Sanitary Couplers

Hose and Fittings

For High-Purity and Sanitary Applications

Food
Beverage
Dairy
Cosmetics
Personal Hygiene
Cleaning Aids
Instrumentation

SAINT-GOBAIN
PERFORMANCE PLASTICS

Golden Rules for Selling Hose and Fittings

STAMPED

SIZE	I.D., O.D. and length
TEMPERATURE	of the material conveyed and the surrounding environment
APPLICATION	conditions of use
MATERIAL	being conveyed, type and concentration
PRESSURE	to which the assembly will be exposed
ENDS	style, type, orientation, attachment methods, etc.
DELIVERY	testing, quality, packaging and delivery requirements

If you have a particular application that requires special attention, please call us at 800-435-3992. Someone from our inside sales or engineering department will be happy to help.

Comments and suggestions for further improving this buyer's guide are welcome. The information it contains supersedes all other previous editions. Please do not refer to previous editions when ordering.

Our products are manufactured under a quality management system registered and complying with 3-A Sanitary Standards where noted and with ISO 9001:2000, which has been independently certified by BVQi.

ISO 9001 BUREAU VERITAS Certification

ANAB ACCREDITED

3-A®

NAHAD NATIONAL ASSOCIATION OF HOSE AND ACCESSORIES DISTRIBUTORS

Made Pure to Work Clean

At Saint-Gobain Performance Plastics, we understand the challenges faced by our customers in the strictly regulated food, beverage, dairy, cosmetics, personal hygiene, cleaning aid and instrumentation industries. Our extensive research and development capabilities enable us to provide products that satisfy the stringent regulatory criteria in your industry. Our business is to know your business – and to work closely with you to solve the critical challenges of high-purity applications.

With a full array of products designed for each step in the process, Saint-Gobain Performance Plastics is uniquely positioned as the single source supplier of sanitary fluid transfer components for the food, beverage, dairy, cosmetics, personal hygiene, cleaning aid and instrumentation industries.

This catalog includes detailed information on our complete selection of sanitary fluid transfer components, designed and carefully manufactured to meet a variety of application needs.

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• PureGard® FPD Hose	22	4-ply, polyester braid
• PureGard® FPW Hose	22	4-ply, polyester braid with stainless steel helix hose
ReSeal® for SaniGard® Rubber Hose	**8**	**Complies with stringent dairy and food processing standards**
• SaniGard® Protector PSD Hose	24	Versatile suction and discharge hose
• SaniGard® Sentry SSW Softwall Hose	24	Ultra-lightweight, designed exclusively for discharge service
• SaniGard® Challenger FEP/Teflon® CTL Hose	25	FEP-lined suction and discharge hose
• SaniGard® Gladiator Crush-Resistant GCR Hose	25	Crush-resistant
ReSeal® for MilkFlex® Hose	**10**	**Full flow smooth bore design eliminates internal obstructions**
• MilkFlex® Hose	27	Most flexible, lightest weight milk pick-up hose available
ReSeal® for Pure-Fit® BRH Brewer Hose	**12**	**Ideal for use in aging, fermentation, packaging, and yeast applications**
• Pure-Fit® BRH Brewer Hose	27	Synthetic multi-ply fabric reinforcement with inner white chlorobutyl tube
ReSeal® for ClearGard® PVC Hose	**14**	**Complies with stringent dairy and food processing standards**
• ClearGard® CBT Hose	30	Clear extrusion with polyester textile inner braid reinforcement
• ClearGard® CCT Hose	30	Clear extrusion; no reinforcement
• ClearGard® CSS Hose	30	Clear extrusion with steel wire helix rod reinforcement
• ClearGard® CSC Hose	31	Clear extrusion with clear helix rod reinforcement; for suction/discharge
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PermaSeal® Fitting/Hose Combination	Page	Product Description
PermaSeal® Radial Crimp for PureGard® Silicone Hose	**18**	**External crimp design eliminates the possibility of product wicking**
• PureGard® SPD Hose	22	Single-ply, polyester braid
• PureGard® FPD Hose	22	4-ply, polyester braid
• PureGard® FPW Hose	22	4-ply, polyester braid with stainless steel helix hose
PermaSeal® Radial Crimp for SaniGard® Rubber Hose	**18**	**External crimp design eliminates the possibility of product wicking**
• SaniGard® Protector PSD Hose	24	Versatile suction and discharge hose
• SaniGard® Sentry SSW Softwall Hose	24	Ultra-lightweight, designed exclusively for discharge service
• SaniGard® Challenger FEP CTL Hose	25	FEP-lined suction and discharge hose
• SaniGard® Gladiator Crush-Resistant GCR Hose	25	Crush-resistant
• SaniTech® G-FDA Gray Transfer Hose	26	Ideal for ultra-pure water transfer
• Pure-Fit® FGR Transfer Hose	26	Specially designed to handle oil-based materials
PermaSeal® Radial Crimp for ClearGard® PVC Hose	**18**	**External crimp design eliminates the possibility of product wicking**
• ClearGard® CBT Hose	30	Clear extrusion with polyester textile inner braid reinforcement
• ClearGard® CSS Hose	30	Clear extrusion with steel wire helix rod reinforcement
• ClearGard® CCT Hose	30	Clear extrusion; no reinforcement
PermaSeal® for Brewer Hose	**20**	**Ideal for use in aging, fermentation, packaging, and yeast applications**
• Pure-Fit® BRH Brewer Hose	27	Synthetic multi-ply fabric reinforcement with inner white chlorobutyl tube
PermaSeal® Radial Crimp for Stainless Steel Braided Hose	**21**	**Offers chemically inert method of transferring fluids in a flexible connection**
• SBT Smooth Bore Stainless Steel Hose	29	Stainless steel braided reinforcement with Teflon® white inner bore
• SBTC Convoluted Stainless Steel Hose	29	Convoluted design is low profile and helical formed to promote draining
NEW **PermaSeal® for FlexPro® and PharmaSmooth™ Hoses**	**23**	**Lightweight, flexible smooth inner bore hose**
• FlexPro® Ultra Flexible Chemfluor® ID	23	PTFE inner tube with stainless steel braid, silicone or rubber cover
• PharmaSmooth® Ultra Smooth OD and ID	23	Smooth OD and ID FEP inner tube with rubber cover
Electrically Heated Hose	**28**	**Maintains internal temperature of transferred materials**

Food	Beverage	Dairy	Cosmetics	Personal Hygiene	Instrumentation	Cleaning Aids	Compliances
							
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							Compliances
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●	●		●	●			FDA

Why Choose ReSeal®?

Reusable

ReSeal® fittings from Saint-Gobain Performance Plastics meet the stringent requirements of critical processing industries such as dairy, food, beverage, cosmetics, personal hygiene, instrumentation and cleaning aids while being totally reusable.

Whether your sanitary hose assembly needs frequent inspection, becomes kinked, is damaged in some way, or simply wears out, our ReSeal® stainless steel fittings can be dismounted and reattached to a new length of hose. You'll still have to buy the new hose, but being able to reuse the ReSeal® fittings can save you between 50% and 90% of the cost of a completely new assembly.

Sanitary

The full flow smooth bore and compression seal design of ReSeal® fittings means there are no obstructions on the inner surface of the fitting – and obstructions provide the perfect breeding ground for harmful bacteria and other contaminants.

Cleanable

The faster you can clean a sanitary fitting assembly, the sooner you can restart your operation. ReSeal® fittings are designed for Clean-In-Place (CIP) convenience – no disassembly required. Depending on the hose applications, they are also suitable for Clean-Out-Of-Place (COP), Steam-In-Place (SIP) and are totally autoclavable.

Safe

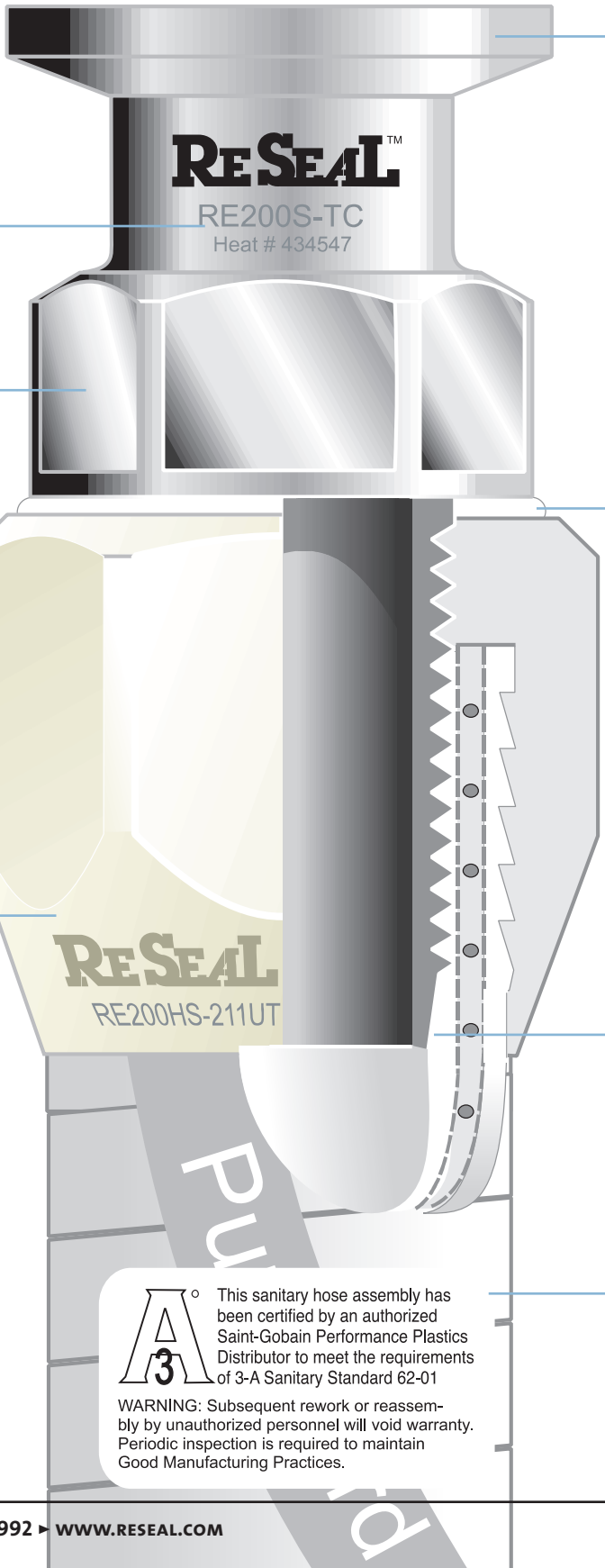
Employee safety is of paramount importance. The deep barb serrations inside ReSeal® fittings ensure excellent retention and resist fitting blow-off at high temperatures. ReSeal® for suction/discharge hose features a patented connective technology that accomplishes this without cutting the hose. ReSeal® fittings' smooth contour design means there are no external elements (straps or bands) that could cause injury to those who work with them.

Inspectable

ReSeal® fittings are a maintenance crew and inspector's dream. They can be taken apart for easy, thorough inspection, then quickly reassembled by a factory-authorized fabricating distributor – and your operation is back up and running, eliminating the need to cut up the hose assembly and throw away expensive stainless steel ends along with the hose!

ReSeal® Fittings – Common Features

(See specific ReSeal® fitting illustrations on following pages for unique features.)



A wide variety of end connector styles available

Pin stamped part numbers provide total traceability; customizing available

Rugged construction – built to last

360° seal ensures no entrapment of bacteria

Streamlined contours allow for handling ease, less chance of injury for workers

Hose sleeves in polymer or stainless steel (depending on coupler)

Safe – no straps or bands to injure workers

Full flow smooth bore design eliminates internal obstructions; average interior surface finish of 15Ra or better

3-A 62-01 listed – compliance with highest sanitary standards

ReSeal® *Fittings for PureGard® Silicone Hose*

INDUSTRY COMPLIANCES:

- 3-A 62-01 LISTED
- MEETS U.S. PHARMACOPEIA CLASS VI TRACEABILITY
- COMPLIES WITH FDA CHAPTER 21 REGULATION 177.2600
- ACCEPTED BY USDA AND CANADIAN FOOD INSPECTION AGENCY (CFIA)

Applications

- *Food*
- *Beverage*
- *Dairy*
- *Cosmetics*
- *Personal Hygiene*
- *Cleaning Aids*
- *Instrumentation*

Features and Benefits

Totally reusable

- Made of grade 316L stainless steel with an average interior surface finish of 15Ra or better
- Can be dismounted and reattached to a new length of hose by a factory-authorized fabricating distributor
- Significant savings compared to the cost of a completely new assembly (up to 50%)
- Smaller sizes (up to 1") can be field fabricated
- Light weight
- Available in a wide variety of sizes and end styles

Sanitary

- Meets the stringent requirements of dairy, food, beverage and cosmetics applications
- Full flow compression seal and smooth bore design prevent bacteria build-up
- No external entrapment area to harbor bacteria

Cleanable

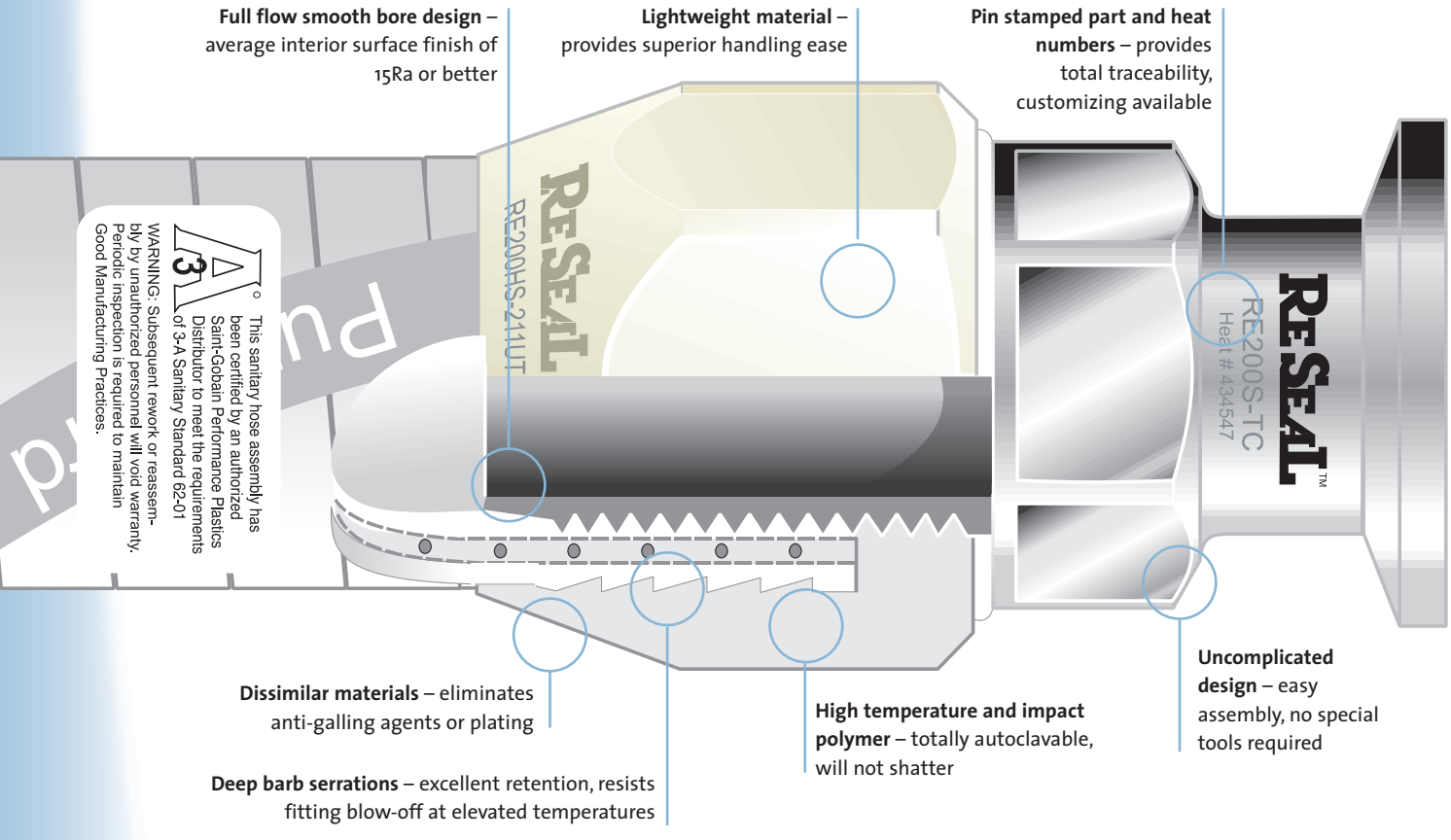
- Suitable for Clean-In-Place (CIP) and Steam-In-Place (SIP) procedures
- Totally autoclavable

Safe

- Superior coupling retention
- No straps or bands to injure workers

Inspectable

- No need to cut up hose assembly
- Quick disassembly makes inspections easy

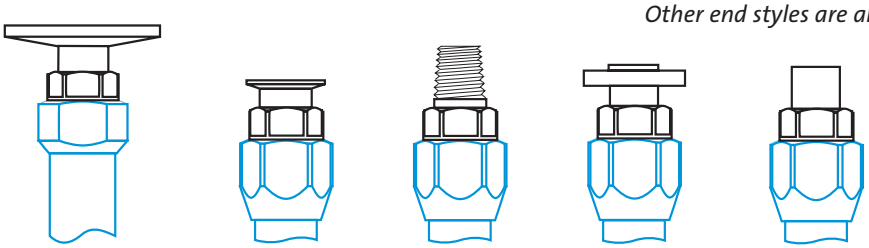


Fitting Details

- ReSeal® fittings for PureGard® silicone hose are available in sizes 1/4" up to 3" in five standard end styles
- Stems are manufactured from grade 316L stainless steel with an average interior surface finish of 15Ra or better for sanitary applications
- Electropolished and polymer stems are available
- Ultra-lightweight polymer hose sleeve is resistant to impact and high temperature
- Stainless steel hose sleeves are also available

End Connector Styles

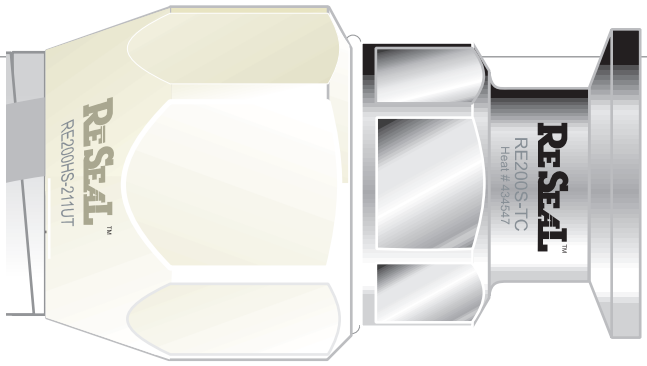
Other end styles are also available with additional welding charges.



TC Sanitary Step-up Sizes | **TC Sanitary Clamp** | **MPT Male Pipe Thread** | **AF Flange End** | **TE Tube End**

Hose Sleeve *(Polymer)*

- Elevated temperature
- CIP, COP, SIP suitable and autoclavable
- Lightweight and abrasion resistant
- Excellent durability
- Higher pressure ratings
- Chemically resistant
- Superior impact resistance
- Stainless steel hose sleeves also available
- Reusable
- Standard colors in red, blue, and green



NOTE: Other special colors are available with an additional surcharge and a minimum run per color.

PureGard® Silicone Hose

PureGard® SPD
(single ply, polyester braid)
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PureGard® FPD
(4-ply, polyester braid)
pg 22

PureGard® FPW
(4-ply, polyester braid with stainless steel helix wire)
pg 22

ReSeal® *Fittings for SaniGard® Rubber Hose*

INDUSTRY COMPLIANCES:

- 3-A 62-01 LISTED
- ACCEPTED BY USDA DAIRY, EGG, MEAT AND POULTRY, CANADIAN FOOD INSPECTION AGENCY (CFIA)
- REVIEWED BY MILK SAFETY BRANCH IN COMPLIANCE WITH GRADE "A" PASTEURIZED MILK ORDINANCE/FDA
- UNIVERSITY OF WISCONSIN TESTED AND VERIFIED AS TOTALLY SANITARY
- COMPLIES WITH FDA CHAPTER 21 REGULATION 177.2600

Applications

- ***Food***
- ***Beverage***
- ***Dairy***
- ***Cosmetics***
- ***Personal Hygiene***

Features and Benefits

Totally reusable

- Made of grade 316L stainless steel with an average interior surface finish of 15Ra or better
- Can be dismounted and reattached to a new length of hose by a factory-authorized fabricating distributor
- Significant savings compared to the cost of a completely new assembly (up to 90%)
- Light weight
- Available in a wide variety of sizes and end styles

Sanitary

- Meets the highest sanitary standards and stringent requirements of high-purity processing applications
- Full flow compression seal and smooth bore design prevent bacteria build-up
- No external entrapment area to harbor bacteria

Cleanable

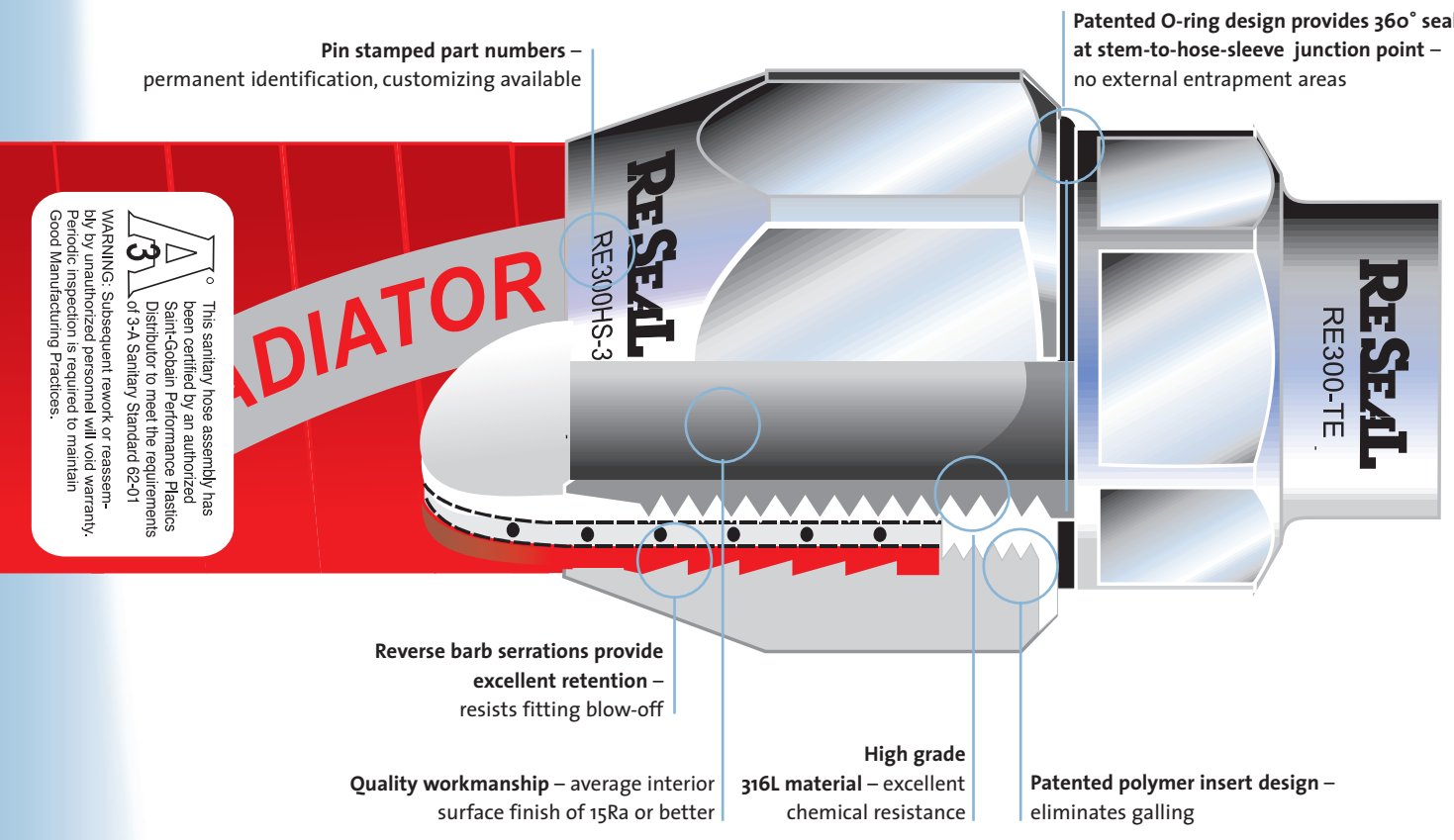
- Suitable for Clean-In-Place (CIP) procedures
- No disassembly for cleaning like clamped-in fittings

