

Sanitary

dry-disconnect
couplings for the
Pharmaceutical and
Biotech Markets



**Stainless Steel 316
and
Hastelloy C materials**



Solutions Providers to the Pharmaceutical & Biotech Markets



Whether you are a small-scale lab, medium sized batch processor, or large manufacturer, we offer the right dry-disconnect coupling to suit your needs – with full support and validation from start to finish.

Beware! There are many so called “sanitary” dry-disconnect (dry-break) couplings on the market today. But most of them have *unpolished* internal finish that is unacceptable in sanitary applications. These couplings are usually based on poppet valve or ball valve designs. By nature, these couplings are not sanitary because they can trap liquid and allow bacteria to germinate. A poppet valve will always contain a dead volume of liquid, no matter what, and a ball valve design allows a dead space between the ball and the body.

In the ball valve design, some manufacturers have attempted to *eliminate* the dead space by inserting plastic shims (PTFE fillers) around the ball. The problem with fillers is that you cannot be 100% sure if you have completely *filled* in the dead space. It would be impossible to determine the exact thickness required for the filler because of variations in the cast body and ball dimensions. If you assemble the body using a slightly thicker filler, the coupling will jam and make it impossible to turn the handle. If the filler is slightly thinner, then certainly there would be a small void around the ball – enough for the liquid to seep into the void and create a dead volume for bacteria to germinate.

Dry Link sanitary polished couplings in sizes 1/2" through 4" are the only true sanitary, drip-free couplings available today because of their simple butterfly design. The smooth mirror-polished bore has no voids, dead spaces, crevices, or fillers that could trap bacteria. Easily drainable and sanitized using steam or other methods such as CIP, SIP, etc., our sanitary couplings are routinely specified in pharmaceutical, biotech, semiconductor, food, and cosmetic industries where ultra cleanliness is required.

Dry Link sanitary couplings are usually specified with wetted internal components *polished* to 20 RA micro-inch mirror finish, although we also offer unpolished internals at economy prices. Wide choice of sizes, body & seal materials, end connections and with full material test certifications (MTR), FDA & USP certifications are available. Other options such as extra fine inside polish, and outside polish to matte finish. We also offer *keyed* sanitary couplings for preventing accidental cross-contamination of fluids. Please see details in our comprehensive Product Catalog or visit us at www.drylink.com for a video demonstration of our couplings in action!

Dry Disconnect Couplings



*Safe • Easy • Fast
Transfer of fluids*

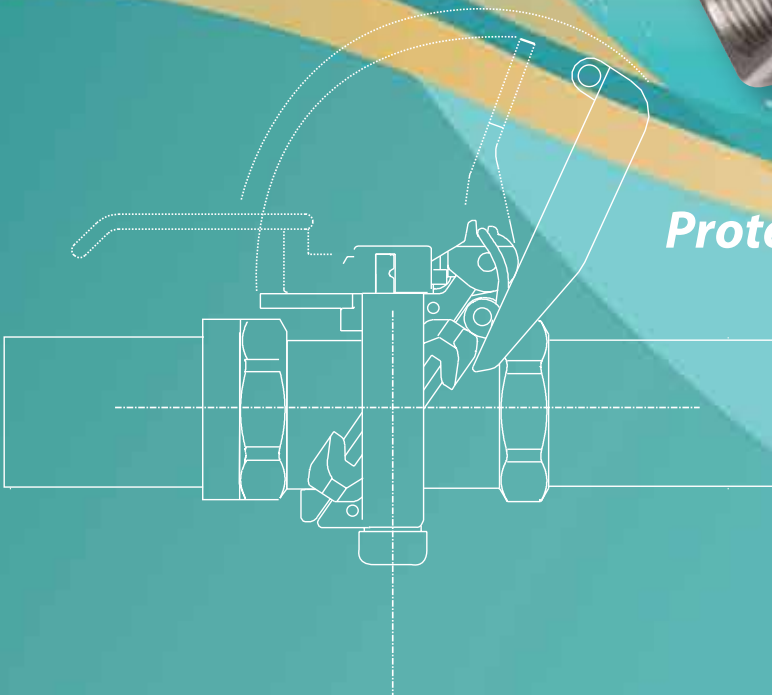
**NO
DRIPS**



Sanitary Coupling

Standard Coupling

Protect environment and employees



- Standard Couplings
- Sanitary Couplings
- Hastelloy C Couplings
- Keyed Couplings

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www.drylink.com

The Dry Link website has much more information than can be included in this catalog. Please see our website for –

- Videos that show how the couplings work
- Chemical selection guide
- Application data
- Maintenance manuals
- Catalogs
- Case histories.

Dry Link applications

- Chemical plants
- Sanitary industry
- Pharmaceutical plants
- Cosmetics
- Adhesive manufacturing
- Paint and varnish manufacturing
- Ink manufacturing
- Printing plants
- Soap and detergent manufacturing
- Rubber and plastics manufacturing
- Pulp and paper industry
- Mining
- Automotive manufacturing
- Electric power
- Railroads
- Wastewater treatment plants
- Chemical waste hauling and incineration
- Fiberglass manufacturing
- Agricultural chemicals
- Nuclear industry
- Liquid transfer terminals
- Petrochemical industry
- Circuit board manufacture
- Oils and solvents
- Fertilizer
- Environmental products
- The list goes on....



High flow through open valve



Dry Link Couplings
Product of the Year
Gold Award
Plant Engineering
magazine



Protect both the environment and employees while avoiding costly clean-ups. Conserve every drop of precious commodities.

