iSED® Automated Erythrocyte Sedimentation Rate Analyzer

Needle Replacement Procedure, 112-28-005 Rev. 0

Purpose

This procedure describes the process of replacing the Needle Tip Assembly.

Scope

This applies to all iSED® instruments when Needle Tip Assembly is damaged or bent, or if a clog is determined to be present in the Needle Tip Assembly. This must also be performed as regularly scheduled maintenance at intervals of 30,000 tests performed.

Required

1. Protective rubber gloves
2. 112-15-087 Screwdriver Multitool or 8mm Box/Combination Wrench
3. Biohazard Disposal

Figure 1: 112-15-087 Screwdriver Multitool

Preparation

1. Power on iSED®
2. Run a Wash Cycle by pressing the Wash Cycle Icon 

Procedure

1. Power off instrument.
2. Remove the Needle Access Door by turning the Thumb Screw counterclockwise and pulling the door outwards and upwards (see Figure 2).

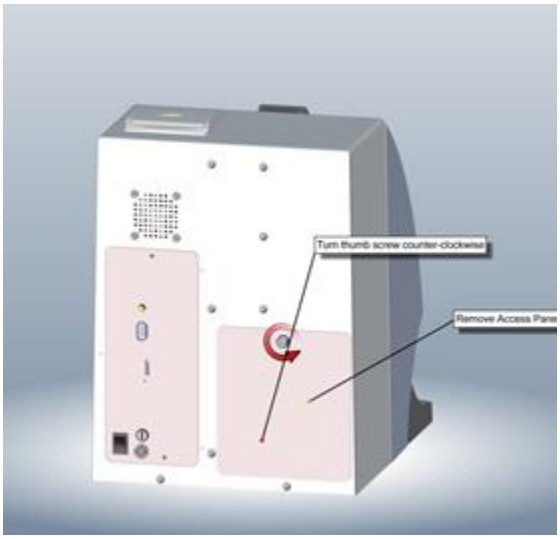

Figure 2

3. Remove the tube from the Washing Ring Barb connector as shown in Figure 3.

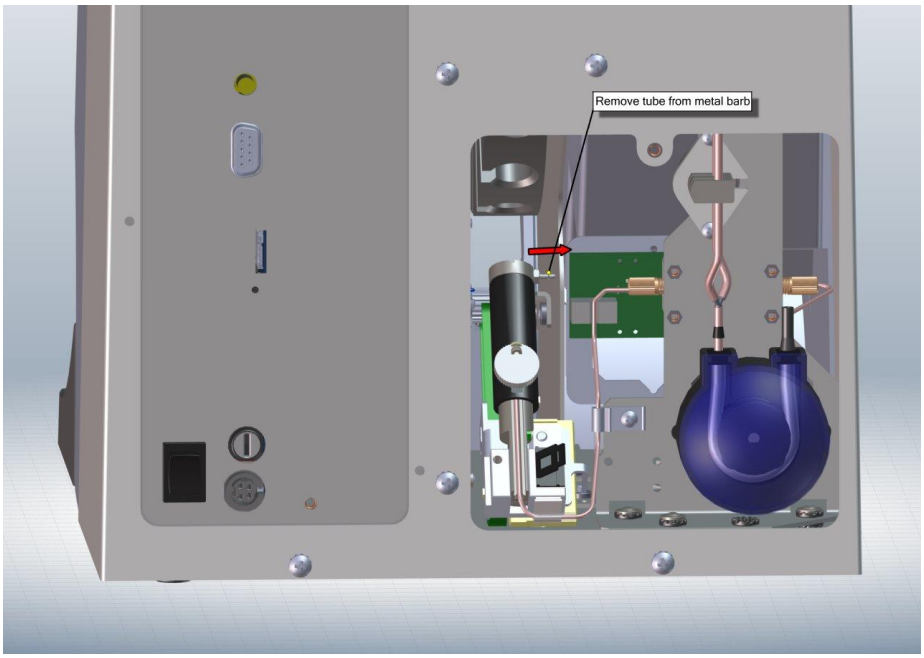

Figure 3

4. Remove the Probe Wire from the black Wire Clip, and the Needle Tubing from the Tube Clip as shown below in Figure 4.

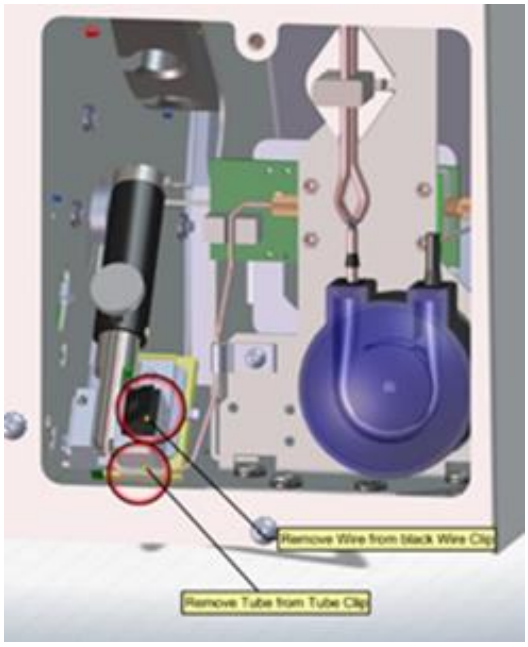

Figure 4

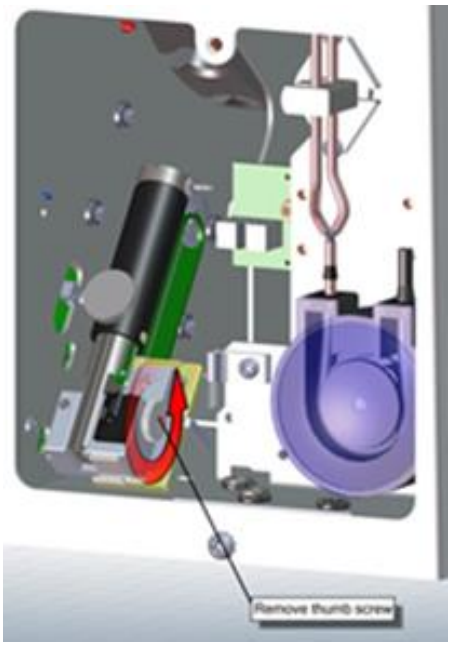

Figure 5

5. Remove black Thumb Screw from Probe tube as shown above in Figure 5.
6. Pivot the Needle Piston Assembly outwards as shown in Figure 6 below.

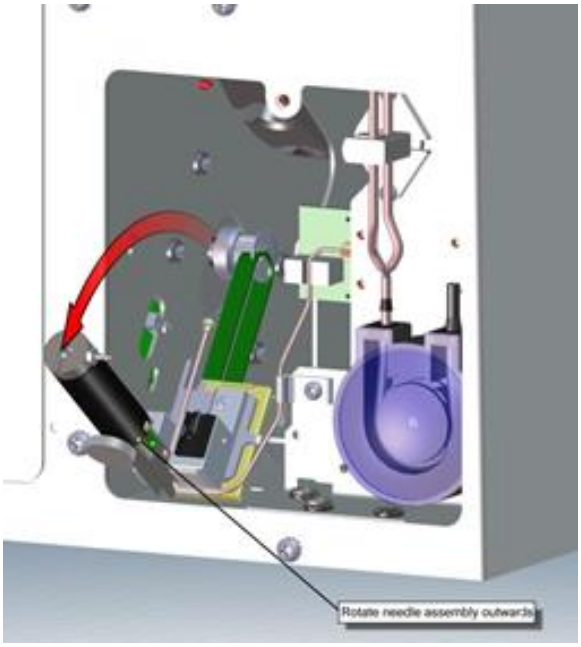

Figure 6

7. Remove Thumb Screw from Probe Tube shown in Figure 7. Now you are able to remove the Probe Tube Assembly (Figure 8) and the spring from Needle Piston Assembly (Figure 9).

