

ABOUT

STAINLESS STEEL FLEXIBLE HOSES

Singaflex Stainless Steel Flexible Hoses are used to service various industries, providing a durable, flexible and effective corrosion resistant solution for liquid or gaseous medium transfer.

Construction

Annular Convolute,
Close Pitch,
4:1 Safety Factor



Durability

Made from high-quality stainless steel, our hoses are resistant to wear and tear, withstand high pressures, extreme temperatures (-200°C to 700°C) and corrosive environments, making them suitable for use in a plethora of scenarios.

Flexibility

A primary advantage Singaflex hoses is its flexibility. It allows for applications in which bending and twisting is required, without compromising its structural integrity.

This makes the hose ideal for applications where rigid pipings are not suitable. The flexibility also allows for easier installation in tight spaces and around obstacles.

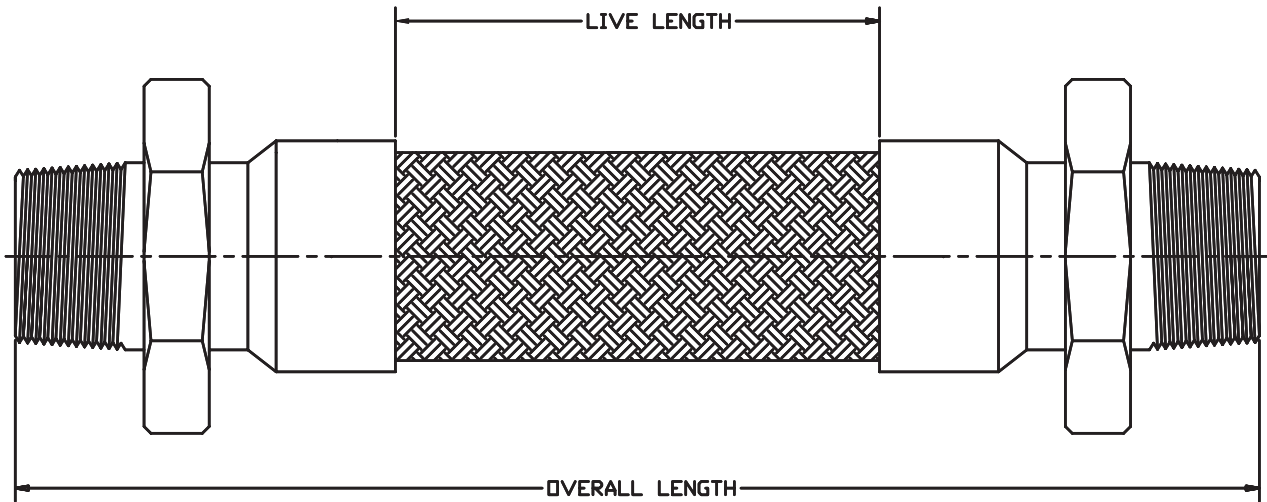
Corrosion Resistance

Singaflex Stainless Steel Flexible Hoses are resistant to corrosion, which makes them suitable for use in applications where corrosion is a concern.

Applications

- Hydraulic and Pneumatic Systems
- Marine
- Oil & Gas
- Heating, Ventilation, Air Conditioning (HVAC)
- Chemical Processing
- Food & Beverage
- Semiconductor
- Construction

GUIDE TO ORDERING



Guide to Ordering

Selection of the correct hose is important to ensure optimum field performance. To achieve this, there are a number of important requirements that must be known.

01 | Material of Hose, Braiding, Fitting

- SS304L
- SS316L

02 | Size of Hose and Fittings

- Nominal Diameter Size in "MM" or "Inch"
- DN6 - DN350 (¼" to 14")

