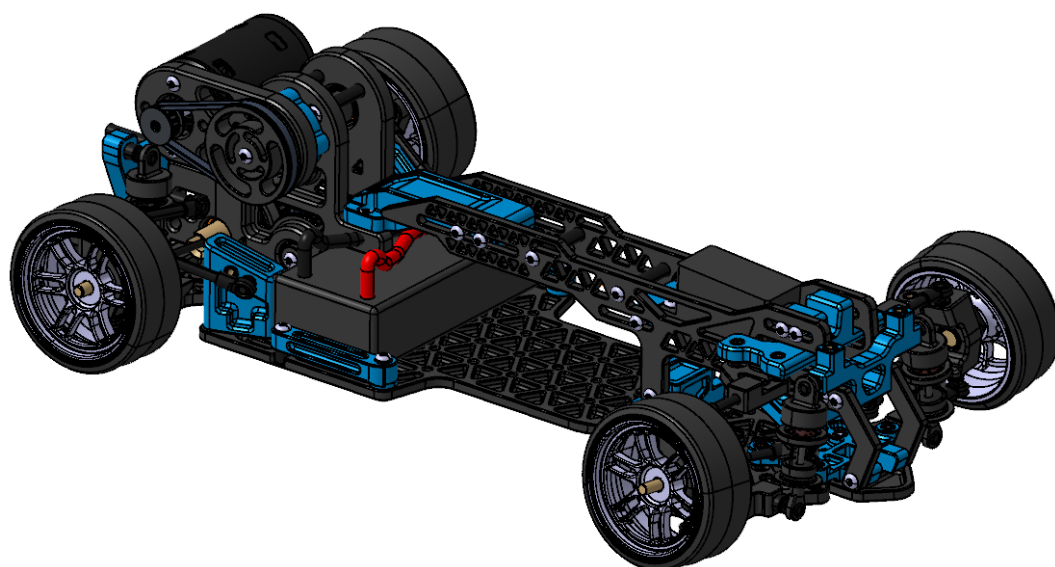




MMC D3 DRIFT CHASSIS INSTRUCTION MANUAL

	MMC D3 Drift Chassis manual		
	Version	Description	Author
	1.0	Doc. Creation	MMC
	-	-	-



MMC D3 Drift Chassis manual

Table of contents

1	Summary.....	3
1.1	Chassis features.....	3
1.2	Recommendations.....	3
1.2.1	Printing materials	3
1.2.2	Printing recommendations.....	4
1.3	License Terms and Conditions.....	4
2	Bill OF Materials	5
2.1	Main Chassis.....	5
2.2	Reduction Axis	8
3	Design annotations	9
3.1	Control arms lengths (As Reference)	9
3.1.1	Rear suspension.....	9
3.1.2	Front Suspension.....	10
3.1.3	Caster and Ackerman positions.....	10
4	3D of the chassis for assembly.....	11



1 Summary

1.1 Chassis features

This chassis has been designed with the goal to offer a high performance rc drift car to the enthusiasts who like to create and modify their cars to their needs.

This car is a perfect balance of all disciplines inside the rc drift world.

Drastically change the feeling of the car by modifying the wheelbase from 240mm all the way to 273mm, changing the position of the centre of gravity with the motor position and more.

The front double wishbone suspension has been kept simple but highly adjustable by changing:

- Track width
- Camber angle
- Caster angle
- Ackerman position
- Toe in / out

The rear multilink suspension has been developed to deliver maximum grip and adjustability by changing:

- Track width
- Camber angle
- Caster angle
- Toe in / out
- Different arm fixing positions

The transmission assembly is fully belt driven giving an unmatched silent and smooth power transfer to the rear wheels. The pulleys used in this build have been retrieved and reworked from a public domain licensed work by Katharsis on Printables.com

1.2 Recommendations

1.2.1 Printing materials

Color filament: Any PLA is recommended for the parts indicated in the bill of materials as "3D (Color)". To increase the overall quality of the build is also recommended to use PLA+ which gives an extra point of strength to the parts.

