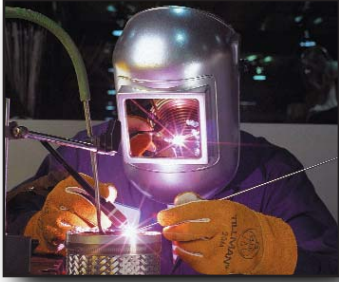


## Corrugated Metal Hose (Designing an Assembly)

There are many components in a metal hose assembly and care should be taken when selecting each of them. Moreover, the components have their own unique technical limitations so it is important to make sure each of the components is compatible with your application. In much the same way as a “chain is as strong as its weakest link”, a metal hose assembly will only perform to the limits of its weakest component.



Once the components have been selected, the quality and skill of the fabricator assembling the components becomes important. The procedures and care used when fabricating assemblies also has a dramatic effect on the assembly's overall performance.



Hose Master has invested a considerable amount of resources researching metal hose fabrication and developing a state-of-the-art fabricating center. In addition, we share the welding technology we have developed with our fabricating distributors. All of this is done to promote quality and consistency in fabricating metal hose assemblies.

*In this section, we will discuss the various components that make up a corrugated metal hose assembly, and what information a metal hose fabricator will need in order to make an assembly for your application. If you need assistance determining the information, we have also included an explanation of how to analyze the application and make the appropriate selections.*



### **Specifying a Metal Hose Assembly:**

In order to make an assembly, the fabricator will need answers to the following five questions. For more information about any of these questions, or for a list of available options, consult the referenced pages listed next to each topic.

1. Hose (type, alloy, and size): page 11
2. End fittings (type, alloy, and size for each end): page 29
3. Length of the assembly (either overall length or live length): page 34
4. Fabrication options: page 35
5. Accessories: page 39

If you have the answers to these questions, a metal hose fabricator will be able to make the assembly. If you do not know the answers to all five questions, you will need to obtain them. The next section is designed to help you determine the answers.

# Corrugated Metal Hose (Designing an Assembly)

## Analyzing an Application:

### S.T.A.M.P.E.D.

To properly design a metal hose assembly for a particular application, the following design parameters must be determined. To help remember them, they have been arranged to form the acronym “S.T.A.M.P.E.D.”

1. **Size** – The diameter of the connections in which the assembly will be installed is needed to provide a proper fit. This information is required.
2. **Temperature** – As the temperature to which the assembly is exposed (internally and externally) increases, the strength of the assembly’s components decreases. Also, the coldest temperature to which the hose will be exposed can affect the assembly procedure and/or fitting materials. If you do not provide this information it will be assumed that the temperatures are 70°F.
3. **Application** – This refers to the configuration in which the assembly is installed. This includes both the dimensions of the assembly as well as the details of any movement that the assembly will experience. This information is necessary to calculate assembly length and required flexibility.
4. **Media** – Identify all chemicals to which the assembly will be exposed, both internally and externally. This is important since you must be sure that the assembly’s components are chemically compatible with the media going through the hose as well as the environment in which the hose is installed. If no media is given, it will be assumed that both the media and the external environment are compatible with all of the available materials for each component.
5. **Pressure** – Identify the internal pressure to which the assembly will be exposed. Also, determine if the pressure is constant or if there are cycles or spikes. This information is important to determine if the assembly is strong enough for the application. If no pressure is given it will be assumed that the pressure is low and there are no pressure surges or spikes.
6. **End Fittings** – Identify the necessary end fittings. This is required since fittings for the assembly must be chosen to properly fit the mating connections.
7. **Dynamics** – Identify the velocity at which the media will flow through the assembly. Since corrugated metal hose does not have a smooth interior, rapid media flow can set up a resonant frequency that will cause the hose to vibrate and prematurely fail. If no velocity is given, it will be assumed that the velocity is not fast enough to affect the assembly’s performance.

*To make gathering this information easier, Hose Master has provided a convenient worksheet to help select components on page 78.*

# Corrugated Metal Hose (Hose)



## Hydroformed Corrugation Process:

### A. Tube

The manufacturing process of corrugated metal hose starts with stainless steel strip that is rolled and the edges welded together to form a thin-walled, gas-tight tube. Hose Master offers:



High quality steel strip



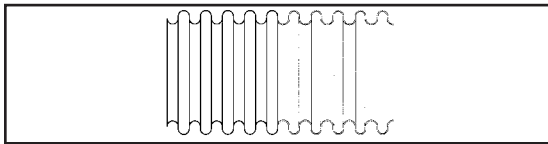
Rolled to form a tube



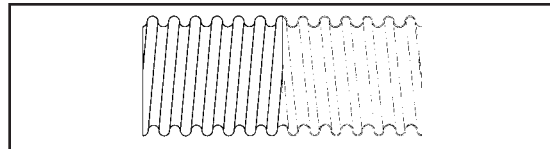
Strong, clean, non-oxidized seam weld

### B. Hose

After the tube has been welded, corrugations are formed into the tube to make it flexible. There are two corrugation profiles, annular and helical.