Safe

- Superior coupling retention
- No straps or bands to injure workers

Inspectable

- No need to cut up hose assembly
- Quick disassembly makes inspections easy

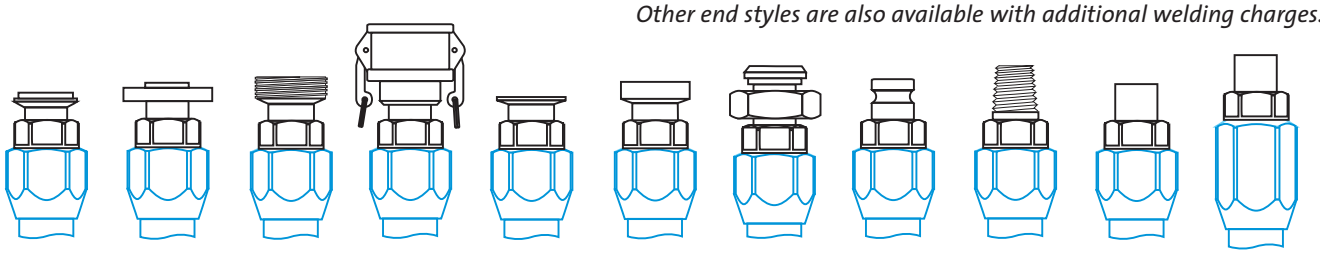


Fitting Details

- ReSeal® fittings for SaniGard® rubber hose are available in sizes 1/2" up to 4" in 11 standard end styles (including an extended shank option)
- Stems are manufactured from grade 316L stainless steel with an average interior surface finish of 15Ra or better
- Hose sleeves are available in either stainless steel or high impact polymer

End Connector Styles

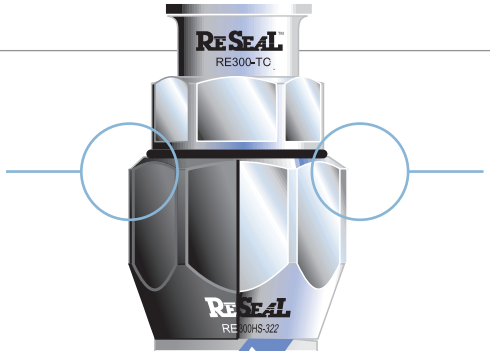
Other end styles are also available with additional welding charges.



EM Male I-Line | **AF** Flange End | **BM** Male ACME Thread | **CF** Female Cam + Groove | **TC** Sanitary Clamp | **EF** Female I-Line | **BS** Bevel Seat & Hex Nut | **CM** Male Cam + Groove | **MPT** Male Pipe Thread | **TE** Tube End | **XTE** Extended Shank

Hose Sleeve

Polymer
- Lightweight
- Mild chemical resistance
- Inexpensive
- Superior impact resistance
- Abrasion resistant
- CIP chemically suitable
- Non-reusable



Stainless Steel
- Elevated temperature
- CIP and COP suitable
- Excellent durability
- Higher pressure ratings
- Chemically resistant
- Reusable

SaniGard® Rubber Hose

SaniGard® Protector® PSD Suction and Discharge Hose
pg 24

SaniGard® Sentry® SSW Softwall Discharge Hose
pg 24

SaniGard® Challenger™ FEP/Teflon® CTL Suction and Discharge Hose
pg 25

SaniGard® Gladiator® Crush-Resistant GCR Hose
pg 25

ReSeal® *Fittings for MilkFlex® Hose*

INDUSTRY COMPLIANCES:

- 3-A 62-01 LISTED
- ACCEPTED BY USDA DAIRY, EGG, MEAT AND POULTRY, CANADIAN FOOD INSPECTION AGENCY (CFIA)
- REVIEWED BY MILK SAFETY BRANCH IN COMPLIANCE WITH GRADE "A" PASTEURIZED MILK ORDINANCE/FDA
- COMPLIES WITH FDA CHAPTER 21 REGULATION 177.2600

Applications

- ***Dairy***
- ***Food***
- ***Beverage***

Features and Benefits

Totally reusable

- Made of grade 316L stainless steel with an average interior surface finish of 20Ra or better
- Can be dismounted and reattached to a new length of hose by a factory-authorized fabricating distributor
- Significant savings compared to the cost of a completely new assembly
- Available in a variety of sizes and end styles
- Light weight

Sanitary

- Meets the stringent requirements of dairy applications
- Full flow compression seal and smooth bore design prevent bacteria build-up
- Patented O-ring design provides 360° seal at stem-to-hose-sleeve junction point
- No external entrapment area to harbor bacteria

Cleanable

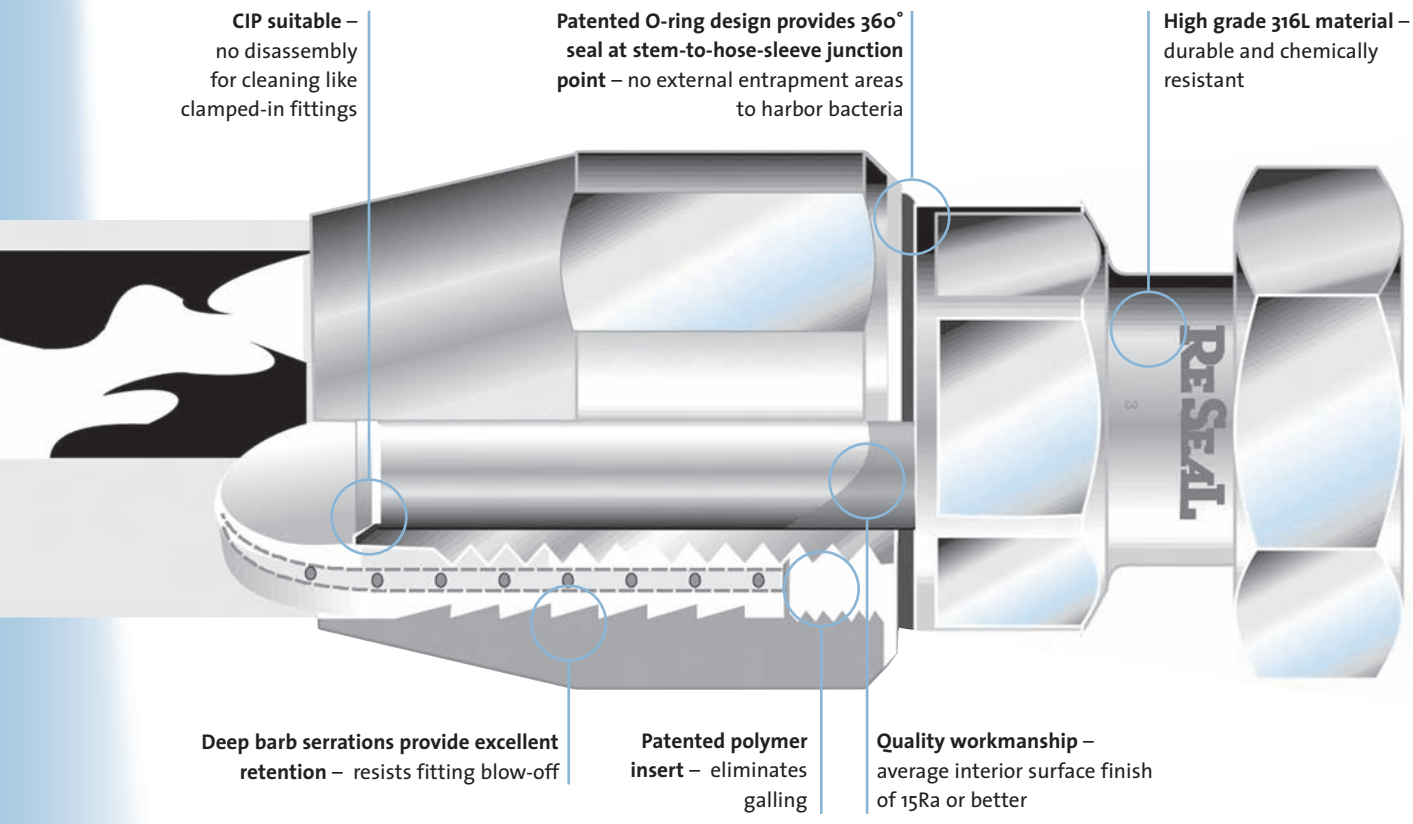
- Suitable for Clean-In-Place (CIP) procedures
- No disassembly for cleaning like clamped-in fittings

Safe

- Superior coupling retention
- No straps or bands to injure workers

Inspectable

- Quick disassembly makes inspections easy

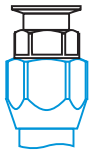


Fitting Details

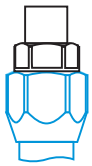
- ReSeal® fittings for MilkFlex® hose are available in three sizes from (51mm, 63mm, 76mm) and three standard end styles
- Stems are manufactured from grade 316L stainless steel with an average interior surface finish of 15Ra or better
- Hose sleeves are available in either stainless steel or high impact polymer

End Connector Styles

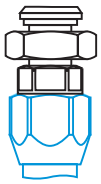
Other end styles are also available with additional welding charges.



TC
Sanitary Clamp



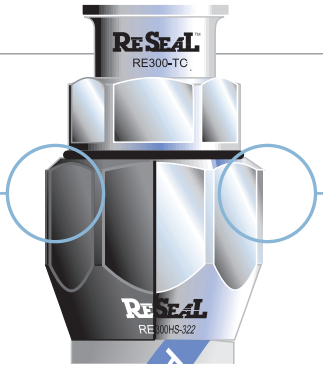
TE
Tube End



BS
Bevel Seat & Hex Nut

Hose Sleeves

Polymer
- Lightweight
- Mild chemical resistance
- Inexpensive
- Superior impact resistance
- Abrasion resistant
- CIP chemically suitable
- Non-reusable



Stainless Steel
- Elevated temperature
- CIP suitable
- Excellent durability
- Higher pressure ratings
- Chemically resistant
- Reusable

MilkFlex® Hose

Milkflex® Hose
pg 27

ReSeal® *Fittings for Pure-Fit® BRH Brewer Hose*

INDUSTRY COMPLIANCES:

- 3-A 62-01 LISTED
- ACCEPTED BY USDA DAIRY, EGG, MEAT AND POULTRY; CANADIAN FOOD INSPECTION AGENCY (CFIA)
- REVIEWED BY MILK SAFETY BRANCH IN COMPLIANCE WITH GRADE "A" PASTEURIZED MILK ORDINANCE/FDA
- UNIVERSITY OF WISCONSIN TESTED AND VERIFIED AS TOTALLY SANITARY

Applications



- ***Beverage Brewing***
- ***Food***
- ***Dairy***

Features and Benefits

Extended shank design
- Designed exclusively for brewer hose

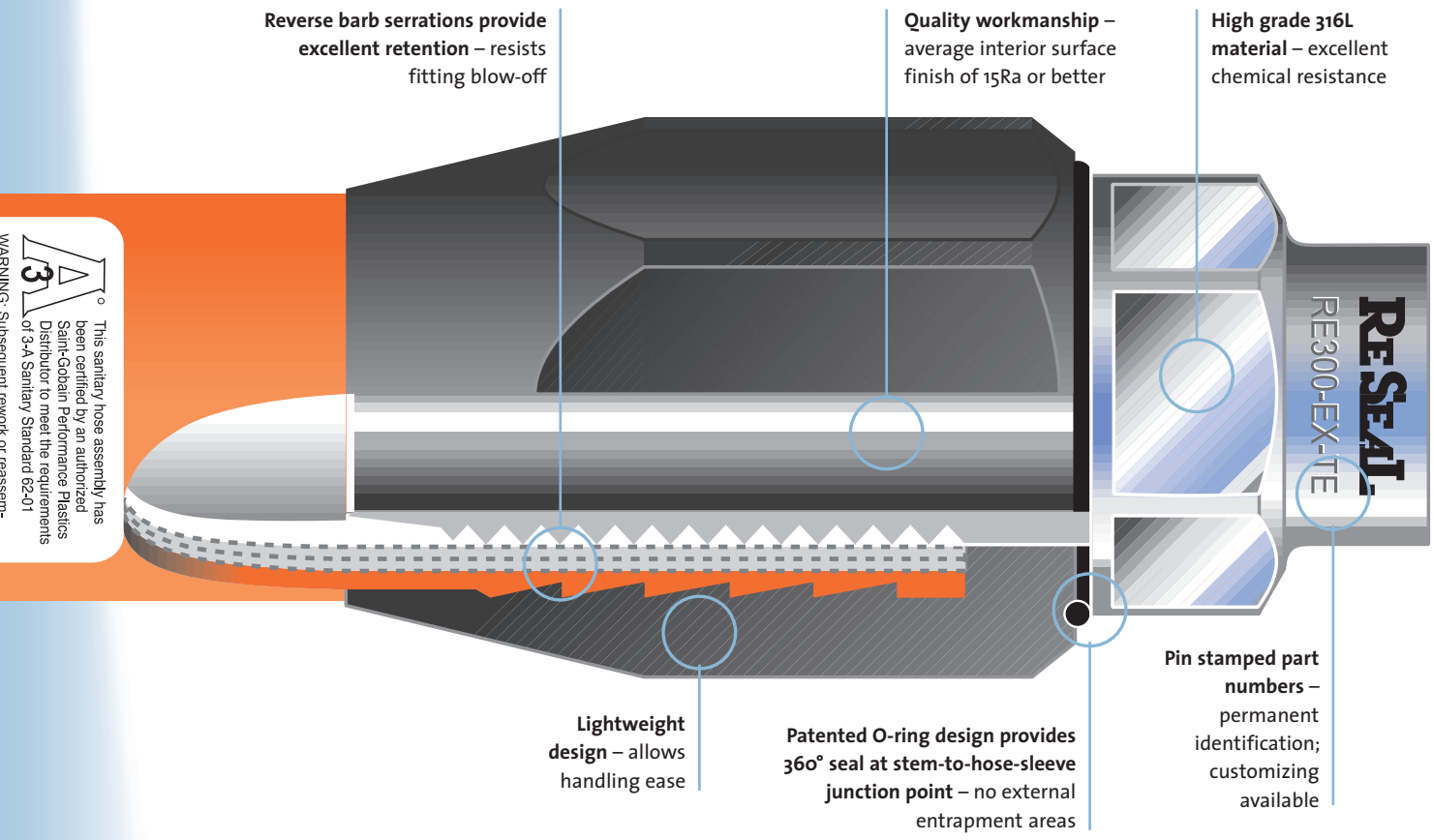
Totally reusable
- Can be dismounted and reattached to a new length of hose by a factory-authorized fabricating distributor
- Significant savings compared to the cost of a completely new assembly (up to 90%)
- Made of grade 316L stainless steel with an average interior surface finish of 15Ra or better
- Light weight
- Available in a wide variety of sizes and end styles

Sanitary
- Full flow compression seal and smooth bore design prevent bacteria build-up
- No external entrapment area to harbor bacteria

Cleanable
- Suitable for Clean-In-Place (CIP) procedures
- No disassembly for cleaning like clamped-in fittings

Safe
- Superior coupling retention
- No straps or bands to injure workers

Inspectable
- No need to cut up hose assembly
- Quick disassembly makes inspections easy

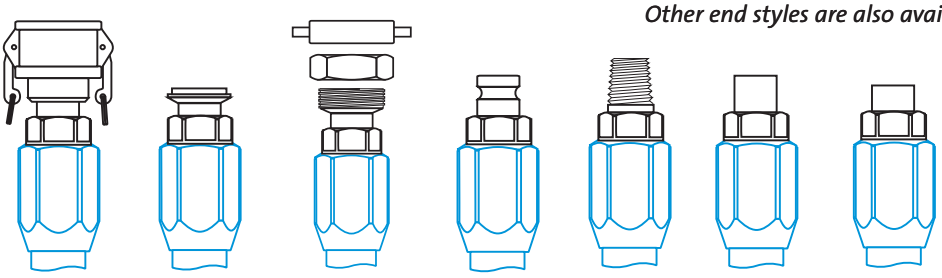


Fitting Details

- ReSeal® fittings for Brewer Hose are available in sizes 1-1/2" up to 4" in seven standard end styles
- Stems are manufactured from grade 316L stainless steel with an average interior surface finish of 15Ra or better
- Ultra-lightweight polymer hose sleeve is resistant to impact and high temperature
- Stainless steel hose sleeves are also available

End Connector Styles

Other end styles are also available with additional welding charges.



CF
Female
Cam + Groove

TC
Sanitary
Clamp

PE
Perlick End

CM
Male
Cam + Groove

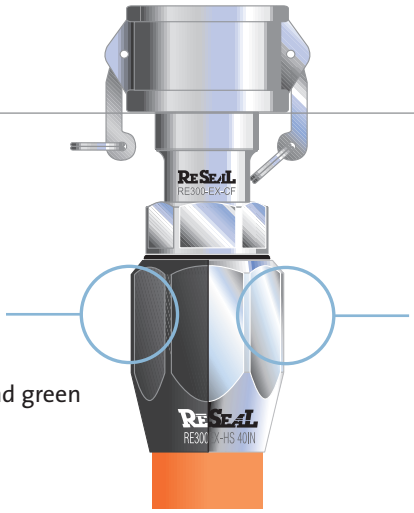
MPT
Male
Pipe Thread

TE
Tube
End

XTE
Extended
Shank

Hose Sleeve

Polymer
- Lightweight
- CIP chemically stable
- Abrasion resistance
- Superior impact resistance
- Mild chemical resistance
- Non-reusable
- Assortment of colors in yellow, blue and green



Stainless Steel
- Elevated temperature
- CIP and COP suitable
- Excellent durability
- Higher pressure ratings
- Chemically resistant
- Reusable
- Polymer sleeves only for BRH-AB

Brewer Hose

Pure-Fit® BRH
Brewer Hose
pg 27

ReSeal®

Fittings for ClearGard® PVC Hose and ClearGard® PVC Suction/Discharge Hose

INDUSTRY COMPLIANCES:

- 3-A 62-01 LISTED
- ACCEPTED BY USDA DAIRY, EGG, MEAT AND POULTRY, CANADIAN FOOD INSPECTION AGENCY (CFIA)
- REVIEWED BY MILK SAFETY BRANCH IN COMPLIANCE WITH GRADE "A" PASTEURIZED MILK ORDINANCE/FDA
- COMPLIES WITH FDA CHAPTER 21 REGULATION 177.2600

Applications

- ***Food***
- ***Beverage***
- ***Dairy***
- ***Cosmetics***
- ***Instrumentation***

Features and Benefits

Totally reusable

- Made of grade 316L stainless steel with an average interior surface finish of 15Ra or better
- Can be dismounted and reattached to a new length of hose by a factory-authorized fabricating distributor
- Smaller sizes can be field fabricated
- Significant savings compared to the cost of a completely new assembly (up to 90%)
- Available in a wide variety of sizes and end styles

Sanitary

- Compliance with the highest 3-A 62-01 sanitary standard
- Full flow compression seal and smooth bore design prevent bacteria build-up

Cleanable

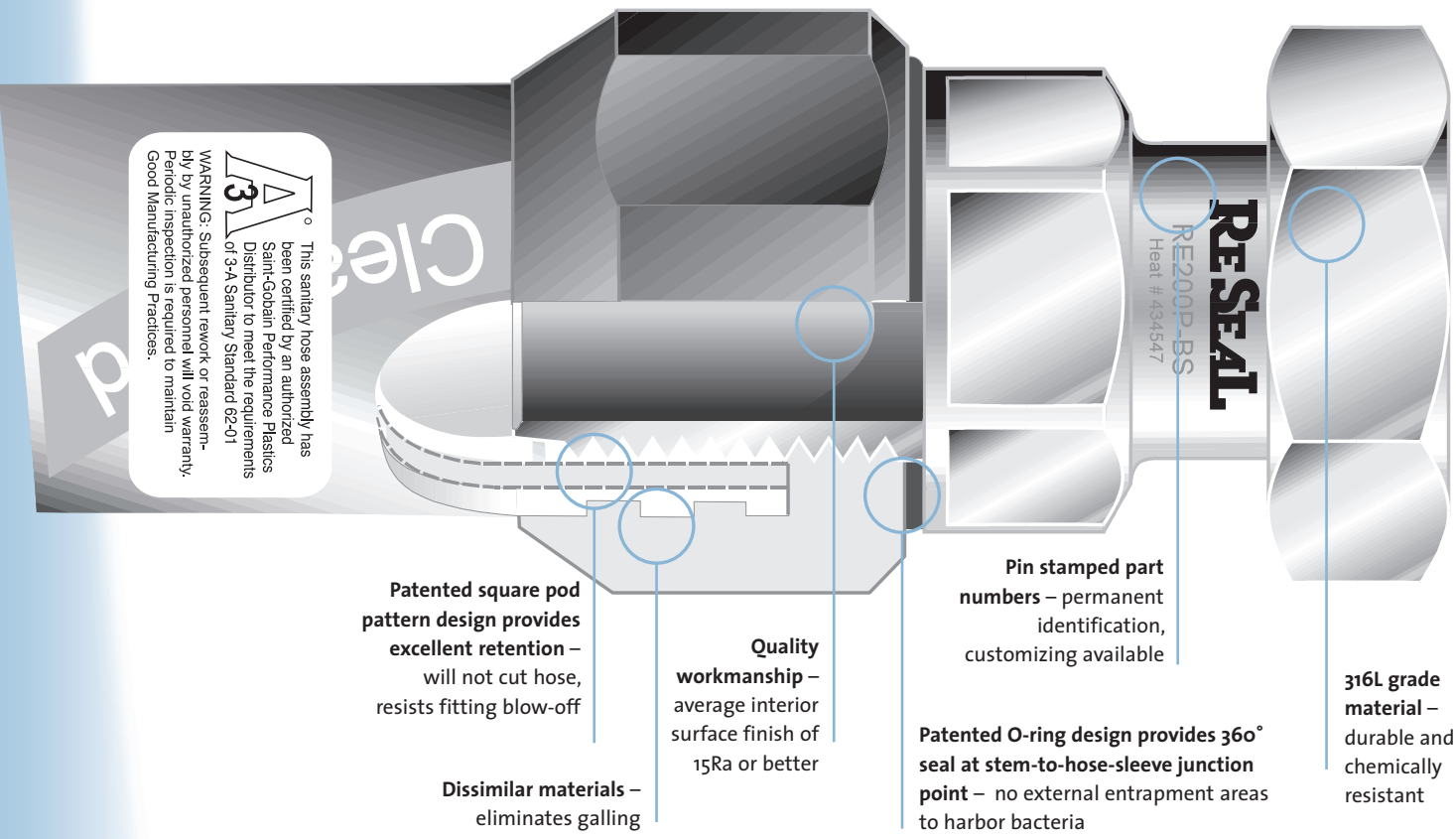
- Chemically suitable for Clean-In-Place (CIP) procedures at low temperatures
- No disassembly for cleaning like clamped-in fittings

