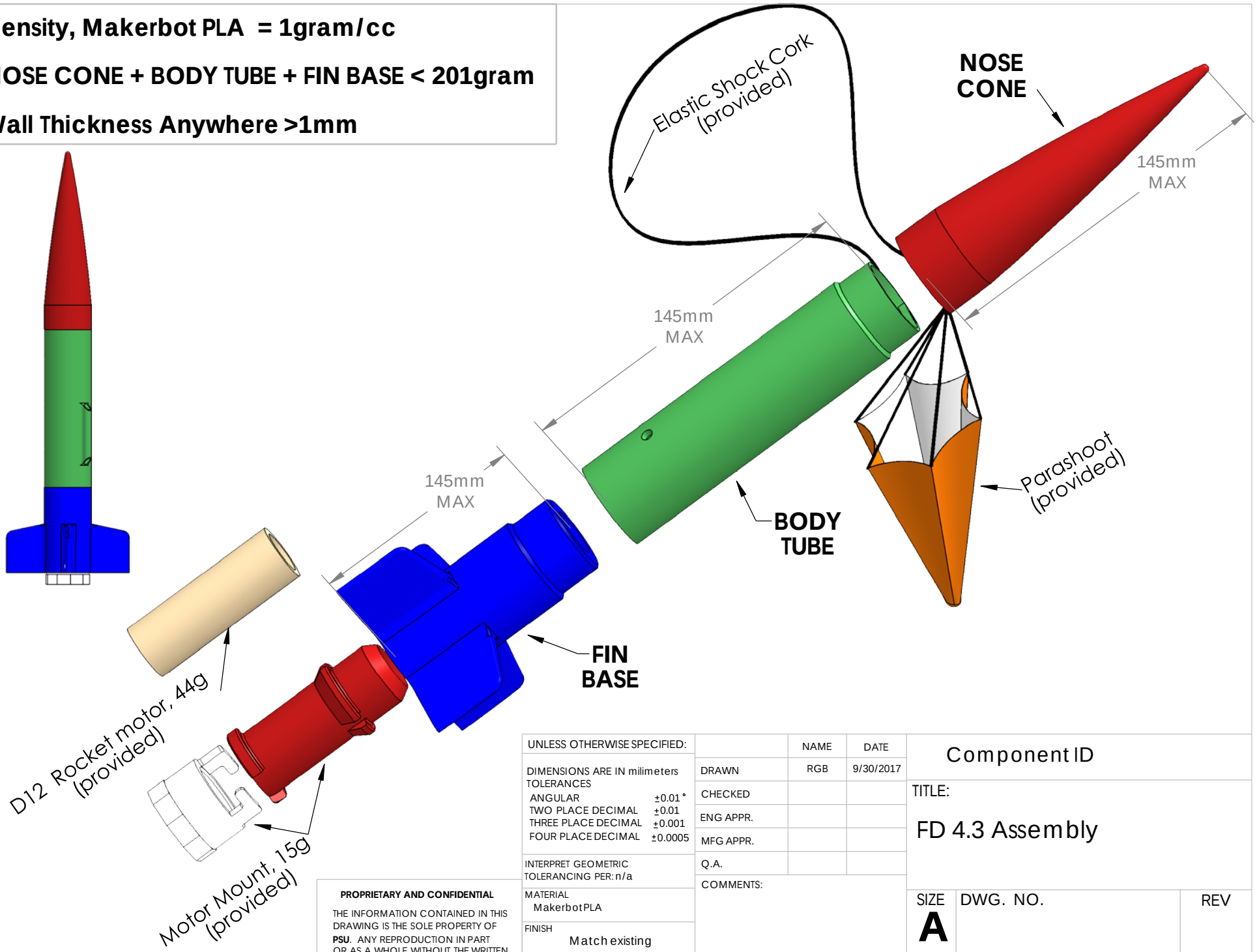
Density, Makerbot PLA = 1gram/cc

NOSE CONE + BODY TUBE + FIN BASE < 201gram

Wall Thickness Anywhere >1mm



UNLESS OTHERWISE SPECIFIED:		NAME	DATE
DIMENSIONS ARE IN milimeters TOLERANCES ANGULAR ±0.01° TWO PLACE DECIMAL ±0.01 THREE PLACE DECIMAL ±0.001 FOUR PLACE DECIMAL ±0.0005	DRAWN	RGB	9/30/2017
	CHECKED		
	ENG APPR.		
	MFG APPR.		
	Q.A.		
INTERPRET GEOMETRIC TOLERANCING PER: n/a	COMMENTS:		
MATERIAL Makerbot PLA			
FINISH Match existing			
DO NOT SCALE DRAWING			

