# Lightscale ONE

#### 1:5th Scale RC Motorbike **Build Manual**



Lightscale

Thank you very much for selecting this Lightscale RC Bike and thus become a member of the ever growing worldwide Lightscale racing family.

The Lightscale ONE is a state of the art 1/5 scale racing bike.

The assembly manual will guide you through all the steps to complete the bike, so you can hit the track with a good base-set-up soonest. The Lightscale design department succeeded to create a superbly performing bike combined with easy assembly and maintenance. The high quality standards of all parts and hardware will make racing your Lightscale ONE bike a very rewarding activity.

#### **SAFETY**

Read and take note of the 'Read this First section' before proceeding to assemble the kit. This kit is intended for persons aged 16 or older.

The Lightscale ONE is a competition prototype RC Bike this is not a toy but a racing model.

This RC Bike is intended to be used on race circuits only and by adult person or under supervision of a responsible adult.

Take safety precautions prior to operating this model. You are responsible for this model's assembly and safe operation.

#### **READ THIS FIRST**

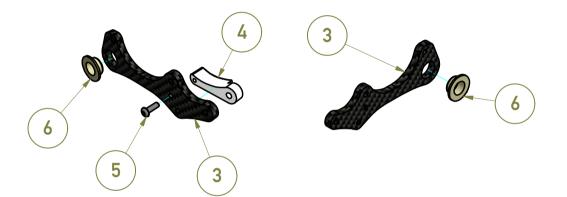
- This is a highly technical hobby product, intended to be used in a safe racing environment. This bike is capable of speeds in excess of 80 km/h or 50mph. Please follow these guidelines when building and operating this model.
- Parental guidance is required when the builder/user of this bike is under 16.
- Follow the building instructions. If in doubt, contact your dealer or importer.
- Be sure to use the proper tools when assembling the bike. Always exercise caution when using electric tools, knives and other sharp objects.
- Be careful when using liquids like lubrication oil or glue.
- Follow the manufacturer's instruction in case you experience irritation after using the product.
- Be careful when operating the bike. Stay away from any rotating parts such as wheels, gears and transmission. Stay away from motor or speedo during and immediately after use, as these parts may be very hot. We advise to use protective hand gloves.
- Only operate this bike in a safe environment, like a special racing track. Avoid using this bike on public roads and crowded places.
- Before operating this bike, always check the mechanical status of the bike. Also check that the transmitter and receiver frequencies correspond and are not used by any other racer at the same time. Check that the batteries of the transmitter and receiver- are fully charged. After use, always check all the mechanics of the bike. We advise to inspect the bike immediately after use and inspect the parts for wear or fractures. Replace when necessary.
- Please clean all white plastic parts from dust inside the holes.
- You will find an extra SOS screw of each type included in the bag.

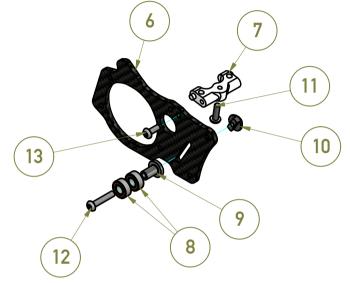
Please enjoy building your Lightscale One bike. Do not hesitate to contact your dealer or Lightscale directly for any issue. https://www.facebook.com/LIGHTSCALE1/

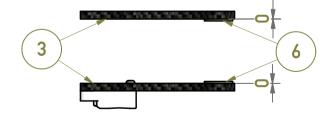


#### Center Swingarm Assembly Part 1









13	1		RH Screw ISO 7380 - M3 x 8
12	1		RH Screw ISO 7380 - M3 x 16
11	1		RH Screw ISO 7380 - M3 x 10
10	1	54030950	Belttensioner Nut
9	1	54030940	Belttensioner 2016
8	2	1059510099	Ball Bearing 5x10x4
7	1	54022201	SLS Shock Holder
6	2	08101505	Swingarm Bushing
5	1		RH Screw ISO 7380 - M2,5 x 8
4	1	54030121	SLS Spur Saver
3	2	54020243	Cfk Swingarm lever
2	1		CS Screw DIN 7991 - M4x8
1	1	54021200	Motorclamp 2016
Pos	Pcs	Lightscale #	Description



# Threadlock 7 Threadlock 5

## Center Swingarm Assembly Part 2

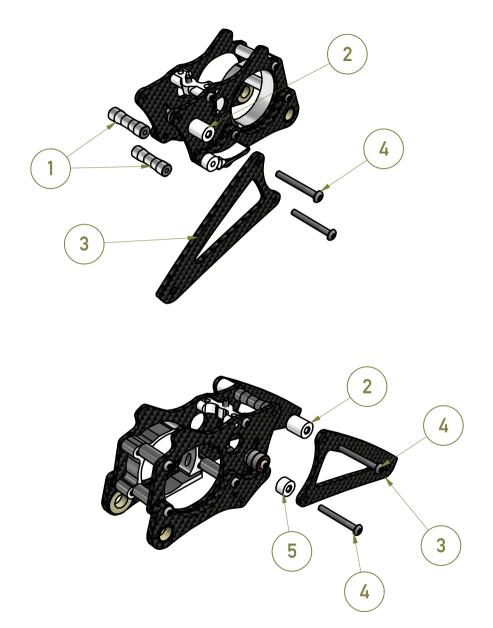




9	1		RH Screw ISO 7380 - M3 x 8
8	1		RH Screw ISO 7380 - M3 x 20
7	2		RH Screw ISO 7380 - M3 x 12
6	2	54020241	Cfk Swingarm inner
5	2	54020242	Cfk Swingarm Spacer
4	2		RH Screw ISO 7380 - M3 x 25
3	1		RH Screw ISO 7380 - M3 x 6
2	3	54021210	Podstrut
1	1	54021200	Motorclamp 2016
Pos	Pcs	Lightscale #	Description



#### Rear Swingarm Assembly

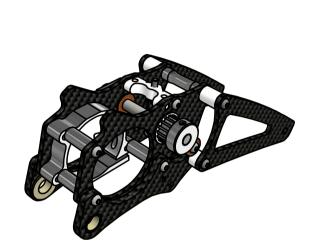




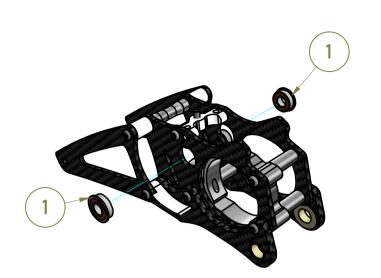
5	1	00339053	SLS Shim ø3x5,3
4	4		RH Screw ISO 7380 - M3 x 25
3	2	54031230	Cfk Swingarm std
2	2	00339108	SLS Shim ø3x10,8
1	2	54030230	Swingarm Distance holder
Pos	Pcs	Lightscale #	Description

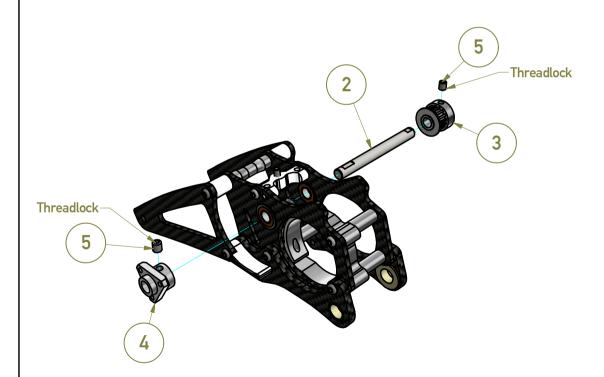


#### **Driveshaft Assembly**



5	2		Grubscrew DIN 913 - M4 x 5
4	1	54032300	Gear Carrier JABBER 2013
3	1	54020161	Belt Pulley 16T 2016
2	1	54021930	Drive Shaft
1	2	1269612099	Ball Bearing flanged 6x12x4
Pos	Pcs	Lightscale #	Description