No drips

- Protect environment and employees
- Minimize exposure to fluids
- Eliminate costly clean up



No spills

- Secure flow shutoff
- Flow stopped and components sealed before coupling can be separated
- Interlock prevents accidental opening
- Helps meet EPA standards



Better flow

- Smooth bore
- Simple configuration
- Low pressure drop
- Ideal for higher viscosity fluids



Smaller and lighter

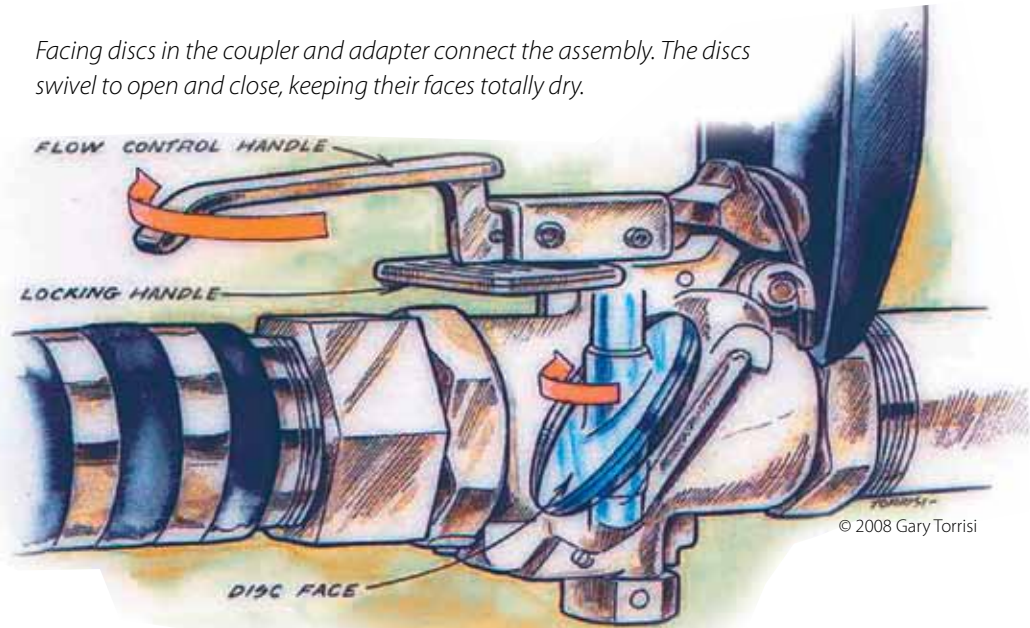
- Compact and lightweight
- Easy to maneuver
- Fits in tight spaces
- Yet still drip free and high flow



No drips, no spills

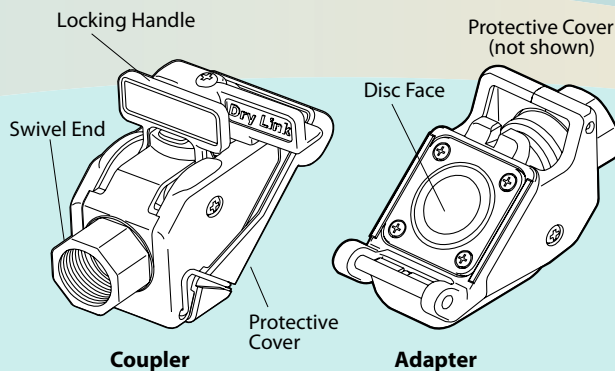
Dry Link couplings trap fluids before they drip onto the floor or ground. Even small drips can pollute or be dangerous or expensive. Disconnected Dry Link couplings are completely drip free.

Facing discs in the coupler and adapter connect the assembly. The discs swivel to open and close, keeping their faces totally dry.

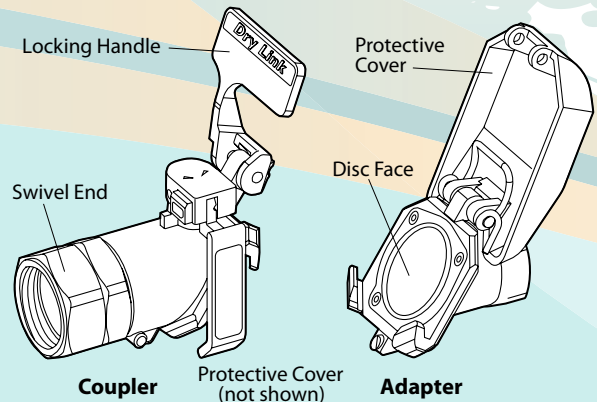


The flow shut-off mechanism resembles a butterfly valve with very low flow restriction. This design enhances flow while also reducing the risk of internal gunk-ups that can lead to connection malfunctions. A safety interlock prevents accidental opening, and a unique sealing arrangement results in the world's most drip-free dry disconnect.

Smaller sizes



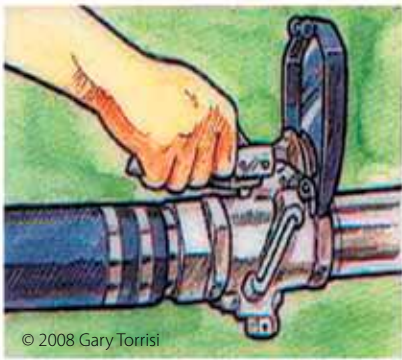
Larger sizes



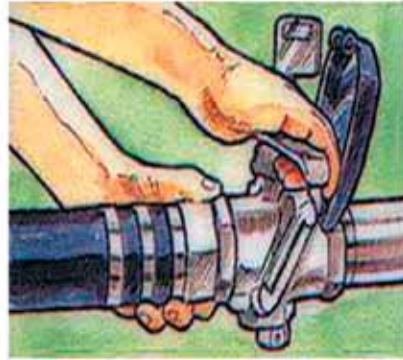


No-hassle operation

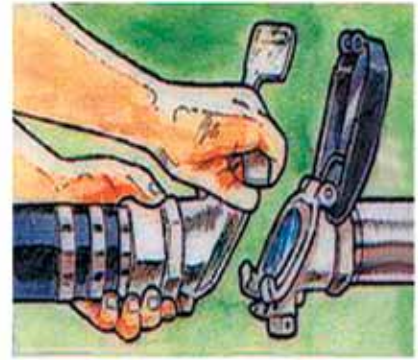
- Built-in swivel end in coupler for easy hose alignment.
- Up to 50% lighter than comparable dry disconnect couplings.
- Easy maintenance. Accessible parts.



