

# VELOX V8

1:8 SCALE NITRO  
RACING CAR

MADE IN GERMANY



HERPHERD

Instruction manual



## VELOX - High performance made in Germany

The new Shepherd Velox is one of a kind in the 1/8 scale racing series. With the newly developed and outstanding design of this car we offer a product in best quality and precision. The keyfacts of the new Shepherd Velox are:

- Newly designed adjustable servo saver for quick adjustment
- Easy to adjust belt tension in the front
- Quick roll-center adjustment in the front and in the rear
- Newly designed "Velox Revolutionary Shock System" (VRS-System) for best performance
- Outstanding "Direct-V-Brake System" (DVB-System) for durable braking
- Well designed symmetric precision chassis made of a new special material
- All bulkheads are made of aluminium, blue anodized
- Redesigned topmounted fuel tank with less vibration and fuel usage until the end
- Changing gears without having to adjust the motormount again
- New "Velox Competition Clutch" (VCC)
- New wheelaxles, mounted from the outside for easy maintainance and setup

All these facts will help you to enjoy racing.

Developed by Robert Pietsch / Patrick Schäfer

## Cautions

To prevent any serious personal injury and/or damage to property, please be responsible when operating with any remote controlled models. Pay extra attention when operating with any glow fuel powered model.

### Choose the right place to operate your R/C model.

Do not run on public streets or highways. This could cause serious accident, personel injuries, and/or property damage.

Never run R/C models near people or animals. Never run indoor.

Do not run where loud noise can disturb others, such as hospitals and residential areas.

### Inspect your model before operation

Make sure that all screws and nuts are properly tightened. Use removable thread lock wherever metal screws go into metal, especially for engine mounts and the engine pilot shaft.

Always use fresh batteries for your transmitter and for your receiver to avoid losing control of the model. Always test the brakes and the throttle before starting your engine.

Make sure no one else is using the same radio frequency as you are.

### Heat, Fire and fuel safety

Never use gasoline in a glow model engine. Use glow fuel specifically designed for model-car engines. Using non-approved fuels in your engine can cause an explosion.

Avoid open flames and do not smoke while running your model or handling with fuel.

Always store fuel in a well ventilated place, away from heating devices, open flames and direct sunlight. Be aware that some parts will be hot after operation. Do not touch the exhaust-system or the engine until they have cooled down.

## Symbols

**BAG**  
**I**

### STEP 1

On each site you see this symbol. The symbol tells you to use BAG I Step 1.  
In each BAG you will find the steps packed separately for easy assembly.

SHEPHERD  
**BAG123**

These stickers indicates the BAG number

SHEPHERD  
**STEP123**

These stickers indicates the STEP number

**1 2 3 4**

Assemble the parts in the specified order

4x 60 52 03  
↑ ↑  
Quantity used in step Partnumber

**TEXT**

Read the TEXT for special information in the steps.

### Building-Tip

The building tips provide you more informations about the step.



### Left Thread

These specified screws are left threaded !



Assemble for both sides, same parts will be used for left and right.



Use thread lock  
(not included)



Use oil  
(not included)



Use grease  
(not included)



Use CA glue  
(not included)

## Tools

These tools are not included in the kit but are required for proper assembling

Allen wrenches



Socket wrenches



To tighten the flywheel screw

Pliers, sidecutter



Hobby knife



Caliper



## Equipment

This equipment is required to use your rc-car. Not included in the kit.

Transmitter



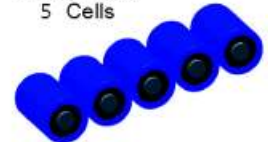
Receiver



Steering Servo  
Throttle/Brake Servo



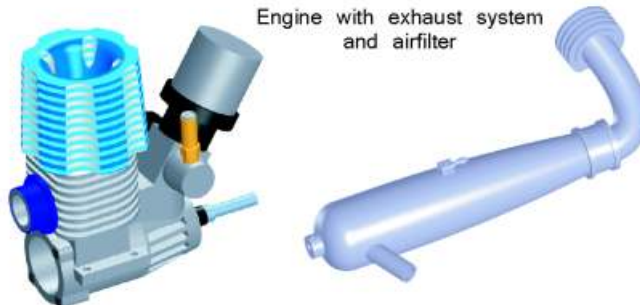
Receiver  
Battery Pack  
5 Cells



Tyres



Engine with exhaust system  
and airfilter



Also required:  
-Starting box  
-Nitrofuel  
-Fuelbottle  
-Glowr  
-Polycarbonatbody

## Parts List - Contents

BAG 1 - Step 1 - Page 9  
Rear solid axle

-60 11 01	Rear solid axle	(1)
-60 11 02	Brake disc "hardcoated"	(2)
-60 11 03	Brake disc clamping ring	(1)
-60 12 01	Rear pulley 48T	(1)
-60 12 02	Locknut break	(1)
-77 03 24	Pin 3x24mm	(1)
-76 03 12	Retaining ring solid axle	(2)

Assembled view

BAG 2 - Step 1 - Page 9  
Rear solid axle

-60 21 01	Excenter beltension rear	(1)
-60 21 01	Excenter beltension rear	(1)
-60 21 03	Rear belt	(1)
-791 21 84	Ballbearing 12x18x4	(2)

BAG 2 - Step 2 - Page 10  
Rear bulkheads & hinge pin brackets

-60 22 11	Rear bulkhead r/l LCG	(2)
-60 22 02	Hinge pin bracket upper rear #1	(1)
-60 22 03	Hinge pin bracket upper rear #2	(1)
-60 22 14	Hinge pin bracket rear lower wishbone narrow	(1)
-60 22 05	Stiffener bulkhead rear	(1)
-71 03 08	Hex. countersunk screw M3x8mm	(2)
-71 03 14	Hex. countersunk screw M3x14mm	(2)
-71 04 10	Hex. countersunk screw M4x10mm	(2)
-73 03 05	Allen set screw M3x5mm	(4)

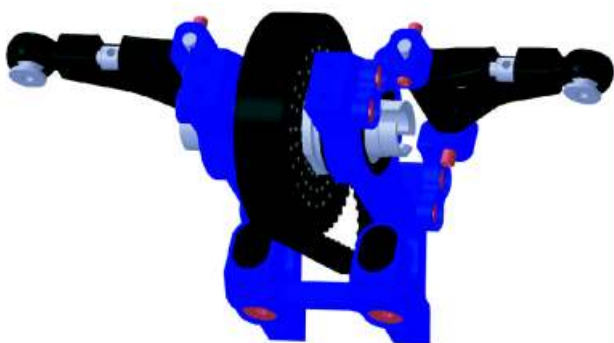
BAG 2 - Step 3 - Page 10  
Rear upper wishbones

-60 23 01	Wishbone upper rear	(2)
-60 23 02	R+L turnbuckle 20mm	(2)
-60 23 05	Hinge pin upper rear	(2)
-70 07 04	Balljoint 7mm	(2)
-70 01 07	Pivot ball D7	(2)

## BAG 2 - Step 4 - Page 10

-60 22 02	Hinge pin bracket upper rear #1	(1)
-60 22 03	Hinge pin bracket upper rear #2	(1)
-73 03 05	Allen set screw M3x5mm	(4)
-71 03 08	Hex. countersunk screw M3x8mm	(4)

Assembled view

BAG 3 - Step 1 - Page 11  
Rear suspension to chassis

-60 25 01	Rollcenter-Excenter 5,5 for part 60 22 04	(2)
-60 25 01	Rollcenter-Excenter 4,5/6,5 for part 60 22 04	(2)
-90 31 01	Chassis Velox V8	(1)
-71 04 10	Hex. countersunk screw M4x10mm	(2)

BAG 3 - Step 2 - Page 11  
Direkt-U-Brake system

-60 32 01	Brake pad left	(1)
-60 32 01	Brake pads right	(1)
-60 32 03	Brake wire linkage	(2)
-60 32 04	Brake lever right	(1)
-60 32 05	Brake lever left	(1)
-60 32 06	Brake lever bushing	(2)
-72 03 04	Hex. buttonhead screw M3x4mm	(2)
-72 03 08	Hex. buttonhead screw M3x8mm	(2)
-72 03 10	Hex. buttonhead screw M3x10mm	(2)

BAG 3 - Step 3 - Page 12  
Rear panel & shock tower

-60 33 11	Rear panel narrow	(1)
-60 33 02	Shocktower rear carbon	(1)
-71 03 08	Hex. countersunk screw M3x8mm	(2)
-71 03 10	Hex. countersunk screw M3x10mm	(4)

BAG 3 - Step 4 - Page 12  
Gearshaft bulkheads

-60 34 01	Bulkhead gearbox r/l	(2)
-60 34 02	Anti-roll bar support right	(1)
-60 34 02	Anti-roll bar support left	(1)
-71 03 10	Hex. countersunk screw M3x10mm	(8)
-790 61 35	Ballbearing 6x13x5	(2)

BAG 3 - Step 5 - Page 12  
Drive pulleys gearshaft

-60 35 01	Pulley adapter 16T/18T/25T/26T	(1)
-60 35 03	Pulleycover 18T	(1)
-60 35 03	Pulley 18T	(1)
-60 35 04	Pulley adapter rear 20T	(1)
-60 35 05	Pulley 20T	(1)
-60 35 06	Shaft 2-speed	(1)
-73 04 05	Allen set screw M4x5mm	(2)
-76 01 08	Circlip 8mm	(2)

Assembled view

BAG 4 - Step 1 - Page 13  
Gearbox with clutch

-60 41 01	Springs gearbox	(2)
-60 41 01	Steelballs gearbox	(1)
-60 41 02	2-speed clutch shoe set	(1)
-60 41 03	2-speed adapter	(1)
-60 41 04	2-speed clutch bell	(1)
-60 41 05	2-speed one-way	(2)
-60 41 46	2nd gear 46T	(1)
-60 41 49	1st gear 49T	(1)
-71 03 06	Hex. countersunk screw M3x6mm	(6)
-72 03 12	Hex. buttonheadscrew M3x12mm	(2)
-73 03 05	Allen set screw M3x5mm	(2)
-76 01 06	Circlip 6mm	(1)
-77 25 12	Pin 2,5x12mm	(1)
-791015B	Ballbearing 10x15x4 flanged	(2)

## Parts List - Contents

### BAG 4 - Step 2 - Page 14

#### Rear lower suspension

-60 43 01	Lower wishbone rear right	(1)
-60 43 01	Lower wishbone rear left	(1)
-60 43 13	Shock mount rear narrow left	(1)
-60 43 14	Shock mount rear narrow right	(1)
-70 01 06	Pivot ball D6	(4)
-71 03 08	Hex. countersunk screw M3x8mm	(2)
-72 03 08	Hex. buttonhead screw M3x8mm	(4)
-73 04 08	Allen set screw M4x8mm	(2)

### BAG 4 - Step 3 - Page 14

-60 44 01	Hinge pins lower rear	(2)
-60 44 02	Rollcenter-Excenter 5.5 for #60 33 01	(2)
-60 44 02	Rollcenter-Excenter 4.5/6.5 for #60 33 01	(2)
-72 03 04	Hex. buttonhead screw M3x4mm	(2)

### BAG 4 - Step 4 - Page 14/15

#### Rear anti-roll bar

-60 23 02	R+L turnbuckle 20mm	(2)
-60 45 04	Anti-roll bar rear soft 2.2mm	(1)
-60 45 07	Cover for anti-roll bar support right	(1)
-60 45 07	Cover for anti-roll bar support left	(1)
-70 01 16	Pivotball anti-roll bar 6mm	(2)
-70 07 02	Balljoint 6mm short	(4)
-71 03 08	Hex. countersunk screw M3x8mm	(4)
-73 03 03	Allen set screw M3x3mm	(4)



### BAG 5 - Step 1 - Page 15

#### Rear uprights

-60 51 01	Wheel-axle rear	(2)
-90 51 02	Rear upright r/l	(2)
-60 51 03	Body mount arms rear	(2)
-72 03 12	Buttonhead screw M3x12mm steel	(4)
-73 03 03	Allen set screw M3x3mm	(4)
-73 03 16	Allen set screw M3x16mm	(2)
-76 02 12	Retaining ring 12mm	(2)
-791 22 12	Ballbearing 12x21x5	(4)

### BAG 5 - Step 2 - Page 16

-60 52 01	Adjusting nut pivotball	(4)
-60 52 03	Pivotball	(4)
-60 52 04	Driveshaft rear	(2)
-75 03 02	Shims M3x2mm	(2)

### BAG 5 - Step 3 - Page 16

#### Rear bodymount & centering plate

-60 53 01	Body mount rear	(1)
-60 53 02	Nylonscrew M6 body mount rear	(2)
-60 53 03	Centering plate body mount rear carbon	(1)
-60 53 04	Centering pin body mount rear	(1)
-60 53 05	Hinge pins body mount rear	(2)
-71 03 08	Hex. countersunk screw M3x8mm	(2)
-72 03 08	Hex. buttonhead screw M3x8mm	(1)

### BAG 5 - Step 4 - Page 17

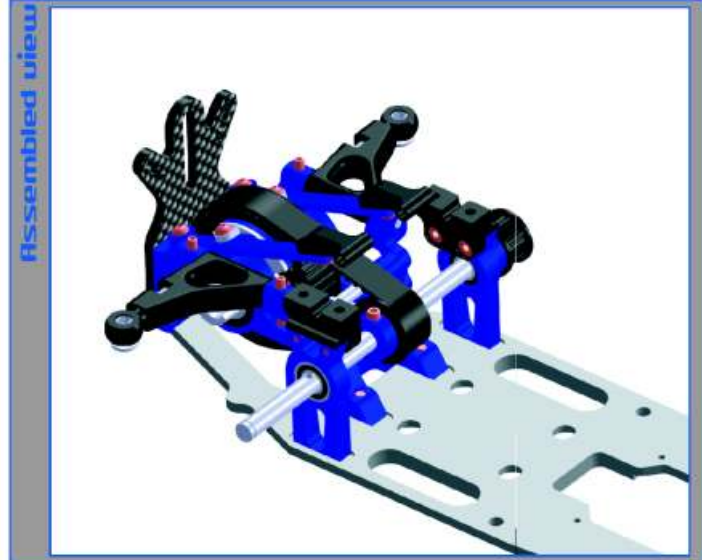
#### Quickchange

-60 54 01	Springs quickchange lever	(2)
-60 54 02	Quick-change lever rear	(2)
-73 03 03	Allen set screw M3x3mm	(2)
-77 03 22	Pin 3x22mm	(2)

### BAG 5 - Step 5 - Page 17

#### Center radioplate mount

-60 55 01	Roll bar	(1)
-60 55 02	Radioplate mount	(1)
-60 55 03	Locknut belt tensioner	(1)
-60 55 03	Bearingsupport belt tensioner	(1)
-60 55 05	Belt tensioner mount carbon	(1)
-71 03 10	Hex. countersunk screw M3x10mm	(2)
-71 04 12	Hex. countersunk screw M4x12mm	(2)
-72 03 16	Hex. Buttonhead screw M3x16mm	(1)
-73 04 05	Allen set screw M4x5mm	(2)
-75 03 01	Shims M3x1mm	(1)
-75 03 02	Shims M3x2mm	(2)
-79 05 08	Ballbearing 5x8x2,5	(1)
-79 05 08B	Ballbearing 5x8x2,5 F	(2)



### BAG 6 - Step 1 - Page 18

#### Middle bearing block & pulley adapter

-60 35 01	Pulley adapter 16T/18T/25T/26T	(2)
-60 61 01	Pulleycover for 16T pulley	(1)
-60 61 01	16T Pulley	(1)
-60 61 03	Pulleycover for 25T pulley	(1)
-60 61 03	25T Pulley	(1)
-60 61 05	Pulleycover for 26T pulley	(1)
-60 61 05	26T Pulley	(1)
-60 61 07	Front belt	(1)
-60 61 08	Middle bearing block	(1)
-60 61 09	Shaft middle bearing block	(1)
-72 03 04	Hex. buttonhead screw M3x4mm	(1)
-72 03 08	Hex. buttonhead screw M3x8mm	(2)
-73 04 05	Allen set screw M4x5mm	(2)
-76 01 08	Circlip 8mm	(2)
-76 04 13	Retaining ring 13mm middle bearing block	(2)
-790 61 35	Ballbearing 6x13x5	(2)

### BAG 6 - Step 2 - Page 18

#### Oneway front

-60 62 01	Driveshaft carrier	(2)
-60 62 02	Shims driveshaft carrier	(2)
-60 62 03	Pulleycover one-way pulley	(1)
-60 62 03	Pulley for one-way 24T	(1)
-60 62 05	Oneway front	(1)
-76 02 14	Retaining ring 14mm	(1)
-791 21 84	Ballbearing 12x18x4	(2)

### BAG 6 - Step 3 - Page 18

#### Front bulkheads

-60 63 01	Bulkhead front right	(1)
-60 63 02	Bulkhead front left	(1)
-71 04 10	Hex. countersunk screw M4x10mm	(6)

## Parts List - Contents

### BAG 6 - Step 4 - Page 19 Lower front hinge pin brackets

-60 64 01	Hinge pin bracket lower front #1	(2)
-60 64 02	Hinge pin bracket lower front #2	(2)
-60 64 03	Bushing hinge pin lower front	(4)
-71 04 08	Hex. countersunk screw M4x8mm	(4)
-73 04 12	Allen set screw M4x12mm	(2)

### BAG 6 - Step 5 - Page 19 Lower front wishbone left

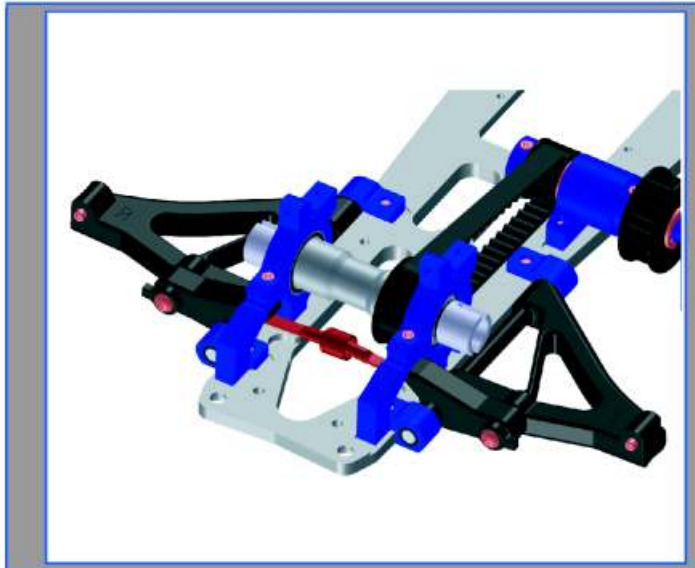
-60 65 01	Anti-roll bar blade male	(1)
-60 65 02	Wishbone lower front left	(1)
-60 65 03	Spacer for anti-roll bar adjuster	(1)
-60 65 03	Anti-roll bar support	(1)
-60 65 03	Excenter anti-roll bar	(1)
-72 03 16	Hex. buttonhead screw M3x16	(1)
-73 03 05	Allen set screw M3x5mm	(1)
-73 03 12	Allen set screw M3x12	(1)

### Lower front wishbone right

-60 66 01	Anti-roll bar blade female	(1)
-60 65 02	Wishbone lower front right	(1)
-60 65 03	Spacer for anti-roll bar adjuster	(1)
-60 65 03	Anti-roll bar support	(1)
-60 65 03	Excenter anti roll bar	(1)
-72 03 16	Hex. buttonhead screw M3x16mm	(1)
-73 03 05	Allen set screw M3x5mm	(1)
-73 03 12	Allen set screw M3x12mm	(1)

### BAG 6 - Step 6 - Page 20 Lower front wishbones & anti roll bar

-60 67 01	Spacer front lower wishbone	(2)
-60 67 02	Hinge pin lower front	(2)
-73 03 05	Allen set screw M3x5mm	(2)



### BAG 7 - Step 1 - Page 20 Front bumper

-60 71 01	Front bumper	(1)
-71 04 12	Hex. countersunk screw M4x12mm	(2)
-71 03 10	Hex. countersunk screw M3x10mm	(2)
-74 03 00	Self-locking nut M3 black	(2)
-74 04 00	Self-locking nut M4 black	(2)

### BAG 7 - Step 2 - Page 20 Front body support

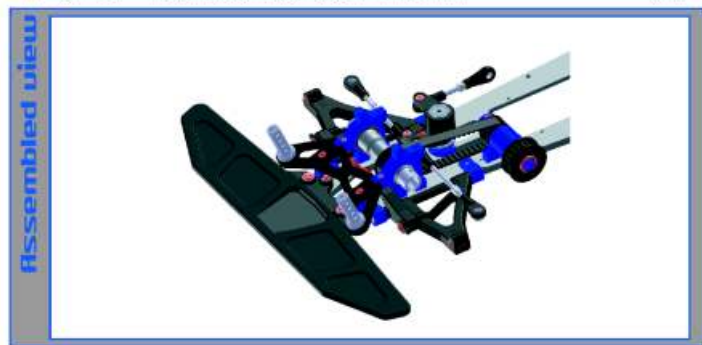
-60 72 01	Body mounts front	(2)
-60 72 02	Body mount plate front	(1)
-71 03 08	Hex. countersunk screw M3x8mm	(2)
-71 04 10	Hex. countersunk screw M4x10mm	(2)
-75 04 01	M4 Countersunk washer	(2)

### BAG 7 - Step 3 - Page 21 Adjustable Servo Saver

-60 73 01	Servo saver tube	(1)
-60 73 02	Servo saver upper part	(1)
-60 73 02	Servo saver adjustable part	(1)
-60 73 02	Servo saver lower part	(1)
-60 73 05	Preload spring servo saver	(1)
-81 13 03	Preload adjust. nut	(1)
-60 73 07	Servo saver shaft	(1)
-72 03 06	Hex. buttonhead screw M3x6mm	(1)
-790 61 03	Ballbearing 6x10x3	(2)

