

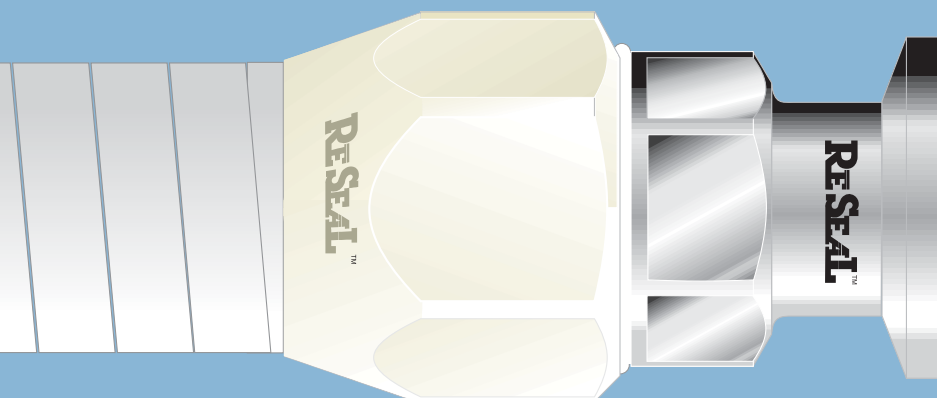


Sanitary Couplers

Hose and Fittings

For High-Purity and Sanitary Applications

Food
Beverage
Dairy
Cosmetics
Personal Hygiene
Cleaning Aids
Instrumentation



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.

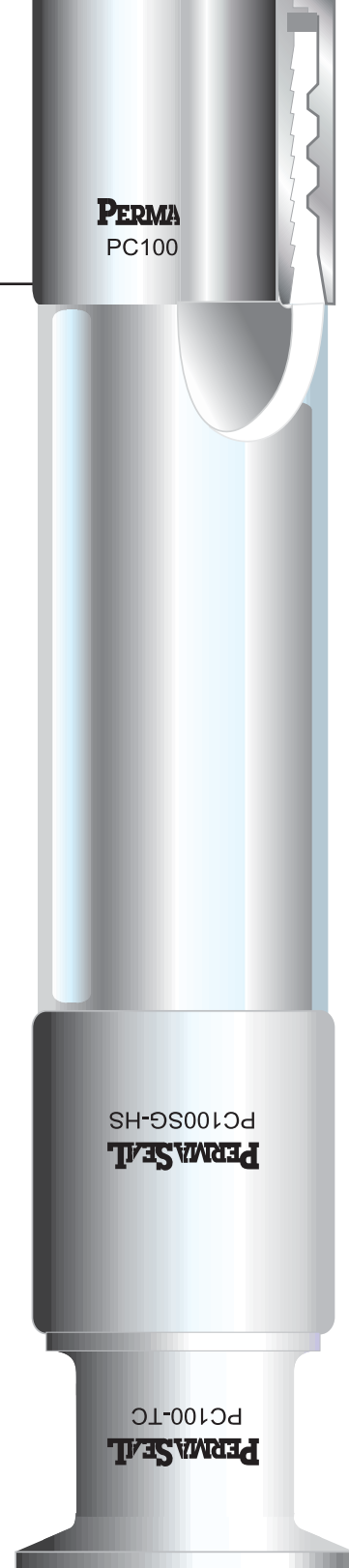
With a full array of products designed for each step in the process, Saint-Gobain Performance Plastics is uniquely positioned as the single source supplier of sanitary fluid transfer components for the food, beverage, dairy, cosmetics, personal hygiene, cleaning aid and instrumentation industries.

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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Product Selection Guide

ReSeal® Fitting/Hose Combination		Page	Product Description
ReSeal® for Silicone Hose		6	Ideal for high-purity applications
• PureGard® SPD Hose		24	Single-ply, polyester braid
• PureGard® FPD Hose		24	4-ply, polyester braid
• PureGard® FPW Hose		25	4-ply, polyester braid with stainless steel helix hose
ReSeal® for Rubber Hose		8	Complies with stringent dairy and food processing standards
• SaniGard® Protector PSD Hose		26	Versatile suction and discharge hose
• SaniGard® Sentry SSW Softwall Hose		26	Ultra-lightweight, designed exclusively for discharge service
• SaniGard® Challenger FEP/Teflon® CTL Hose		27	FEP-lined suction and discharge hose
• SaniGard® Gladiator Crush-Resistant GCR Hose		27	Crush-resistant
• SaniGard® GR-FDA Gray FDA Transfer Hose		28	Ideal for ultra-pure water transfer
• SaniGard® FGR Transfer Hose		28	Specially designed to handle oil-based materials
ReSeal® for PVC Hose and Tubing		12	Complies with stringent dairy and food processing standards
• ClearGard® CSC Hose		29	Clear extrusion with clear helix rod reinforcement; for suction/discharge
• ClearGard® CSW Hose		29	Clear extrusion with white helix rod reinforcement; for suction/discharge
• ClearGard® CBT Tubing		30	Clear extrusion with polyester textile inner braid reinforcement
• ClearGard® CCT Tubing		30	Clear extrusion; no reinforcement
• ClearGard® CSS Tubing		31	Clear extrusion with steel wire helix rod reinforcement
ReSeal® for MilkFlex™ Hose		10	Full flow smooth bore design eliminates internal obstructions
• MilkFlex™ Hose		31	Most flexible, lightest weight milk pick-up hose available
ReSeal® for Brewer Hose		14	Ideal for use in aging, fermentation, packaging, and yeast applications
• BRH Brewer Hose		32	Synthetic multi-ply fabric reinforcement with inner white chlorobutyl tube
• BRH-AB Brewer Hose		32	Specially designed to handle high pressure
PermaSeal® Fitting/Hose Combination		Page	Product Description
PermaSeal® Radial Crimp for Silicone Hose		18	External crimp design eliminates the possibility of product wicking
• PureGard® SPD Hose		24	Single-ply, polyester braid
• PureGard® FPD Hose		24	4-ply, polyester braid
• PureGard® FPW Hose		25	4-ply, polyester braid with stainless steel helix hose
PermaSeal® Radial Crimp for Rubber Hose		18	External crimp design eliminates the possibility of product wicking
• SaniGard® Protector PSD Hose		26	Versatile suction and discharge hose
• SaniGard® Sentry SSW Softwall Hose		26	Ultra-lightweight, designed exclusively for discharge service
• SaniGard® Challenger FEP/Teflon® CTL Hose		27	FEP-lined suction and discharge hose
• SaniGard® Gladiator Crush-Resistant GCR Hose		27	Crush-resistant
• SaniGard® GR-FDA Gray FDA Transfer Hose		28	Ideal for ultra-pure water transfer
• SaniGard® FGR Transfer Hose		28	Specially designed to handle oil-based materials
PermaSeal® Radial Crimp for PVC Tubing		18	External crimp design eliminates the possibility of product wicking
• ClearGard® CBT Tubing		30	Clear extrusion with polyester textile inner braid reinforcement
• ClearGard® CCT Tubing		30	Clear extrusion; no reinforcement
• ClearGard® CSS Tubing		31	Clear extrusion with steel wire helix rod reinforcement
PermaSeal® Internal Expansion for Rubber Hose		20	360° Fixed seal at fitting/stem junction eliminates the possibility of product wicking
• SaniGard® Protector PSD Hose		26	Versatile suction and discharge hose
• SaniGard® Sentry Softwall SSW Hose		26	Ultra-lightweight, designed exclusively for discharge service
• SaniGard® Challenger FEP/Teflon® CTL Hose		27	FEP-lined suction and discharge hose
• SaniGard® Gladiator Crush-Resistant GCR Hose		27	Crush-resistant
• SaniGard® GR-FDA Gray FDA Transfer Hose		28	Ideal for ultra-pure water transfer
• SaniGard® FGR Transfer Hose		28	Specially designed to handle oil-based materials
PermaSeal® for Brewer Hose		22	Ideal for use in aging, fermentation, packaging, and yeast applications
• BRH Brewer Hose		32	Synthetic multi-ply fabric reinforcement with inner white chlorobutyl tube
• BRH-AB Brewer Hose		32	Specially designed to handle high pressure
PermaSeal® Radial Crimp for Stainless Steel Braided Hose		23	Offers chemically inert method of transferring fluids in a flexible connection
• SBT Smooth Bore Stainless Steel Hose		25	Stainless steel braided reinforcement with Teflon® white inner bore
• SBTC Convuluted Stainless Steel Hose		25	Convuluted design is low profile and helical formed to promote draining

Cleaning Aids	Food	Beverage	Dairy	Cosmetics	Personal Hygiene	Instrumentation		
							Compliances	
							3-A, USP Class VI, FDA, Canada Agriculture	
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Compliances								
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							3-A, USDA Dairy, Egg, Meat & Poultry, Canada Agriculture	
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							3-A, USDA Dairy, Egg, Meat & Poultry, Canada Agriculture	
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							3-A, USP Class VI, FDA, Canada Agriculture	
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	●	●				●	FDA, USP CLASS VI	

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 dismantled 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 square pod pattern 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.

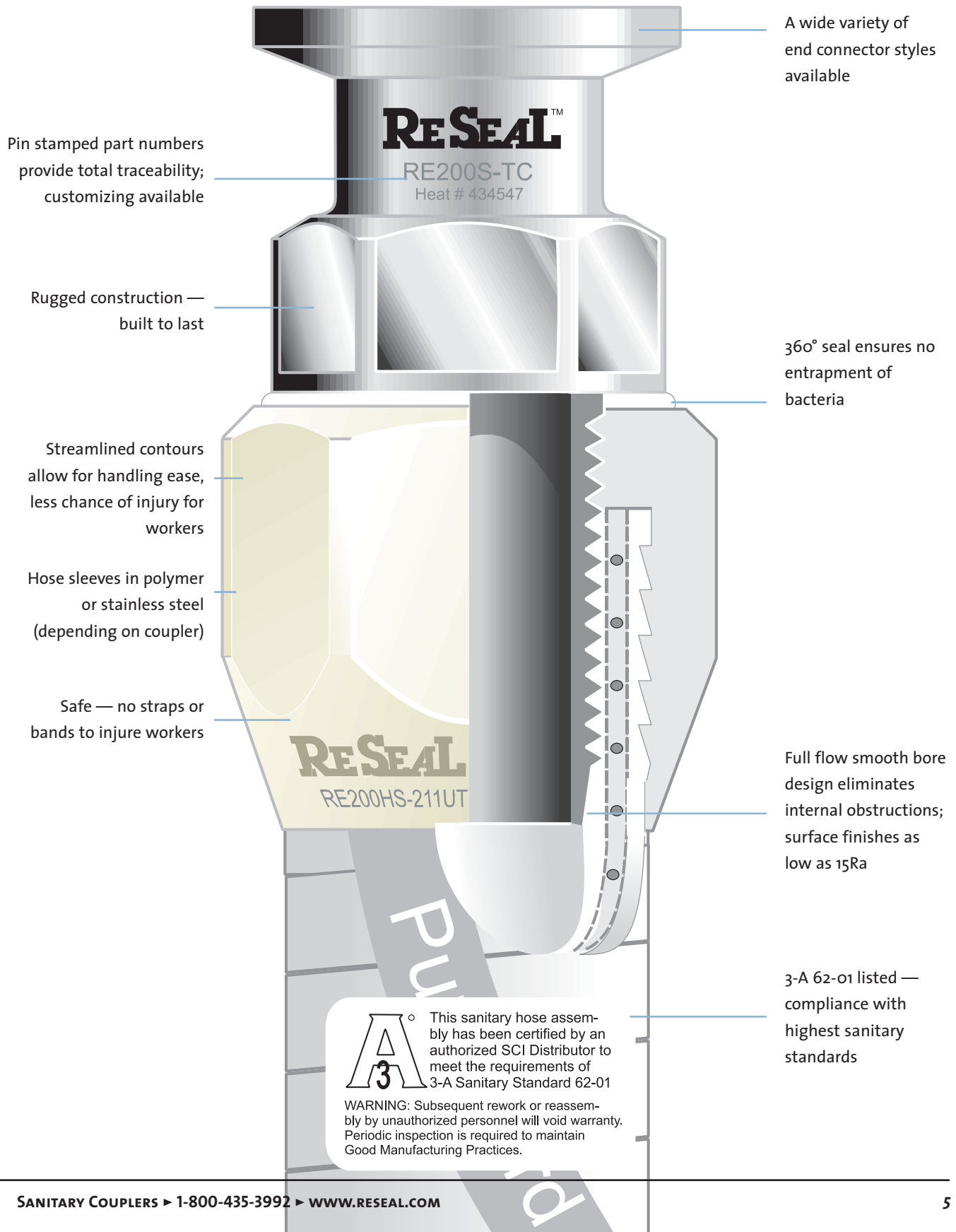
Inspectable

ReSeal® fittings are a maintenance crew and inspector's dream. They can be taken apart for easy, thorough inspection, then quickly reassembled — 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.)



