

Hardware Status Update

Northern Arizona University

NAU SAE Baja

Rear Suspension

Team #74

By: Robert Gerlinger, Tanner Bunch, Samuel Larios

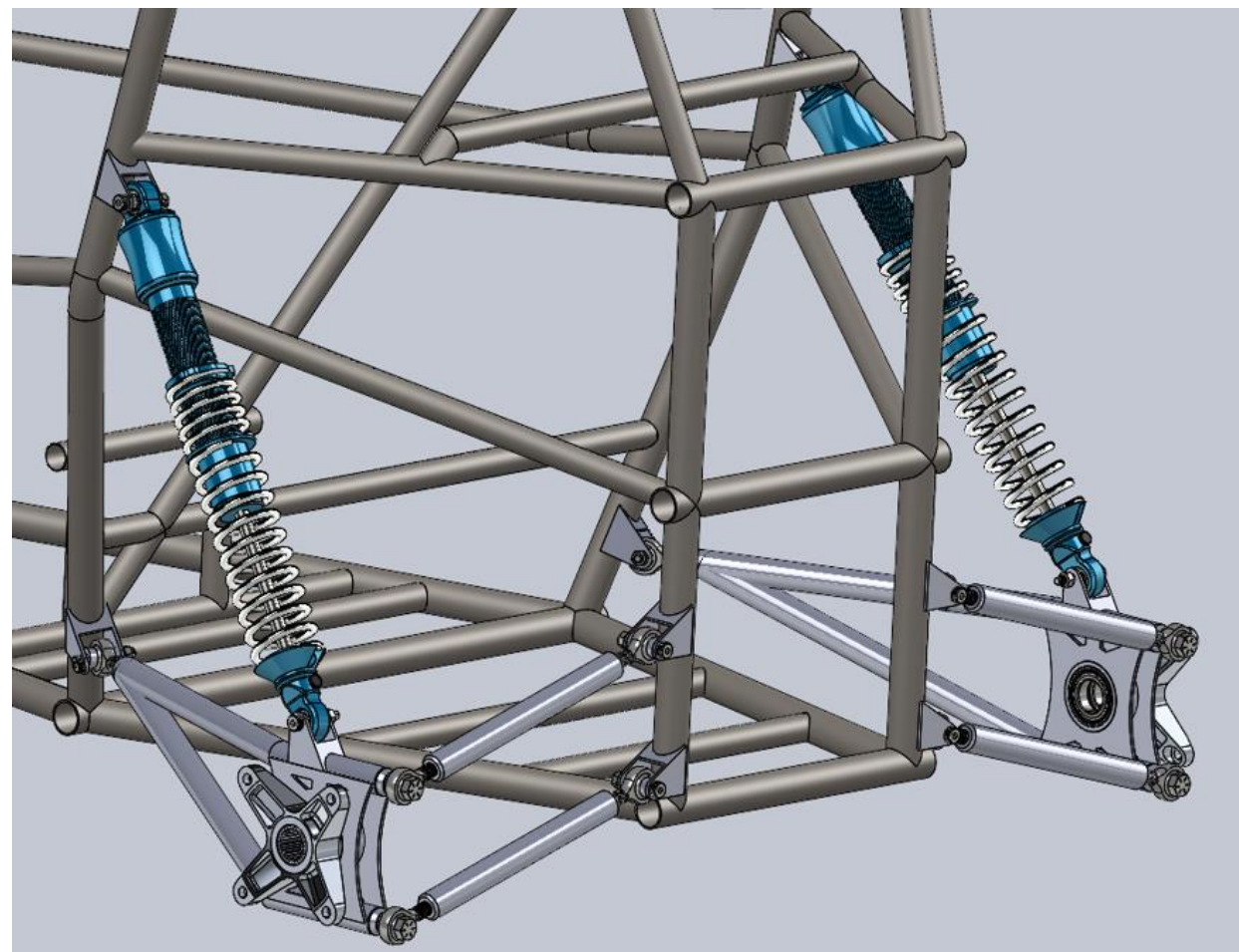
Rear Suspension

Design Efforts

ITEM NO.	PART NUMBER	DESCRIPTION	QTY.
1	Roll_Cage_V2.8.SLDprt		1
2	mounting fixture1		8
3	60645K161	Ball Joint Rod End	8
4	AFCO 63		2
5	rear hub v2		2
7	Control arms (new build)		1
8	Control arms (new build)		1
9	spline for axle		2
10	mounting fixture(1in tubing)		2
11	tie rods		4
12	91259A628	Alloy Steel Shoulder Screw	10
13	94895A115	High-Strength Steel Hex Nut	10