Component ID

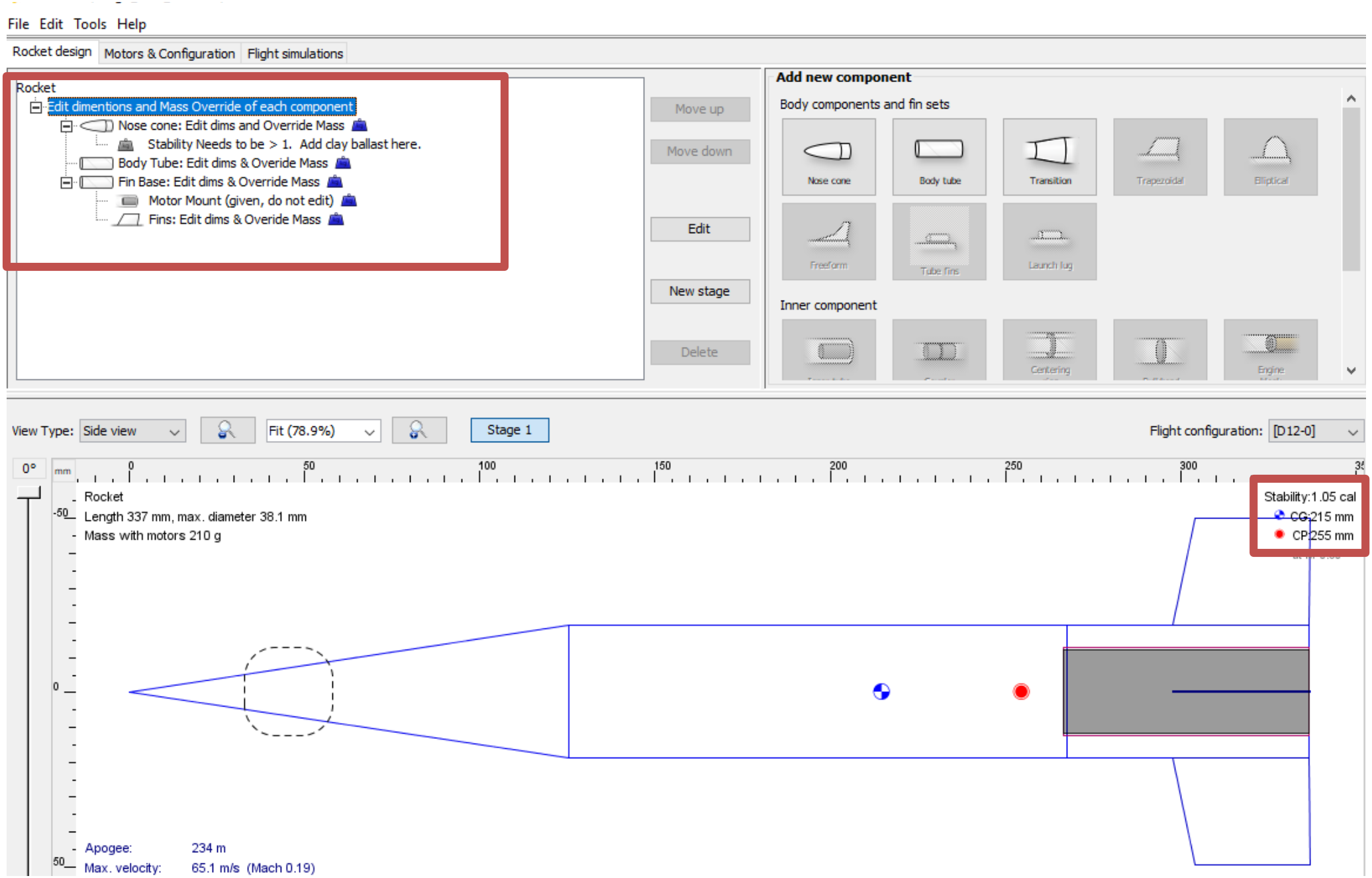
TITLE:

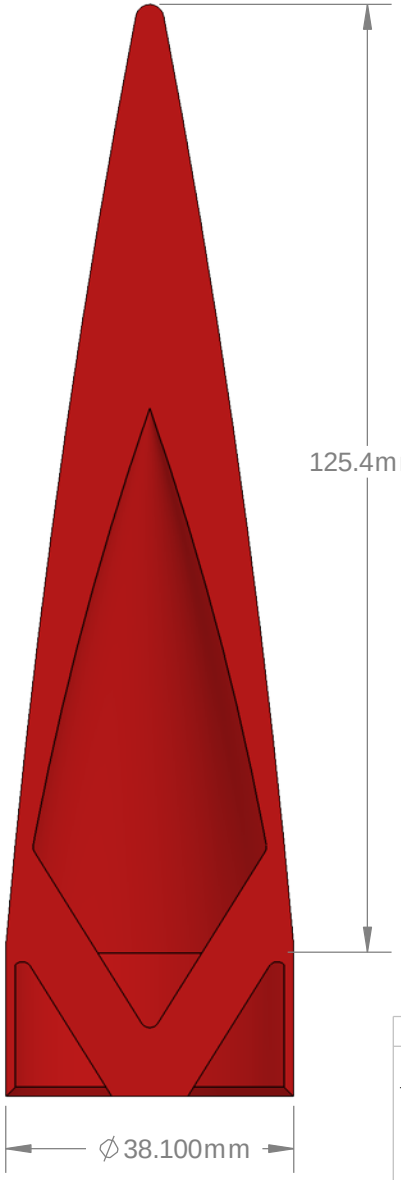
FD 4.3 Assembly

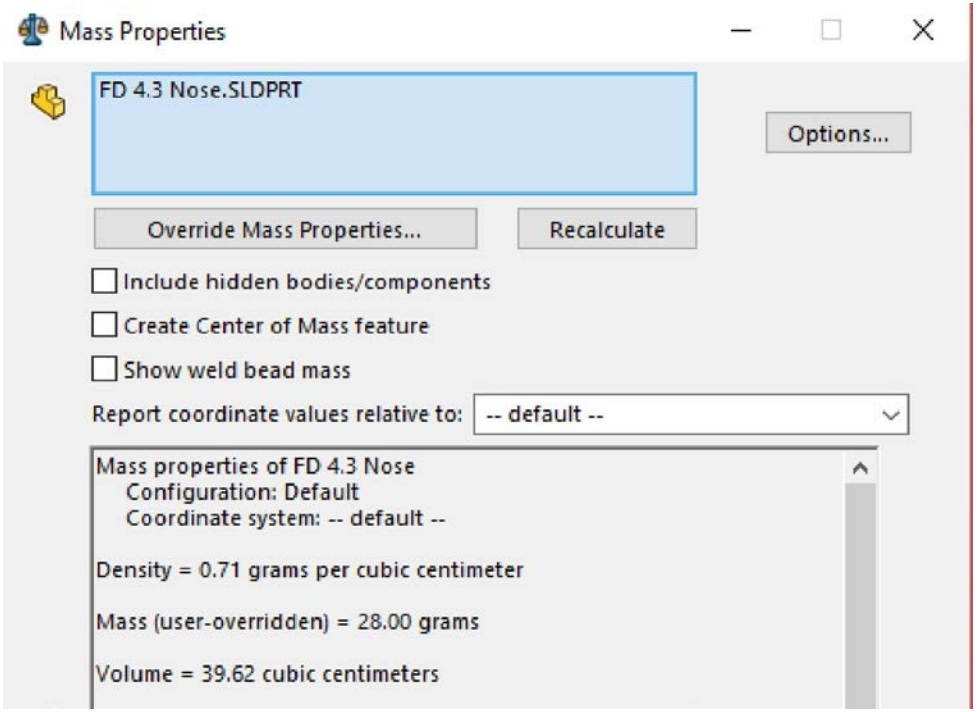
SIZE	DWG. NO.	REV
A		

5 4 3 2 1

Use Open Rocket Data file given. Edit as follows.







