V-Dezign

TEAM V-DEZIGN CARPET RIPPER V

1/12th scale professional onroad car kit



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CAUTION! CAUTION! CAUTION! CAUTION! CAUTION! CAUTION! CAUTION! CAUTION! CAUTION!

- THIS KIT CONTAINS SMALL PARTS - KEEP OUT OF REACH OF SMALL CHILDREN.
- CHILDREN MUST NOT BE ALLOWED TO PUT ANY PARTS IN THEIR MOUTHS.
- THE KIT CONTAINS BOTH METRIC AND INCH SCREWS, THEY ARE PACKED LIKE THEY SHOULD BE USED – DO **NOT** MIX THEM!!

1 INTRODUCTION

1.1 FOREWORD

Thank you for purchasing one of the most innovative on road car 1/12th racing scene has ever seen - Team V-Dezign Carpet Ripper V! The CR V is a professional car kit for those who want to race with the best equipment – without compromises – and with equal car than team drivers run! Carpet Ripper V includes plenty of parts usually seen as optional parts with other brands. Introduce yourself to this manual – pay attention – it includes all the info needed for winning! Welcome to the famous VDZN team!

This document is principally intended for guidance to ordinary users of the equipment. The purpose of this document is to give a general description of the assembly instructions and how to get the best of it. The information described herein is subject to change without notice.

The CR V & instruction manual is based on years of top level experience in racing and test sessions at several different race tracks around the World.

However, if you have any questions, or notice any errors or omissions in this manual, please contact me at

Enjoy Your Carpet Ripper V ride and a best of luck for the races!

Vesa Yli

V-Dezign
info@v-dezign.net

Some results from season 2009-2011 by Carpet Ripper 1/12th car:

- 33% of the cars in top 12 at the EFRA European Championship 2011 were Carpet Rippers
- 4th at EFRA European Championship SPEC 2011 by Vesa Yli
- Winner of the FinTrack Tour Spec class 2011 by Janne Valtanen
- Nordic Champion 2010 by Vesa Yli
- EFRA European Champion 2010 by Chris Kerswell
- 6th, 8th and 10th at EFRA European Champs 2010 by Andy Griffiths, Vesa Yli and Chris Kerswell
- 7 x British Champion by Andy Griffiths & Chris Kerswell
- Multiple winner at Finnish nationals by Vesa Yli
- Multiple winner at UK nationals
- Winner of the C.A.R.S. Challenge @ Chesterfield, UK in Modified by Vesa Yli
- Winner of the C.A.R.S. Challenge @ Chesterfield, UK in Stock by Vesa Yli
- 6th, 8th and 10th at EFRA European Champs 2010 by Andy Griffiths, Vesa Yli and Chris Kerswell
- 2nd @ Finnish Championship 2010 & 2011 by Vesa Yli
- 2nd @ Euro Pan Series 2009-2010 in Modified by Vesa Yli
- 3rd @ Euro Pan Series 2009-2010 in ProStock by Vesa Yli
- 2 x Winner at Rebellion Race in 2006 & 2007 by Vesa Yli
- Russian Champion 2008 by Ivan Laptev

…and the domination continues with CR V in season 2011-2012!

1.2 ABOUT V-DEZIGN

2007 – that is when all got started - Team V-Dezign & Carpet Ripper '07 (CR'07). Andy Griffiths & Vesa Yli - the dynamic duo to rule the races with a new innovative car - without a fear to challenge all the big companies in business! And what happened - numerous wins and titles in Finland and UK, Andy & Vesa in Euro's A final among 100 best drivers in the Europe.

Since 2007 Team V-Dezign has manufactured one of the most successful 1/12th scale upgrade kits in Europe. The '07 car was followed by 2.0 in 2008 – with success by winning the V-Dezign's **first European Championship title in 2010** in Hinckley, UK by Chris Kerswell. In 2009 12th scale scene saw maybe the biggest change to the rules in ages - LiPo technology took over and round cells were replaced by lightweight black boxes called 1S LiPo packs with 3.7V voltage. It also meant t-bar layout was starting to get in the end of it's long road and new style of rear geometry and suspension was needed to place the battery in the centre of the car. Answer was so called link cars - t-bar was replaced by side links and pivot brace. During 2009 we did lots of development work based on current link cars available to see what there is to make the difference. Based on testing on a numerous different tracks around the Europe we went to our own direction we found working the best. Along came 3.0 and 4.0 versions.

There is no fast-lane to the glory. Continuous development & testing at the track is the thing. Unfortunately, nowadays it seems to be too very usual companies just to copy each others - also the mistakes made with design - without knowing what they are doing. Copy just for the win - design and develop to dominate!

1.3 NEW KIT ON THE BLOCK – CARPET RIPPER V

From the beginning of V-Dezign history the ambitious goal has been to manufacture the best 12th scale car available - so far it has only been available as an upgrade kit but along the new CR V - a complete 12th scale Ripper ride is finally here!

Features:

- Optimized and improved rear-end geometry introduced in CR 4.0 for 1S LiPO for low and high traction
- The narrowest chassis in the 1/12th scale market for smoother running - only 109mm wide
- Extended wheelbase for better stability - CR 4.0 was already longer than ANY 1/12th scale car available in the but to make it even a bit longer we have gained more stability in high-speed corners and in both low and high traction
- All aluminium parts are black anodized
- All graphite parts are made and cut by CNC according to the highest quality standards from super stiff 2.25 & 2.75mm graphite
- New, wider track width in front makes the car super smooth and stable to drive - better cornering speed and more consistent runs
- Well-known and copied anodized aluminium side damper tubes - smoothest damping in business
- Newly designed motor pods with no rear overhang - machined from high-quality black anodized 7075-T6 aluminium for maximum rear pod stiffness and stealth look
- Black anodized aluminium screws
- CRC Pro-Strut front-end - most steering and cornering speed
- Wide graphite front brace for CRC Pro-Strut - stiffer and more stable
- Black anodized centre shock - for the smoothest damping
- Adjustable centre shock mounting on chassis
- Graphite rear axle with black anodized lightweight hubs

Normally these parts are optional parts for 1/12th scale car - but with CR V they do! All these are included in the Limited Edition of kits made during late 2011. CR V – the most pro 1/12th car out of the box money can buy - without a need to buy a bag of options to make it similar to team drivers' cars!

- Black aluminium & steel screws & nuts - lightweight and stealth look for the win!
- High-quality ceramic diff balls - long life and super smooth diff operation!
- CRC Pro-Strut with long upper arms - more stability in any condition without compromising the steering
- Bronze pivot balls for lower arms - the smoothest kingpin action
- Rear axle ride height adjusters with .25mm steps
- Xenon VSS 16-balls 64dp spur gear

2 ITEMS NEEDED FOR BUILDING AND SETUPS

2.1 TOOLS (not included)

- Hex drivers
  - 1,5 mm
  - 2 mm
  - 3 mm
  - 0.050”
  - 3/32”
- Socket drivers
  - 5mm
  - 3/16”
  - 11/32”

- PH 2 screw driver
- Pliers
- Universal tools for diff adjustment
- Vernier scale
- Thread-lock
- CA glue

2.2 ELECTRONICS (not included)

- A R/C two channel surface frequency radio system
- 1S compatible electronic speed controller
- A R/C Electric motor, 540 size
- 1S LiPo battery pack
- A LiPo charger
- A LiPo sack for charging safety – **USE ALWAYS WHEN CHARGING OR DISCHARGING!!**

3 SETUP GUIDE FOR CR V

3.1 TIRES AND ADDITIVE

3.1.1 REAR TIRES

Pink and Magenta rear tires (38mm wheels) with diameter of 42 - 43mm works in most tracks. The higher traction the smaller tires. Max size rear tires recommendation is 44mm. The bigger the tire the more rear end lifting may occur.

3.1.2 FRONT TIRES

Magenta or 2xPink works at most tracks. Magenta gives most steering. Recommended tires size is 39,5-41,5mm Remember to keep the tire ‘corners’ round for better handling and less tire breakage. Tire size has huge effect to handling especially on high traction. The bigger the tire the more rear end lifting may occur.

3.1.3 ADDITIVE

CS High Grip or Speedtech Foam Liquid is recommended for most of the tracks. Start with additive on 30% of the tire width in front (inside) and always 100% of the width in rear.

Speedtech has slightly more steering than CS. It also makes the tires go softer earlier in their life cycle. Use additive on rear tires for about 10-30min, in front tires 2-10min depending on track.

3.2 BODY

It is recommended to use either Protoform AMR-12 or Black Art Bomb’R when only EFRA legal bodies are allowed. Protoform has a bit more rear bite and its more stable in modified. For stock racing Black Art has more instant steering in the infield on power but maybe a bit less steering on exit compared to AMR.

Place the body as low as possible so that the front hole markings of the body will match with front tires first.

3.3 CRC PRO STRUT FRONT-END

3.3.1 SPRINGS

It is recommended to use standard.50mm springs with VDZN thrust grease on king pin to get the suspension travel smoother. 0.45 springs are too soft most of the time. 0.55 may be used in some tracks with super high traction carpet.

3.3.2 CAMBER

Start with 1 deg camber on both sides. For more steering try max 1.5deg camber. Tires should be wearing flat. The more camber the more tricky to drive. Cambers to use are in section 0.75 – 1 - 1.25 - 1.5deg.

3.3.3 CASTER

Always use 5deg reactive caster. For more steering out of the corner you can try 10deg but usually it makes the car feel very tricky and over steering on exit. Always make sure BOTH of the sides have same caster (~3,5-4 deg). By relying on equal shim quantity on upper arm static caster setting, with same amount of shims on both ends of the upper arm usually makes the right side to have slightly more caster angle when using 3/16" sized axle/steering block (old CRC dual axle).

3.3.4 SERVO

Servo is to be used lay down. CR V has holes for all common servo types:

- Futaba (9602/9650)
- JR / Graupner
- Sanwa SRG-HR

To maintain the best balance, servo's heavier side is on the right side with receiver - ESC is always to be mounted on the left side of the car as close to antenna mount as possible.

3.3.5 STEERING LINK SHIMS

Use 2-3mm shims (depends on the tire size) to get the ball studs of the steering block laid horizontally. Place the steering servo so that the steering links are either parallel to each other.

3.4 REAR END

3.4.1 REAR AXLE SHIMMING & REAR WIDTH

Remember to shim the rear axle to the centre line of the car. This means (with Jaco wheels) 2 shims to left and 6 shims to right side of the axle. Use the 2mm tweak hole in lower motor pod to measure the rear width both sides. Max width is 172mm.

3.4.2 REAR DROOP

Rear droop means the travel of the rear compared to chassis when chassis is levelled horizontally. Lower motor pod plate should be parallel with the chassis so the droop is measured on max ride height under the battery when shock is at max length. Adjust the droop by shortening/lengthening the shock ball cups.

Recommended droop is ~1mm in rear. Using less travel in rear makes the car push more on power on exit. Using more travel gives more steering on power but may make the car more aggressive on fast and hooking on long sweepers.

3.4.3 CENTER SHOCK

It is recommended to use the gold centre spring with Associated 30-35Wt shock oil. Harder oil gives less general traction. Harder spring makes the car under steer on power on exit.

In CR V it is possible to move centre shock to forward and rear positions. Start with short shock for more rear traction. For more on-power steering, use lengthened shock with aluminium extension part & ball cup (included with the kit in Bag F).

3.4.4 SIDE SPRING PRELOAD

Set the side springs so that when the car is on table (with same size tires on right and left side) so that there is no gap between the side spring and lower motor pod plate.

For more on power steering, tighten the set screw with about ¼ or ½ turn. M3 screw has 0,5mm climb per turn so 1/2 turn means 0,25mm change in preload.

Setting the side spring tension and rear side dampening is probably the most important set-up in most tracks with link cars so pay attention! Start with VDZN super soft to medium dampening lube on tubes and with standard blue springs or optional gold springs. To make the car easier to drive, do not use any preload.

