Colder Products Company

Revised 2/22/08

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CLEANER | FASTER | SAFER | SMARTER

Colder, first choice in couplings

RPN SERIES

RPN (Rack & Panel) Series quick disconnect couplings provide the crucial missing link in a reliable, closed-loop liquid cooling system. RPNs allow "hot swapping" of cold plates with virtually no spillage and their molded valve components provide high flow.

Specifications

Pressure: Vacuum to 100 psi, 6.9 bar

Temperature:
-40° F to 185° F (-40° C to 85° C)
(contact Colder for high temp. applications)

Materials:
Main components: Anodized aluminum
Valves: Polysulfone
O-ring: EPDM (includes thread o-ring)
Springs: 316 stainless steel

Lubricants: Krytox®, PFPE (inert)

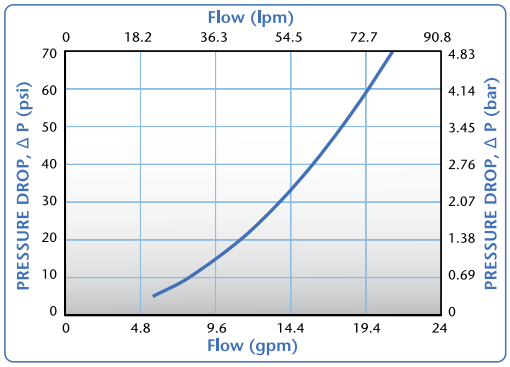
Connect Force:
12.7LBF@0psi, 43.7 LBF@100psi

Connected Length: 2.48 REF

Flow Capacity: C_V~2.5 (see graph)

Spillage: 0.01 ml @ ~0 psi, 0.08 ml @ 100 psi

RPN Water Flow



This graph is intended to give you a general idea of the performance capabilities of each product line.

Features	Benefits
SAE 06 terminations with o-ring	Secure connections require no additional parts
Non-spill valve design	Virtually no spillage around sensitive electronics
Molded valve components	High flow
Anodized aluminum construction	Durable and lightweight

Note: If you like the RPN concept but need a different material, configuration or size, please contact Colder to discuss your application.

Coupling Bodies

ANODIZED ALUMINUM

TERMINATION	PART NO.	HEX	LENGTH
SAE-06 9/16-18 UNF-2A threads (Seals in SAE J1926-1 SAE straight thread port)	RPN30006	7/8"	1.73"

Coupling Inserts

ANODIZED ALUMINUM

TERMINATION	PART NO.	HEX	LENGTH
SAE-06 9/16-18 UNF-2A threads (Seals in SAE J1926-1 SAE straight thread port)	RPN46006	7/8"	1.47"

All measurements are in inches (millimeters) unless otherwise noted. Tubing must meet stated inside and outside diameters. Couplings are pictured with valves unless otherwise noted.

FL SERIES

The 3/8" and 5/8" flow FL Series

couplings are designed for high performance and high flow. Constructed of durable and lightweight anodized aluminum, the FL Series couplings replace cumbersome ball-and-sleeve couplings in demanding applications. Oversized o-rings prevent fouling in harsh environments and integral terminations eliminate leak points and shorten completed assemblies. FL Series couplings are the highest flow, lowest pressure drop, valved couplings offered by Colder.

Specifications

Pressure: Vacuum to 120 psi, 8.3 bar

Temperature:
-40° F to 300° F (-40° C to 149° C)

Materials:
Main components and valve: Aluminum
Thumb latch: Stainless steel
Valve spring: Stainless steel
External springs and pin: Stainless steel
O-rings: Fluorocarbon

Tubing Sizes:
1/2" to 3/4" ID, 12.7mm to 19.0 mm ID

Flow Capacity: C_V~2.1 (3FL), C_V~4.3 (5FL)

WARNING: Pressure, temperature, chemicals, and operating environment can affect the performance of couplings. It is the customer's responsibility to test the suitability of Colder's products in their own application conditions.

Features	Benefits
Aluminum material	Half the weight of brass ball-and-sleeve couplings
Black, hard anodized finish	Durable and attractive
Oversized o-rings	Less contamination
Colder thumb latch	One-hand connection and disconnection

Coupling Bodies

ALUMINUM

TERMINATION	THREAD SIZE		FLOW	SHUTOFF
IN-LINE PIPE THREAD	3/8" NPT		3/8"	3FLD6061106
	1/2" NPT		3/8"	3FLD6061108
	3/4" NPT		5/8"	5FLD60611012

TERMINATION	TUBING SIZE	METRIC EQ.	FLOW	SHUTOFF
IN-LINE HOSE BARB	1/2" ID	12.7mm ID	3/8"	3FLD6061178
	5/8" ID	15.9mm ID	3/8"	3FLD60611710
	3/4" ID	19.0mm ID	5/8"	5FLD60611712

Coupling Inserts

ALUMINUM

TERMINATION	THREAD SIZE		FLOW	SHUTOFF
IN-LINE PIPE THREAD	3/8" NPT		3/8"	3FLD6061246
	1/2" NPT		3/8"	3FLD6061248
	3/4" NPT		5/8"	5FLD60612412

TERMINATION	TUBING SIZE	METRIC EQ.	FLOW	SHUTOFF
IN-LINE HOSE BARB	1/2" ID	12.7mm ID	3/8"	3FLD6061228
	5/8" ID	15.9mm ID	3/8"	3FLD60612210
	3/4" ID	19.0mm ID	5/8"	5FLD60612212

All measurements are in inches (millimeters) unless otherwise noted. Tubing must meet stated inside and outside diameters. Couplings are pictured with valves unless otherwise noted.

TENTUBE SERIES

Specifications

Pressure:
Vacuum to 100 psi, 6.9 bar per line

Temperature:
Acetal fitting inserts:
-40° F to 180° F (-40° C to 82° C)

Polypropylene fitting inserts:
32° F to 180° F (0° C to 82° C)

Materials:
Main components: Nylon

Valves: Acetal (POM)

Valve springs: 316 stainless steel

Fitting inserts: Acetal or polypropylene

O-rings: Buna-N with acetal
or EPDM with polypropylene

Panel mount adapter: Acetal

Tube shroud: Acetal

Color:
Main components:
Black with red locking latch
Tube shroud: Black
Panel mount adapter: Black

Tubing Sizes:
1/16" to 1/8" ID, 1.6mm to 3.2mm ID

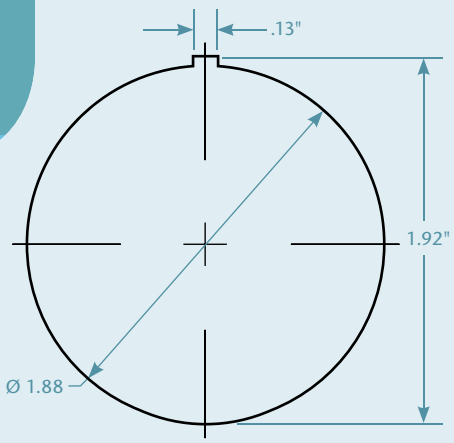
The Tentube™ coupling provides one easy-to-use quick disconnect for up to ten separate fluid lines. The Tentube is available with valves on the body side in panel mount or in-line configurations for maximum design flexibility. The Tentube can connect and disconnect up to ten lines with the use of a simple slide latch. Tubing orientation is ensured by keying the coupling body and insert. Different fluids and tubing sizes can be accommodated by using acetal or polypropylene inserts in three popular sizes.

Features	Benefits
Ten line connection	Fast, efficient operation
Separate flow paths	Pressure and/or vacuum in one coupling
Insert is keyed to body	Ensures correct line orientation
Acetal or polypropylene inserts	Maximize design flexibility

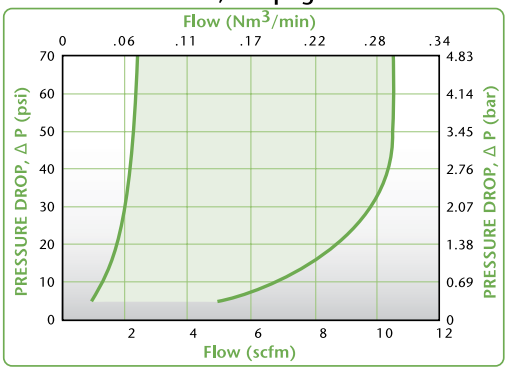
Note: Use TMF and TFF inserts and bodies for custom designed assemblies. See page 69.

Panel Mount Dimensions

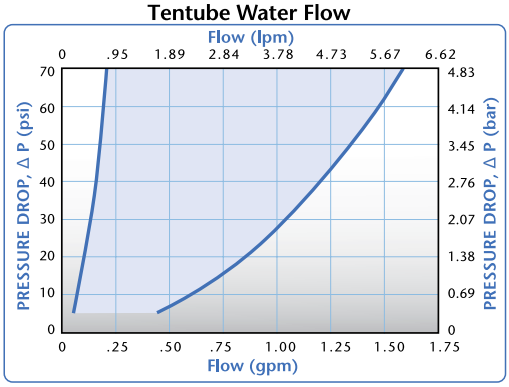
	PANEL OPENING	MAX. PANEL THICKNESS	MIN. PANEL THICKNESS
COUPLING BODIES	see drawing	.44	.06



Tentube Air Flow, 100 psig Inlet Pressure



Tentube Water Flow



These graphs are intended to give you a general idea of the performance capabilities of each product line. The shaded area of each graph represents the operating range of the product family, i.e., upper and lower values are shown. Therefore, depending on the exact coupling configurations selected, you can reasonably expect values to fall within the shaded area.

Don't forget: you can always visit www.colder.com for more product information.

Tentube™ Complete

ACETAL / POLYPROPYLENE

TERMINATIONS	TUBING SIZE	METRIC EQ.	ACETAL STRAIGHT THRU	ACETAL SHUTOFF	POLYPROPYLENE STRAIGHT THRU
COMPLETE COUPLING SET	1/16" ID	1.6mm ID	TT1001	TTD1001	TT100112
		3.0mm ID	TT10M3	TTD10M3	
	1/8" ID	3.2mm ID	TT1002	TTD1002	TT100212

TERMINATIONS	TUBING SIZE	METRIC EQ.	ACETAL STRAIGHT THRU	ACETAL SHUTOFF	POLYPROPYLENE STRAIGHT THRU
COUPLING BODY WITH FEMALE FITTING BODIES	1/16" ID	1.6mm ID	TFB1001	TFBD1001	TFB100112
		3.0mm ID	TFB10M3	TFBD10M3	
	1/8" ID	3.2mm ID	TFB1002	TFBD1002	TFB100212
	Without fitting bodies		TFB10		

TERMINATIONS	TUBING SIZE	METRIC EQ.	ACETAL STRAIGHT THRU	POLYPROPYLENE STRAIGHT THRU
COUPLING INSERT WITH MALE FITTING INSERTS	1/16" ID	1.6mm ID	TMB1001	TMB100112
		3.0mm ID	TMB10M3	
	1/8" ID	3.2mm ID	TMB1002	TMB100212
	Without fitting inserts		TMB10	

Inserts & Bodies

ACETAL / POLYPROPYLENE

TERMINATIONS	TUBING SIZE	METRIC EQ.	ACETAL STRAIGHT THRU	POLYPROPYLENE STRAIGHT THRU
FITTING INSERTS (SEE NOTE ON PAGE 68)	1/16" ID	1.6mm ID	TMF01	TMF0112
		3.0mm ID	TMFM3	
	1/8" ID	3.2mm ID	TMF02	TMF0212

TERMINATIONS	TUBING SIZE	METRIC EQ.	ACETAL STRAIGHT THRU	ACETAL SHUTOFF	POLYPROPYLENE STRAIGHT THRU
FITTING BODIES (SEE NOTE ON PAGE 68)	1/16" ID	1.6mm ID	TFF01	TFFD01	TFF0112
		3.0mm ID	TFFM3	TFFDM3	
	1/8" ID	3.2mm ID	TFF02	TFFD02	TFF0212

Accessories

DESCRIPTION	PART NO.
Tube shroud - snaps into either half	TS10
Panel mount adapter & nut - 7/16" max. panel thickness; requires 1.875" diameter hole	TPM10
Tube jacketing - black, 40 foot coils	TJ10
Cable tie	CT10

All measurements are in inches (millimeters) unless otherwise noted. Tubing must meet stated inside and outside diameters. Couplings are pictured with valves unless otherwise noted.

The Sixtube™ coupling provides one easy-to-use quick disconnect for up to six separate fluid lines. The Sixtube is available with valves on either side for maximum design flexibility. Featuring the Colder thumb latch, the Sixtube can disconnect up to six lines with the push of a button. The snap-in panel mount design keeps a low profile on the front of the equipment panel.

The 3/32" flow Twin Tube™ coupling provides one easy-to-use quick disconnect for two separate fluid lines. The non-valved Twin Tube maintains two individual flow paths in one coupling. Featuring the Colder thumb latch, the Twin Tube can disconnect two lines with the push of a button. The panel mount design keeps a low profile on the front of the equipment panel.

Features	Benefits
Six/two line connection	Fast, efficient operation
Separate flow paths	Pressure and/or vacuum in one coupling
Sixtube insert is keyed to body	Ensures correct line orientation
Free coupling rotation (Twin Tube)	Eliminates kinked tubing
Colder thumb latch	One-hand connection and disconnection

SIXTUBE

Sixtube Specifications

Pressure: Vacuum to 100 psi, 6.9 bar per line

Temperature:
Acetal (POM) fitting inserts:
-40° F to 180° F (-40° C to 82° C)

Polypropylene fitting inserts:
32° F to 180° F (0° C to 82° C)

Materials:
Main component: Acetal (POM)

Valves: Acetal

Fitting inserts: Acetal or polypropylene

Thumb latch: Acetal

Valve spring: 316 stainless steel

O-rings: Buna-N with acetal or EPDM with polypropylene

Color: Natural white with aqua latch

Tubing Sizes:
1/16" to 1/8" ID, 1.6mm to 3.2mm ID

NOTE: Caution must be observed when ordering Sixtube assemblies. Body and insert halves which both contain female or male fittings will not couple. Contact Colder for questions and ordering assistance.

TWIN TUBE

Twin Tube Specifications

Pressure: Vacuum to 120 psi, 8.3 bar per line

Temperature: -40° F to 180° F (-40° C to 82° C)

Materials:
Main components: Acetal or ABS

Thumb latch: Stainless steel

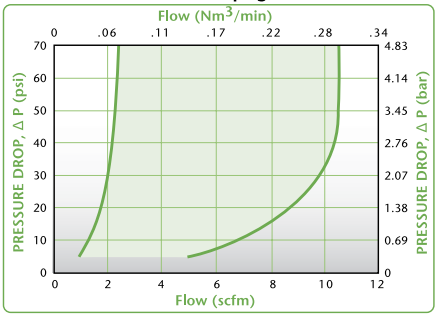
External springs and pin: Stainless steel

O-rings: Buna-N

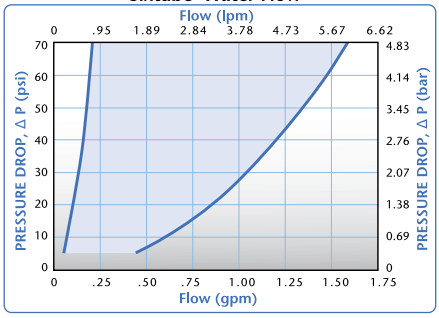
Color: Natural white (acetal), white (ABS)

Tubing Sizes:
1/16" to 1/8" ID, 1.6mm to 3.2mm ID

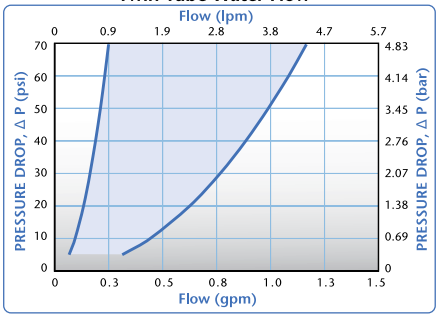
Sixtube Air Flow, 100 psig Inlet Pressure



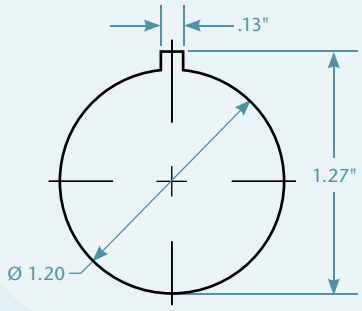
Sixtube Water Flow



Twin Tube Water Flow



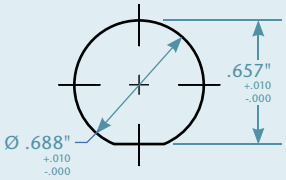
These graphs are intended to give you a general idea of the performance capabilities of each product line. The shaded area of each graph represents the operating range of the product family, i.e., upper and lower values are shown. Therefore, depending on the exact coupling configurations selected, you can reasonably expect values to fall within the shaded area.



Sixtube™ Insert Panel Mount Dimensions

Panel Thickness: 1/8"

Twin Tube™ Body Panel Mount Dimensions



Maximum Panel Thickness: 1/2"
Minimum Panel Thickness: 0.02"

Sixtube Coupling Body

ACETAL / POLYPROPYLENE

TERMINATION	TUBING SIZE	METRIC EQ.	ACETAL STRAIGHT THRU	ACETAL SHUTOFF	POLYPROPYLENE STRAIGHT THRU
WITH MALE FITTING INSERTS	1/16" ID	1.6mm ID	SXM1701		SXM170112
		3.0mm ID	SXM17M3		
	1/8" ID	3.2mm ID	SXM1702		SXM170212
WITH FEMALE FITTING BODIES	1/16" ID	1.6mm ID	SXF1701	SXFD1701	SXF170112
		3.0mm ID	SXF17M3	SXFD17M3	
	1/8" ID	3.2mm ID	SXF1702	SXFD1702	SXF170212
TERMINATION *WITHOUT FITTINGS*			SX17		

Sixtube Coupling Insert

ACETAL / POLYPROPYLENE

TERMINATION	TUBING SIZE	METRIC EQ.	ACETAL STRAIGHT THRU	ACETAL SHUTOFF	POLYPROPYLENE STRAIGHT THRU
WITH MALE FITTING INSERTS	1/16" ID	1.6mm ID	SXM4201		SXM420112
		3.0mm ID	SXM42M3		
	1/8" ID	3.2mm ID	SXM4202		SXM420212
WITH FEMALE FITTING BODIES	1/16" ID	1.6mm ID	SXF4201	SXFD4201	SXF420112
		3.0mm ID	SXF42M3	SXFD42M3	
	1/8" ID	3.2mm ID	SXF4202	SXFD4202	SXF420212
TERMINATION *WITHOUT FITTINGS*			SX42		

Accessories

DESCRIPTION	PART NO.
Sixtube pressure plugs *(For fitting bodies or inserts, see page 71)*	TMPMWHT

Twin Tube Coupling Bodies

ACETAL / ABS

TERMINATION	TUBING SIZE	METRIC EQ.	ACETAL STRAIGHT THRU	ABS STRAIGHT THRU
PANEL MOUNT HOSE BARB	1/16" ID	1.6mm ID	PTC16010	
	1/8" ID	3.2mm ID	PTC16020	PTC1602096

Twin Tube Coupling Inserts

ACETAL / ABS

TERMINATION	TUBING SIZE	METRIC EQ.	ACETAL STRAIGHT THRU	ABS STRAIGHT THRU
IN-LINE HOSE BARB	1/16" ID	1.6mm ID	PTC22010	
	1/8" ID	3.2mm ID	PTC22020	PTC2202096

MULTI-MOUNT SERIES

Specifications

Pressure:

Minimum: Vacuum

Maximum: Brass = 500 psi / no. of stations
or Acetal = 240 psi / no. of stations

Temperature:

-40° F to 180° F (-40° C to 82° C)

Materials:

Main components: Acetal (POM) or chrome-plated brass

Thumb latch: Stainless steel

Mounting Plate: Black anodized aluminum

Valves: Acetal

Valve spring: 316 stainless steel

External springs and pin: Stainless steel

O-ring: Buna-N

Tubing Sizes:

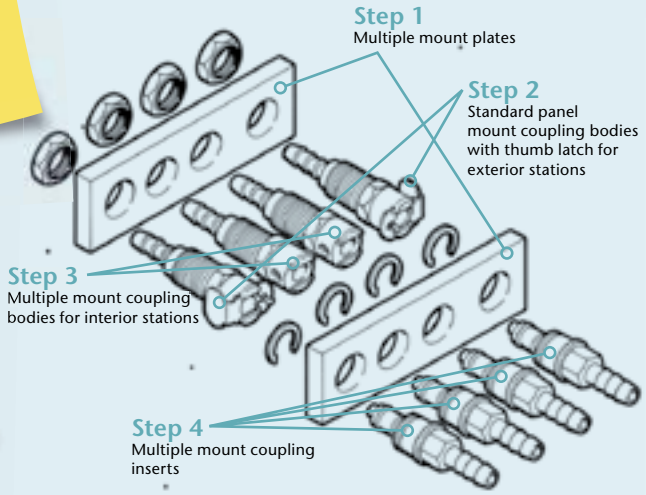
1/8" to 3/8" ID, 3.2mm to 9.5mm ID

Multi-Mount couplings provide one easy-to-use coupling for connecting from three to five lines at once. Multi-mount couplings are available in either 1/8" or 1/4" flow in a wide variety of materials including acetal and chrome plated brass. Multi-mounts are keyed to prevent mismatched connections and can be configured with or without valves for maximum design flexibility.

Features	Benefits
Three to five line connection	Fast, efficient operation
Separate flow paths	Pressure and/or vacuum in one coupling
Insert is keyed to body	Ensures correct line orientation
Acetal or chrome-plated brass	Maximize design flexibility

NOTE: To order in chrome-plated brass, eliminate the "P" at the beginning of the part number.

- Order requires flow size and terminations.
- Retaining clip is included with each insert.
- Multiple mount inserts are designed for mounting in 1/4" thick plates.



Four-Step Multi-Mount Ordering Process

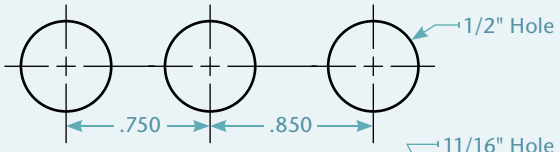
Step 1: Order two "multiple mount plates" (one for the coupling bodies and one for the coupling inserts) with the appropriate number of connection stations for your specific application (available in 3, 4, or 5 connections, or construct your own). Refer to page 73.

Step 2: Order two "standard panel mount coupling bodies with thumb latches" for the exterior stations.

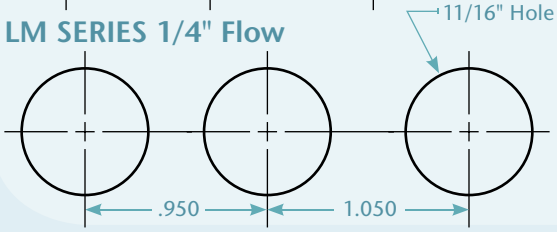
Step 3: Order an appropriate number of "multiple mount coupling bodies without thumb latches" to accommodate the remaining interior stations.

Step 4: Order an appropriate number of "multiple mount inserts" to connect with standard and multiple mount bodies.

MM SERIES 1/8" Flow



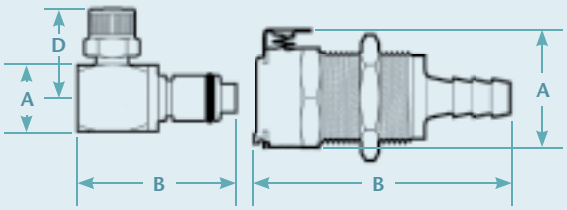
LM SERIES 1/4" Flow



Multiple mount plates are keyed to prevent misconnections.

Multiple mount minimum coupling spacing: Colder offsets the last hole on the mounting plates so they cannot be misconnected.

Product Dimensions



A = Height/Diameter
B = Total Length (including valve)
D = Elbow Radial Length

Retaining Rings

COUPLING SERIES	PART NO. *(replacements)*
MC/PMC	101700
LC/PLC	278100

Multiple Mount Plates

NUMBER OF STATIONS	1/8" FLOW SIZE	LENGTH	1/4" FLOW SIZE	LENGTH
3	CP103	2.60	LCP103	3.00
4	CP104	3.35	LCP104	3.95
5	CP105	4.10	LCP105	4.90

Turqoise shading indicates 1/8" flow couplings. These are not compatible with 1/4" flow couplings in non-shaded sections.