Length = 125.4 mm
OD = 38.1mm
Volume = Override Mass = 39.62g

UNLESS OTHERWISE SPECIFIED:		NAME	DATE
DIMENSIONS ARE IN milimeters TOLERANCES ANGULAR ±0.01° TWO PLACE DECIMAL ±0.01 THREE PLACE DECIMAL ±0.001 FOUR PLACE DECIMAL ±0.0005	DRAWN	RGB	10/1/2017
	CHECKED		
	ENG APPR.		
	MFG APPR.		
INTERPRET GEOMETRIC TOLERANCING PER: n/a	Q.A.		
MATERIAL MakerbotPLA	COMMENTS:		
FINISH Match existing			
DO NOT SCALE DRAWING			

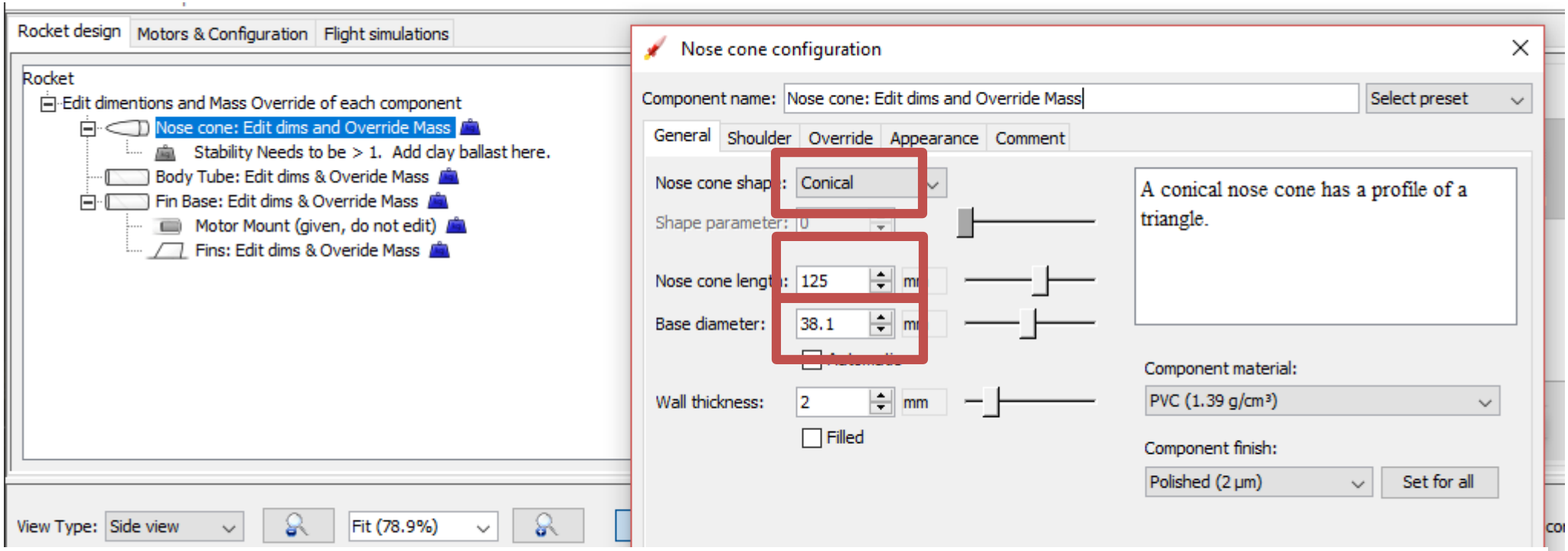
Nose

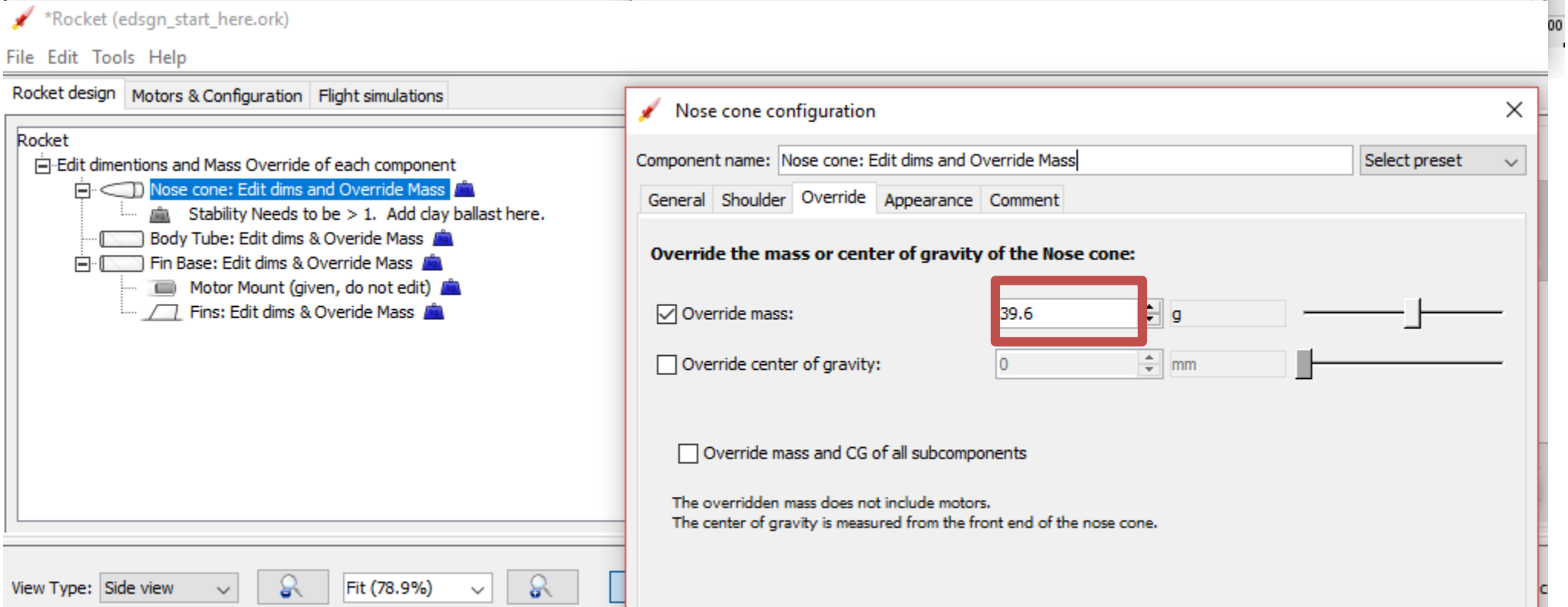
FD 4.3 Assembly

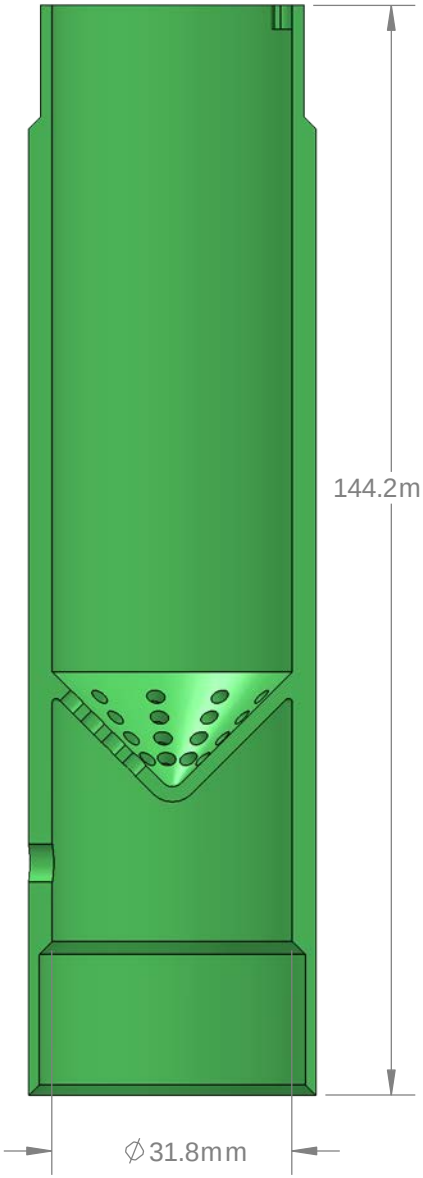
