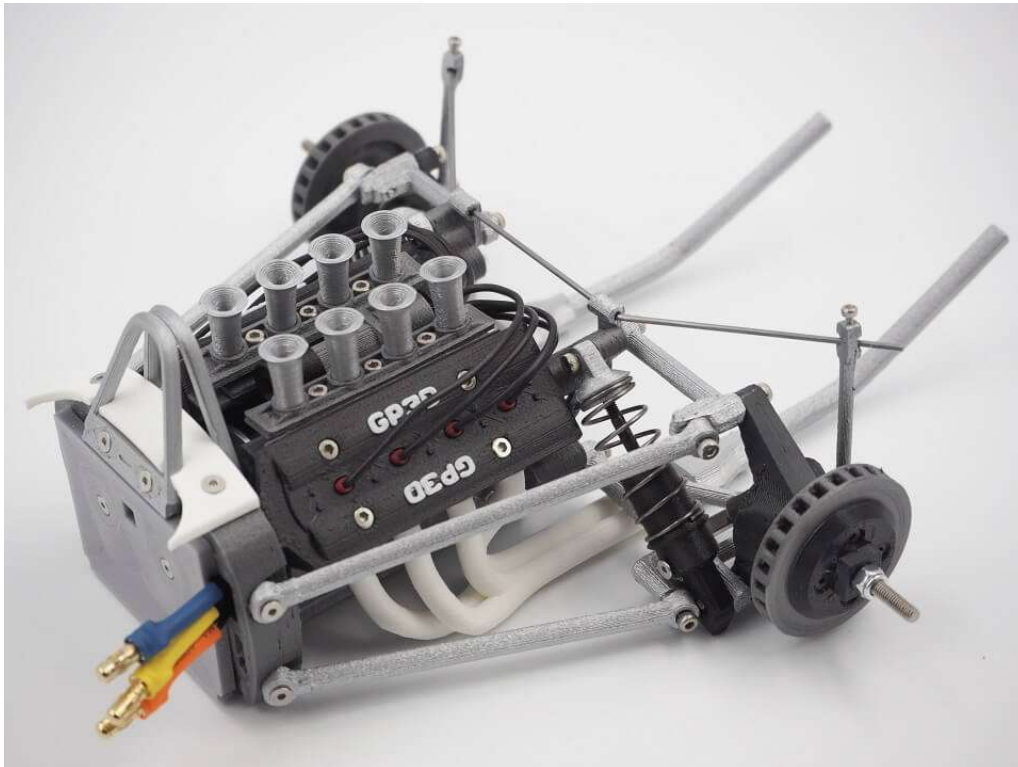




SECTION 8. Rear Suspension



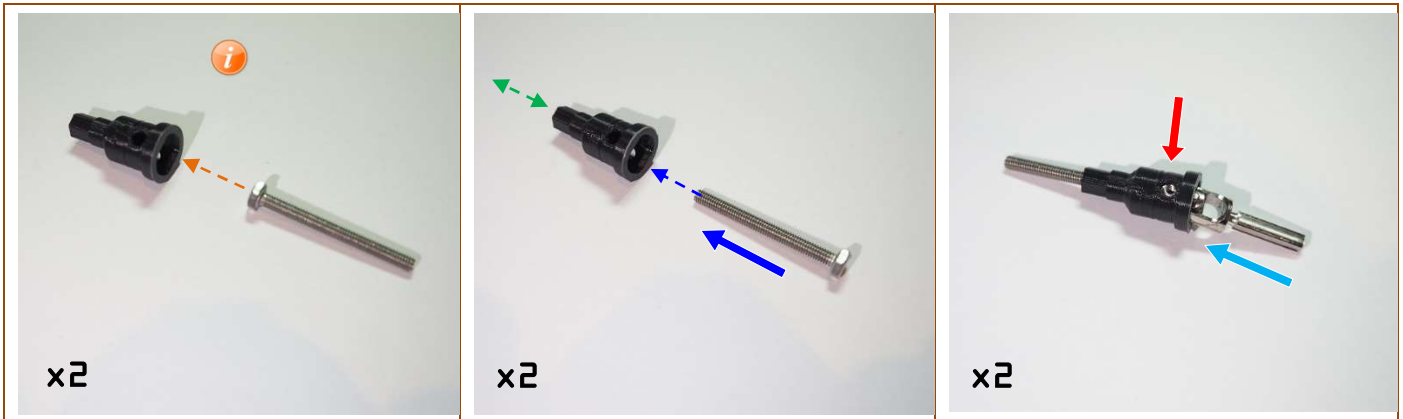
STEP 1 – REAR AXLE - PREPARING THE COMPONENTS



i For the following steps, please prepare:

- Rear Axle Housing (2x)
- CVD Axle (inner shaft part) (2x) – set aside the outer shaft parts for usage in SECTION 9
- M3 hex head x30mm (2x)
- M2cs hex bolts x5mm (4x)
- Bearing Flanged 6x10x3 (2x)
- Bearing 10x15x4 (2x)

STEP 2 – REAR AXLE



x2 Make 2.

