

## Setting the Processing Limits on the Setup Screen

The **Setup Screen** is the starting point for the processing of input short-axis image files. This screen allows the user to verify and / or modify the seed locations for the 3D surface generator that detects the endo- and epicardial surfaces of the left ventricle (LV). These surfaces are used to compute the following:

- Chamber volumes and perfusion polar maps (for ungated studies or time compressed gated studies)
- Chamber volumes at end-diastole (ED) and end-systole (ES), the ejection fraction, perfusion, wall thickening and wall motion polar maps (for gated studies)
- Perfusion polar maps (for ungated studies or for time compressed gated studies, and the ED and ES frames of a gated study).

The program will automatically determine the LV center and the axial limits of the LV. There are circumstances (e.g. extracardiac activity, noisy studies, off-center volumes) that will confuse the algorithm resulting in suboptimal estimates for the LV.

Since the automated surface generator relies on these initial estimates to locate the surfaces of the heart, it is important that the operator insure that the initial LV limits are correct. Incorrect limits can significantly affect the quantified results generated by Corridor4DM -SPECT (i.e. TID, defect extent, functional estimates).

### **STEP 1: Select the Setup Screen**

Select the **Setup** button as highlighted and circled in red in Figure 1. This will present the mid-ventricular vertical long-axis (VLA), horizontal long-axis (HLA) and short-axis (SA) images for step 2.

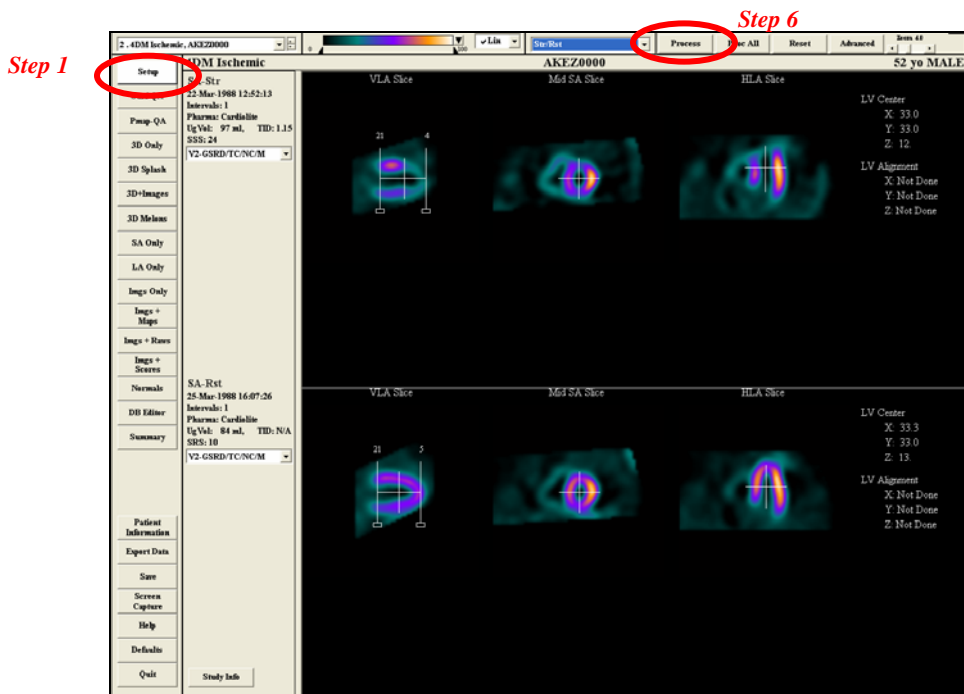


Figure 1. Setup Screen in Corridor4DM application.

**STEP 2: Verify the LV Center and Axial Limits.**

View the LV center and axial limits on the displayed images. If the LV center and axial limits are correct go to step (5). Figure 2 displays correctly positioned crosshairs, i.e., LV long axis is central to all 3 images and the apical and basal limits seen on the VLA slice pass through the center of the apical myocardium and the mitral valve plane.

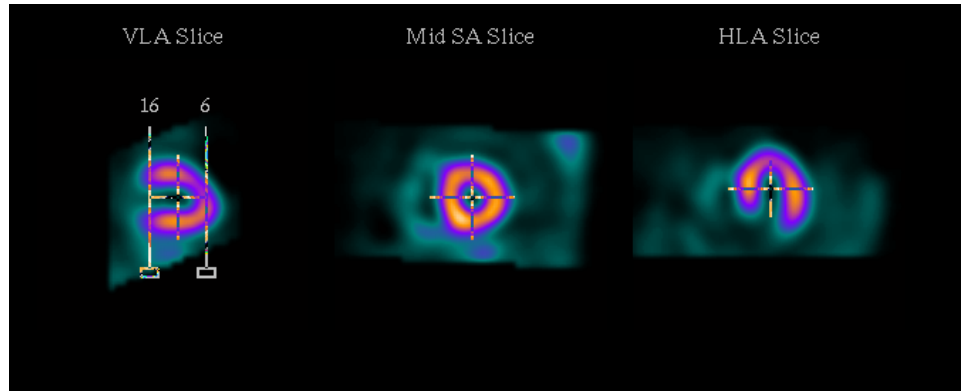


Figure 2. Proper positioning of LV center and axial limits on Setup screen.

The location of the basal limit is very important for ungated studies, as this limit remains unchanged by the surface generator. It should be positioned where the intensity drops to <50% of the mid-ventricular intensity which is best visualized in the anterior and inferior walls of the VLA and the lateral wall of the HLA image.

