# AMPTEK

X 線検出器　寸法及び Option

仁木工芸株式会社

# XR-100CR and XR-100SDD Mechanical Dimensions

## 1.5 Inch Extender (standard)

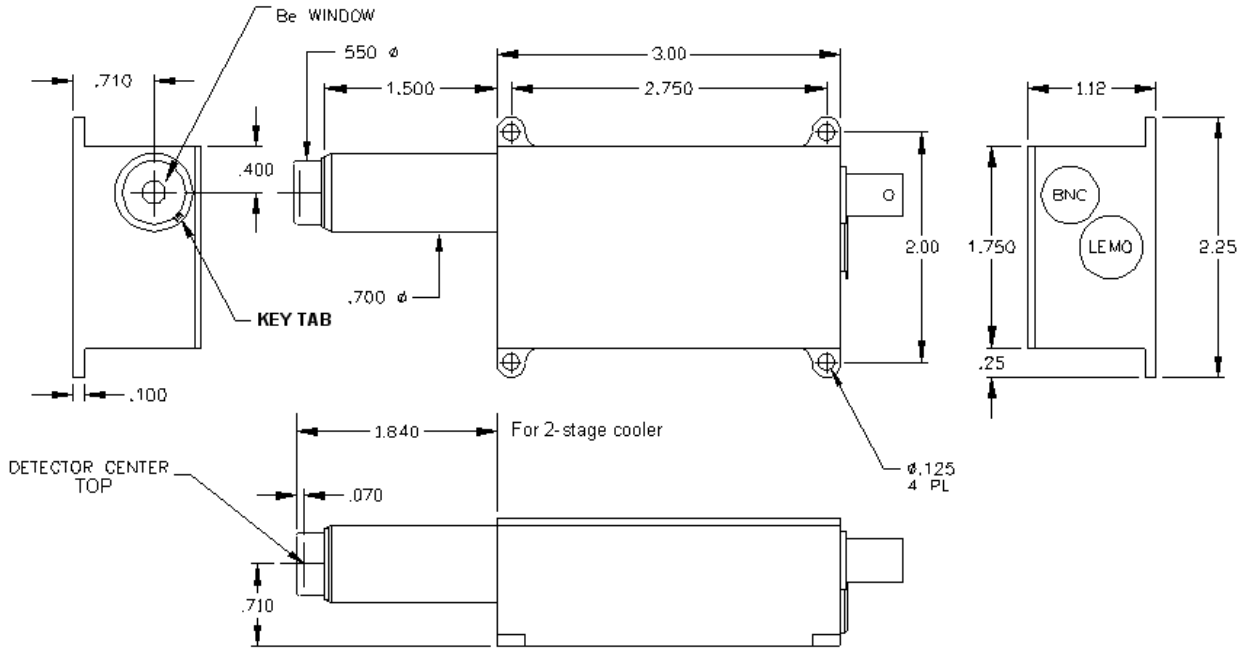


Figure 1. All dimensions in inches ±0.005.