VDZN side springs

Black		(softer)
Green		
Silver		
Blue	**Recommended spring to start with (std)**	
Gold		(harder)

3.5 TIPS FOR HIGH TRACTION

- To reduce rear end lifting:
  - Use smaller tires in both front and rear - 39.5-40.5mm / 41.5-42.5
  - Make sure links are running smoothly and the centre pivot is not tweaked
  - Less preload on side springs
  - Softer damping on tube dampers - VDZN Super soft or soft

- To make the car easier to drive:
  - Harder front tires (Black compound)
  - Smaller tires

3.6 TIPS FOR LOW TRACTION

- Start with slightly bigger tires
- Pink or Magenta compound to rear, 2xPink to front
- No preload on side springs
- Harder side springs

3.7 HOW TO TWEAK THE CAR?

First of all, make sure that all parts are flat and straight like they should, no bending, binding or breakage if had a crash.

- Set the car to a flat table top with all electronics on.
- Put coins (no matter what currency) on the top of the front tires.
- Rise the front end from tweak hole in centre line of the chassis just behind the bumper plate. Both coins should fall exactly at the same time. If not, do the following:

Is the pivot brace tweaked?

- take off the side springs and tube dampers
- turn the rear pod from side to side and feel if it snatches over the middle point – yes / no?
- centre pivot must be extremely smooth and free, no binding allowed!
- if the pivot is tweaked, loosen M3x10 flat head screws and set the rear pod flat with chassis – NOTE! Shock must always be mounted when tweaking the rear pivot!
- move the pivot brace to find the location rear pod feels smooth when moving side to side.
- make sure both side springs have same gap/preload or are they just flat to the lower pod plate
- the side spring from which the coin falls first, needs to be loosen. Or the other side needs to be tightened a bit. Start with 1/8 turn.
- tighten the screws and put back the springs and tubes.

Now try again, coins should fall at the same time. If not, see the following.

What else can be tweaked?

- both side tires should be equal size or at least within 0.3mm.
- check if the front end is tweaked – all suspension parts must move freely
- check if the kingpin is same length on both sides – set to 10.5-10.6 mm like shown in instructions.

If still tweaked – take off the side springs and set the car again to the table and lift from the front. Coins should fall about the same time or exactly the same time if the chassis is in balance with electronics from side to side. Consider that the play in front end parts has an effect when tweaking with coins. Anyway, most of the problems can be solved with bare eyes when the car is build properly and set like guided above and in instructions.

4 GEAR RATIO CHART FOR 90t SPUR GEAR

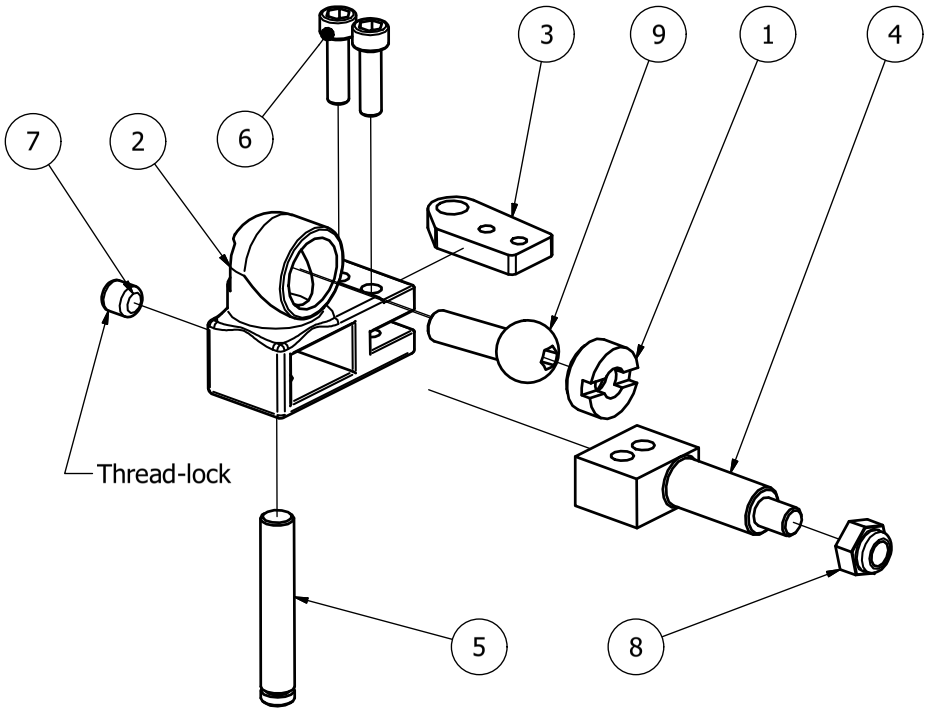
Spur gear **90**

Tire	41,0	41,3	41,5	41,8	42,0	42,3	42,5	42,8	43,0	43,3	43,5	43,8	44,0	44,3	44,5	44,8	45,0
Pinion																	
20	**28,6**	**28,8**	**29,0**	**29,1**	**29,3**	**29,5**	**29,7**	**29,8**	**30,0**	**30,2**	**30,4**	**30,5**	**30,7**	**30,9**	**31,1**	**31,2**	**31,4**
21	30,0	30,2	30,4	30,6	30,8	31,0	31,1	31,3	31,5	31,7	31,9	32,1	32,2	32,4	32,6	32,8	33,0
22	**31,5**	**31,7**	**31,9**	**32,0**	**32,2**	**32,4**	**32,6**	**32,8**	**33,0**	**33,2**	**33,4**	**33,6**	**33,8**	**34,0**	**34,2**	**34,3**	**34,5**
23	32,9	33,1	33,3	33,5	33,7	33,9	34,1	34,3	34,5	34,7	34,9	35,1	35,3	35,5	35,7	35,9	36,1
24	**34,3**	**34,5**	**34,7**	**35,0**	**35,2**	**35,4**	**35,6**	**35,8**	**36,0**	**36,2**	**36,4**	**36,6**	**36,8**	**37,1**	**37,3**	**37,5**	**37,7**
25	35,8	36,0	36,2	36,4	36,6	36,9	37,1	37,3	37,5	37,7	37,9	38,2	38,4	38,6	38,8	39,0	39,3
26	**37,2**	**37,4**	**37,6**	**37,9**	**38,1**	**38,3**	**38,6**	**38,8**	**39,0**	**39,2**	**39,5**	**39,7**	**39,9**	**40,1**	**40,4**	**40,6**	**40,8**
27	38,6	38,9	39,1	39,3	39,6	39,8	40,0	40,3	40,5	40,7	41,0	41,2	41,4	41,7	41,9	42,2	42,4
28	**40,1**	**40,3**	**40,5**	**40,8**	**41,0**	**41,3**	**41,5**	**41,8**	**42,0**	**42,3**	**42,5**	**42,7**	**43,0**	**43,2**	**43,5**	**43,7**	**44,0**
29	41,5	41,7	42,0	42,2	42,5	42,7	43,0	43,3	43,5	43,8	44,0	44,3	44,5	44,8	45,0	45,3	45,5
30	**42,9**	**43,2**	**43,4**	**43,7**	**44,0**	**44,2**	**44,5**	**44,7**	**45,0**	**45,3**	**45,5**	**45,8**	**46,1**	**46,3**	**46,6**	**46,8**	**47,1**
31	44,3	44,6	44,9	45,2	45,4	45,7	46,0	46,2	46,5	46,8	47,0	47,3	47,6	47,9	48,1	48,4	48,7
32	**45,8**	**46,1**	**46,3**	**46,6**	**46,9**	**47,2**	**47,4**	**47,7**	**48,0**	**48,3**	**48,6**	**48,8**	**49,1**	**49,4**	**49,7**	**50,0**	**50,2**
33	47,2	47,5	47,8	48,1	48,4	48,6	48,9	49,2	49,5	49,8	50,1	50,4	50,7	50,9	51,2	51,5	51,8
34	**48,6**	**48,9**	**49,2**	**49,5**	**49,8**	**50,1**	**50,4**	**50,7**	**51,0**	**51,3**	**51,6**	**51,9**	**52,2**	**52,5**	**52,8**	**53,1**	**53,4**
35	50,1	50,4	50,7	51,0	51,3	51,6	51,9	52,2	52,5	52,8	53,1	53,4	53,7	54,0	54,3	54,6	55,0
36	**51,5**	**51,8**	**52,1**	**52,4**	**52,8**	**53,1**	**53,4**	**53,7**	**54,0**	**54,3**	**54,6**	**55,0**	**55,3**	**55,6**	**55,9**	**56,2**	**56,5**
37	52,9	53,2	53,6	53,9	54,2	54,5	54,9	55,2	55,5	55,8	56,2	56,5	56,8	57,1	57,4	57,8	58,1
38	**54,4**	**54,7**	**55,0**	**55,4**	**55,7**	**56,0**	**56,3**	**56,7**	**57,0**	**57,3**	**57,7**	**58,0**	**58,3**	**58,7**	**59,0**	**59,3**	**59,7**
39	55,8	56,1	56,5	56,8	57,1	57,5	57,8	58,2	58,5	58,8	59,2	59,5	59,9	60,2	60,5	60,9	61,2
40	**57,2**	**57,6**	**57,9**	**58,3**	**58,6**	**59,0**	**59,3**	**59,7**	**60,0**	**60,4**	**60,7**	**61,1**	**61,4**	**61,8**	**62,1**	**62,5**	**62,8**

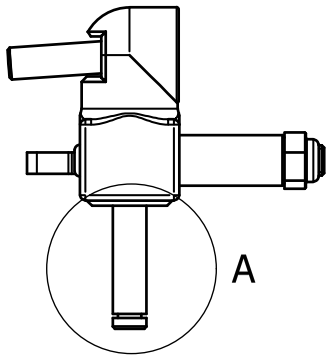
5 RIDE HEIGHT SHIM /BLOCK CHART

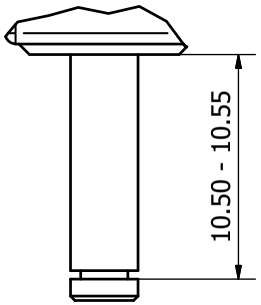
Rear										
Tire size	40,5	41	41,5	42	42,5	43	43,5	44	44,5	45
Ride height block	2,25	2	1,75	1,5	1,25	1	0,75	0,50	0,25	0
Front										
Tire size	39	39,5	40	40,5	41	41,5	42	42,5	43	43,5
Shims	0	0,25	0,5	0,75	1	1,25	1,5	1,75	2	2,25

