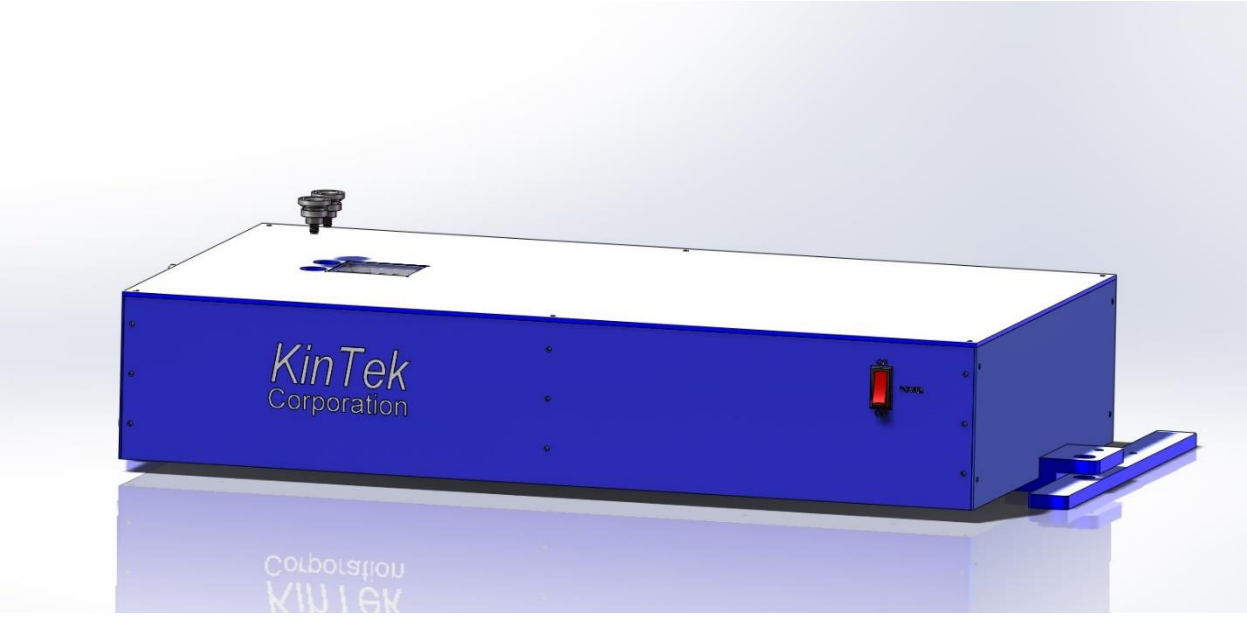
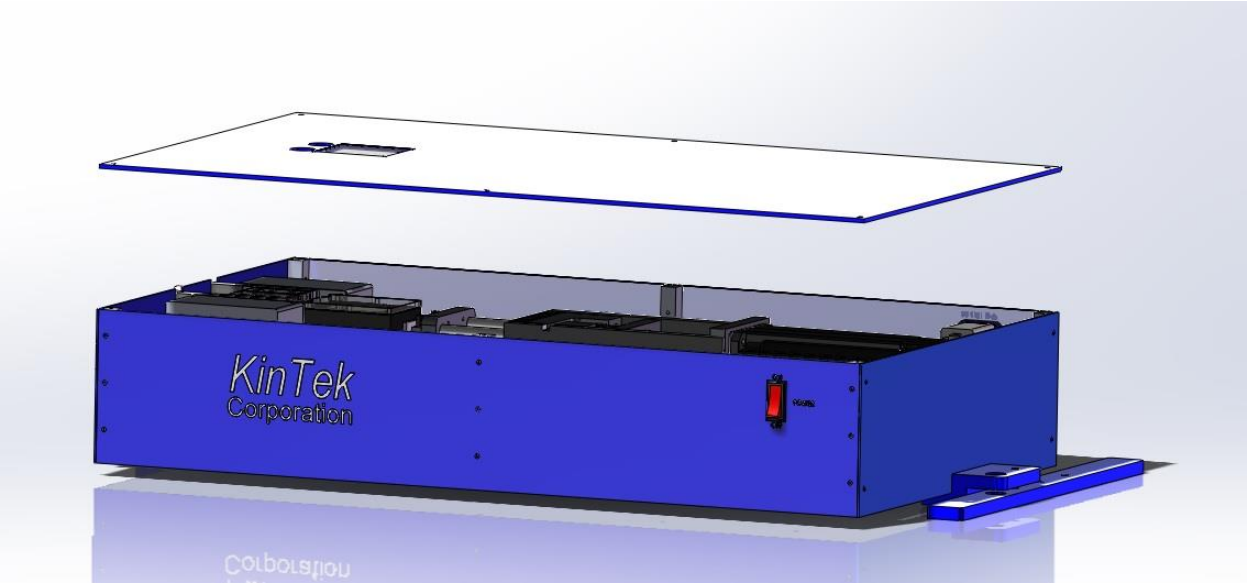
AutoSF-120 Plunger Assembly Replacement

Step 1: Turn off the power and disconnect the power cable from the instrument.



