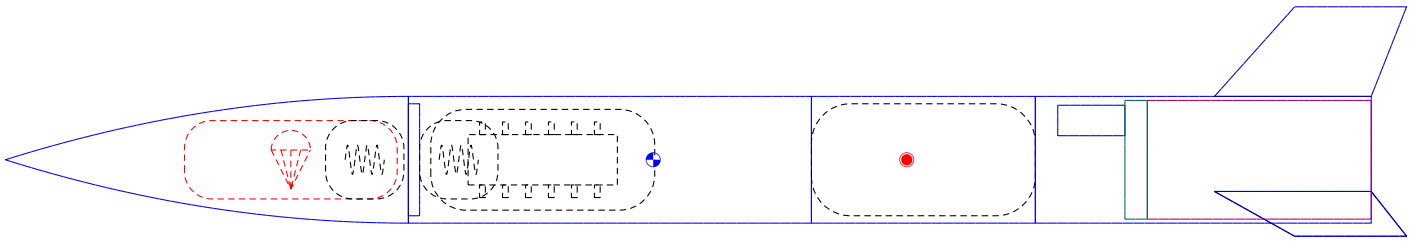
Rocket Design



Rocket

Stages: 1

Mass (Empty): 895 g

Stability: 2 cal

CG: 289 mm

CP: 403 mm

G74W-4

Altitude	281 m
Flight Time	103 s
Time to Apogee	7.89 s
Optimum Delay	6.7 s
Velocity off Pad	12.2 m/s
Max Velocity	75.7 m/s
Velocity at Deployment	2.62 m/s
Landing Velocity	3.15 m/s

Motor	Avg Thrust	Burn Time	Max Thrust	Total Impulse	Thrust to Wt	Propellant Wt	Size
G74W	76.2 N	1.12 s	91.2 N	85.3 Ns	7.91:1	39.3 g	29/83 mm

F37-6

Altitude	91 m
Flight Time	35.8 s
Time to Apogee	5.02 s
Optimum Delay	3.48 s
Velocity off Pad	7.76 m/s
Max Velocity	35.6 m/s
Velocity at Deployment	2.67 m/s
Landing Velocity	2.82 m/s

Motor	Avg Thrust	Burn Time	Max Thrust	Total Impulse	Thrust to Wt	Propellant Wt	Size
F37	32.6 N	1.55 s	46.5 N	50.7 Ns	3.32:1	28.2 g	29/99 mm

E15-7

Altitude	45.8 m
Flight Time	20.3 s
Time to Apogee	4.18 s
Optimum Delay	1.6 s
Velocity off Pad	5.66 m/s
Max Velocity	18.6 m/s
Velocity at Deployment	5.98 m/s
Landing Velocity	2.74 m/s

Motor	Avg Thrust	Burn Time	Max Thrust	Total Impulse	Thrust to Wt	Propellant Wt	Size
E15	15.7 N	2.53 s	28.8 N	39.8 Ns	1.69:1	20.1 g	24/70 mm

B1-P

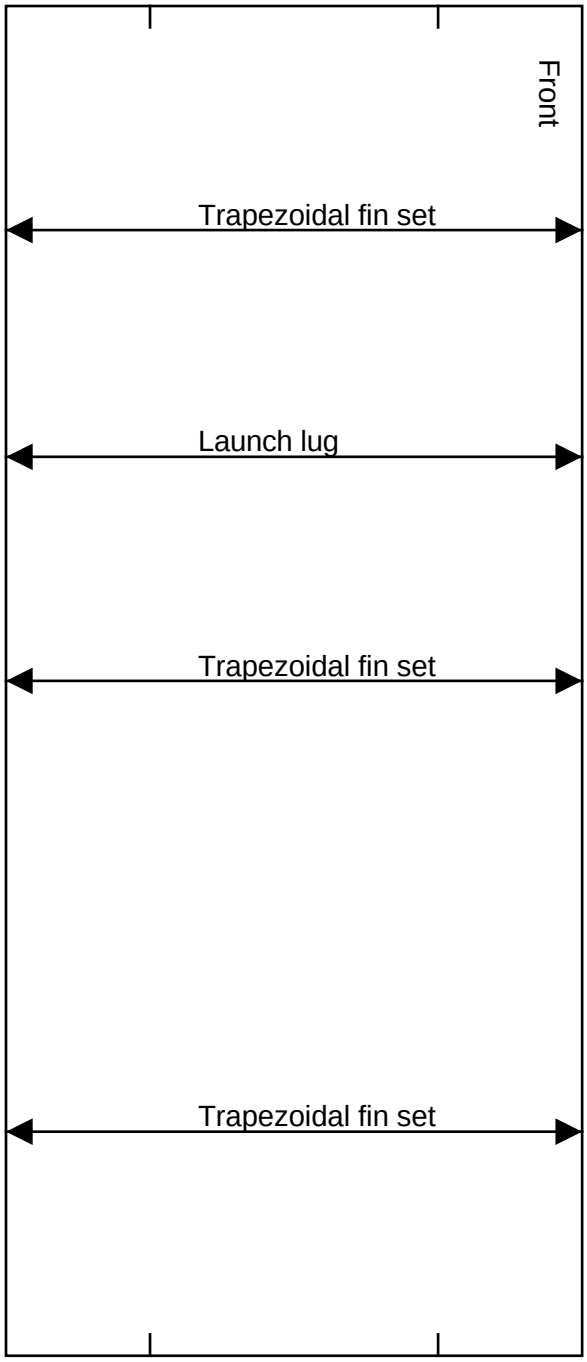
Altitude	0 m
Flight Time	2.91 s
Time to Apogee	0 s
Optimum Delay	N/A
Velocity off Pad	N/A
Max Velocity	0 m/s
Velocity at Deployment	N/A
Landing Velocity	0 m/s