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 CANADA AGRICULTURE

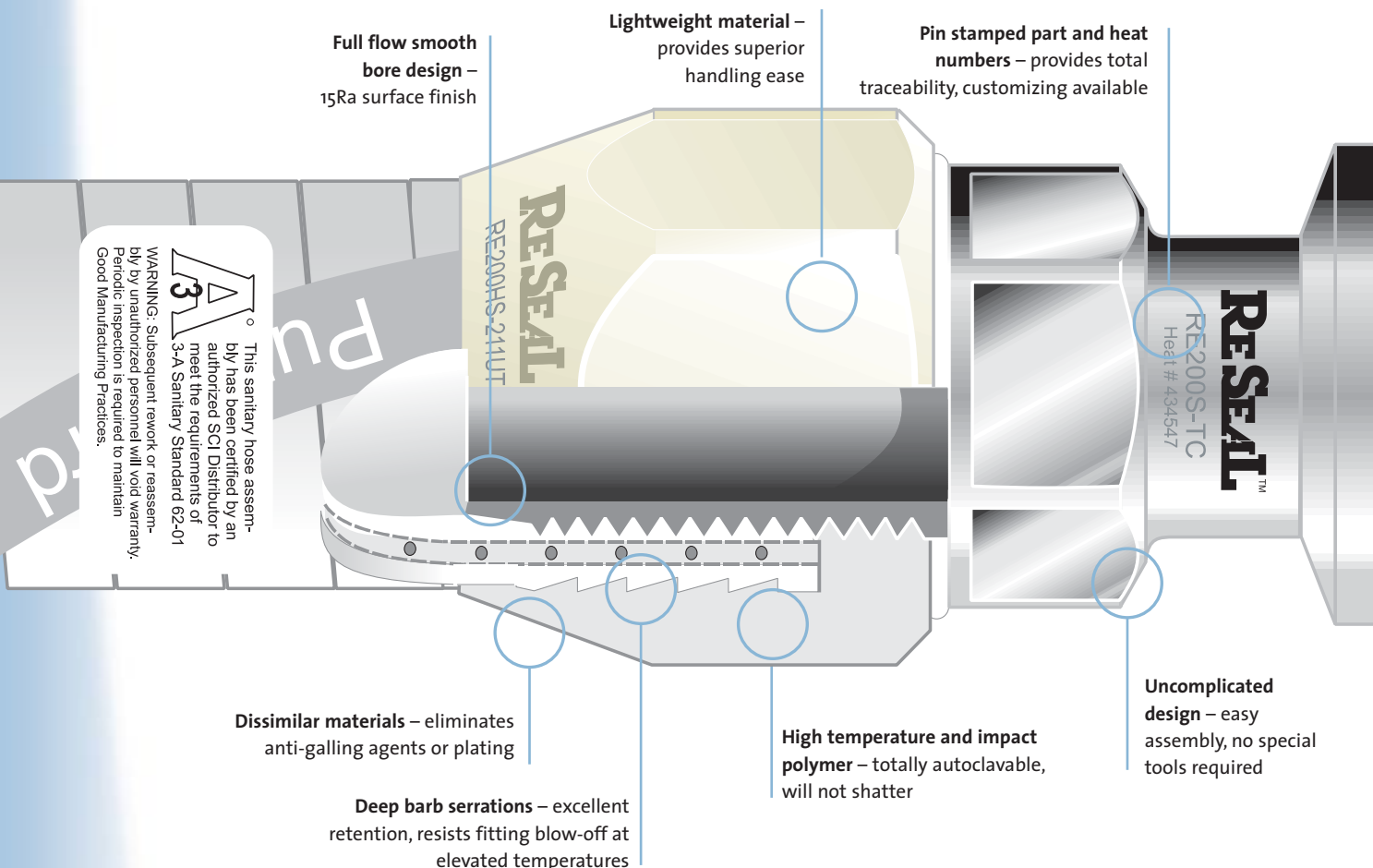
Applications

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



Features and Benefits

- **Totally reusable**
 - Made of grade 316L stainless steel with interior surface finish of 15Ra or better
 - Can be dismantled and reattached to a new length of hose
 - 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

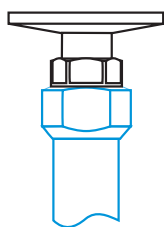


Fitting Details

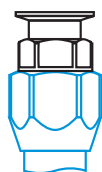
- ReSeal® fittings for PureGard® silicone hose are available in sizes 1/4" up to 4" in five standard end styles
- Stems are manufactured from grade 316L stainless steel with an interior surface finish of 15Ra or better
- Electropolished and polymer stems are available
- Ultra-lightweight polymer hose 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.



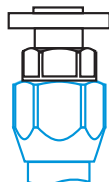
TC
Sanitary
Step-up Sizes



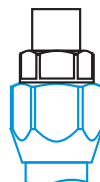
TC
Sanitary
Clamp



MPT
Male
Pipe Thread



AF
Flange
End



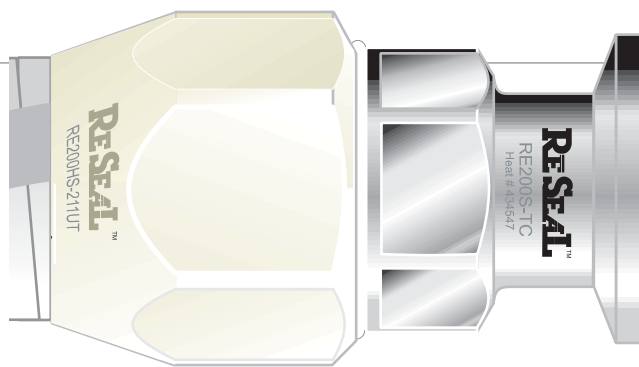
TE
Tube
End

Hose Sleeve (Polymer)

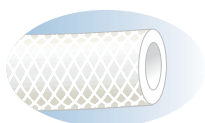
- Elevated temperature
- CIP, COP, SIP suitable and autoclavable
- Lightweight and abrasion resistant
- Excellent durability
- Higher pressure ratings
- Chemically resistant
- Superior impact resistance
- Stainless steel hose sleeves also available
- Reusable
- Assortment of colors in red, blue, violet,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



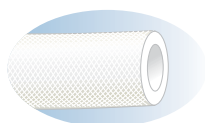
NOTE: Other special colors are available with an additional surcharge and a minimum run of 25 units per color.



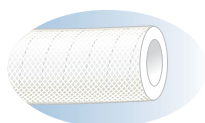
PureGard® Silicone Hose



PureGard® SPD
(single ply, polyester braid)
pg 24



PureGard® FPD
(4-ply, polyester braid)
pg 24



PureGard® FPW
(4-ply, polyester braid
with stainless steel helix wire)
pg 25

ReSeal® Fittings for SaniGard® Rubber Hose



INDUSTRY COMPLIANCES:

- 3-A 62-01 LISTED
- ACCEPTED BY USDA DAIRY, EGG, MEAT AND POULTRY, CANADA AGRICULTURE DAIRY, MEAT & POULTRY
- REVIEWED BY MILK SAFETY BRANCH IN COMPLIANCE WITH GRADE "A" PASTEURIZED MILK ORDINANCE/FDA
- UNIVERSITY OF WISCONSIN TESTED AND VERIFIED AS TOTALLY SANITARY

Applications

- Food
- Beverage
- Dairy
- Cosmetics
- Personal Hygiene



Features and Benefits

- **Totally reusable**
 - Made of grade 316L stainless steel with interior surface finish of 15Ra or better
 - Can be dismantled and reattached to a new length of hose by a factory-authorized 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

Pin stamped part numbers – permanent identification, customizing available

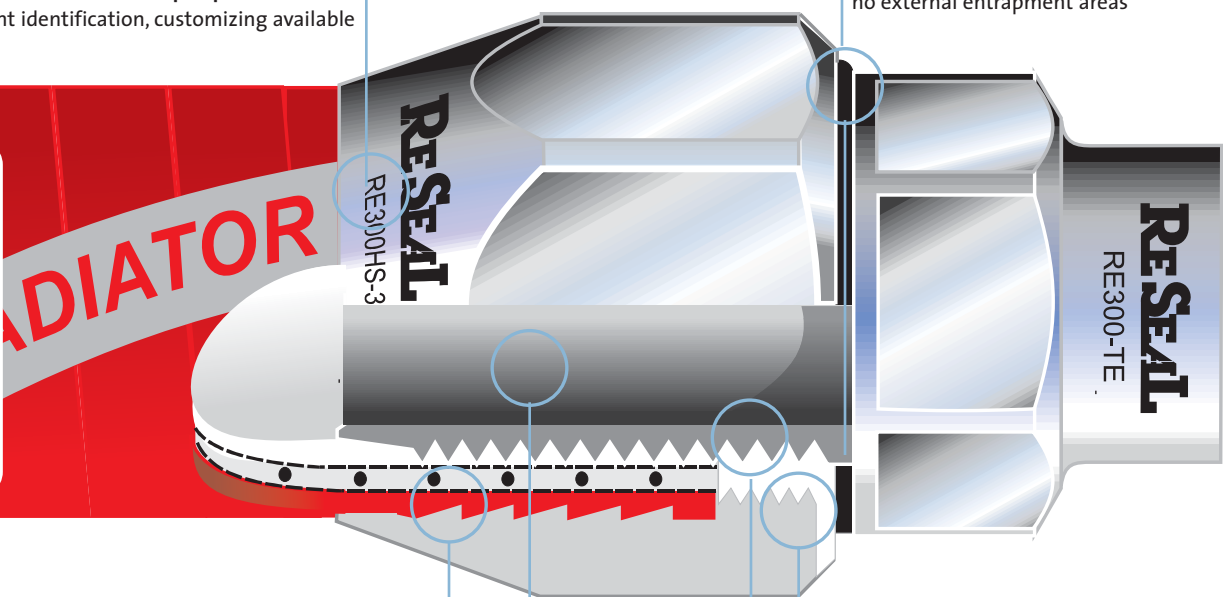
Patented O-ring design provides 360° seal at stem-to-hose-sleeve junction point – no external entrapment areas

Reverse barb serrations provide excellent retention – resists fitting blow-off

Quality workmanship – interior surface exceeds 15Ra

High grade 316L material – excellent chemical resistance

Patent pending polymer insert design – eliminates galling



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

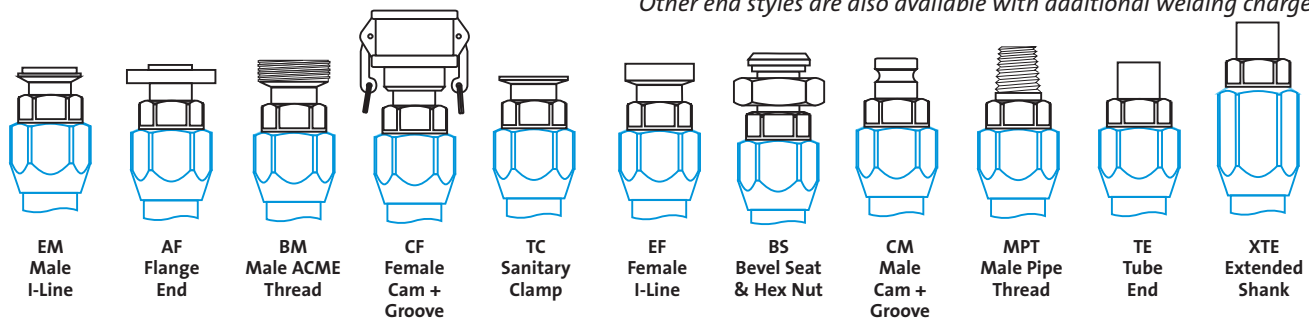
WARNING: Subsequent rework or re-assembly by unauthorized personnel will void warranty. Periodic inspection is required to maintain Good Manufacturing Practices.

