

CNT240 Standard Operation Training Procedures for Users

1. Purpose

To establish training procedures for high-throughput scanners and standardize slide loading/unloading operations and specimen quality control.

2. Scope

These procedures apply to training for all users of high-throughput scanners.

3. Procedures

3.1 Training Content:

3.1.1 Materials and Components:

A) Specimen holder (Figure 1)

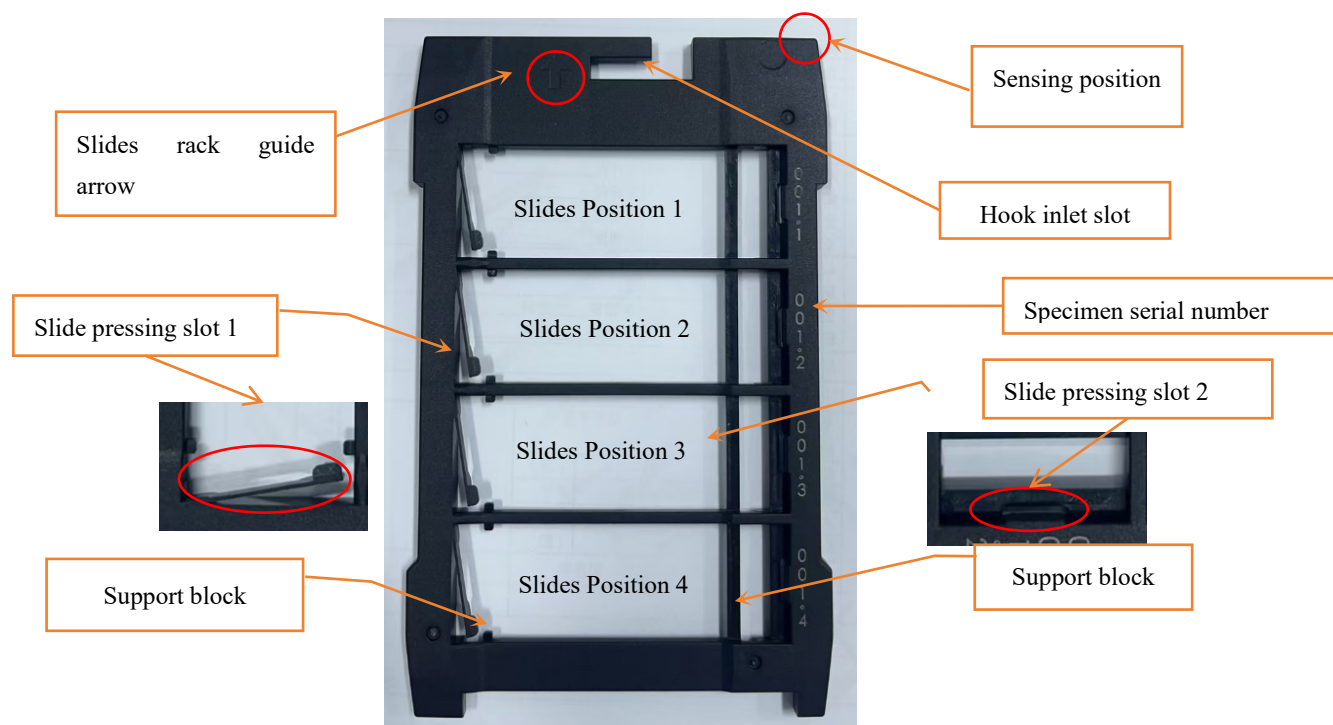
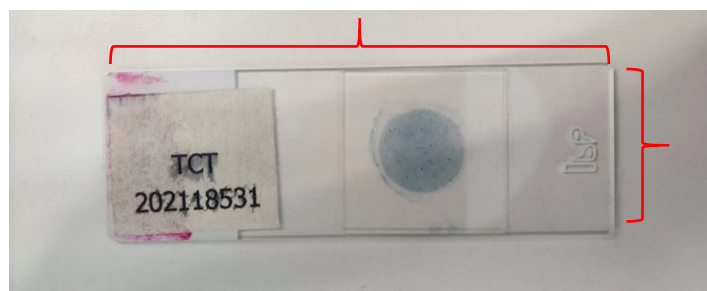


