

SANITARY HOSE & FITTINGS

Flex-Rite™

R-Series Rubber

S-Series Silicone

P-Series PVC

T-Series Teflon

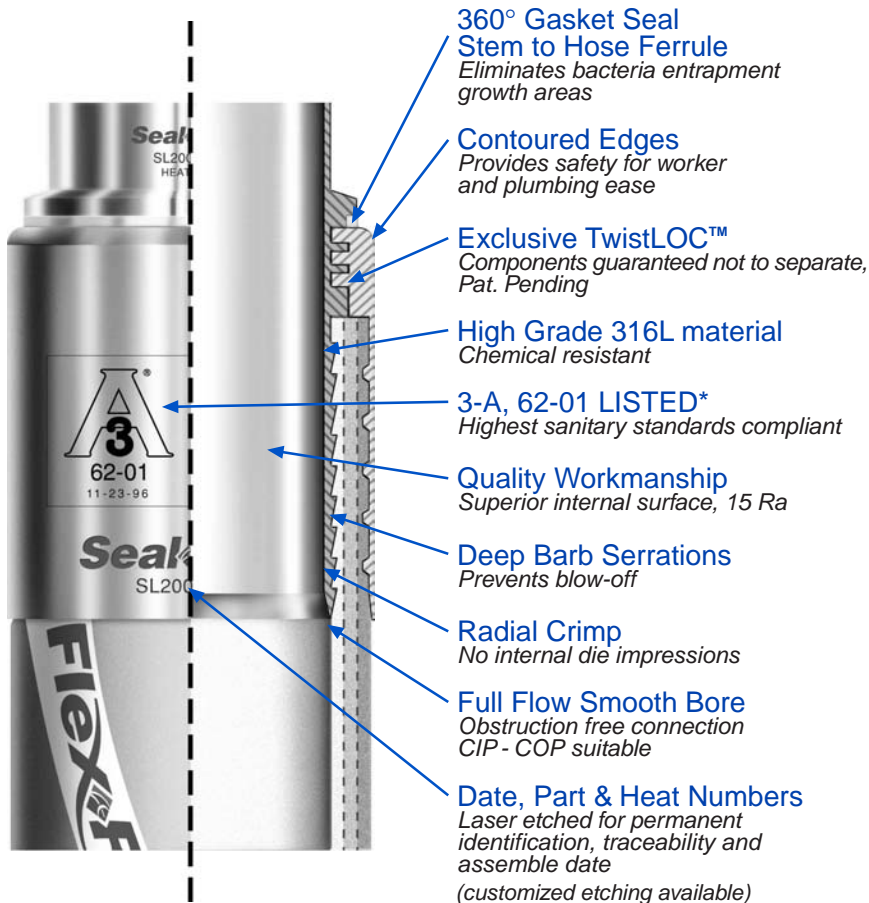
Seal-Rite™

ISO: 9001:2000
REGISTERED





Ace Manufacturing Company formed in 1969 and has evolved over the years into a precision machining facility. We are dedicated to providing High Quality Standards to our customer base and look forward to developing new business partnerships. To this end, in 2004 we started the Flex-Rite™ and Seal-Rite™ lines of hose products and hose fittings. We work hard to know your business, assist you in problem solving, provide you with quality products and over 100 years of experience.



Seal-Rite™ radial crimp couplers are the purest unitized assemblies available today. Our external crimp design provides a 360° fixed seal at the coupler stem to hose junction point that eliminates the possibility of product wicking between the hose and coupler. Unlike internal expansion which can deform metal and yield die impressions, radial crimp technology will not interfere with the internal surface of the coupling stem. A full flow smooth bore transition is created after fabrication that excludes ledges or crevices that can collect bacteria.

TwistLOC™ components become a single unit that resist separation under severe applications. Internal surface finishes exceed 15 Ra. Each coupling stem is manufactured from 316L grade stainless steel and stamped with a material traceability number which is our commitment to quality. Seal-Rite radial crimped couplers are available for attachment on Flex-Rite hoses. A wide range of end styles, sizes 1/2" through 6" are available.

