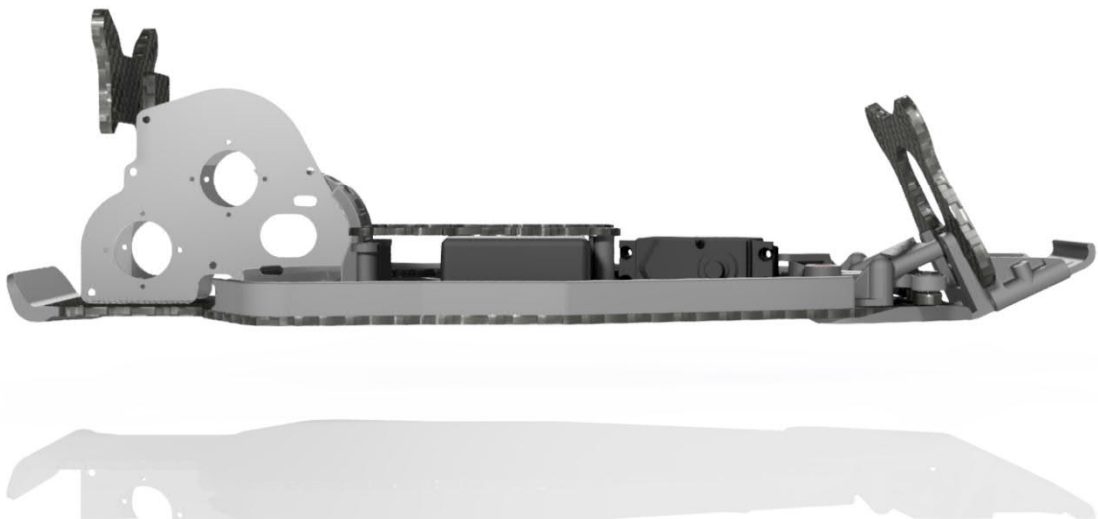




DSPPC EXP3 MID Owners manual





Congratulations, you have bought the fastest Cougar upgrade kit!

(This kit contains parts, to build your own DSPPC EXP3 MID Cougar)

Ok, so... You have been waiting for this, the conversion kit to build your own DSPPC EXP3 MID Schumacher Cougar!

Why have I made this? Well... As I was driving my old Cougar MK1 the last years, I was constantly reminded about the fact that the alloy chassis bends way to easily. From that point, I knew this could be done better.

So, in the beginning I was only thinking about replacing the alloy chassis, to a CF one.

Then I started to talk with Philippe Martin, and later with Marijn. We discussed all possible possibilities to create a new platform, to have a better driving experience, but not to lose too much of the oldschool cabback characteristic look.. All together we have worked on this project for exactly 1 year, that was fun... And now your fun can start too!

And this is where we are now, you bought the kit, and now it's up to you to create something special, and don't hesitate to show it off! It is unique!

Attention!

As you should know, this is only an upgrade kit, to create the Ultimate Schumacher Cougar MID car. and don't hesitate to show it off! It is unique! The most essential parts you need from the donor car are:

- Transmission (gearbox/outdrives (Mk1)
- Wishbones front and back (MK1)
- Rear bulkhead (MK1 or C2)
- Rear Hinge pins + pivot blocks and all turnbuckles
- Front and rear hubs
- Alloy steering bushings T342
- (you can send the alloy chassis to us, for free.... 😊🖤)

Additional advices from the creators...

We recommend a Low Profile servo, to save some space for other components (there is not much space left)

For use of full-size servo or different Lipo setup, you will need to drill and countersunk (CS) new holes yourself.

Pro-Top-Tip!!

Before you mount the wishbones, make sure you have boiled them for about 5 min in hot water. This will strengthen the bond between the atoms internally, which increases the flex and durability of the arms.