### BAG 7 - Step 4 - Page 21

-60 74 01	R+L turnbuckle steering	(2)
-60 74 02	R+L turnbuckle servo	(1)
-70 01 06	Pivot ball D6	(6)
-70 07 03	Balljoint 6mm long	(6)
-71 03 08	Hex. countersunk screw M3x8mm	(3)
-72 04 06	Hex. buttonhead screw M4x6mm	(1)



### BAG 8 - Step 1 - Page 22 Radioplate

-60 81 01	Radioplate carbon	(1)
-60 81 02	Mounting-pins fueltank	(2)
-60 81 03	Brakewiresupport low	(1)
-60 81 03	Brakewiresupport high	(1)
-60 81 05	Rubber Grommets	(2)
-60 81 06	Muffler spring mount	(1)
-71 04 10	Hex. countersunk screw M4x10mm	(1)
-72 03 06	Hex. buttonhead screw M3x6mm	(2)
-72 03 08	Hex. buttonhead screw M3x8mm	(1)
-73 04 05	Allen set screw M4x5mm	(1)

### BAG 8 - Step 2 - Page 22

-60 82 01	Servomount steering	(2)
-60 82 02	Servoarm Kopropo	(1)
-60 82 03	Servoarm Futaba	(1)
-60 82 04	Servoarm Hitec	(1)
-60 82 05	Shims for Servomount	(1)
-72 03 08	Hex. buttonhead screw M3x8mm	(2)
-72 03 10	Hex. buttonhead screw M3x10mm	(4)
-72 03 12	Hex. buttonhead screw M3x12mm	(4)

### BAG 8 - Step 3 - Page 22 Throttle/Brake servo mount

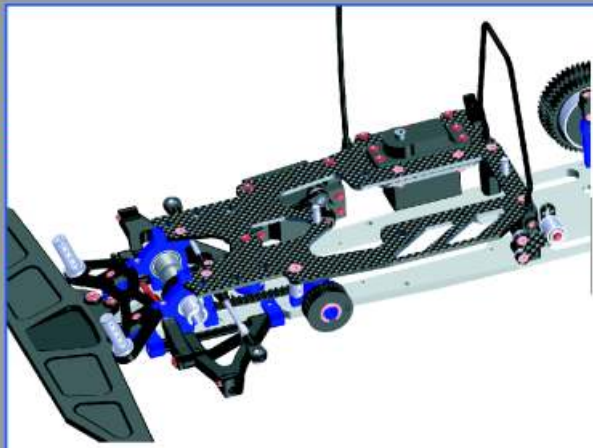
-60 83 01	Servomount throttle/brake carbon	(1)
-71 03 12	Hex. countersunk screw M3x12mm	(2)
-72 03 12	Hex. buttonhead screw M3x12mm	(4)
-74 03 00	Selflocking nut M3	(6)
-75 03 01	Shims M3x1mm	(2)
-75 03 02	Shims M3x2mm	(2)

### BAG 8 - Step 4 - Page 23 Receiver bracket

-60 84 01	Receiver bracket	(1)
-60 84 02	Antenna rod with cap	(1)
-72 03 08	Hex. buttonhead screw M3x8mm	(2)
-71 03 08	Hex. countersunk screw M3x8mm	(5)
-72 03 08	Hex. buttonhead screw M3x8mm	(1)

# Parts List - Contents

Assembled view



## BAG 9 - Step 1 - Page 23 Front upper wishbones

-60 91 01	Suspension bracket upper front r/l	(2)
-60 91 02	Wishbone upper front	(2)
-60 91 03	Hinge pins upper front	(2)
-60 91 04	Caster spacer set	(2)
-71 03 08	Hex. countersunk screw M3x8mm	(6)
-73 03 05	Allen set screw M3x5	(8)

## BAG 9 - Step 2 - Page 24 Driveshaft front

-60 92 01	Driveshaft front	(2)
-60 92 02	Driveshaft insert	(2)
-60 92 03	Wheelaxle front	(2)
-60 92 04	Quick-change lever front	(2)
-60 54 01	Springs quick-change lever	(2)
-73 03 03	Allen set screw M3x3mm	(4)
-77 25 12	Pin 2,5x12mm	(2)
-77 03 20	Pin 3x20mm	(2)

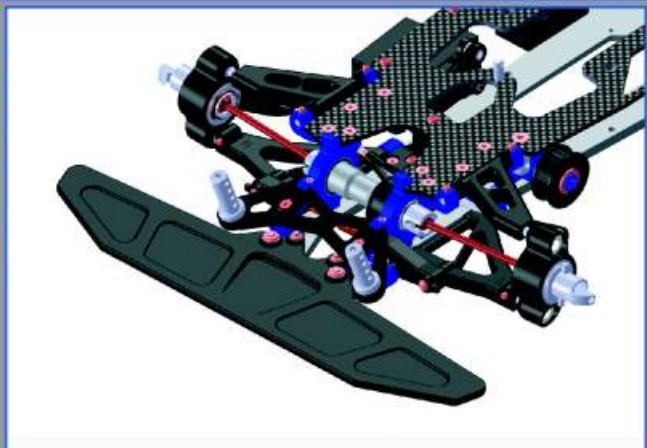
## BAG 9 - Step 3 - Page 24 Uprights front

-90 93 01	Upright front right	(1)
-90 93 01	Upright front left	(1)
-75 12 18	Adjusting shim 12x18x0,3	(8)
-76 02 12	Retaining ring 14mm	(2)
-791 22 15	Ballbearing 12x21x5	(4)

## BAG 9 - Step 4 - Page 24

-60 52 01	Adjusting nut Pivotball	(4)
-60 52 03	Pivotball	(4)
-72 03 10	Hex. buttonhead screw M3x10mm	(2)
-75 03 02	Shims M3x2mm	(2)

Assembled view



## BAG 10 - Step 1 - Page 25

### Servoarm assembling / Throttle-Brake

-61 01 01	Linkage Brakewire	(1)
-61 01 02	Locknut brakelinkage	(1)
-61 01 02	Linkage bracket	(2)
-61 01 02	Linkage	(1)
-61 01 02	Spring for brake linkage	(1)
-61 01 02	Spring for throttle linkage	(1)
-70 02 02	Collar 2mm	(2)
-70 07 01	Balljoint carburator	(1)
-70 25 08	Hexagonsocket screw 2,5x8mm	(2)
-73 03 03	Allen set screw M3x3mm	(4)

## BAG 10 - Step 2 - Page 25

### Servoarm mounting / brake wire

-61 02 01	Brakewire tube	(1)
-61 02 01	Brakewire	(1)
-61 02 03	Spring for brakelevers	(1)

## BAG 10 - Step 3 - Page 25

### Fuel tank

-61 03 01	Fueltank 125ccm, pre-assembled	(1)
-61 03 01	Volume adjuster big	(1)
-61 03 01	Volume adjuster small	(1)
-70 03 06	Hexagonsocket screw M3x6mm steel	(1)
-70 03 14	Hexagonsocket screw M3x14mm steel	(1)
-70 05 02	Body-clips small	(2)
-78 01 03	O-ring fueltank mount	(2)

## BAG 10 - Step 4 - Page 26

### UCC Clutch

-61 04 01	VCC flywheel	(1)
-61 04 02	VCC flywheel nut	(1)
-61 04 03	VCC fly-weights	(4)
-61 04 04	VCC clutch steel disk	(1)
-61 04 05	VCC clutch shoe grey	(1)
-61 04 06	VCC spring cup	(1)
-61 04 07	VCC clutch spring	(1)
-61 04 08	VCC spring adjustment nut	(1)

## BAG 10 - Step 5 - Page 26

### UCC Clutchbell

-61 05 01	VCC clutch bell	(1)
-61 05 02	VCC Thrust bearing support	(1)
-61 05 17	Pinion 1. Gear 17T	(1)
-61 05 20	Pinion 2. Gear 20T	(1)
-70 03 14	Hexagonsocket screw M3x14mm steel	(1)
-75 05 07	Adjusting shim 5x7x0,1	(3)
-75 05 10	Adjusting shim 5x10x0,1	(6)
-75 05 11	Adjusting shim 5x10x1,0	(2)
-75 07 10	Adjusting shim 7x10x0,5	(1)
-790 51 04	Ballbearing 5x10x4	(2)
-79 D5 10	Thrust bearing	(1)

Assembled view



## Parts List - Contents

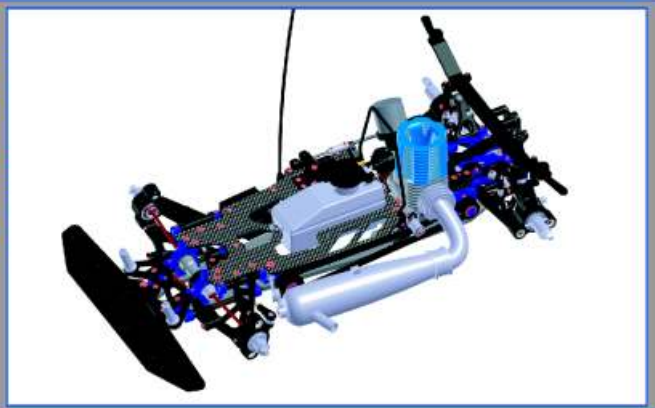
BAG 11 - Step 1 - Page 27  
Engine mount

-61 11 01	Enginemounts	(2)
-70 03 12	Hexagonsocket screw M3x12mm	(4)
-71 04 10	Hex. countersunk screw M4x10mm	(4)
-75 04 01	M4 Countersunk washer	(4)

BAG 11 - Step 2 - Page 27  
Middle belt / spring muffler

-61 12 01	Spring muffler	(1)
-61 12 02	Middle belt	(1)

Assembled view

BAG 11 - Step 3 - Page 28  
Shock absorbers

-81 13 01	Body shock absorber long	(2)
-81 13 02	Body shock absorber short	(2)
-81 13 03	Preload adjust. nut	(4)
-81 13 04	Floating piston	(4)
-81 13 05	Spring floating piston	(4)
-81 13 06	Ball cap shock absorber	(4)
-81 13 07	End cap shock absorber	(4)
-78 01 01	O-Ring for preload nut	(4)
-78 01 02	O-Ring floating piston/shock bottom screw	(4)
-90 26 50	Shockoil 650cst	(1)

## BAG 11 - Step 4 - Page 28

-81 14 02	Screw for shockbottom	(4)
-81 14 03	Piston rod rear long	(2)
-81 14 04	Piston rod front short	(2)
-81 14 05	Piston 2-hole rear	(2)
-81 14 06	Piston 1-hole front	(2)
-78 01 02	O-Ring floating piston/shock bottom screw	(4)
-78 01 03	O-Ring piston rod	(8)
-70 07 02	Balljoint 6mm short	(4)
-76 01 03	Circlip 3mm	(8)

## BAG 11 - Step 5 - Page 28

-81 15 01	Shock absorber spring plate	(4)
-81 15 14	Shock absorber spring rear lightblue	(2)
-81 15 15	Shock absorber spring rear lightblue	(2)

Assembled view

BAG 12 - Step 1 - Page 29  
Front shock mount

-61 21 01	Shock tower front	(1)
-70 01 06	Pivot ball D6	(4)
-72 03 08	Hex. buttonhead screw M3x8mm	(2)
-71 03 08	Hex. countersunk screw M3x8mm	(2)

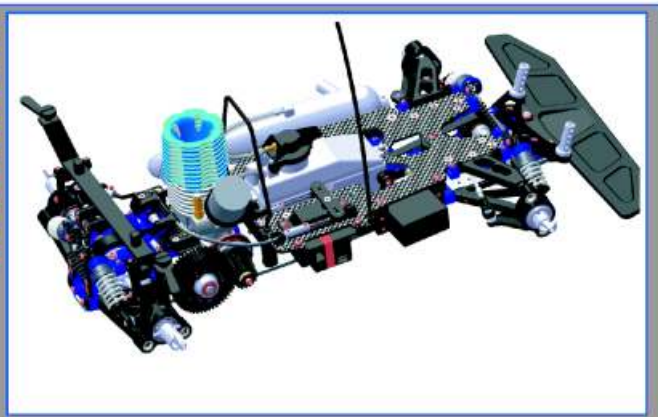
BAG 12 - Step 2 - Page 29  
Rear shock mount

-61 22 01	Fueltube	(1)
-70 01 06	Pivot ball D6	(2)
-72 03 08	Hex. buttonhead screw M3x8mm	(2)

BAG 12 - Step 3 - Page 30  
Batterie pack plate

-61 23 01	Batterie pack plate	(1)
-90 31 03	Chassis weight 30gr	(2)
-70 05 01	Bodyclips	(4)
-71 02 04	Hex. countersunk screw M2,5x4mm	(4)
-71 03 04	Hex. countersunk screw M3x4mm	(2)

Assembled view

BAG 13  
Small parts bag

-60 41 01	Steelballs gearbox	(1)
-70 07 02	Balljoint 6mm short	(1)
-70 07 03	Balljoint 6mm long	(1)
-70 07 04	Balljoint 7mm	(1)
-73 03 03	Allen set screw M3x3mm	(2)
-76 01 03	Circlip 3mm	(2)

Not included  
Optional parts Uelox

-60 41 45	2nd gear 45T
-60 41 47	2nd gear 47T
-60 41 48	1st gear 48T
-60 41 50	1st gear 50T
-60 45 05	Anti-roll bar rear medium 2,6mm
-60 45 06	Anti-roll bar rear hard 3,0mm
-61 05 16	Pinion 1st gear 16T
-61 05 19	Pinion 2nd gear 19T
-61 05 21	Pinion 2nd gear 21T
-81 15 02	Shock absorber spring white rear
-81 15 03	Shock absorber spring white front
-81 15 06	Shock absorber spring red rear
-81 15 07	Shock absorber spring red front
-81 15 10	Shock absorber spring set (2+2+2)
-81 15 20	Shock absorber spring set (2+2+2)
-90 81 01	Radioplate tuning
-90 81 07	Bearings radioplate tuning
-90 81 08	Stiffener radioplate
-90 92 04	Wheelnut + Insert (2+2+2)
-91 04 05	Clutch shoe white
-91 04 15	Clutch shoe black
-91 23 01	Batterie pack plate silver

OPTION

BAG

**1 Rear solid axle**

**STEP 1**

2x

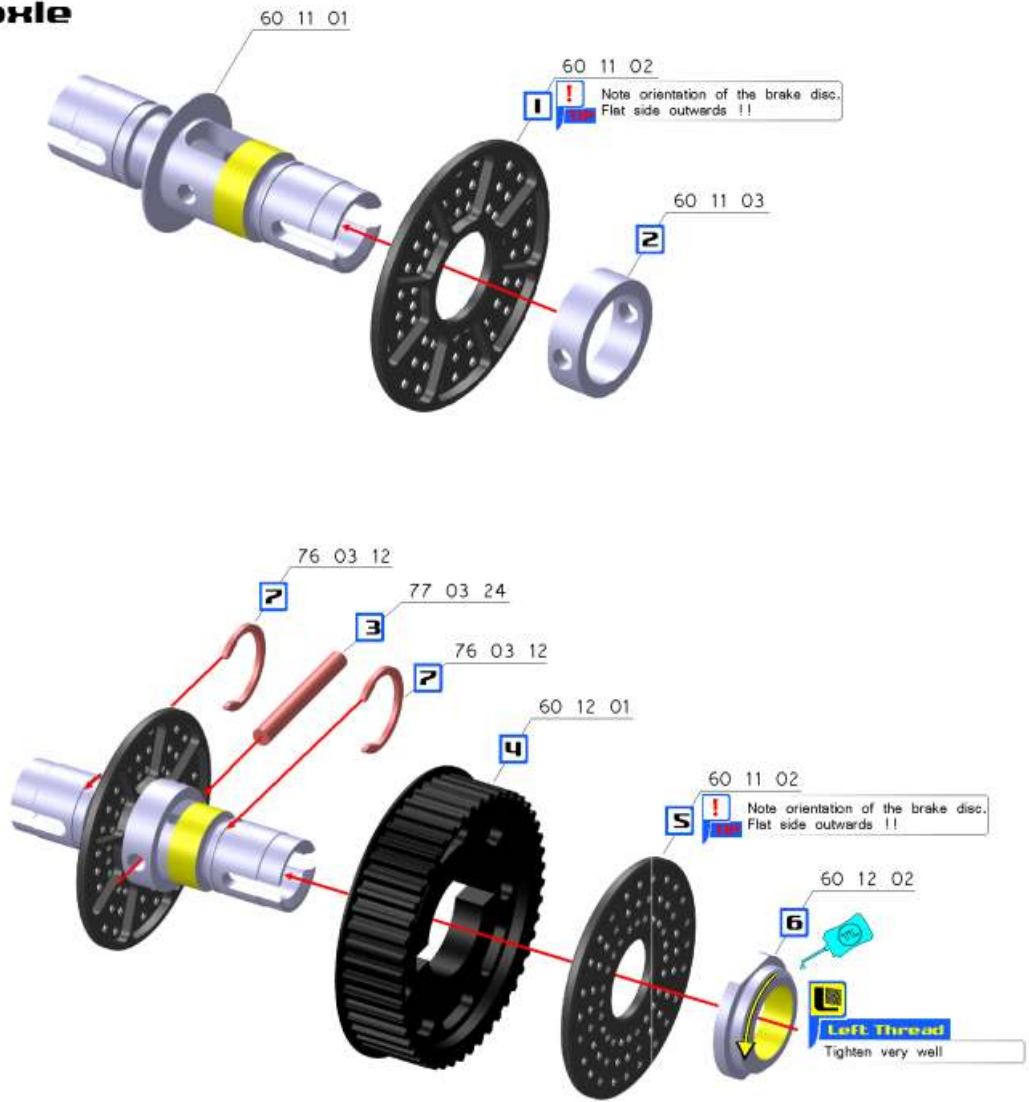


Spring 12x1  
76 03 12

1x



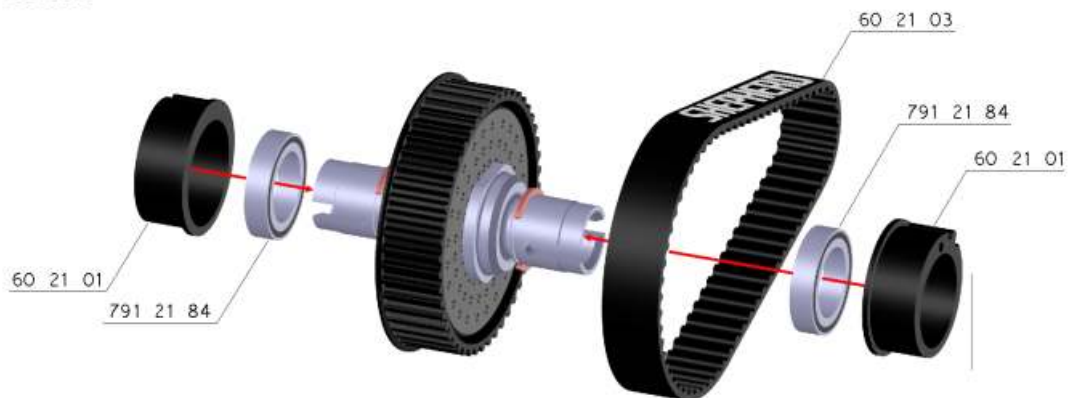
Pin 3x24mm  
77 03 24



BAG

**2 Rear solid axle**

**STEP 1**







**Building tip**  
The rear belt tension excenters are right and left sided parts.  
The right part is marked with a pin on the top of the outer side.

