

CONNECTIONS for LIQUID COOLING

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BENEFITS OF Connections for Liquid Cooling

CPC's couplings are designed with a variety of features that provide safe and secure disconnects for protecting critical fluid applications:

- Automatic non-spill shutoff valves help keep electronics safe by eliminating drips
- Integral terminations result in fewer potential leak points, shorter assemblies and faster installations
- Multiple options for materials, configurations, sizes and valves
- Custom solutions to meet unique application needs

Protect your valuable electronics with the unmatched design, quality and reliability of CPC quick disconnect couplings. CPC's quick disconnect couplings for liquid cooling applications provide ultra-reliable, drip-free connections and disconnections.

The leader in connection technology, CPC has been delivering quick disconnect couplings for liquid cooling of electronics for over 20 years. Applications for CPC's liquid cooling connections include PCs, supercomputers, data centers, chillers, medical equipment and many others that require quality and performance for critical fluid handling solutions.



Attributes for Reliability

Understanding your application is the key to selecting the proper connection. When selecting quick disconnect couplings for liquid cooling it is important to look for the following five attributes to ensure reliability:

ROBUST DESIGN	Liquid cooling system quick disconnect couplings need to be durable, robust and be able to withstand long periods of connection before disconnection. Couplings should also be designed for low pressure drop in order to minimize flow restriction.
DRY DISCONNECT Capability	Dry disconnect couplings reduce spillage of water or coolant to near zero, giving technicians the confidence to connect and disconnect couplings without drips that can damage or destroy equipment.
RESILIENT SEALS	Couplings used in liquid cooling applications remain in a connected state for extended periods. Upon disconnection and reconnection, they need to function perfectly so there are no drips or leaks of coolants. Seals need to have high reliability.
EASE OF USE	It is important to be able to easily disconnect the cooling loops from servers with no spills. Valves on the coupling need to reliably close when disconnected.
MATERIALS Compatibility	Determine whether the coolant is compatible with the connector. Compatibility can be ensured by using quick disconnect couplings designed specifically for liquid cooling.

CONNECTIONS FOR LIQUID COOLING







LQ2: Provides ultra-reliable, dripless connections and disconnections that protect valuable electronics. *Material:* Chrome-plated brass *Tubing ID Sizes:* 1/4" ID (6.4 mm ID)



NS212: Twist-to-connect design features non-spill valves designed to provide fast, safe and virtually leakfree fluid line connections. *Material:* Glass-filled polypropylene *Tubing ID Sizes:* 1/8" to 1/4" (3.2mm to 6.4mm)



NS4: Non-spill coupling that virtually eliminates spills, minimizes downtime and enhances operator safety.

Material: Glass-filled polypropylene, ABS Tubing ID Sizes: 1/8" to 3/8" (3.2mm to 9.5mm)



LQ4: Liquid cooling non-spill coupling guarantees a secure, reliable connection and dripless disconnect. *Material*: Chrome-plated brass *Tubing ID Sizes*: 1/4" to 3/8" (6.4mm to 9.5mm)



RPLQ4: Latchless rack and panel liquid cooling non-spill coupling guarantees a secure, reliable connection and dripless disconnect. *Material*: Chrome-plated brass *Thread Sizes*: 1/4" to 3/8" NPT or SAE



LQ6: Liquid cooling non-spill coupling guarantees a secure, reliable connection and dripless disconnect. *Material:* Chrome-plated brass *Tubing ID Sizes:* 3/8" to 1/2" ID (9.5mm to 12.7mm ID)



NS6: Durable, yet lightweight construction that features non-spill valves and is compatible with many chemicals. *Material:* Glass-filled polypropylene *Tubing ID Sizes:* 3/8" and 1/2" (9.5mm and 12.7mm)



CUSTOM CAPABILITIES

Connection solutions from CPC add value to your product by making your connections easy to use and more reliable, improving the overall functionality, serviceability and design of the equipment and processes in which they are used.

CPC's engineered solutions team works with customers around the world to innovate on the leading edge of what is possible and deliver unmatched product design and quality to solve fluid handling challenges.

LC SERIES CONNECTOR



CPC's LC Series chrome-plated brass couplings are built tough and made to last in the most demanding applications. Ideal for use with higher temperature or pressure, the LC Series features a one-hand operation for swift and easy connects and disconnects. These couplings offer the flexibility of multiple configurations and terminations to mate with both the PLC acetal and PLC12 polypropylene couplings.

FEATURES	BENEFITS		
Brass material	Durable construction withstands higher pressure and temperature		
Chrome plating	Attractive appearance		
High temperature capability	Versions rated to 400°F (204°C)		
CPC thumb latch One-hand connection and discon			
Compatible	LC mates with PLC Series couplings		







PRESSURE:

Vacuum to 250 psi, 17.3 bar

TEMPERATURE:

-40°F to 180°F (-40°C to 82°C) (High temperature versions available with ratings to 400°F)

MATERIALS:

Main components: Chrome-plated brass Thumb latch: Stainless steel Valves: Acetal Valve springs: 316 stainless steel External springs and pin: Stainless steel

0-rings: Buna-N

FINISH: Chrome

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 CPC's products in their own application conditions.

> Note: High temperature versions available with ratings to 400 F. Call customer service for more information.