Figure 1

B) Specimens (Figure 2)

Recommended specifications are shown in the figure below:

$+0.2$
76mm -1



$+0.5$
25.5mm -0.5

Figure 2

C) Instrument slide feeding module (Figure 3)



Figure 3

D) Instrument slide output module (Figure 4)

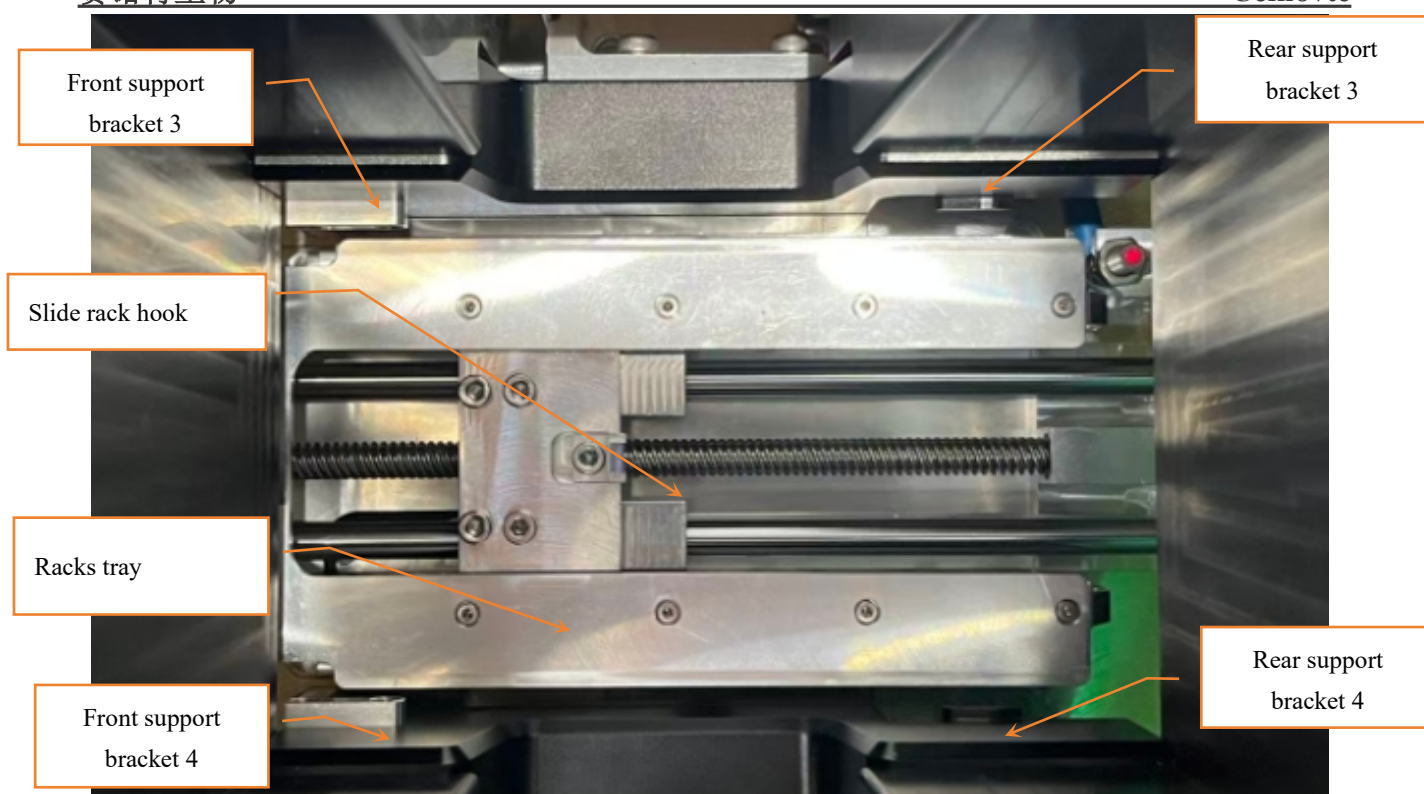


Figure 4

3.2 Specifications for slide preparation quality:

3.2.1 As shown in Figure 5 (area circled in red), when preparing slides, the coverslip shall not extend beyond the top and bottom edges of the glass slide.

