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*Quick  
Disconnect  
Couplings*

# Industrial Engineering Guide

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## Why use a Quick Disconnect Coupler?

If the following benefits are important to you, then consider using a quick disconnect coupler.

- **FLEXIBILITY** – If you need to connect and disconnect tubing or hose, more than once or twice a year.
- **UTILITY** – If plant, process or machine downtime is expensive.
- **SAFETY** – If it's important not to spill a dangerous or messy fluid.
- **SERVICEABILITY** – If service and maintenance needs to be quick and easy, or if your closed loop fluid system is pressurized.
- **MODULARITY** – If attachments or accessories need to be connected or disconnected.
- **CONVIENENCE** – If simple to operate, one hand leak-free connections are what your customers expect.

Quick disconnect couplers  
save time and money.

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## How to choose a Quick Disconnect Coupler

Understanding your application is key to proper selection of a quick disconnect. Use the following checklist to simplify your selection.

- **TEMPERATURE** – Know your minimum and maximum temperature range. Standard temperature tolerances range from -40° F. to 200° F. depending on coupler material.
- **PRESSURE** – What is the maximum pressure your coupling will need to withstand during operation? Quick disconnects rated to 250 psi will handle most low pressure applications. Make sure your application will not exceed the manufacturer's maximum pressure rating.
- **MEDIA** – The viscosity and corrosiveness of the fluid going through the coupling needs to be considered. Make sure the media is chemically compatible with ALL coupling materials- including the seals or "O-rings".
- **SHUTOFF OPTIONS** – Do you need automatic or integral shutoff valves? Shutoff options consist of single, double and non-spill.
- **FLOW** – What are your required gallons per minute (GPM) and pressure drop? Be sure to allow for the effect of shutoff valves and tubing connections on your calculations.
- **TUBING** - What size tubing, both inner and outer diameter, are you using? Double check media compatibility.
- **TUBING CONNECTIONS** – Type: Hose barb, compression fittings, and push-to-connect are the most common termination styles. Size: You will need to know ID for hose barbs, OD for push-in fittings, and tube ID and OD for compression.
- **MOUNTING OPTIONS** – How is the coupling configured into your application? Common mounting options include pipe thread, panel mount, in-line or elbow.
- **SPECIAL REQUIREMENTS** – Sterilization, NSF listed, USP Class VI approved materials, special packaging, color coding, keying, lot traceability etc.

When specifying a coupling, there are three important elements you should focus on –

***Ease of installation, replacement and serviceability.***

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## Why use a CPC Quick Disconnect Coupling?

### **Flexibility** - Subassemblies and Subcontractors

Machinery and equipment designed in modules will benefit from the use of CPC quick disconnects. If you assemble at different times, different locations, or use assemblies from subcontractors, CPC quick disconnects will enhance the flexibility of your manufacturing process by reducing assembly time when you need to connect and disconnect plastic tubing and hose.

CPC quick disconnects engineered specifically for your application, simply click together versus fastening clamps over fittings and hard plumbing. No tools are required to use a one-hand push-button CPC quick disconnect coupling.

### **Utility** – Replacements and Upgrades

Component replacements and upgrades are simple and quick when a CPC coupling is designed into your closed loop fluid system. Upgrades snap into place. Replacements are easy and intuitive. With CPC quick disconnects your product is different from the competition. Expensive plant, process, and machine downtime is kept to a minimum.

### **Safety** – Eliminate Dangerous and Messy Spills

CPC quick disconnect couplings with automatic shutoff valves reduce or eliminate spills and leaks. With the ability to connect and disconnect under pressure, CPC plastic quick couplings safely transfer dangerous flammable or toxic solvents and other toxic fluid media. Your result is increased employee and consumer safety.

Prevent messy, unhygienic spills and provide leak-free protection on all your low pressure plastic tubing lines by specifying CPC quick disconnects. Single, double shutoff, and non-spill valve options are available for most applications. Increase safety, ease of handling, and peace of mind with CPC plastic quick disconnects.