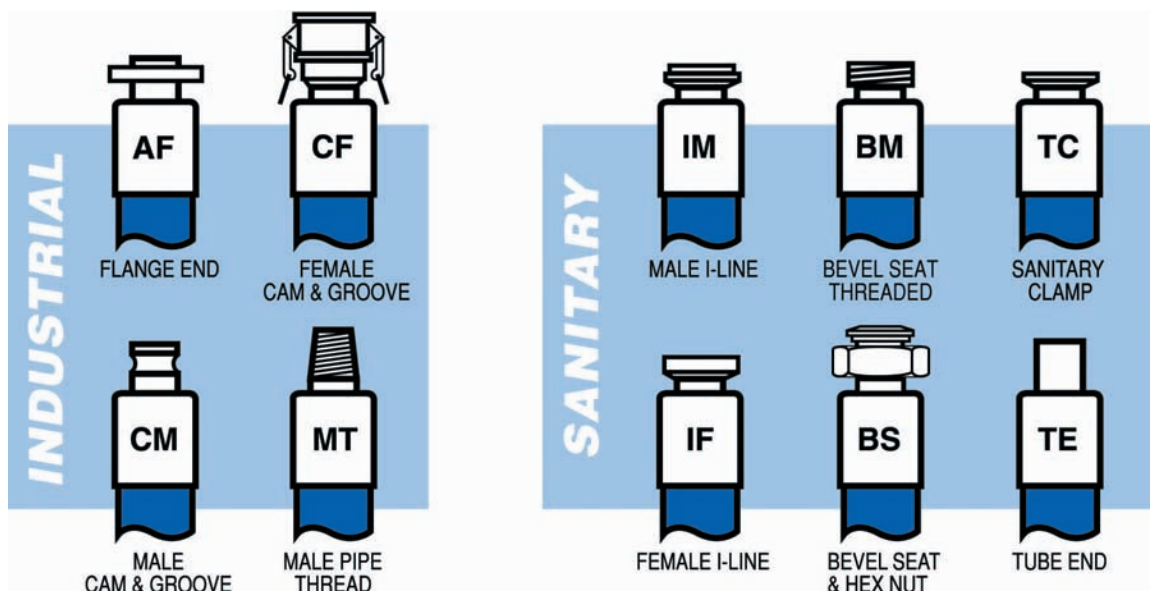
ISO 9001: 2000 REGISTERED

ACCEPTED BY: USDA Dairy

COMPLIANCE: FDA Grade "A" Pasteurized Milk Ordinance

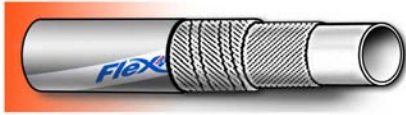
Popular End Connector Styles

For additional STYLES not shown here, see page 11



*Applies to ALL combinations of Seal-Rite "SL" fittings on "R, P & S" Series hose of 1" I.D. and over.

RSD Suction & Discharge



This versatile hose is designed to handle a wide variety of products and application requirements. (Meets 3-A 62-01 standards, USDA requirements and is FDA compliant.) Rated for full suction and discharge use up to 150 PSI. The specially compounded tube is engineered to handle high temperatures, will not impart taste or odor and is highly resistant to common CIP solutions. A dual wire helix makes the RSD extremely flexible and easy to handle.

MODEL	I.D.	O.D.	WORKING PRESSURE	MIN. BEND RADIUS	WEIGHT PER FT.	VACUUM IN HG.
RSD050*	1/2"	1.0"	150 PSI	2.0"	.32 lbs.	29"
RSD075*	3/4"	1.25"	150 PSI	2.0"	.57 lbs.	29"
RSD100	1"	1.50"	150 PSI	3.0"	.91 lbs.	29"
RSD150	1 1/2"	2.06"	150 PSI	4.0"	1.03 lbs.	29"
RSD200	2"	2.57"	150 PSI	4.5"	1.32 lbs.	29"
RSD250	2 1/2"	3.12"	150 PSI	5.5"	1.84 lbs.	29"
RSD300	3"	3.74"	150 PSI	7.0"	2.55 lbs.	29"
RSD400	4"	4.77"	150 PSI	10.0"	3.51 lbs.	29"
RSD600	6"	6.75"	150 PSI	18.0"	5.42 lbs.	29"

TUBE: White, FDA, 3-A, Chlorbutyl

REINFORCEMENT: Spiral-plyed synthetic fabric with dual wire helix

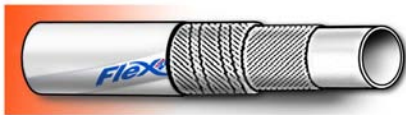
RECOMMENDED CLEANING: CIP, COP

COVER: Gray EPDM w/white stripe

TEMP. RANGE: -40 to 225° F

COLORS AVAILABLE: Consult Factory

RCT Comestible Transfer



Excellent choice for edible **oils**, and **personal care products** as well as most dairy applications. (Meets 3-A 62-01 standards, USDA requirements and is FDA compliant.) Rated for full transfer use up to 150 PSI, Nitrile hose is engineered to handle high temperatures and maintain product color, taste and aroma. A dual wire helix makes the RCT extremely flexible and easy to handle.

MODEL	I.D.	O.D.	WORKING PRESSURE	MIN. BEND RADIUS	WEIGHT PER FT.	VACUUM IN HG.
RST100	1"	1.50"	150 PSI	3.5"	.95 lbs.	29"
RCT150	1 1/2"	2.13"	150 PSI	4.0"	1.10 lbs.	29"
RCT200	2"	2.64"	150 PSI	4.5"	1.45 lbs.	29"
RCT250	2 1/2"	3.19"	150 PSI	6.0"	1.90 lbs.	29"
RCT300	3"	3.76"	150 PSI	7.0"	2.68 lbs.	29"
RCT400	4"	4.77"	150 PSI	10.5"	3.54 lbs.	29"

TUBE: White, FDA, 3-A, Nitrile/PVC Blend

REINFORCEMENT: Spiral-plyed synthetic fabric with dual wire helix

RECOMMENDED CLEANING: CIP, COP

COVER: White Nitrile w/white stripe

TEMP. RANGE: -25 to 250° F

RCR Crush Resistant



Consistent flow is maintained by this crush resistant hose whether kinked, twisted or run over it is designed to spring back to its original shape. Excellent for high traffic areas, the RCR delivers generous flow rates for wine, beer and other sanitary liquid food stuffs. Bacteria resistant construction delivers taste and odor free flow, even at high temperatures.