Turn flow control handle.



Press release and lift locking handle.



Remove coupler.

Coupling disconnects totally dry, with no drips.

Dry Link is the premier manufacturer of dry-disconnect hose couplings for the chemical, petrochemical, pharmaceutical, biotechnology, and food industries. Ideal for hazardous, high viscosity, high-flow, and hygienic applications.

Our patented couplings are up to 50% lighter and more compact than comparable dry-disconnect couplings. Plus, Dry Link couplings use fewer internal components for maximum flow.

Couplings are available in five sizes, three body materials, four seal materials, and five end connections. We also offer sanitary and keyed couplings.

We understand that the modern world depends on substances that could cause harm if they are not stored or handled properly.

The only true drip-free coupling on the market. Offers a greater protection to workers, eliminates costly clean-ups, and helps you meet EPA standards. Dry Link couplings help reduce green house gases.

Dry Link has served domestic and international customers since the early 90s. We are the world-wide industry leader. We place a high value on listening to our customers and building strong and lasting relationships. We are committed to superior service and quality. Our innovative products and attention to custom orders have earned us a leadership position in this business. We aim for a safer workplace and a cleaner world.

Dry Link dry-disconnect couplings (also called “dry-break couplings”) can be used anywhere a hose is used to transfer fluids, especially where the fluids are hazardous, toxic, corrosive or flammable. This includes bulk fluid transfer applications such as tank trucks, railroad cars, and portable tank containers. It also includes in-plant switching manifolds and moving equipment such as portable batch reactor vessels.

Standard couplings

Standard Dry Link couplings consist of a coupler that can be attached to a hose and an adapter that can be fixed to a tank, manifold, pipe, or other equipment. An automatic interlocking mechanism shuts off both the coupler and the adapter when the coupling is disconnected.

Standard couplings are available in several sizes, end connections, and seal materials.

Sanitary couplings

Sanitary couplings are typically specified in pharmaceutical, biotech, semi-conductor, food, and cosmetic industries where ultra cleanliness is required. Sanitary couplings are internally polished to 20 RA micro-inch mirror finish. The smooth bore has no voids, dead spaces, crevices, or fillers that may trap bacteria. Easily sanitized using steam or other methods. FDA and USP certification is available as an option. Other options are also available, such as extra fine RA micro-inch inside polish, and outside polish to matte finish.

Sanitary couplings are available in the same sizes as standard couplings.

Housing material

All wetted parts of standard and sanitary couplings are Type 316 stainless steel. For services where severe corrosives are a concern, Dry Link couplings are also available with Alloy 20 (Carpenter 20) or Hastelloy C wetted parts construction.



Keyed couplings

Keyed couplings are used in batch process plants and manifolds for preventing accidental cross-contamination of fluids. A mechanical interlock allows only a matching coupler and adapter to be connected. Please see details on page 11.





Selection guide



Housing material	Size, inch (DN)							Housing style		
	½ (15)	¾ (20)	1 (25)	1.5 (40)	2 (50)	3 (80)	4 (100)	Standard	Keyed	Sanitary
Stainless Steel 316	•	•	•	•	•	•	•	•	•	•
Alloy 20 (Carpenter 20)					•	•		•	•	
Hastelloy C			•	•	•			•	•	•

Seal material	Size, inch (DN)							Housing style		
	½ (15)	¾ (20)	1 (25)	1.5 (40)	2 (50)	3 (80)	4 (100)	Standard	Keyed	Sanitary
Fluoroelastomer (FKM, Viton®)	•	•	•	•	•	•	•	•	•	•
EPDM	•	•	•	•	•	•	•	•	•	•
PTFE (Teflon®)	•	•	•	•	•	•	•	•	•	•
Perfluoroelastomer (FFKM, Chemraz®, Kalrez®)	•	•	•	•	•	•	•	•	•	•

End connection	Size, inch (DN)							Housing style		
	½ (15)	¾ (20)	1 (25)	1.5 (40)	2 (50)	3 (80)	4 (100)	Standard	Keyed	Sanitary
Female threaded (NPT or BSPP)	•	•	•	•	•	•	•	•	•	•
Butt weld	•	•	•	•	•	•	•	•	•	•
Flanged	•	•	•	•	•	•	•	•	•	•
Triclover*	•	•	•	•	•	•	•	•	•	•

* Triclover end connections are normally made to US standard. By special request, they may be made to DIN standard. Custom end connections are also available.