03 | End Connection

- See next Pages

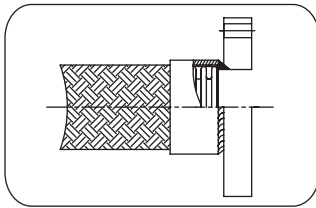
04 | Overall Length

- Length specified to include length/thickness of end connections

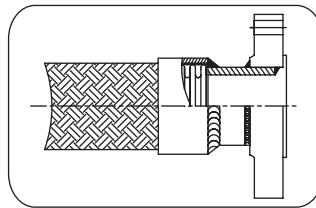
05 | Working Pressure of Application

06 | Temperature of Application

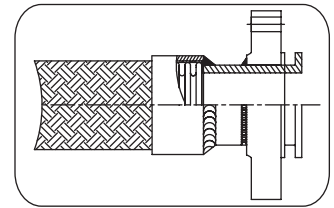
TYPES OF FITTINGS



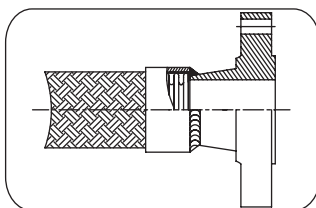
Flat Face Flange



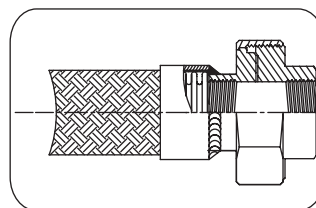
**Raised Face Slip-On
Flange on Pipe End**