Coupling Bodies

ACETAL

TERMINATION	TUBING SIZE	METRIC EQ.	STRAIGHT THRU	SHUTOFF	A	B
PANEL MOUNT FERRULELESS POLYTUBE FITTING, PTF†	1/4" OD, .17" ID	6.4mm OD, 4.3mm ID	PMM1204	PMMD1204	.72	1.72
	1/4" OD, .17" ID	6.4mm OD, 4.3mm ID	PLM12004	PLMD12004	.94	1.82
	3/8" OD, .25" ID	9.5mm OD, 6.4mm ID	PLM12006	PLMD12006	.94	1.95

TERMINATION	TUBING SIZE	METRIC EQ.	STRAIGHT THRU	SHUTOFF	A	B
PANEL MOUNT HOSE BARB	1/8" ID	3.2mm ID	PMM1602	PMMD1602	.72	1.65
	3/16" ID	4.8mm ID	PMM1603	PMMD1603	.72	1.85
	1/4" ID	6.4mm ID	PMM1604	PMMD1604	.72	1.85
	1/4" ID	6.4mm ID	PLM16004	PLMD16004	.94	1.95
	5/16" ID	7.9mm ID	PLM16005	PLMD16005	.94	1.95
	3/8" ID	9.5mm ID	PLM16006	PLMD16006	.94	1.95

TERMINATION	THREAD SIZE	STRAIGHT THRU	SHUTOFF	A	B
PANEL MOUNT FEMALE THREAD	10-32 UNF	PMM181032	PMMD181032	.72	1.25

Coupling Inserts

ACETAL

TERMINATION	TUBING SIZE	METRIC EQ.	STRAIGHT THRU	SHUTOFF	A	B
IN-LINE FERRULELESS POLYTUBE FITTING, PTF†	5/32" OD, .10" ID	4.0mm OD, 2.5mm ID	PMM20025	PMMD20025	.58	1.86/1.96
	1/4" OD, .17" ID	6.4mm OD, 4.3mm ID	PMM2004	PMMD2004	.58	1.77/1.87
	1/4" OD, .17" ID	6.4mm OD, 4.3mm ID	PLM20004	PLMD20004	.72	2.10/2.23
	3/8" OD, .25" ID	9.5mm OD, 6.4mm ID	PLM20006	PLMD20006	.72	2.02/2.15

TERMINATION	TUBING SIZE	METRIC EQ.	STRAIGHT THRU	SHUTOFF	A	B
IN-LINE HOSE BARB	1/8" ID	3.2mm ID	PMM2202	PMMD2202	.56	1.87/1.97
	3/16" ID	4.8mm ID	PMM2203	PMMD2203	.58	2.08/2.18
	1/4" ID	6.4mm ID	PMM2204	PMMD2204	.58	1.83/1.93
	1/4" ID	6.4mm ID	PLM22004	PLMD22004	.72	2.20/2.33
	5/16" ID	7.9mm ID	PLM22005	PLMD22005	.72	2.20/2.33
	3/8" ID	9.5mm ID	PLM22006	PLMD22006	.72	2.03/2.16

TERMINATION	TUBING SIZE	METRIC EQ.	STRAIGHT THRU	SHUTOFF	A	B	D
ELBOW FERRULELESS POLYTUBE FITTING, PTF†	1/4" OD, .17" ID	6.4mm OD, 4.3mm ID	PMM2104	PMMD2104	.53	1.41/1.51	.77

All measurements are in inches (millimeters) unless otherwise noted. Tubing must meet stated inside and outside diameters. Couplings are pictured with valves unless otherwise noted. **†NOTE:** Colder's Ferruleless Polytube Fitting terminations do not require ferrules to achieve a secure connection, which makes them easier to use and reuse. PTF fittings are designed for semi-rigid tubing, i.e., polyethylene, nylon, polyurethane, etc.

Actual size

KEYED, COLOR CODED BRASS

Specifications

Pressure: Vacuum to 250 psi, 17.3 bar

Temperature:
-40° F to 180° F (-40° C to 82° C)

Materials:
Main components: Chrome-plated brass
Thumb latch: Stainless steel
Valves: Acetal (POM)
Valves springs: 316 stainless steel
External springs and pin: Stainless steel
O-rings: Buna-N

Finish: Chrome

Tubing Sizes:
1/8" to 1/4" ID, 3.2mm to 6.4mm ID

Color Coding:
K1 = Orange, K2 = Yellow, K3 = Blue

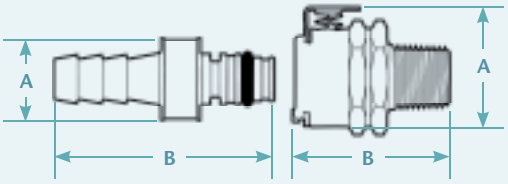
Ordering

Order couplings that have consistent color "K" codes: K1–Orange, K2–Yellow, K3–Blue. For example, order MC1002**K1** with MC2202**K1**.

Standard thermoplastic and chrome-plated brass quick disconnects cannot be interchanged with keyed and color-coded quick disconnect coupling.

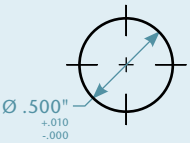
Keyed 1/8" flow MC Series couplings are specifically designed for applications requiring foolproof connections and non-interchangeable lines. Three keyed and color-coded options are available. The keyed, color-coded MC series features chrome-plated brass construction for durability and an attractive appearance.

Features	Benefits
Insert is keyed to body	Ensures correct line orientation
Color coded	No mismatched lines
Colder thumb latch	One-hand connection and disconnection
Chrome-plated brass material	Durable construction and attractive appearance



A = Height/Diameter
B = Total Length (including valve)

Product Dimensions



	PANEL OPENING	MAX. PANEL THICKNESS	MIN. PANEL THICKNESS
COUPLING BODIES	see drawing	.50	.05

PANEL NUT HEX	PANEL NUT THREAD
5/8	1/2-24UNS

Coupling Bodies

CHROME-PLATED BRASS

TERMINATION	THREAD SIZE		STRAIGHT THRU	SHUTOFF	A	B
IN-LINE PIPE THREAD	1/8" NPT		MC1002 (K1,2,3)	MCD1002 (K1,2,3)	.75	1.00
	1/4" NPT		MC1004 (K1,2,3)	MCD1004 (K1,2,3)	.75	1.10

TERMINATION	TUBING SIZE	METRIC EQ.	STRAIGHT THRU	SHUTOFF	A	B
PANEL MOUNT HOSE BARB	1/8" ID	3.2mm ID	MC1602 (K1,2,3)	MCD1602 (K1,2,3)	.75	1.65
	1/4" ID	6.4mm ID	MC1604 (K1 2,3)	MCD1604 (K1,2,3)	.75	1.89

TERMINATION	TUBING SIZE	METRIC EQ.	STRAIGHT THRU	SHUTOFF	A	B
PANEL MOUNT FERRULELESS POLYTUBE FITTING, PTF†	1/4" OD, .17" ID	6.4mm OD, 4.3mm ID	MC1204 (K1,2,3)	MCD1204 (K1,2,3)	.75	1.77

Coupling Inserts

CHROME-PLATED BRASS

TERMINATION	THREAD SIZE		STRAIGHT THRU	A	B
IN-LINE PIPE THREAD	1/8" NPT		MC2402 (K1,2,3)	.57	1.25

TERMINATION	TUBING SIZE	METRIC EQ.	STRAIGHT THRU	A	B
IN-LINE HOSE BARB	1/8" ID	3.2mm ID	MC2202 (K1,2,3)	.50	1.15
	1/4" ID	6.4mm ID	MC2204 (K1,2,3)	.50	1.35

TERMINATION	TUBING SIZE	METRIC EQ.	STRAIGHT THRU	A	B
IN-LINE FERRULELESS POLYTUBE FITTING, PTF†	1/4" OD, .17" ID	6.4mm OD, 4.3mm ID	MC2004 (K1,2,3)	.57	1.37

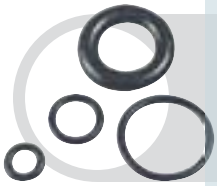
Don't forget: you can always visit www.colder.com for more product information.

All measurements are in inches (millimeters) unless otherwise noted. Tubing must meet stated inside and outside diameters. **†NOTE:** Colder's Ferruleless Polytube Fitting terminations do not require ferrules to achieve a secure connection, which makes them easier to use and reuse. PTF fittings are designed for semi-rigid tubing, i.e., polyethylene, nylon, polyurethane, etc.

Accessories

TERMINATION	PIPE THREAD	TUBING	TUBING DIMENSION	PART NO.	LENGTH
FERRULELESS POLYTUBE FITTING, PTF†	10-32*	1/8"	.07" ID .125 OD	TF1002	.64
	10-32*	1/4"	.17" ID .250 OD	TF1004	.86
	1/8" NPT	1/8"	.07" ID .125 OD	TF2002	.98
	1/8" NPT	1/4"	.17" ID .250 OD	TF2004	1.10
	1/8" NPT	3/8"	.25" ID .375 OD	TF2006	1.24
	1/4" NPT	1/4"	.17" ID .250 OD	TF4004	1.20
	1/4" NPT	3/8"	.25" ID .375 OD	TF4006	1.34

TERMINATION	TUBING	PART NO.	TUBING	PART NO.
FERRULELESS POLYTUBE FITTING NUTS, PTF† REPLACEMENT PARTS	5/32" OD	269700	4.0mm OD	269700
	1/4" OD	100800	8.0mm OD	339500
	3/8" OD	108900	10.0mm OD	358400



DESCRIPTION	COUPLING SERIES	BUNA-N	FLUOROCARBON	EPDM
INSERT SEALS REPLACEMENT PARTS	MC, PMC	730800	730804	730803
	LC, PLC, EFC, APC, Twin Tube™ large o-ring (1.78mm cross section)	731100	731104	731103
	SMC, Twin Tube small o-ring	730600	730604	730603
	HFC/FFC	731600	731604	731603
	3FL		1262600	
	5FL		1262700	

DESCRIPTION	COUPLING SERIES NUTS	NICKEL BRASS	ACETAL	316 STAINLESS	POLYPROPYLENE (PP) POLYSULFONE (PSF)
PANEL MOUNT NUTS	MC, PMC, PMC12	100900	664400	100901	—
	LC, PLC, EFC, PLC12, APC	120700	520300	120701	—
	HFC	—	—	—	621300 (PP)
					694300 (PSF)

DESCRIPTION	COUPLING SERIES	BODY PLUG	INSERT CAP
DUST CAPS & PLUGS	MC, PMC non-sealing	PMC31	PMC32
	LC, PLC non-sealing	PLC310	PLC320
	APC, EFC non-sealing	—	PLC320
	PMC pressure-sealing	PMC30	—
	PLC pressure-sealing	PLC300	—
	HFC/FFC non-sealing (not shown)	HFC312 L (with leash)	
		HFC312 (no leash)	

Luer Fittings

Luers are a common choice for limited use or disposable applications where a shutoff valve is not required. Colder's luer fittings are suitable for small flow applications, typically less than 1/4", and feature parting line-free hose barbs. They mate with luers manufactured to ISO Standards 594-1 and 594-2 and are the preferred choice when looking for high quality, precision molded fluid components.

Specifications: **Material:** Nylon

PART NO.	DESCRIPTION
LM3161	3/32" Hose Barb

PART NO.	DESCRIPTION
LF3161	3/32" Hose Barb

PART NO.	DESCRIPTION
LM4161	1/8" Hose Barb

PART NO.	DESCRIPTION
LF4161	1/8" Hose Barb

PART NO.	DESCRIPTION
LM5161	5/32" Hose Barb

PART NO.	DESCRIPTION
LF5161	5/32" Hose Barb

PART NO.	DESCRIPTION
LM6161	3/16" Hose Barb

PART NO.	DESCRIPTION
LF6161	3/16" Hose Barb

†NOTE: Colder's Ferruleless Polytube Fitting terminations do not require ferrules to achieve a secure connection, which makes them easier to use and reuse. PTF fittings are designed for semi-rigid tubing, i.e., polyethylene, nylon, polyurethane, etc. ***NOTE:** Gaskets are not included with 10-32 PTF style fittings. To prevent leakage with these fittings, we recommend using LOCTITE® Removable Threadlocker 242 or Permanent Threadlocker 262.

Tube Fittings

Specifications | **Pressure:** 100 psi, 7.0 bar | **Temperature:** 32° F to 230° F (0° C to 110° C) | **Materials:** Polypropylene

TERMINATION	PART NO.	DESCRIPTION
HOSE BARB UNION Straight	HS2	1/16" x 1/16" Hose barb
	HS3	3/32" x 3/32" Hose barb
	HS4	1/8" x 1/8" Hose barb

TERMINATION	TEE PART NO.	TEE DESCRIPTION	ELBOW PART NO.	ELBOW DESCRIPTION
HOSE BARB UNION Tee & Elbow	HT2	1/16" x 1/16" x 1/16" Hose barb	HE2	1/16" x 1/16" Hose barb
	HT3	3/32" x 3/32" x 3/32" Hose barb	HE3	3/32" x 3/32" Hose barb
	HT4	1/8" x 1/8" x 1/8" Hose barb	HE4	1/8" x 1/8" Hose barb

TERMINATION	PART NO.	DESCRIPTION
HOSE BARB X 10-32 THREAD Straight	MS2	1/16" Hose barb x 10-32 tThread
	MS3	3/32" Hose barb x 10-32 thread
	MS4	1/8" Hose barb x 10-32 thread

TERMINATION	TEE PART NO.	TEE DESCRIPTION	ELBOW PART NO.	ELBOW DESCRIPTION
HOSE BARB X 10-32 THREAD Tee & Elbow	MT2	1/16" x 1/16"	ME2	1/16" Hose barb x 10-32 thread
	MT3	3/32" x 3/32"	ME3	3/32" Hose barb x 10-32 thread
	MT4	1/8" x 1/8"	ME4	1/8" Hose barb x 10-32 thread

TERMINATION	PART NO.	DESCRIPTION
Miscellaneous	MP	10-32 Plug
	N32	10-32 x 10-32 Nipple

Specifications | **Materials:** Acetal | **Nut:** Nickel-plated brass

TERMINATION	TUBING	METRIC EQ.	PART NO.	PANEL OPENING
PANEL MOUNT HOSE BARB UNION Straight	1/8" ID x 1/8" ID	3.2 x 3.2mm	BHU2202	1/2"
	1/4" ID x 1/4" ID	6.4 x 6.4mm	BHU2204	1/2"
	3/8" ID x 3/8" ID	9.5 x 9.5mm	BHU2206	1/2"

Manifolds

Specifications | **Materials:** Aluminum | **Finish:** Black anodized

DESCRIPTION	PART NO.	SIDE PORTS	END PORTS	LENGTH
10-32 Ported Manifold with 1/8" NPT End Port	32M3	3	1	2.30"
	32M4	4	1	2.80"
	32M5	5	1	3.30"

DESCRIPTION	PART NO.	SIDE PORTS	END PORTS	LENGTH
1/8" NPT Ported Manifold with 1/8" NPT End Port	2M3	3	1	3.10"
	2M4	4	1	4.00"
	2M5	5	1	4.90"

DESCRIPTION	PART NO.	SIDE PORTS	END PORTS	LENGTH
1/4" NPT Ported Manifold with 1/4" NPT End Port	4M3	3	2	3.80"
	4M4	4	2	4.80"
	4M5	5	2	5.80"

JG® Push-To-Connect Accessories

DESCRIPTION	TUBING	PART NO.
IN-LINE LOCKING CLIPS, RED	1/4" Tube OD	1011900
	3/8" Tube OD	1012000

DESCRIPTION	TUBING	PART NO.
IN-LINE COLLET COVERS, COLOR CODED	1/4" Tube OD	1012101 to 06
	3/8" Tube OD	1012201 to 06

Colors available, shown right. Please indicate color using the following suffix codes: 01=Black, 02=Red, 03=Yellow, 04=Gray, 05=Blue, 06=Green (Example: 1012101 is the code for a 1/4" collet cover in black.) **NOTE:** See pages 32 and 33 for JG couplings.

All measurements are in inches (millimeters) unless otherwise noted. Tubing must meet stated inside and outside diameters. Couplings are pictured with valves unless otherwise noted. **NOTE:** Colder's threaded fittings require no gasket for a reliable seal and also allow the fitting to be directionally oriented without a gasket.

The SMC & SMF1 are Colder's smallest couplings. These twist-to-connect couplings provide a reliable and more secure alternative to luer-type connections. They also allow for the tubing to rotate freely when connected. This important feature prevents both kinked tubing and accidental disconnection during use.

Features

- Twist to connect
- Free coupling rotation
- Available in acetal, polypropylene and ABS (see page 14)

Benefits

- Prevents accidental disconnects
- Eliminates kinked tubing
- Multiple materials

Specifications

Pressure: Vacuum to 100 psi, 6.9 bar

Temperature:
-40° F to 250° F (-40° C to 121° C)

Materials:
Main components: Polycarbonate, USP Class VI
Locking sleeves: Polycarbonate
O-rings: Buna-N, USP Class V

Color:
Main components: Purple tint

Tubing Sizes:
1/16" to 1/8" ID, 1.6mm to 5.0mm ID

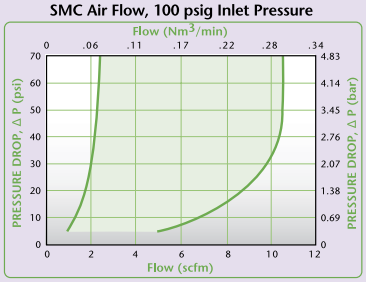
WARNING: Pressure, temperature, chemicals, and operating environment can affect the performance of couplings. It is the customer's responsibility to test the suitability of Colder products in their own application conditions.

Liquid Flow Rates

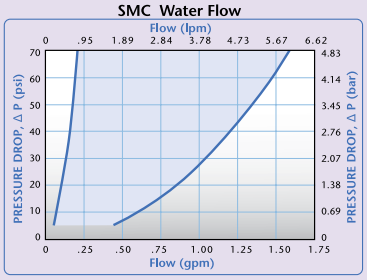
Liquid Flow Rate Information for Couplings

The chart below shows the flow rate for Colder couplings. Each coupling was tested with water at 70° F (21° C). To determine flow rates for specific coupling configurations use the formula to the right.

SMC Air Flow, 100 psig Inlet Pressure



SMC Water Flow



This graph is intended to give you a general idea of the performance capabilities of each product line. The shaded area of the graph represents the operating range of the product family, i.e. upper and lower values are shown. Therefore, depending on the exact coupling configurations selected, you can reasonably expect values to fall within the shaded area.

$$Q = C_V \sqrt{\frac{\Delta P}{S}}$$

Q=Flow rate in gallons per minute
C_V=Average constant of various rates (see chart)
ΔP=Pressure drop across coupling (psi)
S=Specific gravity of liquid

C_V Values for Subminiature Couplings

BODIES	SMM01	SMM02	BODIES	SMM01	SMM02
SMF01	.03	.03	SMFD02	.03	.08
SMFD01	.03	.03	SMPT02	.03	.19
SMF02	.03	.19	SMPTD02	.03	.08

Coupling Body

POLYCARBONATE

TERMINATION	TUBING SIZE	METRIC EQ.	STRAIGHT THRU	A	B
IN-LINE	1/16" ID	1.6mm ID	SMF0191	.48	.75/.90
HOSE BARB	1/8" ID	3.2mm ID	SMF0291	.48	.90

Coupling Insert

POLYCARBONATE

TERMINATION	TUBING SIZE	METRIC EQ.	STRAIGHT THRU	A	B
IN-LINE	1/16" ID	1.6mm ID	SMM0191	.48	.75
HOSE BARB	1/8" ID	3.2mm ID	SMM0291	.48	.90

Coupling Set

POLYCARBONATE

TERMINATION	TUBING SIZE	METRIC EQ.	STRAIGHT THRU	A	B
HOSE BARB	1/16" ID	1.6mm ID	SMC0191	.48	1.32
	1/8" ID	3.2mm ID	SMC0291	.48	1.61

MPC SERIES

MPC Series couplings add ease of use and security to your most critical fluid handling applications. Choose from a full line of connectors and configurations, including pressure sealing caps and plugs in sizes to fit 1/4" and 3/8" tubing. MPC couplings offer optional locking sleeves to further guard against accidental disconnects. In addition, coupling halves can be rotated when connected reducing tube kinks.

Features	Benefits
Ergonomic thumb latch	Easy to operate – even with gloved hands
USP Class VI materials	Meets biocompatibility requirements
Sterilizable by autoclave, Et0, e-beam, or gamma	Reusable, yet economical enough to allow disposability
Parting line-free hose barb	Eliminates potential leak path

Note: MPC Series mates with SaniQuik and Sanitary Series (See pages 84-85)

Specifications

Pressure:
Vacuum to 60 psi, 4.14 bar

Temperature:
Polysulfone: -40° F to 300° F (-40° C to 148.9° C)

Polycarbonate: -40° F to 250° F (-40° C to 121° C)

ABS: -40° F to 160° F (-40° C to 71° C)

Materials:
Main components:
Polycarbonate (purple tint), USP Class VI
Polysulfone (amber), USP Class VI
ABS (white), USP Class VI

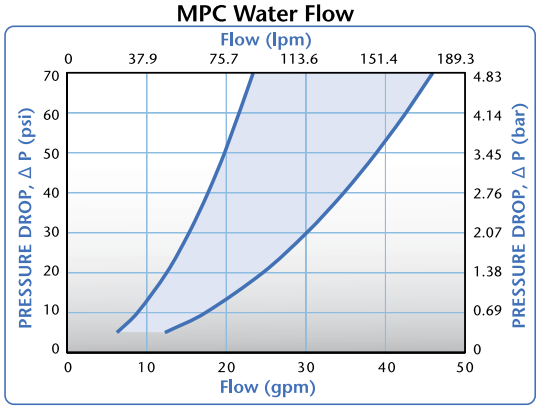
Locking sleeves:
Polysulfone (white), (not applicable for ABS)

O-rings:
Silicone (clear), platinum-cured, USP Class VI and Buna-N (black), USP Class V

Tubing Sizes: 1/4" to 3/8" ID, 6.4mm to 9.5mm ID

WARNING: Pressure, temperature, chemicals, and operating environment can affect the performance of couplings. It is the customer's responsibility to test the suitability of Colder's products in their own application conditions.

MPC Water Flow



This graph is intended to give you a general idea of the performance capabilities of each product line. The shaded area of the graph represents the operating range of the product family, i.e. upper and lower values are shown. Therefore, depending on the exact coupling configurations selected, you can reasonably expect values to fall within the shaded area.

Liquid Flow Rates
Liquid Flow Rate Information for Couplings

The chart below shows the flow rate for Colder couplings. Each coupling was tested with water at 70° F (21° C). To determine flow rates for specific coupling configurations use the formula below.

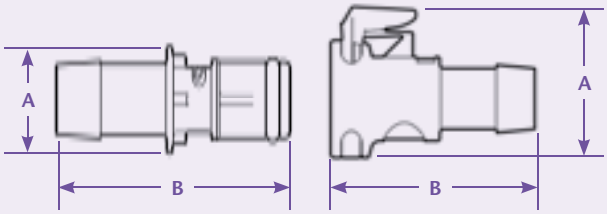
$$Q = C_V \sqrt{\frac{\Delta P}{S}}$$

Q=Flow rate in gallons per minute
C_V=Average constant of various rates (see chart)
ΔP=Pressure drop across coupling (psi)
S=Specific gravity of liquid

C_V Values for MPC Couplings

BODIES	MPC 22004T	MPC 22006T
MPC170004T	2.8	2.8
MPC170006T	2.8	5.5

Product Dimensions



A = Height/Diameter
B = Total Length (including valve)

Coupling Bodies

ABS

TERMINATION	TUBING	METRIC EQ.	FLOW	STRAIGHT THRU	A	B
IN-LINE	1/4" ID	6.4mm ID	.210"	MPC17004T	.93 (23.6)	1.30 (33.0)
HOSE BARB	3/8" ID	9.5mm ID	.290"	MPC17006T	.93 (23.6)	1.30 (33.0)

POLYCARBONATE

TERMINATION	TUBING	METRIC EQ.	FLOW	STRAIGHT THRU	A	B
IN-LINE	1/4" ID	6.4mm ID	.210"	MPC17004T03	.93 (23.6)	1.30 (33.0)
HOSE BARB	3/8" ID	9.5mm ID	.290"	MPC17006T03	.93 (23.6)	1.30 (33.0)

TERMINATION	TUBING	METRIC EQ.	FLOW	STRAIGHT THRU	A	B
IN-LINE	1/4" ID	6.4mm ID	.210"	MPCK17004T03	.99 (25.2)	1.30 (33.0)
HOSE BARB	3/8" ID	9.5mm ID	.290"	MPCK17006T03	.99 (25.2)	1.30 (33.0)
WITH LOCK						

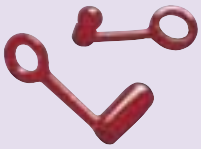
POLYSULFONE

TERMINATION	TUBING	METRIC EQ.	FLOW	STRAIGHT THRU	A	B
IN-LINE	1/4" ID	6.4mm ID	.210"	MPC17004T39	.93 (23.6)	1.30 (33.0)
HOSE BARB	3/8" ID	9.5mm ID	.290"	MPC17006T39	.93 (23.6)	1.30 (33.0)

TERMINATION	TUBING	METRIC EQ.	FLOW	STRAIGHT THRU	A	B
IN-LINE	1/4" ID	6.4mm ID	.210"	MPCK17004T39	.99 (25.2)	1.30 (33.0)
HOSE BARB	3/8" ID	9.5mm ID	.290"	MPCK17006T39	.99 (25.2)	1.30 (33.0)
WITH LOCK						

All measurements are in inches (millimeters) unless otherwise noted. Tubing must meet stated inside and outside diameters.