#### Belt and Spur Gear Assembly

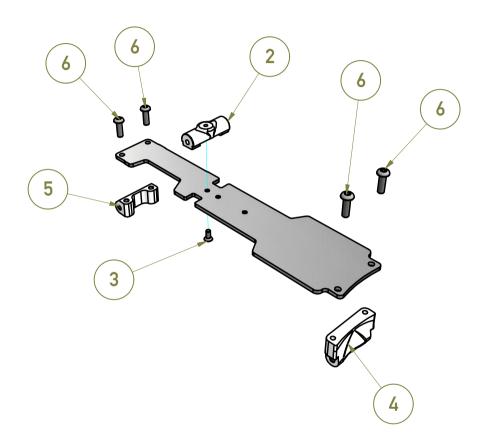


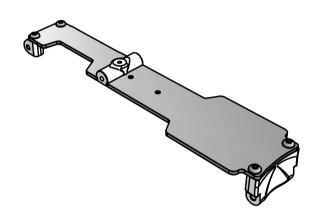
8		
No.		
3	2	

3	3		RH Screw ISO 7380 - M3 x 6
2	1	305787	Spur Gear 87T
1	1	130500285060	Belt
Pos	Pcs	Lightscale #	Description



#### Radio and Battery Bay Assembly



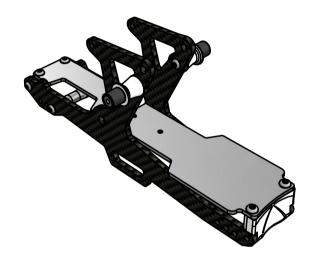


6	4		RH Screw ISO 7380 - M3 x 10
5	1	54030101	SLS Lipostop rear
4	1	54020102	SLS Lipostop front
3	1		CS Screw DIN 7991 - M2,5x6
2	1	54030243	SLS Chassis Center Spacer
1	1	54020132	Radio Plate
Pos	Pcs	Lightscale #	Description



# 3

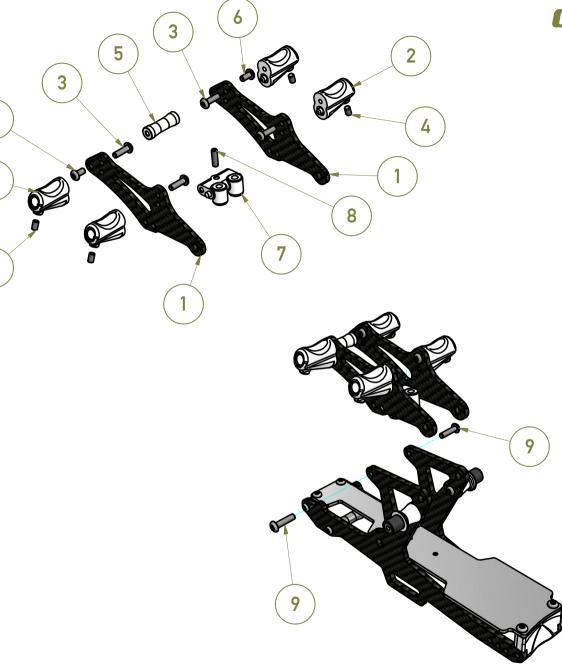
#### Main Chassis Assembly

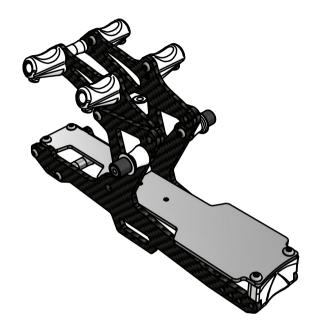


7	2		RH Screw ISO 7380 - M3 x 8
6	1	54030230	Swingarm Distance holder
5	2		RH Screw ISO 7380 - M3 x 10
4	2	00310110	SLS Bodypost
3	2		RH Screw ISO 7380 - M3 x 16
2	2	54020231	Rubber Body Post
1	2	54020201	Cfk Chassis rear
Pos	Pcs	Lightscale #	Description



#### Crashbar Holder Assembly

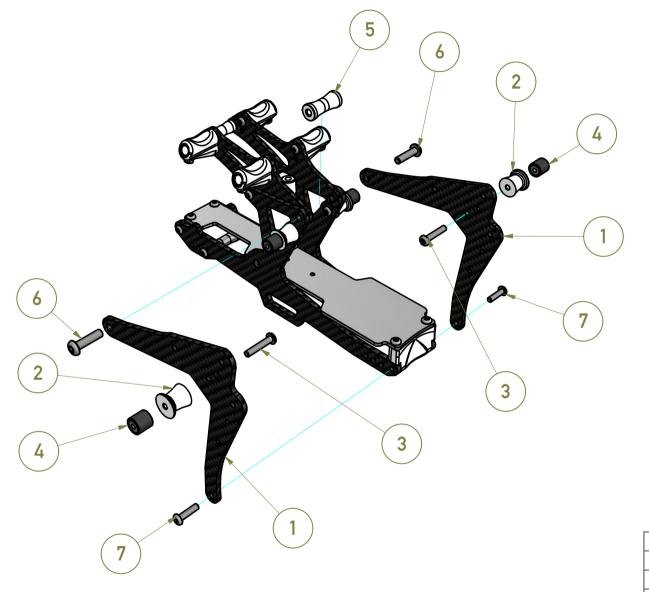


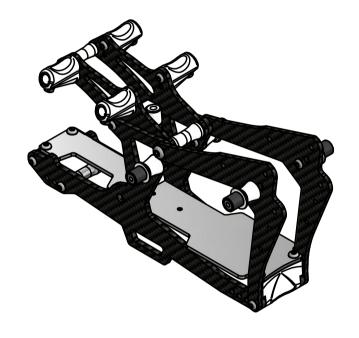


9	2		RH Screw ISO 7380 - M3 x 12
8	1		Grubscrew DIN 913 - M3 x 10
7	1	54022202	SLS Shock Holder Chassis
6	2		RH Screw ISO 7380 - M3 x 6
5	1	54020208	SLS Chassis Spacer 20,8mm M3
4	4		Grubscrew DIN 913 - M3 x 5
3	4		RH Screw ISO 7380 - M3 x 10
2	4	54022103	SLS Crashbarholder
1	2	54022110	Cfk Crashbarholder
Pos	Pcs	Lightsccale #	Description



#### Front Chassis Assembly

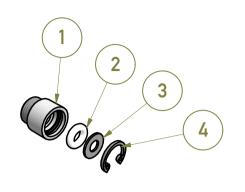


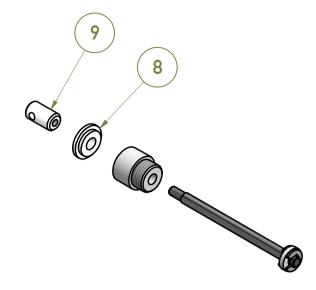


7	2		RH Screw ISO 7380 - M3 x 12
6	2		RH Screw ISO 7380 - M4 x 16
5	1	54020209	SLS Chassis spacer 20,8mm M4
4	2	54020231	Rubber Body Post
3	2		RH Screw ISO 7380 - M3 x 16
2	2	00310110	SLS Bodypost
1	2	54010202	Cfk Chassis front
Pos	Pcs	Lightscale #	Description