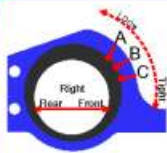
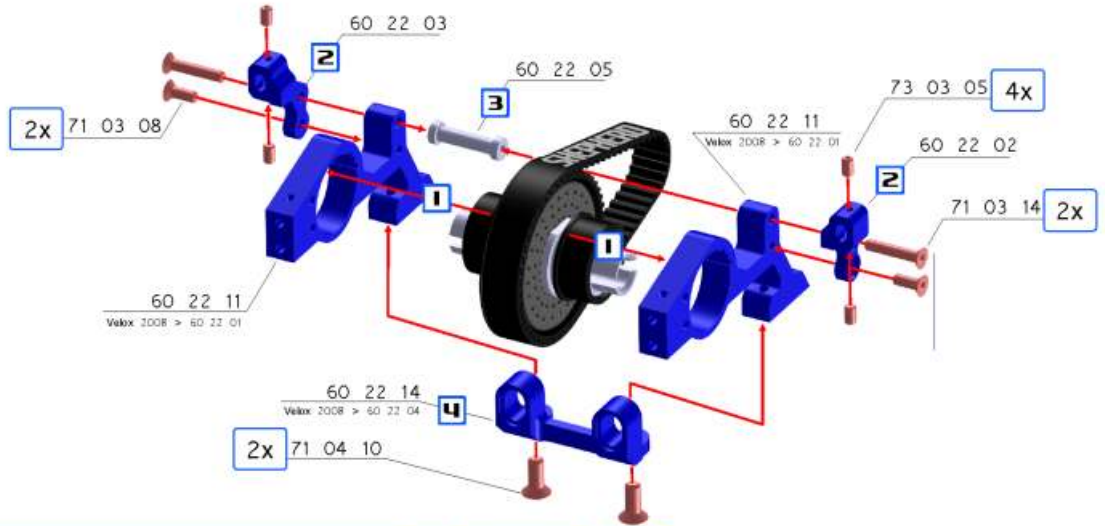


BAG

2 Rear bulkheads & hinge pin brackets

STEP 2

- 2x  M3x14mm  
71 03 14
- 2x  M3x8mm  
71 03 08
- 2x  M4x10mm  
71 04 10
- 4x  M3x5mm  
73 03 05



Setup & Building-Tip

Adjust the belt tension by using different excenter positions.  
 Default position is B  
 To loosen the belt tension use position A  
 To tighten the belt tension use position C

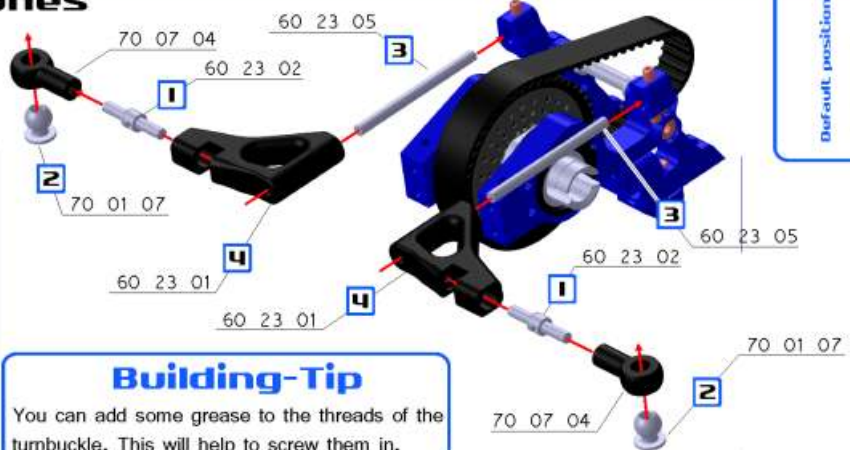
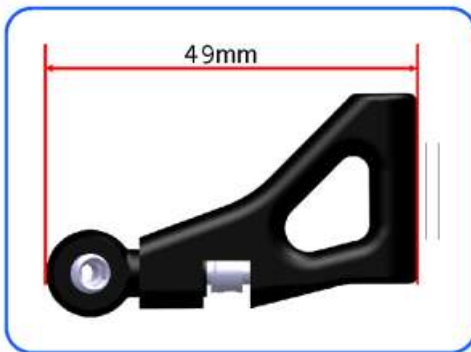
Building-Tip

The screws 73 03 05 should be tightened in step 3.

BAG

2 Rear upper wishbones

STEP 3





Building-Tip

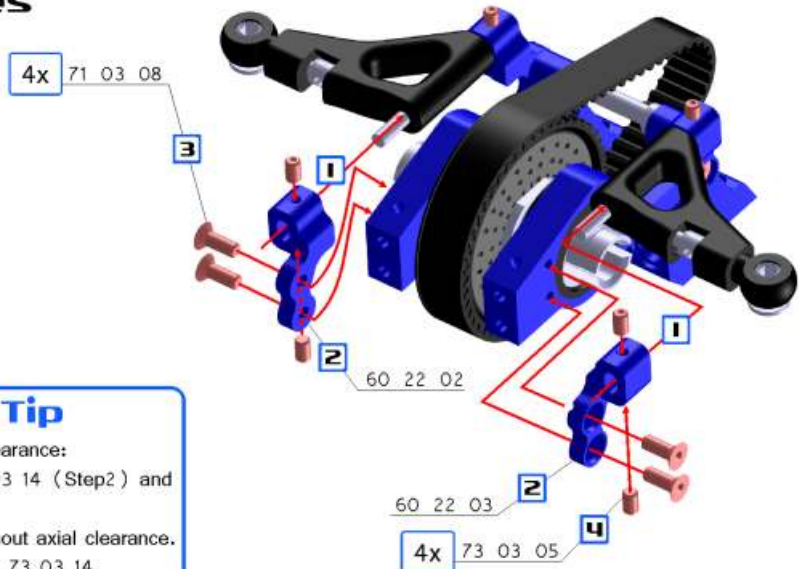
You can add some grease to the threads of the tumbuckle. This will help to screw them in.

BAG

2 Rear upper wishbones

STEP 4

- 4x  M3x8mm  
71 03 08
- 4x  M3x5mm  
73 03 05



Building-Tip

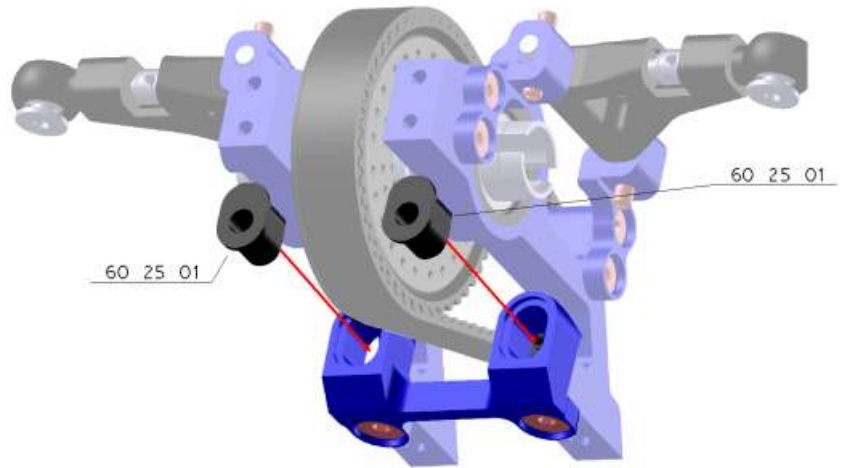
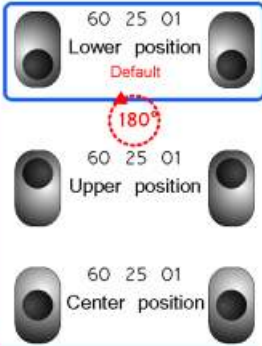
Adjusting the wishbone axial clearance:  
 -Loose screws 71 03 08, 71 03 14 (Step2) and 73 03 05.  
 -Tighten screws 73 03 05 without axial clearance.  
 -Tighten screws 73 03 08 and 73 03 14.

BAG

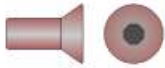
**3** Rear suspension

**STEP 1**

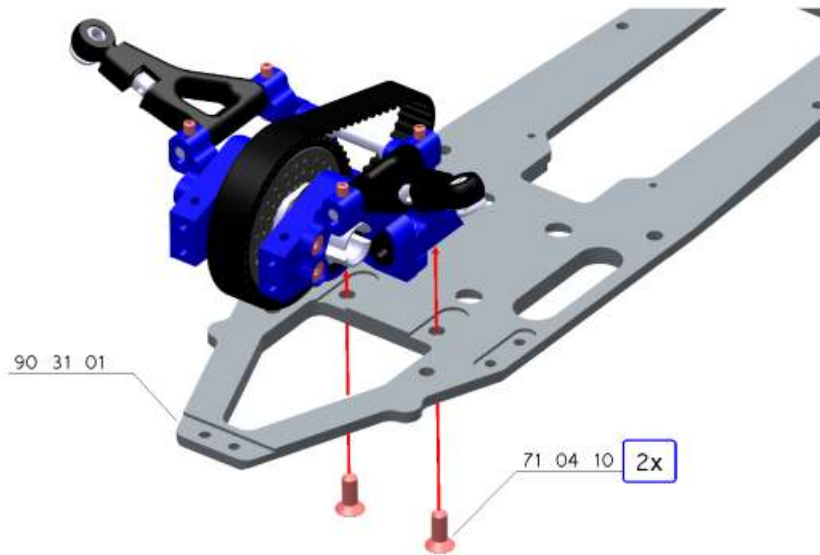
**Setup-Tip**



2x



M4x10mm  
71 04 10



BAG

**3** Direct-U-Brake system

**STEP 2**

2x



M3x4mm  
72 03 04

2x

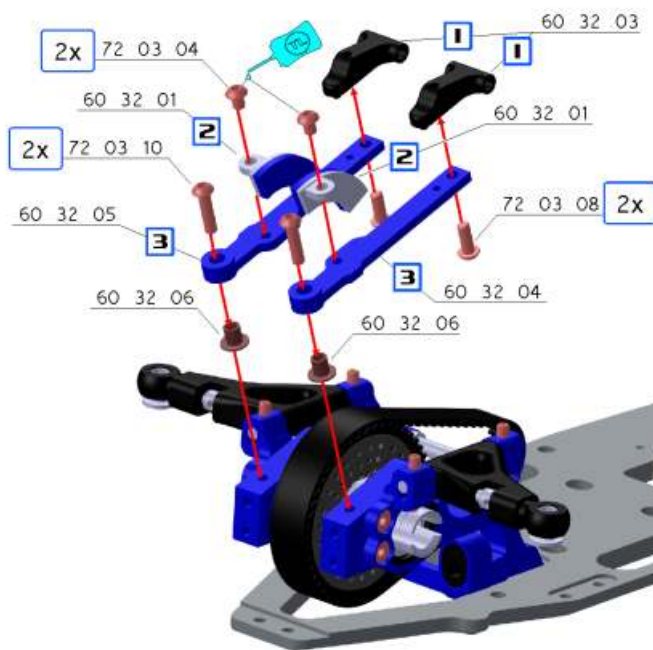


M3x8mm  
72 03 08

2x



M3x10mm  
72 03 10



**Building Tip**

When you assemble the brakepads, be sure that the backside is pressed against the the brakelevers.



**Building Tip**

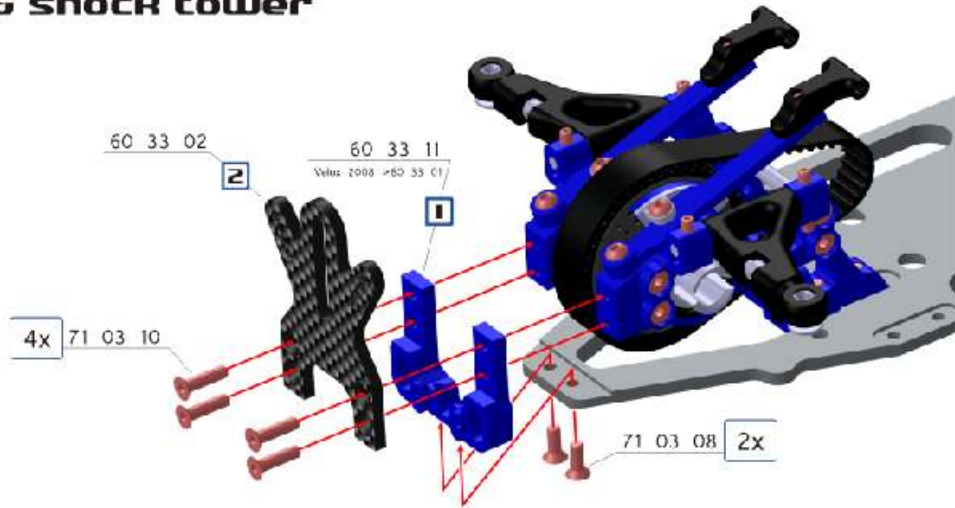
All parts must be free-moving.

**BAG**

**3 Rear panel & shock tower**

**STEP 3**


- 2x  M3x8mm  
71 03 08
- 4x  M3x10mm  
71 03 10

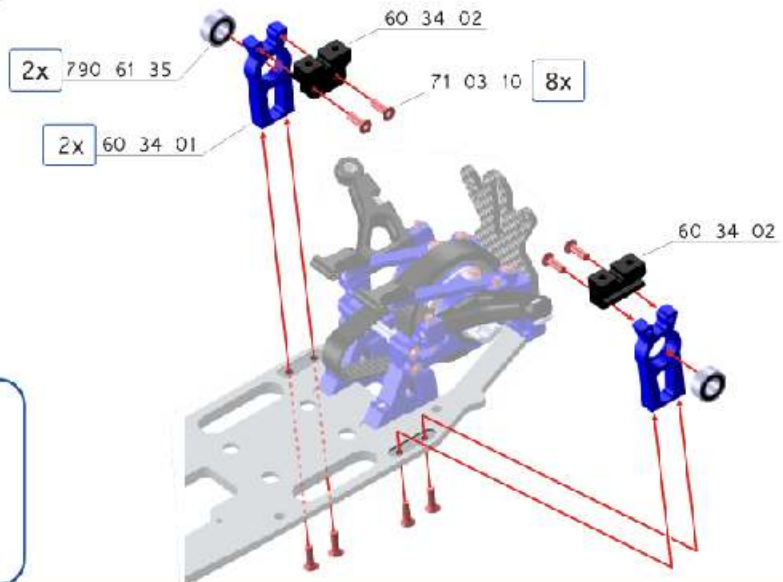
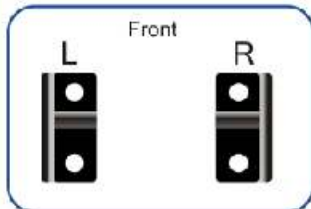


**BAG**

**3 Gearshaft bulkheads**

**STEP 4**

- 8x  M3x10mm  
71 03 10

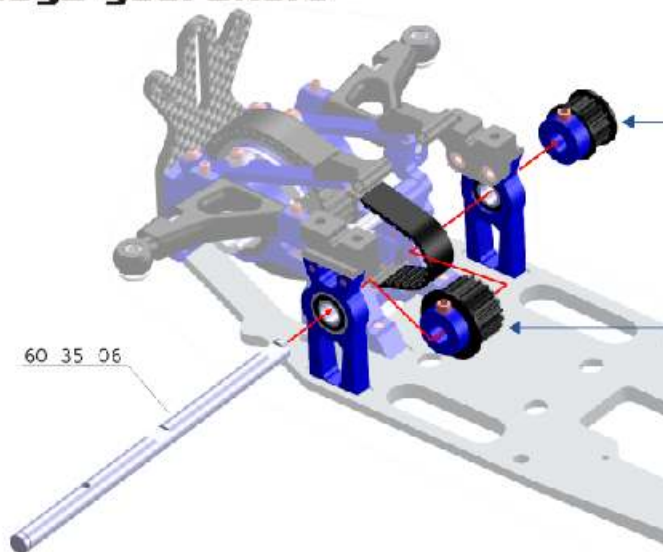


**BAG**

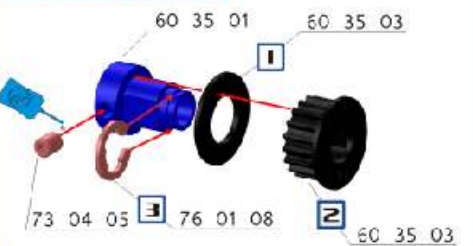
**3 Drive pulleys gearshaft**

**STEP 5**

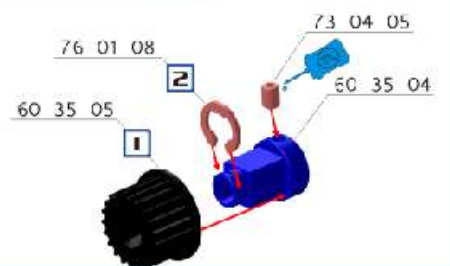
-  M4x5mm  
73 04 05
-  Circclip  
76 01 08



**18 T Pulley**






**20 T Pulley**

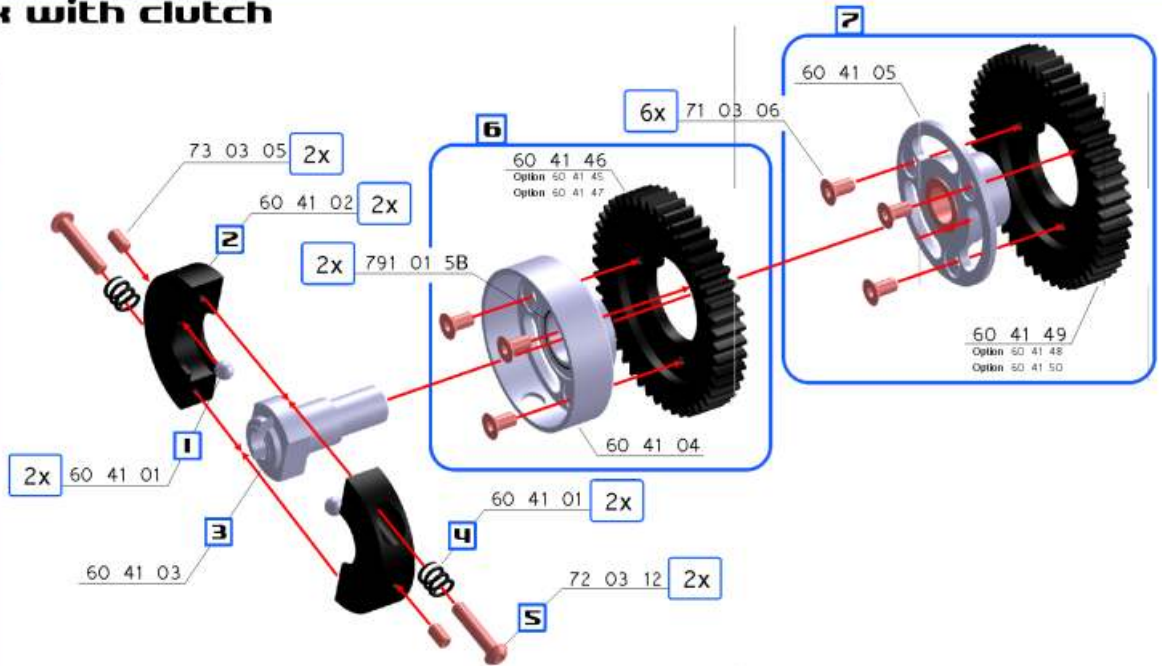


BAG

4 Gearbox with clutch

STEP 1

- 6x  M3x6mm  
71 03 06
- 2x  M3x12mm  
72 03 12
- 2x  M3x5mm  
73 03 05

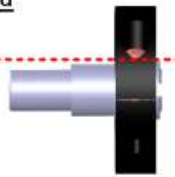


Performance tip

Clean the 2-speed clutch bell before assembling the parts. Clutch bell must be free of grease.

Basic adjustment 2-speed

Tighten the screw 72 03 12 until the buttonhead is aligned to the clutch shoe like shown in the picture aside.



2-speed clutch shoe clearance



Use screws 73 03 05 to adjust the clearance of the 2-speed clutch shoe. Adjust it and make sure there is a equal minimal gap between the shoe and the clutch bell.

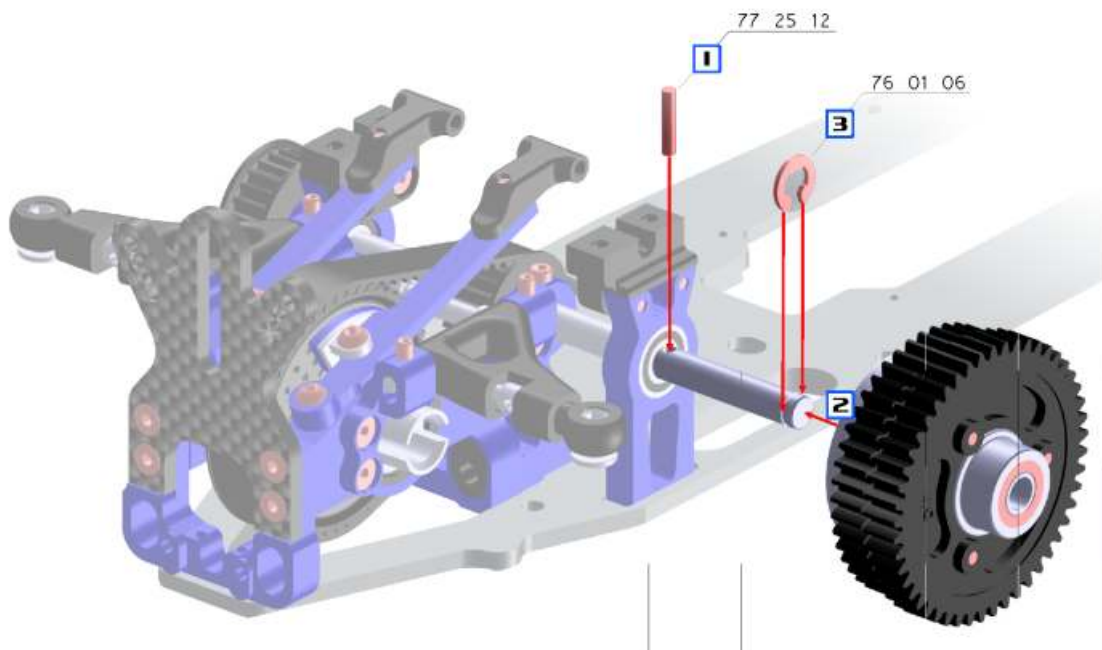
The burr, caused by the screw 73 03 05, must be removed using a cutter.

The clutch shoe assemble must turn around without a resistance.