Also available in NSF listed versions for foodbased applications, please visit our website for part number information.

NSF

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.

DID YOU KNOW?

O-RING SELECTION IS A KEY DECISION in determining which connector will perform best in your specific application. Understanding the material characteristics and how they can be affected by both the media being transferred and the environment in which the connector is being used is important.

BUNA-N is the most common o-ring seal due to its solvent, oil and water resistance. Temperature range is -40°F to 250°F.

FKM is best suited for applications where chemical and strong acid resistance and/or high temperatures are a requirement. The temperature range is -15°F to 400°F.

 ${\ensuremath{\text{EPDM}}}$ has excellent resistance to polar solvents. This o-ring is not compatible with petroleum. The temperature range is -70°F to 300°F.

SILICONE seals have good temperature resistance. The temperature range is -70°F to 400°F and with special compounds can reach 175°F to 450°F. Silicone can also be supplied with Class VI requirements for medical/bioprocessing applications.

For further information about which o-ring is best suited for your application, please contact CPC Customer Service at 1-800-444-2474 or 651-645-0091.



Liquid Flow Rate Information for Couplings

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





 $\boldsymbol{\Delta P}{=} \ \ \text{Pressure drop across coupling (psi)}$

Specific gravity of liq	uid
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BODIES INSERTS	LC 20004	LCD 20004	LC 20006	LCD 20006	LC 22004	LCD 22004	LC 22006	LCD 22006	LC 24004	LCD 24004	LC 24006	LCD 24006	LC 26004
LC10004	.40	.36	1.05	.58	.83	.56	1.40	.82	1.40	.75	1.40	.77	.83
LCD10004	.36	.31	.73	.48	.66	.41	.82	.50	.80	.45	.77	.45	.81
LC10006	.40	.36	1.05	.60	.83	.56	1.40	.81	1.40	.76	1.40	.76	.83
LCD10006	.37	.31	.81	.47	.70	.43	1.02	.51	.98	.46	.99	.48	.98
LC12006	.38	.36	.84	.63	.74	.56	1.14	.75	1.14	.70	1.14	.72	.74
LCD12006	.38	.33	.78	.49	.68	.44	.84	.49	.81	.43	.82	.44	.81
LC16004	.38	.37	.87	.54	.95	.51	1.00	.70	.95	.64	1.00	.66	.95
LCD16004	.37	.31	.61	.44	.57	.41	.78	.44	.78	.43	.75	.46	.78
LC16006	.38	.37	1.00	.57	.95	.53	1.40	.80	1.40	.71	1.40	.73	1.40
LCD16006	.38	.32	.71	.49	.63	.42	.89	.51	.96	.45	.92	.49	.97

LC DIMENSIONS



Product Dimensions

	PANEL OPENING	PANEL THICKNESS MAXMIN.	PANEL NUT HEX	PANEL NUT THREAD
COUPLING BODIES	see drawing	.50 – .05	13/16	11/16-24UNEF
COUPLING INSERTS	see drawing	.090– .300	13/16	11/16-24UNEF



Coupling Bodies • CHROME-PLATED BRASS

F	TERMINATION IN-LINE PIPE THREAD	TUBING/THREAD SIZE 1/4" NPT 1/4" BSPT 3/8" NPT 3/8" BSPT	METRIC EQ.	<i>STRAIGHT THRU</i> LC10004 LC10004BSPT LC10006 LC10006BSPT	SHUTOFF LCD10004 LCD10004BSPT LCD10006 LCD10006BSPT	A.88.88.88.88.88	B 1.15 1.15 1.15 1.15 1.15
-Alt	PANEL MOUNT FERRULELESS POLYTUBE FITTING, PTF†	1/4" OD, .17" ID 3/8" OD, .25" ID	6.4mm OD, 4.3mm ID 9.5mm OD, 6.4mm ID	LC12004 LC12006	LCD12004 LCD12006	.88 .88	1.87 2.00
- Harris	PANEL MOUNT HOSE BARB	1/4" ID 5/16" ID 3/8" ID	6.4mm ID 7.9mm ID 9.5mm ID	LC16004 LC16005 LC16006	LCD16004 LCD16005 LCD16006	.88 .88 .88	2.00 2.00 2.00
-TFF	PANEL MOUNT MALE THREAD	1/4" NPT		LC15004	LCD15004	.88	1.50
	IN-LINE FERRULELESS POLYTUBE FITTING, PTF†	1/4" OD, .17" ID 3/8" OD, .25" ID	6.4mm OD, 4.3mm ID 9.5mm OD, 6.4mm ID	LC13004 LC13006	LCD13004 LCD13006	.88 .88	1.87 2.00
and the second	IN-LINE HOSE BARB	1/4" ID 5/16" ID 3/8" ID	6.4mm ID 7.9mm ID 9.5mm ID	LC17004 LC17005 LC17006	LCD17004 LCD17005 LCD17006	.88 .88 .88	2.00 2.00 2.00

