

# Drive Train 67% Build Update

By: Erik DiMaria  
Logan Gerard Wilson  
Claire Pescatore



# Gantt Chart

## SAE Baja Team 9 Gantt chart

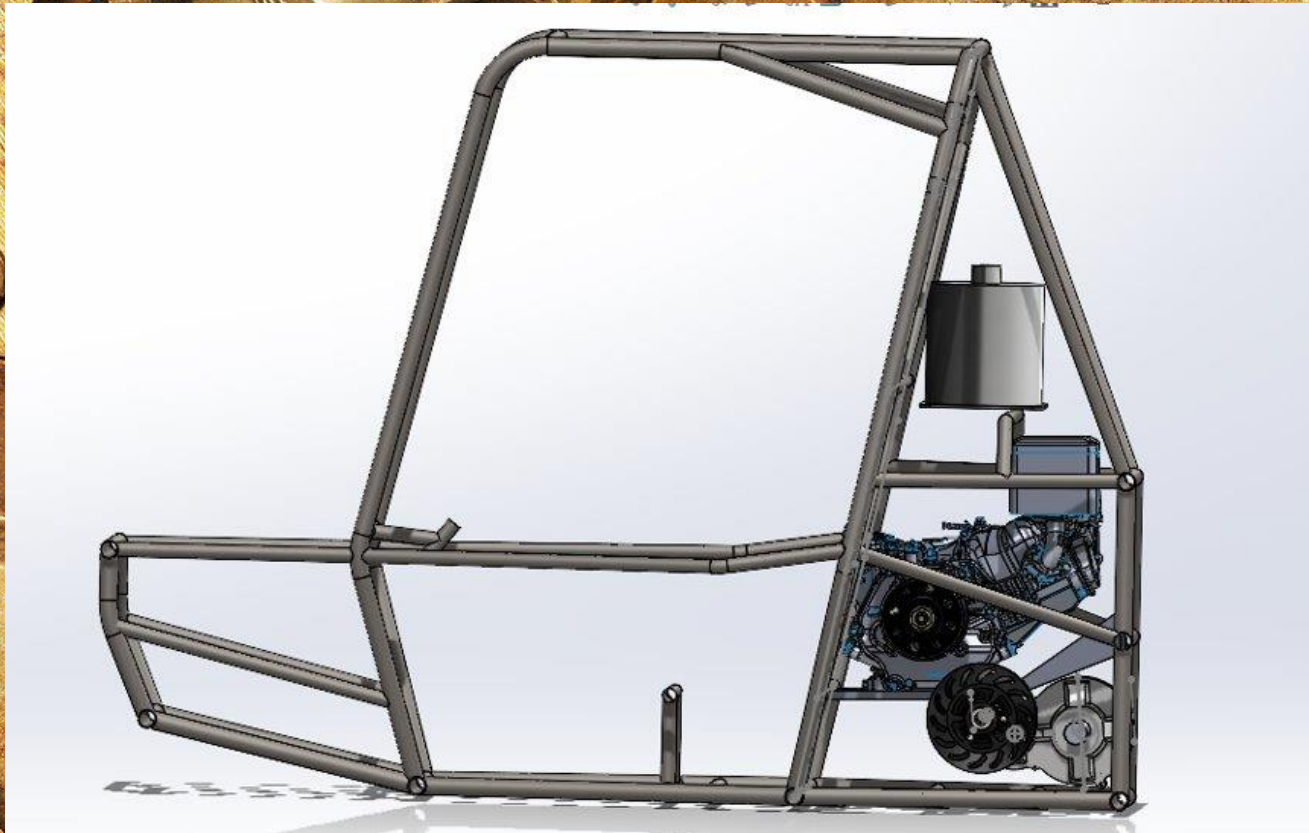
Lumberjack motorsports baja team  
Zachary Biehl, Jared Bonds, Dylan W

Project Start:

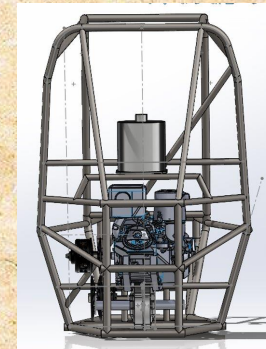
Display Week:

TASK	ASSIGNED TO	PROGRESS	START	END
<b>1/16/2023- 2/13/23</b>				
Time Card Week 1	Team	100%	1/20/23	1/24/23
Project Management Assignment	Team	100%	1/24/23	1/25/23
Engineering Model Summary	Team	100%	1/24/23	1/29/23
Individual learning assignment	Individual	100%	1/29/23	2/3/23
Time Card Week 2	Team	100%	1/24/23	1/30/23
Time Card Week 3	Team	100%	1/30/23	2/6/23
Hardware Status Update/ 33% build	Team	100%	2/6/23	2/13/23
Peer Eval 1	Individual	100%	2/6/23	2/13/23
Time Card Week 4	Team	100%	2/6/23	2/13/23
<b>2/14/23-3/6/23</b>				
Time Card week 5	Team	100%	2/13/23	2/20/23
Staff meeting/finalizing design	Team	100%	2/18/23	2/23/23
Time Card week 6	Team	100%	2/23/23	2/26/23
Website check 1	Team/Claire	100%	2/23/23	3/3/23
Hardware status update/67% build	Team	60%	3/3/23	3/6/23

