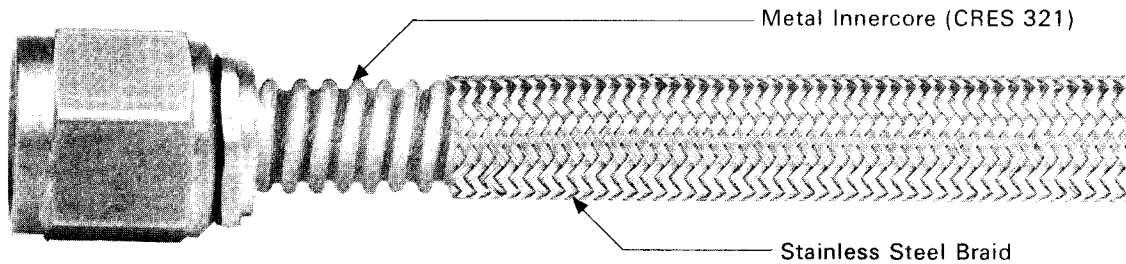
MATERIAL DESIGNATION
A = Innercore (CRES 316)
Fittings (CRES 316)
Braid (CRES 304/316)

BASIC HOSE ASSEMBLY PART NO.	DESCRIPTION		FITTING A	FITTING B	ASSEMBLY LENGTH	BASIC HOSE ASSEMBLY PART NO.	DESCRIPTION		FITTING A	FITTING B	ASSEMBLY LENGTH
	FITTING A	FITTING B					FITTING A	FITTING B			
502000	STRAIGHT SWIVEL, AN CONNECTION	STRAIGHT SWIVEL, AN CONNECTION				502006	STRAIGHT SWIVEL, FLARELESS CONNECTION	STRAIGHT SWIVEL, FLARELESS CONNECTION			
502001	STRAIGHT SWIVEL, AN CONNECTION	90° SWIVEL, AN CONNECTION				502007	STRAIGHT SWIVEL, FLARELESS CONNECTION	90° SWIVEL, FLARELESS CONNECTION			
502002	STRAIGHT SWIVEL, AN CONNECTION	45° SWIVEL, AN CONNECTION				502008	STRAIGHT SWIVEL, FLARELESS CONNECTION	45° SWIVEL, FLARELESS CONNECTION			
502003	90° SWIVEL, AN CONNECTION	90° SWIVEL, AN CONNECTION				502009	90° SWIVEL, FLARELESS CONNECTION	90° SWIVEL, FLARELESS CONNECTION			
502004	45° SWIVEL, AN CONNECTION	45° SWIVEL, AN CONNECTION				502010	45° SWIVEL, FLARELESS CONNECTION	45° SWIVEL, FLARELESS CONNECTION			
502005	90° SWIVEL, AN CONNECTION	45° SWIVEL, AN CONNECTION				502011	90° SWIVEL, FLARELESS CONNECTION	45° SWIVEL, FLARELESS CONNECTION			



PREECE INC.
ENGINEERING
BULLETIN

CONVOLUTED METAL
HOSE ASSEMBLIES
 Bulletin PEB-17



APPLICATIONS AND ENGINEERING INFORMATION

This hose is a medium pressure annular corrugated metal hose innercore with wire braid reinforcement. Fittings are welded to the innercore and wire braid. Assemblies are used for aircraft and missile applications. Higher pressure hose is available and for these requirements our plant should be contacted. Metallic hose is used on applications where flexibility is required but the temperatures are too extreme for Teflon and thermoplastic materials which normally operate in the range of -65°F to 450°F (-54°C to $+232^{\circ}\text{C}$). Pressure in the columns are based on $+70^{\circ}\text{F}$ ($+21^{\circ}\text{C}$). Higher temperatures require these calculations to be reduced. Please consult our plant.

TEMPERATURE RANGE: -325°F to $+1200^{\circ}\text{F}$ (-198°C to $+649^{\circ}\text{C}$)

CONSTRUCTION

INNERCORE: Metal convoluted liner (Annular Construction)
REINFORCEMENT: Corrosion resistant stainless steel wire braid (Type 300)
FITTINGS: Elbows are manufactured with smooth turns to minimize pressure drop.

MILITARY SPECIFICATIONS

Welding to Mil-W-8611
 Electropolishing to Ordnance Specification OD52533

SPECIAL DESIGNS

Preece Inc. has designed and fabricated many complex configurations and flange end fittings for marine, aerospace, and aircraft industries. For special requirements please contact our plant.