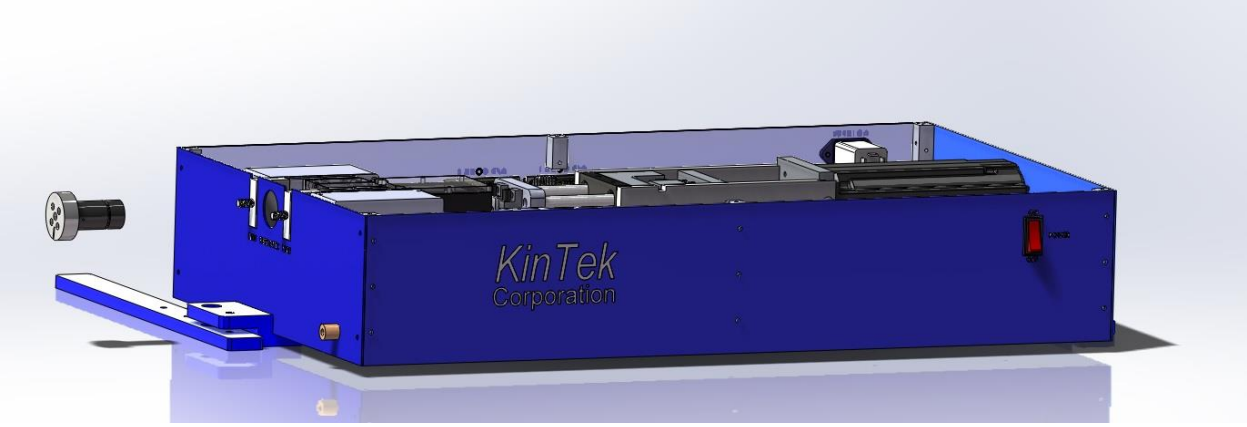
Using the cylindrical tool provided with the instrument, remove the load ports by inserting the pins in the end of the tool into the small holes on the top of the load ports and turning the port counter-clock-wise. In this manner, the port can be un-screwed and removed to facilitate top cover removal.

Step 2:



Remove the 6 Philips Head screws from the top plate and remove.

Step 3:

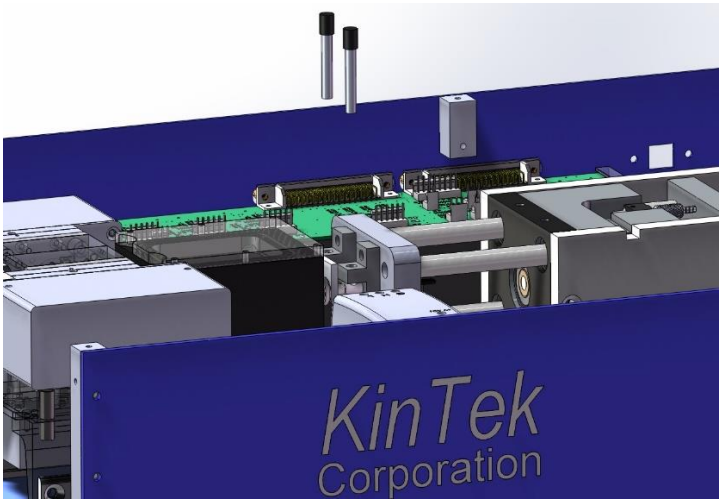


Remove the round fiber adapter from the left side plate. This fiber adapter simply pulls out (with some effort). It is held in place by an o-ring.

