

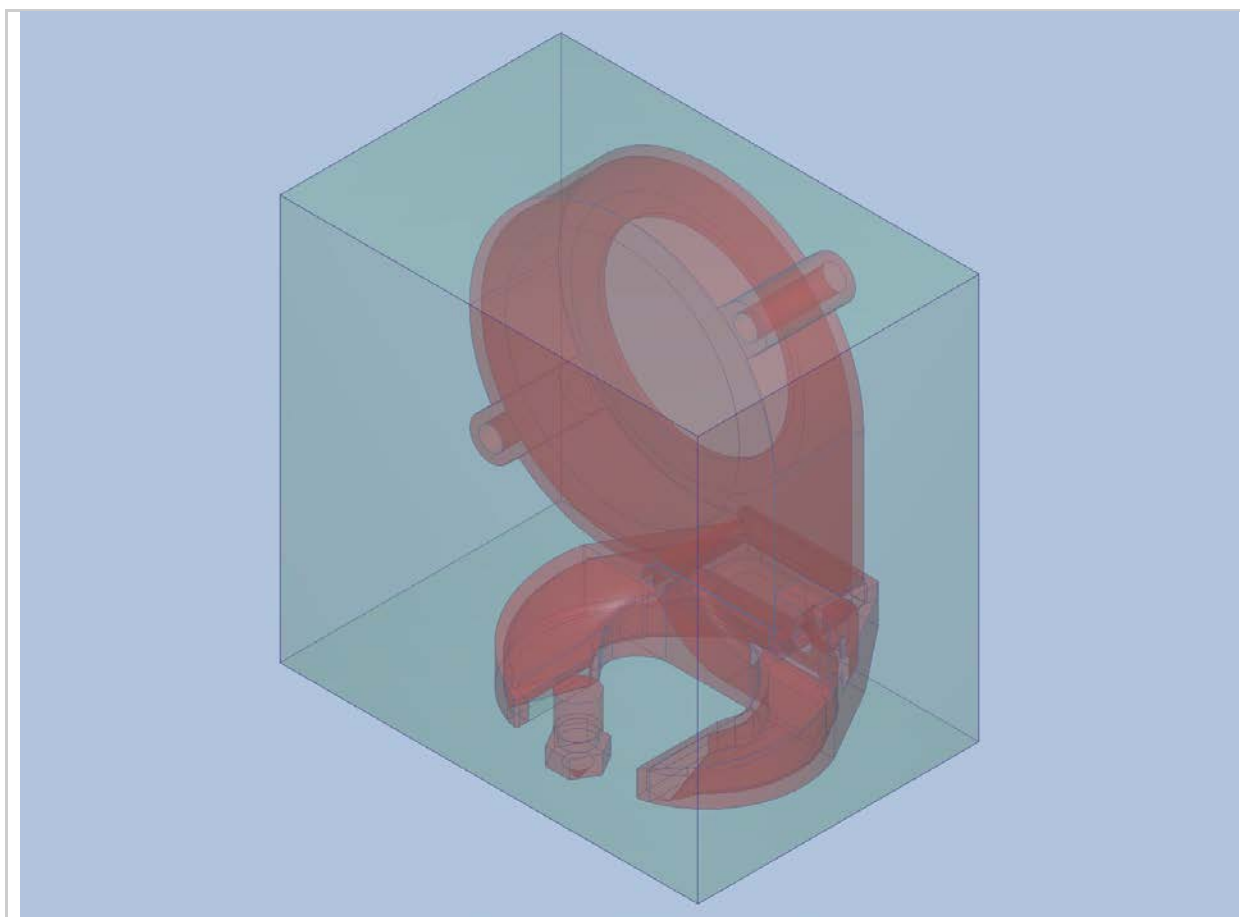
BEAR NOZZLE REV 1

AIR-BOX FAN-CURVE

Prepared by: RH-Dreambox

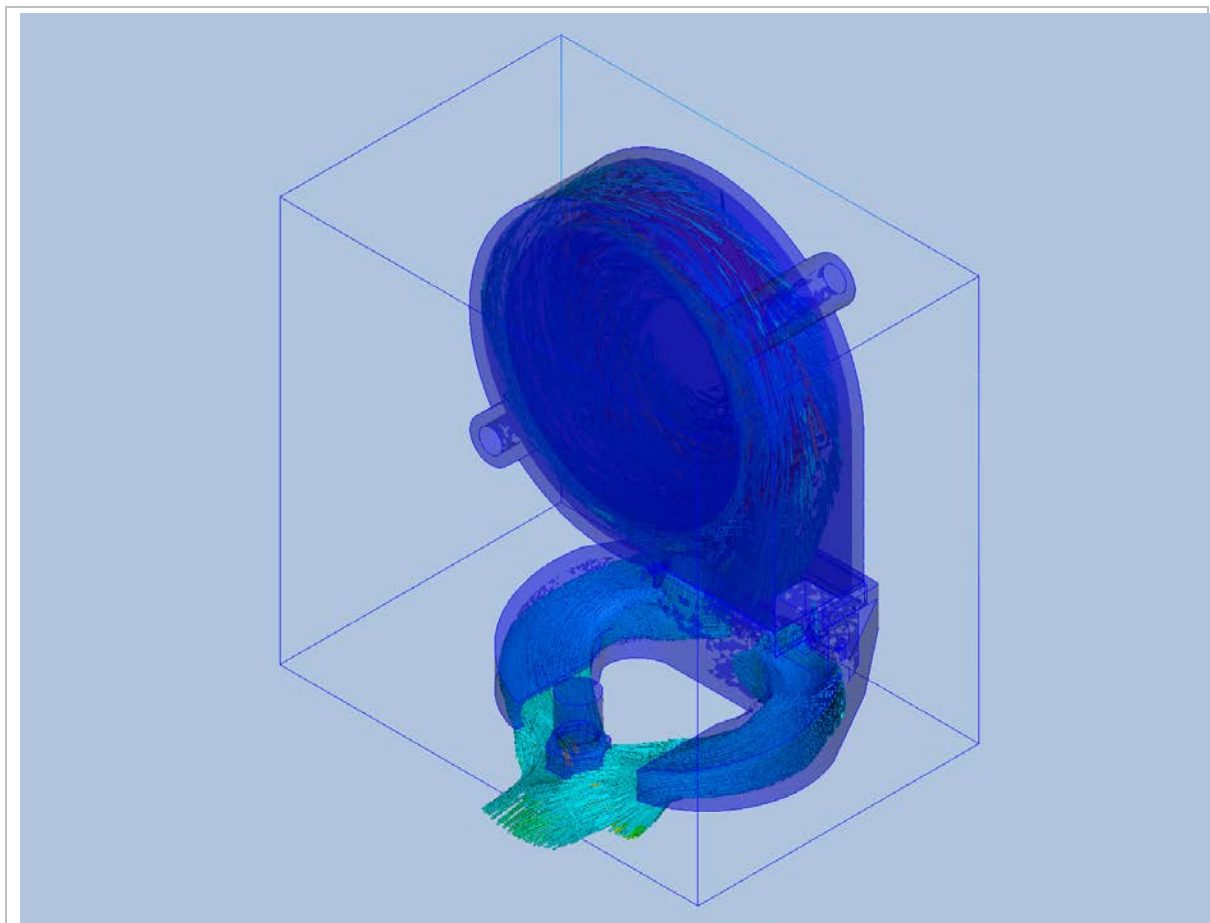
Date: Monday, January 28, 2019

MATERIALS



NAME	ASSIGNED TO	PROPERTIES	
Air	Bear_nozzle_1_air:1 Bear_nozzle_1_air:1 Simulation_Front_Fan_Air:1 CFDCreatedVolume	Density	Equation of State
		Viscosity	1.817e-05 Pa-s
		Conductivity	0.02563 W/m-K
		Specific heat	1004.0 J/kg-K
		Compressibility	1.4
		Emissivity	1.0
		Wall roughness	0.0 meter
		Phase	Vapor Pressure
ABS (Molded)	Bear_nozzle_1:1 Simulation_Front_Fan:1 Simulation_V6_Nozzle:1	X-Direction	0.153 W/m-K
		Y-Direction	Same as X-dir.
		Z-Direction	Same as X-dir.
		Density	1.05 g/cm3
		Specific heat	2.05 J/g-K
		Emissivity	0.469
		Transmissivity	0.0
		Electrical resistivity	1.65e+15 ohm-cm
		Wall roughness	0.0 meter
Prusa front fan-curve	Simulation_Front_Fan:1	Flow	Fan Curve
		Rotational speed	4000.0 RPM