SIZE	DWG. NO.	REV
A		

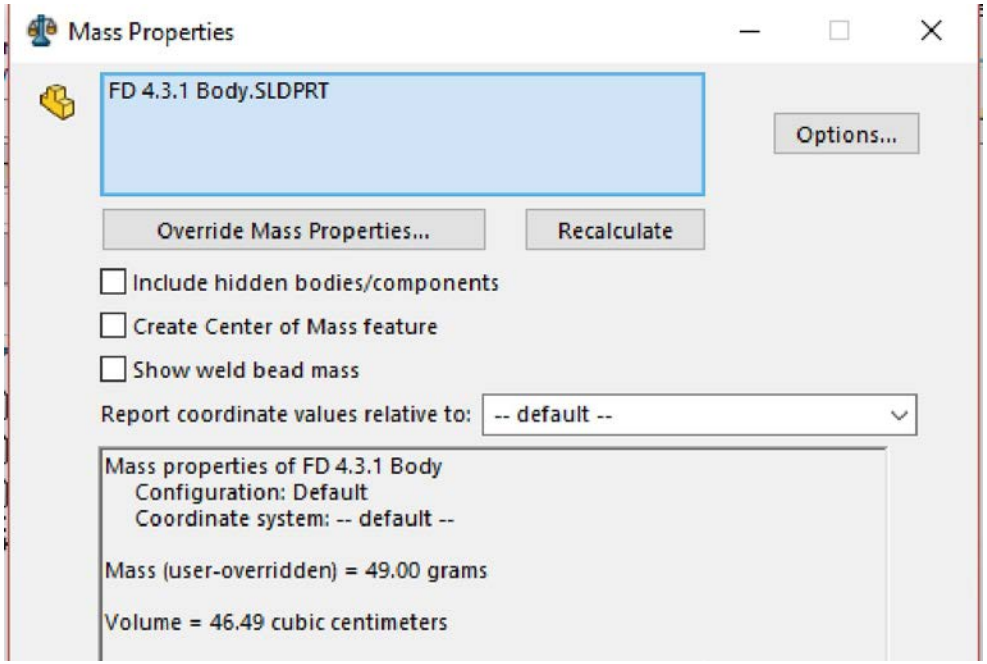
5 4 3 2 1

Enter Nose Cone Data From SolidWorks









Length = 144.2 mm
OD = 38.1mm
Volume = Override Mass = 46.5g

UNLESS OTHERWISE SPECIFIED:		NAME	DATE
DIMENSIONS ARE IN milimeters TOLERANCES ANGULAR ±0.01° TWO PLACE DECIMAL ±0.01 THREE PLACE DECIMAL ±0.001 FOUR PLACE DECIMAL ±0.0005	DRAWN	RGB	10/1/2017
	CHECKED		
	ENG APPR.		
	MFG APPR.		
INTERPRET GEOMETRIC TOLERANCING PER: n/a	Q.A.		
MATERIAL MakerbotPLA	COMMENTS:		
FINISH Match existing			
DO NOT SCALE DRAWING			