MODEL	I.D.	O.D.	WORKING PRESSURE	MIN. BEND RADIUS	WEIGHT PER FT.	VACUUM IN HG.
RCR150	1 1/2"	2.11"	250 PSI	4.0"	.98 lbs.	27"
RCR200	2"	2.68"	250 PSI	7.0"	1.38 lbs.	27"
RCR250	2 1/2"	3.21"	250 PSI	10.0"	1.78 lbs.	27"
RCR300	3"	3.85"	250 PSI	12.0"	2.59 lbs.	27"

TUBE: White, FDA, 3-A, Chlorbutyl

REINFORCEMENT: Spiral-plyed synthetic fabric with monofilament helix

RECOMMENDED CLEANING: CIP, COP

COVER: Orange EPDM w/white stripe

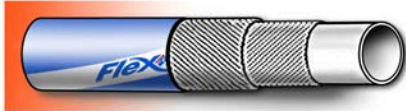
TEMP. RANGE: -30 to 225° F

FDA COMPLIANT: 21 CFR, 177.2600

*The 3-A 62-01 standard applies only to assemblies of 1" diameter and larger.

WARNING: Working pressure ratings for all Flex-Rite™ brand hoses are based on 70° F (ambient temperature). Working pressure and vacuum ratings will decrease as temperatures increase. For "R" series applications that exceed 200° F contact manufacturer for suggestions.

RDC Discharge



This ultra-light discharge hose provides extra flexibility and smooth handling. Designed to be chemically resistant to mild caustic solutions. This discharge hose is well suited for overhead CIP wash units and capable of handling pressures up to 250 PSI.

MODEL	I.D.	O.D.	WORKING PRESSURE	MIN. BEND RADIUS	WEIGHT PER FT.	VACUUM IN HG.
RDC150	1½"	2.07"	250 PSI	-	.88 lbs.	-
RDC200	2"	2.59"	250 PSI	-	1.13 lbs.	-
RDC250	2½"	3.11"	250 PSI	-	1.40 lbs.	-

TUBE: White FDA, 3-A, Chlorbutyl
REINFORCEMENT: Spiral-plied synthetic fabric
RECOMMENDED CLEANING: CIP, COP

COVER: Blue EPDM w/white stripe
TEMP. RANGE: -40 to 225° F

RBT Beverage Transfer



A high pressure hose with limited suction capability is ideal for the highly demanding service of transferring liquid products in breweries, wineries and dairies. Bounce back design resists damage from kinking or flattening in high traffic areas.

MODEL	I.D.	O.D.	WORKING PRESSURE	MIN. BEND RADIUS	WEIGHT PER FT.	VACUUM IN HG.
RBT100	1"	1.69"	250 PSI	4.0"	0.81 lbs.	20"
RBT150	1½"	2.23"	250 PSI	5.5"	1.20 lbs.	20"
RBT200	2"	2.92"	250 PSI	6.5"	1.86 lbs.	20"
RBT300	3"	4.09"	250 PSI	10.0"	3.57 lbs.	20"

TUBE: White FDA, 3-A, Chlorbutyl
REINFORCEMENT: Spiral-plied synthetic fabric 4 plies 1.5" - 6 plies 2" & over
RECOMMENDED CLEANING: CIP, COP

COVER: Purple EPDM w/white stripe
TEMP. RANGE: -40 to 225° F

RES Premium Suction & Discharge



This premium quality hose withstands rough handling and high temperatures. A suction and discharge hose that will not impart taste or odor to products being transferred. Typical use includes: Milk, Dairy, Food and Beverage, Cosmetics, Chemical, and CIP Pharmaceutical Applications. Meets 3-A 1800 standards, USDA requirements and is FDA compliant.

MODEL	I.D.	O.D.	WORKING PRESSURE	MIN. BEND RADIUS	WEIGHT PER FT.	VACUUM IN HG.
RES050	½"	.93"	150 PSI	2.5"	.23 lbs.	29"
RES075	¾"	1.18"	150 PSI	3.75"	.31 lbs.	29"
RES100	1"	1.50"	150 PSI	4.0"	.39 lbs.	29"
RES150	1½"	2.09"	150 PSI	5.0"	.80 lbs.	29"
RES200	2"	2.60"	150 PSI	6.0"	1.16 lbs.	29"
RES250	2½"	3.17"	150 PSI	7.0"	1.70 lbs.	29"

TUBE: White FDA, 3-A, EPDM
REINFORCEMENT: Two polyester spirals with dual helix wire
RECOMMENDED CLEANING: CIP, SIP, Autoclave

COVER: Light Blue, EPDM Synthetic Rubber
TEMP. RANGE: -40 to 300° F

RWD Premium Washdown



Designed for cleanup duties in dairies, creameries, breweries, food, beverage, meat and poultry processing plants. This premium quality hose is capable of handling hot water up to 300° F. A chemically resistant hose, with a wrapped cover construction designed to provide excellent resistance to cuts and abrasion while providing handling stability.