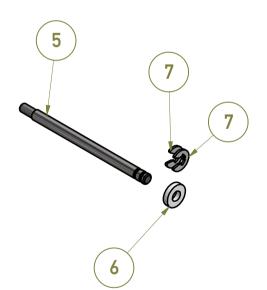


#### Fork Damper Assembly









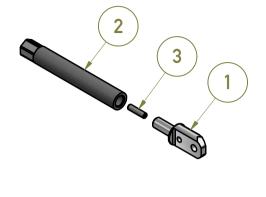


11	1	54011202	Fork Slider Shaft 2016
10	1	00200060	Fork Foam Insert
9	1	54011290	Fork Shock holder
8	1	54011281	Fork Bottom Spring Guide LP
7	2		E-Clip Large DIN 6799 - 2,3
6	1	54011260	Fork Shock Piston
5	1	54011251	Fork Shockrod 2016
4	1		Retainer Ring DIN 472 - 8x0,8
3	1		Shim DIN 125 - A 3,2
2	1	37710000302	0-Ring 3x2mm
1	1	54011241	Fork Shockcap LP
Pos	Pcs	Lightscale #	Description

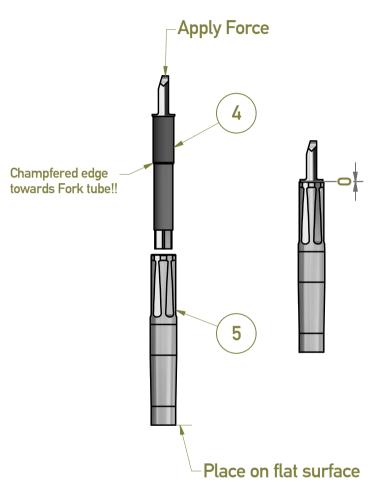


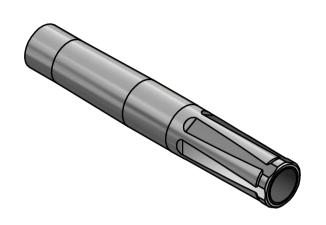
#### Tool Assembly Part#54001550 (not included in Kit)

#### Fork Tube Assembly









			i ,
5	1	54011301	Fork Slider Tube LP
4	1	54011270	Fork Slider Bushing
3	1	not included	Grubscrew DIN 913 - M3 x 12
2	1	not included	Tool Part 2
1	1	not included	Tool Part 1
Pos	Pcs	Lightscale #	Description



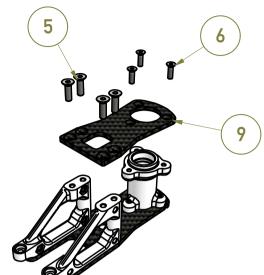
#### Fork Slider Assembly

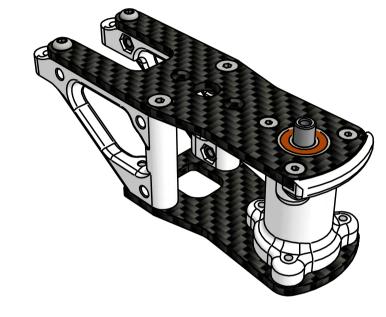


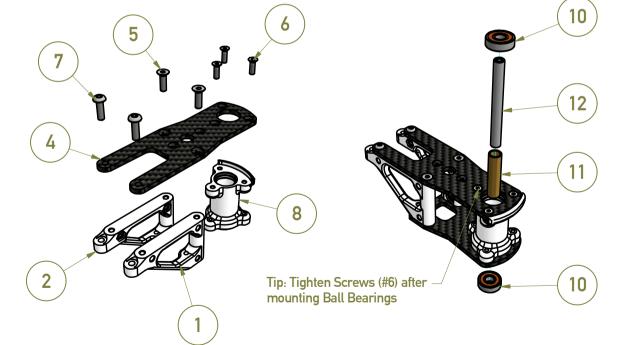
6	2		Fork Tube Assembly
5	2	54011230	Fork Top Cap
4	2		Pin - 2 x 10 - A
3	2		Fork Damper Assembly
2	1	00220021	Fork Spring 2.1
1	1	00220019	Fork Spring 1.9
Pos	Pcs	Lightscale #	Description



#### Steering Pivot Assembly





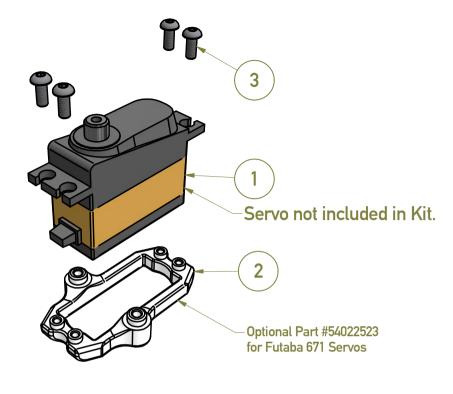


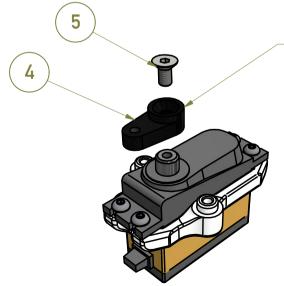
Tip: Secure nuts with glue

12	1	54010402	Steering Axle 2016
11	1	00506526	Steering Bushing 2016
10	2	6959513099	Ball Bearing 5x13x4
9	1	54022313	Cfk Steering Pivot Bottom
8	1	54010303	SLS Steering Pivot
7	2		RH Screw ISO 7380 - M3 x 10
6	6		CS Screw DIN 7991 - M2,5x8
5	6		CS Screw DIN 7991 - M3x10
4	1	54022521	Cfk Steering Pivot Top
3	6		Nut ISO 4035 - M3
2	1	54022413	SLS Triangle Plate LH
1	1	54022423	SLS Triangle Plate RH
Pos	Pcs	Lightscale #	Description

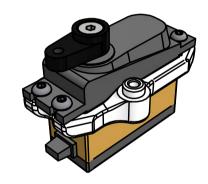


#### Servo Mount Assembly





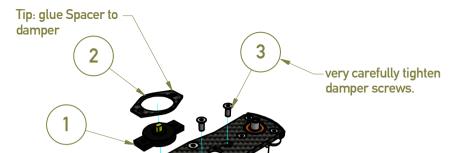
Be sure to set the Servo to neutral with your radio BEFORE mountig the Servohorn.

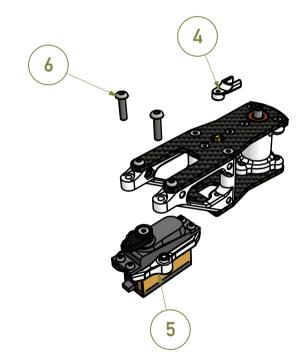


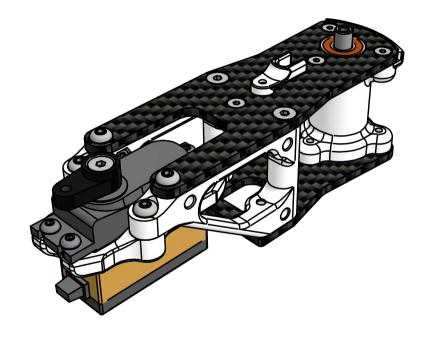
5	1		CS Screw DIN 7991 - M3x6
4	1	00310025	Servohorn 25T
3	4		RH Screw ISO 7380 - M2,5 x 6
2	1	54022524	SLS Servo Holder Savöx 1250
1	1	not included	Servo Savöx SH-1250MG
Pos	Pcs	Lightscale #	Description