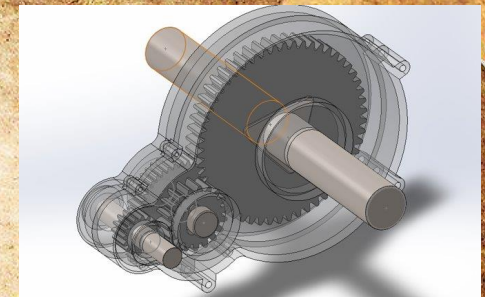
# Drivetrain Placement



Side View of Engine Assembly

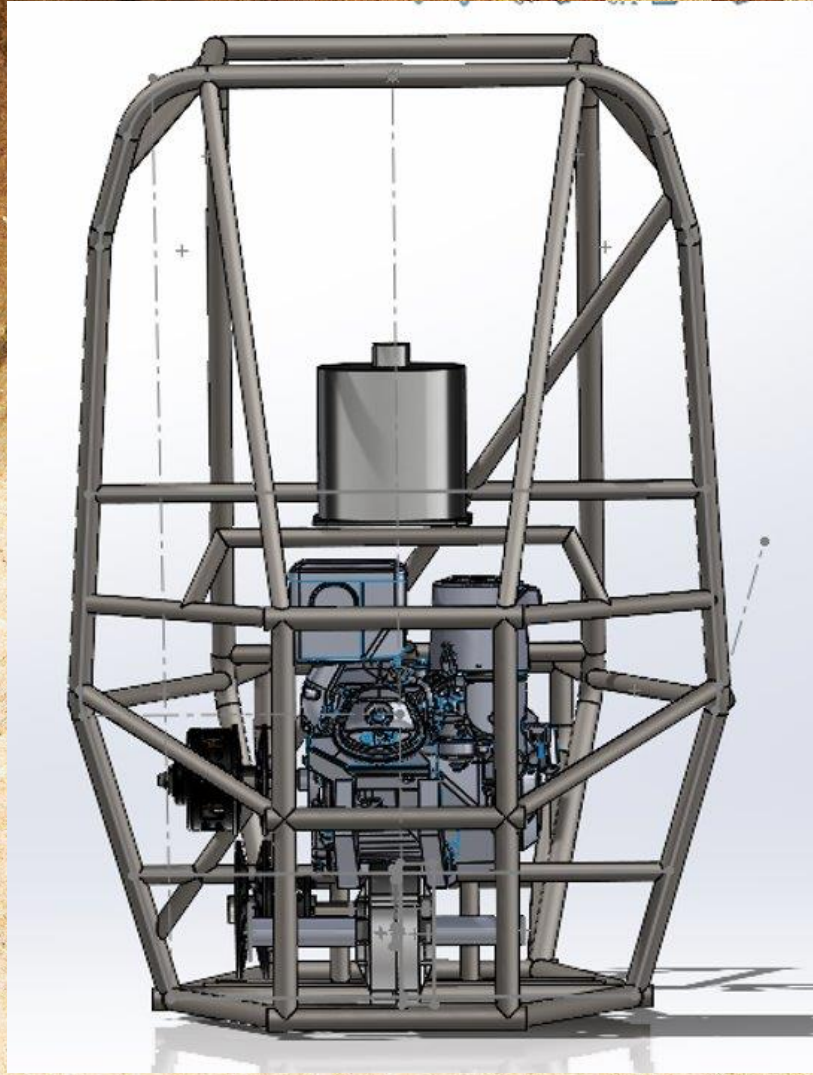


Back View of Engine Assembly

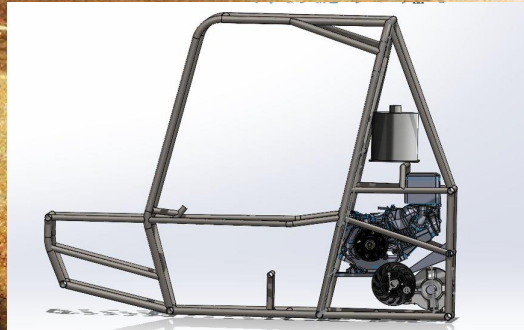


Finished Gear Casing

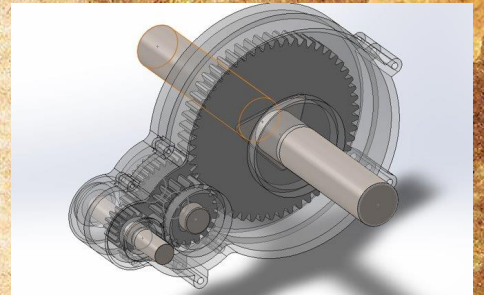
# Drivetrain Placement



Back View of Engine Assembly