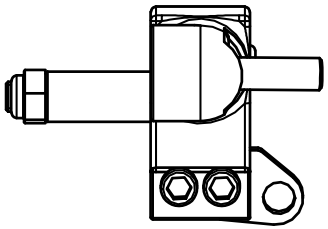
Bag A1 - Steering block assembly

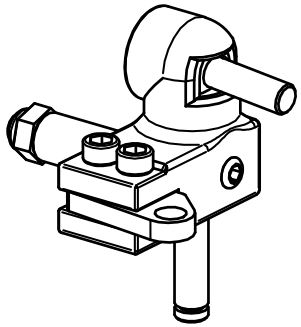


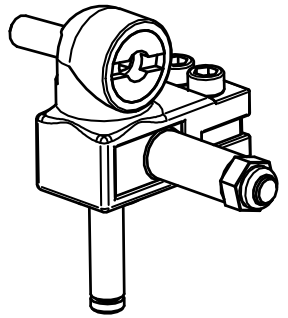
Detail A







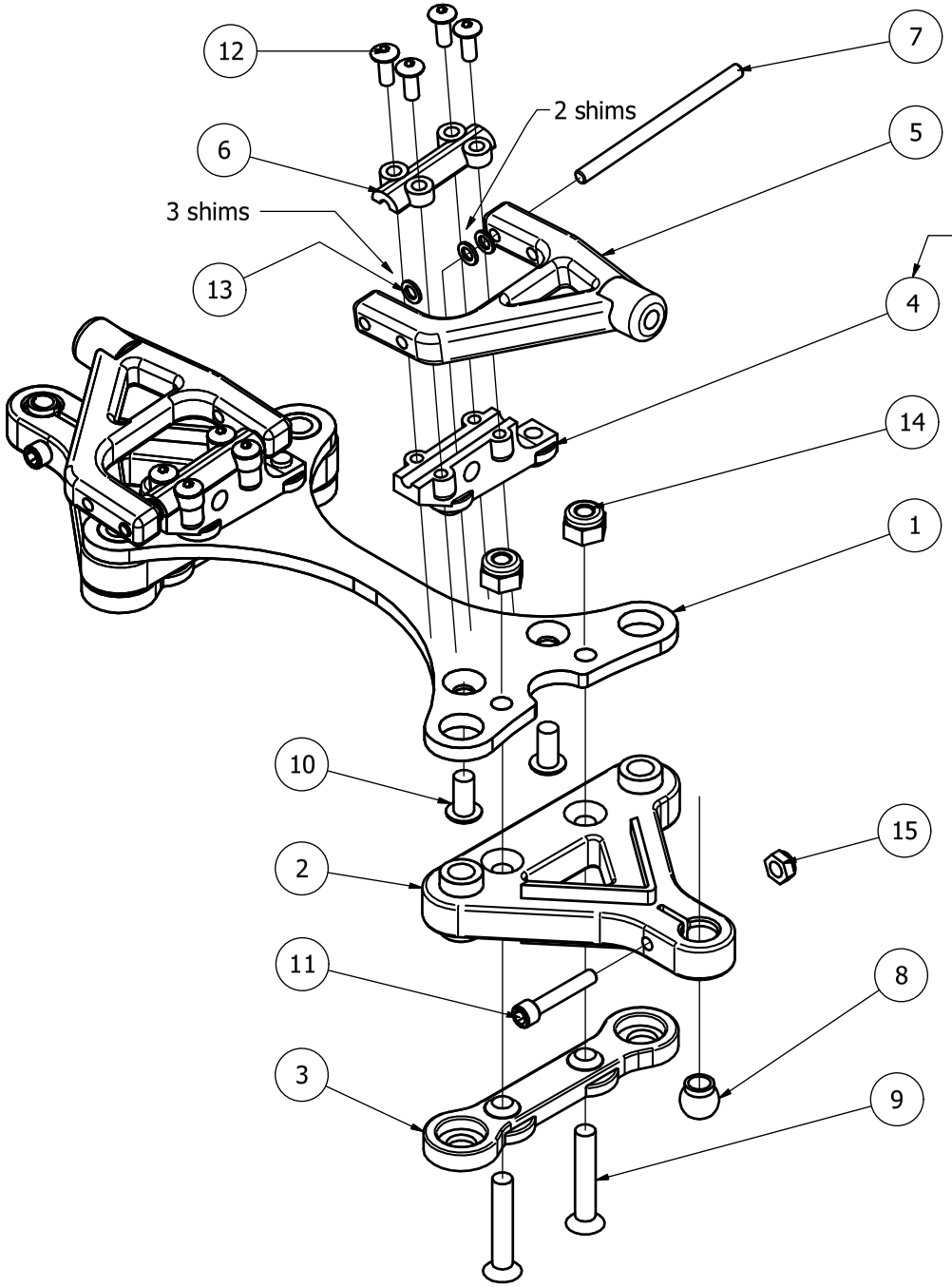


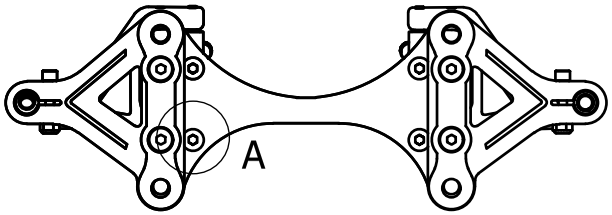


1. Push the dual aluminum axle all the way into the plastic steering block firmly. Use only trailing axle!
2. Use 0.050" hex driver to mount the kingpin into the steering block. Tighten the kingpin until some resistance is met.
3. Set the length of the kingpin according to Detail A. Lock the kingpin with 4-40 set screw. Use thread-lock.
4. Mount the plastic steering arm to steering block. Note direction!
5. Push the upper pivot ball through the steering block. Thread the plastic insert nut into the steering block. This is a bit tricky - note that the slot of the insert is horizontally when mounting! The thread is steep so the insert is not perfectly flat compared to steering block surface when mounted.
6. Do not lock the pivot with insert nut - it MUST be VERY smooth with a slight play - it can be adjusted by the insert nut. If not, use a Dremel too or similar to roll the pivot in steering block but be careful not to burn the plastic!
7. Now the assembly is ready - repeat the same to the right side parts!

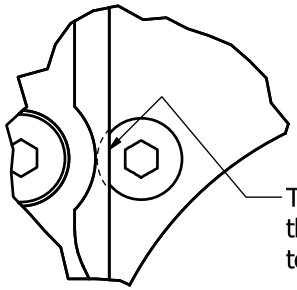
PARTS LIST			
ITEM	QTY	PART NUMBER	DESCRIPTION
1	1	VDZ-547	Insert nut
2	1	VDZ-546	Steering block
3	1	VDZ-540	Steering arm
4	1	VDZ-548	Dual axle
5	1	VDZ-550	Kingpin
6	2	VDZ-556	2/56 x 1/4 Socket head
7	1	VDZ-552	Set screw
8	1	VDZ-732	4-40 x 3-16 Nut
9	1	VDZ-549	Upper pivot ball

Bag A2 - A4 - Front brace assembly





Detail A



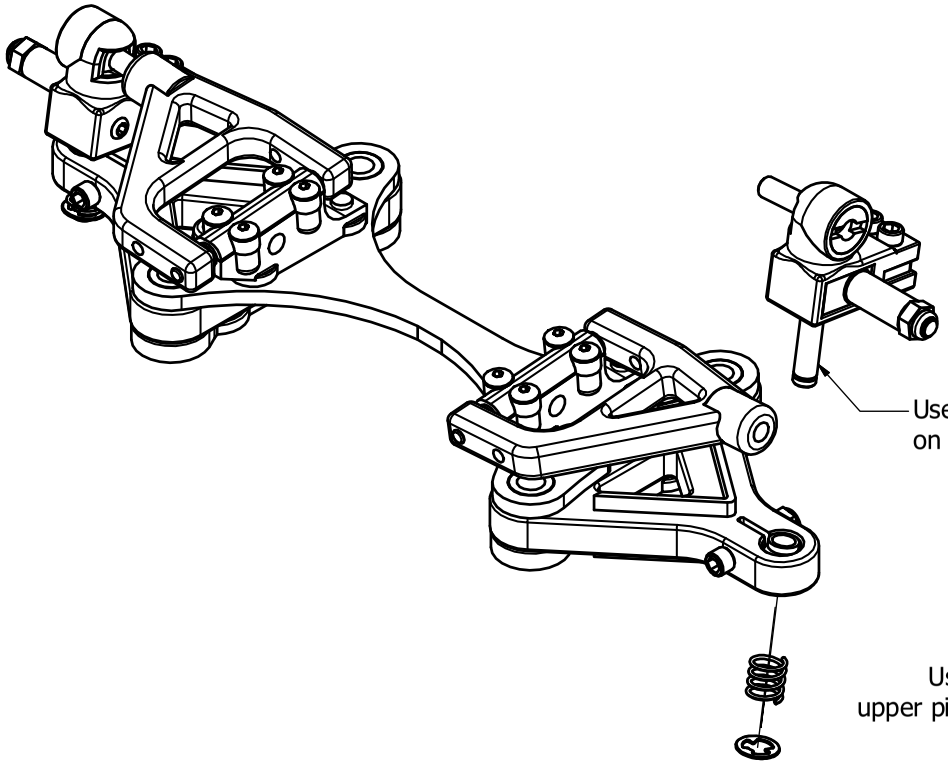
Take some material off around the screws with hobby knife to get them sitting properly.

1. Press the bronze pivot ball into the lower arm against table top. This may need some force. Do NOT press it roughly with pliers - it may leave scratches to the egde of the kingpin hole!
2. Lower pivot ball must move freely, do not tighten the screw in lower arm too tight!
3. Upper arm must fall down freely on its own weight. If its binding even a little, use a 2mm drill (by hand) to make sure holes are parallel to each other.

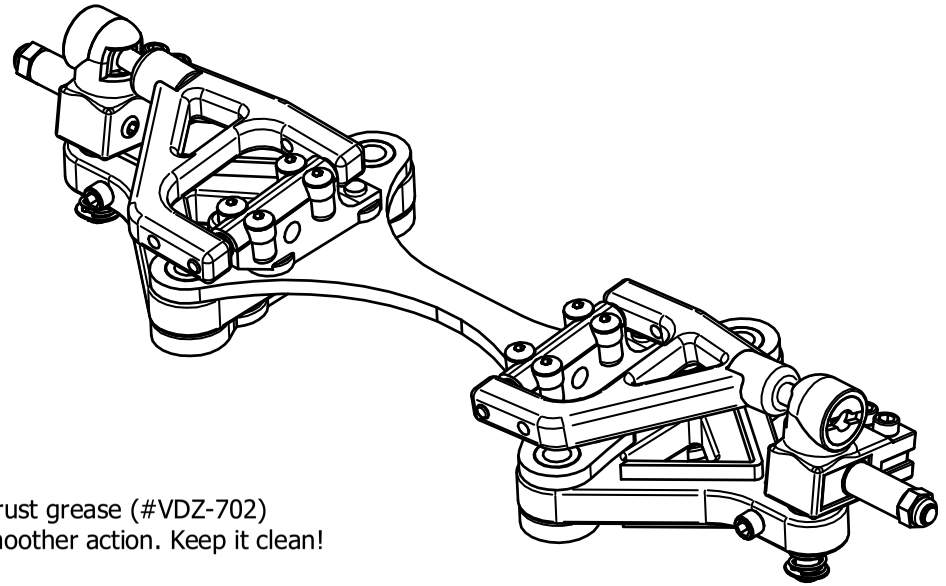
PARTS LIST

ITEM	QTY	PART NUMBER	DESCRIPTION
1	1	VDZ-506	Graphite front brace
2	2	VDZ-541	Lower arm
3	2	VDZ-543	Ride height blocks
4	2	VDZ-544	Caster block
5	2	VDZ-542	Long upper arm
6	2	VDZ-545	Upper cap
7	2	VDZ-553	Hinge pin
8	2	VDZ-527	Bronze pivot ball
9	4	VDZ-727	M3x12 Flat head
10	4	VDZ-722	M3x6 Button head
11	2	VDZ-555	2/56 x 1/2 Socket head
12	8	VDZ-558	2-56 x 1/4 Button head
13	6	VDZ-554	Teflon shims
14	4	VDZ-731	M3 Nut
15	2	VDZ-557	2/56 Lock nut

Bag A - Front-end assembly



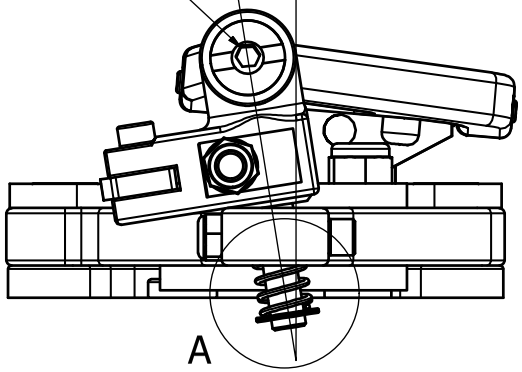
Use V-Dezign Thrust grease (#VDZ-702)
on kingpin for smoother action. Keep it clean!