NOTE: For accurate TID estimates, it is very important that the basal limits for the stress and rest images are set consistently. Small differences in the axial limit can significantly affect the TID estimate, an effect that this exaggerated for small heart.s

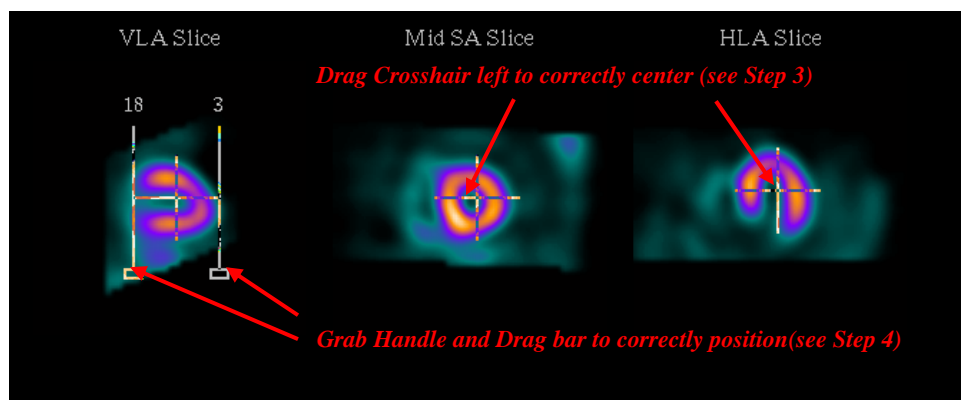


Figure 3. Incorrect positioning of LV center and axial limits on Setup screen.

### **STEP 3: Adjust Location of LV Center**

The LV center is optimally adjusted using the SA image, but it can also be adjusted using the HLA and VLA images.

- Place the mouse pointer over the LV center crosshairs.
- Hold down the left mouse button and drag the crosshairs to the center of the LV chamber.
- Release the left mouse button.

**Note:** Any user modification(s) in the location(s) and lengths of the crosshairs may be restored to their original 4DM-SPECT values by left clicking the Reset button as shown in Figure 1.

### **STEP 4: Adjust LV Axial Limits**

To adjust the position of the basal [and] or apical limits on the VLA image:

- Place the mouse pointer on the rectangular grab handle on one of the limit bars.
- Hold the left mouse button down while dragging the bar to the desired limit (so the apical and basal limits seen on the VLA slice pass through the center of the apical myocardium and the mitral valve plane).
- Release the left mouse button.

**Note:** Any user modification(s) in the location(s) and lengths of the crosshairs may be restored to their original 4D-MSPECT values by left clicking the Reset button as shown in Figure 1.

**STEP 5:** If there is substantial extra-cardiac activity that may cause the surface estimator to misplace the LV surface in this activity, follow the instructions on the [Eliminating extra-cardiac activity](#) help sheet.

## STEP 6: Process the Study

Click left on the **Process** button (c.f. Figure 1) to process the study. When processing is complete, the Surf-QA screen is displayed (c.f. Figure 4).

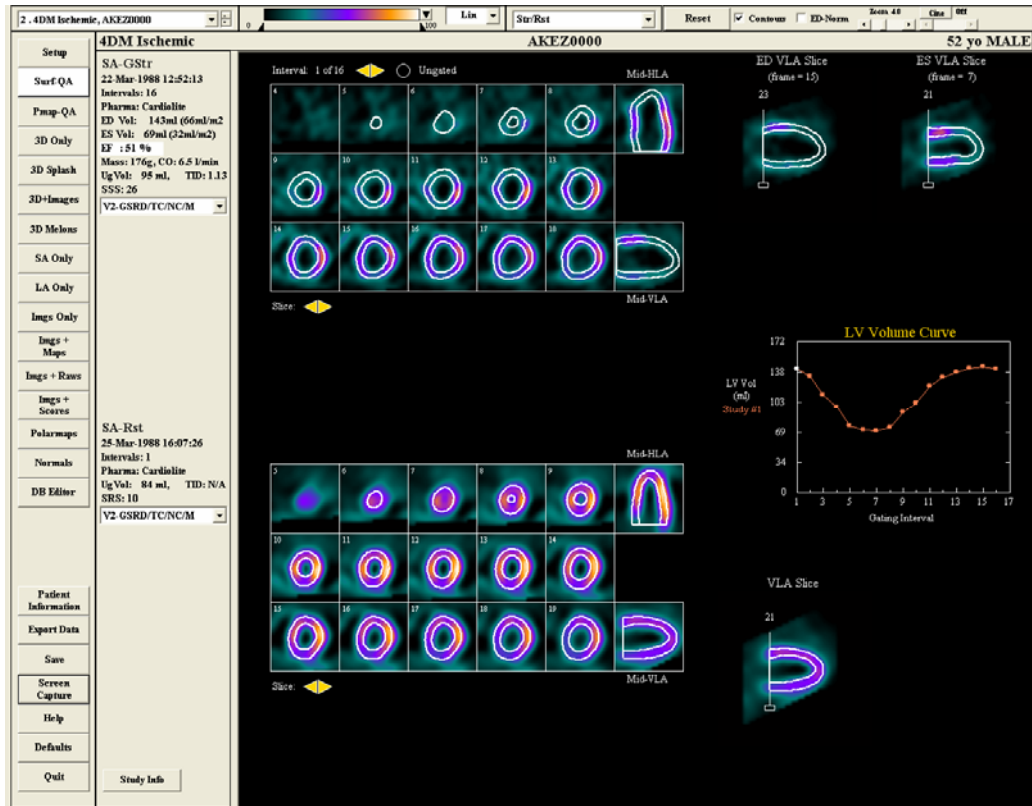


Figure 4. Surface QA (Surf-QA) screen displayed when processing is complete (Splash layout with Diastolic Function option turned off).