

# PIV LOAD ASSEMBLY (CUSTOMIZED ONLY)

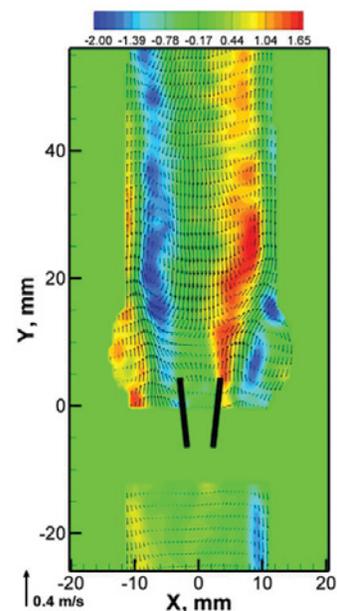
Product Code: 700-ENGS-XX

*Aortic Particle Image  
Velocimetry (PIV)  
Flow Visualization*



The PIV Load Assembly provides an optically clear, anatomically representative aortic inflow and outflow to enable Particle Imaging Velocimetry studies in the Pulse Duplicator. The PIV Load Assembly replaces the lower half of the standard aortic load assembly and is easily substituted into the ViVtiro Labs Pulse Duplicator.

- Optically clear, non-distorting inflow and outflow section
- Interchangeable and customizable silicone aortic annulus
- Anatomical aortic sinuses
- Outflow pressure port
- Easily installed in the Pulse Duplicator



*Analysis using the PIV Load Assembly  
on a mechanical bileaflet valve.*

## > Specifications

The geometry of the aortic root is based on a reasonable simplification of the average measurements published in manuscripts by Tops (2008) and Buellesfeld (2013) (data procured from MSCT).

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Optically clear Acrylic components

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Aortic root diameter (customized sizes only)

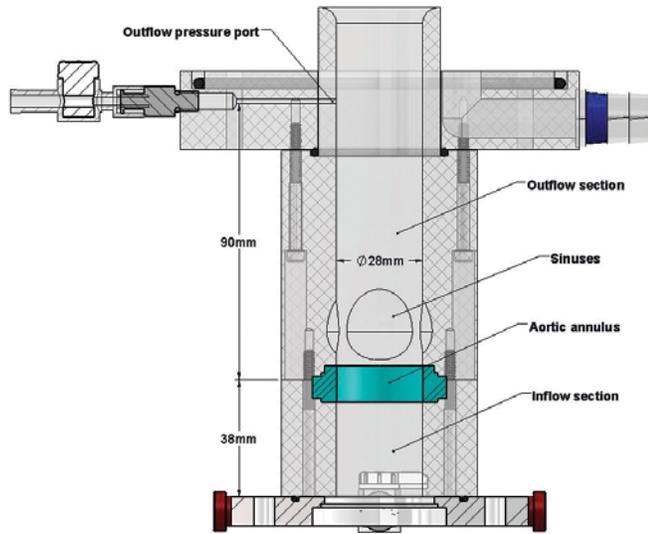
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Outflow section length (customized sizes only)

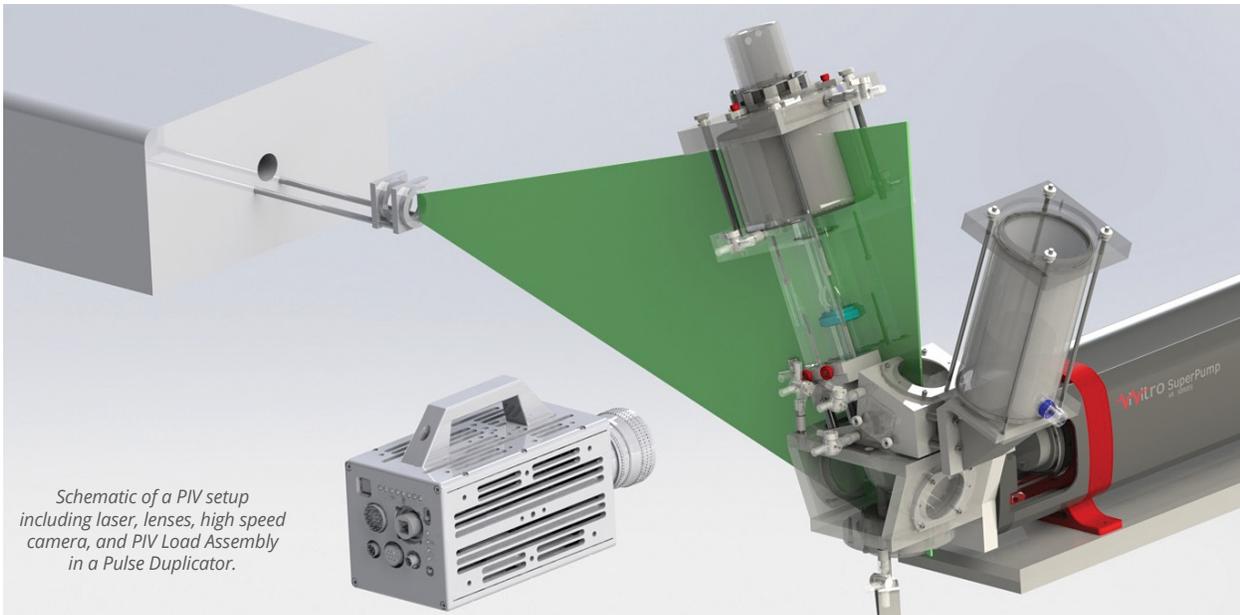
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Inflow diameter section (customized sizes only)

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Example of a PIV Load Assembly cross section



Schematic of a PIV setup including laser, lenses, high speed camera, and PIV Load Assembly in a Pulse Duplicator.

### References:

Buellesfeld, L. (2013). Aortic root dimensions among patients with severe aortic stenosis undergoing transcatheter aortic valve replacement. *JACC: Cardiovascular Intervention* V6(1), P72-83.

Tops, L. (2008). Noninvasive evaluation of aortic root with multislice computed tomography. *JACC: Cardiovascular Intervention* V1(3), 321-330.

**Contact ViVITRO Labs to request customized PIV Load assemblies for your valve prosthesis.**

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