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

Coupling Inserts • CHROME-PLATED BRASS

	TERMINATION IN-LINE PIPE THREAD	TUBING/THREAD SIZE 1/4" NPT 1/4" BSPT 3/8" NPT 3/8" BSPT	METRIC EQ.	<i>STRAIGHT THRU</i> LC24004 LC24004BSPT LC24006 LC24006BSPT	SHUTOFF LCD24004 LCD24004BSPT LCD24006 LCD24006BSPT	 .72 .72 .87 .87 	B 1.25/1.68 1.25/1.68 1.25/1.55 1.25/1.55	0
P	IN-LINE PIPE THREAD (FEMALE)	1/4" NPT Female 1/4" BSPP Female		LC26004 LC26004BSPP	LCD26004 LCD26004BSPP	.72 .72	1.25/1.90 1.25/1.75	
O PAR	PANEL MOUNT FERRULELESS POLYTUBE FITTING, PTF†	1/4" OD, .17" ID 3/8" OD, .25" ID	6.4mm OD, 4.3mm ID 9.5mm OD, 6.4mm ID	LC40004 LC40006	LCD40004 LCD40006	.94 .94	1.83/1.98 1.96/2.11	
- ALE	PANEL MOUNT HOSE BARB	1/4" ID 5/16" ID 3/8" ID	6.4mm ID 7.9mm ID 9.5mm ID	LC42004 LC42005 LC42006	LCD42004 LCD42005 LCD42006	.94 .94 .94	1.96/2.11 1.96/2.11 1.96/2.11	
OFTER	IN-LINE FERRULELESS POLYTUBE FITTING, PTF†	1/4" OD, .17" ID 3/8" OD, .25" ID	6.4mm OD, 4.3mm ID 9.5mm OD, 6.4mm ID	LC20004 LC20006	LCD20004 LCD20006	.72 .72	1.25/1.87 1.38/1.83	
	IN-LINE HOSE BARB	1/4" ID 5/16" ID 3/8" ID	6.4mm ID 7.9mm ID 9.5mm ID	LC22004 LC22005 LC22006	LCD22004 LCD22005 LCD22006	.63 .63 .63	1.35/2.00 1.35/1.85 1.35/1.83	
	ELBOW FERRULELESS POLYTUBE FITTING, PTF†	1/4" OD, .17" ID 3/8" OD, .25" ID	6.4mm OD, 4.3mm ID 9.5mm OD, 6.4mm ID	LC21004 LC21006	LCD21004 LCD21006	.63 .63	1.28/1.43 1.28/1.43	.96 .83
	ELBOW HOSE BARB	1/4" ID 3/8" ID	6.4mm ID 9.5mm ID	LC23004 LC23006	LCD23004 LCD23006	.63/.62 .63/.62	1.28/1.43 1.28/1.43	1.28 1.28

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.

tNOTE: CPC'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.

LQ2 SERIES CONNECTOR



The LQ2 Series provides ultra-reliable, dripless connections and disconnections that protect valuable electronics. Designed specifically for liquid cooling applications, the LQ2 offers a high-flow capacity to optimize liquid cooling system performance. LQ2 uses a CPC-designed valve technology that eliminates drips and is able to withstand long-term use.

FEATURES	BENEFITS			
Color-coded thumb latch	Simple, intuitive one-handed operation with visual difference in cooling lines			
High flow capacity	Cost-effective fluid handling system			
Redundant multilobed seals	Protection against leakage and ability to withstand extended periods of connection			
Locking hose barb	Quality connection with reinforced tubin used in liquid cooling applications			

Specifications • • •

PRESSURE: Vacuum to 200 psi, 13.8 bar

TEMPERATURE: 0°F to 240°F (-17°C to 115°C)

MAXIMUM FLOW AT DISCONNECT:

 $1.00~{\rm gal/min}$ at $0-100~{\rm psi}$ $0.25~{\rm gal/min}$ at $101-200~{\rm psi}$

MATERIALS:

Main Components: Chrome-plated brass Valves and Thumb latch: Polysulfone Valve Springs (wetted): Stainless steel External springs and pin: Stainless steel Seals: EPDM

COLOR: Chrome with Cool Blue or Warm Red

TUBING SIZES:

1⁄4" ID (6.4mm ID)

LUBRICANTS: Krytox® PFPE

SPILLAGE:

<0.015 cc per disconnect at 0 psi <0.063 cc per disconnect rated at 200 psi

INCLUSION: <0.063 cc per connect

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





These graphs are intended to give you a general idea of the performance capabilities of each product line. Contact CPC for flow of a particular coupling combination

LQ2 SERIES DIMENSIONS



Coupling Bodies • CHROME-PLATED BRASS

TERMINA IN-LINE HOSE BA IN-LINE STRAIGH PORT SA ELBOW L HOSE BA



TION LOCKING RB	<i>TUBING/THREAD SIZE</i> ¼" ID	<i>METRIC EQ.</i> 6.4mm ID	<i>Shutoff</i> Lq2D1704LRED Lq2D1704LBLU	A 0.82	B 2.09	0
T THREAD E	¼ SAE		LQ2D3004RED LQ2D3004BLU	0.82	1.72	
OCKING RB	1⁄4" ID	6.4mm ID	LQ2D3304LRED LQ2D3304LBLU	1.54	1.64	1.03