#### Servo and Steering Damper Assembly





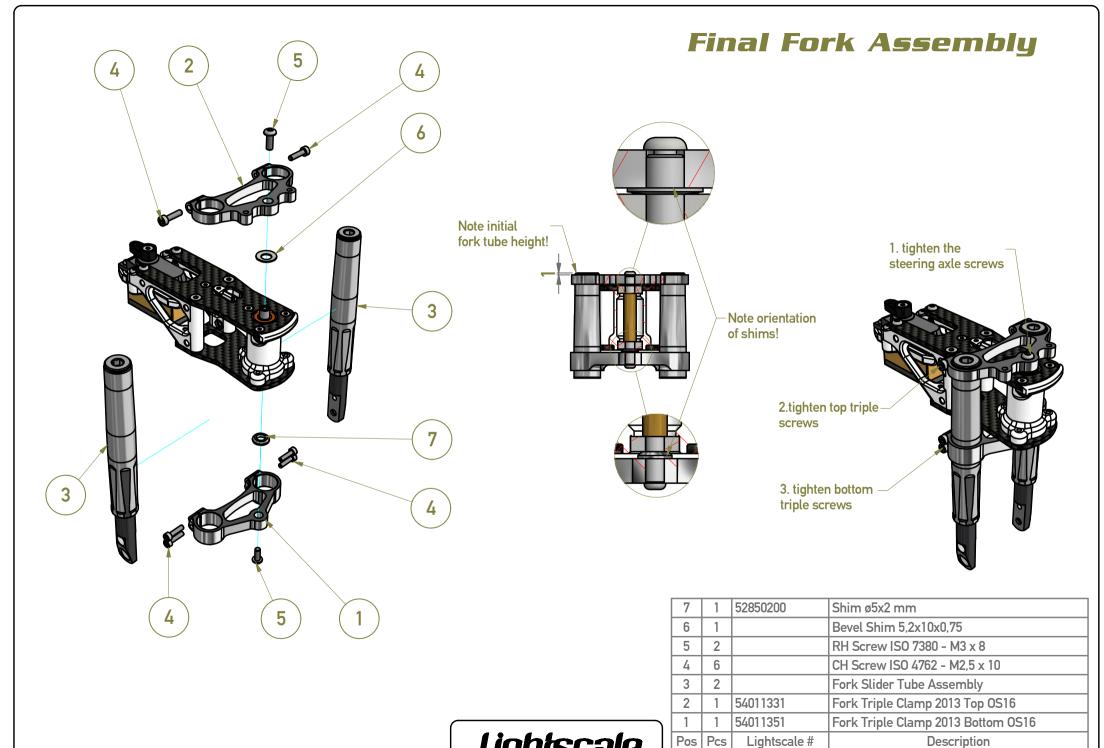


#### **Steering Damper Chart Damping Force**

LeverPosition	<b>S</b> hort		Mid		Long	
Fork Steer	0° L/R10°		O°	0° L/R10°		L/R 1 0°
Beige	3,4	3,0	2,7	2,4	2,1	2,0
Yellow	7,1	6,2	5,6	5, 1	4,5	4,2
Green	8,6	7,4	6,7	6, 1	5,3	5,0
Brown	12,8	11,1	10,0	9, 1	8,0	7,5
Black	17,1	14,8	13,4	12,1	10,7	10,0
Red	27,1	23,5	21,2	19,2	16,9	15,8

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6	2		RH Screw ISO 7380 - M3 x 12
5	1		Savöx 1250 Servo Assembly
4	1	00241000	SLS Damper Lever 2016
3	2		CS Screw DIN 7991 - M2,5x6
2	1	00241002	CfK Steering Damper Spacer
1	1	00241025	Steering Damper Yellow
Pos	Pcs	Lightscale #	Description



**Lightscale** 

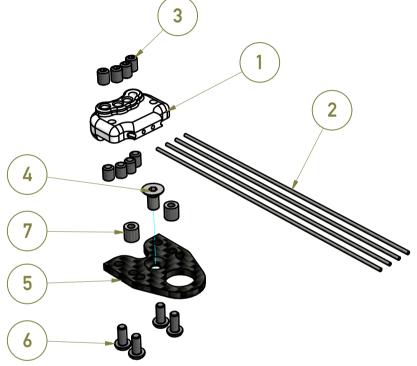
#### Steering Spring Assembly

Use additional spring to carefully clear holes and free them from remainig material.

Do not drill the holes!

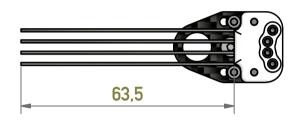


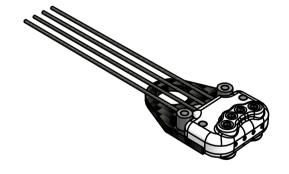




Steering Spring Chart				
	Lightscale #	Description		
Soft	0024085	0,85mm Steering Spring	Kit	
	0024090	0,90mm Steering Spring	Option	
	0024095	0,95mm Steering Spring	Option	
	0024100	1,00mm Steering Spring	Option	
	0024105	1,05mm Steering Spring	Option	
	0024110	1,10mm Steering Spring	Option	
Hard	0024115	1,15mm Steering Spring	Option	



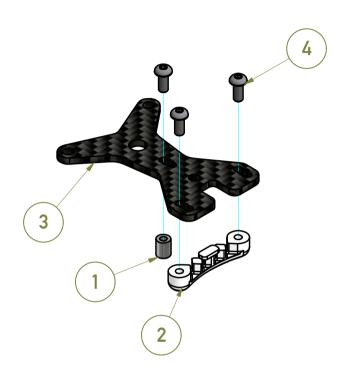


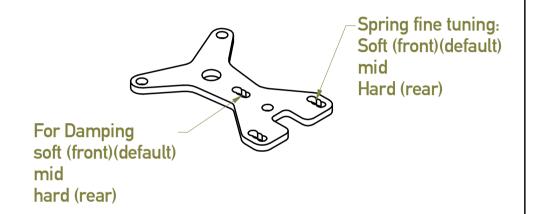


7	2	00314040	Post for Springs 4mm
6	4		RH Screw ISO 7380 - M2,5 x 6
5	1	00310001	CfK Steering Extender
4	1		CS Screw DIN 7991 - M3x6
3	8		Grubscrew DIN 913 - M3 x 4
2	4	00240085	0,85mm Steering Spring
1	1	00310012	SLS Spring Holder quad
Pos	Pcs	Lightscale #	Description



#### Steering Spring Receiver Assembly



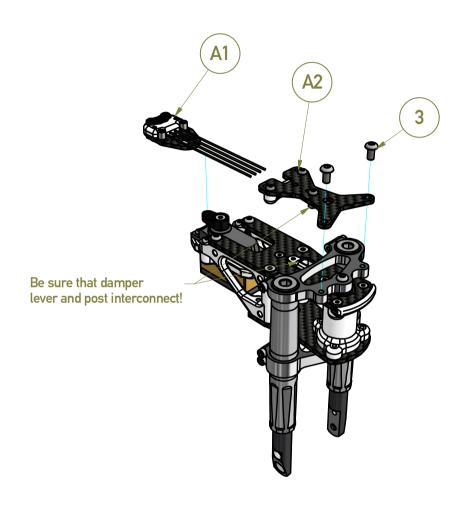




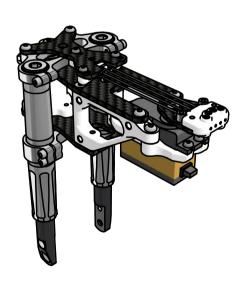
4	3		RH Screw ISO 7380 - M2,5 x 6
3	1	54013102	Cfk Steering Plate
2	1	00310013	SLS Spring Receiver
1	1	00314050	Post for Damper
Pos	Pcs	Lightscale #	Description