For reference, the materials used for the first prototype build were:

- PLA-CF: <https://shorturl.at/YJqjP> (TINMORRY)
- PLA (Color): <https://shorturl.at/8mA03> (SUNLU)



MMC D3 Drift Chassis manual

1.2.2 Printing recommendations

Print all parts laying as flat as possible. Supports may be needed.

All the pieces indicated as "1+1" in the Bill of Materials are single pieces that need a symmetrical piece (Total of two). This only happens to the front and rear bulks.

For the Deck, a minimum of 260mm*260mm build plate is needed for printing it flat.

It's recommended to prioritize print quality for printing these parts and to use at least 15-20% of triangular infill.

1.3 License Terms and Conditions

This work is licensed under a private use license that describes as follows:

You are authorized to:

Print and use the 3D prints of the 3D model for private use, in unlimited quantity.

Share the images of your 3D prints of the 3D model on communication media such as social networks or websites.

What is not allowed:

No commercial use or public sharing of the 3D model.

No modification or adaptation of the 3D model for public sharing or sale.

No distribution, sale, donation or exchange of the digital files of the 3D model.



MMC D3 Drift Chassis manual

2 Bill OF Materials

2.1 Main Chassis

Bill Of Material: MMC D3				
N	Quantity	PN	Group	Notes
1	1	Deck	3D (Carbon)	
2	1	SubFrame_Front	3D (Color)	
3	1	Servo (Low Profile)	Shop	
4	1+1	Front_bulks	3D (Carbon)	
5	1	FrontBulks_Support	3D (Color)	
6	1	Brace_Servo	3D (Color)	
7	34	BallJoint_4.8mm	Shop	
8	1	LCA_FrontLeft	3D (Carbon)	
9	22	BallJoint_4.8_10mm	Shop	
10	1	LCA_FrontRight	3D (Carbon)	
11	1	SuspensionsSupport_Front	3D (Color)	
12	1	Suspension Damper set *	Shop	Includes 8 5,5mm balljoints
14	1	FrontUCA_Supports	3D (Color)	
15	1	UCA_FrontLeft	3D (Carbon)	
16	1	UCA_FrontRight	3D (Carbon)	
17	1	Strut_FrontLeft	3D (Carbon)	
18	4	RPF1_Wheel	3D (Color)	
19	1	Strut_FrontRight	3D (Carbon)	
20	1	Rhino_Diff (Or Yokomo)	Shop	Rhino C-LSD or YD-2 standard
21	1	38T-Rhino	3D (Carbon)	
22	1+1	Rear_bulks	3D (Carbon)	
23	1+1	RearBulks_End	3D (Carbon)	



MMC D3 Drift Chassis manual

24	1	Motor_Spacer	3D (Color)	
25	1	Upperdeck_Support	3D (Color)	
26	1	Motor_Support	3D (Carbon)	
27	1	1st_ReductionAxis	Separated List	
28	1	38T-Hexagon	3D (Carbon)	
29	1	Pinion 14T	3D (Carbon)	
30	1	2nd_ReductionAxis	Separated List	
31	1	162-S3M_Belt	Shop	4mm Width recommended. Can use 3mm
32	2	150-S3M_Belt	Shop	4mm Width recommended. Can use 3mm
33	1	LCA_RearRight	3D (Carbon)	
34	1	Strut_RearRight	3D (Carbon)	
35	1	SuspensionSupport_Rear	3D (Color)	
36	1	Battery	Shop	
37	1	CasterSupport_RearRight	3D (Color)	
38	1	LCA_RearLeft	3D (Carbon)	
39	1	CasterSupport_RearLeft	3D (Color)	
40	1	Strut_RearLeft	3D (Carbon)	
41	1	Battery_Support	3D (Color)	
42	2	Yokomo_49mmRearAxle	Shop	
43	38	M3x8	Hardware	
44	20	M3x10	HardWare	
45	2	M3x4	HardWare	
46	6	M3x6	HardWare	
47	4	M3x12	HardWare	