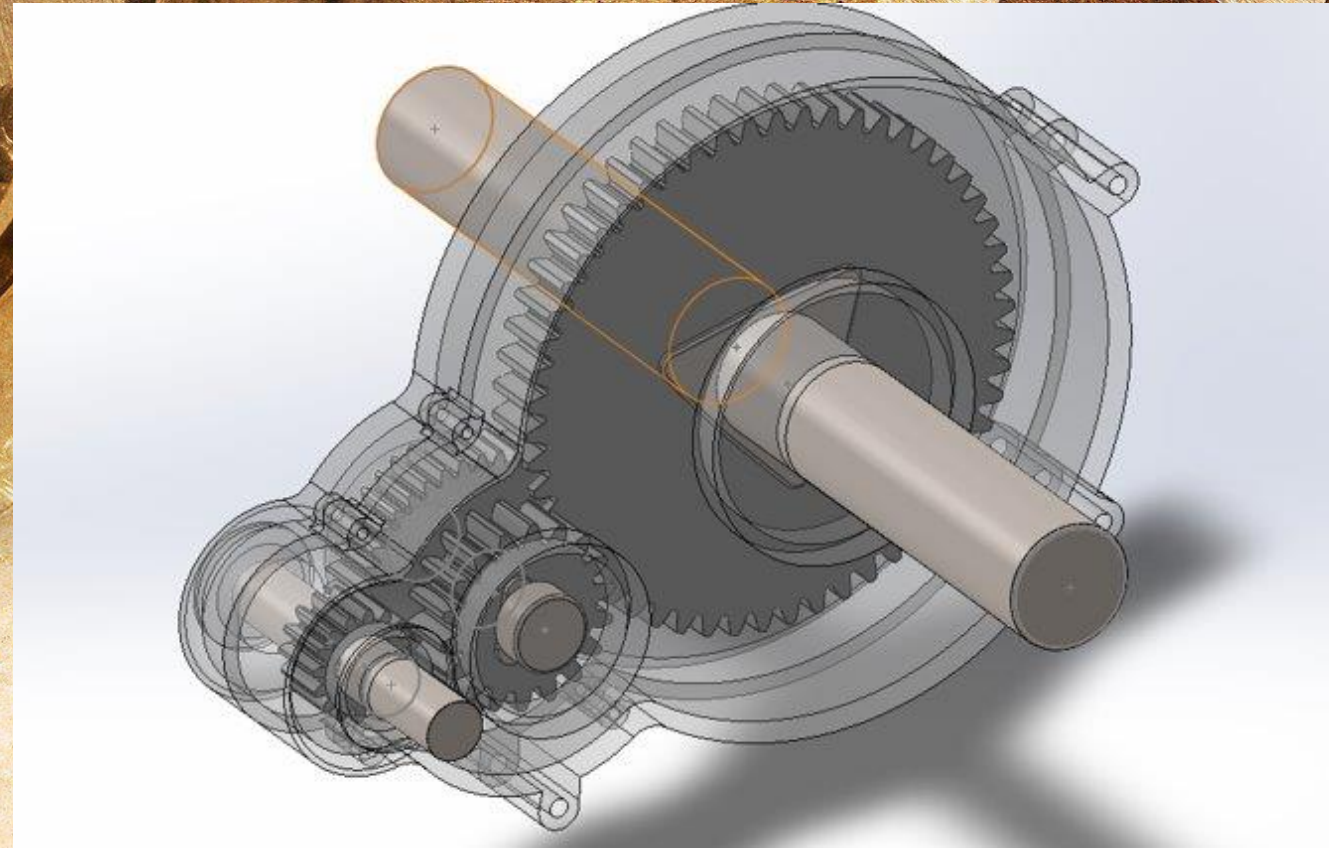


Side View of Engine Assembly

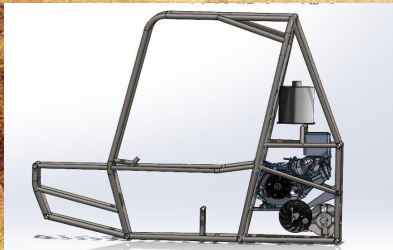


Finished Gear Casing

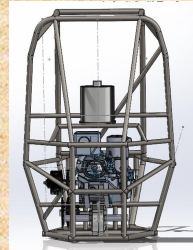
# Drivetrain Placement



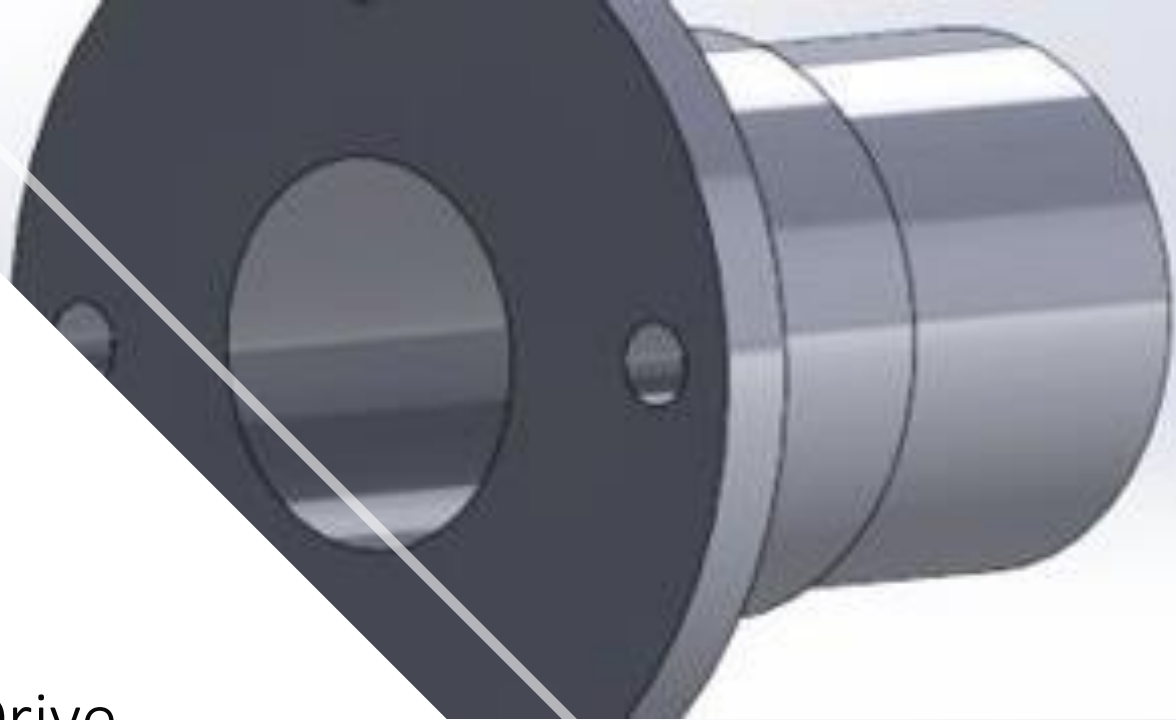
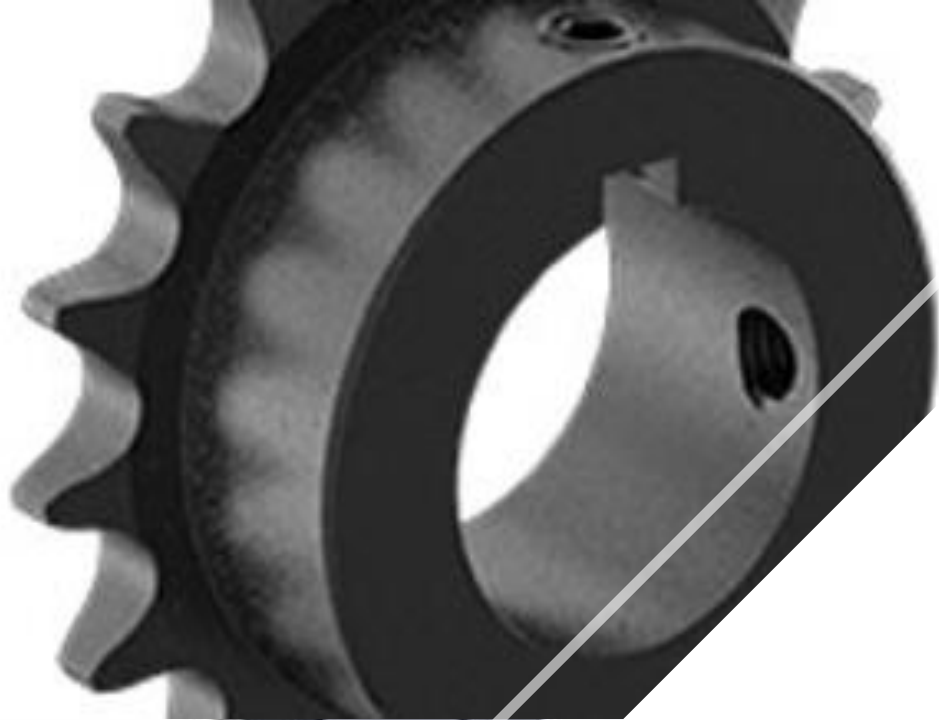
Finished Gear Casing