Coupling Inserts • CHROME-PLATED BRASS



TERMINATION IN-LINE LOCKING HOSE BARB	<i>TUBING/THREAD SIZE</i> ¼" ID	<i>METRIC EQ.</i> 6.4mm ID	SHUTOFF LQ2D2204LRED LQ2D2204LBLU	A 0.562	B 1.96	0
IN-LINE STRAIGHT THREAD PORT SAE	¼ SAE		LQ2D4604RED LQ2D4604BLU	0.625	1.28	
ELBOW LOCKING HOSE BARB	1⁄4" ID	6.4mm ID	LQ2D2304LRED LQ2D2304LBLU	1.313	1.51	1.03

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

NS212 SERIES CONNECTOR



Specifications • • •

PRESSURE:

Vacuum to 45 psi, 3.1 bar

TEMPERATURE: 32°F to 120°F (0°C to 49°C)

MATERIALS:

Main components: Glass-filled polypropylene Valve spring: 316 stainless steel

Seal material: EPDM (FKM/Simriz[®] FFKM optional)

COLOR: Gray with black accent standard

TUBING SIZES:

1/8" and 1/4" ID, 3.2mm and 6.4mm ID

SPILLAGE: <0.025 cc/disconnect

INCLUSION: 0.009 cc/connect

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

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 fail within the shaded area.





NS212 Series couplings were built on the company's proven platform of non-spill valves designed to provide fast, safe and leak-free fluid line connections. The NS212 is an easy, twist-to-connect coupling with an integrated locking mechanism and double-sided non-spill shutoff valves. It is also chemically resistant and ideal for a diverse range of applications including printing and ink management, analytical instrumentation, electronic cooling and chemical handling. NS212 couplings provide high-flow fluid transfer in a small footprint.

Disconnect under pressure with no spills	
Durand also and a surrout the little families and	
applications	
Easy, non-spill connections in tight spaces	
High flow in a small connector	
Minimizes contaminants, reduces the need to purge lines	

NS212 DIMENSIONS



Panel Dimensions

	PANEL OPENING	PANEL THICKNESS MAXMIN.	$\left(\begin{array}{c} + \\ + \end{array} \right)$
COUPLING BODIES	see drawing	.30– .05	
			Ø.688"

Coupling Bodies • POLYPROPYLENE

0))	TERMINATION IN-LINE PIPE THREAD	<i>tubing</i> 1/8" NPT	METRIC EQ.	SHUTOFF NS2D100212	A .71	B 1.74
O Y	IN-LINE FERRULESS POLYTUBE FITTING, PTF†	1/4" OD, .17 ID	6.4mm OD, 4.3mm ID	NS2D130412	.71	1.87
6 7	IN-LINE HOSE BARB	1/8" ID 1/4" ID	3.2mm ID 6.4mm ID	NS2D170212 NS2D170412	.71 .71	1.87 2.05
on	PANEL MOUNT FERRULESS POLYTUBE FITTING, PTF†	1/4" OD, .17 ID	6.4mm OD, 4.3mm ID	NS2D120412	.88	1.87
De	PANEL MOUNT HOSE BARB	1/8" ID 1/4" ID	3.2mm ID 6.4mm ID	NS2D160212 NS2D160412	.88 .88	1.79 2.05

Coupling Inserts • POLYPROPYLENE

1.39
1.32 1.52

The NS212 does not mate with NS2. Contact CPC for additional compatibility information. DESCRIPTION PANEL MOUNT GASKET REPLACEMENT: For sealing panel mount bodies listed above Buna-N 1830300

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

NS4 SERIES CONNECTOR



NS4 Series couplings feature non-spill valves in a compact size, at a great price. Use the NS4 when even a few drops pose problems regarding safety, media cost or environmental regulations. These innovative couplings are lightweight, chemically resistant and easy to use. The non-spill design effectively eliminates spills, minimizes downtime and enhances operator safety. NS4 coulings are also available with optional RFID (Radio Frequency Identification) capability (see page 97).

FEATURES	BENEFITS			
Non-spill design	Disconnect under pressure with no spills			
Color coding	Instant visual differentiation of media lines			
Glass-filled polypropylene	Durable and compatible with many chemicals			
Medical-grade ABS	Gamma sterilizable			



PRESSURE:

Vacuum to 120 psi, 8.3 bar

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

MATERIALS:

Main components and valves: Glass-filled polypropylene with TPV* overmold, ABS with TPE* soft-touch overmold

Thumb latch: Glass-filled polypropylene, ABS

Valve spring: 316 stainless steel

External spring: 316 stainless steel

O-rings: EPDM

COLOR:

Polypropylene: Gray with dark gray overmold standard; gray with red or blue overmold available†

ABS: White with teal overmold

TUBING SIZES:

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

LUBRICANTS: Krytox® PFPE (inert)

SPILLAGE:

<0.10 cc per disconnect at all rated pressures

INCLUSION: 0.26 cc per connect

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

*The overmold material TPV (themoplastic vulcanizate) is used with the NS4 polypropylene couplings. TPV is an alloy of polypropylene thermoplastic and fully vulcanized EPDM rubber. TPV is typically resistant to water, acids and bases. The overmold material TPE (thermoplastic elastomer) is used with the NS4 ABS couplings. TPE is a blend of additives and copolymers in a special formulation that forms extremely durable bonds to the ABS substrate, while offering the traditional properties of soft-touch overmold.

†NOTE: Standard product is gray; color options require a minimum quantities. Please contact CPC for details.