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 interior surface finish of 15Ra or better
- Hose sleeves are available in either stainless steel or high impact polymer

End Connector Styles

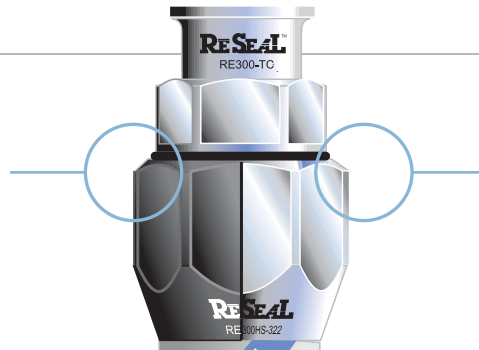
Other end styles are also available with additional welding charges.



Hose Sleeve

Stainless Steel

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



Polymer

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

SaniGard® Rubber Hose



SaniGard® Protector™ PSD
Suction & Discharge Hose
pg 26



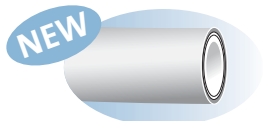
SaniGard® Sentry® SSW
Softwall Discharge Hose
pg 26



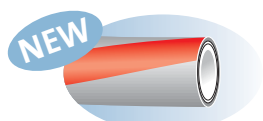
SaniGard® Challenger™ FEP/Teflon®
CTL Suction & Discharge Hose
pg 27



SaniGard® Gladiator®
Crush-Resistant GCR Hose
pg 27



SaniGard® GR-FDA Gray FDA
Sanitary Transfer Hose
pg 28



SaniGard® FGR Sanitary
Transfer Hose
pg 28

ReSeal[®] Fittings for MilkFlex[™] Hose



INDUSTRY COMPLIANCES:

- 3-A 62-01 LISTED
- ACCEPTED BY USDA DAIRY, EGG, MEAT AND POULTRY, CANADA AGRICULTURE DAIRY, MEAT & POULTRY
- REVIEWED BY MILK SAFETY BRANCH IN COMPLIANCE WITH GRADE "A" PASTEURIZED MILK ORDINANCE/FDA

Applications

- Dairy
- Food
- Beverage



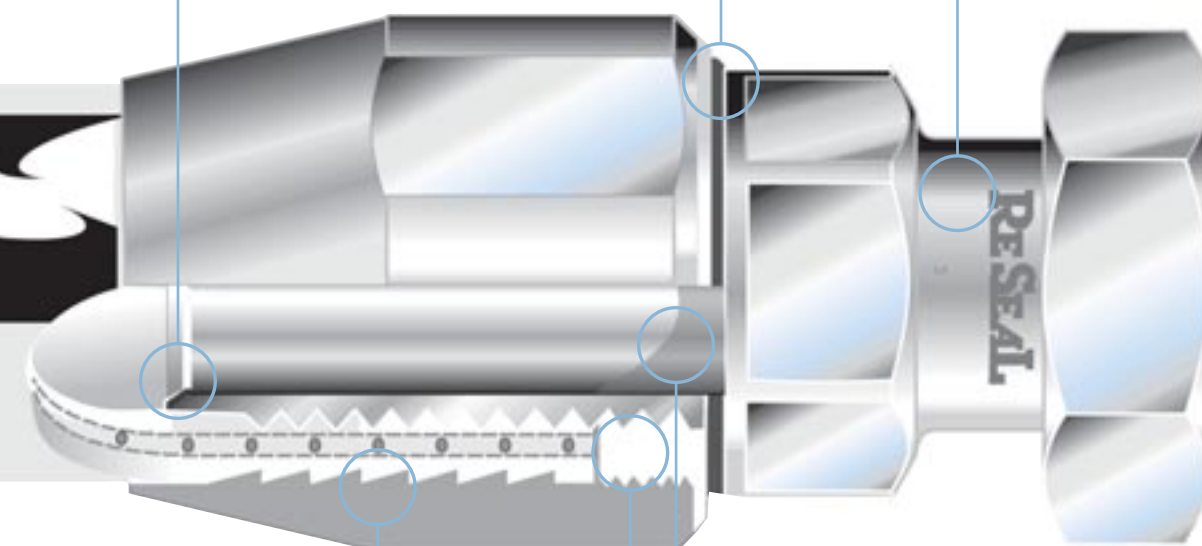
Features and Benefits

- **Totally reusable**
 - Made of grade 316L stainless steel with interior surface finish of 20Ra or better
 - Can be dismounted and reattached to a new length of hose
 - 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

CIP suitable – no disassembly for cleaning like clamped-in fittings

Patented O-ring design provides 360° seal at stem-to-hose-sleeve junction point – no external entrapment areas to harbor bacteria

High grade 316L material – durable and chemically resistant



Deep barb serrations provide excellent retention – resists fitting blow-off

Patent pending polymer insert – eliminates galling

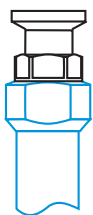
Quality workmanship – internal surface exceeds 20Ra

Fitting Details

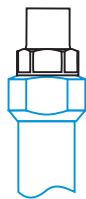
- ReSeal® fittings for MilkFlex™ hose are available in three sizes from (51mm, 63mm, 76mm) and three standard end styles
- Stems are manufactured from grade 316L stainless steel with an interior surface finish exceeding 20Ra
- Hose sleeves are available in either stainless steel or high impact polymer

End Connector Styles

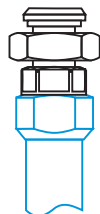
Other end styles are also available with additional welding charges.



TC
Sanitary
Clamp



TE
Tube End

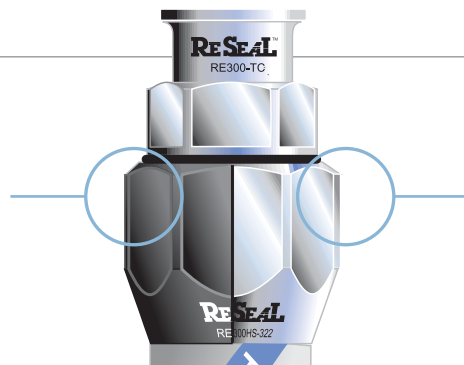


BS
Bevel Seat

Hose Sleeves

Stainless Steel

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



Polymer

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

MilkFlex™ Hose



Milkflex® Hose
pg 31

ReSeal® *Fittings for ClearGard® PVC Suction/Discharge Hose and ClearGard® PVC Tubing*



INDUSTRY COMPLIANCES:

- 3-A 62-01 LISTED
- ACCEPTED BY USDA DAIRY, EGG, MEAT AND POULTRY, CANADA AGRICULTURE DAIRY, MEAT & POULTRY
- REVIEWED BY MILK SAFETY BRANCH IN COMPLIANCE WITH GRADE "A" PASTEURIZED MILK ORDINANCE/FDA

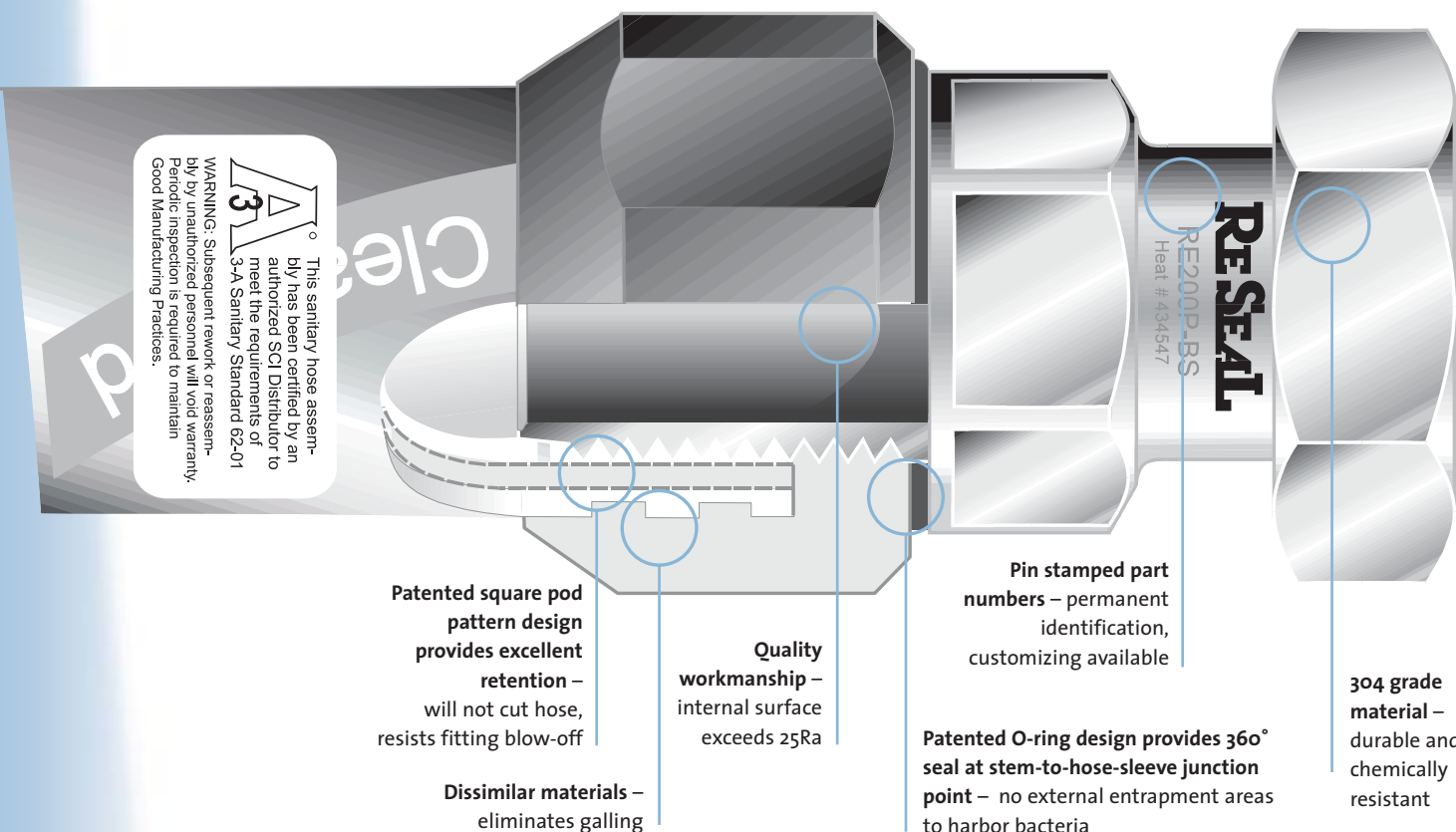
Applications

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



Features and Benefits

- **Totally reusable**
 - Made of grade 304 stainless steel with interior surface finish of 25Ra or better
 - Can be dismounted and reattached to a new length of hose
 - Smaller sizes can be field fabricated
 - 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**
 - 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

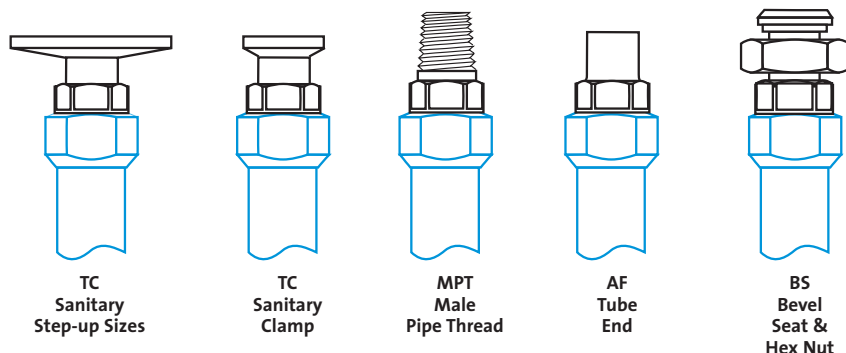


Fitting Details

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

End Connector Styles

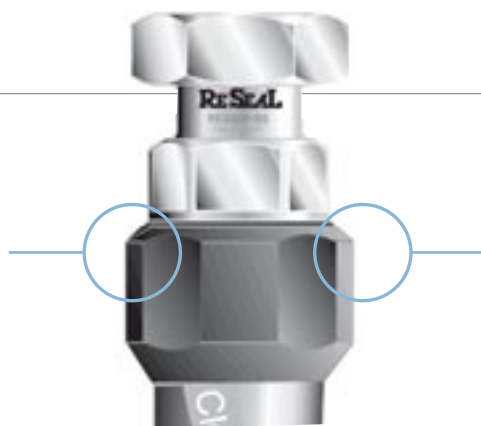
Other end styles are also available with additional welding charges.