MODEL	I.D.	O.D.	WORKING PRESSURE	MIN. BEND RADIUS	WEIGHT PER FT.	VACUUM IN HG.
RWD075	¾"	1.250"	350 PSI	-	.41 lbs.	-

TUBE: White FDA, 3-A, EPDM
REINFORCEMENT: Spiral-plied synthetic fabric 4 plies
RECOMMENDED CLEANING: CIP, COP, SIP

COVER: White EPDM, Wrapped Finish
TEMP. RANGE: -40 to 300° F

FDA COMPLIANT: 21 CFR, 177.2600

*The 3-A 62-01 standard applies only to assemblies of 1" diameter and larger.

WARNING: Working pressure ratings for all Flex-Rite™ brand hoses are based on 70° F (ambient temperature). Working pressure and vacuum ratings will decrease as temperatures increase. For "R" series applications that exceed 200° F contact manufacturer for suggestions.

Pharmaceutical grade, USP Class VI silicone with full traceability to produce seamless, extruded, platinum cured tubes, manufactured in clean room environment

SMW

Multi-ply Wire Reinforced



ULTRA-Flexible, stainless steel wire-reinforced silicone hose. Specially designed for bulk transfer, high-pressure, and vacuum process applications and is compliant with 3A, USDA and FDA standards. This is the only hose of its type manufactured in a Class 1000 clean room of medical-grade platinum-cured silicone throughout.

MODEL	I.D.	O.D.	WORKING PRESSURE	MIN. BEND RADIUS	VACUUM IN HG.	LENGTH
SMW050	1/2"	.82"	200 PSI	3.0"	29"	24'
SMW075	3/4"	1.11"	200 PSI	5.0"	29"	24'
SMW100	1"	1.36"	175 PSI	7.0"	29"	24'
SMW150	1 1/2"	1.86"	175 PSI	9.0"	29"	24'
SMW200	2"	2.36"	150 PSI	11.0"	29"	24'
SMW250	2 1/2"	2.86"	110 PSI	12.0"	29"	15'
SMW300	3"	3.37"	110 PSI	15.0"	29"	12'
SMW400	4"	4.36"	90 PSI	18.0"	29"	12'

TUBE: FDA/USP Class VI silicone - Platinum cured

REINFORCEMENT: Four ply, polyester braid with stainless steel wire helix

RECOMMENDED CLEANING: CIP, SIP, Autoclave

COVER: White translucent

TEMP. RANGE: -100 to 375° F

SMD

Multi-ply Discharge



A 4-ply, fabric reinforced hose designed for higher pressure applications. The inner diameter is a continuous extruded bore to ensure maximum smoothness and purity. Available in standard polyester. 3A, USDA and FDA compliant.

MODEL	I.D.	O.D.	WORKING PRESSURE	MIN. BEND RADIUS	VACUUM IN HG.	LENGTH
SMD050	1/2"	.81"	150 PSI	8.0"	27"	24'
SMD075	3/4"	1.10"	150 PSI	10.0"	24"	24'
SMD100	1"	1.35"	150 PSI	12.0"	20"	24'
SMD150	1 1/2"	1.85"	150 PSI	-	17"	24'
SMD200	2"	2.35"	125 PSI	-	14"	24'
SMD250	2 1/2"	2.85"	125 PSI	-	9"	15'
SMD300	3"	3.35"	125 PSI	-	6"	12'

TUBE: FDA/USP Class VI silicone - Platinum cured

REINFORCEMENT: Four ply, polyester braid

RECOMMENDED CLEANING: CIP, SIP, Autoclave

COVER: White translucent

TEMP. RANGE: -100 to 375° F

SSD

Single Braid Discharge



A braid reinforced silicone hose, processed with pharmaceutical grade elastomer, designed for mid-range pressures. Manufactured using standard polyester or Nomex braid. Compliant 3A, USDA and FDA standards. Resist weathering & temperature extremes.

MODEL	I.D.	O.D.	WORKING PRESSURE	MIN. BEND RADIUS	VACUUM IN HG.	LENGTH
SSD025	1/4"	.52"	155 PSI	1.5"	-	50'
SSD037	3/8"	.66"	125 PSI	2.0"	-	50'
SSD050	1/2"	.80"	120 PSI	2.0"	-	50'
SSD075	3/4"	1.10"	90 PSI	3.0"	-	50'
SSD100	1"	1.36"	70 PSI	4.0"	-	50'
SSD150	1 1/2"	1.90"	45 PSI	5.5"	-	?

TUBE: FDA/USP Class VI silicone - Platinum cured

REINFORCEMENT: Single ply, polyester or nomex braid

RECOMMENDED CLEANING: CIP, SIP, Autoclave

COVER: White translucent

TEMP. RANGE: -80 to 350° F

SDB

Double Braided Discharge



This high-pressure, silicone, double braided, non-metallic hose can be autoclaved, irradiated or sterilized by ethylene oxide gas. Designed to resist weathering and temperature extremes - 3A, USDA and FDA compliant.