Step 4:

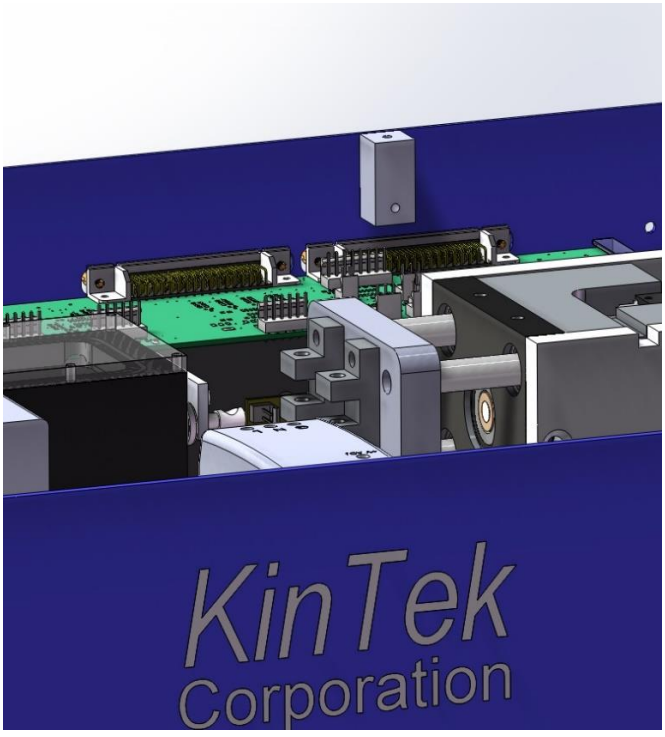
Remove the 4 Philips head screws from the left side plate and remove. These screws are the same as the screws used on the top so there are no worries about getting them mixed up.

Step 5:



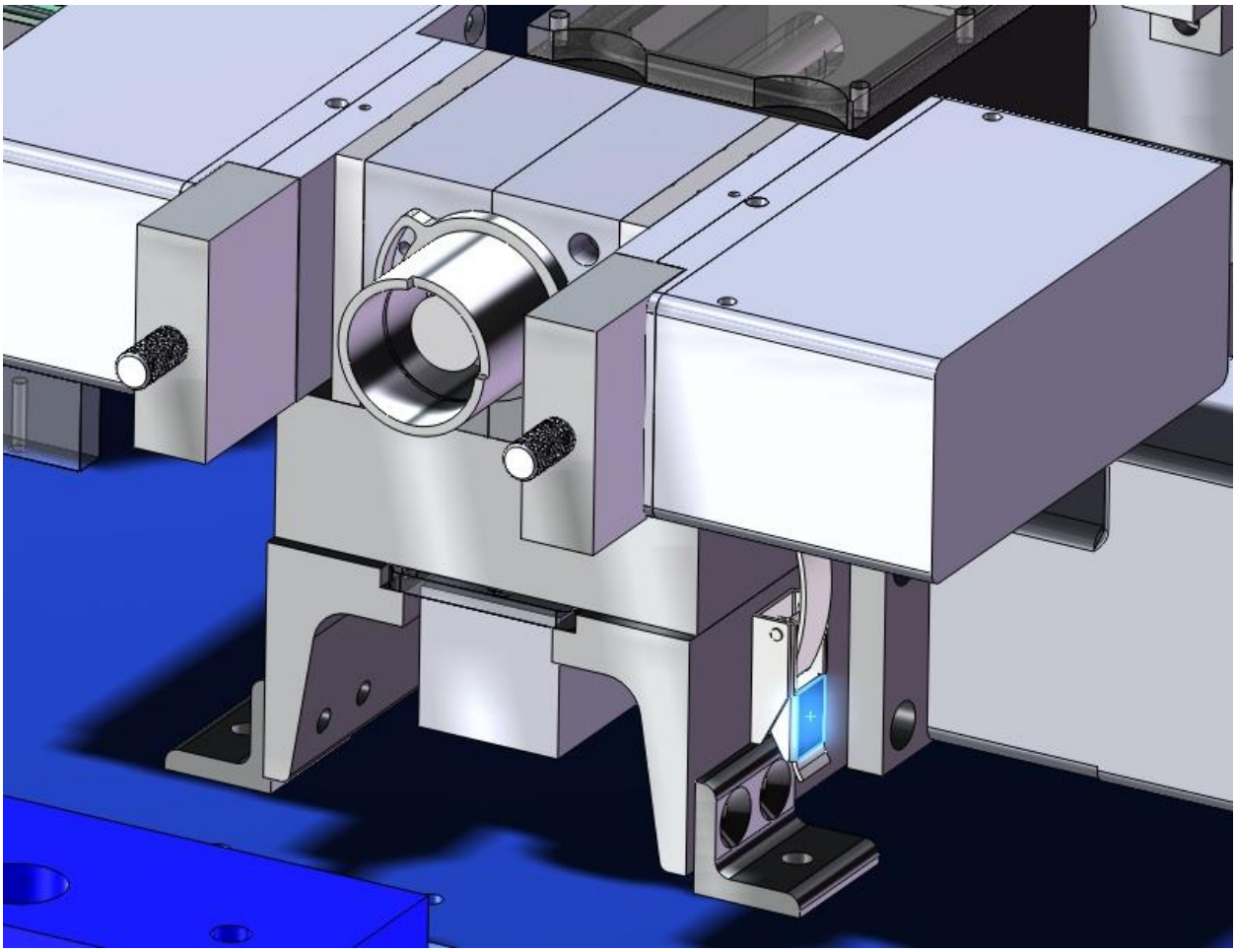
Remove the syringe plunger pins from the drive plate brackets. These two pins should simply pull out.