Hose Sleeve

Polymer

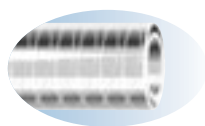
- Inexpensive
- CIP chemically suitable
- Excellent abrasion resistance
- Lightweight
- Mild chemical resistance
- Superior impact resistance
- Assortment of colors available
- Non-reusable



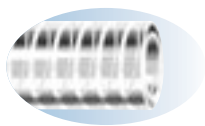
Stainless Steel

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

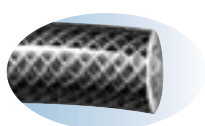
ClearGard® PVC Hose and Tubing



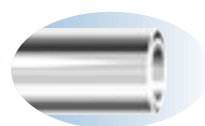
ClearGard® CSC Suction /Discharge Hose
pg 29



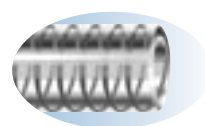
ClearGard® CSW Suction /Discharge Hose
pg 29



ClearGard® CBT Series PVC Tubing
pg 30



ClearGard® CCT Series PVC Tubing
pg 30



ClearGard® CSS Series PVC Tubing
pg 31

NEW

ReSeal[®] Fittings for Brewer Hose



INDUSTRY COMPLIANCES:

- 3-A 62-01 LISTED
- ACCEPTED BY USDA DAIRY, EGG, MEAT AND POULTRY; CANADA AGRICULTURE DAIRY, MEAT & POULTRY
- REVIEWED BY MILK SAFETY BRANCH IN COMPLIANCE WITH GRADE "A" PASTEURIZED MILK ORDINANCE/FDA
- UNIVERSITY OF WISCONSIN TESTED AND VERIFIED AS TOTALLY SANITARY

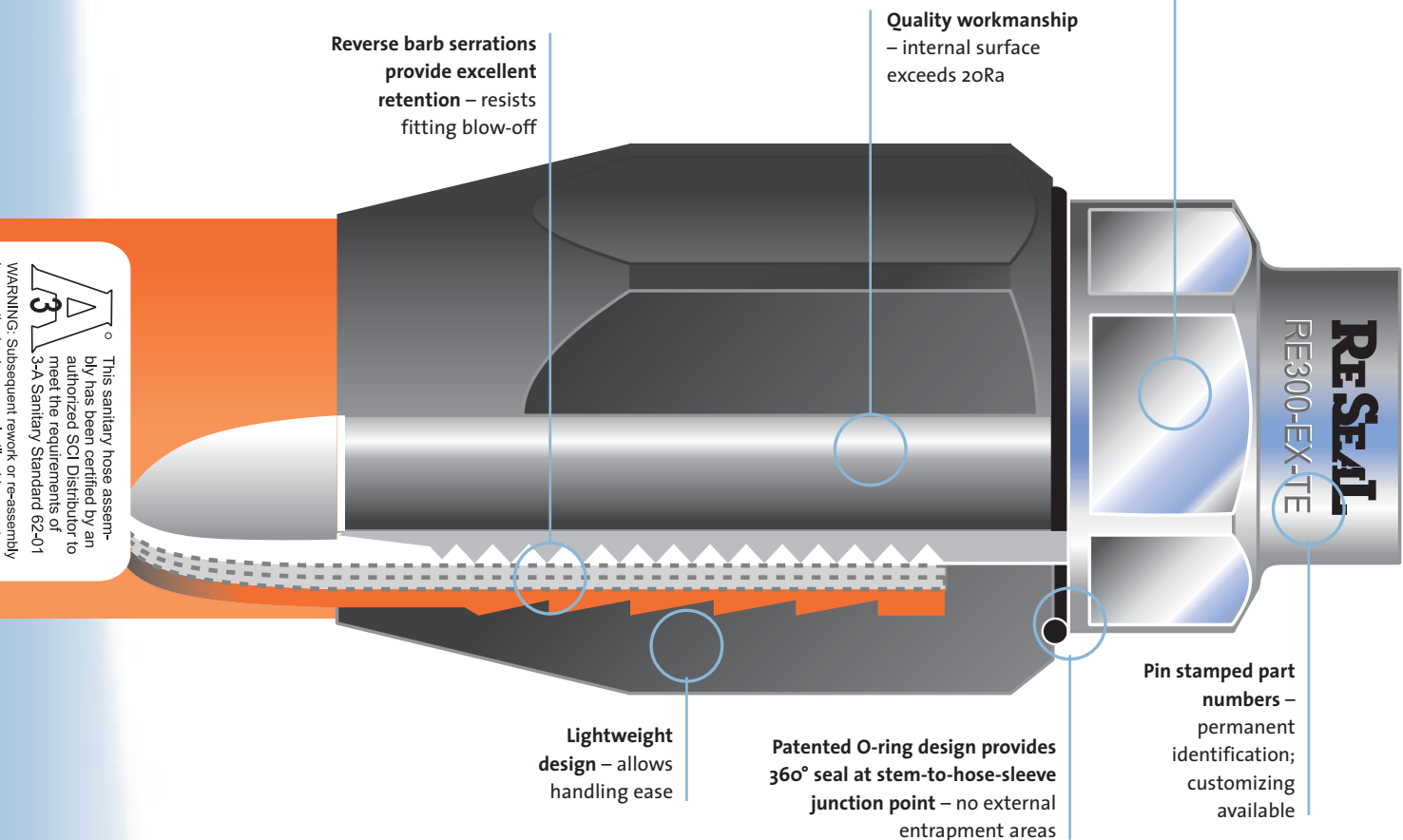
Applications

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



Features and Benefits

- **Extended shank design**
 - Designed exclusively for brewer hose
- **Totally reusable**
 - Can be dismantled and reattached to a new length of hose
 - 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**
 - 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

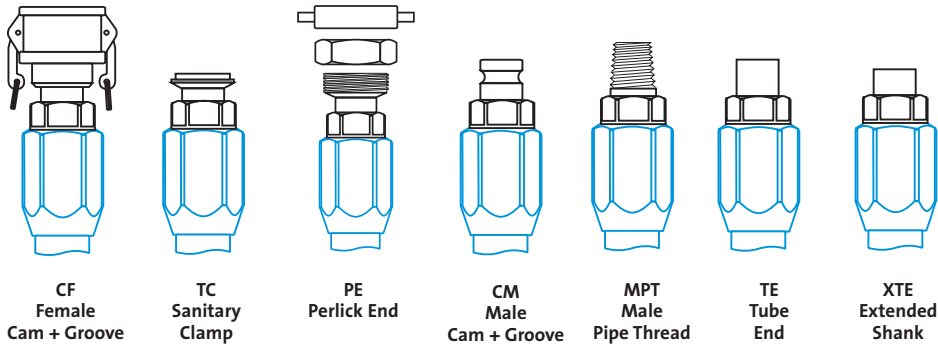


Fitting Details

- 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 interior surface finish exceeding 20Ra
- 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.



Hose Sleeve

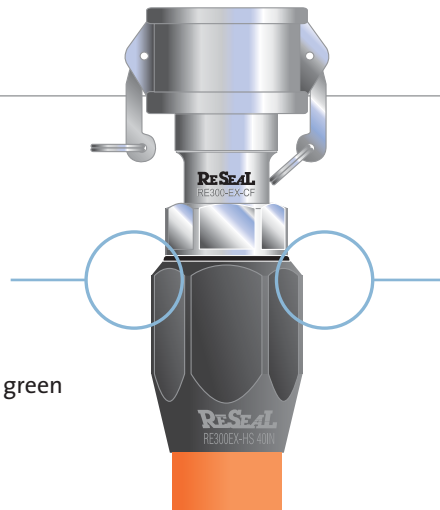
Polymer

- 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



Brewer Hose



BRH Brewer Hose
pg 32



BRH-AB Brewer Hose
pg 32

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.

S a n i t a r y

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.

C l e a n a b l e

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).

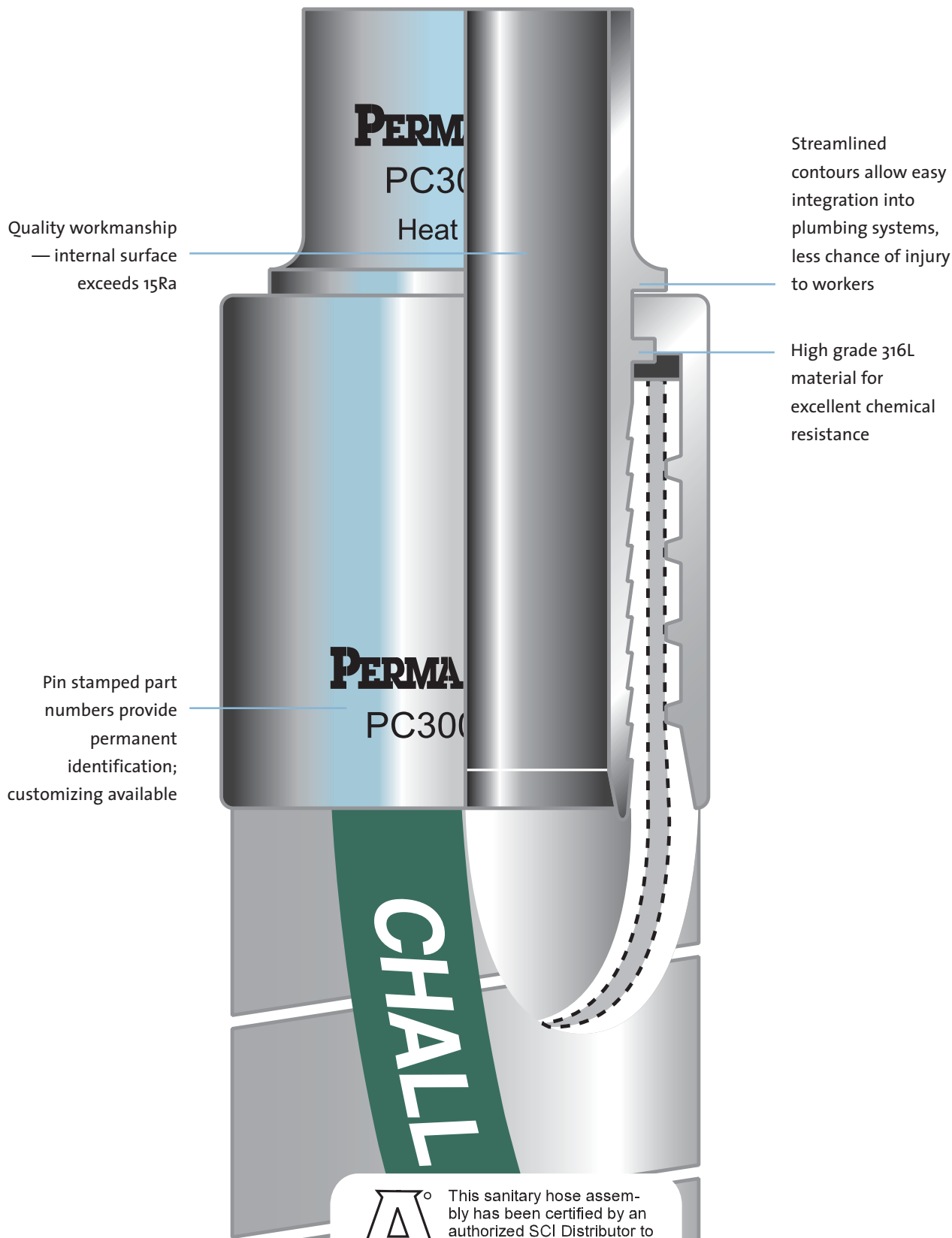
S a f e

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.)