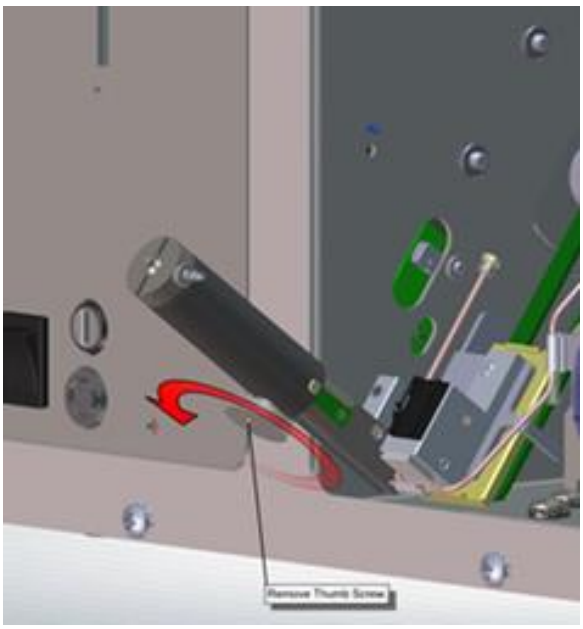

Figure 7

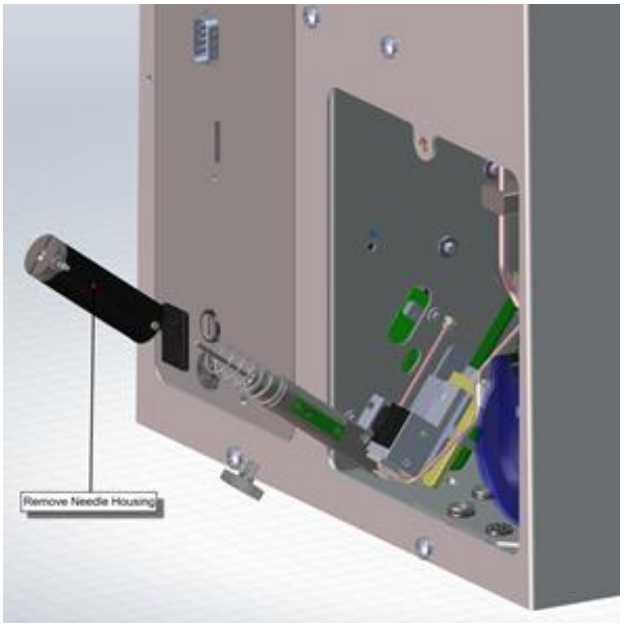

Figure 8

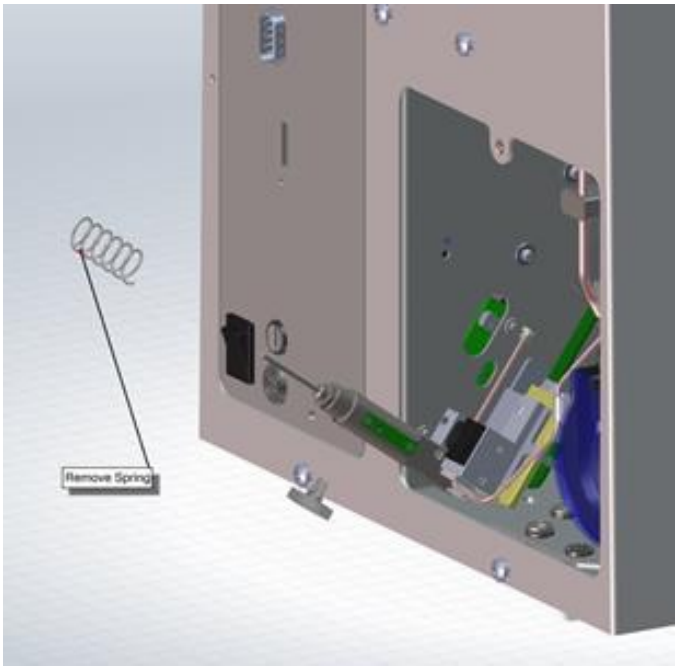

Figure 9

8. Using an 8mm hex socket on the Multitool, unscrew the old Needle Tip (counterclockwise) from Needle Piston Assembly. Discard the Needle Tip in proper Biohazard disposal (see Figure 10).

