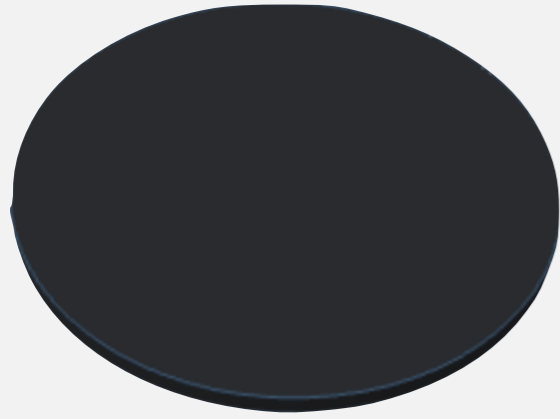


RC Motor Kit

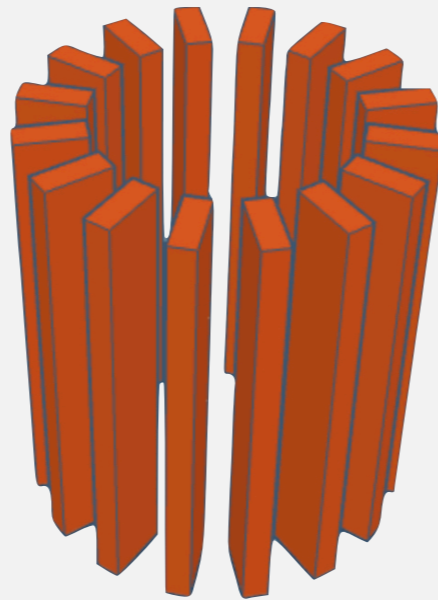
By

Theryn, Cooper, and Noah



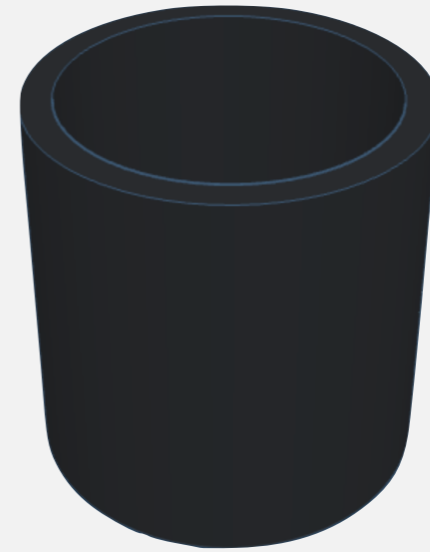
Shape 1

Volume:
4684.87mm³
Surface area:
1,325.68mm²



Shape 2

Volume:
6,387.04mm³
Surface Area:
8,885.6mm²



Shape 4

Volume:
13,948.67mm³
Surface area:
9,858.46mm²



Shape 3

Volume:
451.6mm³
Surface area:
7,092.9079mm²



Shape 5

Volume:
13351.77mm³
Surface area:
2,929.51mm²

Total Volume:
38,823.95mm³

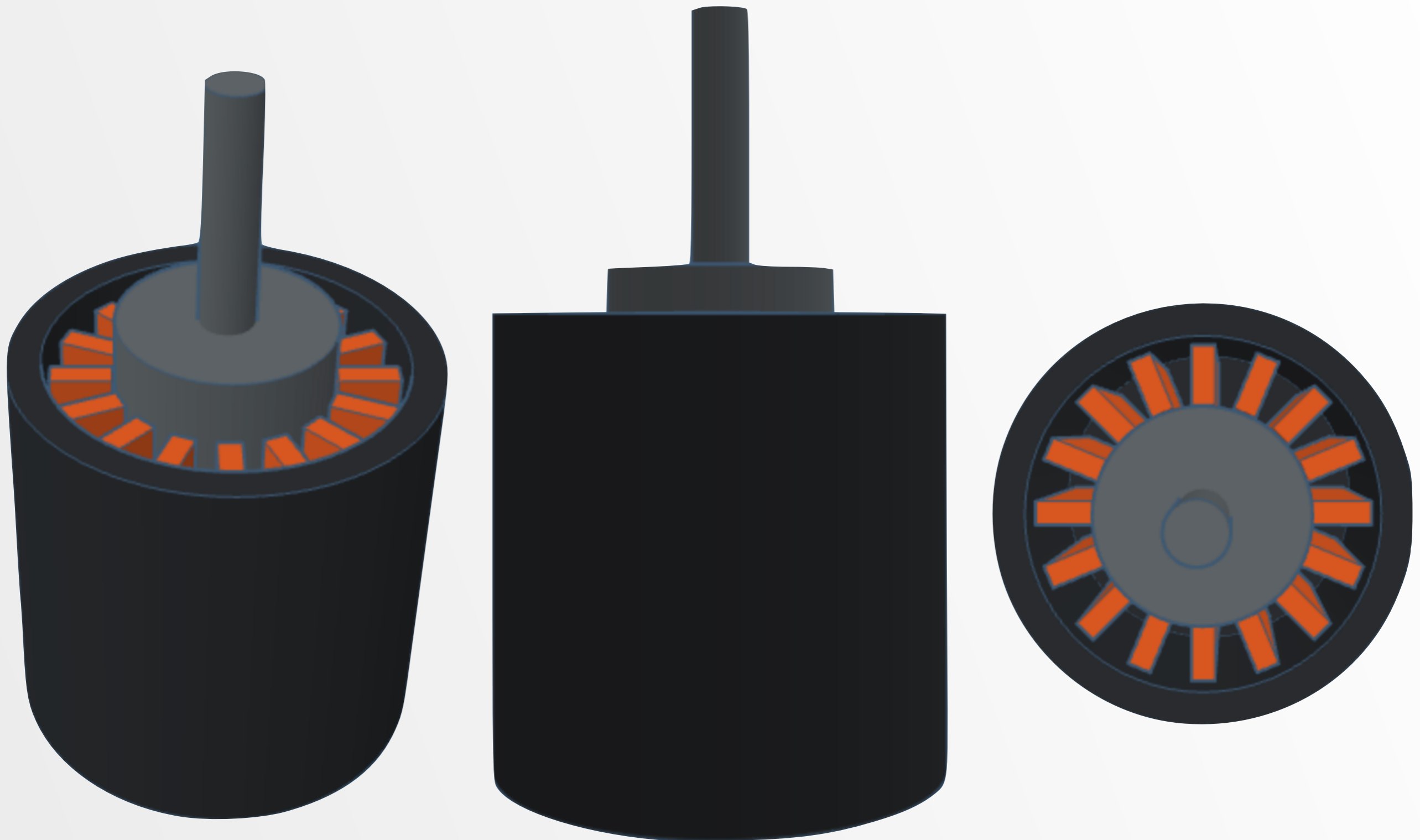
