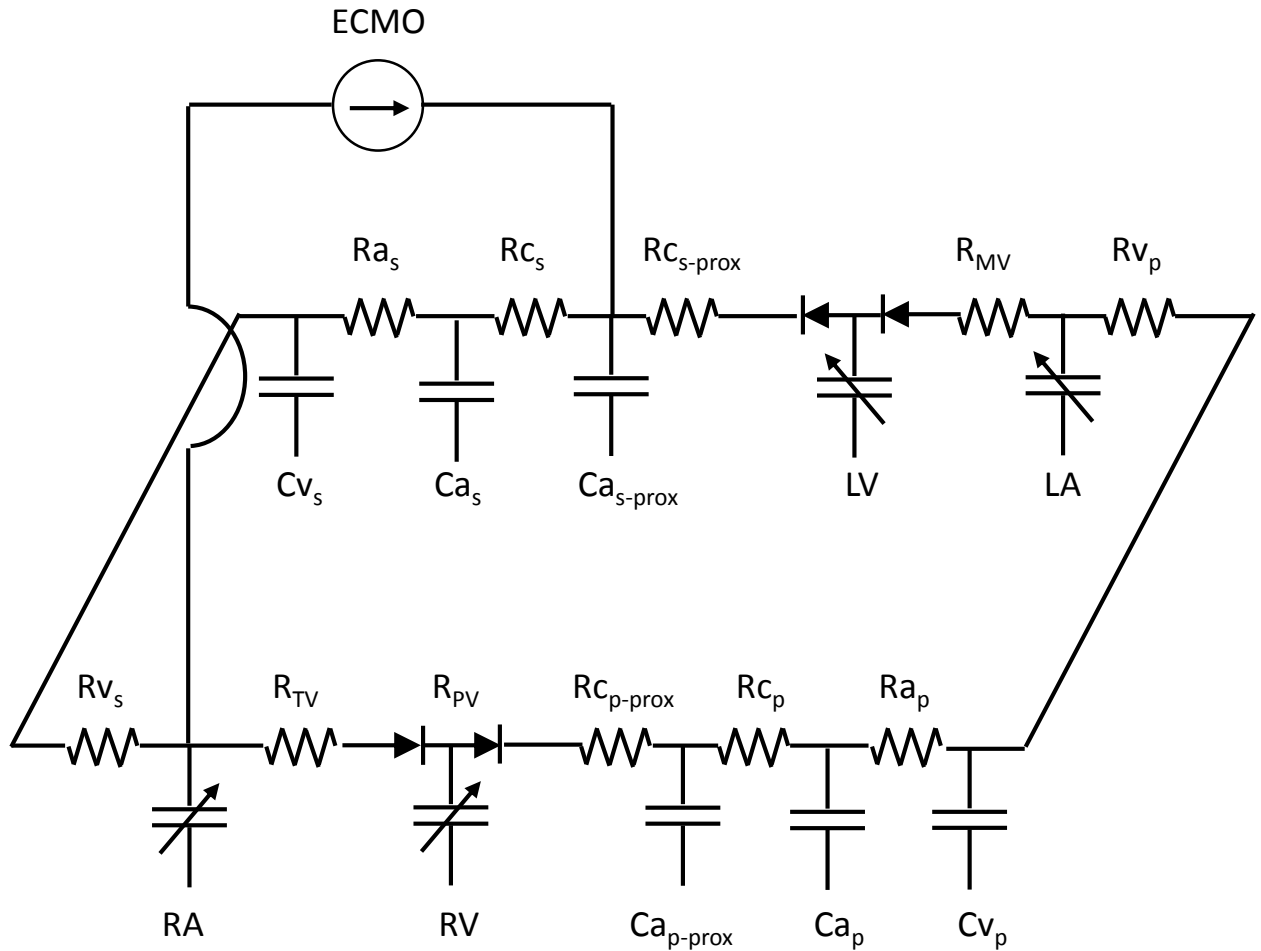


Supplemental Digital Content 1. Diagram of the simulation model



Normal parameters used are the default parameters in Harvi.online (Pvloops.com). LV end-systolic elastance ranged from 2.21 (normal) to 0.7` mmHg/ml (severe heart failure). Systemic and Pulmonary characteristic impedance (R_{cs} , R_{cp}), venous resistance (Rv_s Rv_p), pulmonary arterial resistance (Ra_p), and valvular (mitral and tricuspid) resistance (Rmv , Rtv) remained constant at default values. Circulating blood volume and Systemic arterial resistance (Ra_s) were varied to adjust LV SV and mABP as described in the methods section. VA ECMO translocated volume from the systemic venous compartment (Cv_s) to the systemic arterial compartment (Ca_s) ; RPMs of the device was adjusted to a target flow rate of 3.5 L/min.