## No Extender

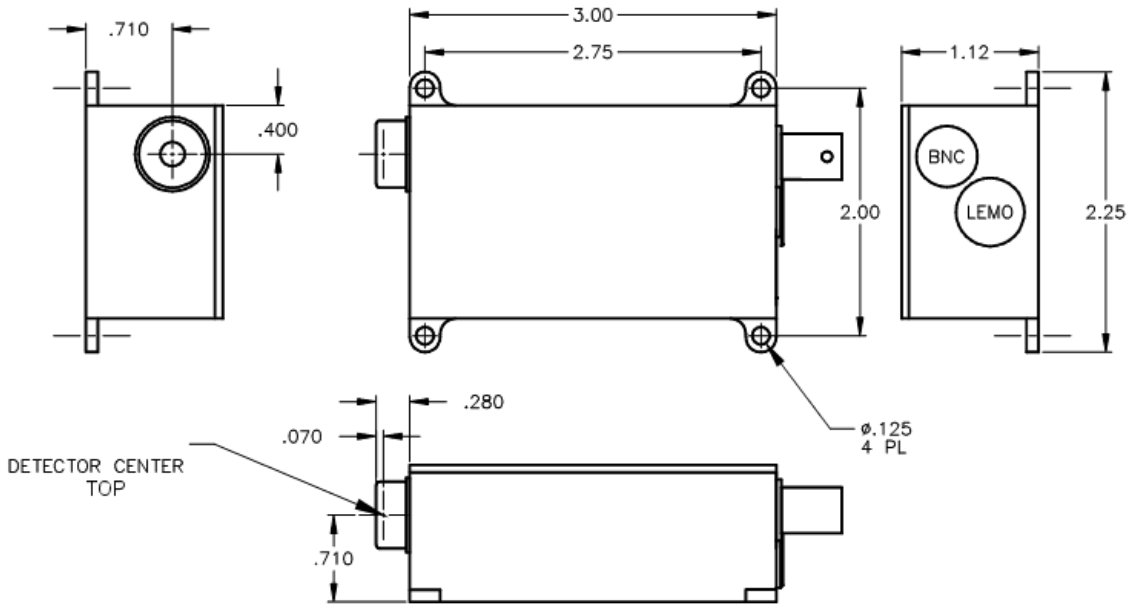


Figure 2. All dimensions in inches ±0.005.