#### Final Steering Assembly

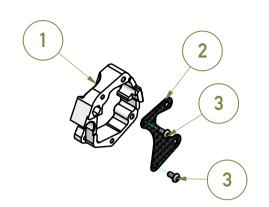


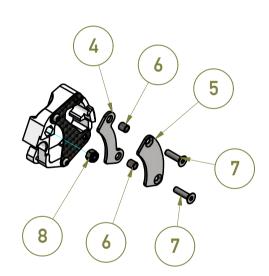


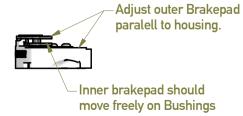


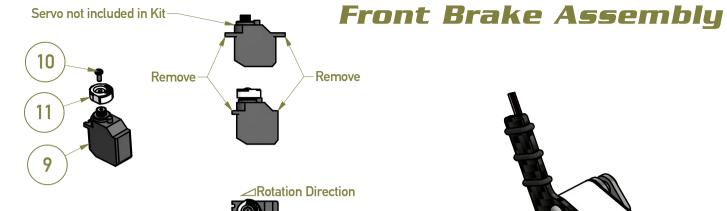
3	2		RH Screw ISO 7380 - M3 x 6
A2	1		Spring Receiver Assembly
A1	1		Servo Spring Assembly
Pos	Pcs	Lightscale #	Description

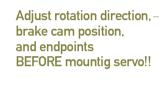


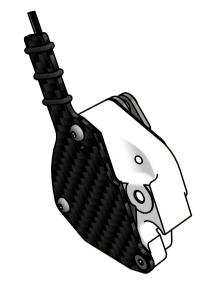


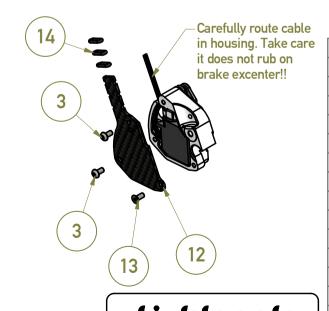






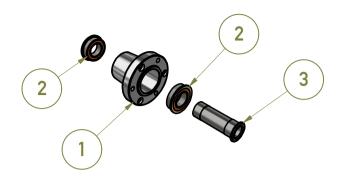


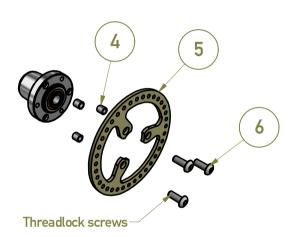


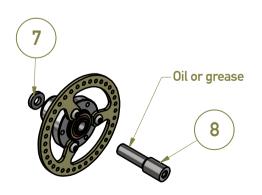


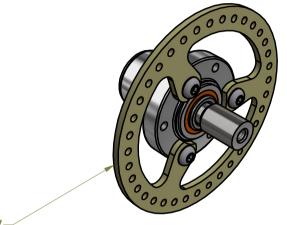
14	3	37710000401	O-Ring for Servocable
13	1		CS Screw DIN 7991 - M2,5x6
12	1	54012421	Cfk outer Brake Cover
11	1	54012201	SLS Brakeexcenter 2015 V2
10	1	Not included	Servo Screw - M2 x 5 - A2
9	1	Not included	Servo Futaba S3776SB
8	1		Nyloc Nut DIN 980 M3
7	2		CS Screw DIN 7991 - M3x12
6	2	00314041	Bushing for Brakedisc
5	1	54012110	Stainless Brakepad Outer
4	1	54012120	Stainless Brakepad Inner
3	4		RH Screw ISO 7380 - M2,5 x 5
2	1	54012411	Cfk inner Brake Cover
1	1	54012403	SLS Brakeservo Holder 2015+
Pos	Pcs	Lightscale #	Description

#### Front Hub Assembly







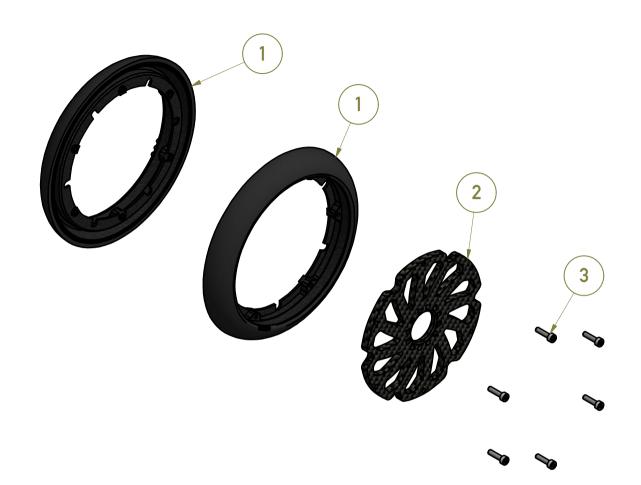


Disc should float freely on Bushings.

8	1	54012506	Axle inner front 2016
7	1	54012332	Shim 5x10x2
6	3		RH Screw ISO 7380 - M3 x 8
5	1	54012101	GFK Brakedisc Lightscale BB
4	3	00314041	Bushing for Brakedisc
3	1	54012505	Axle outer front 2016
2	2	MF148ZZ	Ball Bearing flanged 8x14x4
1	1	54012302	JJ Hub Front ROADIES 2016
Pos	Pcs	Lightscale #	Description



#### Front Wheel Assembly

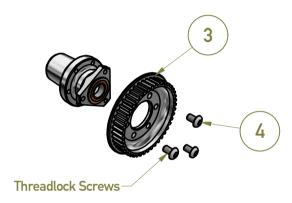


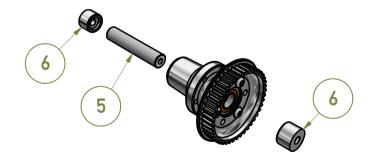


3	6		CH Screw ISO 4762 - M2,5 x 10
2	1	54032602	Cfk Spokes 2019 Uni
1	2	65013800	Roadies Tire Front half
Pos	Pcs	Lightscale #	Description



### 2 1





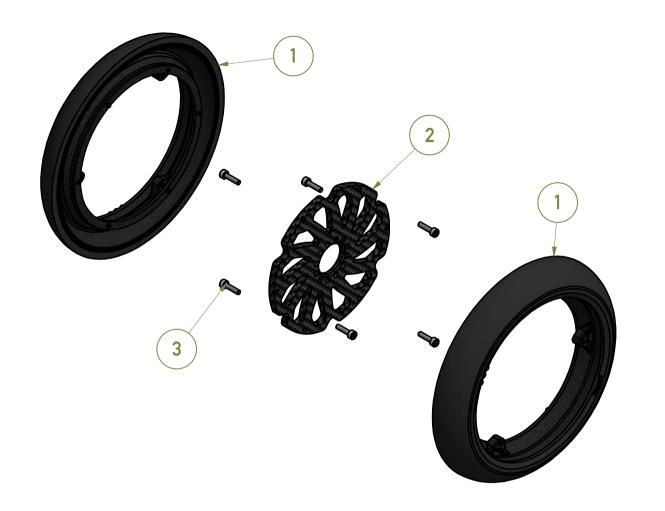
#### Rear Hub Assembly



6	2	54032332	Sideshim 8mm 2016
5	1	54030152	Axle Rear 2016
4	3		RH Screw ISO 7380 - M3 x 5
3	1	54030442	Belt Spur 44T 2016
2	2	MF148ZZ	Ball Bearing flanged 8x14x4 (0.8x15,6)
1	1	54030021	Hub Rear 2016
Pos	Pcs	Lightscale #	Description