PermaSeal® *Radial Crimp Fittings for PureGard® Silicone, SaniGard® Rubber and ClearGard® PVC Hose/Tubing*



INDUSTRY COMPLIANCES:

- 3-A 62-01 LISTED
- ACCEPTED BY USDA DAIRY, EGG, MEAT AND POULTRY; CANADA AGRICULTURE MEAT & POULTRY
- REVIEWED BY MILK SAFETY BRANCH IN COMPLIANCE WITH GRADE "A" PASTEURIZED MILK ORDINANCE

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
- **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 62-01 listed – compliance with highest sanitary standards

Full flow smooth bore design – eliminates internal obstruction

Radial crimp – no internal die impressions

Quality workmanship – internal surface exceeds 15Ra

WARNING: Subsequent rework or reassembly by unauthorized personnel will void warranty. Periodic inspection is required to maintain Good Manufacturing Practices.

CHALLENGE

Deep barb serrations provide excellent retention – prevents fitting blow-off

Channel locking components – becomes a single unit fitting, will not separate under severe conditions

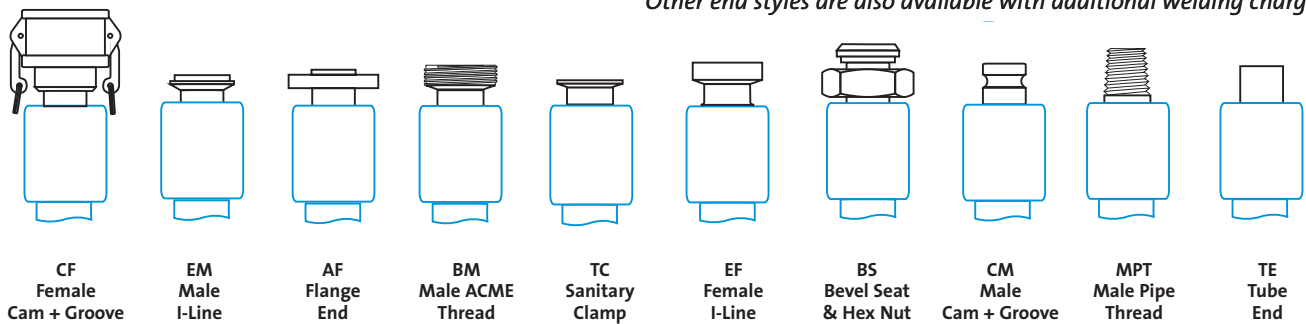
360° fixed seal at stem-to-hose-sleeve junction point – no external entrapment areas to harbor bacteria

Fitting Details

- PermaSeal® radial crimp fittings for PureGard® silicone, SaniGard® rubber and ClearGard® PVC hose and tubing are available in sizes 1/2" up to 6" in 10 standard end styles
- Stems are manufactured from grade 316L stainless steel with an interior surface finish exceeding 15Ra or better
- Hose sleeves are stainless steel

End Connector Styles

Other end styles are also available with additional welding charges.

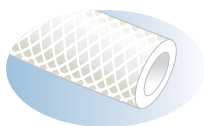


Hose Sleeve (Stainless Steel)

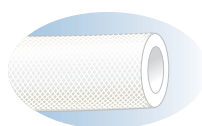
- Elevated temperature
- CIP & COP suitable
- Excellent durability
- Higher pressure ratings
- Chemically resistant
- Lightweight streamlined contour



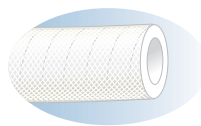
PureGard® Silicone, SaniGard® Rubber and ClearGard® PVC Hose/Tubing



PureGard® SPD
(single ply, polyester braid)
pg 24



PureGard® FPD
(4-ply, polyester braid)
pg 24



PureGard® FPW
(4-ply, polyester braid with stainless
steel helix wire) pg 25



SaniGard® Protector™ PSD
Suction & Discharge Hose
pg 26



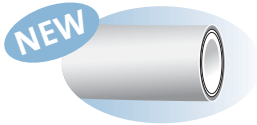
SaniGard® Sentry® SSW
Softwall Discharge
Hose pg 26



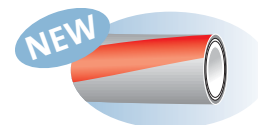
SaniGard® Challenger™
FEP/Teflon® Suction
& Discharge Hose pg 27



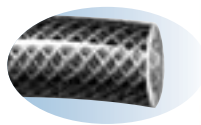
SaniGard® Gladiator®
Crush-Resistant Hose
pg 27



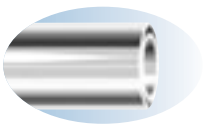
SaniGard® GR-FDA Gray FDA
Sanitary Transfer Hose
pg 28



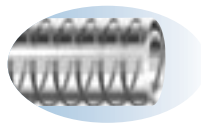
SaniGard® FGR Sanitary
Transfer Hose
pg 28



ClearGard® CBT
Series PVC Tubing
pg 30



ClearGard® CCT
Series PVC Tubing
pg 30



ClearGard® CSS
Series PVC Tubing
pg 31

PermaSeal® *Internal Expansion Fittings for SaniGard® Rubber Hose (sold as component only, no assemblies)*



INDUSTRY COMPLIANCES:

- 3-A 62-01 LISTED
- ACCEPTED BY USDA DAIRY, EGG, MEAT AND POULTRY, CANADA AGRICULTURE DAIRY, MEAT & POULTRY
- REVIEWED BY MILK SAFETY BRANCH IN COMPLIANCE WITH GRADE "A" PASTEURIZED MILK ORDINANCE/FDA

Applications

- Food
- Beverage
- Dairy
- Cosmetics
- Personal Hygiene



Features and Benefits

- **Internal expansion design**
 - 360° fixed seal at fitting/stem junction eliminates the possibility of product wicking between hose and fitting
- **Sanitary**
 - Meets the stringent requirements of food, beverage, dairy and cosmetic applications
 - Full flow compression seal and smooth bore design prevent bacteria build-up
- **Cleanable**
 - Suitable for Clean-In-Place procedures
- No disassembly for cleaning like clamped-in fittings
- **Safe**
 - Channel locking components, when assembled, become a single unit that resists separation under severe conditions
 - No straps or bands to injure workers

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

Full flow smooth bore design – no bacteria harboring edges, eliminates internal obstruction

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

WARNING: Subsequent rework or reassembly by unauthorized personnel will void warranty. Periodic inspection is required to maintain Good Manufacturing Practices.

250 PSI

PERMA
PM300C

PERMA SEAL™
PM300-TE

Reverse barb serrations provide excellent retention – prevents fitting blow-off

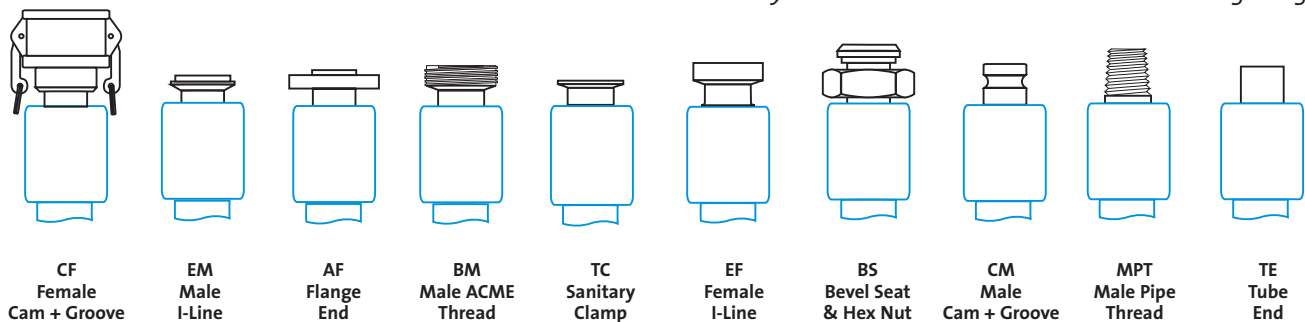
360° gasket seal at stem-to-hose-sleeve junction point – no external entrapment areas

Fitting Details

- PermaSeal® internal expansion fittings for SaniGard® rubber hose are available in sizes 1-1/2" up to 6" in 10 end styles
- Stems are manufactured from grade 316L stainless steel with an interior surface finish exceeding 20Ra
- Hose sleeves are available in stainless steel
- No assembly from factory

End Connector Styles

Other end styles are also available with additional welding charges.



Hose Sleeve (Stainless Steel)

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



SaniGard® Rubber Hose



SaniGard® Protector™ PSD Suction & Discharge Hose
pg 26



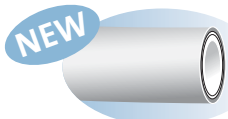
SaniGard® Sentry® SSW Softwall Discharge Hose
pg 26



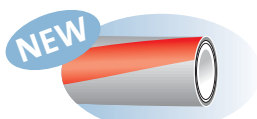
SaniGard® Challenger™ FEP/Teflon® Suction & Discharge Hose
pg 27



SaniGard® Gladiator® Crush-Resistant Hose
pg 27



SaniGard® GR-FDA Gray FDA Sanitary Transfer Hose
pg 28



SaniGard® FGR Sanitary Transfer Hose
pg 28

NEW

PermaSeal® Fittings for Brewer Hose



INDUSTRY COMPLIANCES:

- 3-A 62-01 LISTED
- ACCEPTED BY USDA DAIRY, EGG, MEAT AND POULTRY; CANADA AGRICULTURE DAIRY, MEAT & POULTRY
- 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

Deep barb serrations provide excellent retention – resists fitting blow-off

Quality workmanship – internal surface exceeds 15Ra

Channel locking components – becomes a single unit fitting, will not separate under severe conditions

Fitting Details

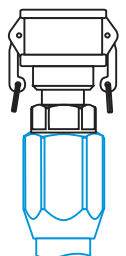
- PermaSeal® fittings for Brewer Hose are available in sizes 1" up to 3" in seven standard end styles
- Stems are manufactured from grade 316L stainless steel with an interior surface finish exceeding 15Ra

Hose Sleeve (Stainless Steel)

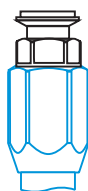
- Elevated temperature
- CIP and COP suitable
- Excellent durability
- Higher pressure ratings
- Chemically resistant

End Connector Styles

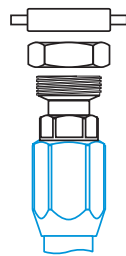
Other end styles are also available with additional welding charges.



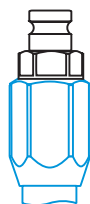
CF Female Cam + Groove



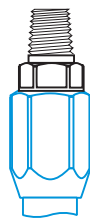
TC Sanitary Clamp



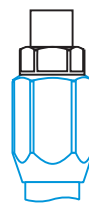
PE Perlick End



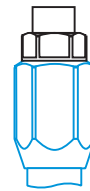
CM Male Cam + Groove



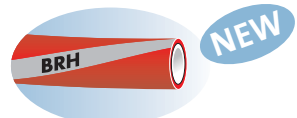
MPT Male Pipe Thread



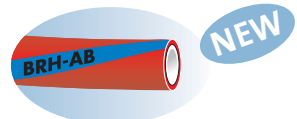
TE Tube End



XTE Extended Shank



BRH Brewer Hose pg 32



BRH-AB Brewer Hose pg 32

PermaSeal®

Radial Crimp Fittings for PureGard® Stainless Steel Braided Hose



INDUSTRY COMPLIANCES:

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

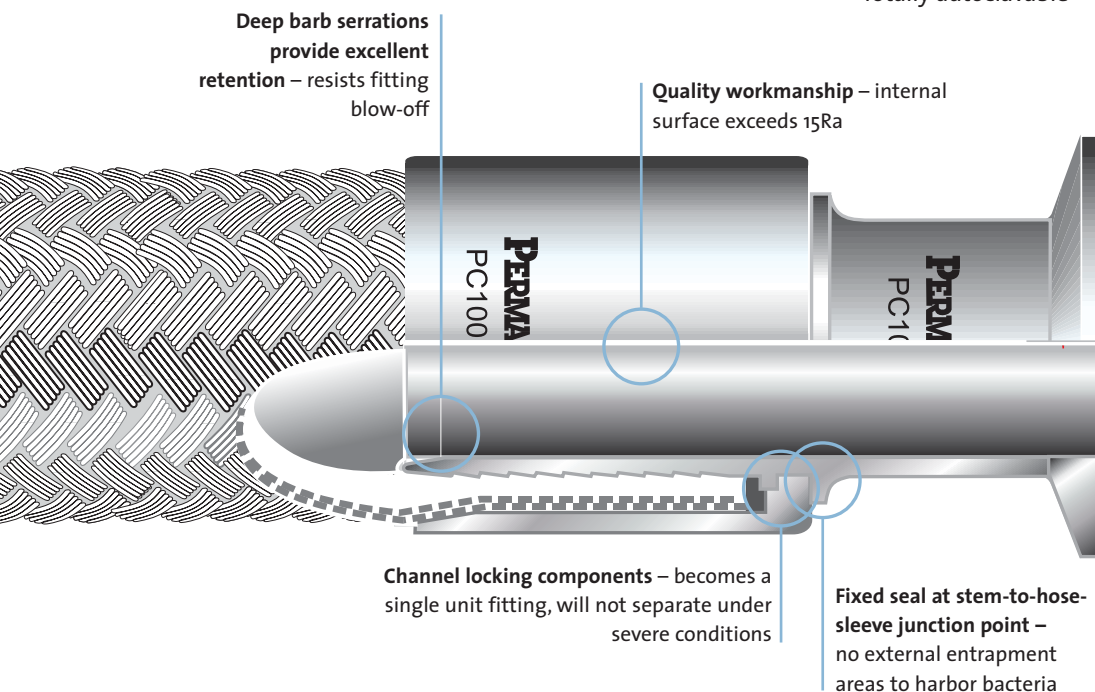
Applications

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



Features and Benefits

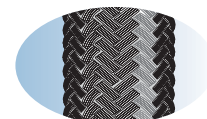
- **Radial crimp design**
 - Does not interfere with internal surface of fitting stem
 - 360° fixed seal at coupler/stem junction eliminates the possibility of product wicking between hose and fitting
- **Sanitary**
 - Meets the stringent requirements of high-purity applications
 - Full flow compression 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



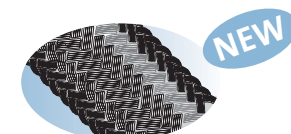
Fitting Details

- PermaSeal® fittings for PureGard® 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 interior surface finish exceeding 15Ra

Stainless Steel Braided Hose



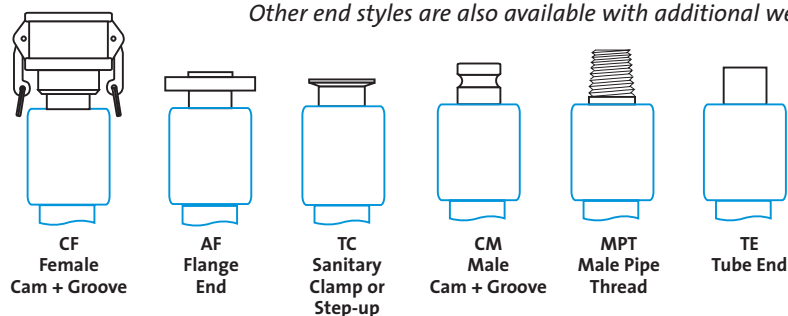
SBT (Smooth Bore)
Stainless Steel Braided Hose
pg 25



SBTC (Convoluted) Stainless
Steel Braided Hose
pg 25

End Connector Styles

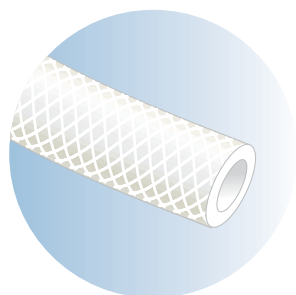
Other end styles are also available with additional welding charges.



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

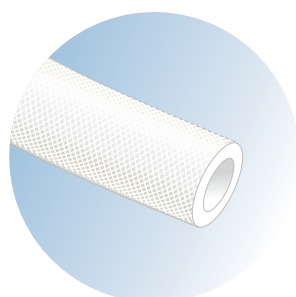
- FDA

HOSE SPECIFICATIONS

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

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.

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

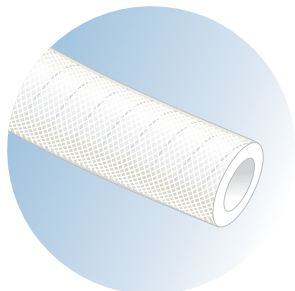
- FDA

HOSE SPECIFICATIONS

Part Number	Inside Diameter (in.)	Outside Diameter (in.)	Max. Working Pressure (PSI@68°)	Min. Bend Radius (in.)	Vacuum in HG
FPD050-HP	1/2	27/32	140	8.0	29
FPD075-HP	3/4	1-4/32	125	2.0	25
FPD100-HP	1	1-12/32	110	12.0	22
FPD150-HP	1-1/2	1-27/32	100	—	17
FPD200-HP	2	2-12/32	75	—	14
FPD250-HP	2-1/2	2-27/32	60	—	9
FPD300-HP	3	3-12/32	50	—	6
FPD400-HP	4	4-12/32	50	—	0

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.

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

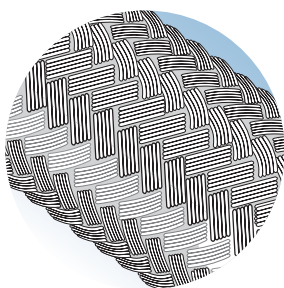
HOSE SPECIFICATIONS

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

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.

Stainless Steel Braided Hose/SBT Smooth Bore & SBTC Convuluted

APPLICATIONS: STEAM IN FOOD PROCESSING, STEAM IN BEVERAGE PROCESSING, INSTRUMENTATION



FEATURES/BENEFITS

- Excellent chemical resistance
- Lightweight construction for handling ease
- Ultra-smooth, non-stick tube surface prevents material build-up, resists moisture absorption
- Super kink-resistant
- Stainless steel braid resists abrasion, allows excellent working pressures

COLOR

- White

CONSTRUCTION

- Inner tube: Teflon®
- 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 per Foot (lbs.)
SBT Smooth Bore							
SB025	1/4	12/32	3,000*	2.5	29.9 ¹	13,500	.08
SB050	1/2	22/32	2,000*	4.0	29.9 ¹	8,500	.15
SB075	3/4	28/32	1,200*	7.5	29.9 ¹	4,800	.22
SB100	1	1-6/32	800*	12.0	20.0 ¹	3,200	.31
SBTC Convuluted — NEW SERIES							
SBC050	1/2	3/4	1,750	1.75	29.9 ²	7,000@72°F	.19
SBC075	3/4	1-7/8	1,375	2.25	29.9 ²	5,500@72°F	.30
SBC100	1	1-10/32	1,000	2.75	29.9 ²	4,300@72°F	.40
SBC125	1-1/4	1-20/32	750	3.50	29.9 ²	3,200@72°F	.50
SBC150	1-1/2	2-4/32	650	3.75	29.9 ²	2,600@72°F	.63
SBC200	2	2-1/2	600	6.50	29.9 ²	2,400@72°F	.89
SBC250	2-1/2	3-1/4	212**	13	29.9 ³	850@70°F	1.35
SBC300	3	3-7/8	175**	14	29.9 ³	700@70°F	1.75
SBC400	4	5	150**	16	29.9 ³	600@70°F	2.1

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

** Working pressure is given @ 70°F. Decrease working pressure 1% for every 2°F above 250°F.

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

² Vacuum rating is given @ 72°F.

³ Vacuum rating is given @ 70°F; Decrease vacuum rating 1% for every 2°F above 250°F.

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 helix wire

FITTINGS

- ReSeal® reusable or PermaSeal® permanent

TEMPERATURE RATING

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

APPROVALS

- FDA

HOSE SPECIFICATIONS

Part Number	Inside Diameter (in.)	Outside Diameter (in.)	Max. Working Pressure (PSI)	Min. Bend Radius (in.)	Vacuum in HG	Weight Per Cubic Foot
GRAY COVER						
PSD050	1/2	1-1/32	150	2.0	29	30 LBS.
PSD075	3/4	1-8/32	150	3.0	29	55 LBS.
PSD100	1	1-17/32	150	4.0	29	85 LBS.
PSD150	1-1/2	2-5/32	150	6.0	29	96 LBS.
PSD200*	2	2-21/32	150	7.0	29	135 LBS.
PSD250	2-1/2	3-6/32	150	8.0	29	180 LBS.
PSD300*	3	3-24/32	150	9.0	29	245 LBS.
PSD400*	4	4-24/32	150	12.0	29	340 LBS.
PSD600	6	6-24/32	150	36.0	29	475 LBS.
WHITE COVER						
PSD150-W	1-1/2	2-5/32	150	6.0	29	96 LBS.
PSD200-W	2	2-21/32	150	7.0	29	135 LBS.
PSD300-W	3	3-24/32	150	9.0	29	245 LBS.

* Heavy duty construction

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

HOSE SPECIFICATIONS

Part Number	Inside Diameter (in.)	Outside Diameter (in.)	Max. Working Pressure (PSI)	Min. Bend Radius (in.)	Vacuum in HG	Weight Per Cubic Foot
SSW150	1-1/2	2-5/32	250	—	0	80 LBS.
SSW200	2	2-21/32	250	—	0	110 LBS.
SSW250	2-1/2	3-6/32	250	—	0	198 LBS.
SSW300	3-24/32	3-24/32	250	—	0	245 LBS.

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

COLOR

- White with green stripe

CONSTRUCTION

- Inner tube: white FEP/Teflon®
- Cover: white EPDM reinforced with two fabric spirals with dual wire helix and static 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
- 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 Per Cubic Foot
CTL050	1/2	1-3/32	150	4.0	29	43 LBS.
CTL075	3/4	1-8/32	150	3.0	29	53 LBS.
CTL100	1	1-17/32	150	3.5	29	83 LBS.
CTL150	1-1/2	2-5/32	150	4.5	29	92 LBS.
CTL200	2	2-21/32	150	6.5	29	133 LBS.
CTL250	2-1/2	3-6/32	150	8.5	29	190 LBS.
CTL300	3	3-24/32	150	12.5	29	225 LBS.
CTL400	4	4-24/32	150	20.5	29	395 LBS.

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.

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

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 yellow or white stripe

CONSTRUCTION

- Inner tube: white butyl or synthetic polyester
- 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

HOSE SPECIFICATIONS						
Part Number	Inside Diameter (in.)	Outside Diameter (in.)	Max. Working Pressure (PSI)	Min. Bend Radius (in.)	Vacuum in HG	Weight Per Cubic Foot
GCR150	1-1/2	2-5/32	250	5.0	20	101 LBS.
GCR200	2	2-21/32	250	7.0	20	117 LBS.
GCR250	2-1/2	3-6/32	250	12.0	20	150 LBS.
GCR300	3	3-24/32	250	18.0	20	215 LBS.
GCR400	4	4-24/32	250	36.0	20	348 LBS.

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.

SaniGard® Rubber Hose Series continued

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

GR-FDA Series



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

- ReSeal® reusable or 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 Per Foot lb.
GFDA-0500	.500 (12.7)	.931 (23.6)	150	2.50	29.9	600	.230
GFDA-0750	.750 (19.1)	1.182 (30.0)	150	3.75	29.9	600	.310
GFDA-1000	1.000 (25.4)	1.500 (38.1)	150	4.00	29.9	600	.390
GFDA-1500	1.500 (38.1)	2.090 (53.1)	150	5.00	29.9	600	.806
GFDA-2000	2.000 (50.8)	2.600 (66.0)	150	6.00	29.9	600	1.161
GFDA-2500	2.500 (63.5)	3.173 (80.6)	150	7.00	29.9	600	1.700
GFDA-3000	3.000 (76.2)	3.718 (94.4)	150	8.00	29.9	600	1.961
GFDA-4000	4.000 (101.6)	4.781 (121.4)	150	11.00	29.9	600	3.009

* 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.