Total Surface Area:
30,092.15mm²

Surface Area to Volume Ratio:
30,092mm² : 38,824mm³
Approximately 0.8:1
Exactly 0.77508757469606:1

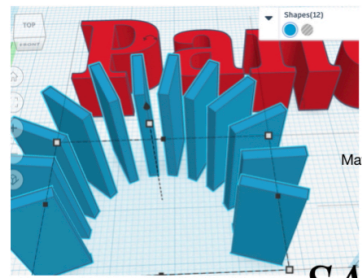
Volume math:
6,387.04 + 451.6 + 4684.87 + 13351.77 + 13,948.67 = 38,823.95mm³

Surface area math:
8,885.6 + 7,092.90 + 1,325.68 + 2,929.51 + 9,858.46 = 30,092.15mm²

Complete Model



Noah



$$SA = 2 \times ((w \times l) + (h \times l) + (h \times w))$$

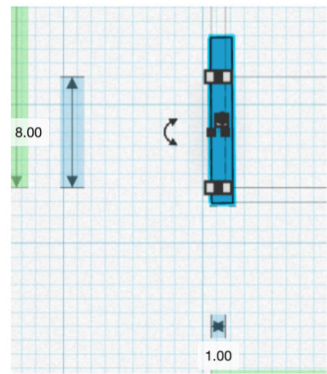
$$SA = 2 \times ((1 \times 8) + (20 \times 8) + (20 \times 1)) = 376$$

