DIXON

The Right Connection®

GSM Hose Brochure

dixonvalve.com

Customer Service
888.226.4673

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This catalog is intended as a product offering and is not designed to serve as a user or technical manual. All information is subject to change without notice.

Distributors and users of products featured in this catalog should contact Dixon Specialty Products with any questions regarding application, compatibility, coupling procedures, or product service life. Dixon's full-time engineering and testing teams are available to provide recommendations and assist with any technical inquiries.

GSM Armored Hose

- Applications include but not limited to: water cooling hose, oxygen supply hose, hydraulic hose, natural gas hose, black liquor hose, steam hose
- Wide selection of inner hoses specific to the demands of the application are industrial, hydraulic, stainless steel, or PTFE
- Armor: galvanized steel or stainless steel
- Sizes: 1/4" to 12"
- Extremely flexible armor protects from heat, slag splash, and harsh environments
- Temperature rating depends on specific applications; consult Dixon®
- A variety of end connections are available. Contact Dixon at 888.226.4673

PTFE Hose

- Available as ready to assemble bulk hose and fittings or made-to-order assemblies
- SAE100R14 nominal smooth bore sizes, True I.D. smooth bore, and open pitch convoluted hose in conductive and non conductive
- Majority of hose and fittings stocked in Maryland providing rapid delivery on made-to-order PTFE hose assemblies
- Common size hose and fittings stocked
- 24-hour or same day shipment for many orders

Hose Restraints

- Available for a range of applications
- Provide standby safety in the case of accidental failure of assembly or fitting
- King Safety Cables are a low cost answer to minimizing damage to equipment and injuries to operators caused by the failure of air hose connections
  - Ideal for lower pressure hose-to-hose and hose-to-tool applications
- King Safety Whipsocks have dual anchor points that are secured beyond the fitting to keep the hose under complete control during a failure
  - Ideal for higher working pressure hose-to-rigid outlets and hose-to-hose connections
- Nylon safety restraints

Refining: Raw and Recycled Materials

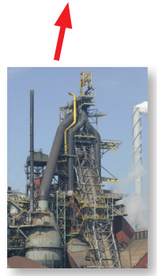
Coke Oven: coke battery, pusher, "Larry" car, quench car

Iron Ore

Coke

Limestone

Blast Furnace



Blast Furnace: Tap hole drill, mud gun, PCI (pulverized coal injection), Bosh and Tuyere hose

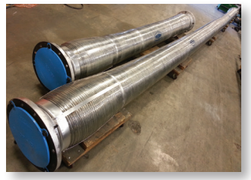
Recycled Steel

GSM Armor provides a continuous, overlapping barrier without restricting the flexibility of the hose

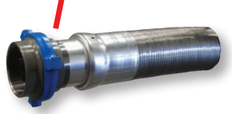
Material Handling: Scrap grapple, pot hauler, slag removal and charging systems

Primary Process: Melting

BOF: Oxygen lance hose, water supply and return lines and hydraulic hose



Basic Oxygen Furnace

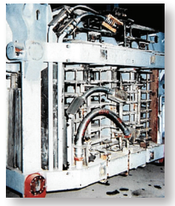


8" GSM Water Hose with 206 series Hammer Union:
- Spec: 350E
- GSM armor protects hose from being compromised and from premature failure during critical furnace cooling processes

Electric Arc Furnace

Tilt Cylinder:
- Heavy gauge wire resists sparks and slag during the charging stage

Water Cooling Hose:
- GSM bender hose, on the bottom of caster eliminates frequent, time consuming repairs



Continuous Caster

GSM Slide Gate Hose:
- GSM hydraulic hose, reduces the need for repairs during charges, provides a safer work environment

Pouring Ladle and Ingot Molds

Dixon has a product for every process of the steel industry

Secondary Process and Finishing: Cast and Roll

Hot Strip & Rolling Mills benefit from GSM armor and insulation by reducing hose fatigue caused by high temperatures and abrasive environments

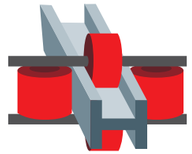
Secondary Applications: Reheat furnace, peel bar, roll stand water, pinch roll cylinder, and more

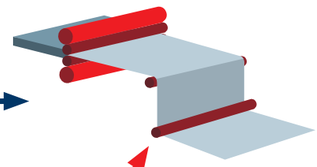
Finishing Mill Applications utilize the GSM armor where longer hose service life reduces repetitive repairs, replacements, and down time.

Bloom

Billet

Slab





GSM Torch cut-off hose will reduce maintenance caused by exterior abrasion and blows from the cutting process

GSM Armored PTFE Hose:
- Suitable for conveying oils, gases, fuels, and steam
- Specification: True I.D, smooth bore, open pitch convoluted, and nominal 100R14
- Stainless steel braid, **1000°F** insulation, GSM armor
- Silicone fire sleeve options available

Finished Products

OUR VALUE PROPOSITION
Dixon is committed to delighting our customers by being the easiest company they do business with every day.

SERVICE
Customer service that supports our customers before, during, and after the sale.

QUALITY MANUFACTURING
Innovative manufacturing that continues to build the Dixon brand recognized by our customers as "The Quality Line".

PRODUCT MIX
Broad product offering that provides our customers with market based solutions supported by extensive customer training.

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

When fabricating and specifying hose assemblies ask the following questions:

S*ize*: What is the I.D. (inside diameter) of the hose? What is the O.D. (outside diameter) of both ends of the hose? What is the overall length of the assembly required?

T*emperature*: What is the temperature range of the media (product) that is flowing through the hose assembly? What is the temperature range of the environment that surrounds the outside of the hose assembly?

A*pplication*: How is the hose assembly actually being used? Is it a pressure application? Is it a vacuum (suction) application? Is it a gravity flow application? Are there any special requirements that the hose assembly is expected to perform? Is the hose being used in a horizontal or vertical position? Are there any pulsations or vibrations acting on the hose assembly?

M*edia*: What is the media/material that is flowing through the hose assembly? Being specific is critical. Check for: Abrasive materials, chemical compatibility, etc.

P*ressure*: What is the maximum pressure including surges (or, maximum vacuum) that this hose assembly will be subjected to? Always rate the maximum working pressure of your hose assembly by the lowest rated component in the system.

E*nds*: What couplings have been requested by the user? Are they the proper fittings for the application and hose selected?

D*ixon*: Dixon recommends that, based on the hose, fittings, and attachment method used, all assemblies be permanently marked with the designed working pressure and intended media. Do not use other manufacturers' fittings or ferrules with Dixon products due to the differences in dimensions and tolerances We also recommend that all hose assemblies be tested frequently. *Be Safe*: Any questions on application, use, or assembly, call 800.355.1991.

Ordering Information for Hose Assemblies

S

Size							
I.D.	in	Length	ft	Preferred hose material			

T

Temperature of media (inside hose) and environment (outside hose)							
Media	°F	Environment	°F	Steam	Yes		No

A

Application			
Application			
External Environment		Transfer Type	

M

Material being transferred (type & concentration)

P

Pressure			
Pressure			

E

End clamping and fitting methods			
End fitting 1 + material		End fitting 2 + material	
Preferred clamping method			

D

Delivery			
Date required		Quantity	

GSM Armored Hose

Applications

- Industrial hose applications, where strong resistance to external forces is necessary for machines and equipment to function effectively
- Economically beneficial in applications where industrial hose is exposed to high temperatures, abrasion, and constant flexing
- For various mill applications like material handling, coke oven processing, blast furnaces, electric arc furnaces, basic oxygen furnaces, continuous casters, rolling and finishing mills, among other mill applications

Features

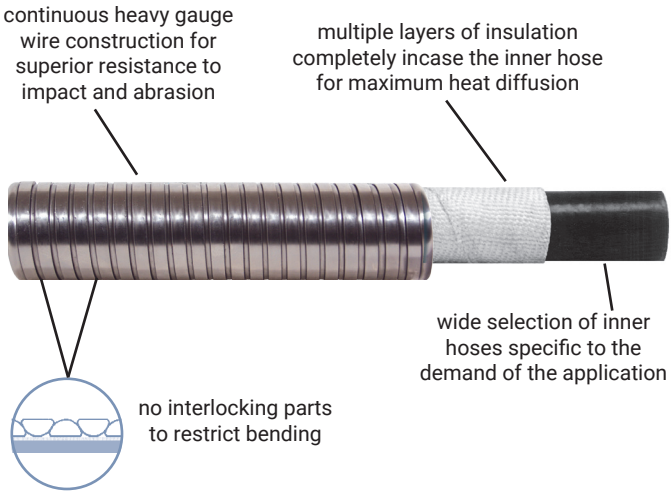
- Continuous GSM armor construction offers extremely flex-ible and long-lasting protection for extended hose service
- Multiple layers of heat-resistant insulation are applied to maximize heat absorption and diffusion
- Inner hose chosen to meet installation specifications for hydraulic, water, gases, grease, and steam applications
- Prior to shipment, all GSM hoses are assembled, cleaned, and inspected by our team of highly-trained professionals

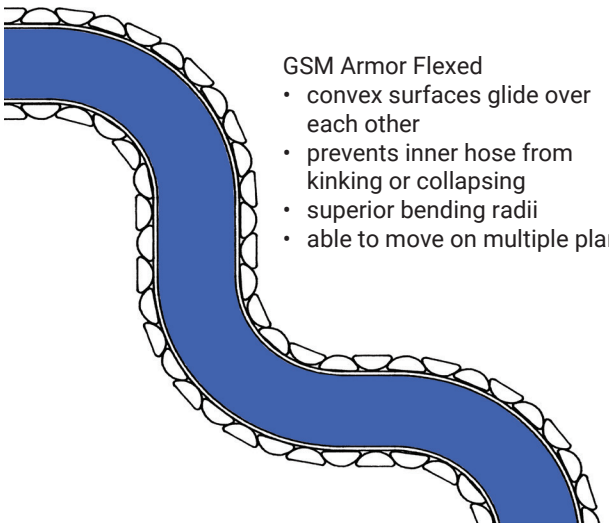
Materials

- Inner hose: reinforced industrial rubber, hydraulic, stainless steel braided metal, and PTFE
- Insulation: multiple layers of **1000°F (538°C)** rated fiberglass insulation
- GSM Ball-Joint Armor: galvanized or stainless steel
- Variety of end connections available: 150# and 300# flanges, Dixon Cam & Groove, Hammer Unions, MNPT, FJIC, code 61, and more

Sizes

- 1/4" - 12" I.D.
- Contact Dixon Specialty Products for custom lengths and fabrications



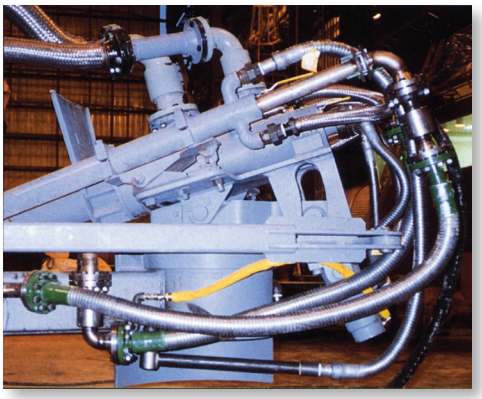


GSM Armor Flexed

- convex surfaces glide over each other
- prevents inner hose from kinking or collapsing
- superior bending radii
- able to move on multiple planes

GSM BOP hose tested at **2,000°F (1093°C)** (2,000,000 BTU's) at **5,000 PSIWP**.

Oxygen Hose



GSM armor and insulation deliver maximum diffusion and absorption of heat.

Application
- Reliable connector for the critical transfer of supplying oxygen into an oxy-fuel burner furnace

Features
- Multiple layers of **1000°F (538°C)** rated heat-resistant insulation
- Temperature rating depends on the specific application

Materials
- Tube: neoprene rubber
- Reinforcement: multiple high tensile wire braids
- Cover: smooth neoprene
- GSM Ball-Joint Armor: galvanized steel or stainless steel

Sizes
- 3/8" - 3"

Specification
- 256H

Hose Dimension		Minimum Bend Radius	PSI		Approximate Weight (ft-lbs)
I.D.	Approximate O.D.		Working	Burst	
3/8"	60/64"	2"	**500**	**2000**	1
1/2"	1-17/64"	2-1/2"	**500**	**2000**	1.25
3/4"	1-19/64"	3"	**500**	**2000**	1.8
1"	1-45/64"	4-1/2"	**500**	**2000**	2
1-1/4"	1-52/64"	5"	**500**	**2000**	2.8
1-1/2"	2-18/64"	6-1/2"	**500**	**2000**	3
2"	2-53/64"	11"	**300**	**1200**	4
2-1/2"	3-27/64"	12"	**300**	**1200**	5
3"	3-45/64"	15"	**300**	**1200**	6.25

NOTE: Consult Dixon® for details.

BOF Oxygen Lance Hose

Flexibility of GSM will reduce noise caused by vibration.

Application
- Reliable connector for the injection of oxygen directly into molten steel in a basic oxygen furnace

Features
- Multiple layers of **1000°F (538°C)** rated heat-resistant insulation
- Temperature rating depends on the specific application

Materials
- Tube: neoprene rubber
- Reinforcement: multiple textile plies and metal helix wire
- Cover: smooth neoprene
- GSM Ball-Joint Armor: galvanized steel or stainless steel

Sizes
- 4" - 8"

Specification
- LW65

Hose Dimension		Minimum Bend Radius	PSI		Approximate Weight (ft-lbs)
I.D.	Approximate O.D.		Working	Burst	
4"	5-36/64"	24"	**300**	**1500**	11
6"	7-45/64"	36"	**300**	**1500**	20
8"	10"	48"	**300**	**1500**	27.5

NOTE: Consult Dixon® for details.