Safe

- Superior coupling retention
- No straps or bands to injure workers

Inspectable

- No need to cut up hose assembly
- Quick disassembly makes inspections easy

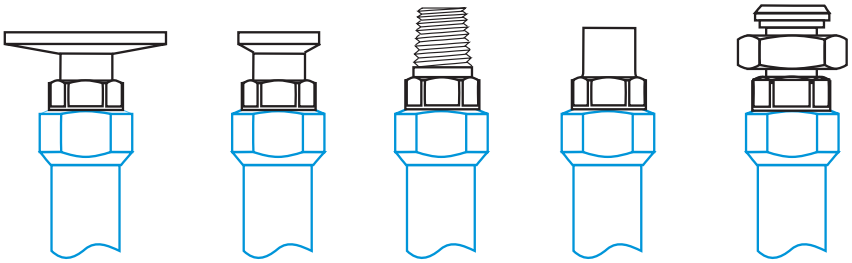


Fitting Details

- ReSeal® fittings for ClearGard® PVC hose and suction/discharge hose are available in sizes 1" up to 4" in five standard end styles (including a 316L stainless steel stem option)
- Stems are manufactured from 304L stainless steel with an average interior surface finish exceeding 25Ra (CSC, CSW only)
- Stems are manufactured from grade 316L stainless steel with an average interior surface finish of 15Ra or better (CBT, CCT, CSS only)
- Hose sleeves are available in either high impact polymer or stainless steel (stainless steel for CBT, CCT, CSS only)

End Connector Styles

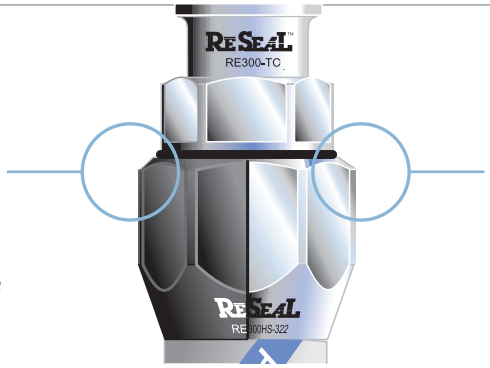
Other end styles are also available with additional welding charges.



TC Sanitary Step-up Sizes | **TC Sanitary Clamp** | **MPT Male Pipe Thread** | **AF Tube End** | **BS Bevel Seat & Hex Nut**

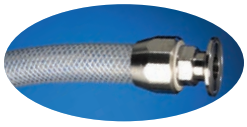
Hose Sleeve

Polymer
- Inexpensive
- CIP chemically suitable
- Excellent abrasion resistance
- Lightweight
- Mild chemical resistance
- Superior impact resistance
- Assortment of colors available
- Non-reusable



Stainless Steel
- Elevated temperature
- CIP and COP suitable
- Excellent durability
- Higher pressure ratings
- Chemically resistant
- Reusable
- For CBT, CCT and CSS only

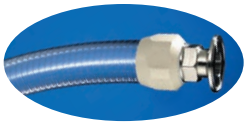
ClearGard® PVC Hose and Tubing



ClearGard® CBT Series PVC Hose
pg 30

ClearGard® CCT Series PVC Hose
pg 30

ClearGard® CSS Series PVC Hose
pg 30



ClearGard® CSC Suction/Discharge Hose
pg 31

ClearGard® CSW Suction/Discharge Hose
pg 31

Why Choose PermaSeal®?

PermaSeal® fittings from Saint-Gobain Performance Plastics offer many of the same features as our ReSeal® fittings. The difference is that PermaSeal® fittings, as their name implies, remain in place once they're installed. They cannot be disassembled and re-used.

Sanitary

PermaSeal® fittings share the same full flow smooth bore and compression seal design found in ReSeal® fittings, so there are no ledges or crevices that can collect harmful bacteria and other contaminants. PermaSeal® fittings also feature an external radial crimp design that provides a uniform fixed seal at the junction point of the fitting and hose, which eliminates the possibility of product wicking between the two. In short, PermaSeal® fittings maintain the absolute sanitary conditions your applications require.

Cleanable

PermaSeal® fittings are designed for Clean-In-Place (CIP) convenience – no disassembly is required. Their outstanding cleanability means quicker maintenance and shorter downtimes. PermaSeal® fittings can also be autoclaved and Clean-Out-Of-Place (COP).

Safe

Maintaining a safe workplace is vital to every manufacturing firm. Thanks to their channel locking components, following assembly PermaSeal® radial crimp fittings for stainless steel braided hose and rubber, silicone and PVC hose become single units that resist separation even under severe conditions. And the streamlined contours of all PermaSeal® fittings not only make them safer for employees to handle and work around, but also facilitate their use in most plumbing configurations.

PermaSeal® *Fittings – Common Features*

(See specific PermaSeal® fitting illustrations on following pages for unique features.)

Quality workmanship – average interior surface finish of 15Ra or better

Pin stamped part numbers provide permanent identification; customizing available

Streamlined contours allow easy integration into plumbing systems, less chance of injury to workers

High grade 316L material for excellent chemical resistance

PermaSeal®

Radial Crimp Fittings for PureGard® Silicone, SaniGard® Rubber, Sani-Tech® G-FDA, Pure-Fit® FGR, ClearGard® PVC, FlexPro® and PharmaSmooth™ Hose

INDUSTRY COMPLIANCES:

- 3-A 62-01 LISTED
- ACCEPTED BY USDA DAIRY, EGG, MEAT AND POULTRY; CANADIAN FOOD INSPECTION AGENCY (CFIA)
- REVIEWED BY MILK SAFETY BRANCH IN COMPLIANCE WITH GRADE "A" PASTEURIZED MILK ORDINANCE
- COMPLIES WITH FDA CHAPTER 21 REGULATION 177.2600

Applications

- *Food*
- *Beverage*
- *Dairy*
- *Cosmetics*
- *Personal Hygiene*
- *Cleaning Aids*
- *Instrumentation*

Features and Benefits

Radial crimp design

- Does not interfere with internal surface of coupling stem
- 360˚ fixed seal at coupler/stem junction eliminates the possibility of product wicking between hose and fitting
- Made of grade 316L stainless steel with an average interior surface finish of 15Ra or better

Sanitary

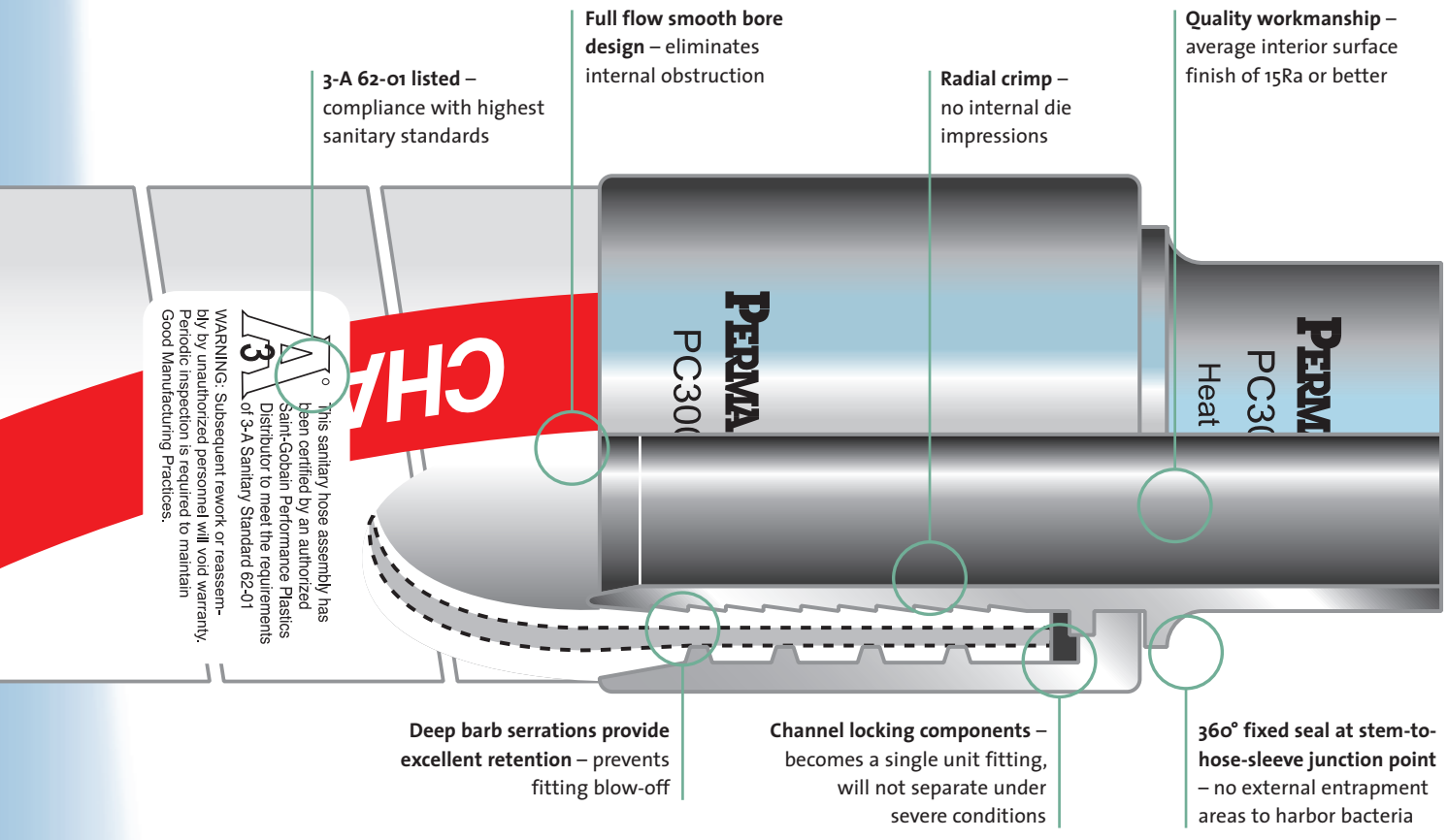
- Meets the stringent requirements of high-purity applications
- Full flow compression seal and smooth bore design prevent bacteria build-up

Cleanable

- Suitable for Clean-In-Place (CIP) procedures

Safe

- Channel locking components, when assembled, become a single unit that resists separation under severe conditions
- Streamlined contours help protect workers

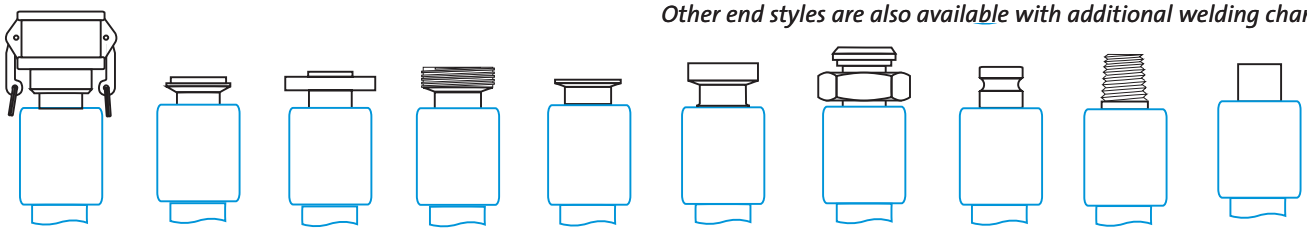


Fitting Details

- PermaSeal® radial crimp fittings for PureGard® silicone, SaniGard® rubber, Sani-Tech® G-FDA, Pure-Fit® FGR, ClearGard® PVC, FlexPro® and PharmaSmooth™ hose are available in sizes 1/4" up to 6" in 10 standard end styles
- Stems are manufactured from grade 316L stainless steel with an average interior surface finish of 15Ra or better
- Hose sleeves are stainless steel

End Connector Styles

Other end styles are also available with additional welding charges.



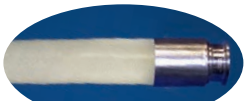
CF Female Cam + Groove | **EM** Male I-Line | **AF** Flange End | **BM** Male ACME Thread | **TC** Sanitary Clamp | **EF** Female I-Line | **BS** Bevel Seat & Hex Nut | **CM** Male Cam + Groove | **MPT** Male Pipe Thread | **TE** Tube End

Hose Sleeve *(Stainless Steel)*

- Elevated temperature
- CIP & COP suitable
- Excellent durability
- Higher pressure ratings
- Chemically resistant
- Lightweight streamlined contour

PureGard® Silicone, SaniGard® Rubber, Sani-Tech® G-FDA, Pure-Fit® FGR, ClearGard® PVC, FlexPro® and PharmaSmooth™ Hose

PureGard® SPD Silicone Hose *(single ply, polyester braid)*, pg 22



PureGard® FPD Silicone Hose *(4-ply, polyester braid)*, pg 22

PureGard® FPW Silicone Hose *(4-ply, polyester braid with stainless steel helix wire)*, pg 22

SaniGard® Protector® PSD Suction and Discharge Hose, pg 24

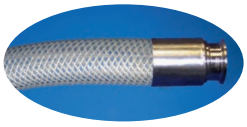
SaniGard® Sentry® SSW Softwall Discharge Hose, pg 24

SaniGard® Challenger™ FEP/Teflon® CTL Suction and Discharge Hose, pg 25

SaniGard® Gladiator® Crush-Resistant GCL Hose, pg 25

Pure-Fit® FGR Sanitary Transfer Hose, pg 26

Sani-Tech® G-FDA Sanitary Transfer Hose, pg 26



ClearGard® CBT Series PVC Hose, pg 30

ClearGard® CCT Series PVC Hose, pg 30

ClearGard® CSS Series PVC Hose, pg 30

FlexPro® Hose, pg 23

PharmaSmooth™ Hose, pg 23

PermaSeal® *Fittings for Pure-Fit® BRH Brewer Hose*

INDUSTRY COMPLIANCES:

- 3-A 62-01 LISTED
- ACCEPTED BY USDA DAIRY, EGG, MEAT AND POULTRY; CANADIAN FOOD INSPECTION AGENCY (CFIA)
- REVIEWED BY MILK SAFETY BRANCH IN COMPLIANCE WITH GRADE "A" PASTEURIZED MILK ORDINANCE/FDA

Applications



- ***Beverage Brewing***
- ***Food***
- ***Dairy***

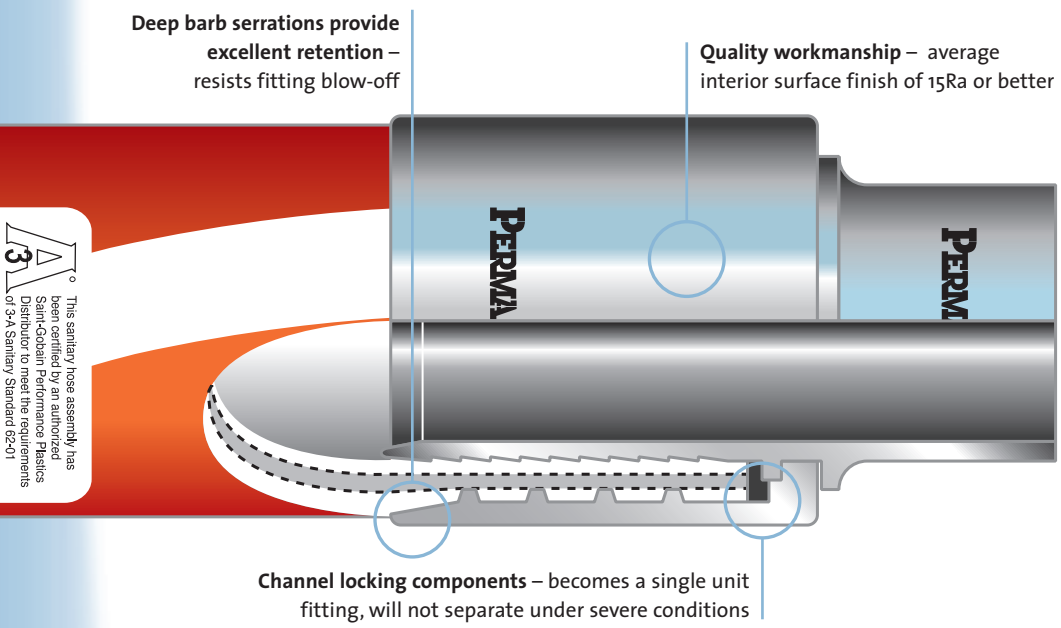
Features and Benefits

Radial crimp design
- Does not interfere with internal surface of coupling stem
- 360˚ fixed seal at coupler/stem junction eliminates the possibility of product wicking between hose and coupler

Sanitary
- Meets the stringent requirements of high-purity applications
- Full flow compression seal and smooth bore design prevent bacteria build-up

Cleanable
- Suitable for Clean-In-Place (CIP) procedures

Safe
- Channel locking components, when assembled, become a single unit that resists separation under severe conditions
- Streamlined contours help protect workers



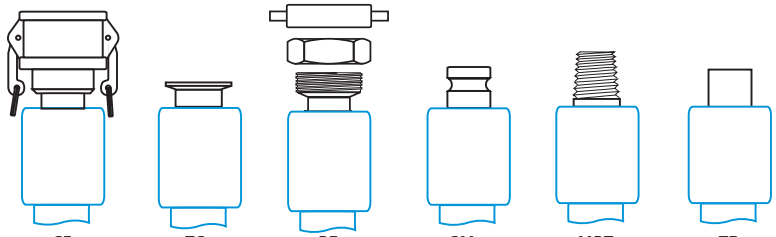
3-A This sanitary hose assembly has been certified by an authorized Saint-Gobain Performance Plastics Distributor to meet the requirements of 3-A Sanitary Standard 62-01

Fitting Details

- PermaSeal® fittings for Brewer Hose are available in sizes 1" up to 3" in six standard end styles
- Stems are manufactured from grade 316L stainless steel with an interior surface finish exceeding 15Ra

End Connector Styles

Other end styles are also available with additional welding charges.



CF Female Cam + Groove | **TC** Sanitary Clamp | **PE** Perlick End | **CM** Male Cam + Groove | **MPT** Male Pipe Thread | **TE** Tube End

Hose Sleeve *(Stainless Steel)*

- Elevated temperature
- CIP and COP suitable
- Excellent durability
- Higher pressure ratings
- Chemically resistant

Brewer Hose

Pure-Fit® BRH Brewer Hose pg 32

PermaSeal®

Radial Crimp Fittings for Stainless Steel Braided Hose

INDUSTRY COMPLIANCES:

- ACCEPTED BY FDA CHAPTER 21 CFR 17.1550
- ACCEPTED BY U.S. PHARMACOPEIA CLASS VI

Applications

- ***Steam in Food Processing***
- ***Steam in Beverage Processing***
- ***Instrumentation***

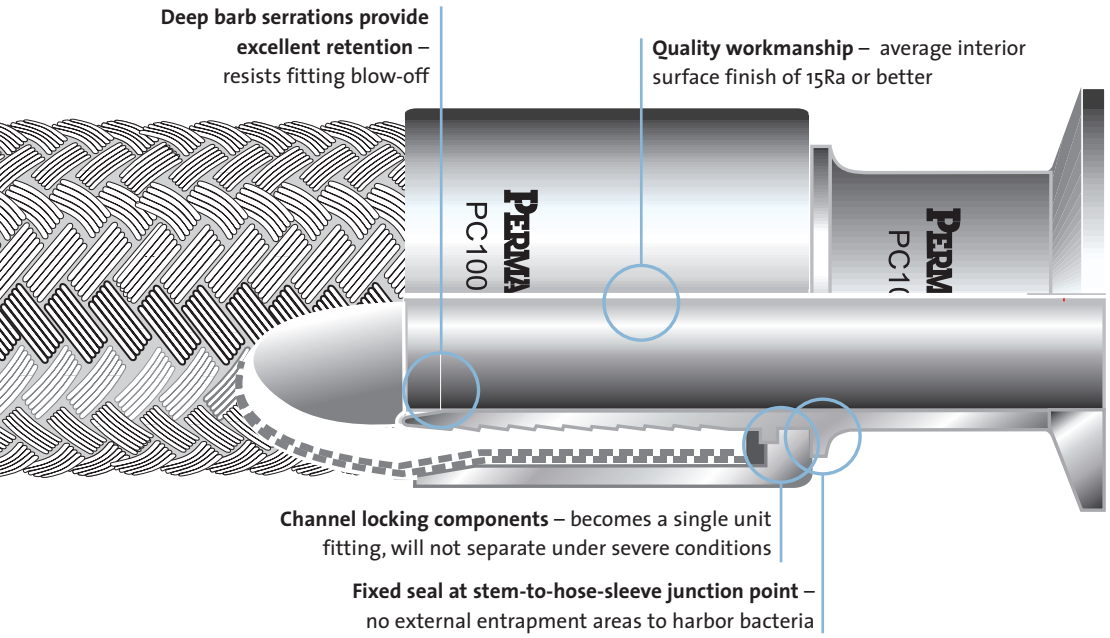
Features and Benefits

Radial crimp design
- Does not interfere with internal surface of fitting stem
- 360˚ fixed seal at coupler/stem junction eliminates the possibility of product wicking between hose and fitting

Sanitary
- Meets the stringent requirements of high-purity applications
- Full flow compression seal and smooth bore design prevent bacteria build-up

Cleanable
- Suitable for Steam-In-Place (SIP) procedures
- Totally autoclavable

Safe
- Channel locking components, when assembled, become a single unit that resists separation under severe conditions
- Streamlined contours help protect workers

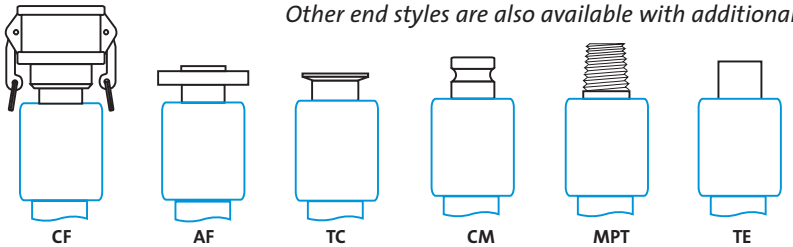


Fitting Details

- PermaSeal® fittings for stainless steel braided hose are available in sizes 1/4" up to 4" in six standard end styles
- Stems are manufactured from grade 316L stainless steel with an average interior surface finish of 15Ra or better

End Connector Styles

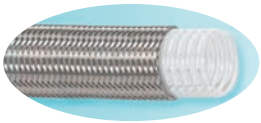
Other end styles are also available with additional welding charges.