DSPPC EXP3 MID kit contains:

- See Attachment "Bag assortment list"

Additional parts you need or want:

- Tools needed:
 - Torx Driver 6 and 8
 - Hex driver 1.5 – 2 – 2,5
 - Nut driver 4.5 - 5.5
 - And whatever you can buy at your local hardware store, just because you like it.
- Cougar 2 or Parma Alley cat body. (Top Cat and Courgar MK1 can fit also, with some adjustments)
- Wingmount U3850 (or U7952 when 10mm shallower or wider mounting is wanted for the wing)
- Lipo mounting system (F.e. Klink cradle for the Cougar LD)
- Servo mounts (Low profile servo) U4327
- Front long 44mm Hingepins U1425 (available via Schumacher)
- LWB Rear wishbones TopCat U7568 (recommended, not necessary if you use different ones)

Note:

Please be aware, This build is a journey on its own. We supply you with as many parts as possible to give you a head start.. As this is an upgrade kit, and Schumacher provided quite some different models, it is impossible to create the same car as someone else. This is the Ultimate chance to create a new car, but very different compared to the other owners! It will be a challenge, but after you completed this build, you have your own personal DSPPC EXP3 MID car!

Recommendations for the shocks:

Front shocks: Length between 77mm and 82mm

Rear shocks: between 95mm and 100mm.



Installation:

We supply you with as many parts as possible to give you a head start, i hope...

You already own a Schumacher Cougar, so you should understand this.

If you don't trust yourself before starting this conversion... here is some extra help from our side (RTFM!!)

Start....

Opening bag Step17 from BAG G. These are the spare hardware items, in case we missed out on something, or you crew up, we don't have any arguments!

STEP 1. (Let's start...!!)

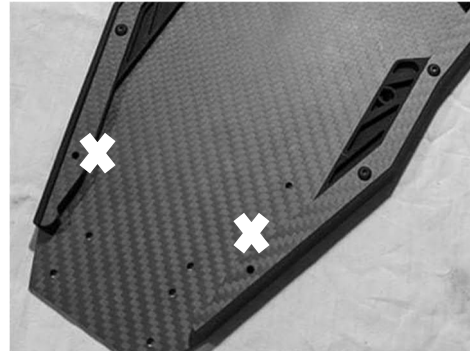
Take out the CF Chassis, and open bag Step 1.

Here you will find the sideguards and stiffener plates.

Mount the sideguard first with the CS screws from underneath.

Then use the 3 PH screws to fix the CF stiffeners.

The 2 holes all the way upfront of the sideguards will be used in step 4



STEP 2.

Same as Step 1, only the other side.

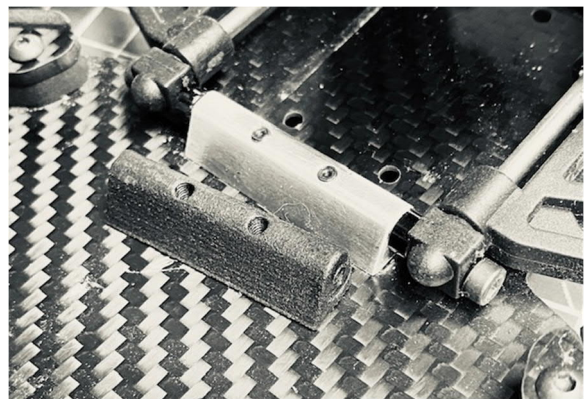
The two front holes do not need screws yet.

STEP 2a.

These are the screws to fix the Klinik Cradle system, if you will not use the cradle system, our advice is to mount a CS screw and the M3 Locknut to seal the hole, and fix the sideguard. For other Lipo mounts, you will need to drill and CS the holes you need. As many people want different options, you are free to adapt your favorite lipo mount.

Step 3.

The Rear Arm mount needs to be mounted with the angled side towards the front



(Black part shown is the stock part, alloy part is the Manobet optional part.)

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Step 4.