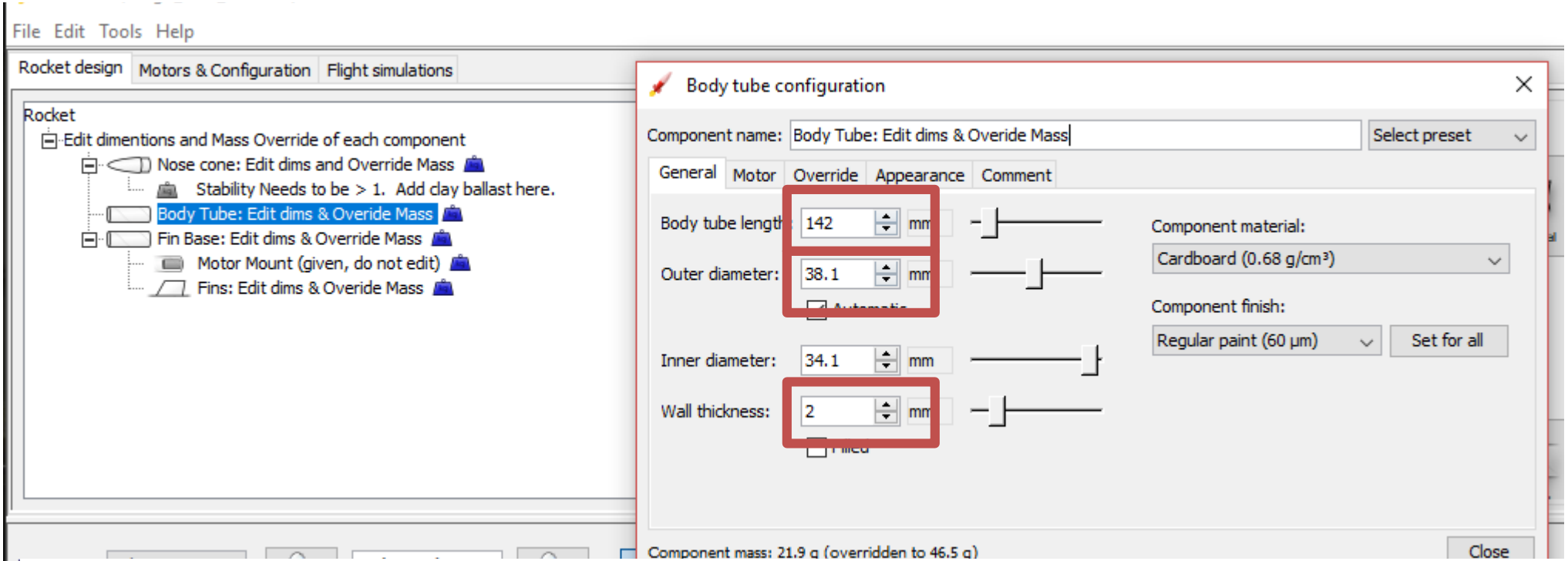
Body

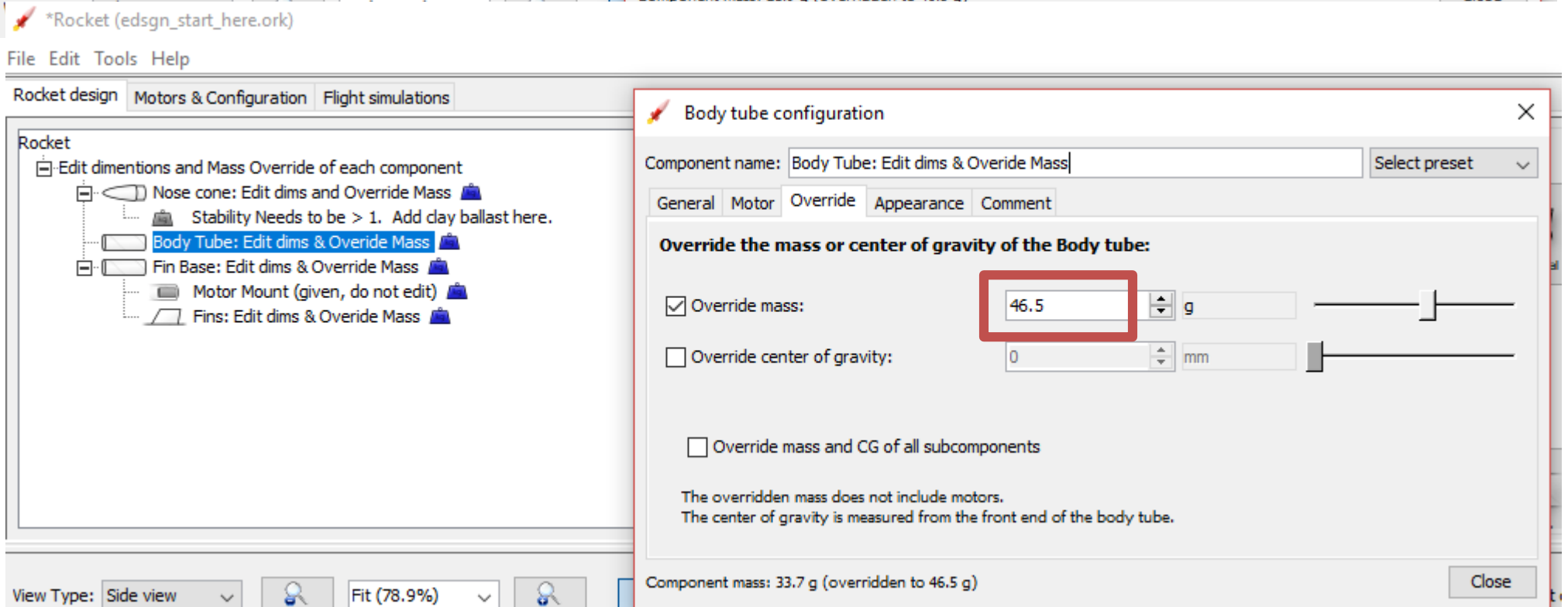
FD 4.3 Assembly

SIZE	DWG. NO.	REV
A		

5 4 3 2 1

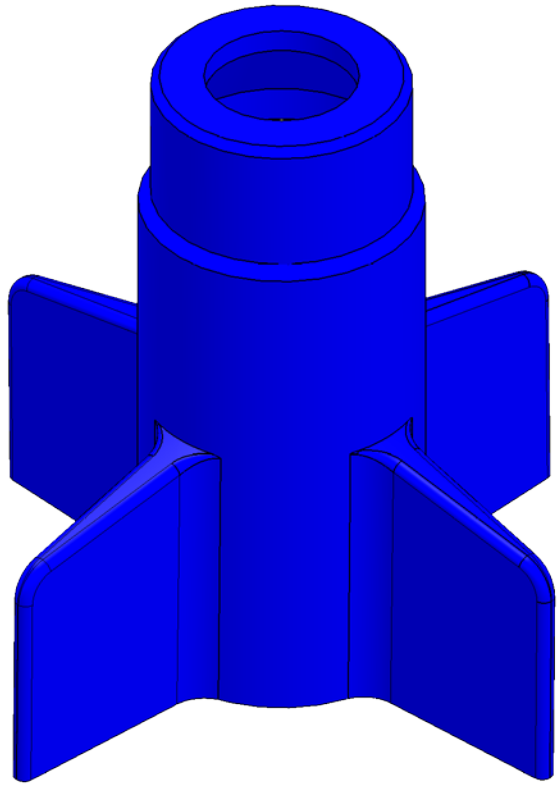
Enter Body Tube Data From SolidWorks





Need to determine mass of fins and fin base separately.