**Gearbox to driveshaft**




- 1x  Pin 2,5x12mm  
77 25 12
- 1x  Circlip  
76 01 06



BAG

4 Rear lower wishbones

STEP 2

- 2x  M3x8mm  
71 03 08
- 4x  M3x8mm  
72 03 08
- 2x  M4x8mm  
73 04 08

**Building Tip**  
Assemble one left and one right wishbone, they are marked with L (left) and R (right).

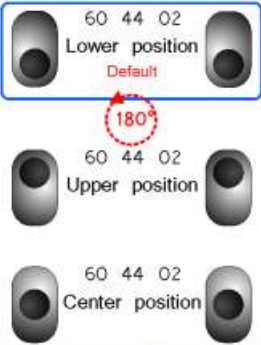


BAG

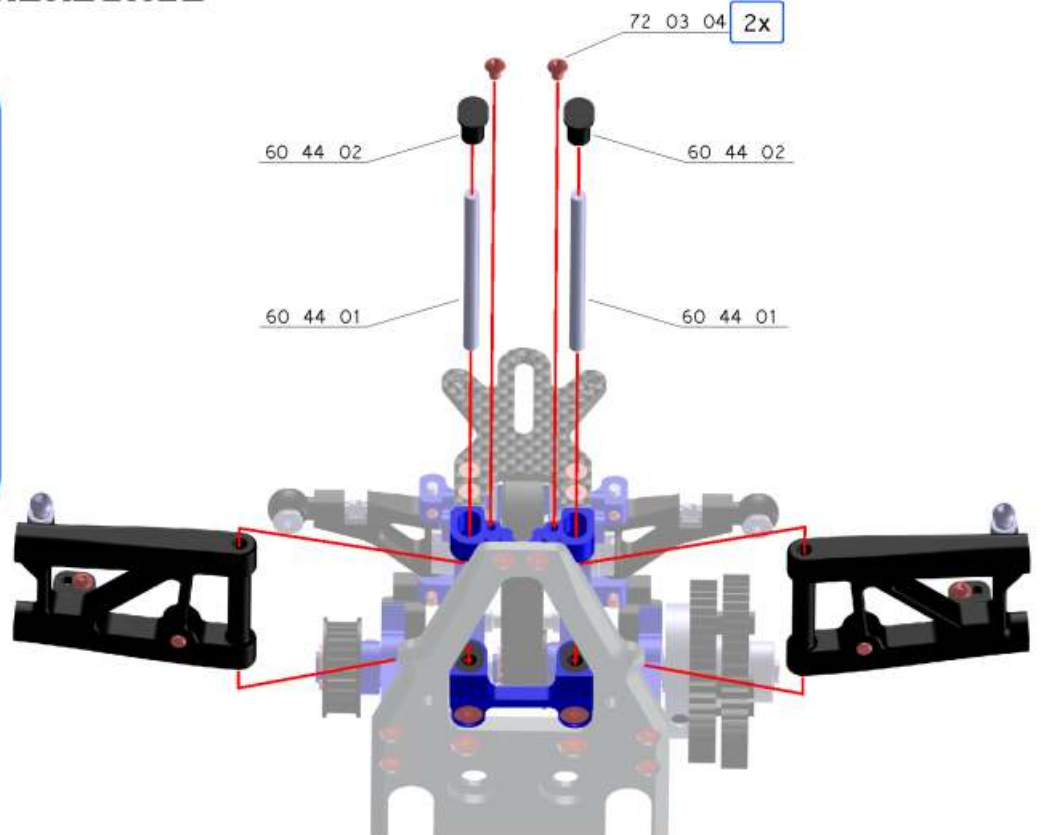
4 Rear lower wishbones

STEP 3

Setup-Tip



- 2x  M3x4mm  
72 03 04



BAG

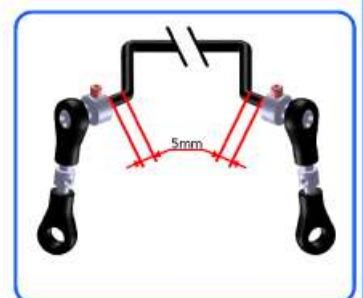
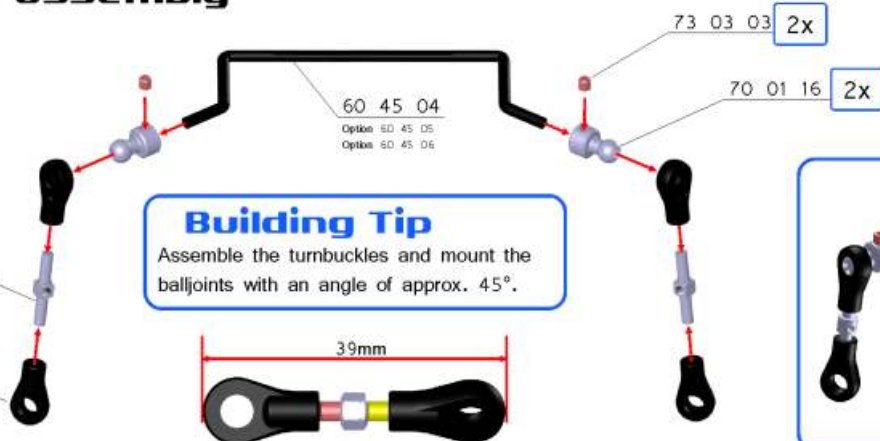
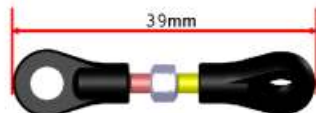
4 Antirollbar assembly

STEP 4

- 2x  M3x3mm  
73 03 03

**Building Tip**  
Assemble the turnbuckles and mount the balljoints with an angle of approx. 45°.



- 2x 60 23 02
- 4x 70 07 02



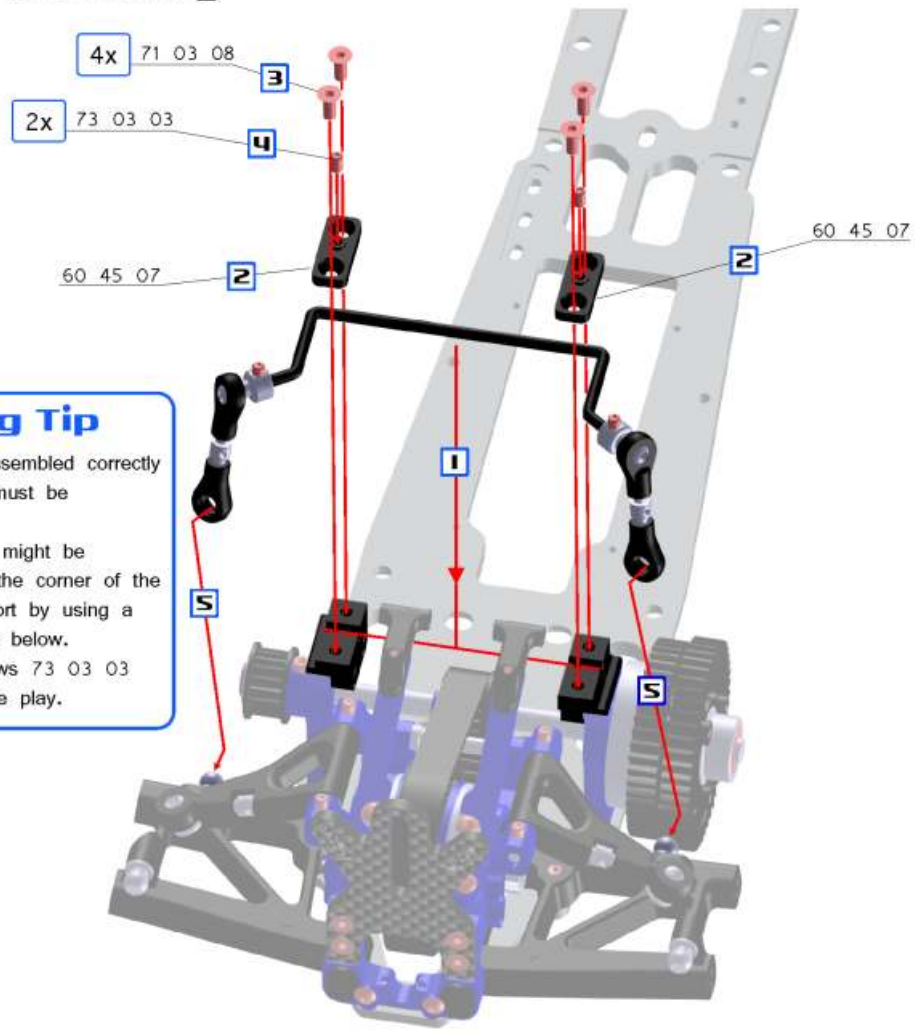
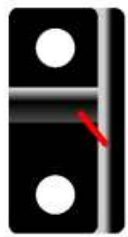
BAG

**4** Rear antirollbar assembly

**STEP 4**

- 4x  M3x8mm  
71 03 08
- 2x  M3x3mm  
73 03 03




**Building Tip**  
 If all parts are assembled correctly the anti-roll bar must be free-moving.  
 In some cases it might be necessary to cut the corner of the anti-roll bar support by using a cutter, see picture below.  
 With the set screws 73 03 03 you can adjust the play.



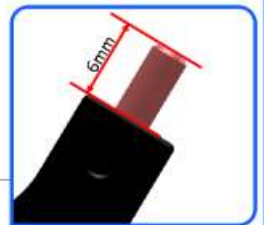
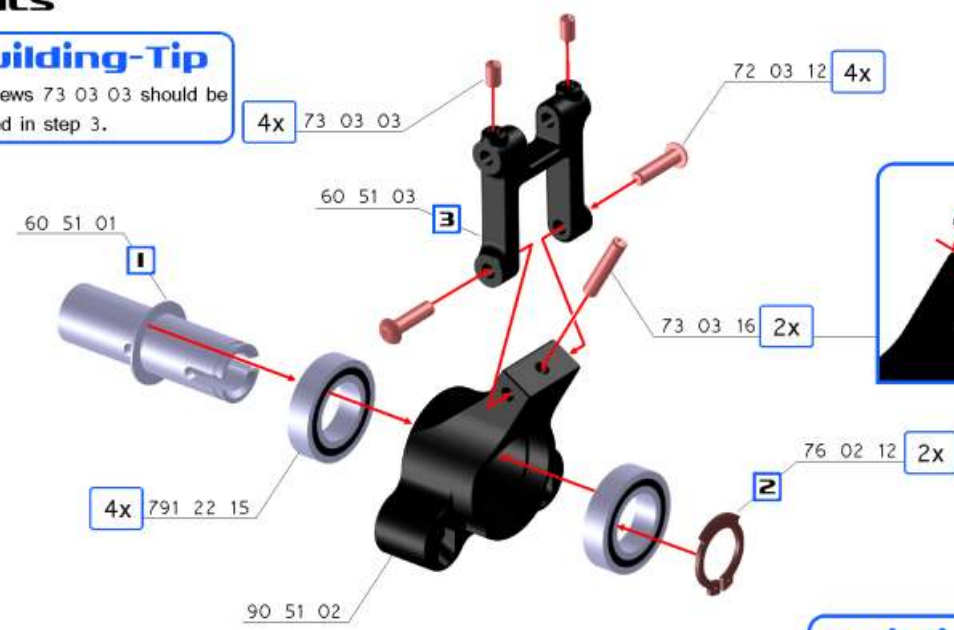
BAG

**5** Rear uprights

**STEP 1**

- 4x  M3x3mm  
73 03 03
- 4x  M3x12mm  
72 03 12
- 2x  M3x16mm  
73 03 16

**Building-Tip**  
 The screws 73 03 03 should be tightened in step 3.



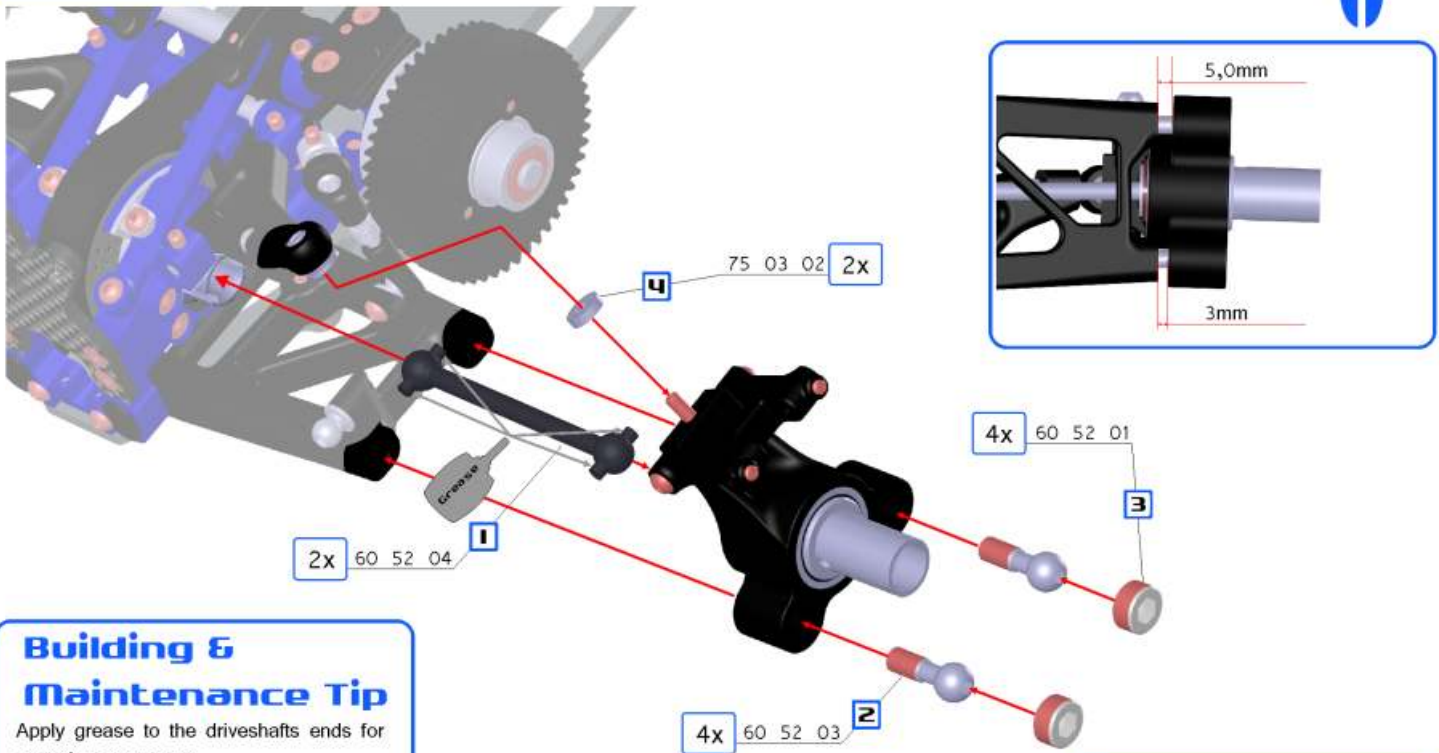
**Building Tip**  
 Do not overtighten the screws 72 03 12, all parts must be free moving.

**Building Tip**  
 Install the retaining rings with the sharp edge toward the rear solid axle.

BAG

**S** Rear uprights right and left

**STEP 2**



**Building & Maintenance Tip**

Apply grease to the driveshafts ends for smoother movement.  
For better durability clean the driveshafts from time to time and apply some grease again.


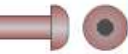
**Building Tip**

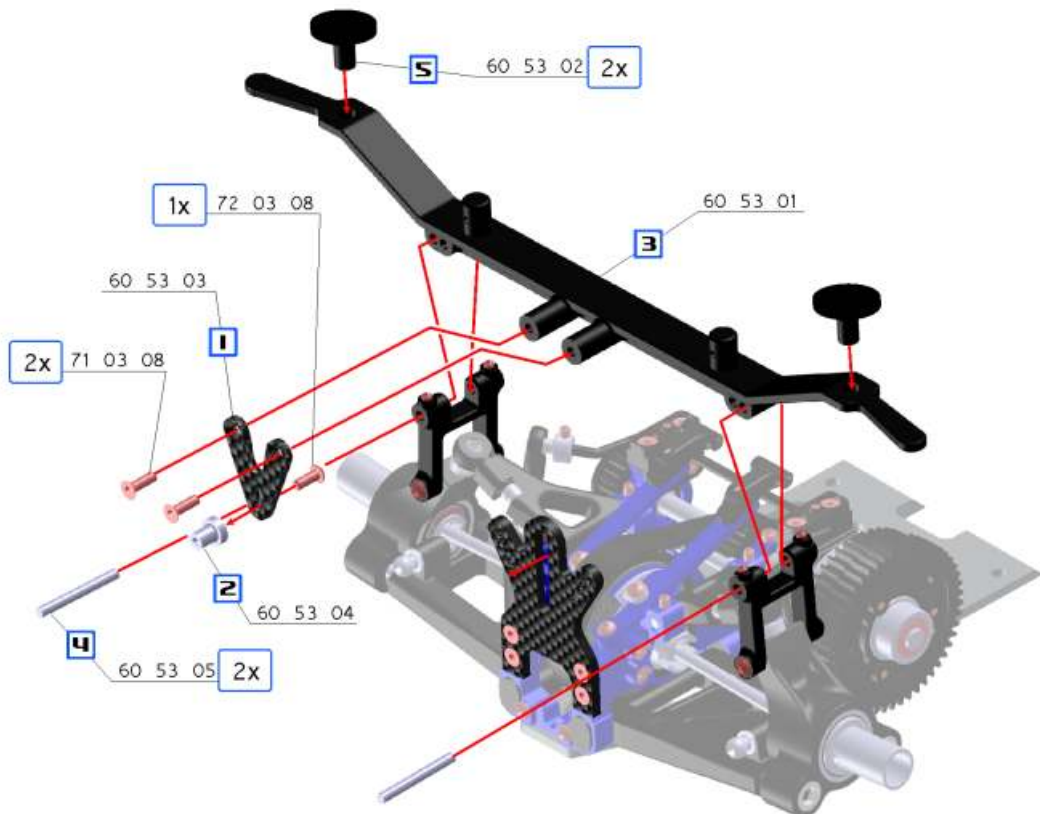
When assembling the pivotballs make sure the uprights are free-moving.