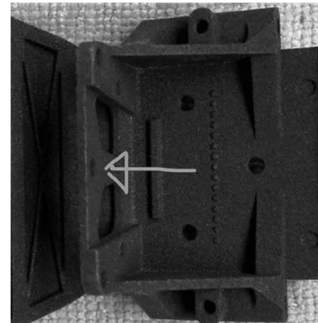
Squeeze the top support brace between the sidepods, and tighten it with the 2 PH 10mm screws.



Step 5.

Open Bag B.

Slide the front bulkhead underneath the chassis, and fix it with the 2 CS 25mm screws and M3 locknuts. The 6mm CS screw fits in the front middle top hole, this is only to secure a good centered fixation.



Step 6.

Place the CF front tower in position, behind the little ridge in the bulkhead.

Use the 2x 10mm CON HEX screws to fix the bottom, and the 2x 16mm CON HEX screws for the top holes.



Step 6a

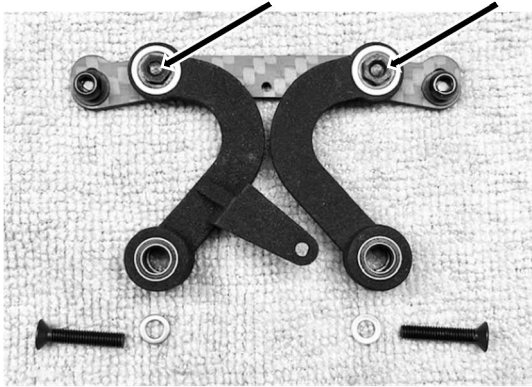
These are our standard Shock standoffs, which should suit most of the shock options to mount. The middle position is the basic setup position.

Play with it!



Step 7.

The steering system is pre-assembled, but only for us to be sure everything fits well. Please untighten the little black nuts, and put a little drop of Locktite on there to prevent from loosening.



For adjusting Bump Steer, place the two 2mm washer (Bag F) Underneath the ball stud on the steering arms. This is "sort of" the basic setup, with the rear holes on the Ackerman steering arm.

Place the 2 washers over the 16mm CS screws, which you push through the bottom of the bulkhead and chassis. Use the original Alloy steering bushings from the donor car to fix everything together. The 2 Ball studs can be re-mounted with a drop of lock-tite as well.



Step 8.

Now we head to the rear end of the car.

Prepare the rear hingepins, and put the pivot blocks on 1 side (Rear side). The mounting can be done in two ways, standard is the hingepin on the inside of the pivot block mounting screws.

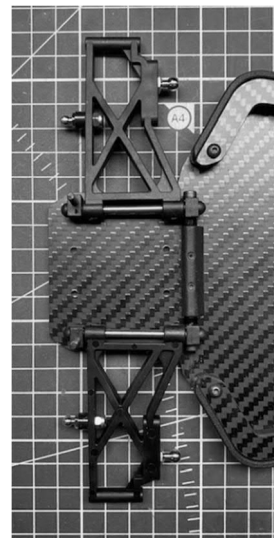
For a wide width rear. Place them on the outside.

(not legit for official races!!)

Now you can put the 25mm HEX CS trough the rear outer holes of the chassis, place the rear bumper over them, and on top the rear pivot blocks. (use the M3 locknuts for a temporary fix, so the screws don't fall out.

Step 9.

Now it's time to put the Wishbones and front pivot blocks over the hingepins. Take the 2x 20mm HEX CON screws, and start with a 1mm washer, then put the screws through the pivot block. Between the Pivot block and Rear Arm Mount you can use several shims, recommendation is 2mm, this will give a 3 degrees toe in setting. Every 0.5mm changes 1 degree.