- i Preparation: temporarily push the M3 'hex head' end first into the Rear Axle Housing corresponding hex shape recess inside – purpose is to slightly force widen the recess shape to match the bolt head enabling easier seating in next item. Remove the bolt/head after doing this!
- Insert the M3 hex head x30mm bolt into the Rear Axle Housing as shown. The hex shaped head of the bolt must be 'pulled' into that corresponding hex shaped recess inside the housing.
- Ensure there is ~16-17mm of thread exposed. If it's less, the bolt head hasn't fully seated into the recess, remove and repeat the preparation item above.
- Insert the CVD into the Rear Axle Housing
- The holes in both the housing and CVD axle must be aligned ready for the next STEP...

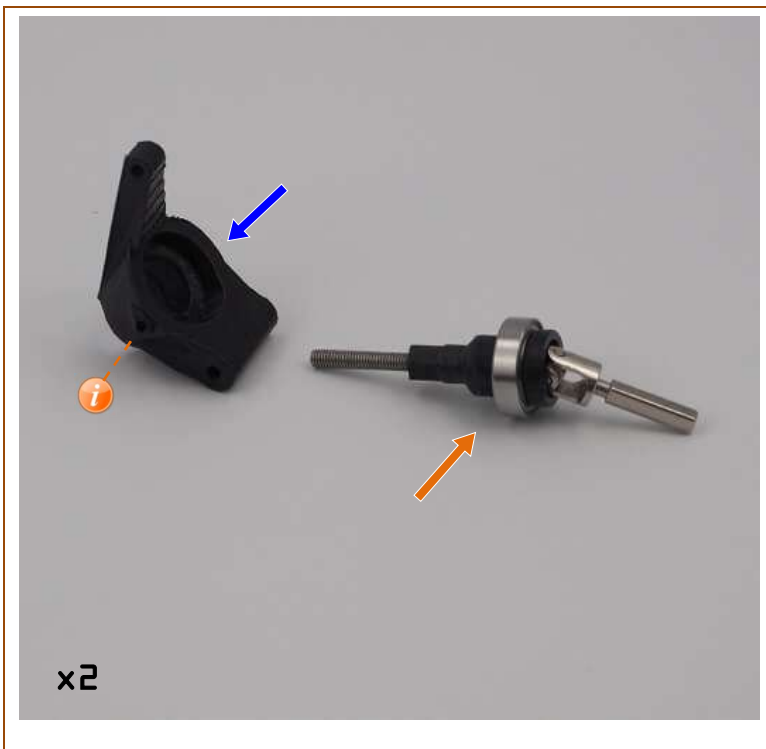
STEP 3 – REAR AXLE BEARINGS



x2 Make 2.

- Insert the M2cs hex bolts x5mm from both sides to secure the CVD. Ensure these two bolts are equally inserted (and touching in the middle) so the bearing can easily slide over them in the next item.
 - Slide the Bearing 10x15x4 onto the Rear Axle Housing. It should be an easy press fit over those two M2cs hex bolts. If not, slightly adjust those bolts in/out as needed until the Bearing slides over easily.
 - Slide the Bearing Flanged 6x10x3 onto the Rear Axle Housing. Note the direction of the flange. This bearing should also be a firm press fit. If it's too tight you may need to lightly/carefully sand the Rear Axle Housing a small amount only in the area where the bearing will seat as shown in picture. But be careful not to sand the hex shaped end of the Rear Axle Housing at the same time, you can wrap some tape temporarily to protect it whilst performing the sanding process.
- i** The Bearing Flanged 6x10x3 is temporarily fitted in this STEP to ensure ease of fitment in the next STEP where it will be removed to first install the Axle assembly into the Rear Upright.

STEP 4 – REAR UPRIGHT - PREPARING THE COMPONENTS



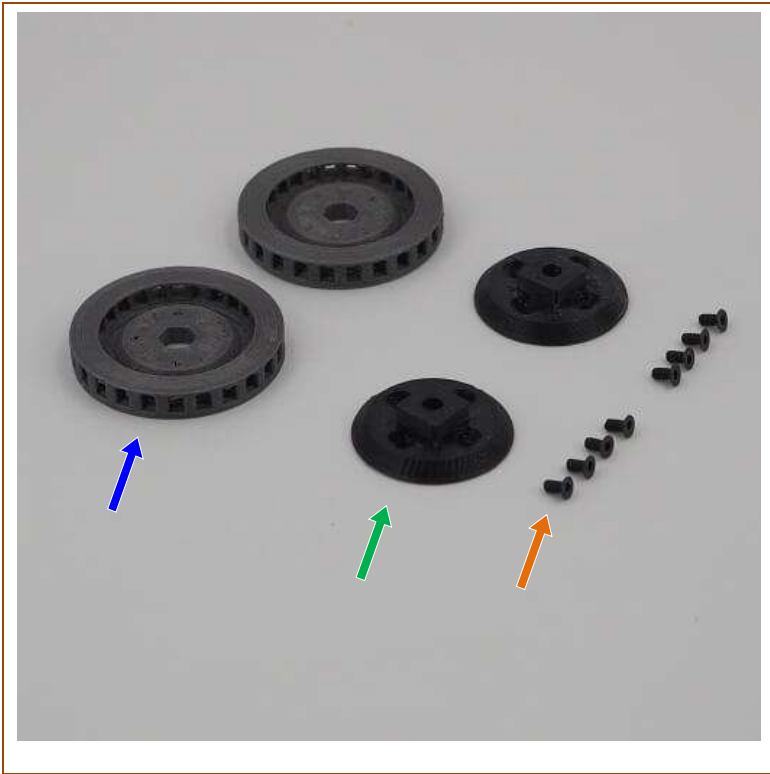
- i** For the following steps, please prepare:
- Rear Upright (L & R) – Left side is pictured
- Axle assembly from the previous STEP (2x)
- i** Note the small raised hole for the anti-roll bar mount on this side for the Left upright. The Right side is opposite.