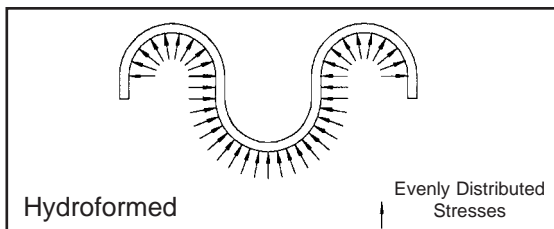


Annular profile - Independent corrugations, straight and parallel



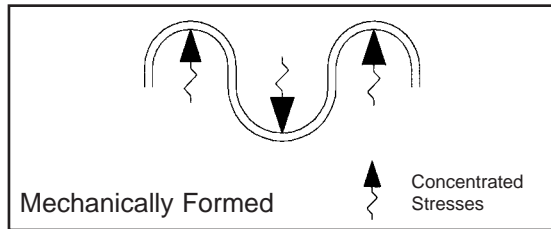
Helical profile - One continuous corrugation that spirals around the hose.

Corrugations are formed into the tube either mechanically or hydraulically ("Hydroforming").



Hydroformed

Evenly Distributed Stresses



Mechanically Formed

Concentrated Stresses

Hydroforming:

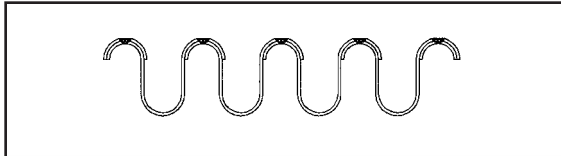
- Enhances flexibility and cycle life.
  - Maintains wall thickness.
  - Reduces concentrated residual stress.
  - Minimizes work hardening.
- Is a clean process.
  - Hydroforming uses water to form the hose while most other processes require lubrication.

**Hose Master Inc. is the only American metal hose manufacturer to hydroform metal hose.**

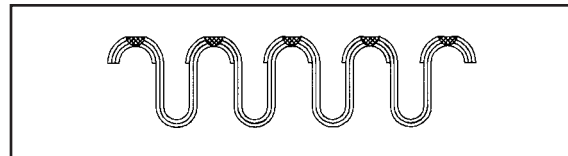
# Corrugated Metal Hose (Hose)

## Corrugated Strip Process (Extraflex/Hydraflex):

In addition to our line of annular, corrugated hose, Hose Master offers two helical hoses specially designed to maximize performance without the drawbacks of traditional, mechanically-formed, helical hose. Rather than welding a tube and mechanically forming the corrugation, these products are made from stainless steel strip that is formed before welding. Because it is not mechanically formed from a tube, it is extremely flexible and does not contain all the residual stresses like traditional mechanically-formed helical hose.



*Extraflex profile*



*Hydraflex profile*

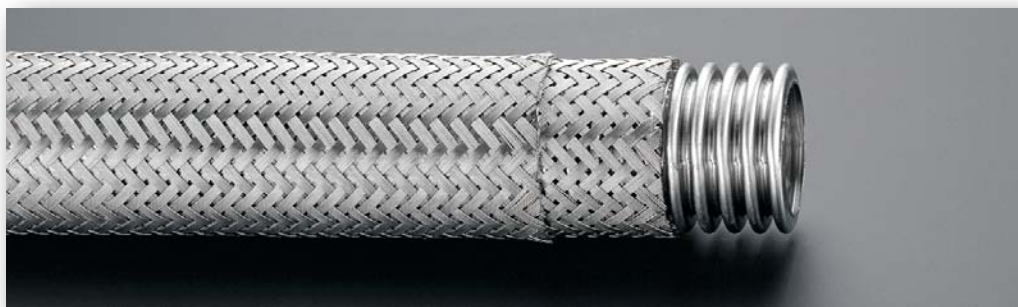
Both Extraflex and Hydraflex are made by pre-forming the stainless steel strip, overlapping the material, and then continuously resistance welding the seam together. While Extraflex is made with one ply of stainless steel, Hydraflex is made with two plies for higher pressure ratings.

## Braiding Process:

To give corrugated hose the ability to withstand pressure, stainless steel wire is braided over the hose. Hose may be single braided (one layer of braid) or double braided (two layers of braid) to achieve even greater working pressures. Braided braid is used on large diameter hose.