# General AXR (T0-8) Mechanical Dimensions

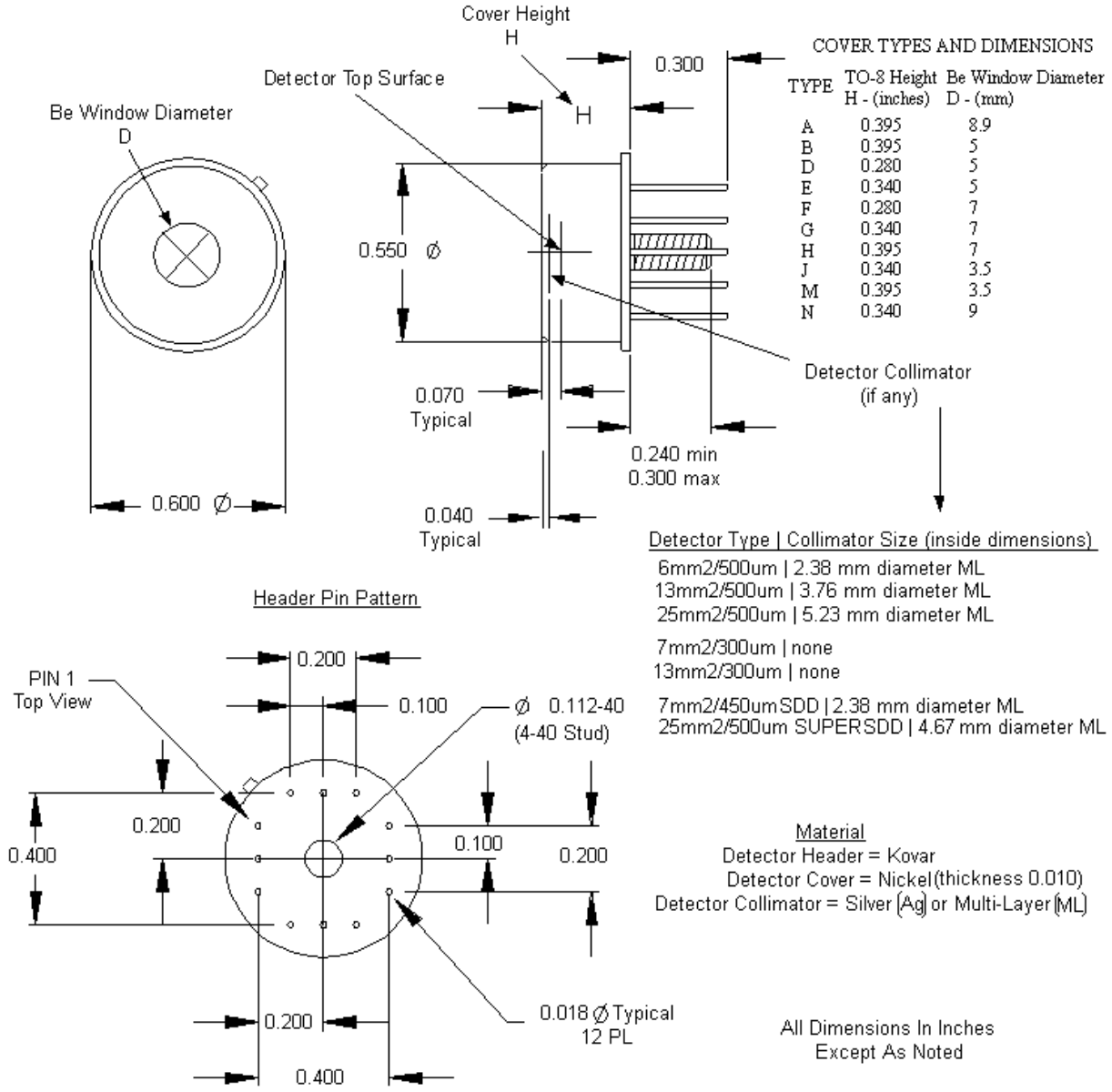


Figure 3. All dimensions in inches ±0.005.

### MultiLayer Collimator (ML)

Collimators can be made from material other than Aluminum, like Copper, Tungsten, Silver or other, provided the fluorescence peaks from the collimator material do not interfere with the anticipated measurement.

In cases where fluorescence peaks produced from the edges of collimators need to be minimized or eliminated, a multilayer collimator can be made by progressively using lower Z materials. Each layer will act as an absorber to the fluorescence peaks of the previous layer.

The final layer will be of the lowest Z material whose fluorescence peaks are of low enough energy to be outside the anticipated X-ray detection range.

Amptek has developed a state-of-the-art internal MultiLayer Collimator (ML). The base metal is 100 µm of tungsten (W), the first layer is 35 µm of chromium (Cr), the second layer is 15 µm of titanium (Ti), and the last layer is 75 µm of aluminum (Al).

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**Right Angle Heat Sink Mechanical Dimensions (supplied with OEM components)**