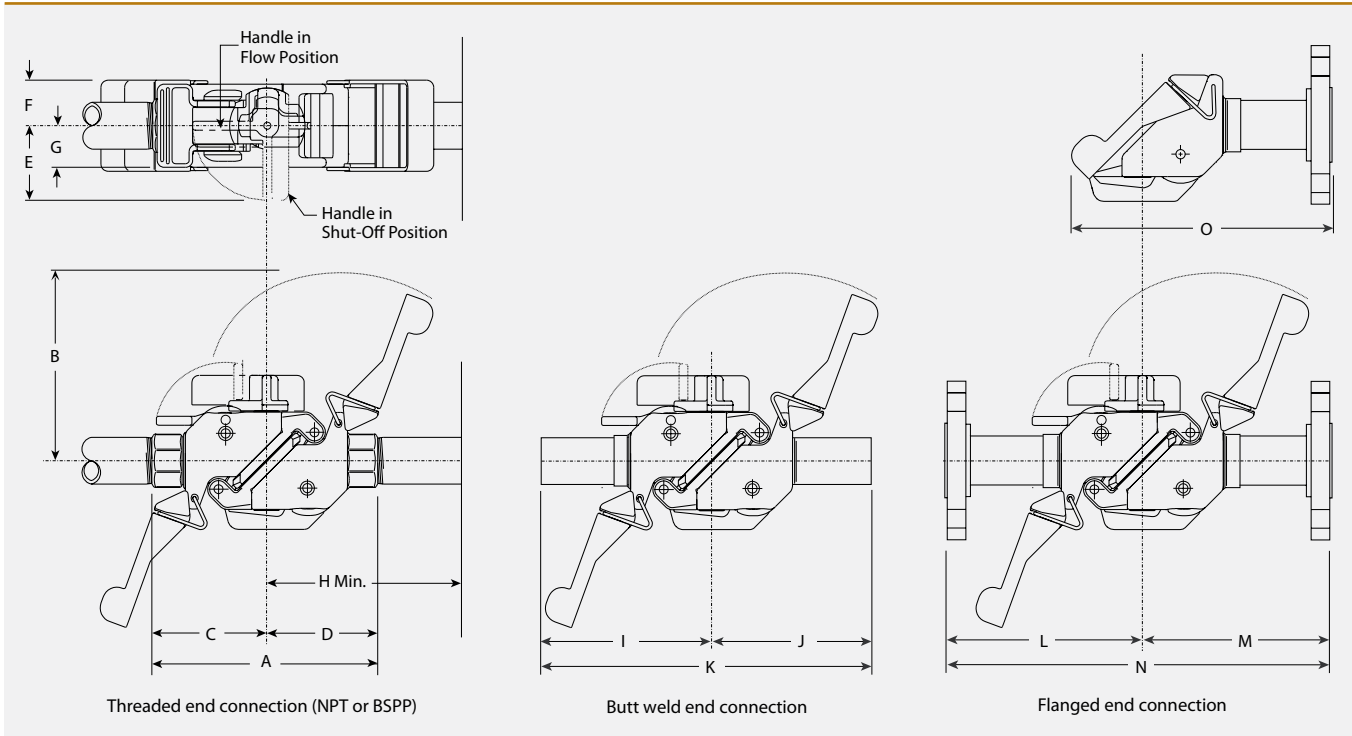
Chemical compatibility guide

Please see the Dry Link website for information about compatibility with a wide range of chemicals.

www.drylink.com

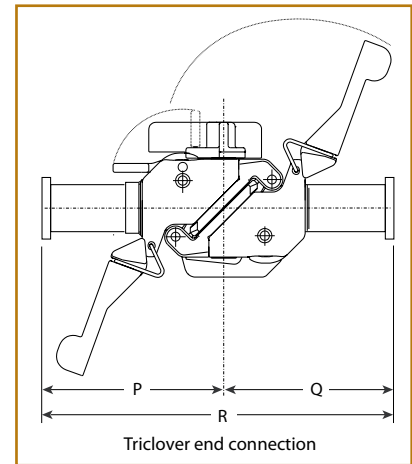
Standard and Sanitary Couplings $\frac{1}{2}$ " (DN 15), $\frac{3}{4}$ " (DN 20), 1" (DN 25) & 1½" (DN 40)

Couplers include a standard built-in swivel. Optional swivel is available for adapters. Available in Stainless Steel 316 housing material. For Hastelloy C, please see page 10.



Weight lb/kg

Nominal size	Threaded end		Butt weld		Flanged		Triclover	
	Coupler	Adapter	Coupler	Adapter	Coupler	Adapter	Coupler	Adapter
$\frac{1}{2}$ ", $\frac{3}{4}$ ", 1"	2.0	1.8	3.1	2.8	5.3	5.0	3.1	2.8
DN 15, 20, 25	0.9	0.8	1.4	1.3	2.4	2.3	1.4	1.3
1½"	3.4	3.1	5.0	4.6	7.4	7.0	5.0	4.6
DN 40	1.5	1.4	2.3	2.1	3.4	3.4	2.3	2.1