Designing the proper braid for each type of corrugated hose requires sophisticated engineering to maintain the proper balance between the braid strength and the hose flexibility. Hose Master's braid packages offer several advantages:

1. High Percentage Braid Coverage – Hose Master has a high percentage of braid coverage yielding better cycle life and protection against damage to the hose.
2. Machine Braided Hose – Hose Master weaves the braid directly onto the hose ensuring that the braid fits tightly against the hose, preventing potential hose deformation or squirm.



*Corrugated metal hose with double braid.*

## Corrugated Metal Hose (Selecting a Hose)



When selecting a hose, you must consider three variables: pressure carrying capability, flexibility, and chemical compatibility.

- **Pressure Carrying Capability** – The hose must be strong enough to handle the pressures to which it will be exposed. To determine hose pressure capability, consult the catalog “Maximum Working Pressure” stated for the hose. The Maximum Working Pressure must be reduced for each of the following circumstances:

**Temperature** – As temperature increases, hose working pressure decreases. After you have determined the proper alloy (see “Chemical Compatibility” below) go to the “Temperature Derating” table on page 67 and match the alloy of the hose and braid with the highest temperature to which they will be exposed (either internally or externally) to obtain the proper derating factors. Then multiply the hose’s Maximum Working Pressure by the most limiting temperature derating factor.

**Dynamic Pressure** – Pulsating, surge, or shock pressures, like those encountered with quick opening or closing valves, can inflict severe damage on a hose. If your application entails pulsating pressures, the working pressure should be derated by 1/2. If your application entails shock pressures, derate the stated working pressure to 1/6 of its value.

**Example: 1” Annuflex hose - T321 stainless steel hose and T304 stainless steel braid @ 300°F with shock pressures.**

Catalog Maximum Working Pressure = 718 psi.

Temperature Derating Factor at 300° F.= 0.86; and the Pressure Derating Factor =1/6.

Maximum Application Working Pressure = 718 psi x 0.86 x 1/6 =102.91 psi.

- **Flexibility** – Confirm that the hose’s minimum bend radius is less than the bend radius required. Keep in mind that the hose’s minimum bend radius will change with pressure. To determine the minimum bend radius, go to the charts beginning on page 68 for the type of hose being used and match the line for the hose’s I.D. with your application’s pressure requirements. The chart will show you the recommended minimum bend radius. Care should also be taken for applications with vibration. Consult page 71 for recommendations.
- **Chemical Compatibility** – You must choose a material for the hose and braid that is compatible with the media being conveyed through the hose as well as the environment in which the hose is installed. When determining chemical compatibility it is important to know the temperature and concentration of the chemical(s). Although there are many resources to confirm chemical compatibility, two of the industry standards that you may use are the National Association of Corrosion Engineers (NACE) and the Compass Corrosion Guides. You may also contact our Customer Service Department which can check these sources for you.

# Corrugated Metal Hose (Products)

Flexibility
Working Pressure
Feature: <i>Standard Product</i>

**Annuflex** is the standard of Hose Master’s extensive line of high performance annular corrugated stainless steel hose. Proprietary hydroforming technology ensures the excellent cycle life of the hose, with minimum effort to flex or bend the hose . . . . .15

Flexibility
Working Pressure
Feature: <i>Most Pliable</i>

**Masterflex** is the most pliable product of the annular family of hydroformed hose . . . . .16

Flexibility
Working Pressure
Feature: <i>“Stay-Put” Application</i>

**Formaflex** has the “stay-put” characteristics required for stress-free connections between piping systems and rotary joints or other similar static applications . . . . .17

Flexibility
Working Pressure
Feature: <i>High Pressure</i>

**Pressureflex** is Hose Master’s hydroformed, annular, heavy-wall, corrugated metal hose specifically designed for higher pressure applications. . . . .18

Flexibility
Working Pressure
Feature: <i>Chemical Resistance</i>

**ChemKing®** is Hose Master’s chemical transfer, hydroformed hose. ChemKing® offers excellent corrosion resistance to many of the most severe applications found in chemical processing . . . . .19

Flexibility
Working Pressure
Feature: <i>Bronze Alloy</i>

**Bronzeflex** is a heavy-duty corrugated hose designed for use in those applications that specifically require bronze hose. . . . .20

Flexibility
Working Pressure
Feature: <i>Helical/Flexible</i>

**Extraflex** is a spirally-welded, helical corrugated hose specifically designed to achieve extreme flexibility while maintaining good pressure ratings. . . . .21

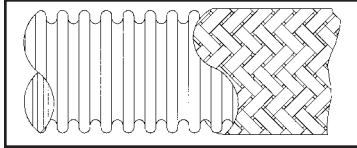
Flexibility
Working Pressure
Feature: <i>Helical/High Pressure</i>

**Hydrflex** is a double wall, spirally-welded, helical corrugated hose specifically designed for high-pressure applications that also require good flexibility . . . . .22

Note: Product specifications are subject to change.