Water Hose

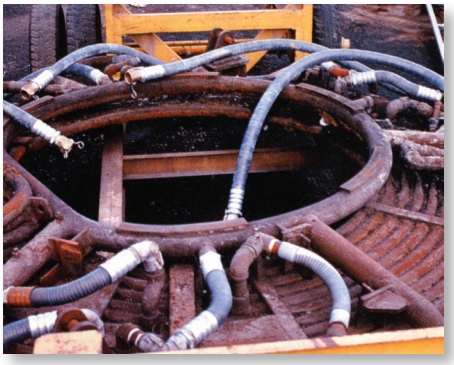
Application
- Water cooled applications where flexible connections are required to transfer water in abrasive environments

Features
- Multiple layers of **1000°F (538°C)** rated heat-resistant insulation
- Temperature rating depends on the specific application

Specifications
- 1/2" to 3": 460H, 4" and above: 350H

Materials
- Tube: 1/2" to 3" nitrile rubber, 4" and above are SBR rubber blend
- Reinforcement: 1/2" to 3" have multiple high tensile wire braids, 4" and above have multiple textile plies and metal helix wire
- Cover: SBR rubber blend
- GSM Ball-Joint Armor: galvanized steel or stainless steel

Sizes
- 1/2" - 10" hose



Circulating water in an electric arc furnace cooling roof or furnace door.

Hose Dimension		Minimum Bend Radius	PSI		Approximate Weight (ft-lbs)
I.D.	Approximate O.D.		Working	Burst	
1/2"	1-15/64"	2-1/2"	**500**	**2000**	1.1
3/4"	1-22/64"	3"	**500**	**2000**	1.4
1"	1-42/64"	4"	**500**	**2000**	1.8
1-1/4"	1-60/64"	5"	**500**	**2000**	2.4
1-1/2"	2-18/64"	8"	**500**	**2000**	2.9
2"	2-50/64"	10"	**500**	**2000**	3.8
2-1/2"	3-18/64"	13"	**400**	**1600**	4.5
3"	4-8/64"	17"	**400**	**1600**	6
4"	5-36/64"	24"	**150**	**600**	11
6"	7-45/64"	36"	**150**	**600**	20
8"	10-7/64"	48"	**150**	**600**	27.5
10"	12"	60"	**150**	**600**	35

NOTE: Consult Dixon® for details.

Hydraulic Hose

Application
- Hydraulic service in abrasive environments needs the ultimate protection from external abuse, extreme heat, and kinking

Features
- Multiple layers of **1000°F (538°C)** rated heat-resistant insulation
- Temperature rating depends on the specific application

Materials
- Tube: oil resistant, synthetic rubber
- Reinforcement: 2, 4, and 6 wire braids
- Cover: oil resistant, synthetic rubber
- GSM Ball-Joint Armor: galvanized steel or stainless steel

Sizes
- 1/4" - 2" standard, other sizes available

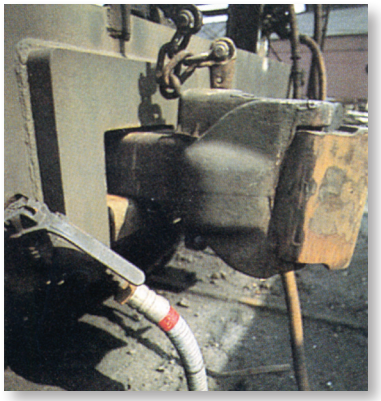
Specifications
- 100R2, 100R12, 100R13

Better resistance to impact, abrasion, and kinking.

Hose Dimension I.D.	Working Pressure (PSI)		Bend Radius	
	100R2	100R12	100R2	100R12
1/4"	**5800**	**n/a**	3"	n/a
3/8"	**5000**	**4000**	4"	5"
1/2"	**4250**	**4000**	6"	7"
5/8"	**2750**	**4000**	7"	8"
3/4"	**3125**	**4000**	8-1/2"	9-1/2"
1"	**2500**	**4000**	10"	12"
1-1/4"	**2250**	**3000**	14-1/2"	16-1/2"
1-1/2"	**1800**	**2500**	18"	20"
2	**1300**	**3000**	22"	25"

NOTE: Consult Dixon for details.

Air Hose



Ideal in the applications where failures could be a disaster.

Application
- Air service in the transportation industry for air brake systems for rail cars and signal hose

Features
- Multiple layers of **1000°F (538°C)** rated heat-resistant insulation
- Temperature rating depends on the specific application

Materials
- Tube: nitrile blend
- Reinforcement: multiple high tensile wire braids
- Cover: neoprene rubber
- GSM Ball-Joint Armor: galvanized steel or stainless steel

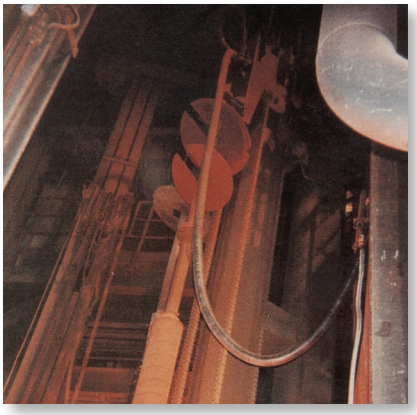
Sizes
- 1/2" - 3"

Specification
- 460H

Hose Dimension		Minimum Bend Radius	PSI		Approximate Weight (ft-lbs)
I.D.	Approximate O.D.		Working	Burst	
1/2"	1-15/64"	2-1/2"	**500**	**2000**	1.1
3/4"	1-22/64"	3"	**500**	**2000**	1.4
1"	1-42/64"	4"	**500**	**2000**	1.8
1-1/4"	1-60/64"	5"	**500**	**2000**	2.4
1-1/2"	2-18/64"	8"	**500**	**2000**	2.9
2"	2-50/64"	10"	**500**	**2000**	3.8
2-1/2"	3-18/64"	13"	**400**	**1600**	4.5
3"	4-8/64"	17"	**400**	**1600**	6

NOTE: Consult Dixon® for details.

Natural Gas Hose



Reliable, flexible connector to meet your needs.

Application
- Used in the transfer of gases, ideally the injection of oxygen, natural gas, argon, or other gases into the ladle or blast furnace

Features
- Multiple layers of **1000°F (538°C)** rated heat-resistant insulation
- Temperature rating depends on the specific application

Materials
- Tube: neoprene rubber
- Reinforcement: multiple high tensile wire braids
- Cover: neoprene rubber
- GSM Ball-Joint Armor: galvanized steel or stainless steel

Sizes
- 3/8" - 3"

Specification
- 256H

Hose Dimension		Minimum Bend Radius	PSI		Approximate Weight (ft-lbs)
I.D.	Approximate O.D.		Working	Burst	
3/8"	60/64"	2"	**500**	**2000**	1
1/2"	1-17/64"	2-1/2"	**500**	**2000**	1.25
3/4"	1-19/64"	3"	**500**	**2000**	1.8
1"	1-45/64"	4-1/2"	**500**	**2000**	2
1-1/4"	1-52/64"	5"	**500**	**2000**	2.8
1-1/2"	2-18/64"	6-1/2"	**500**	**2000**	3
2"	2-53/64"	11"	**300**	**1200**	4
2-1/2"	3-27/64"	12"	**300**	**1200**	5
3"	3-45/64"	15"	**300**	**1200**	6.25

NOTE: Consult Dixon for details.

Steam Hose

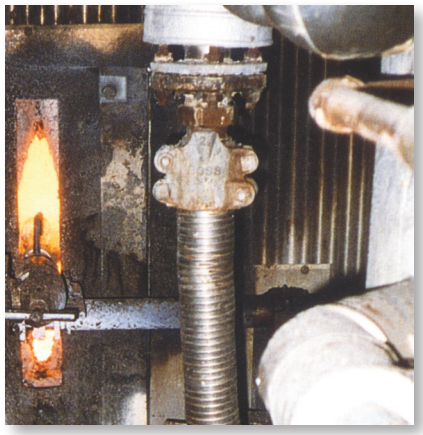
Application
• Used to convey steam in applications where heat and abrasion are a concern

Features
• Multiple layers of **1000°F (538°C)** rated heat-resistant insulation
• Temperature rating depends on the specific application

Materials
• Tube: Butyl blend
• Reinforcement: wire braid
• Cover: EPDM
• GSM Ball-Joint Armor: galvanized steel or stainless steel

Sizes
• 1/2" - 3"

Specification
• 769H



Designed to extend the life of your hose in the harshest conditions.

Hose Dimension		Minimum Bend Radius	PSI		Approximate Weight (ft-lbs)
I.D.	Approximate O.D.		Working	Burst	
1/2"	1-15/64"	3"	**250**	**2500**	1.25
3/4"	1-34/64"	4-1/2"	**250**	**2500**	2
1"	1-54/64"	5"	**250**	**2500**	2.25
1-1/4"	2-8/64"	6"	**250**	**2500**	3
1-1/2"	2-26/64"	7"	**250**	**2500**	3.5
2"	3"	10"	**250**	**2500**	4.5
2-1/2"	3-24/64"	13"	**250**	**2500**	6.25
3"	4-9/64"	16"	**250**	**2500**	7.5

NOTE: Consult Dixon® for details.

Black Liquor Hose

Application
• Used to convey Black Liquor in applications where heat and abrasion are a concern such as the pulp and paper industry

Features
• Multiple layers of **1000°F (538°C)** rated heat-resistant insulation
• Temperature rating depends on specific application

Materials
• Tube: Butyl blend
• Reinforcement: wire braid
• Cover: EPDM
• GSM Ball-Joint Armor: galvanized steel or stainless steel

Sizes
• 1/2” - 3”

Specification
• 769H

Keeping the hose protected for extended life of the hose.

Hose Dimension		Minimum Bend Radius	PSI		Approximate Weight (ft-lbs)
I.D.	Approximate O.D.		Working	Burst	
1/2"	1-15/64"	3"	**250**	**2500**	1.25
3/4"	1-34/64"	4-1/2"	**250**	**2500**	2
1"	1-54/64"	5"	**250**	**2500**	2.25
1-1/4"	2-8/64"	6"	**250**	**2500**	3
1-1/2"	2-26/64"	7"	**250**	**2500**	3.5
2"	3"	10"	**250**	**2500**	4.5
2-1/2"	3-24/64"	13"	**250**	**2500**	6.25
3"	4-9/64"	16"	**250**	**2500**	7.5

NOTE: Consult Dixon for details.

GSM Ball-Joint Armored Stainless Hose

Exclusively with our genuine ball-joint armor

Application
- Used where pressure, temperature, media, or environment exceeds the limitations of rubber or PTFE lined transfer hose

Features
- Temperature: **1500°F (815.5°C)**, see temperature adjustments on pg. 30
- Heat-resistant insulation to **1000°F (538°C)**

Materials
- Hose: 321 stainless steel and 316L stainless steel are available
- Single or double braid available in 304 and 316 stainless steel

Specification
- ISO 10380

GAM Hose – DA1 and DA2

Hose	Hose Dimension				Bend Radius		PSI @ 70°F (21°C)	
	I.D.	# Braids	O.D. with Braid	Approx. O.D. with GSM Ball Joint Armor	Dynamic	Static	Working	Burst
DA1	1/4"	1	.48"	.82"	5	1	---	---
DA2		2	.56"	.89"			**2500**	**10000**
DA1	3/8"	1	.7"	1"	5.5	1.25	**3375**	**13500**
DA2		2	.81"	1.06"			**1680**	**6720**
DA1	1/2"	1	.91"	1.08"	6	1.5	**2700**	**10740**
DA2		2	.98"	1.21"			**1980**	**7920**
DA1	3/4"	1	1.28"	1.53"	8	2.25	**940**	**3760**
DA2		2	1.35"	1.6"			**1500**	**6000**
DA1	1"	1	1.58"	1.83"	9	2.75	**630**	**2520**
DA2		2	1.65"	1.9"			**1000**	**4000**
DA1	1-1/4"	1	1.93"	2.08"	10.5	3.5	**575**	**2300**
DA2		2	2.02"	2.27"			**920**	**3680**
DA1	1-1/2"	1	2.28"	2.44"	12	4	**500**	**2000**
DA2		2	2.37"	2.62"			**800**	**3200**
DA1	2"	1	2.73"	2.85"	15	5	**530**	**2120**
DA2		2	2.85"	3.09"			**850**	**3400**
DA1	2-1/2"	1	3.33"	3.5"	20	8	**500**	**2000**
DA2		2	3.43"	3.68"			**700**	**2800**
DA1	3"	1	3.88"	4.03"	22	9	**400**	**1600**
DA2		2	3.98"	4.27"			**600**	**2400**
DA1	4"	1	4.98"	5.1"	27	13	**300**	**1200**
DA2		2	5.08"	5.35"			**440**	**1770**
DA1	6"	1	7.1"	7.12"	36	19	**165**	**660**
DA2		2	7.33"	7.58"			**260**	**1050**
DA1	8"	1	9.19"	9.34"	40	20	**230**	**930**
DA2		2	9.28"	9.53"			**370**	**1495**
DA1	10"	1	11.32"	11.43"	50	25	**230**	**910**
DA2		2	11.45"	11.7"			**360**	**1460**
DA1	12"	1	13.31"	13.5"	60	30	**160**	**640**
DA2		2	13.43"	13.75"			**250**	**1020**

GSM Ball-Joint Armored Stainless Hose

Exclusively with our genuine ball-joint armor

Application
- Intended for applications that require high-pressure options

Features
- Temperature: **1500°F (815.5°C)**, see temperature adjustments on pg. 30
- Heat-resistant insulation to **1000°F (538°C)**

Materials
- Hose: 321 stainless steel and 316L stainless steel are available
- Double braid available in 304 and 316 stainless steel