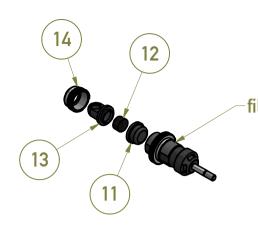
#### Rear Wheel Assembly



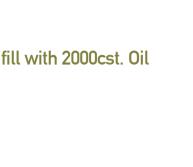




3	6		CH Screw ISO 4762 - M2,5 x 10
2	1	54032602	Cfk Spokes 2019 Uni
1	2	65023800	Roadies Tire Rear half
Pos	Pcs	Lightscale #	Description

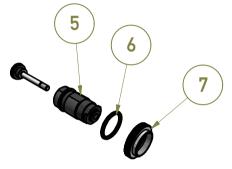


#### Rear Shock Assembly

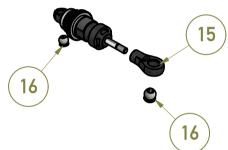


min.57mm



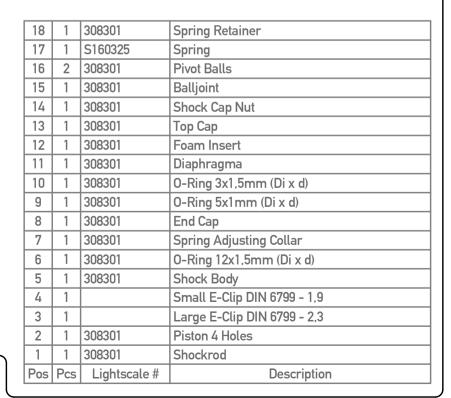


10











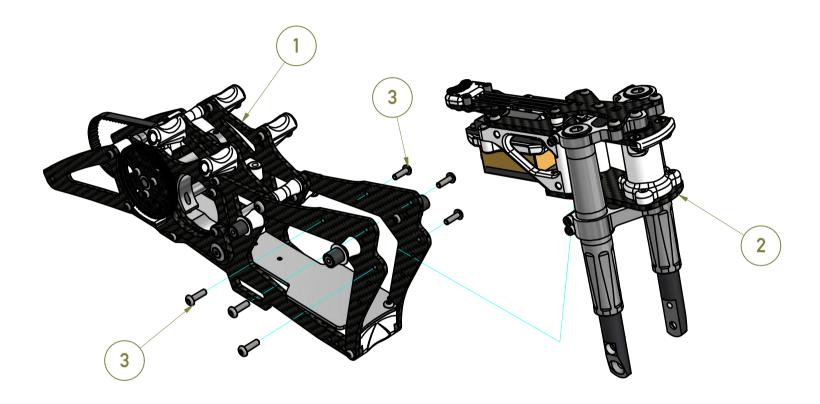
#### Swingarm and Chassis Final Assembly



5 2 CS Screw DIN 7991 - M3x16								
4	Swingarm Pivot							
3	2	52900401	Pivot Shim ø3					
2	1		Swingarm Assembly					
1 1 Chassis Assembly		Chassis Assembly						
Pos	Pcs	Lightscale #	Description					



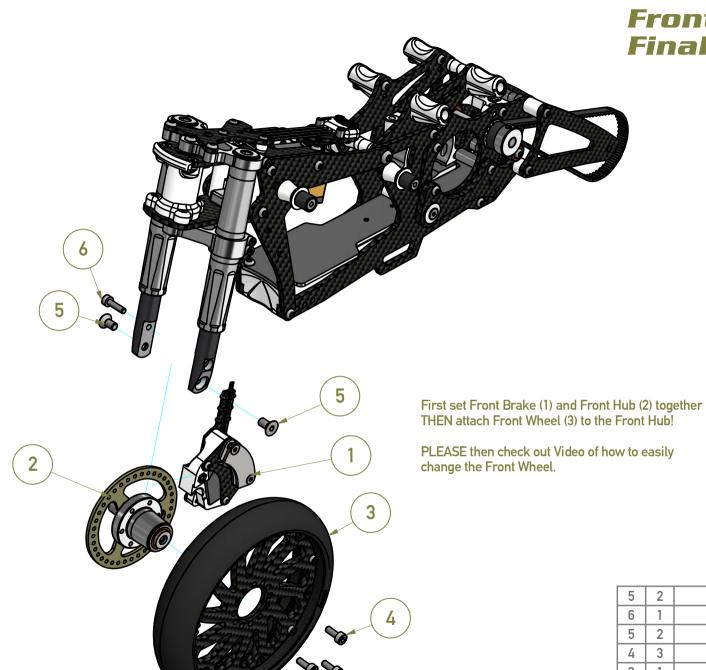
#### Headstock and Chassis Final Assembly





3	<ul> <li>3 6 RH Screw ISO 7380 - M3 x 10</li> <li>2 1 Headstock Assembly</li> <li>1 1 Chassis Assembly</li> </ul>					
2 1 Headstock Assembly						
1	1 1 Chassis Assembly					
Pos	1 Chassis Assembly Description					

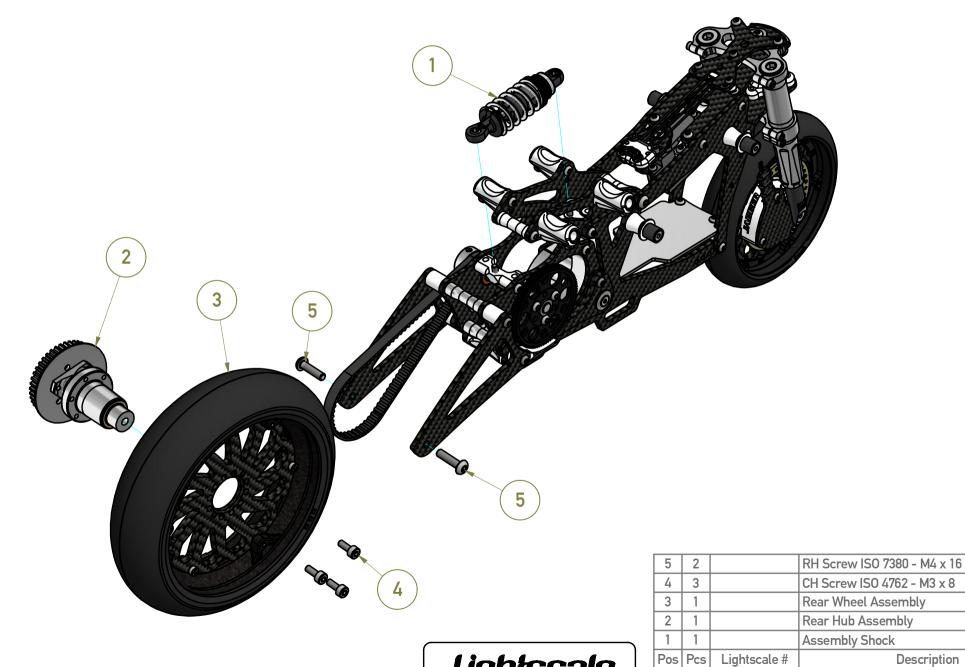
#### Front Wheel and Brake Final Assembly



5	2	Innensechskant-Rundkopfschraube								
6	1		CH Screw ISO 4762 - M3 x 14							
5	2		CS Screw DIN 7991 - M4x8							
4	3		CS Screw ISO 4762 - M3 x 8							
3	1	Front Wheel Assembly								
2	1		Front Hub Assembly							
1	1		Front Brake Assembly							
Pos	Pcs	Lightscale #	Description							