# Corrugated Metal Hose (Products)

## ANNUFLEX



**Annuflex** is the foundation of Hose Master's extensive line of annular hydroformed products. The hydroforming process produces a hose with minimal residual stress, uniform wall thickness throughout the corrugations, and minimal work hardening. This process provides a very flexible, long lasting corrugated metal hose.

Explanation of **Annuflex** Part Numbers:

**AF** \_\_\_\_\_ **7** \_\_\_\_\_  
 Material Code      Braid Code

**Material Codes:**  
**4** - T321 Stainless Steel  
**5** - T316L Stainless Steel  
**7** - T304L Stainless Steel

**Braid Codes**  
**00** - Unbraided  
**50** - T304 Single Braid  
**55** - T304 Double Braid

\*T316 Braid available upon request.

*Example: AF4750 = T321 Stainless Steel, annular, corrugated metal hose with a single T304 Stainless Steel Braid.*

Inside Diameter (in.)	Number of Braids (#)	Outside Diameter (in.)	Static Min. Bend Radius (in.)	Dynamic Min. Bend Radius (in.)	Maximum Working Pressure (psi)	Burst Pressure (psi)	Weight Per Foot (lbs.)
1/4	0	0.41	1.0	4.5	90	7233	0.04
	1	0.47			1800		0.11
	2	0.53			2700		0.18
3/8	0	0.65	1.2	5.0	70	6230	0.10
	1	0.71			1558		0.20
	2	0.77			2336		0.30
1/2	0	0.77	1.5	5.5	70	4743	0.11
	1	0.83			1186		0.22
	2	0.89			1779		0.33
5/8	0	0.96	1.8	7.0	57	4820	0.17
	1	1.02			1205		0.33
	2	1.08			1808		0.49
3/4	0	1.16	2.1	8.0	43	3591	0.19
	1	1.22			898		0.37
	2	1.28			1347		0.55
1	0	1.47	2.7	9.0	43	2872	0.26
	1	1.53			718		0.50
	2	1.59			1077		0.74
1 1/4	0	1.75	3.1	10.0	43	2581	0.29
	1	1.83			645		0.61
	2	1.91			968		0.93
1 1/2	0	2.08	3.9	11.0	28	2125	0.47
	1	2.16			531		0.85
	2	2.24			797		1.23
2	0	2.61	5.1	13.0	14	1797	0.59
	1	2.69			449		1.11
	2	2.77			674		1.63
2 1/2	0	3.40	6.8	16.0	14	1669	0.84
	1	3.50			417		1.64
	2	3.60			626		2.44
3	0	3.88	7.8	18.0	14	1384	1.18
	1	3.98			346		2.06
	2	4.08			519		2.94
4	0	4.96	9.8	22.0	14	1194	1.41
	1	5.06			299		2.47
	2	5.16			448		3.53
5	0	6.00	12.8	28.0	14	1099	2.18
	1	6.12			275		3.61
	2	6.24			412		5.04
6	0	7.01	14.8	32.0	11	839	2.69
	1	7.13			210		4.44
	2	7.25			315		6.19
8*	0	9.08	20.0	40.0	3	850	5.32
	1	9.44			212		7.66
10*	0	11.10	25.0	50.0	2	700	8.71
	1	11.49			175		12.65
12*	0	13.22	30.0	60.0	2	640	11.58
	1	13.51			160		17.53

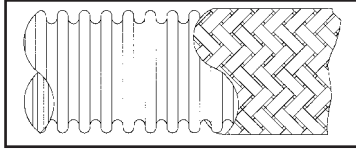
\*Supplied with braided braid.

**Notes:** The minimum bend radius is measured from the centerline of the hose. The minimum bend radius increases with pressure (see chart on page 68). The working pressure decreases with temperature (obtain derating factor on page 67). For rapid pressure fluctuations consult the factory.

 **Call 1-800-221-2319**  
[www.hosemaster.com](http://www.hosemaster.com)

# Corrugated Metal Hose (Products)

## MASTERFLEX



**Masterflex** is manufactured using the same high quality process used to make Annuflex hose, but the number of corrugations per foot is increased to allow for greater flexibility.