Caster ~ 4-7 °

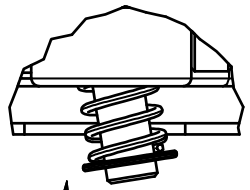
Note!
Caster angle possibly differs slightly from side to side when using equal shimming with upper arm. Adjust equal caster on both sides with shims.

Use 2mm hex driver to tighten
upper pivot to arm and to set camber



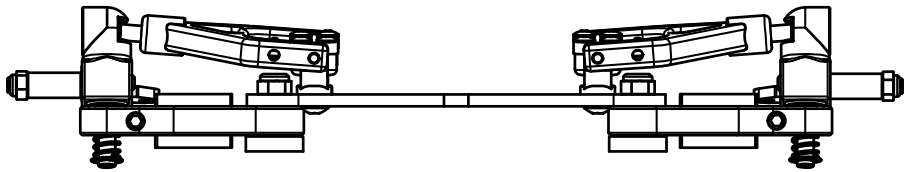
A

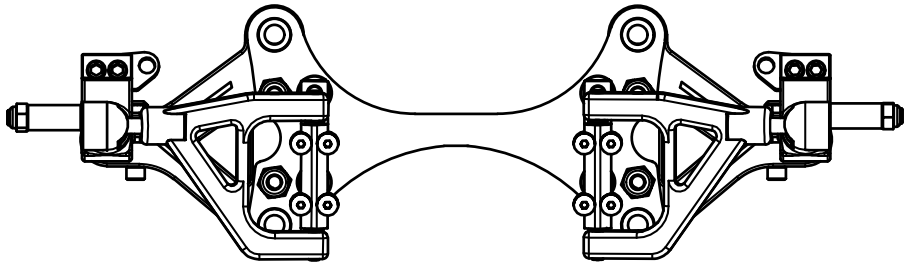
Detail A



NOTE! Do NOT use any preload!

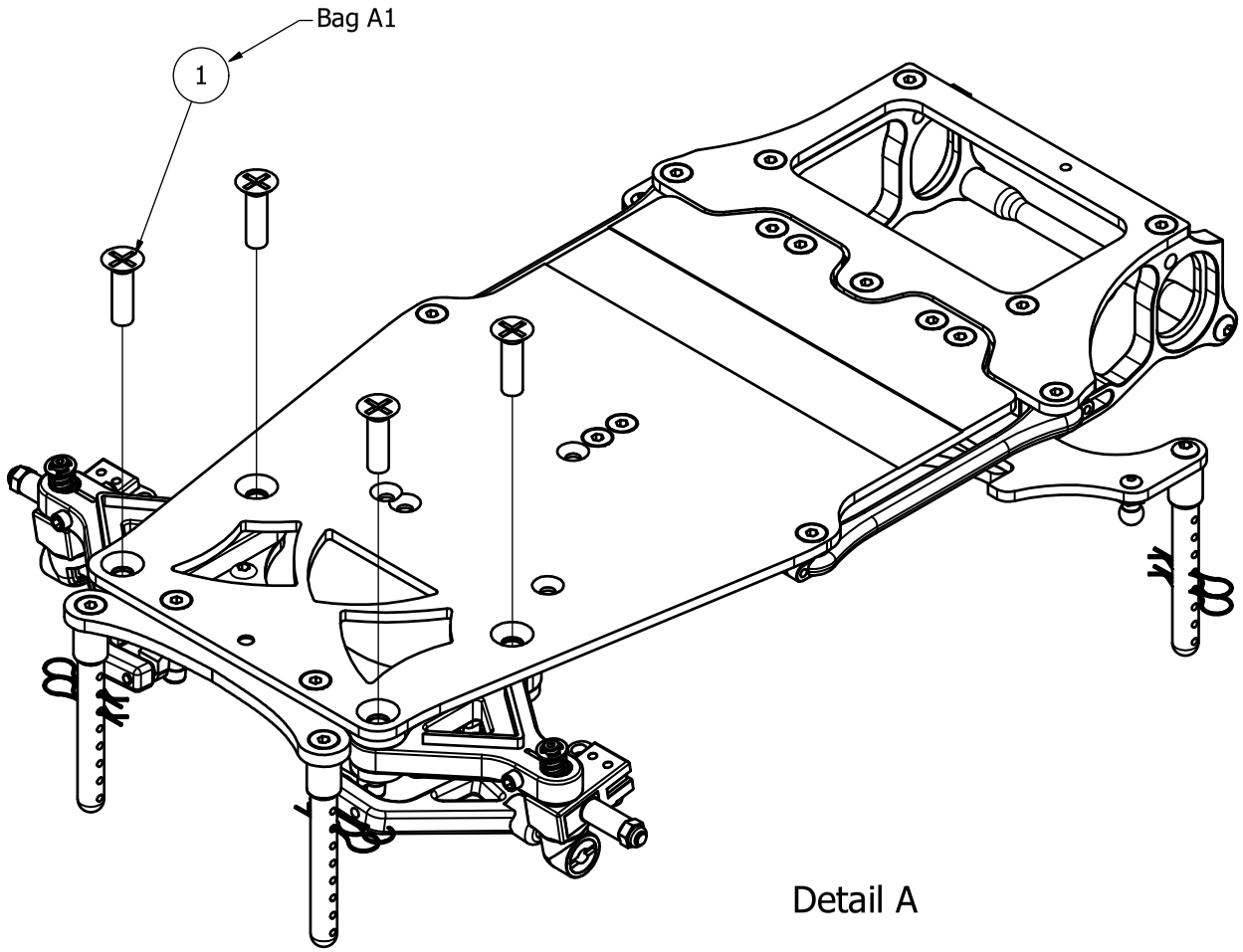
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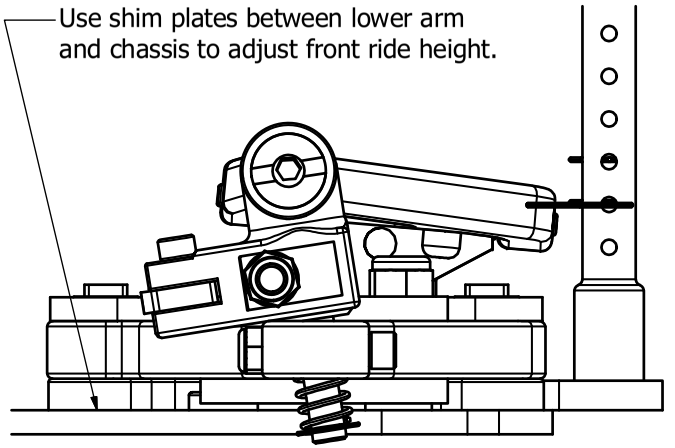


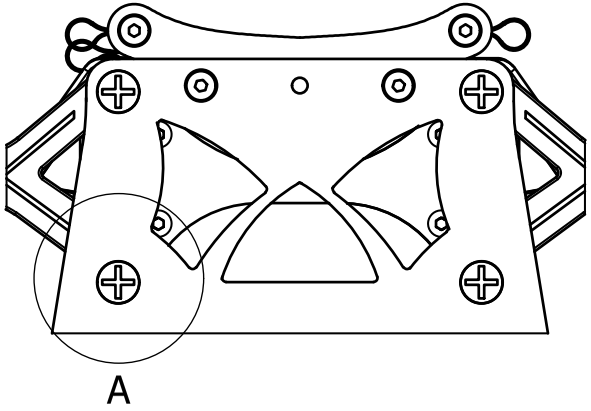


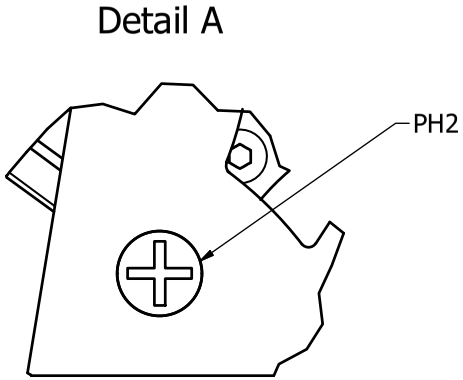
PARTS LIST			
ITEM	QTY	PART NUMBER	DESCRIPTION
19	2	VDZ-562	Front spring 0.50mm
20	2	VDZ-551	E-clip