Specification
- ISO 10380

High Pressure GAM Hose – D82 and D92

Hose	Hose Dimension				Bend Radius		PSI @ 70°F (21°C)	
	I.D.	# Braids	O.D. with Braid	Approx. O.D. with GSM Ball Joint Armor	Dynamic	Static	Working	Burst
D82	1/4"	2	.64"	.89"	5	2.50	**4000**	**16400**
D92		2	.64"	.89"	12	6	**4400**	**17500**
D82	3/8"	2	.81"	1.06"	5.5	2.75	**2400**	**9600**
D92		2	.83"	1.08"	12	6	**3000**	**12290**
D82	1/2"	2	1.02"	1.27"	8	4	**3500**	**14000**
D92		2	1.02"	1.27"	14	7	**3500**	**14000**
D82	3/4"	2	1.41"	1.66"	8	4	**2000**	**8300**
D92		2	1.46"	1.71"	15	7.5	**3190**	**12760**
D82	1"	2	1.7"	1.95"	9	4.5	**1700**	**6800**
D92		2	1.77"	2.02"	16	8	**2500**	**10200**
D82	1-1/4"	2	2.1"	2.35"	10	5	**1700**	**7000**
D92		2	2.09"	2.34"	18	9	**2100**	**8400**
D82	1-1/2"	2	2.43"	2.68"	10	5	**1380**	**5500**
D92		2	2.43"	2.68"	19	9.5	**1695**	**6795**
D82	2"	2	2.76"	3.01"	11.5	5.75	**1295**	**5180**
D92		2	2.77"	3.02"	24	12	**1340**	**5300**
D82	2-1/2"	2	3.49"	3.75"	24	12	**925**	**3700**
D82	3"	2	4.03"	4.28"	28	14	**850**	**3450**
D82	4"	2	5.05"	5.3"	40	20	**530**	**2100**
D82	6"	2	7.33"	7.58"	95	24	**425**	**1700**

Armored Hose Fittings

Available in carbon steel and stainless steel, consult Dixon Specialty Products for other available options.

male NPT

Dixon ground joint

hex male NPT

150# and 300# fixed or floating flange

female JIC

FJIC 45° and 90° elbow

code 61 and 62 straight

code 61 and 62
45° and 90° elbow

Additional Ends

Dixon coupler
Cam & Groove

Dixon adapter
Cam & Groove

hammer union

NPT threaded union

Food Grade Hose

Applications
• Suitable for the transfer of fatty liquids, alcohol (max 92%), and food processing

Sizes
• 1-1/2”, 2", 3”, and 4"

Feature
• Highly flexible FDA and 3A compliant white smooth-bore nitrile tube
• Compatible with True I.D. fitting line
• Special food hose crimp collars required
NOTE: Contact Dixon® for more information

Materials
• Tube: FDA compliant chlorobutyl with ultra smooth tube
• Reinforcement: synthetic plies with an embedded helix wire
• Cover: gray ozone and weather resistant non-marking compound

Specifications
• Temperature range: **-4°F** to **200°F** (**-20°C** to **93°C**) continuous

Part #	Size	Approximate O.D.	PSI		Minimum Bend Radius	Approximate Weight (ft-lbs)
			Working	Burst		
BFH-150	1-1/2"	2.05"	**250**	**750**	9.06	0.87
BFH-200	2"	2.56"	**250**	**750**	11.81	1.24
BFH-300	3"	3.62"	**250**	**750**	17.72	2.08
BFH-400	4"	4.8"	**250**	**750**	23.62	3.19

NOTE: For use with fittings and ferrules on page 16.

Dixon Boss® Sanitary Crimp Stems

Clamp End x Hose Shank

Features

- Sanitary style end
- Dixon sanitary crimp stems are only to be used with Dixon sanitary stainless steel crimp ferrules listed below
- Reference dixonvalve.com for crimp recommendations

Size	316 Stainless Steel Part #
1"	CSSR100-3A
1-1/2"	CSSR150-3A
2"	CSSR200-3A
2-1/2"	CSSR250
3"	CSSR300-3A
4"	CSSR400

Dixon Boss Sanitary Ferrules

Crimp Ferrules

Approval

- Ferrules have a surface finish of 63 or better

Hose I.D.	Hose O.D.		AISI 304 Stainless Steel Part #
	From	To	
1-1/2"	1-58/64"	1-61/64"	F24G-1969
	1-62/64"	2-1/64"	F24G-2031
	2-2/64"	2-5/64"	F24G-2094
	2-6/64"	2-9/64"	F24G-2156
	2-10/64"	2-13/64"	F24G-2219
	2-14/64"	2-17/64"	F24G-2281
	2-18/64"	2-21/64"	F24G-2344
	2-22/64"	2-25/64"	F24G-2406
2"	2-30/64"	2-33/64"	F32G-2531
	2-34/64"	2-37/64"	F32G-2594
	2-38/64"	2-41/64"	F32G-2656
	2-42/64"	2-45/64"	F32G-2719
	2-46/64"	2-48/64"	F32G-2766
	2-49/64"	2-51/64"	F32G-2815
	2-52/64"	2-55/64"	F32G-2875
	2-56/64"	2-59/64"	F32G-2938
	2-60/64"	2-63/64"	F32G-3000
	3"	3-3/64"	F32G-3063
	3-4/64"	3-7/64"	F32G-3125
3"	3-36/64"	3-39/64"	F48G-3625
	3-40/64"	3-43/64"	F48G-3688
	3-44/64"	3-47/64"	F48G-3750
	3-48/64"	3-51/64"	F48G-3813
	3-52/64"	3-55/64"	F48G-3875
	3-56/64"	3-59/64"	F48G-3938
	3-61/64"	4"	F48G-4016
4"	4-40/64"	4-43/64"	F64G-4688
	4-44/64"	4-47/64"	F64G-4750
	4-48/64"	4-51/64"	F64G-4813
	4-52/64"	4-55/64"	F64G-4875
	4-56/64"	4-59/64"	F64G-4938
	5-5/64"	5-8/64"	F64G-5141

Nominal

Applications
- Suitable for conveying chemicals, foods, pharmaceuticals, oils, gas, fuels, steam, and cooling fluids for data centers

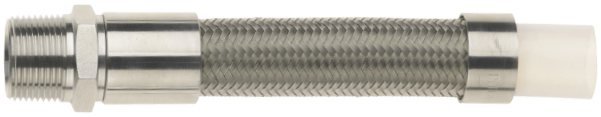
Size
- Size range: dash-3 to dash-20

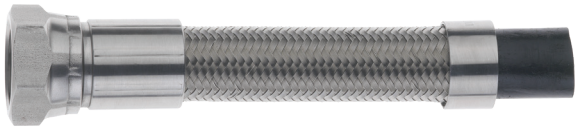
Specification
- Temperature range: **-100°F** to **450°F (-73°C** to **232°C)**

Features
- 304 stainless braided
- Extruded or heat shrink coverings are available upon request
- Boxed coils (bulk, per ft. lengths, and full reels available from Maryland, call Dixon® at 888.226.4673)
- For use with nominal PTFE fittings on pages 18 and 19

Approval
- Nominal standard smooth bore PTFE hose meets SAE100R14

Nominal Smooth Bore PTFE Hose – Coiled
(fittings not included)





Nominal Size	Average I.D.	Length in Feet	Dash Size	Working Pressure (PSI)	Burst Pressure (PSI)	White, non-conductive, coiled Part #	Black, conductive, coiled Part #
1/4"	.187"	100	dash-4	**3,000**	**12,000**	WSB-04-100	---
5/16"	.250"		dash-5	**3,000**	**12,000**	WSB-05-100	---
3/8"	.312"		dash-6	**2,500**	**10,000**	WSB-06-100	---
1/2"	.405"		dash-8	**2,000**	**8,000**	WSB-08-100	---
5/8"	.500"		dash-10	**1,750**	**7,000**	WSB-10-100	BSB-10-100
3/4"	.625"		dash-12	**1,500**	**6,000**	WSB-12-100	BSB-12-100
3/4T"	.750"	50	dash-12T	**1,100**	**4,400**	---	BSB-12T-50
1"	.875"		dash-16	**1,000**	**4,000**	WSB-16-50	BSB-16-50

Nominal Smooth Bore PTFE Hose Per Foot Length
(fittings not included)

Nominal Size	Average I.D.	Dash Size	White, non-conductive Part #	Black, conductive Part #
1/4"	.187"	dash-4	WSB-04	BSB-04
5/16"	.250"	dash-5	WSB-05	---
3/8"	.312"	dash-6	WSB-06	BSB-06
3/8T"	.375"	dash-6T	WSB-06T	---
1/2"	.405"	dash-8	WSB-08	BSB-08
5/8"	.500"	dash-10	WSB-10	BSB-10
3/4"	.625"	dash-12	WSB-12	BSB-12
3/4T"	.750"	dash-12T	WSB-12T	---
1"	.875"	dash-16	WSB-16	---
1T"	1.000"	dash-16T	---	BSB-16T
1-1/4"	1.125"	dash-20Z	WSB-20Z [1]	BSB-20Z [1]

[1] Double braided
NOTE: Per feet lengths are available from Maryland. Contact Dixon at 888.226.4673.

WARNING: Misuse of these products can cause serious injury or even death.

WARNING: Pressurized steam is an extremely dangerous commodity. Only hose, fittings, clamps, and accessory items that have been tested and approved by Dixon for use with Dixon products for steam service should ever be used. Never use an unapproved item for steam service. Always follow the manufacturer's product recommendations for pressurized steam handling.

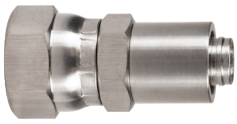
WARNING: For safety reasons, due to differences in dimensions and tolerances, do not interchange other manufacturer's products with Dixon products.

Nominal Fittings

Crimp Collars for all nominal fittings are included

- For use with nominal smooth bore PTFE hoses on the previous page

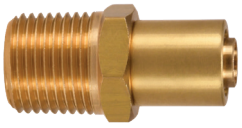
Female JIC Swivels



Hose Size	Thread Size	Carbon Steel Part #	304 Stainless Steel Part #	Brass Part #
dash 4	1/4"	FJC-04-04	FJS-04-04	FJB-04-04
dash 5	5/16"	FJC-05-05	FJS-05-05	FJB-05-05
dash 6	3/8"	FJC-06-06	FJS-06-06	FJB-06-06
dash 8	1/2"	FJC-08-08	FJS-08-08	FJB-08-08
dash 10	5/8"	FJC-10-10	FJS-10-10	FJB-10-10
dash 12	3/4"	FJC-12-12	FJS-12-12	FJB-12-12
dash 16	1"	FJC-16-16	FJS-16-16	FJB-16-16
dash 20Z	1-1/4"	FJC-20Z-20	FJS-20Z-20[1]	---

[1] stock quantity only

Rigid Male Pipe Fittings



Hose Size	Thread Size	Carbon Steel Part #	304 Stainless Steel Part #	Brass Part #
dash 4	1/8"	MPC-04-02	MPS-04-02	MPB-04-02
dash 4	1/4"	MPC-04-04	MPS-04-04	MPB-04-04
dash 5	1/4"	MPC-05-04	MPS-05-04	MPB-05-04
dash 6	1/4"	MPC-06-04	MPS-06-04	MPB-06-04
dash 6	3/8"	MPC-06-06	MPS-06-06	MPB-06-06
dash 8	3/8"	MPC-08-06	MPS-08-06	MPB-08-06
dash 8	1/2"	MPC-08-08	MPS-08-08	MPB-08-08
dash 10	1/2"	MPC-10-08	MPS-10-08	MPB-10-08
dash 12	3/4"	MPC-12-12	MPS-12-12	MPB-12-12
dash 16	1"	MPC-16-16	MPS-16-16	MPB-16-16
dash 20Z	1-1/4"	MPC-20Z-20	---	MPB-20Z-20

Female SAE Swivels

Hose Size	Thread Size	Carbon Steel Part #	Brass Part #
dash 6	3/8"	SAEC-06-06	SAEB-06-06
dash 12	3/4"	SAEC-12-12	SAEB-12-12

WARNING: Misuse of these products can cause serious injury or even death.

WARNING: Pressurized steam is an extremely dangerous commodity. Only hose, fittings, clamps, and accessory items that have been tested and approved by Dixon for use with Dixon products for steam service should ever be used. Never use an unapproved item for steam service. Always follow the manufacturer's product recommendations for pressurized steam handling.

WARNING: For safety reasons, due to differences in dimensions and tolerances, do not interchange other manufacturer's products with Dixon products.

