

Be Safe When Selecting Quick Couplings!



Warning!

All quick disconnect couplings should be viewed as potential hazards that can cause property damage, personal injury or even death if used or installed improperly! Improper use includes selecting a product unsuitable for your application, installing or using the product incorrectly and ignoring signs of imminent failure or mis-use. Failure may result in explosive propulsion of components, rapid expulsion of hazardous media, and failure or unintentional movement of a fluid powered component.

Proper Selection of Quick Disconnect Couplings

The very properties that make a compressed media useful in almost every area of modern life can also make them dangerous when mishandled. Dixon quick disconnect couplings have been carefully engineered to meet specific industry requirements while maintaining abundant safety margins. If quick disconnect couplings are not used in the correct applications or are incorrectly applied, accidents and downtime can result. It is up to the end user to inform the distributor of the application and pressures involved when ordering quick disconnect couplings and it is up to the distributor to supply the right coupling for the application.

The use of S.T.A.M.P.E.D. will help in the proper selection of quick disconnect coupling products. When in doubt, Dixon Quick Coupling stands ready to provide information, including test results (if available), coupling recommendations and other data to help resolve quick disconnect coupling related issues.

S.T.A.M.P.E.D. Questions and Selection Process

- Size** Couplings should be selected to handle the flow and pressure requirements of the system. Excessive pressure drop will result in restricted flow, slower actuation, higher fluid velocity, heat generation and eventually a breakdown of fluids, seals and components.
1. What size coupler is required?
 2. What is the maximum allowable pressure drop for the application?
 3. Are there any size restrictions due to a 'tight-spot' installation?
- Temperature** Media and ambient temperatures must be limited to the specific operating parameters of the selected sealing materials. Excessive cold will reduce sealing capability while excessive heat can cause the premature breakdown of body and valve seals.
1. What is the media/fluid temperature?
 2. What is the ambient temperature?
 3. Are there any 'flash' heat or fire sources near the connection?
- Application** Quick coupling interchangeability is a key issue that needs to be closely reviewed. There are several instances where non-interchangeable couplers and nipples may connect. This is very dangerous and these couplings should never be pressurized. Be sure to match like series couplers and nipples!
1. Is an industry interchange coupler required?
 2. What are the functional requirements of the coupling?
 3. Have there been any problems with other couplings in this application?
- Media** Quick disconnect couplings are available with a variety of body materials and seal options. Exposure to harsh and corrosive operating environments may reduce service life. Several quick couplings spill fluid upon disconnection which may be a safety concern!
1. Which seal and body materials are compatible with the system fluid?
 2. Is air inclusion, system contamination or fluid loss a concern?
 3. Is this fluid dangerous to the operator?
- Pressure** During the selection process, the published working pressure of the coupling must be equal to or greater than the maximum system pressure. Surge pressures in a fluid power system, higher than the rated pressure, will shorten the service life of the coupling.
1. Is the pressure 'Static' or 'Dynamic'?
 2. What is the maximum operating pressure required for the application?
 3. Are there any pressure spikes in the system?
- Ends** Many end configurations are available and each one has specific operating parameters. For example, the working pressure of couplings utilizing Hose Barb or Collar Hose Barb end connections may be dramatically reduced. If in doubt, test under controlled conditions for suitability to the application.
1. What end configuration and size is required? (Male Threaded, Female Threaded, or Hose Barb)
 2. Does the chosen end configuration support the application parameters and system pressure?
 3. What is the ideal valving configuration? (Single Shut-off, Double Shut-off, or Unvalved)
- Details** Forgotten or missed application details can cause a failure if not properly addressed! Be meticulous in the assessment of your application to ensure that all parameters are considered in the selection of the proper quick disconnect coupling.
1. Are there any side-load, vibration or swivelling problems associated with the application?
 2. Does the coupling require a safety sleeve-lock mechanism?
 3. Are there any environmental concerns that need to be addressed?