Front-end installation



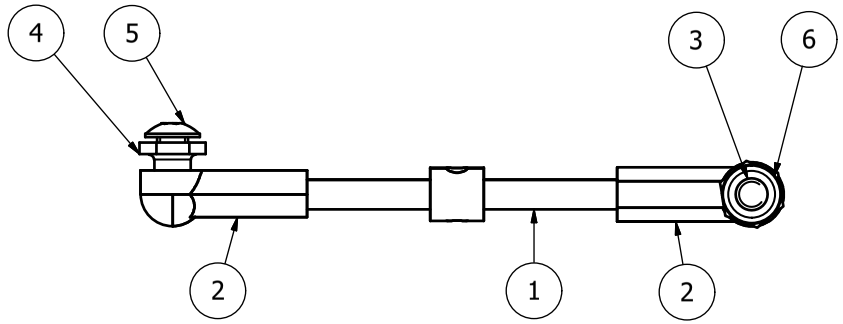


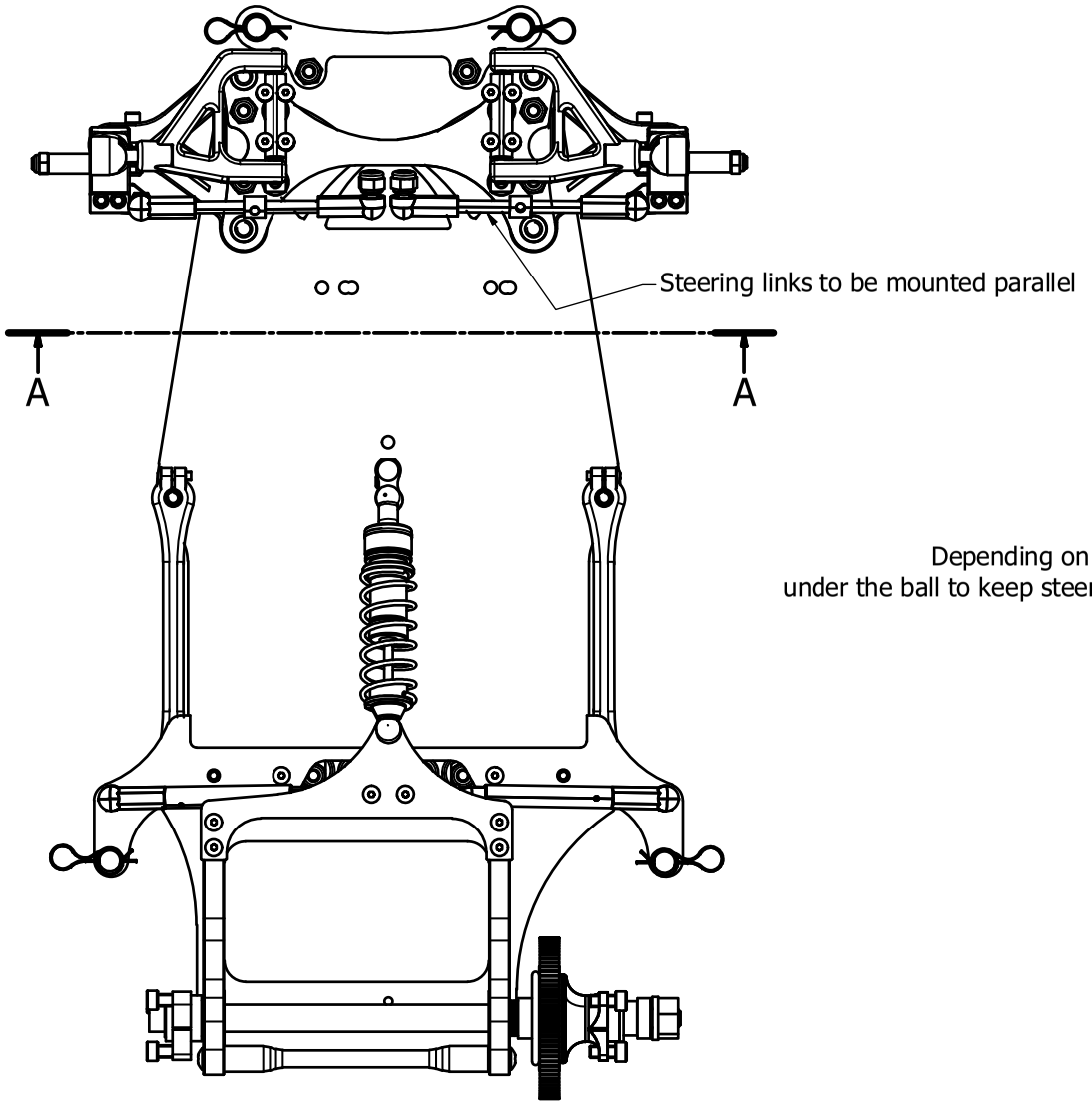




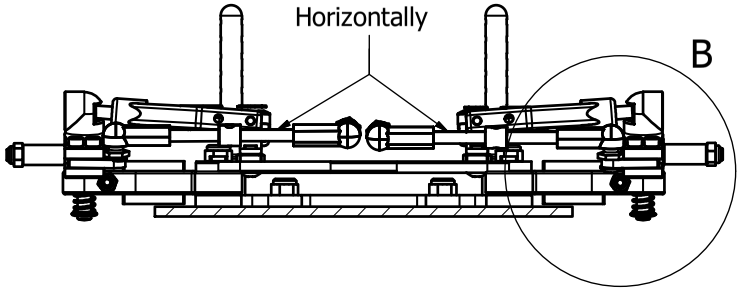
PARTS LIST			
ITEM	QTY	PART NUMBER	DESCRIPTION
1	4	VDZ-733	8-32 x 5-8 Flat Head

Bag A - Steering link installation



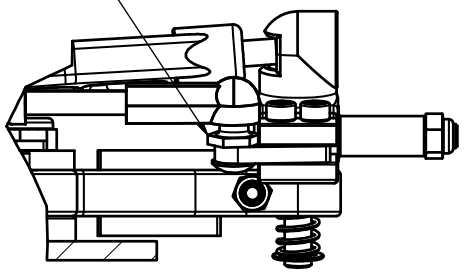


Detail A



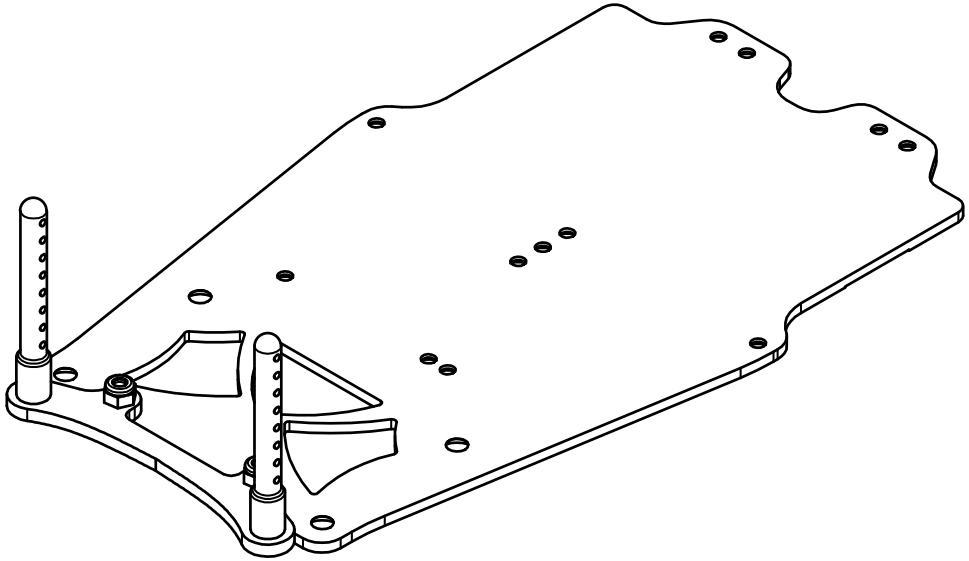
Depending on tire size, use 1-3mm shims
under the ball to keep steering link horizontally levelled

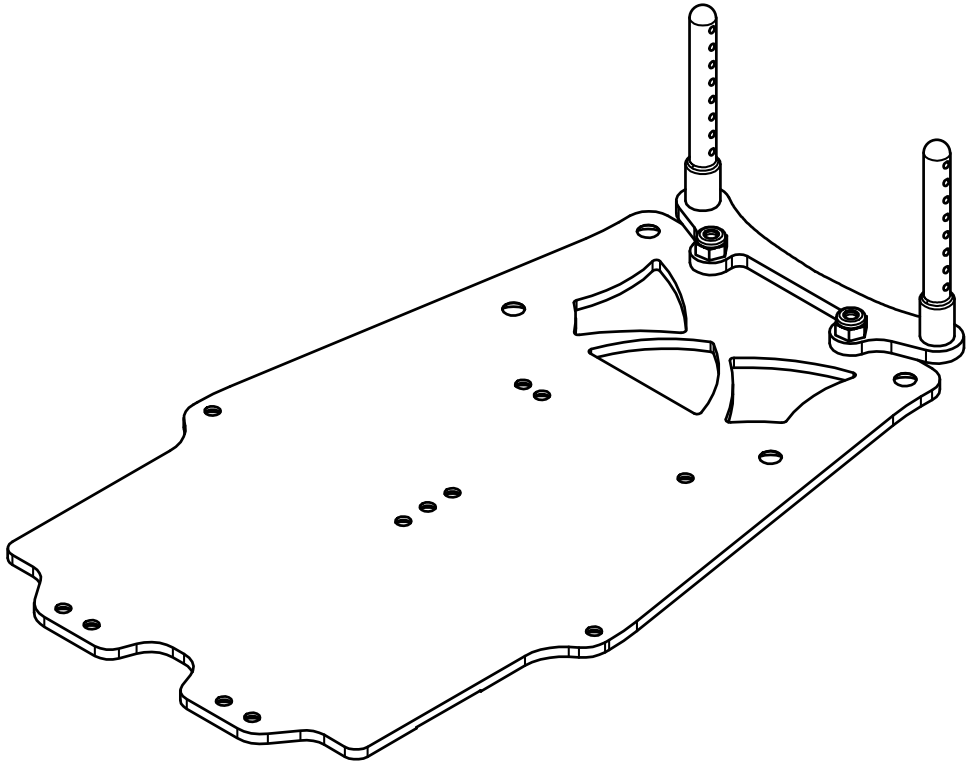
Detail B

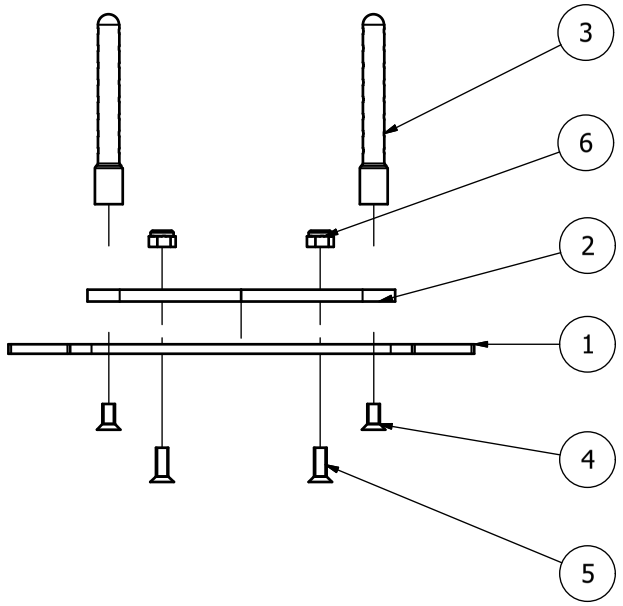


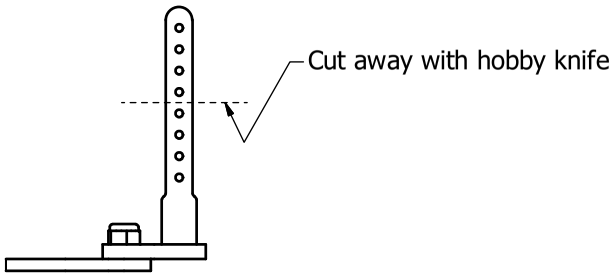
PARTS LIST			
ITEM	QTY	PART NUMBER	DESCRIPTION
1	1	VDZ-748	Turnbuckle
2	2	VDZ-748	Ball cup
3	1	VDZ-742	Ball stud, long
4	1	VDZ-743	4-40 Ball stud, silver
5	1	VDZ-744	4-40 Button head
6	1	VDZ-731	M3 Nut

