

HEMODYNAMIC SIMULATOR II

P09026

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2-Quarter Schedule

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Bill of Materials

- Complete BOM
 - Control System & Instrumentation BOM
 - Mechanical Pump BOM

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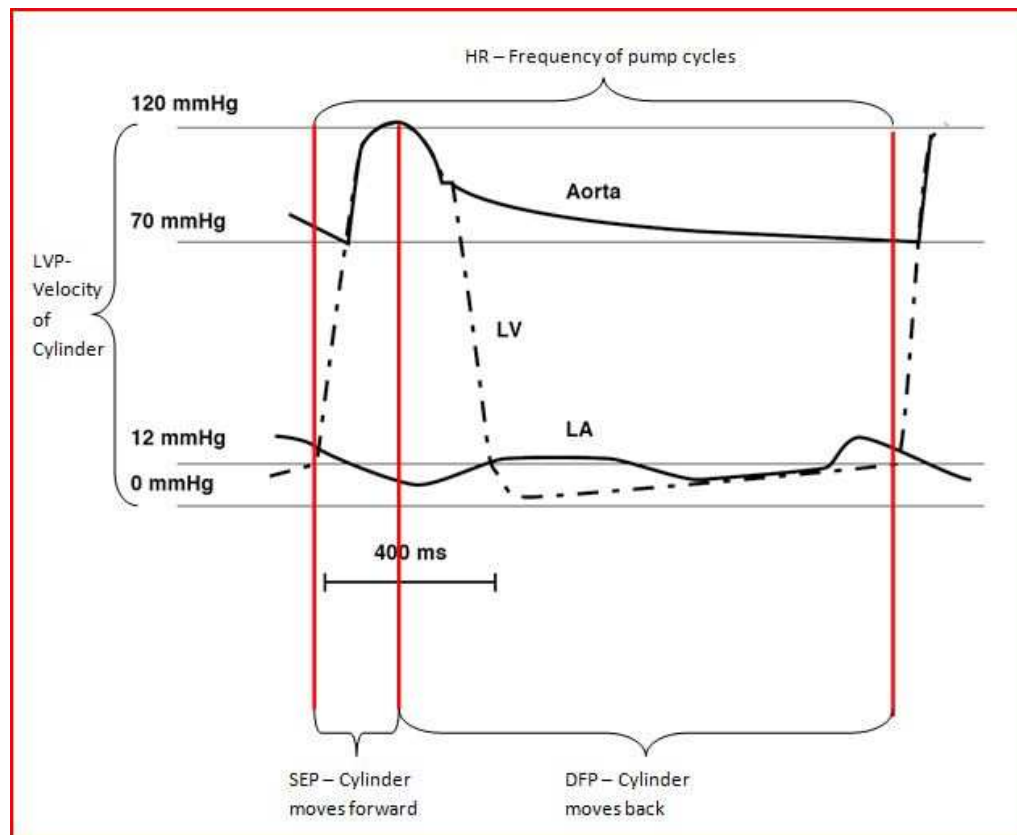
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Drawings/Schematics