MODEL	I.D.	O.D.	WORKING PRESSURE	MIN. BEND RADIUS	VACUUM IN HG.	LENGTH
SDB050	1/2"	.94"	225 PSI	2.5"	-	50'
SDB075	3/4"	1.25"	200 PSI	3.0"	-	50'
SDB100	1"	1.47"	130 PSI	3.5"	-	50'

TUBE: FDA/USP Class VI silicone - Platinum cured (clear)

REINFORCEMENT: Double ply, polyester braid

RECOMMENDED CLEANING: CIP, SIP, Autoclave

COVER: Solid white

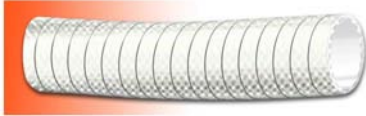
TEMP. RANGE: -100 to 350° F

FDA COMPLIANT: 21 CFR, 177.2600

WARNING: Working pressure ratings for all Flex-Rite™ brand hoses are based on 70° F (ambient temperature). Working pressure and vacuum ratings will decrease as temperatures increase. For "S" series applications that exceed 250° F contact manufacturer for suggestions.

SHF

HI-FLEX Wire Reinforced



This highly flexible hose is extremely easy to handle. Reinforced with stainless steel wire ensures a balance between strength and lightness. Designed for bulk transfer, high-pressure, and vacuum process applications and is compliant with 3A, FDA and USP Class VI standards. Short lengths are ideal for proportioning and load cells.

MODEL	I.D.	O.D.	WORKING PRESSURE	MIN. BEND RADIUS	VACUUM IN HG.	LENGTH
SHF050	1/2"	.94"	150 PSI	1.50"	28"	-
SHF075	3/4"	1.18"	150 PSI	2.00"	28"	-
SHF100	1"	1.42"	150 PSI	2.50"	28"	-
SHF150	1 1/2"	1.93"	125 PSI	4.50"	28"	-
SHF200	2"	2.44"	105 PSI	5.50"	28"	-
SHF250	2 1/2"	2.91"	75 PSI	7.00"	28"	-
SHF300	3"	3.46"	70 PSI	9.00"	28"	-
SHF400	4"	4.49"	50 PSI	14.50"	28"	-

TUBE: USP Class VI silicone - Platinum cured

REINFORCEMENT: Four ply, polyester braid with stainless steel wire helix

RECOMMENDED CLEANING: CIP, SIP, Autoclave

COVER: White translucent

TEMP. RANGE: -76 to 395° F

Properties of Teflon® PTFE T-62 Resin

Regarding Convolutd Hoses: Ace Manufacturing uses only DuPont Teflon PTFE T-62 resin due to the extraordinary performance it provides.

Properties	Unit	Teflon PTFE T-62 Copolymer	PTFE Homopolymer	FEP
Continue Service Temp	°F	500°F	500°F	300°F
Tensile Strength	PSI	5,000	3,000	3,000
Flex Life	Cycles	>18,000,000	>1,000,000	5,000

Teflon Differences: A variety of hoses are marketed under the name of Teflon, when in fact they are fluoropolymers. Teflon PTFE (polytetrafluoroethylene) and Teflon FEP (fluorinated ethylene propylene copolymer) are marketed under the brand name Teflon, however they are not equivalent in every hose application.

Dupont's T-62 PTFE resin is one of the most chemically inert materials known to man. It has a life up to 60 times greater than many types of fluoropolymers, this is why Ace only uses this outstanding all-purpose hose for flexible applications. However, we do offer a rubber covered, smooth bore, FEP lined hose. In

this application, FEP is suitable as the rubber cover with embedded helical wire limit both temperature and the potential for over bending.

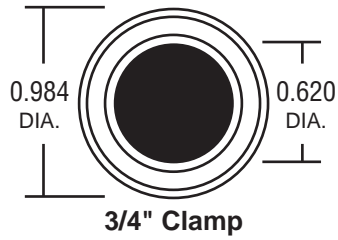
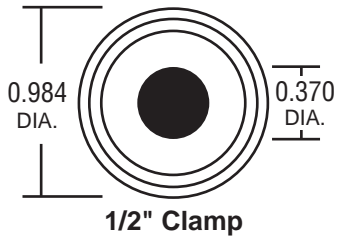
Teflon is widely known as a non-stick material which is in large demand from various industries. The non-stick attribute is perfect for hose cores, providing for complete transfer of material while maintaining product integrity. Dupont's PTFE Teflon resin is rated from -80°F to 450° F which exceeds most application requirements. When specifying hoses for your applications, be sure that you get the resin type best suited to your application. Simply specifying Teflon does not guarantee that you will get Teflon PTFE.

Application

Working conditions should be given careful consideration when specifying a hose. If the assembly will be constantly flexing, surging or bent, the capabilities of the assembly could change. In some applications accessories like kink guards, vacuum spring wires and armor guard protectors can be installed that will prolong the life of the hose assembly.