BAG

**S** Rear bodypanel & centering plate

**STEP 3**

- 2x  M3x8mm  
71 03 08
- 1x  M3x8mm  
72 03 08



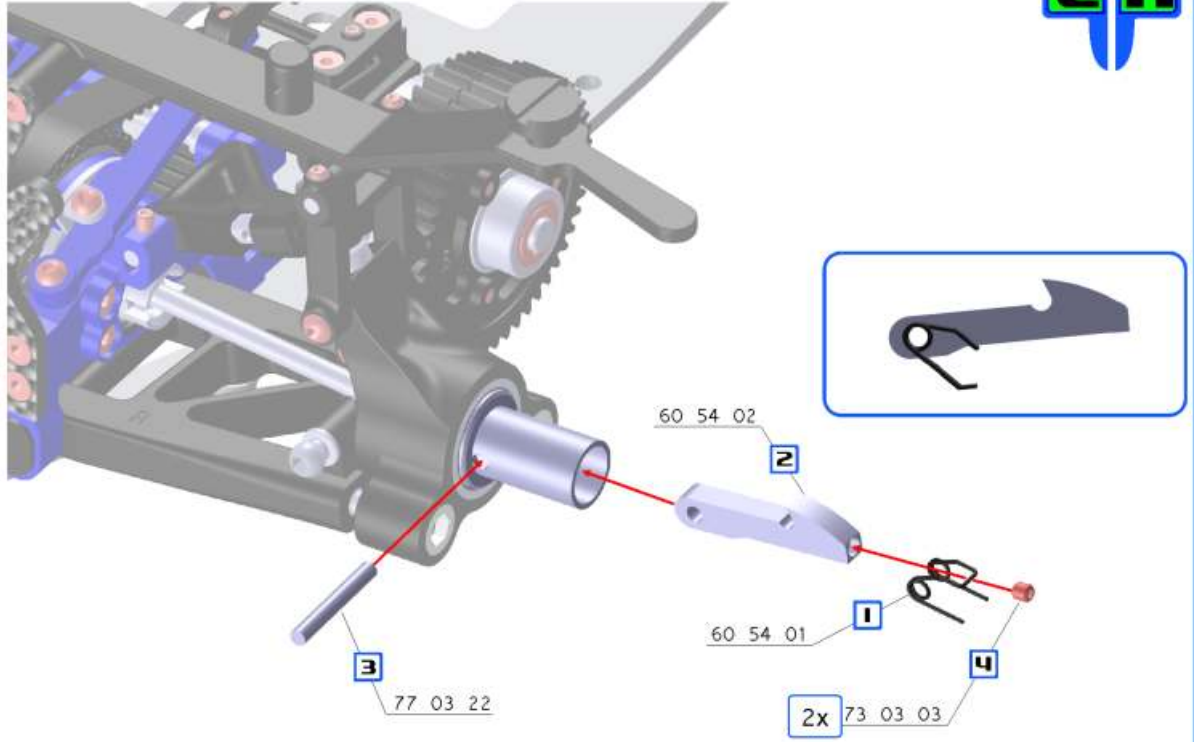
BAG

**S Quickchange**

**STEP 4**

2x  **M3x3mm**  
73 03 03

2x  **Pin 3x22mm**  
77 03 22





BAG


**S Radioplate mount**

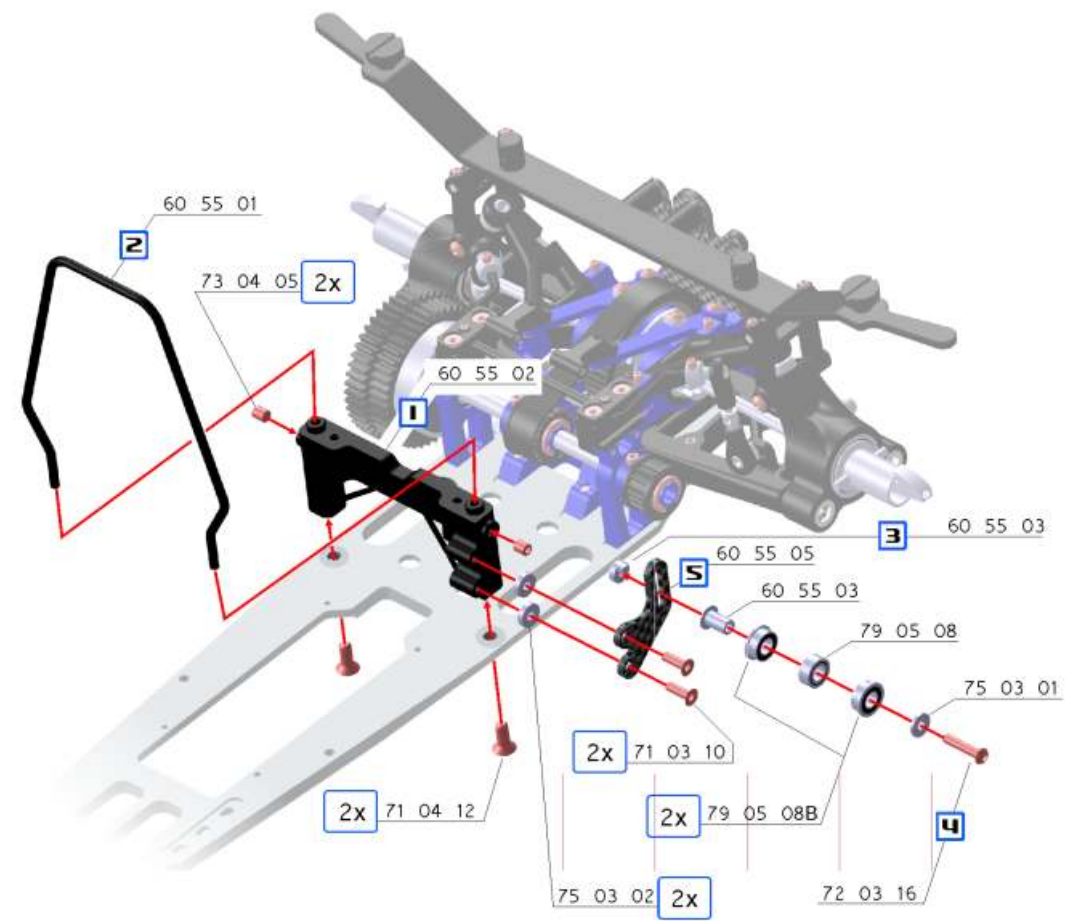
**STEP 5**

2x  **M4x5mm**  
73 04 05

1x  **M3x16mm**  
72 03 16

2x  **M3x10mm**  
71 03 10





2x  **M4x12mm**  
71 04 12

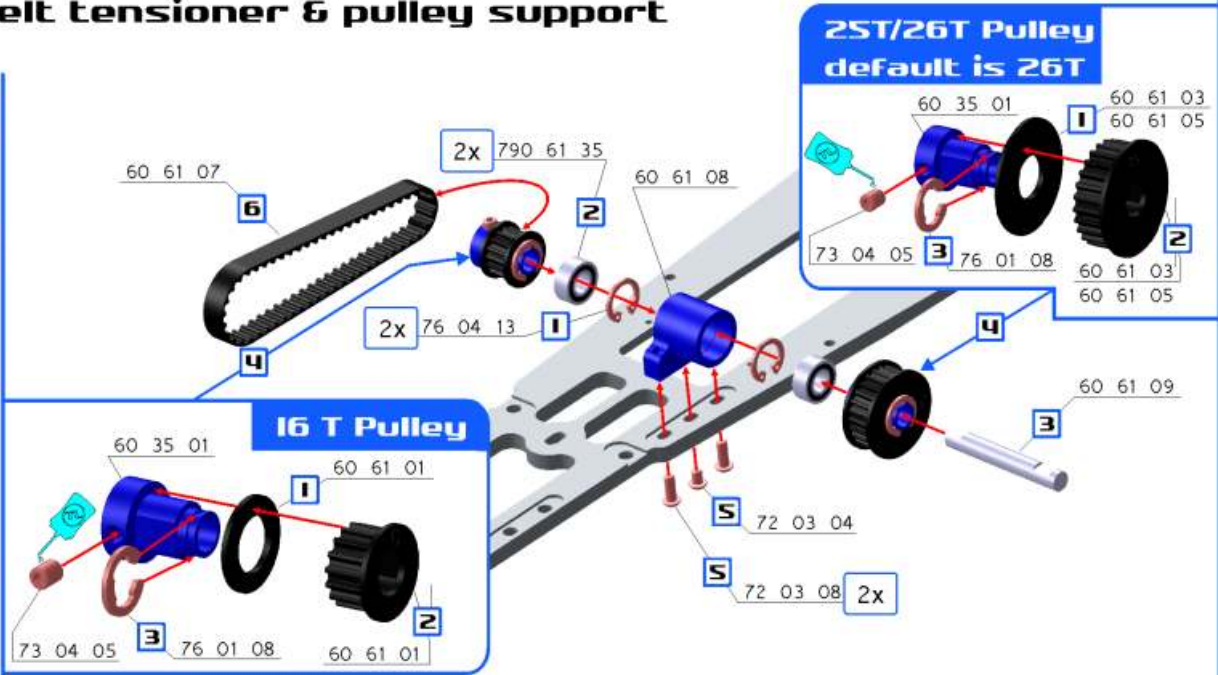


**BAG**

**6 Front belt tensioner & pulley support**

**STEP 1**

- 1x  M3x4mm  
72 03 04
- 2x  M3x8mm  
72 03 08
- 2x  Circlip 8mm  
76 01 08
- 2x  Retaining ring  
76 04 13

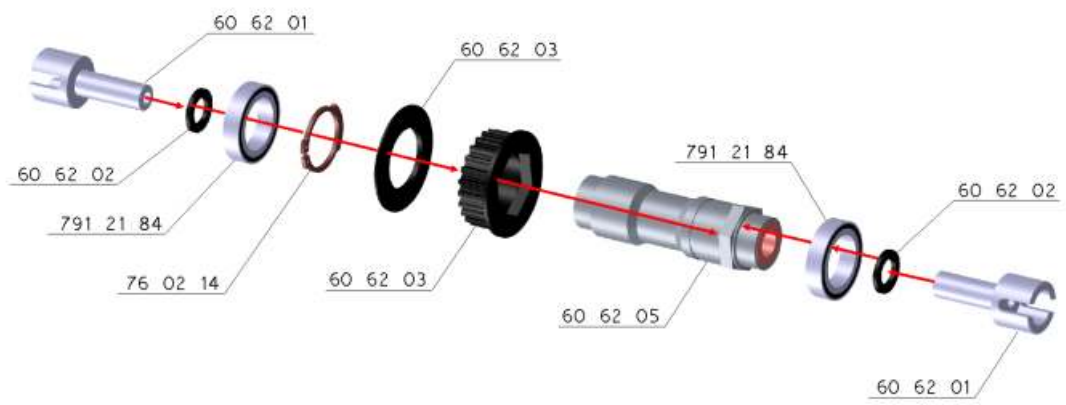


**BAG**

**6 One way front axle**

**STEP 2**

- 2x  Retaining ring  
76 02 14

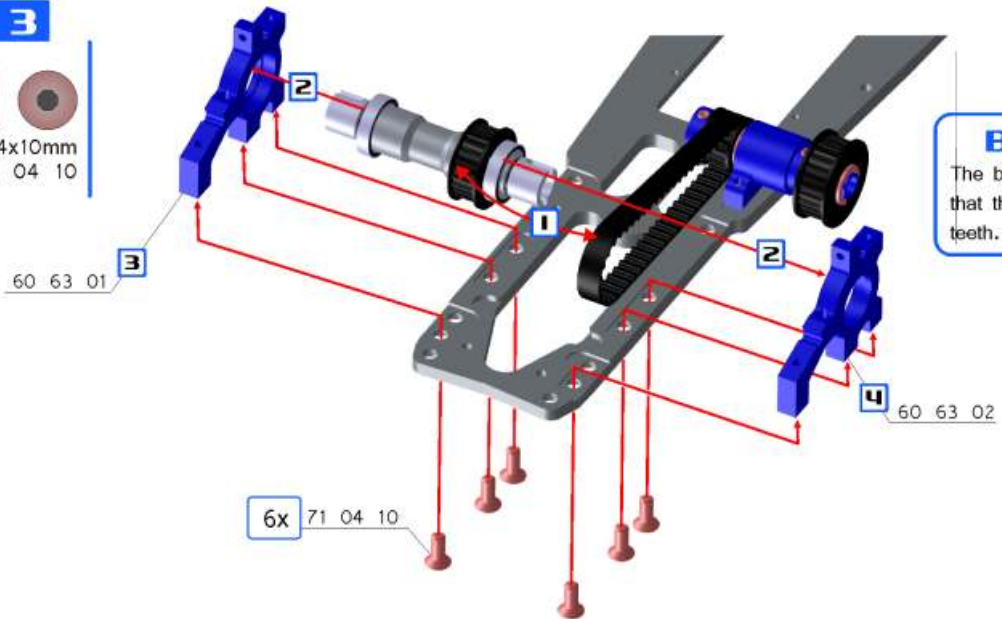


**BAG**

**6 Front bulkheads**

**STEP 3**

- 6x  M4x10mm  
71 04 10

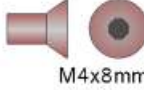



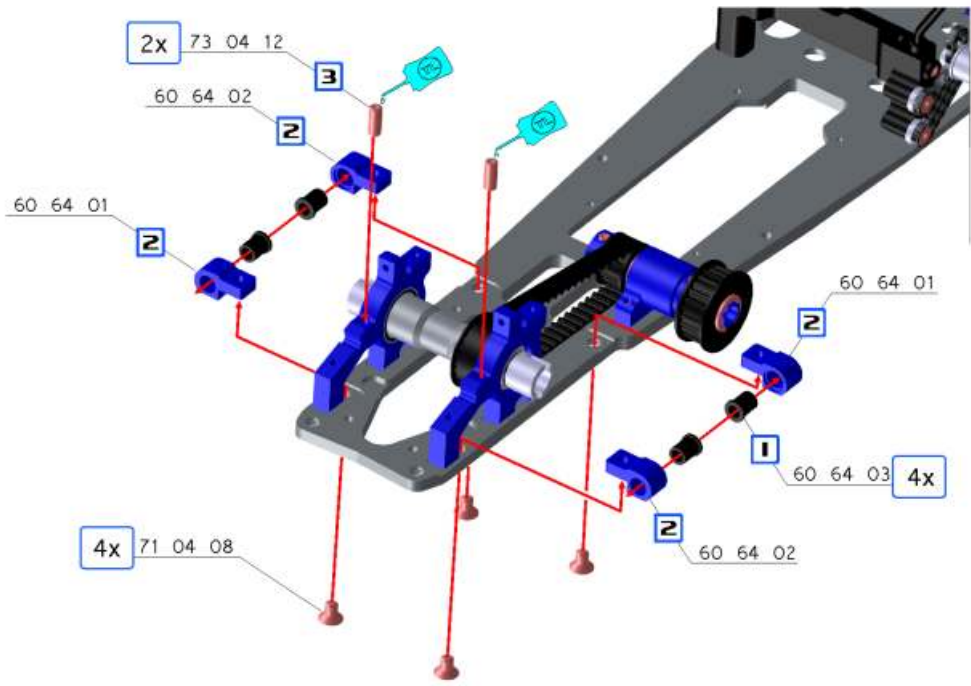
**Building Tip**  
The belt tension should be so strong that the belt can't jump over the teeth.

**BAG**

**6 Lower front hinge pin brackets**

**STEP 4**




- 4x  M4x8mm  
71 04 08
- 2x  M4x12mm  
73 04 12

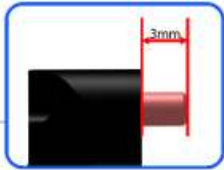
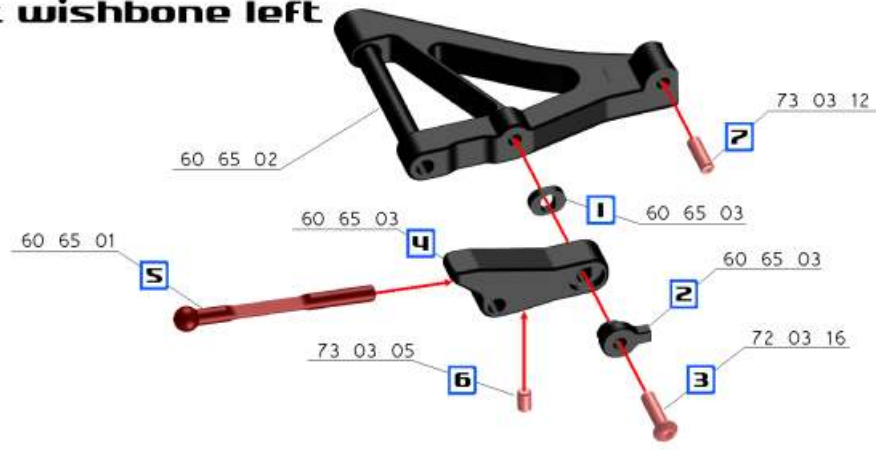


**BAG**




**6 Lower front wishbone left**

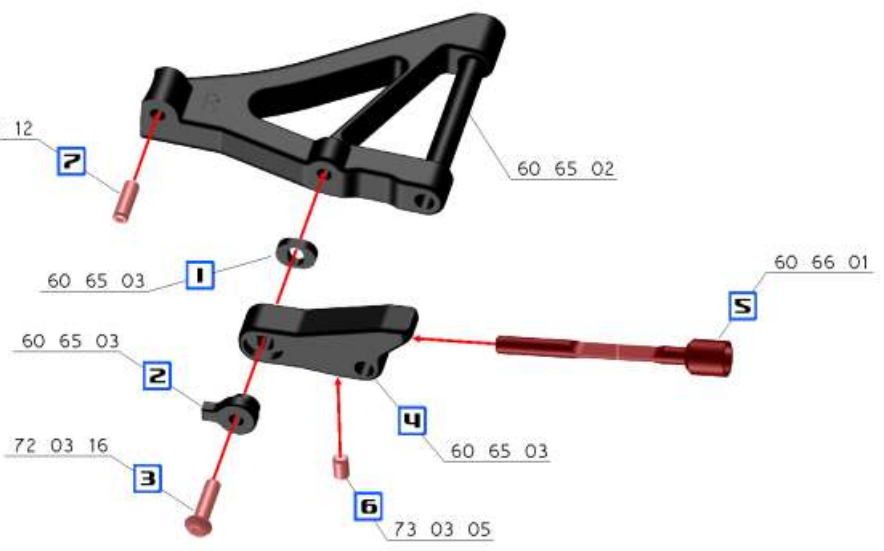
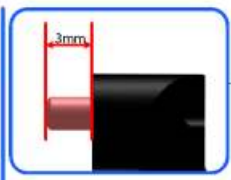
**STEP 5**

- 1x  M3x16mm  
72 03 16
- 1x  M3x5mm  
73 03 05
- 1x  M3x12mm  
73 03 12



**Lower front wishbone right**

- 1x  M3x16mm  
72 03 16
- 1x  M3x5mm  
73 03 05
- 1x  M3x12mm  
73 03 12

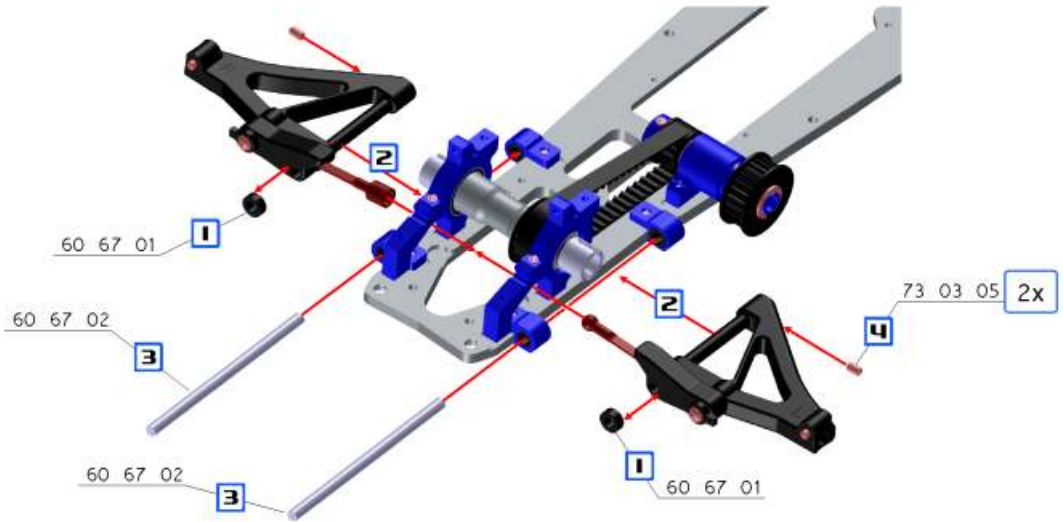


**BAG**

**6 Lower front wishbones & anti roll bar**

**STEP 6**





- 2x  M3x5mm  
73 03 05

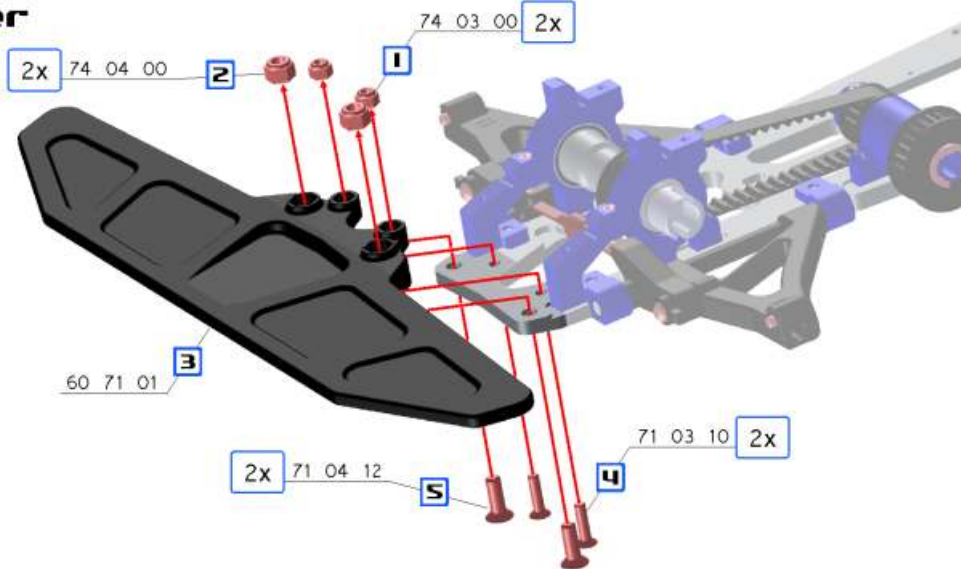


**BAG**

**7 Front bumper**

**STEP 1**



- 2x  M4  
74 04 00
- 2x  M3  
74 03 00
- 2x  M3x10mm  
71 03 10
- 2x  M4x12mm  
71 04 12

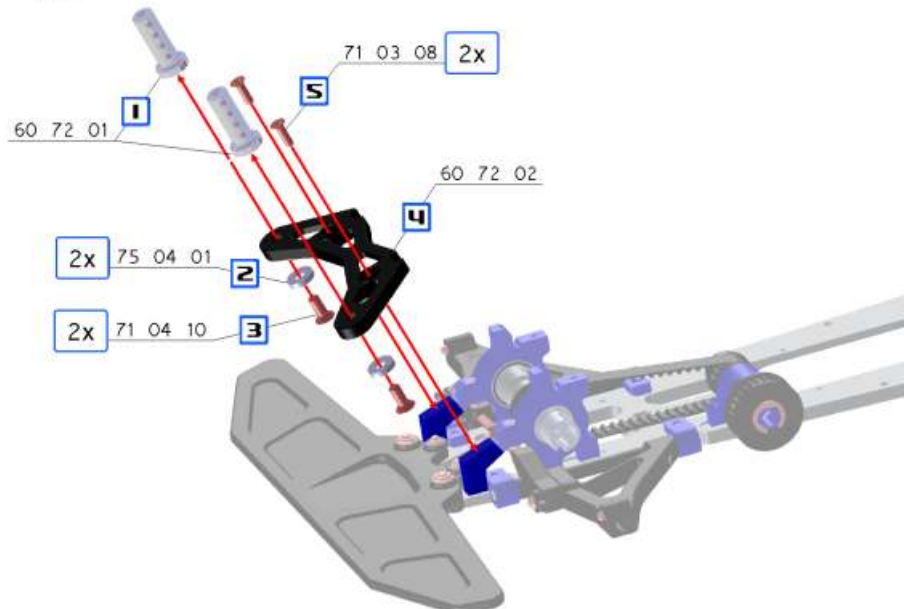


**BAG**

**7 Front body support**

**STEP 2**

- 2x  M3x8mm  
71 03 08
- 2x  M4x10mm  
71 04 10



BAG

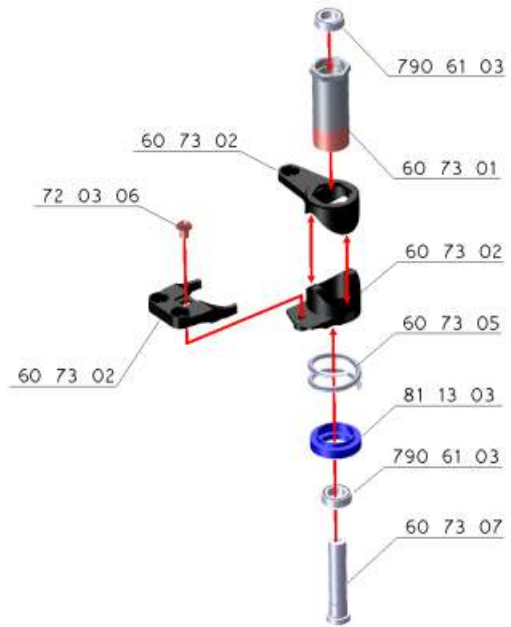
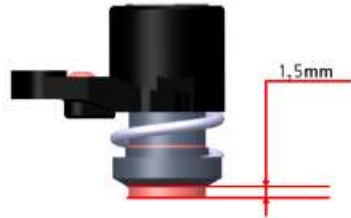
Adjustable servo saver