Accessories



DESCRIPTION	MATERIALS	PART NO.
Leash plug for MPC body	Soft, flexible, medical-grade PVC	MPC30L
Leash cap for MPC insert	Soft, flexible, medical-grade PVC	MPC32L

Note: For validation quantities of MPC and MPX, contact Colder for Bag 25 Quantities.

DID YOU KNOW ...

Colder's products for Life Sciences applications are manufactured in our ISO Class 7 certified clean room. The SMC, MPC, MPX, MPU, Sanitary, HFC39 and Steam-Thru® product lines are all molded from medical-grade materials and are packaged in double bags with material certifications.

DID YOU KNOW ...

Many of Colder's connectors are made from Animal-Free materials thereby reducing the amount of BSE-related documentation requirements. Contact Customer Service at 1-800-444-2474 or 651-645-0091 for further information about Colder's Animal Free material offering.

Coupling Inserts

ABS

TERMINATION	TUBING	METRIC EQ.	FLOW	STRAIGHT THRU	O-RING	A	B
IN-LINE	1/4" ID	6.4mm ID	.210"	MPC22004TM	Silicone Seal USP Class VI	.60 (15.2)	1.30 (33.0)
HOSE BARB	3/8" ID	9.5mm ID	.290"	MPC22006TM	Silicone Seal USP Class VI	.60 (15.2)	1.30 (33.0)

TERMINATION	TUBING	METRIC EQ.	FLOW	STRAIGHT THRU	O-RING	A	B
IN-LINE	1/4" ID	6.4mm ID	.210"	MPC22004T	Buna-N Seal USP Class V	.60 (15.2)	1.30 (33.0)
HOSE BARB	3/8" ID	9.5mm ID	.290"	MPC22006T	Buna-N Seal USP Class V	.60 (15.2)	1.30 (33.0)

POLYCARBONATE

TERMINATION	TUBING	METRIC EQ.	FLOW	STRAIGHT THRU	O-RING	A	B
IN-LINE	1/4" ID	6.4mm ID	.210"	MPC22004T03M	Silicone Seal USP Class VI	.60 (15.2)	1.30 (33.0)
HOSE BARB	3/8" ID	9.5mm ID	.290"	MPC22006T03M	Silicone Seal USP Class VI	.60 (15.2)	1.30 (33.0)

TERMINATION	TUBING	METRIC EQ.	FLOW	STRAIGHT THRU	O-RING	A	B
IN-LINE	1/4" ID	6.4mm ID	.210"	MPC22004T03	Buna-N Seal USP Class V	.60 (15.2)	1.30 (33.0)
HOSE BARB	3/8" ID	9.5mm ID	.290"	MPC22006T03	Buna-N Seal USP Class V	.60 (15.2)	1.30 (33.0)

POLYSULFONE

TERMINATION	TUBING	METRIC EQ.	FLOW	STRAIGHT THRU	O-RING	A	B
IN-LINE	1/4" ID	6.4mm ID	.210"	MPC22004T39M	Silicone Seal USP Class VI	.60 (15.2)	1.30 (33.0)
HOSE BARB	3/8" ID	9.5mm ID	.290"	MPC22006T39M	Silicone Seal USP Class VI	.60 (15.2)	1.30 (33.0)

Accessories

SEALING CAP	SEALING CAP W/LOCK	MATERIAL	A	B
MPC32003	MPCK32003	Polycarbonate	93 (23.6)	1.30 (33.0)
MPC32039	MPCK32039	Polysulfone	.99 (25.2)	1.30 (33.0)

Accessories

SEALING PLUG	O-RING	MATERIAL	A	B
MPC30003M	Silicone Seal USP Class VI	Polycarbonate	.75 (19.1)	1.24 (31.5)
MPC30039M	Silicone Seal USP Class VI	Polysulfone	.75 (19.1)	1.24 (31.5)

All measurements are in inches (millimeters) unless otherwise noted. Tubing must meet stated inside and outside diameters.

MPX SERIES

MPX Specifications

Pressure: Vacuum to 60 psi, 4.14 bar

Temperature:

Polysulfone:
-40° F to 300° F (-40° C to 148.9° C)

Polycarbonate:
-40° F to 250° F (-40° C to 121° C)

Materials:

Main components:
Polysulfone (amber), USP Class VI; Polycarbonate (purple tint), USP Class VI

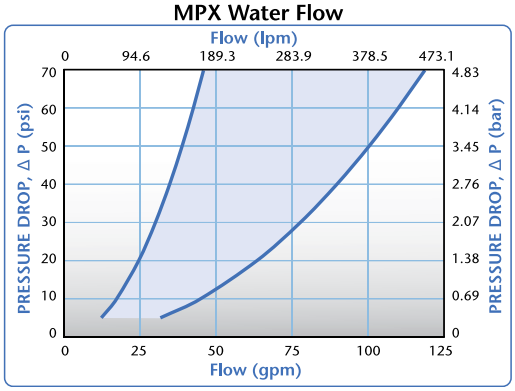
Locking sleeves: Polysulfone (white)

O-rings:
Silicone (clear), platinum-cured, USP Class VI

Tubing Sizes:
3/8" to 1/2" ID, 9.5mm to 12.7mm ID

WARNING: Pressure, temperature, chemicals, and operating environment can affect the performance of couplings. It is the customer's responsibility to test the suitability of Colder's products in their own application conditions.

MPX Water Flow



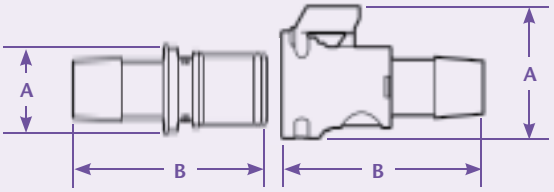
These graphs are intended to give you a general idea of the performance capabilities of each product line. The shaded area of each graph represents the operating range of the product family, i.e., upper and lower values are shown. Therefore, depending on the exact coupling configurations selected, you can reasonably expect values to fall within the shaded area.

MPX Series couplings add ease of use and security to your most critical fluid handling applications. Choose from a full line of connectors and configurations, including pressure sealing caps and plugs in sizes to fit 3/8" and 1/2" tubing. MPX couplings offer optional locking sleeves to further guard against accidental disconnects. In addition, coupling halves can be rotated when connected reducing tube kinks.

Features	Benefits
Ergonomic thumb latch	Easy to operate – even with gloved hands
USP Class VI materials	Meets biocompatibility requirements
Sterilizable by autoclave, Et0, e-beam, or gamma	Reusable, yet economical enough to allow disposability
Parting line-free hose barb	Eliminates potential leak path

Note: MPC Series mates with SaniQuik and Sanitary Series (See pages 84-85)

Product Dimensions



A = Height/Diameter
B = Total Length (including valve)

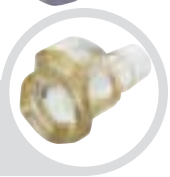
Coupling Bodies

POLYCARBONATE

TERMINATION	TUBING SIZE	METRIC EQ.	FLOW	STRAIGHT THRU	A	B
IN-LINE HOSE BARB	1/2" ID	12.7mm ID	.500"	MPX17803	1.28 (32.5)	1.96 (49.8)

TERMINATION	TUBING SIZE	METRIC EQ.	FLOW	STRAIGHT THRU	A	B
IN-LINE HOSE BARB WITH LOCK	1/2" ID	12.7mm ID	.500"	MPXK17803	1.28 (32.5)	1.96 (49.8)

POLYSULFONE



TERMINATION	TUBING SIZE	METRIC EQ.	FLOW	STRAIGHT THRU	A	B
IN-LINE HOSE BARB	1/2" ID	12.7mm ID	.500"	MPX17839	1.28 (32.5)	1.96 (49.8)

TERMINATION	TUBING SIZE	METRIC EQ.	FLOW	STRAIGHT THRU	A	B
IN-LINE HOSE BARB WITH LOCK	1/2" ID	12.7mm ID	.500"	MPXK17839	1.28 (32.5)	1.96 (49.8)

Coupling Inserts

POLYCARBONATE

TERMINATION	TUBING SIZE	METRIC EQ.	FLOW	STRAIGHT THRU	O-RING	A	B
IN-LINE HOSE BARB	3/8" ID	9.5mm ID	.375"	MPX22603M	Silicone Seal USP Class VI	.85 (21.6)	1.90 (48.3)
	1/2" ID	12.7mm ID	.500"	MPX22803M	Silicone Seal USP Class VI	.85 (21.6)	1.90 (48.3)

POLYSULFONE

TERMINATION	TUBING SIZE	METRIC EQ.	FLOW	STRAIGHT THRU	O-RING	A	B
IN-LINE HOSE BARB	3/8" ID	9.5mm ID	.375"	MPX22639M	Silicone Seal USP Class VI	.85 (21.6)	1.90 (48.3)
	1/2" ID	12.7mm ID	.500"	MPX22839M	Silicone Seal USP Class VI	.85 (21.6)	1.90 (48.3)

Accessories

SEALING CAP	SEALING CAP W/LOCK	A	B
MPX32003	MPXK32003	1.28 (32.5)	1.67 (42.4)
MPX32039	MPXK32039	1.28 (32.5)	1.67 (42.4)

Accessories

SEALING PLUG	O-RING	A	B
MPX30003M	Silicone Seal USP Class VI	1.10 (27.9)	1.66 (42.2)
MPX30039M	Silicone Seal USP Class VI	1.10 (27.9)	1.66 (42.2)

All measurements are in inches (millimeters) unless otherwise noted. Tubing must meet stated inside and outside diameters.

SANIQUIK SERIES

Actual size

Specifications

Pressure:
Vacuum to 60 psi, 4.14 bar

Temperature:
-40° F to 300° F (-40° C to 148.9° C)

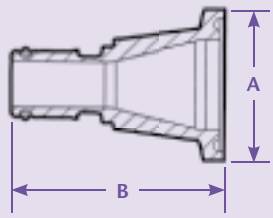
Sterilization: Autoclave

Materials:
Main component: 316L stainless steel
O-rings: Silicone (clear), platinum-cured, USP Class VI

Note: Mates with MPC polycarbonate and polysulfone bodies and sealing caps (pages 79-81) and MPX polycarbonate and polysulfone bodies and sealing caps (pages 82-83).

Colder's SaniQuik™ connection answers the question of how to integrate single-use components with your existing stainless processing equipment. This integral sanitary termination attaches to hard-plumbed systems with tri-clover clamps. Once attached it permits quick and easy connection to single-use bag systems, manifolds or tube sets which incorporate Colder disposable couplings. SaniQuik connections reduce sanitary gasket replacement, enabling cost-effective media transfer solutions for feeding, harvesting or sampling applications.

Features	Benefits
3/4" and 1-1/2" sanitary standard terminations	Connects to hard plumbed systems with sanitary gasket and tri-clover clamps
Compatible with MPC & MPX Series	Quick and easy connections to industry standard plastic couplings used on disposable bag and tube sets
Integral coupling adaptor	Disconnecting coupling reduces sanitary gasket replacement



A = Height/Diameter
B = Total Length (including valve)

Connections

316L STAINLESS

DESCRIPTION	PART NO.	MATING COUPLING	SANITARY SIZE	SANITARY BORE	A	B
SILICONE SEAL USP CLASS VI	SQCC221212M	MPC Series	3/4"	3/4"	.89" (22.6)	1.39" (35.3)
	SQCC222424M	MPC Series	1-1/2"	1-1/2"	1.98" (50.3)	1.50" (38.1)
	SQCX221212M	MPX Series	3/4"	3/4"	.89" (22.6)	1.54" (39.1)
	SQCX222416M	MPX Series	1-1/2"	1"	1.98" (50.3)	1.50" (38.1)
	SQCX222424M	MPX Series	1-1/2"	1-1/2"	1.98" (50.3)	1.50" (38.1)

Accessories

SILICONE (CLEAR)

DESCRIPTION	PART NO.	MATING SANIQUIK
PLATINUM-CURED USP CLASS VI REPLACEMENT SEALS	2260100	SQCC221212M, SQCC222424M
	2260200	SQCX221212M, SQCX222416M, SQCX222424M

All measurements are in inches (millimeters) unless otherwise noted. Tubing must meet stated inside and outside diameters.

SANITARY SERIES

Specifications

Pressure:
Vacuum to 60 psi, 4.14 bar

Temperature:
-40° F to 300° F (-40° C to 148.9° C)

Materials:
Main components:
Polysulfone (amber tint)

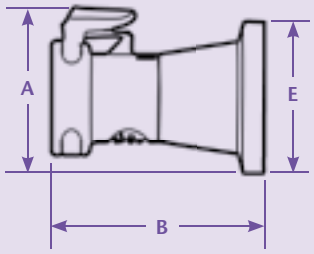
O-rings (mating insert): Silicone (clear), platinum-cured, USP Class VI

Termination Size:
3/4" and 1", 19.0mm and 25.4mm

Note: Mates with MPC polycarbonate and polysulfone inserts and sealing plugs (pages 79-81) and MPX polycarbonate and polysulfone bodies and sealing caps (pages 82-83).

Sanitary couplings attach directly to popular 3/4" mini and 1" maxi size sanitary connections, eliminating the need for cumbersome adapters or tubing assemblies. Direct attachment allows faster connection to and disconnection from installed, rigid and flexible piping systems.

Features	Benefits
Ergonomic thumb latch	Easy to operate – even with gloved hands
3/4" and 1" sanitary terminations	Install with standard gaskets and clamps
Compatible with MPC and MPX Series couplings	Easy conversion to industry standard connections or single-use systems



A = Height/Diameter
B = Total Length (including valve)
E = Outside Diameter

Coupling Bodies
POLYSULFONE

PART NO.	SIZE	A	B	E
MPC3301239	3/4"	.98 (24.9)	1.40 (35.6)	1.0 (25.4mm)
MPC3301639	1"	1.50 (38.1)	1.40 (35.6)	1.5 (38.1mm)
MPX3301239	3/4"	1.28 (32.5)	1.70 (43.2)	1.0 (25.4mm)

All measurements are in inches (millimeters) unless otherwise noted. Tubing must meet stated inside and outside diameters. **NOTE:** QD sanitary couplings are compatible with both stainless steel and plastic clamps. Clamps and gaskets are referenced for illustration and are not available through Colder.

STEAM-THRU CONNECTIONS

Specifications

Pressure:
Steam position:
Up to 30 psi, 2.07 bar (Steam-Thru)
35 psi, 2.41 bar (Steam-Thru II)

Flow position: Vacuum to 20 psi, 1.38 bar

Temperature:
Steam position:
Up to 266° F (130° C) for 60 minutes (Steam-Thru)
Up to 275° F (135° C) for 60 minutes (Steam-Thru II)

Flow position: 39° F to 104° F (4° C to 40° C)

Materials:
Connection: Polysulfone, USP Class VI

O-rings: Silicone (clear), platinum-cured, USP Class VI

Tear-away sleeve: Polyethylene or polycarbonate (Steam-Thru only)

Typical Flow Rate:
C_V = 4.2 - 4.6 (Steam-Thru)
C_V = 5.2 - 8.0 (Steam-Thru II)

Sterilization:
Gamma: Up to 50 kGy gamma irradiation

Autoclave: At 265° F (128° C) for 30 minutes, up to two cycles (applies only to part numbers STC1700500-STC1700800)

SIP process:
Up to 266° F (130° C) for 60 minutes (Steam-Thru)
Up to 275° F (135° C) for 60 minutes (Steam-Thru II)

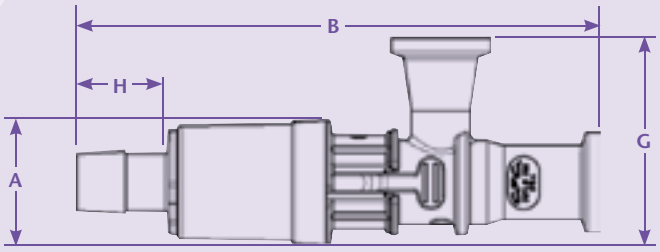
Tubing sizes:
3/8" to 1/2" ID, 9.5mm to 12.7mm ID (Steam-Thru)
1/2" ID, 12.7mm ID (Steam-Thru II)

Steam-Thru® Connections allow a quick and easy sterile connection between biopharmaceutical processing equipment and disposable bag and tube assemblies. The single-use design saves time and money by eliminating unnecessary cleaning procedures and reducing validation burden associated with reusable components.

Features	Benefits
Innovative three-port design	Allows a true steam-through SIP process which eliminates "dead legs" and the need for laminar flow hoods
Patented valve design	Allows sterile connection and disconnection and permits high media flow rate
Thumb latch/	Provides visual indicator of process stage
Tear-away sleeve	Secures valve position
Industry standard terminations	Speeds connection to the process equipment and connects to popular sizes of flexible tubing
Single-use design	Eliminates unnecessary cleaning procedures and validation issues

Steam-Thru® Configurations

Steam-Thru® Connection's patented three-port design allows steam to pass directly through the lower ports to "steam on" to stainless equipment. After the SIP cycle is completed, the connector's valve is actuated, creating a sterile flow path to single-use systems.



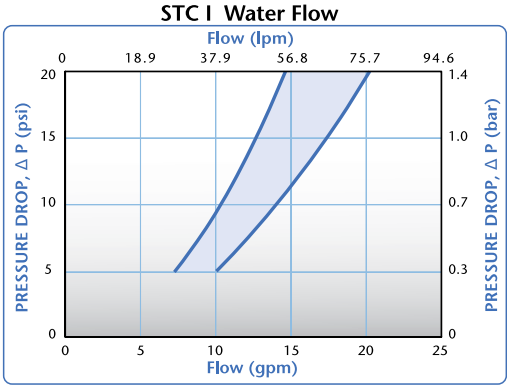
F = Actuated Length

POLYSULFONE

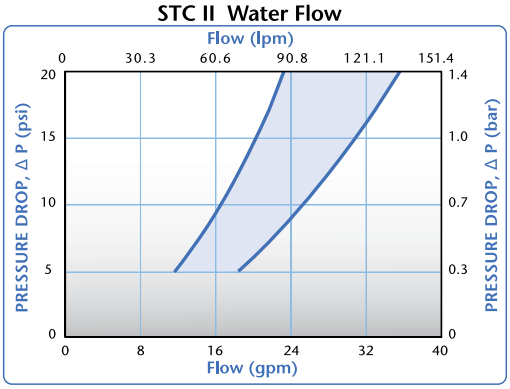
DESCRIPTION	PART NO.	TERMINATIONS	A	B	F	G	H
WITH	STC1700000	3/4" x 3/4" sanitary x 1/2" HB	1.20 (30.5)	5.09 (129.3)	4.44 (112.8)	2.00 (50.8)	0.89 (22.6)
POLYETHYLENE	STC1700100	3/4" x 3/4" sanitary x 3/8" HB	1.20 (30.5)	4.80 (121.9)	4.15 (105.4)	2.00 (50.8)	0.60 (15.2)
SLEEVE	STC1700200	3/4" x 1-1/2" sanitary x 1/2" HB	1.20 (30.5)	5.09 (129.3)	4.44 (112.8)	2.00 (50.8)	0.89 (22.6)
	STC1700300	3/4" x 1-1/2" sanitary x 3/8" HB	1.20 (30.5)	4.80 (121.9)	4.15 (105.4)	2.00 (50.8)	0.60 (15.2)

DESCRIPTION	PART NO.	TERMINATIONS	A	B	F	G	H
WITH	STC1700500	3/4" x 3/4" sanitary x 1/2" HB	1.20 (30.5)	5.09 (129.3)	4.44 (112.8)	2.00 (50.8)	0.89 (22.6)
AUTOCLAVABLE	STC1700600	3/4" x 3/4" sanitary x 3/8" HB	1.20 (30.5)	4.80 (121.9)	4.15 (105.4)	2.00 (50.8)	0.60 (15.2)
POLYCARBONATE	STC1700700	3/4" x 1-1/2" sanitary x 1/2" HB	1.20 (30.5)	5.09 (129.3)	4.44 (112.8)	2.00 (50.8)	0.89 (22.6)
SLEEVE	STC1700800	3/4" x 1-1/2" sanitary x 3/8" HB	1.20 (30.5)	4.80 (121.9)	4.15 (105.4)	2.00 (50.8)	0.60 (15.2)

STC I Water Flow



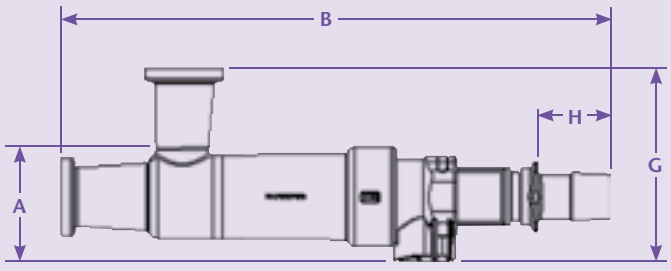
STC II Water Flow



These graphs are intended to give you a general idea of the performance capabilities of each product line. The shaded area of each graph represents the operating range of the product family, i.e., upper and lower values are shown. Therefore, depending on the exact coupling configurations selected, you can reasonably expect values to fall within the shaded area.

Steam-Thru II Configurations

Steam-Thru II Connections offer the flexibility of "steam on" and "steam off" functionality. The innovative design allows the valve to be returned to the steam position enabling a second SIP cycle following media transfer. The "steam off" disconnection of disposable systems minimizes cross-contamination risks associated with reusable components.



F = Actuated Length

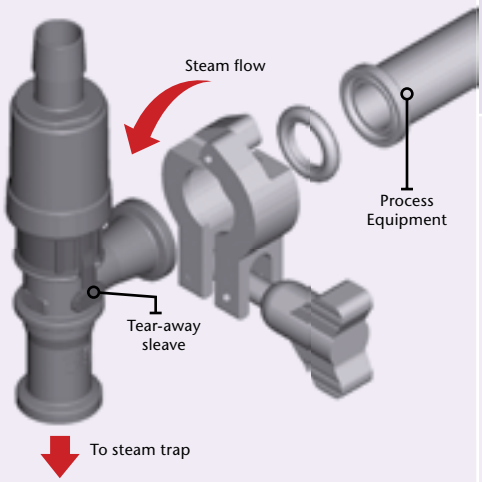
POLYSULFONE

TERMINATION	PART NO.	TERMINATIONS	A	B	F	G	H
	STC2020000	3/4" x 3/4" sanitary x 1/2" HB	1.42 (36.1)	6.84 (173.7)	5.93 (150.6)	2.40 (61.0)	.89 (22.6)
	STC2020200	3/4" x 1-1/2" sanitary x 1/2" HB	1.42 (36.1)	6.85 (173.7)	5.93 (150.6)	2.40 (61.0)	.89 (22.6)

All measurements are in inches (millimeters) unless otherwise noted. Tubing must meet stated inside and outside diameters.

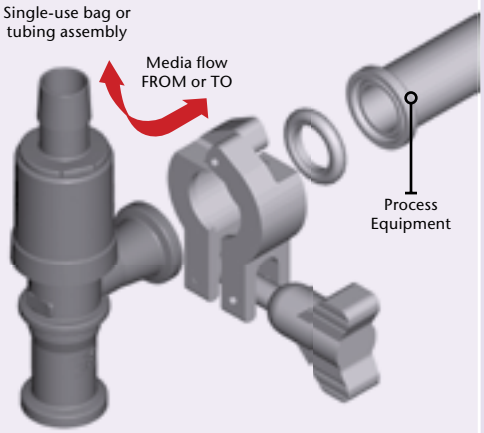
Steam-Thru Process

STEAM POSITION



Steam flows from the process equipment through the Steam-Thru to sterilize the connection. With the tear-away sleeve in place, the transfer of fluid to or from the bioreactor is prevented.

FLOW POSITION



When the tear-away sleeve is removed, the Steam-Thru is actuated, the connection to the steam trap is disabled and a sterile flow path is established between the process equipment and the disposable system.

DID YOU KNOW ... there are many advantages of single-use systems?

Increase Productivity
The reliability of single-use systems result in increased productivity through the reduction of system downtime associated with cleaning and cleaning validation.

Add Flexibility
Single-use systems can be easily modified for alternative media handling.