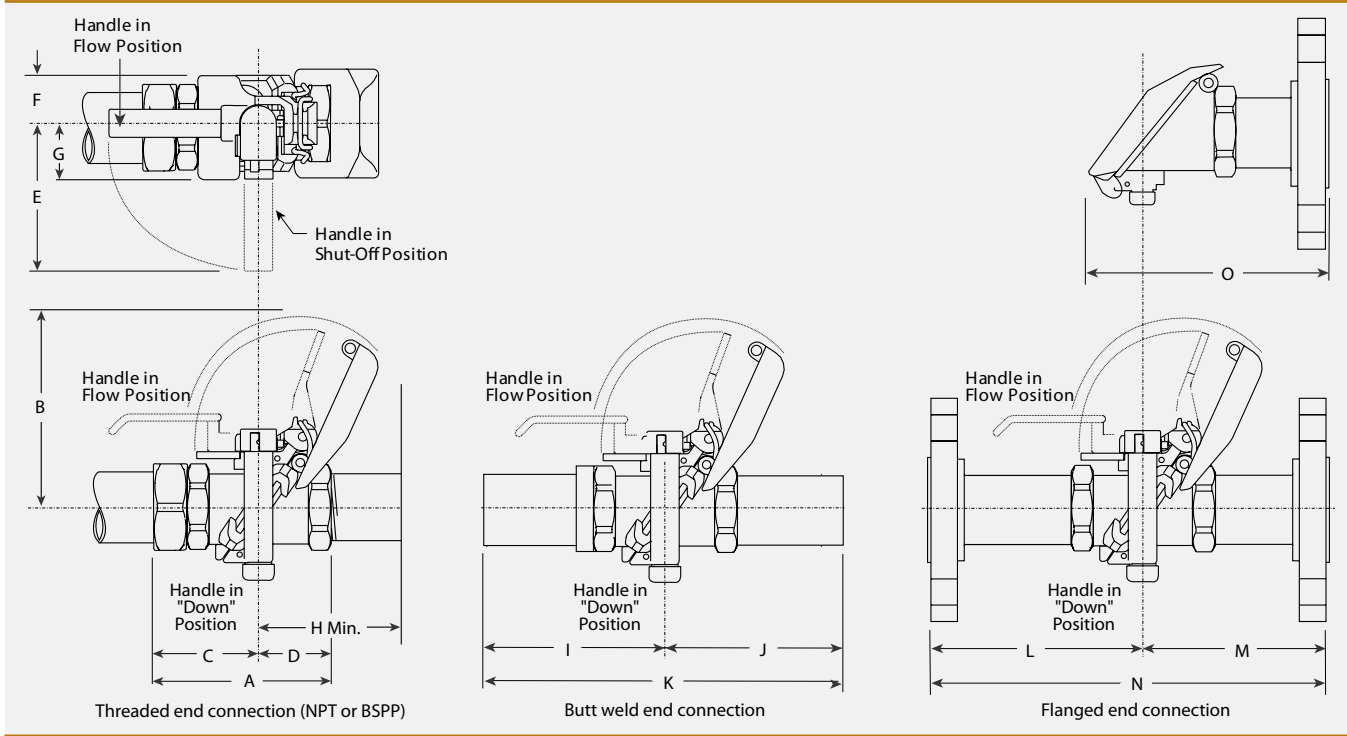
Dimensions inches/mm

Nominal size	All units								Butt weld			Flanged				Triclover		
	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R
$\frac{1}{2}$ ", $\frac{3}{4}$ ", 1"	6.26	5.31	3.16	3.10	2.10	1.17	1.17	3.10	6.25	5.85	12.10	5.55	5.13	10.68	6.80	4.56	4.56	9.12
DN 15, 20, 25	159	135	80	79	53	30	30	79	169	149	307	141	130	271	173	116	116	232
1½"	7.40	6.76	3.75	3.65	2.50	1.42	1.42	3.65	8.03	7.63	15.66	7.03	6.63	13.66	8.75	5.12	5.12	10.25
DN 40	188	171	95	93	64	36	36	93	204	194	398	179	168	347	222	130	130	260



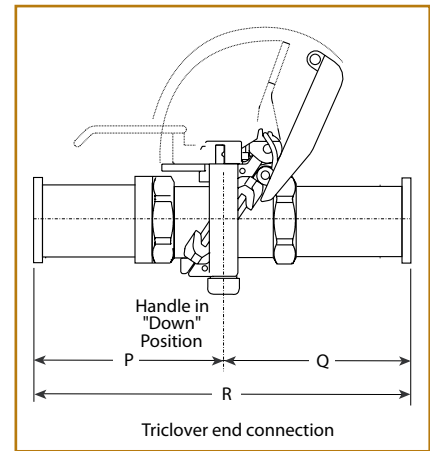
Standard and Sanitary Couplings 2" (DN 50), 3" (DN 80) & 4" (DN 100)

Couplers include a standard built-in swivel. Optional swivel is available for adapters. Available in Stainless Steel 316 and Alloy 20 housing materials. For Hastelloy C, please see page 10.



Weight lb/kg

Nominal size	Threaded end		Butt weld		Flanged		Triclover	
	Coupler	Adapter	Coupler	Adapter	Coupler	Adapter	Coupler	Adapter
2"	5.0	3.0	7.0	5.0	11.5	9.0	7.0	5.0
(DN 50)	2.3	1.4	3.2	2.3	5.2	4.1	3.2	2.3
3"	14.0	9.0	16.5	11.5	27.0	21.3	16.5	11.5
(DN 80)	6.4	4.1	7.5	5.2	12.2	9.7	7.5	5.2
4"	17.0	13.0	18.3	13.3	32.5	26.8	18.3	13.3
(DN 100)	7.7	5.9	8.3	6.1	14.7	12.2	8.3	6.1