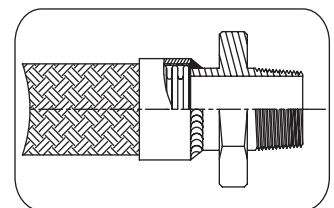
**Lap Joint
Rotating Flange**



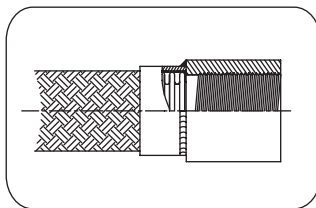
**Raised Face
Weldneck Flange**



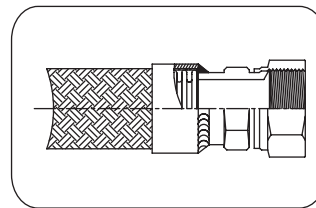
Female Union



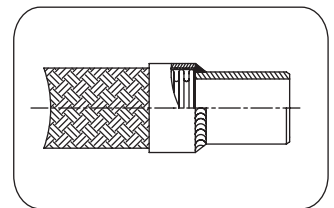
Male with Hex Nut



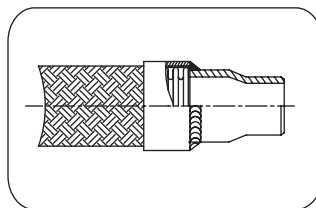
Female Socket



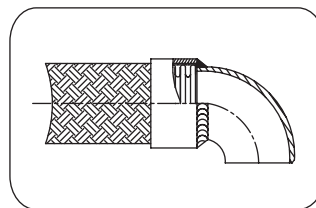
**Welded Female
Swivel**



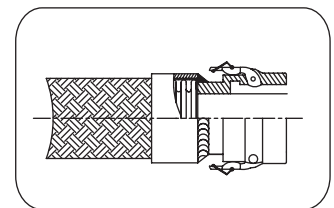
Welded Pipe



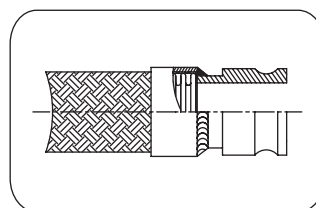
**Welded Concentric
Reducer**



**Welded 90
Degree Elbow**

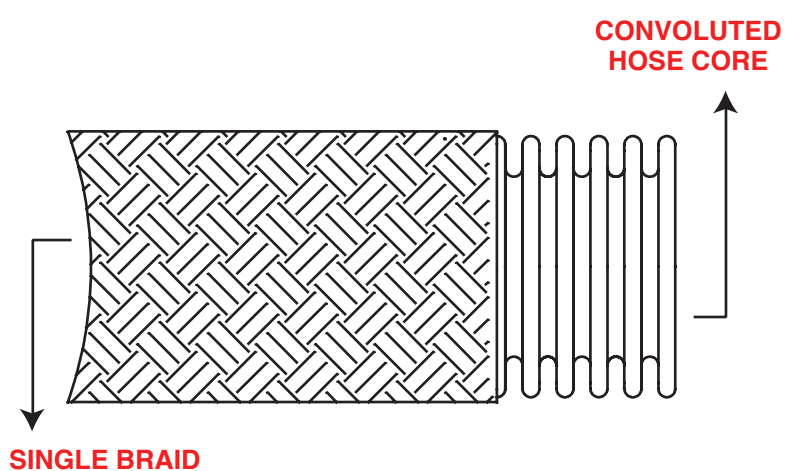


Part C Female Coupler



Part A Male Camlock

Stainless Steel Flexible Hose SINGLE BRAIDED



Construction

CORE: GRADE SS304L OR SS316L

BRAID: GRADE SS304L BY DEFAULT

SS316L BRAID AVAILABLE UPON REQUEST

Safety Factor
4:1

Temperature
-200°C TO 700°C

SINGAFLEX FH001 SINGLE BRAIDED HOSE DATA

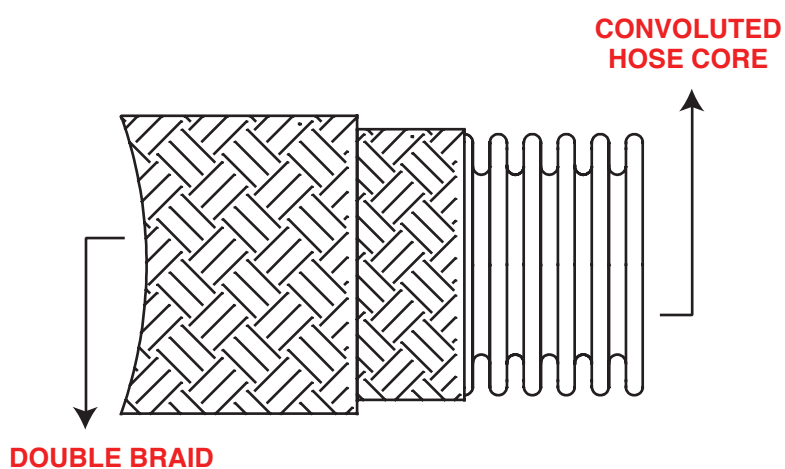
SSH 0 - UNBRAIDED

SSH 1 - SINGLE BRAIDED

Nominal Size DN		Hose Type	Max Working Pressure at 20°C	Max Test Pressure at 20°C	Max Bend Radius		Nominal OD		Estimated Weight kg/m
MM	Inch		Bar	Bar	MM	Inch	MM	Inch	
6	1/4	SSH 0	10	15	100	4	10.0	0.40	0.17
		SSH 1	167	250	100	4	11.0	0.44	0.28
10	3/8	SSH 0	10	15	125	5	14.0	0.56	0.24
		SSH 1	138	207	125	5	16.0	0.64	0.39
12	1/2	SSH 0	5	7.5	125	5	18.0	0.72	0.31
		SSH 1	103	154	125	5	20.0	0.80	0.50
20	3/4	SSH 0	4	6	150	6	25.5	1.02	0.37
		SSH 1	72	108	150	6	27.0	1.08	0.62
25	1	SSH 0	4	6	175	7	33.0	1.32	0.48
		SSH 1	65	98	175	7	34.5	1.38	0.80
32	1-1/4	SSH 0	3	4.5	200	8	41.0	1.64	0.65
		SSH 1	46	69	200	8	43.0	1.72	1.15
40	1-1/2	SSH 0	2	3	250	10	47.5	1.90	0.85
		SSH 1	40	60	250	10	50.0	2.00	1.50
50	2	SSH 0	1	1.5	350	14	62.0	2.48	1.25
		SSH 1	34	51	350	14	64.0	2.56	2.10
65	2-1/2	SSH 0	1	1.5	500	20	86.0	3.44	1.55
		SSH 1	31	46	500	20	88.5	3.54	2.65
80	3	SSH 0	1	1.5	325	21	99.0	3.96	1.80
		SSH 1	27	40	525	21	102.0	4.08	3.13
100	4	SSH 0	0.7	1.1	625	25	126.0	5.04	2.40
		SSH 1	18	27	625	25	130.0	5.20	4.15
125	5	SSH 0	0.7	1.1	750	30	152.0	6.08	5.90
		SSH 1	16	24	750	30	156.0	6.24	6.40
150	6	SSH 0	0.5	0.75	900	36	179.0	7.16	4.50
		SSH 1	14	21	900	36	183.0	7.32	7.85
200	8	SSH 0	0.3	0.45	1020	40	233.0	9.32	6.00
		SSH 1	10	15	1020	40	238.0	9.52	10.5
250	10	SSH 0	0.25	0.36	1220	48	286.0	11.44	7.50
		SSH 1	10	15	1220	48	291.0	11.64	12.5
300	12	SSH 0	0.2	0.2	2900	116	338.0	13.52	11.0
		SSH 1	10	15	2900	116	343.0	13.72	15.0
350	14	SSH 0	0.1	0.1	2950	118	376.0	15.04	13.0
		SSH 1	10	15	2950	118	384.0	15.36	18.0

N.B. Technical data is subject to change without notice.