MMC D3 Drift Chassis manual

48	2	M3x35	HardWare	
49	1	Motor_V3	Shop	
50	1	HCG D3	Separated List	
51	1	Yokomo Basic front axle set	Shop	
52	1	6mm Wheel hex set	Shop	
53	1	ESC	Shop	
54	1	Receiver + Controller	Shop	
55	9	15x10x4mm Bearing	Hardware	
56	6	9x5x3mm Bearing	Hardware	
57	4	10mm M3x5mm round nut	Hardware	
58	2	15mm M3x5mm round nut	Hardware	
59	2	18mm M3x5mm Round nut	Hardware	
60	4	20mm M3x5mm round nut	Hardware	
61	6	2mm Spacer	3D (Carbon)	
62	2	4mm Spacer	3D (Carbon)	
63	14**	TurnBuckle	Shop	
64	96	M3 Threaded Inserts (4.5mm OD), length: 6mm	Shop	
65	1	Yokomo rear axle pin guards	Shop	
66	1	14T pinion gear	Shop	Press-fitted to the 14T pulley (29)
67	1	Servo_Supports	3D (Color)	

* 55mm damper sets recommended for this chassis

** Turnbuckle lengths depend on what balljoint lengths are used. Check the standard arm lengths as reference.



MMC D3 Drift Chassis manual

2.2 Reduction Axis

Bill Of Material: 1st Reduction Axis				
N	Quantity	PN	Group	Notes
1	1	End1_1st	3D (Carbon)	
2	1	End2_1st	3D (Carbon)	
3	1	14T_Hex	3D (Carbon)	
4	1	55mm M3 Hex nut	HardWare	Buy 60mm and cut
5	2	M3x8	Hardware	

Bill Of Material: 2nd Reduction Axis				
N	Quantity	PN	Group	Notes
1	1	End1_2nd	3D (Carbon)	
2	1	End2_2nd	3D (Carbon)	
3	1	14T-20T_Hex	3D (Carbon)	
4	1	30mm M3 Hex nut	HardWare	
5	2	M3x8	Hardware	

