



GE Healthcare

## 4D Image Acquisition of Chambers Guide

### Probes

Adult Transthoracic probes: **4V or 4Vc-D**

Paediatric Transthoracic probe: **6Vc-D** (Please note Auto LVQ, Auto RVQ and Auto LAQ tools are not available with this probe)

Transoesophageal probe: **6Vt-D**

### Left Ventricle

Image capture process is the same for Transthoracic Echo (TTE) and Transoesophageal Echo (TOE)

Suggested TTE view: Apical 4 chamber view

Suggested TOE view: Mid Oesophageal 2 chamber or Mid Oesophageal 4 chamber view

1. Adjust depth/width of image to ensure all of LV walls are present in the sector, including MV annulus.
2. Press **Large** volume on the touch screen
3. **OPTIONAL** Press the **Angle** button on control panel to change view to that of the ventricle (4 pre-defined views with a yellow arrow depicting viewing position)
4. **OPTIONAL** Select **Multi-Slice** on the touch screen, visualisation tool to help check all of LV walls are within the sector
5. Adjust probe position as needed to ensure all wall segments can be seen in the sector
6. Volume size (depth and width) can be adjusted with the far-left rotary button BUT WATCH THE FRAME RATE!
7. **OPTIONAL** Gain adjustments (2D & 4D) can be performed during acquisition or afterwards during post processing
8. Check Frame Rate (top right of screen) needs to be >12 FPS for auto 4D LV volume analysis (>25FPS for 4D strain analysis, TTE only). Please note you will require higher frame rates for higher heart rates, to aid accurate assessment.
  - a. Either turn frame rate up or down with **Frame Rate** rotary button (far right on control panel), adjust according to balance of resolution loss.
  - b. Or with a more regular rhythm you can use **Multi-Beat**. Select number of cycles required on touch screen (keep to lowest number needed). Ask patient to perform a breath hold at point of best image then press **Multi-Beat** button on touch screen. In **Multi-Slice** function can clearly see if any stitching artefacts (lines across the image)
9. **Image Store** when ready.



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## **Right Ventricle**

Image capture process is the same for Transthoracic Echo (TTE) and Transoesophageal Echo (TOE)

Suggested TTE view: Apical 4 chamber view modified for RV

Suggested TOE view: Mid Oesophageal 4 chamber view

1. Adjust depth of image to ensure all of RV walls are present in the sector, including TV annulus.
2. Press **Large** volume on the touch screen
3. **OPTIONAL** Press the **Angle** button on control panel to change view to that of the ventricle (4 pre-defined views with a yellow arrow depicting viewing position)
4. **OPTIONAL** Select **Multi-Slice** on the touch screen, visualisation tool to help check all of RV walls are within the sector
5. Adjust probe position as needed to ensure all wall segments can be seen in the sector
6. Volume size (depth and width) can be adjusted with the far-left rotary button BUT WATCH THE FRAME RATE!
7. **OPTIONAL** Gain adjustments (2D & 4D) can be performed during acquisition or afterwards during post processing
8. Check Frame Rate (top right of screen) needs to be >12 FPS for Auto RVQ. Please note you will require higher frame rates for higher heart rates, to aid accurate assessment.
  - a. Either turn frame rate up or down with **Frame Rate** rotary button (far right on control panel), adjust according to balance of resolution loss.
  - b. Or with a more regular rhythm you can use **Multi-Beat**. Select number of cycles required on touch screen (keep to lowest number needed). Ask patient to perform a breath hold at point of best image then press **Multi-Beat** button on touch screen. In **Multi-Slice** function can clearly see if any stitching artefacts (lines across the image)
9. **Image Store** when ready.



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## **Left Atrium**

Suggested TTE view: Apical 4 chamber view

Please note Auto LAQ is NOT available for TOE images

1. Adjust depth of image to ensure LV and LA walls are present in the sector
2. Press **Large** volume on the touch screen
3. **OPTIONAL** Press the **Angle** button on control panel to change view to that of the ventricle (4 pre-defined views with a yellow arrow depicting viewing position)
4. **OPTIONAL** Select **Multi-Slice** on the touch screen, visualisation tool to help check all of LA walls are within the sector
5. Adjust probe position as needed to ensure all walls can be seen in the sector
6. Volume size (depth and width) can be adjusted with the far-left rotary button BUT WATCH THE FRAME RATE!
7. **OPTIONAL** Gain adjustments (2D & 4D) can be performed during acquisition or afterwards during post processing
8. Check Frame Rate (top right of screen) needs to be >12 FPS for Auto LAQ. Please note you will require higher frame rates for higher heart rates, to aid accurate assessment.
  - a. Either turn frame rate up or down with **Frame Rate** rotary button (far right on control panel), adjust according to balance of resolution loss.
  - b. Or with a more regular rhythm you can use **Multi-Beat**. Select number of cycles required on touch screen (keep to lowest number needed). Ask patient to perform a breath hold at point of best image then press **Multi-Beat** button on touch screen. In **Multi-Slice** function can clearly see if any stitching artefacts (lines across the image)
9. **Image Store** when ready.

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