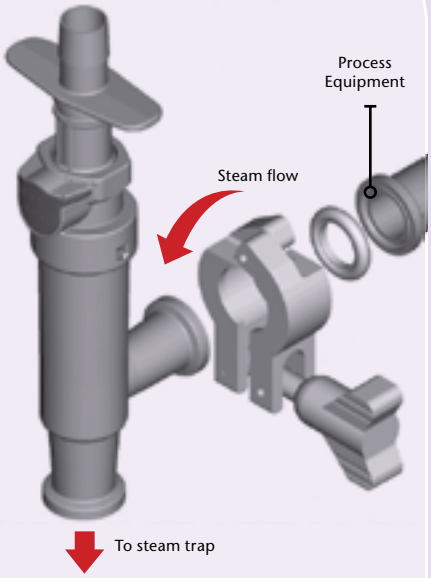
Minimize Risk
The integration of single-use systems can help minimize the risk of media contamination in multi-product manufacturing.

Reduce Cost
Cost savings include the reduced chemical and utility expenses of cleaning and labor.

Don't forget: you can access many feature articles on Single-Use technology at www.colder.com.

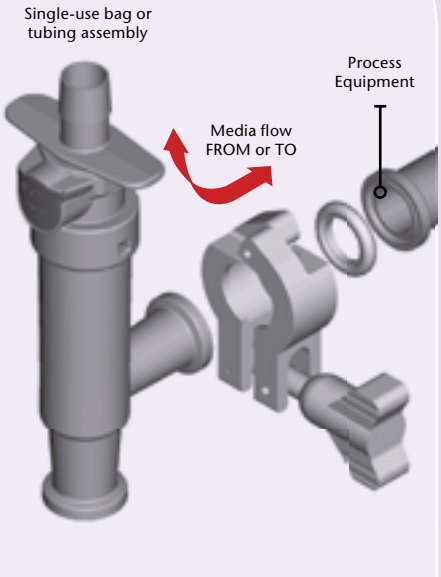
Steam-Thru II Process: An audible "click" and the visual indicator of the raised thumb latch provide assurance that the valve is locked in the flow or steam position.

STEAM ON POSITION



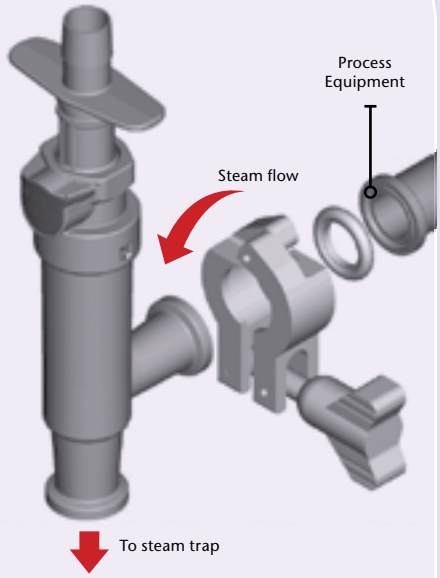
Steam flows from the process equipment through the Steam-Thru II creating a "steam on" sterile connection.

FLOW POSITION



Once the valve is locked in the flow position a sterile flow path has been created allowing media transfer.

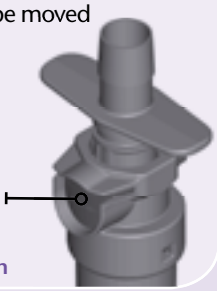
STEAM OFF POSITION



Once the valve is locked in the steam position, complete a second SIP cycle to "steam off" the connection.

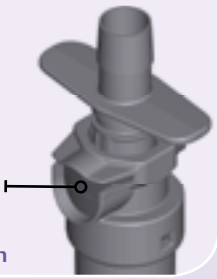
TRANSITION TO FLOW

Once the "steam on" cycle is complete and the steam trap has been closed, simply press the thumb latch to allow the valve to be moved down to the flow position.



TRANSITION TO STEAM

Once media transfer is complete, simply press the thumb latch to allow the valve to be moved back up to the steam position.



HFC39 SERIES

Specifications

Pressure:
Vacuum to 125 psi, 8.62 bar

Temperature:
-40° F to 280° F (-40° C to 137.8° C)

Materials:
Main components:
Polysulfone (amber tint), USP Class VI

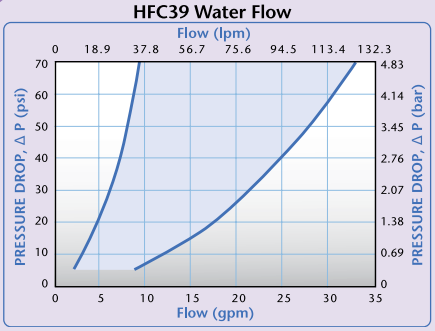
O-rings: Silicone (clear), platinum-cured, USP Class VI

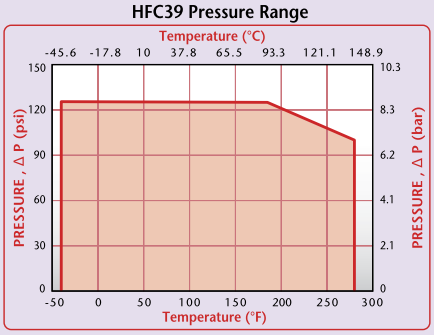
Springs: 316 stainless steel

Tubing Sizes:
1/4", 3/8" and 1/2" ID
6.4mm, 9.5mm and 12.7mm ID

HFC39 Series couplings feature

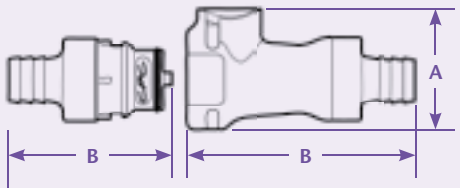
automatic shutoff valves, and offer a cost-effective replacement for expensive, heavy, stainless steel connectors or fittings. The HFC's medical-grade polysulfone meets the biocompatibility requirements including USP Class VI, MEM elution, agarose overlay, hemolysis in vitro, and USP physicochemical tests.





Features	Benefits
Automatic shutoff valves	Stops flow and eliminates need for pinch clamps
Audible "click"	Provides confidence of a secure connection
Lightweight	Single-use assemblies
Parting line-free outer barb	Eliminates potential leak point

Product Dimensions



A = Height/Diameter B = Total Length (including valve)

Coupling Bodies

POLYSULFONE

TERMINATION	TUBING SIZE	METRIC EQ.	FLOW	SHUTOFF	A	B
IN-LINE	1/4" ID	6.4mm ID	1/4"	HFCD17439M	1.44 (36.6)	2.82 (71.6)
HOSE BARB	3/8" ID	9.5mm ID	3/8"	HFCD17639M	1.44 (36.6)	2.82 (71.6)
	1/2" ID	12.5mm ID	3/8"	HFCD17839M	1.44 (36.6)	2.82 (71.6)

Coupling Inserts

POLYSULFONE

TERMINATION	TUBING SIZE	METRIC EQ.	FLOW	STRAIGHT THRU	SHUTOFF	A	B
IN-LINE	1/4" ID	6.4mm ID	1/4"	HFC22439M	HFCD22439M	1.00 (25.4)	2.02 (51.3)
HOSE BARB	3/8" ID	9.5mm ID	3/8"	HFC22639M	HFCD22639M	1.00 (25.4)	2.02 (51.3)
	1/2" ID	12.5mm ID	3/8"	HFC22839M	HFCD22839M	1.00 (25.4)	2.02 (51.3)

All measurements are in inches (millimeters) unless otherwise noted. Tubing must meet stated inside and outside diameters. Couplings are pictured with valves unless otherwise noted.

MPU SERIES

Specifications

Pressure:
Vacuum to 35 psi, 2.41 bar

Temperature:
-40° F to 300° F (-40° C to 148.9° C)

Materials:
Main components:
Polysulfone (amber tint), USP Class VI

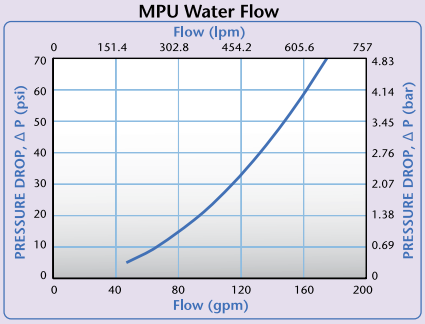
O-rings: Silicone (clear), platinum-cured, USP Class VI

Tubing Sizes:
3/4" ID, 19mm ID

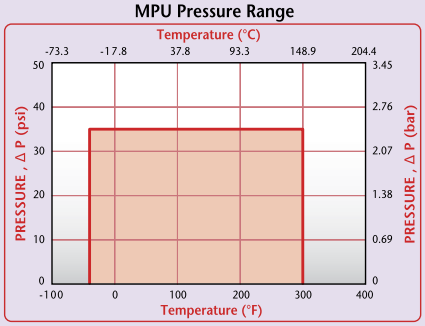
The MPU's twist-to-connect
design features an easy-to-use locking mechanism that guards against accidental disconnects and provides a reliable, secure connection. A 3/4" hose barb provides smooth, rapid media transfer.

Features	Benefits
3/4" hose barb	Facilitates rapid fill and empty of bioprocessing bags
Locking feature	Guards against accidental disconnect
Sharp barb end	Minimizes fluid turbulence and dead space
Shrouded, leak-free seal & smooth, internal flow path	Protects valuable fluids and eliminates potential to contaminate fluid path
Lightweight	Removes extra weight from assemblies

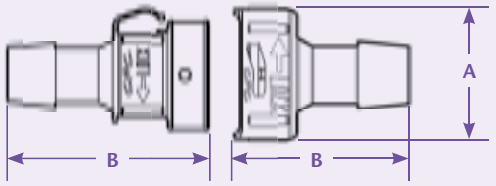
MPU Water Flow



MPU Pressure Range



Product Dimensions



A = Height/Diameter B = Total Length (including valve)

Coupling Bodies

POLYSULFONE

TERMINATION	TUBING	METRIC EQ.	FLOW	STRAIGHT THRU	A	B
IN-LINE HOSE BARB	3/4" ID	19mm ID	.710"	MPU171239	1.75 (44.5)	2.37 (60.2)

Coupling Inserts

TERMINATION	TUBING	METRIC EQ.	FLOW	STRAIGHT THRU	O-RING	A	B
IN-LINE HOSE BARB	3/4" ID	19mm ID	.710"	MPU221239M	Silicone Seal USP Class VI	1.56 (39.6)	2.88 (73.2)

Accessories

SEALING CAP		MATERIAL	A	B
MPU32039		Polysulfone	1.75 (44.5)	.79 (20.1)
SEALING PLUG	**O-RING**	**MATERIAL**	**A**	**B**
MPU30039M	Silicone Seal USP Class VI	Polysulfone	1.56 (39.6)	1.38 (35.1)

All measurements are in inches (millimeters) unless otherwise noted. Tubing must meet stated inside and outside diameters. Couplings are pictured with valves unless otherwise noted.

The CQH and CQV Series are designed for high-purity use and feature all plastic construction. Molded, virgin materials and lubricant-free design enable use in the most demanding applications. Broad chemical compatibility and clean room manufacturing make them ideal for use in critical wet processes.

Features	Benefits
100% metal free	No risk of metal contaminants or corrosion
High flow valve design	High flow in a compact package
Disconnect under pressure	Speeds servicing and reduces risk of injury
Polypropylene and PVDF	Broad chemical compatibility

CQH/CQV SERIES

Specifications

CQH Materials:

Main components:
Natural, virgin polypropylene

Valve o-rings: Viton® FKM (black)

External insert o-ring:
Simriz® FFKM perfluoro (black)

Valve (wetted) and thumb latch spring: PEEK®

Flare nuts: PVDF

Lubricants: None used

CQV Materials:

Main components: Natural, virgin PVDF

Valve o-rings: Chemraz FFKM perfluoro (white)

External insert o-ring:
Chemraz FFKM perfluoro (white)

Valve (wetted) and thumb latch spring: PEEK

Flare nuts: PVDF

Lubricants: None used

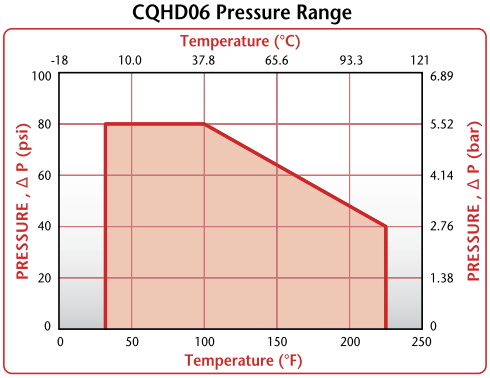
Spillage/air inclusion:

~1.5cc (ml)/disconnect (reconnect)

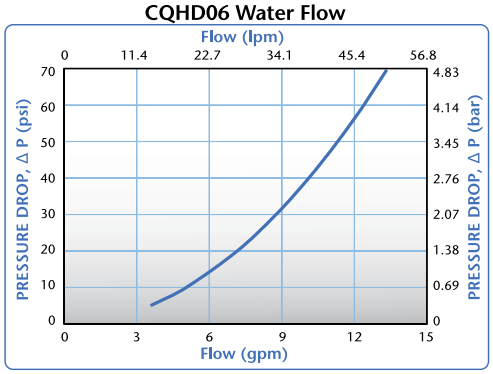
NOTE: Compatible with DrumQuik® MODULAR Dispense System, Universal and Asian Drum Adaptors.

Visit www.colder.com for information about CQH and CQV modified product options.

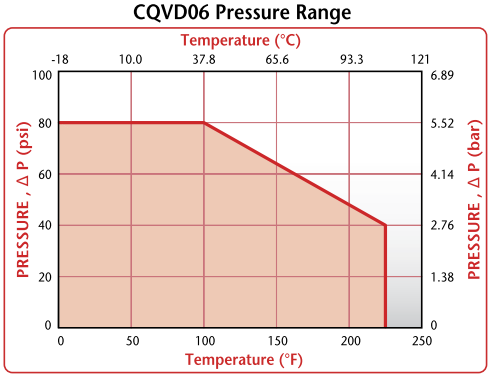
CQHD06 Pressure Range



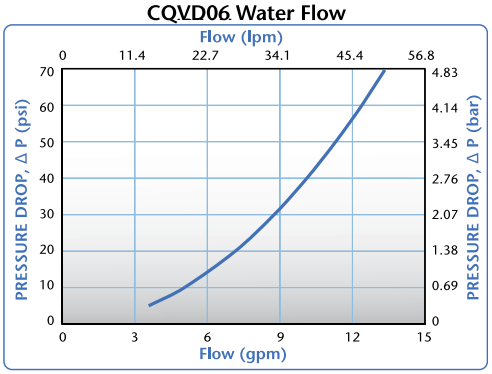
CQHD06 Water Flow



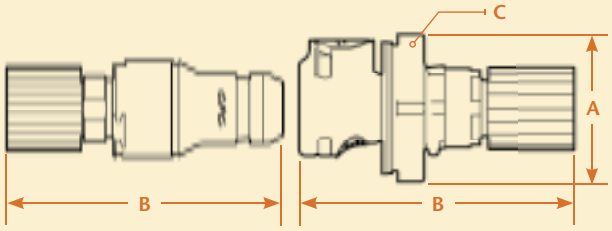
CQVD06 Pressure Range



CQVD06 Water Flow

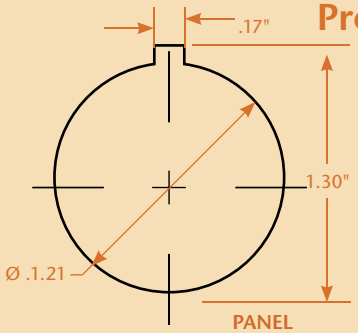


These graphs are intended to give you a general idea of the performance capabilities of each product line. The shaded area of each graph represents the operating range of the product family, i.e., upper and lower values are shown. Therefore, depending on the exact coupling configurations selected, you can reasonably expect values to fall within the shaded area.



A = Height/Diameter
B = Total Length (including valve)

Product Dimensions



Gasket Thickness: .06"
Mounting Hole: 1.21" diameter
Coupling Spacing: 1.62" minimum
Panel Thickness: .25"

	PANEL OPENING	MAX. PANEL THICKNESS	MIN. PANEL THICKNESS
COUPLING BODIES	see drawing	.25	.03

CQH Coupling Bodies
POLYPROPYLENE

TERMINATION	TUBING/THREAD SIZE	TERMINATION TYPE	SHUTOFF	A	B
IN-LINE	1/4" OD	Flare compression	CQHD06100104	1.44	3.32
	3/8" OD	Flare compression	CQHD06100106	1.44	3.38
	1/2" OD	Flare compression	CQHD06100108	1.44	3.38
	3/8" Taper	Male NPT	CQHD06100206	1.44	2.73

TERMINATION	TUBING/THREAD SIZE	TERMINATION TYPE	SHUTOFF	A	B
PANEL MOUNT	1/4" OD	Flare compression	CQHD06110104	1.82	3.32
	3/8" OD	Flare compression	CQHD06110106	1.82	3.38
	1/2" OD	Flare compression	CQHD06110108	1.82	3.37
	3/8" Taper	Male NPT	CQHD06110206	1.82	2.73

CQH Coupling Inserts
POLYPROPYLENE

TERMINATION	TUBING/THREAD SIZE	TERMINATION TYPE	SHUTOFF	A	B	C
IN-LINE	1/4" OD	Flare compression	CQHD06200104	1.00	2.49	
	3/8" OD	Flare compression	CQHD06200106	1.00	2.55	
	1/2" OD	Flare compression	CQHD06200108	1.00	2.56	
	3/8" Taper	Male NPT	CQHD06200206 ‡	1.16	1.90	1.00
	3/4" Taper	Male NPT	CQHD06200212 ‡	1.16	2.26	1.00

‡Indicates coupling that can be used with DrumQuik®.

CQV Coupling Bodies
PVDF

TERMINATION	TUBING/THREAD SIZE	TERMINATION TYPE	SHUTOFF	A	B	C
IN-LINE	1/4" OD	Flare compression	CQVD06100104	1.44	3.31	
	3/8" OD	Flare compression	CQVD06100106	1.44	3.38	
	1/2" OD	Flare compression	CQVD06100108	1.44	3.37	
	3/8" Taper	Male NPT	CQVD06100206	1.44	2.70	1.00

TERMINATION	TUBING/THREAD SIZE	TERMINATION TYPE	SHUTOFF	A	B	C
PANEL MOUNT	1/4" OD	Flare compression	CQVD06110104	1.82	3.24	
	3/8" OD	Flare compression	CQVD06110106	1.82	3.38	
	1/2" OD	Flare compression	CQVD06110108	1.82	3.37	
	3/8" Taper	Male NPT	CQVD06110206 ‡	1.82	2.70	

‡Indicates coupling that can be used with DrumQuik.

CQV Coupling Inserts
PVDF

TERMINATION	TUBING/THREAD SIZE	TERMINATION TYPE	SHUTOFF	A	B	C
IN-LINE	1/4" OD	Flare compression	CQVD06200104	1.00	2.41	
	3/8" OD	Flare compression	CQVD06200106	1.00	2.57	
	1/2" OD	Flare compression	CQVD06200108	1.00	2.57	
	3/8" Taper	Male NPT	CQVD06200206 ‡	1.16	1.89	1.00

All measurements are in inches (millimeters) unless otherwise noted. Tubing must meet stated inside and outside diameters. ‡Indicates coupling that can be used with DrumQuik.

CQG SERIES

The CQG06 Series high purity couplings feature our patented pressure-balanced, non-spill design. Molded virgin polypropylene and a 100% springless flow path provide broad chemical resistance and exceptionally high flow capacity, allowing instant disconnects (and reconnects), even under pressure.

Features	Benefits
Non-spill design	Ultimate protection from chemicals and fumes
Pressure-balanced	Failsafe disconnect, even under pressure; easy to reconnect at high pressure
Springless flow path design	Eliminates source of metallic contaminants

Specifications

Materials:

Main components:
Natural, virgin polypropylene

Seals: Viton® FKM

Springs (non-wetted): Hastelloy® C

Flare nuts: PVDF

Lubricants: None used

Dual Containment Nut and Panel Mount Fitting:
Virgin, natural polypropylene

Flare nuts and panel nuts: PVDF

Panel mount o-rings: Viton FKM

Spillage/air inclusion:

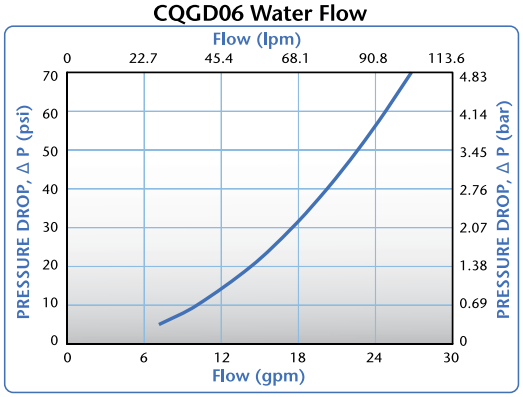
<0.1 cc (ml)/disconnect (reconnect)

Panel Mount: Optional adaptor kit

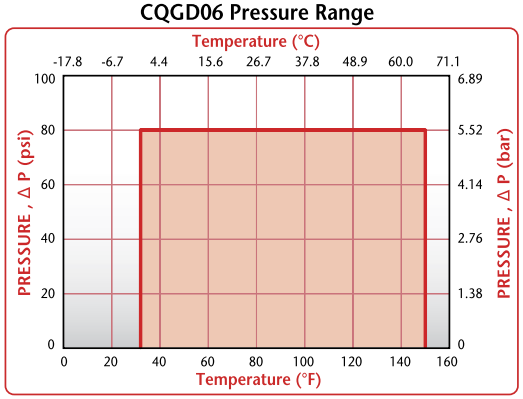
Compatible with DrumQuik® MODULAR Dispense System, Universal and Asian Drum Adaptors.

Visit www.colder.com for information about CQH and CQV modified product options.

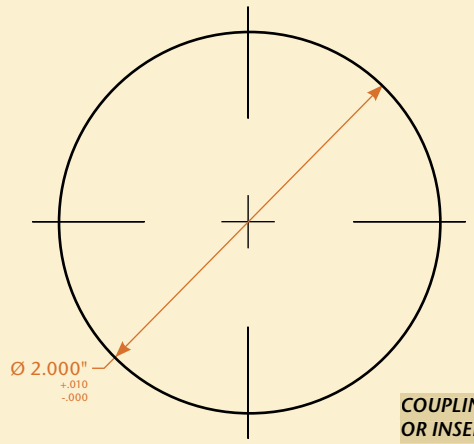
CQGD06 Water Flow



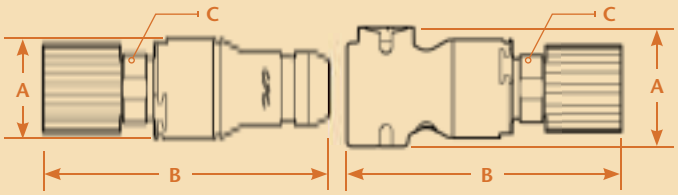
CQGD06 Pressure Range



These graphs are intended to give you a general idea of the performance capabilities of each product line. The shaded area of each graph represents the operating range of the product family, i.e., upper and lower values are shown. Therefore, depending on the exact coupling configurations selected, you can reasonably expect values to fall within the shaded area.



Product Dimensions



A = Height/Diameter
B = Total Length (including valve)
C = Hex Size on Main Component

	PANEL OPENING	MAX. PANEL THICKNESS	MIN. PANEL THICKNESS
COUPLING BODIES OR INSERTS	see drawing	.50	.12

Coupling Bodies

POLYPROPYLENE

TERMINATION	TUBING/THREAD SIZE	TERMINATION TYPE	SHUTOFF	A	B	C
IN-LINE BODIES	3/8" OD	Flare compression	CQGD06100106	1.96	4.21	
	1/2" OD	Flare compression	CQGD06100108	1.96	4.42	
	3/4" OD	Flare compression	CQGD06100112	1.96	4.49	
	1/2" Taper	Male NPT	CQGD06100208	1.96	3.81	1.00

Coupling Inserts

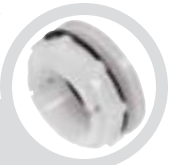
POLYPROPYLENE

TERMINATION	TUBING/THREAD SIZE	TERMINATION TYPE	SHUTOFF	A	B	C
IN-LINE INSERTS	3/8" OD	Flare compression	CQGD06200106	1.62	4.35	
	1/2" OD	Flare compression	CQGD06200108	1.62	4.45	
	3/4" OD	Flare compression	CQGD06200112	1.62	4.63	
	3/8" Taper	Male NPT	CQGD06200206 ‡	1.62	3.81	1.00
	1/2" Taper	Male NPT	CQGD06200208	1.62	3.95	1.00
	3/4" Taper	Male NPT	CQGD06200212 ‡	1.62	4.15	1.00

All measurements are in inches (millimeters) unless otherwise noted.
Tubing must meet stated inside and outside diameters.
‡ Indicates coupling that can be used with DrumQuik®.