NS4 DIMENSIONS



Coupling Bodies • POLYPROPYLENE / ABS

0	TERMINATION IN-LINE PIPE THREAD	Tubing/Thread Size 1/4" NPT 1/4" BSPT	METRIC EQ.	ABS SHUTOFF NS4D1000406 NS4D10004BSPT06	<i>Polypropylene</i> <i>Shutoff</i> NS4D10004 NS4D10004BSPT	A 1.05 1.05	B 2.31 2.29	
opr	IN-LINE FERRULESS POLYTUBE FITTING, PTF†	1/4" OD, .17" ID 3/8" OD, 1/4" ID	6.4mm OD, 4.3mm ID 9.5mm OD, 6.4mm ID	NS4D1300606	NS4D13004 NS4D13006	1.05 1.05	2.32 2.45	
O O	IN-LINE HOSE BARB	1/8" ID* 1/4" ID 3/8" ID	3.2mm ID* 6.4mm ID 9.5mm ID	NS4D1700206 NS4D1700406 NS4D1700606	NS4D17002 NS4D17004 NS4D17006	1.05 1.05 1.05	2.09 2.34 2.34	
REID	IN-LINE HOSE BARB (RS-232 Interface)	1/8" ID 1/4" ID 3/8" ID	3.2mm 6.4mm 9.5mm		iNS4DR1700200 iNS4DR1700400 iNS4DR1700600	2.15 2.15 2.15	3.49 3.49 3.49	
2 P	IN-LINE HOSE BARB (USB Interface)	1/4" ID 3/8" ID 1/2" ID	6.4mm ID 9.5mm ID 12.7mm ID		iNS4DR1700201 iNS4DR1700401 iNS4DR1700601	2.15 2.15 2.15	3.40 3.40 3.40	

Panel Dimensions

COUPLING

INSERTS

PANEL

OPENING

see drawing

PANEL THICKNESS

Ø .945"

MAX.-MIN.

.25 – .03

Coupling Inserts • POLYPROPYLENE / ABS

S	TERMINATION IN-LINE PIPE THREAD	Tubing/Thread Size 1/4" NPT 1/4" BSPT	METRIC EQ.	ABS SHUTOFF NS4D2400406 NS4D24004BSPT06	<i>POLYPROPYLENE</i> <i>Shutoff</i> NS4D24004 NS4D24004BSPT	A .96 .96	B 1.95 1.95
	IN-LINE FERRULESS POLYTUBE FITTING, PTF†	1/4" OD, .17" ID 3/8" OD, 1/4" ID	6.4mm OD, 4.3mm ID 9.5mm OD, 6.4mm ID	NS4D2000606	NS4D20004 NS4D20006	.96 .96	1.95 2.09
and the	IN-LINE Hose Barb	1/8" ID* 1/4" ID 3/8" ID	3.2mm ID* 6.4mm ID 9.5mm ID	NS4D2200206 NS4D2200406 NS4D2200606	NS4D22002 NS4D22004 NS4D22006	.96 .96 .96	1.73 1.98 1.98
and the	PANEL MOUNT FERRULESS POLYTUBE FITTING, PTF†	1/4" OD, .17" ID 3/8" OD, 1/4" ID	6.4mm OD, 4.3mm ID 9.5mm OD, 6.4mm ID	NS4D4000606	NS4D40004 NS4D40006	1.17 1.17	2.30 2.43
- M	PANEL MOUNT Hose Barb	1/8" ID* 1/4" ID 3/8" ID	3.2mm ID* 6.4mm ID 9.5mm ID	NS4D4200206 NS4D4200406 NS4D4200606	NS4D42002 NS4D42004 NS4D42006	1.17 1.17 1.17	2.07 2.32 2.32
all	PANEL MOUNT HOSE BARB ELBOW	1/4" ID 3/8" ID	6.4mm ID 9.5mm ID		NS4D43004 NS4D43006	1.19 1.19	2.39 2.39
SP	ELBOW HOSE BARB	1/4" ID 3/8" ID	6.4mm ID 9.5mm ID		NS4D23004 NS4D23006	0.96 0.96	2.04 2.04
FID	IN-LINE HOSE BARB (RS-232 Interface)	1/8" ID 1/4" ID 3/8" ID	3.2mm 6.4mm 9.5mm		iNS4DR2200200 iNS4DR2200400 iNS4DR2200600	For produc dimension cpcworldw	t s visit ide.com
	Accessories		DESCRIPTION PANEL MOUNT GASKET panel mount inserts lis	<i>REPLACEMENT:</i> For sealing ted above	<i>MATERIAL</i> EPDM FKM	PART NO 1879800 1889500	1.)

All measurements are in inches (millimeters) unless otherwise noted. Tubing must meet stated inside and outside diameters. PTF fittings are designed for semi-rigid tubing, i.e., polyethylene, nylon, polyurethane, etc. †NOTE: CPC's Ferruleless PTF (polytube fitting) terminations do not require ferrules to achieve a secure connection and are therefore easier to use and reuse. *NOTE: Patented 1/8* ID (3.2mm) hose barb connection has a support shroud allowing a maximum tube OD of 1/4" (6.4mm).

LQ4 SERIES CONNECTOR



LQ4 Series quick disconnect couplings provide ultra-reliable, dripless connections and disconnections that protect valuable electronics. Designed specifically for liquid cooling applications, LQ4 utilizes patent-pending valve technology that eliminates drips and is able to withstand long-term use.