Use Multibody to split fins off Fin Base



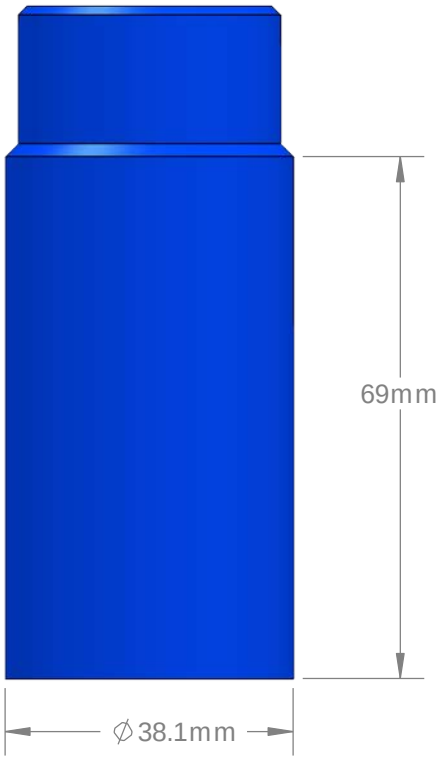
UNLESS OTHERWISE SPECIFIED:	NAME	DATE
DIMENSIONS ARE IN milimeters TOLERANCES ANGULAR ±0.01° TWO PLACE DECIMAL ±0.01 THREE PLACE DECIMAL ±0.001 FOUR PLACE DECIMAL ±0.0005	DRAWN: RGB	10/1/2017
	CHECKED	
	ENG APPR.	
	MFG APPR.	
	Q.A.	
INTERPRET GEOMETRIC TOLERANCING PER: n/a	COMMENTS:	
MATERIAL: MakerbotPLA		
FINISH: Match existing		
DO NOT SCALE DRAWING		

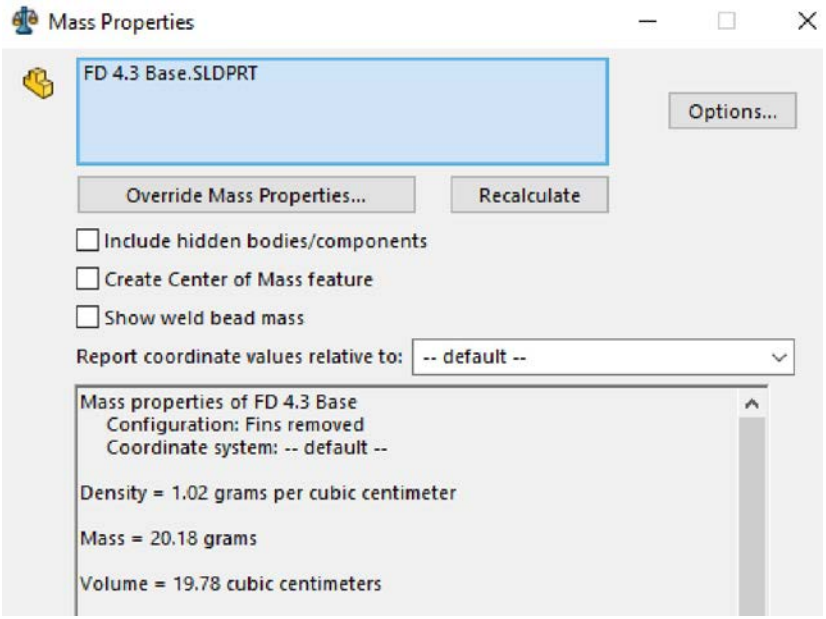
Fin Base

FD 4.3 Assembly

SIZE	DWG. NO.	REV
A		

5 4 3 2 1





Length = 69 mm
OD = 38.1mm
Volume = Override Mass = 20.2g

UNLESS OTHERWISE SPECIFIED:		NAME	DATE
DIMENSIONS ARE IN milimeters TOLERANCES ANGULAR ±0.01° TWO PLACE DECIMAL ±0.01 THREE PLACE DECIMAL ±0.001 FOUR PLACE DECIMAL ±0.0005	DRAWN	RGB	10/1/2017
	CHECKED		
	ENG APPR.		
	MFG APPR.		
INTERPRET GEOMETRIC TOLERANCING PER: n/a	Q.A.		
MATERIAL MakerbotPLA	COMMENTS:		
FINISH Match existing			
DO NOT SCALE DRAWING			