Bag B - Bumber assembly



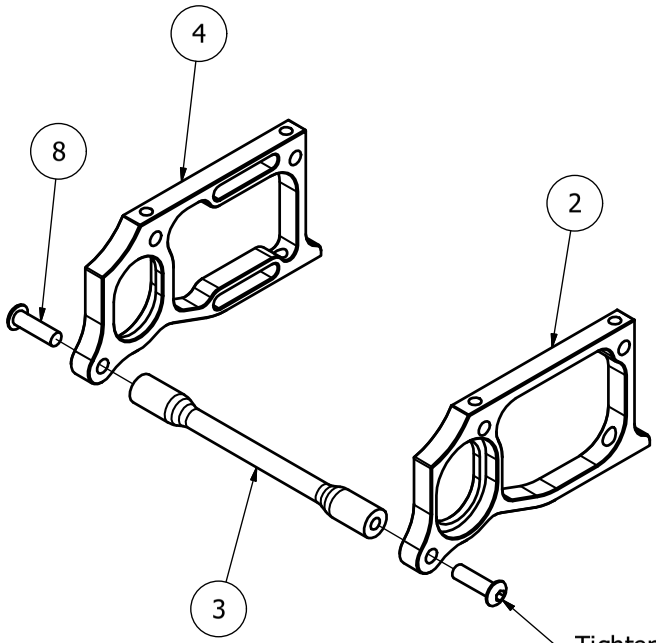


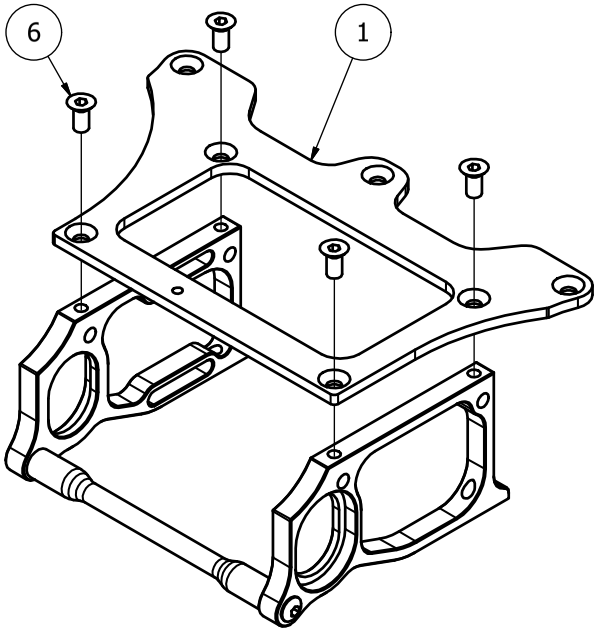


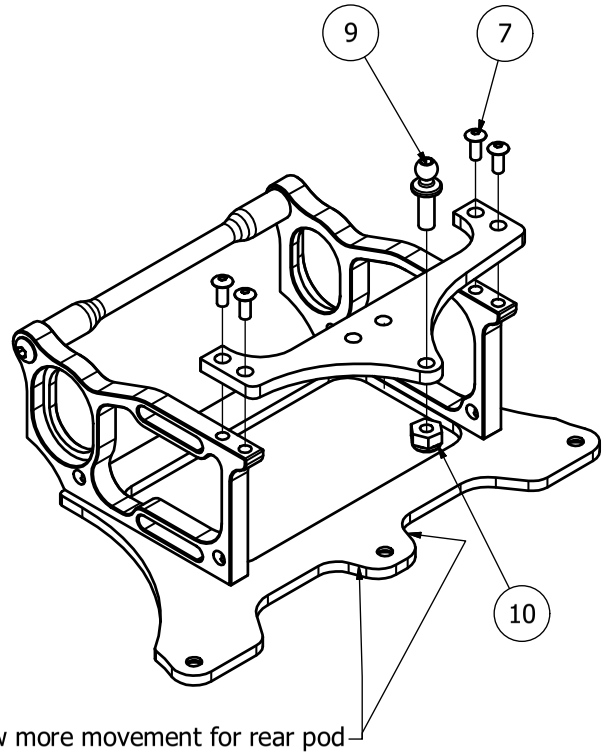


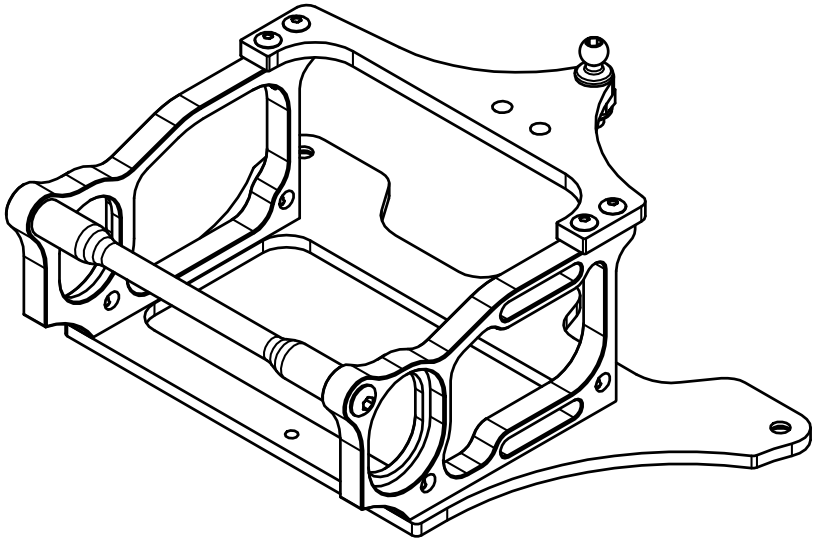
PARTS LIST			
ITEM	QTY	PART NUMBER	DESCRIPTION
1	1	VDZ-502	CR V chassis 2.25mm
2	1	VDZ-507	Bumber plate
3	2	VDZ-536	Body post
4	2	VDZ-724	M3x6 Flat head screw
5	2	VDZ-725	M3x8 Flat head screw
6	2	VDZ-731	M3 Nut

Bag C - Rear pod assembly







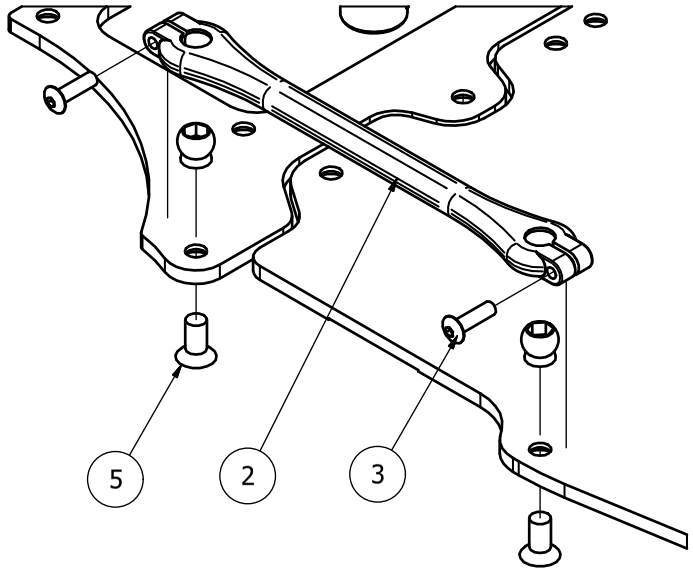


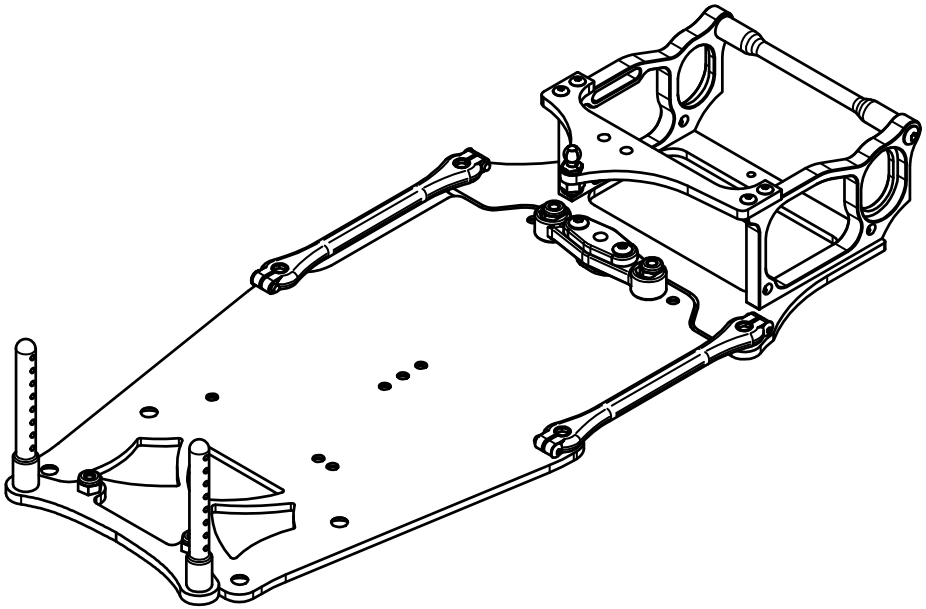
1. Lay the complete rear pod assemly to a flat surface for tightening the shock mount plate and rear brace when all parts are together to make sure nothing is tweaked.

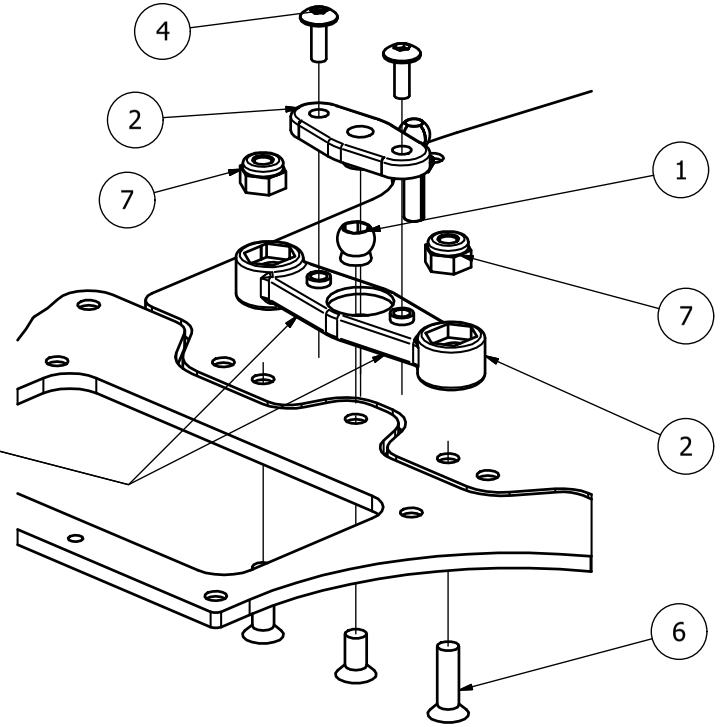
2. Do not overtighten!

PARTS LIST			
ITEM	QTY	PART NUMBER	DESCRIPTION
1	1	VDZ-503	CR V lower motor pod plate
2	1	VDZ-512	CR V motor pod L
3	1	VDZ-508	CR V pod brace
4	1	VDZ-511	CR V motor pod R
5	1	VDZ-504	Shock mount plate
6	4	VDZ-724	M3x6 Flat head screw
7	4	VDZ-722	M3x6 Button head Alum
8	2	VDZ-723	M3x10 Button head
9	1	VDZ-742	Ball-stud, long
10	1	VDZ-731	M3 Nut

Bag D - Link suspension assembly







Cut off the 'bubbles' under the pivot brace after mounting the cap

1. Side links must move extremely free on pivot balls - any binding will cause tweak!

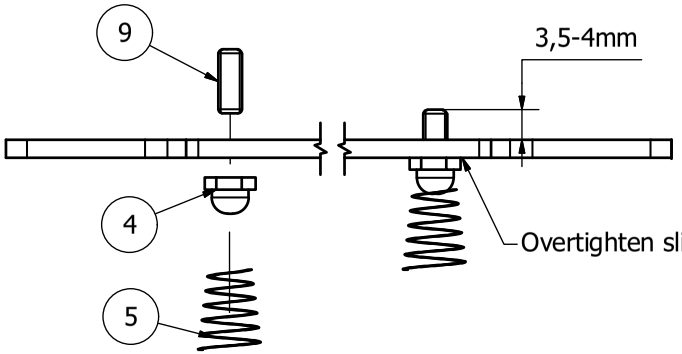
2. Pivot ball on plastic pivot brace must NOT be overtightened and mover extremely free with a slight play!

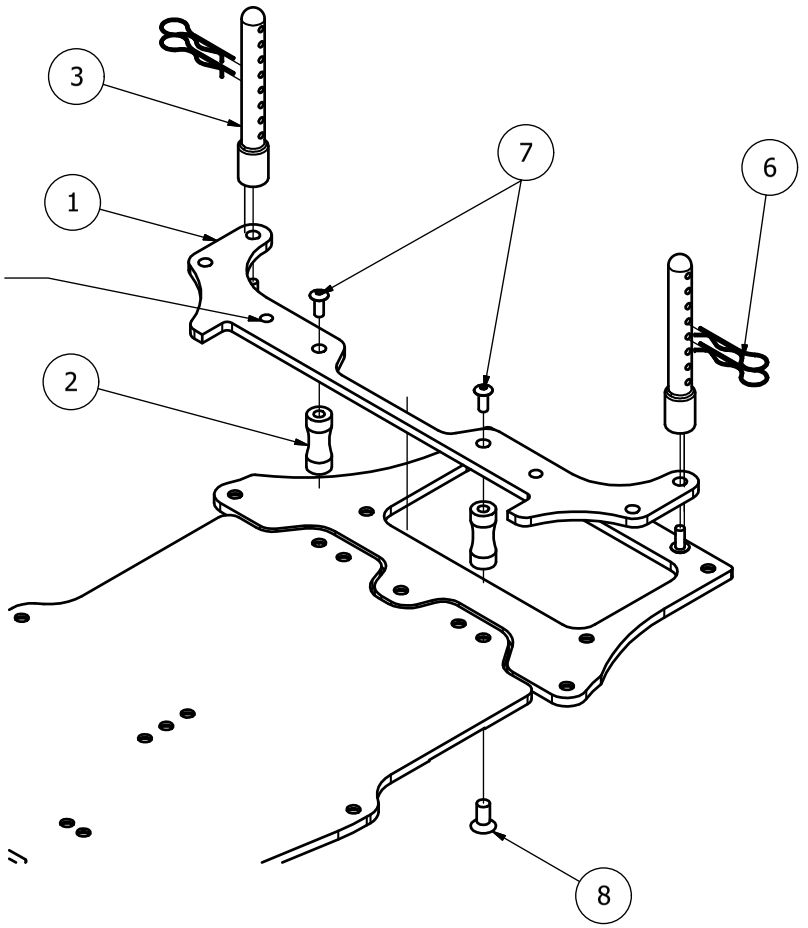
3. Do not tighten the pivot brace M3x10 screws yet - rear pod must be tweaked first. More info will follow!

