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Quick Coupling Products Quick Reference Guide

Bulletin 3800-QRG USA | April 2014

Parker

ENGINEERING YOUR SUCCESS.

Pneumatic Couplings

Pneumatic couplings, also referred to as single shut-off (SSO) couplings, are typically used in compressed air applications to connect air tools, equipment and hoses. Additional applications include other gases and low pressure liquids. Parker pneumatic couplings are offered in a wide range of interchanges, sizes, materials, ports and other options to satisfy most every pneumatic application.

Industrial Interchange

Operation: ..... Manual Sleeve, Push-To-Connect
Size: ..... 1/4" to 3/4"
Material: ..... Brass and/or Steel
Locking Mechanism: ..... Fingers, Ball, Pawl Lock
Rated Pressure: ..... Up to 300 psi

Tru-Flate Interchange

Operation: ..... Manual Sleeve, Push-To-Connect
Size: ..... 1/4" to 1/2"
Material: ..... Brass and/or Steel
Locking Mechanism: ..... Ball
Rated Pressure: ..... Up to 300 psi

ARO 210 Interchange

Operation: ..... Manual Sleeve, Push-To-Connect
Size: ..... 1/4"
Material: ..... Brass and/or Steel
Locking Mechanism: ..... Ball
Rated Pressure: ..... Up to 300 psi

Lincoln Interchange

Operation: ..... Manual Sleeve
Size: ..... 1/4"
Material: ..... Brass and/or Steel
Locking Mechanism: ..... Ball
Rated Pressure: ..... 300 psi

Common High Flow European Interchange

Operation: ..... Push-To-Connect
Size: ..... 1/4" & 3/8"
Material: ..... Brass and/or Steel
Locking Mechanism: ..... Fingers & Ball
Rated Pressure: ..... 300 psi

Schrader Twist-Lock Interchange

Operation: ..... Push-To-Connect
Size: ..... 1/4" & 1/2"
Material: ..... Brass and/or Steel
Locking Mechanism: ..... Cam
Rated Pressure: ..... 300 psi

Exhaust Type Couplers

Parker's E-z-mate coupler incorporates a secondary valve sleeve that allows trapped internal pressure to be exhausted prior to disconnect. Tool-Mate Couplers are made of a durable composite yet are lightweight and non-marking.

Interchange: ..... Industrial and RF
Operation: ..... Push-To-Connect
Size: ..... 1/4" to 3/4"
Material:. Steel **(E-z-mate Series)**, Polyamide **(Tool-Mate Series)**
Locking Mechanism: ..... Ball Lock and Fingers
Rated Pressure: ..... 300 psi

Special Purpose-Propane & Natural Gas

Operation: ..... Manual Sleeve
Size: ..... 1/4" to 1-1/4"
Material: ..... Brass
Locking Mechanism: ..... Ball
Rated Pressure: ..... 0.5 psi

Hydraulic Couplings

A wide variety of designs each tailored to a particular application. Based on valving, hydraulic couplings generally are either Double Shot-Off or Straight-Thru. Double Shut-Off couplings contain shut-off valves in both halves, body and nipple. Used extensively when loss of fluid is undesirable. Straight-Thru couplings have no valves in either half and are ideal for maximum flow applications.

High Pressure Hydraulic

Used in rugged high pressure applications:
Portable hydraulic rams, construction, railway maintenance and jacking equipment.

Size: ..... 1/4" to 1/2"
Material: ..... Steel, Stainless Steel and Brass & Steel
Locking Mechanism: ..... Ball Lock **(FH, HO, TC, 71 Series)** Threaded **(3000, 1141, 75 Series)**
Rated Pressure: ..... Up to 15,000 psi
Rated Flow: ..... Up to 12 GPM

Connect Under Pressure Hydraulic

Used where heavy duty, high pressure, mobile or maintenance equipment is required. Push to connect and thread to connect styles.

Size: ..... 1/2" to 1-1/2"
Material: ..... Steel, and Brass & Steel
Locking Mechanism: .... Ball Lock **(9200 Lever 8200 and 5000 Series)** Threaded **(6100 Series)**
Rated Pressure: ..... Up to 3,000 psi
Rated Flow: ..... Up to 100 GPM

Non-Spill Hydraulic

Used extensively where hydraulic oil spillage could cause safety hazards. Push-to-connect. Sleeve locking prevents accidental disconnection. Employs flush valving for non-spill connecting and disconnecting.