Note: The red boxed area in Figure 6 shows non-standard placement of coverslips. Two corners of the coverslip extend past the top and bottom edges of the glass slide (severe displacement or skewing of the coverslip, with the entire slide suspended above the specimen holder, will cause focusing failure and blurry scanning results).

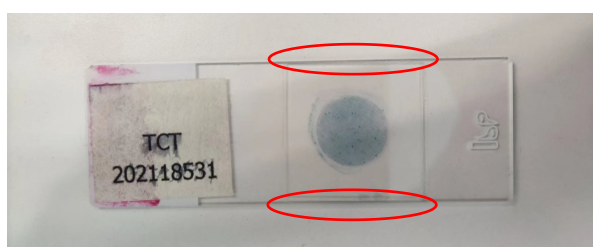


Figure 5

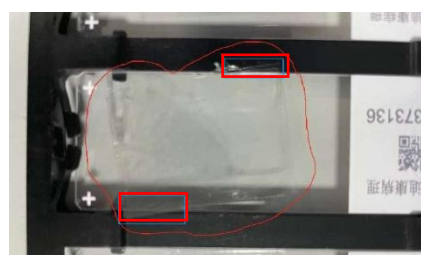


Figure 6

3.2.2 After placing the coverslip on the glass slide, the mounting medium overflowing around the coverslip (dotted line area in Figure 7) shall not exceed the thickness of the coverslip. Check for broken coverslip fragments, air bubbles, or double coverslips. Note: The mounting medium in the red circled area of Figure 8 forms water droplets thicker than the coverslip. This condition will collide with the objective lens during scanning or slide exchange, resulting in consistently blurry scanned images

afterwards, and may cause permanent damage to the objective lens in severe cases.

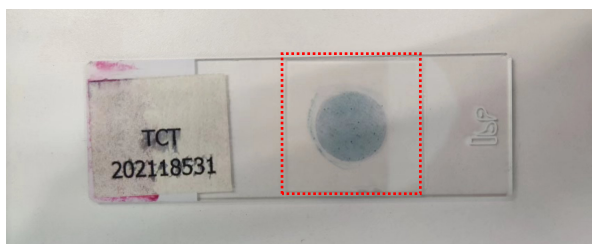


Figure 7



Figure 8

3.2.3 Other non-standard examples, see Figure 9



Figure 9

3.3 Slide Loading Procedures

3.3.1 Loading Steps

3.3.1.1 As shown in Figure 10, hold both sides of the slide with the transparent side facing down. Tilt the slide at 20° against the support block surface, and insert the transparent edge under the hook of Slide Pressing Slot 1. Push the slide forward per Figure 11 until the pressing slot deforms slightly, then gently press down along the pushing force to insert the labeled end into Slide Pressing Slot 2. As illustrated in Figure 12 and Figure 13, both ends of the slide shall be secured under the hooks of Slide Pressing Slot 1 and Slide Pressing Slot 2.

