

# SAFETY GUIDE FOR SELECTING AND USING QUICK CONNECT COUPLINGS AND RELATED ACCESSORIES

**DANGER:** failure or improper selection or improper use of quick connect couplings or related accessories can cause death, personal injury and property damage. Possible consequences of failure or

improper selection or improper use of quick connect couplings or related accessories include but are not limited to:

- Couplings or parts thrown off at high speed
- High velocity fluid discharge
- Contact with suddenly moving or falling objects that are to be held in position or moved by the conveyed fluid
- Dangerously whipping hose
- Explosion or burning of the conveyed fluid
- Contact with conveyed fluids that may be hot, cold, toxic, or otherwise injurious
- Sparking or explosion while paint or flammable liquid spraying

Before selecting or using any connect couplings or related accessories, it is important that you read and follow the following instructions.

## 1.0 GENERAL INSTRUCTIONS

**1.1 Scope:** this catalogue provides instructions for selecting and using (including installing connecting, disconnecting, and maintaining) quick connect couplings and related accessories (including caps, plugs, hoses, blow guns). This safety instruction is a supplement to and is to be used with the specific Parker publications for the specific quick connect couplings and related accessories that are being considered for use.

**1.2 Fail-Safe:** quick connect couplings or the hose they are attached to can fail without warning for many reasons. Design all systems and equipment in a fail-safe mode, so that failure of the quick connect coupling or hose will not endanger persons or property.

**1.3 Distribution:** provide a copy of this safety guide to each person who is responsible for selecting or using quick connect coupling products. Do not select or use quick connect couplings without thoroughly reading and understanding this safety guide as well as the specific Parker publications for the products considered or selected.

**1.4 User responsibility:** due to the wide variety of operating conditions and uses for quick connect couplings, Parker RectusTema and its distributors do not represent or warrant that any particular coupling system is suitable for any specific end use system. This safety instructions do not analyse all technical parameters that must be considered in selecting a product. The user, through its own analysis and testing, is solely responsible for:

- Making the final selection of the quick connect couplings.
- Assuring that the user's requirements are met and that the use presents no health or safety hazards.
- Providing all appropriate health and safety warnings on the equipment on which the quick connect couplings are used.

**1.5 Additional questions:** call the appropriate Parker customer service department if you have any questions or require any additional information. For the telephone numbers of the appropriate customer service department, see the Parker publication for the product being considered or used.

## 2.0 SELECTION INSTRUCTIONS

**2.1 Pressure:** quick connect couplings selection must be made so that the published rated pressure of the coupling is equal to or greater than the maximum system pressure. Pressure surges in the system higher than the rated pressure of the coupling will shorten the quick connect coupling's life. Do not confuse burst pressure or other pressure values with rated pressure and do not use burst pressure or other pressure values for this purpose. Couplings greater than DN 25 operating with pressure above 10 bar are restricted to be used with liquid fluids group 2 acc to PED 2014/68/EU. Couplings used with gases of fluid group 2 must consider PED 2014/68/EU if used with Nominal Diameter greater than DN 32 and are limited to a product of PS x DN greater than 1000 bar. For fluids Group 1 please see catalogue "Snap-tite H, IH, & PH Series", (LEAF/3800-H Series/UK).

**2.2 Fluid compatibility:** quick connect couplings selection must assure compatibility of the body and seal materials with the fluid media used. See the fluid compatibility chart. See also 2.1 above.

**2.3 Temperature:** be certain that fluid and ambient temperatures, both steady and transient, do not exceed the limitations of the quick connect couplings. Use caution and hand protection when connecting or disconnecting quick connect couplings that are heated or cooled by the media they are conducting or by their environment.

**2.4 Size:** transmission or power by means of pressurised liquid varies with pressure and rate of flow. The size of the quick connect couplings and other components of the system must be adequate to keep pressure losses to a minimum and avoid damage due to heat generation or excessive fluid velocity.

**2.5 Pressurised connection or disconnection:** if connecting or disconnecting under pressure is a requirement, use only quick connect couplings designed for that purpose. The rated operating pressure of a quick connect coupling may not be the pressure at which it may be safely connected or disconnected.

**2.6 Environment:** care must be taken to ensure that quick connect couplings are either compatible with or protected from the environment (that is, surrounding conditions) to which they are exposed. Environmental conditions including but not limited to ultraviolet radiation, ozone, moisture, water, salt water, chemicals, and air pollutants can cause degradation and premature failure.