STEP 5 – REAR UPRIGHT






- x2** Repeat for Right side.
- Insert the Axle assembly (with the 6x10x3 Bearing Flanged removed) into the Rear Upright-Left. Ensure the Bearing 10x15x4 is firmly pushed all the way to seat into its recess.
 - Slide the Bearing Flanged 6x10x3 over the end of the Axle assembly and into the Rear Upright.
 - ⓘ If the Bearing Flanged 6x10x3 is too tight a fit into the Rear Upright, remove and carefully trim away any excess material until it's a firm press fit.
 - ✓ Ensure your two Rear Uprights match the picture. Noting the small raised holes on the sides are both facing you when the Rear Uprights are positioned as shown.

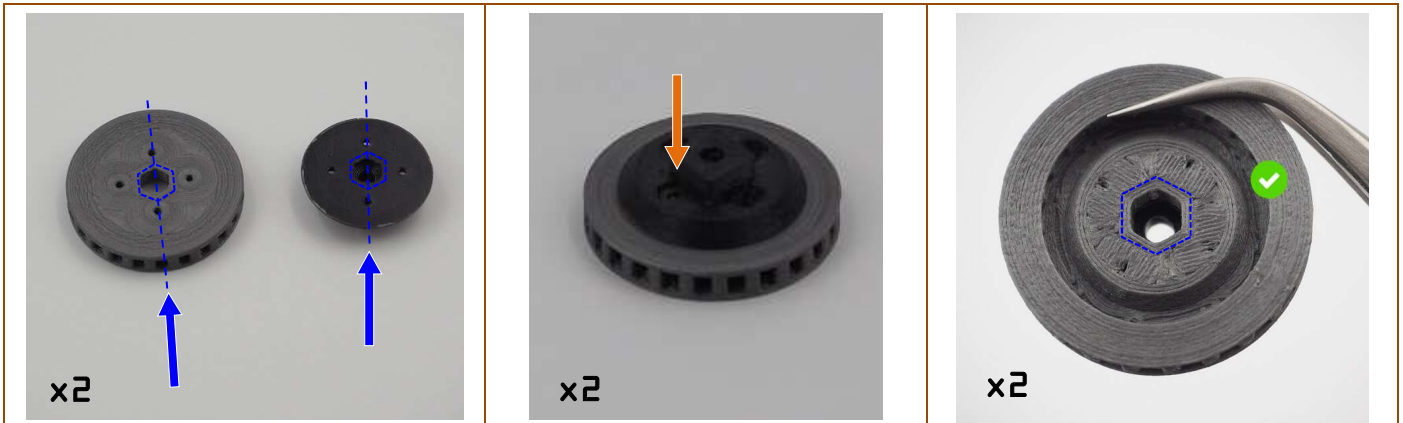
STEP 6 – REAR BRAKE DISC - PREPARING THE COMPONENTS



 For the following steps, please prepare:

-  Rear Brake Disc (2x) – Note: the hex shape centre hole**
-  Rear Brake Hub (2x) – Note: these have a hex shape shallow centre hole underneath**
-  M2cs hex bolt x5mm (8x)**

STEP 7 – REAR BRAKE DISC



x2 Make 2.