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### ***Serviceability*** - Maintenance and Repairs

Field service and scheduled maintenance are quick and easy with CPC's reliable one-hand operation. Install CPC quick disconnect couplers on existing plastic tubing and hose, and reduce service call time.

Service technicians know maintenance that is easy gets done. Closed loop and pressurized fluid systems run better and last longer with CPC couplers making maintenance easy. No leaks or spills from plastic tubing or hose connections. That's why maintenance professionals prefer CPC quick disconnect couplings.

### ***Modularity*** - Attachments and Accessories

Manufacturers of products with attachments and accessories use CPC quick disconnect couplers to expand product lines by offering intuitive, tool-free attachments. High value add-ons and accessories increase product life-cycle and profitability. CPC's injection molded plastic, one-hand push-button quick disconnect coupling's patented design makes adding product accessories simple and straightforward.

### ***Convenience*** – Intuitive and Economic

You expect leak-free, secure connections on plastic tubing and hose. CPC's ergonomic "click-to-connect" plastic quick disconnect couplings provide a reliable, intuitive connection for all your fluid flow applications. With a standard product line of over 4,000 items, specifying and installing CPC plastic quick couplers is easy and economical.

At Colder Products Company, we find answers and create cost-effective solutions to your fluid flow application problems. Our goal is to design and manufacture simple to operate, one-hand, push-button, leak-free connections that work exactly the way you need them. Connect and disconnect – it's what we do. Safely and reliably for 25 years.

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## Engine Systems Case Study BMW Motorcycles



When BMW Motorcycle design engineers in Berlin went searching for a solution to problems occurring during fuel tank installation and routine service on the BMW R1150 and K1200 Series motorcycles, they found their answer outside Frankfurt, Germany at Colder Products Company's European office - CPC GmbH.

Difficulties in fuel tank assembly and removal as well as problems with handling the fuel tank and fuel hoses during scheduled maintenance were solved with a pair of modified Colder Products PLCD



17005VMBLK couplers.

Replacing traditional hose clamps, the black plastic quick disconnects contain a double shut-off valve to prevent the loss of fuel pressure in the Bosch electronic fuel injection system when disconnected. Fluorocarbon (FKM) O-rings ensure chemical compatibility and leak-free performance with the unleaded, premium grade fuel required by these sophisticated engine systems.



BMW motorcycle owners and service technicians all over the world now enjoy the convenience and serviceability of Colder's one-hand push-button operation.

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## Analytical Instruments Case Study Biomass Production System

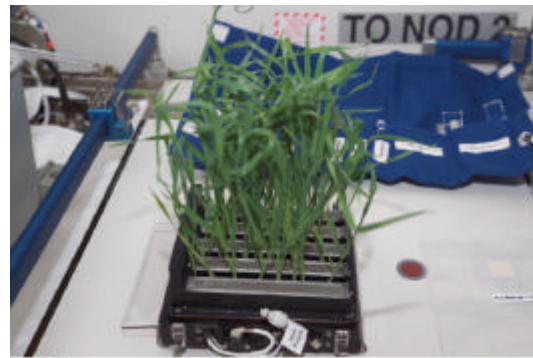


Carrying more than seven astronauts and hardware bound for the International Space Station, Space Shuttle *Atlantis* launched from Kennedy Space Center on April 4, 2002. PLCD Series plastic quick couplings manufactured by Colder Products Company also made the voyage.



Scientists at Orbital Technologies Corporation, a Wisconsin aerospace research and product development contractor, created a Biomass

Production System for NASA, using Colder Products' PLCD Series quick disconnects on deionized water, CO<sub>2</sub> and liquid nutrient supply lines.



CPC's lightweight plastic, injection molded, double shut-off quick disconnect coupling was specified. The PLCD's time-tested leak-free performance, along with its one-hand push-button operation was key. Outer space is a very unforgiving environment.

The ISO 9001 quality and reliability of Colder Products PLCD quick couplers are crucial to their placement aboard the International Space Station's Destiny Laboratory Module. Colder Product Company is proud to be chosen to be a supplier to America's space program.

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