Explanation of **Masterflex** Part Numbers:

AF 5  
Material Code      Braid Code

**Material Codes:**  
4 - T321 Stainless Steel  
5 - T316L Stainless Steel  
7 - T304L Stainless Steel

**Braid Codes**  
00 - Unbraided  
50 - T304 Single Braid  
55 - T304 Double Braid

Example: AF4550 =  
T321 Stainless Steel, annular,  
corrugated metal hose with a  
single T304 Stainless Steel Braid.

\*T316 Braid available upon request.

Inside Diameter (in.)	Number of Braids (#)	Outside Diameter (in.)	Static Min. Bend Radius (in.)	Dynamic Min. Bend Radius (in.)	Maximum Working Pressure (psi)	Burst Pressure (psi)	Weight Per Foot (lbs.)
1/4	0	0.42			90		0.07
	1	0.48	0.9	3.7	1800	7233	0.14
	2	0.54			2700	9100	0.21
3/8	0	0.65			70		0.20
	1	0.71	1.0	4.0	1558	6230	0.30
	2	0.77			2336	9345	0.40
1/2	0	0.77			70		0.22
	1	0.83	1.2	4.4	1186	4743	0.33
	2	0.89			1779	7115	0.44
5/8	0	0.96			57		0.31
	1	1.02	1.4	5.6	1205	4820	0.47
	2	1.08			1808	7230	0.63
3/4	0	1.16			43		0.33
	1	1.22	1.7	6.4	898	3591	0.51
	2	1.28			1347	5387	0.69
1	0	1.47			43		0.45
	1	1.53	2.1	7.1	718	2872	0.69
	2	1.63			1077	4308	0.93
1 1/4	0	1.75			43		0.56
	1	1.83	2.5	7.9	645	2581	0.88
	2	1.91			968	3872	1.20
1 1/2	0	2.08			28		0.82
	1	2.16	3.1	8.7	531	2125	1.20
	2	2.24			797	3188	1.58
2	0	2.61			14		0.95
	1	2.69	4.0	10.3	449	1797	1.47
	2	2.77			674	2696	1.99
2 1/2	0	3.40			14		1.29
	1	3.50	5.4	12.8	417	1669	2.09
	2	3.60			626	2504	2.89
3	0	3.88			14		1.84
	1	3.98	6.3	14.5	346	1384	2.72
	2	4.08			519	2076	3.60
4	0	4.96			14		2.33
	1	5.06	7.7	17.4	299	1194	3.39
	2	5.16			448	1791	4.45
5	0	6.00			14		3.64
	1	6.12	10.0	21.9	275	1099	5.07
	2	6.24			412	1649	6.50
6	0	7.01			11		4.16
	1	7.13	11.6	25.0	210	839	5.91
	2	7.25			315	1259	7.66

**Notes:** The minimum bend radius is measured from the centerline of the hose. The minimum bend radius increases with pressure (see chart on page 68). The working pressure decreases with temperature (obtain derating factor on page 67). For rapid pressure fluctuations consult the factory.

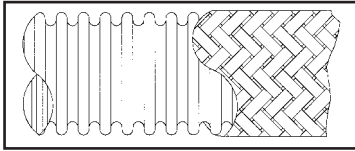
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www.hosemaster.com





# Corrugated Metal Hose (Products)

## FORMAFLEX



**Formaflex** is Hose Master's "stay-put" annular corrugated metal hose. Formaflex is designed to bend and stay in one position, providing a stress-free connection between piping systems.

Explanation of **Formaflex** Part Numbers:

**AF** \_\_\_\_\_ **9** \_\_\_\_\_  
 Material Code      Braid Code

**Material Codes:**  
 4 - T321 Stainless Steel  
 5 - T316L Stainless Steel

**Braid Codes**  
 00 - Unbraided  
 50 - T304 Single Braid  
 55 - T304 Double Braid

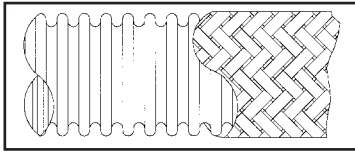
*Example: AF4950 = T321 Stainless Steel, annular, corrugated metal hose with a single T304 Stainless Steel Braid.*

Inside Diameter (in.)	Number of Braids (#)	Outside Diameter (in.)	Static Min. Bend Radius (in.)	Maximum Working Pressure (psi)	Burst Pressure (psi)	Weight Per Foot (lbs.)
1/4	0	0.41	1.0	90	3600	0.04
	1	0.47		900		0.11
3/8	0	0.65	1.2	70	3200	0.10
	1	0.71		800		0.17
1/2	0	0.77	1.5	70	2660	0.11
	1	0.83		665		0.19
5/8	0	0.96	1.8	57	2000	0.17
	1	1.02		500		0.26
3/4	0	1.16	2.1	43	1520	0.19
	1	1.22		380		0.29
1	0	1.47	2.7	43	1420	0.26
	1	1.53		355		0.42
1 1/4	0	1.75	3.1	43	1120	0.29
	1	1.81		280		0.47
1 1/2	0	2.08	3.9	28	1056	0.47
	1	2.14		264		0.71
2	0	2.61	5.1	14	884	0.59
	1	2.69		221		0.90