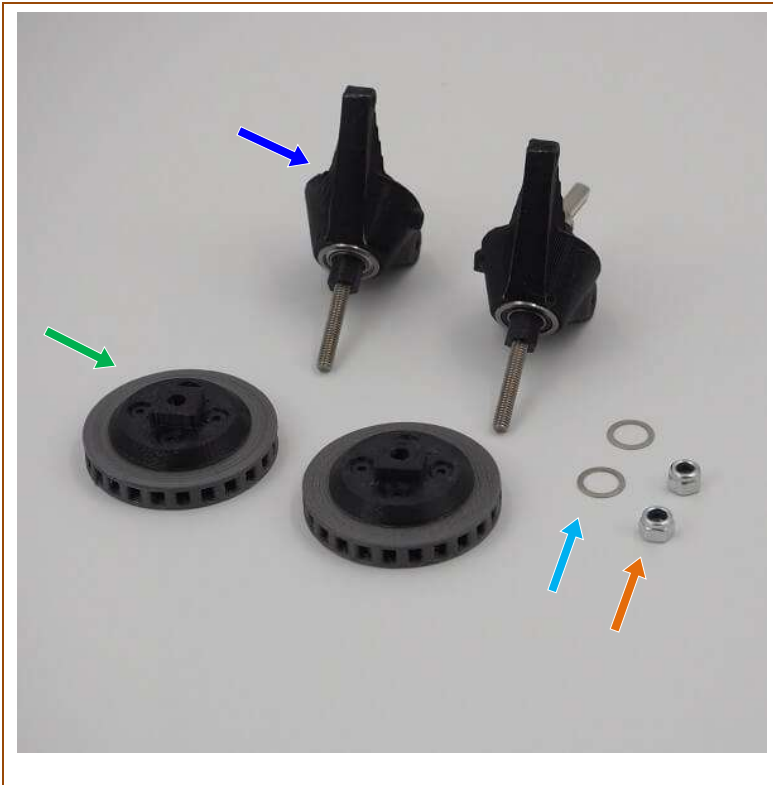
- Before screwing these two parts together make sure you align the hex centre hole shape, if they are attached 90 degrees out then the hex shapes will not align and the Axle Housing will not fit properly in future steps.

Take note of the hex points that 'point' to a screw hole and ensure these are matched when orienting the parts together.

- With the parts correctly rotated/aligned screw in one M2cs hex bolt x4mm. Do not fully tighten – only until the parts are just touching is sufficient for now.

- ✓ Before securing the remaining screws, double check again that the hex shape is correctly aligned, it is super easy to get this incorrectly rotated whilst manipulating the parts for assembly!

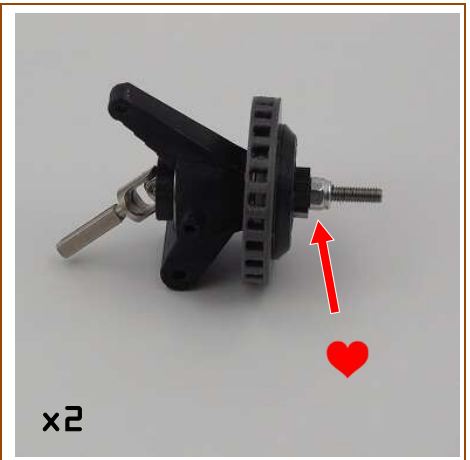
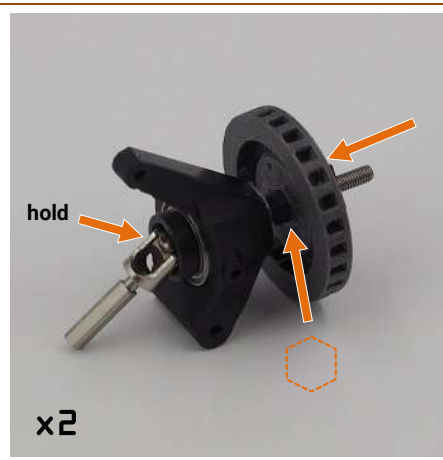
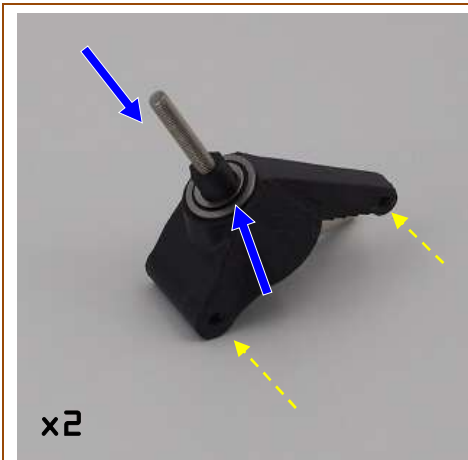
STEP 8 – REAR UPRIGHT ASSEMBLY - PREPARING THE COMPONENTS



***i* For the following steps, please prepare:**

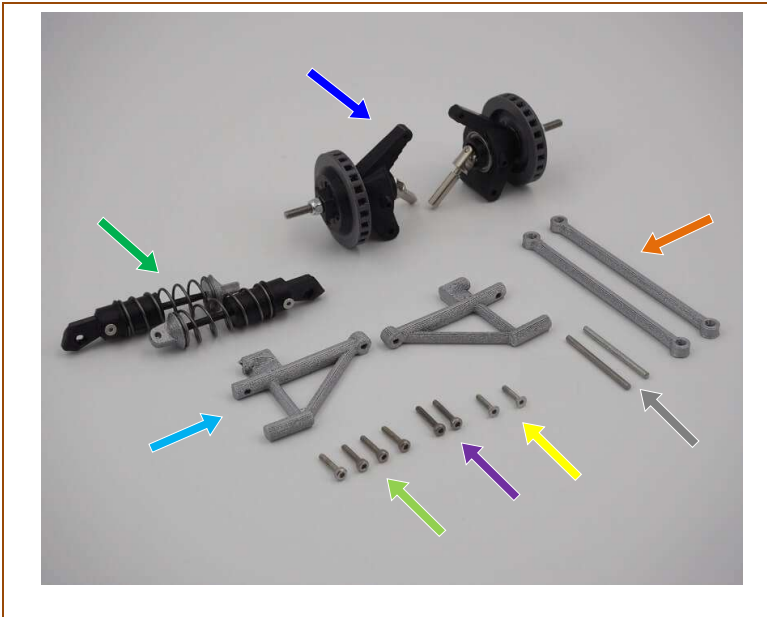
- Rear Upright assembly (L & R) – From STEP 6
- Rear Brake Hub assembly (2x) – From STEP 8
- Shim 6mm (2x)
- M3 nylock nut (2x)