Stainless Steel Flexible Hose DOUBLE BRAIDED



Construction

CORE: GRADE SS304L OR SS316L

BRAID: GRADE SS304L BY DEFAULT

SS316L BRAID AVAILABLE UPON REQUEST

Safety Factor
4:1

Temperature
-200°C TO 700°C

SINGAFLEX FH002 DOUBLE BRAIDED HOSE DATA

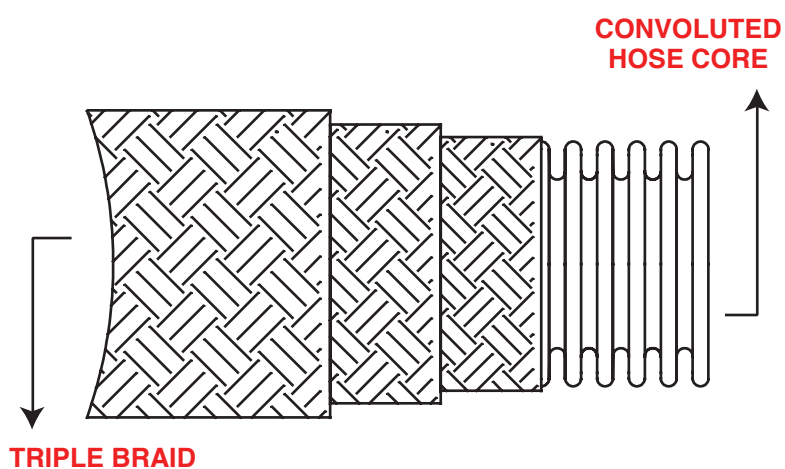
SSH 0 - UNBRAIDED

SSH 2 - DOUBLE BRAIDED

Nominal Size DN		Hose Type	Max Working Pressure at 20°C	Max Test Pressure at 20°C	Max Bend Radius		Nominal OD		Estimated Weight kg/m
MM	Inch		Bar	Bar	MM	Inch	MM	Inch	
6	1/4	SSH 0	10	15	100	4	10.0	0.40	0.17
		SSH 2	275	412	100	4	12.4	0.50	0.40
10	3/8	SSH 0	10	15	125	5	14.0	0.56	0.24
		SSH 2	221	331	125	5	17.3	0.69	0.56
12	1/2	SSH 0	5	7.5	125	5	18.0	0.72	0.31
		SSH 2	176	264	125	5	21.4	0.86	0.71
20	3/4	SSH 0	4	6	150	6	25.5	1.02	0.37
		SSH 2	131	197	150	6	29.1	1.16	0.90
25	1	SSH 0	4	6	175	7	33.0	1.32	0.48
		SSH 2	102	153	175	7	36.6	1.46	1.13
32	1-1/4	SSH 0	3	4.5	200	8	41.0	1.64	0.65
		SSH 2	85	128	200	8	45.2	1.81	1.70
40	1-1/2	SSH 0	2	3	250	10	47.5	1.90	0.85
		SSH 2	72	108	250	10	52.1	2.08	2.20
50	2	SSH 0	1	1.5	350	14	62.0	2.48	1.25
		SSH 2	60	90	350	14	66.1	2.64	3.05
65	2-1/2	SSH 0	1	1.5	500	20	86.0	3.44	1.55
		SSH 2	46	69	500	20	90.7	3.63	3.90
80	3	SSH 0	1	1.5	525	21	99.0	3.96	1.80
		SSH 2	40	60	525	21	105.0	4.20	4.55
100	4	SSH 0	0.7	1.1	625	25	126.0	5.04	2.40
		SSH 2	28	42	625	25	132.0	5.28	6.05
125	5	SSH 0	0.7	1.1	750	30	152.0	6.08	3.90
		SSH 2	19	28	750	30	159.0	6.36	9.10
150	6	SSH 0	0.5	0.75	900	36	179.0	7.16	4.50
		SSH 2	16	24	900	36	188.0	7.52	11.5
200	8	SSH 0	0.3	0.45	1020	40	233.0	9.32	6.00
		SSH 2	14	21	1020	40	240.0	9.60	15.5
250	10	SSH 0	0.25	0.36	1220	48	286.0	11.44	7.50
		SSH 2	14	21	1220	48	291.0	11.64	12.5
300	12	SSH 0	0.2	0.2	2900	116	338.0	13.52	11.0
		SSH 2	14	21	2900	116	343.0	13.72	15.0
350	14	SSH 0	0.1	0.1	2950	118	376.0	15.04	13.0
		SSH 2	14	21	2950	118	384.0	15.36	18.0

N.B. Technical data is subject to change without notice.