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Control System



Controllable Parameters

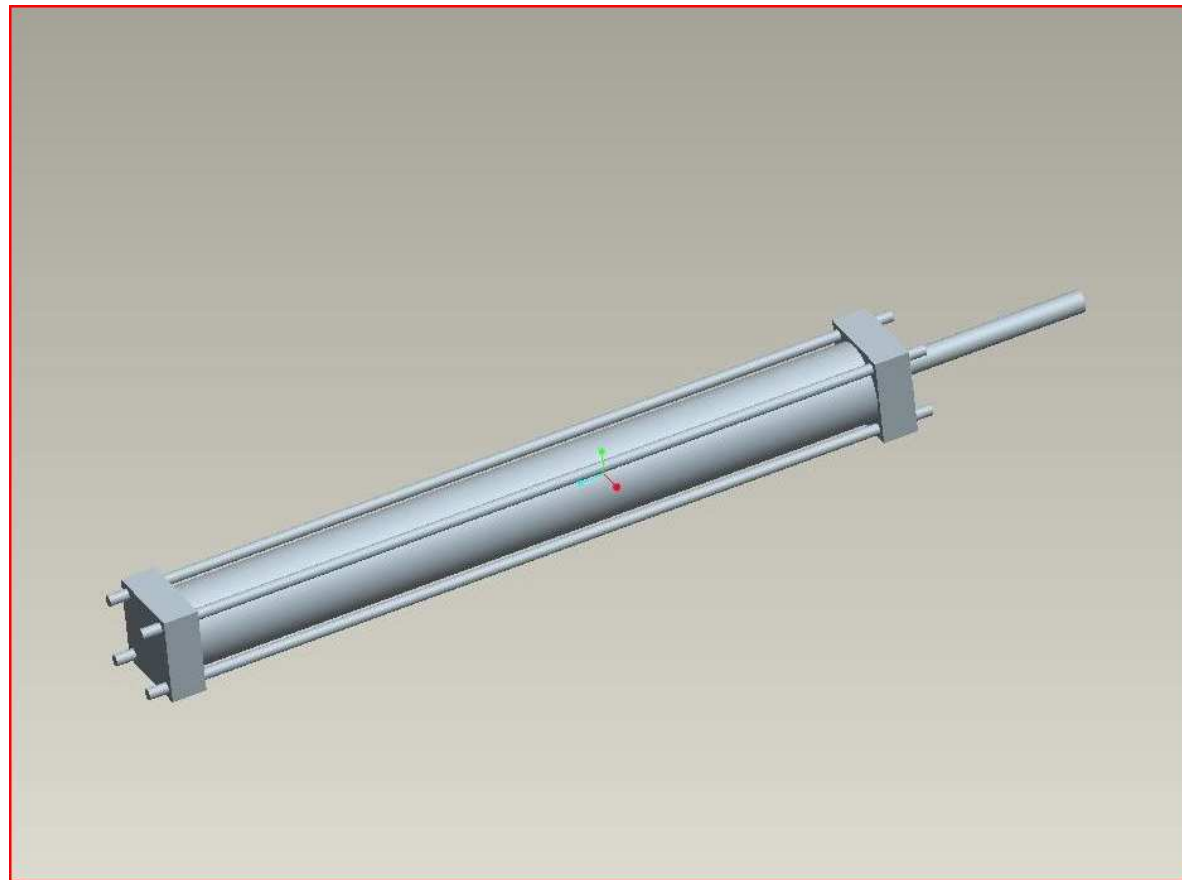
1. LV Pressure
2. Systolic Ejection Period (SEP)
3. Heart Rate (HR)

Note: The DFP is controlled indirectly by the SEP and HR that are set by the user.

