



Kevin B. Singleton | Permasert 2.0  
Honeywell Perfection | June 2020

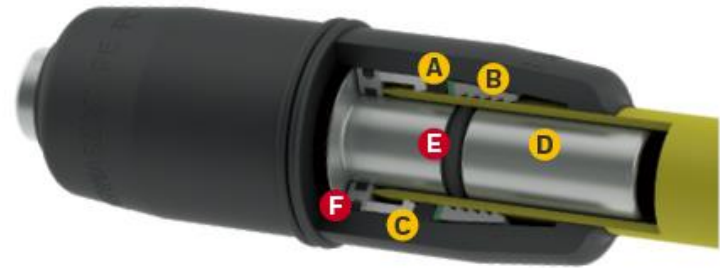
# Permasert 2.0 Design Overview

Permasert 2.0 new design offers redundancy while maintaining features of the original design.



CURRENT DESIGN

- A** O.D. Seal
- B** Gripper Collet
- C** Spacer Retainer
- D** Stiffener



NEW 2.0 DESIGN

- E** I.D. Seal
- F** Sealing Hub

- **INNER SEAL:** Protects against nuisance leaks from scratched pipe.
- **OUTER SEAL:** Protects against pipe defects such as variations in inner wall thickness.
- **TWO-PIECE DESIGN:** More flexible than single-piece stiffeners to minimize gaps and stress.



# Permasert 2.0 Specifications

## Specifications

### BODY

Gas Grade Polyethylene (PE4710)

Collet: Acetal (POM)

Thrust Washer: Polyethylene (PE)

Seals: BUNA-N (Nitrile)

Spacer Retainer Ring: Acetal (POM)

Insert Stiffener: Zinc-plated  
Carbon Steel

### TESTING

**Pull-out Resistance:**

ASTM D2513 Category

- 0.2 ipm

- 20 ipm

- Full Seal + Full Restraint, PE yields

**Hydrostatic:** ASTM D1598

- 670 psi (4.6 MPa) hoop stress

- 176°F (80°C)

- Pass

**Quick Burst:** ASTM D1599

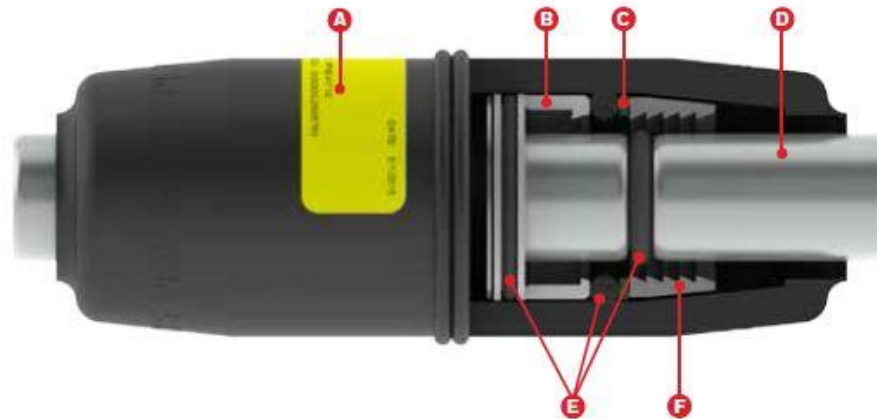
- Pass

### PRESSURE RATINGS

Couplings are designed to meet or exceed the maximum allowable operating pressure (MAOP) requirements of the piping system: 125 psig MAOP, or the rating of the installed tubing.

### SIZES

½" CTS through 2" IPS



**A** Permasert® 2.0 Coupling: Molded from PE4710 resin. Meets or exceeds US DOT Part 192; ASTM D2513, Category 1; ASTM F1924; NFPA 58; CSA 137.4. IAPMO/UPC listed.