FEATURES	BENEFITS
Non-spill design	Disconnect under pressure with no spills
Redundant sealing when connected	Extra protection from leaks
Color-coding	Instant visual difference in cooling lines
Friction-free valve	Valving system designed for extended periods in connected state
Ruggedness	Able to withstand long-term, repeated use
Rotation allows movement	Eliminates tube kinking





Specifications • • •

PRESSURE: Vacuum to 120 psi, 8.3 bar

TEMPERATURE: 0°F to 240°F (-17°C to 115°C)

MAXIMUM FLOW AT DISCONNECT: 3.0 gal/min, 11.3L/min

MATERIALS:

Main housing components: Chrome-plated brass Valves and thumb latch: Polysulfone Valve spring (wetted): Stainless steel External spring: Stainless steel Seals: EPDM

COLOR:

Chrome with Cool Blue or Warm Red

TUBING SIZES:

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

LUBRICANTS: Krytox® PFPE

SPILLAGE:

0.025 cc per disconnect rated at 0 psi 0.055 cc per disconnect rated at 120 psi

INCLUSION: 0.025 cc per connect

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

These graphs are intended to give you a general idea of the performance capabilities of each product line. Contact CPC for flow of a particular coupling combination.



Infiltec GmbH - Innovative Kupplungssysteme für das Gas- und Flüssigkeitshandling

LQ4 DIMENSIONS



A = Height/DiameterB = Total Length

Coupling Bodies • CHROME-PLATED BRASS

Contraction of the second seco	<i>TERMINATION IN-LINE HOSE BARB</i>	TUBING/THREAD SIZE 1/4" ID 1/4" ID 3/8" ID 3/8" ID	METRIC EQ. 6.4mm ID 6.4mm ID 9.5mm ID 9.5mm ID	SHUTOFF LQ4D17004RED LQ4D17004BLU LD4D17006RED LQ4D17006BLU	(A) 0.98 0.98 0.98 0.98	B 2.49 2.49 2.49 2.49 2.49
	IN-LINE STRAIGHT THREAD PORT SAE	1/4 SAE-4 1/4 SAE-4 3/8 SAE-6 3/8 SAE-6		LQ4D30004RED LQ4D30004BLU LQ4D30006RED LQ4D30006BLU	0.98 0.98 0.98 0.98	2.29 2.29 2.29 2.29 2.29
	IN-LINE PIPE THREAD	1/4" NPT 1/4" NPT 3/8" NPT 3/8" NPT		LQ4D10004RED LQ4D10004BLU LQ4D10006RED LQ4D10006BLU	0.98 0.98 0.98 0.98	2.31 2.31 2.31 2.31 2.31
19	IN-LINE PTF	1/4" ID x 3/8" OD 1/4" ID x 3/8" OD		LQ4D13006RED LQ4D13006BLU	0.98 0.98	2.46 2.46

Coupling Inserts • CHROME-PLATED BRASS

e de	TERMINATION IN-LINE HOSE BARB	TUBING/THREAD SIZE 1/4" ID 1/4" ID 3/8" ID 3/8" ID	METRIC EQ. 6.4mm ID 6.4mm ID 9.5mm ID 9.5mm ID	SHUTOFF LQ4D22004RED LQ4D22004BLU LQ4D22006BLU LQ4D22006RED	A 0.74 0.74 0.74 0.74	B 2.22 2.22 2.22 2.22 2.22 2.22
9F	IN-LINE STRAIGHT THREAD PORT SAE	1/4 SAE-4 1/4 SAE-4 3/8 SAE-6 3/8 SAE-6		LQ4D46004BLU LQ4D46004RED LQ4D46006BLU LQ4D46006RED	0.80 0.80 0.80 0.80	2.02 2.02 2.02 2.02 2.02
-	IN-LINE PIPE THREAD	1/4" NPT 1/4" NPT 3/8" NPT 3/8" NPT		LQ4D24004RED LQ4D24004BLU LQ4D24006RED LQ4D24006BLU	0.80 0.80 0.80 0.80 0.80	2.04 2.04 2.04 2.04
or the	IN-LINE PTF	1/4" ID x 3/8" OD 1/4" ID x 3/8" OD		LQ4D20006RED LQ4D20006BLU	0.80 0.80	2.19 2.19

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





RPLQ4 Series quick disconnect couplings provide

ultra-reliable, dripless connections and disconnections that protect valuable electronics. Designed specifically for rack mounted liquid cooling applications, RPLQ4 utilizes patent-pending valve technology that eliminates drips and is able to withstand long-term use.

Specifications

PRESSURE: Vacuum to 120 psi, 8.3 bar

TEMPERATURE: 0°F to 240°F (-17°C to 115°C)

MAXIMUM FLOW AT DISCONNECT:

3.0 gal/min, 11.3L/min

ENGAGEMENT TOLERANCE

Coupling must be within $1/8^{\scriptscriptstyle \rm T}$ of fully engaged to achieve maximum flow.