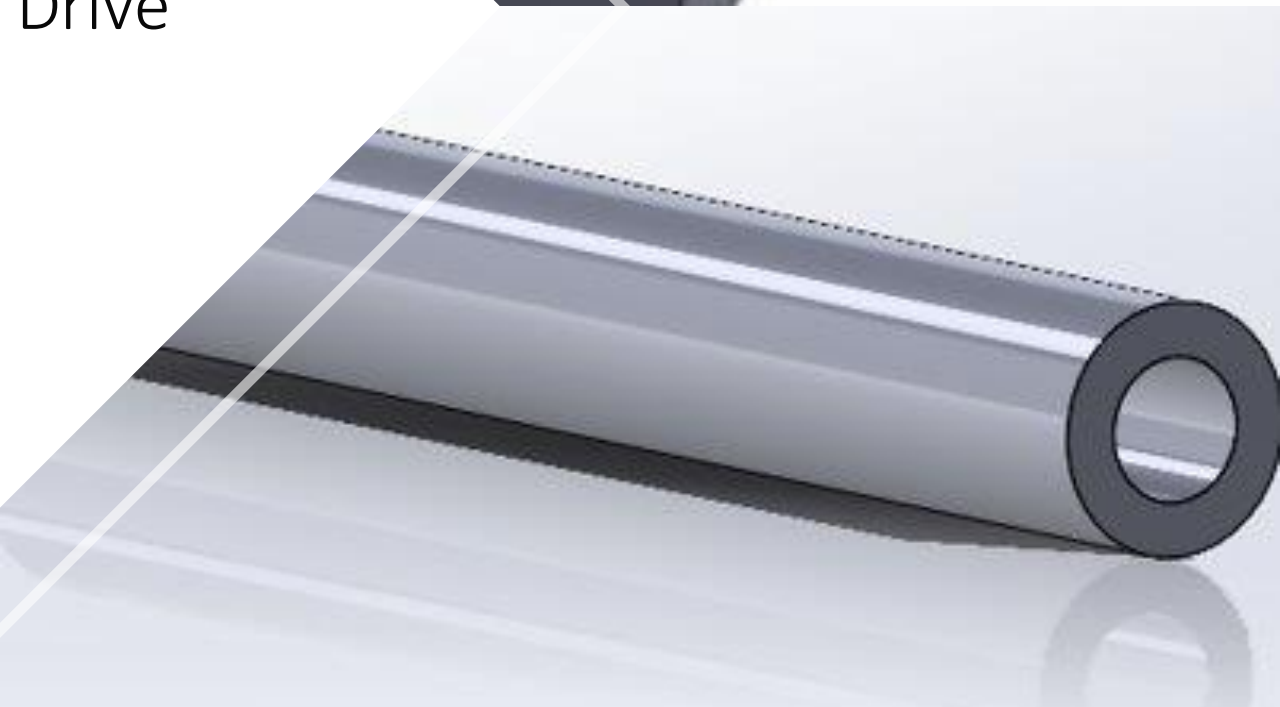
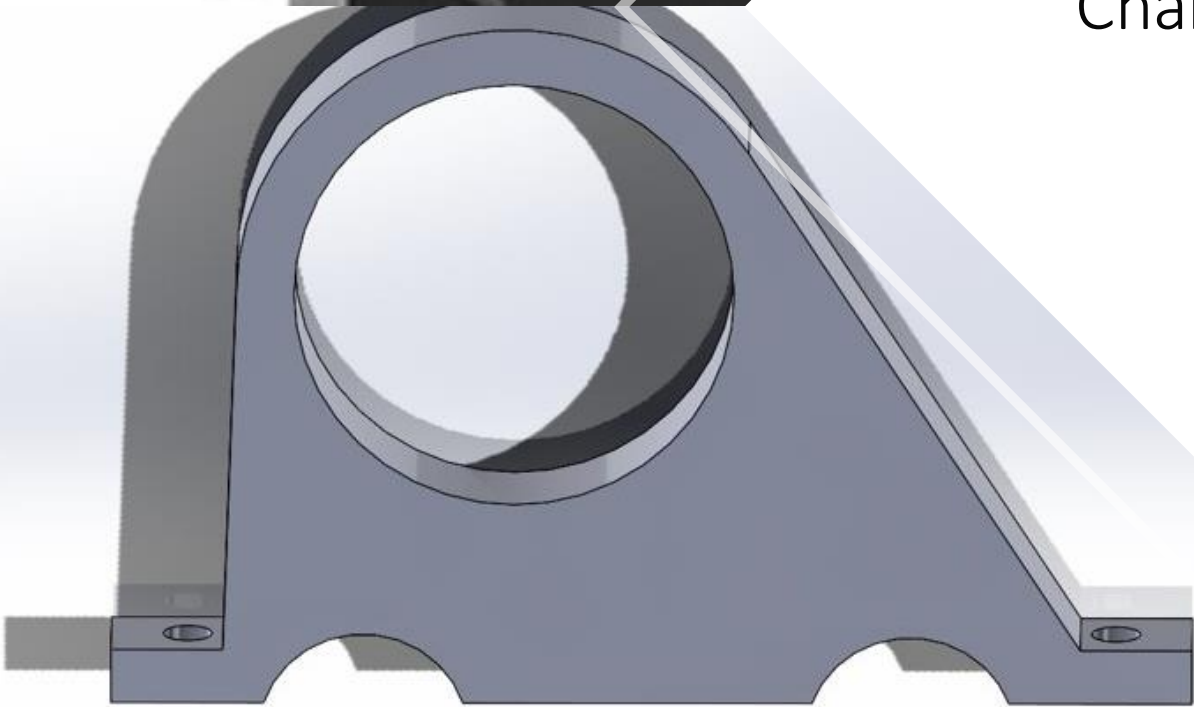
Side View of Engine Assembly