**Notes:** The minimum bend radius is measured from the centerline of the hose.

# Corrugated Metal Hose (Products)

## PRESSUREFLEX



**Pressureflex** is Hose Master's high-pressure annular corrugated metal hose. With all the advantages of a hydroformed hose, Pressureflex is made from heavy wall T321 Stainless Steel. Pressureflex offers flexibility and dependability when higher pressures are a factor.

Explanation of **Pressureflex** Part Numbers:

**AF 8 7**

Braid  
Code

### Braid Codes

**00** - Unbraided

**50** - T304 Single Braid

**55** - T304 Double Braid

\*T316 Braid available upon request.

Example: AF8750 =  
T321 Stainless Steel, annular,  
corrugated metal hose with a  
single T304 Stainless Steel Braid.

Inside Diameter (in.)	Number of Braids (#)	Outside Diameter (in.)	Static Min. Bend Radius (in.)	Dynamic Min. Bend Radius (in.)	Maximum Working Pressure (psi)	Burst Pressure (psi)	Weight Per Foot (lbs.)
3/4	0	1.13			45		0.32
	1	1.21	2.2	8.0	1142	4569	0.58
	2	1.29			1713	6854	0.84
1	0	1.44			45		0.38
	1	1.54	2.8	10.0	929	3717	0.74
	2	1.64			1394	5576	1.11
1 1/4	0	1.72			45		0.58
	1	1.82	3.1	11.0	766	3065	0.99
	2	1.92			1149	4598	1.40
1 1/2	0	2.05			28		0.75
	1	2.15	3.9	13.0	717	2866	1.29
	2	2.25			1075	4299	1.84
2	0	2.58			28		1.15
	1	2.70	5.1	15.0	649	2596	1.94
	2	2.82			974	3894	2.72
2 1/2	0	3.36			28		1.64
	1	3.48	6.9	17.0	507	2029	2.66
	2	3.60			761	3044	3.67
3	0	3.84			28		1.78
	1	3.96	7.9	20.0	369	1476	2.85
	2	4.08			554	2214	3.92
4	0	4.92			28		2.80
	1	5.04	9.8	25.0	330	1319	4.27
	2	5.16			495	1979	5.74
5*	0	5.96			28		3.03
	1	6.13	12.8	34.0	331	1324	5.14
6*	0	6.97			23		3.74
	1	7.22	14.8	40.0	285	1140	6.44

\*Supplied with braided braid.

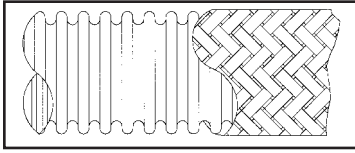
**Notes:** The minimum bend radius is measured from the centerline of the hose. The minimum bend radius increases with pressure (see chart on page 69). The working pressure decreases with temperature (obtain derating factor on page 67). For rapid pressure fluctuations consult the factory.

Call 1-800-221-2319  
www.hosemaster.com



# Corrugated Metal Hose (Products)

**ChemKing®**



**ChemKing®** is Hose Master's chemical resistant annular corrugated metal hose. Hydroformed from a special 276 alloy, ChemKing® provides superior flexibility and excellent corrosion resistance. Used in a variety of industries, ChemKing® is the solution for many of the most severe chemical transfer applications.

Explanation of **ChemKing®** Part Numbers:

**AF 6 7**

Braid  
Code

**Braid Codes**

**00** - Unbraided

**40** - T316 Single Braid

**44** - T316 Double Braid

*Example: AF6740 =*

*276 annular, corrugated metal  
hose with a single T316 Stainless  
Steel Braid.*

