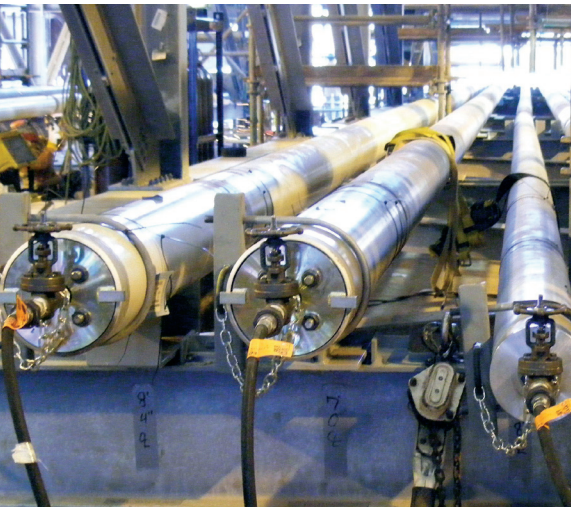
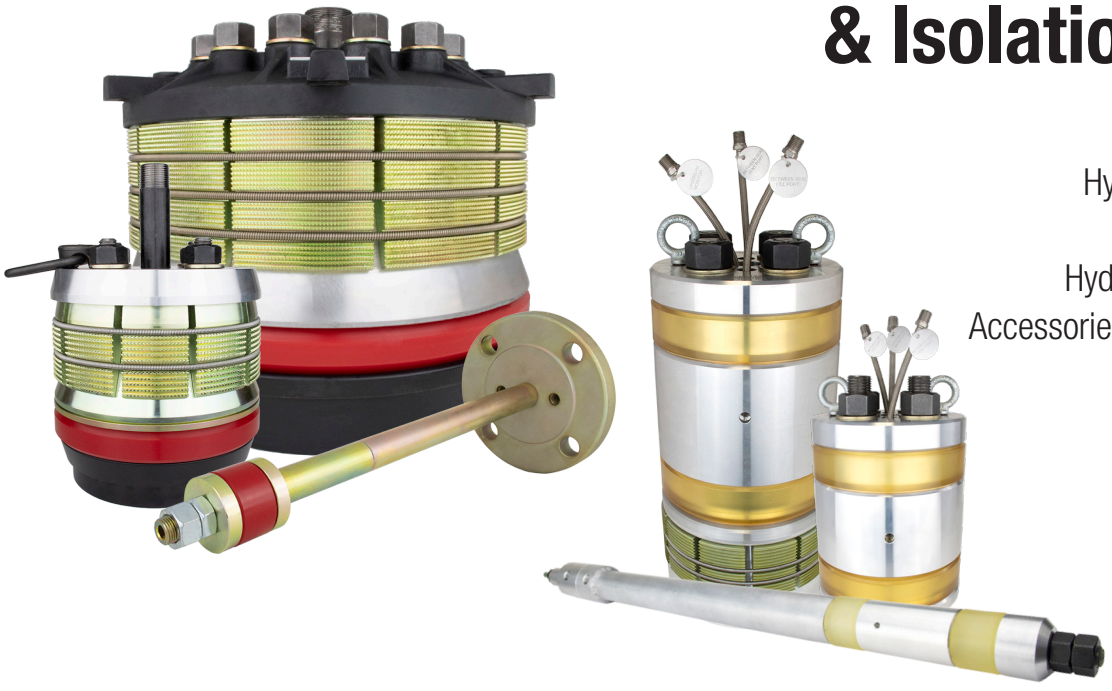
CURTISS-WRIGHT

EST Group



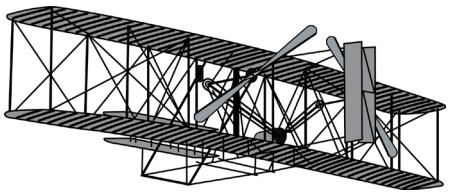
Pressure Testing & Isolation Plugs



Hydrostatic Test Plugs
Pipe Isolation Plugs
Hydrostatic Test Pumps
Accessories/Safety Equipment

Curtiss-Wright Corporation

With a proud legacy spanning more than 90 years, Curtiss-Wright Corporation is a global innovative company that delivers highly engineered, critical function products and services to the commercial, industrial, defense and energy markets. Building on the heritage of Glenn Curtiss & the Wright brothers, we have a long tradition of providing reliable solutions through trusted customer relationships.