Nominal PTFE Hose Insertion Tool and Dies

Feature

- Takes the hassle out of installing crimp collars onto braided PTFE Hose; with a few simple steps even challenging braid can be easily and safely inserted into the crimp collar

Description	Size	Part #
tool/die holder	---	ITDH
die	dash 4	ITD-04
die	dash 5	ITD-05
die	dash 6	ITD-06
die	dash 8	ITD-08
die	dash 10	ITD-10
die	dash 12	ITD-12
die	dash 16	ITD-16

Nominal Smooth Bore PTFE Hose Fittings

Crimp collars for all nominal fittings are included

Application

- For use with nominal smooth bore PTFE hoses on page 17

Tube End Stubs

Hose Size	Tube Size	304 Stainless Steel Part #
dash 4	1/4"	TES-04-04
dash 6	3/8"	TES-06-06
dash 8	1/2"	TES-08-08
dash 12	3/4"	TES-12-12
dash 16	1"	TES-16-16

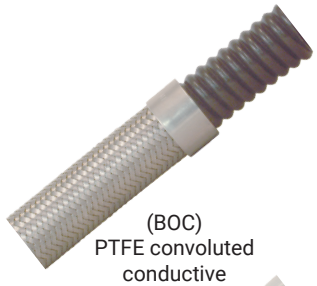
45° FJIC Fittings

Hose Size	Thread Size	304 Stainless Steel Part #	Carbon Steel Part #
dash 3	3/16"	FJS45-03-03	FJC45-03-03
dash 4	1/4"	FJS45-04-04	FJC45-04-04
dash 5	5/16"	FJS45-05-05	FJC45-05-05
dash 6	3/8"	FJS45-06-06	FJC45-06-06
dash 8	1/2"	---	FJC45-08-08
dash 10	5/8"	FJS45-10-10	FJC45-10-10
dash 12	3/4"	---	FJC45-12-12
dash 16	1"	---	FJC45-16-16

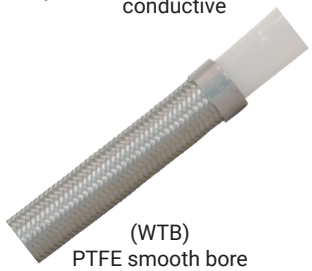
90° FJIC Fittings

Hose Size	Thread Size	304 Stainless Steel Part #	Carbon Steel Part #
dash 3	3/16"	FJS90-03-03	FJC90-03-03
dash 4	1/4"	FJS90-04-04	FJC90-04-04
dash 5	5/16"	---	FJC90-05-05
dash 6	3/8"	FJS90-06-06	FJC90-06-06
dash 8	1/2"	FJS90-08-08	FJC90-08-08
dash 10	5/8"	FJS90-10-10	FJC90-10-10
dash 12	3/4"	FJS90-12-12	FJC90-12-12
dash 16	1"	---	FJC90-16-16
dash 20Z	1-1/4"	FJS90-20Z-20	FJC90-20Z-20

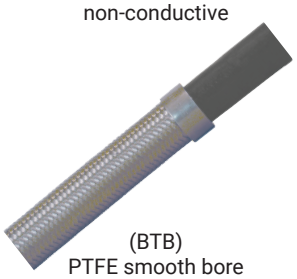
(WOC)
PTFE convoluted
non-conductive



(BOC)
PTFE convoluted
conductive



(WTB)
PTFE smooth bore
non-conductive



(BTB)
PTFE smooth bore
conductive

True I.D. Hose

Application
- Suitable for conveying acids, chemicals, foods, and pharmaceuticals

Size
- Size range: 1/4" - 2"

Specification
- Temperature range: **-100°F** to **450°F** **(-73°C** to **232°C)**

Features
- Boxed coils (bulk, per ft. lengths, and full reels available from Maryland, call Dixon® at 888.226.4673)
- 304 stainless braided
- Other braids including synthetic, extruded, and heat shrink coverings are available upon request

True I.D. Open Pitch Convoluted Hose

(fittings not included)

Size	Working Pressure PSI	Burst Pressure PSI	White, non-conductive Part #	Black, conductive Part #
1/4"	**1,740**	**6,960**	WOC-T04	---
3/8"	**1,850**	**7,400**	WOC-T06	BOC-T06
1/2"	**1,500**	**6,000**	WOC-T08	BOC-T08
3/4"	**1,300**	**5,200**	WOC-T12	BOC-T12
1"	**1,000**	**4,000**	WOC-T16	BOC-T16
1-1/4"	**900**	**3,600**	WOC-T20	BOC-T20
1-1/2"	**700**	**2,800**	WOC-T24	BOC-T24
2"	**500**	**2,000**	WOC-T32	BOC-T32

Heavy Wall True I.D. Smooth Bore Hose

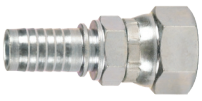
(fittings not included)

Size	Working Pressure PSI	Burst Pressure PSI	White, non-conductive Part #	Black, conductive Part #
1/4"	**3,000**	**12,000**	WTB-T04	---
3/8"	**2,250**	**9,000**	WTB-T06	BTB-T06
1/2"	**1,500**	**6,000**	WTB-T08	BTB-T08
3/4"	**1,100**	**4,400**	WTB-T12	BTB-T12
1"	**900**	**3,600**	WTB-T16	BTB-T16

NOTE: For use with nominal PTFE fittings on pages 20 and 21.

True I.D. Fittings

Crimp collars for all True I.D. fittings are sold separately



Female JIC Swivels

Size	Carbon Steel Part #	316 Stainless Steel Part #
1/4"	FJC-T04	FJR-T04
3/8"	FJC-T06	FJR-T06
1/2"	FJC-T08	FJR-T08
3/4"	FJC-T12	FJR-T12
1"	FJC-T16	FJR-T16
1-1/4"	FJC-T20	FJR-T20
1-1/2"	FJC-T24	FJR-T24
2"	FJC-T32	FJR-T32

Rigid Male Pipe Fittings

Size	Carbon Steel Part #	316 Stainless Steel Part #
1/4"	MPC-T04	MPR-T04
3/8"	---	MPR-T06
1/2"	MPC-T08	MPR-T08
3/4"	MPC-T12	MPR-T12
1"	MPC-T16	MPR-T16
1-1/4"	MPC-T20	MPR-T20
1-1/2"	MPC-T24	MPR-T24
2"	MPC-T32	MPR-T32

NOTE: For use with True I.D. PTFE hoses.

True I.D. Fittings

PTFE Hose Fittings

Sanitary Tri-Clamps

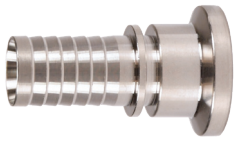
Application

- For use with True I.D. PTFE hoses on page 20

Hose Size	Clamp Size	316 Stainless Steel Part #
1/2"	1"	TCR-T08-16
1/2"	1-1/2"	TCR-T08-24
3/4"	1-1/2"	TCR-T12-24
1"	1"	TCR-T16-16
1"	1-1/2"	TCR-T16-24
1-1/2"	1-1/2"	TCR-T24-24
2"	2"	TCR-T32-32

Mini Sanitary Tri-Clamps

Size	316 Stainless Steel Part #
1/2"	TCMR-T08
3/4"	TCMR-T12



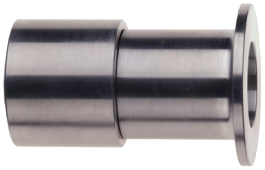
NOTE: For GSM and PTFE hose assemblies contact Dixon® at 888.226.4673.

Flange Retainers

Feature

- For use with lap joint flanges. Contact Dixon at 888.226.4673

Size	316 Stainless Steel Part #	316 Stainless Steel PTFE Encapsulated Part #
1/2"	FRR-T08	---
3/4"	FRR-T12	FRRE-T12
1"	FRR-T16	FRRE-T16
1-1/4"	---	FRRE-T20
2"	FRR-T32	---



Crimp Collars

Convoluted Crimp Collars

Features

- For True I.D. open pitch convoluted PTFE hose only
- New design for ease of installation and improved appearance of finished crimp

Size	Carbon Steel Part #	304 Stainless Steel Part #
1/4"	CSC-T04-1	SSC-T04-1
3/8"	CSC-T06-1	SSC-T06-1
1/2"	CSC-T08-1	SSC-T08-1
3/4"	CSC-T12-1	SSC-T12-1
1"	CSC-T16-1	SSC-T16-1
1-1/4"	CSC-T20-1	SSC-T20-1
1-1/2"	CSC-T24-1	SSC-T24-1
2"	CSC-T32-1	SSC-T32-1

Smooth Bore Crimp Collars

Features

- For True I.D. smooth bore PTFE hose only
- New design for ease of installation and improved appearance of finished crimp

Size	Carbon Steel Part #	304 Stainless Steel Part #
1/4"	CSC-T04-2	SSC-T04-2
3/8"	CSC-T06-2	SSC-T06-2
1/2"	CSC-T08-2	SSC-T08-2
3/4"	CSC-T12-2	SSC-T12-2
1"	CSC-T16-2	SSC-T16-2

Contact Dixon at 888.226.4673 for assembly instructions and crimp recommendations.

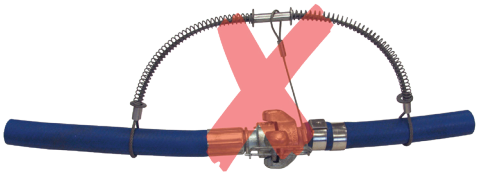
King Cable®

Application
- When hose, couplings, or clamps fail, or there is an accidental separation of the assembly, King safety cables minimize damage to equipment and injuries to operators.

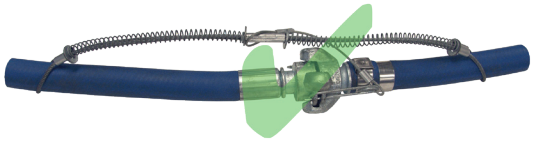
Features
- Must be installed in the extended position (no slack)
- Cable reaches across hose fittings to provide standby safety for hose
- Spring-loaded loops in the cable ends open easily to pass over the couplings for a firm grip on the hose
- No tools needed – easy to install and remove
- Cables shipped with safety restraint labels attached
- Highly resistant to rust and corrosion
- Hose-to-hose or hose-to-rigid outlet

Materials
- For WB1, WB3, WA2, WA4, WSR1, WSR3, WSR2, WSR4, WSR1C, WB1C, WSR1E:
  wire rope – galvanized carbon steel
  ferrules – aluminum
  springs – galvanized carbon steel
- For WB1SS, WB3SS, WA2SS, WA4SS, WSR1SS, WSR2SS, WSR3SS, WSR4SS:
  wire rope – 304 stainless steel
  ferrules – copper
  springs – 304 stainless steel
- For WA2B:
  wire rope – galvanized carbon steel
  ferrules – copper
  springs – galvanized carbon steel

Specification
- Maximum operating pressure: **200 PSI**



Incorrect installation



Correct installation

Hose-to-Tool Service

Hose end — Tool end

Hose I.D.	Cable	Length	Maximum Working Pressure (PSI)	Steel Part #	Stainless Steel Part #
1/2" – 1-1/4"	1/8"	20-1/4"	**200**	WSR1	WSR1SS
1/2" – 2"	3/16"	28"	**200**	WSR3	WSR3SS
1-1/2" – 3"	1/4"	38"	**200**	WSR2	WSR2SS
4"	3/8"	44"	**200**	WSR4	WSR4SS

Hose-to-Hose Service

Hose end — Hose end

Hose I.D.	Cable	Length	Maximum Working Pressure (PSI)	Steel Part #	Stainless Steel Part #
1/2" – 1-1/4"	1/8"	20-1/4"	**200**	WB1	WB1SS
1/2" – 2"	3/16"	28"	**200**	WB3	WB3SS
1-1/2" – 3"	1/4"	38"	**200**	WA2	WA2SS
4"	3/8"	44"	**200**	WA4	WA4SS

King Cable Options

WB1C – WB1 with safety clip and lanyard

WSR1E – WSR1E with stainless steel marine eye

Hose I.D.	Cable	Part #	Description	Maximum Working Pressure (PSI)
1/2" – 1-1/4"	1/8"	WSR1C	WSR1 with safety clip and lanyard used to lock Air King® couplings	**200**
1/2" – 1-1/4"	1/8"	WB1C	WB1 with safety clip and lanyard used to lock Air King couplings	**200**
1/2" – 1-1/4"	1/8"	WSR1E	WSR1 with stainless steel safety marine eye used to connect safety cable to a bolt on tool	**200**
1-1/2" – 3"	1/4"	WA2B	WA2 with bronze/copper ferrule for special environmental conditions	**200**

Nylon Safety Restraints

Applications
- Pneumatic, hydraulic, and water hoses

Features
- Strong, flexible nylon webbing
- Superior corrosion and spark resistance over metal restraints
- Rubber grommets securely choke eyes around hose
- Must be installed in the extended position (no slack)
- Shipped with labels detailing working pressures and safety instructions
- Minimizes damage to equipment and injuries to operators in the event hose, couplings or clamps fail, or there is an accidental separation of the assembly
- Contact Dixon® at 888.226.4673 for additional options

Materials
- Strap: nylon
- Grommets: rubber

Specification
- Maximum working temperature: **200°F (93°C)**

Length	Recommended for use on the following hose inside diameters:								Nylon Part #
	1/4"	1/2"	3/4"	1"	2"	3"	4"	6"	
	Hose maximum working pressure (PSI) for above hose I.D.								
30"	**26,000**	**6,500**	**2,900**	**1,650**	**400**	---	---	---	WBN130
40"	---	---	---	**1,650**	**400**	**175**	**100**	---	WBN140
30"	**52,000**	**13,000**	**5,800**	**3,300**	**750**	---	---	---	WBN230
44"	---	---	---	**3,300**	**750**	**350**	**200**	---	WBN244
64"	---	---	---	---	**750**	**350**	**200**	**90**	WBN264
44"	---	---	---	**7,300**	**1,800**	**820**	**450**	---	WBN344
64"	---	---	---	---	**1,800**	**820**	**460**	**200**	WBN364
64"	---	---	---	---	**2,300**	**1,040**	**580**	**260**	WBN464

King Safety Whipsocks

KSW32

KSW40

Application

- Ideally suited for applications where the media being transferred is under higher working pressures such as air, water, hydraulic, and slurry

Features

- King safety whipsocks keep the hose under control in the event of a high-pressure hose assembly failure
- Dual anchor points secured beyond the fittings eliminate hose whip
- Be sure the anchoring points are rated for the application
- Galvanized steel woven stockings extend down the hose to grip securely over a larger area preventing whip, abrasion, and wear
- Securing both eye-to-rigid or eye-to-eye anchor points reduce whip in the event of a hose connection failure
- Contact Dixon® with questions regarding working pressure, available options, or custom configurations

Materials

- Wire rope: galvanized carbon steel
- Ferrules: aluminum

Size	O.D. Range	Length	Max. Working Pressure PSI	Part #
3/8"	.315" – .5512"	15.75"	**5,000**	KSW06
1/2"	.5512" – .7874"	21.65"	**3,000**	KSW08
3/4"	.7874" – 1.181"	25.20"	**2,000**	KSW12
1"	1.181" – 1.575"	34.25"	**1,500**	KSW16
1-1/4"	1.575" – 1.969"	38.19"	**1,000**	KSW20
1-1/2"	1.969" – 2.362"	49.21"	**700**	KSW24
2"	2.362" – 2.756"	51.18"	**1,300**	KSW32
2-1/2"	2.756" – 3.346"	53.15"	**800**	KSW40
3"	3.346" – 3.937"	72.44"	**750**	KSW48
3-1/2"	3.937" – 4.724"	72.05"	**550**	KSW56
4"	4.724" – 5.512"	86.61"	**550**	KSW64
6"	5.512" – 7.087"	93.31"	**250**	KSW96