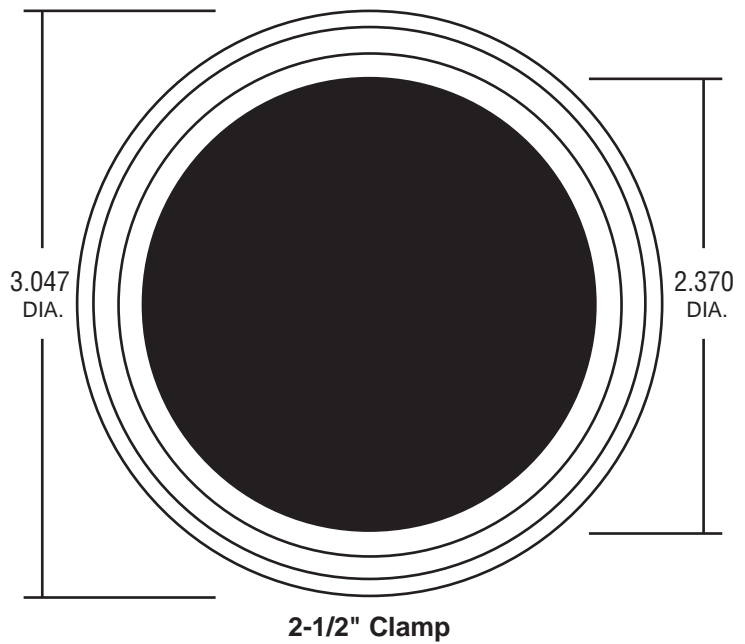
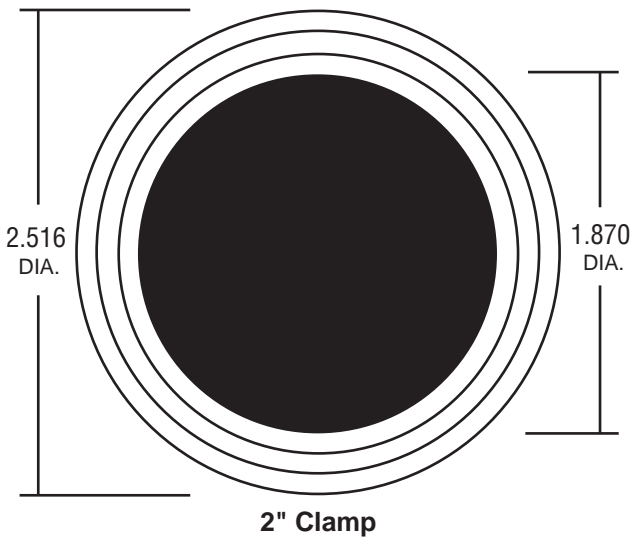
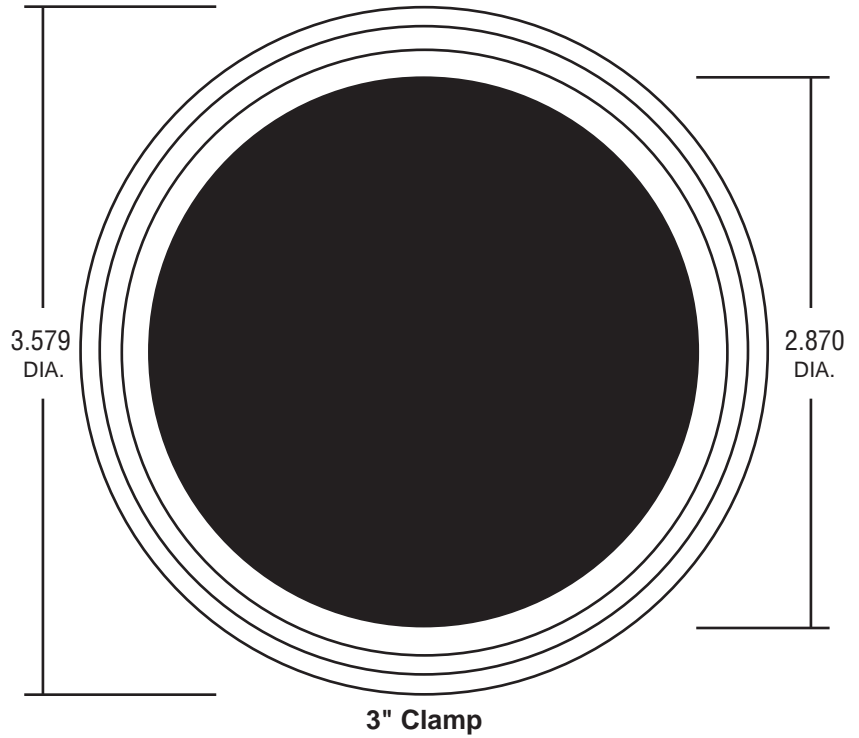
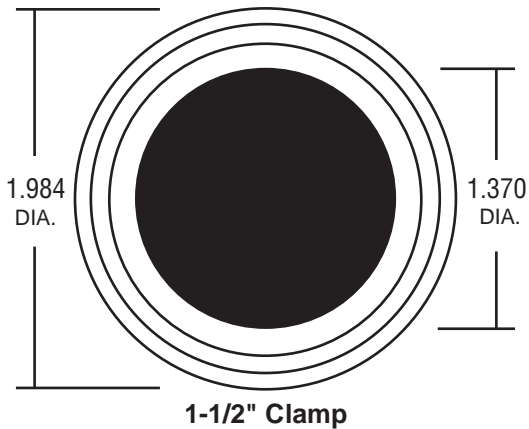
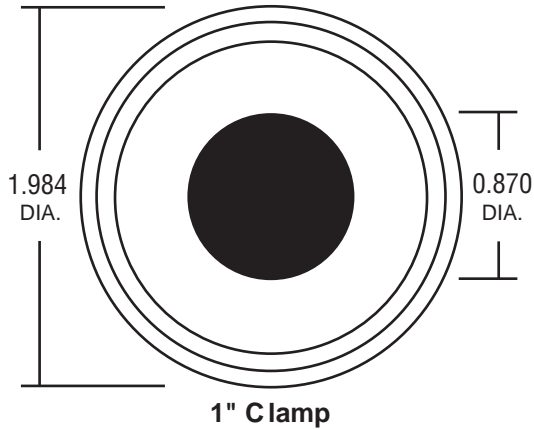
Teflon is a registered trademark of E.I. DuPont deNemours and Company

Sanitary Clamp Fitting



These actual-size drawings are provided for your convenience and ordering accuracy when specifying sanitary fittings.