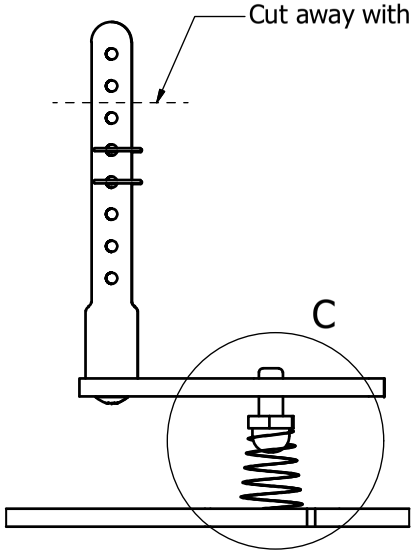
4. If side links are binding:
   > loosen the M2x6 screw
   > use flat screw driver in the slot and open it a bit
   > tighten the M2x6 screwand keep the tool still in the slot
   > the screw will keep the link's end loop a bit more open.

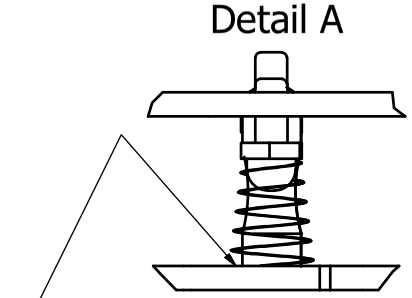
PARTS LIST			
ITEM	QTY	PART NUMBER	DESCRIPTION
1	5	VDZ-538	Pivot balls
2	2+1+1	VDZ-526	Side links, pivot brace, pivot cap
3	4	VDZ-559	M2x6 Button head
4	4	VDZ-560	M2.5x6 Button head screw
5	6	VDZ-724	M3x6 Flat head screw
6	2	VDZ-726	M3x10 Flat head screw
7	2	VDZ-731	M3 Nut

Bag E - Rear cross brace assembly









!NOTE!
Setting the side springs is one of the most important thing about the setup!

Actually - the preload is mimimal or doesn't exist!
Start rather with a little gap or flat than preload.

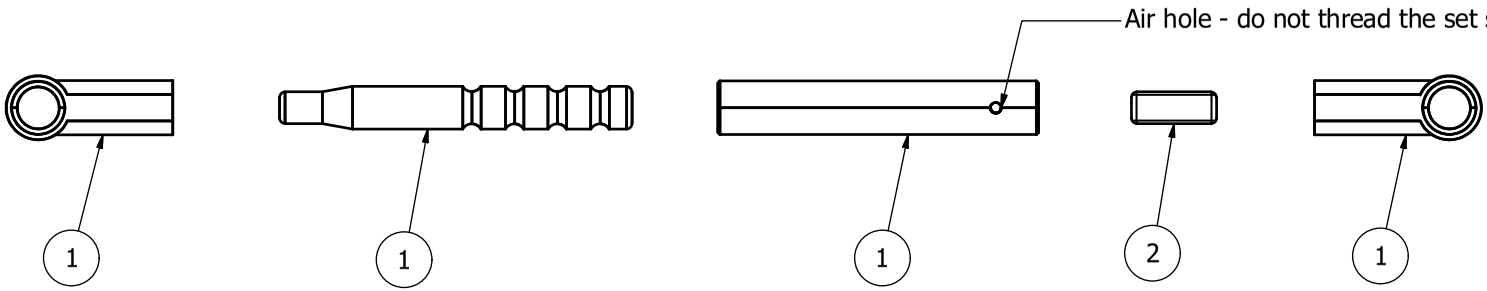
Normal fine tuning is 1/8 turn.

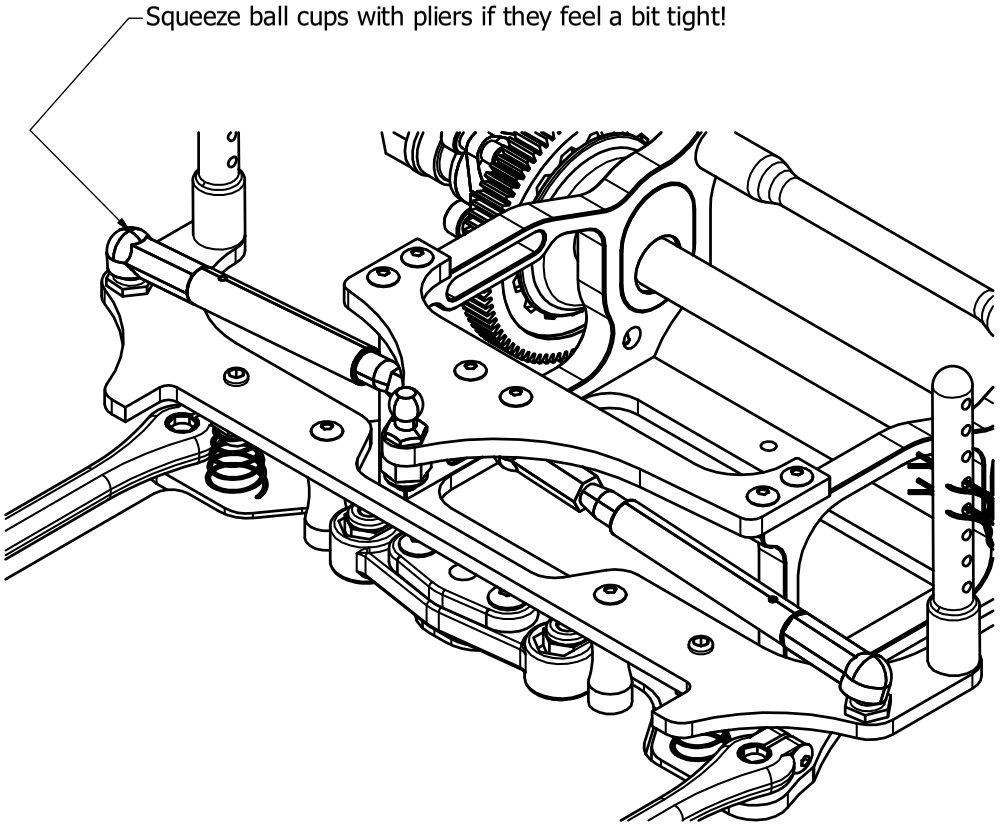
1. Thread M3x8 set screws through the pre-threaded cross brace holes by 2mm with 1.5mm hex driver.
2. Use a vernier for measuring. Do same for both screws.
3. Hold the set screw on its place with the hex driver and tighten the spring retainer with a socket nut tool (not pliers!) to ensure that the retainer does not twist while tightening. Tighten until it reaches the the cross brace.
4. Overtighten a bit - like ~ 1/2 to 3/4 turn - and you will notice that the spring retainer straightens itself against the surface. No more twisting spring retainers!
5. Mount the springs by clicking them around the spring retainers.
6. Set the preload to 0 mm against the lower motor pod plate. 1 turn = 0.5mm when setting side springs.

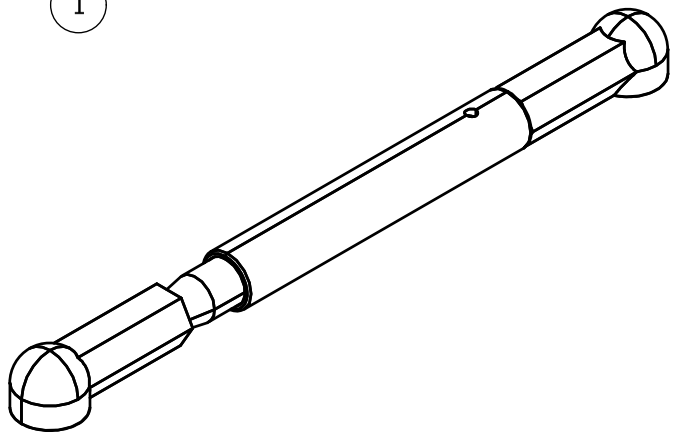
PARTS LIST

ITEM	QTY	PART NUMBER	DESCRIPTION
1	1	VDZ-505	Rear cross brace
2	2	VDZ-509	Cross brace standoffs
3	2	VDZ-536	Body post
4	2	VDZ-570	Spring retainer
5	2	VDZ-571	Side springs, blue
6	4	VDZ-537	Body clips
7	4	VDZ-722	M3x6 Button head Alum
8	2	VDZ-724	M3x6 Flat head screw
9	2	VDZ-730	Set screw M3x8

Bag E - Tube assembly & installation



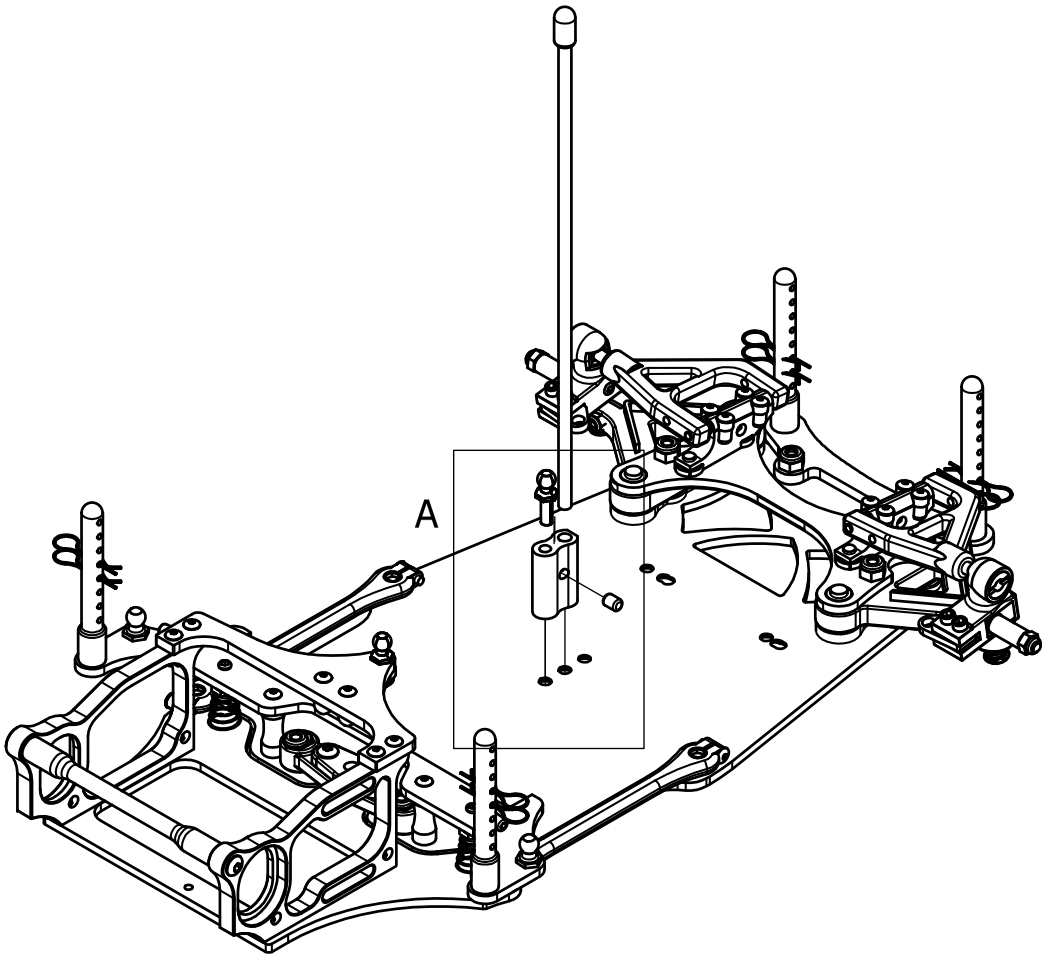


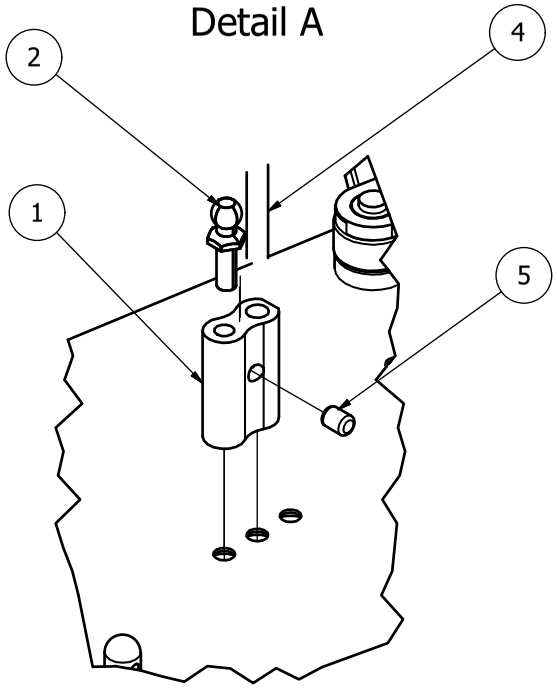


1. CR V tubes come pre-oiled with VDZN medium tube oil. (Limited editon kits)
2. Thread the M3x8 set screw half way into the ball cups.
3. Thread the ball cup into the aluminum tube by hand. Do NOT use pliers to hold the tube as they scratch the aluminum coating! Do not use any glue to avoid getting in to the tube cylinder surface.
4. Thread the other ball cup to shaft until the threaded part is covered.
5. Use pliers to install the tube - be careful not to scratch the ball or tube surface!
6. Repeat the same for another tube.