Step 6:



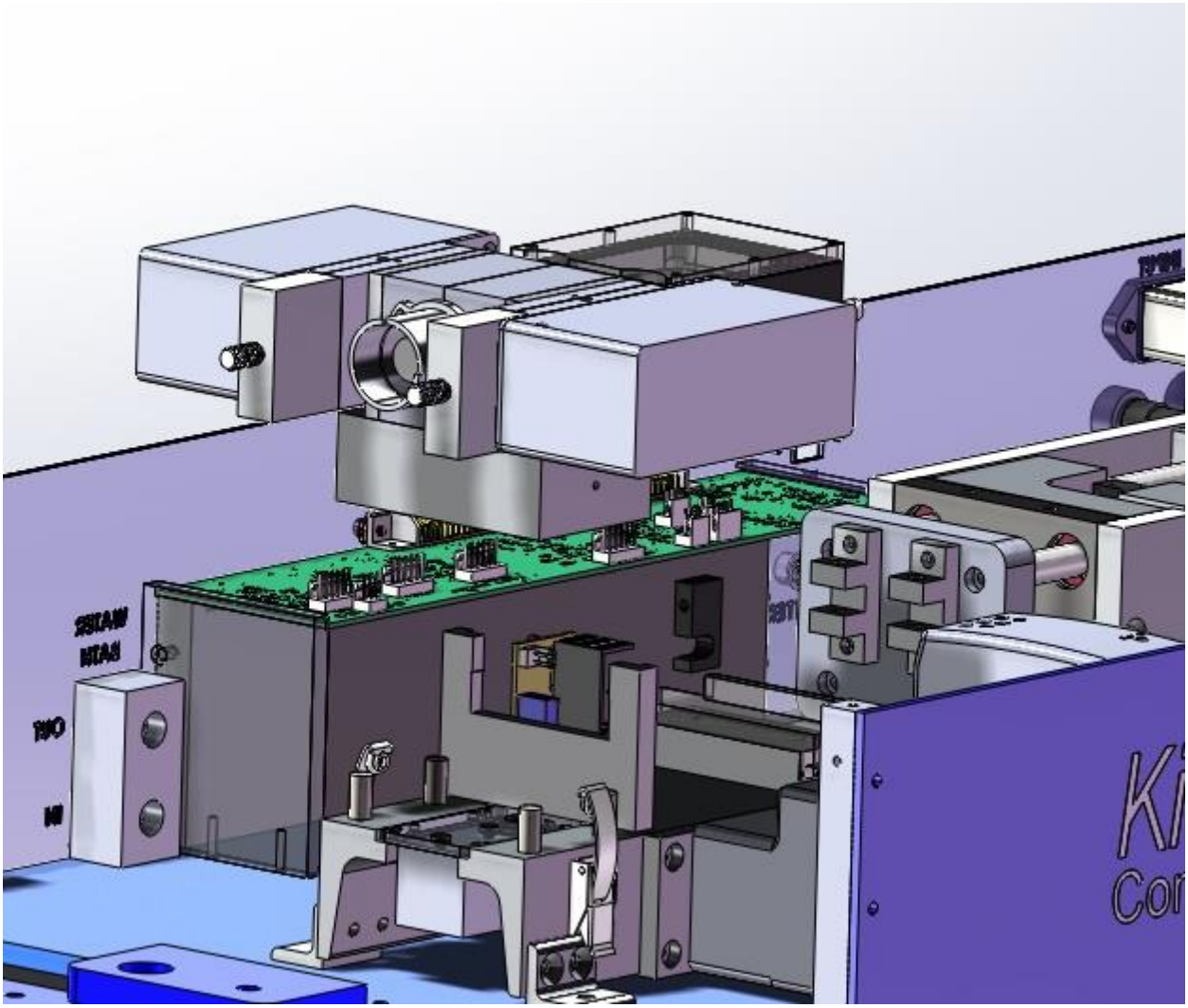
Move the drive plate to the right so that the plungers clear the drive plate brackets when the syringe assembly is lifted out. Ensure the water bath tubes are disconnected, the LED power wire is disconnected and the temperature probe is removed. When disconnecting water lines and removing the temperature probe, be aware that if the system isn't drained, water will escape from the chamber.