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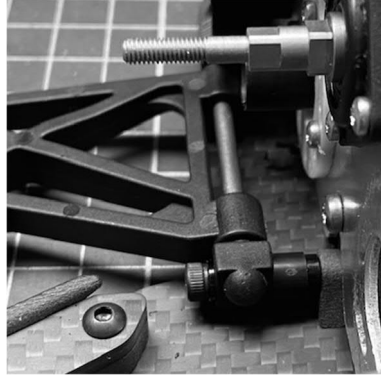
For the (NOT LEGIT FOR RACING) Wider width setting, change the rear pivot block to the outer side, and add the 5mm plastic bushing. After this, play again with the shims for the right toe-in setting

When using the Manobet RAM optional part, you will need the 3mm Washer between the pivot block and HEX CON screw!

This is the standard width:



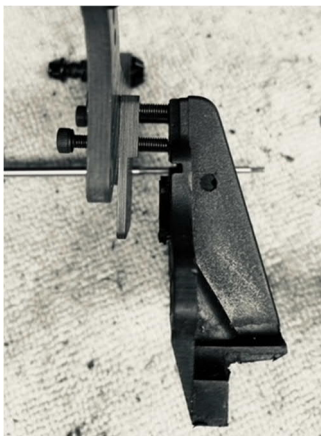
This is the wider width setting (+10mm width total)



Step 10.

Now we can start building the rear tower.

First step would be to mount the rear fill plate, and tower together. Make sure the filler plate is orientated correctly!!!



This may seem as an easy step, but a mistake is easily made!

Take the 4x HEX CON 20mm screws, and screw it all together. Put the 4 M3 Locknuts on the rear end for a solid construction.

The 2x Torx 2.9 x 16mm screws are here for fixing the tower against the transmission later, these go through the rear bulkhead/fillplate.

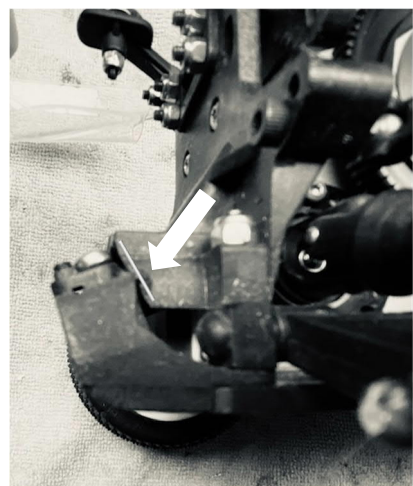


Mount the rear bulkhead onto the chassis. Take off the 2x M3 locknuts, screw the 2x CS 25mm through the holes of the rear bulkhead, and tighten it all together with the 2x M3 Locknuts again (I know this is a bit difficult, but possible!)

Now you will notice, the rear bulkhead hits the rear bumper.

Sorry... But we designed it like this! ☺

At this point you will need to cut away of the rear bulkhead a bit, as shown here →



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Step 10a.

These are our standard Shock standoffs, which should suit most of the possible shock options.. The second from out, is the basic setup position. Play with it!



Step 11.

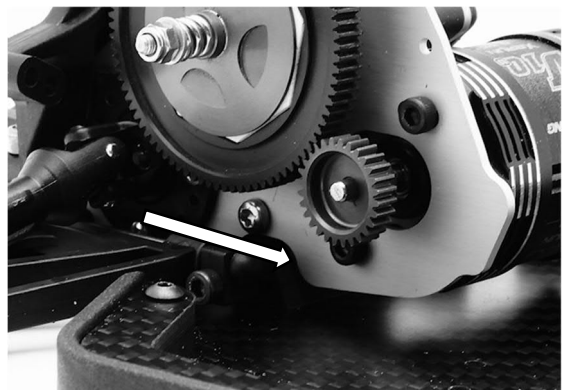
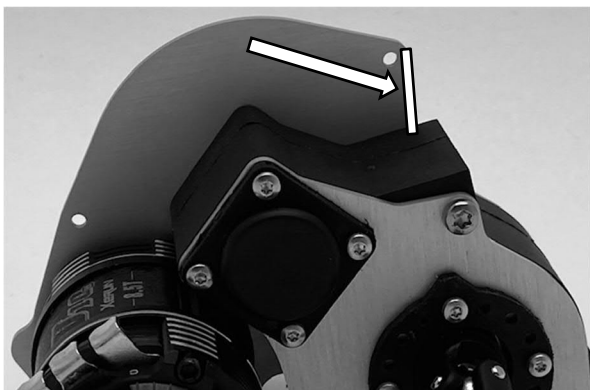
Now it is time to start assembling the transmission! Please (if you already didn't) rotate the original transmission, and swap the side plates left to right and otherway around. Use the Torx screws we provided for a clean looking tranny, whilst serving as a more sophisticated option when servicing.. (NOTE.. Please be carefull with using the screws, in some cases the original holes are a little bit small, so turn them in gently bit by bit!!)