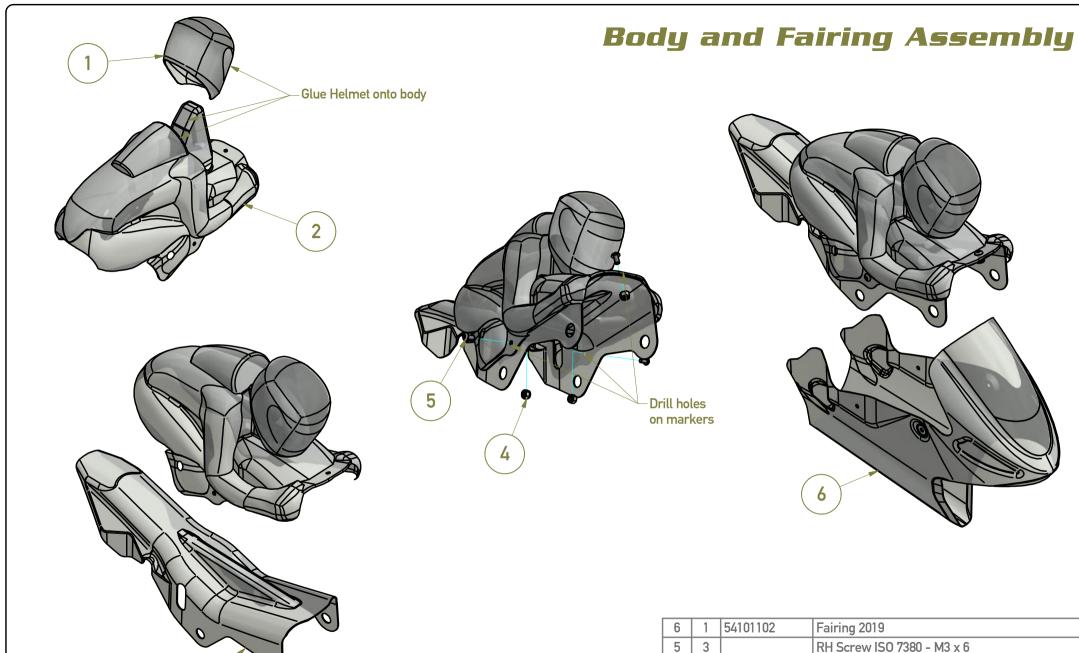


#### Rear Wheel and Shock Final Assembly

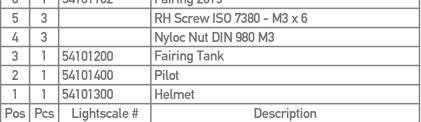


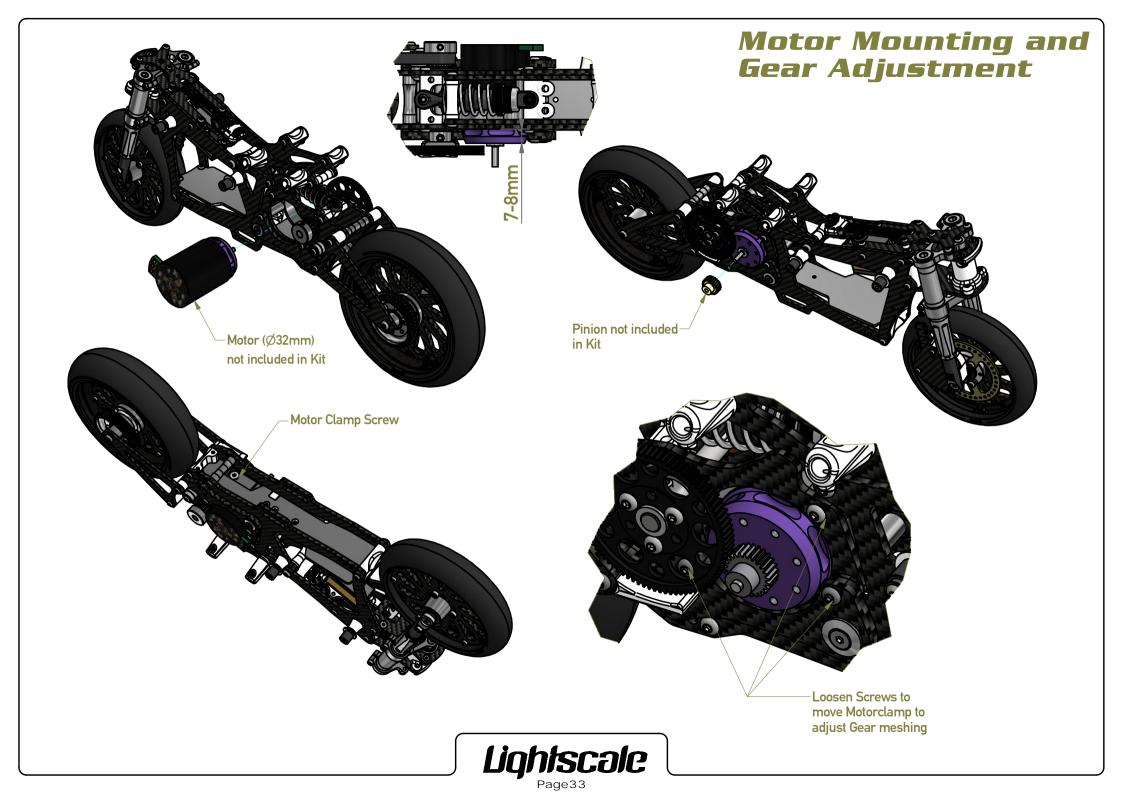
Lightscale
Page 31

Pos Pcs

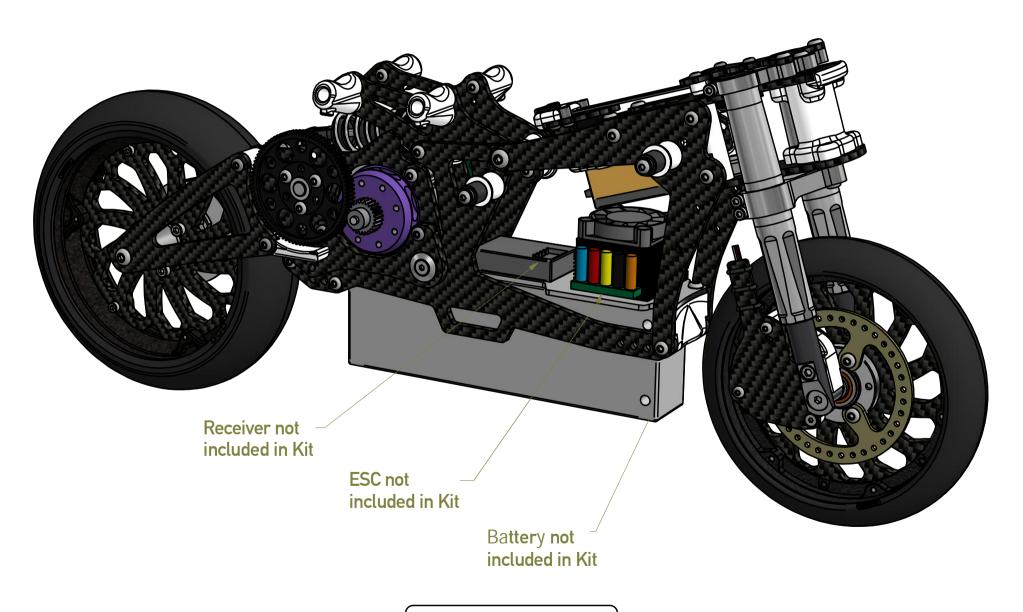


Lightscale
Page32



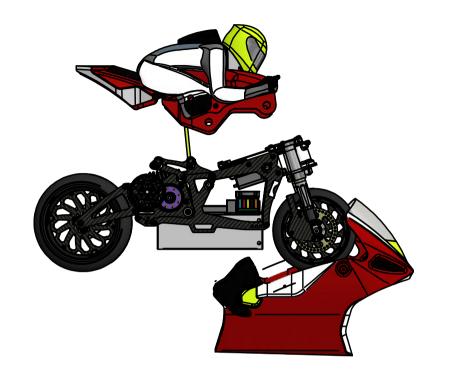


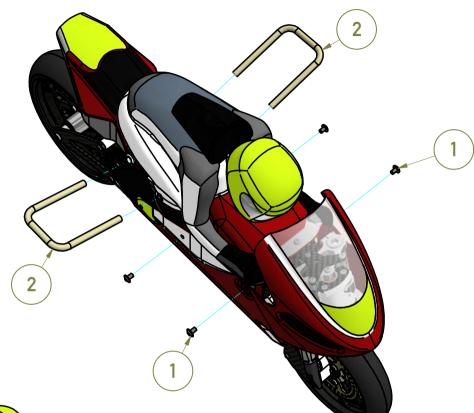
#### Recommended Electronics Position





#### Crashbar and Bodywork Assembly



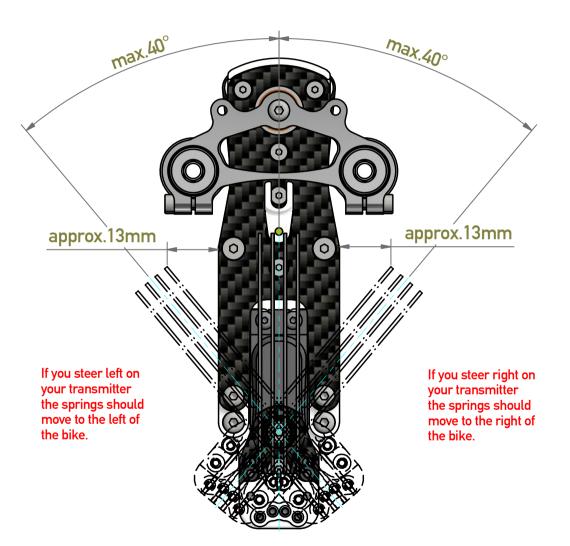




2	2	54022110	Crashbar			
1	4		RH Screw flanged ISO 7380-2 - M3x5			
Pos	Pcs	Lightscale #	Description			

Lightscale
Page 35

#### Steering Servo Setup!! Read carefully!!



WARNING!! Adjust Servo travel according to drawing. If the Servo is allowed to travel further the springs can be damaged (bent) or overstressed and break over time.

You can do this by reducing the D/R (Dual Rate) of your transmitter. BUT during driving it can happen that you increase D/R beyond the springs envelope and destroy them.

We encourage you to set up your radio the following way:

#### TIP1:

We recommend to adjust the Servo Travel (+/-40°) by reducing the EPA (Endpoints) of the Steering Servo on your radio.

#### TIP2:

Once you have adjusted the travel of the servo as on the drawing we recommend not to touch D/R and EPA anymore. Adjust response of the steering over steering EXPO.

#### TIP3:

If the steering is not responsive enough we recommend to increase (+) the EXPO of your Steering. EXPO of up to +100% is not uncommon for expert drivers on this System. If you reach +100% and the bike still isn't responsive enough try a harder spring.

If the bike is too responsive with the inital spring and EXPO is 0% we recommend to reduce D/R not under 70%. DO NOT use negative (-) EXPO. If this does not help use a softer spring.

#### TIP4.

We recommend to use the softest possible springs where you still have the best responsive feeling.

Most expert Pilots come close to these settings:

EPA approx. 75-85% to meet the  $40^{\circ}$  range shown to the left (to not overstress the springs)

D/R approx. 90% (for that extra kick, just in case)

EXPO: +75% (So you have headroom up or down)

These adjustments are valid for a System where 100% EPA is about 45° Servo travel in both directions.