EST Group

Established in 1968 and headquartered in Hatfield, Pennsylvania, USA, EST Group specializes in the development and manufacturing of tools and systems that greatly simplify the maintenance of shell & tube and air-cooled heat exchangers, as well as test plug systems to expedite in-service inspection of open-end pipe, piping systems, tubing, and pressure vessels.

Our GripTight® line of Test & Isolation plugs provide customers with safe and effective solutions for high pressure hydrostatic testing and isolation of open-end pipe, piping systems, tubing, and pressure vessels at working pressures up to 15,000 PsiG (1034 BarG).

Additionally, EST Group provides a range of Field Services & Product Training, including heat exchanger tube testing, inspection, cleaning, partial retubing, and pipe & pressure vessel inspection and testing to customers in power generation, petrochemical and refining, fine chemical and pharmaceutical, oil and gas production, shipbuilding, and engineering and construction industries worldwide.

ISO 9001:2015
registered facility

Hydrostatic Test Plugs

GripTight MAX® Plug

Patented dual-serrated gripper design for safe and reliable testing at high pressures up to 15000 PsiG (1034 BarG). Highly effective for testing high pressure steam systems, high alloy hardened pipe materials, and down hole/ well-head piping. Also effective for testing non-metallic materials including Fiberglass Reinforced Plastic (FRP) and Glass Reinforced Epoxy (GRE).

Test Pressure
Up to 15000 PsiG (1034 BarG)*

Size Range
3/8" to 48" NPS (DN10 to DN1200)
Custom sizes available upon request

Standard Seal Material
Urethane**

Features

- Patented dual-serrated gripper design provides more gripping points on pipe I.D. surface
- Hardened shaft, grippers, and cone increases durability, extends service life, and reduces wear
- Ideal for hardened pipe applications up to HRC 32
- Reusable, compatible with hydrostatic or pneumatic testing

GripTight® Elbow Plug

Eliminate welding on end caps! Versatile plug designed for testing long radius elbows without welding. Patented GripTight MAX self-aligning gripper & seal design provides a safe and effective solution for testing pipe spools and piping systems terminating in long radius elbows.

Test Pressure
Up to 3350 PsiG (231 BarG)*

Size Range
2" to 48" NPS (DN50 - DN1200)
Custom sizes available upon request

Standard Seal Material
Urethane**

Features

- Orientation free installation
- Saves significant time over welding end caps
- Patented dual-serrated grippers
- Patented self-aligning gripper/seal design
- Fits most long radius elbows
- Reusable, compatible with hydrostatic or pneumatic testing

SCAN TO SEE IT IN ACTION

FLOWCODE
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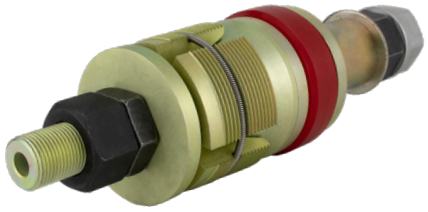
**Higher pressures available upon request.*
***Alternate seal materials available including Neoprene, Fluoroelastomer, Silicone, EPDM, Natural Rubber, Nitrile Buna-N, and SBR Buna-S.*

Hydrostatic Test Plugs



GripTight® Reverse Pressure Plug

Pressure test flange-to-pipe welds with full radial, hoop and axial stresses – equivalent to the stresses that would be produced when using a blind to pressurize the entire piping system. Pressure testing can effectively verify the weld integrity providing the user confidence that the flange and weld will properly function when placed into service.