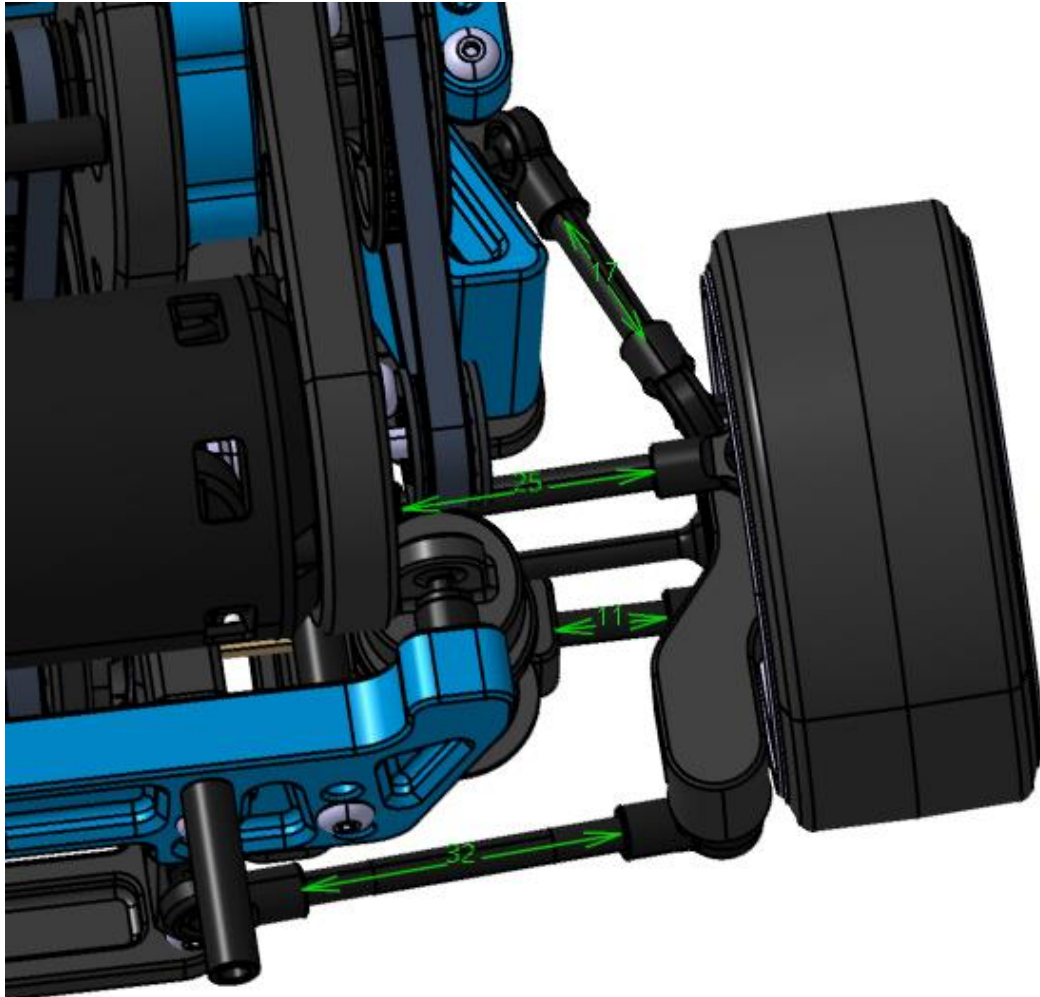


3 Design annotations

3.1 Control arms lengths (As Reference)

Distances are measured from the edge of the ball end caps (all of them are 10mm as designed, but other sizes can be used)