Panel Mount Adaptor

POLYPROPYLENE



DESCRIPTION	PART NO.
Panel mount adapter kit (fits both bodies & inserts)	CQG06PMKIT01

ChemQuik® Dual Containment Flare Nuts

The ChemQuik® Dual Containment System is an easy way to "double contain" critical chemical lines, protecting plant and personnel in case a primary process line ruptures or "sweats". The system provides a protective secondary line to catch any fluid and routes it to a safe location.

These fittings work with any ChemQuik coupling with fine thread flare terminations or a common flare style fitting. In addition, the panel mount version can be mounted into a pump cabinet or other panel mount connection point. The primary line can then be routed from the coupling directly to a pump, connected to a ChemQuik coupling or to a fitting at the panel mount fitting.

The "weep port" serves to vent the area between the primary and secondary lines so that pressure cannot build up in case of a primary line rupture. The leaking fluid can then be routed to a containment vessel or to a leak detector.

POLYPROPYLENE

FLARE NUT	DESCRIPTION
CQDCNUT0408	Dual containment nut, 1/4" OD process line x 1/2" OD secondary containment line.
CQDCNUT0612	Dual containment nut, 3/8 OD process line x 3/4" OD secondary containment line.
CQDCNUT0812	Dual containment nut, 1/2" OD process line x 3/4" OD secondary containment line.
CQDCNUT1216	Dual containment nut, 3/4" OD process line x 1" OD secondary containment line.

FLARE FITTING	DESCRIPTION
CQPMDCNUT0408	Panel mount dual containment nut, 1/4" OD Process line x 1/2" OD secondary containment line.
CQPMDCNUT0612	Panel mount dual containment nut, 1/4" OD Process line x 1/2" OD secondary containment line.
CQPMDCNUT0812	Panel mount dual containment nut, 1/4" OD Process line x 1/2" OD secondary containment line.
CQPMDCNUT1216	Panel mount dual containment nut, 1/4" OD Process line x 1/2" OD secondary containment line.

Shown with CQG06 and CQH06 couplings.

DRUMQUIK MODULAR

Specifications

Pressure: 0 to 45 psig (0 to 3.1 bar)

Temperature: 0° to 150° F (-17° to 65° C), polypropylene limited to 32° F (0° C)

Materials:

Main components:
Natural, virgin PTFE or polypropylene

Dip-Tube o-ring:
FEP Encapsulated Viton® FKM

DrumQuik o-rings: FEP Encapsulated Viton (included with drum insert)

Lubricants: None used

Number of Ports: Two; one 3/4" female NPT liquid port and one 3/8" female NPT vent port (with backup o-rings included in o-ring kit)

Drum Thread: Industry standard 2" buttress coarse thread, 2" NPS fine thread and BCS 56x4 (European standard) – others available by special order; contact factory

Dip-Tube Length: 35.3" (897mm) or 55" (1397mm) (measured from sealing surface, may be trimmed to fit special container)

Visit www.colder.com for information about CQH and CQV modified product options.

The easy to use DrumQuik® MODULAR dispense system combines your choice of ChemQuik® or general purpose couplings with a modular dip-tube based system for the extraction of aggressive or ultra-pure chemicals from drums and IBCs. This extremely durable and reliable two-port, closed system increases operator safety and reduces downtime by virtually eliminating dangerous spills and fumes.

Features	Benefits
Modular design	Provides flexibility in system configuration
Two-port system	Eliminates fumes and allows blanket gas connection (N_2, CO_2) and recirculation
Standard threads	Fits common drum bungs (2" buttress, BCS 56x4, etc.)
Polypropylene and PTFE materials	Broad chemical compatibility

DrumQuik® MODULAR Configuration

DrumQuik® dip-tubes and mating ChemQuik® or general purpose couplings provide multiple configuration options for extracting chemicals from drums and IBC/tote containers, minimizing the potential for exposure and contamination.

Colder's ChemQuik, NSH or HFC12 Series couplings (or common fittings) can be used with the DrumQuik system to provide instant, safe and reliable connections of chemical line to rigid containers. Simply thread the coupling(s) into the DrumQuik drum insert to provide the system connection. Then thread in a DrumQuik dip-tube of proper length (and a foot valve as required) for a perfect match to your drum or IBC/tote. Insert the assembly into the container and your system is complete.

Drum Inserts : Polypropylene, PTFE

PART NO.	DESCRIPTION
DQMDI2PP2BUT	Polypropylene, 3/4" NPT liquid port, 3/8" NPT vent, 2" buttress
DQMDI2PP2NPS	Polypropylene, 3/4" NPT liquid port, 3/8" NPT vent, 2" NPS
DQMDI2PP56X4	Polypropylene, 3/4" NPT liquid port, 3/8" NPT vent, BCS 56x4
DQMDI2PP2BSPP	Polypropylene, 3/4 NPT liquid port, 3/8 NPT vent, 2" BSPP
DQMDI2PTFE2BUT	PTFE, 3/4" NPT liquid port, 3/8" NPT vent, 2" buttress
DQMDI2PTFE2NPS	PTFE, 3/4" NPT liquid port, 3/8" NPT vent, 2" NPS
DQMDI2PTFE56X4	PTFE, 3/4" NPT liquid port, 3/8" NPT vent, BCS 56x4
DQMDI2PTFE2BSPP	PTFE, 3/4 NPT liquid port, 3/8 NPT vent, 2" BSPP

Dip-Tubes : Polypropylene, PTFE

PART NO.	DESCRIPTION
DQMDTUBEPP35	Polypropylene, 35.3" (897mm) long from sealing surface
DQMDTUBEPP55	Polypropylene, 55" (1397mm) long from sealing surface
DQMDTUBEPTFE35	PTFE, 35.3" (897mm) long from sealing surface
DQMDTUBEPTFE55	PTFE, 55" (1397mm) long from sealing surface

Replacement O-ring Kit : FEP Encapsulated Viton®

PART NO.	DESCRIPTION
DQMSKITFEPVITON	Complete o-ring kit, FEP encapsulated Viton® FKM (includes liquid port and bung o-ring)

Pipe Plugs : PFA

PART NO.	DESCRIPTION
DQMPLUGPFA06	Hex pipe plug, 3/8" NPT, PFA material
DQMPLUGPFA12	Hex pipe plug, 3/4" NPT, PFA material

Vent Check Valves : PVDF

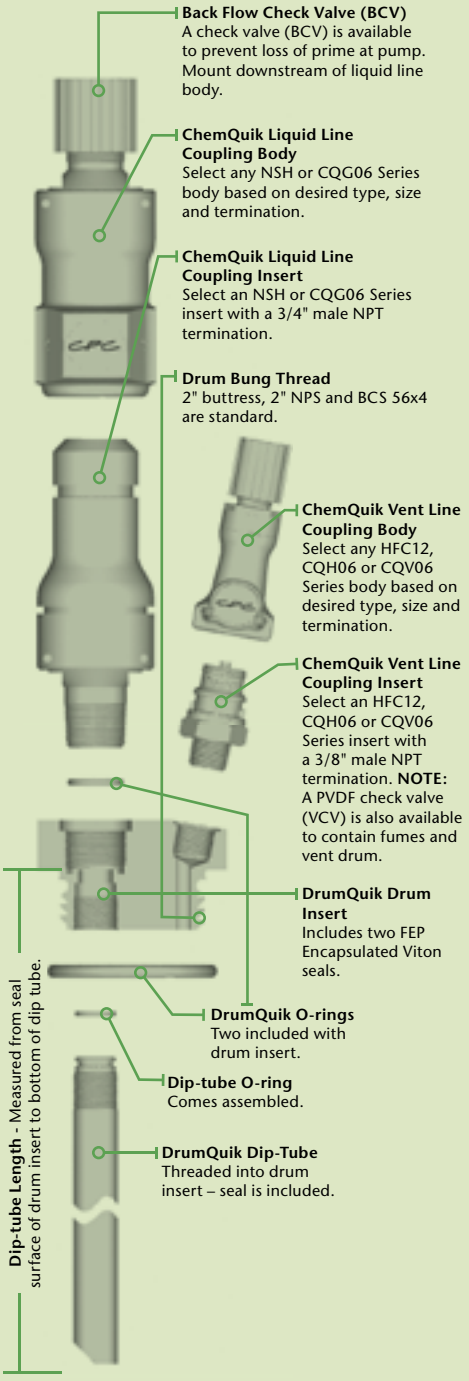
PART NO.	DESCRIPTION
DQMCKPVDF0206	Check valve, PVDF, PTFE ball, Hastelloy® C spring, 3/8 male NPT inlet & outlet

Foot Valves: Polypropylene

PART NO.	DESCRIPTION
DQMFVPP0204	Foot valve with screen, polypropylene & polypropylene screen, ceramic ball, PTFE seat, 1/4 male NPT (threads into bottom of DQM PTFE dip-tubes to prevent back flow and loss of pump prime)
DQMFVPP0208	Foot valve with screen, polypropylene & polypropylene screen, ceramic ball, PTFE seat, 1/2 male NPT (threads into bottom of DQM polypropylene dip-tubes to prevent back flow and loss of pump prime)

All measurements are in inches (millimeters) unless otherwise noted. Tubing must meet stated inside and outside diameters. **NOTE:** Some applications require the use of a back flow check valve (BCV) which prevents reverse flow when suction pump is turned off. Colder recommends that the BCV be installed immediately downstream from the liquid line coupling body. Similarly, to allow air into drum, but prevent fumes from escaping, install a vent check valve (VCV) in vent port. Contact Colder's factory for assistance.

DrumQuik Modular Dispense System



WARNING: Always check for chemical compatibility of all DrumQuik and coupling components for suitability in a specific application prior to use.

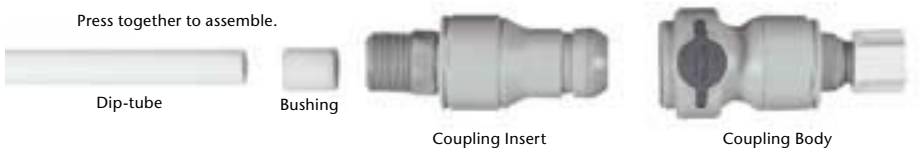
Universal Drum Adaptor Kit
(shown with NSH Series)

Universal 2-Port Drum Adaptor Kit
(shown with HFC12 and NS4)

BottleQuik UBA 2-Port Bottle Adaptor Kit
(shown with CQG and CQH)

DrumQuik® UDA Kit
Polypropylene

The DrumQuik® UDA Kit turns ChemQuik® or general purpose (HFC or NSH) couplings into a dip-tube that can easily be threaded into the 3/4" female NPS port of common drum closures. It provides a simple and inexpensive way to dispense chemicals in pumped systems. For your convenience, Colder offers a variety of drum adaptor plugs to facilitate easy drum connections. (See plugs and caps on page 99.)



PART NO.	DESCRIPTION
DQUDAKITPP35	Adaptor & dip-tube, 37" (889mm) long from o-ring surface (approx.), Viton® FKM seal
DQUDAKITPP55	Adaptor & dip-tube, 55" (1397mm) long, Viton FKM o-ring

Use above kits with HFC, NSH, CQG06, and CQH06 Series couplings.

DrumQuik UDA 2-Port Kit
Polypropylene

Like the DrumQuik UDA Kit, the DrumQuik UDA 2-port system is intended to thread into the 3/4" female NPS port of common closures found in drums, jerry cans, pails, or Nalgene® bottles. However, it features two ports; a 3/8" female NPT liquid port that connects to the dip-tube (included), and a 1/4" female NPT vent port. For your convenience, Colder offers a variety of drum adaptor plugs to facilitate easy drum connections. (See plugs and caps on page 99.)

PART NO.	DESCRIPTION
DQUDA2PKITPP	2-Port adaptor & dip-tube, 35.5" (902mm) long, Viton FKM o-ring. 3/8" Female NPT liquid port, 1/4" Female NPT vent port

Use above kit with HFC12, HFC35, NSH, NS4, and EFC12 Series couplings.

DQUDA2PNALNUT	3/4" NPS hex nut with 1 3/8" hex (Fits DQ UDA2PKIT PP to secure it to Nalgene bottle. Must bore a 1 1/8" (28.5mm) hole in cap).

BottleQuik® UBA 2-Port Kit
Polypropylene

The BottleQuik® is very similar to the DQ UDA 2-port, but is intended for use on reagent bottles with SP400-38mm threads. It can be used in either the upright position or inverted and for this reason has two 3/8" female NPT ports for liquid and vent ports.

PART NO.	DESCRIPTION
DQUDACAP2PKITPP	2-Port adaptor CAP for 38mm SP-444 bottles & dip-tube, 17.75" (451mm) long, Viton FKM o-ring. 3/8" Female NPT liquid port, 3/8" female NPT vent port, 3/8" Female NPT vent port

Use above kits with CQG, CQH and CQV Series couplings.

All measurements are in inches (millimeters) unless otherwise noted. Tubing must meet stated inside and outside diameters. **NOTE:** The DQ UDA kits are designed to work with Colder couplings that have 3/4" NPT male terminations. The DQ UDA 2-Port kits are designed to work with a 3/8" NPT male on the liquid port and a 1/4" NPT male on the vent port. A 3/8" male NPT to 1/4" female NPT reducer bushing may be required to accommodate smaller NS4, PLC and PMC Series couplings. Bottlequik features two 3/8" female NPT ports. **NOTE:** The DrumQuik Modular and DrumQuik Adaptors are intended for end-use applications not requiring compliance with UN/DOT standards for use in transportation of hazardous materials.

DrumQuik® Asian Drum Adaptors
Polypropylene

The DrumQuik® Asian drum adaptors allow ChemQuik® or general purpose (HFC or NSH) couplings to be easily connected to the unique threads common in many drum closures (with integral dip-tubes) manufactured in Asia, e.g., Kodama, Accelo, Stella, Dung Woo, etc. A 3/4" female NPT inner thread can accept any coupling or fitting with a 3/4" male NPT termination.

PART NO.	DESCRIPTION
DQADAPP0212	Adaptor, Viton® FKM seals, 3/4" female NPT inner port x 3/4" NPS male thread to fit drum plug.
DQADAPP0622	Adaptor, Viton FKM seals, 3/4" female NPT inner port x 1-3/8" male buttress thread to fit drum plug.

Type A
For use with closure plugs with a 3/4" NPS center port.

Type B
For use with closure plugs with a 13/8" buttress center port.

3/4" NPT inner port incorporates a face seal to assure a leak-free connection.

DrumQuik Modular and UDA Check Valves and Foot Valves
Check Valves: PVDF | Foot Valves: Polypropylene

The DrumQuik check valves and foot valves are intended for use with DrumQuik MODULAR and UDA Dispense Systems. Check valves can be used as a vent check valve (VCV), which allows make-up air into the drum when liquid is removed, but will prevent fumes from escaping. They can also be used as a back flow check valve (BCV), which will prevent the pump from losing its prime during extended periods of inactivity. Foot valves serve the same function as the BCV, with the added benefit of preventing fluid loss from the bottom of the dip-tube during transfer from drum to drum.

PART NO.	DESCRIPTION
DQMCKPVDF0204	PVDF, PTFE Ball, Hastelloy® C spring, viton o-ring, 1/4" male NPT inlet & outlet (use for DQ UDA2PKIT PP vent line)
DQMCKPVDF0206	PVDF, PTFE Ball, Hastelloy C spring, Viton o-ring, 3/8" male NPT inlet & outlet (use for DQM vent line OR for DQ UDA2PKIT liquid line back flow prevention)
DQMCKPVDF0208	PVDF, PTFE Ball, Hastelloy C spring, Viton o-ring, 1/2" male NPT inlet & outlet (use for DQM back flow prevention for polypropylene DQM systems)
DQMFVPP0204	Polypropylene & polypropylene screen, ceramic ball, PTFE seat, 1/4" male NPT (threads into bottom of DQM PTFE dip-tubes to prevent back flow and loss of pump prime)
DQMFVPP0208	Polypropylene & polypropylene screen, ceramic ball, PTFE seat, 1/2" male NPT (threads into bottom of DQM polypropylene dip-tubes to prevent back flow and loss of pump prime)
DQMFVPP0708	Polypropylene & polypropylene screen, ceramic ball, PTFE seat, compression for 1/2" OD tube (attaches to bottom of DQ UDA & DQ UDA 2P dip-tubes to prevent back flow and loss of pump prime)

Foot Valve

Check Valve (PVDF)

DrumQuik Plugs and Caps

For your convenience, Colder offers several sizes of common bung plugs and caps that have the internal 3/4" female NPS thread, into which the DrumQuik Universal Drum Adaptors/ChemQuik couplings are threaded.

PART NO.	DESCRIPTION
DQMBUNGPP2BUT12	Bung closure, polypropylene, EPDM o-ring, 2" buttress x 3/4" female NPS
DQMBUNGPP2NPS12	Bung closure, polypropylene, EPDM o-ring, 2" NPS x 3/4" female NPS
DQMBUNGPP56X412	Bung closure, polypropylene, EPDM o-ring, BCS56x4 x 3/4" female NPS
DQMCAPPP70MM	Cap closure, polypropylene, EPDM o-ring, 70mm x 3/4" female NPS

DQ UDA kits can be used with a wide range of closures.

DRUMQUIK PRO

Specifications

Pressure:
Uncoupled: Vacuum to 45 psig (3.1 bar)
Coupled: Vacuum to 22 psig (1.5 bar)

Temperature:
Drum insert: -20° to 120°F (-29° to 49°C)
Coupler: 32° to 120°F (0° to 49°C)

Materials:
Drum insert & dip-tube:
Food grade, virgin polyethylene (HDPE)

Shipping plug:
Food grade, virgin polyethylene (HDPE)

Coupler: Food grade, virgin polypropylene (PP)

Spring (coupler only): 316 stainless steel
O-rings: Food grade EPDM

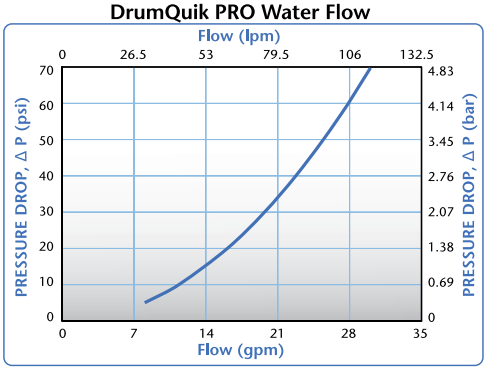
Lubricants: Krytox® PFPE (inert)

Liquid port fittings: Polypropylene

Flow Capacity: 3.6 C_V (51.7 Kv)

Visit www.colder.com and click on plastic products for information about CQH and CQV modified product options.

DrumQuik PRO Water Flow



This graph is intended to give you a general idea of the flow capabilities of each product line.

The chart above characterises the flow of the DrumQuik PRO with a pump drawing liquid out.

DrumQuik® PRO is an easy-to-use product for extracting chemicals from rigid containers. The closed-system design and rugged construction meet the strict safety requirements of chemical handling and food applications as well as the demands of harsh operating environments. The DrumQuik® PRO minimizes chemical exposure and facilitates the delivery of liquids from bulk transfer containers to end use applications. The coupler is reusable and the dip-tube closure is suited to cost-sensitive one-way/single-use container applications and can be disposed of or recycled along with the container.

Features	Benefits
Quick connect/disconnect	Allows faster drum change-outs
Disposable drum insert assembly	Reduces messy handling and chemical exposure
Ported vent system	Allows make-up air into drum without releasing vapors
Rugged, durable construction	Withstands harsh operating environments

The DrumQuik PRO dispensing system is in compliance with UN/DOT standards for use in transportation of hazardous materials.

Couplers: Polypropylene Elbow

PART NUMBER	DESCRIPTION
DQPRO120208	Elbow, 1/2" male NPT
DQPRO120712	Elbow, 3/4" male BSPP

Drum Inserts: Polyethylene Threaded

PART NUMBER	DESCRIPTION
DQPRO202BUT	2" American buttress thread
DQPRO2056X4	BCS 56x4 thread

Dip-Tubes: Polyethylene

PART NUMBER	DESCRIPTION
DQPRODT0330	330mm long (for 5 gal/25L jerry cans)
DQPRODT0902	902mm long (for 55 gal/200L drums)
DQPRODT0990	990mm long (for IBCs)

Accessories

PART NUMBER	DESCRIPTION
Tools	
2290300*	Torque socket tool (acetal) * Required for drum insert installation
2479100	Bung wrench (aluminum)
2375600	Key installation tool (for key kits)
Venting Options	
2324300	Vent check valve, 1/2" ID x 1/4" male NPT (polypropylene, 316 SST, EPDM)
EFCD24412	Vent coupling insert, 1/4" male NPT (polypropylene, 316 SST, EPDM)
EFCD17612	Vent coupling body, 3/8" hose barb (polypropylene, 316 SST, EPDM)
Backflow Prevention Options **Material:** Polypropylene	
2478900	Check valve, 1/2" female NPT x 1/2" male NPT (EPDM, 302 SST)
2478901	Check valve, 1/2" female NPT x 1/2" male NPT (FKM, 302 SST)
2478902	Check valve, 1/2" female NPT x 1/2" male NPT (EPDM, Hastelloy C)
2478903	Check valve, 1/2" female NPT x 1/2" male NPT (FKM, Hastelloy C)
2479000	Foot valve, 1/2" hose barb (EPDM, 302 SST)
2479001	Foot valve, 1/2" hose barb (FKM, 302 SST)
2479002	Foot valve, 1/2" hose barb (EPDM, Hastelloy C)
2479003	Foot valve, 1/2" hose barb (FKM, Hastelloy C)

NOTE: Colder Products Company distributes the above check valves and foot valves, designed with a low crack pressure to minimize flow losses. These valves are not produced by Colder and may exhibit imperfect sealing performance at low back pressure. Sealing performance will typically improve with increasing back pressure. Colder makes no claims or warranty regarding suitability for use in specific applications and recommends that the customer determine suitability for use in their specific application.

Liquid Port Fittings	
2402600	1/2" female NPT x 3/8" OD compression
2402700	1/2" female NPT x 1/2" OD compression
2402800	1/2" female NPT x 5/8" OD compression
2402900	1/2" female NPT x 3/8" OD hose barb
2403000	1/2" female NPT x 1/2" OD hose barb
2403100	1/2" female NPT x 3/4" OD hose barb

Replacement Parts

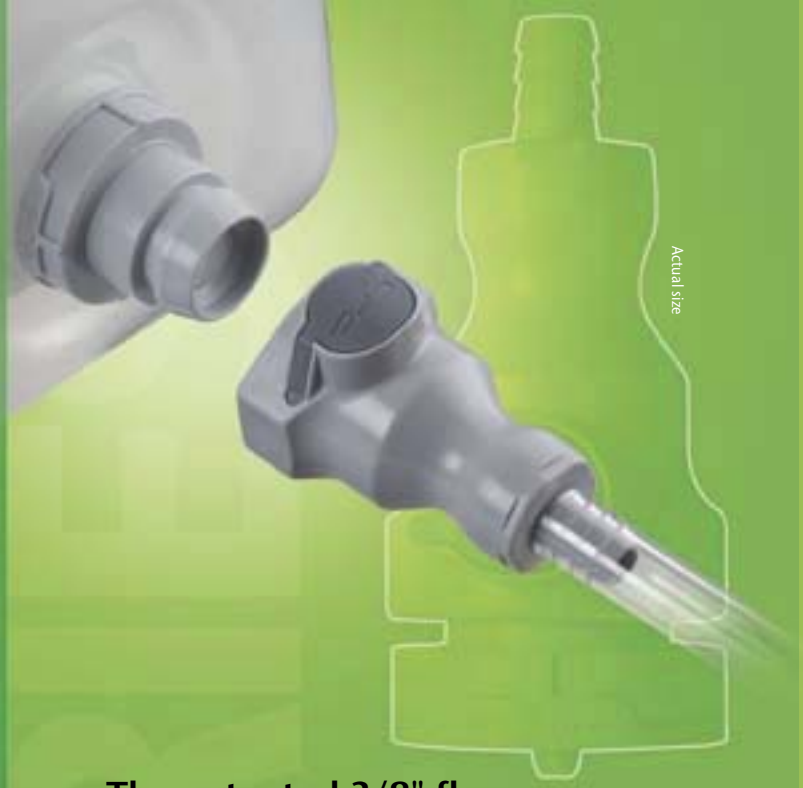
PART NUMBER	DESCRIPTION
2007900	Shipping plug for drum insert (does not include shipping plug o-ring)
2290100	Shipping plug o-ring, EPDM
2307200	Shipping plug o-ring, FKM
2423400	Coupler o-ring kit, EPDM (includes 2 o-rings)
2423500	Coupler o-ring kit, FKM (includes 2 o-rings)
2166000	Drum insert o-ring, 2" buttress, EPDM
2166100	Drum insert o-ring, 2" buttress, FKM
2165800	Drum insert o-ring, BCS 56x4, EPDM
2165900	Drum insert o-ring, BCS 56x4, FKM

Sample Kits

PART NUMBER	DESCRIPTION
DQPRONASAMP	2" Buttress drum insert, 902mm dip-tube, 1/2" NPT coupler (EPDM o-rings, 316 SST spring)
DQPRONASAMP207	2" Buttress drum insert, 902mm dip-tube, 1/2" NPT coupler (FKM o-rings, Hastelloy C spring)
DQPROEUSAMP	BCS 56x4 drum insert, 902mm dip-tube, 3/4" BSPP coupler (EPDM o-rings, 316 SST spring)
DQPROEUSAMP207	BCS 56x4 drum insert, 902mm dip-tube, 3/4" BSPP coupler (FKM o-rings, Hastelloy C spring)

Color Coding

PART NUMBER	COLOR	PART NUMBER
COUPLER CAP		***DRUM INSERT PLUG***
DQPROCAPGRY00	GRAY	DQPROPLUGGRY00
DQPROCAPRED01	RED	DQPROPLUGRED01
DQPROCAPYEL02	YELLOW	DQPROPLUGYEL02
DQPROCAPGRN03	GREEN	DQPROPLUGGRN03
DQPROCAPBRN04	BROWN	DQPROPLUGBRN04
DQPROCAPBLU05	BLUE	DQPROPLUGBLU05
DQPROCAPBLK99	BLACK	DQPROPLUGBLK99



UDC SERIES

The patented 3/8" flow Universal Dispensing Coupler (UDC) provides a universal connection to a 38mm fitment neck. Make instant connections to bulk packaging systems including bag-in-box (BIB), flexible and rigid packaging styles. Automatic flush face valves minimize costly or dangerous spillage. An ergonomic design and a large, shrouded thumb latch pad produce a coupling that is easy to grip and simple to operate.