Recommendation is the Pro-Trans, U7600. Be aware that the adjustment screw of the diff stays on the left hand side of the car, otherwise they will loosen when driving the car!

After the transmission is ready for installing, you can now put the tranny in place. Use the 4x CS Torx 2.9x13mm screws to mount the gearbox from the bottom, and the 2x PH Torx 2.9x16mm which go through the rear bulkhead, CF fillplate, and inside the mounting holes of the transmission.

We have seen, there are some slight differences in the motor sideplates, which could result in trimming a bit off with a dremel or a file, here are the two critical area's, which could hit the rear tower, or the lower Arm mount:



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Step 11a.

After mounting the Transmission, you can now mount the waterfall in place, and lock it with the extra 1x Torx 2.2 x 9mm on the motorplate side (not really clear when not visible on picture)



Step 12.

You can mount the motor with the HEX CON screws and black washers.

Step 13.

Ok, almost there...

We now move to the front end of the car again.

With the provided parts from this bag, you can mount the front wishbones.

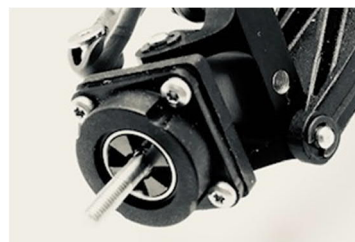
Please use the longer hinge pin (U1425) if wanted and place the CF brace in between. Take the grub screw to lock the hinge pin in place.

The 2x Traxxas rod ends are a straight fit, and are easy to get from a local hobby shop. We have been running these for quite a while, and had no issues thus far.. The Original MK1 rose-joints are a bit fragile, and also quite rare. The 2x 1.5MM washers are placeable in the front, or the rear of the ball joint. We recommended to put the washer on the rear side of the rod-end. the two HEX CON 16mm screws are there to mount the rod ends in the wishbones.



Step 14.

These are the screws to replace the original screws for the steering blocks, for easier servicing and better looks.



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Step 15.

This is a bag of various screws for different purposes, we will explain what goes where.

2x HEX CON 20mm	For the rear wheels
2x HEX CON 12mm	For the front wheels
2x HEX PH 16mm	Wing wount (Tower)
2x HEX PH 12mm	Wing mount
2x PH Torx 2.9 x 9.5mm	Swaybar screws (use U3499)
2x HEX CON 10mm	Servo mounting to chassis
4x HEX PH 10mm	If needed to mount the servo onto the servo mount (JIC)

Step 16.

Just a bag of miscellaneous screws and nuts and stuff we had left over, hope you don't need them right away... 😊

Step 17. (BAG G)

Decals, put them all over your car!!!

Body trimming:

Please look out for trimming the body in a normal way, as the fitment is good, you will need to cut some lines different, aspecially on the rear end of the car!



Well.... You have build the DSPPC EXP3 MID kit, from this point you can start finishing the car with the other parts from the donor car you have.

The positions of turnbuckles and which hubs you want etc, we leave that up to each and every owner. All the kits we have supplied will be quite different in the end, and we would love to see what you will make of it.