King Safety Shackles

Applications

- Two shackles are used to anchor the King safety whipsock
- Secure both eyes to a rigid anchor point to reduce whip in the event of a hose or connection failure

Features

- Recommended bolt, nut, and cotter pin style shackle
- Caution: working load must be rated for the application

Size	Working Load	Fits KSW Eye	Micro Alloy Steel Part #
5/16"	3/4 ton (1,000 lbs)	KSW06-KSW12	KSS04
7/16"	1-1/2 ton (3,000 lbs)	KSW16-KSW40	KSS06
5/8"	3-1/4 ton (6,000 lbs)	KSW48-KSW96	KSS08

Spring Guard

Application
- Protects hose against the effects of flexing at its most vulnerable point, immediately behind the coupling

Features
- Optional end tang allows end guard to be secured under a clamp or ferrule
- Wire fits most hose O.D.s from 1/2" to 3-1/4" Contact Dixon® for custom sizes or lengths

With Tang

Guard I.D.	Wire Gauge	Overall Length	Tang Length	Approx. # of Coils/ft	Galvanized Steel Part #	304 Stainless Steel Part #
3/4"	0.175	12"	1"	33	SEGC1-0.75-12	SEGS1-0.75-12
1"	0.175	12"	1"	33	SEGC1-1.00-12	SEGS1-1.00-12
1-1/4"	0.175	14"	2"	39	SEGC1-1.25-14	SEGS1-1.25-14
1-1/2"	0.175	14"	2"	39	SEGC1-1.50-14	SEGS1-1.50-14
1-3/4"	0.175	16"	2"	44	SEGC1-1.75-16	SEGS1-1.75-16
2"	0.280	16"	2"	44	SEGC1-2.00-16	SEGS1-2.00-16
2-1/2"	0.280	18"	2"	50	SEGC1-2.50-18	SEGS1-2.50-18
3"	0.280	18"	2"	50	SEGC1-3.00-18	SEGS1-3.00-18

Without Tang

Guard I.D.	Wire Gauge	Overall Length	Approx. # of Coils/ft	Galvanized Steel Part #	304 Stainless Steel Part #
3/4"	0.175	12"	33	SEGC0-0.75-12	SEGS0-0.75-12
1"	0.175	12"	33	SEGC0-1.00-12	SEGS0-1.00-12
1-1/4"	0.175	14"	39	SEGC0-1.25-14	SEGS0-1.25-14
1-1/2"	0.175	14"	39	SEGC0-1.50-14	SEGS0-1.50-14
1-3/4"	0.175	16"	44	SEGC0-1.75-16	SEGS0-1.75-16
2"	0.280	16"	44	SEGC0-2.00-16	SEGS0-2.00-16
2-1/2"	0.280	18"	50	SEGC0-2.50-18	SEGS0-2.50-18
3"	0.280	18"	50	SEGC0-3.00-18	SEGS0-3.00-18

Continuous Spring Guard

Application
- Protects hose from external abrasion and helps resist over flexing

Features
- Fits tight to hose reducing the potential for snagging
- Contact Dixon at 888.226.4673 for custom lengths or sizes

Guard I.D.	Wire Gauge	Overall Length	Approx. # of Coils/ft	Galvanized Steel Part #	304 Stainless Steel Part #
3/4"	0.175"	25'	33	CWG-C-0.75-25	CWG-S-0.75-25
1"	0.175"	25'	33	CWG-C-1.00-25	CWG-S-1.00-25
1-1/4"	0.175"	25'	33	CWG-C-1.25-25	CWG-S-1.25-25
1-1/2"	0.175"	25'	33	CWG-C-1.50-25	CWG-S-1.50-25
1-3/4"	0.175"	25'	33	CWG-C-1.75-25	CWG-S-1.75-25
2"	0.280"	25'	33	CWG-C-2.00-25	CWG-S-2.00-25
2-1/2"	0.280"	25'	33	CWG-C-2.50-25	CWG-S-2.50-25
3"	0.280"	25'	33	CWG-C-3.00-25	CWG-S-3.00-25

Technical Information for GSM Hose

Assembly Installation

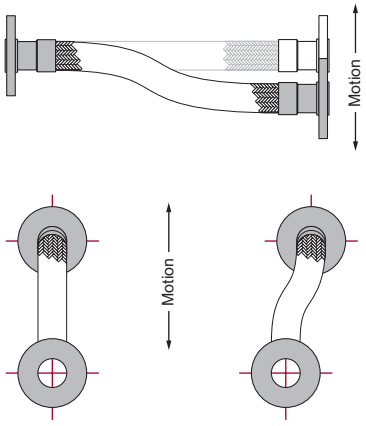
GSM hose is engineered to provide maximum service life when properly installed. Improper installation, incorrect flexing, or careless handling in an application will reduce the effective service life of the hose and cause premature failure of an assembly. The following installation and handling precautions should be observed to achieve optimum performance from your corrugated hose assemblies.

Avoid torque.

Do not twist the hose assembly during installation when aligning the bolt holes in a flange or in making up pipe threads. The utilization of lap joint flanges or pipe unions will minimize this condition. It is recommended that two wrenches be used in making the union connection; one to prevent the hose from twisting and the other to tighten the coupling.

In plane lateral offset installation

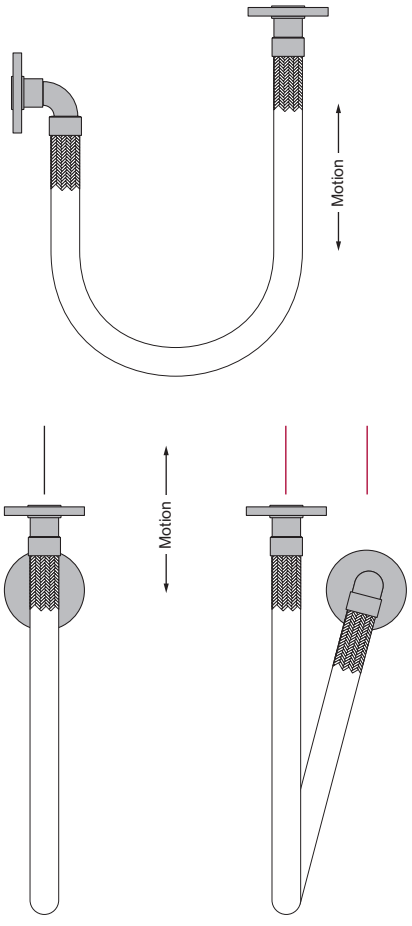
Prevent out-of-plane flexing in an installation. Always install the hose so that the flexing takes place in only one plane. This plane must be the plane in which the bending occurs.



Correct
in plane
flexing

Wrong
out of plane
flexing

In plane traveling loop installation



Correct
in plane
flexing

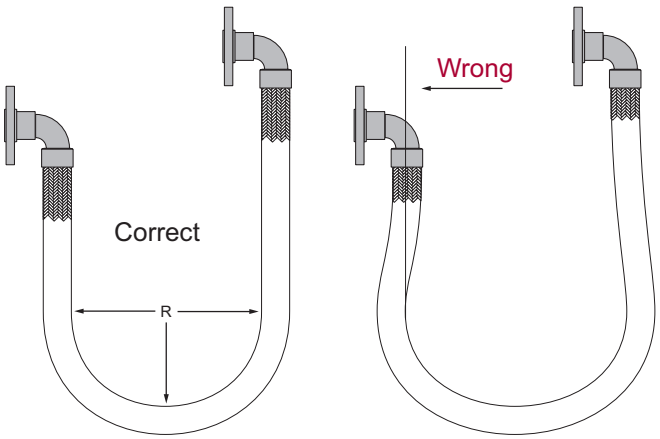
Wrong
out of plane
flexing

Technical Information for GSM Hose

Assembly Installation (continued)

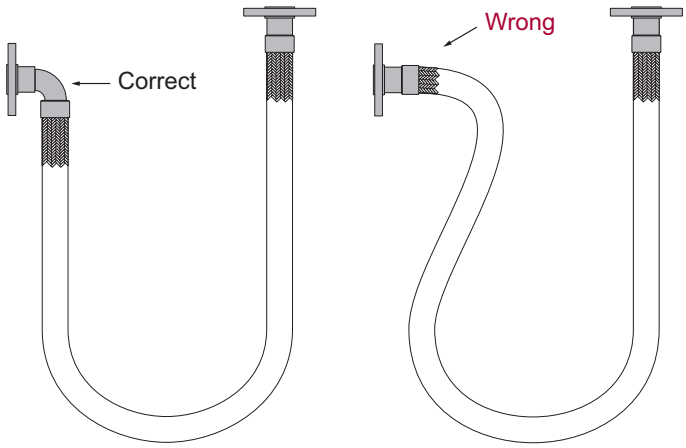
Avoid over bending.

The repetitive bending of a hose to a radius smaller than the radius listed in the specification tables for corrugated hose will result in premature hose failure. Always provide sufficient length to prevent over bending and to eliminate strain on the hose.



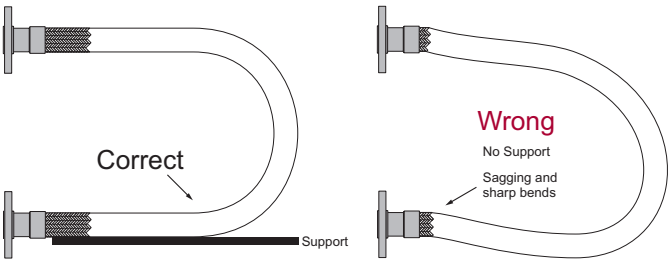
Avoid sharp bends.

Utilize sound geometric configurations that avoid sharp bends, especially near the end fittings of the assembly.



Provide support.

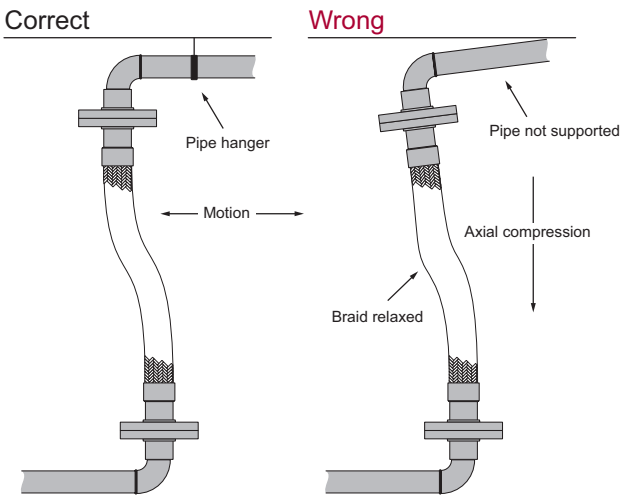
When installing the assembly in a horizontal loop, provide support for the arms to prevent the hose from sagging.



Do not extend or compress axially.

A piping system which utilizes GSM hose to absorb movement must be properly anchored and/or guided.

Always support the piping to prevent excessive weight from compressing the hose and relaxing the braid tension.



Technical Information for GAM Hose

Pressure Loss and Flow Velocity Information

Pressure Loss

For the same flow characteristics, the pressure loss is higher in metal hoses than rigid piping, due to the profile of the corrugations. As a rough estimation, expect the pressure loss in corrugated hoses to be 150 percent higher than in new, smooth steel pipes.

Flow Velocity Consideration

The flow velocity in corrugated metal hose should never exceed 150 ft./sec. for gas or 75 ft./sec. for liquids. When a hose is installed in a bent condition, the flow values should be reduced proportionally to the degree of the bend. Where the flow velocity exceeds these rates, an interlocked metal hose liner or larger hose ID is recommended.

Classification of Motion

Random Motion

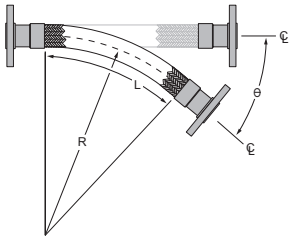
Such motion is non-predictable and occurs from the manual handling of a hose assembly. Care must be taken to prevent over-bending of the hose and to avoid external abrasion of the wire braid. An armor covering of GSM Ball-Joint Armor provides protection against these abuses.

Axial Motion

This type of motion occurs when there is extension or compression of the hose along its longitudinal axis. This class of motion is restricted to unbraided corrugated hose only and is accommodated by traveling loops.

Angular Motion

This type of motion occurs when one end of a hose assembly is deflected in a simple bend with the ends not remaining parallel.
To find the live hose length:
L = RØ/180 + 2(s)
L = Live Hose Length (inches)
π = 3.1416
R = Minimum Centerline Bend Radius — Dynamic (in.)
Ø = Angular Deflection (degrees)
S = Outside Diameter of Hose



Offset Motion

Offset motion occurs when one end of the hose assembly is deflected in a plane perpendicular to the longitudinal axis with the ends remaining parallel. This movement can be due to a one-time (static) bend or movement which repeatedly occurs slowly over time (such as thermal expansion).

- The appropriate formula to use to calculate Live Hose Length depends on the condition of the moving end.
- When the offset motion occurs to both sides of the hose centerline, use total travel in the formula; i.e., 2 x "T".
- The offset distance "T" for constant flexing should never exceed 25 percent of the centerline bend radius "R". If the difference between "L" and "Lp" is significant, exercise care at installation to avoid stress on hose and braid at the maximum offset distance.