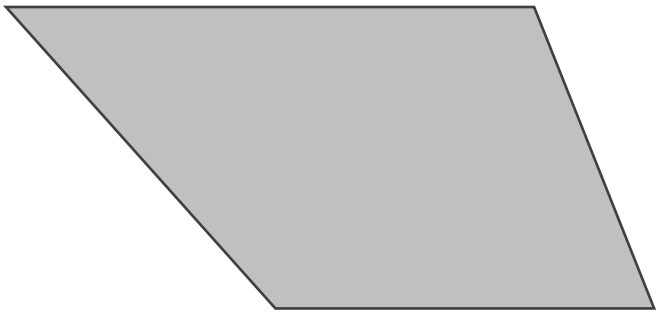
Motor	Avg Thrust	Burn Time	Max Thrust	Total Impulse	Thrust to Wt	Propellant Wt	Size
B1	1.88 N	2.42 s	3.87 N	4.61 Ns	0.19:1	24 g	24/40 mm

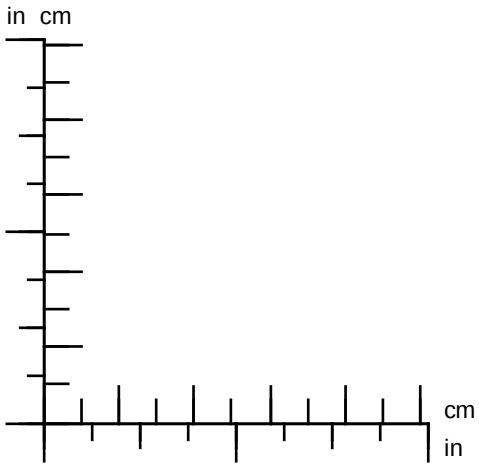
Parts Detail

Sustainer

	Nose cone	PLA (1.3 g/cm³)	Parabolic series	Len: 180 mm	Mass: 49.8 g
	Parachute	Ripstop nylon (67 g/m²)	Dia_{out} 1782 mm	Len: 95 mm	Mass: 174 g
	Shroud Lines	Elastic cord (flat 6 mm, 1/4 in) (4.3 g/m)	Lines: 8	Len: 200 mm	
	Shock cord	Tubular nylon (25 mm, 1 in) (29 g/m)		Len: 200 mm	Mass: 5.8 g
	Body tube	PLA (1.3 g/cm³)	Dia_{in} 53 mm Dia_{out} 56.6 mm	Len: 180 mm	Mass: 72.5 g
	Shock cord	Tubular nylon (25 mm, 1 in) (29 g/m)		Len: 200 mm	Mass: 5.8 g
	Altimeter		Dia_{out} 45 mm		Mass: 300 g
	Extra trube	PLA (1.3 g/cm³)	Dia_{in} 53 mm Dia_{out} 56.6 mm	Len: 100 mm	Mass: 40.3 g
	Tolerance		Dia_{out} 50 mm		Mass: 100 g
	Tail	PLA (1.3 g/cm³)	Dia_{in} 53 mm Dia_{out} 56.6 mm	Len: 150 mm	Mass: 60.4 g
	Trapezoidal fin set (3)	PLA (1.3 g/cm³)	Thick: 3.6 mm		Mass: 33.7 g
	Launch lug	PLA (1.3 g/cm³)	Dia_{in} 10 mm Dia_{out} 13.6 mm	Len: 30 mm	Mass: 2.6 g
	Inner Tube	PLA (1.3 g/cm³)	Dia_{in} 51 mm Dia_{out} 53 mm	Len: 100 mm	Mass: 21.2 g
	Engine block	PLA (1.3 g/cm³)	Dia_{in} 0 mm Dia_{out} 53 mm	Len: 10 mm	Mass: 28.7 g


Front
Trapezoidal fin set
Launch lug
Trapezoidal fin set
Trapezoidal fin set

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