Math for the surface area of the individual panels

$$376 \times 12 = 4512$$

$$SA = 4512$$

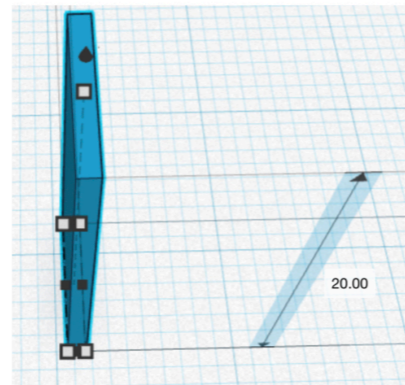
I did this equation above because there are 12 panels



$$V = whl$$
$$8 \times 20 \times 1 = 160$$

$$160 \times 12 = 1920$$

$$V = 1920$$



Surface Area and Volume Math

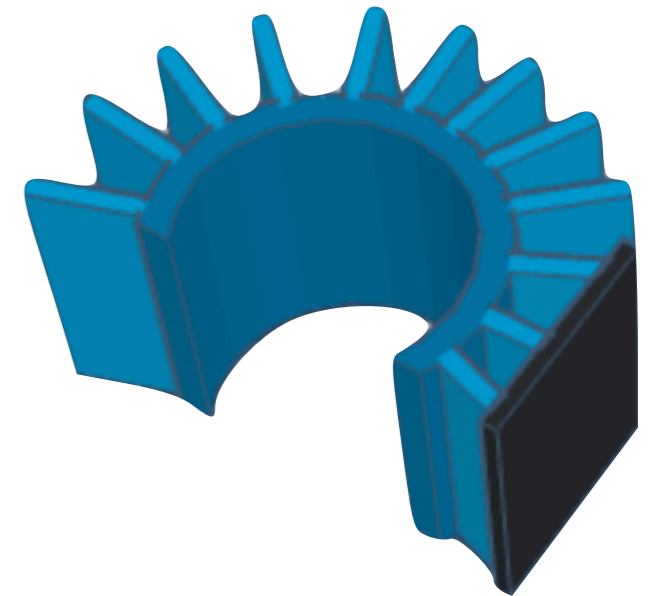
Total Volume = 1920 + 320 + 6283.19 = 8523.19mm cubed

Total Surface Area = 4512 + 712 + 1884.96 = 7108.96mm squared

SA : V = 7108.96 : 8523.19 Or

0.8340726887 : 1

Complete design

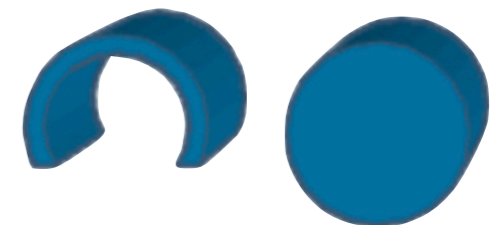


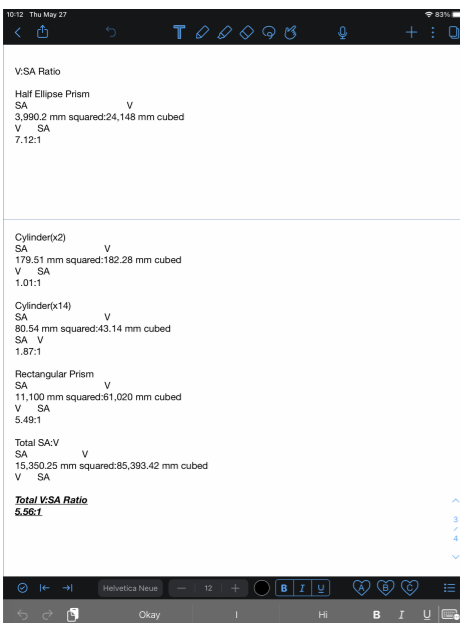
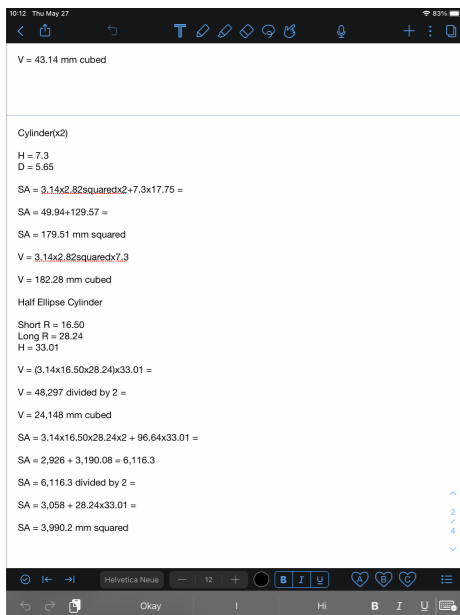
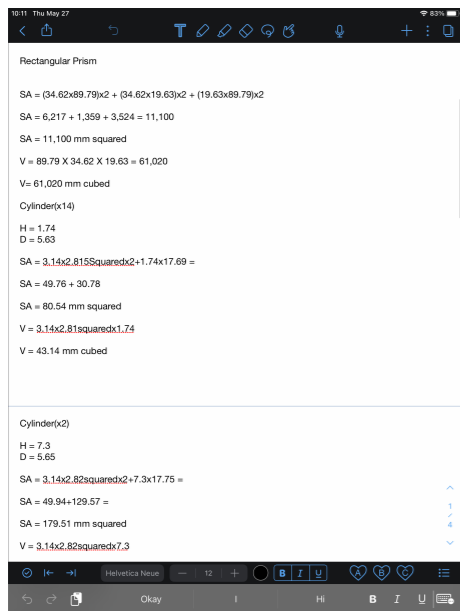
Expanded design