CF Female Cam + Groove | **AF** Flange End | **TC** Sanitary Clamp or Step-up | **CM** Male Cam + Groove | **MPT** Male Pipe Thread | **TE** Tube End

Stainless Steel Braided Hose

SBT (Smooth Bore) Stainless Steel Braided Hose
pg 29



SBTC (Convoluted) Stainless Steel Braided Hose
pg 29

PureGard® *Silicone Hose Series*

APPLICATIONS: FOOD, BEVERAGE, DAIRY, COSMETICS, PERSONAL HYGIENE, CLEANING AIDS, INSTRUMENTATION

SPD Series

FEATURES/BENEFITS
- High pressure rating
- Ultra-flexible, with improved bend radius compared to non-reinforced hose
- Suitable for Clean-In-Place (CIP) and Steam-In-Place (SIP)
- Totally sterilizable and autoclavable
- Imparts no taste or odor
- Versatile applications

COLOR
- Translucent white

CONSTRUCTION
- Inner tube: platinum-cured FDA silicone
- Cover: FDA silicone reinforced with single\ ply polyester braid

FITTINGS
- ReSeal® reusable or PermaSeal® permanent

TEMPERATURE RATING
- -80° to +350°F

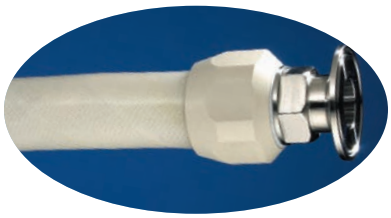
APPROVALS
- FDA
- 3-A
- USP Class VI
- CFIA

HOSE SPECIFICATIONS

Part Number	Inside Diameter (in.)	Outside Diameter (in.)	Max. Working Pressure (PSI@68°)*	Min. Bend Radius (in.)	Vacuum in HG	Weight (lb./ft.)	Max. Length (ft.)
SPD025-HP	1/4	16/32	155	1.5	—	0.1	50
SPD037-HP	3/8	21/32	125	2.0	—	0.14	100
SPD050-HP	1/2	27/32	105	2.5	—	0.19	100
SPD062-HP	5/8	30/32	90	3.0	—	0.25	100
SPD075-HP	3/4	1-4/32	65	3.5	—	0.3	100
SPD100-HP	1	1-12/32	55	5.0	—	0.4	50
SPD150-HP	1-1/2	1-27/32	45	6.0	—	0.58	50

**See NOTE below*

FPD Series



FEATURES/BENEFITS
- Extremely flexible and extra durable
- Sterilizable
- Outstanding pressure-rating strength
- Suitable for Clean-In-Place (CIP) and Steam-In-Place (SIP)
- Totally sterilizable and autoclavable
- Imparts no taste or odor
- Versatile applications

COLOR
- Translucent white

CONSTRUCTION
- Inner tube: platinum-cured FDA silicone
- Cover: FDA silicone reinforced with four-ply polyester braid

FITTINGS
- ReSeal® reusable or PermaSeal® permanent

TEMPERATURE RATING
- -80° to +350°F

APPROVALS
- FDA
- 3-A
- USP Class VI
- CFIA

HOSE SPECIFICATIONS

Part Number	Inside Diameter (in.)	Outside Diameter (in.)	Max. Working Pressure (PSI@68°)*	Min. Bend Radius (in.)	Vacuum in HG	Weight (lb./ft.)	Max. Length (ft.)
FPD050-HP	1/2	27/32	140	8.0	29	0.23	12
FPD075-HP	3/4	1-4/32	125	10.0	25	0.3	12
FPD100-HP	1	1-12/32	110	12.0	22	0.38	12
FPD150-HP	1-1/2	1-27/32	100	—	17	0.52	12
FPD200-HP	2	2-12/32	75	—	14	0.73	12
FPD250-HP	2-1/2	2-27/32	60	—	9	0.89	12
FPD300-HP	3	3-12/32	50	—	6	0.95	12
FPD400-HP	4	4-12/32	50	—	0	1.37	12

**See NOTE below*

Minimum order 12 ft.

FPW Series

FEATURES/BENEFITS
- Higher pressure rating
- Excellent bend radius
- Suitable for Clean-In-Place (CIP) and Steam-In-Place (SIP)
- Totally sterilizable and autoclavable
- Imparts no taste or odor
- Unsurpassed surface smoothness
- Versatile applications

COLOR
- Translucent white

CONSTRUCTION
- Inner tube: platinum-cured FDA silicone
- Cover: FDA silicone reinforced with four-ply polyester braid with stainless steel helix wire

FITTINGS
- ReSeal® reusable or PermaSeal® permanent

TEMPERATURE RATING
- -80° to +350°F

APPROVALS
- FDA
- 3-A
- USP Class VI
- CFIA

HOSE SPECIFICATIONS

Part Number	Inside Diameter (in.)	Outside Diameter (in.)	Max. Working Pressure (PSI@68°)*	Min. Bend Radius (in.)	Vacuum in HG	Weight (lb./ft.)	Max. Length (ft.)
FPW050-HP	1/2	27/32	200	2.5	29	0.28	12
FPW0755-HP	3/4	1-4/32	200	3.5	29	0.30	12
FPW100-HP	1	1-12/32	200	5.0	29	0.44	12
FPW150-HP	1-1/2	1-27/32	200	8.0	29	0.58	12
FPW200-HP	2	2-12/32	175	11.0	29	0.88	12
FPW250-HP	2-1/2	2-27/32	175	13.0	29	1.1	12
FPW300-HP	3	3-12/32	150	17.0	29	1.57	12
FPW400-HP	4	4-12/32	100	20.0	29	2.26	12

**NOTE: All PureGard® product pressure ratings are shown at ambient temperature (68°F). As temperatures increase, working pressure and vacuum ratings will decrease. Contact factory for recommendations for assembly applications that exceed 250°F.*

Minimum order 12 ft.

NEW

FlexPro® Series *Ultra Flexible Chemfluor® ID*

APPLICATIONS: FOOD, BEVERAGE, DAIRY, COSMETICS, PERSONAL HYGIENE, INSTRUMENTATION

FlexPro® with optional EPDM cover

COLOR
- Standard: gray
- Special colors available: green, blue, red, purple

CONSTRUCTION
- Inner tube: Chemfluor® PTFE
- Cover: Platinum-cured silicone or EPDM rubber
- Reinforcement: High tensile 304 or 316 stainless steel braid

FITTINGS
- PermaSeal® crimp style
- Flare-Thru fitting technology available

TEMPERATURE RATING
- -100°F to +450°F

APPROVALS
- FDA, US Pharmacopeia Class VI, 3-A

FEATURES/BENEFITS
- True smooth bore ID with convoluted hose flexibility
- Smooth ID surface for unimpeded flow with no particle entrapment
- Reduced force to bend for easy handling
- High pressure rating for resilient performance
- Sterilizable, steamable and autoclavable to meet the highest sanitary standards
- Full vacuum rated
- Imparts no taste or odor
- Highly chemical resistant
- Patented

HOSE SPECIFICATIONS - NOMINAL ID FOR CRIMP STYLE (304 STAINLESS STEEL MECHANICAL BRAID)

Part Number	Inside Diameter (in.)	Inside Diameter (mm.)	Outside Diameter (in.)	Outside Diameter (mm.)	Max. Working Pressure (PSI)	Max. Working Pressure (Mpa)	Min. Burst Pressure (PSI)	Min. Burst Pressure (Mpa)	Min. Bend Radius (in.)	Min. Bend Radius (mm.)	Vacuum Hg @ 70°F (in.)	Vacuum Hg @ 70°F (mm.)	Weight (lb/ft.)	Weight (kg/m)
12FLP	3/4	19.1	1-1/8	34.9	1000	6.90	4000	27.60	2	50.8	29.9	760	0.42	0.63
16FLP	1	25.4	1-3/8	34.9	1000	6.90	4000	27.60	2-1/4	57.2	29.9	760	0.63	0.94
HOSE SPECIFICATIONS - TUBE SIZE FOR FLARE-THRU (316 STAINLESS STEEL BRAID)														
14FLP	7/8	22.2	1-1/4	31.8	400	2.76	1600	11.03	2-1/4	57.2	29.9	760	0.52	0.77

NOTE: *When using Flare-Thru technology, pressure rating is for hose only.*

NEW

PharmaSmooth™ Series *Ultra Smooth OD and ID*

APPLICATIONS: FOOD, BEVERAGE, DAIRY, COSMETICS, PERSONAL HYGIENE, INSTRUMENTATION

COLOR
- Standard: gray
- Special colors available with minimum order quantities

CONSTRUCTION
- Inner tube: Chemfluor® FEP
- Cover: EPDM rubber
- Reinforcement: High tensile 304 or 316 stainless steel braid

FITTINGS
- PermaSeal® crimp style
- Flare-Thru fitting technology available

TEMPERATURE RATING
- -40°F to +350°F

APPROVALS
- FDA, US Pharmacopeia Class VI, 3-A

FEATURES/BENEFITS
- Ultra smooth OD surface
- Easy to clean
- Smooth ID even when bent
- Imparts no taste or odor
- Excellent bend radius
- Kink resistant
- Sterilizable and autoclavable
- Full vacuum rated
- Highly chemical resistant

HOSE SPECIFICATIONS - NOMINAL ID FOR CRIMP STYLE (304 STAINLESS STEEL MECHANICAL BRAID)

Part Number	Inside Diameter (in.)	Inside Diameter (mm.)	Outside Diameter (in.)	Outside Diameter (mm.)	Max. Working Pressure (PSI)	Max. Working Pressure (Mpa)	Min. Burst Pressure (PSI)	Min. Burst Pressure (Mpa)	Min. Bend Radius (in.)	Min. Bend Radius (mm.)	Vacuum Hg @ 70°F (in.)	Vacuum Hg @ 70°F (mm.)	Weight (lb/ft.)
8PSTLCT	1/2	12.7	7/8	23.1	500	3.45	2100	14.48	2-1/2	63.50	29.9	75.95	0.35
12PSTLCT	3/4	19.1	1-1/4	31.8	500	3.45	2100	14.48	3-1/4	82.55	29.9	75.95	0.62
16PSTLCT	1	25.4	1-1/2	38.1	450	3.10	1800	12.41	4-3/4	120.65	29.9	75.95	0.75
20PSTLCT	1-1/4	31.8	1-3/4	44.5	320	2.21	1600	11.03	7	177.80	29.9	75.95	0.98
24PSTLCT	1-1/2	38.1	2	52.1	300	2.07	1350	9.31	9	228.60	29.9	75.95	1.20
32PSTLCT	2	50.8	2-5/8	67.3	250	1.72	1200	8.27	11-1/2	292.10	29.9	75.95	1.50
40PSTLCT	2-1/2	63.5	3-1/4	81.3	200	1.38	900	6.21	18	457.20	29.9	75.95	2.35
48PSTLCT	3	76.2	3-3/4	94.0	150	1.03	700	4.83	22	558.80	29.9	75.95	2.50
64PSTLCT	4	101.6	4-3/4	119.4	150	1.03	600	4.14	34	863.60	29.9	75.95	3.60

NOTE: *Flare-Thru fittings are pressure rated only. Not rated for vacuum service.*

SaniGard® *Rubber Hose Series*

APPLICATIONS: FOOD, BEVERAGE, DAIRY, COSMETICS, PERSONAL HYGIENE

SaniGard® Protector® PSD Suction and Discharge Rubber Hose

FEATURES/BENEFITS
- Engineered to handle a wide variety of applications
- Rated for full suction and discharge service up to 150 psi
- Unique reinforced fabric spiral and wire helix design delivers exceptional flexibility

COLOR
- Gray or white with blue stripe

CONSTRUCTION
- Inner tube: white FDA butyl
- Cover: EPDM reinforced with two fabric spirals with galvanized helix wire

FITTINGS
- ReSeal® reusable or PermaSeal® permanent

TEMPERATURE RATING
- -40° to +225°F (continuous) +250°F (intermittent)

APPROVALS
- FDA, USDA, 3-A, CFIA

HOSE SPECIFICATIONS

Part Number	Inside Diameter (in.)	Outside Diameter (in.)	Max. Working Pressure (PSI)	Min. Bend Radius (in.)	Vacuum in HG	Weight (lb./ft.)	Max. Length** (ft.)
GRAY COVER							
PSD050	1/2	1-1/32	150	2.0	29	0.40	100
PSD075	3/4	1-8/32	150	3.0	29	0.56	100
PSD100	1	1-17/32	150	4.0	29	0.65	100
PSD150	1-1/2	2-5/32	150	6.0	29	1.07	100
PSD200*	2	2-21/32	150	7.0	29	1.43	100
PSD250	2-1/2	3-6/32	150	8.0	29	2.08	100
PSD300*	3	3-24/32	150	9.0	29	2.63	100
PSD400*	4	4-24/32	150	12.0	29	3.13	100
PSD600	6	6-24/32	150	36.0	29	5.22	20
WHITE COVER							
PSD150-W	1-1/2	2-5/32	150	6.0	29	1.07	100
PSD200-W	2	2-21/32	150	7.0	29	1.53	100
PSD300-W	3	3-24/32	150	9.0	29	2.63	100

** Heavy duty construction*

***Special order up to 400-ft. length*

NOTE: *All SaniGard® product pressure ratings are shown at ambient temperature (68°F). As temperatures increase, working pressure and vacuum ratings will decrease. Contact factory for recommendations for assembly applications that exceed 200°F.*

SaniGard® Sentry® SSW Softwall Discharge Rubber Hose

FEATURES/BENEFITS
- Softwall design for extra flexibility and handling ease
- Ultra-lightweight
- Designed exclusively for discharge service when structural rigidity is not needed
- Chemically resistant to mild caustic solutions
- High pressure rated
- Ideally suited for overhead CIP wash units

COLOR
- Blue with yellow stripe

CONSTRUCTION
- Inner tube: white butyl
- Cover: EPDM reinforced with two fabric spirals

FITTINGS
- ReSeal® reusable or PermaSeal® permanent

TEMPERATURE RATING
- -40° to +225°F (continuous) +250°F (intermittent)

APPROVALS
- FDA, USDA, 3-A, CFIA

HOSE SPECIFICATIONS

Part Number	Inside Diameter (in.)	Outside Diameter (in.)	Max. Working Pressure (PSI)	Min. Bend Radius (in.)	Vacuum in HG	Weight (lb./ft.)	Max. Length (ft.)
SSW150	1-1/2	2-5/32	250	—	0	1	100
SSW200	2	2-21/32	250	—	0	1.25	100
SSW250	2-1/2	3-6/32	250	—	0	1.66	100
SSW300	3	3-24/32	250	—	0	2.23	100

WARNING: Not recommended for applications that require structural rigidity.

NOTE: *All SaniGard® product pressure ratings are shown at ambient temperature (68°F). As temperatures increase, working pressure and vacuum ratings will decrease. Contact factory for recommendations for assembly applications that exceed 200°F.*

SaniGard® Challenger™ FEP/Teflon® CTL Suction and Discharge Rubber Hose

FEATURES/BENEFITS

- Premium quality with smooth, non-stick, chemically inert FEP Teflon® lining
- Does not impart taste or odor
- Can be safely cleaned with open end steam at low pressures
- Dual helix with static dissipated wire provides full vacuum, excellent flexibility and added safety when electrical continuity is required
- Excellent chemical resistance
- Durable and kink-resistant

Teflon™ is a registered trademark of E.I. du Pont Nemours and Company.

COLOR
- White with red stripe

CONSTRUCTION
- Inner tube: white FEP
- Cover: white EPDM reinforced with two fabric spirals with dual wire helix and dual plated grounding wire
- Heavy-duty construction option available

FITTINGS
- PermaSeal® permanently installed or ReSeal® reusable with stainless steel hose sleeves only

TEMPERATURE RATING
- -40° to +350°F

APPROVALS
- FDA, USDA, 3-A, CFIA
- Meets U.S. Pharmacopeia Class VI requirements

HOSE SPECIFICATIONS

Part Number	Inside Diameter (in.)	Outside Diameter (in.)	Max. Working Pressure (PSI)	Min. Bend Radius (in.)	Vacuum in HG	Weight (lb./ft.)	Max. Length (ft.)
CTL050	1/2	1-3/32	150	2.0	29	0.37	100
CTL075	3/4	1-8/32	150	3.0	29	0.5	100
CTL100	1	1-17/32	150	3.5	29	0.72	100
CTL150	1-1/2	2-5/32	150	8.0	29	1.09	100
CTL200	2	2-21/32	150	10.0	29	1.56	100
CTL250	2-1/2	3-6/32	150	C/F*	29	2.03	60
CTL300	3	3-24/32	150	15.0	29	2.43	60
CTL400	4	4-24/32	150	C/F*	29	3.29	30

** Contact factory*

NOTE: *All SaniGard® product pressure ratings are shown at ambient temperature (68°F). As temperatures increase, working pressure and vacuum ratings will decrease. Contact factory for recommendations for assembly applications that exceed 200°F.*

SaniGard® Gladiator® Crush-Resistant GCR Rubber Hose

FEATURES/BENEFITS

- Abrasion resistant non-marking cover perfect for high traffic areas
- Crush resistant
- Monofilament helix allows hose to return to original shape after being twisted, kinked or run over by a vehicle
- Suitable for Clean-In-Place (CIP)
- High pressure rated

COLOR
- Red with white stripe

CONSTRUCTION
- Inner tube: santoprene rubber
- Cover: EPDM reinforced with multiple fabric spirals with monofilament helix

FITTINGS
- PermaSeal® permanently installed or ReSeal® reusable

TEMPERATURE RATING
- -40° to +225°F (continuous) +250°F (intermittent)

APPROVALS
- FDA, USDA, 3-A, CFIA

HOSE SPECIFICATIONS

Part Number	Inside Diameter (in.)	Outside Diameter (in.)	Max. Working Pressure (PSI)	Min. Bend Radius (in.)	Vacuum in HG	Weight (lb./ft.)	Max. Length (ft.)
GCR150	1-1/2	2-5/32	250	5.0	20	1.05	100
GCR200	2	2-21/32	250	7.0	20	1.33	100
GCR250	2-1/2	3-6/32	250	12.0	20	1.77	100
GCR300	3	3-24/32	250	18.0	20	2.3	100
GCR400	4	4-24/32	250	36.0	20	2.94	100

NOTE: *All SaniGard® product pressure ratings are shown at ambient temperature (68°F). As temperatures increase, working pressure and vacuum ratings will decrease. Contact factory for recommendations for assembly applications that exceed 200°F.*

WARNING: Gladiator® is rated at 20 HG (about 75% vacuum) but will actually pull a full vacuum when new. Repeated collapsing of the hose by twisting, kinking, etc., creates a "soft spot" that reduces vacuum capabilities, even though the hose rebounds to its original shape.

Pure-Fit® *FGR Series*

APPLICATIONS: FOOD, BEVERAGE, DAIRY, COSMETICS, PERSONAL HYGIENE

FEATURES/BENEFITS
- Multiple fabric reinforcements for pressure capability
- Flexes easily, withstands vacuum and facilitates static grounding
- Imparts no taste or odor
- Excellent chemical resistance
- Full vacuum rating
- Higher pressure rating

COLOR
- Gray with red spiral stripe

CONSTRUCTION
- Inner tube: white nitrile-PVC blend
- Cover: EPDM with stainless helix wire reinforcement

FITTINGS
- PermaSeal® permanent

TEMPERATURE RATING
- -40° to +250°F

APPROVALS
- FDA, USDA, 3-A

HOSE SPECIFICATIONS

Part Number	Inside Diameter in. (mm)	Outside Diameter in. (mm)	Max.* Working Pressure (PSI)	Min. Bend Radius in.**	Vacuum in HG	Min. Burst Pressure (PSI)	Weight (lb./ft.)	Max. Length (ft.)
HOSFGR-08	.500 (12.7)	.972 (24.7)	400	1.5	29.9	1650	0.4	100
HOSFGR-12	.750 (19.1)	1.268 (32.2)	375	2.0	29.9	1500	0.5	100
HOSFGR-16	1.000 (25.4)	1.518 (38.6)	350	3.0	29.9	1450	0.6	100
HOSFGR-24	1.500 (38.1)	2.020 (51.3)	300	4.0	29.9	1200	0.9	100
HOSFGR-32	2.000 (50.8)	2.520 (64.0)	250	4.5	29.9	1050	1.3	100
HOSFGR-40	2.500 (63.5)	3.138 (79.7)	150	6.0	29.9	700	1.9	100
HOSFGR-48	3.000 (76.2)	3.650 (92.7)	150	7.0	29.9	600	2.3	100
HOSFGR-64	4.000 (101.6)	4.670 (118.6)	150	10.0	29.9	600	3.1	100

** Based on ambient condition on exterior of hose. Elevated temperatures and characteristics of medium being transferred can affect working pressures and burst pressures.*

***Measured on the inner surface of the curved portion. Data is based on static applications. For dynamic or cyclic applications, consult factory.*

Sani-Tech® *G-FDA Series*

APPLICATIONS: FOOD, BEVERAGE, DAIRY, COSMETICS, PERSONAL HYGIENE

FEATURES/BENEFITS
- Cover and reinforcements designed to withstand rough handling and high temperatures
- Premium quality sanitary suction and discharge hose
- Handles a wide variety of products
- Full vacuum rating
- Custom laylines available

COLOR
- Gray

CONSTRUCTION
- Inner tube: white EPDM
- Cover: gray EPDM reinforced with two spirals of dual-helix wire

FITTINGS
- PermaSeal® permanent

TEMPERATURE RATING
- -40° to +300°F

APPROVALS
- FDA, USDA, 3-A

HOSE SPECIFICATIONS

Part Number	Inside Diameter in. (mm)	Outside Diameter in. (mm)	Max.* Working Pressure (PSI)	Min. Bend Radius in.**	Vacuum in HG	Min. Burst Pressure (PSI)	Weight (lb./ft.)	Max. Length (ft.)
GFDA-0500	.500 (12.7)	.931 (23.6)	150	2.50	29.9	600	0.23	60
GFDA-0750	.750 (19.1)	1.182 (30.0)	150	3.75	29.9	600	0.31	60
GFDA-1000	1.000 (25.4)	1.500 (38.1)	150	4.00	29.9	600	0.391	60
GFDA-1500	1.500 (38.1)	2.090 (53.1)	150	5.00	29.9	600	0.81	60
GFDA-2000	2.000 (50.8)	2.600 (66.0)	150	6.00	29..9	600	1.16	60
GFDA-2500	2.500 (63.5)	3.173 (80.6)	150	7.00	29.9	600	1.70	50
GFDA-3000	3.000 (76.2)	3.718 (94.4)	150	8.00	29.9	600	1.96	60
GFDA-4000	4.000 (101.6)	4.781 (121.4)	150	11.00	29.9	600	3.01	60