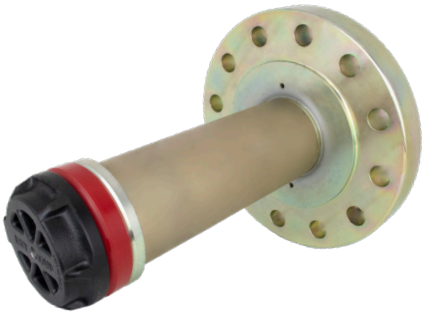
Features

- Subjects the flange-to-pipe weld to full radial, hoop and axial stresses during hydrostatic testing
- Flange-to-pipe welds can be tested without needing to pressurize the entire system
- Optional lanyard assembly acts as visual plug movement indicator allowing the operator to monitor the plug position during testing and halt work if improper installation occurred
- ASME PCC-2 Type I testing device[1]

Test Pressure
Up to 2250 PsiG (155 BarG)*

Size Range
2" to 48" NPS (DN50 - DN1200)
Custom sizes available upon request

Standard Seal Material
Urethane**



High Lift Flange/Weld Plug

Monitor upstream conditions, isolate and purge the weld area, perform the weld, and hydro test the weld joint with one easy tool. No blind flanging upstream, no vacuum truck for evacuating the line, and no X-raying. Each test requires a minimum amount of water, no need to fill the entire line. You will use less water and minimize your environmental impact. Operating pressures to ANSI B16.5 requirements.

Features

- Designed to function in four distinct ways: as a purge dam, weld fixture, test plug, and a weld isolation plug
- Flange-to-pipe welds are tested without needing to pressurize the entire system
- Ported center shaft allows for upstream monitoring
- ASME PCC-2 Type III testing device[1]

Test Pressure

150#	450 PsiG	(31.0 BarG)
300#	1125 PsiG	(77.6 BarG)
600#	2250 PsiG	(155.1 BarG)

Size Range
3/8" to 48" NPS (DN10 to DN1200)
Custom sizes available upon request

Standard Seal Material
Urethane**

O.D. GripTight® Plug

Test open or plain end pipe and tube by sealing pipe O.D. Patented design allows for the bore of the sealing element to be larger than the pipe O.D. during installation, preventing damage to the seal.

Features

- One plug can be used for a range of pipe schedule sizes
- Patented design prevents damage to the seal during installation and removal
- Lightweight aircraft aluminum construction
- Metric pipe and tubing sizes available

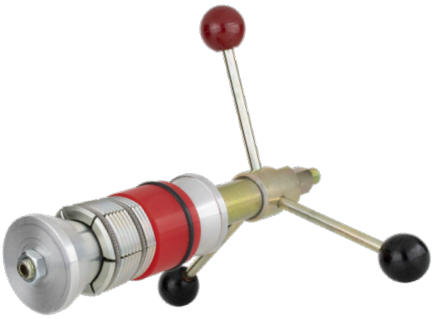
Test Pressure
Up to 5000 PsiG (344.7 BarG)

Size Range
1/4" to 4" ANSI pipe sizes (DN8 to DN100) &
1/2" to 3½" (12.7mm to 88.9mm) O.D. tube sizes

Standard Seal Material
Urethane with Fluoroelastomer O-ring**

**Higher pressures available upon request.*
***Alternate seal materials available including Neoprene, Fluoroelastomer, Silicone, EPDM, Natural Rubber, Nitrile Buna-N, and SBR Buna-S.*
1. ASME PCC-2 (Article 503) - "Test Devices for Localized Pressure or Tightness Testing of Welded Repairs"

Hydrostatic Test Plugs



GripTight® PE Plug

Designed for testing of polyethylene pipe (LDPE, MDPE, & HDPE). Working pressure varies by plug size, SDR, and material grade. Testing can be performed on an installed pipe or while it is still on the spool. Aluminum/Steel constructions with Urethane Seal.