Size: ..... 1/4" to 2"
Material: ..... Steel, Stainless Steel Polypropylene **(PF Series only)**
Locking Mechanism: ..... Ball Lock
Rated Pressure: ..... Up to 10,000 psi
Rated Flow: ..... Up to 50 GPM

General Purpose Hydraulic

Used primarily for transfer of hydraulic fluid and also used with chemicals, water, steam and some gases.

Size: ..... 1/8" to 2-1/2"
Material: ..... Brass, Steel and Stainless Steel
Locking Mechanism: ..... Ball Lock
Rated Pressure: ..... Up to 6,000 psi
Rated Flow: ..... Up to 200 GPM

1163 Series

H0 Series

ST Series

High Flow Hydraulic

Used where maximum flow with lowest pressure drop is desired - high pressure washers, mobile water tank lines or connecting hose lines to hydro-blasting equipment.

Size: ..... 1/8" to 1-1/2"
Material: .. Brass, Steel, Nickle Plated Steel and Stainless Steel
Locking Mechanism: ..... Ball Lock
Rated Pressure: ..... Up to 15,000 psi
Rated Flow: ..... Up to 100 GPM

DM Series

Miniature Coupling

Parker's DM Series features double shut off valving in a small envelope size.

Operation: ..... Push-To-Connect
Size: ..... 1/8"
Material: ..... Nickel Plated Brass
Locking Mechanism: ..... Ball Lock
Rated Pressure: ..... 250 psi

Moldmate Series

Extension Nippples

Mold Coolant Couplings

Specifically designed for connecting coolant lines to molds and dies on injection molding machinery. Straight through/ Single Shut-Off. Extensions are available in various lengths.

Size: ..... 1/4" to 1/2"
Material: ..... Brass
Locking Mechanism: ..... Ball Lock
Rated Pressure: ..... 200 psi
Rated Flow: ..... Up to 12 GPM

Dust Plugs/Caps

Keep mating surfaces clean and free of contamination.

Size: ..... 1/8" to 1-1/2"
Material: ..... Aluminum, Rubber

Thermoplastic Couplings

Spectrum Series

PPM/PPL/PPA Series

PF Series
Chemical Transfer

PPM/PPL/PPA, Spectrum and PF Series

Parker's thermoplastic couplings offer light weight design and chemical resistance to meet a broad range of coupling applications. Valved and non-valved options on Spectrum and PPA, PPM/PPL. PF is non-spill with flush valves.

Size: ..... 1/8" to 2"
Material: ..... Acetal/SS, PVDF/SS, PVDF/PEEK™, Polypropylene/SS
Locking Mechanism: ..... Finger Lock, Pawl Lock, Push-Button Latch
Rated Pressure: ..... Up to 145 psi
Rated Flow: ..... Up to 50 GPM
Temp. Range: ..... Up to +250° F

Swivels

PS Series is ideal for an array of dynamic high pressure applications.

A wide variety of port options are available.

S Series swivels offer a pressure balanced, compact forged body design.

A wide variety of port options are available.

PS and S Series Swivels

Size: ..... 1/4" to 2"
Material: ..... Steel, Stainless Steel
Configurations: ..... Inline and 90° **(PS Series)** 90° **(S Series)**
Rated Pressure: ..... Up to 5000 psi
Plating: ..... Standard zinc and clear trivalent chromate
Port Options: ..... NPTF, JIC 37° Flare, Female NPSM Pipe Swivel, SAE O-Ring Boss

Valves

CV Series

DT Series

DC Series

2600 Series

S6C/3C Series

CPIFF Series

Check Valves

CV, DT, DC and 2600 Series are unidirectional flow control devices used primarily in hydraulic systems to eliminate potential damage caused by fluid back pressure. CPIFF and 3C/S6C are soft seat check valves.

Size: ..... 1/4" to 2"
Material: ..... Aluminum, Steel, Stainless Steel
Operating Pressure: ..... Up to 6,000 psi
Crack Pressure: ..... Up to 200 psi

H1/HM1 Series

PV Series Pressure Vac Relief Valves

Pressure/Vacuum Relief Valves

H1, HM1 and PV Series are used to maintain positive pressure in hydraulic tanks and reservoirs.

Filter Rating: ..... 10 micron, nominal
Pressure Relief Settings: ..... Up to 50 psi
Vacuum Relief Settings: ..... 0.3 psi

TH Series

Thermal Bypass Valves

TH Series will modulate fluid temperature by shifting return line flow through the cooler or bypassing it back to the reservoir.

Port Size: ..... 1" ORB
Shift Temps: ..... 100°F, 120°F, 140°F, 160°F, 180°F
Relief Valve Setting: ..... 5 to 85 psi
Rated Flow: ..... 60 GPM

Diagnostic Products

Parker's Diagnostic equipment can identify hard-to-detect variations in pressure, temperature and flow quickly and easily.