** Based on ambient condition on exterior of hose. Elevated temperatures and characteristics of medium being transferred can affect working pressures and burst pressures.*

***Measured on the inner surface of the curved portion. Data is based on static applications. For dynamic or cyclic applications, consult factory.*

MilkFlex® *Suction/Discharge Hose*

APPLICATIONS: DAIRY, FOOD, BEVERAGE

COLOR
- White

CONSTRUCTION
- Inner tube: white FDA butyl
- Cover: white natural rubber reinforced with two fabric plies with double helix wire

FITTINGS
- ReSeal® reusable

TEMPERATURE RATING
- -40° to +190°F continuous

APPROVALS
- FDA, USDA, 3-A, CFIA

FEATURES/BENEFITS
- Lightweight and flexible
- Remains supple even in extremely cold temperatures
- Resists pinhole leaks during high temperature cleaning
- Reduces cracked helix problems caused by pressure surges or aging

HOSE SPECIFICATIONS

Part Number	Inside Diameter (mm)	Outside Diameter (mm)	Max. Working Pressure (PSI @ 68°)	Min. Bend Radius (in.)	Vacuum in HG	Weight (lb./ft.)	Max. Length (ft.)
MHH-51	51	65	90	5.0	29	1.35	100
MHH-63	63	76	90	7.0	29	1.68	100
MHH-76	76	89	90	14	29	2	100

NOTE: *All MilkFlex® product pressure ratings are shown at ambient temperature (68°F). As temperatures increase, working pressure and vacuum ratings will decrease. Contact factory for recommendations for assembly applications that exceed 190°F.*

Pure-Fit® *BRH Brewer Hose*

APPLICATIONS: BEVERAGE BREWING, FOOD, DAIRY

COLOR
- Red EPDM with gray stripe

CONSTRUCTION
- Inner tube: white chlorobutyl
- Cover: synthetic multi-ply fabric reinforcement

FITTINGS
- ReSeal® reusable or PermaSeal® permanent

TEMPERATURE RATING
- -22° to +222°F

APPROVALS
- FDA
- USDA
- 3-A

FEATURES/BENEFITS
- Specially designed for brewing
- Excellent for transfer of non-oily liquid products such as in brewing
- Resists damage from kinking or flattening
- Four plies of fabric reinforcement (1" and 1-1/2")
- Six plies of fabric reinforcement (2" and 3")
- Available in bulk or fabricated hose assemblies

HOSE SPECIFICATIONS

Part Number	Inside Diameter (in.)	Outside Diameter (in.)	Max. Working Pressure (PSI @ 68°)	Min. Bend Radius (in.)	Vacuum in HG	Weight (lb./ft.)	Max. Length (ft.)
HOSBRH-16	1.000	1.686	250	4.0	20	0.8	100
HOSBRH-24	1.500	2.220	250	5.5	20	1.2	100
HOSBRH-32	2.000	2.812	250	6.5	20	1.8	100
HOSBRH-48	3.000	4.124	250	10.0	20	3.5	100

NOTE: *Product pressure ratings are shown at ambient temperature. As temperatures increase, working pressure and vacuum ratings will decrease. Contact factory for recommendations for assembly applications that exceed 140°F.*

EHH Series *Electrically Heated Hose*

INDUSTRY COMPLIANCES:

- FDA APPROVED HOSE CONSTRUCTION MATERIALS

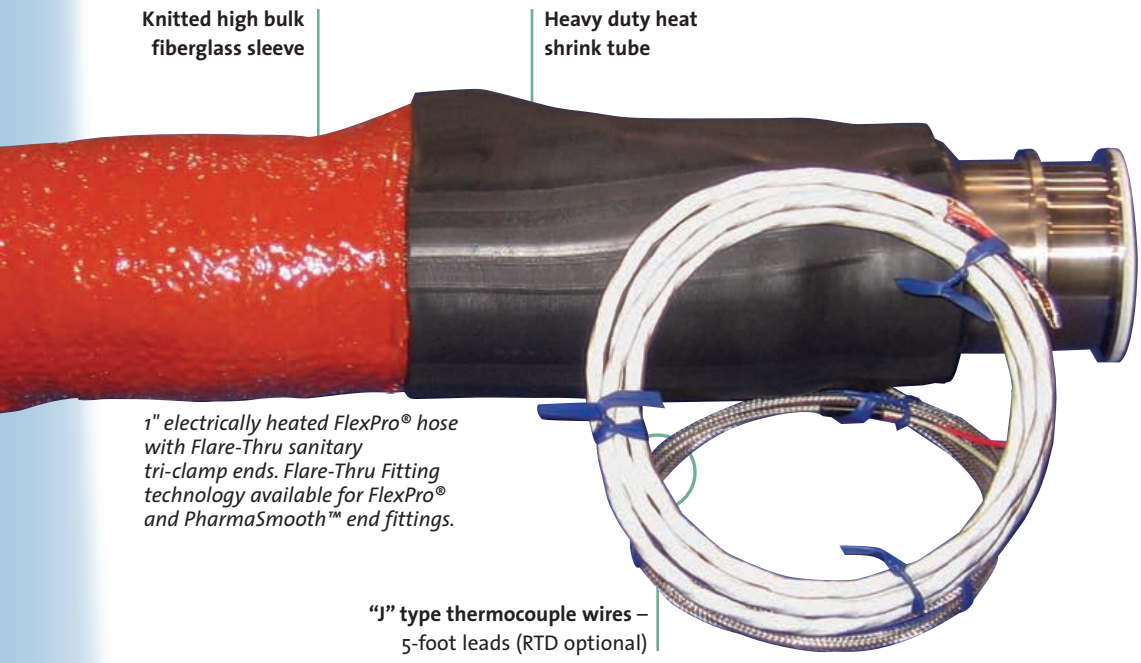
Applications

- *Hot glues*
- *Filling machines*
- *Food casings*
- *Food lines*
- *Hot waxes*
- *Food processing machines*
- *Pharmaceutical*
- *Cosmetics*
- *Outdoor applications where temperature must be maintained*

Features and Benefits

- Electrically heated trace feature maintains internal temperature of materials regardless of hose installation
- Can be used with flexible stainless steel braided hose assemblies*
- Custom fabrication available
- Small outside diameter eliminates bulky hose
- External temperature controller available

**Consult factory for availability of EHH option with other Saint-Gobain hose assemblies, and for details on how to order. For a complete catalog on EHH Series products, call customer service and ask for literature #FLS-3028.*



1" electrically heated FlexPro® hose with Flare-Thru sanitary tri-clamp ends. Flare-Thru Fitting technology available for FlexPro® and PharmaSmooth™ end fittings.

Hose Details

Construction

- Available on a "built-to-order" basis on virtually all Sanitary Couplers hose assemblies
- 115 or 220 VAC
- J and K thermocouples available
- RTD available

Temperature Ratings

- Up to maximum temperature of +250°F/+121°C

External Protection Options

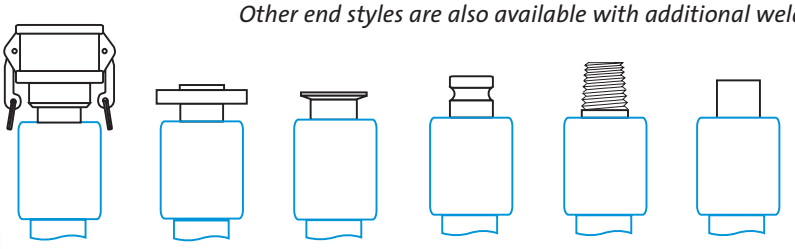
- Silicone
- FEP heat shrink

Optional Controller Unit

- Digital read-out
- 3-digit display
- NEMA 4X face plate

End Connector Styles

Other end styles are also available with additional welding charges.



CF Female Cam + Groove

AF Flange End

TC Sanitary Clamp or Step-up

CM Male Cam + Groove

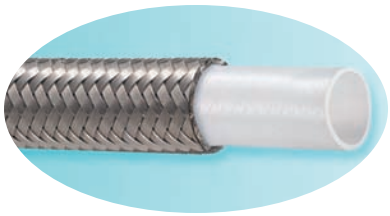
MPT Male Pipe Thread

TE Tube End

Stainless Steel Braided Hose

APPLICATIONS: STEAM IN FOOD PROCESSING, STEAM IN BEVERAGE PROCESSING, BOTTLE FILLING

SBT Smooth Bore



FEATURES/BENEFITS

- Greater wall thickness of Chemfluor® PTFE tube
  - Up to 33% thicker than most competing products (tube wall .040 minimum)
  - Superior kink resistance
  - Improved vacuum ratings
  - Better damage resistance
- Neutral to taste, color and odor
- Non-stick, non-contaminating
- Cleans easily – steam, detergent or caustic
- Can be autoclaved
- Full ID sizes
  - Greater flow rate per given size
  - Less pressure drop through fitting area than hoses with tube size ID

COLOR
- White

CONSTRUCTION
- Inner tube: Chemfluor® fluoropolymer smooth bore
- Cover: stainless steel braided reinforcement

FITTINGS
- PermaSeal® permanent

TEMPERATURE RATING
- -100° to +450°F (continuous)
- -100° to +500°F (intermittent)

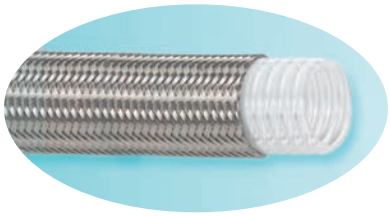
APPROVALS
- FDA 21CFR 177.1550
- U.S. Pharmacopeia Class VI

HOSE SPECIFICATIONS

Part Number	Inside Diameter (in.)	Outside Diameter (in.)	Max. Working Pressure (PSI)	Min. Bend Radius (in.)	Vacuum in HG	Burst Pressure (PSI)	Weight (lb./ft.)
SBT025	1/4	12/32	3,000*	2.5	29.9[1]	13,500	.08
SBT050	1/2	22/32	2,000*	4.0	29.9[1]	8,500	.15
SBT075	3/4	28/32	1,200*	7.5	29.9[1]	4,800	.22
SBT100	1	1-6/32	800*	12.0	20.0[1]	3,200	.31

** Working pressure is given @ 70°F. Decrease working pressure 1% for every 2°F above 350°F.*
1 Vacuum rating is given @ 70°F; Decrease vacuum rating 1% for every 2°F above 350°F.

SBTC Convoluted



FEATURES/BENEFITS

- Chemfluor® PTFE fluoropolymer inner tube
- Superior flexibility and vacuum resistance
- Convoluted inner tubes are low profile and helical formed to promote drainage
- Neutral to taste
- Does not absorb color or odor
- Non-stick, non-contaminating
- Easy to clean (SIP, CIP, autoclavable)

COLOR
- White

CONSTRUCTION
- Inner tube: Chemfluor® fluoropolymer convoluted
- Cover: stainless steel braided reinforcement

FITTINGS
- PermaSeal® permanent

TEMPERATURE RATING
- -100° to +450°F (continuous)
- -100° to +500°F (intermittent)

APPROVALS
- FDA 21CFR 177.1550
- U.S. Pharmacopeia Class VI

HOSE SPECIFICATIONS

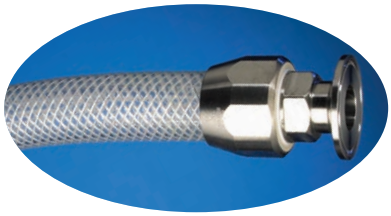
Part Number	Inside Diameter (in.)	Outside Diameter (in.)	Max. Working Pressure (PSI)	Min. Bend Radius (in.)	Vacuum in HG	Burst Pressure (PSI)	Weight (lb./ft.)
SBTC050	1/2	3/4	1,750	1.75	29.9[1]	7,000@72°F	.19
SBTC075	3/4	1-7/8	1,375	2.25	29.9[1]	5,500@72°F	.30
SBTC100	1	1-10/32	1,000	2.75	29.9[1]	4,300@72°F	.40
SBTC125	1-1/4	1-20/32	750	3.50	29.9[1]	3,200@72°F	.50
SBTC150	1-1/2	2-4/32	650	3.75	29.9[1]	2,600@72°F	.63
SBTC200	2	2-1/2	600	6.50	29.9[1]	2,400@72°F	.89
SBTC250	2-1/2	3-1/4	212*	13	29.9[2]	850@70°F	1.35
SBTC300	3	3-7/8	175*	14	29.9[2]	700@70°F	1.75
SBTC400	4	5	150*	16	29.9[2]	600@70°F	2.1

** Working pressure is given @ 70°F. Decrease working pressure 1% for every 2°F above 250°F.*
1 Vacuum rating is given @ 72°F.
2 Vacuum rating is given @ 70°F; Decrease vacuum rating 1% for every 2°F above 250°F.

ClearGard® *PVC Hose*

APPLICATIONS: FOOD, BEVERAGE, DAIRY, COSMETICS, INSTRUMENTATION

CBT Series



FEATURES/BENEFITS
- Flexible
- Imparts no odor or taste
- Alkaline-resistant
- Non-toxic and non-pyrogenic
- Light weight

COLOR
- Transparent

CONSTRUCTION
- FDA PVC clear extrusion with polyester textile inner braid reinforcement

FITTINGS
- ReSeal® reusable or PermaSeal® permanent

TEMPERATURE RATING
- 20° to +140°F

APPROVALS
- FDA, USDA, 3-A, CFIA

HOSE SPECIFICATIONS

Part Number	Inside Diameter (in.)	Outside Diameter (in.)	Max. Working Pressure (PSI @ 68°)	Min. Bend Radius (in.)	Vacuum in HG	Weight (lb./ft.)	Max. Length (ft.)
CBT050	1/2	26/32	250	5.0	-	0.17	100
CBT075	3/4	1-4/32	200	7.0	-	0.3	100
CBT100	1	1-12/32	150	9.0	-	0.38	100
CBT150	1-1/2	1-29/32	100	15.0	-	0.64	50
CBT200	2	2-16/32	75	18.0	-	0.94	50

NOTE: *All ClearGard® product pressure ratings are shown at ambient temperature (68°F). As temperatures increase, working pressure and vacuum ratings will decrease. Contact factory for recommendations for assembly applications that exceed 140°F.*

CCT Series

FEATURES/BENEFITS
- Flexible
- Imparts no odor or taste
- Alkaline-resistant
- Non-toxic and non-pyrogenic
- Light weight

COLOR
- Transparent

CONSTRUCTION
- FDA PVC clear extrusion with no reinforcement

FITTINGS
- ReSeal® reusable or PermaSeal® permanent

TEMPERATURE RATING
- 20° to +140°F

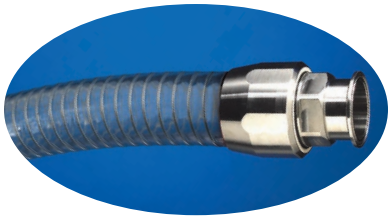
APPROVALS
- FDA, USDA, 3-A, CFIA

HOSE SPECIFICATIONS

Part Number	Inside Diameter (in.)	Outside Diameter (in.)	Max. Working Pressure (PSI @ 68°)	Min. Bend Radius (in.)	Vacuum in HG	Weight (lb./ft.)	Max. Length (ft.)
CCT050	1/2	26/32	45	-	-	0.13	100
CCT075	3/4	1-4/32	35	-	-	0.38	100
CCT100	1	1-12/32	35	-	-	0.43	100
CCT150	1-1/2	1-29/32	35	-	-	0.54	50
CCT200	2	2-16/32	35	-	-	0.96	50

NOTE: *All ClearGard® product pressure ratings are shown at ambient temperature (68°F). As temperatures increase, working pressure and vacuum ratings will decrease. Contact factory for recommendations for assembly applications that exceed 140°F.*

CSS Series



FEATURES/BENEFITS
- Flexible
- Imparts no odor or taste
- Alkaline-resistant
- Non-toxic and non-pyrogenic
- Light weight

COLOR
- Transparent

CONSTRUCTION
- FDA PVC clear extrusion with steel wire helix rod reinforcement

FITTINGS
- ReSeal® reusable or PermaSeal® permanent

TEMPERATURE RATING
- 20° to +140°F

APPROVALS
- FDA, USDA, 3-A, CFIA

HOSE SPECIFICATIONS

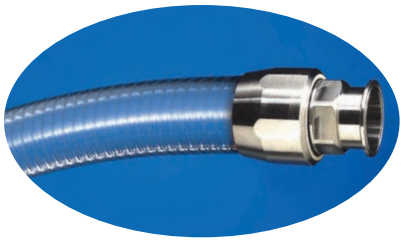
Part Number	Inside Diameter (in.)	Outside Diameter (in.)	Max. Working Pressure (PSI @ 68°)	Min. Bend Radius (in.)	Vacuum in HG	Weight (lb./ft.)	Max. Length (ft.)
CSS050	1/2	26/32	150	2.0	29	0.21	100
CSS075	3/4	1-4/32	150	3.0	29	0.36	100
CSS100	1	1-12/32	100	4.0	29	0.44	100
CSS150	1-1/2	1-29/32	50	6.0	29	0.58	50
CSS200	2	2-16/32	50	8.0	29	0.84	100
CSS250	2-1/2	3	50	10.0	29	1.38	100
CSS300	3	3-16/32	50	12.0	29	1.64	100

NOTE: *All ClearGard® product pressure ratings are shown at ambient temperature (68°F). As temperatures increase, working pressure and vacuum ratings will decrease. Contact factory for recommendations for assembly applications that exceed 140°F.*

ClearGard® *PVC Suction/Discharge Hose*

APPLICATIONS: FOOD, BEVERAGE, DAIRY, COSMETICS, INSTRUMENTATION

CSC Series



FEATURES/BENEFITS
- Flexible
- Imparts no odor or taste
- Alkaline-resistant
- Non-toxic and non-pyrogenic
- Full vacuum rating

COLOR
- Transparent

CONSTRUCTION
- FDA PVC clear extrusion with clear helix rod reinforcement

FITTINGS
- ReSeal® reusable

TEMPERATURE RATING
- 20° to +140°F

APPROVALS
- FDA, USDA, 3-A, CFIA

HOSE SPECIFICATIONS

Part Number	Inside Diameter (in.)	Outside Diameter (in.)	Max. Working Pressure[1] (PSI @ 68°)	Min. Bend Radius (in.)	Vacuum in HG	Weight (lb./ft.)	Max. Length (ft.)
CSC100	1	1-7/32	100	3.0	29	0.24	100
CSC150	1-1/2	1-26/32	85	6.0	29	0.5	100
CSC200	2	2-11/32	75	8.0	29	0.71	100
CSC250	2-1/2	2-30/32	65	10.0	29	0.94	100
CSC300	3	3-14/32	65	12.0	29	1.14	100
CSC400	4	4-17/32	55	16.0	29	1.91	100

NOTE: *All ClearGard® product pressure ratings are shown at ambient temperature (68°F). As temperatures increase, working pressure and vacuum ratings will decrease. Contact factory for recommendations for assembly applications that exceed 140°F.*

CSW Series

FEATURES/BENEFITS
- Flexible
- Imparts no odor or taste
- Alkaline-resistant
- Non-toxic and non-pyrogenic
- Full vacuum rating

COLOR
- Transparent

CONSTRUCTION
- FDA PVC clear extrusion with white helix rod reinforcement

FITTINGS
- ReSeal® reusable

TEMPERATURE RATING
- 20° to +140°F

APPROVALS
- FDA, USDA, 3-A, CFIA

HOSE SPECIFICATIONS

Part Number	Inside Diameter (in.)	Outside Diameter (in.)	Max. Working Pressure[1] (PSI @ 68°)	Min. Bend Radius (in.)	Vacuum in HG	Weight (lb./ft.)	Max. Length (ft.)
CSW100	1	1-7/32	100	3.0	29	0.24	100
CSW150	1-1/2	1-26/32	85	6.0	29	0.5	100
CSW200	2	2-11/32	75	8.0	29	0.71	100
CSW250	2-1/2	2-30/32	65	10.0	29	0.94	100
CSW300	3	3-14/32	65	12.0	29	1.14	100

NOTE: *All ClearGard® product pressure ratings are shown at ambient temperature (68°F). As temperatures increase, working pressure and vacuum ratings will decrease. Contact factory for recommendations for assembly applications that exceed 140°F.*

ClearGard® *Flow Indicators*

INDUSTRY COMPLIANCES:

- ACCEPTED BY USDA DAIRY, EGG, MEAT AND POULTRY, CANADIAN FOOD INSPECTION AGENCY (CFIA)
- COMPLIES WITH 3-A STANDARD 65-00
- REVIEWED BY MILK SAFETY BRANCH IN COMPLIANCE WITH GRADE "A" PASTEURIZED MILK ORDINANCE/FDA

Applications

For monitoring product levels and movement in rigid piping systems

Features and Benefits

Ultra-pure

- Chemfluor® FEP tubing resistant to virtually all known chemicals
- Helps maintain your ultra-pure environment
- Universally suitable for most caustic applications