STEP 9 – REAR UPRIGHT ASSEMBLY











- x2** Make 2.
- Open out the holes with the **2mm** drill bit.
 - Slide the Shim 6mm over the Axle until it rests against the Bearing Flanged 6x10x3.
 - Slide the Brake Disc over the Axle ensuring the hex shapes are aligned. Hold the back of the Axle at the same time to stop it from sliding out, whilst pressing the Brake Disc all the way until it touches the Shim 6mm.
 - Tighten the M3 nylock nut all the way down the thread. Firstly; this will ensure the Rear Axle Housing hex shape is pulled fully into the Brake Disc assembly, so tighten enough to achieve this but not overtighten. Secondly this will temporarily retain the Brake Disc and Shim until the Rear Wheels are added in SECTION 10.
 - ✓ Make sure your Left & Right Rear Upright assemblies match the picture.

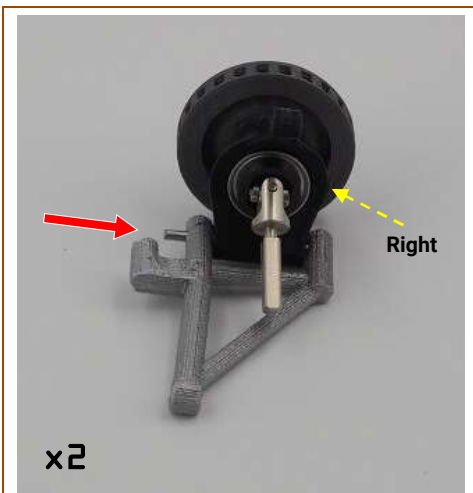
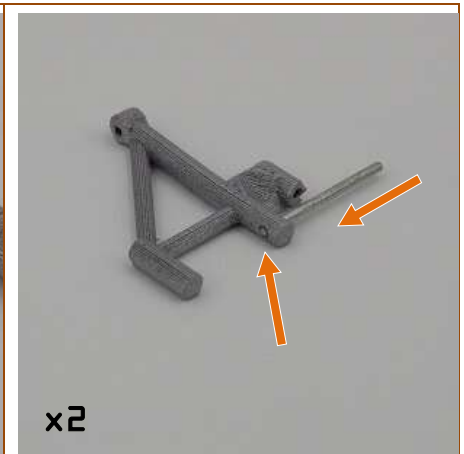
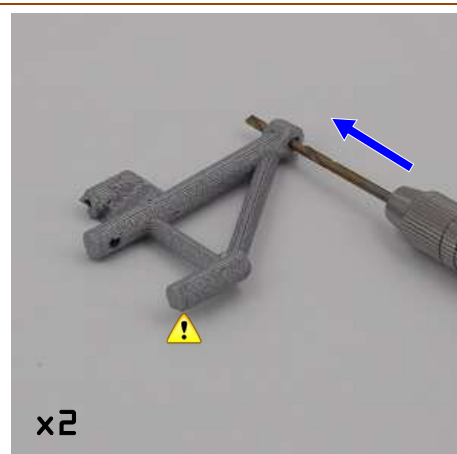
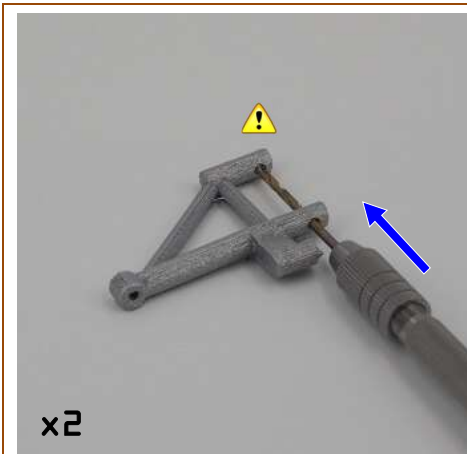
STEP 10 – REAR SUSPENSION - PREPARING THE COMPONENTS



 For the following steps, please prepare:

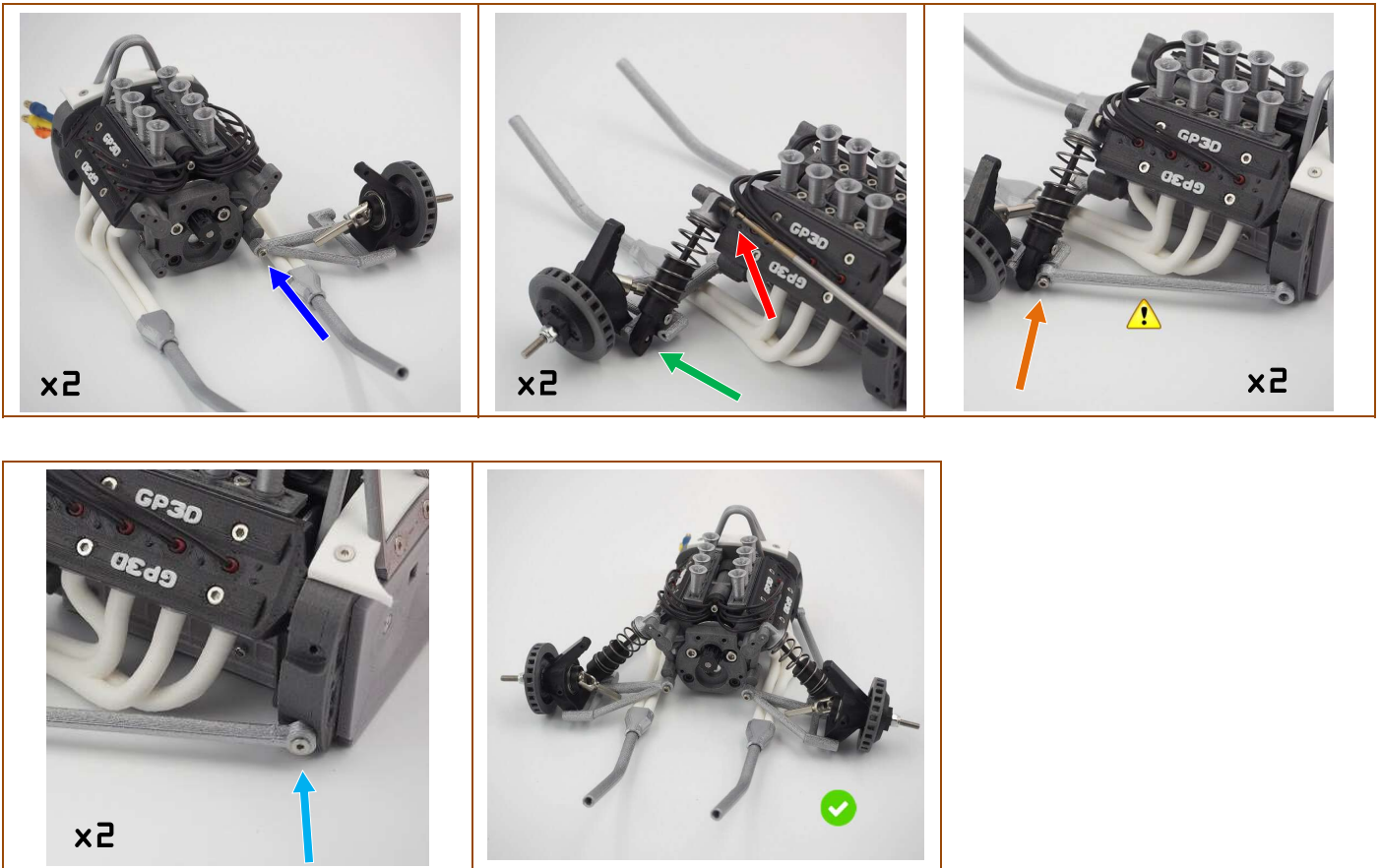
-  Rear Upright assembly (L & R) – From STEP 10**
-  Rear Shocks (L & R) – From SECTION 2**
-  Rear Suspension Arm Lower (L & R)**
-  Rear Trailing Link Lower (2x) – Note: Shorter pair of the four Trailing Links**
-  M2 hex bolt x10mm (4x)**
-  M2 hex bolt x12mm (2x)**
-  M2cs hex bolt x10mm (2x)**
-  Steel Rod Hinge Pins 2x30mm (2x)**