Panels



Cylinder





Total Volume Rectangular Prism:
61,020mm³

Total Surface Area Rectangular Prism:
11,100²

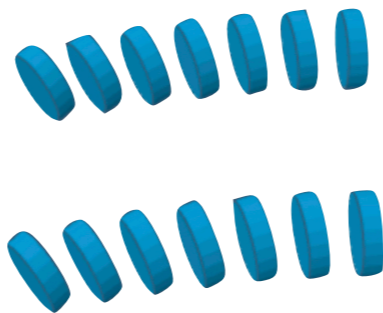
Volume to Surface Area Ratio:
5.49:1



Total Volume Cylinder(x14):
43.13mm³

Total Surface Area Cylinder(x14):
49.76mm²

Surface Area to Volume Ratio:
1.87:1



Total Volume Cylinder(x2):
182.28mm³

Total Surface Area Cylinder(x2):
179.52mm²

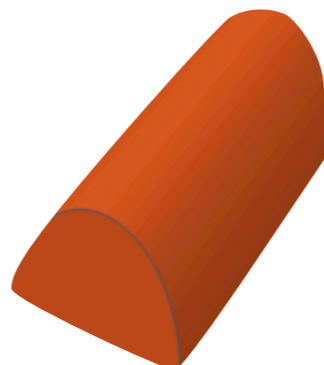
Volume to Surface Area Ratio:
1.01:1



Total Volume Half Ellipse Cylinder:
24,148mm³

Total Surface Area Cylinder(x14):
3,990.2mm²

Volume to Surface Area Ratio:
7.12:1



Total Volume:
85,393.42mm³

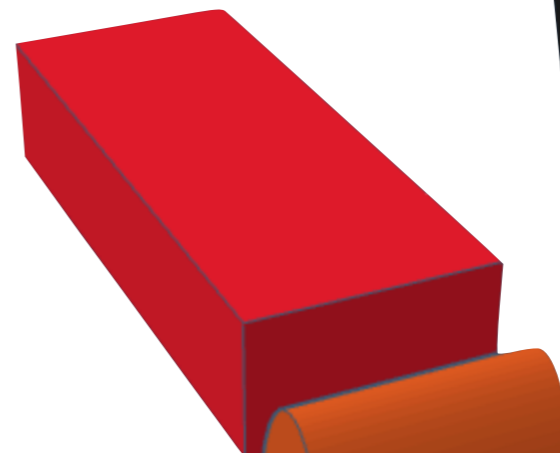
Cooper

Total Surface Area:
15,350.25mm²

Surface Area to Volume Ratio:
5.56:1



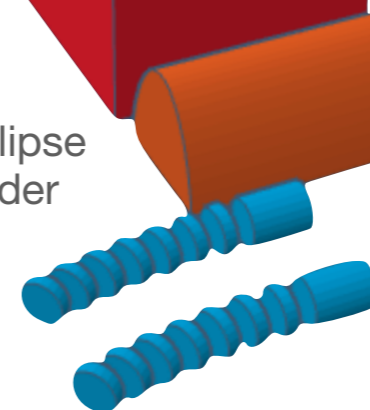
Rectangular Prism



Half Ellipse Cylinder

Cylinder(x14)