The UDC Series is also available with optional RFID (Radio Frequency Identification) capability. Please refer to page 107 for more information on Colder's patented IdentiQuik® smart coupling technology.

Features	Benefits
Universal 38mm cap	Fits most manufacturers' fitment necks
Flush face/non-spill valves	Minimizes spillage
Integral terminations	Fewer leak points, shorter assemblies, faster installations
Shrouded thumb latch	Protects against accidental disconnects
RFID technology (iUDC only)	Helps maintain warranty, integrity, brand protection

Specifications

Pressure:
20" Hg vacuum to 15 psi, 1 bar (body only)

Temperature:
32° F to 160° F (0° C to 71° C)

Materials:
Main body components and valves: Polypropylene

Springs: 316 stainless steel

UDC caps: Acetal (POM), polypropylene

O-rings (food grade):
UDC: EPDM, silicone, Buna-N

iUDC: EPDM

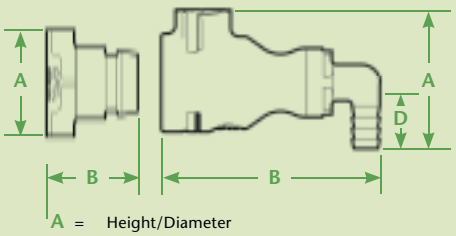
CIP adapter: Acetal

Color: Light gray with dark gray latch

Closure Size: SP-400 38mm

Did you know all standard UDC Series products are listed under NSF/ANSI standard 169? See page 105 for a full listing of Colder's NSF part numbers and products

Product Dimensions



A = Height/Diameter
B = Total Length (including valve)
D = Elbow Radial Length

Coupling Bodies

POLYPROPYLENE

TERMINATION	TUBING SIZE	SILICONE O-RING	BUNA-N O-RING	EPDM O-RING	A	B
IN-LINE HOSE BARB	3/8" ID	99000	98400	98500	1.73	3.06
	1/2" ID	95600	97600	95300	1.73	3.06
	5/8" ID	99100	97900	98100	1.73	3.20
	3/4" ID	99200	98600	98700	1.73	3.21

TERMINATION	TUBING SIZE	SILICONE O-RING	BUNA-N O-RING	EPDM O-RING	A	B	D
ELBOW HOSE BARB	3/8" ID	99300	97800	99400	1.73	3.25	.93
	1/2" ID	95400	97700	95100	1.73	3.25	.93

All measurements are in inches (millimeters) unless otherwise noted. Tubing must meet stated inside and outside diameters.

Caps

ACETAL

TERMINATION	DESCRIPTION	SILICONE O-RING	BUNA-N O-RING	EPDM O-RING	A	B
THREAD-ON 38MM, VALVED	Without thread seal	95800	96400	97400	1.70	1.39
	With thread seal	95801	96401	97401	1.70	1.39

POLYPROPYLENE

TERMINATION	SILICONE O-RING	EPDM O-RING	A	B
SNAP-IN 38MM VALVED	9461300	9500000	1.15	1.77

NOTE: Snap-in closure designed to fit Scholle 900 bag necks.

Clean-in-Place (CIP) Adapter

ACETAL

TERMINATION	DESCRIPTION	PART NO.	A	B
IN-LINE	1/2" HB (no o-ring)	96000	1.15	1.56

All measurements are in inches (millimeters) unless otherwise noted. Tubing must meet stated inside and outside diameters. Couplings are pictured with valves unless otherwise noted.

SMART COUPLINGS WITH RFID

The IdentiQuik® Series of smart couplings are RFID enabled couplings used on equipment and in processes. RFID is an automatic identification method that relies on storing and remotely retrieving data. Smart coupling applications include: inventory level meters, medical equipment calibration, product protection, and many more. Turn to page 107 for more information about IdentiQuik Smart Couplings™.

IdentiQuik UDC Series

- **Identify misconnections:** eliminate out-of-sequence connections or misconnections due to operator error
- **Protect your brand:** prevent out-of-date, incorrect or misapplied products from being used
- **Prolong equipment life:** prevent the accidental or unintentional use of harmful media
- **Save time:** automatic documentation of package and media lot numbers, date codes and more

RFID Specifications

Interrogator Read Range: Approximately 1"

Operating voltage:
8-25 V standard,
5V only available

Power Consumption:
350mW maximum

Communications:
RS232

I-Code RFID Tags:
13.56 MHz, 120 bytes, 64 bytes, 48 bytes user programmable

Pressure:
20" Hg vacuum to 15 psi, 1 bar, 103kPa (reader), 5" Hg vacuum to 2 psi, .14 bar, (caps uncoupled)

Temperature:
32° F to 158° F
(0° C to 70° C)

Coupling Readers

POLYPROPYLENE

TERMINATION	TUBING SIZE	METRIC EQ.	SHUTOFF	A	B
IN-LINE	1/4" ID	6.4mm ID	iUDCD4HP24A00	2.00	3.49
HOSE BARB	3/8" ID	9.5mm ID	iUDCD6HP24A00	2.00	3.49
	1/2" ID	12.7mm ID	iUDCD8HP24A00	2.00	3.49
	5/8" ID	15.9mm ID	iUDCD10HP24A00	2.00	3.49
	3/4" ID	19mm ID	iUDCD12HP24A00	2.00	3.49

Product Dimensions
(see page 102)

Caps *(UDC, UDC 12)*

ACETAL

TERMINATION	DESCRIPTION	METRIC EQ.	SHUTOFF	A	B
THREAD-ON 38MM, VALVED	Without thread seal	38mm	iUDCDPU	1.70	1.47
	With thread seal	38mm	iUDCDPT	1.70	1.47

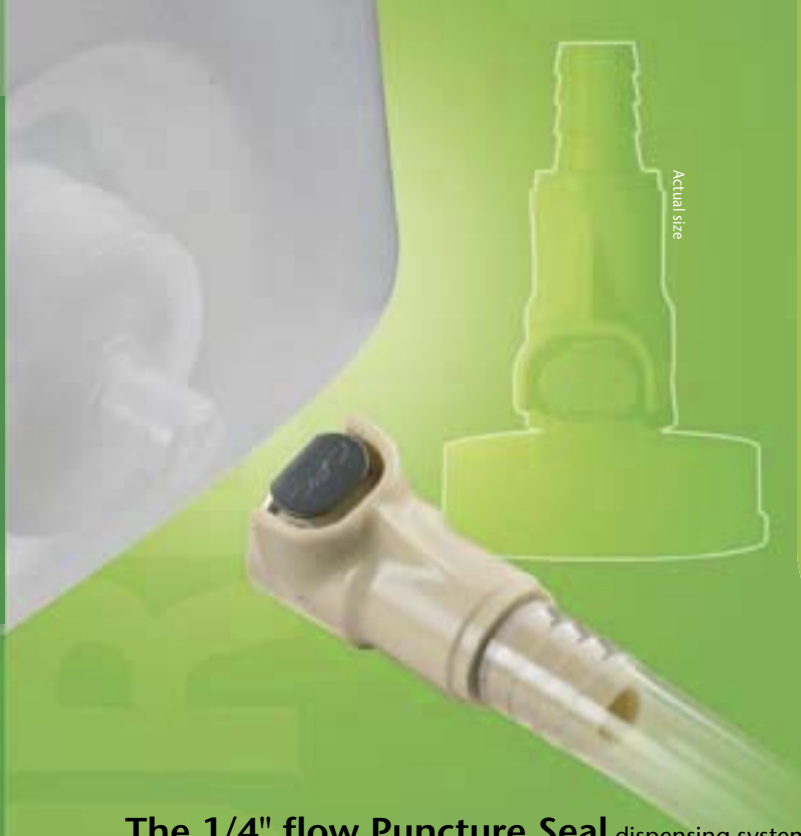
POLYPROPYLENE

TERMINATION	DESCRIPTION	METRIC EQ.	SHUTOFF	A	B
THREAD-ON 38MM, VALVED	Without thread seal	38mm	iUDC12DPU	1.70	1.48
	With thread seal	38mm	iUDC12DPT	1.70	1.48

TERMINATION	METRIC EQ.	SHUTOFF	A	B
SNAP-IN 38MM, VALVED*	38mm	iUDCDPS	1.62	1.76

All measurements are in inches (millimeters) unless otherwise noted. Tubing must meet stated inside and outside diameters.

Customized parts (voltage, termination, cable length, etc.) available. Call for more information.



Specifications

Pressure: 120 psi, 8.3 bar

Temperature:
32° F to 160° F (0° C to 71° C)

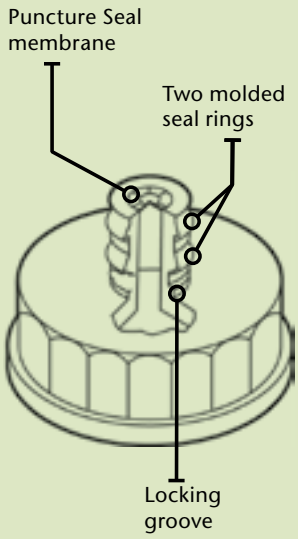
Materials:
Main components and valves: Polypropylene
38mm closure: Polyethylene (LDPE)
Thumb latch: Stainless steel
Valve spring: 316 stainless steel
External spring and pin: Stainless steel
O-rings: EPDM

Closure Size: SP-400 38mm

PUNCTURE SEAL

The 1/4" flow Puncture Seal dispensing system provides clean and safe liquid dispensing from bag-in-box (BIB) or other types of flexible packaging. The system consists of a Puncture Seal closure cap and a specially designed quick disconnect coupling body. The closure makes a positive thread or snap-in seal with a 38mm fitment neck. The Puncture Seal coupling body automatically breaks the membrane seal on the closure cap when connected. To switch to a new container, simply depress the Colder thumb latch to disconnect the system and then connect the Puncture Seal coupling body to a fresh container.

Features	Benefits
Puncture Seal coupling	Easily breaks the Puncture Seal membrane
Polypropylene and polyethylene materials	Greater chemical resistance
Puncture Seal membrane	Eliminates shipping caps and o-rings
Colder thumb latch	One-hand connection and disconnection



Coupling Body

POLYPROPYLENE

TERMINATION	TUBING SIZE	METRIC EQ.	STRAIGHT THRU	SHUTOFF	LENGTH
IN-LINE	1/4" ID	6.4mm ID	PS1700412	PSD1700412	1.95
HOSE BARB	3/8" ID	9.5 mm ID	PS1700612	PSD1700612	1.95

Closure

POLYETHYLENE

TERMINATION	PART NO.	LENGTH	HEIGHT
THREAD-ON 38MM	PSC38mm	1.7	1.12
SNAP-IN 38MM	496200	1.88	1.62

NSF/Food Grade:

Colder Products Company manufactures many products specifically for the Food & Beverage marketplace. All of these products are listed under NSF/ANSI standard 169 and are made from FDA approved materials. All of our NSF listed products are available with built-in shut-off valves that automatically shut off the media when you disconnect the coupling. Visit www.colder.com to learn more.

Applications may include: office coffee service, water filtration, condiment dispensing, dairy processing, and flavoring and scent production.

NSF PN	STANDARD PN	PAGE NO.
11800	PMCD1002	18
12000	PMCD1002BSPT	18
12600	PMC1602	18
12700	PMCD1602	18
13200	PMC1702	18
13300	PMCD1702	18
11400	PMCD1704	18
14700	PMC2202	19
10400	PMCD2202	19
11600	PMC2204	19
10800	PMCD2204	19
13400	PMC2402	19
14300	PMCD4202	19
11000	PMCD4204	19
15500	MCD1002	26
17100	MCD1702	26
19200	MCD2004	27
17300	MC2402	27
17400	MCD2402	27
20400	PLC10004	32
21000	PLCD10004	32
31600	PLCD10004BSPT	32
22600	PLC10006	32
20600	PLCD10006	32
29700	PLCD12006	32
23200	PLC13004	32
24300	PLCD13004	32
24500	PLCD13006	32
22900	PLCD14004	32
21100	PLCD16004	32
26700	PLCD16006	32
22500	PLC17004	32
22100	PLCD17004	32
20500	PLC17006	32
20800	PLCD17006	32
22400	PLC22004	33
21500	PLCD22004	33
20100	PLC22006	33
21400	PLCD22006	33
20300	PLC24004	33
26100	PLCD24004BSPT	33
30400	PLC24006	33
22200	PLCD24006	33
24700	PLCD29004	33
24900	PLCD29006	33
26000	PLCD40004	33
30900	PLCD40006	33
26600	PLCD42004	33
31200	PLC42006	33
74600	LCD10004	41
75700	LC16006	41

NSF PN	STANDARD PN	PAGE NO.
75100	LC10006BSPT	40
75000	LCD10006	40
76200	LCD13006	40
76300	LC17004	40
70800	LCD17004	40
76400	LC17006	40
76500	LCD17006	40
73400	LCD20004	41
73600	LCD20006	41
70100	LC22004	41
70500	LCD22004	41
73900	LC22006	41
70900	LCD22006	41
74400	LC23004	41
70400	LCD23004	41
74500	LC23006	41
71300	LCD23006	41
71800	LC24004BSPT	41
71500	LCD24004	41
72200	LC24006	41
72300	LCD24006	41
71700	LCD26004	41
73000	LCD42004	41
73200	LCD42006	41
44400	APC10004	46
45600	APCD10004	46
49200	APC10006	46
45700	APCD10006	46
43200	APCD13004SH	46
43300	APCD13006SH	46
40700	APC17004	46
42100	APCD17004SH	46
40800	APC17006	46
42200	APCD17006SH	46
43400	APCD20004	47
43500	APCD20006	47
49500	APC21004	47
43000	APCD21004	47
43100	APCD21006	47
40900	APC22004	47
42600	APCD22004	47
41000	APC22006	47
42700	APCD22006	47
46200	APC23004	47
42800	APCD23004	47
44700	APC23006	47
42900	APCD23006	47
42300	APC24004	47
42400	APCD24004	47
42500	APC24006	47
48600	APCD24006	47
42000	1/4 FE FL NV IL BODY APC	*
46000	1/4COMP V IL BODY APC	*

NSF PN	STANDARD PN	PAGE NO.
44900	1/4COMP V INST APC	*
46100	3/8COMP V BODY APC	*
45000	3/8COMP V INST APC	*
45500	5/8UNF FE V BODY APC	*
9203400	1/4 TUBE STUB NV APC	*
63500	HFC101212	58
63400	HFC10612	58
63300	HFCD10612	58
61200	HFC10812	58
62800	HFCD10812	58
62000	HFCD161212	58
63800	HFC16612	58
60300	HFCD16812	58
63700	HFC171212	58
63600	HFC17612	58
60600	HFCD17612	58
61500	HFC17812	58
60700	HFCD17812	58
62200	HFCD221212	59
65500	HFC22612	59
62700	HFCD22612	59
61300	HFC22812	59
61400	HFCD22812	59
65300	HFCD231212	59
61100	HFCD23612	59
64400	HFC23812	59
61000	HFCD23812	59
62500	HFC24612	59
60500	HFCD24612	59
64000	HFC24812	59
60400	HFCD24812	59
85900	HFC101235GHT	62
86300	HFC10635	62
86400	HFC10835	62
86500	HFC16635	62
83500	HFC17635	62
85600	HFCD17635	62
83200	HFC17835	62
80700	HFCD17835	62
86100	HFC191235GHT	62
89100	HFC22635	62
80900	HFCD22635	62
83100	HFC22835	62
81000	HFCD22835	62
89500	HFC23635	62
81200	HFCD23635	62
83400	HFC23835	62
81400	HFCD24635	62
88100	HFC24835	62
82600	HFC261235GHT	62

NOTE: Parts without standard part number equivalent are only available as NSF listed products.

Collaborative Design Solutions

For over 28 years, Colder Products Company's custom product Design Team has worked with customers around the world to design custom couplings and complete solution designs. Collaborative solutions result from cooperation between Colder and its customers to develop diverse designs that improve their products' performance while leveraging our extensive design and manufacturing expertise.

Colder works directly with our customer's design engineering team to solve the most difficult fluid and air management problems. Some of the solutions Colder has worked on in the past include modified quick disconnect couplings, quick disconnect couplings with RFID and other electronics, manifolds with integrated quick disconnect couplings, plastic components and fittings for fluid delivery, and modular valve designs for air flow.

Colder collaborates with customers to:

- Conceptualize a custom design that adds value
- Evaluate the design integrated with customer's product
- Implement a collaborative solution

Custom Coupling Designs

Colder's custom coupling Design Team partners with customers to design custom coupling solutions to solve specific problems and improve their product's performance. Colder uses its solid modeling capabilities, prototype equipment, an expansive test lab, and the expertise to fill in the gap where you need additional support.

Consider a custom coupling design when:

- A Colder coupling will add value to your product by increasing ease-of-use and reliability.
- Requirements cannot be met by an existing standard Colder quick disconnect coupling.
- Unique applications, budgets or timing warrant your designer's collaboration with Colder's custom coupling Design Team.

Colder Products Company will help customize your products with specialty solutions to meet your unique requirements while increasing the value of your product. Colder's collaborative custom designs result in cleaner, faster, safer and smarter fluid handling solutions.

Don't forget: you can always visit www.colder.com for more product information.

Smart Connections

Continually driven by innovation, Colder Products Company has created a new class of products called Smart Connections. Smart Connections create verifiable message transactions that result in greater control of equipment and processes and ultimately add value to customer's products.

Smart Connections are Radio Frequency Identification (RFID) enabled couplings and Smart Custom Solutions with added electronics that measure and identify critical parameters. The IdentiQuik® series of Colder's couplings utilizes RFID technology to automatically identify fluid characteristics and capture data from point-of-origin to point of use. Smart Custom Solutions are specialty designs that incorporate RFID and Colder's strong engineering and electronics expertise to perform controls beyond everyday expectations.

The benefits of Smart Connections include:

- Identify misconnections due to operator error or out-of-sequence connections.
- Protect brands by halting or logging the use of unauthorized fluids.
- Save time by electronically and visually verifying correct usage of liquid media.
- Prolong equipment life by preventing the use of harmful media.
- Minimize health and safety issues by locking out dangerous combinations.

IdentiQuik Smart Couplings™

The IdentiQuik series of couplings are RFID enabled couplings used on equipment and in processes to provide solutions for protecting brands, reducing liabilities, and managing inventories. RFID is an automatic identification method that relies on storing and remotely retrieving data. IdentiQuik couplings support RFID tags via 2 RF interfaces: I-Code (made by Philips Semiconductor) and ISO15693 (made by numerous companies). Smart coupling features include: inventory level meters, medical equipment calibration, product protection, and many more.

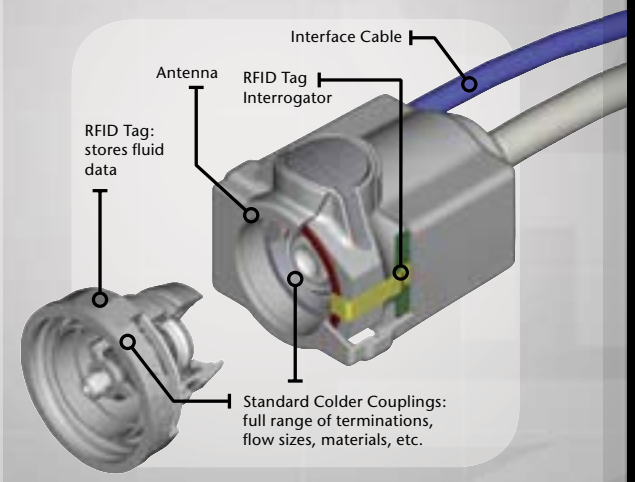
RFID tags, storing up to 64 bytes of data, 48 bytes user programmable, are encapsulated on coupling inserts. Product identification, date, batch, and lot codes can be automatically transferred from inserts on bags, totes, drums and supply lines to the connecting dispense or fill lines.

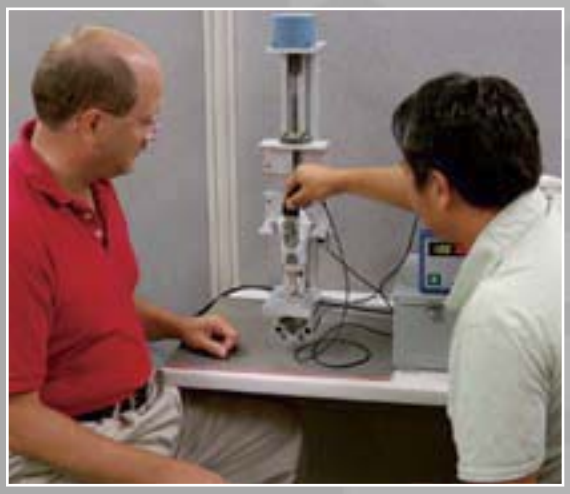
The data can be used to initiate various measures and logic control, such as:

- Turning on a pump
- Validating process recipes
- Preventing misconnections
- Locking out hazardous mixing at systems level

Smart Connection technology can be applied to virtually any of Colder's standard couplings or used in specialty designs specific to your application. Colder's design team will work with you to find the optimal solution.

Visit www.colder.com to learn more.