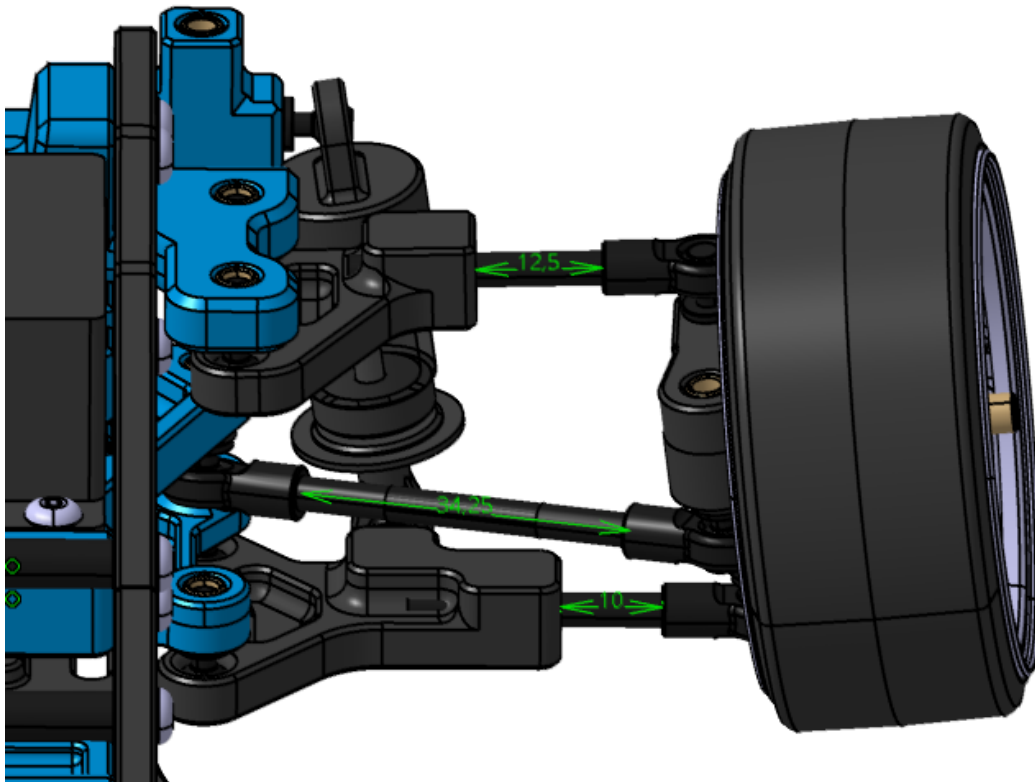
3.1.1 Rear suspension



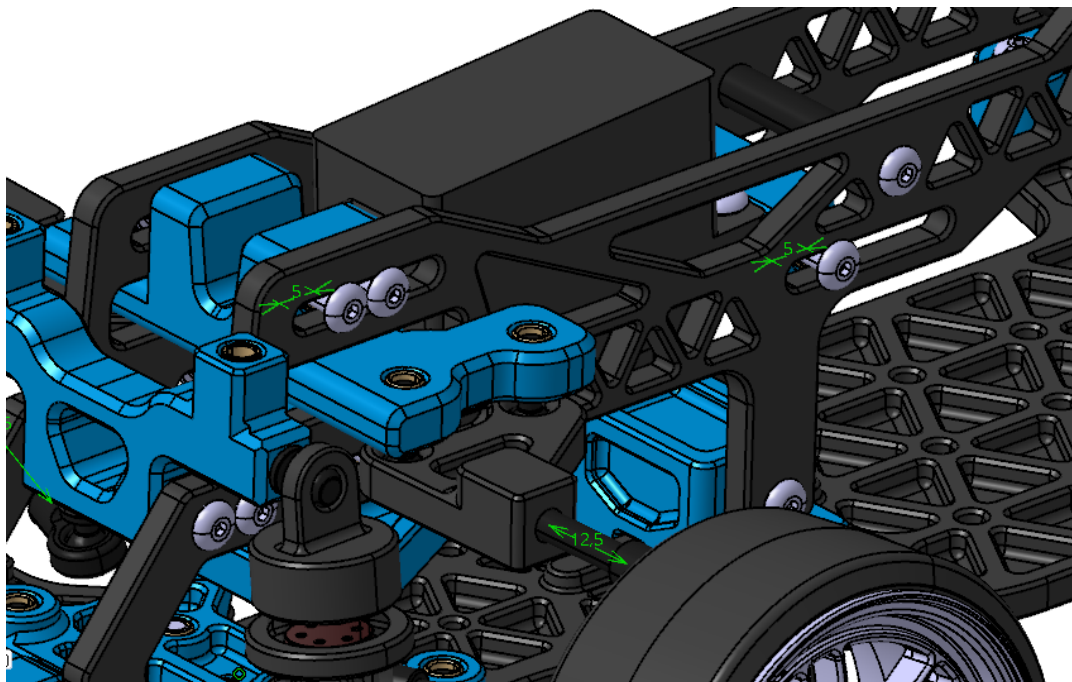


MMC D3 Drift Chassis manual

3.1.2 Front Suspension



3.1.3 Caster and Ackerman positions



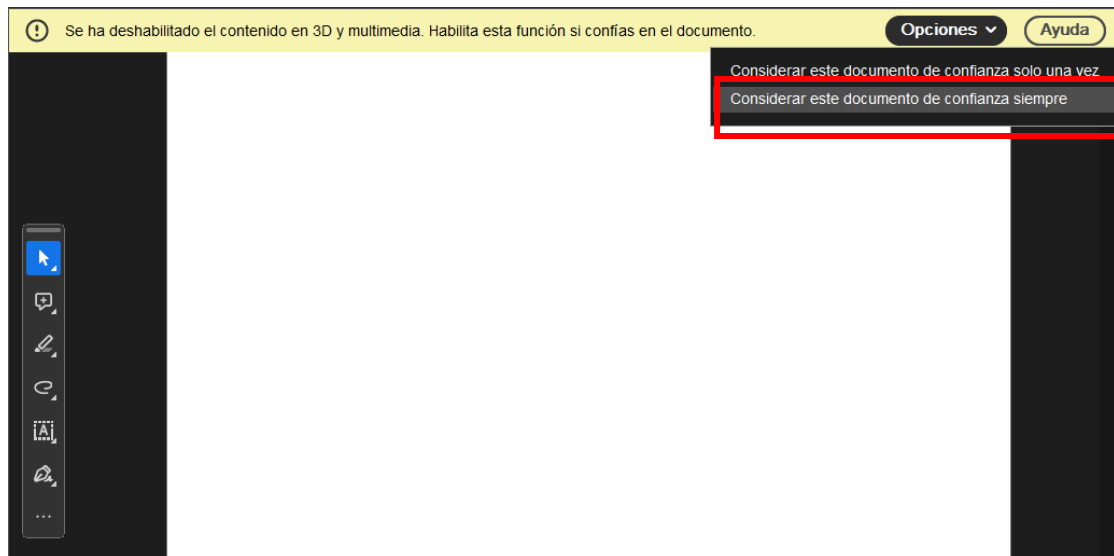


MMC D3 Drift Chassis manual

4 3D of the chassis for assembly

In the last page of the document there's a 3DPDF view to interact with and see the