STEP 3

- 1x M3x6mm 72 03 06

Building Tip

Do not overtighten screw 72 03 06

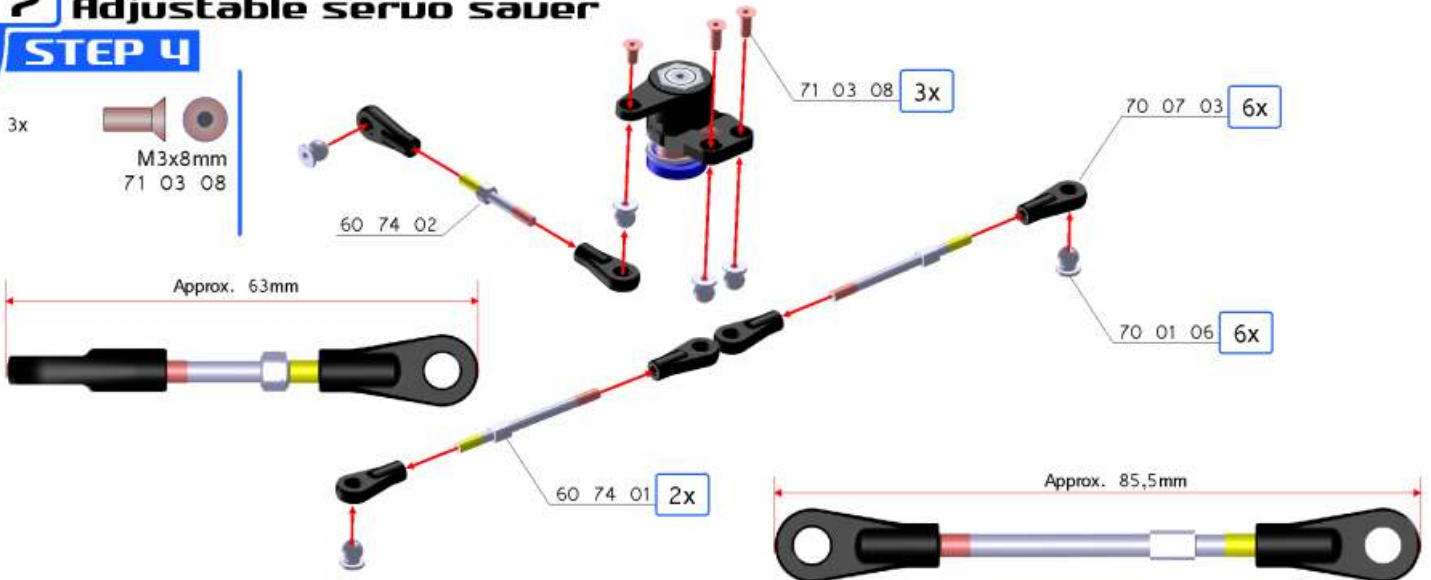


BAG

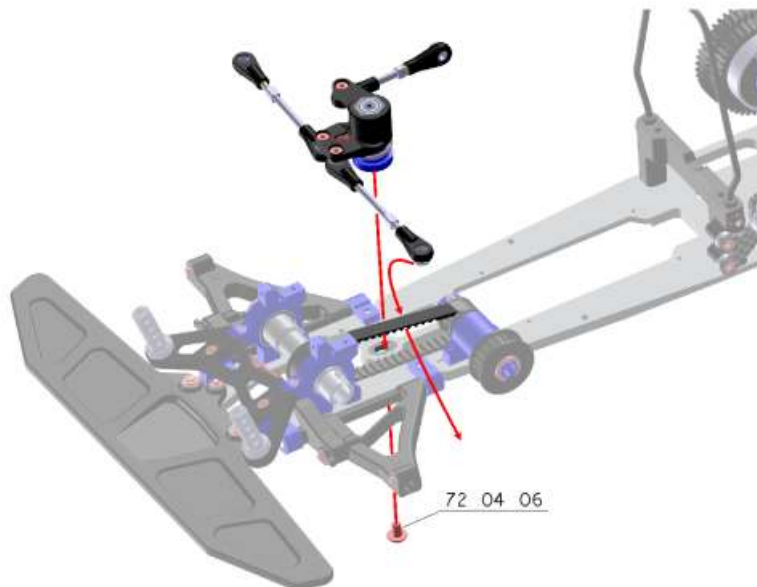
Adjustable servo saver

STEP 4

- 3x M3x8mm 71 03 08



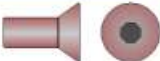



- 1x M4x6mm 72 04 06

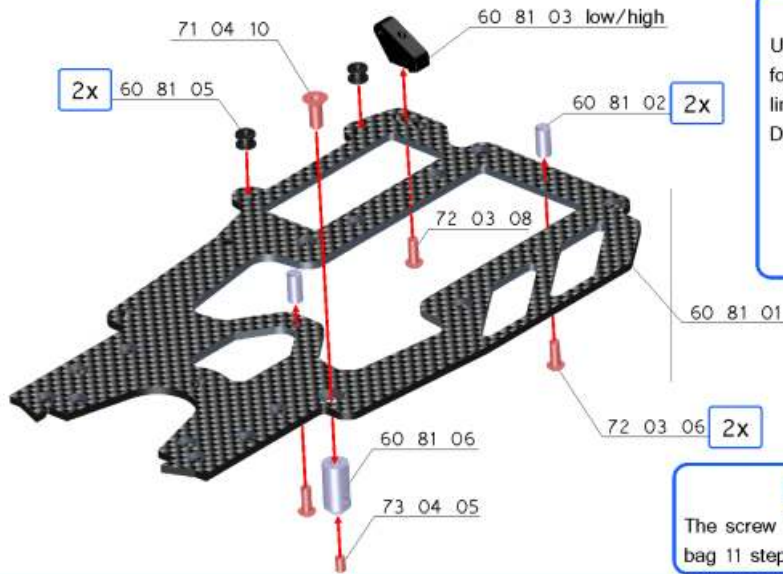


BAG

8 Radioplate

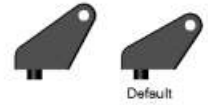
STEP 1

- 1x  M4x10mm  
71 04 10
- 2x  M3x6mm  
72 03 06
- 1x  M3x8mm  
72 03 08
- 1x  M4x5mm  
73 04 05



Building-Tip

Use the different brakewiresupports for correctly installing the brakewire linkage in bag 10 step 1. Default part is the low one.






Building-Tip

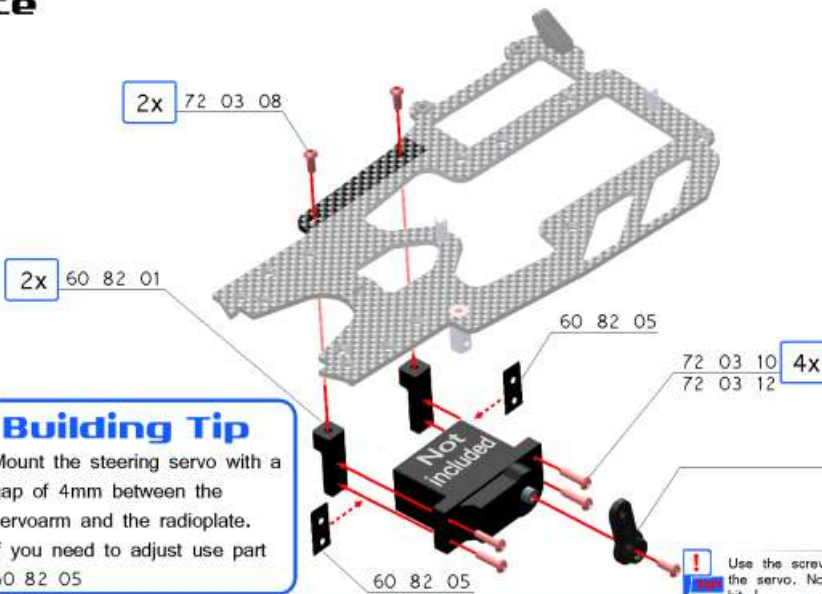
The screw 73 04 06 should be tightened in bag 11 step2.

BAG

8 Radioplate

STEP 2

- 2x  M3x8mm  
72 03 08
- 4x  M3x10mm  
72 03 10
- 4x  M3x12mm  
72 03 12



**Building Tip**  
Mount the steering servo with a gap of 4mm between the servoarm and the radioplate. If you need to adjust use part 60 82 05

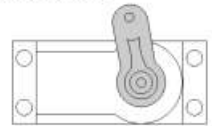
Building Tip

Use the correct servo arm for your servo.

- 60 82 02 = K = Kopropo
- 60 82 03 = F = Futaba
- 60 82 04 = H = Hitec



Mount the servo arm with an angle of approximately 10° in neutral position.





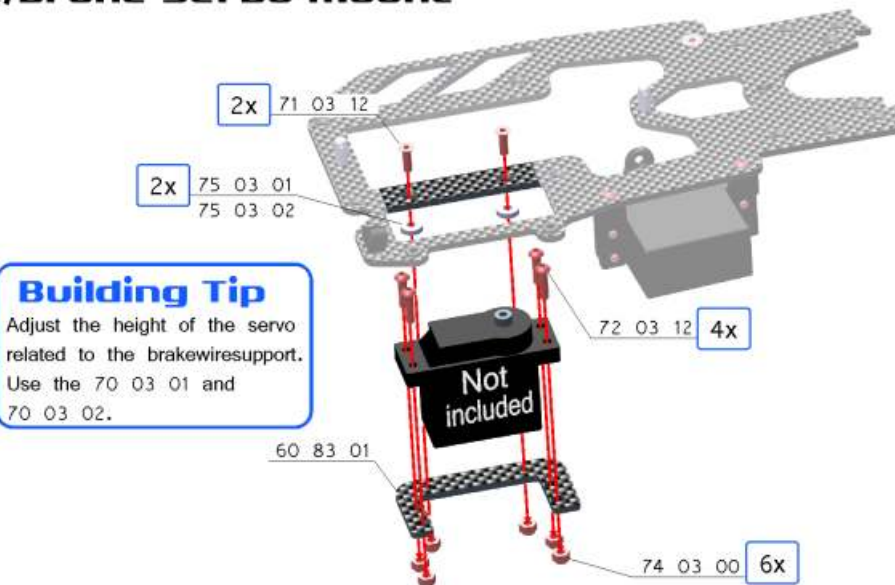
**!** Use the screws provided with the servo. Not included in the kit!

BAG

8 Throttle/brake servo mount

STEP 3

- 2x  M3x12mm  
71 03 12
- 4x  M3x12mm  
72 03 12



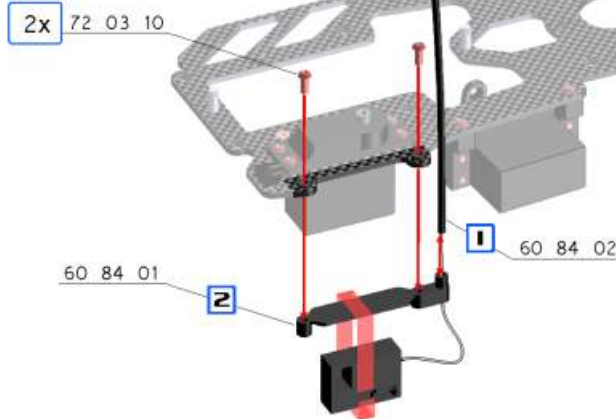
**Building Tip**  
Adjust the height of the servo related to the brakewiresupport. Use the 70 03 01 and 70 03 02.

BAG

**8 Receiver bracket**

**STEP 4**

- 2x  M3x10mm  
72 03 10




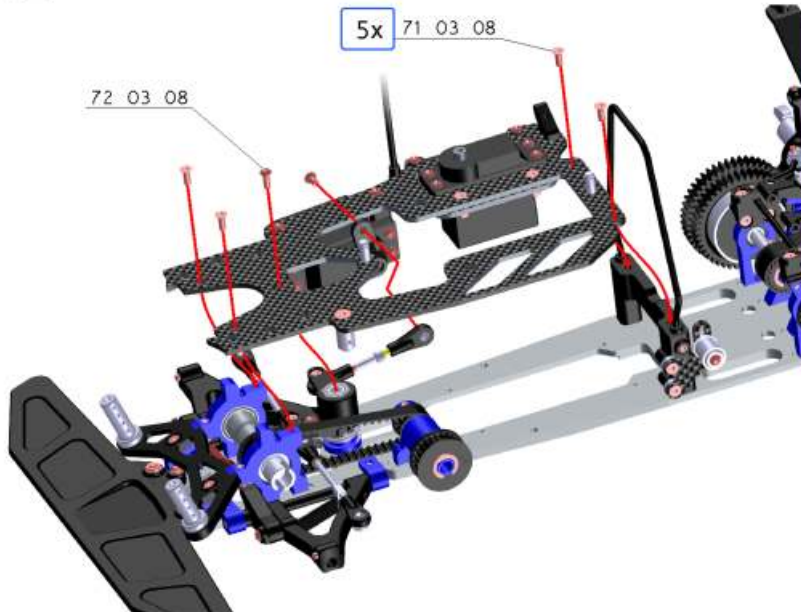
**Building Tip**

Use tape to mount the receiver to the receiver at the bracket. Receiver and tape are not included in the kit !

**Radioplate**

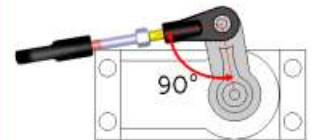
- 5x  M3x8mm  
71 03 08

- 1x  M3x8mm  
72 03 08



**Building Tip**

Mount the turnbuckle to the servo arm with an angle of 90°. In this position all steering parameters should be set to neutral.



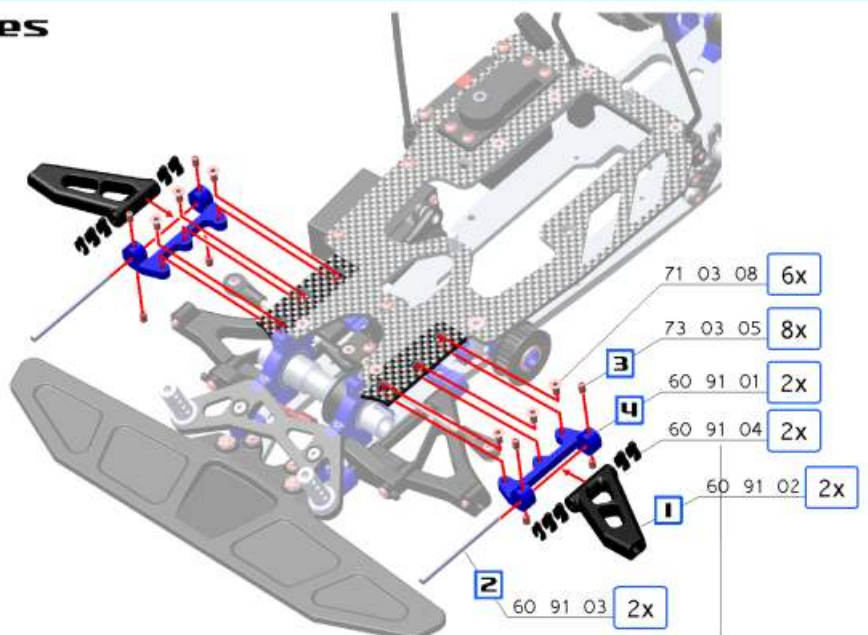
BAG

**9 Front upper wishbones**

**STEP 1**

- 6x  M3x8mm  
71 03 08

- 8x  M3x5mm  
73 03 05




**Building Tip**

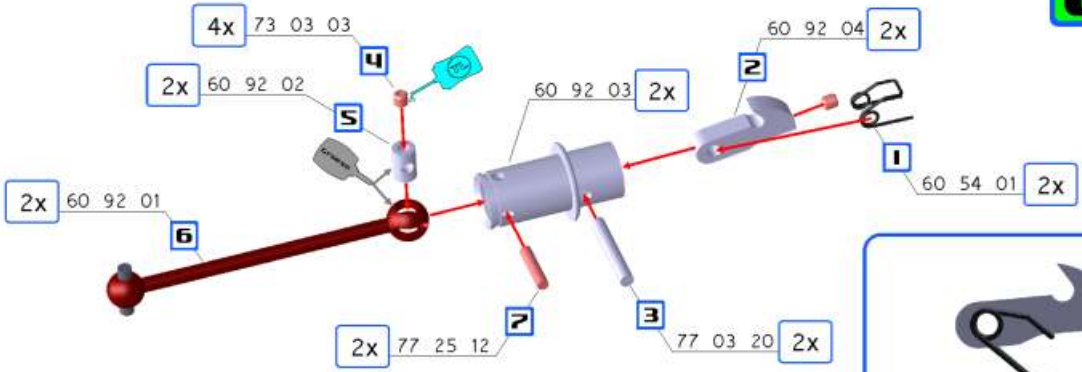
Use the 60 91 04 to adjust the caster.

BAG

9 Driveshaft front

STEP 2

- 4x  M3x3mm  
73 03 03
- 2x  Pin 2,5x12mm  
77 02 12
- 2x  Pin 3x20mm  
77 03 20

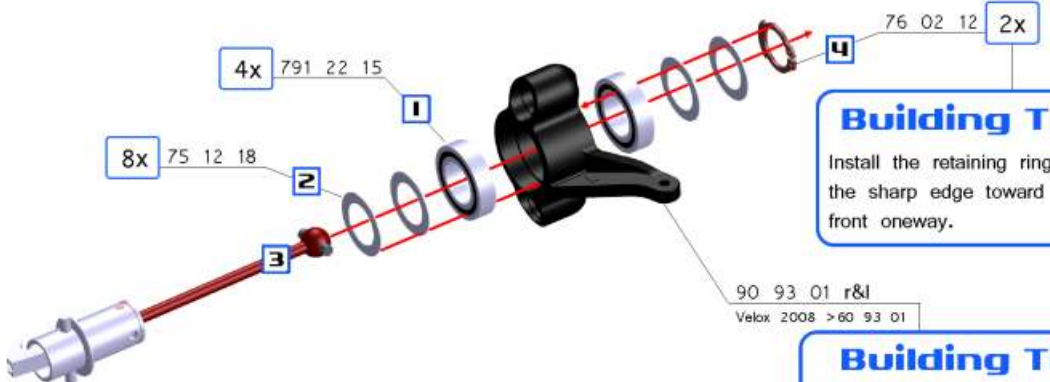


BAG

9 Uprights front

STEP 3

- 2x  Retaining ring 12mm  
76 02 12




**Building Tip**  
Install the retaining rings with the sharp edge toward the front oneway.

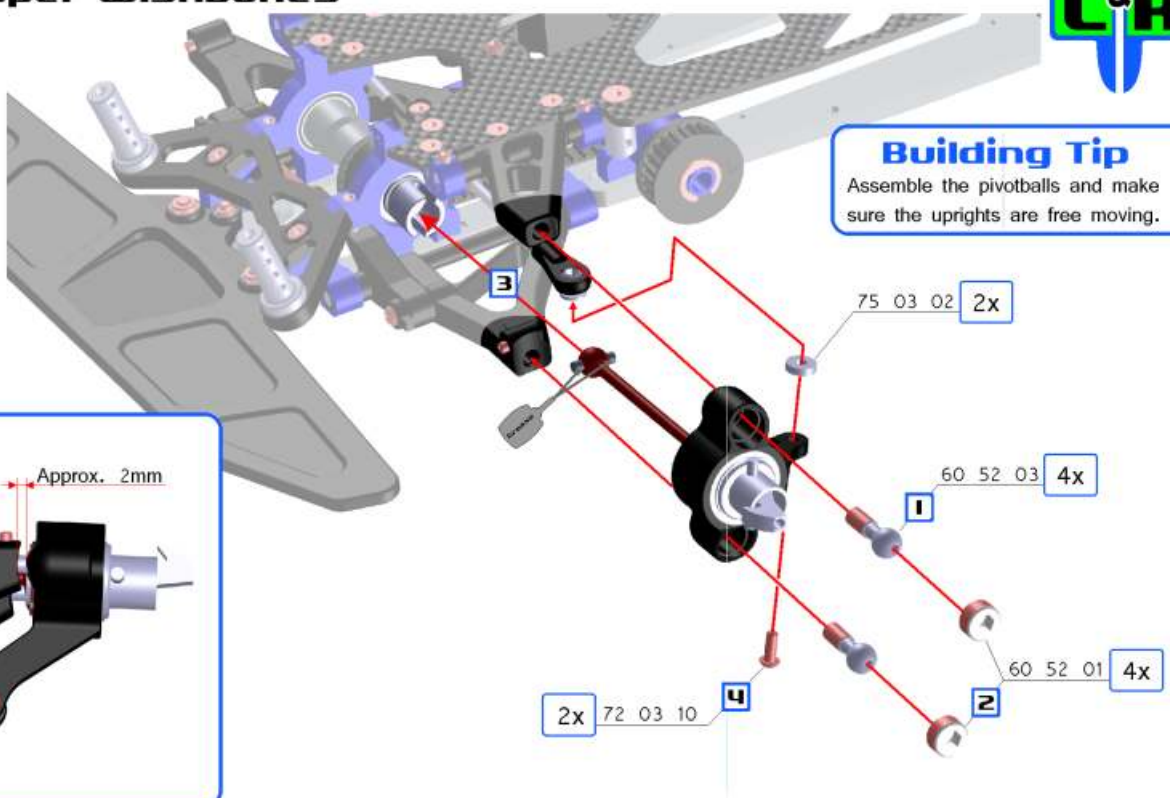
**Building Tip**  
Assemble one left and one right upright, they are marked with L=Left and R=Right.