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Air Cylinder



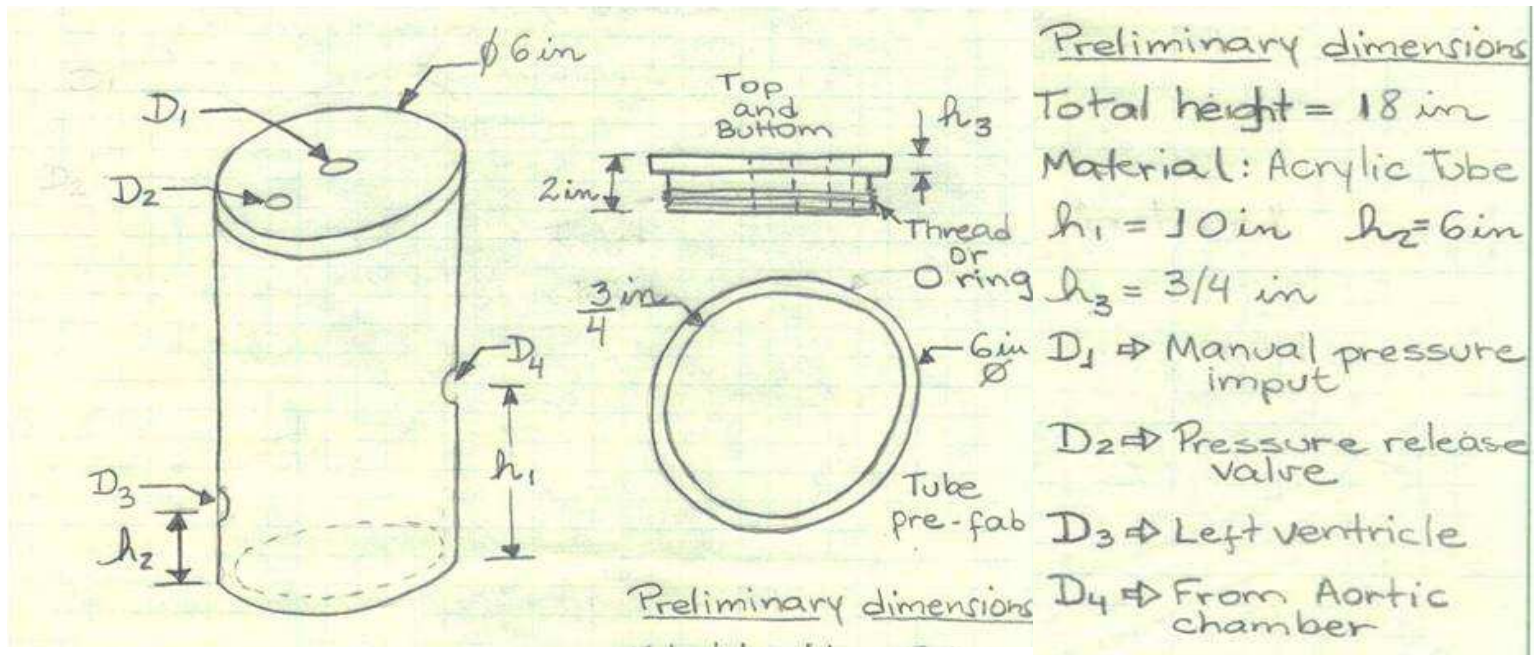
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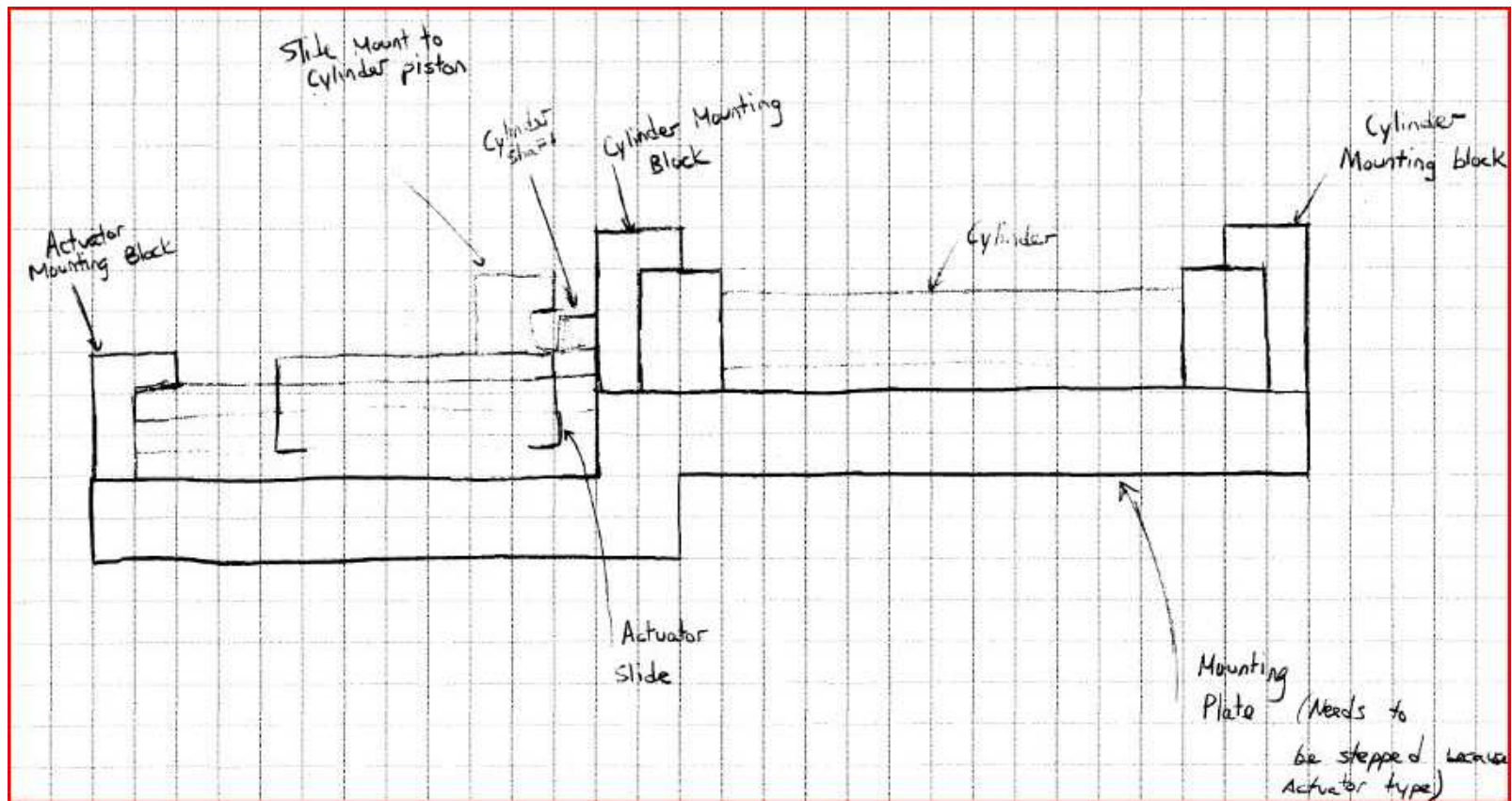
Atrial Reservoir