Non-stick surface

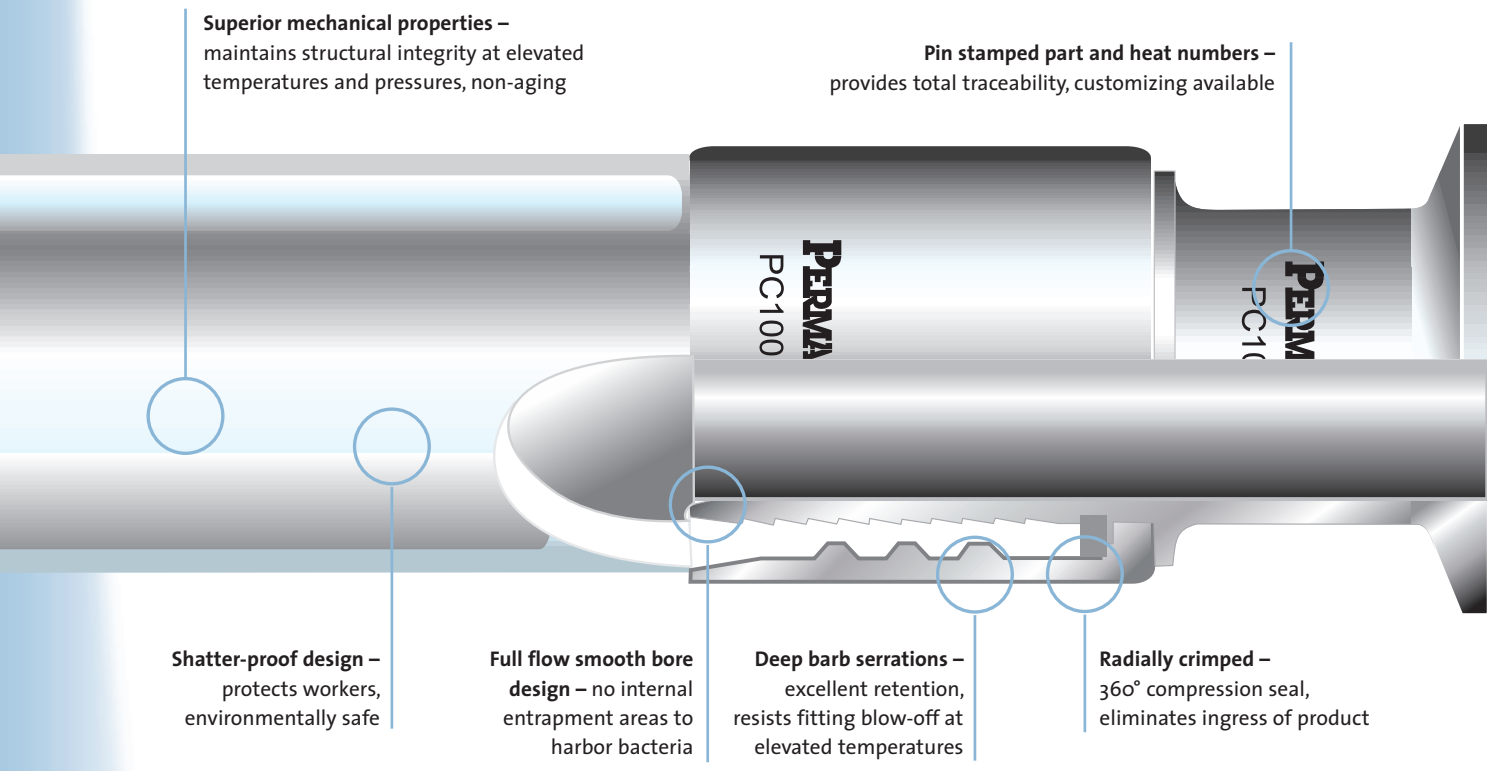
- Up to six times smoother than standard PFA tubing
- Greatly reduces potential for cross-contamination
- Less cross-contamination, higher process productivity

Superior visual clarity

- Allows accurate monitoring of product levels and movement in rigid piping systems
- Will not discolor, resists ultraviolet light

Radial crimp design

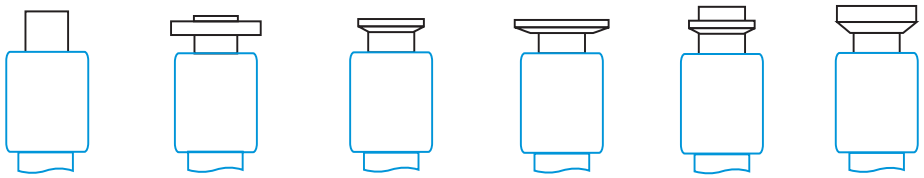
- Utilizes PermaSeal® radial crimp fittings
- Excellent durability, increased pressure ratings
- Provides a full flow smooth bore inside diameter
- High grade 316L material – high chemical resistance



Flow Indicator Details

- ClearGard® flow indicators are available in sizes 1/2" up to 3" (lengths up to 10 feet) in six standard end styles
- Stems manufactured from grade 316L stainless steel with an interior surface finish exceeding 15Ra or better
- Non-metallic stems in a number of polymers are available for metal-sensitive applications
- Can also be ordered as a homogenous unit, thus making it the smoothest internal bore flow indicator available; contact factory for size and length availability

End Connector Styles



TE
Tube End

AF
Flange End

TC
Sanitary Clamp

TC
Step Up

EM
Male I-Line

EF
Female I-Line

Flow Indicator Specifications

SPECIFICATIONS

Part Number	Size (in.)	Inside Diameter (in.)	Outside Diameter (in.)	Wall Thickness	Pressure (PSI) (p.s.i.)@ 70°F	Burst Pressure 70°F
CFI050	1/2	0.500	0.700	0.100	200	800
CFI075	3/4	0.750	0.950	0.100	175	700
CFI100	1	1.000	1.250	0.125	125	500
CFI150	1-1/2	1.356	1.610	0.125	105	420
CFI200	2	1.856	2.100	0.125	72	290
CFI250	2-1/2	2.356	2.650	0.150	50	200
CFI300	3	2.856	3.230	0.185	40	160
CFI400	4	3.856	4.276	0.210	30	120

**Burst pressure ratings at ambient 70°F (21°C).* *For applications over 300°F consult factory.*

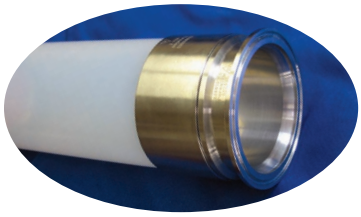
PRESSURE CORRECTION FACTORS FOR ALL NON CAGED FLOW INDICATORS

Using operating pressure @ ambient with correction factors for elevated temperatures.

70°F	150°F	200°F	250°F	300°F
100%	65%	50%	35%	25%

Example: 1" Flow indicator @ 200°F rated @ 125 P.S.I. ambient x .50 = 62.5 P.S.I. @ 200°F

ClearGard® Flow Indicator



Fittings/Adapters *and Pipe Interface Adapters*

Saint-Gobain Performance Plastics manufactures an extensive array of transitional pieces designed to interface with Saint-Gobain hose assemblies and existing pipe and tubing systems. These adapters are offered in several materials:

- Stainless steel lined with Chemfluor® FEP fluoropolymer
- Chemfluor® PFA encapsulated stainless steel
- Stainless steel
- Exotic alloys

Features and Benefits

ADAPTERS

- Highest quality material – 316L stainless steel, compared to the 304 stainless steel used in many competing products
- Wide range of sizes – 3/4"-4" ID
- Common fitting styles – sanitary clamp (including mini) by MNPT or FNPT standard
- Smooth, highly finished ID – 12-15 Ra surface finish standard
- Easy installation – Hex or "wrenching" flats eliminate pipe wrench surface marring
- Reduced hose assembly connection labor – Sanitary clamp style connections speed up the process thanks to easy-to-use gasket and clamp Saint-Gobain PermaSeal® or Flare-Thru configured hose assemblies
- Entrapment problems minimized – Smooth machined ID reduces surface roughness often found on "as cast" adapters
- Traceability – Material Certifications available with PIN stamped heat trace numbers
- Leak paths eliminated – Large range of multiple "step" by size transitions eliminates common practice of stacked single-step reducers
- Specials available – Connection styles other than sanitary by NPT available to meet your unique application requirements
- Alternative materials – Polypropylene and PVDF (Kynar®) available

SANITARY END CAPS

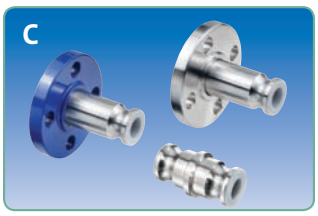
- Highest quality material – 316L stainless steel standard
- Sizes – 3/4"-4" ID
- Material Certification available

Types of Pipe Interface Adapters

A. Pure-Fit® Stainless Steel

B. Chemfluor® FEP Fluoropolymer Lined

C. Chemfluor® PFA Fluoropolymer Encapsulated



Pure-Fit® 316 Stainless Steel

DESCRIPTION

- Manufactured from the highest quality stainless steel
- Sizes from 1/4" to 4" ID

MATERIALS

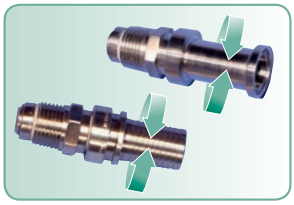
- 316 and 304 stainless steel surface finish
- Standard 15 Ra internal surface finish

TECHNICAL DATA

- Material test reports (MTRs) and electropolishing available upon request

CLAMP AND GASKET X MALE OR FEMALE NPT	
in.	in.
1/2 x 1/4	1 x 1
1/2 x3/8	1-1/2 x 1
1/2 x 1/2	1-1/2 x 1-1/2
3/4 x 3/4	2 x 2
1 x 1/4	2-1/2 x 2-1/2
1 x 3/8	3 x 3
1 x 1/2	4 x 4
1 x 3/4	

Swiv-L-Flex® Sanitary Swivel Fittings and Adapters



MATERIALS

- Body 316L stainless steel; seals pre-loaded PTFE and stainless steel thrust rings and high performance elastomers

DESCRIPTION

- Innovative, patent-pending design simplifies hot water washdown
- Delivers smooth, easy 360° swivel motion regardless of temperature and pressure
- Designed for use with virtually all brands of spray nozzles
- Double-seal design for leak-free operation
- Easy handling reduces operator fatigue and misdirected spray down
- Compatible with most Saint-Gobain Performance Plastics rubber hoses, silicone hoses and fluoropolymer-lined hoses
- Adapters can be easily and quickly connected using standard "mini" sanitary clamps and gaskets

STANDARDS

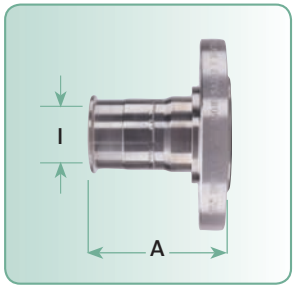
- FDA, 3-A

TECHNICAL DATA

- Heavy duty retainer virtually eliminates clip ring failure and fitting blow-off
- Maximum working pressure for fittings and adapters is 150 PSIG @ 200° hot water service

PART NUMBER	DESCRIPTION
69081203X116	3/4" Mini Adapter
69081603X106	1" TC Adaptor
991203DSKS	3/4" Barb for Rubber Hose
381203DSKS	3/4" Barb for Fluoropolymer Hose
991003DSKS	5/8" Barb for Rubber Hose

Chemfluor FEP Fluoropolymer Lined 10 x 12 Sanitary x 150# Flanged



DESCRIPTION
- Flare-Thru liner design
- Transition piece for interface with Saint-Gobain Performance Plastics hose assemblies and existing pipe and tubing systems

MATERIALS
- Chemfluor® FEP liner
- 316L stainless steel base material
- Lengths can be varied

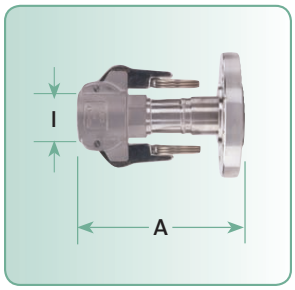
STANDARDS
- ANSI B16.5, ASA 150# and 300# ratings
- DIN P/N 16
- BS 10 table E
- J.I.S. 10 K flanges

TECHNICAL DATA
- Corrosion resistant
- Smooth, non-stick inner surface eliminates entrapment
- Swivel style lap-joint flanges
- Less costly than exotic alloy construction
- Temperature rated+ 350°F
- Pressure rated 150 psi
- Supplied with standard 316L stainless steel lap-joint flange
- Flange and sanitary connections are the same size; no "jump" sizes are manufactured
- Typical applications include transfer stations for truck unloading, pump connections, and vessel connections

10 X 12 SANITARY X 150# FLANGED ADAPTER SPECIFICATIONS

Part Number	Hose Size in.	Hose Size mm.	I Inner Diameter in.	I Inner Diameter mm.	Inner Dia. at Face of Gasket in.	Inner Dia. at Face of Gasket mm.	A Overall Length in.	A Overall Length mm.
8916101 2S6FT	1.00	25.40	0.80	20.32	0.87	22.10	3.50	88.90
8924101 2S6FT	1.50	38.10	1.30	33.02	1.36	34.54	4.50	114.30
8932101 2S6FT	2.00	50.80	1.75	44.45	1.86	47.14	4.53	115.06
8948101 2S6FT	3.00	76.20	2.80	71.12	2.86	72.54	5.03	127.76
8964101 2S6FT	4.00	101.60	3.64	92.33	3.64	92.33	5.50	139.70

Chemfluor® FEP Fluoropolymer Lined 12 x 16 150# Flanged x Female Cam and Groove



DESCRIPTION
- Locking style cam lock arms
- Flare-Thru liner design
- Transition piece for interface with Saint-Gobain Performance Plastics hose assemblies and existing pipe and tubing systems

MATERIALS
- Chemfluor® FEP liner
- 316L stainless steel exterior bodies
- 316L ANSI Class 150 standard
- Epoxy coated carbon steel Class 150 available
- 304 ANSI Class 150 available
- Consult factory for ANSI Class 300 flanges

STANDARDS
- ANSI B16.5, ASA 150# and 300# ratings
- DIN P/N 16 and its equal BS 4504 table 16
- BS 10 table E
- J.I.S. 10 K flanges
- MIL-C-27487

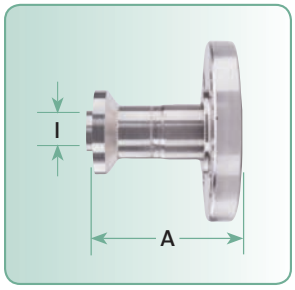
TECHNICAL DATA
- Corrosion resistant
- Smooth, non-stick inner surface eliminates entrapment
- Swivel style lap-joint flanges
- Less costly than exotic alloy construction
- Temperature rated +350°F
- Pressure rated 150 psi
- Supplied with standard 316L stainless steel lap-joint flange complete with Chemfluor® PFA encapsulated gasket
- Typical applications include transfer stations for truck unloading, pump connections, and vessel connections

12 X 16 FEMALE CAM AND GROOVE X 150# FLANGED ADAPTER SPECIFICATIONS

Part Number	Hose Size in.	Hose Size mm.	I Inner Diameter in.	I Inner Diameter mm.	Inner Dia. at Face of Gasket in.	Inner Dia. at Face of Gasket mm.	A Overall Length in.	A Overall Length mm.
89161216LKS6FT	1.00	25.40	0.91	23.11	4.38	111.13	5.50	139.70
89241216LKS6FT	1.50	38.10	1.40	35.56	4.50	114.30	5.75	146.05
89321216LKS6FT	2.00	50.80	1.82	46.23	4.75	120.65	6.38	161.93

Pipe Interface Adapters

Chemfluor® FEP Fluoropolymer Lined 12 x 50 150# Flanged x Male "I" Line



DESCRIPTION
- Flare-Thru liner design
- Transition piece for interface with Saint-Gobain Performance Plastics hose assemblies and existing pipe and tubing systems

MATERIALS
- Chemfluor® FEP liner
- 316 stainless steel
- Lengths can be varied
- 316L ANSI Class 150 standard
- Epoxy coated carbon steel Class 150 available
- 304 ANSI Class 150 available
- Consult factory for ANSI Class 300 flanges

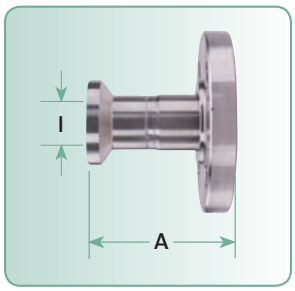
STANDARDS
- ANSI B16.5, ASA 150# and 300# ratings

TECHNICAL DATA
- Corrosion resistant
- Smooth, non-stick inner surface eliminates entrapment
- Swivel style lap-joint flanges
- Less costly than exotic alloy construction
- Temperature rated +350°F
- Pressure rated 150 psi
- Supplied with standard 316L stainless steel flange
- Typical applications include transfer stations for truck unloading, pump connections, and vessel connections

12 X 50 MALE "I" LINE X 150# FLANGED ADAPTER SPECIFICATIONS

Part Number	Hose Size		I Inner Diameter		A Overall Length	
	in.	mm.	in.	mm.	in.	mm.
89161250S6FT	1.00	25.40	1.00	25.40	3.50	88.90
89241250S6FT	1.50	38.10	1.50	38.10	4.25	107.95

Chemfluor® FEP Fluoropolymer Lined 12 x 51 150# Flanged x Female "I" Line



DESCRIPTION
- Flare-Thru liner design
- Transition piece for interface with Saint-Gobain Performance Plastics hose assemblies and existing pipe and tubing systems

MATERIALS
- Chemfluor® FEP liner
- 316 stainless steel exterior bodies
- 316L ANSI Class 150 standard
- Epoxy coated carbon steel Class 150 available
- 304 ANSI Class 150 available
- Consult factory for ANSI Class 300 flanges

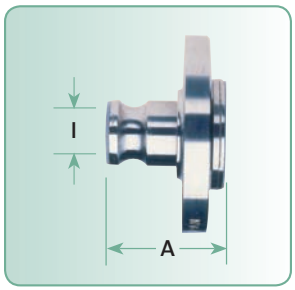
STANDARDS
- ANSI B16.5, ASA 150# and 300# ratings
- DIN P/N 16 and its equal BS 4504 table 16
- BS 10 table E
- J.I.S. 10 K flanges

TECHNICAL DATA
- Corrosion resistant
- Smooth, non-stick inner surface eliminates entrapment
- Swivel style lap-joint flanges
- Less costly than exotic alloy construction
- Temperature rated +350°F
- Pressure rated 150 psi
- Supplied with standard 316L stainless steel flange

12 X 50 FEMALE "I" LINE X 150# FLANGED ADAPTER SPECIFICATIONS

Part Number	Hose Size		I Inner Diameter		Inner Dia. at Face of Gasket		A Overall Length	
	in.	mm.	in.	mm.	in.	mm.	in.	mm.
89161251S6FT	1.00	25.40	1.00	25.40	3.33	84.46	3.50	88.90

Chemfluor® PFA Fluoropolymer Encapsulated Male Cam and Groove x 150# Flanged • Style 18T



DESCRIPTION

- Flange by cam and groove adapter; flange is 150# lap-joint (swivel) style
- Transition piece for interface with Saint-Gobain Performance Plastics hose assemblies and existing pipe and tubing systems
- Chemfluor® PFA liner "locked in" to stainless steel body

MATERIALS

- Chemfluor® PFA encapsulated with 316 stainless steel base material
- Standard flange: epoxy-coated carbon steel
- 150#, 304 and 316 stainless steel, and 300# flanges optional

STANDARDS

- ANSI B16.5, ASA 150# and 300# ratings
- DIN PN 16 and its equal BS 4504 table 16
- BS 10 table E
- J.I.S. 10 K flanges

TECHNICAL DATA

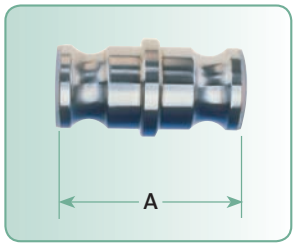
- Corrosion resistant
- All 316 stainless steel exterior bodies
- Smooth, non-stick inner surface eliminates entrapment
- Less costly than exotic alloy construction
- Vacuum rated
- Temperature rated -100°F to +450°F
- Pressure rated to 150# lap-joint flange rating or mating female cam and groove/gasket rating
- Consult factory for 300# flanges

10 X 12 SANITARY X 150# FLANGED ADAPTER SPECIFICATIONS

Part Number	Hose Size in.	Hose Size mm.	I Inner Diameter in.	I Inner Diameter mm.	Inner Dia. Outer Diameter in.	Inner Dia. Outer Diameter mm.	A Overall Length in.	A Overall Length mm.
381218TOO	0.75	19.05	0.70	17.78	1.25	31.75	3.35	85.09
381618TOO	1.00	25.40	0.83	20.96	1.44	36.58	3.75	95.25
382418TOO	1.50	38.10	1.19	30.23	2.15	54.61	4.13	104.78
383218TOO	2.00	50.80	1.75	44.45	2.49	63.25	4.50	114.30
384818TOO	3.00	76.20	2.86	72.64	3.60	91.44	5.13	130.18

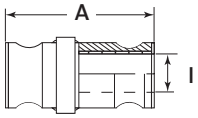
Important: For adapter with epoxy-coated carbon steel flange, replace "OO" with "CO" in part number. For adapter with 304 stainless steel flange, replace "OO" with "S4" in part number. For adapter with 316L stainless steel flange, replace "OO" with "S6" in part number.

Chemfluor® PFA Encapsulated • Male Spool • Style 19T



DESCRIPTION

- Spool adapter
- Join hose assemblies together
- Convert a female cam and groove fitting to a male fitting
- Chemfluor® PFA liner "locked in" to stainless steel body



MATERIALS

- Chemfluor® PFA encapsulated with 316 stainless steel base material

STANDARDS

- Manufactured to specification MIL-C-27487
- All styles fully interchangeable with all other manufacturers' designs when made to this specification

TECHNICAL DATA

- Corrosion resistant
- All 316 stainless steel exterior bodies
- Smooth, non-stick inner surface eliminates entrapment
- Less costly than exotic alloy construction
- Vacuum rated
- Temperature rated -100°F to +450°F
- Pressure rated to 150# lap-joint flange rating or mating female cam and groove/gasket rating

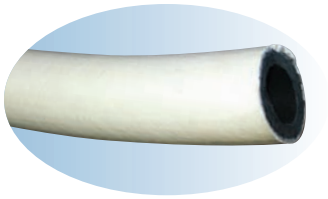
MALE SPOOL ADAPTER SPECIFICATIONS • STYLE 19T

Part Number	Hose Size in.	Hose Size mm.	I Inner Diameter in.	I Inner Diameter mm.	Outer Diameter in.	Outer Diameter mm.	A Overall Length in.	A Overall Length mm.
381619T	1.00	25.40	0.80	25.40	1.44	36.50	3.18	80.80
382419T	1.50	38.10	1.22	30.86	2.11	53.57	3.79	96.16
383219T	2.00	50.80	C/F*	C/F*	C/F*	C/F*	C/F*	C/F*

**C/F – consult factory.*

Extras

Washdown Hose



FEATURES/BENEFITS
- Designed for food and beverage clean-up service
- Handles hot water up to 200°F
- Abrasion resistant, non-marking cover
- Spiral construction for excellent flexibility

COLOR
- White

CONSTRUCTION
- Inner tube/black nitrile
- Cover/white nitrile-PVC blend reinforced with two synthetic textile spiral cords

FITTINGS
- Shank style with strap or worm gear type clamp (not supplied by Saint-Gobain)

TEMPERATURE RATING
- -20° to +200°F

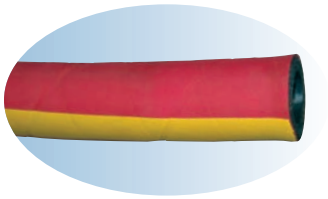
HOSE SPECIFICATIONS

Part Number	Inside Diameter (in.)	Outside Diameter (in.)	Working Pressure (PSI)	Weight (lb./ft.)	Max Length (ft.)
WDH075	3/4	1-6/32	300	0.4	500

NOTE: *Product pressure ratings are shown at ambient temperature. As temperatures increase, working pressure and vacuum ratings will decrease. Contact factory for recommendations for assembly applications that exceed 140°F.*

Available only in 500-foot coil.

Steam Hose



FEATURES/BENEFITS
- Recommended for cleaning pumps, valves, tubing
- Rugged construction for harsh conditions
- Will not harden or crack during normal service life
- Vented cover resists blistering

COLOR
- Red with yellow stripe

CONSTRUCTION
- Inner tube/black EPDM
- Cover/EPDM reinforced with steel wire

FITTINGS
- Interlocking clamp style (not supplied by Saint-Gobain)

TEMPERATURE RATING
- -20° to +400°F

HOSE SPECIFICATIONS

Part Number	Inside Diameter (in.)	Outside Diameter (in.)	Working Pressure (PSI)	Weight (lb./ft.)	Max. Length (ft.)
PCR075	3/4	1-8/32	250	0.5	200

NOTE: *Product pressure ratings are shown at ambient temperature. As temperatures increase, working pressure and vacuum ratings will decrease. Contact factory for recommendations for assembly applications that exceed 140°F.*

Available only in 50-, 100- and 200-foot lengths.