SensoControl® Products

- The Parker Service Master Plus, Parker Service Master Easy and Serviceman Plus Test Meters
- ServiceJunior Digital Pressure Gauges
- Transducers
- Flow Sensors
- Temperature Probes
- Test Meter Kits

EMA-3 Series

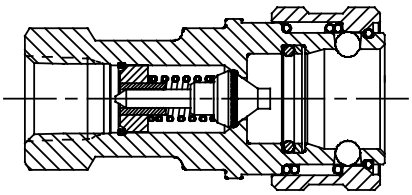
PDP Series

PD Series

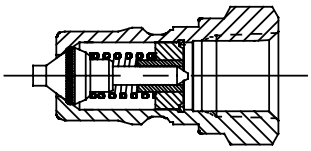
Test Port/Fluid Sampling Couplings

Size: ..... 1/8" **(PD, PDP Series)**
1/8" and 9/16 **(EMA-3 Series)**
Material: ..... Steel
Locking Mechanism: ..... Threaded **(EMA-3 Series**
Ball Lock **(PD, PDP Series)**
Rated Pressure: ..... up to 6000 psi **(PD, PDP Series)**
Up to 9000 **(EMA-3 Series)**

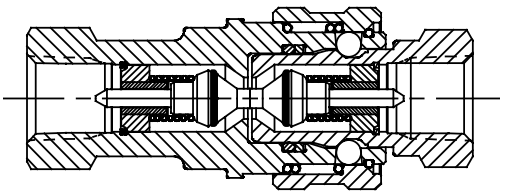
Glossary of Terms



Coupler



Nipple



Coupling

Air Inclusion: The ambient atmosphere forced into the system during the connection of the quick disconnect halves.

Break-Away: Automatic disconnection of a coupling when an axial separation force is applied.

Brinelling: Dimples or grooves worn into the shoulder of a male half by the locking balls in the female half.

Burst Pressure: The pressure at which a device loses the capability to retain pressure.

Case Hardening: Hardening the surface of low carbon steel.

Cold Flow: Continued deformation under load.

Connect Under Pressure: Ability to connect coupling halves with internal line pressure applied to either both sides or one side.

Coupling, Female Half: Other nomenclature "coupler", "socket", "body".

Coupling, Male Half: Other nomenclature "nipple", "plug", "adapter".

Coupling, Quick Disconnect: A component which can quickly join or separate a fluid line without the use of tools or special devices.

Differential Pressure (ÆP): The difference in pressure between any two points of a system or a component.

Double-Acting Sleeve: Permits push-to-connect and pull-to-disconnect convenience on implement line when female half is clamp mounted and connected with a hose.

Dust Cap: Dust or dirt repelling enclosure for both halves.

Dust Plug: Dust or dirt repelling enclosure both halves.

Flow Checking: Occurs when a nipple valve closes during flow conditions, such as when quickly lowering a heavy implement.(Also called Check Off, Back Checking or Lock-up.)

Flush Position (Valve): When the coupler valve is fully open, allowing maximum oil flow.

Force to Connect: Axial and/or rotational force required to make a complete connection.

Force to Disconnect: The reverse of the above.

Induction Hardening: Localized hardening of medium carbon steel.

Peak Pressure: Maximum momentary pressure encountered in the operation of a component.

Pressure Cap: Cap which incorporates a seal capable of withstanding the rated pressures on the male half.

Pressure Impulse Test: Subjecting a component to a specified pressure at a specified rate of increase or decrease for a specified time limit.

Pressure Operating: The pressure at which a system is operated.

Pressure Plug: Plug which incorporates a seal capable of withstanding the rated pressures on the female half.

Proof Pressure: The non-destructive test pressure in excess of the maximum rated operating pressure.

Push To Connect (Auto Lock): Locking arrangement which permits one handed connection by pushing the nipple into the coupler.

Rated Pressure: The maximum pressure at which a product is designed to operate.

Single-Acting Sleeve: Permits pull-to-disconnect convenience on implement line when female body is clamp mounted. Making connection requires manually pulling female body forward, inserting male tip, then allowing body and tip to return to original position in the clamp.

Sleeve Lock: Arrangement which provides an additional lock which must be actuated before the locking sleeve can be retracted.

Spillage: The fluid removed from the system due to disconnection of a coupling assembly. This is the fluid trapped between the mating seal and the valve seal of the coupling halves.

Surge Pressure: The pressure existing from surge conditions.

Surge Flows: A rapid increase in fluid flow.