Stainless Steel Flexible Hose TRIPLE BRAIDED



Construction

CORE: GRADE SS304L OR SS316L

BRAID: GRADE SS304L BY DEFAULT

SS316L BRAID AVAILABLE UPON REQUEST

Safety Factor
4:1

Temperature
-200°C TO 700°C

SINGAFLEX FH003 TRIPLE BRAIDED HOSE DATA

SSH 0 - UNBRAIDED

SSH 3 - TRIPLE BRAIDED

Nominal Size DN		Hose Type	Max Working Pressure at 20°C	Max Test Pressure at 20°C	Max Bend Radius		Nominal OD		Estimated Weight kg/m
MM	Inch		Bar	Bar	MM	Inch	MM	Inch	
6	1/4	SSH 0	10	15	100	4	10.0	0.40	0.17
		SSH 3	440	465	100	4	12.4	0.50	0.52
10	3/8	SSH 0	10	15	125	5	14.0	0.56	0.24
		SSH 3	360	454	125	5	17.3	0.69	0.68
12	1/2	SSH 0	5	7.5	125	5	18.0	0.72	0.31
		SSH 3	224	448	125	5	21.4	0.86	0.99
20	3/4	SSH 0	4	6	150	6	25.5	1.02	0.37
		SSH 3	138	259	150	6	29.1	1.16	1.06
25	1	SSH 0	4	6	175	7	33.0	1.32	0.48
		SSH 3	129	229	175	7	36.6	1.46	1.86
32	1-1/4	SSH 0	3	4.5	200	8	41.0	1.64	0.65
		SSH 3	112	181	200	8	45.2	1.81	2.35
40	1-1/2	SSH 0	2	3	250	10	47.5	1.90	0.85
		SSH 3	108	180	250	10	52.1	2.08	3.20
50	2	SSH 0	1	1.5	350	14	62.0	2.48	1.25
		SSH 3	73	117	350	14	66.1	2.64	4.06
65	2-1/2	SSH 0	1	1.5	500	20	86.0	3.44	1.55
		SSH 3	52	90	500	20	90.7	3.63	4.71
80	3	SSH 0	1	1.5	525	21	99.0	3.96	1.80
		SSH 3	46	85	525	21	105.0	4.20	6.2
100	4	SSH 0	0.7	1.1	625	25	126.0	5.04	2.40
		SSH 3	35	76	625	25	132.0	5.28	9.26
125	5	SSH 0	0.7	1.1	750	30	152.0	6.08	3.90
		SSH 3	26	57	750	30	159.0	6.36	15.10
150	6	SSH 0	0.5	0.75	900	36	179.0	7.16	4.50
		SSH 3	25	39	900	36	188.0	7.52	17.5
200	8	SSH 0	0.3	0.45	1020	40	233.0	9.32	6.00
		SSH 3	18	27	1020	40	240.0	9.60	21.5
250	10	SSH 0	0.25	0.36	1220	48	286.0	11.44	7.50
		SSH 3	16	24	1220	48	291.0	11.64	24
300	12	SSH 0	0.2	0.2	2900	116	338.0	13.52	11.0
		SSH 3	16	24	2900	116	343.0	13.72	27.0
350	14	SSH 0	0.1	0.1	2950	118	376.0	15.04	13.0
		SSH 3	16	24	2950	118	384.0	15.36	30.0

N.B. Technical data is subject to change without notice.

Here are some factors to consider to maximise the service life of flexible hoses:

01

Do Not Torque

(Twisting in installation/flexure)

Minimise torque damage to a hose by completing either ends of the hose assembly with a union or swivel flanges.

Fixed flanged ends should be bolted into place before the swivel flanges.

In the case of an assembly consisting of a union and male threaded end, the male threaded end should be threaded into place prior to the union.