chassis assembly and it's components. Follow the instructions below:

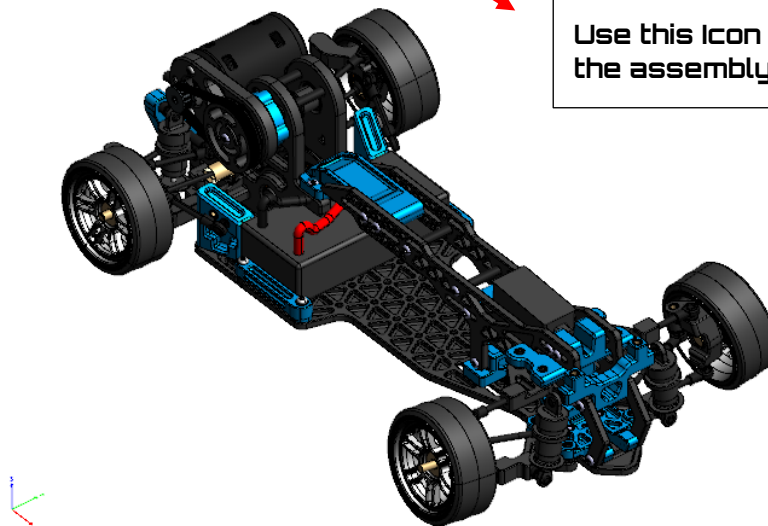
- 1- When scrolling down the last page, it will appear as a blank page, but you will see that you can click on an option button with two options. Click on the second option:



- 2- After this, click on the white page when the hand mouse icon appears, and the 3D viewer will load.