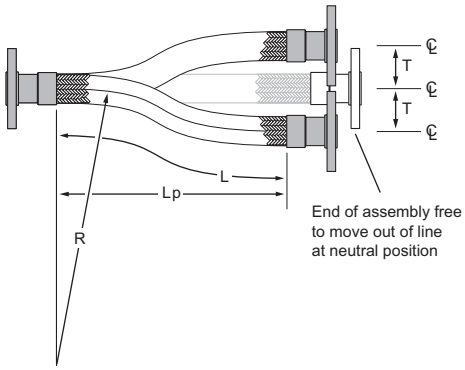
  L = Live Hose Length (inches)
  Lp= Projected Live Hose Length (inches)
  R = Minimum Centerline Bend Radius — Dynamic (in.)
  T = Offset Motion to One Side of Centerline (inches)

Minimum Bend Radius Occurs at Offset Position

Moving end is free to move "out of line" at neutral position.
To find the live hose length:

$$L = \sqrt{6(RT) + T^2}$$

$$Lp = \sqrt{L^2 - T^2}$$

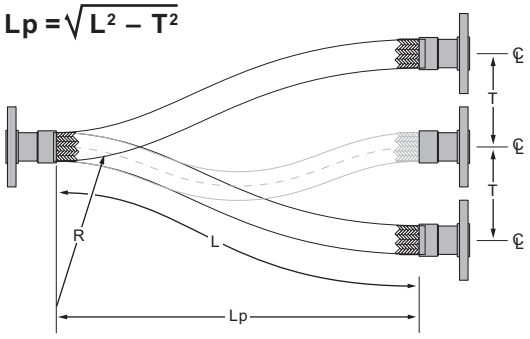


Minimum Bend Radius Occurs at Crowded Position

Moving end of the hose is restricted to move only up and down as hose crosses neutral position.
To find the live hose length:

$$L = \sqrt{20(RT)}$$

$$Lp = \sqrt{L^2 - T^2}$$



Technical Information for GAM Hose

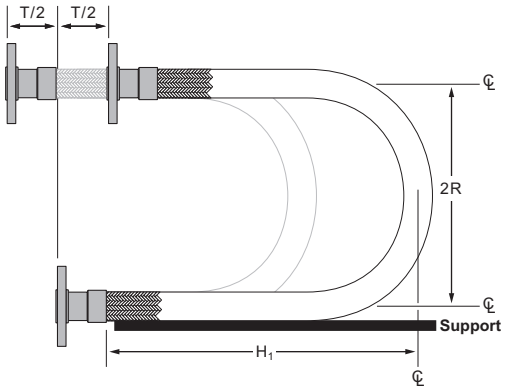
Classification of Motion (continued)

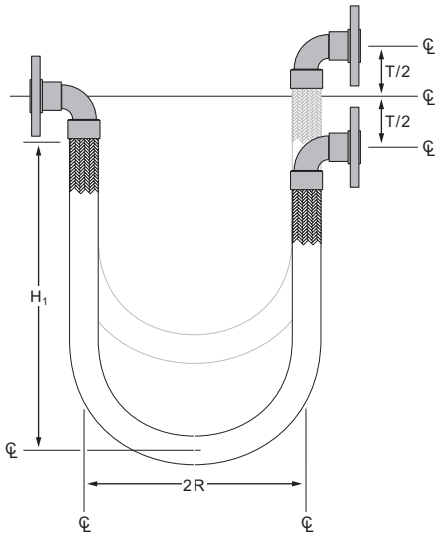
Traveling Loops

In a piping system where axial movement must be accommodated or where the magnitude of the motion is in excess of the limits of an offset movement, the traveling loop configuration offers an ideal solution. In traveling loops, the centerline of a hose assembly is bent in a circular arc. Traveling loops accommodate movement in one of two ways. A constant radius traveling loop accommodates motion by varying the length of the arms of the assembly while the radius remains constant. A variable radius traveling loop accommodates motion by varying the bend radius of the hose assembly. Both types of traveling loops can be installed to absorb either horizontal or vertical movement. The constant radius traveling loop provides for greater movement while the variable radius traveling loop requires less installation space.

L = Live Hose Length (inches)
R = Minimum Centerline Bend Radius for Constant Flexing (inches)
T = Total Travel (inches)
H = Hang Length of the Loop (inches)

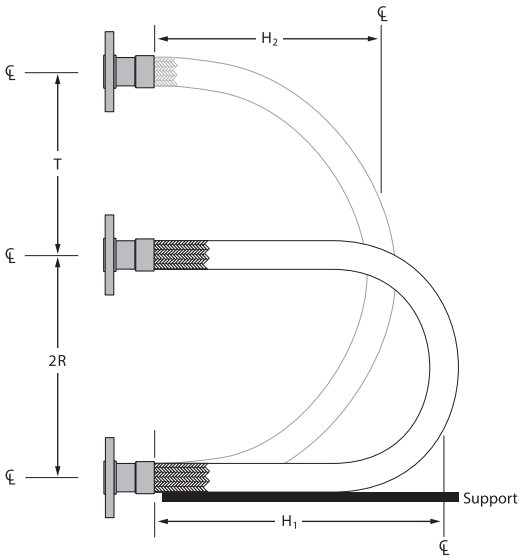
Constant Radius Traveling Loop – Class A

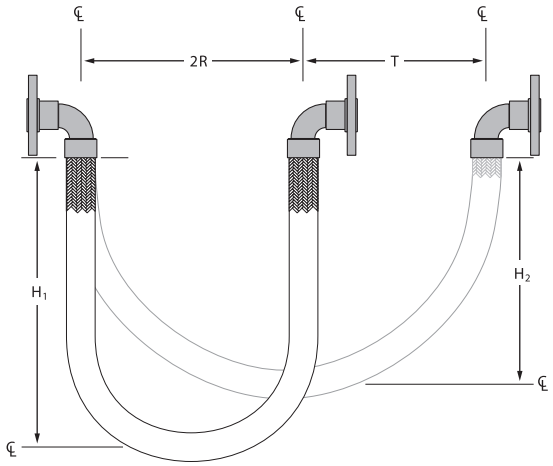




$L = 4R + T/2$
$H_1 = 1.43R + T/2$

Variable Radius Traveling Loop – Class B

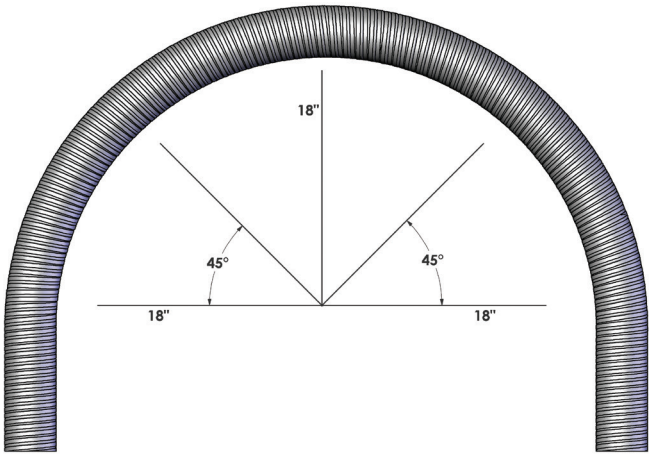




$L = 4R + 1.57T$
$H_1 = 1.43R + 0.79T$
$H_2 = 1.43R + 0.5T$

Technical Information for GAM Hose

Flexibility and Bend Radius



Bending a hose to a smaller bend radius than the hose is rated to may damage the hose and result in premature failure. The bend radius for the given application must be equal to or greater than the rated minimum bend radius.

Note: see page 36 for definition

The minimum bend radius is defined as the radius at which the hose can be bent in service without damaging or significantly shortening the life of the assembly.

Using the minimum bend radius and the angle at which the hose is bent, you can calculate the minimum length of hose needed to make the bend. Note: This is the live length of the hose required not the length of the entire hose assembly.

Formula:

$$\frac{A}{360°} \quad x2\pi B = L$$

For example, a 3" hose bent at 180° needs a minimum live length of 53.88" or 1,356mm given its minimum bend radius of 17"

$$(\frac{180}{360°})(2)(3.14)(17) = 53.38"$$

$$(\frac{180}{360°})(2)(3.14)(431.8) = 1{,}356mm$$

Reprinted from The Rubber Manufacturers Association, Inc. Hose Handbook, © IP-2, Fifth Addition, 1987

Temperature Adjustment Factors

In general, the strength and therefore the pressure rating of metal hose decreases as the temperature increases. Thus, as the operating temperature of a metal hose assembly increases, the maximum allowable working pressure of the assembly decreases. The pressure ratings shown in the specifications charts for corrugated and interlocked hose are valid at **70°F (21°C)**. Elevated service temperatures will decrease these pressure ratings by the factors shown in the following chart for the alloy used in the braid wire. What also must be considered is the maximum working temperature of the end fittings, of the hose and their method of attachment.

For example to calculate the maximum working pressure for:

- 3/4" I.D., 321 stainless steel corrugated hose
- with single-braided, 304L braid
- at **800°F (427°C)**

From the corrugated metal hose specification table, the maximum working pressure at **70°F (21°C)** is **792 PSIG**. Multiply
792 PSIG by 0.73. The maximum working pressure at **800°F (427°C)** is **578 PSIG**.

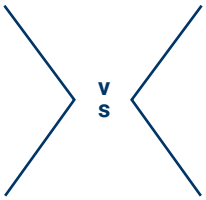
Temperature Adjustment Factor Based on Braid Alloy

Temperature (°F)	304/304L Stainless Steel	316L Stainless Steel	321 Stainless Steel
70	1.00	1.00	1.00
150	.95	.93	.97
200	.91	.89	.94
250	.88	.86	.92
300	.85	.83	.88
350	.81	.81	.86
400	.78	.78	.83
450	.77	.78	.81
500	.77	.77	.78
600	.76	.76	.77
700	.74	.76	.76
800	.73	.75	.68
900	.68	.74	.62
1000	.60	.73	.60
1100	.58	.67	.58
1200	.53	.61	.53
1300	.44	.55	.46
1400	.35	.48	.42
1500	.26	.39	.37

Technical Information for PTFE Hose

Nominal Bore PTFE Hose Explained

Nominal Bore Hose follows the SAE 100R14 tubing standard which is typically labeled in 'dash' sizes (1/16 of an inch). For example, 1/2" tubing is 1/2" O.D. with a slightly smaller I.D. Thus, dash 8 (-08) nominal hose is 8/16" or 1/2" O.D., yielding an average I.D. of 13/32". All manufacturers of Nominal Fluoropolymer hose follow the same nominal I.D./O.D. standard.



True Bore Hose on the other hand follows the same I.D. as schedule 40 pipe; therefore, a typical 2" I.D. true bore hose is the exact same bore size as its mating 2" pipe.

PTFE Hose Assembly Instructions

1. Determine the cut-off length using the Overall Length Calculation (OAL) (see page 32).
2. Using the calculated cut-off length, mark the hose to the desired length. Depending on the cutting option, tape can be used to reduce the flowering effect of the braid.
3. Cut the hose to the desired OAL using one of the preferred hose cutting options (see page 32).
4. Making sure the interlocking step of the collar is facing the cut end of the hose, slide the collars over the braid on each end of the hose or use collar insertion tool (see page 32).
5. Prior to inserting the fittings into the hose, be sure the tube is not folded over or compromised. Using a tool, such as a nail punch, expand the I.D. of the hose so that the fitting may slide in the hose without folding or bunching the tube. Make sure you do not puncture or damage the hose while opening up the tube I.D.
6. Push the fitting into the hose so that the step of the collar is lined up with the interlocking ring of the stem. Be sure that the fitting is securely pushed all the way in to the cut end of the hose.
7. Using the proper PTFE hose crimp specs on page 33, determine the correct set of dies for proper reduction. While crimping, make sure the step of the collar is securely locked into the fitting. For best results, use a 2 or 3 step crimp while rotating the hose assembly hitting the high spots made by the previous pass.
8. Use a caliper to check crimp dimensions and make any macro adjustments in the finished O.D.
9. All assemblies made by Dixon Specialty Products are pressurized air under water tested to **125 PSI** for 15 seconds.

Technical Information for PTFE Hose

Dixon PTFE Hose Cutting Options

There are several methods to effectively cut stainless steel braided PTFE hose:

Hose Cutting Tool Options:

1. **Metal Cutting Wheel** – non-scalloped (used to cut hydraulic hose). Since Dixon PTFE braid doesn't flare much on the female side of the braid there is no need to tape the braid.

2. **Beverly Shear** – flattens the hose but does a nice job cutting the hose and braid; Dixon offers a simple ferrule tool to assist in putting on the collars (this is the preferred method of cutting stainless braided hoses).

3. **Thin Abrasive Blade** – works well except creates a lot of dirt and dust and many times you need to tape the braid.

Dixon PTFE Insertion Tools:

Insertion tools are available from Dixon Specialty Products by calling 888-226-4673.

Overall Length (OAL) Calculation:

1. Select the fitting you plan to insert in the hose.
2. Measure the distance from the ferrule groove to the connection end of the fitting for each fitting.
3. Add the two end distances together and subtract this number from the assembly overall length.
4. The result is the cut length of the hose.

Assembly Installation

Do...

- Follow any printed instructions included with the flexible connector
- Follow industry recommended practices and use care in handling and installing flexible connector
- Install flexible connectors so the bend is as close to the center of the connector as possible
- Observe the minimum bend radius as specified by the connector manufacturer
- Trial-fit threaded connections by hand, unmake and then make permanent
- Use a flexible connector of proper length to suit the installation
- Only wrench on the fitting hex flats as provided
- Design the installation to allow for ground movement after installation, such as settling or frost heave
- Install the proper length connector to allow a 2" straight run of hose at each end fitting
- Use pipe wrenches on both mating hexes to avoid twisting the hose
- Keep hose free from all objects and debris
- Handle and store connectors carefully prior to installation
- Check for leaks before covering the installation
- Install in such a manner that the connector can be removed
- Make sure the pressure rating of connector is not exceeded

Don't...

