

# Technical Bulletin



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## CPM FITTINGS

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- 1. INSTALLATION GUIDELINES**
- 2. OPTIONS AND REPLACEMENT PARTS**
- 3. TEST DATA**

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### 1. INSTALLATION GUIDELINES

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#### 1.1 FITTINGS

Weld-in styles are designed for use with standard automatic welding machines. For best drainage, fittings should be mounted in the vertical position. Pressure gauges may be specified with back-mounted connections for optimum readability. Transmitters with cap-mounted displays offer best readability in this position as well.

For applications requiring horizontal mounting, a 1/8" per foot slope is required to ensure drainability. **IMPORTANT:** Care must be taken to ensure lateral orientation as well. The fitting should pitch forward only, not side-to-side.

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#### 1.2 INSTRUMENTS

Diaphragms on CPM fittings are extremely sensitive and must be treated gently and carefully. **DO NOT** attempt to depress with your hand to actuate. Also, take care not to damage the diaphragm, while installing the CPM fitting.

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#### 1.3 O-RING REMOVAL

Use caution to ensure pressure is not applied to the diaphragm during O-ring removal. For best results, apply pressure to the outside of the o-ring with thumb and forefinger on opposite sides of the setting. Push laterally and lift at the same time to remove the O-ring.

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### 2. OPTIONS AND REPLACEMENT PARTS

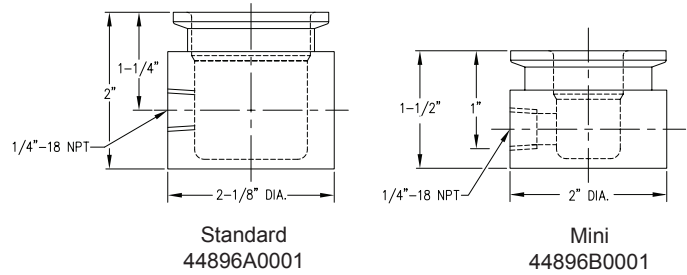
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#### 2.1 REPLACEMENT O-RINGS (6 PER PACKAGE)

	Standard CPM(123)	Mini CPM(161)
EPDM USP Class VI (Standard)	56096A0001	56096B0001
Silicone (clear)	56096A0002	56096B0002
Viton 3107	56096A0003	56096B0003

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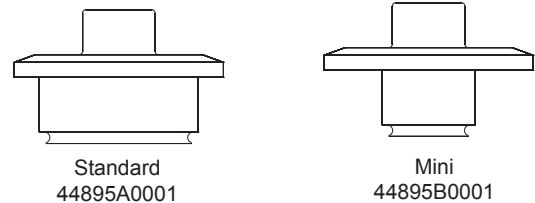
**2.2 CALIBRATION FIXTURE #44896A0001 Standard CPM(123)**  
**#44896B0001 Mini CPM(161)**



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**2.3 STAINLESS STEEL PLUG #44895A0001 Standard CPM(123)**  
**#44895B0001 Mini CPM(161)**

(Seals line to allow instrument to be removed for calibration)



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### 3. TEST DATA

In addition to the technical specifications outlined in the brochure and instruction manual, some customers have requested data relative to testing that has been performed on the CPM fitting. Outlined below are the various tests that have been conducted thus far, along with the results.

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#### 3.1 PRESSURE TEST

A standard plug was installed in a CPM fitting using a standard 1.5" Tri-Clamp® and EPDM O-ring. One of the ports was capped off and the other was connected to a high pressure nitrogen bottle with a regulator. The unit was then immersed in water and pressure was applied in 200 psig increments, with pressure being held constant for 3 minutes at each test point. No leaks were observed up to the maximum pressure of 1200 psig. The pressure was then relieved and the plug left in place so visual inspection of the seal could be made of the O-ring. No deformation or migration of the O-ring was observed. The clamp and plug were then removed to determine if the O-ring was damaged due to overpressure and no problems were found. Therefore, the CPM seal will carry a maximum pressure rating of 600 psig at 25°C, to match the rating of the clamp.

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#### 3.2 VACUUM TEST

The test fitting was set up as above and connected to a vacuum source fitted with an isolation valve such that pressure decay could be observed. The fitting was evacuated to 25"Hg and sealed from the source. The vacuum indicator was observed for 10 minutes with no increase in pressure. Resolution of the indicator was 1/100th of an inch of Hg. Subsequent observation of the O-ring showed no deformation or migration of the O-ring.

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#### 3.3 CLEANING TEST #1

A test fitting was installed in a 3/4" line in a horizontal position. A pressure gauge was installed in the fitting and viscous barbecue sauce was allowed to sit and congeal in the fitting for one hour. Warm (120°F) water with a mild detergent was then recirculated for 10 minutes, followed by a clear water rinse, both at less than 3 GPM. The fitting was then disassembled and visual inspection showed no sign of soil on the fitting, o-ring, or gauge diaphragm.

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#### 3.4 CLEANING TEST #2

The wettable surfaces of the test fitting were coated with an oil base ultraviolet detectable solution. The solution was allowed to penetrate and dry for five minutes. The fitting was installed in a closed loop pipe line to evaluate its cleanability. The cleaning solution used consisted of one part detergent and five parts hot tap water (water cooled to 98°F during test). The cleaning solution was pumped through the test fitting at a flow rate of 2.85 gallons per minute. After five minutes of cleaning, the test fitting was disassembled and checked with an ultraviolet detectable solution to evaluate the cleaning characteristics. All traces of the ultraviolet detectable solution had been removed from the wettable surfaces. The test was repeated several times to verify the procedure.