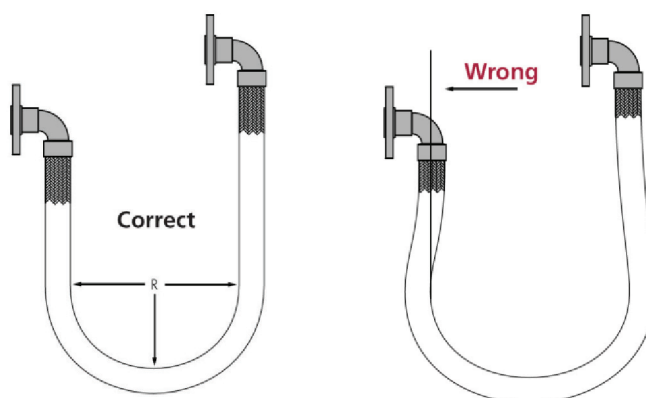
02

Preventing Out-of-Plane Flexing

Always install the hose in a position whereby “flexing” takes place only in one plane, and in the plane of bending.

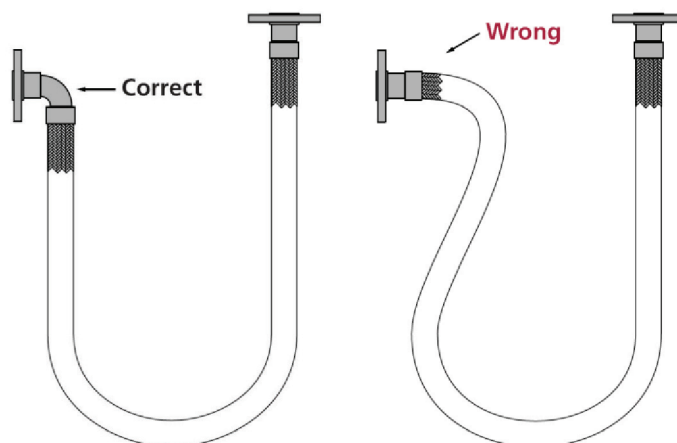
03

Avoid Overbending



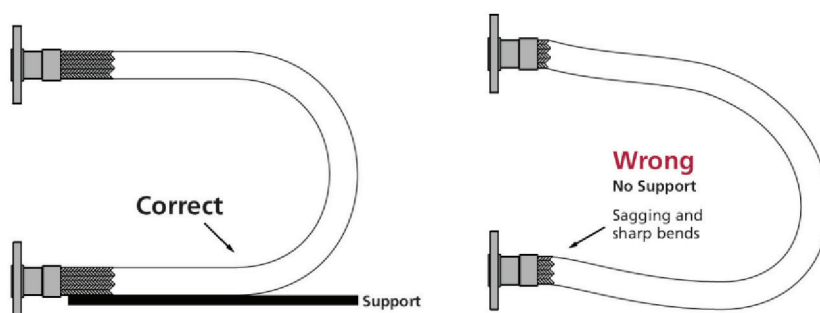
04

Avoid Sharp Bends



05

Provide Support



When installing a assembly in a horizontal loop, provide support for the arms to prevent the hose from sagging.

06

Do Not Extend or Compress Axially

A piping system which utilises the hoses for movement absorption should be properly anchored and/or guided.

Provide piping support prevents excessive weight from compressing the hose and relaxes the braid tension.

DO'S

- Follow printed instructions included with the flexible connector.
- Follow industry-recommended practices and use care in handling and installing flexible connectors.
- Any bends in the hose should be kept as close to the center of the flexible connector as possible.
- Adhere to maximum bend radius as suggested in technical specifications.
- Use a flexible connector of proper length to suit the installation.
- Keep hose free from debris.
Handle and store connectors carefully prior to installation.
- Check for leaks before covering the installation.
- Ensure the pressure rating of the connector is not exceeded.
- Only apply wrench on hex fittings.

DON'T

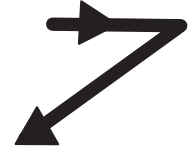
- Apply wrench to hose tube, collar or assembly.
- Twist hose during assembly installation.
- "Over-bend" the hose assembly.
- Install a flexible connector with a bend next to the end fittings.
- Lay the hose assembly on objects that could cause punctures/damage to the hose.
- Stretch or compress the hose to fit an installation.
- Install the assembly to be in contact with other components or equipment.

MOTION

COMMON TERMINOLOGY

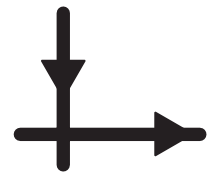
Angular Motion

Motion that occurs when one end of a hose assembly is deflected in a simple bend with the ends not remaining parallel. Angular motion may be incorporated in an installation to accommodate misalignment and vibration only, but must not be used to accommodate expansion that would result in unloading the braid.