**B** Spacer Retainer Ring: Centers pipe and provides a redundant activation mechanism for the collet.

**C** Thrust Washer: Provides even distribution of force on the collet.

**D** Stiffener: Zinc-plated steel stiffener guarantees proper alignment and adds support for full-restraint.

**E** Seals: BUNA-N (Nitrile) elastomers provide a redundant sealing system.

**F** Collet: Tapered gripping collet prevents pipe pull-out.

# Permasert 2.0 – Complete Main to Meter Solution

- Configurable for all your gas distribution needs



- A** Anodeless Service Line Risers and Transition Fittings
- B** PSV Polyethylene Shut Off Valves
- C** EFV Excess Flow Valves
- D** Permasert 2.0 Couplings
- E** Servi-Sert™ Fittings
- F** Permalock™ Mechanical Tapping Tees

# Chamfer Tools

- Similarities:
  - Necessary for Installation
  - Left-hand operation
  - Replaceable blades
- Key Changes:
  - ID/OD Chamfer
  - Size
  - Color & Labelling
  - Rotation Arrows
  - **Stab depth marking**
    - **Blind End Guide**



\*New tools are backwards compatible with Permasert 1.0

# Permasert Identification Guide

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Connected Utilities

## Permasert 2.0 Design (Yellow Label)

If the product label is **YELLOW**, you're installing a Permasert 2.0 product featuring ID and OD seals.



Use the corresponding **YELLOW** chamfering tool to prepare the PE pipe.



Gray chamfering tool will not work with Permasert 2.0 product.

Mark the pipe using the proper method depending upon which size and style of fitting you are installing. For proper installation procedure, please refer to Permasert 2.0 installation instructions. Document Number 57640 Rev. A

### Standard Fittings

1/2" CTS to 1-1/4" CTS

### Blind End Fittings

1/2" CTS to 1-1/4" CTS

### Blind End and Standard Fittings

1-1/4" IPS to 2" IPS



## PERMASERT IDENTIFICATION GUIDE

### Permasert Design (White Label)

If the product label is **WHITE**, you're installing an original Permasert product featuring OD seals.



Use the corresponding **GRAY** or **YELLOW** chamfering tool to prepare the PE pipe.



Gray or Yellow chamfering tool will work with the original Permasert product

Mark the pipe using the proper method depending upon which size and style of fitting you are installing. For proper installation procedure, please refer to Permasert installation instructions. Document Number 52405, Rev M.

Permasert (OD seal only) fittings stab depth is measured from the fusion bead to the moisture seal on all sizes and styles of fittings.



### Find Out More

email: [permasert2.0@honeywell.com](mailto:permasert2.0@honeywell.com)  
website: <http://hwl.co/permasert2>

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All Permasert 2.0 configurations meet or exceed the requirements of ASTM D2513, US DOT Part 192, and CSA B137.4.

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PERMASERT IDENTIFICATION GUIDE



# Fast & Easy Installation

Cut



Chamfer



Mark



Stab



# Permasert 2.0 Coupling Installation – Step 1

- Cut the PE tubing so the end is square.