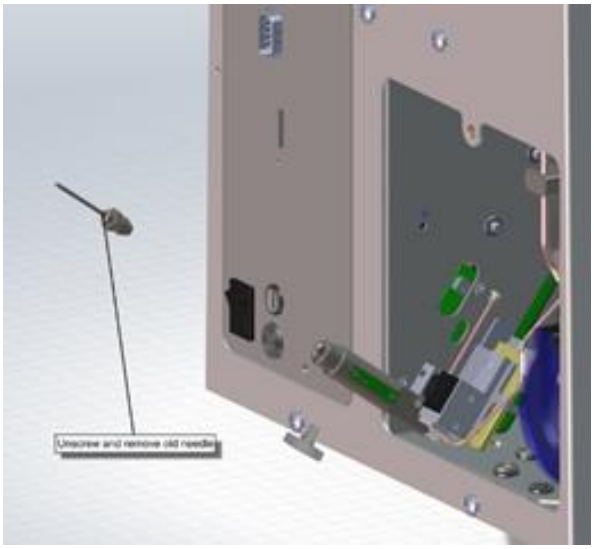

Figure 10

9. Verify the Needle Tubing is resting on the lowest possible “ledge” of the interior of the Needle Piston shown in Figure 11.

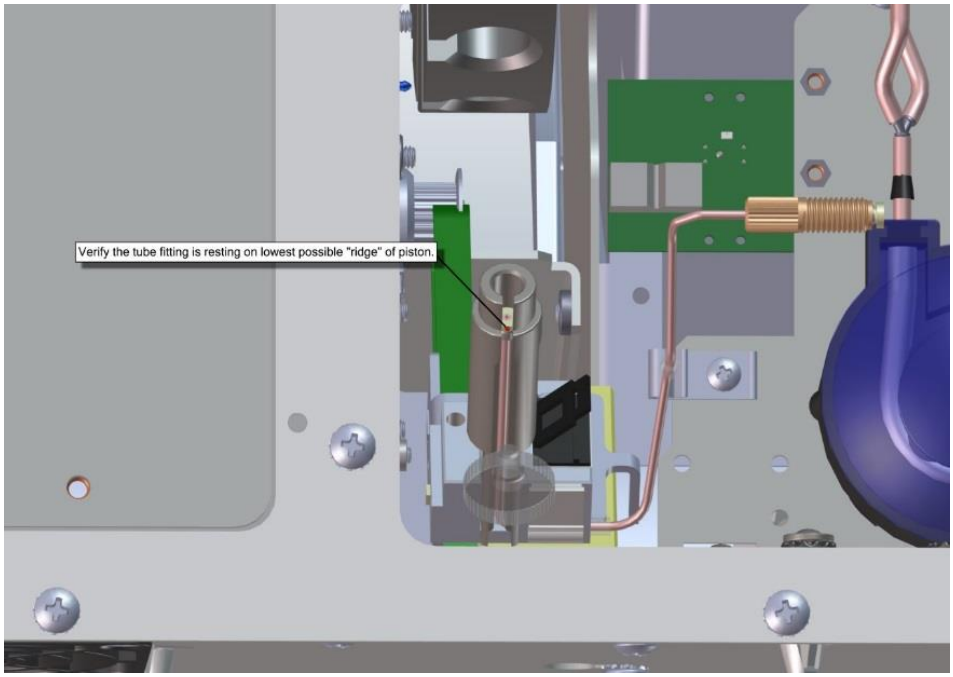

Figure 11

10. Screw the replacement Needle Tip into the Needle Piston. Tighten as much as possible by hand. Tighten again with the adjustable wrench by rotating it another half-turn counterclockwise (180°) shown below in Figure 12.