MATERIALS:

Main housing components: Chrome-plated brass Valves: Polysulfone

Valve spring (wetted): Stainless steel Seals: EPDM

SCAIS: LE DI

COLOR: Chrome with Cool Blue or Chrome with Warm Red

THREAD SIZES: 1/4" to 3/8" NPT or SAE

LUBRICANTS: Krytox[®] PFPE

SPILLAGE:

0.025 cc per disconnect rated at 0 psi 0.055 cc per disconnect rated at 120 psi

INCLUSION: 0.025 cc per connect

FEATURES

Non-spill design Redundant sealing when connected Color-coding Friction-free valve

Ruggedness Axial engagement tolerance



BENEFITS

Disconnect under pressure with no spills Extra protection from leaks Instant visual difference in cooling lines Valving system designed for extended periods in connected state Able to withstand long-term, repeated use Valves designed to allow full flow even when not fully engaged





These graphs are intended to give you a general idea of the performance capabilities of each product line. Contact CPC for flow of a particular coupling combination.



Coupling Bodies • CHROME-PLATED BRASS

	TERMINATION RACK AND PANEL STRAIGHT THREAD PORT SAE	THREAD SIZE 1/4 SAE-04 1/4 SAE-04 3/8 SAE-06 3/8 SAE-06	METRIC EQ.	SHUT OFF RPLQ4D30004RED RPLQ4D30004BLU RPLQ4D30006RED RPLQ4D30006BLU	A 0.74 0.74 0.74 0.74 0.74	B 2.16 2.16 2.16 2.16 2.16
1	RACK AND PANEL Pipe thread	1/4" NPT 1/4" NPT 3/8" NPT 3/8" NPT		RPLQ4D10004RED RPLQ4D10004BLU RPLQ4D10006RED RPLQ4D10006BLU	0.74 0.74 0.74 0.74	2.18 2.18 2.18 2.18 2.18

Coupling Inserts • CHROME-PLATED BRASS

T	TERMINATION RACK AND PANEL STRAIGHT THREAD PORT SAE	THREAD SIZE 1/4 SAE-04 1/4 SAE-04 3/8 SAE-06 3/8 SAE-06	METRIC EQ.	SHUT OFF RPLQ4D46004BLU RPLQ4D46004RED RPLQ4D46006BLU RPLQ4D46006RED	A 0.80 0.80 0.80 0.80 0.80	B 1.90 1.90 1.90 1.90 1.90
	RACK AND PANEL PIPE THREAD	1/4" NPT 1/4" NPT 3/8" NPT 3/8" NPT		RPLQ4D24004RED RPLQ4D24004BLU RPLQ4D24006RED RPLQ4D24006BLU	0.80 0.80 0.80 0.80 0.80	1.92 1.92 1.92 1.92

LQ6 SERIES CONNECTOR



LQ6 Series couplings closed-system design provides ultra-reliable, dripless connections and disconnections. The first of their kind, the couplings utilize patent-pending valve technology specifically designed for liquid cooling applications.

FEATURES	BENEFITS			
Non-spill design	Disconnect under pressure with no spills			
Redundant sealing when connected	Extra protection from leaks			
Color-coding	Instant visual difference in cooling lines			
Friction-free valve	Valving system designed for extended periods in connected state			
Ruggedness	Able to withstand long-term, repeated use			
Rotation allows movement	Eliminates tube kinking			







PRESSURE: Vacuum to 120 psi, 8.3 bar

TEMPERATURE: 0°F to 240°F (-17°C to 115°C)

MAXIMUM FLOW AT DISCONNECT: 4.0 gal/min, 15.1 L/min

MATERIALS:

Main housing components: Chrome-plated brass Valves and thumb latch: Polysulfone Valve spring (wetted): Stainless steel External spring: Stainless steel Seals: EPDM

COLOR:

Chrome with Cool Blue or Warm Red

TUBING SIZES:

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

LUBRICANTS: Krytox® PFPE

SPILLAGE:

0.05 cc per disconnect rated at 0 psi 0.125 cc per disconnect rated at 120 psi

INCLUSION: 0.42 cc per connect

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

These graphs are intended to give you a general idea of the performance capabilities of each product line. Contact CPC for flow of a particular coupling combination.



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LQ6 DIMENSIONS



A = Height/DiameterB = Total Length

Coupling Bodies • CHROME-PLATED BRASS

O Pro-Just	TERMINATION IN-LINE HOSE BARB	TUBING/THREAD SIZE 3/8" ID 3/8" ID 1/2" ID 1/2" ID	<i>METRIC EQ.</i> 9.5mm ID 9.5mm ID 12.7mm ID 12.7mm ID	SHUTOFF LQ6D17006RED LQ6D17006BLU LQ6D17008RED LQ6D17008BLU	A 1.185 1.185 1.185 1.185 1.185	B 2.73 2.73 2.73 2.73 2.73
()	IN-LINE STRAIGHT THREAD PORT SAE	3/8 SAE-6 3/8 SAE-6 1/2 SAE-8 1/2 SAE-8		LQ6D30006RED LQ6D30006BLU LQ6D30008RED LQ6D30008BLU	1.185 1.185 1.185 1.185 1.185	2.48 2.48 2.50 2.50
a porte	IN-LINE PIPE THREAD	3/8" NPT 3/8" NPT		LQ6D10006RED LQ6D10006BLU	1.185 1.185	2.56 2.56
A A	IN-LINE PTF	3/8" ID x 1/2" OD 3/8" ID x 1/2" OD		LQ6D13008RED LQ6D13008BLU	1.185 1.185	2.50 2.50