FGR Series



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 clear helix rod reinforcement

FITTINGS

- ReSeal® reusable or 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 Per Foot lb.
HOSFGR-08	.500 (12.7)	.972 (24.7)	400	1.5	29.9	1650	.04
HOSFGR-12	.750 (19.1)	1.268 (32.2)	375	2.0	29.9	1500	.05
HOSFGR-16	1.000 (25.4)	1.518 (38.6)	350	3.0	29.9	1450	.06
HOSFGR-24	1.500 (38.1)	2.020 (51.3)	300	4.0	29.9	1200	.09
HOSFGR-32	2.000 (50.8)	2.520 (64.0)	250	4.5	29.9	1050	1.3
HOSFGR-40	2.500 (63.5)	3.138 (79.7)	150	6.0	29.9	700	1.9
HOSFGR-48	3.000 (76.2)	3.650 (92.7)	150	7.0	29.9	600	2.3
HOSFGR-54	4.000 (101.6)	4.670 (118.6)	150	10.0	29.9	600	3.1

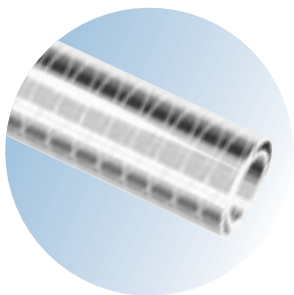
* Based on ambient condition on exterior of hose. Elevated temperatures and characteristics of medium being transferred can affect working pressures and burst pressures.

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

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

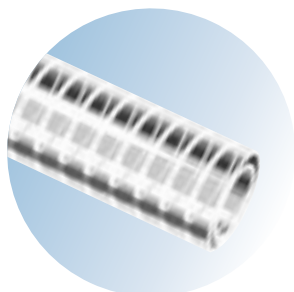
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HOSE SPECIFICATIONS

Part Number	Inside Diameter (in.)	Outside Diameter (in.)	Max. Working Pressure ¹ (PSI @ 68°)	Min. Bend Radius (in.)	Vacuum in HG	Weight Per Cubic Foot
CSC100	1	1-7/32	100	3.0	29	20 LBS.
CSC150	1-1/2	1-26/32	85	6.0	29	40 LBS.
CSC200	2	2-11/32	75	8.0	29	60 LBS.
CSC250	2-1/2	2-30/32	65	10.0	29	85 LBS.
CSC300	3	3-14/32	65	12.0	29	115 LBS.
CSC400	4	4-17/32	55	16.0	29	180 LBS.

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 white

CONSTRUCTION

- FDA PVC clear extrusion with clear helix rod reinforcement

FITTINGS

- ReSeal® reusable

TEMPERATURE RATING

- 20° to 140°F

APPROVALS

- FDA

HOSE SPECIFICATIONS

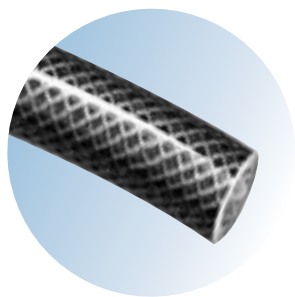
Part Number	Inside Diameter (in.)	Outside Diameter (in.)	Max. Working Pressure ¹ (PSI @ 68°)	Min. Bend Radius (in.)	Vacuum in HG	Weight Per Cubic Foot
CSW100	1	1-7/32	100	3.0	29	20 LBS.
CSW150	1-1/2	1-26/32	85	6.0	29	40 LBS.
CSW200	2	2-11/32	75	8.0	29	60 LBS.
CSW250	2-1/2	2-30/32	65	10.0	29	85 LBS.
CSW300	3	3-14/32	65	12.0	29	115 LBS.

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 Tubing

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

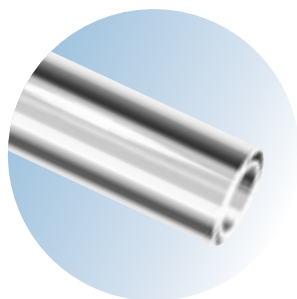
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HOSE SPECIFICATIONS

Part Number	Inside Diameter (in.)	Outside Diameter (in.)	Max. Working Pressure (PSI @ 68°)	Min. Bend Radius (in.)	Vacuum in HG	Weight Per Cubic Foot
CBT050	1/2	6/32	250	5.0	-	17 LBS.
CBT075	3/4	1-4/32	200	7.0	-	30 LBS.
CBT100	1	1-12/32	150	9.0	-	38 LBS.
CBT150	1-1/2	1-20/32	100	15.0	-	64 LBS.
CBT200	2	2-16/32	75	18.0	-	94 LBS.

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

HOSE SPECIFICATIONS

Part Number	Inside Diameter (in.)	Outside Diameter (in.)	Max. Working Pressure (PSI @ 68°)	Min. Bend Radius (in.)	Vacuum in HG	Weight Per Cubic Foot
CCT050	1/2	6/32	45	-	-	13 LBS.
CCT075	3/4	1-4/32	35	-	-	30 LBS.
CCT100	1	1-12/32	35	-	-	38 LBS.
CCT150	1-1/2	1-20/32	35	-	-	40 LBS.
CCT200	2	2-16/32	35	-	-	48 LBS.

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

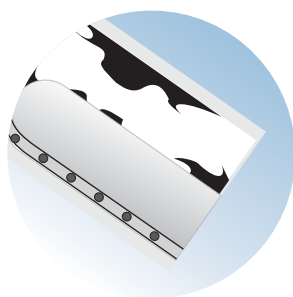
HOSE SPECIFICATIONS

Part Number	Inside Diameter (in.)	Outside Diameter (in.)	Max. Working Pressure (PSI @ 68°)	Min. Bend Radius (in.)	Vacuum in HG	Weight Per Cubic Foot
CSS050	1/2	26/32	150	2.0	29	15 LBS.
CSS075	3/4	1-4/32	150	3.0	29	24 LBS.
CSS100	1	1-12/32	100	4.0	29	35 LBS.
CSS150	1-1/2	1-20/32	70	6.0	29	67 LBS.
CSS200	2	2-16/32	70	8.0	29	81 LBS.
CSS250	2-1/2	2-30/32	50	10.0	29	138 LBS.
CSS300	3	3-16/32	50	12.0	29	164 LBS.

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.

MilkFlex™ Suction/Discharge Hose

APPLICATIONS: DAIRY, FOOD, BEVERAGE



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

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

HOSE SPECIFICATIONS

Part Number	Inside Diameter (mm)	Outside Diameter (mm)	Max. Working Pressure (PSI @ 68°)	Min. Bend Radius (in.)	Vacuum in HG	Weight Per Cubic Foot
MHH-51	51	65	90	5.0	29	100 LBS.
MHH-63	63	76	90	7.0	29	124 LBS.
MHH-76	76	89	90	14	29	156 LBS.

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.

NEW

Brewer Hose

APPLICATIONS: BEVERAGE BREWING, FOOD, DAIRY

BRH Series



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

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

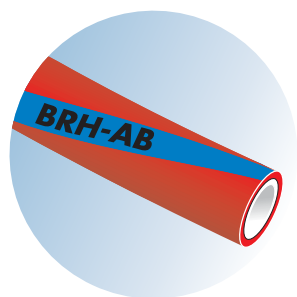
- FDA
- USDA
- 3-A

HOSE SPECIFICATIONS

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

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.

BRH-AB Series



FEATURES/BENEFITS

- Specially designed for brewing
- Excellent flexibility and handling ease for in-plant use
- Ultra-smooth, bacteria-free inner tube
- Imparts no taste or odor
- Abrasion-resistant cover for excellent oil and ozone protection
- Higher pressure rating

COLOR

- Red EPDM with blue stripe

CONSTRUCTION

- Inner tube: white seamless chlorobutyl
- Cover: one-piece EPDM

FITTINGS

- ReSeal® reusable or PermaSeal® permanent

TEMPERATURE RATING

- -40°F to 225°F (continuous)
- 250°F (intermittent)

APPROVALS

- FDA
- 3-A standard 1800

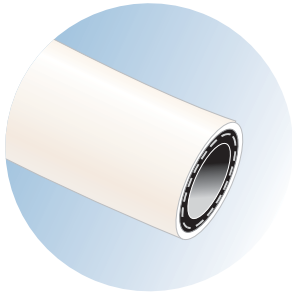
HOSE SPECIFICATIONS

Part Number	Inside Diameter (in.)	Outside Diameter (in.)	Reinforcement	Max Working Pressure (PSI@68°)	Weight LB/FT
BRH-AB-150	1-1/2	2-3/8	4 PLIES	500	1.28
BRH-AB-200	2	3	6 PLIES	500	1.82
BRH-AB-250	2-1/2	3-1/2	6 PLIES	500	1.94
BRH-AB-300	3	4-1/8	6 PLIES	500	2.90
BRH-AB-400	4	5-3/16	6 PLIES	500	3.68

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.

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

TEMPERATURE RATING

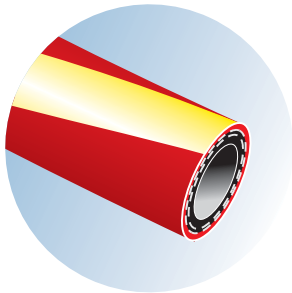
- -20° to +200°F

HOSE SPECIFICATIONS

Part Number	Inside Diameter (in.)	Outside Diameter (in.)	Working Pressure (PSI)	Weight Per Cubic Foot
WDH075	3/4	1-6/32	300	40 LBS.

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.

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

TEMPERATURE RATING

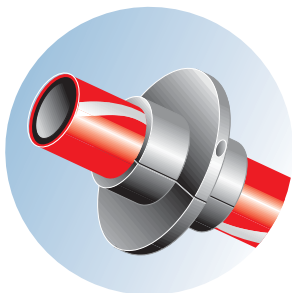
- -20° to +400°F

HOSE SPECIFICATIONS

Part Number	Inside Diameter (in.)	Outside Diameter (in.)	Working Pressure (PSI)	Weight Per Cubic Foot
PCR075	3/4	1-8/32	250	40 LBS.

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.

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
HD150	10" TO 16"	1-1/2"	4.0 LBS.
HD200	12" TO 18"	2"	4.8 LBS.
HD250	20" TO 28"	2-1/2"	5.0 LBS.
HD300	20" TO 28"	3"	5.0 LBS.
HD400	24" TO 36"	4"	5.5 LBS.

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.

ClearGard® *Flow Indicators*



INDUSTRY COMPLIANCES:

- ACCEPTED BY USDA DAIRY, EGG, MEAT AND POULTRY, CANADA AGRICULTURE DAIRY, MEAT & POULTRY
- 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

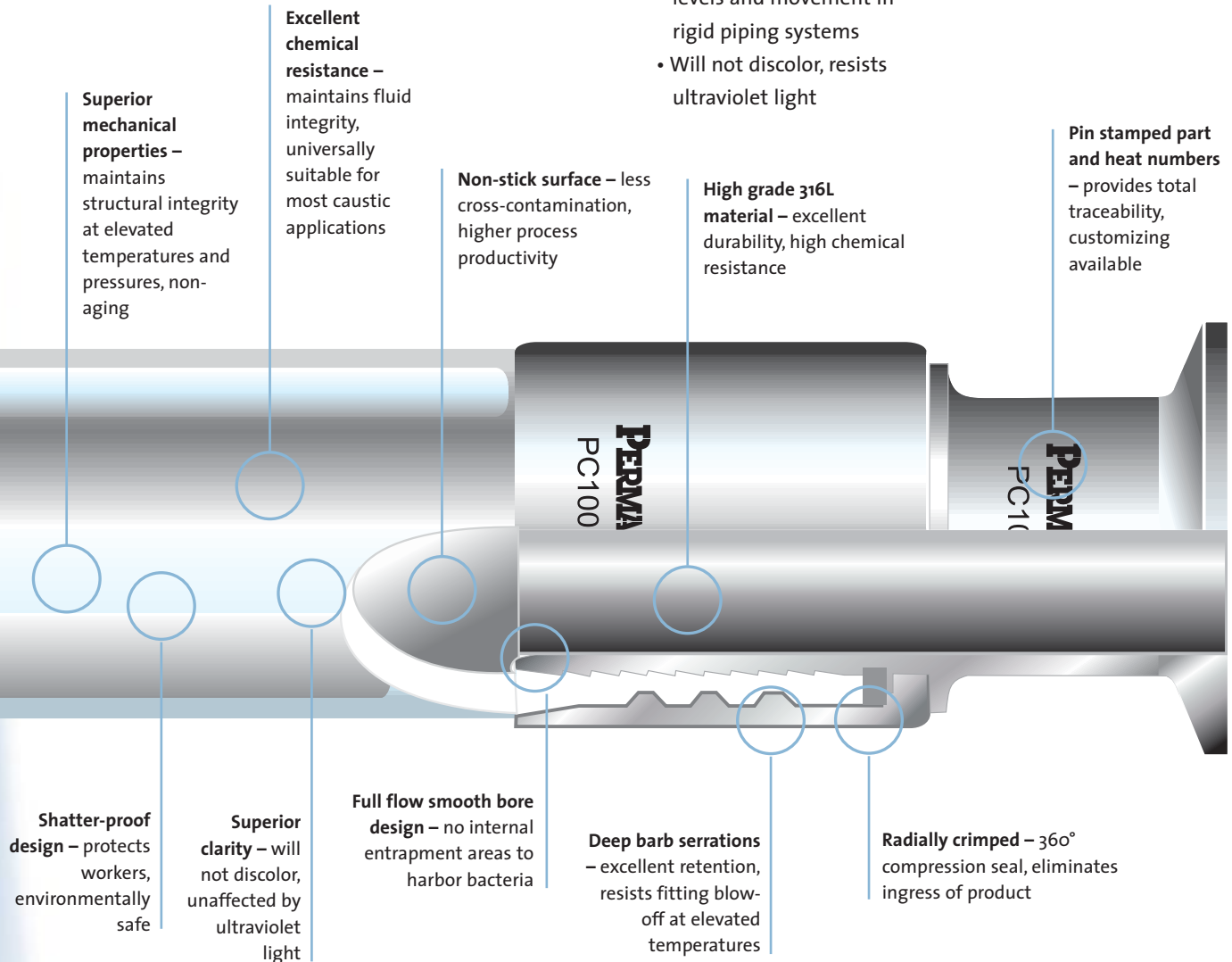
- Chemfluor® FEP tubing material resistant to virtually all known chemicals
- Helps maintain your ultra-pure environment