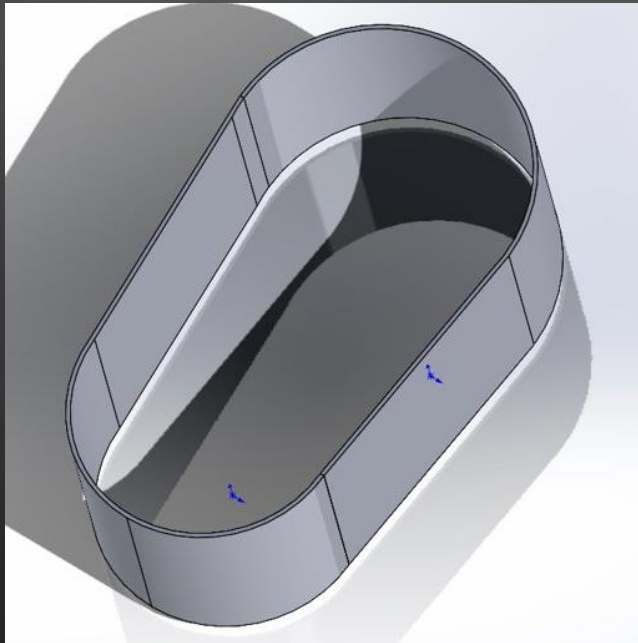
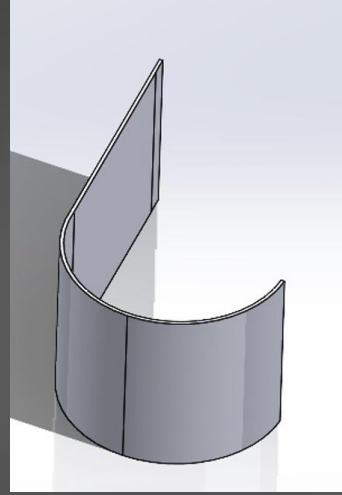
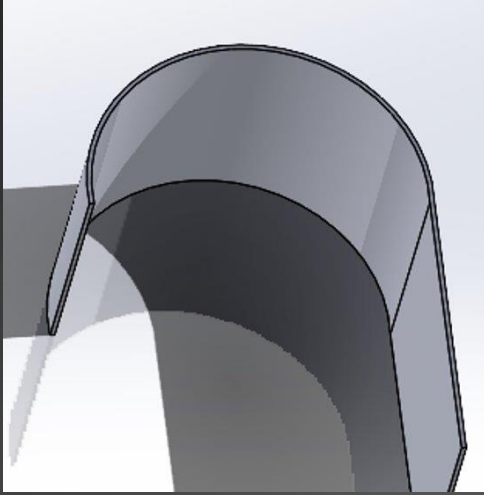


Back View of Engine Assembly



Chain Drive





## CVT Guard

- Finger protection will be laid over the sides, and cut out to be matched with some spare room
- With the spare room, perforated metal can be folded over to screw into the sides.