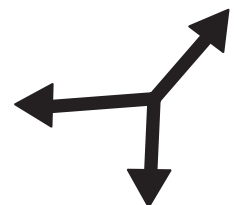
Axial Motion

This type of motion occurs when one end of a hose assembly is deflected along its longitudinal axis. Axial motion is applicable to annular corrugated, unbraided flexible hose only. Neither helical hose nor braided hose should be used in axial motion applications.



Offset Motion

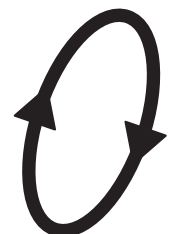
Motion that occurs when one end of the hose assembly is deflected in a plane perpendicular to the longitudinal axis with the end remaining parallel. Offset is measured in inches of displacement of the free end centerline from the fixed end centre line. In offset motion applications, the offset should never be greater than one-fourth (25%) of the minimum centerline bend radius.



Radial Movement

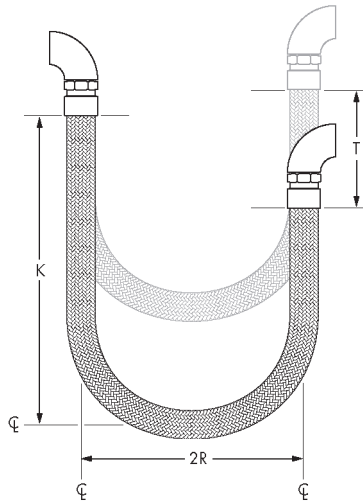
This type of movement occurs when hoses are bent in a 180° arc such as in vertical or horizontal travelling loops. Travelling loops are classified a Class “A” where the bend radius remains constant and the one end of the hose moves parallel to the other end. A Class “B” travelling loop has the hose installed in a U-shaped configuration and the ends move perpendicular to each other so as to enlarge or decrease the width of the loop.

Horizontal travelling loops must have the bottom leg of the hose supported to avoid undue stress on the end of the hose. The weight of the hose and media inside the hose will reduce the pressure capability of the hose. Weight loads should be considered when engineering corrugated metal hose assemblies for travelling loop applications.



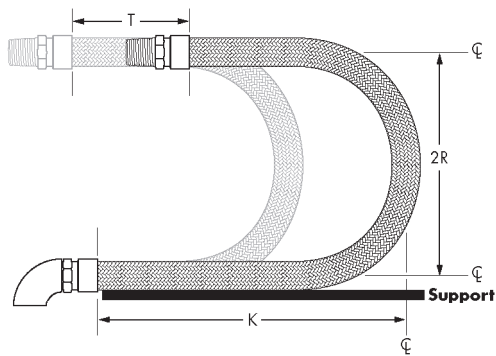
LOOP DIAGRAMS

Class A Traveling Loops

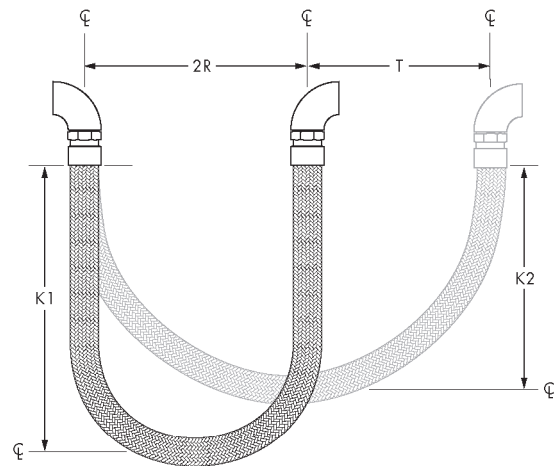


$$L = 4R + T/2$$

$$K = 1.43R + T/2$$



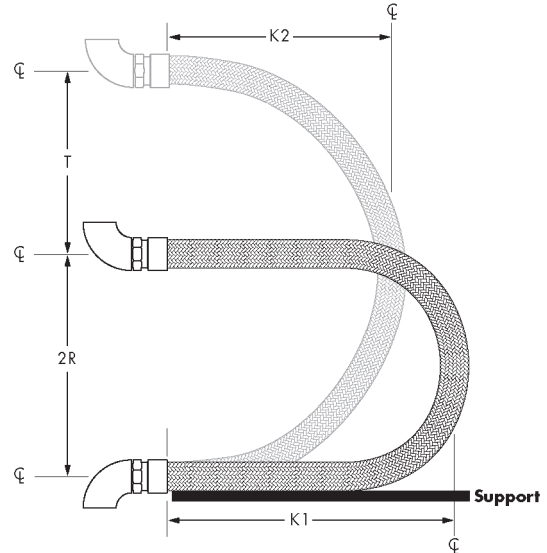
Class B Traveling Loops



$$L = 4R + 1.57T$$

$$K1 = 1.43R + .785T$$

$$K2 = 1.43R + T/2$$



T = Total travel (inches)

R = Centerline bend radius (inches)

L = Hose live length (inches)

K = Loop length (inches)

Angular Offset Motion

Angular movement is defined as the bending of the hose so that the ends are no longer parallel. Amount of movement is measured from centerline of the hose if it were installed straight.

