

# Flow Cell Replacement and Alignment

The KinExA<sup>®</sup> Flow Cell is a capillary tube with a 20 Micron screen. For information on choosing the right Flow Cell or to find out when to replace the Flow Cell see [How to Guide 214 \(HG214 Flow Cell Selection and Information\)](#). Proper Flow Cell alignment provides for optimal performance.

## Flow Cell Replacement 3X00

- Route the clear *Entry Line* upwards through the *O-ring* (located on top of the *Optics House Frame*) and attach it to the bottom of the 4-way *Connector* using a *White Ferrule* (347016) with a *1/4-28 Black Nut* (346001) (**Figure 1**).

**Note:** Refer to the end of the instructions if uncertain about how to correctly install a *White Ferrule* or a *Tan Ferrule*.

- Slide the colored *Exit Line* through the *O-ring* (located on the left side of the *Optics Housing Frame*) and connect it into the bottom of the *Union* using a *10-32 Tan Nut* (346201) and a *Tan Ferrule* (347116) (**Figure 1**).

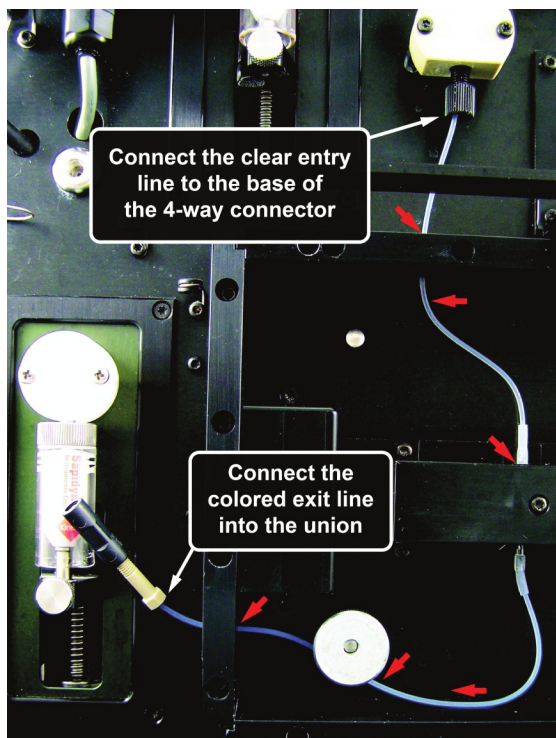


Figure 1: Installing a new Flow Cell into the Instrument.

## Flow Cell Replacement 4000

- Open the *Reflector Mount*, and slide back the *Retaining Clip*. The old *Flow Cell* may be dislodged from the *Flow Cell Groove*.
- Gently pull the clear *Entry Line* down from the hole in the top of the *Optics Housing Frame* until the *Union* is exposed. Unscrew the *Flow Cell* from the *Union* (**Figure 2A**). Discard the *Ferrule* but keep the white *Extra Short Nut* (346205).
- Open the *Plumbing Panel*. Unscrew the colored *Exit Line* from the right side of the 4-way *Connector* (**Figure 2B**). Discard the *Ferrule* but keep the *M6 Black Nut* (346101). The *Flow Cell* is now completely detached from the *Instrument* and may be removed and discarded.
- Thoroughly clean the *Groove Lens* and the *Reflector Mount* with *Denatured Alcohol* and *Kimwipes*.
- Attach the clear *Entry Line* to the base of the *Union* using the *Extra Short Nut* and the *1/16" Tan Ferrule* included with the new *Flow Cell*. Torque the *Extra Short Nut* to 15 in-oz using the *1/4" Deep Socket* (015902) and *15 in-oz Torque Wrench* (024140). Route the clear *Entry Line* upwards through the hole in the top of the *Optics Housing Frame* until it is hidden from view (**Figure 2A**).
- Route the colored *Exit Line* through the *O-ring* in the left side of the *Optics Housing Frame*; look for it to come out on the far right side of the *Plumbing Panel*.
- Attach the colored *Exit Line* to the 4-way *Connector* using an *M6 Black Nut* and *1/16" White Ferrule* (**Figure 2B**).
- Apply a thin layer of *Dielectric Grease* (231362) or *Index Matching Fluid* (231363) onto the *Grooved Lens* and the *Reflector Mount* before securing the *Flow Cell* with the *Retainer Clip* and closing the *Reflector Mount*.

**Note:** The *White Ferrule* slides onto the *Tubing* with the tapered end toward the *Nut* and the flared end toward the *Valve Port*. The *Tan Ferrule* slides onto the *Tubing* with the tapered end toward the *Valve Port* and the flared end toward the *Nut*. When installing and tightening these fittings, be sure to push the *Tubing* all of the way into the *Valve Ports* (Figures 5 & 6).

