QUICK DISCONNECT COUPLINGS

LIQUID COOLING OF EV CHARGING AND EV FLEET OPERATIONS

CPC®

CPCWORLDWIDE.COM/LIQUIDCOOLING

EV CHARGING KEEPS THE PACE.

According to the International Energy Agency's 2020 EV report, the electric vehicle (EV) market will grow by 36% annually, reaching 245 million vehicles globally in 2030. DC fast and extreme fast charging infrastructure is needed to support this growth. And what's necessary for that?

LIQUID COOLING.

CPC

FAST CHARGING IS HEATING UP.

DC fast charging relies on higher power — over 350kW or more in Extreme Fast Chargers (XFCs). That kind of power generates significant heat. As external converters and EV supply equipment controls are responsible for safely and effectively managing the higher power levels between the charger and an EV, they require effective thermal management.

And this poses another challenge. A DC fast charger necessitates larger conductors. Along with increased charging speed and higher heat, the resulting cables can become bulky and unwieldy.

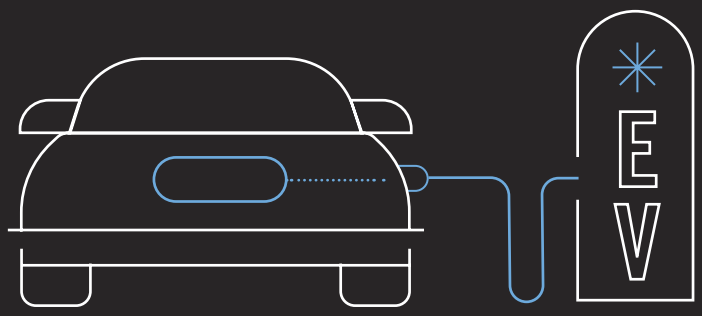
LIQUID COOLING: DRIVING INNOVATION FORWARD.

High-power EV charging solutions require the benefits of liquid cooling. Compared to standard air cooling, liquid cooling offers more efficient heat dissipation — the key to unlocking higher performance and shorter charging times.

Further, liquid cooled charging cables can use smaller conductors to reduce cable weight by up to 40%. That allows them to fit where other cables can't, optimizing limited space. As an added benefit, lighter-weight cables are easier to handle for consumers, promoting safe and reliable operation.

LIQUID COOLING EV APPLICATIONS USE QUICK DISCONNECT COUPLINGS (QDs)

- IN THE HOSE HANDLE "NOZZLE"
- AT THE INVERTER OF THE CHARGING UNIT NEAR POWER SOURCE
- AS PART OF DISTRIBUTION NODES OF CONSOLIDATED CHARGING UNITS
- WITHIN FLEET BATTERY CHARGING BAY STATION SYSTEMS
- ON BOARD VEHICLES, NEAR BATTERY AND/OR DRIVE TRAIN SYSTEMS
- ANYWHERE ELSE HEAT NEEDS EFFICIENT DISSIPATION



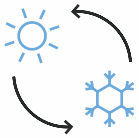
A GLOBAL LEADER IN LIQUID COOLING CONNECTORS.

CPC has been delivering robust, leak-free, worry-free couplings for liquid cooling of electronics for over a decade. Our thermal management expertise and proven record of custom-engineered solutions not only ensures that a variety of CPC quick disconnects are available to suit your application, it allows us to innovate at your pace when new options are needed.

PAVING THE WAY FOR EV CHARGING INFRASTRUCTURE.

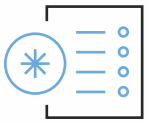
CPC quick disconnect couplings are purpose-built to address the challenges design engineers face and facilitate the cooling necessary to keep EVs charged and running.

YOUR CHALLENGES



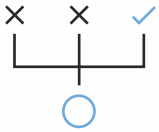
Extreme Conditions

It's a big world — high power charging stations (HPCs) need to operate from the blistering heat of the desert to the sub-zero temperatures of winter.



Development Support

Before EV infrastructure is widely adopted, it needs to provide an inarguable benefit. With products providing top flow to size ratios, we can help you ensure you're making the best case for efficiency.



Complex Infrastructure

From the space constraints of HPCs themselves to the various needs of manufacturers, fleet operators, cities, utilities and drivers, you need flexible solutions. CPC QDs are manufactured in a variety of sizes and materials.

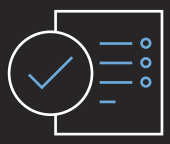
OUR SOLUTIONS

Dependable Durability

CPC couplings are tough enough to withstand the elements, with robust seals designed for extended connection and options that are compatible with a wide variety of system coolants. Testing validates performance at extreme climates.