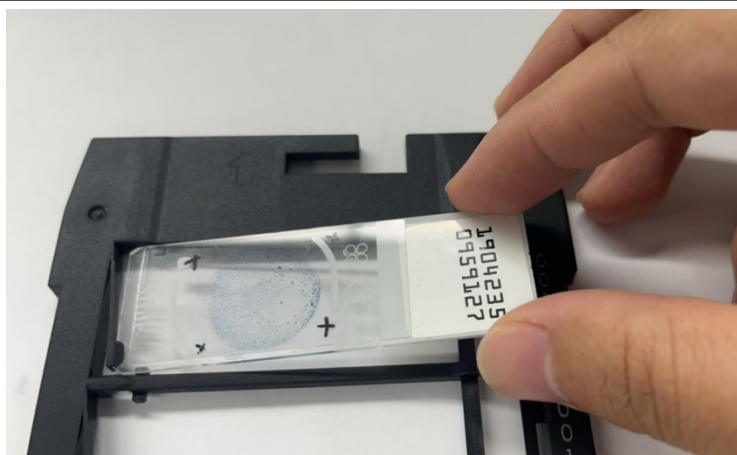


Figure 10

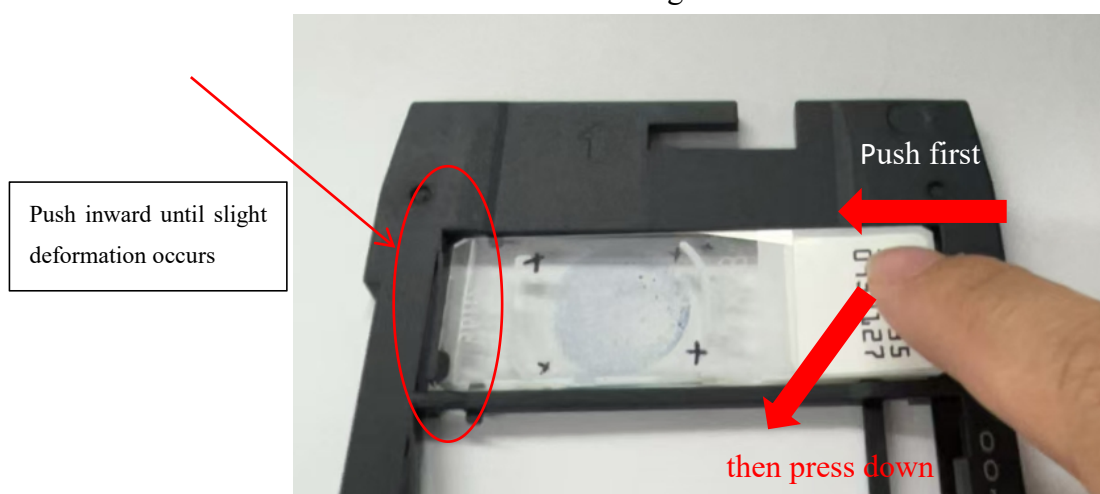


Figure 11



Figure 12

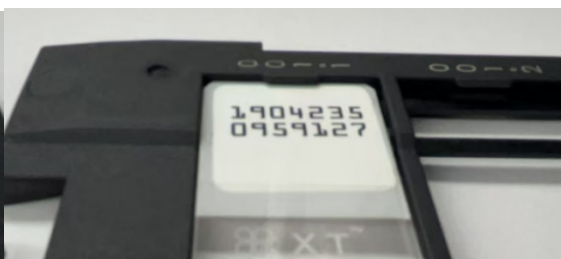


Figure 13

3.3.1.2 Non-standard Operation Examples

A) During slide loading, touching the glass surface of the slide with fingers as shown in Figure 14 and Figure 15 will leave fingerprints and mounting medium residues, which may lead to focusing failure and blurry scanned images.



Figure 14



Figure 15

B)As shown in Figure 16, pushing the slide upward with fingers during loading dislodges the slide from the slide pressing slots (Figure 17), which may result in slide jamming during slide feeding, scanning or slide ejection.

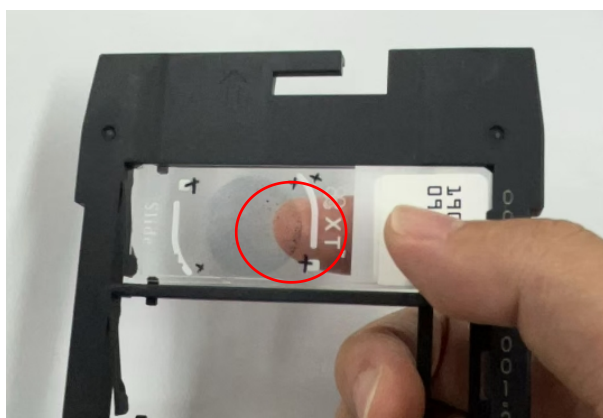


Figure 16

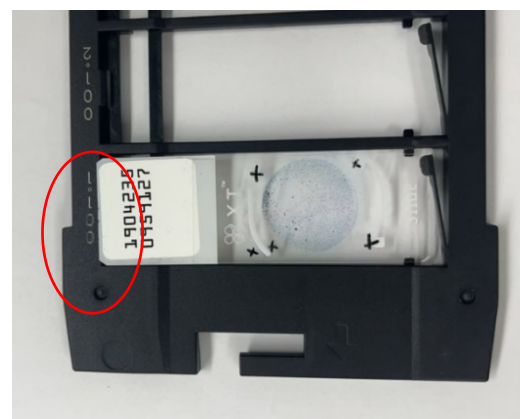


Figure 17

3.4 Slide Unloading Steps

As shown in Figure 18, grip the labeled end of the slide with fingers and pull downward to release the labeled end from Slide Pressing Slot 2. Then gently lift the slide, hold both sides of the slide with the other hand, and remove the slide.