Coupling Inserts • CHROME-PLATED BRASS

	TERMINATION IN-LINE HOSE BARB	TUBING/THREAD SIZE 3/8" ID 3/8" ID 1/2" ID 1/2" ID	<i>METRIC EQ.</i> 9.5mm ID 9.5mm ID 12.7mm ID 12.7mm ID	SHUTOFF LQ6D22006RED LQ6D22006BLU LQ6D22008RED LQ6D22008BLU	(A) .93 .93 .93 .93	B 2.47 2.47 2.47 2.47 2.47
0)	IN-LINE STRAIGHT THREAD PORT SAE	3/8 SAE-6 3/8 SAE-6 1/2 SAE-8 1/2 SAE-8		LQ6D46006RED LQ6D46006BLU LQ6D46008RED LQ6D46008BLU	1.025 1.025 1.025 1.025 1.025	2.22 2.22 2.24 2.24 2.24
a for	IN-LINE PIPE THREAD	3/8" NPT 3/8" NPT		LQ6D24006RED LQ6D24006BLU	1.025 1.025	2.30 2.30
a. 7	IN-LINE PTF	3/8" ID x 1/2" OD 3/8" ID x 1/2" OD		LQ6D20008RED LQ6D20008BLU	1.025 1.025	2.52 2.52

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

NS6 SERIES CONNECTOR



NS6 Series couplings couplings feature non-spill valves at a great price. Use the NS6 when even a few drops of spillage pose problems regarding safety, media cost or environmental regulations. These innovative couplings are lightweight, chemically resistant and easy to use. The non-spill design virtually eliminates spills, minimizes downtime and enhances operator safety. Soft touch overmold makes them comfortable in the hand and very attractive.

FEATURES	BENEFITS			
Non-spill design	Disconnect under pressure with no spills			
Color coding	Instant visual differentiation of media lines			
Glass-filled polypropylene	Durable and compatible with many chemicals			
CPC thumb latch	One-hand connection and disconnection			



PRESSURE:

Vacuum to 120 psi, 8.3 bar

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

MATERIALS:

Main components and valves: Glass-filled polypropylene with TPV* soft touch overmold

Thumb latch: Glass-filled polypropylene

Valve spring (wetted): 316 stainless steel

External spring: 316 stainless steel O-rings: EPDM

COLOR:

Gray with dark gray overmold standard; gray with red or blue overmold available†

TUBING SIZES:

3/8" and 1/2" ID, 9.5mm and 12.7mm ID

LUBRICANTS: Krytox® PFPE (inert)

SPILLAGE:

 ${\sim}0.03~{\rm cc}$ per disconnect @ 0 psi, ${\sim}0.30~{\rm cc}/$ disconnect @ 120 psi

INCLUSION: 0.42 cc per connect

*The overmold material is a TPV (thermoplastic vulcanizate). This TPV is an alloy of polypropylene thermoplastic and fully vulcanized EPDM rubber. The material is typically resistant to water, acids and bases.

†NOTE: Standard product is gray; color options require a set-up charge and minimum quantities. Please contact CPC for details.







NS6 DIMENSIONS





B = Total Length

Panel Dimensions



Coupling Bodies • POLYPROPYLENE

0.00	TERMINATION IN-LINE PIPE THREAD	<i>Tubing/Thread Size</i> 1/2" NPT 1/2" BSPT	METRIC EQ.	<i>Shutoff</i> NS6D10008 NS6D10008BSPT	A 1.31 1.31	B 3.01 3.01
(Par)	IN-LINE COMPRESSION	1/2" OD	12.7mm OD	NS6D13008	1.31	3.53
0.0	IN-LINE HOSE BARB	3/8" ID 1/2" ID	9.5mm ID 12.7mm ID	NS6D17006 NS6D17008	1.31 1.31	3.16 3.16

Coupling Inserts • POLYPROPYLENE

300	TERMINATION IN-LINE PIPE THREAD	TUBING/THREAD SIZE 1/2" NPT 1/2" BSPT	METRIC EQ.	<i>Shutoff</i> NS6D24008 NS6D24008BSPT	A 1.31 1.31	B 2.44 2.44
- DIA	IN-LINE COMPRESSION	1/2" OD	12.7mm OD	NS6D20008	1.31	3.01
De	IN-LINE HOSE BARB	3/8" ID 1/2" ID	9.5mm ID 12.7mm ID	NS6D22006 NS6D22008	1.31 1.31	2.59 2.59
1 WH	PANEL MOUNT COMPRESSION	1/2" OD	12.7mm OD	NS6D40008	1.50	3.32
A.	PANEL MOUNT Hose Barb	3/8" ID 1/2" ID	9.5mm ID 12.7mm ID	NS6D42006 NS6D42008	1.50 1.50	2.85 2.85
	Accesso	pries	DESCRIPTION PANEL MOUNT GASKET REPLACEMENT: For sealing panel mount bodies listed above		<i>Material</i> Epdm FKM	PART NO. 1884300 1889600
		All measurem Couplings are	ents are in inches (millimet pictured with valves unless	ers) unless otherwise noted. Tub s otherwise noted.	ing must meet stated	inside and outside diameters.