Parker Safety Guide for Selecting and Using Fluid Control Division Products including Valves, Assemblies and Related Accessories

WARNING: Failure or improper selection or improper use of Parker Fluid Control Division Products, including valves, assemblies or related accessories ("Products") can cause death, personal injury and property damage. Possible consequences of failure or improper selection or improper use of these Products include but are not limited to:

- Gas leakage leading to explosion or rupture of a pressure vessel.
- Leakage or other release of toxic or otherwise hazardous liquids or gases.
- Unintended or mistimed cycling or motion of machine members. Or failure of machine members to cycle.
- Sudden moving or falling objects.
- Work piece or component parts being thrown off at high speeds.
- Failure of a device to function properly. For example, failure to clamp or unclamp an associated item or device.
- Electrical shorts, burns, burn out of equipment or fires.

Before selecting or using any of these Products, it is important that you read and follow the instructions below. No product from any division in Fluid Connector Group is approved for in-flight aerospace applications. For Valves and Regulators used in in-flight aerospace applications, please contact Parker Aerospace Group

1.0 GENERAL INSTRUCTIONS

1.1. Scope: This safety guide is designed to cover general guidelines on the selection, installation, operation, and maintenance of these Products. This safety guide is a supplement to and is to be used with the specific Parker publication for the valve, assembly or related accessory being considered for use. Product specific information can be found in the applicable Installation Operation Maintenance (IOM) documents using the provided QR code label on or with the product. IOMs can also be found at https://qr.parker.com/213503 .Parker publications are available at www.parker.com or by calling 1-800-CPARKER.

1.2. Fail-Safe: All Products can and do fail without warning for many reasons. Design all systems in a fail-safe mode so that failure of the Products will not endanger persons or property.

1.3 Distribution: Provide a copy of this safety guide to each person that is responsible for installation, operation, and maintenance of these Products. Do not select or use these Products 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 applications for these Products, Parker and its distributors do not represent or warrant that any particular Parker Fluid Control Product is suitable for any specific end use system. This safety guide does not analyze 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 Product;
- Assuring that the user's requirements are met and that the application presents no health or safety hazards;
- Providing all appropriate health and safety warnings on the equipment on which the Products are used; and
- Assuring compliance with all applicable government and industry standards.

1.5 Additional Questions: Call the appropriate Parker technical service department if you have any questions or require any additional information. See the Parker publication for the Product being considered or used, or call 1-800-CPARKER, or go to www.parker.com for telephone numbers of the appropriate technical service department.

2.0 PRODUCT SELECTION INSTRUCTIONS

2.1 Selection: Consult the specific Parker Fluid Control publication for the Product being considered for use. Confirm the choice of Product with Parker Fluid Control's technical consultants prior to placing orders for the Product or installing and using the Product.

2.2 Chemical Compatibility: Elastomer seal material used in the Products must be properly selected based on compatibility with the gases, liquids or additives being conveyed in the Product. Any exposure to non-compatible gases, liquids or additives may result in failure or degradation of the seals and leakage from the Product. Such failure or degradation could happen immediately or at any time over the life of the Product.

3.0 PRODUCT ASSEMBLY AND INSTALLATION INSTRUCTIONS

3.1 Inspection: Prior to assembly, all components must be checked for correct style, part number, and physical properties such as size or the presence of physical damage. Do NOT use any component that displays any signs of nonconformance.

3.1.1 A careful examination of the Unit Valve and Unit Solenoid must be performed. If you purchase a Unit Valve and a Unit Solenoid, be sure that the last two digits of the Unit Valve match the first two digits of the Unit Solenoid. If they do not match then do not install.

3.1.2 Check nameplate for correct catalog number, pressure, voltage and service. Do not install if unsuitable.

3.1.3 Valves to be installed in Hazardous Locations must be outfitted with Hazardous Location coils only. Verify nameplate data and coil part number before installing the valve.

3.2 Product Assembly: Do not assemble, install or use a Parker Fluid Control Division Product in any end use or application that exceeds the specified operating parameters as listed by Parker such as but not limited to, pressure, voltage and frequency, and medium. Do not mix components or solenoids from a Parker valve with valves or solenoids from another manufacturer. Do not mix components or solenoids from one Parker valve with components or solenoids from another Parker valve.

3.2.1 Threaded Connections: Proper procedures for the application of tape or liquid pipe sealant or thread compound must be followed so these contaminants do not enter the Product.