RESULTS



Inlets and Outlets

outlet 1	mass flow out	-0.103682 g/s
	minimum x,y,z of	0.0
	node near minimum	26941.0
	outlet bulk pressure	-0.0 dyne/cm ²
	outlet bulk	-0.0 C
	outlet mach number	0.000969327
	reynolds number	40.9091
	surface id	249.0
	total mass flow out	-0.103682 g/s
	total vol. flow out	-86.0619 cm ³ /s
	volume flow out	-86.0619 cm ³ /s

Field Variable Results

VARIABLE	MAX	MIN
cond	0.00153 W/cm-K	0.0 W/cm-K
dens	1.05 g/cm ³	0.00120251 g/cm ³
econd	0.594345 W/cm-K	0.0 W/cm-K
emiss	1.0	0.0
evisc	0.218604 g/cm-s	0.0 g/cm-s
gent	53650100000.0 1/s	0.0316228 1/s
press	789.475 dyne/cm ²	-149.686 dyne/cm ²
ptotl	1164.02 dyne/cm ²	-149.686 dyne/cm ²
scal1	0.0	0.0
seebeck	0.0 V/K	0.0 V/K
shgc	0.0	0.0
spech	2.05 J/g-K	1.00396 J/g-K
temp	0.0 C	0.0 C
transmiss	0.0	0.0
turbd	2.79126e+20 cm ² /s ³	5.62318e-11 cm ² /s ³
turbk	806660000000.0 cm ² /s ²	1.817e-07 cm ² /s ²
ufactor	0.0	0.0