- 0.984" O.D. is the same for 1/2", 3/4" I.D. styles.
- 1.984" O.D. is the same for 1" and 1-1/2" I.D. styles.
- Varying O.D. for the 2", 2-1/2" and 3" I.D. styles



Installation Information

USING THIS ACRONYM "STAMPED" WILL ASSIST YOU IN ORDERING THE APPROPRIATE HOSE.

- S = SIZE**
- T = TEMPERATURE** (WORKING & CLEANING)
- A = APPLICATION**
- M = MEDIA** (MATERIAL BEING TRANSFERED)
- P = PRESSURE** (WORKING & CLEANING)
- E = END STYLE** (TYPE & ALIGNMENT)
- D = DELIVERY** (SPECIAL PACKAGING)

STAMPED

Chemical Charts are located on our website

Prior to Installation

Inspect hose completely for signs of obvious damage. Possible damage may include cuts to cover, kinking, broken braids and crushing. This damage can reduce hose life and pressure rating.

Do Not Use any damaged hose.

Hose should be application specific. Review materials, pressures, chemical compatibility, temperature and environment to ensure proper selection of hose.

- Restrict hose movement to a single plane (Fig. 1) to minimize resultant twisting or torque. Within the bending plane is where flexing should occur. Stress fatigue increases with excessive bending of hose.
- Axial or twisting movement (Fig. 2) should be eliminated. The likelihood of leakage or failure increases for hoses that are twisted (torqued) during assembly. Floating flanges or swivel-type fittings (i.e., JIC) can eliminate improper twisting.
- Avoid stretching or compressing the hose (Fig. 3) along its longitudinal axis with in-line installation.
- Failure of hose will occur when hose is bent (Fig. 4) beyond minimum bend radius. Bend radii are given for individual products and sizes. The bend radius values must be observed (measure to inside radius of fluoropolymer-lined hose and centerline for stainless steel metal hose) for hoses to be installed properly. Occasionally, vacuum and pressure ratings are based on not to exceed 2% minimum bend radius. The manufacturer should be contacted for specific hose ratings and data.

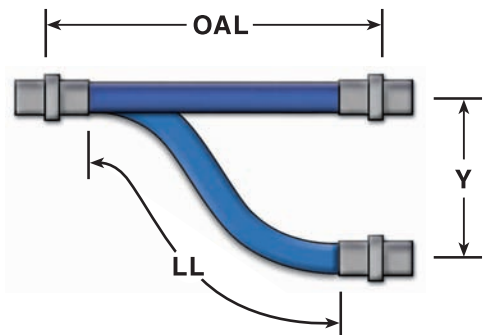
Motion Calculations

Axial Motion: Motion that occurs when a hose is compressed along its longitudinal axis. Axial motion is only applicable in very short lengths of annular hose only. Fluoropolymer lined hose should not be subjected to axial motion.

Offset Motion: Motion that occurs when one end of the hose is deflected in a plane perpendicular to its longitudinal axis with the ends remaining parallel. In offset applications where motion is repeated, the offset should never exceed 25% of the minimum bend radius. To calculate the required live length to achieve a desired offset, use the following calculations:

$$LL = \sqrt{6YR + Y^2}$$

LL = Hose live length, inches
 R = Min. Bend Radius, inches
 Y = Offset, inches
 OAL = LL + Fitting Length + (2x nominal hose diameter)



Note: Where offset motion "Y" occurs on both sides of hose centerline, the hose live length should be based on total travel, or 2Y. The modified calculation will be:

$$LL = \sqrt{12YR + (2Y)^2}$$

Bend Radius (fluoropolymer hose and all rubber hose)

- The radius of a bent section of hose measured to the innermost surface of the curved portion (R1).

Bend Radius (metal hose)

- The radius of a bent section of hose measured to the hose centerline (R2).

Minimum Bend Radius

- The smallest radius at which a hose can be used.

Force to Bend

- The amount of stress required to induce bending around a specified radius - a measure of stiffness.

Maximum Rated Working Pressure

- The maximum pressure hoses should be subjected to on a continuous basis.

Maximum Rated Test Pressure

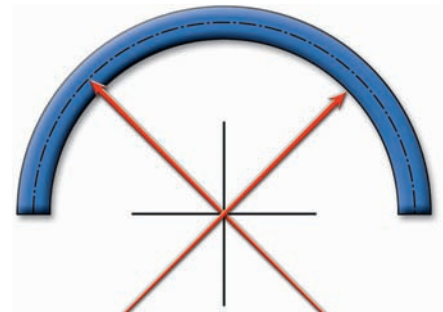
- The maximum rated pressure is multiplied by 150%.

Nominal Rated Burst Pressure

- The average pressure at which the core or braid will rupture at ambient temperature.

Pressure / Temperature Correction

- Hose pressure capabilities decrease as the temperature increases. Consult factory to determine pressure rating at elevated temperatures.