NAME	DATE	SIZE	DWG. NO.	REV
DRAWN: RG	2/13/23	A	REAR SUSPENSION	

SCALE: 1:10 WEIGHT: SHEET 1 OF 1



Rear Suspension

Purchasing Plan

Rear Suspension															
No.	Part Name	Action Needed	Size/Dimensions	QTY	Price (Each)	Price (Total)	Link to Website	Part No. (From Website)	Manufacture	Primary Vendor	Secondary Vendor	Key			
1	Hubs (Aluminum)	Been Made	See Cad File	3	0	0	N/A	N/A	Henry	N/A	N/A	Item Already owned/in house (reused)	25	83.33%	
2	Heims	Ordered	1/2"-20 Thread	12	12.5	209.79	https://racetech.com	60645K16	RaceTech Titanium	RaceTech Titanium	N/A	Item Ordered	30	100.00%	
3	Steel Plates	Been Made	5"x5" inches	4	0	0	https://www.advmetals.com	N/A	Advanced Metals	Advanced Metals	N/A	Total Purchased		100.00%	
4	Tie Rods	Fabricated	9" Length	4	0	0	https://www.advmetals.com	CMR1065	Advanced Metals	Advanced Metals	N/A	Need to order (In Process)	0	0.00%	
5	Shocks	None	N/A	4	0	0	N/A	N/A	AFCO	AFCO	N/A	Running Total	1350.35	83.33%	
6	Shock Mounts	CAD and Fab	Reference CAD File	4	0	0	N/A	N/A	Machine Shop	Machine Shop	N/A	Total Items Needed	30	Rear End Suspension	
7	Tie Rod Mounts	CAD and Fab	Reference CAD File	8	0	0	N/A	N/A	Machine Shop	Machine Shop	N/A				
8	Brake Caliper/With pads	None	See Website	1	139.99	139.99	https://www.hyperracing.com	366-050	Hyperracing	HBS	N/A				
9	Brake Rotor	None	Reference CAD File	2	0	0	N/A	N/A	Machine Shop	Machine Shop	N/A				
10	Control Arms	None	Reference CAD File	2	0	0	https://www.industrialmetals.com	4130RDT12506	Industrial Metals	Industrial Metals	N/A				
11	Shock Bolts	None	2" 5/16 ID	6	0	0	N/A	N/A	N/A	N/A	N/A				
12	Shock Nuts	None	.25 ID	6	0	0	N/A	N/A	N/A	N/A	N/A				
13	Heim Nuts	Ordered	1/2" D 20 thread	12	4.86	58.32		RT65009	RaceTech Titanium	RaceTech Titanium	N/A				
14	Heim Bolts	None	1/2" D 20 thread	8	0	0	N/A	TBD	RaceTech Titanium	RaceTech Titanium	N/A				
15	Wheel Studs	None	3/8"	8	0	0	N/A	TBD	N/A	N/A	N/A				
16	Lug Nuts	None	3/8"	8	0	0	N/A	TBD	N/A	N/A	N/A				
17	Hub Bearings	None	OD 2.165"	4	0	0	https://www.skf.com	6006 -2RS1	SKF	SKF	N/A				
18	Axle Nuts	Purchased			0	0		TBD	GO AZ	Go AZ	N/A				
19	Heim Spacers	None	Reference CAD File	20	0	0	N/A	N/A	N/A	N/A	N/A				
20	Brake Mount	CAD and Fab	Reference CAD File	1	0	0	N/A	N/A	Machine Shop	Machine Shop	N/A				
21	Brake Mount Bolts	None	3/8" OD 1.5" Length	2	0	0	N/A	N/A	N/A	N/A	N/A				
22	Axles	Purchased		2	150	300		TBD	GO AZ	Go AZ	N/A				
23	Shock Tabs	CAD and Fab	Reference CAD File	8	0	0	N/A	N/A	Machine Shop	Machine Shop	N/A				
24	Heim Bolts(In control arm)	None	2"Length 1/2" OD	4	0	0	N/A	N/A	N/A	N/A	N/A				
25	1/2" Partially threaded bolts	Purchased	1/2-20 thread partially threaded bolts	10	2.724	27.24	https://www.fastener.com	UPC:842176164632	Fastener	Fastener	N/A				
26	Classic MX transponder	Purchased	N/A	1	122	122	Shopping Cart (m	TR2 MX	MyLaps Speed	MyLaps	N/A				
27	Dzus Fasteners(hardware)	Purchased	N/A	1	153.03	153.03	https://www.aa-mfg.com	Several Check link	A&A Manufacturing	aa-mfg	N/A				
28	Frame Paint	None	N/A	5		0									
29	Helmet	None	small and medium size helmets	2	169.99	339.98	https://oneal.com	0628-163	ONEal	Oneal	N/A				
30	Head Rest Material	None	N/A	1	0	0	N/A	N/A	N/A	N/A	N/A				