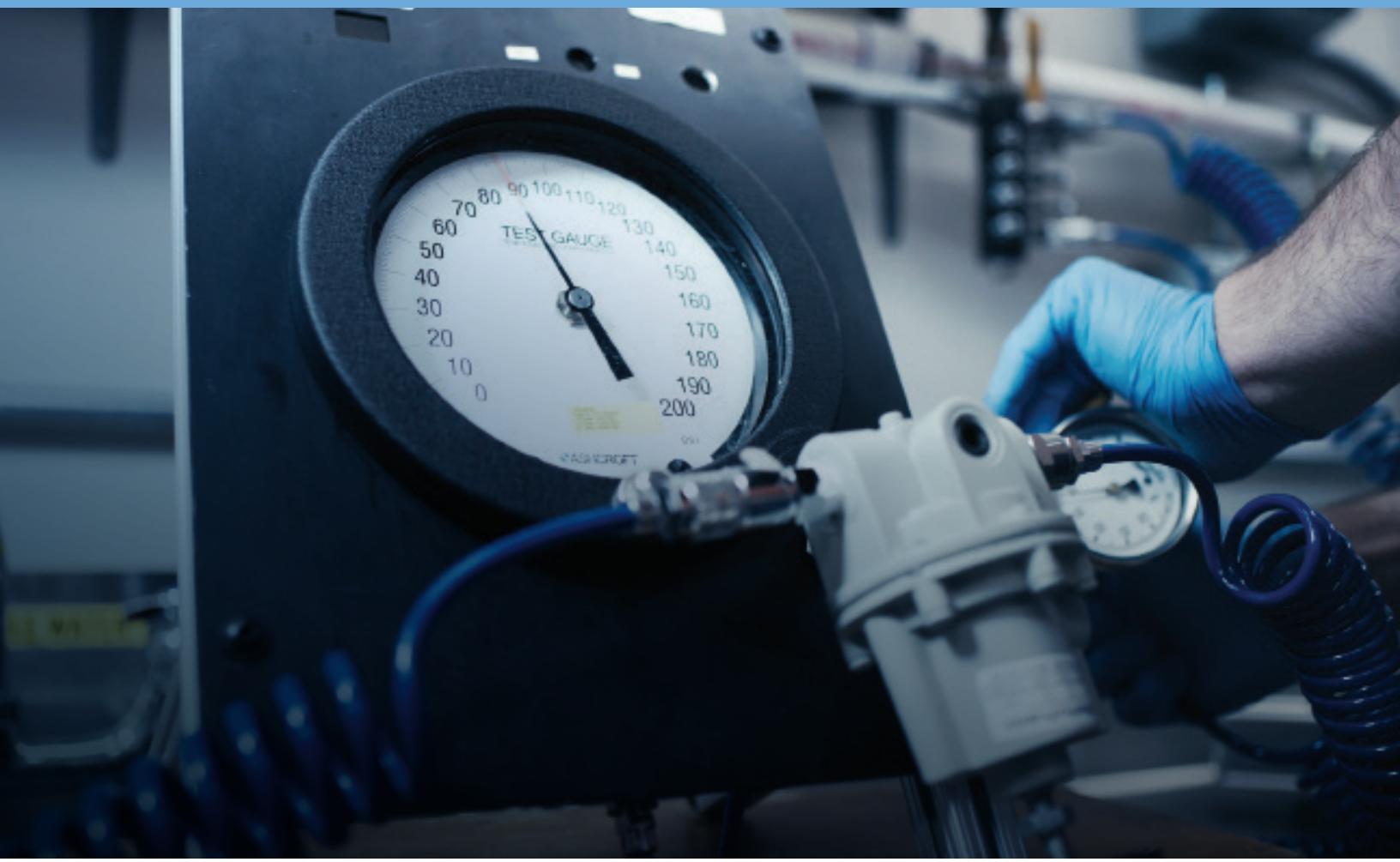
Trusted Reliability

Application-specific design, robust testing and high-performance manufacturing practices ensure quality products that charging station manufacturers and infrastructure operators alike can rely upon, reducing repairs and charging system downtime.



Maximum Versatility

We offer a wide portfolio of solutions with standard products manufactured in a variety of sizes that are trusted by the world's most trusted EV charging station manufacturers. Custom-engineered solutions are available for unique needs.



