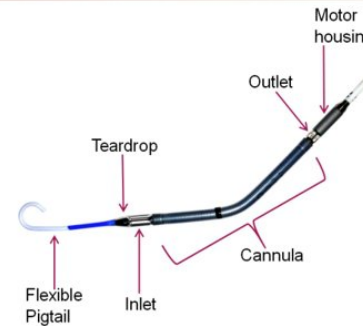


# Impella TTE and TEE Position Summary Guides

## ECHO AND IMPELLA® DEVICES : PROPER PLACEMENT (TTE)

### Verify Proper Catheter Placement

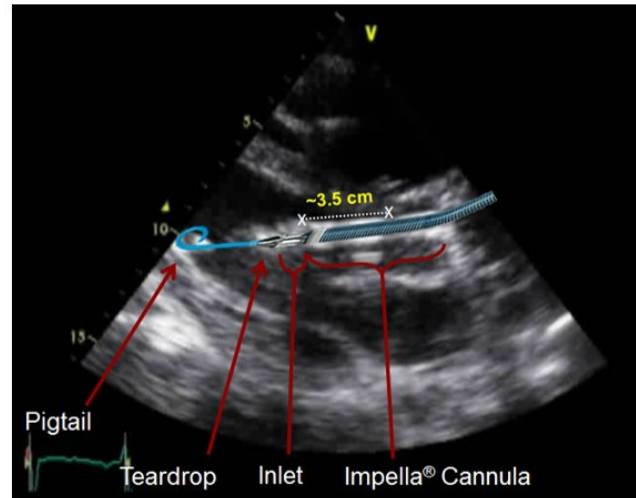
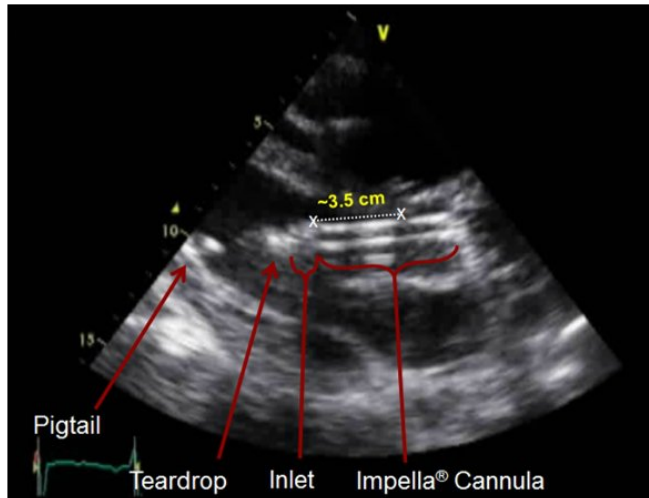
- ✓ Stable position in mid-ventricular space
- ✓ Catheter directed toward apex, pigtail free of mitral subvalvular structures
- ✓ Inlet clear of MV structures and LV walls
- ✓ Distance from aortic valve annulus to the inlet (where parallel lines of cannula *railroad tracks* end) should measure approximately 3.5 cm
- ✓ Outlet in the aorta, well above the aortic valve (Use Color Flow Doppler)



### Tips and Tricks



- For the most accurate measurements, be sure you are able to view the catheter throughout the length of the measurement (off-axis views may be required)
- Reverberation/comet-tail artifacts posterior to inlet and teardrop may help locate these components
- Utilize color flow Doppler to visualize outflow limited to ascending aorta
- Due to pump preload dependence, on every echo assess LV volume status and RV function



Preferred view for TTE: Parasternal long axis view



Because TTE and TEE views provide 2D images, visualizing catheter position in multiple views is recommended.

IMP-046

For 24-Hour Impella heart pump assistance call Abiomed's Clinical Support Center at 1-800-422-8666

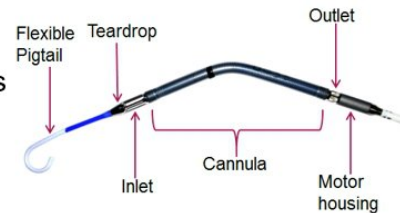
**ABIOMED**  
Recovering hearts. Saving lives.

# Impella TTE and TEE Position Summary Guides

## ECHO AND IMPELLA® DEVICES : PROPER PLACEMENT (TEE)

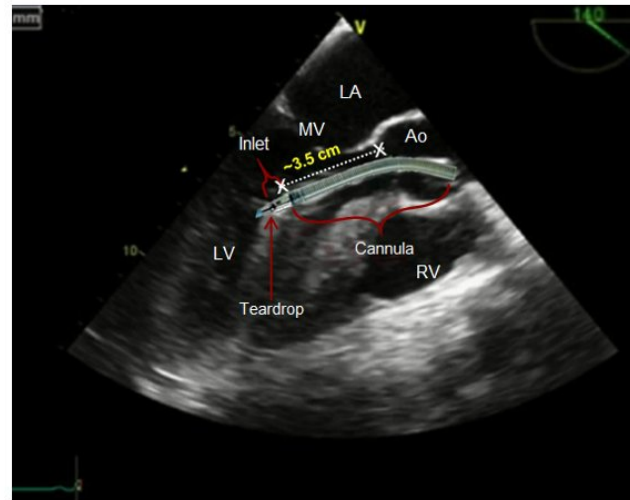
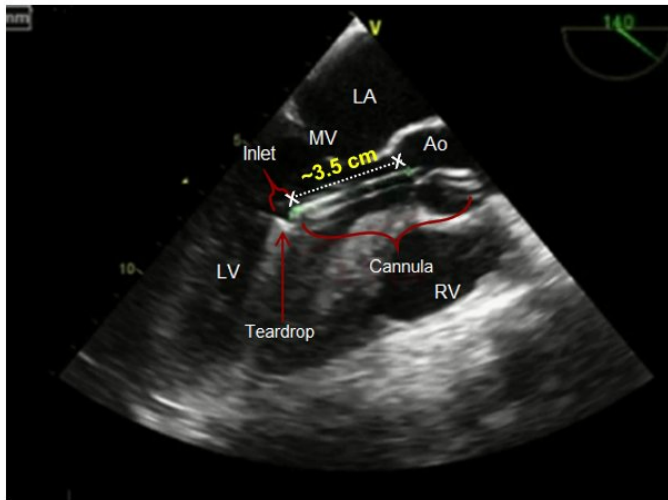
### Verify Proper Catheter Placement

- ✓ Stable position in mid-ventricular space
- ✓ Catheter directed toward apex, pigtail free of mitral subvalvular structures
- ✓ Inlet clear of MV structures and LV walls
- ✓ Distance from aortic valve annulus to the inlet (where parallel lines of cannula *railroad tracks* end) should measure approximately 3.5 cm
- ✓ Outlet in the aorta, well above the aortic valve (Use Color Flow Doppler)



### Tips and Tricks

- For the most accurate measurements, be sure you are able to view the catheter throughout the length of the measurement (off-axis views may be required)
- Reverberation/comet-tail artifacts posterior to inlet and teardrop may help locate these components
- Utilize color flow Doppler to visualize outflow limited to ascending aorta
- Due to pump preload dependence, on every echo assess LV volume status and RV function



Preferred view for TEE: Mid-esophageal long axis view



Because TTE and TEE views provide 2D images, visualizing catheter position in multiple views is recommended.

IMP-046

For 24-Hour Impella heart pump assistance call Abiomed's Clinical Support Center at 1-800-422-8666

**ABIOMED**  
Recovering hearts. Saving lives.