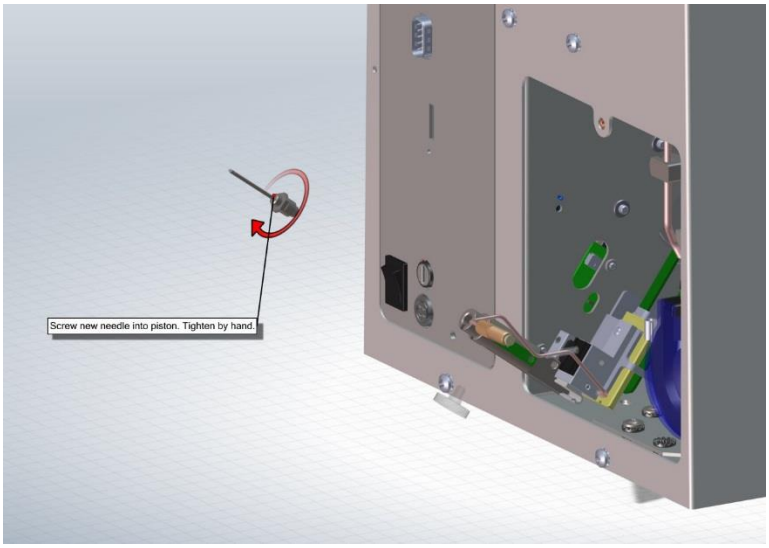

Figure 12

11. Replace the Spring (Figure 13) and Needle Tube Housing (Figure 14)

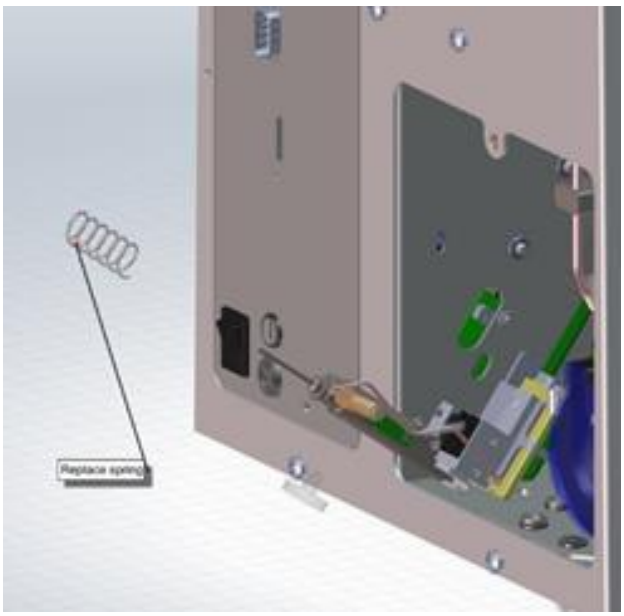

Figure 13

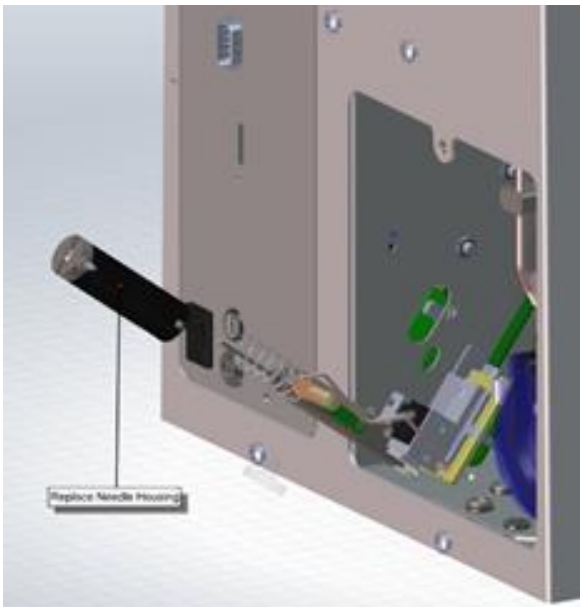

Figure 14

12. Replace the Thumb Screw on the Needle Tube Housing. You may will have to compress the Spring and Needle Tube Housing slightly in order to tighten the Thumb Screw. **Compressing the Assembly wiLl cause the Needle Tip to BECOME EXPOSED from the Assembly. Be Aware of piercing injury.** Thumb Screw should tighten completely down but be careful to prevent stripping out the plastic of the Needle Tube Housing (see Figure 15).

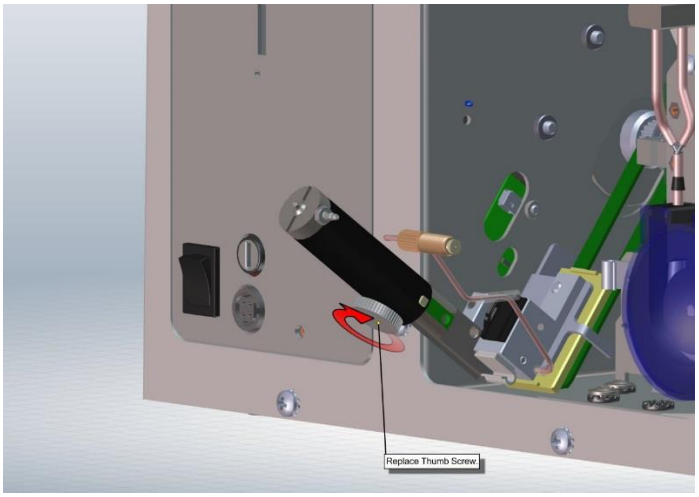

Figure 15

13. Pivot the Needle Piston Assembly back into the operational position (Figure 16). Replace the Washing Tube back onto the Barb connector of the Needle Tube Housing (Figure 17).