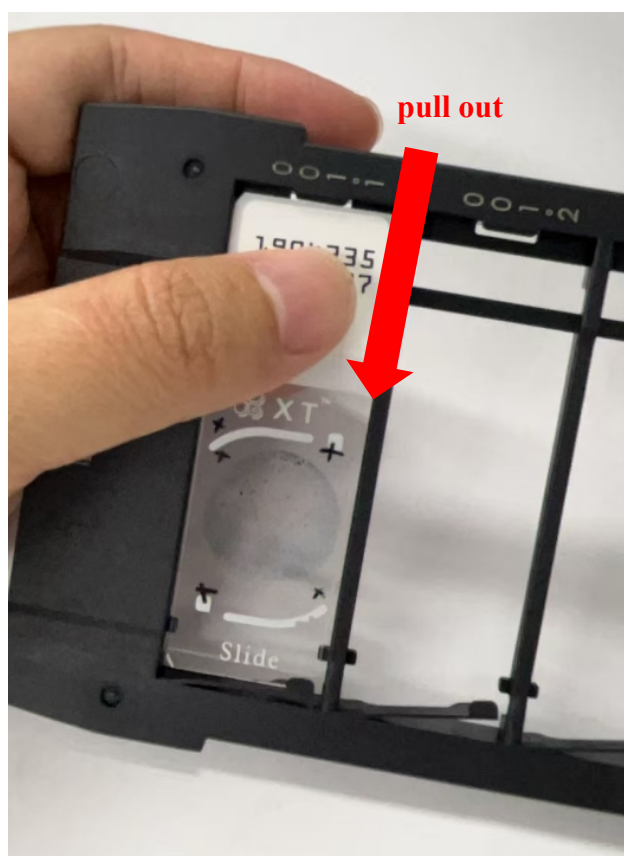


Figure 18

3.5 Standard Operating Steps for Loading Racks into Slide Loading Slot

3.5.1 When placing the racks into the slide loading slot, ensure the guide arrow on the racks points to the left.



Figure 19

3.5.2 Loading racks



Figure 20



Figure 21



Figure 22

Insert the racks vertically into the loading slot as shown in the figure above.

B) Take one rack, hold both sides of it, and lower it vertically from top to bottom along the right side of the slide loading slot onto the front and rear support brackets. The concave notch on the right side of the rack shall abut against the right inner wall of the loading slot.

C) Once the first rack is fixed in place, multiplexer racks can be handled together. Align all racks neatly before picking them up (Figure 23). Use the gripping methods shown in Figure 24 or Figure 25 as recommended. For the method in Figure 24: considering different hand sizes among operators, no more than 5 holders should be taken at one time, then stack them into the slot from top to bottom. When using the method in Figure 26, avoid touching the slides with fingers.



Figure 23



Figure 24



Figure 25

3.5.3 Non-standard Operation Examples

A) Improper placement of racks will cause slide jamming during feeding and render the instrument unable to operate normally.

B) Improper handling of slide-loaded racks as shown in Figure 26 and Figure 27 may leave fingerprints or mounting medium residues on slides, or even push slides out of racks. This may result in incorrect focusing and blurry scanned images, as well as risks of slide jamming and broken slide fragments.



Figure 26



Figure 27



4.1 Other Precautions

4.1.1 If only 2 slides are available, place them in slide positions No.2 and No.3 to lower the risk of errors.

4.1.2 If only 1 slide is available, place it in slide position No.3 to lower the risk of errors.

4.1.3 Damaged slide racks are prohibited from reuse.

4.1.4 Slide racks are consumables and shall be replaced every six months.