Chemical Compatibility Table

CHEMICAL		SPRING Materials					COUPLING Materials				
Name	Formula	Hastelloy C	316 SS	PPS	PEEK™	Teflon® Encapsulated 316SS	Polypropylene	HDPE	PVDF	PTFE/PFA	Acetal/POM (Celcon)
Acetic Acid	$C_2H_4O_2$	A to 212°	A to 212°	A	A	A (PTFE Encapsulated 316 Stainless St.)	A to 140° AB 50-100% to 160° AB to 80% to 180°	AB to 100% to 70° AB 60% to 180°	A to 122° A to 10% to 225° AB to 50%,150-200°	A	A to 5% to 70° BC 10% @ 70°
Acetic Anhydride (Acetyl Oxide)	$(CH_3CO)_2O$	A	A to 40% to 165° A 40-100% to 300°	A to 200°	NO DATA	A (PTFE Encapsulated 316 Stainless St.)	AB to 130° NR @ 140°	B/NR 100% 70-180°	AB to 70° NR @ 122°	A	NR at 70°
Acetone (Dimethyl Keytone)	CH_3COCH_3	A	A to 212°	A to 200°	A to 212°	A (PTFE Encapsulated 316 Stainless St.)	A to 230°	C at 70°	A to 10% to 122° AB 50% to 77°	A	A at 5% to 140° B at 70°
Acetonitrile (Methyl Cyanide)	CH_3CN	B @ 70°	A@100% to 100° NR 4% @ 192°	A to 200°	A to 70°	A (PTFE Encapsulated 316 Stainless St.)	AB to 75° NR @ 122°	A to 122°	A to 125° B @150° NR @ 180°	A	NR at 70°
Aluminum Sulfate (Aluminum Salt)	$Al_2O_{12}S_3$	A to 165°	A to 50% to 212° AB 50-100%	A to 100% to boiling	A to 212°	A	A to 100% to 160° A to 10% to boiling AB 100% at 250°	A to 160°	A to 100% to 280° A 10% to boiling	A	A at 10% to 70° AB to 100% to 180°
Amines (General)	NA	A to 85% to 160° AB to 200°	A	A to 70°	A to 70°	A	AB to 120°	NR	NR	A	NR at 70°
Ammonia Gas (Anhydrous)	NH_3	A @ 100% to 140°	A to 40% to 165° A 40-100% to 212°	A to 200°	A	A (PTFE Encapsulated 316 Stainless St.)	A to 100% to 212°	A to 140°	A	A	NR at 70°
Ammonia (Aqueous) (Ammonium Hydrate)	NH_3	A to 100% to 70° AB to 100% to 200°	A to 100% to 70° AB to 212°	A to 30% to 70° A to 10% to 200°	AB	A (PTFE Encapsulated 316 Stainless St.)	A to 185°	BC to 30% to 120° NR to 30% at 140°	A	A	A/NR 10-30% to 120°
Ammonium Acetate	$C_2H_7NO_2$	A@19%	A to 100% to 150°	NO DATA	NO DATA	A	A to 102° AB to 180°	A to 122°	A to 100% to 175°	A	A to 70°
Ammonium Fluoride	NH_4F	A to 25% to 175° A 45% to 260°	AB to 10% to 212° NR > 10%	NR	NO DATA	A (PTFE Encapsulated 316 Stainless St.)	A	AC 25-100% to 120° A to 25% to 160°	A	A°	NO DATA
Ammonium Hydroxide (Ammonia, Aqeous)	NH_4OH	A to 47% to 70° A@100% to 150° AB@100% to 200°	A to 100% to 70° A@100% to 150°	A to 200°	A to 212°	A (PTFE Encapsulated 316 Stainless St.)	A to 225°	AB to 100% to 140°	A to 200°	A	AB to 100% to 140°
Ammonium Sulfate (Dolamin)	$(NH_4)_2SO_4$	A to 10% to boiling A sat. to 130° AB sat. to 200°	A to 37% to 221° AB 38-80% to 150° A sat'd to boiling	A to 200°	A	A (PTFE Encapsulated 316 Stainless St.)	A 10% to 100°	A to 100% to 70° AB to 100% 120-180°	A	A to 400°	B 100% 70-140° AB fertilizer to 70° AB to 5% to 70°
Aqua Regia (NitroHydrochloric Acid)	HCL-HNO_3	NR (Titanium: A to 70°) (Tantalum: A)	NR	NR	NR	A (PTFE Encapsulated 316 Stainless St.)	C at 70 - 104°	NR	A to 100° AB to 178° B a 212°	A	NR at 70°
Benzene (Mineral Naphtha) (Benzol)	C_6H_6	AB @100% to 140° B to 100% to Boiling	A to 20% to 217° AB 20-100% to 200°	A to 100°	A to 212°	A to 500°	AB to 10% to 70° AB dilute to 140°	A at 10% to 70° C/NR at 100% at 70° NR at 122°	A to 100% to 120° AB at 100% at 120-140° B at 100% at 140-158°	A to 500°	A to 140°
Butyl Acetate (N-Butyl Acetate)	$C_6H_{12}O_2$	A	A	A to 200°	A to 70°	A to 500°	NR	AC at 70° BC at 120°	A to 70° AB at 80-100° C at 104-120°	A to 500°	AB to 70°
Calcium Carbonate (Aglime)	$CCaO_3$	B to 100% to Boiling	A Dilute to 120° AB@100%	A to 150°	A to 70°	A to 500°	A to 248°	A to 160°	A to 258° AB to 285°	A to 500°	A to 10% to 150° AB to 180°
Ceric Ammonium Nitrate (CAN)	$CeH_8N_8O_{18}$	NO DATA	NO DATA	NO DATA	NO DATA	NO DATA	NO DATA	NO DATA	NO DATA	NO DATA	NO DATA
Chlorine (Anhydrous) (Dichlorine, Chlorinated water)	CL_2	A to 140° (to 10 ppm to 70°)	A to 70° (to 10 ppm to 70°)	NR	A to 10% to 70° NR Conc. @ 70°	A (PTFE Encapsulated 316 Stainless St.)	NR	A to 2% to 140° NR	A to 100% to 200° AB at 100% to 230° NR	A	NR at 10-100% at 70°
Citric Acid	$C_6H_8O_7$	A to boiling	A to 50% B@100% 70-212° NR 60-100% >125°	A to 220°	A to 212°	A (PTFE Encapsulated 316 Stainless St.)	A	A to 100% to 160° AB to 100% at 180°	A	A	AB at 15% at 140-150° B at 15-100% at 70° C at 100% at 140-150°
Copper Sulfate (Cupric Sulfate)	CuO_4S	A to boiling	A to 100% to 160° A to 45% to 180° A to 10% to 2121°	A to 223°	A to 212°	A (PTFE Encapsulated 316 Stainless St.)	A	A to 50% to 150° AB at 50-100% to 180°	A	A	AB to 100% to 140°
Corn Oil	NA	A	A	A to 100°	A to 70°	A	A	A	A	A	AB
Corn Syrup	NA	NO DATA	A	A to 100°	A to 70°	A	A	A to 150°	A	A	AB to 140°
Cotton Seed Oil	NA	A	A	A to 200°	NO DATA	A	A	A to 140°	A	A	AB
Cyclohexanone (Cyclohexyl ketone)	$C_6H_{10}O$	A to 100°	A to 100 to 100°	A to 200°	A to 70°	A to 500°	AB to 70° B at 70-100° NR at 120°	NR	AB to 122°	A to 500°	A to 70° AB to 140°
Dichloroacetic Acid (DCA)	CL_2CHCO_2H	NO DATA	NO DATA	NO DATA	NO DATA	A (PTFE Encapsulated 316 Stainless St.)	AB to 100% to 125°	BC at 70°	AB to 50% to 212° AB 100% to 125°	A	NO DATA
Dichloromethane (Methylene Dichloride)	CH_2CL_2	AB	A to 70°	A 100% to 70° A/NR 40% @ 100°	NR	A (PTFE Encapsulated 316 Stainless St.)	B/NR @ 70° C/NR @ 88-122°	NR	AB to 100° to 100° B 100% 104 - 125°	A	A to 70°
Dimethyl Acetamide (DMAC)	C_4H_9NO	NO DATA	NO DATA	NO DATA	NO DATA	A	AB to 125°F	A to 122°	NR	A	NO DATA
DI water	H_2O	A	A	A to 200°	A	A (PTFE Encapsulated 316 Stainless St.)	A	A to 140°	A	A	NO DATA
Ethyl Alcohol (Ethanol/Grain Alcohol)) (Denatured Alcohol)	C_2H_5OH	A to 100% to 212°	A to 100% to 200°	A	A to 212°	A (PTFE Encapsulated 316 Stainless St.)	A to 100% to 180°	A to 100% to 160°	A to 100% to 176° AB to 100% to 280°	A	A at 96-100% to 70° B at 100% at 120-180°
Ethylene Glycol (Glycol Alcohol)	$HOCH_2$-CH_2OH	A 20-100%	A 40-100% to 200° A 100%	A to 200°	A to 212°	A (PTFE Encapsulated 316 Stainless St.)	A	A to 160°	A	A	A to 100% to 120° AB to 140° B at 180°
Ethyl Acetate (Acetic Ether)	$C_4H_8O_2$	A	A	A 100% to 100°	A to 70°	A (PTFE Encapsulated 316 Stainless St.)	A to 180°	BC at 100% at 70° C at 100% at 122° NR at 100% at 140°	A to 70° B 100 - 122° NR @ 170°	A	A to 10% to 200° AB at 100% to 70° BC at 100% at 140°
Ether (Ethyl Ether) (Diethyl Oxide)	$C_4H_{10}O$	A@100% to 200° A to 56% to 171°	A@100% to 212°	A to 200°	A to 212°	A to 500°	NR	NR at 100% at 140°	AB to 94° B @ 104° NR @ 140°	A	A to 70° AB at 140°
Formic Acid (Formylic Acid)	CH_2O_2	A to 100% to 200°	A to 5% AB 5 - 80% to 212° B 80 - 100% to 212°	A to 100% to 70° A to 40% to 200° NR @ 37% @ 150°	AB to 10% to 70° BC 100% @ 70°	A (PTFE Encapsulated 316 Stainless St.)	A to 100% to 70° A to 40% to 104° C 100% @ 140°	A to 100% to 104° B at 50-100% at 140-150° BC at 100% at 180°	A to 100% to 212°	A	NR at 3-100% at 70° B C
Gasoline (Petrol)	NA	A	A to 200°	A to 176°	A to 212°	A to 500°	NR at 70°	NR	A to 275° AB to 285°	A to 500°	A to 70°
Glycerin (Glycerol)	$C_3H_8O_3$	A to 100% to 212° A @ 100% to 600°	A to 100% to 200° A@100% to 300°	A to 200°	A to 100% to 70°	A to 450°	A to 100% to 225°	A to 160° A to 150° AB to 180°	A to 100% to 275° AB at 100% at 285°	A to 450°	A to 140°
Hexane (Dipropyl) (N-Hexane)	C_6H_{14}	A	A@100% to 200°	A to 200°	A to 70°	A (PTFE Encapsulated 316 Stainless St.)	BC @ 70-104° C @ 120-140° NR @ 140°	NR	A	A	A to 70°
HMDS (1,1,1,3,3,3-Hexamethyldisilazane) Bis(trimethylsilyl)amine	$C_6H_{19}NSi_2$	NO DATA	NO DATA	NO DATA	NO DATA	A (PTFE Encapsulated 316 Stainless St.)	NO DATA	NO DATA	NO DATA	A	NO DATA
Honey	NA	A to 70°	A to 140°	NO DATA	NO DATA		A to 70° AB @ 180°	A to 140°	A	A	A to 70°
Hydrobromic Acid (Hydrogen Bromide)	HBr	A@50% to 80° A@100% to 140° AB to 20% to 70°	NR	A to 37% to 100° A to 70°	NR	A (PTFE Encapsulated 316 Stainless St.)	A 20% to 225° A to 50% to 150° B Conc. to 185°	A to 20% to 160° A to 50% to 140° AB 50-100% at 70-150°	A dilute to 250° A to 37% to 70° A 38-100 to 275°	A	NR
Hydrochloric Acid (Muriatic Acid)	HCL	A to 40% to 140° NR 5-100% 175°	NR 3-100%	A to 10% to 200°	A to 212°	A (PTFE Encapsulated 316 Stainless St.)	A to 100% to 70° A to 36% to 150° A to 10% to 185°	A to 100% to 140° A to 40% to 160° AB to 40% to 150°	A to 38% to 194° A to 50% to 175° AB 40-70% to 70°	A	A to 10% to 70° NR at 30-100% at 70°
Hydrofluoric Acid	HF	A to 100% to 70° A@90% to 125°	A to 10% AB@16% to 120° NR 45-80%	A to 50% to 140° A to 35% to 200° NR > 50%	NR 4-100%@70°	A (PTFE Encapsulated 316 Stainless St.)	A to 50% to 140° A to 40% to 200° A to 30% to 225°	A to 60% to 140° A to 40% to 180° A to 30% to 160°	A to 100% to 212°	A	NR at 70°
Hydrogen Peroxide (Hydrogen Dioxide)	H_2O_2	A to 100% to 75° A to 50% to 200°	A to 30% to 104° A 50-100% to 70°	A to 10 to 200° AB to 30% to 100° NR 50-100% @ 70°	A to 212°	A (PTFE Encapsulated 316 Stainless St.)	A to 80% to 70° A to 5% to 170° NR 30% > 125°	A to 30% to 140° AB at 30-90% to 120° AB at 30-100% to 70°	A to 200° A to 30% to 212°	A	NR at 4-100% at 70°

		SEAL Materials				
Polysulfone	Polycarbonate	FKM (Viton®)	EPDM	FFKM (Chemraz® / Simriz® / Kalrez®)	Buna	Silicone
A to 100% to 70° A to 20% to 140°	A to 50% to 70° B to 50% @ 122°	A 10% to 70° B 10-25% to 100° B 50% to 140°	A to 70° AB to 200°	A A to 70°	B to 30% at 70° B to 20% to 185° C at 80% at 70°	A A to 70°
NR at 70°	NR at 70°	B 50% to 70° NR 50% @ 100° NR 100% @ 70°	B to 200°	A	C at 100% at 70° NR 25-50% at 70°	A
A to 20% to 70° NR at 100% at 70°	A to 70° NR 10-100% at 70°	NR	A to 200°	A	125% vol 3 days 70° NR any conc at 70°	A
NR at 70°	NR at 70°	NR	A	A	C at 70°	A
A to 100% to 200° A to 10% to boiling	A to 100% to 200°	A to 100% to 176° A to 10% to boiling	A to 176° AB to 200°	A to 70°	A to 70° AB any conc to 180°	A to 70°
NO DATA	NR at 70°	NR	AB to AC	A	NR at 70°	A
C at 70°	NR at 70°	NR	A to 140°	A (Black 550) AB (White 571 & 592)	A to 104° B to 140° NR at 200°	A (Black 550) AB (White 571 & 592)
AB to 30% to 200°	NR 70-150°	AB 30% to 70° C 10% @ 104° A ammonia H2O	A 100% to 212°	A	A at 38% to 200°	A
A sat'd to 122°	A sat'd to 122°	A to 140° B at 212°	A to 140° B at 212°	A	A to 140° B at 176°	A
NO DATA	NR at 70°	A to 140°	A to 140°	A	AB any conc to 104°	A
A to 100% to 200°	BC 5% at 70° NR 10-100% 70° NR 5% at 120°	A46% to 70° AB to 70° B 104-140°	A to 160° AB to 200°	A	A to 38% to 200° A/NR conc to 140°	A
A to 100% to 200° A to sat'd to boiling	A to 100% to 200° NR 10-100%boiling	A to 70°	A to 120°	A	A any con to 200°	A
NR at 70°	NR at 70°	A to 70° B to 185°	B to 104° NR at 140°	A (White 571 & 592) AB to 70° (Black 550)	NR at 70°	A (White 571 & 592) AB to 70° (Black 550)
NR at 70°	NR at 70°	B to 158°	NR at 70°	A to 70°	NR at 70°	NR at 70°
NR at 70°	NR at 70°	NR at 70°	B at 70°	NO DATA	NR at 70°	NR at 70°
NO DATA	C at 70-150°	A to 248°	A to 140°	A to 70°	A to 200°	AC to 70°
NO DATA	NO DATA	NO DATA	NO DATA	NO DATA	NO DATA	NO DATA
NR at 70°	NR at 70°	C 400 ppm at 70°	B 400 ppm at 70° C 400 ppm at 104°	A to 70°	C sat'd at 70° NR 400 ppm at 70°	NR at 70°
A to 100% to 150° A to 100% 10 70°	A to 100% to 70° B at 10-15% at 120° C at 15% at 150°	A	A	A	A to 200° B at 212°	A
A to 200°	A to 100% to 70°	A to conc. to 176° AB to 212°	A to conc. to 176° AB to 212°	A	A to conc to 176° AB any conc to 212°	A
A	A	A	NR	A	A	A
A	A	A	A	A	A	A
A	A	A	A	A	A	A
NR at 70°	NR at 70°	NR at 70°	BC at 70°	B at 70°	NR at 70°	NR at 70°
NO DATA	NO DATA	NR	NO DATA	A	NR at 70°	A
NR at 70°	NR at 70°	B @ 70°	BC to 130° NR @ 140°	A	NR at 70°	A
NR at 70°	NR at 70°	NO DATA	NO DATA	NO DATA	NO DATA	NO DATA
A to 200°	NO DATA	A to 70° AB to 200°	A to 70° AB to 200°	A	A to 70° AB to 200°	A
A to 70% to 70° B at 100% at 70-120° NR at 100% at 200°	A to 90% to 70° AB at 96-100% to 70° B at 40-100% at 120°	A to 70°	A to 200°	A	A to 140° B to 185°	A
A to 100% to 200°	A to 160° B to 200°	A to 250°	A to 212°	A	A to 212°	A
NR at 70°	NR at 85-100% at 70°	NR	A to 130°	A	NR at 70°	A
NR at 70°	NR at 70°	NR	NR	A	NR at 70°	A
A to 10% to 70° at 10-50% at 70-120° C 98-100% at 70-120°	A to 50% to 70° AB at 50-100% to 70° B at 3-50% at 120°	AB to 50% to 104° NR 60-100% @ 70°	A to 200° A to 90% to 212°	B	B to 50% at 70° NR 50-100% at 70° NR at 100% at 140°	B
A to 70°	C at 70°	AB to 200°	NR at 70°	A to 70°	NR Consider FKM or E-Type FKM	NR at 70°
A at 100% to 200°	A to 125°	A to 250°	A to 176° AB to 200°	A to 70°	A to 250°	A to 70°
A at 100% to 200°	A to 158° NR at 80-120°	A to 200°	NR	A	A to 70°	A
NO DATA	NO DATA	NO DATA	NO DATA	A	NO DATA	A
NO DATA	A to 70°	A to 140°	A to 140°	NO DATA	A to 140°	A to 70°
A to 20% to 300° B at 30% at 70°	NR at 30-100% at 70°	A to 140°	A to 200°	A	NR	A
A to 100% to 70° A to 50% to 140° A to 37% to 200°	A to 10% to 200° AB at 20% at 70-200°	A to 20% to 230° A to 25% to 140° AB 50-100% to 70°	A to 25% to 140° A to 3 molar to 158° AB to 37% to 130°	A	AB 20-37% to 70° AB to 15% to 150°	A
A to 10% to 200° AB 25-38% at 70-200°	A to 10% to 180° AB at 20% to 70° BC at 35% at 70°	A to 60% to 130° A to 50% to 176 A to 30% to 212°	A dilute to 212° AB to 60% to 130° AB to 65% to 70°	A	AB 10% to 70° C 20-30% to 130°	A
A to 100% to 70° A to 90% to 120° B at 30% at 180°	A to 100% to 125°	A to 104° A 50% to 200° AB @ 100% @ 160°	B 5% to 140° B 3-30% @ 70°	A (White 571 & 592) AB (Black 550)	B 3% at 70° BC 10% to 80°	A (White 571 & 592) AB (Black 550)

Interpretation of test data

Swelling
(In 30 days to 1 year of exposure)

	Linear (Plastics)	Volumetric (Elastomers)
A	< 10%	<= 15%
B	< 15%	<= 30%
C	< 20%	<= 50%
NR	> 20%	> 50%

LOSS OF TENSILE STR.
(In 30 days to 1 year of exposure)

	(Plastics)	(Elastomers)
A	< 15%	<=15%
B	< 30%	<= 30%
C	< 50%	<= 60%
NR	> 50%	> 60%