In the attachments you will find:

- Kit parts list
- Setup sheet
- Pricelist 2021



BAG Assortment List:

Bag A			
	1	Mid Motor Chassis	MID-MMC-CF-006-B
1	1	Sideguard Left	MID-SGL-PP-010-B
1	1	Side Stiffener Left	MID-SSL-CF-008-B
1	4	HEX CS 8mm	
1	3	HEX PH 8mm	
2	1	Side Stiffener Right	MID-SSR-CF-007-B
2	1	Sideguard Right	MID-SGR-PP-011-B
2	4	HEX CS 8mm	
2	3	HEX PH 8mm	
2a	2	HEX CS 20mm	
	2	SST LN M3	
	2	Black LN M3	
3	1	Rear Arm Mount	MID-RAM-PP-014-A
3	2	HEX CS 10mm	
4	1	Front Stiffener Brace	MID-FSB-PP-016-B
3	2	HEX PH 10mm	
BAG B			
5	1	Front Bulkhead	MID-FBH-PP-009-B
5	2	HEX CS 25mm	
5	2	SST LN M3	
5	1	HEX CS 6mm	
6	1	Front Shock Tower	MID-FST-CF-003-D
6	2	HEX CON 10mm	
6	2	HEX CON 16mm	
6A	2	HEX CON 25mm	
6A	2	Ultima RC Washer	UR1521-N
6A	2	Delrin ball joint shocks 10mm	500385
6A	2	Black LN M3	
7	1	Steering Ackerman Plate	MID-SAP-CF-005-B
7	1	Steering Arm Left	MID-SAL-PP-012-B
7	1	Steering Arm Right	MID-SAR-PP-013-B
7	4	Ballbearing 5x8x3,5	
7	2	Ballbearing 4x8x3 Flanged	
7	2	Ballbearing 6x3x2,5 Flanged	
7	2	HEX CS 10mm	
7	2	HEX CS 16mm	
7	2	Serpent STRNG nut	500437
7	4	O-ring 3mm	
7	2	Ball Stud 5.5mm Low black	
7	2	Ball Sockets 5.5mm	U7209
7	2	HEX CS 6mm	

BAG C			
8	1	Rear Bumper	MID-RBP-PP-017-B
8	2	HEX CS 25mm	
8	2	SST LN M3	
9	2	HEX CON 20mm	
9	2	HEX CON 25mm	
9	2	BUSHING 5mm	
9	2	Washer 3mm	
9	2	Washer 2mm	
9	2	Washer 1mm	
9	2	Washer 0.5mm	
10	1	Rear Shock Tower	MID-RST-CF-002-C
10	1	Rear Spacer Plate	MID-RSP-CF-004-A
10	4	SST LN M3	
10	4	HEX CON 20mm	
10a	2	HEX CON 25mm	
10a	2	Ultima RC Washer	UR1521-N
10a	2	Delrin ball joint shocks 10mm	500385
10a	2	Black LN M3	
BAG D			
11	2	PH Torx 2,9 x 16mm	
11	6	PH Torx 2,9 x 9.5mm	
11	12	PH Torx 2,2 x 6.5mm	
11	4	PH Torx 2,2 x 9mm	
11	4	CS Torx 2,9 x 13mm	
11a	1	Motor Waterfall	MID-MWF-PP-015-B
11a	2	HEX CS 10mm	
11a	1	PH Torx 2,2 x 9mm	
12	2	HEX CON 6mm	
12	2	Washer black	
BAG E			
13	1	Front pivot brace	MID-FPV-CF-001-A
13	2	Traxxas Rod end (Front Shocks)	TRX2742
13	2	1,5mm Rod end washers	
13	2	HEX CON 16mm	
13	2	Grub Screw 8mm	
14	8	PH Torx 2,2 x 6,5mm	
BAG F			
15	2	HEX CON 20mm	Rear wheels
15	2	HEX CON 12mm	Front wheels
15	2	HEX PH 16mm	Wing mount tower
15	2	HEX PH 12mm	Wing mount tower
15	2	PH Torx 2,9 x 9mm	Swaybar
15	2	HEX CS 10mm	Servo mount
15	4	HEX PH 10mm	Servo mount
16	XX	Spare screws	
BAG G			
17	1	Decals	