Features

- Patented dual seal design
- Easily installed by hand, no special tools required
- Conservatively rated to 150% of maximum operating pressure required under 49 CFR 192.513

Test Pressure
375 PsiG (25.8 BarG) Max
Varies by plug size, SDR, and material grade

Size Range
2", 3", 4", 6" and 8" (DN50 to DN200)

Standard Seal Material
Urethane with Fluoroelastomer and Nitrile/Buna-N O-rings**

Socket Weld SQS Plug

Designed to facilitate testing socket weld fittings and couplings. During installation, grippers expand within the socket holding the plug in position while the seal element expands and seals off the bore of the fitting. Designed for ASTM A105 3000 lb. carbon steel socket weld fittings.

Features

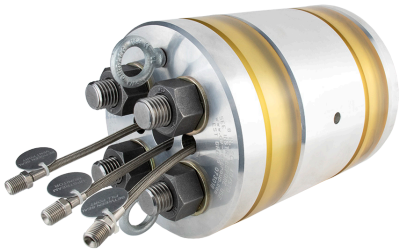
- Unique "Twin Cone" design provides uniform gripper expansion that ensures 100% contact between the test plug and the socket weld fitting
- Long wearing urethane seals provide easy plug installation and removal
- Replacement grippers and seals available, allowing you to use the SQS hydrostatic test plug multiple times

Test Pressure
Up to 5000 PsiG (344.7 BarG)

Size Range
1/2" to 2" NPS (DN15 to DN50)
Custom sizes available upon request

Standard Seal Material
Urethane**

Pipe Isolation Plugs



GripTight® Isolation Plug

Isolate and monitor potentially explosive vapors during hot work, and hydro test new weld connections with one easy to operate tool. The dual port design creates a positive pressure barrier between the seals – safely isolating hot work from any residual upstream gases. GripTight Isolation Test Plugs integrate a Double Block and Bleed Test Plug with GripTight Grippers, ensuring operational safety, and minimizing the risk of blowout/expulsion due to unexpected upstream pressure in the line.

Test Pressure
Up to 2250 PsiG (155 BarG) between the seals
Upstream pressure up to 1500 PsiG (103 BarG)*

Size Range
3/4" to 48" NPS (DN20 to DN1200)
Custom sizes available upon request

Standard Seal Material
Urethane**

Features
- Monitor potentially explosive vapors during hot work
- Minimize risk of accidental blowout/expulsion due to improper use or unexpected upstream pressure
- Test with minimal media – reduces waste water & treatment expenses
- ASME PCC-2 Type IV testing device[1]

Double Block and Bleed Plug

Isolate and monitor potentially explosive vapors during hot work, and hydro test new weld connection with one easy to use tool. The dual port design creates a positive pressure barrier between the seals – safely isolating hot work from any residual upstream gases. The volume of water required is so small that testing can be accomplished using a simple hand pump. Easily facilitates testing in remote areas of the facility.

Test Pressure
Up to 2250 PsiG (155 BarG)* between the seals
Upstream pressure rated to 10 PsiG (0.7 BarG)*

Size Range
3/4" to 48" NPS (DN20 to DN1200)
Custom sizes available upon request

Standard Seal Material
Urethane**

Features
- Multi-schedule capability
- Monitor potentially explosive vapors during hot work
- Test with minimal media – reduces waste water & treatment expenses
- Lightweight, aluminum and steel construction
- ASME PCC-2 Type IV testing device[1]

SCAN TO SEE IT IN ACTION

*Higher pressures available upon request.
**Alternate seal materials available including Neoprene, Fluoroelastomer, Silicone, EPDM, Natural Rubber, Nitrile Buna-N, and SBR Buna-S.
1. ASME PCC-2 (Article 503) - "Test Devices for Localized Pressure or Tightness Testing of Welded Repairs"

Hydrostatic Test Pumps

P Series Hand Pump

Suitable for all hydrostatic testing applications. Self-contained, portable hand pump with 5 gallon (19 liters) reservoir for testing tubes, pipes and pressure vessels when air is not available. Output Pressure: up to 3,000 PsiG (207 BarG).