- Apply a wrench to a hose, collar, or assembly
- Twist hose assemblies during installation or when aligning the bolt holes in a flange or when making up pipe threads
- "Pre–flex" a flexible connector to limber it up. Over bending could cause damage and result in leakage
- Over bend a flexible connector, a 45° - 90° bend should be sufficient to install any flexible connector
- Install a flexible connector with the bend next to the end fittings, this could cause damage and result in leakage
- Lay the flexible connector on rocks or objects which could puncture the hose and cause leakage
- Attempt to stretch or compress a flexible connector to fit an installation
- Restrict flexibility by allowing connector to come into contact with other components or equipment during installation

Nominal I.D. SAE100R14 Smooth Bore PTFE Hose Crimp Specifications

Dixon Hose Part#		Crimp Spec. Range (in)
Non-conductive White	Conductive Black	
WSB-03	BSB-03	.300-.305
WSB-04	BSB-04	0.335-0.345
WSB-05	BSB-05	0.395-0.405
WSB-06	BSB-06	0.471-0.480
WSB-6T	BSB-6T	0.652
WSB-08	BSB-08	0.575-0.585
WSB-10	BSB-10	0.685-0.695
WSB-12	BSB-12	0.800-0.810
WSB-12T	BSB-12T	1.07
WSB-16	BSB-16	1.070-1.080
WSB-16T	BSB-16T	1.35
WSB-20Z	BSB-20Z	1.42

• T – denotes heavy wall
• Z – denotes double braid
• Specifications are valid only when using Dixon True Bore Fittings

Stainless Steel Open Pitch Convoluted Hose Crimp Specifications

Dixon Hose Part#		Crimp Spec. Range (in)
Non-conductive White	Conductive Black	
WOC-T04	BOC-T04	0.55
WOC-T06	BOC-T06	0.649
WOC-T08	BOC-T08	0.799
WOC-T12	BOC-T12	1.055
WOC-T16	BOC-T16	1.362
WOC-T20	BOC-T20	1.654
WOC-T24	BOC-T24	1.909
WOC-T32	BOC-T32	2.402

• Specifications are valid only when using Dixon True Bore Fittings

True Bore 40 Wall Smooth Bore Hose Crimp Specifications

Dixon Hose Part#		Crimp Spec. Range (in)
Non-conductive White	Conductive Black	
WTB-T04	---	0.525
WTB-T06	BTB-T06	0.652
WTB-T08	BTB-T08	0.75
WTB-T12	BTB-T12	1.07
WTB-T16	BTB-T16	1.35
WTB-T16Z	---	1.35
---	BTB-T20Z	call for spec.
WTB-T24Z	---	call for spec.

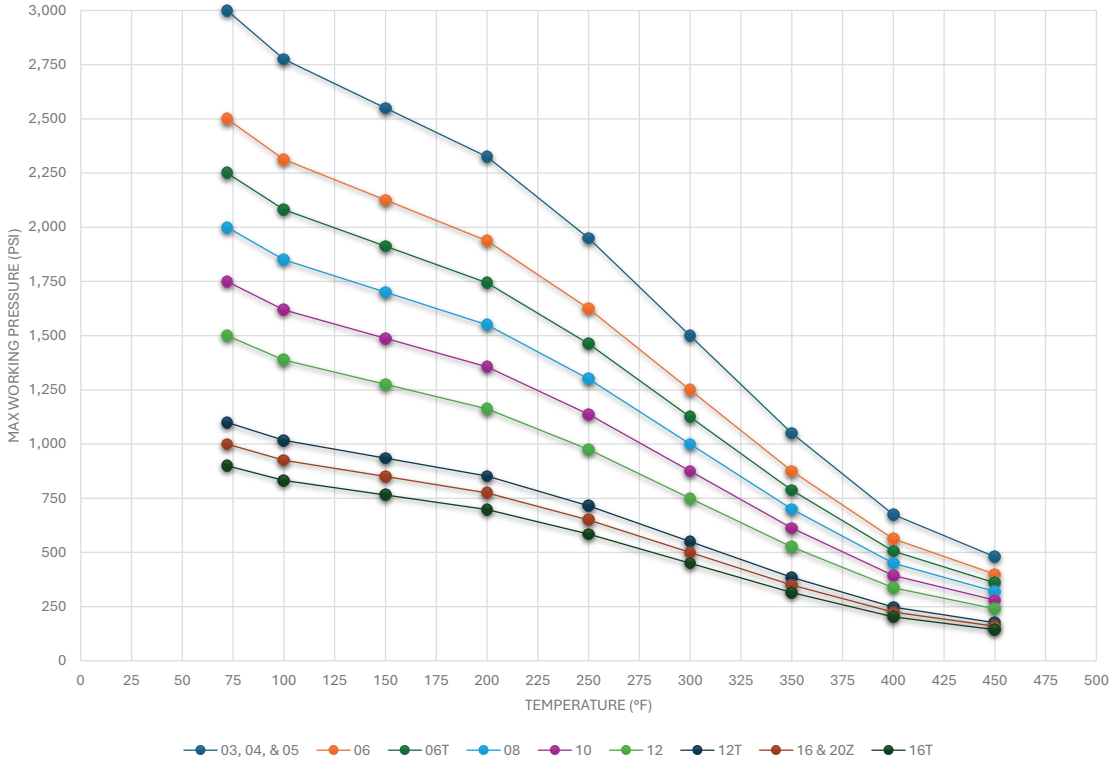
• Z – denotes double braid
• Specifications are valid only when using Dixon True Bore Fittings

NOTE: Crimp specifications are based on hose vendor recommendations.

Temperature Derating for PTFE Hose

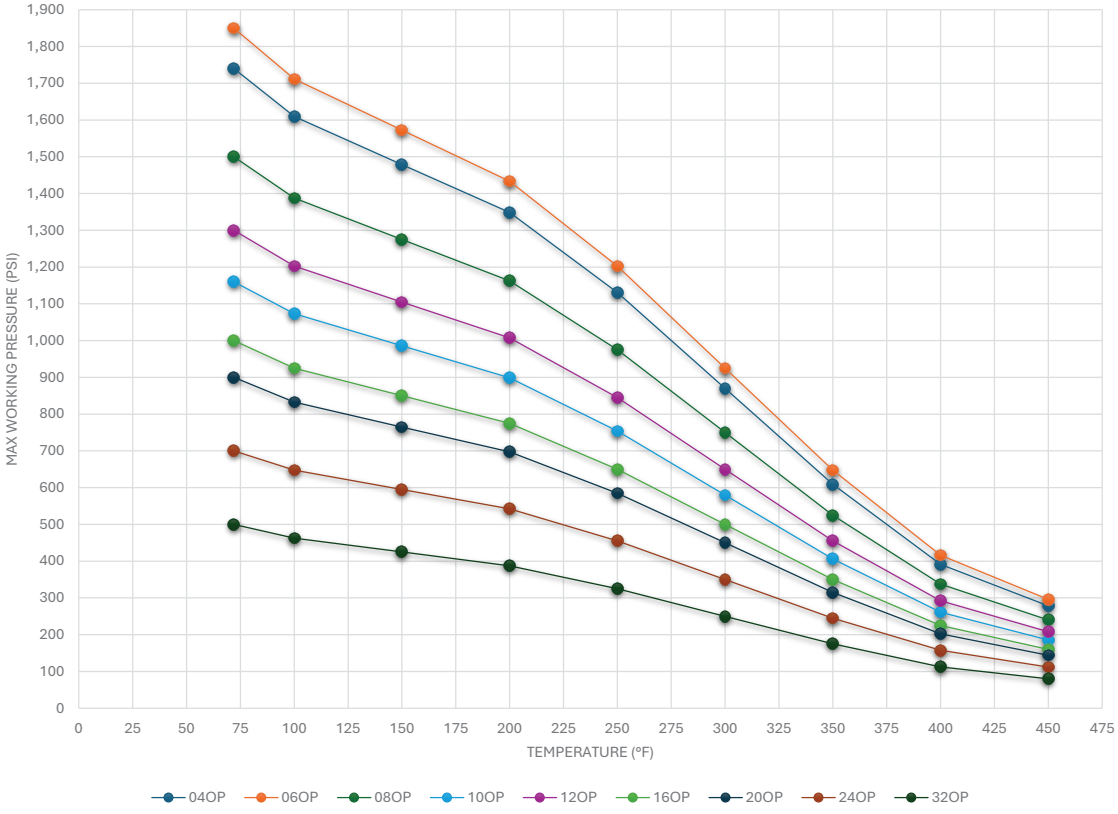
WSB and BSB Hose

Nominal ID SAE100R14 PTFE



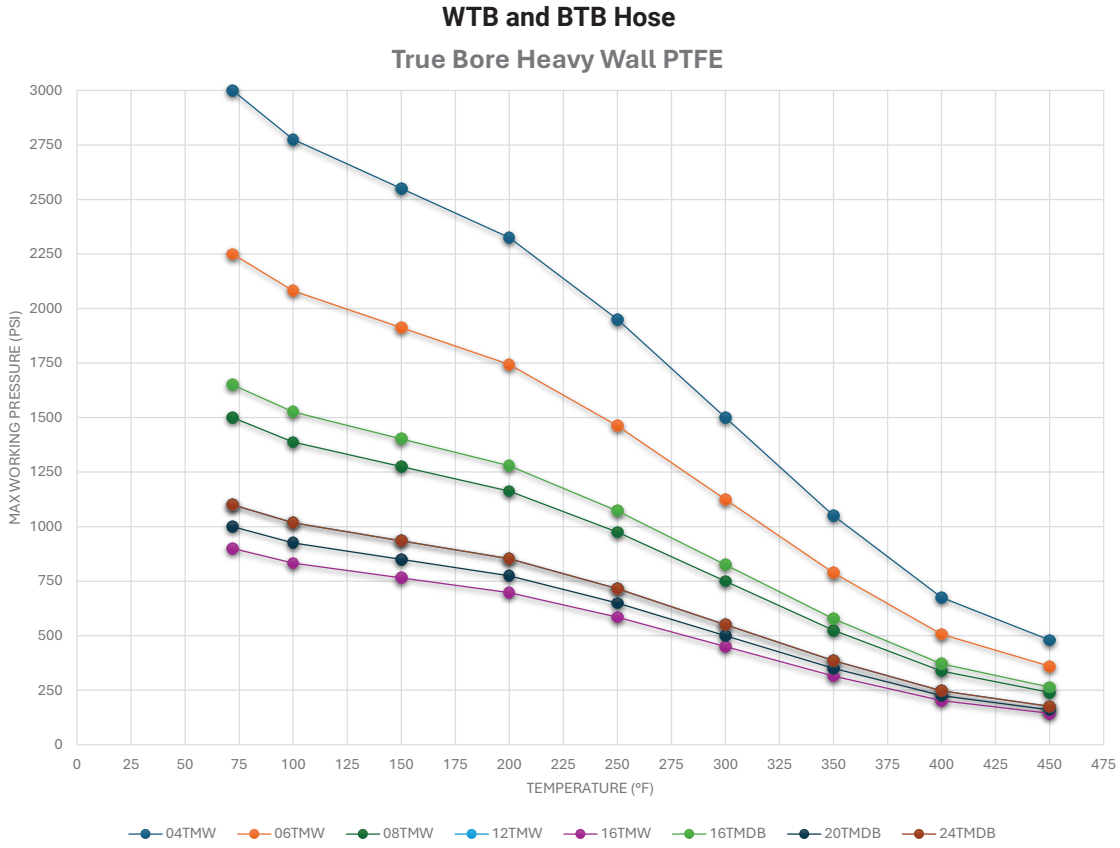
WOC and BOC Hose

Convoluted PTFE



Temperature Derating for PTFE Hose

(continued)



Glossary

Abrasion:
External damage to a hose assembly caused by it being rubbed on a foreign object.

Ambient or Atmospheric Conditions:
The surrounding conditions, such as temperature, pressure and corrosion, to which a hose assembly is exposed.

Amplitude of Vibration and/or Lateral Movement:
The distance a hose assembly deflects laterally to one side from its normal position, when this deflection occurs on both sides of the normal hose centerline.

Anchor:
A restraint applied to a pipeline to control its motion caused by thermal growth.

Annular:
Refers to the convolutions on a hose that are a series of complete circles or rings located at right angle to the longitudinal axis of the hose (sometimes referred to as bellows).

Application:
The service conditions that determine how a hose assembly will be used.

Attachment:
The method of fixing end fittings to flexible hose – welding, brazing, soldering, swaging, or mechanical.

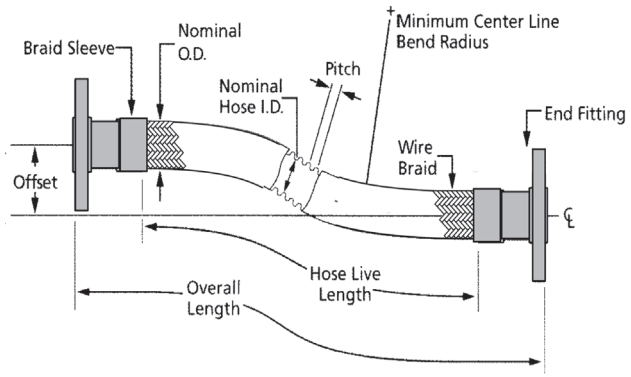
Axial Movement:
Compression or elongation of the hose along its longitudinal axis.

Basket Weave:
A braid pattern in which the strands of wire alternately cross over and under two braid bands (two over – two under).

Bend Radius:
The radius of a bend measured to the hose centerline.

Braid:
A flexible wire sheath surrounding a metal hose that prevents the hose from elongation due to internal pressure. Braid is composed of a number of wires wrapped helically around the hose while at the same time going under and over each other in a basket weave fashion.

