Use this reference sheet to perform Needle Localization with Tomosynthesis on Selenia® Dimensions® systems. This document does not replace the instructions in your User Guide.

Procedure for Needle Localization with Tomosynthesis

1. Install a Localization Paddle, and install the Crosshair Device at the Tubehead. Be sure that the crosshair guides are out of the x-ray field.

2. Open a new procedure with a Tomo or TomoHD view for your approach.

3. Position the patient and apply compression.

4. Acquire a Tomo Scout. Make sure that the ROI is visible inside the Localization Paddle opening. If not, reposition the patient and repeat.

5. Note the Compression Thickness, and note the thickness of the excess tissue through the opening of the Localization Paddle.

6. Scroll through the reconstruction slices to identify where the lesion is best seen. Note the slice number (each slice is 1 mm in thickness).

7. Place the Acquisition Workstation crosshair on the lesion.

8. To find the coordinates for the Gantry Crosshair Device, scroll through the reconstructions until you can identify the alpha numeric coordinates.

9. Calculate the needle depth:

Value	Example
Breast Compression Thickness	50 mm
(+) Thickness of the tissue through the opening of the paddle	+ 7 mm
(-) Slice number where the lesion is found	- 30 mm
(+) Optional distance past the ROI for the wire	+ 5-15 mm
(=) Needle depth of the localization wire	32– 42 mm

10. Turn on the collimator light and align the Crosshair Device at the Tubehead to match the Acquisition Workstation crosshair.

11. Position and insert the needle.

12. Move the Crosshair Device guides out of the x-ray field.

13. Acquire another Tomo image to be sure that the needle is in the correct location. To calculate if a correction is necessary, compare the slice number of the point of the needle and the slice number of the lesion.

14. Insert the guide wire through the needle, and then remove the needle, if desired, leaving the wire in position.

15. If desired, complete the following steps:

    a. Acquire a Conventional or Tomo view to be sure of correct wire placement.

    b. Take the orthogonal view to document wire or needle placement (either in Tomo or conventional).

16. Only add one view icon at a time for orthogonal views to remove the possibility of paddle shift due to possible minimal compression.

Example: Calculating Needle Depth with Tomosynthesis

In this example, use the values from the table on the previous page and refer to the following figure.

Calculate the needle depth from the tissue skin line (item 1) rather than from the localization paddle (item 9). Insert the needle a minimum of 27 mm (breast compression + bulging tissue).
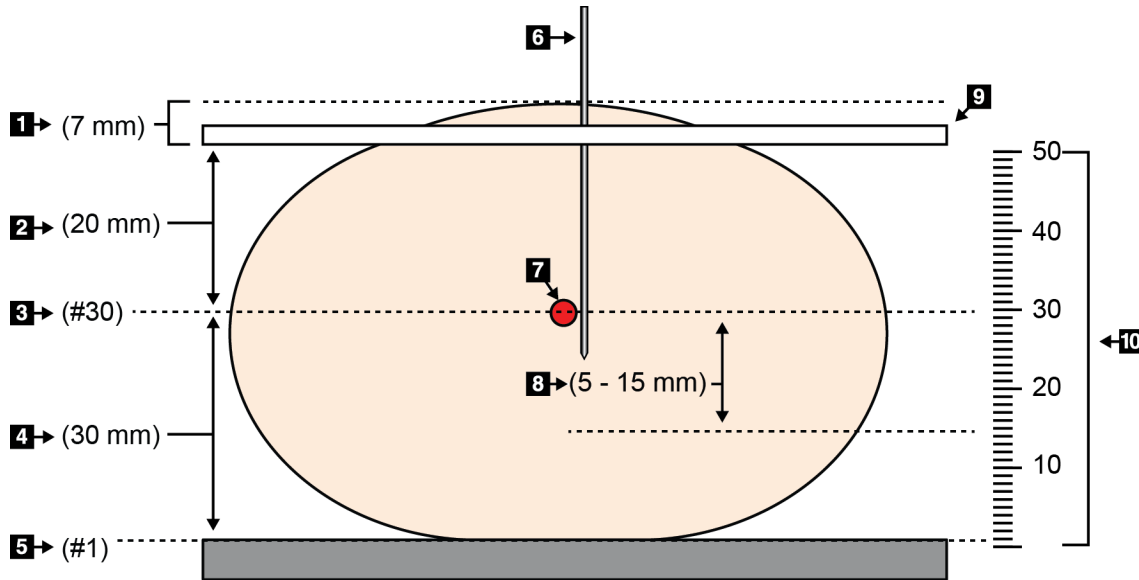

Figure 1: Calculating needle depth

Item	Description	Example
1	Thickness of the tissue through the opening of the localization paddle	7 mm
2	Thickness measured from the localization paddle to the lesion	
3	Lesion slice number (the slice number where lesion is best seen (clearest))	30 mm
4	Thickness measured from the detector to the lesion	
5	Slice number 1	
6	Needle	
7	Lesion	
8	Advancing the needle 5 - 15 mm more than the lesion (optional)	5 - 15 mm
9	Localization paddle	
10	Thickness of the breast compression from the detector (0 mm) to the localization paddle (50 mm in this example)	50 mm