Thermal Build-Up: Hydraulic pressure caused by expansion of the fluid due to heat from an external source such as sunlight.

Trapped Pressure: Pressurized hydraulic fluid trapped behind closed coupling valve.

Twist Lock: A locking arrangement which requires a rotational actuation to unlock the mating halves.

Types of Quick Disconnect Coupling Valves:

Straight-Thru (ST): This provides straight through flow.

Double Shut-off Valve (DSO): A valve in the female half and a valve in the male half.

Single Shut-off Valve (SSO): Generally, a valve in the female half with no valve in the male half.

NOTE: Refer to Parker's Publication No. 3800-B1.0: Safety Guide for Selecting and Using Quick Action Couplings and Related Accessories.

Introduction

Parker's Quick Coupling Division, established in 1968, has been supplying quality products to the marketplace since it's inception. With manufacturing facilities on two continents, Parker QCD produces hydraulic and pneumatic products designed to meet the demanding requirements of a wide variety of applications in a host of markets including Agriculture, Automotive, Chemical, Off-Shore Oil, Pulp and Paper, Food Processing, Printing and Publishing, Plastics, Public Utilities, Construction, Alternative Fuels and others.

Quick Couplings are available in a variety of sizes and end configurations ranging from 1/8 inch to 2-1/2 inches to accommodate a broad spectrum of design requirements. Pressure capabilities to 10,000 psi working pressure, port configurations including metrics, body materials ranging from brass to 316 stainless steel to polypropylene, to the forefront of the Fluid Connector Industry.

As the world's largest manufacturer of Quick Couplings, Parker QCD's commitment is to the customer. The Quick Coupling Division strives to improve by providing new products and solutions to the market and developing state-of-the-art technologies to provide the highest quality products at a competitive price. Quality products not limited to standards, but inclusive of many non-standard products designed to meet specific customer requirements.

At Parker Quick Coupling, we view our customers as vital partners. It is for this reason we will continue to develop innovative solutions for our customers' complex applications and provide them with the very best in customer service.

Checklist for Selecting Quick Couplings

- ❑ What are the functional requirements of the coupling?
- ❑ What is the maximum working pressure of the application?
- ❑ Which seals and body material are compatible with the system's fluid?
- ❑ Is the application static or dynamic?
- ❑ What size coupler/hose is required?
- ❑ What is the maximum pressure drop suitable for the application?
- ❑ Does the application require the ability to connect and disconnect under pressure?
- ❑ What is the media temperature and ambient temperature?
- ❑ What end configurations are required?
- ❑ Is an industry interchange coupler required?
- ❑ Is air inclusion and fluid loss a concern in the application?

Refer to Parker Catalog 3800 for more detailed product information.

Call Parker Information Center Toll Free: 1-800-C Parker (1-800-272-7537) for catalogs, literature or additional information.
www.parker.com/quickcouplings

⚠ WARNING

FAILURE OR IMPROPER SELECTION OR IMPROPER USE OF THE PRODUCTS DESCRIBED HEREIN OR RELATED ITEMS CAN CAUSE DEATH, PERSONAL INJURY AND PROPERTY DAMAGE.

• This document and other information from Parker-Hannifin Corporation, its subsidiaries and authorized distributors provide product or system options for further investigation by users having technical expertise.

• The user, through its own analysis and testing, is solely responsible for making the final selection of the system and components and assuring that all performance, endurance, maintenance, safety and warning requirements of the 0 are met. The user must analyze all aspects of the application, follow applicable industry standards, and follow the information concerning the product in the current product catalog and in any other materials provided from Parker or its subsidiaries or authorized distributors.

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The items described in this document are hereby offered for sale by Parker Hannifin Corporation, its subsidiaries or its authorized distributors. This offer and its acceptance are governed by the provisions stated in the "Offer of Sale."

Parker Fluid Connectors Group
North American Divisions & Distribution Service Centers

Your complete source for quality tube fittings, hose & hose fittings, brass & composite fittings, quick disconnect couplings, valves and assembly tools, locally available from a worldwide network of authorized distributors.

Fittings:
Available in inch and metric sizes covering SAE, BSP, DIN, GAZ, JIS and ISO thread configurations, manufactured from steel, stainless steel, brass, aluminum, nylon and thermoplastic.

Hose, Tubing and Bundles:
Available in a wide variety of sizes and materials including rubber, wire-reinforced, thermoplastic, hybrid and custom compounds.

Worldwide Availability:
Parker operates Fluid Connectors manufacturing locations and sales offices throughout North America, South America, Europe and Asia-Pacific.

For information, call toll free...
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