BAG

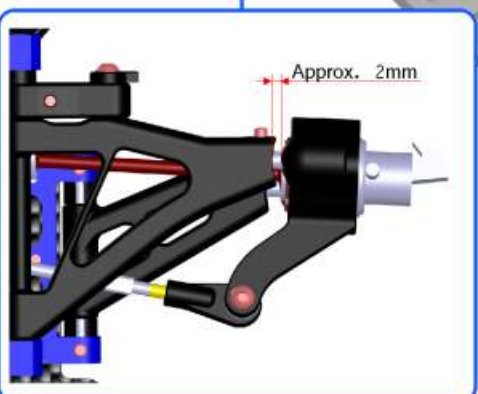
9 Front upper wishbones

STEP 4

- 2x  M3x10mm  
72 03 10





**Building Tip**  
Assemble the pivotballs and make sure the uprights are free moving.

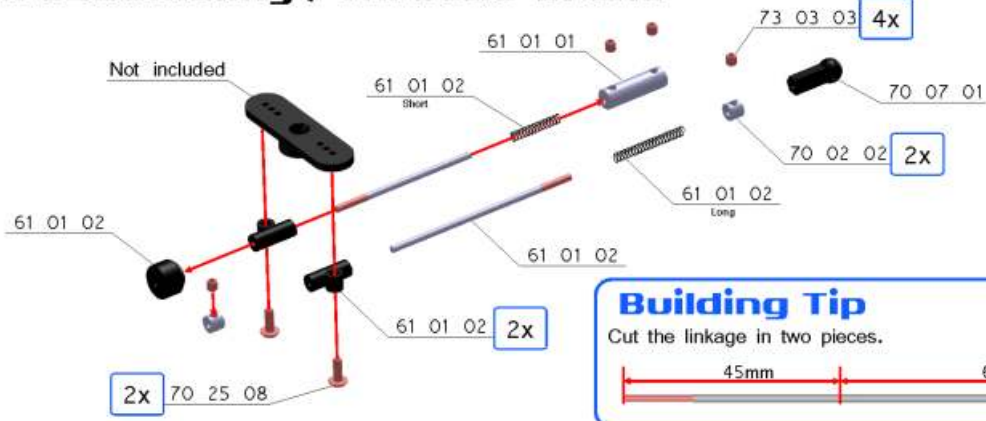


**BAG**

**10 Servoarm assembling / Throttle-Brake**

**STEP 1**

- 2x  M2,5x8mm  
70 25 08
- 4x  M3x3mm  
73 03 03



**Building Tip**

Cut the linkage in two pieces.



**BAG**

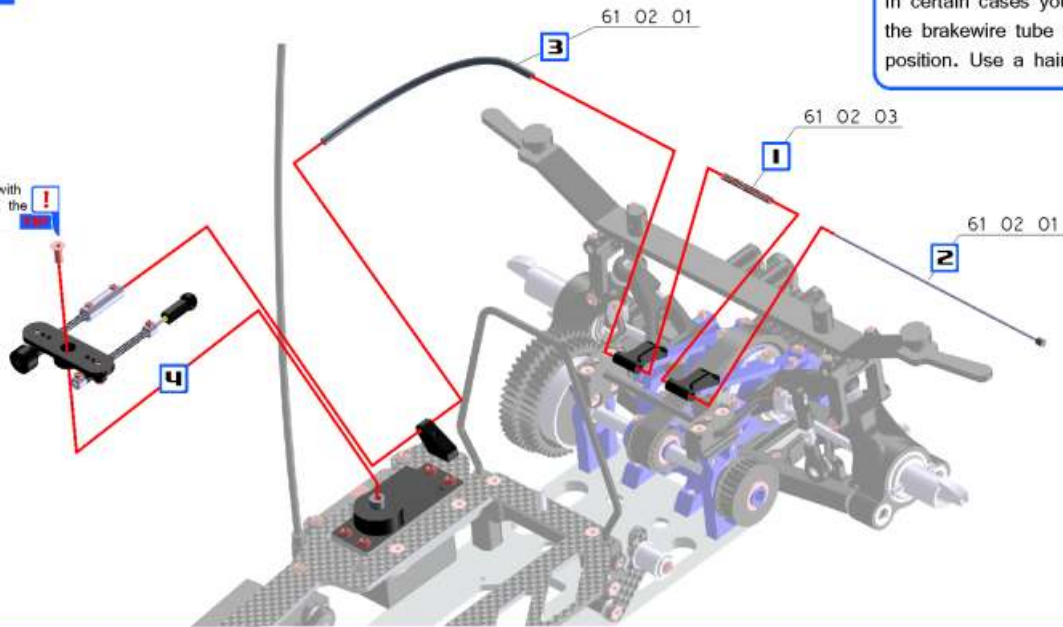
**10 Servoarm mounting / Brake wire**

**STEP 2**

**Building Tip**

In certain cases you have to bend the brakewire tube to the right position. Use a hairdryer

Use the screws provided with the servo. Not included in the kit !





**BAG**

**10 Fuel Tank**

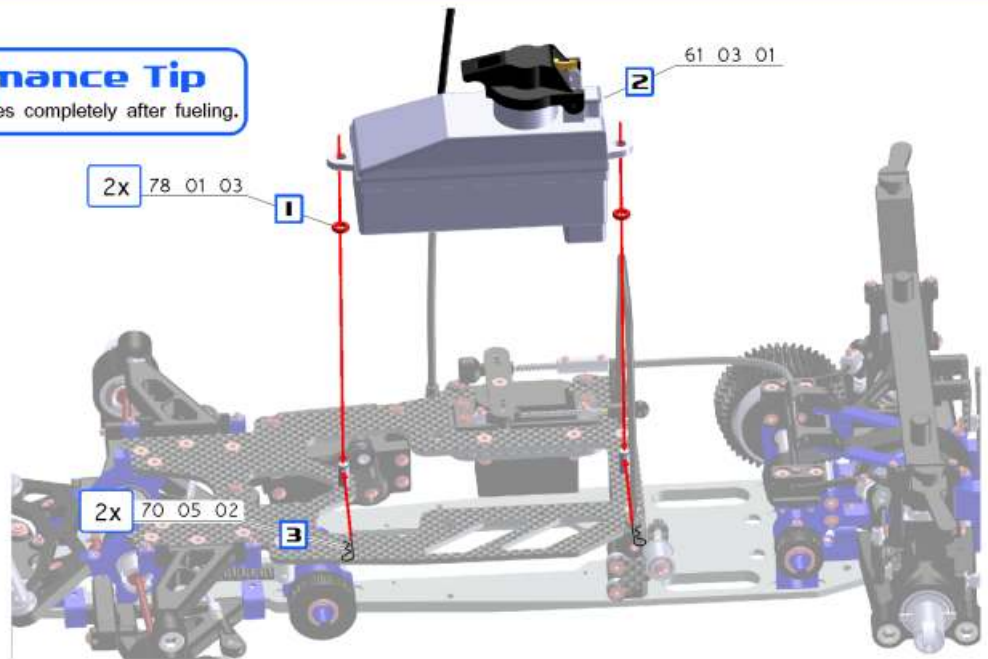
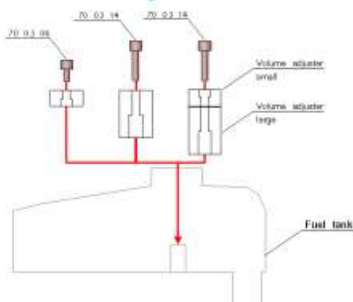
**STEP 3**

**Performance Tip**

The fuel cap closes completely after fueling.

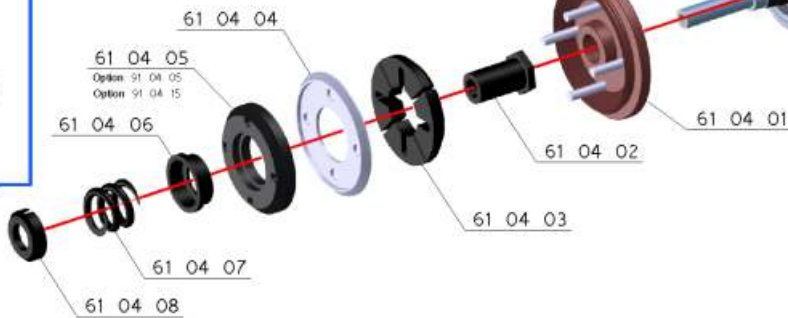
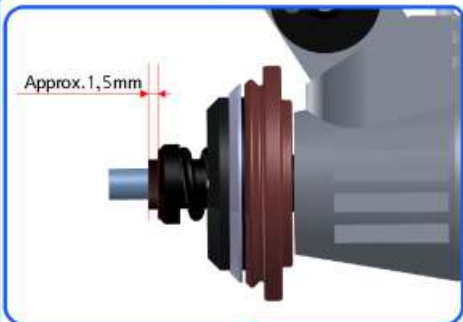
-  M3x14mm  
70 03 14
-  M3x6mm  
70 03 06

**Volume adjuster fuel tank**



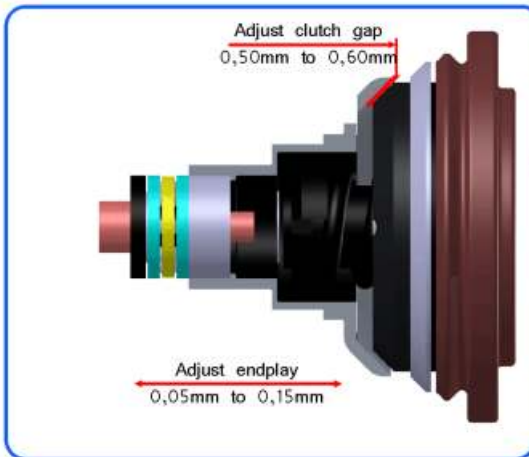
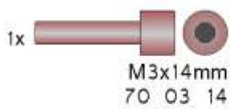
**BAG 10** UCC Clutch

**STEP 4**

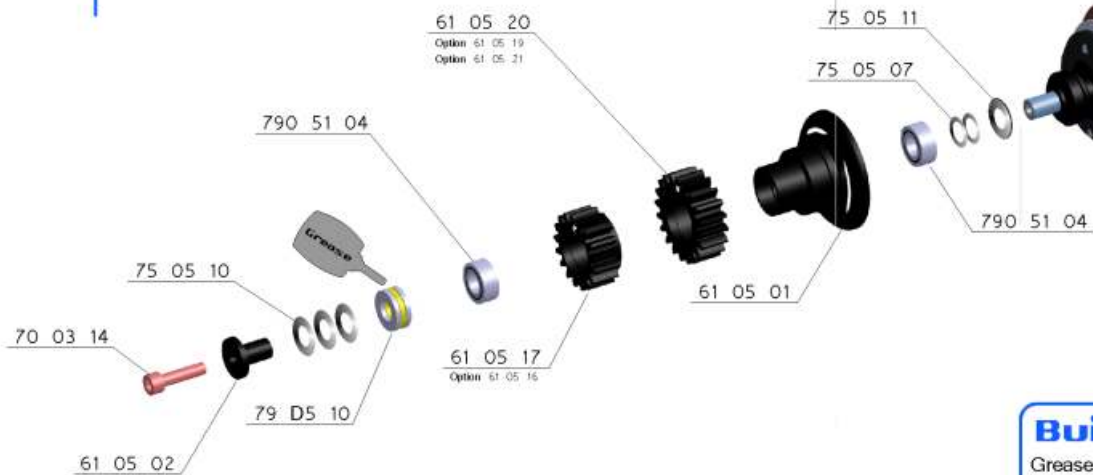


**BAG 10** UCC Clutchbell

**STEP 5**



**Building Tip**  
Please adjust the clutch gap and the endplay appropriately by using the enclosed adjusting shims.

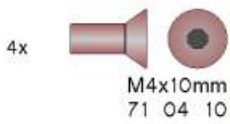
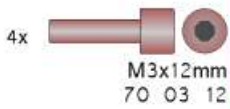


**Building Tip**  
Grease has to be applied to the thrust bearing.

BAG

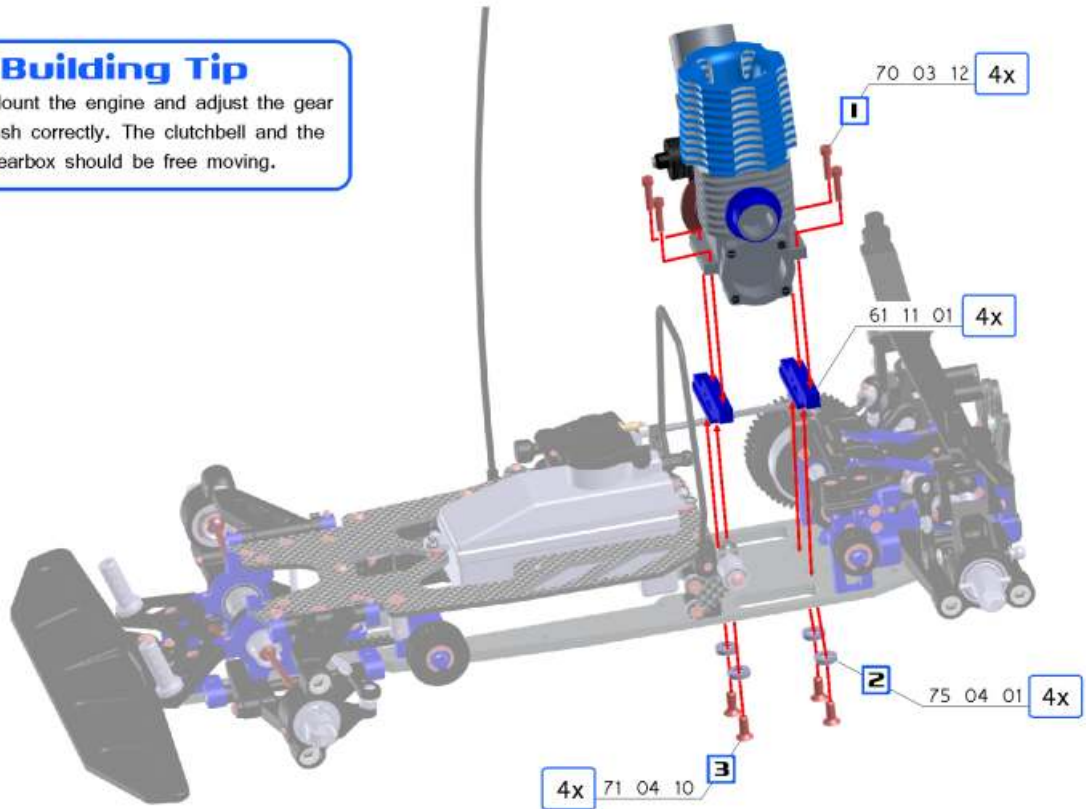
II Engine mount

STEP 1



**Building Tip**

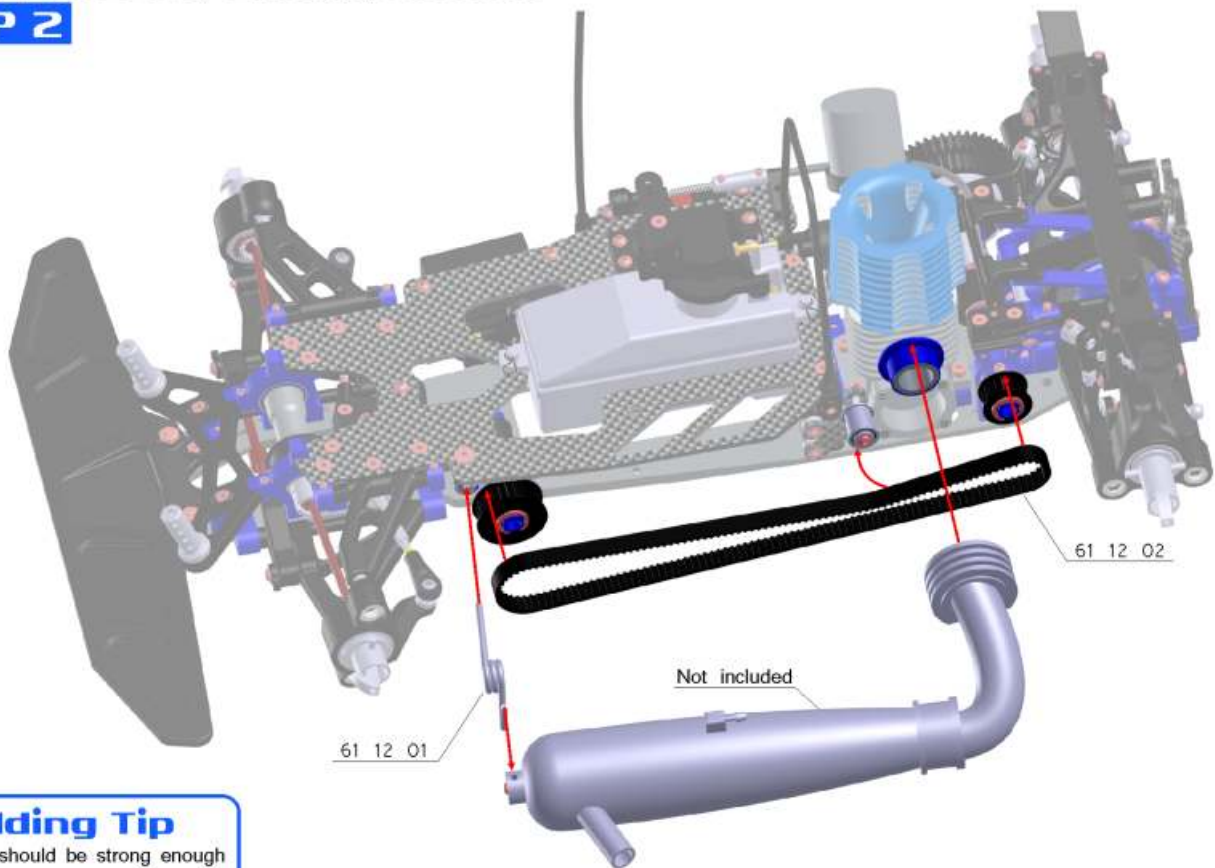
Mount the engine and adjust the gear lash correctly. The clutchbell and the gearbox should be free moving.



BAG

II Middle belt / spring muffler

STEP 2

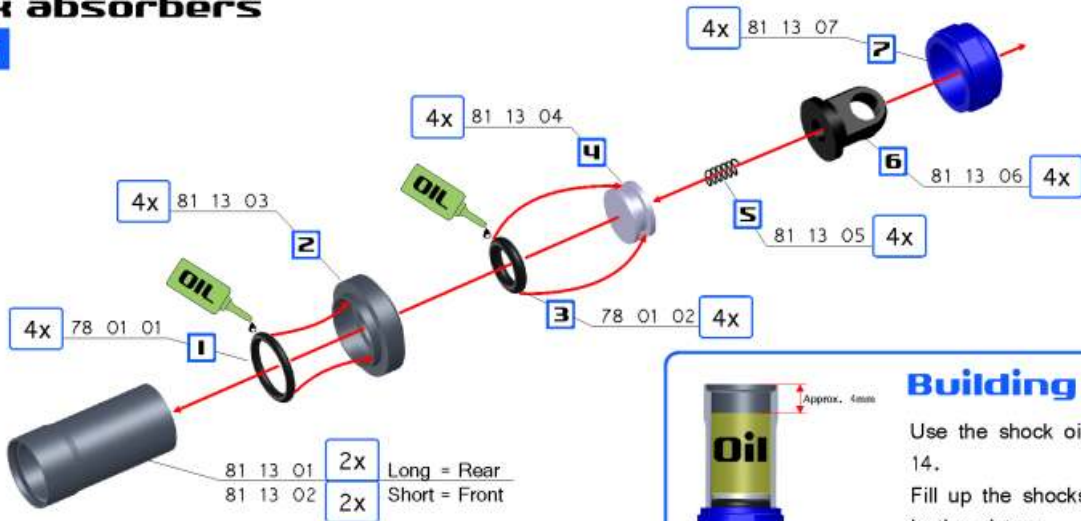


**Building Tip**

Belttension should be strong enough so the belt can't jump over the teeth.

**BAG II Shock absorbers**

**STEP 3**

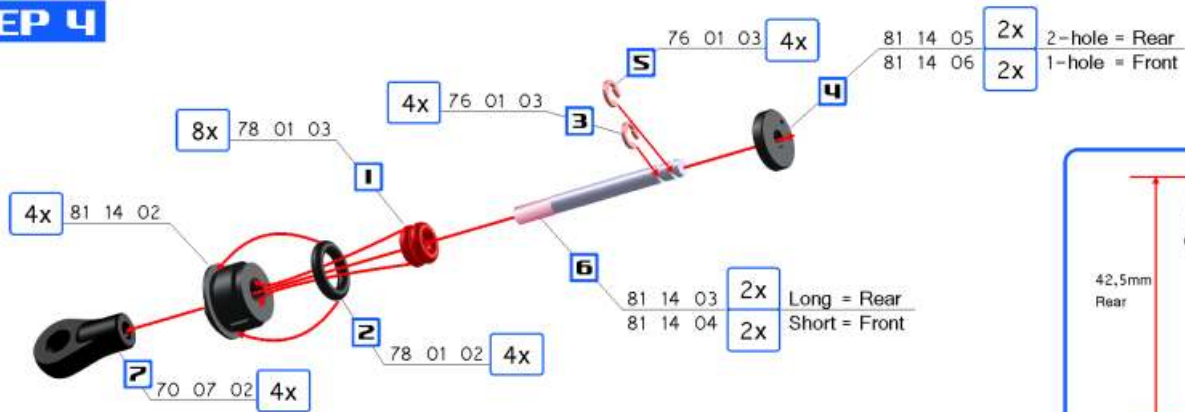


**Building Tip**

Use the shock oil 650cst Bag 14.  
Fill up the shocks like shown in the picture.  
Let the oil settle and allow the air bubbles to escape.