**2.7 Locking means:** ball locking quick connect couplings can unintentionally disconnect if they are dragged over obstructions on the end of a hose or if the sleeve is bumped or moved enough to cause disconnection. Sleeves designed with flanges to provide better gripping for oily or gloved hands are especially susceptible to accidental disconnection and should not be used where these conditions exist. Sleeve lock or union (threaded) sleeve designs should be considered where there is a potential for accidental uncoupling.

**2.8 Mechanical loads:** external forces can significantly reduce quick connect couplings' life or cause failure. Mechanical loads which must be considered include excessive tensile or side loads and vibration. Unusual applications may require special testing prior to quick connect couplings selection.

**2.9 Specifications and standards:** when selecting quick connect couplings, government, industry and Parker specifications must be reviewed and followed as applicable.

**2.10 Vacuum:** not all quick connect couplings are suitable or recommended for vacuum service. Quick connect couplings used for vacuum applications must be selected to ensure that the quick connect couplings will withstand the vacuum and pressure of the system.

**2.11 Fire resistant fluids:** some fire resistant fluids require seals other than the standard NBR (nitrile) used in many coupling systems.

**2.12 Radiant heat:** quick connect couplings can be heated to destruction or loss of sealing without contact by such nearby items as hot manifolds or molten metal. The same heat source may then initiate a fire. This can occur despite the presence of cool air around the quick connect couplings.

**2.13 Welding and brazing:** heating of plated parts, including quick connect couplings and port adapters, above 450 °F (232 °C) such as during welding, brazing, or soldering may emit deadly gases and may cause coupling seal damage.

### 3.0 INSTALLATION INSTRUCTIONS

**3.1 Pre-installation inspection:** before installing a quick connect coupling, visually inspect it and check for correct style, body material, seal material, and catalogue number. Before final installation, coupling halves should be connected and disconnected with a sample of the mating half with which they will be used.

**3.2 Quick connect coupling halves from other manufacturers:** if a quick connect coupling assembly is made up of one Parker RectusTema half and one half from another manufacturer, the lowest pressure rating of the two halves should not be exceeded.

**3.3 Fitting installation:** use a thread sealant, when assembling taper pipe thread joints in quick connect couplings. Be sure the sealant is compatible with the system fluid or gas. To avoid system contamination, use a liquid or paste type sealant rather than a tape style. Use the flats provided to hold the quick connect coupling when installing fittings. Do not use pipe wrenches or a vice on other parts of the coupling to hold it when installing or a removing fittings as damage or loosening of threaded joints in the coupling assembly could result. Do not apply excessive torque to taper pipe threads because cracking or splitting of the female component can result.

**3.4 Caps and plugs:** use dust caps and plugs when quick connect couplings are not coupled to exclude dirt and contamination and to protect critical surfaces from damage.

**3.5 Coupling location:** locate quick connect couplings where they can be reached for connection or disconnection without exposing the operator to slipping, falling, getting sprayed or coming in contact with hot or moving parts.

**3.6 Hose whips:** use a hose whip (a short length of hose between the tool and the coupling half) instead of rigidly mounting a coupling half on hand tools or other devices. This reduces the potential for coupling damage if the tool is dropped and provides some isolation from mechanical vibration which could cause uncoupling.

### 4.0 MAINTENANCE INSTRUCTIONS

**4.1** Even with proper selection and installation, quick connect coupling life may be significantly reduced without a continuing maintenance program. Frequency should be determined by the severity of the application and risk potential. A maintenance program must be established and followed by the user and must include the following as a minimum:

**4.2 Visual inspection of quick connect couplings:** any of the following conditions require immediate shut down and replacement of the quick connect coupling:

- Cracked, damaged, or corroded quick connect couplings parts.
- Leaks at the fitting, valve or mating seal.
- Broken coupling mounting hardware, especially breakaway clamps.

**4.3 Visual inspection all other:**

- Leaking seals or port connections.
- Excess dirt build-up on the coupling locking means or on the interface area of either coupling half.
- Defective clamps, guards, and shields.
- System fluid level, fluid type and any entrapment.

**4.4 Functional test:** operate the system at maximum operating pressure and check for possible malfunctions and freedom from leaks. Personnel must avoid potential hazardous areas while testing and using the system.

**4.5 Replacement intervals:** specific replacement intervals must be considered based on previous service life, government or industry recommendations, or when failures could result in unacceptable downtime, damage or injury risk. See instruction 1.2 above.