Braid Angle:
The acute angle formed by the braid strands and the axis of the hose.



Braid Construction:
Term applies to description of braid,
i.e., 36 x 8 x .014, 304L SS.

36	=	number of carriers or bands in a braid
8	=	number of wires on each carrier
.014	=	wire diameter in inches
304L	=	material, Type 304L stainless steel

Braid Collar, Braid Band or Ferrule:
A ring made from tube or metal strip placed over the ends of a braided hose to contain the braid wires for attachment of fittings.

Braid Wear:
Motion between the braid and corrugated hose which normally causes wear on the O.D. of hose.

Braided Braid:
In this braid, the strands of wire on each carrier of the braiding machine are braided together, and then braided in normal fashion, hence the term braided braid.

Brazing:
A process of joining metals using a non-ferrous filler metal, which melts above **800°F (427°C)**, yet less than the melting of the "parent metals" to be joined.

Butt Weld:
A process in which the edges or ends of metal sections are butted together and joined by welding.

Controlled Flexing:
Controlled flexing occurs when the hose is being flexed regularly, as in connections to moving components. Examples: Platen presses, thermal growth in pipe work.

Convolution:
The annular or helical flexing member in corrugated or strip wound hose.

Corrosion:
The chemical or electrochemical attack of a media upon a hose assembly.

Glossary
(continued)

Cycle-Motion:
The movement from normal to extreme position and return.

Dye Penetrant Inspection or Test:
A method for detecting surface irregularities, such as cracks, voids, porosity, etc. The surface to be checked is coated with a red dye that will penetrate existing defects. Dye is removed from surface and a white developer is applied. If there is a defect in the surface being checked, the red dye remaining in it causes the white developer to be stained, thereby locating the defective area.

Dog-Leg Assembly:
Two hose assemblies joined by a common elbow.

Duplex Assembly:
An assembly consisting of two hose assemblies – one inside the other – and connected at the ends.

Erosion:
The wearing away of the inside convolutions of a hose caused by the flow of the media conveyed, such as wet steam, abrasive particles, etc.

Exposed Length:
The amount of active (exposed) hose in an assembly. Does not include the length of fittings and ferrules.

Fatigue:
Failure of the metal structure associated with, or due to, the flexing of hose or bellows.

Fitting:
A loose term applied to the nipple, flange, union, etc., attached to the end of a hose.

Flow Rate:
Pertains to a volume of media being conveyed in a given time period, e.g., cubic feet per hour, pounds per second, gallons per minute, etc.

Frequency:
The rate of vibration or flexure of a hose in a given time period, e.g., cycles per second (CPS), cycles per minute (CPM), cycles per day (CPD), etc.

Galvanic Corrosion:
Corrosion that occurs on the less noble of two dissimilar metals in direct contact with each other in an electrolyte, e.g., water, sodium chloride in solution, sulfuric acid, etc.

GSM/GAM Hose:
GSM: Goodall Semi-Metallic. A specialized armored hose manufactured by Dixon Specialty Products.
GAM: a braided metal hose that is utilized in high-pressure and high-temperature applications, and used in conjunction with or provided only with GSM armor.

Helical:
Used to describe a type of corrugated hose having one continuous convolution resembling a screw thread.

Helical Wire Armor:
To provide additional protection against abrasion under rough operating conditions, GSM Ball Joint Armor can be supplied.

Installation:
Referring to the installed geometry of a hose assembly.

Interlocked Hose:
Formed from profiled strip and wound into flexible metal tubing with no subsequent welding, brazing, or soldering. May be made pressure-tight by winding in strands of packing.

Intermittent Bend Radius:
The designation for a radius used for non-continuous operation. Usually an elastic radius.

Inside Diameter (I.D.):
This refers to the internal diameter of a hose.

Liner:
Flexible sleeve used to line the I.D. of hose when the velocity of gaseous media is in excess of 180 ft. per second.

Medium (Singular)/Media (Plural):
The substance(s) being conveyed through a piping system.

Metal Inert Gas Welding:
A method of welding in which the filler metal wire supplies the electric current to maintain the arc, which is shielded from the access of air by inert gas, usually argon.

Minimum Bend Radius:
The smallest radius to which a hose can be bent without suffering permanent deformation of its convolutions.

Misalignment:
A condition in which two points, intended to be connected, will not mate due to their being laterally out of line with each other.

Operating Conditions:
The pressure, temperature, motion, media, and environment that a hose assembly is subjected to.

Outside Diameter (O.D.):
This refers to the external diameter of a hose.

Penetration (Weld):
The percentage of wall thickness of the two parts to be joined that is fused into the weld pool in making a joint. Our standard for penetration of the weld is 100 percent, in which the weld goes completely through the parent metal of the parts to be joined and is visible on the opposite side from which the weld was made.

Pitch:
The distance between the two peaks of adjacent corrugation.

Glossary
(continued)

Pressure:
Usually expressed in pounds per square inch (**PSI**) and, depending on service conditions, may be applied internally or externally to a hose.

a. **Absolute Pressure –** A total pressure measurement system in which atmospheric pressure (at sea level) is added to the gauge pressure, and is expressed as **PSIG**.
b. **Atmospheric Pressure –** The pressure of the atmosphere at sea level which is **14.7 PSI**, or 29.92 inches of mercury.
c. **Burst Pressure (Actual And Rated)**
    1. **Actual –** Failure of the hose determined by the laboratory test in which the braid fails in tensile, or the hose ruptures, or both, due to the internal pressure applied. This test is usually conducted at room temperature with the assembly in a straight line, but for special applications, can be conducted at elevated temperatures and various configurations.
    2. **Rated –** A burst value which may be theoretical, or a percentage of the actual burst pressure developed by laboratory test. It is expected that, infrequently, due to manufacturing limitations, an assembly may burst at this pressure, but would most often burst at a pressure greater than this.
d. **Deformation Pressure (Collapse) –** The pressure at which the corrugations of a hose are permanently deformed due to fluid pressure applied internally, or, in special applications, externally.
e. **Feet of Water or Head Pressure –** Often used to express system pressure in terms of water column height. A column of water 1 ft. high exerts a **.434 PSI** pressure at its base.
f. **Proof Pressure or Test Pressure –** The maximum internal pressure which a hose can be subjected to without either deforming the corrugations, or exceeding 50 percent of the burst pressure. When a hose assembly is tested above 50 percent of its burst pressure, there often is a permanent change in the overall length of the assembly, which may be undesirable for certain applications.
g. **PSIG –** Pounds per square inch gauge.
h. **Pulsating Pressure –** A rapid change in pressure above and below the normal base pressure, usually associated with reciprocating type pumps. This pulsating pressure can cause excessive wear between the braid and the tops of the hose corrugations.
i. **Shock Pressure –** A sudden increase of pressure in hydraulic or pneumatic system, which produces a shock wave. This shock can cause severe permanent deformation of the corrugations in a hose as well as rapid failure of the assembly due to metal fatigue.
j. **Static Pressure –** A non-changing constant pressure.
k. **Working Pressure –** The pressure, usually internal, but sometimes external, imposed on a hose during operating conditions.

Scale:
Generally refers to the oxide in a hose assembly brought about by surface conditions or welding.

Seamless:
Used in reference to a corrugated metal hose made from a base tube that does not have a longitudinal seam as in the case of a butt welded or lap welded tube.

Strand(s):
Individual groups of wires in a braid. Each group is constructed of wire strands from the braiding machine.

Stress Corrosion:
A form of corrosion in stainless steel normally associated with chlorides.

Traveling Loop:
A general classification of bending, wherein the hose is installed to a U-shaped configuration.

1. **Class A Loop –** An application wherein the radius remains constant and one end of the hose moves parallel to the other end of the hose.
2. **Class B Loop –** A condition wherein a hose is 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.

Torque (Torsion):
A force that produces, or tends to produce, rotation of or torsion through one end of a hose assembly while the other end is fixed.

Tungsten-Electrode Inert Gas Welding:
A method of welding in which the arc is maintained by a tungsten electrode and shielded from the access of air by an inert gas.

Velocity:
The speed at which the medium flows through the hose, usually specified in feet per second.

Velocity Resonance:
The sympathetic vibration of convolutions due to buffeting of high velocity gas or air flow.

Vibration:
Low amplitude motion occurring at high frequency.

Welding:
The process of localized join of two or more metallic components by means of heating their surfaces to a state of fusion, or by fusion with the use of additional filler materials.

Limited Warranty

DIXON VALVE AND COUPLING COMPANY, LLC (herein called "Dixon") warrants the products described herein and manufactured by Dixon to be free from defects in material and workmanship for a period of one (1) year from date of shipment by Dixon under normal use and service. Its sole obligation under this warranty being limited to repairing or replacing, as hereinafter provided, at its option any product found to Dixon's satisfaction to be defective upon examination by it, provided that such product shall be returned for inspection to Dixon's factory within three (3) months after discovery of the defect. The repair or replacement of defective products will be made without charge for parts or labor. This warranty shall not apply to: (a) parts or products not manufactured by Dixon, the warranty of such items being limited to the actual warranty extended to Dixon by its supplier; (b) any product that has been subject to abuse, negligence, accident, or misapplication; (c) any product altered or repaired by others than Dixon; and (d) to normal maintenance services and the replacement of service items (such as washers, gaskets, and lubricants) made in connection with such services. To the extent permitted by law, this limited warranty shall extend only to the buyer and any other person reasonably expected to use or consume the goods who is injured in person by any breach of the warranty. No action may be brought against Dixon for an alleged breach of warranty unless such action is instituted within one (1) year from the date the cause of action accrues. This limited warranty shall be construed and enforced to the fullest extent allowable by applicable law.

Other than the obligation of Dixon set forth herein, Dixon disclaims all warranties, express or implied, including but not limited to any implied warranties of merchantability or fitness for a particular purpose, and any other obligation or liability. The foregoing constitutes Dixon's sole obligation with respect to damages, whether direct, incidental, or consequential, resulting from the use or performance of the product.

Some products and sizes may be discontinued when stock is depleted or may require a minimum quantity for ordering.

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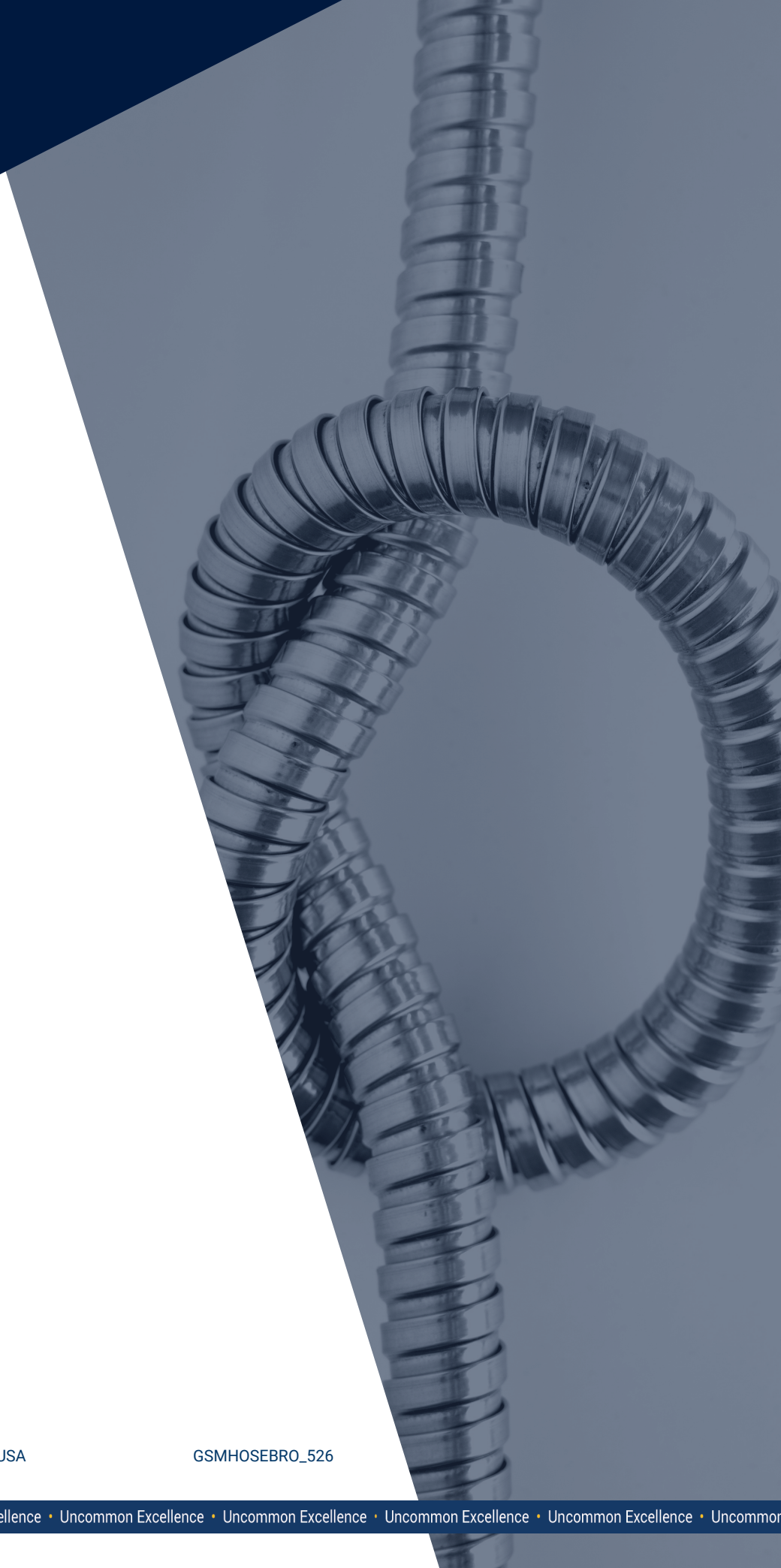

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