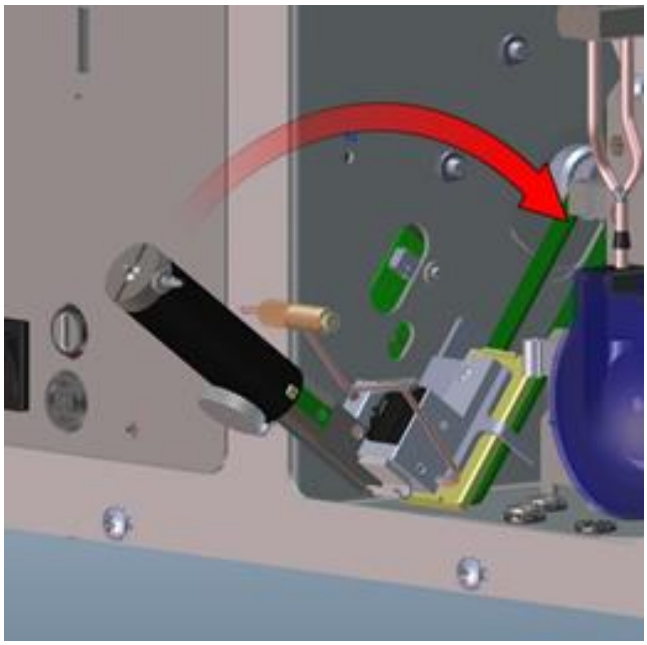

Figure 16

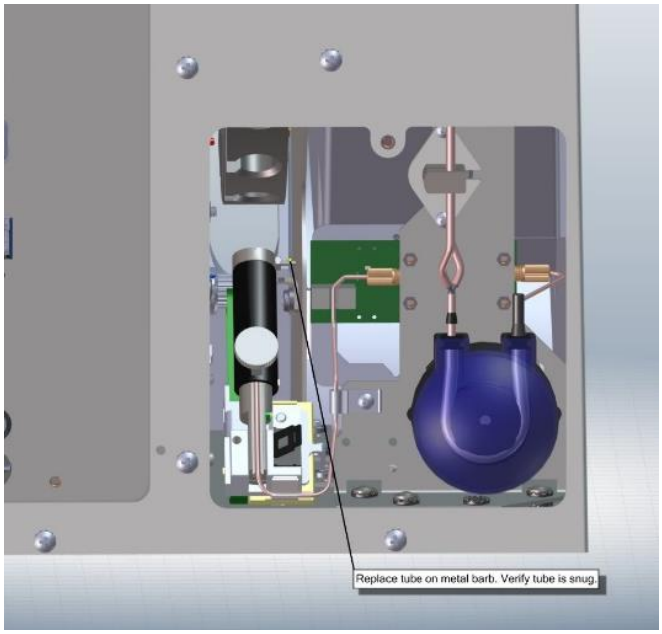

Figure 17

14) Replace the long black Thumb Screw. Tighten screw completely. Verify Needle Piston Assembly is locked in position and cannot pivot outwards (Figure 18).