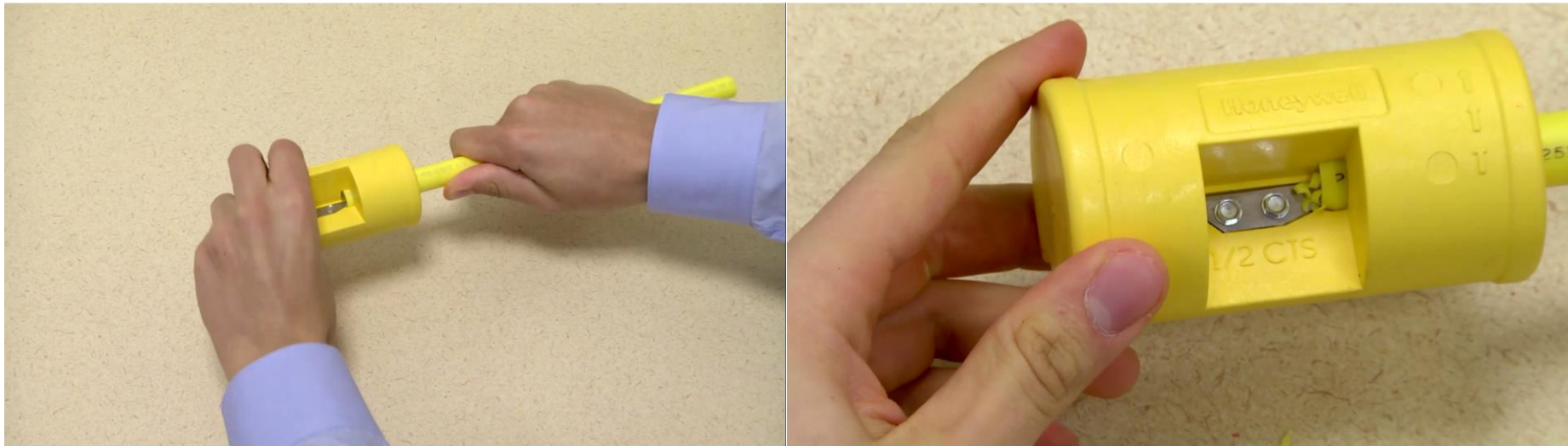
# Permasert 2.0 Coupling Installation – Step 2

- Wipe with a clean, dry cloth, inspect the tubing for surface defects. If excessive scratches or gouges are visible, cut off the defective area and repeat the first 3 steps.



# Permaset 2.0 Couplings Installation – Step 3

- Using the Honeywell chamfer tool, insert the tube and rotate the tool to chamfer both the outer diameter (O.D.) and the inner diameter (I.D.) of the tube. Continue until the tube bottoms out.



# Permasert 2.0 Coupling (1/2 CTS to 1-1/4 CTS) Installation – Step 4

- Mark the tube at the end of the chamfer tool using a soft marking tool (felt tip pen, crayon, or grease pencil). This process will mark the stab depth. Remove the chamfer tool.





# Permasert 2.0 Blind End Couplings (1/2 CTS to 1-1/4 CTS) Installation – Step 4

- Remove the chamfer tool and place the tube into the blind end guide on the side of the chamfer tool. Mark the stab depth at the end of the chamfer tool using a soft marking tool (felt tip pen, crayon, or grease pencil).



# Permasert 2.0 Standard & Blind End Couplings (1-1/4 IPS or Larger) Installation – Step 4

- Mark the stab depth using a soft marking tool (felt tip pen, crayon, or grease pencil) by aligning the chamfered end of the tube with the offset distance label on the coupling body. NOTE: Mark the tubing flush with the end of the coupling body. DO NOT use the end of the stiffener as a marking reference point.



# Permasert 2.0 Standard & Blind End Couplings (1-1/4 IPS or Larger) Installation Step 4 (Cont.)

- The stab depth distance can be marked directly on the tubing using the following lengths measured from the end of the tubing:
  - 1 ¼ IPS Coupling – 3 1/2”
    - Blind End – 4 3/8”
  - 1 ½ IPS Coupling – 3 1/2”
  - 2 IPS Coupling – 4 1/4”
    - Blind End – 5 1/8”





# Permasert Coupling Installation – Step 5

- Stab the PE piping into the Permasert fitting so the stab depth mark is visible.
  - Within 1/8" of moisture seal on 1/2" CTS and 1" CTS sizes
  - Within 1/4" on all other sizes through 1-1/4" CTS
  - Approx. 3/8" on 1-1/4" IPS and 2" IPS sizes
- PE piping must bottom out in the fitting. Pressure test the joint in accordance with your standard procedure. Reference mark can move outward up to an additional 3/8" during pressure testing.



# Questions?

• **THANK YOU!**