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Setup Sheet DSPPC EXP3 MID

Driver:

Mechanic:

Date:

Event:

Weather:

Result:

Fastest Lap:

Track Rec Lapt:

Rec holder:

DSPPC EXP3 MID

V3.1

TRACK	Location/Club:	ELECTRICS	ESC:		
	Type: <input type="checkbox"/> Open <input type="checkbox"/> Med <input type="checkbox"/> Tight		Motor:	Timing:	
	Surface:		Grip: <input type="checkbox"/> High <input type="checkbox"/> Medium <input type="checkbox"/> Low	Battery:	Position (Batt):
	Condition: <input type="checkbox"/> Smooth <input type="checkbox"/> Medium <input type="checkbox"/> Bumpy		Notes:	Servo:	Receiver:
	Notes:				

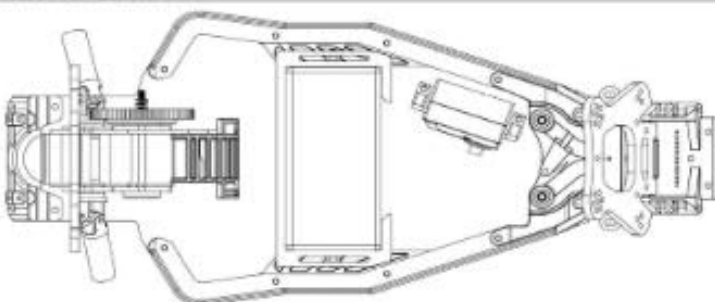
WHEELS & TYRES	Rear tyre:	CHASSIS	Bodyshell:	Wing:
	Rear Insert:		Wingmount: <input type="checkbox"/> U3850 <input type="checkbox"/> U4377 <input type="checkbox"/> U7952 (L-R 10mm) <input type="checkbox"/>	
	Front tyre:		Weight total: _____ Grams	Front - Rear % %
	Front Insert:		Added Weight: Fr _____ Gr Mid _____ Gr Re _____ Gr	
	Wheel type:		Carbon Fibre stiffeners: <input type="checkbox"/> 3mm <input type="checkbox"/> 2mm <input type="checkbox"/> 1mm	
	Notes:		Bumper: <input type="checkbox"/> Yes <input type="checkbox"/> No	Front Shock Cover: <input type="checkbox"/> Yes <input type="checkbox"/> No
	Transm: <input type="checkbox"/> Pro-Trans <input type="checkbox"/> Std	Driveshaft: <input type="checkbox"/> Plastic <input type="checkbox"/> Roller DS		
	Spur Gear: _____	Pinion Gear: _____		

SUSPENSION	FRONT		SUSPENSION	REAR	
	Wishbones: <input type="checkbox"/> C1 <input type="checkbox"/> C2 <input type="checkbox"/>			Wishbone: <input type="checkbox"/> SWB <input type="checkbox"/> MWB <input type="checkbox"/> LWB <input type="checkbox"/>	
	Toe in/out: _____ Deg	Bump Steer washer: _____ mm		Toe in/out: _____ Deg	Washer: _____ mm
	Camber: _____ Deg	Ackermann: <input type="checkbox"/> Front <input type="checkbox"/> Rear		Camber: _____ Deg	Arm mount bar: <input type="checkbox"/> Plastic <input type="checkbox"/> Alloy
	Castor: _____ Deg	Camber link position:		Anti Squat: _____ Deg	Sway bar: _____ mm
	Front brace: <input type="checkbox"/> Yes <input type="checkbox"/> No			Camber Link Wheel: <input type="checkbox"/> Out <input type="checkbox"/> In	Camber link position:
Hubs: <input type="checkbox"/> Std <input type="checkbox"/> Alloy		Track width *: <input type="checkbox"/> Narrow <input type="checkbox"/> Wide			
Notes:		Notes:			