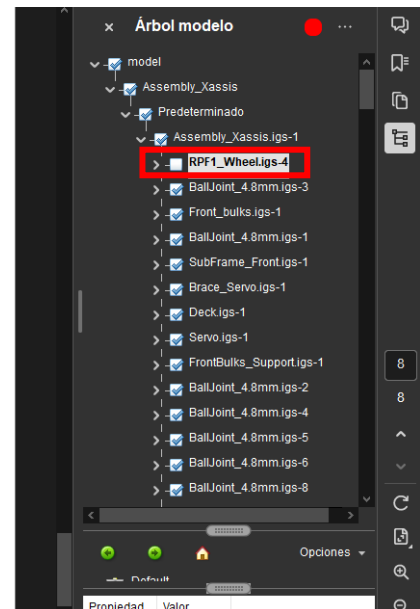
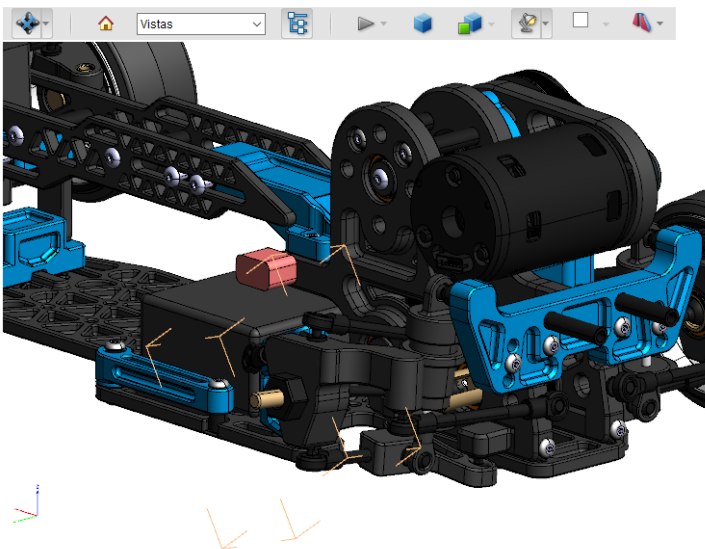
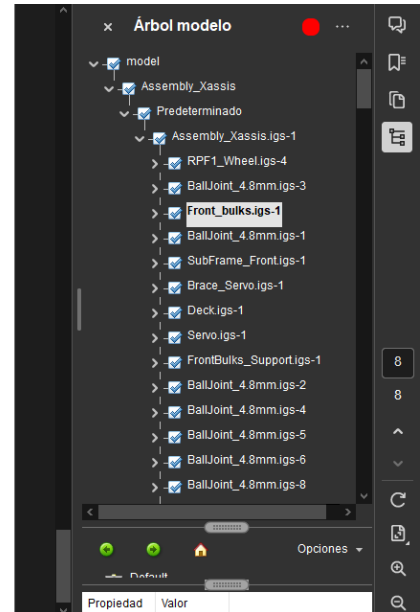
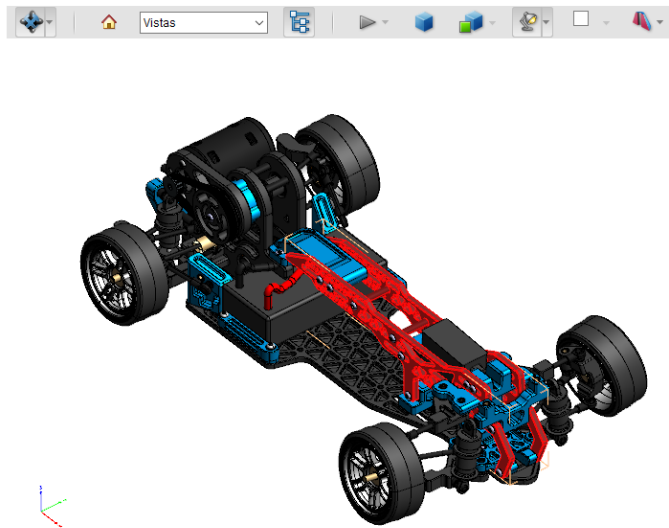
Use this icon to see the assembly tree.





MMC D3 Drift Chassis manual

- 3- Use the Assembly Tree to navigate through the components and hide/show them. Use the left mouse button to rotate, Ctrl+ left mouse button to pan and right mouse button to zoom in/out.
- 4- The components get highlighted on the 3D view when selected on the Tree and viceversa.



5- ENJOY!