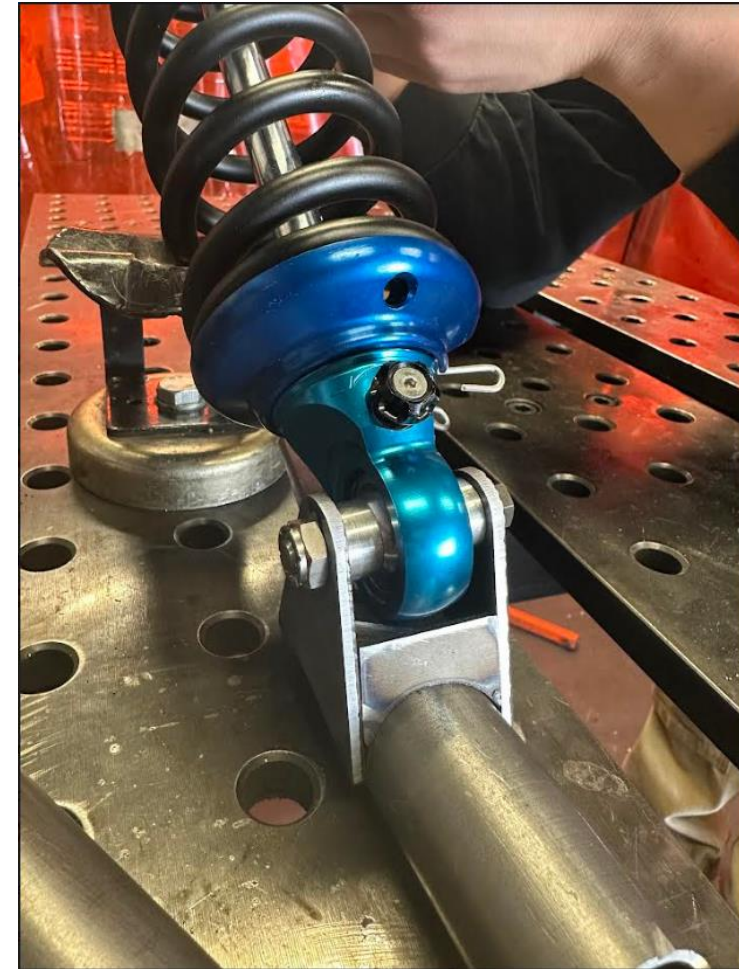
Rear Suspension

Manufacturing Plan

Importance	Part	Number of parts	Who	Time to manufacture/ part (hr)	Total times (hr)	Percent of time	Total # of parts manufactured	Percent of parts to be built	Percent of total build	Raw Material	Location	Material on hand	Status
CNC													
1	Rear Hubs	3	Henry	5	15	22.51%	3	100.00%	22.51%	6061 T6	Machine shop	Yes	on hand/ finished
Plasma Cutter													
1	Housing plates	4	Tanner	0.033	0.133	0.20%	4	100.00%	0.20%	4130	Family shop	Yes	on hand/ finished
Fab													
1	Right/ left upper control arm	2	Tanner	0.5	1	1.50%	2	100.00%	1.50%	4130	Family shop	yes	on hand/ finished
2	Head rest	1	Team	2	2	3.00%	1	100.00%	3.00%	wood/foam	Machine shop	Yes	on hand/ finished
3	Seat	1	Team	3	3	4.50%	1	100.00%	4.50%	Carbon fiber	Machine shop	Yes	on hand/ finished
4	Rear tow hitch	1	Team	0.5	0.5	0.75%	1	100.00%	0.75%	4130	Machine shop	Yes	on hand/ finished
5	Tow hitch mounts	2	Team	0.25	0.5	0.75%	0	0.00%	0.00%	4130	Machine shop	Yes	Not made
6	Fuel Splash guard	1	Team	1	1	1.50%	0	0.00%	0.00%	6061 T6	Machine shop	Yes	Not made
7	Shock mount	2	Team	1	2	3.00%	0	0.00%	0.00%	4130	Machine shop	Yes	Not made
8	Body panels	8	Team	2.5	20	30.02%	0	0.00%	0.00%	Carbon fiber	Machine shop	Yes	Not made
9	Right/left lower control arm	2	Tanner	0.5	1	1.50%	2	100.00%	1.50%	4130	Family shop	Yes	on hand/ finished
10	Control arm/lateral link/Shock mounts	10	Samuel	0.5	5	7.50%	10	100.00%	7.50%	4130	Machine shop	yes	Not made
Lathe													
1	Lateral link	4	Robert	0.75	3	4.50%	2	50.00%	9.00%	4130	Machine shop	Yes	Half made
2	Lateral link inserts	8	Robert	0.5	4	6.00%	0	0.00%	0.00%	4130	Machine shop	Yes	Not made
3	Control arm bearing housing	2	Travis	3	6	9.00%	2	100.00%	9.00%	4130	Machine shop	Yes	on hand/ finished
4	Heim spacers	10	Robert	0.25	2.5	3.75%	10	100.00%	3.75%	6061 T6	Machine shop	yes	on hand/ finished
					Total hours=	66.633	100.00%	Total Percent Build=	63.23%				
									Rear suspension Parts =	92.25%			

Rear Suspension

Demonstration



Rear Suspension

System Integration

Our 67% build has now incorporated miscellaneous items that have been purchased for the entirety of rear-end responsibility. Any new existing purchases are for any design changes that might be made.

Questions?