# Manufacturing Plan

Drivetrain									
Priority No.	Part Name	Action Needed	Size/Dimensions	QTY	Price (Each)	Price (Total)	Link to Website	Part No. (From Website)	Notes
1	Gear Casings (2 sides)	already owned	n/a	2	0	0			CAD done, will be ordered next week
2	Gears	Make in house	4 different sizes	4	0	0			CAD done, finalizing Wire EDM quote Dimensions currently being updated to the nearest millimeter to assure optimization
3	Input Shaft	make in house	Length: TBD, D: 15mm	1	0	0			Dimensions currently being updated to the nearest millimeter to assure optimization
4	Middle Shaft	make in house	Length: TBD, D: 15-20mm	1	0	0			Dimensions currently being updated to the nearest millimeter to assure optimization
5	Output Shaft	Make in house	Length: TBD, D: 25mm	1	0	0			Dimensions currently being updated to the nearest millimeter to assure optimization
6	Gearbox Casing Bearings (Input)	Ordered	(8x22x7mm)	2	9	18	<a href="https://www.amazon.com/Pcs-608-2RS-Ball-Bearings/dp/B09PKD8QZZ/ref=asc_df_B09PKD8QZZ/?tag=hyprod-20&amp;linkCode=df0&amp;hvadid=564832768295&amp;hvpos=&amp;hvnetw=g&amp;hvrand=15508056620382503717&amp;hvpone=&amp;hvptwo=&amp;hvqmt=&amp;hvdev=c&amp;hvdvcmdl=&amp;hvlcint=&amp;hvlcophy=1013406&amp;hvtargid=pla-164">https://www.amazon.com/Pcs-608-2RS-Ball-Bearings/dp/B09PKD8QZZ/ref=asc_df_B09PKD8QZZ/?tag=hyprod-20&amp;linkCode=df0&amp;hvadid=564832768295&amp;hvpos=&amp;hvnetw=g&amp;hvrand=15508056620382503717&amp;hvpone=&amp;hvptwo=&amp;hvqmt=&amp;hvdev=c&amp;hvdvcmdl=&amp;hvlcint=&amp;hvlcophy=1013406&amp;hvtargid=pla-164</a>	608-2RS	
7	Gearbox Casing Bearings (Middle)	Ordered	(8x22x7mm)	2	0	0	" " " "		
8	Gearbox Casing Bearings (Output)	Ordered	(8x22x7mm)	2	0	0	" " " "		
9	Gearbox Spacers	already owned	aluminum tubes	8	0	0	Aluminum in house		
10	Retaining Rings	already owned	Dia: 10-20mm	4	0	0			Dimensions currently being updated to the nearest millimeter to assure optimization
11	Keyways	Make in house	TBD	26		0			Might not use for the build
12	Keys	Make in house	TBD	26		0			Might not use for the build
13	Casing Bolts	Need to order	Dia: TBD	12	4	48	grab from copper mountain nut and bolt		Finding best bolts and Nuts to use, research going on now.
14	Casing Nuts	Need to order		12	6	72	grab from copper mountain nut and bolt		Finding best bolts and Nuts to use, research going on now.
15	Casing Washers	Need to order		12	6	72	grab from copper mountain nut and bolt		
16	Guard for Chain Drive (Sheet Metal)	already owned	n/a	1		0			
17	Sprockets	ordered		4		0			Currently working on CAD
18	Throttle Cable	need to order	4ft or 48inches	1	50	50	<a href="https://www.summitracing.com/parts/csi-6004">https://www.summitracing.com/parts/csi-6004</a>	CSI-6004	
19	Bearings for axels	Need to order		4		0	<a href="https://www.amazon.com/Pcs-608-2RS-Ball-Bearings/dp/B09PKD8QZZ/ref=asc_df_B09PKD8QZZ/?tag=hyprod-20&amp;linkCode=df0&amp;hvadid=564832768295&amp;hvpos=&amp;hvnetw=g&amp;hvrand=15508056620382503717&amp;hvpone=&amp;hvptwo=&amp;hvqmt=&amp;hvdev=c&amp;hvdvcmdl=&amp;hvlcint=&amp;hvlcophy=1013406&amp;hvtargid=pla-164">https://www.amazon.com/Pcs-608-2RS-Ball-Bearings/dp/B09PKD8QZZ/ref=asc_df_B09PKD8QZZ/?tag=hyprod-20&amp;linkCode=df0&amp;hvadid=564832768295&amp;hvpos=&amp;hvnetw=g&amp;hvrand=15508056620382503717&amp;hvpone=&amp;hvptwo=&amp;hvqmt=&amp;hvdev=c&amp;hvdvcmdl=&amp;hvlcint=&amp;hvlcophy=1013406&amp;hvtargid=pla-164</a>	608-2RS	
20	Chains	Need to order	2 ft/chain	2		0			
20	Belt	need to order	length 34.83", width 7/8"	2	39.95	79.9	<a href="https://www.gopowersports.com/40-series-drive-belt-203786/">https://www.gopowersports.com/40-series-drive-belt-203786/</a>	203786	

Key
Item Owned or Purchased
Item Manufacturing Done
Item In Progress
Item Not Started
Running Total (\$)
572.8

90% Purchased  
47% Built  
15% Assembled  
100% Design

21	Chain Links	need to order	Custom Steel 5/16 pitch	2		33	<a href="https://www.amazon.com/Chain-Links/dp/B09PKD8QZZ/ref=asc_df_B09PKD8QZZ/?tag=hyprod-20&amp;linkCode=df0&amp;hvadid=564832768295&amp;hvpos=&amp;hvnetw=g&amp;hvrand=15508056620382503717&amp;hvpone=&amp;hvptwo=&amp;hvqmt=&amp;hvdev=c&amp;hvdvcmdl=&amp;hvlcint=&amp;hvlcophy=1013406&amp;hvtargid=pla-164">https://www.amazon.com/Chain-Links/dp/B09PKD8QZZ/ref=asc_df_B09PKD8QZZ/?tag=hyprod-20&amp;linkCode=df0&amp;hvadid=564832768295&amp;hvpos=&amp;hvnetw=g&amp;hvrand=15508056620382503717&amp;hvpone=&amp;hvptwo=&amp;hvqmt=&amp;hvdev=c&amp;hvdvcmdl=&amp;hvlcint=&amp;hvlcophy=1013406&amp;hvtargid=pla-164</a>	RC-26-CL/10	
22	Chain Tensioner	need to order	N/A	2		22			
23	Chain Tensioner Nut	already owned	N/A	2		0			
24	Chain Tensioner Nut Washer	already owned	N/A	2		0			
25	Chain Link Washers	need to order	N/A	4		40			
26	Chain Link Spacers	need to order	N/A	4		40			
27	Chain Link 202 Black plates	already owned	N/A	4		0			
28	Chain Link 202 Black plates	already owned	N/A	4		0			
29	Chain Link 202 Black plates	already owned	N/A	4		0			
30	Engines	already owned	N/A	1		0			