R1
Bend Radius All
(Except Metal Hose)
Measure to inside
radius

R2
Bend Radius for
Metal hose
Measure to
centerline
radius

Flexibility / Bend Radius

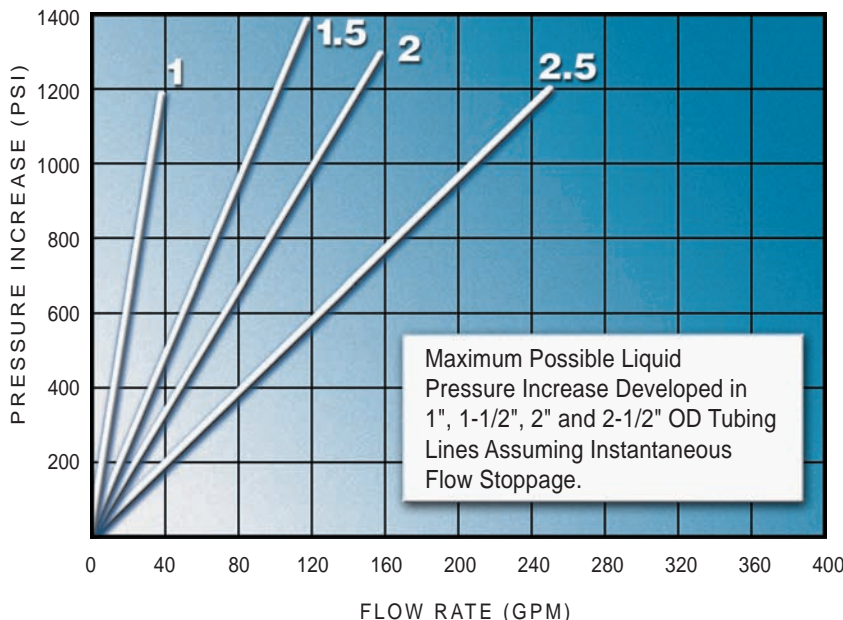
Reprinted from RMA Hose Handbook IP-2 Fourth Edition

Flexibility and minimum bend radius are important factors in hose design and selection if it is known that the hose will be subjected to sharp curvatures in normal use. When bent at too sharp an angle, hose may kink or flatten in the cross-section. The reinforcement may also be unduly stressed or distorted and the hose life thereby shortened.

Adequate flexibility means the hose should be able to conform to the smallest anticipated bend radius without over stress. The minimum bend radius is generally specified for each hose in this catalog. This is the radius to which the hose can be bent in service without damage or appreciably shortening its life. The radius is measured to the inside of the curvature.

Hydraulic Shock...

Due To Instantaneous Pressure Increase



Formula to determine minimum hose length given bend radius and degree of bend required:

$$L = \frac{A}{360^\circ} \times 2\pi B$$

L = Minimum length of hose to make bend
(bend must be made equally along this portion of hose length)

A = Angle of bend

B = Given bend radius of hose

π = 3.14

Example: To make a 60° bend at the hose's rated minimum bend radius of 15 cm

$$L = \frac{60}{360^\circ} \times 2 \times 3.14 \times 15 \cong 16 \text{ cm}$$

Thus, the bend must be made over approximately 16 cm of hose length. The bend radius used must be equal to or greater than the rated minimum bend radius. Bending the hose to a smaller bend radius than minimum may kink the hose and the result in damage and early failure.



Cautionary Statement

All products are in the nature of commodities and they are sold by published specifications and not for particular purposes, uses or applications. Purchaser shall first determine their suitability for the intended purposes, uses or applications and shall either conduct its own engineering studies or tests, or retain qualified engineers, consultants or testing laboratories and consult with them before determining the proper use, suitability or propriety of the merchandise or products for the intended purposes, uses or applications.

Purchaser shall follow all instructions contained in seller's catalogs, brochures, technical bulletins and other documents regarding the product. Purchasers or users of the products should frequently and consistently undertake inspections and protective measures with respect to the use and application of products, which should include the examination of tube and cover, conditions of the hose or tubing, and the identification, repair or replacement of sections showing cracking, blistering, separations, internal and external abrasions, leaking or slipped couplings or connections and make proper proof tests.

Limited Warranty

The merchandise or products sold or distributed by seller are warranted to its customers to be free from defects in material and workmanship at the time of shipment by us, subject to the following provisions. All warranty claims shall be made within six (6) months after seller shipped the products. Seller's liability hereunder is limited to the purchase price of any products proving defective, or, at seller's option, to the replacement of such products upon its authorized return to seller.

This warranty is in lieu of and excludes all other warranties, expressed, implied, statutory, or otherwise created under applicable law including, but not limited to, the warranty of merchantability and the warranty of fitness for a particular purpose. In no event shall seller or the manufacturer of the product be liable for special, incidental, or consequential damages, including loss of profits, whether or not caused by or resulting from the negligence of seller and/or the manufacturer of the product, unless specifically provided herein. In addition, this warranty shall not apply to any products or portions thereof which have been subjected to abuse, misuse, improper installation, maintenance or operation, electrical failure or abnormal conditions, and to products which have been tampered with, altered, modified, repaired, reworked by anyone not approved by seller, or used in any manner inconsistent with the provisions of the "cautionary statement " above.