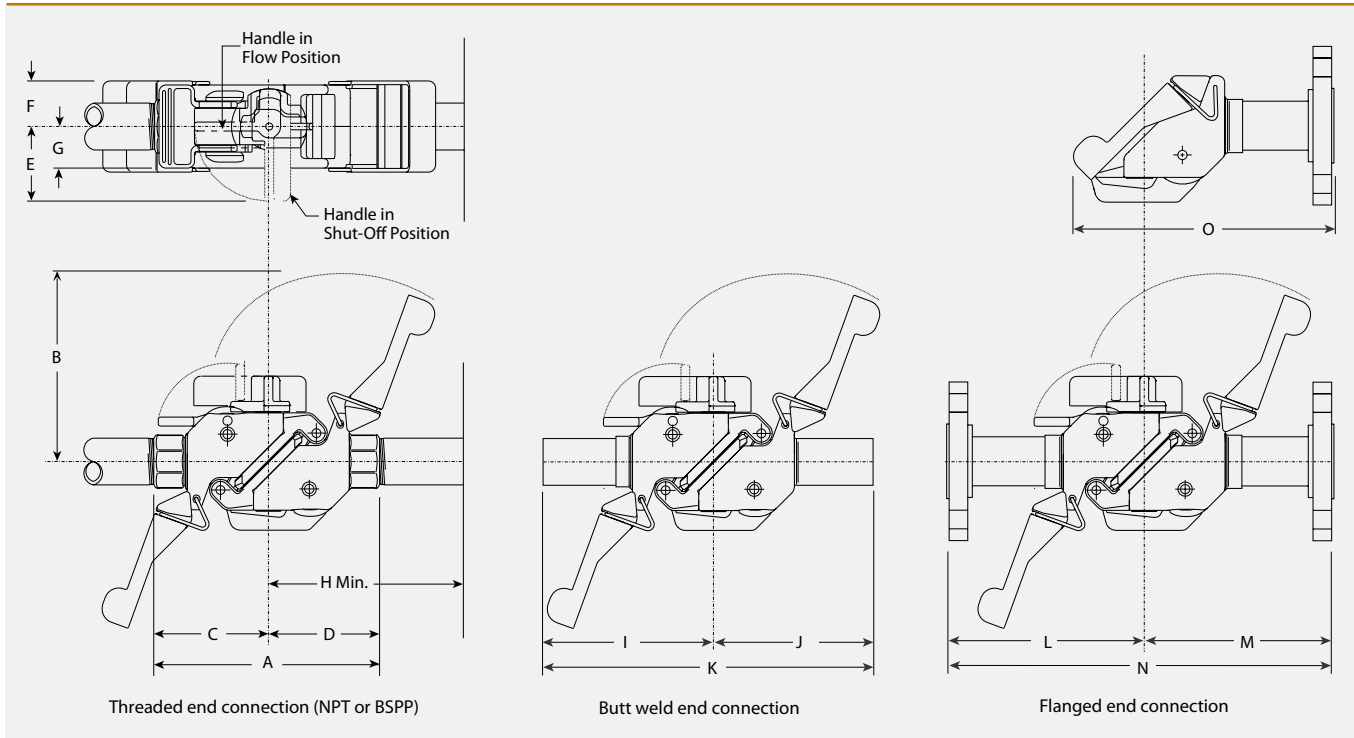


Dimensions inches/mm

Nominal size	All units								Butt weld			Flanged				Triclover		
	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R
2"	6.26	6.50	3.73	2.53	5.25	1.70	2.00	5.00	8.90	8.56	17.46	8.00	6.56	14.59	8.40	4.00	4.00	8.00
(DN 50)	159	165	95	64	133	43	51	127	278	217	495	255	167	421	203	102	102	204
3"	8.54	9.88	5.04	3.50	7.38	2.35	2.65	7.00	13.27	12.56	25.83	11.06	7.56	18.62	10.25	7.29	5.75	13.04
(DN 80)	217	251	130	89	187	60	67	178	337	319	656	281	192	473	241	185	146	331
4"	12.54	9.88	7.04	5.50	7.38	2.35	2.65	7.00	13.27	12.56	25.83	11.06	7.56	18.62	10.25	9.54	8.00	17.54
(DN 100)	319	251	179	140	187	60	67	178	337	319	656	281	192	473	241	242	203	446

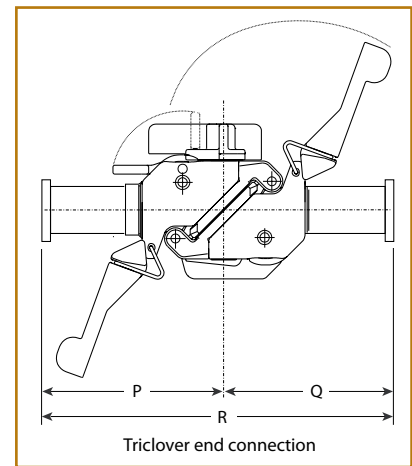
Hastelloy C Couplings 1" (DN 25), 1½" (DN 40), & 2" (DN 50)

Dry Link couplings with Hastelloy C wetted parts are especially designed for highly corrosive applications.



Weight lb/kg

Nominal size	Threaded end		Butt weld		Flanged		Triclover	
	Coupler	Adapter	Coupler	Adapter	Coupler	Adapter	Coupler	Adapter
1"	3.4	3.1	5.0	4.6	7.4	7.0	5.0	4.6
DN 25	1.5	1.4	2.3	2.1	3.4	3.4	2.3	2.1
1½"	3.4	3.1	5.0	4.6	7.4	7.0	5.0	4.6
DN 40	1.5	1.4	2.3	2.1	3.4	3.4	2.3	2.1
2"	4.9	3.5	5.7	5.3	9.4	9.0	Contact Dry Link	Contact Dry Link
DN 50	2.2	1.6	2.6	2.4	4.3	4.1	Contact Dry Link	Contact Dry Link



Dimensions inches/mm

Nominal size	All units								Butt weld			Flanged				Triclover		
	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R
1"	7.40	6.76	3.75	3.65	2.50	1.42	1.42	3.65	8.03	7.63	15.66	7.03	6.63	13.66	8.75	5.12	5.12	10.25
DN 25	188	171	95	93	64	36	36	93	204	194	398	179	168	347	222	130	130	260
1½"	7.40	6.76	3.75	3.65	2.50	1.42	1.42	3.65	8.03	7.63	15.66	7.03	6.63	13.66	8.75	5.12	5.12	10.25
DN 40	188	171	95	93	64	36	36	93	204	194	398	179	168	347	222	130	130	260
2"	9.37	6.76	5.16	4.21	2.50	1.42	1.42	3.65	9.44	8.19	17.66	8.44	7.19	15.63	9.31	Contact Dry Link	Contact Dry Link	Contact Dry Link
DN 50	238	171	131	107	64	36	36	93	240	208	448	214	183	397	236	Contact Dry Link	Contact Dry Link	Contact Dry Link

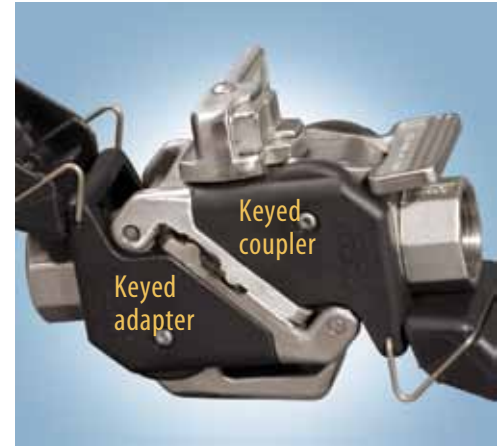


Keyed Couplings

- Prevent accidental connections and cross contamination.
- Matched sets of couplers and adapters with mechanical keys.
- Keyed units will not latch onto standard non-keyed units.

