Modeling Blood Flow Through the Chamber of an Artificial Heart

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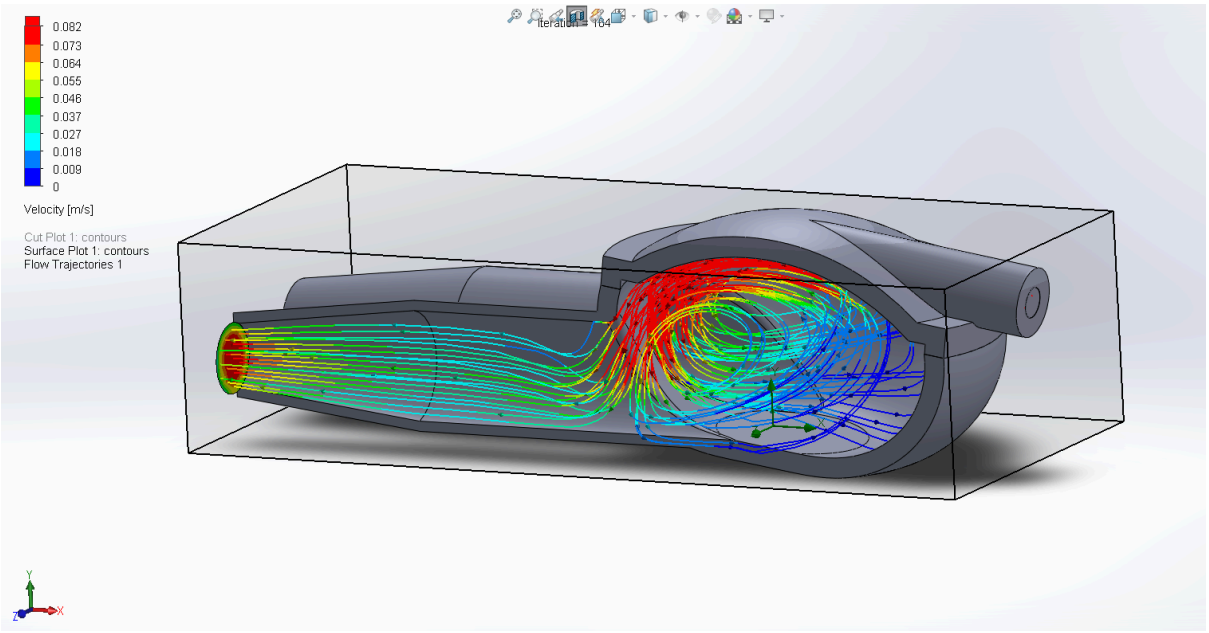
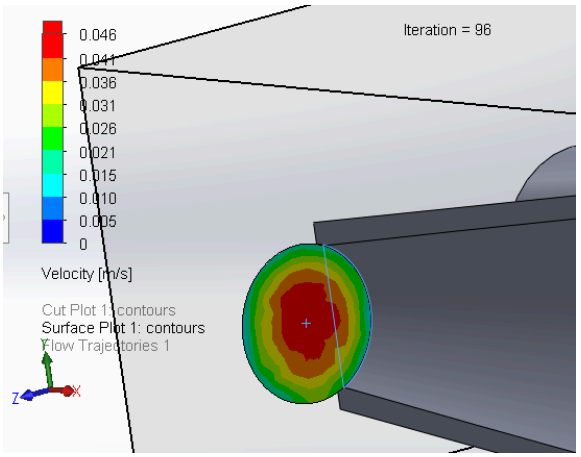
Obtained Results:

SIMULATIONS

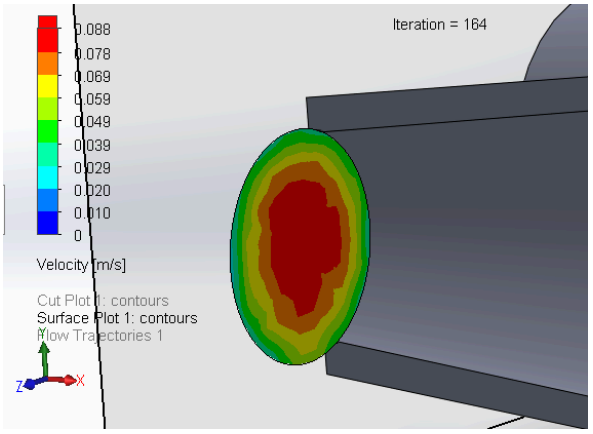
Blood Flow Simulation:



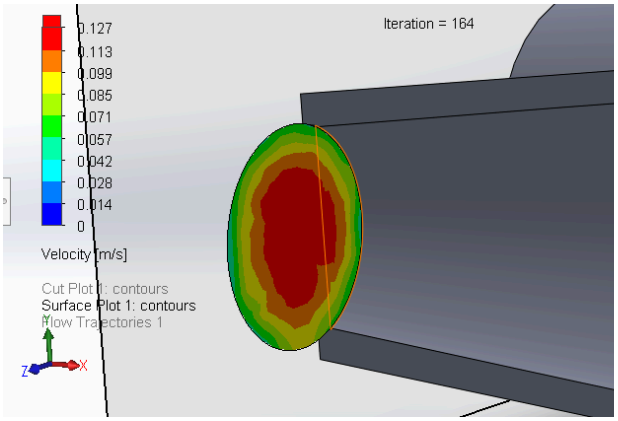
VELOCITY v = 0.2 m/s



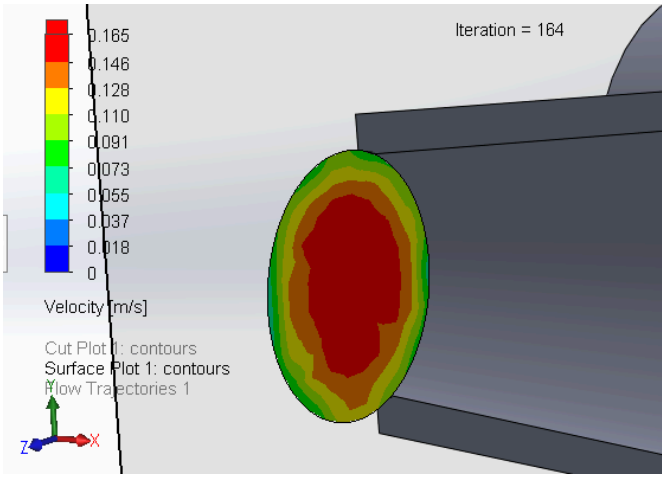
VELOCITY v = 0.4 m/s



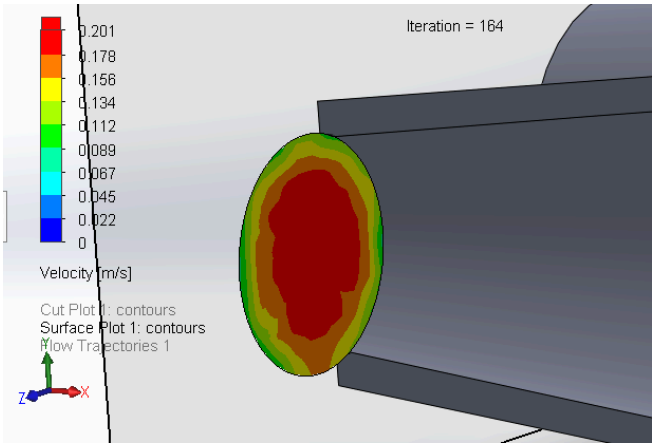
VELOCITY v = 0.6 m/s



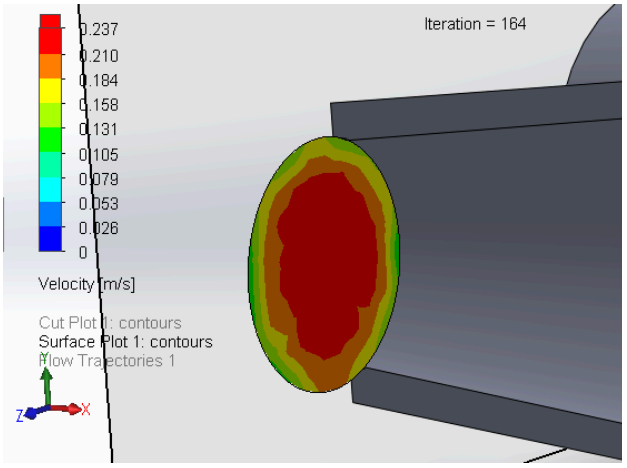
VELOCITY v = 0.8 m/s



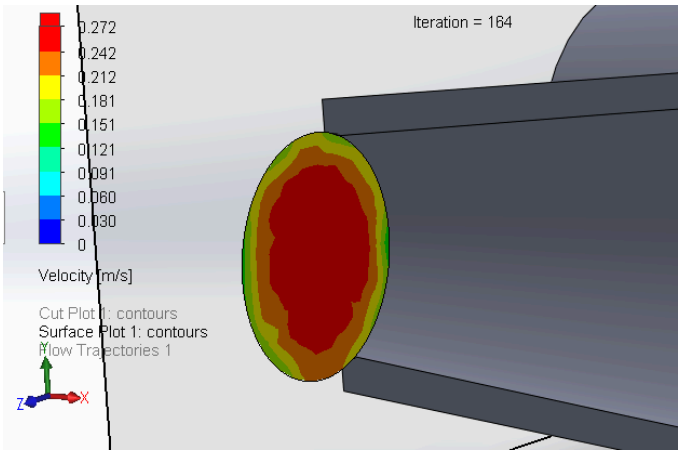
VELOCITY v = 1.0 m/s



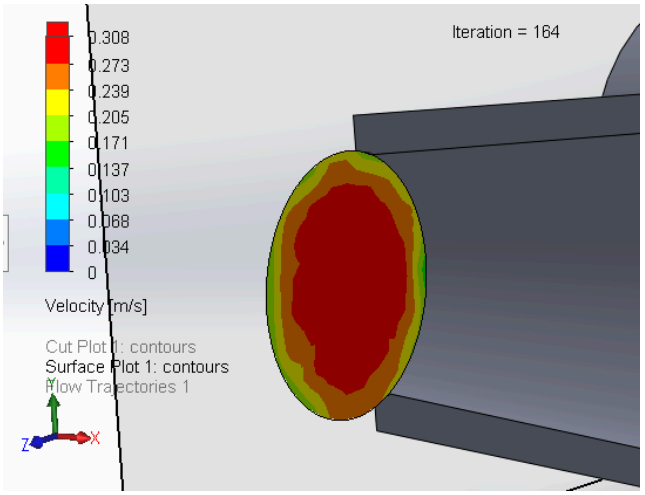
VELOCITY v = 1.2 m/s



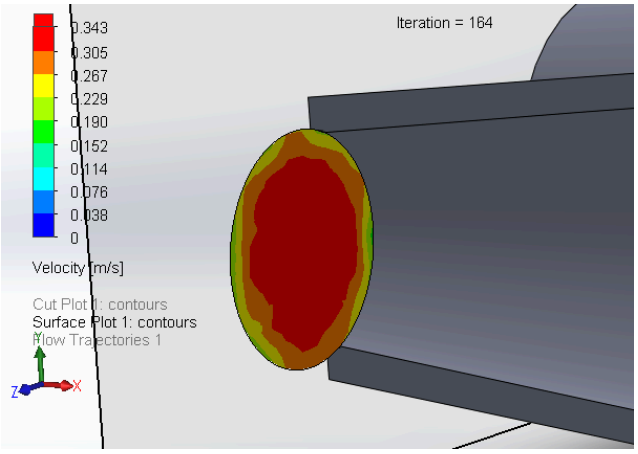
VELOCITY v = 1.4 m/s



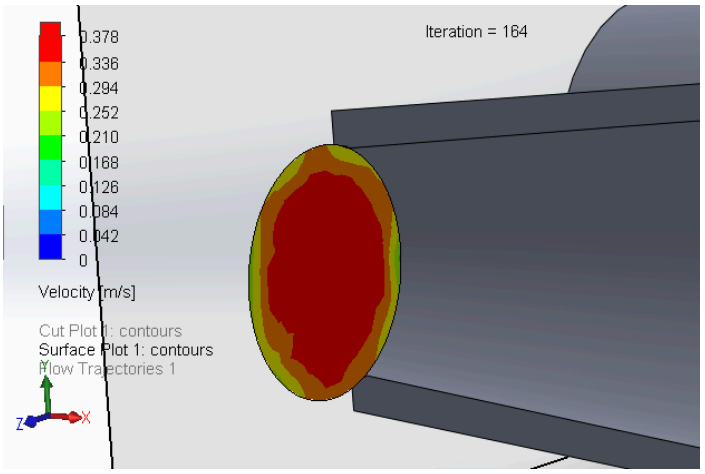
VELOCITY v = 1.6 m/s



VELOCITY v = 1.8 m/s



VELOCITY v = 2.0 m/s



	Design Point 1	Design Point 2	Design Point 3	Design Point 4	De
Velocity normal to face (Inlet Velocity 1) [m/s]	0,2	0,4	0,6	0,8	
SG Maximum Velocity 2 [m/s]	0,047591063	0,089277286	0,128860773	0,165785153	

	Design Point 5	Design Point 6	Design Point 7	Design Point 8	Design Point 9	Design Point 10
0,8	1	1,2	1,4	1,6	1,8	2
53	0,201808649	0,237521016	0,273053335	0,30848013	0,343806291	0,379076495

WNIOSKI

The collected data indicate that increasing the velocity of blood entering the heart leads to an increase in the maximum velocity of blood exiting. The higher blood velocity tends to concentrate closer to the center of the opening, and its velocity decreases the closer it is to the walls of the outlet.