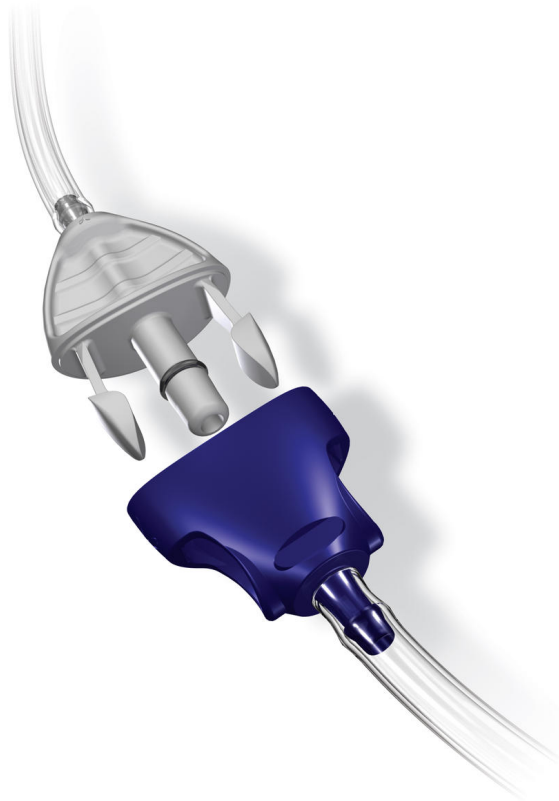


Could Plastic Quick Connects Expand Your Design Options?

Ken Davis, Value Plastics, Inc., a Nordson Company

Leveraging more than 60 years of design evolution, meeting the most stringent requirements for use in medical devices, today's plastic tube connectors provide OEMs with lightweight, cost-efficient and reliable design options for hundreds of mission-critical uses. No longer just ideal for medical equipment, these plastic connectors have been integrated into laboratory instrumentation and industrial equipment, where the need for reliable, critical connections is paramount and ease of servicing vital to maintain production uptime and throughput.



In many industrial and manufacturing processes, and with laboratory and in-plant test and calibration instrumentation, plastic tube connectors are employed to convey substances which can flow such as liquids and gases, slurries, powders and masses of small solids. Manufacturing, packaging and material handling functions in many diverse industries including food and beverage, pharmaceutical, oil and gas, alternative fuels, printing and semiconductor manufacturing have embraced plastic tubing connectors as a viable solution to supply functions such as liquid filling equipment, fuel supplies and low-pressure pneumatic and hydraulic systems.

Plastic connectors are particularly well suited for industrial and laboratory equipment because of their light weight, chemical resistance, non-corrosive properties, flexible composites and configurations, ease of making connections and

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lower cost compared to traditional connectors. Nowhere is this more evident than with plastic quick connect fittings, recognized for their ability to provide quick and easy connections and disconnections of tubing for servicing equipment, changing consumables and equipment portability.

The Advantages of Plastic Quick Connects

In the design process of equipment for fluid handling in laboratory or industrial applications, typically only a small percentage of the overall system is subjected to user interface. These parts, however, should be designed to reduce or even eliminate the potential for user fault. The choice of connection type depends on a variety of factors, including the expected frequency of connection/disconnection, servicing and safety needs, as well as user expertise. With so many factors to take into consideration, choosing the right connector can present significant challenges.

When frequent maintenance and servicing is required on a system, quick connects are preferred and can provide a critical advantage to OEMs desiring to improve user interface performance. They incorporate design features that prevent spillage and minimize the potential of accidental misconnections or leakage during maintenance and servicing. Quick connects help minimize service-related downtime by providing quick and easy access to fluid lines that may need to be disconnected during repair.

Such features as built-in shut-off valves that automatically close the line to stop the fluid flow and prevent leakage while the line is disconnected. Conversely, quick connects can be equipped with open-flow valves which will allow a desired consistent flow, with little flow path impedance, to minimize disturbance to media and allow maximum flow rates – both critical considerations in a number of applications.

Better Design - Streamlined Human Interface

The latest advances in plastic quick connects deliver a significantly improved level of human engineering, ease of use and operator intuitiveness, when compared to conventional metal and plastic quick connects. These new quick connectors are equipped with intuitively simplistic thumb latch and side latch mechanisms, for one hand connection and disconnection, which make for easy handling in laboratory and industrial fluid management applications.

The latest plastic quick connect thumb latch designs feature ergonomic grips and automatic shut-off valves for better connecting and disconnecting ease and optimum fluid control. Maximizing convenience and versatility, one new design, from Value Plastics, universally interchanges with other thumb latch plastic connectors and may be used with PVC, polyurethane, silicone and other types of flexible tubing. These new thumb latch quick connectors, produced in acetal and polypropylene for a variety of application uses, are designed with single barbs

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capable of increased pull-off resistance when compared to multi-barb styles. Proven to provide a more secure seal and tubing retention, this design feature minimizes the risk of leaks and accidental disconnection.

Improving on the intuitive use aspect of quick connects, new plastic side latch designs achieve an almost instinctive ease of use. One design, also from Value Plastics, available in nylon and for use in small-bore applications in many fluid delivery areas, is particularly intuitive. Users automatically know how to operate the quick connect the minute they pick it up. These plastic side latch quick connectors are easy to use, safe, secure and reliable. Audible clicks on connection, ergonomic shape and design simplicity – all aspect of these connectors were engineered to cut down on the likelihood of human error.

These new features in plastic quick connects enhance operator ease of use, and expand the range of available options for the design of laboratory and industrial equipment by OEM designers.

Attractive Option for OEMs

Although plastic quick connects may not be applicable for all plant and laboratory uses – high pressure pneumatics and hydraulics where metal is generally required, for example, their light weight, design flexibility and ergonomics makes them ideal candidates for many applications, such as liquid transfer and filling processes, operating and integrating portable instrumentation and where fluid connections between flexible equipment are required. Additionally, because of cost considerations use of metal quick connects is sometimes curtailed. Plastic quick connects, however, present a price point significantly less than metal connectors, enabling OEM designers to more liberally specify their use, incorporating more features and better ergonomics with less cost.

About Value Plastics, Inc., a Nordson Company

Value Plastics manufactures and markets a line of fluid management components designed specifically for flexible tubing. Products include quick connect fittings, luer fittings, check valves, tube-to-tube fittings, threaded fittings and blood pressure monitoring components. Value Plastics products find global application in demanding healthcare OEM, research and specialty industrial applications.

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