<b>Inside Diameter (in.)</b>	<b>Number of Braids (#)</b>	<b>Outside Diameter (in.)</b>	<b>Static Min. Bend Radius (in.)</b>	<b>Dynamic Min. Bend Radius (in.)</b>	<b>Maximum Working Pressure (psi)</b>	<b>Burst Pressure (psi)</b>	<b>Weight Per Foot (lbs.)</b>
1/2	0	0.77	1.5	5.5	70	4743	0.11
	1	0.83			1186		0.22
	2	0.89			1779		0.33
3/4	0	1.16	2.1	8.0	43	3591	0.19
	1	1.22			898		0.37
	2	1.28			1347		0.55
1	0	1.47	2.7	9.0	43	2872	0.26
	1	1.53			718		0.50
	2	1.59			1077		0.74
1 1/2	0	2.08	3.9	11.0	28	2125	0.47
	1	2.16			531		0.85
	2	2.24			797		1.23
2	0	2.61	5.1	13.0	14	1797	0.59
	1	2.69			449		1.11
	2	2.77			674		1.63
3	0	3.88	7.8	18.0	14	1384	1.18
	1	3.98			346		2.06
	2	4.08			519		2.94
4*	0	4.96	9.8	22.0	14	1194	1.41
	1	5.06			299		2.47
	2	5.16			448		3.53
5*	0	6.00	12.8	28.0	14	1099	2.18
	1	6.12			275		3.61
	2	6.24			412		5.04
6*	0	7.01	14.8	32.0	11	839	2.69
	1	7.13			210		4.44
	2	7.25			315		6.19

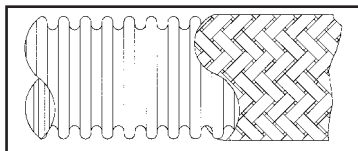
\* Consult factory for delivery.

**Notes:** The minimum bend radius is measured from the centerline of the hose. The minimum bend radius increases with pressure (see chart on page 69). The working pressure decreases with temperature (obtain derating factor on page 67). For rapid pressure fluctuations consult the factory.

Braid is T316 stainless steel. Monel braid is available upon request. When Monel braid is used, stated pressure ratings need to be reduced by 0.75. Part numbers for Monel braid are AF6780 (single braid), and AF6788 (double braid).

# Corrugated Metal Hose (Products)

## BRONZEFLEX



**Bronzeflex** is Hose Master's heavy-duty corrugated hose designed for use in those applications that specifically require bronze hose.

Explanation of **Bronzeflex** Part Numbers:

**BF 11**

Braid  
Code

**Braid Codes**

- 00 - Unbraided
- 10 - Bronze Single Braid
- 11 - Bronze Double Braid

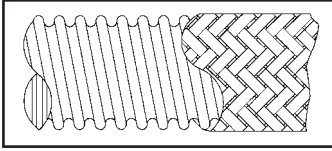
Example: BF1110 =  
Bronze, annular, corrugated  
metal hose with a single Bronze  
Braid.

Inside Diameter (in.)	Number of Braids (#)	Outside Diameter (in.)	Static Min. Bend Radius (in.)	Dynamic Min. Bend Radius (in.)	Maximum Working Pressure (psi)	Burst Pressure (psi)	Weight Per Foot (lbs.)
3/8	0	0.63			60		0.18
	1	0.69	2.0	6.0	704	2816	0.31
	2	0.75			936	3744	0.44
1/2	0	0.77			50		0.23
	1	0.83	2.2	7.0	566	2264	0.43
	2	0.89			753	3012	0.63
3/4	0	1.13			30		0.47
	1	1.19	2.5	8.0	468	1872	0.81
	2	1.26			622	2488	1.15
1	0	1.42			26		0.56
	1	1.50	3.0	10.0	334	1336	0.97
	2	1.58			444	1776	1.38
1 1/4	0	1.81			16		0.79
	1	1.89	3.5	12.0	306	1224	1.34
	2	1.97			407	1628	1.69
1 1/2	0	2.13			15		1.04
	1	2.23	4.0	13.5	297	1188	1.74
	2	2.34			395	1580	2.44
2	0	2.64			10		1.15
	1	2.75	6.0	17.0	210	840	2.41
	2	2.85			279	1116	3.67
2 1/2	0	3.25			8		1.99
	1	3.37	8.5	22.0	194	776	3.33
	2	3.49			258	1032	4.67
3	0	3.70			5		2.68
	1	3.85	12.0	24.0	166	664	4.16
	2	3.95			221	884	5.64

**Notes:** The minimum bend radius is measured from the centerline of the hose. The minimum bend radius increases with pressure (see chart on page 69). The working pressure decreases with temperature (obtain derating factor on page 67). For rapid pressure fluctuations consult the factory.

# Corrugated Metal Hose (Products)

## EXTRAFLEX



**Extraflex** is Hose Master's spirally-welded corrugated metal hose, specifically designed to maximize flexibility while maintaining good pressure ratings. The helical design facilitates draining and reduces in-line turbulence.

Explanation of **Extraflex** Part Numbers:

**EF** \_\_\_\_\_ **0** \_\_\_\_\_  
 Material Code      Braid Code

**Material Codes:**  
**9** - T321 Stainless Steel  
**3** - T316L Stainless Steel

**Braid Codes**  
**00** - Unbraided  
**50** - T304 Single Braid  
**55** - T304 Double Braid  
 \*T316 Braid available upon request.