SaniGard® Hose Supports

FEATURES/BENEFITS
- Designed to elevate hose to reduce cover wear, increase service life
- Exclusive saddle support eliminates hose kinking problems
- Two-part design installs easily, stays in place, and slides across pavement for handling ease

HOSE SPECIFICATIONS

Part Number	Suggested Intervals	Fits SaniGard® Hose ID Size	Weight (lb.)
HD150	10" to 16"	1-1/2"	4
HD200	12" to 18"	2"	4.8
HD250	20" to 28"	2-1/2"	5
HD300	20" to 28"	3"	5
HD400	24" to 36"	4"	5.5

NOTE: *Product pressure ratings are shown at ambient temperature. As temperatures increase, working pressure and vacuum ratings will decrease. Contact factory for recommendations for assembly applications that exceed 140°F.*

SANIseal™ Hose Identification System

INDUSTRY COMPLIANCES:
- FDA APPROVED

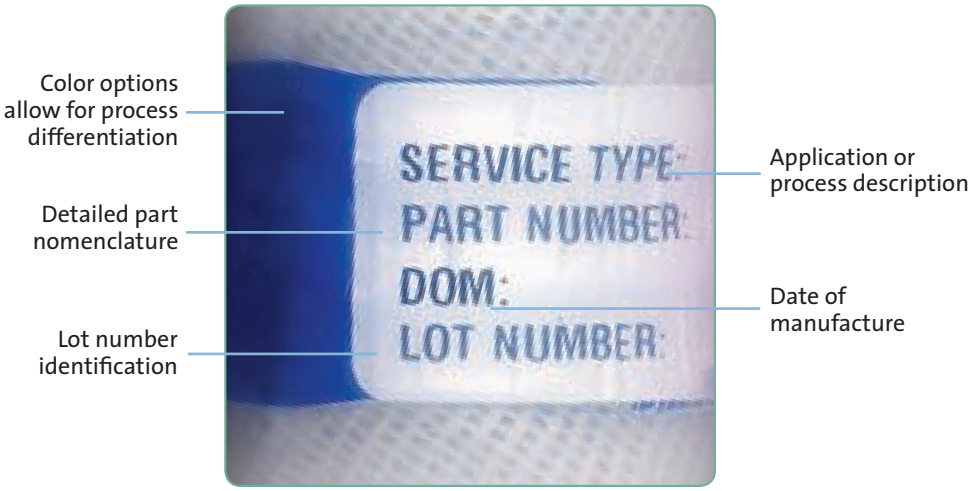
Applications

- ***Biopharmaceutical manufacturing***
- ***Production fermentation***
- ***Pharmaceutical processing***
- ***Load cell***
- ***Bioreactor process lines***
- ***Bulk product transfers***

Features and Benefits

- Allows key information (e.g., date of manufacture, lot number, approval criteria, re-order phone number) to be permanently sealed and bonded to Saint-Gobain hoses
- Meets or exceeds FDA requirements on hose identification
- Suitable for autoclaving, clean-in-place (CIP) and steam-in-place (SIP) applications
- No product contact
- No areas where entrapment can occur
- Easy to clean and sanitize
- Will not peel, crack or blister

SANISEAL® TYPICAL LABEL EXAMPLE



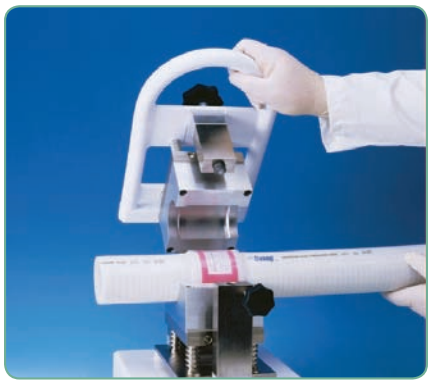
NOTE: *Data options to be specified by customer.*

Construction

- Patented silicone label encapsulation system
- Available on a "built-to-order" basis on virtually all hose assemblies

SANIseal® Details

- Compatible with the full range of Sanitary Couplers hoses through 3" ID, including those with silicone, stainless steel and EPDM rubber covers



Standard Hose Sleeve Sizes for ReSeal®

Legend

SPD, FPD, FPW – PureGard® Silicone Hose
PSD, SSW, CTL, GCR – SaniGard® Rubber Hose
CSC, CSW, CBT, CCT, CSS – ClearGard® PVC Hose and Tubing
MHH – MilkFlex® Hose
BRH – Pure-Fit® BRH Brewer Hose

STYLE	SIZE	STANDARD SLEEVE SIZE	
SPD/FPD/FPW	1/4"	RE025HS-015UT & RE025HS-016UT	N/A IN SS
SPD/FPD/FPW	3/8"	RE037HS-020UT & RE037HS-021UT	N/A IN SS
SPD/FPD/FPW	1/2"	RE050HS-026UT & RE050HS-027UT	BOTH POLYMER AND SS
SPD/FPD/FPW	5/8"	RE062HS-029UT & RE062HS-030UT	BOTH POLYMER AND SS
SPD/FPD/FPW	3/4"	RE075HS-103UT & RE075HS-104UT	BOTH POLYMER AND SS
SPD/FPD/FPW	1"	RE100HS-111UT & RE100HS-112UT	BOTH POLYMER AND SS
SPD/FPD/FPW	1-1/2"	RE150HS-127UT & RE150HS-128UT	BOTH POLYMER AND SS
FPD/FPW	2"	RE200HS-211UT & RE200HS-212UT	BOTH POLYMER AND SS
FPD/FPW	2-1/2"	RE250HS-226UT & RE250HS-227UT	BOTH POLYMER AND SS
FPD/FPW	3"	RE300HS-311UT & RE300HS-312UT	BOTH POLYMER AND SS
FPD/FPW	4"	N/A (PERMANENT CRIMPED ONLY)	
CSW/CSC	1"	RE100P-HS107 & RE100P-HS108	N/A IN SS
CSW/CSC	1-1/2"	RE150P-HS125	N/A IN SS
CSW/CSC	2"	RE200P-HS211	N/A IN SS
CSW/CSC	2-1/2"	RE250P-HS229	N/A IN SS
CSW/CSC	3"	RE300P-HS313	N/A IN SS
CSW/CSC	4"	RE400P-HS416	N/A IN SS
CBT/CCT/CSS	1/2"	RE050T-HS025 & RE050T-HS026	BOTH POLYMER AND SS
CBT/CCT/CSS	3/4"	RE075T-HS103 & RE075T-HS104	BOTH POLYMER AND SS
CBT/CCT/CSS	1"	RE100T-HS111 & RE100T-HS112	BOTH POLYMER AND SS
CBT/CCT	1-1/2"	RE150T-HS129 & RE150T-HS130	BOTH POLYMER AND SS
CSS	1-1/2"	RE150T-HS127 & RE150T-HS128	RE150T-HS128SS FOR SS
CBT/CCT	2"	RE200T-HS214 & RE200T-HS215	BOTH POLYMER AND SS
CSS	2"	RE200T-HS211 & RE200T-HS212	BOTH POLYMER AND SS
CSS	2-1/2"	RE250T-HS300 & RE250T-HS301	BOTH POLYMER AND SS
CSS	3"	RE300T-HS315 & RE300T-HS316	BOTH POLYMER AND SS
PSD/CTL*	1/2"	RE050EX-HS100 & RE050EX-HS101	BOTH POLYMER AND SS
PSD/CTL*	3/4"	RE075EX-HS107 & RE075EX-HS108	BOTH POLYMER AND SS
PSD/CTL*	1"	RE100EX-HS116 & RE100EX-HS117	BOTH POLYMER AND SS
PSD/GCR/SSW/CTL*	1-1/2"	RE150HS-203 & RE150HS-204	BOTH POLYMER AND SS
PSD/GCR/SSW/CTL*	2"	RE200HS-219 & RE200HS-220	BOTH POLYMER AND SS
PSD/GCR/SSW/CTL*	2-1/2"	RE250HS-304 & RE250HS-305	BOTH POLYMER AND SS
PSD/GCR/SSW/CTL*	3"	RE300HS-322 & RE300HS-323	BOTH POLYMER AND SS
PSD/GCR/CTL*	4"	RE400HS-422 & RE400HS-423	BOTH POLYMER AND SS
MHH	51MM (2")	RE51MM-HS218 & RE51MM-HS219	BOTH POLYMER AND SS
MHH	63MM (2-1/2")	RE63MM-HS300 & RE63MM-HS301	BOTH POLYMER AND SS
MHH	76MM (3")	RE76MM-HS316 & RE76MM-HS317	BOTH POLYMER AND SS
BRH	1"	RE100EX-HS124	BOTH POLYMER AND SS
BRH	1-1/2"	RE150HS-207	BOTH POLYMER AND SS
BRH	2"	RE200HS-222 & RE200HS-221	BOTH POLYMER AND SS
BRH	3"	RE300HS-402, 404, 405, 406	BOTH POLYMER AND SS

*NOTE: *SaniGard® CTL not available with polymer sleeves.*

How to Order an Assembly

Assembly Part Number

PSD	200	RE	200	TC	200	TC	P	15/0
Hose*	ID Size	Fitting Style	Size/Style First End		Size/Style Second End		Hose Sleeve Material	Assembly Length

Hose
PSD
GCR
SSW
CTL
G-FDA
FGR
CSC
CSW
CBT
CCT
CSS
SPD
FDP
FPW
MHH
SBT
SBTC
BRH
FLP (FlexPro®)
PSTLCT (PharmaSmooth™)

ID Size
025 = 1/4"
037 = 3/8"
050 = 1/2"
062 = 5/8"
075 = 3/4"
100 = 1"
150 = 1-1/2"
200 = 2"
250 = 2-1/2"
300 = 3"
400 = 4"
600 = 6"

Fitting Style
RE = ReSeal®
PC = PermaSeal® Radial Crimp

End Style
TC = Sanitary Clamp
BS = Bevel Seat and Hex Nut
BM = Male Threaded Bevel
EF = I-Line Female
EM = I-Line Male
JM = John Perry Male
JF = John Perry Female
MPT = Male Pipe Thread
FPT = Female Pipe Thread
AF = AMSI Stub End & Plate Flange
QM = Q-Line
TE = Tube End Stem (Butt Weld)
CM = Cam & Groove Male
CF = Cam & Groove Female
XTE = Extended Shank
PE = Perlick End

Hose Sleeve
S = Stainless
P = Polymer

Assembly Length
Feet/Inches

**Add EH to hose portion of assembly part number for Electrically Heated Hose option; e.g., PSDEH.*

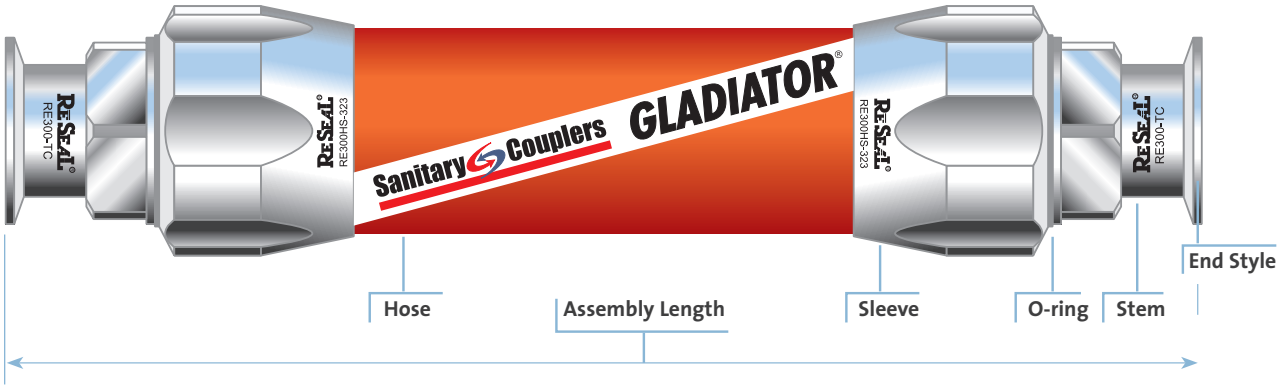
Overall length tolerances for assemblies
1/4" on assemblies to 24"
1/2" on assemblies 25" to 60"
1% on assemblies over 60"

Electrically Heated Hose
Submit the following information with orders.

Ambient Temperature: _____
Fluid Inlet Temperature: _____
Type of Fluid: _____
Hazardous Area Classification: _____
Supply Voltage: _____
Controller Required: ☐ Yes ☐ No
Type of Sensor: ☐ J Type ☐ RTD

⚠ IMPORTANT NOTES ON ELECTRICALLY HEATED HOSE

- Electrically Heated Hose supplied with standard J type thermocouple. RTD is also available; contact factory for details.
- Electrically Heated Hose not supplied with controller. Optional controllers are available; contact factory for details.



NOTE ON RETURN POLICY: Any unused and unassembled product may be returned only at the approval of the manufacturer. There will be a 25% restocking charge for any of these returned products provided the products are in good unused condition.

Temperature/Pressure *Reference Guide*

Legend

PSD - SaniGard® Protector™ Rubber Suction and Discharge Hose
CTL - SaniGard® Challenger™ FEP/ Teflon Suction and Discharge Hose
GCR - SaniGard® Gladiator® Crush-Resistant Rubber Hose
SSW - SaniGard® Sentry® Softwall Rubber Discharge Hose
SPD, FPD, FPW - PureGard® Silicone Hose
GFDA - Sani-Tech® G-FDA Series Hose
HOSFGR - Pure-Fit® FGR Series Hose
BRH - Brewer Hose
SB - Smooth Bore Stainless Steel Braided Hose
SBC - SBTC Convoluted Stainless Steel Braided Hose
FLP - FlexPro®
PSTLCT - PharmaSmooth™

HOSE TYPE	TEMP.	MAXIMUM PRESSURE
PSD, CTL	68	150
GCR, SSW	68	250
SPD025	68	155
SPD037	68	125
SPD050	68	105
SPD062	68	90
SPD075	68	65
SPD100	68	55
SPD150	68	45
FPD050	68	140
FPD075	68	125
FPD100	68	110
FPD150	68	100
FPD200	68	75
FPD250	68	60
FPD300	68	50
FPW050-150	68	200
FPW200	68	175
FPW250	68	175

HOSE TYPE	TEMP.	MAXIMUM PRESSURE
FPW300	68	150
GFDA	68	150
HOSFGR-08	68	400
HOSFGR-12	68	375
HOSFGR-16	68	350
HOSFGR-24	68	300
HOSFGR-32	68	250
HOSFGR-40	68	150
HOSFGR-48	68	150
HOSFGR-54	68	150
BRH	68	250
SB025	70	3000
SB050	70	2000
SB075	70	1200
SB100	70	800
SBC050	70	1750
SBC075	70	1375
SBC100	70	1000
SBC125	70	750

HOSE TYPE	TEMP.	MAXIMUM PRESSURE
SBC150	70	650
SBC200	70	600
SBC250	70	212
SBC300	70	175
SBC400	70	15
FLP075	68	1000
FLP063	68	400
FLP100	68	1000
PSTLCT050	68	500
PSTLCT075	68	500
PSTLCT100	68	450
PSTLCT125	68	320
PSTLCT150	68	300
PSTLCT200	68	250
PSTLCT250	68	200
PSTLCT300	68	150
PSTLCT400	68	150

NOTE: *For rubber hose (PSD, CTL, GCR, SSW and PSTLTC), factor in a 25% reduction inworking pressure for every 100˚ over ambient temperature. For silicone hose (SPD, FPD, and FPW), factor in a 15% reduction in working pressure for every 100˚ over ambient temperature.*

Temperature Conversion Chart

How to Use this Chart

If the temperature in the center column is Celsius, read Fahrenheit in the column to the right. If the temperature in the center column is Fahrenheit, read Celsius in the column to the left.

°C	GIVEN TEMP. (°C OR °F)	°F
-46	-50	-58
-43	-45	-49
-40	-40	-40
-37	-35	-31
-34	-30	-22
-32	-25	-13
-29	-20	-4
-26	-15	+5
-23	-10	+14
-21	-5	+23
-18	0	+32
-15	+5	+41
-12	+10	+50
-9	+15	+59
-7	+20	+68
-4	+25	+77
-1	+30	+86
+2	+35	+95
+4	+40	+104
+7	+45	+113
+10	+50	+122
+13	+55	+131
+16	+60	+140
+18	+65	+149
+21	+70	+158
+24	+75	+167
+27	+80	+176
+29	+85	+185
+32	+90	+194
+35	+95	+203
+38	+100	+212
+41	+105	+221
+43	+110	+230
+46	+115	+239
+49	+120	+248
+52	+125	+257
+54	+130	+266
+57	+135	+275
+60	+140	+284
+63	+145	+293
+66	+150	+302
+68	+155	+311
+71	+160	+320

°C	GIVEN TEMP. (°C OR °F)	°F
+74	+165	+329
+77	+170	+338
+79	+175	+347
+82	+180	+356
+85	+185	+365
+88	+190	+374
+91	+195	+383
+93	+200	+392
+96	+205	+401
+99	+210	+410
+102	+215	+419
+104	+220	+428
+107	+225	+437
+110	+230	+446
+113	+235	+455
+116	+240	+464
+118	+245	+473
+121	+250	+482
+124	+255	+491
+127	+260	+500
+129	+265	+509
+132	+270	+518
+135	+275	+527
+138	+280	+536
+141	+285	+545
+143	+290	+554
+146	+295	+563
+149	+300	+572
+152	+305	+581
+154	+310	+590
+157	+315	+599
+160	+320	+608
+163	+325	+617
+166	+330	+620
+168	+335	+635
+171	+340	+644
+174	+345	+653
+177	+350	+662
+179	+355	+671
+182	+360	+680
+185	+365	+689
+188	+370	+698
+191	+375	+707

°C	GIVEN TEMP. (°C OR °F)	°F
+193	+380	+716
+196	+385	+725
+199	+390	+734
+202	+395	+743
+204	+400	+752
+207	+405	+761
+210	+410	+770
+213	+415	+779
+216	+420	+788
+218	+425	+797
+221	+430	+806
+224	+435	+815
+227	+440	+824
+229	+445	+833
+232	+450	+842
+235	+455	+851
+238	+460	+860
+241	+465	+869
+243	+470	+878
+246	+475	+887
+249	+480	+896
+252	+485	+905
+254	+490	+914
+257	+495	+923
+260	+500	+932

Chemical Compatibility Reference Chart

The ratings in this chart are based on the results of laboratory tests. They reflect the relative capabilities of various Teflon®, silicone, PVC and rubber hose formulations to withstand specific chemicals. **NOTE:** The ratings in the chart DO NOT reflect the extent to which extraction may occur or the extent to which fluids may undergo any physical changes in properties or composition as a result of coming into contact with the hose. Saint-Gobain Performance Plastics makes no representation or warranty with respect to the susceptibility of any fluid to become contaminated or undergo changes in properties or composition as a result of possible extraction of hose ingredients by the fluid to be transmitted. Certain corrosives that would be destructive to hose with prolonged exposure can be satisfactorily handled for short periods of time if flushed with water after use. All ratings are based on room temperature (73°F). Chemical resistance will be adversely affected by elevated temperatures.

IMPORTANT: It is the user's responsibility to ensure the suitability and safety of Saint-Gobain Performance Plastics' hose for all intended uses, including establishing the compatibility of any fluid with the hose through which it is to be transmitted. Laboratory, field or clinical tests must be conducted in accordance with applicable requirements in order to determine the safety and effectiveness for use of hose in any particular application.