3.2.2 Sweating or Brazing: Products requiring the sweating or brazing of pipe connections must have precautions taken to protect the internal product components from excessive heat during the sweating or brazing operation. Follow the directions in the specific Parker Fluid Control Division publication for the Product in question.

3.2.3 Mounting: Check the specific Parker Fluid Control Division publication for the Product in question for limitations on mounting prior to mounting the Product.

3.2.4 Electrical Connection: Turn off electrical power before connecting or disconnecting the Product to the power source. Wiring must comply with local and national electrical codes.

3.2.5 Voltage: Some coils contain solid state components that can be damaged by voltage spikes, transient voltage, over temperature, over voltage, or improper assembly. To protect against premature failure, please read the instructions in the specific Parker Fluid Control Division publication for the Product in question.

3.2.6 Port Connection: Parker Product operating parameters assume that the user connects the fluid to the proper inlet, outlet and exhaust ports. Connecting to the wrong ports may result in a complete failure or degraded performance. Use caution when applying and activating the fluid connection. Take the necessary precautions to protect personnel and property from injury and damage when turning on the fluid to the Product. Make sure the voltage is in the correct state (on or off) to control the applied pressure as required for the application in question.

3.2.7 Screw Terminal Coil and Terminal Box Assembly: When the DIN or screw terminal coils are used with the terminal box assembly, be sure to apply a wrench to the wrench flats on the conduit hub when installing electrical conduit.

3.2.8 Pressure: Turn off line pressure and bleed off trapped pressure from the lines before installing, removing or disassembling the Product.

4.0 PRODUCT AND SYSTEM OPERATION INSTRUCTIONS

4.1 Pressure Differential: Pressure differential dependent Products require a minimum pressure differential to operate properly. Make sure the chosen Product is sized properly for the application to maintain the required pressure differential across the Product.

4.2 System Check-out: Once installed, the Product installation must be tested to insure proper operation and that no external leakage exists. All safety equipment must be in place including but not limited to safety glasses, helmets, ear protection, splash guards, coveralls and any shields on the equipment. All air entrapment must be eliminated and the system pressurized to the maximum system pressure (at or below the Product maximum working pressure) and checked for proper function and freedom from leaks. Personnel must stay out of potentially hazardous areas while testing and using.

5.0 PRODUCT MAINTENANCE AND REPLACEMENT INSTRUCTIONS

5.1 Maintenance: Even with proper selection and installation, Product life or performance may be significantly reduced without a continuing maintenance program. The severity of the application, risk potential from a possible Product failure, and experience with any Product failures in the application or in similar applications should determine the frequency of the inspection and the replacement for the Products so that Products are replaced before any failure occurs. A maintenance program must be established and followed by the user and, at minimum, must include instructions 5.1.1 through 5.1.3.

5.1.1 Product Lubrication and filtration: Almost all products require filtration. Consult the specific Parker Fluid Control Division publication for the Product in question. Note, too, that some Products require lubrication or filtration or both as a regular maintenance item due to the nature of the application's environment. Consult the specific Fluid Control Division publication for the Product in question to determine this. Other Products, such as proportional valves, do not require any maintenance if the fluid is properly filtered. If a failure should occur, then these proportional valves should not be repaired but replaced.

5.1.2 Cleaning: Do not expose plastic or elastomeric materials to any type of commercial cleaning fluid. Parts should be cleaned with a mild soap and water solution.

5.1.3 Fluid Spills: Necessary precautions should be taken during maintenance to avoid exposing personnel or the surrounding area to any spilled fluid if the fluid is regulated, harmful, or damaging when exposed to or in contact with personnel or the surrounding environment.

5.2 Service and Repair:

5.2.1 General: Do not repair Products unless the specific Fluid Control Division publication for the Product in question allows this procedure. Not all Products can be safely repaired in the field. Repair and replacement must be in accordance with the specific Parker Fluid Control Division publication for the Product in question and any Parker replacement kit instructions.

5.2.2 Replacement Parts: If you purchase any replacement parts they must be original equipment manufactured by Parker Fluid Control Division.

5.2.3 Lock-Out / Tag-Out: Follow all lock-out and tag-out procedures before undertaking service or repairs. This includes de-energizing all electrical, fluid and mechanical energy sources.

5.2.4 Hazardous Location Coils - When replacing coils, Products equipped with Hazardous Location coils must use Hazardous Location replacement coils only. Verify nameplate data and coil part number before installing the replacement coil.