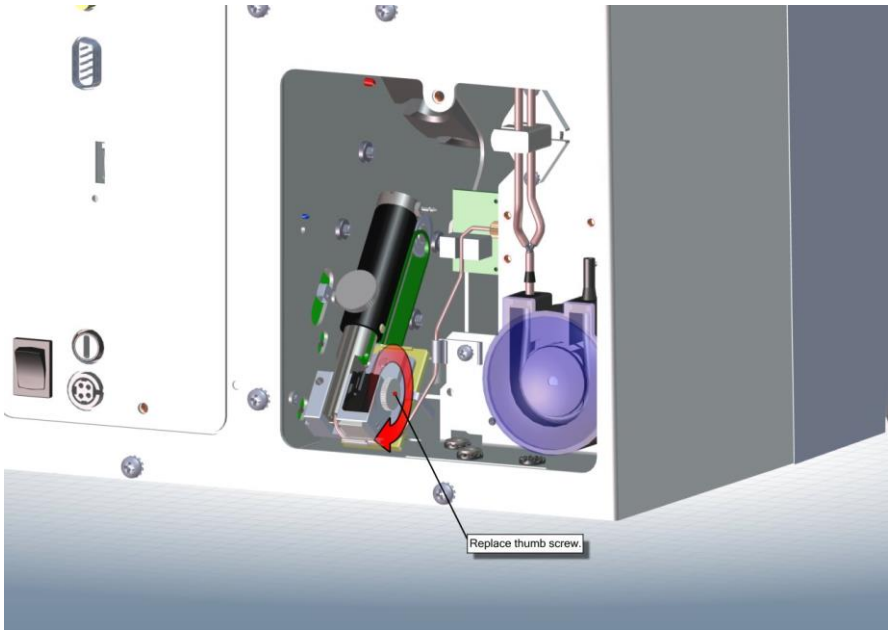

Figure 18

15) Replace the Probe Wire into the black Wire Clip, and the Needle Tube into the Tube Clip (Figure 19).

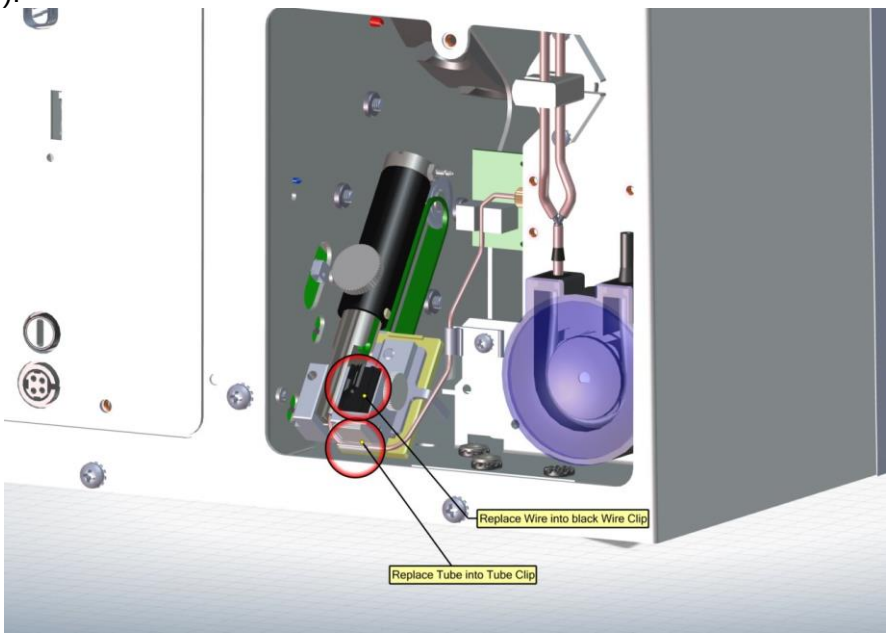

Figure 19

16) Replace Needle Access Door (Figure 20). Secure Door by tightening Thumb Screw (Figure 21).

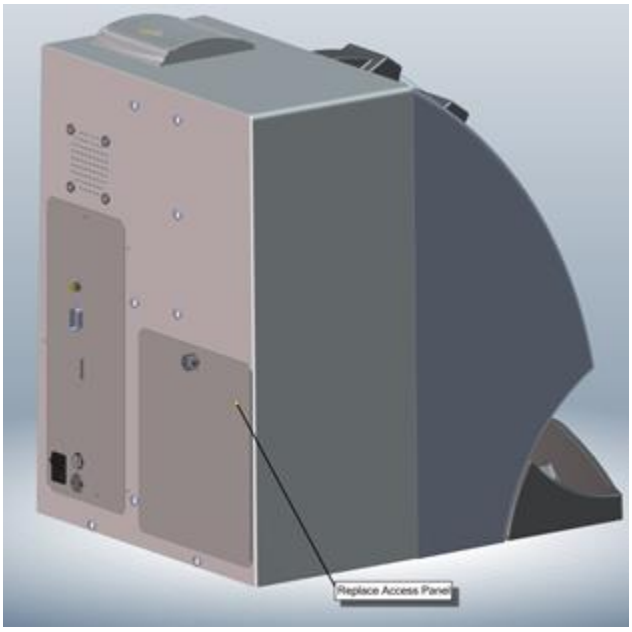

Figure 20

Figure 21

17) Needle replacement is now completed.