½" (DN 15), ¾" (DN 20), 1" (DN 25) & 1½" (DN 40) (SS316)
 1" (DN 25), 1½" (DN 40) & 2" (DN 50) (Hastelloy C)

For a particular key code, custom-machined matched couplers and adapters can latch only onto each other. Coupler keys are designated as 1C, 2C, 3C, etc., and adapter keys as 1A, 2A, 3A, etc. So a coupler stamped with key 1C will connect only with an adapter stamped with key 1A. When ordering, please specify key code numbers of your choice.

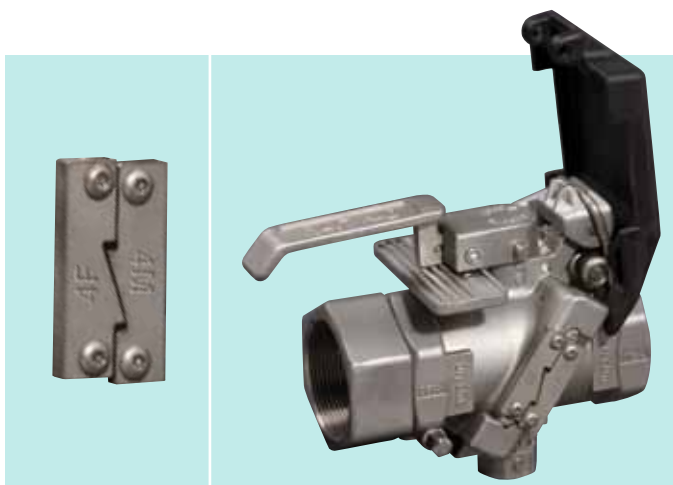


2" (DN 50), 3" (DN 80), & 4" (DN 100) (SS316 and Alloy 20)

For 2", 3", and 4" size couplings, each coupler and adapter of the set has an attached key on each side of the body. Coupler keys are designated 1F, 2F, 3F, etc. and the adapter keys 1M, 2M, 3M, etc. These designations are stamped on the keys themselves. Keys are field replaceable.

One key (for example, 5F) is fitted to the left-hand side and one (for example, 4F) to the right-hand side of a coupler to give the coupler a unique designation 5FL/4FR. The mating adapter for this coupler will have a unique designation of 5ML/4MR. Each combination is given a set code, in this case set code "T". When ordering, please specify the set code of your choice.

Set code	Coupler		Adapter	
	Marking on left key	Marking on right key	Marking on left key	Marking on right key
A	1F	1F	1M	1M
B	1F	2F	1M	2M
C	1F	3F	1M	3M
D	1F	4F	1M	4M
E	2F	1F	2M	1M
F	2F	2F	2M	2M
G	2F	3F	2M	3M
H	2F	4F	2M	4M
I	3F	1F	3M	1M
J	3F	2F	3M	2M
K	3F	3F	3M	3M
L	3F	4F	3M	4M
M	4F	1F	4M	1M
N	4F	2F	4M	2M
O	4F	3F	4M	3M
P	4F	4F	4M	4M
Q	5F	1F	5M	1M
R	5F	2F	5M	2M
S	5F	3F	5M	3M
T	5F	4F	5M	4M



Maximum working pressure

Nominal size	Stainless 316 and Alloy 20	Hastelloy C
½" (DN 15), ¾" (DN 20) & 1" (DN 25)	210 psi (14.3 bar)	210 psi (14.3 bar)
1½" (DN 40)	210 psi (14.3 bar)	210 psi (14.3 bar)
2" (DN 50)	150 psi (10.3 bar)	210 psi (14.3 bar)
3" & 4" (DN 80 & DN 100)	120 psi (8.3 bar)	Not applicable

For one-time field test only, the maximum joint working pressure may be increased to 1½ times the figures shown.

Bending moments (coupled assembly)

Maximum 200 ft-lb. (271 n•m) at the swivel

Vacuum

Tested to 28" (711 mm) Hg vacuum in all positions without leakage.

Operating temperature range

Fluoroelastomer (Viton®) or EPDM seals	-20°F to +230°F (-29°C to +110°C)
PTFE seals	+20°F to +230°F (-7°C to +110°C)

Contact Dry Link for higher or lower temperature limit requirements.