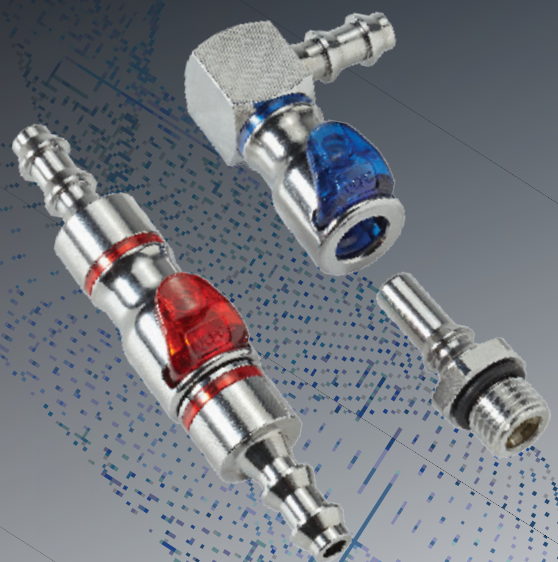
TORTURE TESTED AGAIN AND AGAIN AND AGAIN.

We want you to be absolutely confident in our liquid cooling connectors. That's why we are always testing them. It starts with materials testing, followed by product testing and then torture testing to failure. In addition to published validation reports, our connectors are designed and manufactured to meet the stringent ISO 9001 and ISO 13485 quality standards. All of which means you can rest easy knowing that CPC products will perform to their specifications. Our testing protocols include:

- HELIUM MASS SPECTROMETER LEAK TESTING
- BUBBLE LEAK TESTING
- PRESSURE DECAY TESTING
- HYDROSTATIC LEAK TESTING
- AND MORE

IMPRESSIVE INNOVATION. UNPARALLELED PERFORMANCE.

Backed by decades of experience, we're at the forefront of innovation, delivering the features needed to connect with confidence.



An ergonomically designed thumb latch provides both ease and speed of installation and system maintenance — just listen for the CPC "click" to know you're connected.

Blind mates provide access to power inverters at the back of HPCs no matter how hard to reach they may be and provide flow tolerances at connection. They can also compensate for axial tolerance variations in assemblies without sacrificing flow performance.

Optimized flowrates for superior performance.

A robust portfolio of QDs allow coolant to efficiently chill inverters, umbilicals and other components within your system.

Made of durable PPSU or metal and high-performance polymers that withstand pressures during installation and use (side load, flexing, tensile forces) for years of leak-free reliability.

MEET YOUR LIQUID COOLING LINEUP.

A wide variety of use cases within EV charging applications requires a wide portfolio of [illegible] offers the quick disconnect couplings options you need with features like non-spill [illegible] locking hose barb terminations.

CPC's innovative design and quality manufacturing spans all product lines. However, Everis® co[illegible] are exclusively designed and built for the rigors of liquid cooling applications. But it doesn't end ther[illegible] CPC continues to expand the portfolio with advanced engineering coupling models along with new size, configuration and termination option solutions. Visit cpcworldwide.com/liquidcooling for details.

EVERIS® LQ SERIES

Purpose-built liquid cooling non-spill chrome-plated brass couplings offer a secure, reliable connection and dripless disconnect.

Everis® LQ2

Nominal flow of 1/8" (3.2 mm)
with a Cv of 0.37 (Kv 0.32)
Termination options: locking hose barb, SAE, & G thread

Everis® LQ4

Nominal flow of 1/4" (6.4 mm)
with a Cv of 1.3 (Kv 1.1)
Termination options: hose barb, locking hose barb, SAE, NPT, G thread, & PTF

Everis® LQ6

Nominal flow of 3/8" (9.5 mm)
with a Cv of 2.2 (Kv 1.9)
Termination options: hose barb, locking hose barb, SAE, NPT, G thread, & PTF

Everis® LQ8

Nominal flow of 1/2" (12.7 mm)
with a Cv of 6 (Kv 5.2)
Termination options: locking hose barb, SAE & G thread

EVERIS® BLQ SERIES

Designed specifically for integrated mounting and external locking engagement, with ultra-reliable dripless connections and disconnections.