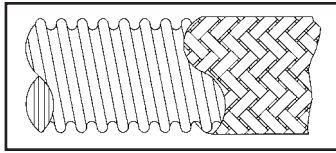
*Example: EF9050 = T321 Stainless Steel, annular, corrugated metal hose with a single T304 Stainless Steel Braid.*

Inside Diameter (in.)	Number of Braids (#)	Outside Diameter (in.)	Static Min. Bend Radius (in.)	Dynamic Min. Bend Radius (in.)	Maximum Working Pressure (psi)	Burst Pressure (psi)	Weight Per Foot (lbs.)
1/4	0	0.39			71		0.09
	1	0.45	0.4	2.2	1778	7112	0.13
	2	0.51			2489	9956	0.19
5/16	0	0.47			43		0.10
	1	0.53	0.6	2.4	1422	5688	0.18
	2	0.59			1991	7964	0.26
3/8	0	0.55			36		0.11
	1	0.61	0.6	2.8	1138	4552	0.19
	2	0.67			1707	6828	0.28
1/2	0	0.67			28		0.14
	1	0.73	0.8	3.1	910	3640	0.26
	2	0.79			1422	5688	0.39
5/8	0	0.85			28		0.19
	1	0.91	1.2	3.9	910	3640	0.32
	2	0.96			1422	5688	0.46
3/4	0	1.02			14		0.22
	1	1.08	1.4	5.1	711	2844	0.38
	2	1.18			1138	4552	0.55
1	0	1.22			11		0.26
	1	1.28	1.8	6.3	569	2276	0.54
	2	1.34			910	3640	0.83
1 1/4	0	1.57			9		0.45
	1	1.65	2.4	7.9	455	1820	0.76
	2	1.73			711	2844	1.09
1 1/2	0	1.89			7		0.65
	1	1.97	3.0	9.4	356	1424	1.02
	2	2.05			569	2276	1.40
2	0	2.36			6		0.71
	1	2.44	3.5	11.0	284	1136	1.22
	2	2.52			455	1820	1.75

**Notes:** The minimum bend radius is measured from the centerline of the hose. The minimum bend radius increases with pressure (see chart on page 70). The working pressure decreases with temperature (obtain derating factor on page 67). For rapid pressure fluctuations consult the factory.

# Corrugated Metal Hose (Products)

## HYDRAFLEX



**Hydrflex** is Hose Master's T316 double-walled spirally-welded corrugated metal hose. Specially designed to maintain extreme pressure and flexibility, Hydrflex is self-draining and generates minimal in-line turbulence.

Explanation of **Hydrflex** Part Numbers:

**HF 34**

Braid  
Code

### Braid Codes

00 - Unbraided

50 - T304 Single Braid

55 - T304 Double Braid

\*T316 Braid available upon request.

Example: HF3450 =  
T316 Stainless Steel, helical,  
corrugated metal hose with a  
single T304 Stainless Steel Braid.

Inside Diameter (in.)	Number of Braids (#)	Outside Diameter (in.)	Static Min. Bend Radius (in.)	Dynamic Min. Bend Radius (in.)	Maximum Working Pressure (psi)	Burst Pressure (psi)	Weight Per Foot (lbs.)
1/4	1	0.52	1.1	5.0	4600	18400	0.21
	2	0.62			5800	23200	0.32
5/16	1	0.62	1.2	5.1	4000	16000	0.29
	2	0.74			4800	19200	0.45
3/8	1	0.70	1.4	5.5	3800	15200	0.36
	2	0.82			4000	16000	0.57
1/2	1	0.82	1.6	5.7	2600	10400	0.43
	2	0.94			3700	14800	0.69
5/8	1	0.97	2.2	6.1	2400	9600	0.51
	2	1.09			2700	10800	0.82
3/4	1	1.19	2.8	6.5	2000	8000	0.64
	2	1.31			2200	8800	1.03
1	1	1.39	3.5	7.9	1500	6000	0.78
	2	1.51			2000	8000	1.25
1 1/4	1	1.75	4.1	9.4	1100	4400	1.15
	2	1.87			1600	6400	1.70
1 1/2	1	2.07	5.1	12.2	1000	4000	1.45
	2	2.19			1500	6000	2.16
2	1	2.55	6.7	14.6	750	3000	1.97
	2	2.67			1100	4400	2.83

**Notes:** The minimum bend radius is measured from the centerline of the hose. The minimum bend radius increases with pressure (see chart on page 70). The working pressure decreases with temperature (obtain derating factor on page 67). For rapid pressure fluctuations consult the factory.