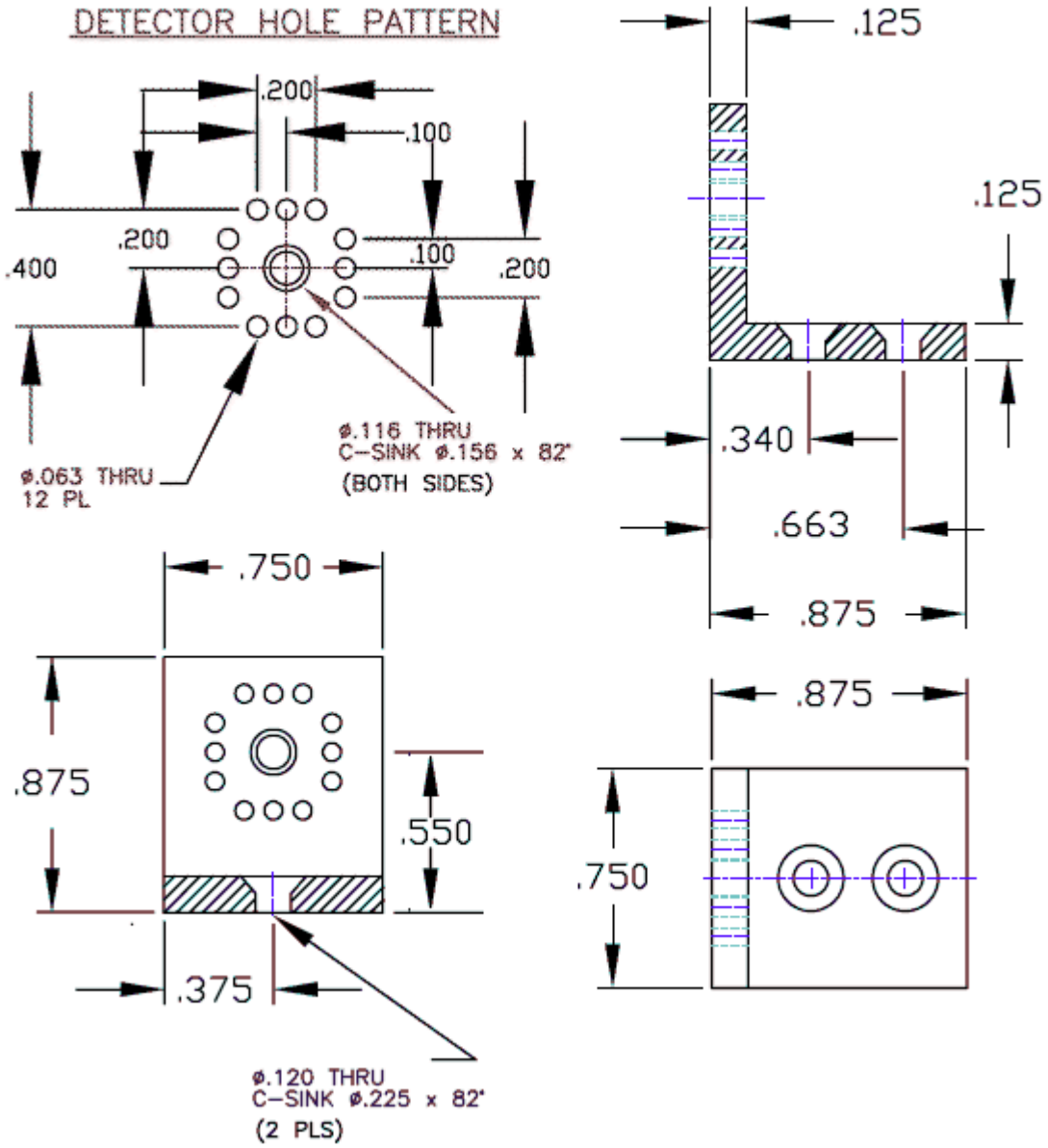
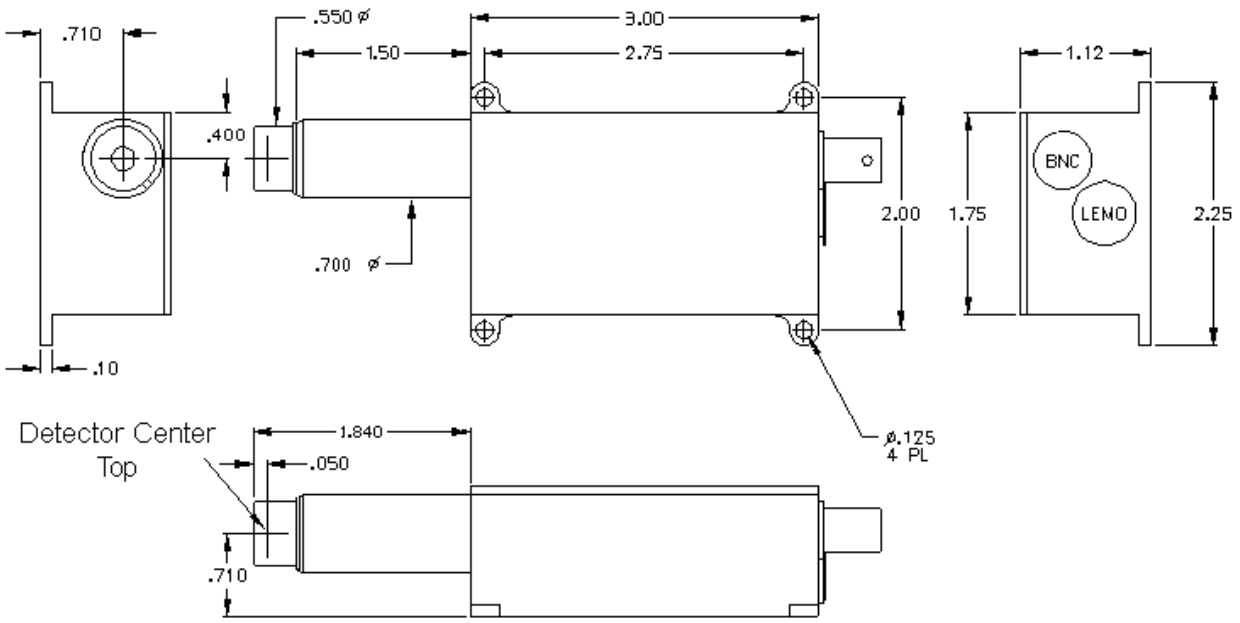



Figure 4. All dimensions in inches ±0.005.