DESCRIPTION OF CHEMICAL ATTACK

Excellent, little or no swelling, softening or surface deterioration

Good chemical resistance, minor swelling, softening or deterioration

Limited chemical resistance, moderate attack, conditional service

Severe attack, not recommended for use

NOTE: All temperatures are in degrees Fahrenheit.
Conversion: °C = (°F - 32)/1.8

Chemical Compatibility Table

CHEMICAL		SPRING Materials					COUPLING Materials				
Name	Formula	Hastelloy C	316 SS	PPS	PEEK™	Teflon® Encapsulated 316SS	Polypropylene	HDPE	PVDF	PTFE/PFA	Acetal/POM (Celcon)
Iodine	I_2	A	A 9-10% to 72° NR >10%	NR	BC @ 70°	A (PTFE Encapsulated 316 Stainless St.)	A to 100% @ 75° AB to 100% @ 176°	A to 6.5% to 70°	A to 100% to 170° C 100% @ 212	A	A to 70° C/NR at 100% at 70°
Isopropyl Alcohol (IPA) (Isopropanol)	$(CH_3)_2CH\text{-}OH$	A@100% to 212° A@47% to 356° A@11% to 70°	A to 100% to 140° A@100% to 212°	A to 200°	A to 75°	A (PTFE Encapsulated 316 Stainless St.)	A to 225°	A to 160°	A to 150° AB to158°	A	A to 70°
KEROSENE	NA	A	A	AB to 200°	A to 70°	A	AB to 80° BC @ 122° NR @ 140°	C/NR @ 70° NR @ 100°	A	A	A to 180°
LIMONENE/DL-LIMONENE (Orange Oil)	$C_{10}H_{16}$	A to 70°	A to 140°	NO DATA	NO DATA		B @ 70° C @ 122°	B @ 70° C @ 122°	A to 260°	A to 122°	NR @ 70°
Methyl Alcohol (Methanol) (Wood Alcohol)	CH_3OH	A to 212°	A	A to 150°	A to 212°	A (PTFE Encapsulated 316 Stainless St.)	A to 70° BC 100 @ 180°	A to 100% to 122° AB at 100% at 140° B/NR at 100% at 150-180°	A to 148° AB 212-257°	A	A to 140° B at 180°
Methylene Chloride	CH_2CL_2	A	A to 100% to 200° A to 90% to 212°	A 100% to 70°	A to 70°	A (PTFE Encapsulated 316 Stainless St.)	NR	NR	AB to 100°	A	A to 70°
Methyl Ethyl Keytone (MEK)	C_4H_8O	A to 200°	A to 200°	A to 100% to 70°	A to 212°	A to 500°	A to 100% to 70° AB at 100% at 125° AB at 100% at 122°	NR	NR	A to 500°	A to 70° AB at 70-180°
MINNCARE® Cold Sterilant (Hydr. Peroxide, Peracetic acid, Acetic acid)	H_2O_2 $C_2H_4O_3$ $C_2H_4O_2$	A	A	A	A	A	A	A	AB	A	NO DATA
N-Methyl 2-Pyrrolidone	NMP $CH_3N(CH_2)_3CO$	NO DATA	NO DATA	A to 70°	A	A (PTFE Encapsulated 316 Stainless St.)	A	NO DATA	C/NR @70°	A	NO DATA
Nitric Acid (Hydrogen Nitrate)	HNO_3	A to 99% to 130° A to 50% to 140° AB@10% to 185°	A to 100% to 120° A to 60% to 175° A to 50% to boiling	A to 30% to 100° AB to 40% to 80° NR 50-100% @ 70°"	A to 30% to 70° A to 10% to 212° NR 50% @ 70°	A (PTFE Encapsulated 316 Stainless St.)	A to 50% to 104° A to 30% to 180° A to 10% to 210°	A to 30% to 140° A to 40% to 70° AB at 50% to 70°	A to 98% to 70° A to 90% to 140° A to 30% to 212°	A	NR
OIL, Corn	NA	A to 70°	A	A to 175°	A to 140†	A to 140°	B/NR to 104°	AB to 70°	A	A	AB to 70°
OILS/LUBRICANTS, General	NA	A	A	AB to 70° NR @ 120°	AB to 70° (SEA) NR (Crude & Diester)	A to 70°	NR	A	A	A	A to 158°
OIL, Mineral	NA	A	A to 150°	A to 100° C/NR @ 140-160	C @ 70° NR @ 100°	A	NR	A to 140°	A	A	A to 140°
OIL, Olive	NA	A to 70°	A	A 100% to 176°	AB to 70°	A	B @ 70°	A to 150°	A	A	A to 150°
OIL, Vegetable	NA	A	A	A to 140° AB @ 160°	AC @ 70°	A	AC	A to 70°			
Oxalic Acid (Ethanedioic Acid)	$C_2H_2O_4$	A to 100% to 140° A to 50% to Boil B 60-100% to Boil	A to 50% to 100° A 20-50 to 125° B 60-90% @ 70°	A	A	A (PTFE Encapsulated 316 Stainless St.)	A to 100% to 140° A to 50% to 180°	A to 100% to 160° AB to 100% to 180° NR at 100% at 212°	A to 100% to 125° A to 60% to 212° B @ 100% @ 158°	A	C at 5% at 70-150° C at 10% at 70°
Ozone (trioxygen)	O_3	A@2% to 140°	A to 70° A@2% to 140°	NO DATA	A to 212°	A (PTFE Encapsulated 316 Stainless St.)	NR	AB weak conc. At 70° C sat'd in H2O at 70° NR at 2-100% at 105°	A	A	NR
Phosphoric Acid	H_3PO_4	A to 200° A to 50% to boiling	A to 40% to 240° A to 70% to 150°	A	A to 212°	A (PTFE Encapsulated 316 Stainless St.)	A to 185° A to 75% to 225°	A to 100% to 140° A to 75% to 160° AB to 90% at 160-180°	A A 85% to 230°	A	C at 0.3-10% at 70° NR at 10-100% at 70°
Propylene Glycol (PG-12)	$C_3H_8O_2$	B@100% @ 70°	A to 30% A@80-90% A@60%	A to 70°	NO DATA	A to 500°	AB to 160°	A to 140° AB at 180°	A to 275° AB at 280°	A to 500°	A to 70°
PGMEA (Propylene Glycol Monomethyl Ether Acetate)	$C_6H_{12}O_3$	NO DATA	NO DATA	NO DATA	NO DATA	NO DATA	NO DATA	NO DATA	NO DATA	NO DATA	NO DATA
PGME (Propylene Glycol Monomethyl Ether) (Dowtherm 209 / Dowanol PM)	$C_4H_{10}O_2$	A	A	A	B	A (PTFE Encapsulated 316 Stainless St.)	A to 140° AB to 150°	NO DATA	AB	A	NO DATA
Potassium Carbonate (Carbonic Acid) (Potash)	CK_2O_3	A to 90% to 212° AB@100% to 140°	A to 17% to 240° AB 20- 100% to boil	A to 100% to 200°	A at 60-100% to 70°	A to 100% to 500°	A to 225°	A to 160° AB at 180°	A to 100% to 275° AB to 100% at 285°	A to 100% to 500°	A at 60-100% to 180°
Potassium Hydroxide (Caustic Potash)	KOH	A to 50% to 200° AB@100% to 185°	A to 100% to 70° A to 70% to 150°	A to 200° A to 50% to 268°	A to 212°	A (PTFE Encapsulated 316 Stainless St.)	A A 70% to 185°	A to 100% to 160° AB to 100% at 180°	*A to 25% to 140° A to 10% to 280° A 60-100% to 212°	A	B to 100% to 180°
Potassium Permanganate	$KMN0_4$	A to 50% to 75° AB@100% to 200° B to 30% 75-212°	A to 25% to 70° AB to 100% to 100° A@100% to 130°	A to 200°	A to 75°	A (PTFE Encapsulated 316 Stainless St.)	A to 100% to 70° A to 25% to 140° A to 10% to 180°	A to 100 % to 160° A to 10% to 180° AB at 20% to 180°	A	A	A to 10% to 140° NR conc.-100% at 70°
Pyridine (Azine)	C_5H_5N	A to 100% to 100° A@100% to 140°	A to 100% to 212°	A to 200°	A to 212°	A (PTFE Encapsulated 316 Stainless St.)	A to 100% to 75° AB 100% 120-180° NR 100% @ 120°	BC at 70° C at 140°	NR	A	AB to 70°
Sodium Bicarbonate (Baking Soda)	$CHNaO_3$	A to 100% to 150° AB to 20% to boiling	A to 100% to 150° A to 20% to 212°	A to 100% to 300°	A to 250°	A to 100% to 500°	A to 225°	A to 160° AB at 180°	A to 100% to 275° AB to 100% at 285°	A to 100% to 500°	A to 200°
Sodium Carbonate (Soda Ash)	CNa_2O_3	A to 100% to 212°	A to 100% to 212°	A to 100% to 300°	A to 100% to 212°	A to 100% to 500°	A to 100% to 225°	A to 100% to 160° AB to 100% at 180°	A to 100% to 275° AB to 100% at 285°	A to 100% to 500°	A to 100% to 140° A to 20% to 180°
Sodium Chloride (Salt)	ClNa	A to 100% to 176°	A to 16% to 212° A 25 - 80% to 160° A@100% to 212°	A	A	A	A	A to 100% to 160°	A	A	A to 100% to 70° AB to 100% 150-180°
Sodium Hydroxide (Caustic Soda)	NaOH	A to 100% to 70° A to 50% to 200° AB 50-80% to 170°	A to 20% AB 20- 70% to 212° AB 70-100% to 125°	A to 100% to 70° A to 50% to 140° A to 20% to 200°	A to 100% to 70° A to 54% to 392°	A (PTFE Encapsulated 316 Stainless St.)	A to 125° A to 70% to 225°	A to 100% to 140° A to 70% to 160° AB to 100% at 180°	A to 50% to 70° A to 20% to 104° A to 15% to 176°	A	A to 60% to 180° AB at 60-80% to 180° BC at 80-100% at 70°
Sodium Hypochlorite (Bleach)	CLNaO	A to 50% to 115° A to 20% to 140° AB@100% to 200	Generally NR A to 6% to 160° A sat'd to 200°	BC 5% to 200°	AB to 100%	A (PTFE Encapsulated 316 Stainless St.)	A to 100% to 70° A to 5% to 120° C 12-13%>70°, NR @104°	A to 100% to 160° AB to 100% at 180°	A to 17% AB to 100%	A	NR at 10-100% at 70°
Soybean Oil	No Formula	A	A	A	A	A	A	A	A	A	A
STERIS® CIP 100 (Potassium Hydroxide & Tetrasodium EDTA)	Alkaline Cleaner KOH & $C_{10}H_{12}N_2Na_4O_8$	A to 200°	A to 150°	A	A to 212°	A	A	NO DATA	A to 140°	A	NO DATA
STERIS® CIP 200 (Phosphoric Acid & Citric Acid)	Acid Cleaner H_3PO_4 $C_6H_8O_7$	A to 200°	A to 150°	A to 220°	A	A	A	A	A	A	C
Sulfuric Acid (Air-free) (Better when aerated)	H_2SO_4	A to 60% to 70° A 90-100% to 100° (A to 100% to 140°)	A to 20% to 70° A 80-100% to 70° Sensetive to concen.	A 10-75% to 70° AB to 98% to 220°	A to 40% to 212° NR > 40%	A (Encaps. 316ss)	*A to 10%° to 212° A to 50% to 176° A to 90% to 104°	A to 75% to 70° A to 60% to 140° A to 50% to 160°	A to 90% to 212° A to 96% to 175° A to 98% to 120°	A A to 90% (Boiling)	A to 3% to 70° NR at 10-100% at 70° NR at 30% at 70°
Tetrachloroethylene (PERC/PERK)	C_2CH_4	A	A	AB @ 100%	A	A	NR 100% @ 70° B Low Conc. @ 70°	NR 100% @ 70° B 10% @ 70°	A to 100% to 176°	A	A to 70° AB 70°-140°
Tetrahydrofuran (Tetramethylene Oxide)	C_4H_8O	A to 200°	A to 200°	A 100% to 140° C 100% @ 200°	A to 70°	A (PTFE Encapsulated 316 Stainless St.)	BC @ 70° C/NR @ 100-120° NR @ 140°	NR at 70°	C 10-100% @ 70° NR @ 120°	A	A to 70°
Tetramethyl Ammonium Hydroxide (TMAH)	$C_4H_{13}NO$	NO DATA	NO DATA	NO DATA	NO DATA	A to 100% to 500°	A to 150°	NO DATA	A to 100% to 200° A to 50% to 215°	A to 100% to 500°	NO DATA
Thionyl Chloride (Sulfinyl Chloride) (Sulforous Chloride)	CL_2OS	NO DATA	NR	NO DATA	A to 70°	A	B/NR 10 - 100%@70°	NR	NR	A	AC at 70°
Toluene (Toluol)	C_7H_8	A to 212°	A@100% to 212°	A to 100°	A to 75°	A (PTFE Encapsulated 316 Stainless St.)	NR	AB to 70° C/NR at 70° NR at 140°	A to 140° AB @ 176° BC 176-212°	A	A to 70° AB at 140° C at 180°
Trichloroacetic Acid (TCA)	$C_2HCL3_0_2$	A@100% to boiling AB to 100% to boil.	NR	A to 200°	A to 68° (Fluoroware)	A (PTFE Encapsulated 316 Stainless St.)	A to 140° AB @ 150°	A to 10% to 140° AC at 70-150°	A to 75° A to 65% to 212° AB 104-125°	A	NR at 70°
Trichloroethylene (Ethylene Trichloride) (Triad)	C_2HCL_3	B@90% to 212° A@100% to 212°	A@90% to 212° A@100 to 140°	AC 70-100° NR @ 200°	A to 212°	A (PTFE Encapsulated 316 Stainless St.)	NR	B at 70° C at 122° NR at 212°	A to 189° (blackens)	A	AB at 70-180°
Xylene (Xylol)	C_8H_{10}	A	A 75-100% A@50% to 220°	A to 200°	A to 70°	A (PTFE Encapsulated 316 Stainless St.)	C @ 70-140° NR @ 150°	NR at 70°	A to 175° A to 100% to 175°	A	A to 140° AB at 180°

WARNING: The compatibility data was assembled primarily from the Chemical Resistance Guides published by COMPASS PUBLICATIONS ©. The table is to be used as a general guide only. Colder Products Company is not responsible for the accuracy of this data and assumes no obligation of liability in connection with its use. Therefore, CPC insists that all customers test and evaluate the suitability for use of CPC couplings in their particular application before using the couplings.

*PVDF may discolor after prolonged exposure in Potassium Hydroxide. *Polypropylene may discolor after prolonged exposure in Sulfuric Acid

Viton® is a registered trademark of Dupont Dow Elastomers. PEEK™ is a trademark of Victrex USA, Inc. Halar® is a registered trademark of Ausimont. Chemraz® is a registered trademark of Green Tweed.

SEAL Materials						
Polysulfone	Polycarbonate	FKM (Viton®)	EPDM	FFKM (Chemraz® / Simriz® / Kalrez®)	Buna	Silicone
NR	NR	A to 100% to 140°	AB to 160°	A	A 6.5% to 70° B to 140°	A
A to 122° AB at 185°	A to 125°	A to 170° B @212°	A to 160° B @176°	A	A to 70° B any conc to 130°	A
AB to 200°	A to 70° AC @ 122°	A to 158°	NR	A	A	NR
C @ 70 - 122°	C @ 70 - 122°	A to 140°	NO DATA	NO DATA	A to 140°	NR @ 70°
A at 100% to 70° C at 100% at 120° NR at 100% at 200°	AB at 50% to 70° B at 70° C at 122°	NR	A to 160° AB to 176°	A	A to 70° AB any conc to 150°	A
NR at 100% at 70°	NR at 70°	B @ 70°	BC to 130°	A	NR at 70°	A
NR at 40-100% at 70°	NR at 100% at 70°	NR at 70°	A to 140° AB to 240°	A to 70°	NR any conc at 70°	NR at 70°
A	A	B	B	A	B	A
NR at 70°	NO DATA	NR	NR	A	NO DATA	A
A to 5% to 140° A to 40% to 70° B at 10% at 140°	A to 20% to 70° AB at 20-50% to 70° B to 10% at 120°	A 50% to 140° A 90-100% to 158° AC 60-70% to 70°	A to 25% to 70° A to 10% to 104° B 25-30% to 140°	A	NR 0-100% at 70°	A
A to 70°	A to 150°	A to 140°	NR	A	AB any conc to 150°	A to 70°
A	A to 70°	A to 158°	NR	A	A	NR
A to 200°	A to 70° B @ 120°-200°	A to 70°	NR	A	A	B @ 70°
A to 73°	A to 150°	A to 176°	B @ 70°	A to 70°	A	NR
		A to 200°	AC to 200°	A	A to 200°	A to 70°
A to 100% to 70° AB at 5% to 180°	A to 10% to 70° B at 70°	A to 100% to 140° A to 50% to 176°	A	A	AB to 100% to 140° NR 10% boiling	A
A to 122°	B 10 ppm in H2O at 70 NR 1-100% at 70°	A to sat. to 70° NR sat @ 140°	A to sat. to 70° NR sat. @ 140	A (White 571 & 592) AB (Black 550)	NR 2% to sat'd at 70°	A (White 571 & 592) AB (Black 550)
A to 100% to 200° A to 85% to 250° NR at 85% at 300°	A to 100% to 70° A to 25% to 158° B at 85% at 120°	A to 140° A to 85% to 176° A 75% to 212°	A to 130° A to 85% to 176° B to 30% to 212°	A	A to 10% to 104° AB to 50% to 104° AB 30% to 104°	A
B at 70-122°	BC at 70° C/NR at 122°	A to 140°	A to 70°	A to 70°	A to 250°	A to 70°
NO DATA	NO DATA	NO DATA	NO DATA	NO DATA	NO DATA	NO DATA
NO DATA	NO DATA	NR	A 50% to 70°	A		A
A to 200°	A at 5% to 70° NR at 70°	A to 212°	A to 176° AB to 200°	A aqueous sol'n to 70°	A to 200° A to 180°	AC to 70°
A to 100% to 200°	C at 1% at 70° NR at 1% at 125° NR at 5-100% at 70°	AB to 70° AB to 70% to 140° A 5% to 150°	A to 200° B 25% @ 212	A (Black 550) AB (White 571 & 592)	A to 5% to 150° AB to 150°	A (Black 550) AB (White 571 & 592)
A to 200°	A to 100% to 200°	A to 140°	A to 200°	A	AC to 150°	A
AB to 50% to 70° NR at 70°	NR at 70°	NR	B to 160°	A	NR at 70°	A
A to 100% to 70°	A to 100% to 200°	A to 212°	A to 176° B at 212°	A to 70°	A to 140° AB to 200°	A to 70°
A to 100% to 200°	A to 100% to 200°	A to 212°	A to 176° B at 212°	A to 70°	A to 100% to 160° AB to 100% to 200°	A to 70°
A to 100% to 200°	A to 100% to 120°	A to 100% to 212°	A to 100% to 176°	A to 70°	A to 160°	NO DATA
A to 50% to 120° A to 20% to 200° AB to 50% to 250°	A to 20% to 120° A to 15% to 200° C at 25% at 70-120°	B to 70° B 80% @140°	A to 70° A to 50% to 176° B 20% @ 212°	A (Black 550) AB (White 571 & 592)	A to 20% to 212° A to 50% to 176°	A (Black 550) AB (White 571 & 592)
A to 100% to 200° A to 17% to 300°	A to 10% to 70° AB to 100% to 70° C at 15% at 125-150°	A to 100% to 130° BC 20% @ 158°	AB 20-100% to 130	A	NR	A
NO DATA	A	A	NR	A	A	NR
NO DATA	NO DATA	AB to 140°	A to 200°	A (Black 550) AB (White 571 & 592)	NO DATA	A (Black 550) AB (White 571 & 592)
A	B	A	A to 176°	A	AB to 104°	A
A to 65% to 200° A to 35% to 300° AB at 85% to 210°	A to 50% to 70° A to 10% to 180° AB 20-30% at 122-200°	A to 158° A to 70% to 176° A to 50% to 212°	A to 90% to 70° A to 80% to 140° A 10% to 176°	A	A at 60% to 140° A at 50% to 70° A to 30% to 140°	A
NR	NR	A	NR	A	NR @ 70°	NR
NR at 200°	NR at 70°	NR	NR	A	NR at 70°	A
NO DATA	NO DATA	NO DATA	NO DATA	NO DATA	NO DATA	NO DATA
NR at 70°	NR at 70°	AB to 70°	NR	A	NR at 70°	A
NR at 70°	NR at 70°	A to 100° BC to 200°	NR	A	NR 30-100% at 70°	A
B at 70-122°	A to 20% to 70° C/NR 100% at 70° NR at 100% at 122°	NR	B at 70°	A	NR at 70°	A
NR at 70°	NR at 70°	NR	B	A	NR at 70°	A
NR at 100% at 70°	NR at 70°	A to 140°	NR	A	NR at 70°	A

Interpretation of test data

Swelling
(In 30 days to 1 year of exposure)

	Linear (Plastics)	Volumetric (Elastomers)
A	< 10%	<= 15%
B	< 15%	<= 30%
C	< 20%	<= 50%
NR	> 20%	> 50%

LOSS OF TENSILE STR.
(In 30 days to 1 year of exposure)

	(Plastics)	(Elastomers)
A	< 15%	<=15%
B	< 30%	<= 30%
C	< 50%	<= 60%
NR	> 50%	> 60%

DESCRIPTION OF CHEMICAL ATTACK

Excellent, little or no swelling, softening or surface deterioration

Good chemical resistance, minor swelling, softening or deterioration

Limited chemical resistance, moderate attack, conditional service

Severe attack, not recommended for use

NOTE: All temperatures are in degrees Fahrenheit.
Conversion: °C = (°F - 32)/1.8

Sterilization and Disinfectant Methods

MATERIAL	METHOD: DISINFECTANTS – FORMALIN	DISINFECTANTS – ISOPROPYL ALCOHOL	DISINFECTANTS – ETHYL ALCOHOL	ETHYLENE OXIDE	AUTOCLAVE	E-BEAM IRRADIATION – 50 KILOGRAYS	GAMMA IRRADIATION – 50 KILOGRAYS	DRY HEAT – 250° F
METALS								
302 STAINLESS STEEL	Y	Y	Y	Y	Y	Y	Y	Y
316 STAINLESS STEEL	Y	Y	Y	Y	Y	Y	Y	Y
CHROME-PLATED BRASS-CDA 360	N	Y	Y	Y	Y	Y	Y	Y
POLYMERS								
ABS	N	N/A	Y	Y	N	Y	Y	N
ACETAL	Y	Y	Y	Y	Y	N	N	N
LDPE	Y	Y	Y	Y	N	Y	Y	N
NYLON	Y	N	N	Y	N	N	N	N
POLYCARBONATE	Y	Y	Y	Y	Y	Y	Y	Y
POLYPROPYLENE	Y	Y	Y	Y	N	Y	Y	N
POLYSULFONE	Y	Y	Y	Y	Y	Y	Y	Y
ELASTOMERS								
NITRILE/BUNA-N	Y	Y	Y	N	N	Y	Y	Y
SILICONE	Y	Y	Y	Y	Y	Y	Y	Y
KALREZ®	Y	Y	Y	Y	Y	N	N	Y
EPR/EPDM	Y	Y	Y	Y	Y	Y	Y	Y
FKM/VITON®	Y	Y	Y	N	N	N	N	Y

KEY

Y = **Excellent**, recommended material for this sterilization method
N = **No**, not recommended
N/A = **Not Applicable**

Sterilization Methods

DISINFECTANTS: 70° F (20° C), Formalin, ethyl alcohol, etc. Sterilize coupled or uncoupled.

ETHYLENE OXIDE, EtO: Four hours, 100% EtO @ 110° F (43° C), up to five repetitions, coupled or uncoupled.

AUTOCLAVE: 250° F (121° C), 30 min. max., up to 10 repetitions. Sterilize uncoupled only. Contact CPC for specific material autoclaving capabilities.

ELECTRON BEAM: Maximum cumulative exposure of 50 kilograys. Sterilize coupled or uncoupled.

GAMMA: Maximum cumulative exposure of 50 kilograys. Sterilize coupled or uncoupled.

DRY HEAT: 250° F (121° C), 12 hours, no pressure. Sterilize uncoupled only.

Don't forget: you can always visit www.colder.com for more product information.

Chemical Coupling Material Descriptions

Polymers

Acetal
Acetal thermoplastic (Polyoxymethylene) is strong, lightweight and economical, and is used for a wide variety of chemical and mechanical components. Acetal offers high strength and rigidity over a broad temperature range, low wear, toughness and resistance to repeated use. This material is notable for superior dimensional stability, long-term creep resistance, long-term fatigue resistance and excellent resistance to moisture, chemicals and fuels.

ABS
ABS is an economical medical-grade thermoplastic that withstands gamma and e-beam sterilization. It is commonly used in medical devices. ABS is an amorphous material with good physical properties and high resistance to chemical attack. ABS materials are less resistant to UV rays if directly exposed, but can be used if protected against weather influences.

Polysulfone
Polysulfone thermoplastic is a rigid material with excellent strength, good chemical resistance, withstands repeated sterilization, and higher temperatures than other thermoplastics. Its high hydrolytic stability allows its use in medical applications requiring autoclave and steam sterilization. Mechanically, polysulfone has a fairly high strength even when non-reinforced, allowing its use under high pressure.

Polycarbonate
Polycarbonate thermoplastic is resistant to some chemicals, withstands sterilization and is transparent. It is commonly used in medical devices and offers impact resistance, outstanding dimensional stability and good optical properties. Colder's polycarbonates are specifically chosen to change color when sterilized by gamma or e-beam radiation. Polycarbonate is an amorphous engineering thermoplastic with high mechanical, optical, electrical and thermal properties.

Polypropylene
Polypropylene is an excellent general purpose resin that is highly resistant to chemical attack from solvents and chemicals in harsh environments. In general, polypropylene is resistant to environmental stress cracking, and it can be exposed to challenging environments.

Polyethylene
Polyethylene is a low cost, chemically resistant thermoplastic. It is opaque, and can withstand reasonably high temperatures. Polyethylene, unlike polypropylene, cannot withstand normally required autoclaving conditions. It is resistant to many different solvents, and has a wide variety of applications, particularly where cost is a major factor.

PEEK
Polyetheretherketon (PEEK), a unique semi-crystalline polymer, is a highly temperature resistant engineered thermoplastic with excellent chemical and fatigue resistance. It exhibits superior mechanical and electrical properties. PEEK works effectively as a metal replacement in harsh environments. It is inert to all common solvents and resists a wide range of organic and inorganic liquids. It is an excellent material for a wide spectrum of applications where thermal, chemical and combustion properties and high purity are critical to performance.

PPS
Polyphenylene sulfide (PPS) polymer offers the broadest resistance to chemicals for its market as an advanced engineering plastic. (PEEK and PTFE have better resistance, but are not considered engineering resins.) It has no known solvents below 392° F (200° C) and is inert to steam, strong bases, fuels, and acids. In addition, PPS products are inherently flame retardant. PPS is an excellent alternative to PEEK at lower temperatures and in certain chemicals, e.g., sulfuric acid.

Fluoropolymers

PVDF
Polyvinyliidene fluoride (PVDF) partially fluorinated polymer is a tough engineering thermoplastic with a balance of physical and chemical properties that qualify it for high performance in a wide range of applications. It is mechanically strong and tough, has good ductility and has a broad, useful temperature range. As a fluoropolymer, PVDF is highly resistant to most environmental conditions, including corrosive chemicals, ultraviolet and gamma radiation, and is ideally suited to handling wet or dry chlorine, bromine and other halogens.

PTFE
Polytetrafluoroethylene (PTFE) is a fluorocarbon resin that is chemically resistant to all chemicals and solvents with the exception of some molten metals, molten sodium hydroxide, elemental fluorine, and certain fluorinating agents. PTFE offers chemical resistance and stability at high temperature. It is not suitable for medical applications requiring gamma or e-beam sterilization, and is susceptible to creep due to its soft mechanical properties.

Alloys

Chrome-Plated Brass
A rugged metallic material with an attractive appearance, chrome-plated brass is excellent for higher pressure and temperature. It is easier to machine than steel, and is economically attractive when compared to stainless steel couplings. It is commonly used in instrumentation, air and vacuum line applications.

Die-Cast Zinc
Die-cast zinc is a durable and lightweight (about 20% less than comparable brass) material that withstands high pressure and temperature. It is an economical material for certain high volume applications requiring mechanical strength superior to plastics. Nickel plating provides attractive appearance and adds chemical resistance.

Aluminum
Aluminum is a lightweight metal with an available hard anodized finish for durability. Aluminum is non-toxic, non-magnetic, and non-sparking and is known for its high strength to weight ratio.

Elastomers

EPDM
Ethylene-propylene-diene rubber (EPDM, also sometimes referred to as EPR) is a more chemically resistant family of compounds than buna (nitrile, or NBR) rubbers. Colder uses high quality peroxide cured EPDMs. They provide exceptional resistance to temperatures with a wide range of chemicals, and maintain good resistance to compression set and ozone. EPDM is an ideal, reasonably-priced material for parts requiring a broad resistance to chemicals.

FKM
Fluorocarbon (FKM) is a widely specified fluorinated elastomer seal material, well known for its outstanding resistance to heat, oxidation, weathering, and ozone. It has outstanding resistance to a broad variety of fluids, including: aliphatic and aromatic hydrocarbons, halogenated fluids and strong acids. It has outstanding resistance to compression set and provides sealing performance and longevity unmatched by any non-fluorinated elastomer. These characteristics make FKM the perfect choice for demanding sealing applications.

FFKM (Kalrez®, Chemraz®, Simriz®)
Perfluoroelastomers provide the broadest range of chemical resistance of any elastomeric material, combining the resilience and sealing force of an elastomer with chemical resistance approaching that of PTFE. These critical process seals minimize microcontamination in wet and dry wafer fabrication and pharmaceutical processes. They can be utilized to provide minimal extractable ion content, low particle generation, and high-dimensional stability, making these seals ideal for ultra high purity applications. FFKM is the preferred solution for the most difficult sealing problems in many industries, particularly fluid handling.

PFA & FEP Encapsulated Seals
Encapsulated seals are a hybrid seal combining an elastomeric core material with a fluoropolymer jacket typically made from PFA, FEP or some other compound. The idea is to combine the resiliency of the elastomer with the superior chemical resistance of the fluoropolymer to achieve a seal that is lower cost than a pure fluoroelastomer FFKM seal. Applications are limited, but where appropriate, Colder uses these types of seals to achieve high chemical performance at a lower cost.

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Colder Patent Statement: Colder Products Company takes pride in its innovative quick disconnect coupling solutions, many of which have been awarded United States and International patents. Colder Products Company has a strong tradition of leadership in the quick disconnect market, and aggressively pursues and protects its proprietary information and intellectual property. In cases where it is practical and as a benefi t to its customers, Colder Products Company has licensed its proprietary technology. Please contact Colder Products to discuss your unique needs.

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