Step 7:



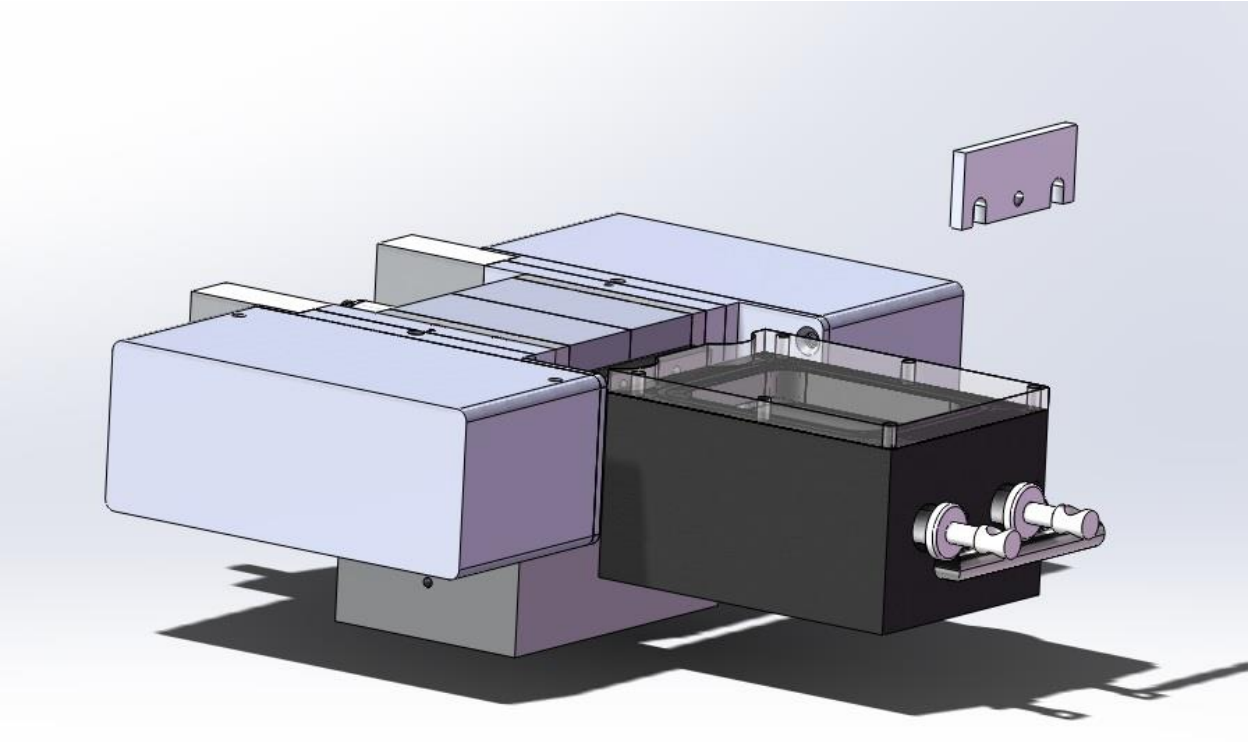
There are two spring-loaded clips holding the syringe assembly in place. They are located under the PMT modules as shown (one on each side). Lift out and up on these clips to release them.

Step 8:



Unplug the PMT Module signal and control wires. Once the clips have been released, the syringe assembly (including the two PMT modules, observation cell cube and syringe chamber assembly) can be simply lifted out of the instrument. Ensure not to kink the exit line tubing when lifting the assembly up. Unscrew the exit line from the stop valve once the assembly is free of the alignment pins. While this assembly is lifted out, cover the small round hole exposing the absorbance PMT (under the channel). I usually use a load port cover. This will shield the PMT from direct ambient light.

Step 9:



Using a 3/32 hex driver, remove the syringe retainer from the assembly by removing the screw and lifting up. When replacing this screw, ensure NOT to tighten it. The screw simply should make contact with the retainer so that it stays in place. Tightening this screw will put undue lateral pressure on the syringes and they may break.

At this point, the syringe plungers can be removed easily and replaced with new ones.

Reassembly is accomplished in the reverse order. Ensure the exit line is reconnected to the stop valve before replacing the assembly. The water lines and the temperature probe must be held out of the way when replacing the assembly on the alignment pins.

Once the syringe assembly is on the alignment pins, great care must be taken to ensure the assembly is flat against its seat with no gaps between the base and the channel.