# XR-100T-CdTe Mechanical Dimensions

## 1.5 Inch Extender (standard)




All dimensions are in inches except as noted ±0.0005.

## Vacuum Operation

The XR-100 can be operated in air or in vacuum down to $10^{-8}$ Torr. There are two ways the XR-100 can be operated in vacuum.

Option A: The entire XR-100 detector and preamplifier box can be placed inside the chamber. In order to avoid overheating and dissipate the 1 Watt of power needed to operate the XR-100, good heat conduction to the chamber walls should be provided by using the four mounting holes. An optional Model 9DVF 9-Pin D vacuum feedthrough connector on a Conflat is available to connect the XR-100 to the PX2 or PX4 outside the vacuum chamber.

Option B: The XR-100 can be located outside the vacuum chamber to detect X-Rays inside the chamber through a standard Conflat compression O-ring port. Optional Model EXV9 (9 inch) or EXV5 (5 inch) vacuum detector extender is available for this application.

**Both Option A & B for vacuum chamber pressures to $10^{-8}$ torr.**

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## Option A

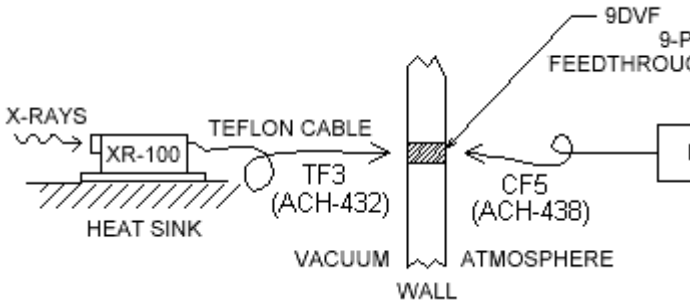


Figure 1. Option A with PX2

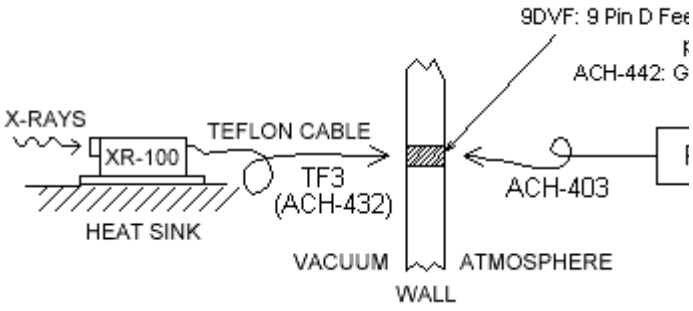


*Figure 2. Option A with PX4*

### Required items with PX2

- XR-100CR or XR-100T-CdTe
- TF3 Cable (ACH-432)
- 9DVF Feedthrough connector
- CF5 Cable (ACH-438)
- PX2CR or PX2T-CdTe

### *Required items with PX4*

- *XR-100CR or XR-100T-CdTe*
- *TF3 Cable (ACH-432)*
- *9DVF Feedthrough connector*
- *PX4 (includes ACH-403 Cable and ACH-442 Gender Changer)*

# Option B

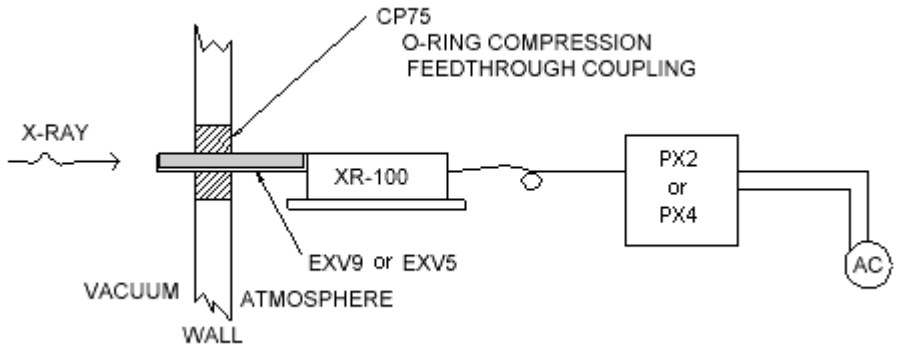


Figure 3.