• Non-stick surface

- Up to six times smoother than standard PFA tubing
 - Greatly reduces potential for cross-contamination
- ### • Superior visual clarity
- Allows accurate monitoring of product levels and movement in rigid piping systems
 - Will not discolor, resists ultraviolet light

• Radial crimp design

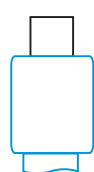
- Utilizes PermaSeal® radial crimp fittings
- Excellent durability, increased pressure ratings
- Provides a full flow smooth bore inside diameter



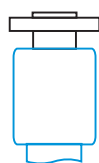
Flow Indicator Details

- ClearGard® flow indicators are available in sizes 1/2" up to 3" (lengths up to 10 feet) in six standard end styles
- Stems are 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; there are size and length limitations, however, so contact factory for availability

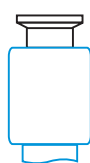
End Connector Styles



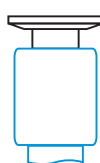
TE
Tube End



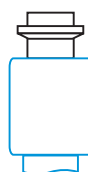
AF
Flange End



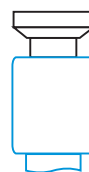
TC
Sanitary
Clamp



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	0.125	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	0.180	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

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

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-HS118	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

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

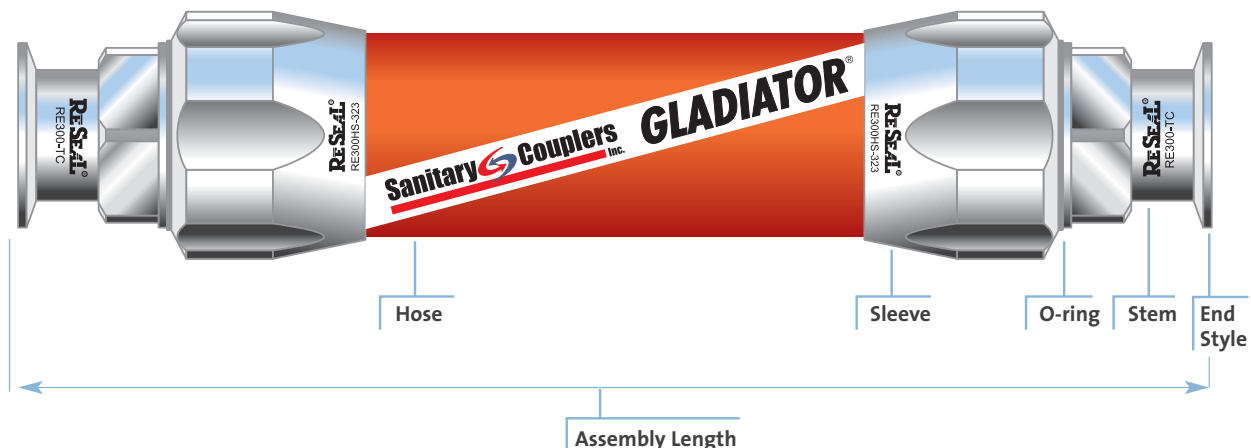
How to Order an Assembly

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	ID Size	Fitting Style	End Style		Hose Sleeve	Assembly Length		
PSD	025 = 1/4"	RE = ReSeal®	TC = Sanitary Clamp	BS = Bevel Seat and Hex Nut	S = Stainless	Feet/Inches		
GCR	037 = 3/8"	PC = PermaSeal®	BM = Male Threaded Bevel	EF = I-Line Female	P = Polymer			
SSW	050 = 1/2"	Radial Crimp	EM = I-Line Male	JM = John Perry Male				
CTL		PM = PermaSeal®	JF = John Perry Female	MPT = Male Pipe Thread				
GR-FDA		Internal	FPT = Female Pipe Thread	AF = AMSI Stub End & Plate Flange				
FGR	062 = 5/8"	Expansion	BST = Transparent Bevel Seat and Nut	TCT = Transparent Polymer Sanitary Clamp				
CSC	075 = 3/4"		QM = Q-Line	TE = Tube End Stem (Butt Weld)				
CSW	100 = 1"		CM = Cam & Groove Male	CF = Cam & Groove Female				
CBT	150 = 1-1/2"		XTE = Extended Shank	PE = Perlick End				
CCT	200 = 2"							
CSS	250 = 2-1/2"							
SPD	300 = 3"							
FDP	400 = 4"							
FPW	600 = 6"							
MHH								
SBT								
SBTC								
BRH								
BRH-AB								

Overall length tolerances for assemblies are:

- 1/4" on assemblies to 24"
- 1/2" on assemblies 25" to 60"
- 1" on assemblies over 60"



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 - GR-FDA Series Hose
HOSFGR - FGR Series Hose
BRH, BRH-AB - Brewer Hose
SB - Smooth Bore Stainless Steel Braided Hose
SBC - SBTC Convoluted Stainless Steel Braided Hose

HOSE TYPE	TEMP.	MAXIMUM PRESSURE
PSD, CTL	68	150
GCR, SSW	68	250
SPDo25	68	155
SPDo37	68	125
SPDo50	68	105
SPDo62	68	90
SPDo75	68	65
SPD100	68	55
SPD150	68	45
FPDo50	68	140
FPDo75	68	125
FPD100	68	110
FPD150	68	100
FPD200	68	75
FPD250	68	60

HOSE TYPE	TEMP.	MAXIMUM PRESSURE
FPD300	68	50
FPWo50-150	68	200
FPW200	68	175
FPW250	68	175
FPW300	68	150
GFDA	68	150
HOSFGR-o8	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

HOSE TYPE	TEMP.	MAXIMUM PRESSURE
BRH-AB	68	500
SBo25	70	3000
SBo50	70	2000
SBo75	70	1200
SBo100	70	800
SBCo50	70	1750
SBCo75	70	1375
SBC100	70	1000
SBC125	70	750
SBC150	70	650
SBC200	70	600
SBC250	70	212
SBC300	70	175
SBC400	70	15

Note: For rubber hose (PSD, GCR, CTL, and SSW), factor in a 25% reduction in working pressure for every 100 deg over ambient temperature. For silicone hose (SPD, FPD, and FPW), factor in a 15% reduction in working pressure for every 100 deg 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	+626
+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 [23°C]). 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	E
Ammonium Hydroxide, 5-10% in w	E	X	E	G	E
Ammonium Hydroxide, 30% in w	E	X	E	F	-

CHEMICAL	TEFLON®	SILICONE	PVC	RUBBER	BRH
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

CHEMICAL	TEFLON®	SILICONE	PVC	RUBBER	BRH
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
Diethyl 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	-
Limone-D	E	X	X	X	X
Linoleic Acid	E	G	X	X	X

CHEMICAL	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

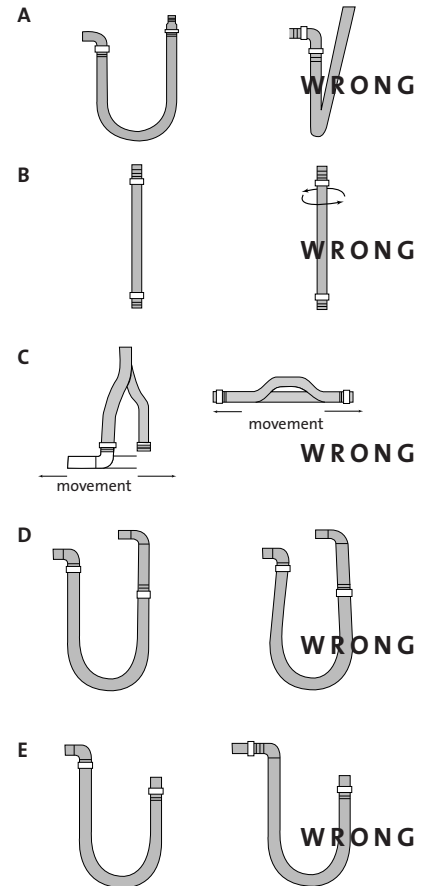
CHEMICAL	TEFLON®	SILICONE	PVC	RUBBER	BRH
Sodium Benzoate, 22% in w	E	E	E	G	E
Sodium Bicarbonate, 7% in w	E	E	E	E	E
Sodium Carbonate, 7% in w	E	E	E	E	E
Sodium Chlorate, 45% in w	E	E	E	E	G
Sodium Chloride, 20% in w	E	E	E	E	G
Sodium Cyanide, 30% in w	E	E	E	E	E
Sodium Fluoride, 3% in w	E	E	E	E	E
Sodium Hydroxide, 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

CHEMICAL	TEFLON®	SILICONE	PVC	RUBBER	BRH
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.

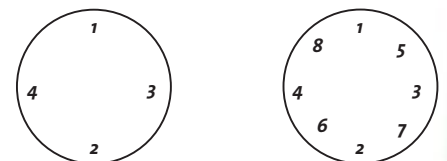
Nominal Hose Size

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

Torque (ft.-lbs.)

- **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.

Bolt Torque Sequence



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 influence service life include:

- **Corrosion**
 - General corrosion attack
 - Stress corrosion cracking
 - Intergranular corrosion
 - Pitting corrosion
- **Fatigue (including)**
 - High cyclic
 - Flexure
 - Pulsation
 - Torsion
 - Vibration
- **Vibration/Wear**
 - 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 mechanical imposed) and/or offset.

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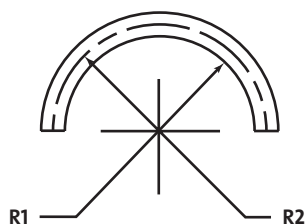
Glossary

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 innermost surface of the curved portion (R1).

Bend Radius (metal hose) — The radius of a bent section of hose measured to the hose centerline (R2).

Minimum Bend Radius — The smallest radius at which a hose can be used.



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.

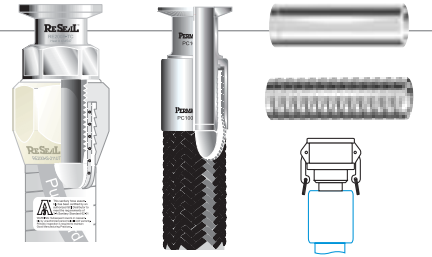
Pressure/Temperature Correction — Metal hose pressure capabilities decrease as the temperature increases. Consult the *Temperature/Pressure Reference Guide* (p. 38) to determine pressure ratings at elevated temperatures.

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

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