Everis® BLQ2

Nominal flow of 1/8" (3.2 mm)
with a Cv of 0.37 (Kv 0.32)
Termination option: SAE

Everis® BLQ4

Nominal flow of 1/4" (6.4 mm)
with a Cv of 1.3 (Kv 1.1)
Termination options: SAE & G thread

Everis® BLQ6

Nominal flow of 3/8" (9.5 mm)
with a Cv of 2.2 (Kv 1.9)
Termination options: SAE & G thread

EVERIS® PLQ SERIES

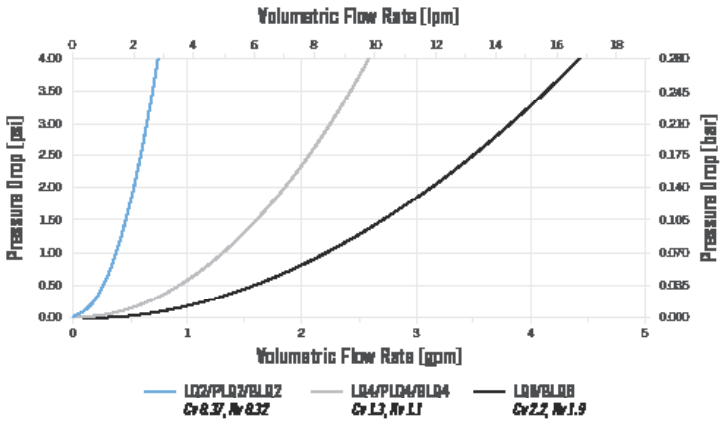
The robust Everis PLQ series' high-performance polyphenylsulfone PPSU QDs are lightweight, dimensionally stable and UL94 VO-rated. Specify the Everis PLQ line to avoid galvanic corrosion and condensation issues.

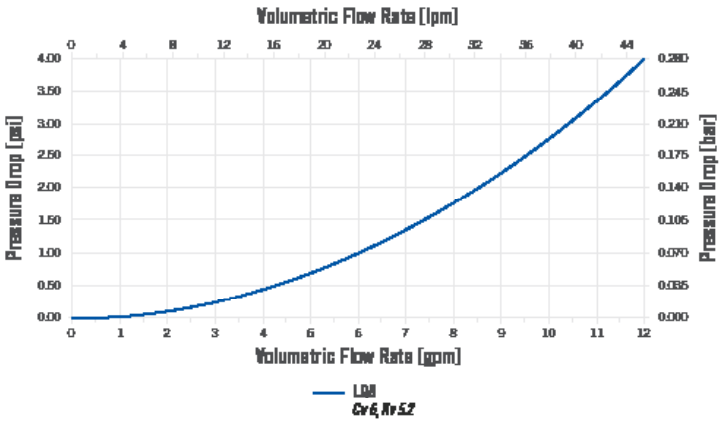
Everis™ PLQ2

Nominal flow of 1/8" (3.2 mm)
with a Cv of 0.37 (Kv 0.32)
Termination options: Locking hose barb, SAE, G thread

Everis™ PLQ4

Nominal flow of 1/4" (6.4 mm)
with a Cv of 1.3 (Kv 1.1)
Termination options: hose barb, locking hose barb, SAE, G thread





Note: Graphs indicate flow performance using water at room temperature

NS SERIES

Unlike Everis quick disconnects which are specifically designed for the rigors of liquid cooling, NS couplings are general purpose non-spill connectors commonly used in applications where just a single seal is required.

(Everis products have dual seals.)

Like all Everis couplings, NS couplings feature a non-spill valve which results in a wetted surface as the extent of fluid egress upon disconnect.

LC SERIES

CPC's Chrome-plated brass LC Series are built tough to withstand higher pressures and temperatures than the Everis and the NS Series quick disconnects.

They also feature the audible CPC signature click for confirmation of connection along with the CPC latch which allows for easy one-handed operation.

INNOVATION BORN FROM EXPERIENCE.

For over 40 years, CPC has been a leading provider of quick disconnect couplings, fittings and connectors. Our expertise in liquid cooling doesn't stop at electric vehicle charging — we're active in liquid cooling applications ranging from high performance computing to radar, lasers, 5G, medical devices and more.

By synthesizing our learnings from such a wide variety of disciplines, we are able to innovate in unexpected ways, anticipate future challenges and bring you the best purpose-built solutions.

READY TO HIT THE ROAD TOGETHER?

We want to work with you today to drive EV charging solutions forward.

KNOW EXACTLY WHAT YOU'RE LOOKING FOR?

Great, let's get down to business. Just call or e-mail us at info@cpcworldwide.com to request samples or a quote.

CPCWORLDWIDE.COM

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1-800-444-2474

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49-6026-9973-0

Asia Pacific
(852) 2987-5272

CPC

WANT TO COLLABORATE?

For designers of EV charging, on-board liquid cooling and EV fleet battery systems, we've curated tools and resources to help you tackle any challenge:

- ASK AN ENGINEER
- WHITE PAPERS
- LIQUID COOLING TECH GUIDES
- CAD FILES

VISIT US AT CPCWORLDWIDE.COM TO GET STARTED.

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