### Required items

- XR-100CR or XR-100T-CdTe
- EXV9 or EXV5
- CP75 Feedthrough coupling
- PX2CR/PX2T-CdTe or PX4

### Option B Mechanical Dimensions

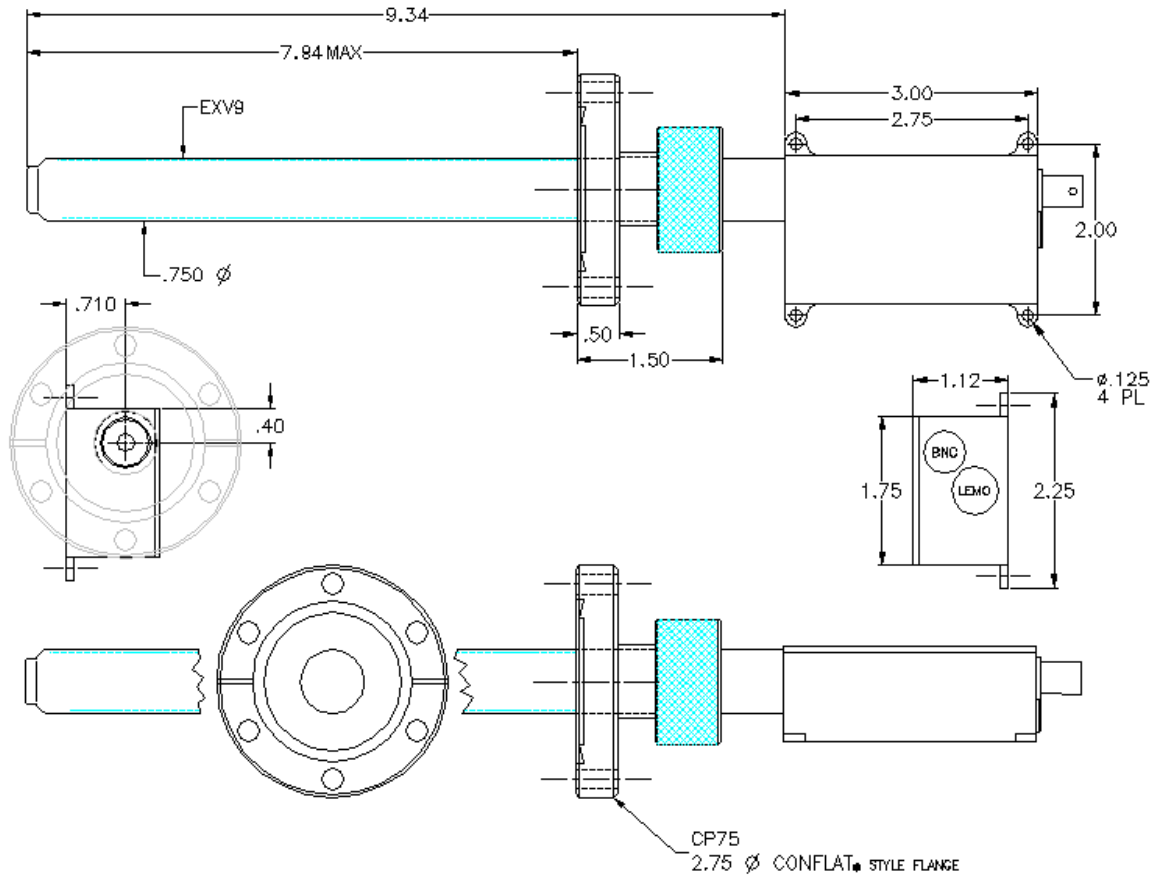


Figure 4. EXV9 – 9″ vacuum extender. All dimensions are in inches except as noted.