# Manufacturing Plan

21	Chain Links	need to order	Carbon Steel, 0.25 pitch	2	11	22	<a href="https://www.amazon.com/Roller-Chain-Connecting-Links-Pack/dp/B085FQ9P6F/ref=asc_df_B085FQ9P6F/?tag=hyprod-20&amp;linkCode=df0&amp;hvadid=459618092337&amp;hvpos=&amp;hvnetw=g&amp;hvrnd=3265920101474883529&amp;hvppone=&amp;hvptwo=&amp;hvqmt=&amp;hvdev=c&amp;hvdvcmdl=&amp;hvolocint=&amp;hvolocphy=1013406&amp;hvtargid=pla-945359385976&amp;pvc=1">https://www.amazon.com/Roller-Chain-Connecting-Links-Pack/dp/B085FQ9P6F/ref=asc_df_B085FQ9P6F/?tag=hyprod-20&amp;linkCode=df0&amp;hvadid=459618092337&amp;hvpos=&amp;hvnetw=g&amp;hvrnd=3265920101474883529&amp;hvppone=&amp;hvptwo=&amp;hvqmt=&amp;hvdev=c&amp;hvdvcmdl=&amp;hvolocint=&amp;hvolocphy=1013406&amp;hvtargid=pla-945359385976&amp;pvc=1</a>	RC-25-CL/10	
22	Chain Tightener	need to order	n/a	2	36	72	<a href="https://www.amazon.com/dp/B07GKXLYBS/ref=sspa_dk_detail_3?pd_rd_i=B07GKXLYBS&amp;pd_rd_w=YdFF&amp;content-id=amzn1.sym.88097cb9-5064-44ef-891b-abfacbc1c44b&amp;pf_rd_p=88097cb9-5064-44ef-891b-abfacbc1c44b&amp;pf_rd_r=DN24X03N03HTKZQ7QBCK&amp;pd_rd_wg=wRDjx&amp;pd_rd_r=d5340de9-5634-4e84-9245-015d782bfd36&amp;s=industrial&amp;sp_csd=d2lkZ2V0TmF1ZT1zcF9kZXRhWw&amp;spLa=ZW5jcnVwdGVLUXVhbGimaWVyPUEyS1RFRUpBSDBVTzhYJmVuY3J5cHRIZEikPUEwMDU2MzcwMVA5M1VHR0Q5TFhOQSZlbnNyeXB0ZWRRBZEikPUEwNzY5NjA3MUYyMlpSMTZBUUYzSyZ3aWRnZXROYW1lPXNwX2RldGFpbCZhy3Rpb249Y2xpY2lSZWRpcmVjdCZkb05vdExvZ0NsaWNRpXRydWU&amp;th=1">https://www.amazon.com/dp/B07GKXLYBS/ref=sspa_dk_detail_3?pd_rd_i=B07GKXLYBS&amp;pd_rd_w=YdFF&amp;content-id=amzn1.sym.88097cb9-5064-44ef-891b-abfacbc1c44b&amp;pf_rd_p=88097cb9-5064-44ef-891b-abfacbc1c44b&amp;pf_rd_r=DN24X03N03HTKZQ7QBCK&amp;pd_rd_wg=wRDjx&amp;pd_rd_r=d5340de9-5634-4e84-9245-015d782bfd36&amp;s=industrial&amp;sp_csd=d2lkZ2V0TmF1ZT1zcF9kZXRhWw&amp;spLa=ZW5jcnVwdGVLUXVhbGimaWVyPUEyS1RFRUpBSDBVTzhYJmVuY3J5cHRIZEikPUEwMDU2MzcwMVA5M1VHR0Q5TFhOQSZlbnNyeXB0ZWRRBZEikPUEwNzY5NjA3MUYyMlpSMTZBUUYzSyZ3aWRnZXROYW1lPXNwX2RldGFpbCZhy3Rpb249Y2xpY2lSZWRpcmVjdCZkb05vdExvZ0NsaWNRpXRydWU&amp;th=1</a>	08DE-60-100	
23	Guard for CVT (Aluminum/Steel)	already owned	n/a	1		0			
24	Metal Mesh for CVT Guard	already owned	n/a	1		0			
25	External Kill Switch	Need to order	n/a	1	62.95	62.95	<a href="https://www.amazon.com/Ski-Doo-1994-1996-Snowmobile-27-0152-414612700/dp/B079FJSJW7">https://www.amazon.com/Ski-Doo-1994-1996-Snowmobile-27-0152-414612700/dp/B079FJSJW7</a>	27-0152	
26	Cockpit Kill Switch	item owned	n/a	1	62.95	62.95	<a href="https://www.amazon.com/Ski-Doo-1994-1996-Snowmobile-27-0152-414612700/dp/B079FJSJW7">https://www.amazon.com/Ski-Doo-1994-1996-Snowmobile-27-0152-414612700/dp/B079FJSJW7</a>	27-0152	
27	Sheet metal for back plate	already owned				0			
28	Lubrication	already owned	n/a	1	13	13			
29	CVT	already owned	n/a	1		0			
30	Engine	owned	n/a	1		0			

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Item Owned or Purchased
Item Manufacturing Done
Item In Progress
Item Not Started
Running Total (\$)
572.8

