

**CURTISS -  
WRIGHT**

**EST Group**

## **GripTight® Isolation Plug**

**Delivering Speed and Safety to Pipe Weld Testing**



Conventional flange-to-pipe weld testing often carries with it high costs and risks in the form of downtime and delays, wastewater disposal challenges and potentially dangerous work conditions. Curtiss-Wright EST Group developed its GripTight® Isolation Plug to resolve these challenges and keep workers safer during hot work.

## Safe and Secure Isolation

The GripTight Isolation Plug is a one-tool solution that positively isolates and monitors potentially hazardous or explosive vapors upstream of a welding job, and then effectively hydrotests the new weld connection.

The GripTight Isolation Plug features the GripTight gripper technology, a proven system with a 20-year track record of successful use in EST Group's GripTight Test Plugs. The gripper system is designed for reliable sealing and adheres to the principle, "the greater the pressure, the greater the grip." If a faulty valve or other event should cause a rapid increase in the upstream pressure, the grippers use that pressure to increase their grip on the pipe's inner diameter (I.D.) wall. The grippers hold the GripTight Isolation Plug in place and withstand the full rated line pressure up to 1500 PsiG (103 BarG), thus preventing a failure that could damage the line or lead to serious injury for the onsite work crew.

## A Two-Seal System

The GripTight Isolation Plug is built on the functionality of the proven Double Block and Bleed (DBB) Test Plug, a two-seal plug that revolutionizes how pipe connections are isolated and tested. The DBB Test Plug has a dual port design that allows an inert gas or water to be introduced to the cavity section between the two seals through the fill port. At the same time, air is evacuated through the vent port, resulting in a safe, positive pressure barrier between the hot work and any residual upstream gases.

This cavity is pressurized and constantly monitored. Any decrease in cavity pressure, which might indicate a leak, is detected instantaneously. This allows the operator to stop the welding operation and immediately attend to the pressure drop to prevent the possibility of an explosion or fire.

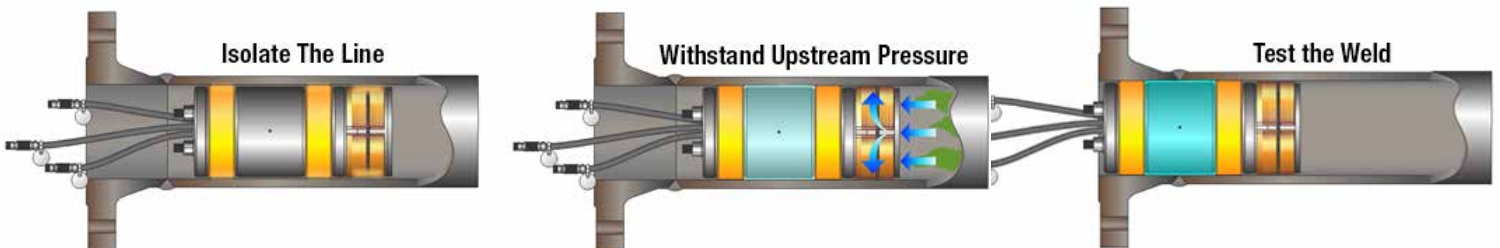
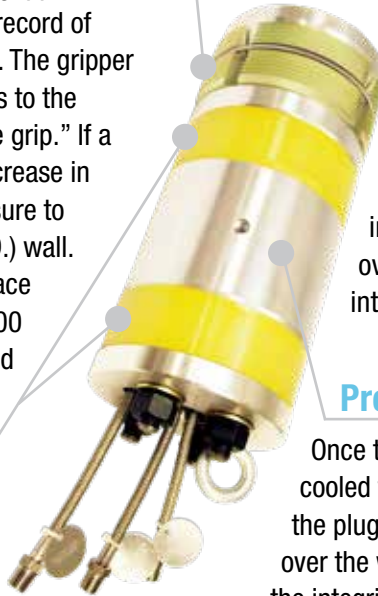
The plug's dual port system also allows water (or other medium) to be circulated between the seals, providing enhanced cooling capabilities during pre/post weld procedures. This cooling feature can enhance safety when working in areas with tight space restrictions that require the plug to be set in close proximity to the weld area.

The GripTight Isolation Plug is designed for use in seamless and welded pipe. In situations in which seam-welded pipe is used or where corrosion, pitting or scale is present, the pipe's I.D. may require some preparation before the plug is installed. The plug is designed with increased clearance such that it can be positioned over a weld for testing, even when a slight weld intrusion is present on the I.D. of the pipe.

## Pressure Testing

Once the welding is complete and the weld area has cooled to below 180°F (82°C), the seals are released and the plug can be moved to reposition the isolation cavity over the weld. The plug is then reset and pressurized to test the integrity of the weld, up to a test pressure of 2250 PsiG (155 BarG). Pressure tests can be completed in as little as 10 minutes from insertion to removal.

The GripTight Isolation Plug also permits pressure testing with significantly less water than traditional pressure test methods. For example, using a traditional blind flange to test a weld in a 1000-ft length of 12", schedule 40 pipe, would require filling the entire line with approximately 5800 gallons of water. Using the GripTight Isolation Plug to test that same weld requires less than a gallon of water. This not only significantly reduces fill time and minimizes the challenges associated with disposing of large volumes of potentially contaminated water, but it also helps get the line back into service more quickly.



## Reliability and Availability

Each GripTight Isolation Plug is manufactured in an ISO 9001:2015 registered facility and is designed to meet ASME Boiler and Pressure Vessel Codes. The plugs meet ANSI N45.2, NQA-1, and 10 CFR 50 Appendix B program requirements.

The GripTight Isolation Plug is available in a wide size range – from ¾” to 48” NPS (DN20 to DN1200) – with larger sizes available upon request. The plug’s lightweight aluminum and steel construction makes it easy to transport and install, oftentimes circumventing the necessity of cranes or other lifting devices. GripTight Isolation Plugs come standard with urethane seals, but can be custom built with alternate material upon request.

Curtiss-Wright EST Group can supply GripTight plugs to plants, shipyards and refineries across the Gulf Coast quickly, thanks to a Houston-based distribution network that stocks plugs of various sizes and specifications. The rapid response of a local supplier is critical in unplanned or emergency situations where maintenance needs to be completed safely and efficiently. A plug can be express shipped to the site to allow the operator to fix the problem and get the pipe back in service quickly.

**Using a traditional blind flange to test a weld in a 1,000-ft length of 12”, schedule 40 pipe, would require filling the entire line with approximately 5,800 gallons of water. Using the GripTight Isolation Plug to test that same weld requires less than a gallon of water.**



***Since 1968, Curtiss-Wright EST Group has specialized in the development and manufacture of tools and systems that greatly simplify the maintenance of shell-and-tube and air-cooled heat exchangers. EST Group also offers test plug systems that expedite in-service inspection of pipe, pipelines, piping systems and pressure vessels. Our plugging and testing systems have saved customers millions of dollars in maintenance and downtime. Visit [cw-estgroup.com](http://cw-estgroup.com) or contact us at (800) 355-7044 to learn more about our services and engineered solutions.***

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