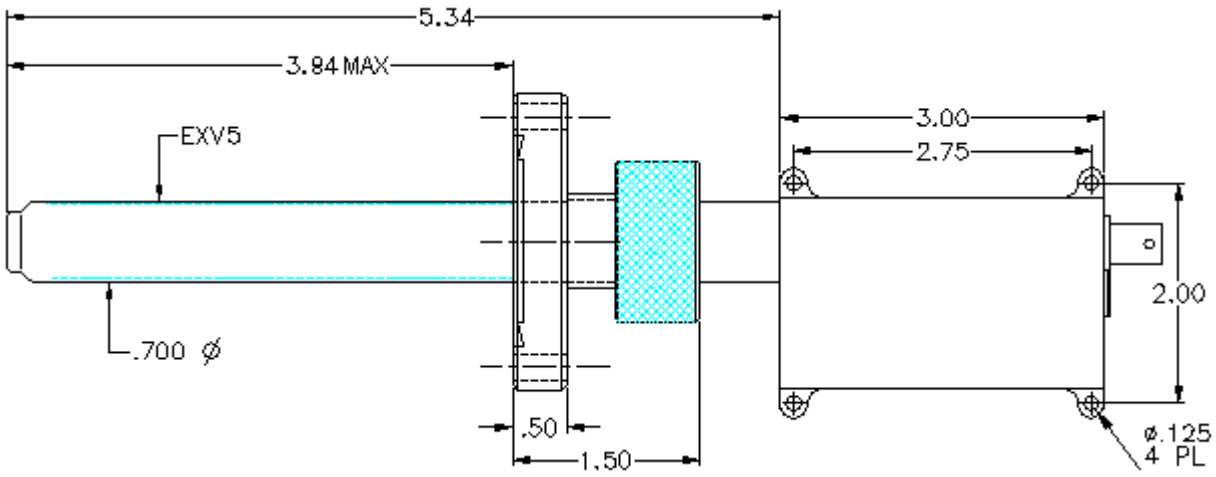


Figure 5. EXV5 – 5″ vacuum extender. All dimensions are in inches except as noted.


Figure 6. The XR100 and the X-123 with EXV9 9 inch extenders and CP75 feedthrough couplings.

## Model CP75

Vacuum feedthrough coupling on 2 3/4″ Conflat for use with the EXV9 or EXV5.

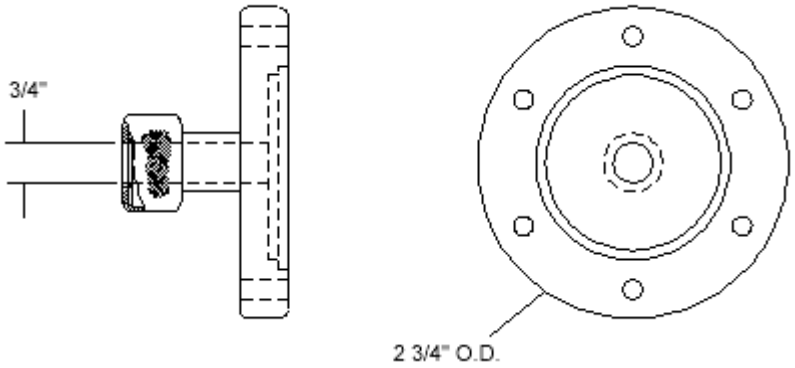


Figure 7. All dimensions are in inches except as noted.

## Model 9DVF

9 pin D-subminiature vacuum feedthrough connector mounted on a standard 2 3/4″ stainless steel Conflat.

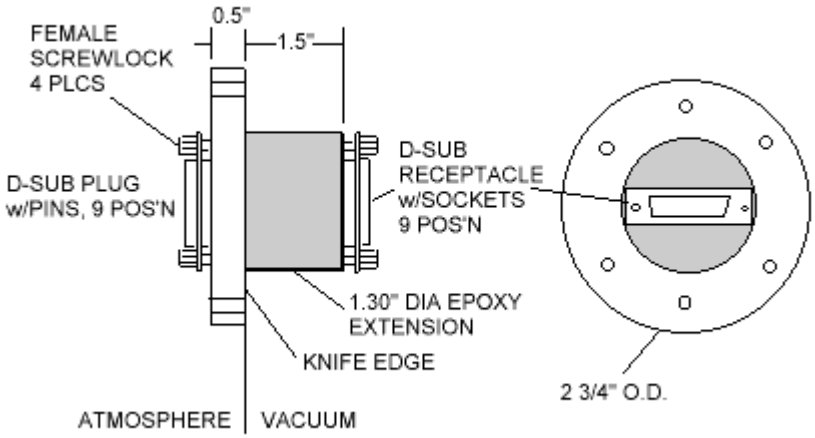


Figure 8. All dimensions are in inches except as noted.