Wetted metal parts*

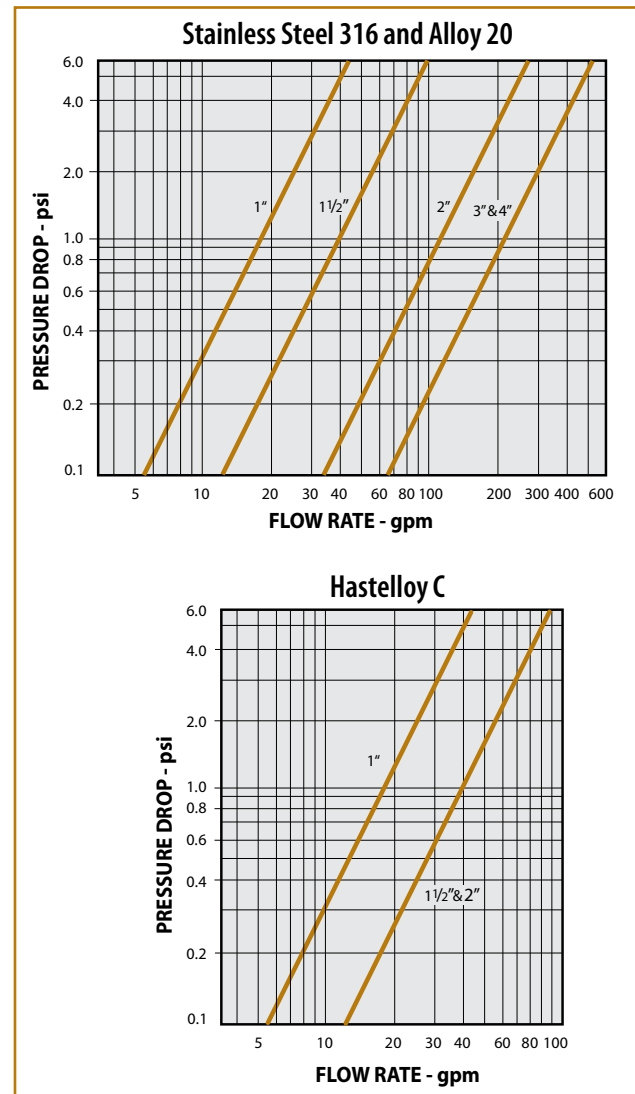
Standard	All 316 stainless steel ASTM A351, Grade CF8M
Optional	Alloy 20 ASTM A351, Grade CN7M
Optional	Hastelloy C ASTM A494, Grade CW2M

*Disc is electroless nickel plated to reduce galling.

Seals

Fluoroelastomer (FKM, Viton®)	Typically used for oxidizing acids, petroleum oils, halogenated hydrocarbons, lubricants, hydraulic fluids, or organic liquids.
EPDM	Typically used with dilute acids, ketones, or alcohol.
PTFE	Typically used with most chemicals and solvents.
Perfluoroelastomer (FFKM/Chemraz®/Kalrez®)	Typically used for higher temperatures and for fluids that have suspended grit.

For special applications and optional materials, please contact Dry Link. For details on seal materials, please contact us.





How to order

Please order by specifying component, size, housing material, main seal material, end connection, and any special requirements. Special tube ends and metric flanges are also available.

Component	Size	Housing material	Main Seal material	End connection	Special requirements
Coupler (Style 250)	½" (DN 15)	SS 316	Fluoroelastomer (FKM, Viton®)	NPT (female)	Sanitary with 20 RA polished internals
	¾" (DN 20)	Alloy 20		BSPP (female)	
	1" (DN 25)	Hastelloy C	EPDM	Butt weld*	FDA or USP approved seals
	1½" (DN 40)		PTFE	Flanged** (ANSI Class 150)	Keyed couplings
	2" (DN 50)		Perfluoroelastomer (FFKM/Chemraz®/Kalrez®)		Certification documentation
	3" (DN 80)			Triclover	Remote indication
	4" (DN 100)				
Adapter (Style 260)	½" (DN 15)	SS 316	Fluoroelastomer (FFKM, Viton®)	NPT (female)	Sanitary with 20 RA polished internals
	¾" (DN 20)	Alloy 20		BSPP (female)	
	1" (DN 25)	Hastelloy C	EPDM	Butt weld*	FDA or USP approved seals
	1½" (DN 40)		PTFE	Flanged** (ANSI Class 150)	Keyed couplings
	2" (DN 50)		Perfluoroelastomer (FFKM/Chemraz®/Kalrez®)		Optional built-in swivel on adapter
	3" (DN 80)			Triclover	Certification documentation
	4" (DN 100)				Remote indication
Repair Parts	Please refer to maintenance manuals for ordering parts.				

*Schedule 40 construction **Metric (DN) flanges also available by special order. Not all sizes available for all housing materials - see page 7 for details.

Certification documentation

All our couplings are individually and rigorously tested for leaks before being released for sale. In addition, we can provide certification documentation for our couplings.

- Material test certification (heat lot codes with chemical and physical properties)
- Seal material certification (FDA and USP certifications)
- Certificates of conformance
- Production test certificates (pressure test certificates)
- Certified drawings

Special requirements

We understand that you may have special requirements not covered by our standard products. Our engineering staff welcomes the challenge of your unique requirements. Please contact us. We pride ourselves on the many custom jobs we have done in the past.

Remote position indicator

For added security, sensors can be mounted on Dry Link couplings that send an electric signal to a remote control room. The signal can indicate when a coupler is latched onto an adapter or when a coupler is opened or closed by an operator. Please contact us about your application.



Rail Cars



Intermodal Bulk Containment





Loading and Switching Racks



Bulk Transport



ISO Containers



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Teflon®, Viton® and Kalrez® are registered trademarks of Dupont Dow Elastomers Company.
Chemraz® is a registered trademark of Green Tweed Company.

Help keep our planet green

Dry Link is a global company, with products in place on all continents. As responsible citizens of this planet, our customers are choosing environmentally friendly products such as Dry Link couplings to help reduce global warming, improve deteriorating ecology, and save disappearing wildlife. We can't solve the climate crisis alone, but we can take small steps together. Dry Link couplings help keep the planet green . . . Go for the GREEN!



Chemicals may cost only pennies per gallon (until they drip and cost thousands in fines)

You can avoid big fines by using Dry Link couplings. These dry disconnect couplings use a unique patented drip-free design to trap chemicals before they leak on the ground or floor. You will avoid costly cleanups while protecting both workers and the environment. Plus, our couplings are compact and lightweight for easy handling and use fewer internal components for maximum flow.



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