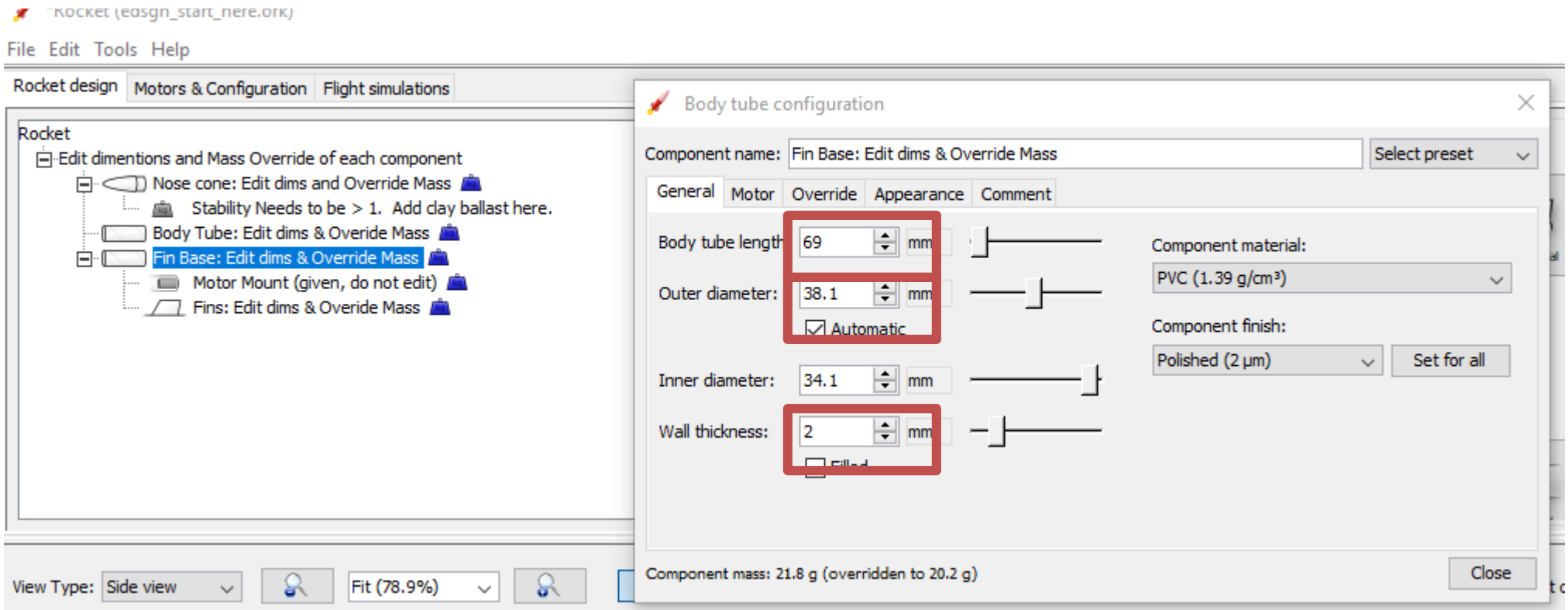
Fin Base: w/o Fins

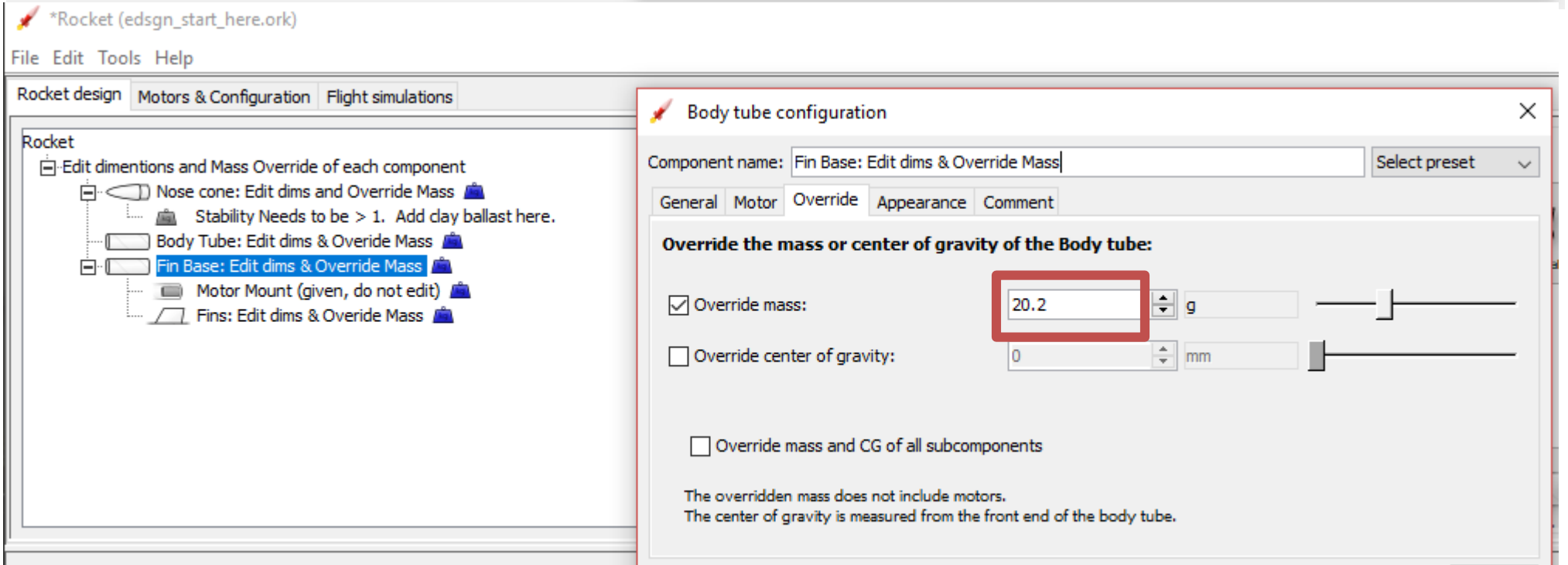
FD 4.3 Assembly

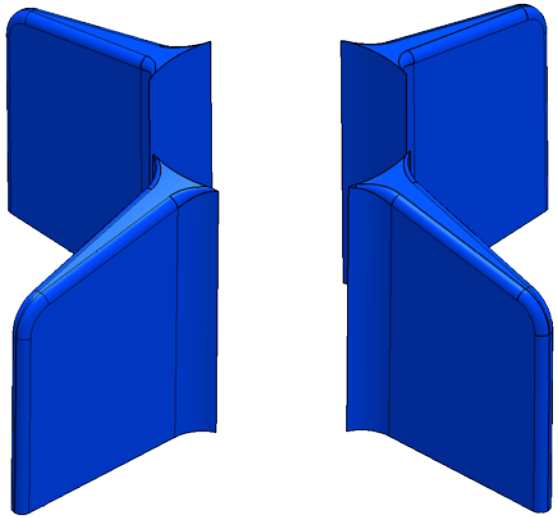
SIZE	DWG. NO.	REV
A		

5 4 3 2 1

Enter Fin Base (w/o Fins) Data From SolidWorks







Mass Properties

FD 4.3 Base.SLDPRT

Override Mass Properties... | Recalculate

☐ Include hidden bodies/components

☐ Create Center of Mass feature

☐ Show weld bead mass

Report coordinate values relative to: -- default --

Mass properties of FD 4.3 Base
Configuration: Fins
Coordinate system: -- default --

Density = 1.02 grams per cubic centimeter

Mass = 20.62 grams

Volume = 20.21 cubic centimeters

Volume = Override Mass = 20.2g

		NAME	DATE
UNLESS OTHERWISE SPECIFIED:			
DIMENSIONS ARE IN milimeters	DRAWN	RGB	10/1/2017
TOLERANCES			
ANGULAR ±0.01 °	CHECKED		
TWO PLACE DECIMAL ±0.01	ENG APPR.		
THREE PLACE DECIMAL 0.001	MFG APPR.		
FOUR PLACE DECIMAL ±0.0005	Q.A.		
INTERPRET GEOMETRIC TOLERANCING PER: n/a	COMMENTS:		
MATERIAL MakerbotPLA			
FINISH Match existing			
DO NOT SCALE DRAWING			