Size	Offset Motion H (mm)																
	10	20	30	40	50	60	70	80	90	100	120	140	160	180	200	250	300
10	50	70	90	110	130	150	170	190	210	230	270	310	350	390	430	530	630
15	55	US	95	115	135	155	175	195	215	235	275	315	355	395	435	535	635
20	65	90	110	130	150	170	190	210	230	250	290	330	370	410	450	550	650
25	80	110	140	150	170	190	210	230	250	270	310	350	390	430	470	570	670
	75	105	130	145	165	185	205	225	245	265	305	345	385	425	465	565	665
32	85	120	150	170	185	205	225	245	265	285	325	365	405	445	485	585	685
	80	110	140	160	180	200	220	240	260	280	320	360	400	440	480	580	680
40	90	125	155	180	200	220	240	260	280	300	340	380	420	460	500	600	700
	85	120	150	170	190	210	230	250	270	290	330	370	410	450	490	590	690
50	100	140	170	200	225	245	260	280	300	320	360	400	440	480	520	620	720
	90	125	155	180	200	220	240	260	280	300	340	380	420	460	500	600	700
65	115	160	200	230	260	280	305	325	340	360	400	440	480	520	560	660	760
	95	135	165	190	215	235	250	270	290	310	350	390	430	470	510	610	710
80	150	210	260	300	335	370	400	425	450	475	520	560	610	650	690	790	890
	115	160	200	230	260	280	305	325	345	365	405	445	485	525	565	665	765
100	170	240	295	340	380	420	450	480	510	540	590	640	680	720	750	850	950
	130	180	225	260	290	320	345	370	390	410	450	490	530	570	610	710	810
125	160	225	280	320	360	390	425	455	480	510	555	600	640	680	720	820	900
150	175	245	300	350	390	430	465	495	525	555	605	655	700	740	785	885	985
200	215	300	370	430	480	530	570	610	645	680	745	805	860	915	960	1075	1180
250	235	330	410	470	525	580	625	665	705	745	815	880	940	1000	1050	1175	1290
300	270	380	470	540	605	660	715	765	810	855	935	1010	1080	1145	1210	1350	1480
350	290	410	500	580	650	710	770	820	870	920	1000	1090	1,160	1230	1300	1450	1590
400	310	440	540	620	700	760	820	880	930	980	1080	1160	1240	1320	1390	1550	1700
450	350	496	600	700	780	860	930	990	1050	1110	1210	1310	1400	1490	1570	1750	1920
500	365	515	630	730	820	900	970	1040	1100	1160	1270	1370	1460	1550	1640	1830	2000
550	375	530	650	750	840	920	1000	1060	1130	1190	1300	1400	1500	1590	1680	1880	2060
600	390	550	680	780	870	960	1040	1100	1170	1240	1350	1460	1560	1,660	1750	1950	2140

(Unit: mm)

TEMPERATURE CORRECTION DATA

Temperature Correction Factors

Where hoses are required to operate at temperatures above 20°C, a correction factor must be multiplied by the stated working pressure given for the selected hose. The factors of stainless steel flexible hoses are given in the table alongside and the following example shows how calculations are made for hoses required to operate at elevated temperatures.

Example

A 50mm bore stainless steel hose is required to convey fluid at a working pressure of 17 Bar and at a temperature of 300°C

Assuming the maximum working pressure at 20°C for single braided hose type SSH1 is 34 Bar, based on the correction factor, maximum working pressure at 300°C = $34 \times 0.61 = 20.74$ B

Temperature °C	Cor. Factor
-200	1.0
-150	1.0
-100	1.0
-50	1.0
0	1.0
20	1.0
50	0.95
100	0.83
150	0.75
200	0.69
250	0.65
300	0.61
350	0.58
400	0.56
450	0.54
500	0.53
550	0.52
600	0.34
650	0.19
700	0.10