100% Purchased  
47% Built  
15% Assembled  
100% Design

21	Chain Links	need to order	Carbon Steel, 0.25 pitch	2	11	22	<a href="https://www.amazon.com/Roller-Chain-Connecting-Links-Pack/dp/B085FQ9P6F/ref=asc_df_B085FQ9P6F/?tag=hyprod-20&amp;linkCode=df0&amp;hvadid=459618092337&amp;hvpos=&amp;hvnetw=g&amp;hvrnd=3265920101474883529&amp;hvppone=&amp;hvptwo=&amp;hvqmt=&amp;hvdev=c&amp;hvdvcmdl=&amp;hvolocint=&amp;hvolocphy=1013406&amp;hvtargid=pla-945359385976&amp;pvc=1">https://www.amazon.com/Roller-Chain-Connecting-Links-Pack/dp/B085FQ9P6F/ref=asc_df_B085FQ9P6F/?tag=hyprod-20&amp;linkCode=df0&amp;hvadid=459618092337&amp;hvpos=&amp;hvnetw=g&amp;hvrnd=3265920101474883529&amp;hvppone=&amp;hvptwo=&amp;hvqmt=&amp;hvdev=c&amp;hvdvcmdl=&amp;hvolocint=&amp;hvolocphy=1013406&amp;hvtargid=pla-945359385976&amp;pvc=1</a>	RC-25-CL/10	
22	Chain Tightener	need to order	n/a	2	36	72	<a href="https://www.amazon.com/dp/B07GKXLYBS/ref=sspa_dk_detail_3?pd_rd_i=B07GKXLYBS&amp;pd_rd_w=YdFF&amp;content-id=amzn1.sym.88097cb9-5064-44ef-891b-abfacbc1c44b&amp;pf_rd_p=88097cb9-5064-44ef-891b-abfacbc1c44b&amp;pf_rd_r=DN24X03N03HTKZQ7QBCK&amp;pd_rd_wg=wRDjx&amp;pd_rd_r=d5340de9-5634-4e84-9245-015d782bfd36&amp;s=industrial&amp;sp_csd=d2lkZ2V0TmF1ZT1zcF9kZXRhWw&amp;spLa=ZW5jcnVwdGVLUXVhbGimaWVyPUEyS1RFRUpBSDBVTzhYJmVuY3J5cHRIZEikPUEwMDU2MzcwMVA5M1VHR0Q5TFhOQSZlbnNyeXB0ZWRRBZEikPUEwNzY5NjA3MUYyMlpSMTZBUUYzSyZ3aWRnZXROYW1lPXNwX2RldGFpbCZhy3Rpb249Y2xpY2lSZWRpcmVjdCZkb05vdExvZ0NsaWNRpXRydWU&amp;th=1">https://www.amazon.com/dp/B07GKXLYBS/ref=sspa_dk_detail_3?pd_rd_i=B07GKXLYBS&amp;pd_rd_w=YdFF&amp;content-id=amzn1.sym.88097cb9-5064-44ef-891b-abfacbc1c44b&amp;pf_rd_p=88097cb9-5064-44ef-891b-abfacbc1c44b&amp;pf_rd_r=DN24X03N03HTKZQ7QBCK&amp;pd_rd_wg=wRDjx&amp;pd_rd_r=d5340de9-5634-4e84-9245-015d782bfd36&amp;s=industrial&amp;sp_csd=d2lkZ2V0TmF1ZT1zcF9kZXRhWw&amp;spLa=ZW5jcnVwdGVLUXVhbGimaWVyPUEyS1RFRUpBSDBVTzhYJmVuY3J5cHRIZEikPUEwMDU2MzcwMVA5M1VHR0Q5TFhOQSZlbnNyeXB0ZWRRBZEikPUEwNzY5NjA3MUYyMlpSMTZBUUYzSyZ3aWRnZXROYW1lPXNwX2RldGFpbCZhy3Rpb249Y2xpY2lSZWRpcmVjdCZkb05vdExvZ0NsaWNRpXRydWU&amp;th=1</a>	08DE-60-100	
23	Guard for CVT (Aluminum/Steel)	already owned	n/a	1		0			
24	Metal Mesh for CVT Guard	already owned	n/a	1		0			
25	External Kill Switch	Need to order	n/a	1	62.95	62.95	<a href="https://www.amazon.com/Ski-Doo-1994-1996-Snowmobile-27-0152-414612700/dp/B079FJSJW7">https://www.amazon.com/Ski-Doo-1994-1996-Snowmobile-27-0152-414612700/dp/B079FJSJW7</a>	27-0152	
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27	Sheet metal for back plate	already owned				0			
28	Lubrication	already owned	n/a	1	13	13			
29	CVT	already owned	n/a	1		0			
30	Engine	owned	n/a	1		0			

# Manufacturing Plan

Finish the second half of each gear box casing

Start and finish the belt protector for the CVT casing

Finish anything not finished Tuesday and Wednesday Assemble the gear box if stock and bearings arrive

Mounting day

Shafts can start Wednesday as we now have stock

Tuesday

Wednesday

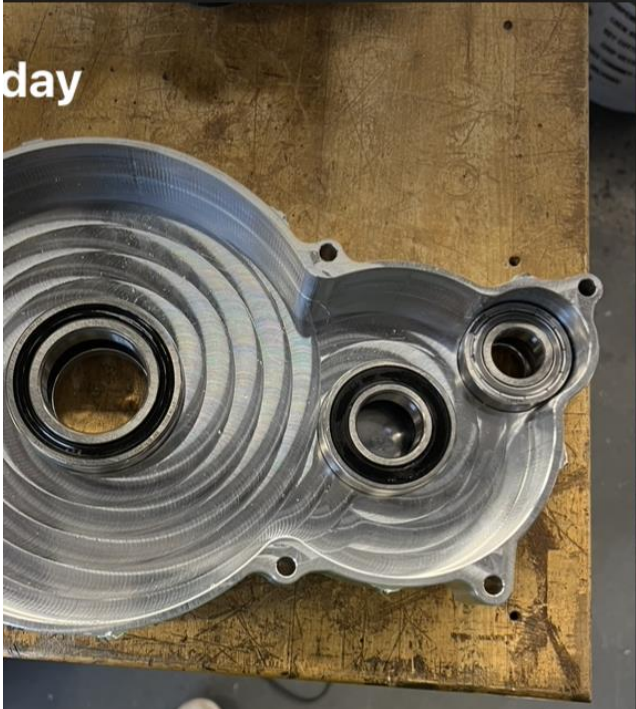
Thursday

Friday

Wednesday

# Manufacturing Progress - Gear Box

- Gears = 100% done, Gear Casing = 100% done with bearings and bolts in casing



# Manufacturing Progress - Chain Drive

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- 1/8 Tabs Completed, other 7 will be completed, and welded onto frame on Wednesday March 15th
- CURRENT PROGRESS ON EVERYTHING: 47% done currently, 60% reached by the end of spring break.