E = EXCELLENT G = GOOD F = FAIR X = NOT RECOMMENDED

CHEMICAL	teflon®	silicone	pvc	rubber	brh
Acetaldehyde	E	F	X	X	E
Acetamide, 67% in w	E	E	X	F	G
Acetate Solvents	E	X	X	X	G
Acetic Acid, 10% in w	E	E	E	E	E
Acetic Acid, 50-60% in w	E	E	G	-	-
Acetic Acid, Glacial, 100%	E	X	X	-	G
Acetic Anhydride	E	E	X	F	G
Acetone	E	F	X	X	G
Acetonitrile	E	X	X	X	E
Acetyl Bromide	E	X	X	X	-
Acetyl Chloride	E	X	X	X	X
Acetylene Gas	E	E	E	F	E
Acrylonitrile	E	X	X	X	X
Adipic Acid, 100% in alc	E	X	X	E	X
Air	E	E	E	E	E
Alcohols General	E	G	X	G	G
Aliphatic Hydrocarbons	E	X	X	F	X
Alkyl Alcohol	E	X	X	G	E
Alum, 5% in w	E	E	E	E	E
Aluminum Chloride, 53% in w	E	E	E	E	E
Aluminum Hydroxide, 2% in w	E	E	E	E	E
Aluminum Sulfate, 50% in w	E	E	E	E	E
Aluminum Salts	E	E	E	E	E
Amines	E	X	X	X	-
Ammonia Gas	E	X	E	E	E
Ammonia, Anhydrous Liquid	E	X	G	G	E
Ammonium Acetate, 45% in w	E	E	E	E	
Ammonium Hydroxide, 5-10% in w	E	X	E	G	E
Ammonium Hydroxide, 30% in w	E	X	E	F	-
Ammonium Persulfate, 30% in w	E	E	E	E	E
Ammonium Salts	E	E	E	E	E
Ammonium Sulfate, 30% in w	E	E	E	E	E
Amyl Acetate	E	X	X	X	G
Amyl Alcohol	E	X	X	F	F
Amyl Chloride	E	X	X	X	X
Aniline	E	X	X	X	G
Aniline Hydrochloride	E	X	X	X	F
Antimony Salts	E	E	E	E	-
Aqua Regia	G	X	X	X	X
Aromatic Hydrocarbons	E	X	X	X	X
Arsenic Acid, 20% in w	E	F	E	G	E
Arsenic Salts	E	E	E	G	-
ASTM Reference No. 1 Oil	E	E	X	E	X
ASTM Reference No. 2 Oil	E	G	X	E	X
ASTM Reference No. 3 Oil	E	X	X	G	X
Barium Carbonate, 1% in w	E	E	E	E	E
Barium Hydroxide, 5% in w	E	E	E	E	E
Benzaldehyde	E	F	X	X	G
Benzene	E	X	X	X	X
Benzenesulfonic Acid	E	X	X	X	X
Benzoic Acid	E	X	X	F	F
Benzyl Alcohol	E	E	X	X	G
Bleach Liquor, 22% in w	E	X	E	F	E
Borax, 6% in w	E	E	E	E	E
Boric Acid, 4% in w	E	E	E	E	E
Bromine, Anhydrous Liquid	X	X	X	X	-
Butadiene	E	E	E	F	F
Butane	E	E	E	G	X
Butyl Acetate	E	X	X	X	F
Butyl Alcohol	E	X	X	G	G
Butyric Acid	E	X	X	X	G
Calcium Carbonate, 25% in dilute acids	E	E	E	E	E
Calcium Chloride, 30% in w	E	E	E	G	E
Calcium Hydroxide, 10% in glycerol	E	E	E	E	E
Calcium Hypochlorite, 20% in w	E	X	E	F	E
Calcium Nitrate, 55% in w	E	E	E	E	E
Calcium Salts	E	E	E	E	E
Calcium Sulfate, 0.2% in w	E	E	E	E	E
Carbon Dioxide, Wet/Dry	E	E	E	E	G
Carbon Disulfide	E	X	X	X	-
Carbon Monoxide	E	E	E	E	E
Carbon Tetrachloride	E	X	X	X	X
Carbonic Acid	E	E	E	G	E
Castor Oil	E	E	F	E	G
Cellosolve	E	X	X	X	G
Cellosolve Acetate	E	X	X	X	G
Chlorine, Dry Gas	E	X	E	G	X
Chlorine, Wet Gas	E	X	E	F	X
Chloroacetic Acid, 20% in w	E	E	E	X	G
Chlorobenzene, Mono, Di, Tri	E	X	X	X	X
Chloroform	E	X	X	X	X
Chlorosulfonic Acid	E	X	X	X	X
Chromic Acid, 10-20% in w	E	X	E	X	E
Chromic Acid, 50% in w	E	X	E	X	E
Citric Acid, 10-20% in w	E	E	E	E	E
Cottonseed Oil	E	E	F	E	G
Cresol (m, o, or p)	E	G	F	X	X

E = EXCELLENT G = GOOD F = FAIR X = NOT RECOMMENDED

CHEMICAL	teflon®	silicone	pvc	rubber	brh
Cresylic Acid	E	X	X	X	X
Cupric Chloride, 40% in w	E	E	E	E	E
Cupric Nitrate, 70% in w	E	E	E	E	E
Cupric Sulfate, 13% in w	E	E	E	E	E
Cyclohexane	E	X	X	F	X
Cyclohexanone	E	X	X	X	X
Detergent Solutions	E	E	E	E	E
Diacetone Alcohol	E				
Dibutyl Phthalate	E	E	F	F	F
Diethylamine	E	X	E	G	G
Diethylene Glycol	E	E	E	E	E
Dimethylformamide	E	E	X	F	G
Dimethylsulfoxide	E	F	X	X	X
Dioctyl Phthalate	E	E	F	X	G
Dioxane	E	X	X	X	G
Ether	E	X	X	X	X
Ethyl Acetate	E	X	X	X	G
Ethyl Alcohol (Ethanol)	E	F	X	F	E
Ethyl Benzoate	E	X	X	X	X
Ethyl Chloride	E	X	X	F	E
Ethyl Ether	E	X	X	X	X
Ethylene Bromide	E	E	X	X	X
Ethylene Chlorohydrin	E	G	X	X	G
Ethylene Dichloride	E	X	X	X	F
Ethylene Glycol	E	E	E	E	E
Ethylene Oxide	E	E	E	X	X
Fatty Acids	E	G	X	F	X
Ferric Chloride, 43% in w	E	E	E	E	E
Ferric Nitrate, 60% in w	E	E	E	E	E
Ferric Sulfate, 5% in w	E	E	E	E	E
Ferrous Chloride, 40% in w	E	E	E	E	F
Ferrous Sulfate, 5% in w	E	E	E	E	E
Fluoboric Acid, 48% in w	E	X	E	E	G
Fluorine Gas	G	X	X	X	X
Fluosilicic Acid, 25% in w	G	F	E	E	E
Formaldehyde, 37% in w	E	F	X	F	G
Formic Acid, 25% in w	E	E	E	E	E
Formic Acid, 40-50% in w	E	E	G	G	G
Formic Acid, 98% in w	E	E	G	F	G
Freon 11	F	E	E	G	X
Freon 12	F	E	E	E	X

CHEMICAL	teflon®	silicone	pvc	rubber	brh
Freon 22	F	E	E	F	X
Furfural	E	X	X	X	E
Gallic Acid, 17% in acetone	E	X	X	F	E
Gelatin	E	E	E	E	E
Glucose, 50% in w	E	E	E	E	E
Glycerin	E	E	E	E	E
Glycolic Acid, 70% in w	E	E	G	F	-
Heptane	E	X	X	F	X
Hexane	E	X	X	F	X
Hydrazine	E	X	X	F	E
Hydrobromic Acid, 20-50% in w	E	X	E	F	E
Hydrobromic Acid, 100% in w	E	X	E	X	E
Hydrochloric Acid, 10% in w	E	E	E	E	E
Hydrochloric Acid, 37% in w	E	X	E	F	G
Hydrocyanic Acid	E	E	E	G	E
Hydrofluoric Acid, 10% in w	E	X	E	G	E
Hydrofluoric Acid, 25% in w	E	X	E	G	G
Hydrofluoric Acid, 40-48% in w	E	X	E	X	G
Hydrogen Gas	E	E	E	E	E
Hydrogen Peroxide, 3% in w	E	E	E	G	G
Hydrogen Peroxide, 10% in w	E	E	E	F	G
Hydrogen Peroxide, 30% in w	E	E	E	G	G
Hydrogen Peroxide, 90% in w	E	F	F	X	X
Hydrogen Sulfide	E	E	E	E	E
Hydroquinone, 7% in w	E	G	E	F	X
Hypochlorous Acid, 25% in w	E	E	E	X`	G
Iodine, 50 ppm in w	E	E	E	G	G
Isobutyl Alcohol	E	X	X	F	E
Isooctane	E	X	X	G	X
Isopropyl Acetate	E	X	X	X	E
Isopropyl Alcohol	E	X	X	G	E
Isopropyl Ether	E	X	X	G	X
Ketones	E	X	X	X	G
Lacquer Solvents	E	X	X	X	X
Lactic Acid, 3-10% in w	E	E	E	E	E
Lactic Acid, 85% in w	E	X	X	G	E
Lead Acetate, 35% in w	E	E	E	G	E
Lead Salts	E	E	E	G	E
Lemon Oil	E	X	X	E	-
Limonene-D	E	X	X	X	X
Linoleic Acid	E	G	X	X	X

	teflon®	silicone	pvc	rubber	brh
Linseed Oil	E	E	F	F	G
Lubricating Oils, Petroleum	E	G	X	G	X
Magnesium Carbonate, 1% in w	E	E	E	E	E
Magnesium Chloride, 35% in w	E	E	E	E	E
Magnesium Hydroxide, 10% in dilute acids	E	E	E	E	E
Magnesium Nitrate, 50% in w	E	E	E	E	E
Magnesium Sulfate, 25% in w	E	E	E	E	E
Maleic Acid, 30% in w	E	G	X	X	X
Malic Acid, 36% in w	E	E	E	E	X
Manganese Salts	E	E	E	E	-
Mercuric Chloride, 6% in w	E	E	E	E	E
Mercuric Cyanide, 8% in w	E	E	E	E	E
Mercury	E	E	E	E	E
Mercury Salts	E	E	E	E	E
Methane Gas	E	E	E	E	X
Methyl Acetate	E	X	X	X	E
Methyl Alcohol (Methanol)	E	G	X	F	E
Methyl Bromide	E	X	X	X	X
Methyl Chloride	E	X	X	X	X
Methyl Ethyl Ketone	E	X	X	X	E
Methyl Isobutyl Ketone	E	X	X	X	X
Methylene Chloride	E	X	X	X	X
Methyl Methacrylate	E	X	X	X	X
Mineral Oil	E	X	G	E	X
Mineral Spirits	E	X	X	X	X
Monoethanolamine	E	X	X	X	G
Naphtha	E	X	X	X	X
Naphthalene	E	X	X	X	X
Natural Gas	E	E	E	G	X
Nickel Chloride, 40% in w	E	E	E	E	E
Nickel Nitrate, 75% in w	E	E	E	E	E
Nickel Salts	E	E	E	E	E
Nickel Sulfate, 25% in w	E	E	E	E	E
Nitric Acid, 10% in w	E	F	E	G	E
Nitric Acid, 35% in w	E	X	E	X	X
Nitric Acid, 68-71% in w	G	X	X	X	X
Nitrobenzene	E	X	X	X	G
Nitromethane	E	X	X	X	G
Nitrous Acid, 10% in w	E	G	E	X	-
Nitrous Oxide	E	E	E	E	E
Oils, Animal	E	E	F	-	-

Chemical Compatibility Reference Chart *continued*

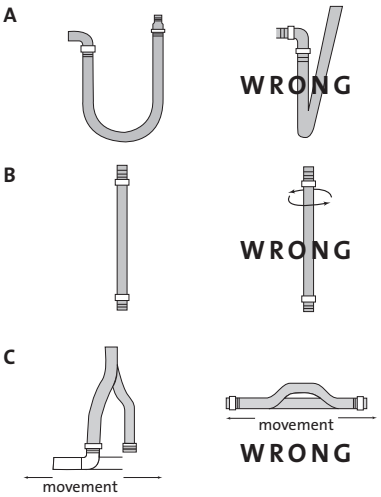
E = EXCELLENT G = GOOD F = FAIR X = NOT RECOMMENDED

CHEMICAL	teflon®	silicone	pvc	rubber	brh
Oils, Essential	E	X	X	-	-
Oils, Hydrocarbon	E	G	X	-	-
Oils, Vegetable	E	E	F	-	-
Oleic Acid	E	G	X	F	X
Oleum, 25% in w	E	G	E	-	-
Ortho Dichlorobenzene	E	X	X	X	X
Oxalic Acid, 12% in w	E	E	G	G	E
Oxygen	E	E	E	G	E
Ozone, 300pphm	E	E	E	X	G
Palmitic Acid, 100% in ether	E	G	X	G	G
Paraffins	E	X	X	X	E
Perchloric Acid, 67% in w	E	X	G	X	G
Perchloroethylene	E	X	X	X	X
Phenol, 5-10% in w	E	E	E	X	E
Phenol, 91% in w	E	G	F	X	E
Phosphoric Acid, <10% in w	E	F	E	E	G
Phosphoric Acid, 25% in w	E	X	E	X	G
Phosphoric Acid, 85% in w	E	X	E	X	G
Phosphorous Trichloride Acid	E	X	E	X	E
Photographic Solutions	E	G	E	G	G
Phthalic Acid, 9% in alc	E	G	F	F	-
Phthalic Anhydride, 9% in alc	E	E	X	F	-
Picric Acid, 1% in w	E	X	E	X	G
Plating Solutions	E	X	E	E	E
Potassium Carbonate, 55% in w	E	E	E	E	E
Potassium Cyanide, 33% in w	E	E	E	E	E
Potassium Dichromate, 5% in w	E	E	E	E	E
Potassium Hydroxide, <10% in w	E	E	E	E	E
Potassium Iodide, 56% in w	E	E	E	E	G
Potassium Permanganate, 6% in w	E	E	E	G	G
Potassium Salts	E	E	E	E	E
Propane Gas	E	E	E	E	X
Propylene Glycol	E	E	E	G	G
Propylene Oxide	E	E	E	X	G
Pyridine	G	X	X	X	G
Salicylic Acid, 1% in w	E	E	E	G	E
Silicone Oils	E	X	G	E	E
Silver Nitrate, 55% in w	E	E	E	G	E
Skydrol 500A	E	X	F	X	G
Soap Solutions	E	E	E	E	E
Sodium Acetate, 55% in w	E	E	E	G	E
Sodium Benzoate, 22% in w	E	E	E	G	E
Sodium Bicarbonate, 7% in w	E	E	E	E	E
Sodium Carbonate, 7% in w	E	E	E	E	E
Sodium Chlorate, 45% in w	E	E	E	E	G
Sodium Chloride, 20% in w	E	E	E	E	G
Sodium Cyanide, 30% in w	E	E	E	E	E
Sodium Fluoride, 3% in w	E	E	E	E	E
Sodium Hydroxide, 10-15% in w	E	E	E	E	E
Sodium Hydroxide, 30-40% in w	E	E	E	E	E
Sodium Hypochlorite, 5.5% in w	E	X	E	G	G
Sodium Hypochlorite, 12.2% in w	E	X	E	G	G
Sodium Nitrate, 3.5% in w	E	E	E	G	E
Sodium Salts	E	E	E	E	E
Sodium Sulfate, 5% in w	E	E	E	E	E
Sodium Sulfide, 45% in w	E	E	E	E	E
Stannic Chloride, 50% in w	E	E	E	E	G
Stannous Chloride, 45% in w	E	E	E	E	G
Stearic Acid, 5% in alc	E	G	X	F	G
Styrene Monomer	E	X	X	X	X
Sulfur Chloride	E	X	X	X	X
Sulfur Dioxide, Gas Dry	E	E	E	X	G
Sulfur Dioxide, Gas Wet	E	E	E	X	E
Sulfur Trioxide, Wet	G	G	G	X	G
Sulfuric Acid, 10% in w	E	E	E	G	G
Sulfuric Acid, 30% in w	E	G	E	G	G
Sulfuric Acid, 95-98% in w	E	X	X	X	X
Sulfurous Acid	E	E	E	X	G
Tannic Acid, 75% in w	E	E	G	E	E
Tartaric Acid, 56% in w	E	E	E	E	G
Tetrahydrofuran	E	X	X	X	G
Thionyl Chloride	E	E	E	X	X
Tin Salts	E	E	E	E	G
Titanium Salts	E	E	E	X	-
Toluene	E	X	X	X	X
Trichloroacetic Acid, 90% in w	E	E	E	F	G
Trichloroethane	E	X	X	X	X
Triethanolamine	E	X	X	G	G
Trichloroethylene	E	X	X	G	G
Trichloropropane	E	X	X	X	X
Tricresyl Phosphate	E	E	F	X	E
Trisodium Phosphate	E	E	E	E	E
Turpentine	E	X	X	X	G
Urea, 20% in w	E	E	E	G	E
Uric Acid	E	E	E	-	-
Vinegar	E	E	E	G	E
Vinyl Acetate	E	X	X	X	E
Water, De-ionized	E	E	E	E	E
Water, Distilled	E	E	E	E	E
Xylene	E	X	X	X	X
Zinc Chloride, 80% in w	E	E	E	E	E
Zinc Salts	E	E	E	E	E

General Hose Installation Precautions

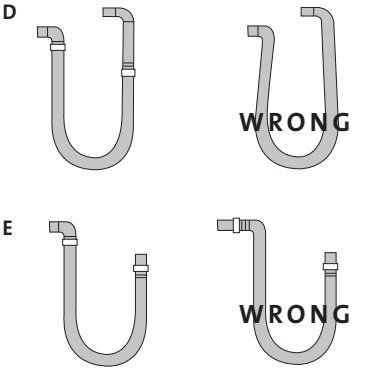
Prior to Installation

1. Examine the hose for any obvious damage. **IF THE HOSE IS DAMAGED, DO NOT USE.** Examples of damage may include slices to the cover, kinks, broken braid, and crushing of the hose (can reduce life and pressure rating).
2. Review application to ensure proper selection of hose has been made by examining materials, pressures, chemical compatibility, temperature and environment.
3. Hose movement should be restricted to a **SINGLE PLANE (Drawing A)** to minimize the resultant twisting (torque). Note: The flexing plane should also be the plane in which the bending occurs. Excessive bending will induce stress fatigue **(Drawing B).**
4. Axial movement should be eliminated. The hose should not be stretched or compressed along its longitudinal axis when installed in-line **(Drawing C)**.



Installation

- **Never use hose below minimum bend radius (Drawing D)**. Bend radii (measured to inside radius of fluoropolymer-lined hose and centerline for stainless steel metal hose) are given for individual products and sizes (consult factory for specific data). These values represent the minimum bend radius with which the hose can be properly installed. If these values are not maintained, the hose can fail prematurely. Note: In some cases, vacuum and pressure ratings are based on not exceeding 2% minimum bend radius (consult factory for specific hose ratings).
- **Do not allow severe bends (Drawing E).** Severe bends can cause kinking in a hose or overstress the assembly/material, resulting in damage and ultimate failure. If severe bends cannot be avoided, use elbows designed to accommodate the direction change.
- **Do not twist (torque) assembly along centerline during installation.** The likelihood of leakage/failure increases for hoses that are twisted (torqued) during assembly. The proper use of floating flanges and swivel-type fittings (i.e., JIC) can eliminate improper twisting.

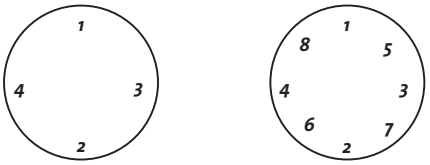


Nominal Hose Size

1/2"	1"	1-1/2"	2"	3"	4"	5"	6"
10	10	15	25	40	30	60	75

Torque (ft.-lbs.)

Bolt Torque Sequence



- **For accurate tightening a torque wrench is HIGHLY recommended.** If a flange leak occurs on one side of a properly torqued flange, the bolts should not be over-torqued. Instead loosen the bolts on the non-leaking side the same amount you tighten the bolts on the leaking side.

General Hose Installation Precautions *continued*

Service Life Factors

The actual service life of the hose assembly is strongly affected by its environment. Some of the factors that may influence service life include:

Corrosion
- General corrosion attack
- Stress corrosion cracking
- Intergranular corrosion
- Pitting corrosion

Fatigue (including)
- High cyclic
- Flexure
- Pulsation
- Torsion

Vibration

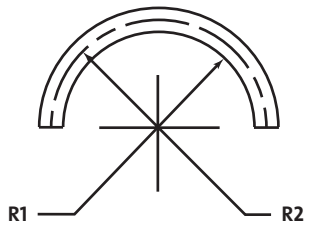
Wear

Movement of attached equipment
Proper hose configuration and live length should be used when hose may be exposed to movements from attached piping, tanks or equipment (i.e., thermal growth of mechanically imposed) and/or offset.

Glossary

Quite often, customers have questions when the subject of hose flexibility is brought up. Many different terms are used to describe this attribute of the Saint-Gobain Performance Plastics Sanitary Couplers line. Below are some of the formal definitions currently used in the hose industry.

Bend Radius (fluoropolymer hose and all rubber hose) – The radius of a bent section of hose measured to the inner-most 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.



Bend Radius (all, except metal hose) =
R1 measured to inside radius
Bend Radius for metal hose =
R2 measured to centerline radius

For Metal Hose

Dynamic Bend Radius – The radius at which constant or continuous flexing occurs.
Static Bend Radius – The smallest fixed radius to which a hose can be subjected.
Force to Bend – The amount of stress required to induce bending around a specified radius. Hence, a measure of stiffness.

Pressure Definitions

Maximum Rated Working Pressure – The maximum pressure that the hose can be subjected to on a continuous basis.
Maximum Rated Test Pressure – The maximum rated pressure is multiplied by 150% to determine the maximum rated test pressure.
Nominal Rated Burst Pressure – The average pressure at which the core or braid will rupture at ambient temperature.
Pulsating or Shock Pressure – The performance of metal hose can be greatly reduced under this type of working pressure. Pressures are normally reduced by 50% in pulsating or shock pressure applications.
Pressure/Temperature Correction – Metal hose pressure capabilities decrease as the temperature increases. Consult the *Temperature/Pressure Reference Guide* (p. 42) to determine pressure ratings at elevated temperatures.
Pressure Drop – Pressure drop occurs in long hose runs. The amount of pressure loss in a metal hose is approximately three times that of steel pipe.

Marketing Tools/Literature Request

More high performance products for fluid handling from Saint-Gobain Performance Plastics

Flexible Components Fluoropolymer Hose and Fitting Buyer's Guide

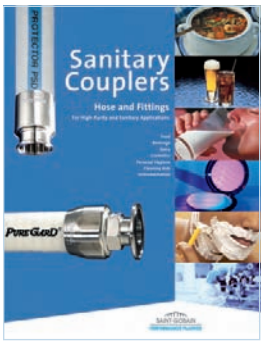
An invaluable reference source for customers requiring innovative, performance-tested hose assemblies. Features an extensive selection of products incorporating Chemfluor® fluoropolymers.

Flexible Components Brand Compressed Gas and Cryogenic Hose Catalog

Aids customers in selecting appropriate transfer hoses and related equipment for custom and individual applications with exacting requirements.

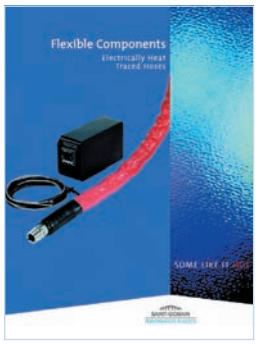
Choices Brochure

Condensed version of the Flexible Components Fluoropolymer Hose and Fitting Buyer's Guide. Useful as a quick reference.



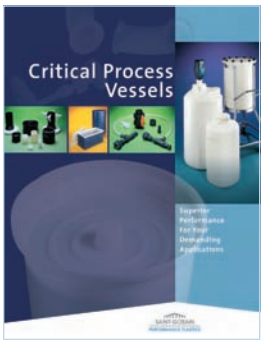
Sanitary Couplers Dairy, Food and Beverage Process Catalog

Featuring ReSeal®, re-usable coupling technology, this catalog provides a full range of hose, tubing and fitting options that comply with the most stringent 3-A, FDA/PMO, and USDA requirements.



Electrically Heat Traced Hose Assemblies Guide

Flexible Components offers a guide for the selection of the electric heat trace option for corrosive-resistant and ultra pure hoses from Saint-Gobain Performance Plastics.



Molded Products Catalog

Provides complete data on Saint-Gobain Performance Plastics high-performance molded products, including tanks, biosystems, blowers, fittings and accessories.

Tygon® Tubing Catalog

Offers the broadest range of Tygon® tubing formulations to meet such needs as temperature resistance, long service life, autoclavability, biocompatibility and abrasion resistance.

Acutech Catalog

Contains a wide range of extruded thermoplastic products, including tubing, pipe, rod and specialty profiles, as well as heat shrink tubing and highly specialized, proprietary custom products and profiles.

Manufacturing Facilities

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2664 Gilchrist Road
Akron, Ohio 44305
Tel: (800) 798-1554, (330) 798-9240
Fax: (330) 798-6968
TYGON® Brand Flexible Tubing, Chemfluor® Tubing
www.tygon.com

Saint-Gobain Performance Plastics
3910 Terry Diane Street
Beaverton, Michigan 48612
Tel: (888) 387-0067, (989) 435-9533
Fax: (989) 435-2355
TYGON® Brand Extruded Silicone and Molded Components
www.biopharm.saint-gobain.com
www.medical.saint-gobain.com
www.industrialsilicone.com

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460 Milltown Road
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Fax: (908) 218-9009
Flexible Components, Sanitary Couplers ReSeal® and PermaSeal®, Sani-Tech® Products, Tanks
www.flexiblecomponents.com
www.reseal.com

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Fax: (856) 423-8182
Roll Cover, Engineered Extrusions
www.bunnell-plastics.com

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Fax: (973) 696-4056
Chemware®
www.labpure.com

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Specialty Extruded and Molded Silicone Products
www.biopharm.saint-gobain.com
www.medical.saint-gobain.com

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www.verneret.com

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Fax: (518) 283-1418
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www.packagepure.com

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