P Series Pump

Suitable for all hydrostatic testing applications. Portable pump for testing tubes, pipes and pressure vessels in the field or shop. Self-contained, lockable aluminum toolbox. Output Pressure: 2,500 / 10,000 PsiG (172 / 689 BarG) models available.

Blue Max 3

Suitable for all hydrostatic testing applications. Enclosed cabinet provides safe & quiet operation, protects components from damage. Output Pressure: 1,000 / 3,600 / 10,000 PsiG (69 / 248 / 689 BarG) models available.

Accessories & Safety Equipment

Safety Gags

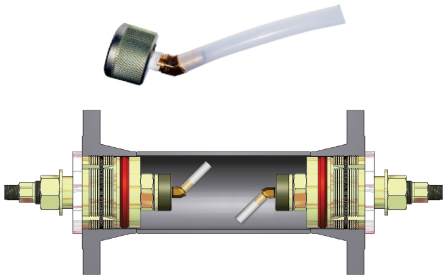
Provides a secondary restraint of the plug for an added measure of safety. Prevents damage that may occur due to incorrectly installed plugs ejecting from the pipe during pressurization. Gags fasten quickly to pipe O.D. and plug inlet.

Features
- Bolt on clamp for easy installation and removal
- Provides enhanced safety during testing
- Safe, reliable, and easy to use

Standard Material
Zinc Plated Carbon Steel

Operating Pressure
Reference Test/Isolation Plug Pressure Rating

Size Range
3/8" to 48" NPS (DN10 to DN1200)
Custom sizes available upon request



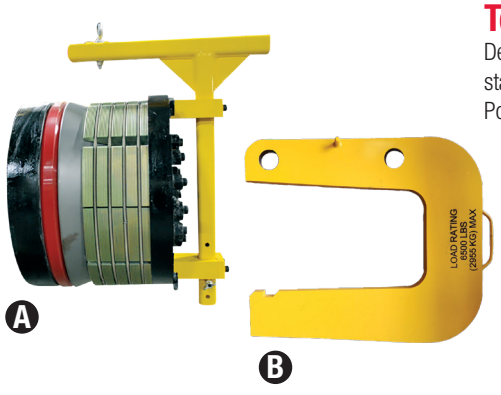
GripTight® Vent Caps

Safely fill and drain pipes during hydrostatic testing. Vents can be installed with tubes at high and low points in the area being tested in order to fill with test medium and displace air/gases in the pipe being tested. Zinc plated Carbon Steel body / Polyethylene tube.

Features
- Easy to install
- Facilitates hydrostatic testing best practices per ASME B31.1 & ASME PCC-2

Operating Pressure
Reference Test/Isolation Plug pressure rating

Size Range
1¼" to 8" NPS (DN32 to DN200)



Test Plug Lifting Arms

Designed to maneuver larger test plugs securely with cranes, forklifts, or other lifting mechanisms. Provides greater stability and operator safety during installations. Available for use with plug sizes 10" to 48" (DN250 to DN1200). Powder coated Carbon Steel construction. Can be adapted for use with Special Test/Isolation plugs.

Style	Size Ranges	Max. Capacity
A	10"-24" (DN250-DN600)	10"-24" - 1,500lbs. (680.4kg)
B	26"-36" (DN650-DN900)	26"-36" - 3,500lbs. (1,587.6kg)
B	38"-48" (DN950-DN1200)	38"-48" - 6,500lbs. (2,948.4kg)

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Product animations, instructions, and detailed technical information are available on our website: **www.cw-estgroup.com**