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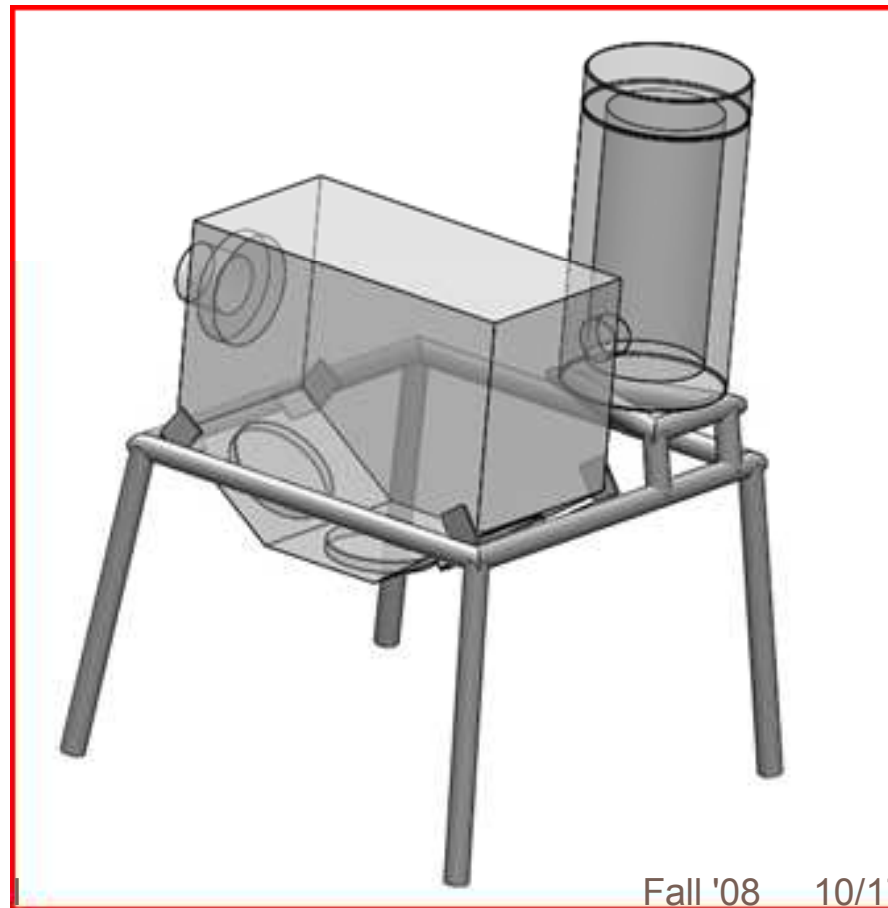
Actuator Mount