PARTS LIST			
ITEM	QTY	PART NUMBER	DESCRIPTION
1	4	VDZ-510	Damper tube set
2	1	VDZ-730	Set screw M3x8

Bag F - Antenna mount assembly





1. There are 2 positions for shock center shock, short and long.
   Start with short option.

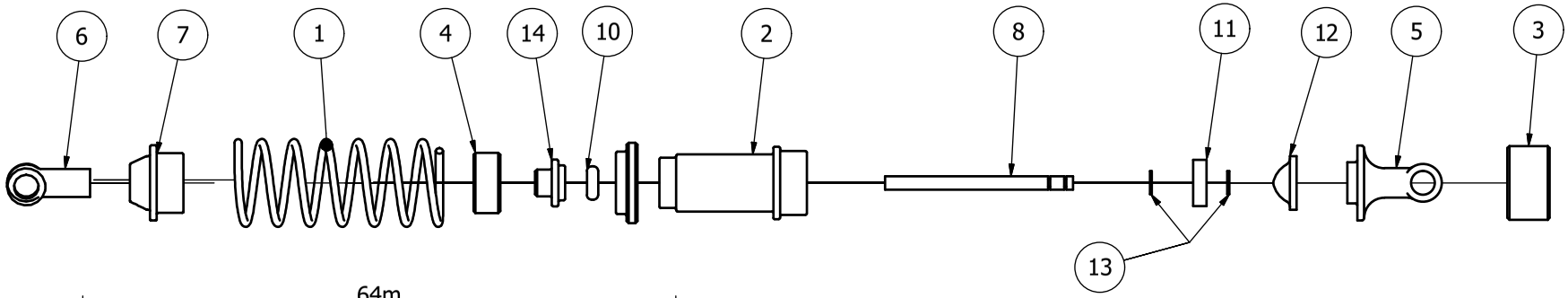
2. The shock/antenna mount is mounted to the most rear holes - see Detail A.

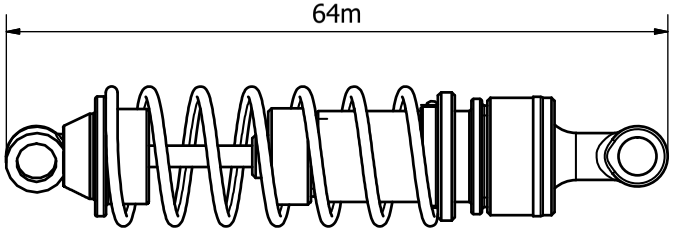
3. Apply little drop of CA glue to the antenna and roll it on a pit towel or paper.
   This due to antenna is slightly smaller (0.2mm) than the hole for antenna.
   Do not glue the antenna into antenna mount - graphite roll-over antenna
   can break in a hard crash.

4. Tighten the set screw to lock the antenna.

PARTS LIST			
ITEM	QTY	PART NUMBER	DESCRIPTION
1	1	VDZ-524	Antenna mount
2	1	VDZ-741	Ball-end, short
3	2	VDZ-724	M3x6 Flat head screw
4	1	VDZ-539	Roll-over antenna
5	1	VDZ-733	M3x4 set screw

Bag F - Center shock assembly & installation



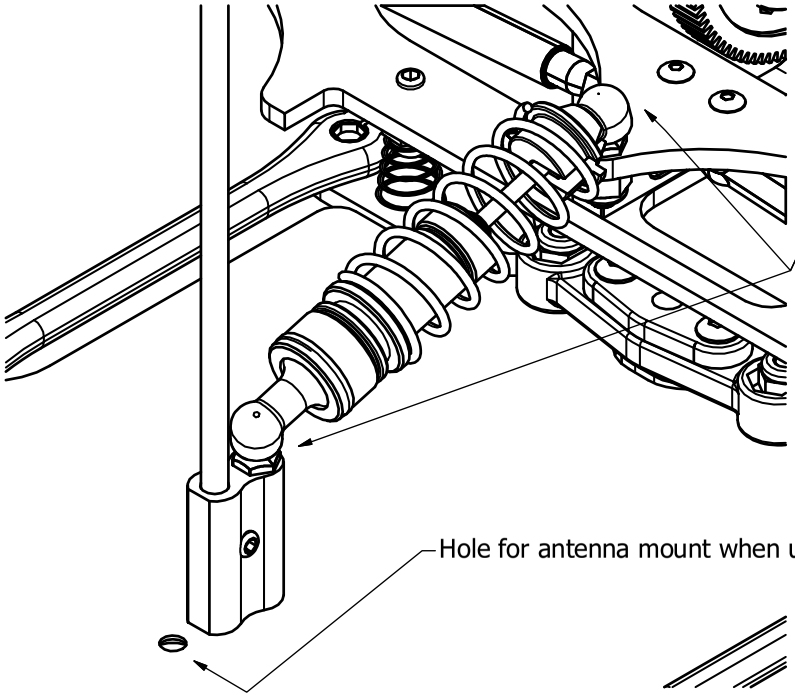


1. To make the shock maximum smooth, work the piston a bit to make it round on edges. You can do this by using a Dremel tool or similar after the piston is assembled to the shaft and locked with e-clips.

2. It is recommended to use AE 35w oil or similar from other brands.

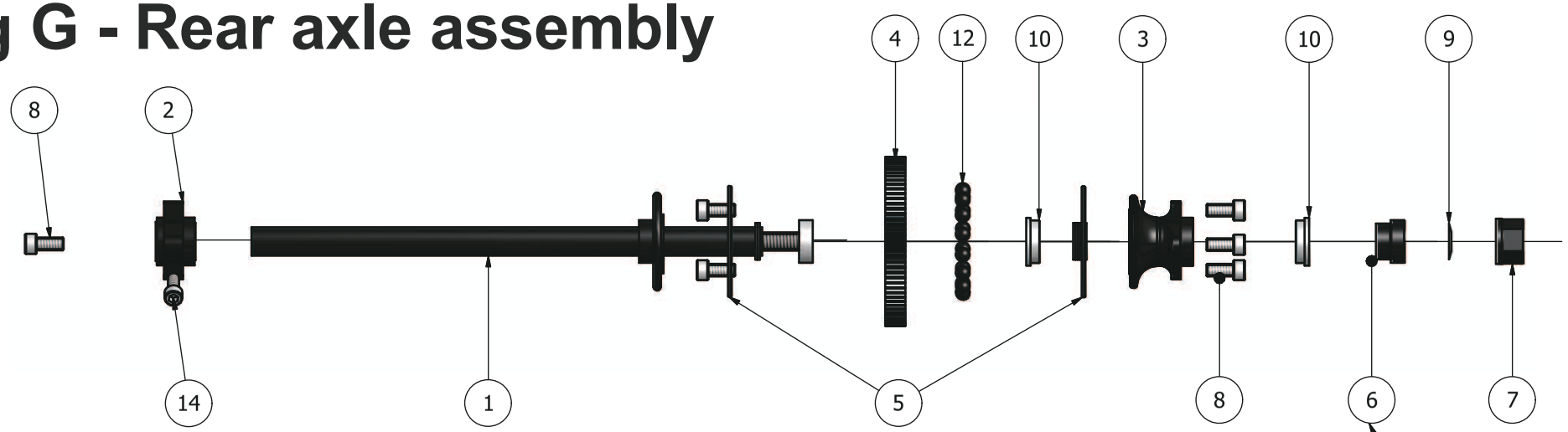
3. Starting length for the shock in short option is 64mm.

Extended shock:
1. Needed parts : aluminium extension part and ball cup.
2. Shorten the extra ball cup with hobby knife to fit the length.
3. Length for the extended shock is 70mm.
4. Move antenna/shock mount to forward position.

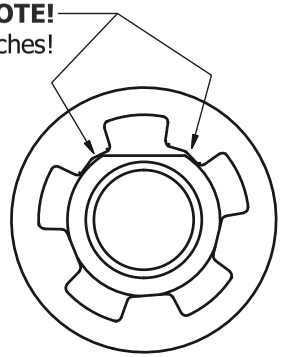


PARTS LIST			
ITEM	QTY	PART NUMBER	DESCRIPTION
1	1	VDZ-581	Shock spring, gold
2	1	VDZ-521	Shock cylinder
3	1	VDZ-521	Upper nut
4	1	VDZ-521	Bottom nut
5	1	VDZ-521	Upper ball cup
6	1	VDZ-521	Ball cap, short
7	1	VDZ-521	Spring plate
8	1	VDZ-521	Shock shaft
9	1	VDZ-521	Preload nut
10	1	VDZ-521	O-ring
11	1	VDZ-521	Shock piston
12	1	VDZ-521	Bladder
13	2	VDZ-521	e-clip, small
14	1	VDZ-521	Bottom plastic adapter

Bag G - Rear axle assembly



!NOTE!
Place the diff rings according to notches!



Axle shims for Jaco wheels:

Recommendations:

°Polish diff rings with #1000-1200 abrasive paper for smoother performance.

°Use Team V-Dezign Diff grease - apply only small amount of grease to diff rings. If using other brands (i.e. Team AE #6636) apply about half capacity of grease for 8-10 holes.

°Apply small amount of grease to diff rings back side to keep them in place while assemble.

°Diff needs some run-in (1-pack) - DO NOT overtighten the diff nut! Pay attention also for the left clamp screw when tightening it on the axle.

Remember to keep the diff always smooth & non-slipping!

PARTS LIST			
ITEM	QTY	PART NUMBER	DESCRIPTION
1	1	VDZ-520	Rear axle
2	1	VDZ-522	Left axle clamp
3	3	VDZ-523	Diff hub
4	1	VDZ-528	Xenon VSS 64dp 90t
5	2	VDZ-529	Lite diff rings
6	1	VDZ-530	Diff bushing
7	1	VDZ-534	Diff nut, plastic
8	6	VDZ-532	4-40 X 1/4" SS SHCS
9	1	VDZ-533	8x4.2x0.4mm Belleville
10	2	VDB-14F	1/4" X 3/8" Flanged
11	1	VDB-14P	1/4" X 3/8" Plain
12	16	VDB-18D	1/8" Ceramic ball
14	1	VDZ-531	M2.5x6mm Socket
15	8	VDZ-735	Rear axle shims