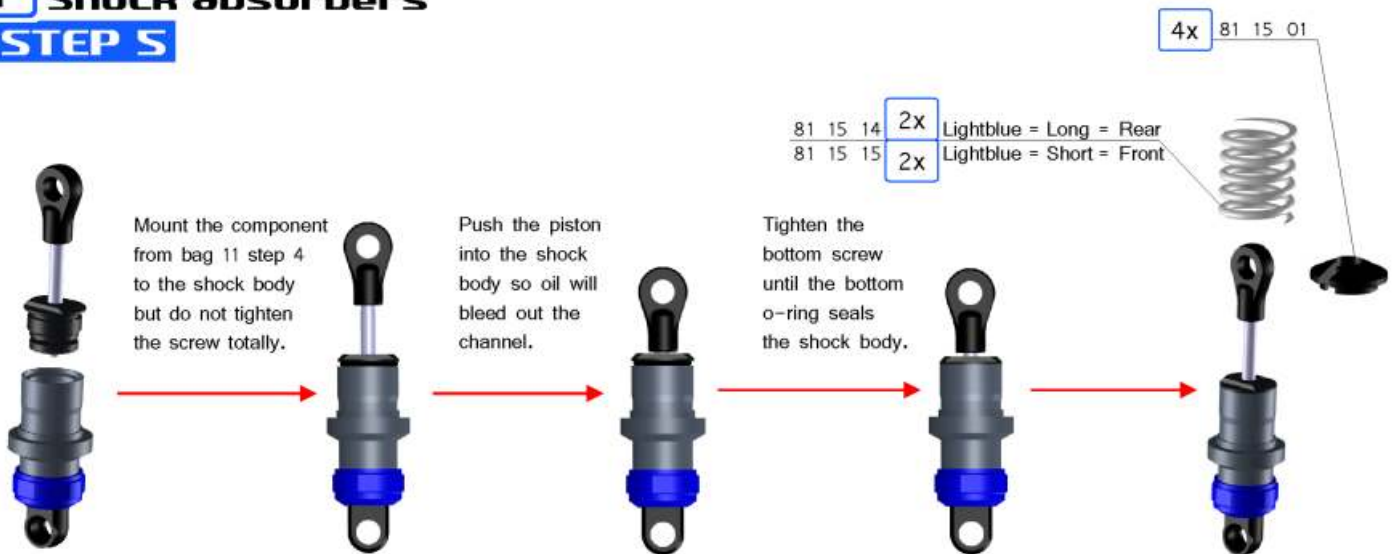
**BAG II Shock absorbers**

**STEP 4**



**BAG II Shock absorbers**

**STEP 5**

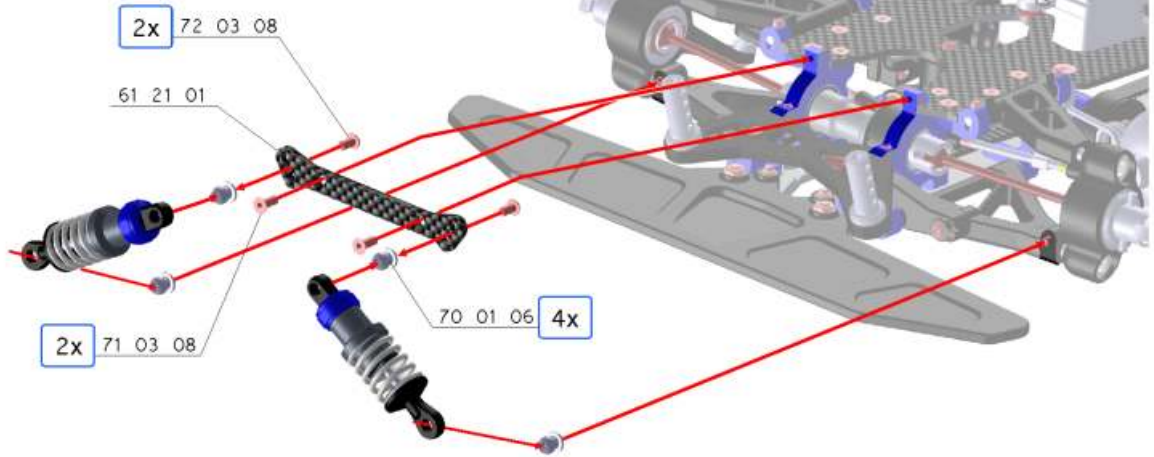
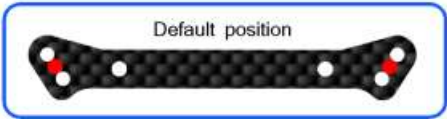


BAG

# 12 Shock tower front

## STEP 1

- 2x M3x8mm 72 03 08
- 2x M3x8mm 71 03 08

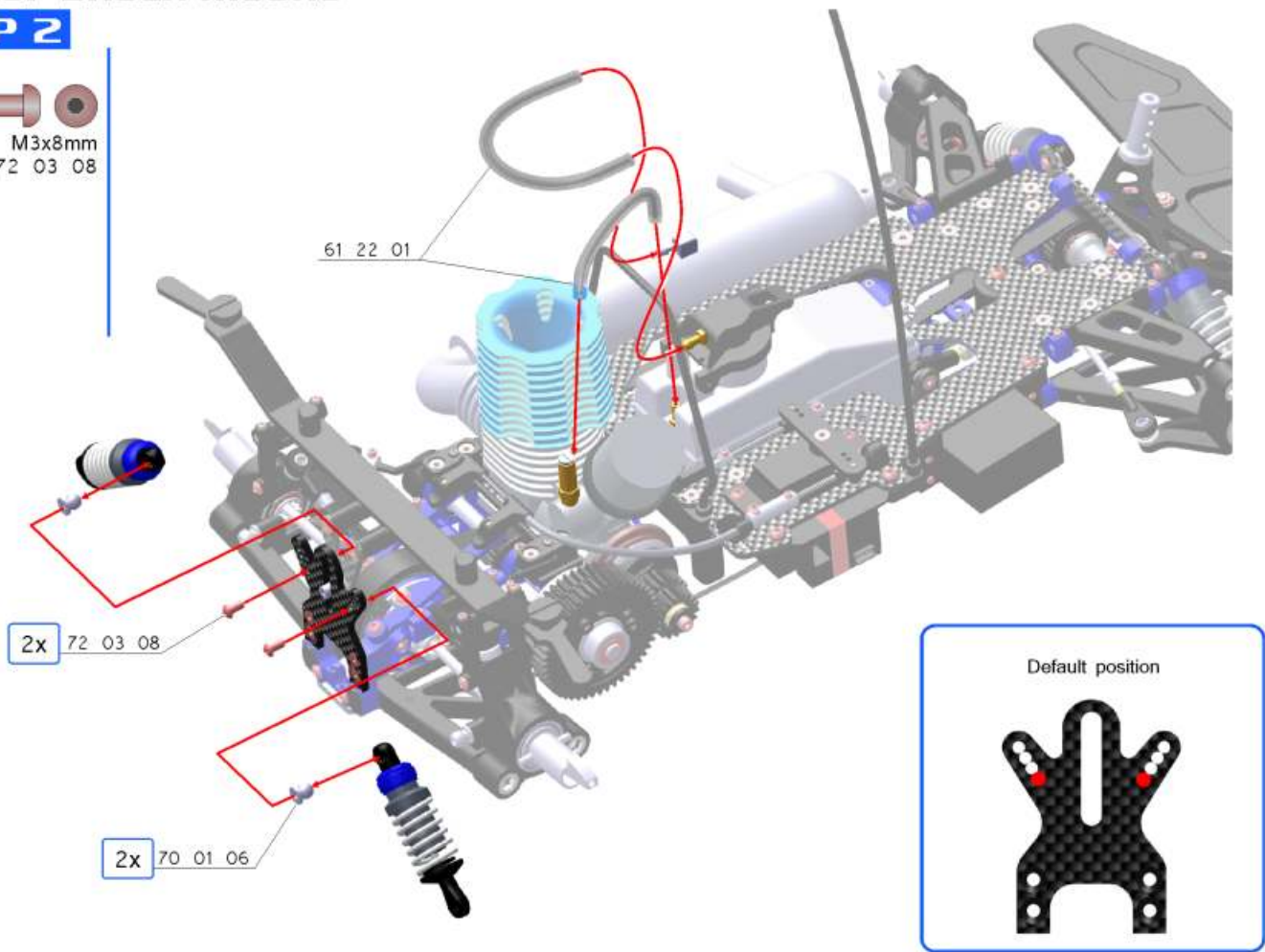


BAG

# 12 Rear shock mount

## STEP 2



- 2x M3x8mm 72 03 08

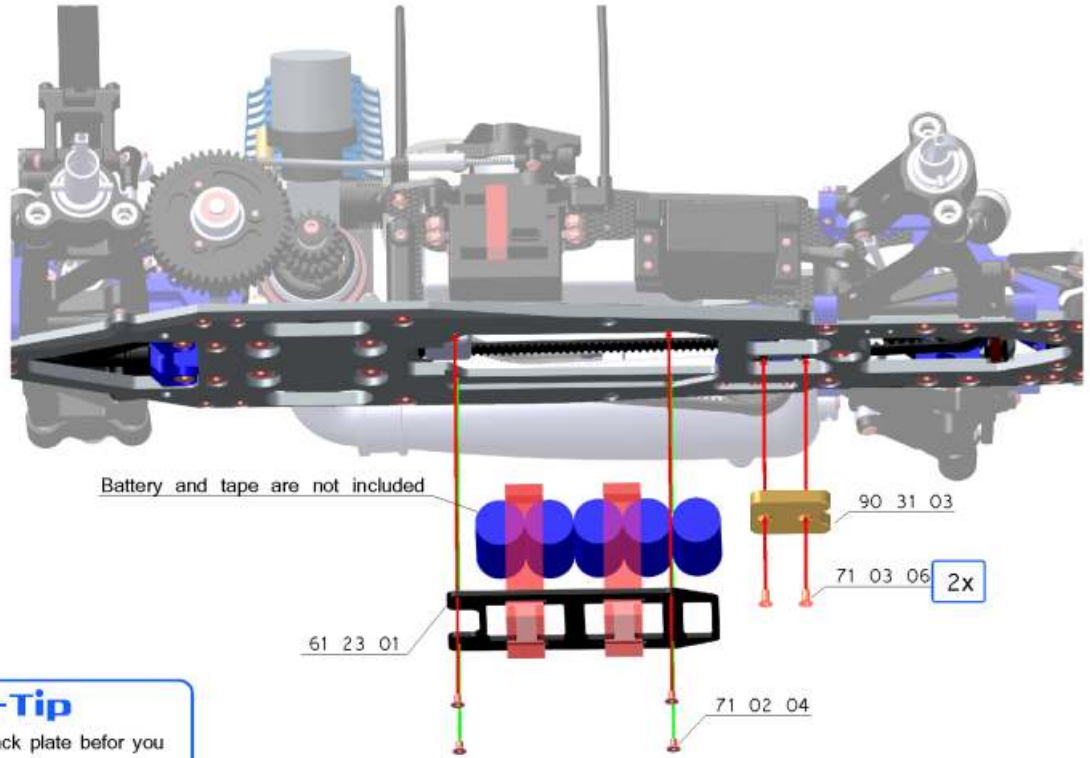


**BAG**

**12 Batterie pack plate**

**STEP 3**

- 4x  M2.5x4mm  
71 02 04
- 2x  M3x6mm  
71 03 06



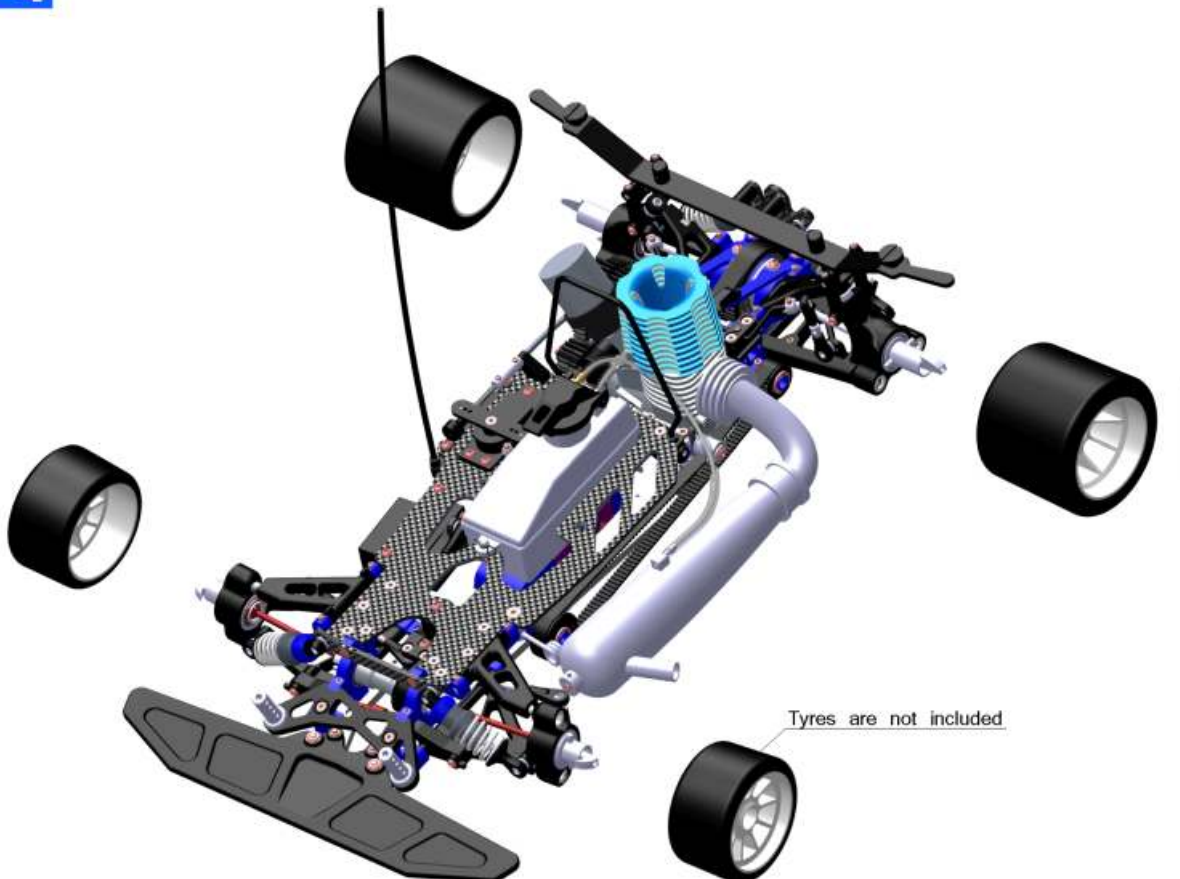
**Building-Tip**

Remove burs from batterie pack plate before you fix the battery pack to the plate.

**BAG**

**12 Tyre assembling**

**STEP 4**





# SET-UP SHEET

Name: **Standard**  
 Date:  
 Track:

**Track condition:**  
 Surface:  SMOOTH  MEDIUM  BUMPY  
 Size:  TIGHT  MEDIUM  FAST  
 Traction:  LOW  MEDIUM  HIGH

Engine	Muffler	Manifold	Plug
Novarossi	3007	Short	7tf

Clutch shoe	Centrifugal shoe	Spring
Black	Original	Original


Clutch bell clearance/mm	Adj. nut position/mm
0,55	1,5


Drive ratio		
Pinion 1st	Pinion 2nd	Pulley
<input type="radio"/> 16 <input checked="" type="radio"/> 17	<input type="radio"/> 19 <input checked="" type="radio"/> 20 <input type="radio"/> 21	<input checked="" type="radio"/> 26 <input type="radio"/> 25

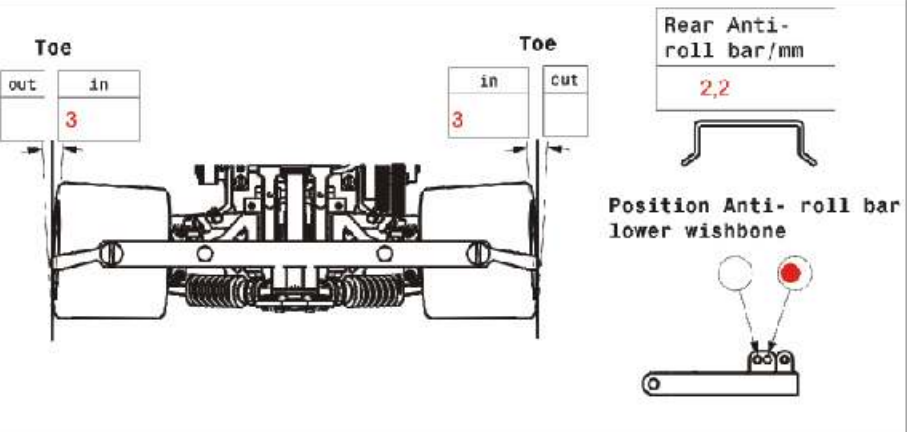
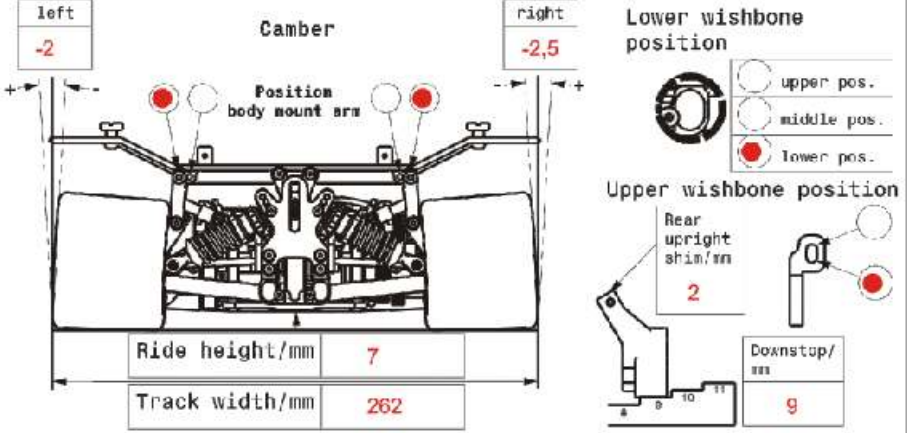
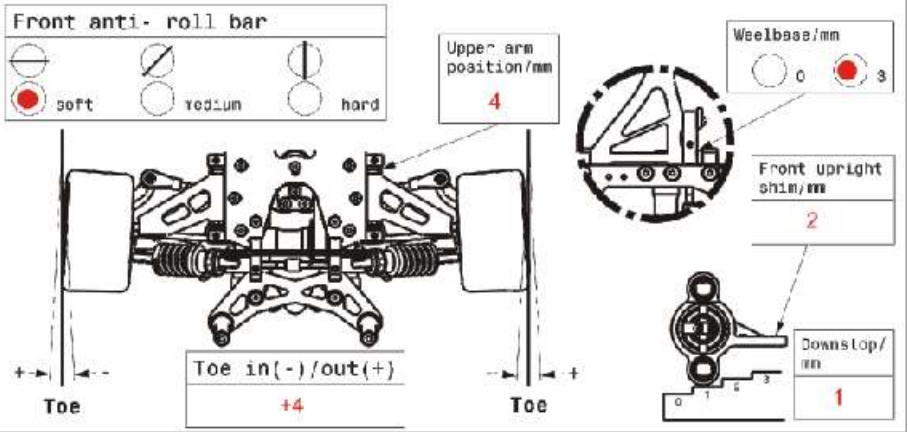
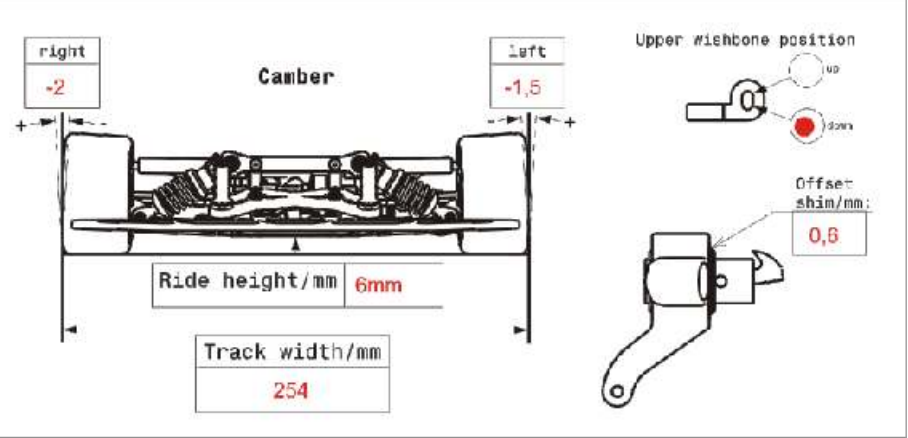
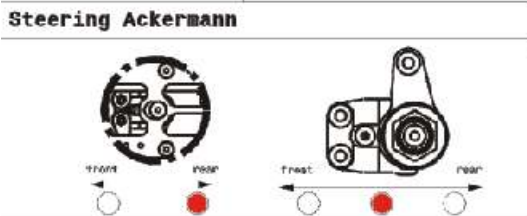
Spur 1st	Spur 2nd
<input type="radio"/> 48 <input checked="" type="radio"/> 49 <input type="radio"/> 50	<input type="radio"/> 45 <input checked="" type="radio"/> 46 <input type="radio"/> 47

Tyres		
Front left/right	brand	Rear left/right
Ennet / Ennet	shore	Ennet / Ennet
32 / 32	diameter start/mm	35 / 35
67 / 67	diameter end/mm	74 / 74

Body	
Body position/mm	Spoiler position/mm
15	10

Rear shock	
Position 	Piston (hole) 2
	Oil 650
	Spring Lightblue

Front shock	
Position 	Piston (hole) 1
	Oil 650
	Spring Lightblue



Comments:  
[www.team-shepherd.com](http://www.team-shepherd.com)