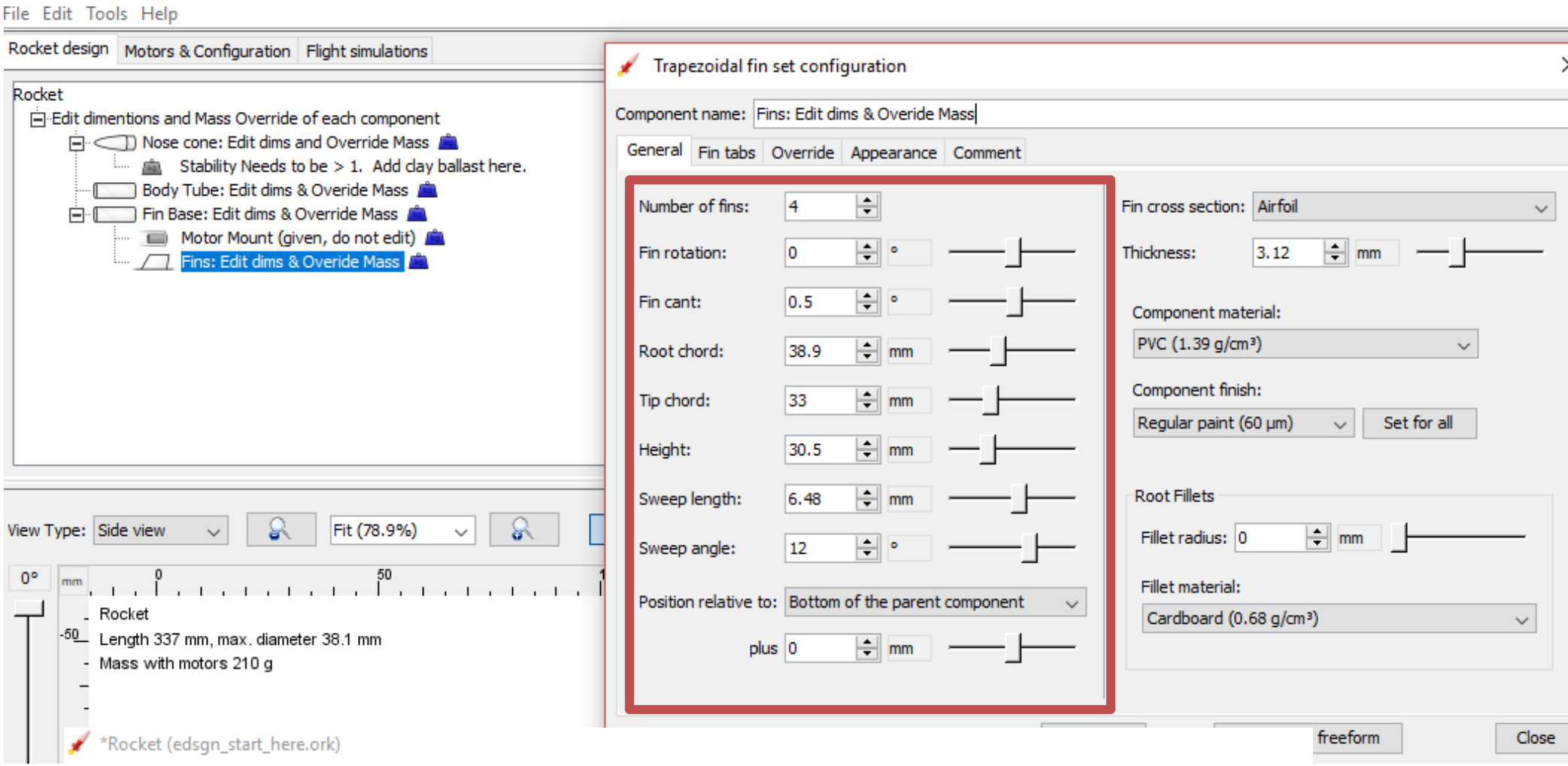
Fin Base: Fins Only

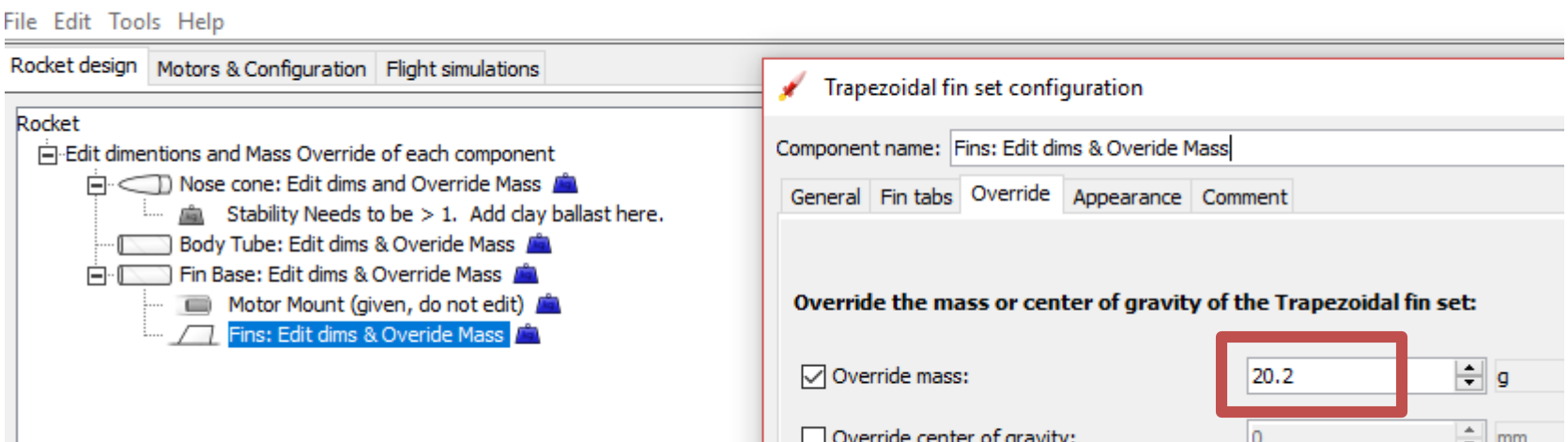
FD 4.3 Assembly

SIZE	DWG. NO.	REV
A		

5 4 3 2 1

Enter Fin Base (only Fins) Data From SolidWorks





Enter Nose Cone Ballast for STABILITY >1.0