visc	0.0001817 g/cm-s	0.0 g/cm-s
vx vel	833.439 cm/s	-835.44 cm/s
vy vel	269.402 cm/s	-495.582 cm/s
vz vel	835.135 cm/s	-833.241 cm/s

Fluid Forces on Walls

pressx	-255.6 dynes
pressy	97.159 dynes
pressz	-99.044 dynes
shearx	50.412 dynes
sheary	-43.703 dynes
shearz	24.237 dynes

Blower data

Simulation is made with a fan curve from Sunon GB1205PHV2-8AY
 Speed 4000 rpm, Airflow 3 cf/m, Static pressure 0.40 inch-H2O

Variation method:		Fan Curve	
ft ³ /min		in.H2O	
	Flow Rate	Pressure Head	
1	0	0.4	
2	0.5	0.33	
3	1	0.27	
4	1.5	0.21	
5	2	0.15	
6	2.5	0.07	
7	3	0	

Decision Center

SUMMARY PARTS

SUMMARY PART 4

RESULT QUANTITY	DESIGN 1::SCENARIO 1
Blower Volume	13.438 cm ³
Blower Pressure	472.87 dyne/cm ²
Blower Vol Flow	785.63 cm ³ /s
Nozzle air inlet	Left channel 0.96 cm ²
Nozzle air inlet	Right channel 1.29 cm ²
Nozzle air outlet	2 x 0.49 cm ²

SUMMARY PLOTS

PLOT 1, NOZZLE OUTLETS AIR VELOCITY