#### **Gearing for 48DP**

	44 T													
	78	79	80	81	82	83	84	85	86	87	88	89	90	
18								12,99	13,14	13,29	13,44	13,60	13,75	18
19							12,16	12,30	12,45	12,59	12,74	12,88	13,03	19
20						11,41	11,55	11,69	11,83	11,96	12,10	12,24	12,38	20
21					10,74	10,87	11,00	11,13	11,26	11,39	11,52	11,65	11,79	21
22				10,13	10,25	10,38	10,50	10,63	10,75	10,88	11,00	11,13	11,25	22
23			9,57	9,68	9,80	9,92	10,04	10,16	10,28	10,40	10,52	10,64	10,76	23
24		9,05	9,17	9,28	9,40	9,51	9,63	9,74	9,85	9,97	10,08	10,20		24
25	8,58	8,69	8,80	8,91	9,02	9,13	9,24	9,35	9,46	9,57	9,68			25
26	8,25	8,36	8,46	8,57	8,67	8,78	8,88	8,99	9,10	9,20				26
27	7,94	8,05	8,15	8,25	8,35	8,45	8,56	8,66	8,76					27
28	7,66	7,76	7,86	7,96	8,05	8,15	8,25	8,35						28
29	7,40	7,49	7,59	7,68	7,78	7,87	7,97							29
30	7,15	7,24	7,33	7,43	7,52	7,61								30
	78	79	80	81	82	83	84	85	86	87	88	89	90	
							34	T						
	78	79	80	81	82	83	84	85	86	87	88	89	90	
18								10,03	10,15	10,27	10,39	10,51	10,63	18
19							9,39	9,51	9,62	9,73	9,84	9,95	10,07	19
20						8,82	8,93	9,03	9,14	9,24	9,35	9,46	9,56	20
21					8,30	8,40	8,50	8,60	8,70	8,80	8,90	9,01	9,11	21
22				7,82	7,92	8,02	8,11	8,21	8,31	8,40	8,50	8,60	8,69	22
23			7,39	7,48	7,58	7,67	7,76	7,85	7,95	8,04	8,13	8,22	8,32	23
24		6,99	7,08	7,17	7,26	7,35	7,44	7,53	7,61	7,70	7,79	7,88		24
25	6,63	6,72	6,80	6,89	6,97	7,06	7,14	7,23	7,31	7,40	7,48			25
26	6,38	6,46	6,54	6,62	6,70	6,78	6,87	6,95	7,03	7,11				26
27	6,14	6,22	6,30	6,38	6,45	6,53	6,61	6,69	6,77					27
28	5,92	6,00	6,07	6,15	6,22	6,30	6,38	6,45						28
29	5,72	5,79	5,86	5,94	6,01	6,08	6,16							29
30	5,53	5,60	5,67	5,74	5,81	5,88								30
	78	79	80	81	82	83	84	85	86	87	88	89	90	

#### **Gearing for 32DP**

	44 T							
	52	54	56	58	60			
10					16,50	10		
11				14,50	15,00	11		
12			12,83	13,29	13,75	12		
13		11,42	11,85	12,27	12,69	13		
14		10,61	11,00	11,39	11,79	14		
15	9,53	9,90	10,27	10,63	11,00	15		
16	8,94	9,28	9,63	9,97		16		
17	8,41	8,74	9,06	9,38		17		
18	7,94	8,25	8,56			18		
	52	54	56	58	60			
			34	1 T				
	52	54	56	58	60			
10					12,75	10		
11				11,20	11,59	11		
12			9,92	10,27	10,63	12		
13		8,83	9,15	9,48	9,81	13		
14		8,20	8,50	8,80	9,11	14		
15	7,37	7,65	7,93	8,22	8,50	15		
16	6,91	7,17	7,44	7,70		16		
17	6,50	6,75	7,00	7,25		17		
18	6,14	6,38	6,61			18		