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Heart Stand



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Heart Stand



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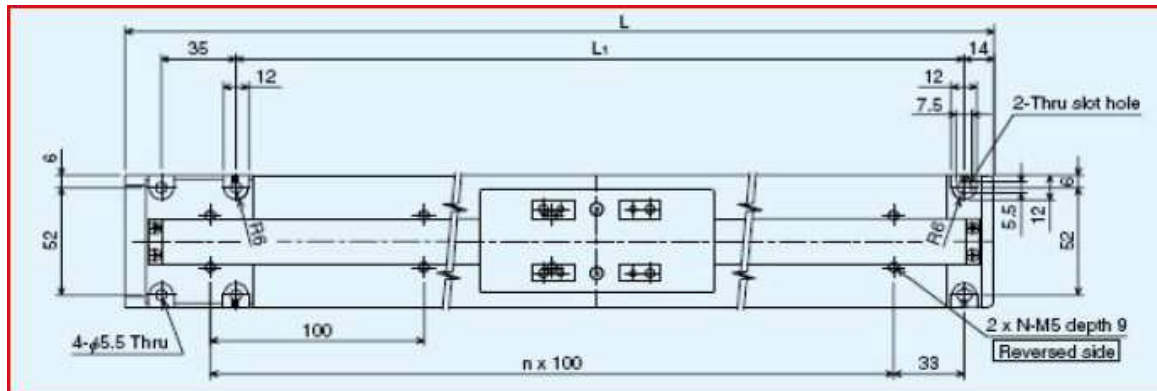


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Actuator



Dimensional Table

Unit : mm

Stroke	Effective stroke	Mechanical stroke st_1+st_2	L	L ₁	L ₂	n	N	Mass : kg
0050	50	60	237	171	171	1	2	1.9
0100	100	110	287	221	221	2	3	2.1
0150	150	160	337	271	271	2	3	2.3
0200	200	210	387	321	321	3	4	2.5
0250	250	260	437	371	371	3	4	2.7
0300	300	310	487	421	421	4	5	2.9
0350	350	360	537	471	471	4	5	3.1
0400	400	410	587	521	521	5	6	3.3
0450	450	460	637	571	571	5	6	4.0
0500	500	510	687	621	621	6	7	4.2
0550	550	560	737	671	671	6	7	3.5
0600	600	610	787	721	721	7	8	3.7
0700	700	710	887	821	821	8	9	4.6

Source: https://tech.thk.com/upload/catalog_claim/pdf/320E_VLA.pdf

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Feasibility

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Actuator Specifications

- Page 1
 - Displacement, Average Force
- Page 2
 - Displacement needed for different air column & water levels
- Page 3
 - Force required
- Page 4
 - Actuator specs. finalized

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Risk Assessment

Risk Assessment (Rev. 3)

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Team Schedule

	Alex	Clarissa	Gaurav	Joe	Jonathan	Liliane	Mark
11:00 AM	Finalize concepts for the control system			Continue designing heart stand, & buffering chamber		Finalize Atrial Chamber design	Continue calling application engineers
12:00 PM							
1:00 PM	LUNCH						
2:00 PM	Test flow meters	Search for technical data for pressure transducers	Test pressure sensors			Update LabVIEW program	Assess all actuators, for lead time & cost
3:00 PM							
4:00 PM	Setup DAQ & begin recording data			Choose an actuator			

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Questions ?