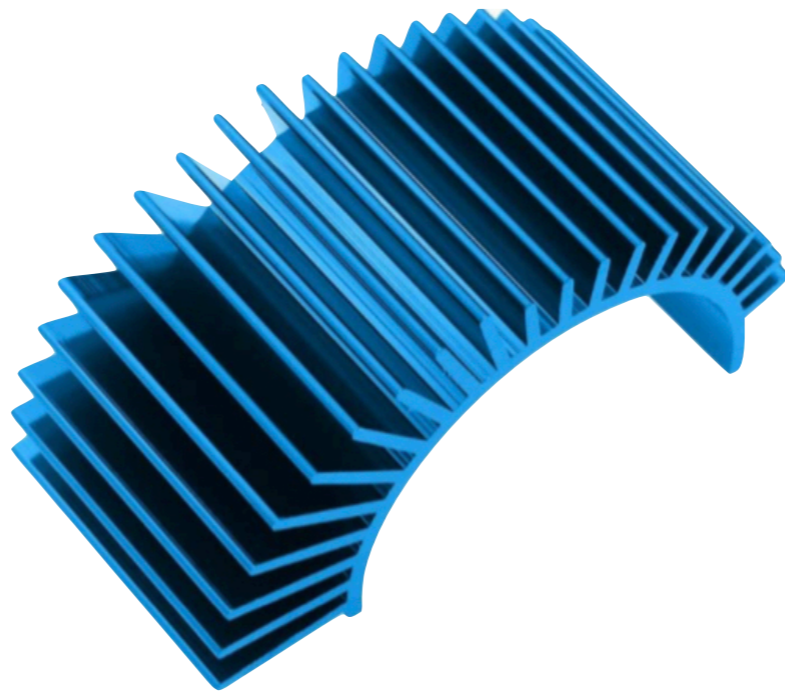
Cylinder(x2)



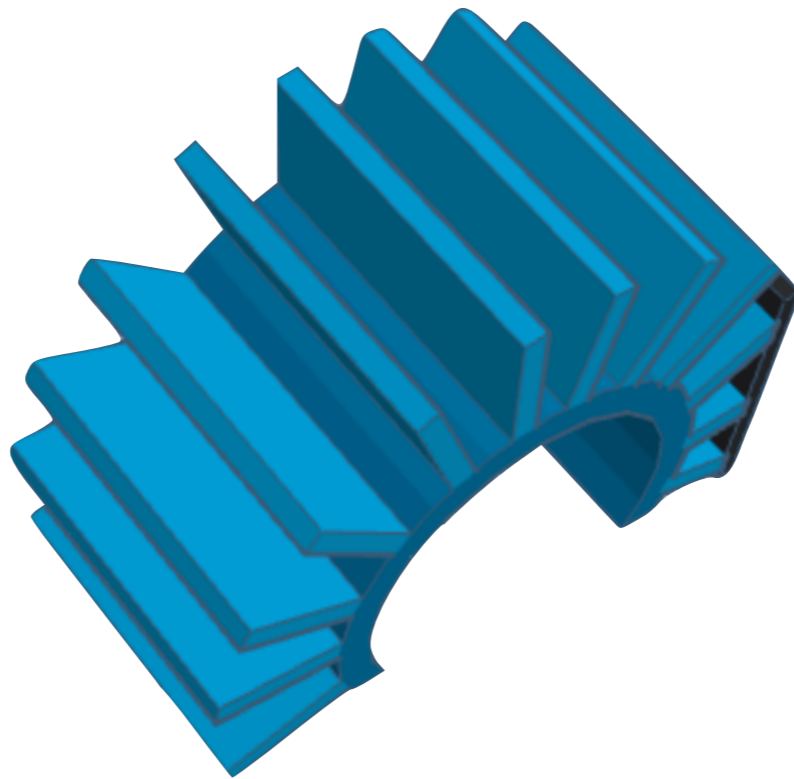
Calculations

Shape	Formula For S.A.	Formula For V
Cuboid/Rectangular Prism	$SA = (L \times H \times 2) + (W \times H \times 2) + (L \times W \times 2)$	$V = L \times W \times H$
Half Cylinder	$SA = (\pi \times R^2 \times 2 + C \times H) \div 2 + D \times H$	$V = (\pi \times R^2 \times H) \div 2$
Cylinder	$SA = \pi \times R^2 \times 2 + H \times C$	$V = \pi \times R^2 \times H$

Theryn's
Electric Motor



Noah's
Heat Sink



Cooper's
Battery