DIMENSIONS AND PRESSURE RATINGS

HOSE PART NUMBER	I.D. NOMINAL		O.D. NOMINAL		BEND RADIUS (Static)		BEND RADIUS (Flexing)		OPERATING PRESSURE		PROOF PRESSURE		BURST PRESSURE		WEIGHT	
	in	mm	in	mm	in	mm	in	mm	psi	bar	psi	bar	psi	bar	lbs/ft	kg/m
503- 4	.24	6.1	.42	10.7	2.50	63.5	6.25	159	1500	104	2250	155	9000	621	.11	.163
503- 5	.28	7.1	.53	13.5	3.25	82.6	7.50	191	1400	97	2100	145	8400	580	.13	.194
503- 6	.34	8.6	.60	15.2	3.75	95.3	9.00	229	1200	83	1800	124	7200	497	.18	.268
503- 8	.46	11.7	.78	19.8	4.00	101.6	10.00	254	1100	76	1650	114	6000	414	.30	.447
503-10	.57	14.5	.94	23.9	5.00	127.0	11.50	292	800	55	1200	83	4200	290	.36	.536
503-12	.70	17.8	1.10	27.9	6.50	165.1	15.00	381	700	48	1050	72	4000	276	.45	.670
503-16	.95	24.1	1.36	34.5	7.00	177.8	18.00	457	600	41	900	62	2400	166	.60	.893

HOSE ASSEMBLY NUMBERING SYSTEM

Example 1

STRAIGHT TO STRAIGHT FITTING

ASSEMBLIES WITH STRAIGHT FITTINGS EACH END USE DASH SIZE DESIGNATION.

503000 8B 0145

BASIC ASSEMBLY NO. _____ ASSEMBLY LENGTH 14 5/8" LAST DIGIT IN 1/8 INCH INCREMENTS

SIZE (1/2" OD Tube Size) _____ FITTING MATERIAL DESIGNATION

Example 2

STRAIGHT TO 90° ELBOW FITTING

ASSEMBLIES WITH ELBOW FITTING ONE END AND STRAIGHT FITTING ONE END USE DASH SIZE DESIGNATION.

503001 4B 0134

BASIC ASSEMBLY NO. _____ ASSEMBLY LENGTH 13 1/2" LAST DIGIT IN 1/8 INCH INCREMENTS

SIZE (1/4" OD Tube Size) _____ FITTING MATERIAL DESIGNATION

Example 3

90° ELBOW TO 90° ELBOW FITTING

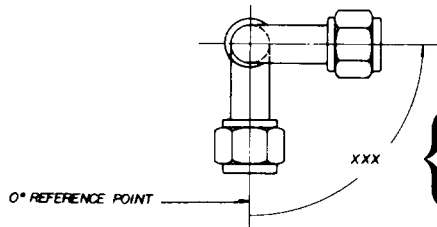
ASSEMBLIES WITH ELBOWS EACH END USE LETTER CODE FOR SIZE DESIGNATION

503003 F 0173 B 090

BASIC ASSEMBLY NO. _____ ANGULAR ROTATION IN DEGREES (MEASURED COUNTERCLOCKWISE)

SIZE (1/4" Tube Size) _____ FITTING MATERIAL DESIGNATION

_____ ASSEMBLY LENGTH 17 3/8" LAST DIGIT IN 1/8 INCH INCREMENTS



ANGULAR ROTATION IN DEGREES MEASURED COUNTERCLOCKWISE WHEN USING ELBOW CONFIGURATIONS ON BOTH ENDS

TUBE SIZE (O.D.)	1/4"	5/16"	3/8"	1/2"	5/8"	3/4"	1"
DASH SIZE	-4	-5	-6	-8	-10	-12	-16
LETTER CODE	F	G	H	J	K	L	M

MATERIAL DESIGNATION	
B =	Innercore (CRES 321)
Fitting	(CRES 304/321)
Braid	(CRES 304/321)

BASIC HOSE ASSEMBLY PART NO.	DESCRIPTION		FITTING A	FITTING B	ASSEMBLY LENGTH	BASIC HOSE ASSEMBLY PART NO.	DESCRIPTION		FITTING A	FITTING B	ASSEMBLY LENGTH
	FITTING A	FITTING B					FITTING A	FITTING B			
503000	STRAIGHT SWIVEL, AN CONNECTION	STRAIGHT SWIVEL, AN CONNECTION				503006	STRAIGHT SWIVEL, FLARELESS CONNECTION	STRAIGHT SWIVEL, FLARELESS CONNECTION			
503001	STRAIGHT SWIVEL, AN CONNECTION	90° SWIVEL, AN CONNECTION				503007	STRAIGHT SWIVEL, FLARELESS CONNECTION	90° SWIVEL, FLARELESS CONNECTION			
503002	STRAIGHT SWIVEL, AN CONNECTION	45° SWIVEL, AN CONNECTION				503008	STRAIGHT SWIVEL, FLARELESS CONNECTION	45° SWIVEL, FLARELESS CONNECTION			
503003	90° SWIVEL, AN CONNECTION	90° SWIVEL, AN CONNECTION				503009	90° SWIVEL, FLARELESS CONNECTION	90° SWIVEL, FLARELESS CONNECTION			
503004	45° SWIVEL, AN CONNECTION	45° SWIVEL, AN CONNECTION				503010	45° SWIVEL, FLARELESS CONNECTION	45° SWIVEL, FLARELESS CONNECTION			
503005	90° SWIVEL, AN CONNECTION	45° SWIVEL, AN CONNECTION				503011	90° SWIVEL, FLARELESS CONNECTION	45° SWIVEL, FLARELESS CONNECTION			