SHOCKS	FRONT		SHOCKS	REAR	
	Shock type: <input type="checkbox"/> Vari-Shock <input type="checkbox"/> MK1 <input type="checkbox"/> Bigbore <input type="checkbox"/>			Shock type: <input type="checkbox"/> Vari-Shock <input type="checkbox"/> MK1 <input type="checkbox"/> Bigbore <input type="checkbox"/>	
	Oil:	Piston:		Oil:	Piston:
	Spring:	Seals:		Spring:	Seals:
	Shock Length: _____ mm	MAX <-----> MIN _____ mm		Shock Length: _____ mm	MAX <-----> MIN _____ mm
	Position Arms: <input type="checkbox"/> out <input type="checkbox"/> in			Position Arms: Out <input type="radio"/> <input type="radio"/> <input type="radio"/> <input type="radio"/> In	
Rideheight: _____ mm		Rideheight: _____ mm			
Spring adj: _____ mm		Spring adjuster: _____ mm			
Standoff: _____ mm		Standoff: _____ mm			

* When choosing the wider rear track width setup, check IFMAR Rules for max width!

NOTES



Document made by DSPPC, for pleasure and fun, but most of all... **GAIN SPEED!**



Pricelist DSPPC EXP3 MID (2021)

	Part	Part number	Quantity	Price
CarbonFiber milled Parts	Front pivot brace	MID-FPV-CF-001-A	1	€ 3,70
	Rear Shock Tower	MID-RST-CF-002-C	1	€ 13,88
	Front Shock Tower	MID-FST-CF-003-D	1	€ 18,50
	Rear Spacer Plate	MID-RSP-CF-004-A	1	€ 6,01
	Steering Ackerman Plate	MID-SAP-CF-005-B	1	€ 4,63
	Mid Motor Chassis	MID-MMC-CF-006-B	1	€ 112,50
	Side Stiffener Right	MID-SSR-CF-007-B	1	€ 9,25
	Side Stiffener Left	MID-SSL-CF-008-B	1	€ 9,25
3D printed parts	Side guard Left	MID-SGL-PP-001-B	1	€ 18,50
	Side guard Right	MID-SGR-PP-002-B	1	€ 18,50
	Front suspension plate	MID-FSP-PP-003-C	1	€ 29,60
	Front support brace	MID-FB-PP-004-B	1	€ 24,05
	Bell Cranks	MID-BC-PP-005-A	1	€ 31,45
	Motor guard	MID-MG-PP-006-B	1	€ 18,50
	Rear suspension brace	MID-RSB-PP-007-A	1	€ 11,10
	Rear bumper	MID-RB-PP-008-C	1	€ 11,10
Needed extra parts	Serpent STRNG nut	500437	1	€ 8,57
	Delrin ball joint shocks 10mm	500385	2	€ 8,01
	Ultima RC Washer PCK 8	UR1521-N	0,25	€ 1,34
	Bearing 4x8x3 (Flanged)	TU2528-10	2	€ 2,70
	Bearing 5x8x2,5 (NRML)	TU2512-10	2	€ 2,16
	Bearing 3x8x2,5 (Flanged)	TU2527-10	4	€ 5,40
	TITANIUM PIVOT BALL 5.5MM LOW (PR)	U7825	1	€ 6,55
Fastening equipment	M3 - Steel hardened HEX screws	N/A	46	€ 10,12
	SST torx. Screws	N/A	42	€ 4,62
	Nuts and washers	N/A	14	€ 3,08
Decals sheet	DSPPC EXP3 MID decals	MID-DS-SA-001-C	1	€ 15,00
Option Parts (*)	Alloy rear suspension brace	MID-RSB-MNB-001-A	1	€ 15,00
Prices are exclusive shipping costs				
(*) option parts not included in the standard kit				