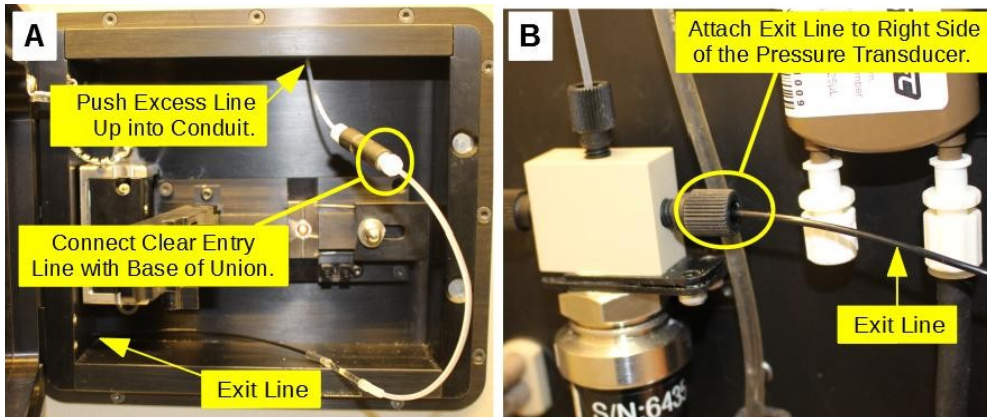


Figure 2: A) Routing the Flow Cell through the Optics Housing Frame. B) Routing the Flow Cell into the 4-way Connector.

### Flow Cell Alignment

- Align the top of the filter, represented in green below, with the notch in the *Optics Housing* as shown in **Figure 3**.
- Look at the camera image and fine tune the alignment so that the top of the filter is in line with the corner of the KinExA Technology Logo (**Figure 4**).
- If the camera image appears blurry or cloudy, wipe off the *Flow Cell* with a *Kimwipe* to remove excess *Dielectric Grease* or *Index Matching Fluid* on the camera side of the *Flow Cell*. (Red circled area in **Figure 3**).

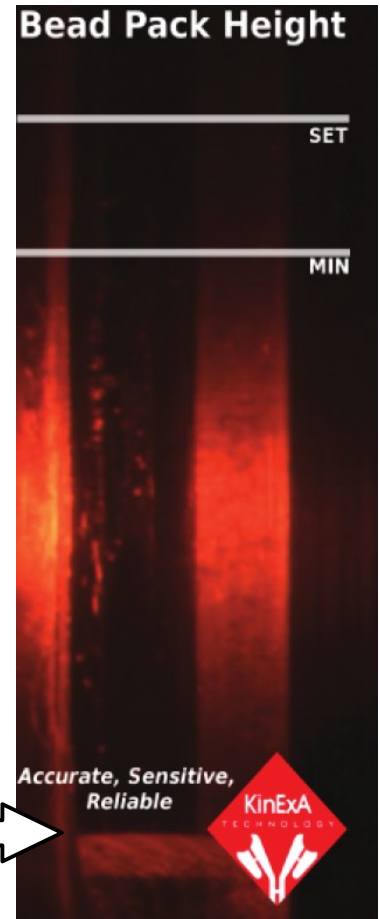


Figure 4: Camera image of properly aligned Flow Cell.

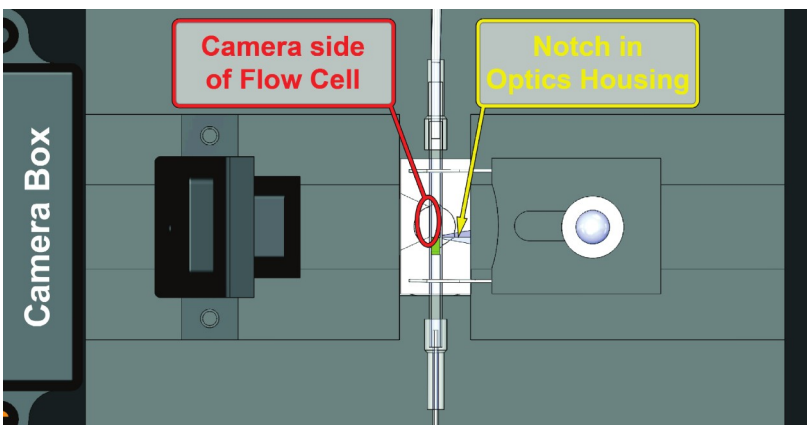


Figure 3: Proper alignment of the filter with the notch in the Optics Housing. Grease left on the camera side of the Flow Cell (red circle) can cause the image to be blurry or cloudy. (Note: The filter is not green, the color helps to see the alignment in the illustration.)

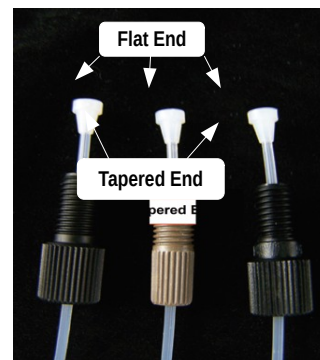


Figure 5: White Ferrule with the tapered end facing the Nut.

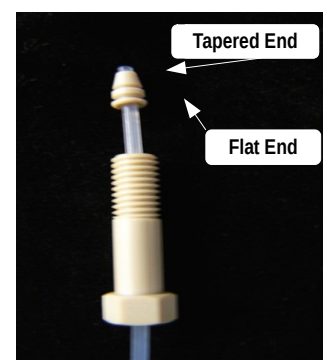


Figure 6: Tan Ferrule with the tapered end facing away from the Nut.