STEP 11 – REAR SUSPENSION



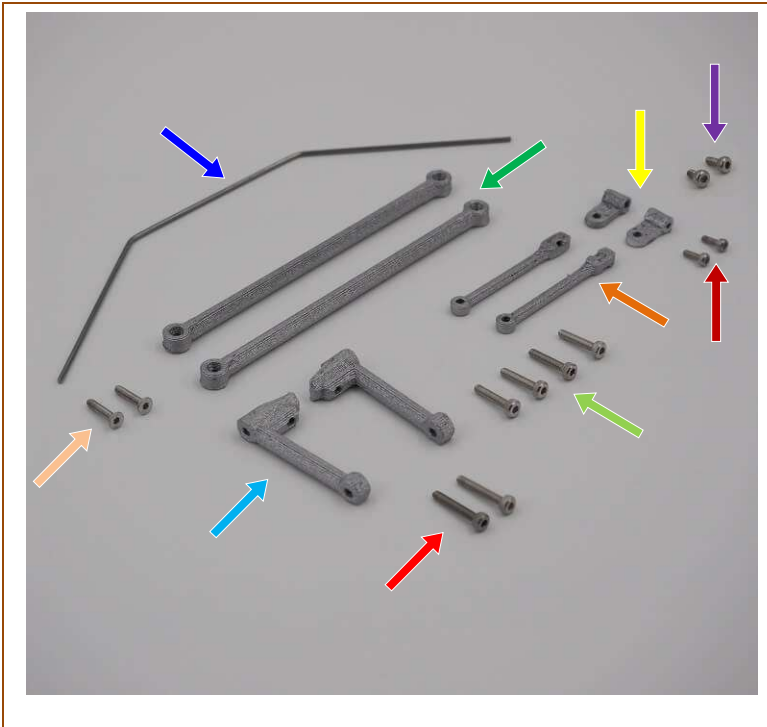
- x2** Repeat for other side.
- Gently open out the hinge pin holes with the 2mm drill bit.
 - ⚠ Do not drill through the end hole, this keeps the hinge pin captive.
 - Prepare for the Rear Upright attachment by inserting a Steel Rod Hinge Pin x30mm into the Rear Suspension Arm, but only until the end is flush with the inside face as indicated.
 - Line up the Rear Upright with the Rear Suspension Arm so that the hinge pin holes are aligned and then slowly push the Steel Rod Hinge Pin x30mm into the Rear Upright. You may need to use a flat hard object, like the side of pliers or similar tool as it will be a firm press fit. Ensure it also lines up with the back hole in the Rear Suspension Arm.
- Note:** The Steel Rod will remain protruding out the front ~5mm when fully inserted.
- Ensure you have the Right Rear Upright assembly and the Right Rear Suspension Arm paired together

STEP 12 – REAR SUSPENSION ATTACHMENT



- x2** Repeat for other side.
- Attach the right Rear Arm/Upright assembly from the previous STEP 12 to the Engine Bay assembly from SECTION 6 using the M2 hex bolt x10mm. Tighten until the head touches the Suspension Arm and then back out ~half turn. Tighten this only enough to still allow the arm to pivot easily.
 - Pick the 'Right' Rear Shock from SECTION 7. Note; the Right shock has the Shock Cap angling downwards with its M2cs hex bolt head facing forward when positioned as per the picture. Slide it onto the exposed front of the Steel Rod Hinge Pin x30mm, you may need to orient the Shock vertically for it to easily slide on the Steel Rod to clear the forward part of the Suspension Arm.
 - Then rotate the top Spring Retainer end of the Shock inwards and secure to the Motor Plate with M2 hex bolt x10mm. You may have to push the Spark Plug leads out of the way slightly to position your 1.5mm hex driver.
 - Secure the rearward end of the Rear Trailing Link Lower with the M2 hex bolt x12mm. Note the hole in the Rear Suspension Arm Lower is angled backwards slightly and therefore aligns 90 degrees with the Rear Trailing Link Lower angle. Leave a 0.5mm gap between the hex bolt head and the Link to allow it to rotate with the suspension action.
 - ⚠ Trailing link orientation front to back doesn't matter, however you'll note one side is slightly flat from the print bed, therefore ensure that flat side is facing inwards.
 - Attach the front of the Rear Trailing Link Lower with the M2cs hex bolt x10mm to the lower hole in the side of the Rear Bulkhead. Again, note the hole is angled backwards to align 90 degrees with the Suspension Link and not the Rear Bulkhead, and leave a 0.5mm gap between the M2cs hex bolt head and the Link to allow it to rotate with the suspension action.
 - ✓ Make sure your Left & Right Rear Suspension matches the picture.

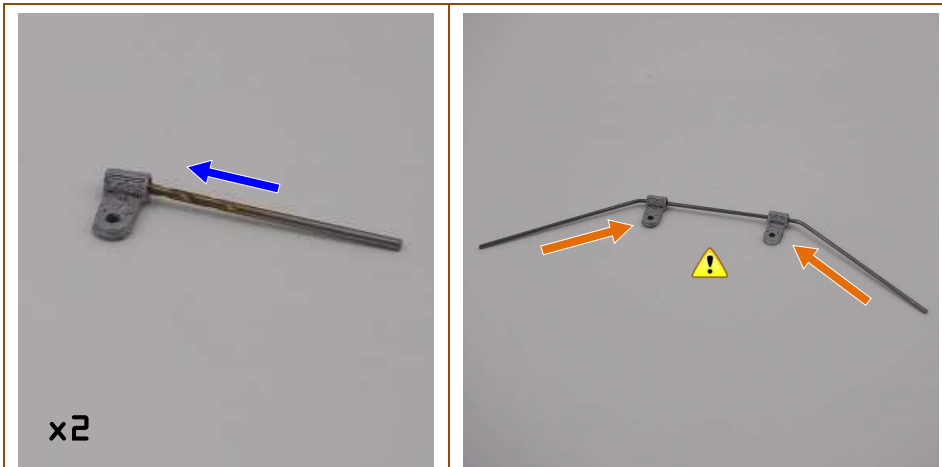
STEP 13 – REAR SUSPENSION UPPER - PREPARING THE COMPONENTS



i For the following steps, please prepare:

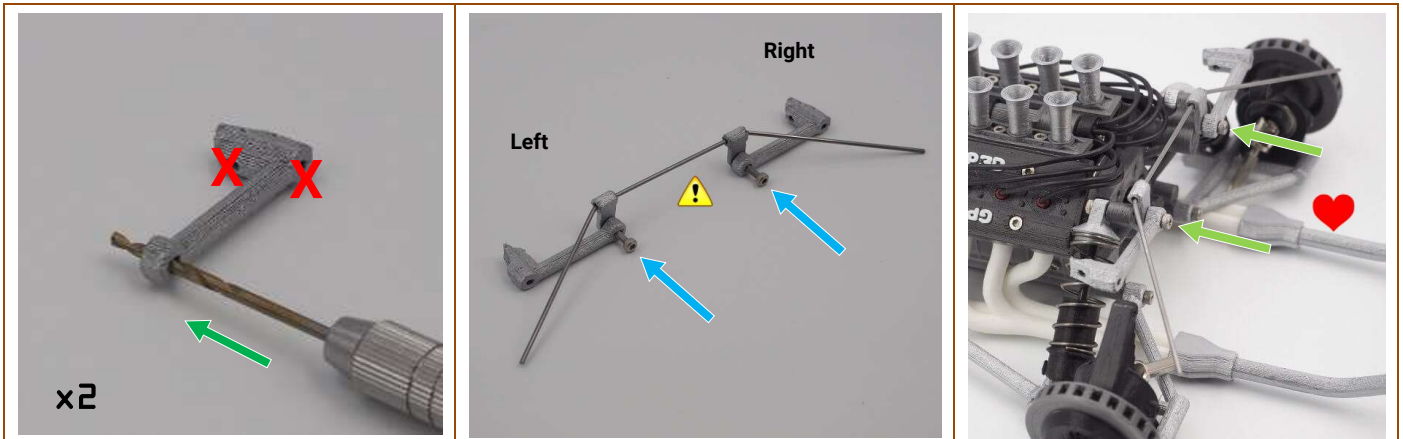
- Rear Anti-roll Bar (1x)
- Rear Trailing Link Upper (2x) – Note: Longer pair of the four Trailing Links
- Rear Suspension Arm Upper (L & R)
- Rear Anti-roll Bar Link (L & R)
- Rear Anti-roll Bar Support (2x)
- M1.6 hex bolt x5mm (2x)
- M2 hex bolt x4mm (2x)
- M2 hex bolt x10mm (4x)
- M2 hex bolt x12mm (2x)
- M2cs hex bolt x10mm (2x)

STEP 14 – ANTI-ROLL BAR



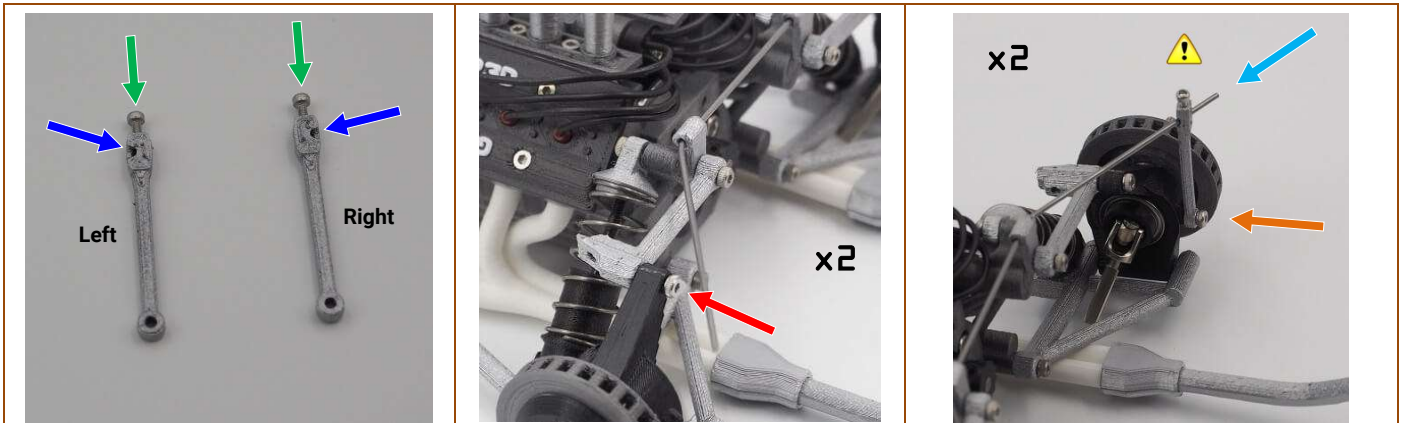
- x2** Make 2.
- Open out the hole in the Rear Anti-roll Bar Support with the **1.5mm** drill bit.
 - Slide the two Rear Anti-roll Bar Supports onto the Rear Anti-roll Bar and push them past the bend so they are located in the middle section as shown.
- ⚠ There is a slight widening of the hole on one side of each Rear Anti-roll Bar Support that can be used to allow them to be more easily pushed around the bend in the Anti-roll Bar.

STEP 15 – REAR UPPER LINKS ATTACHMENT



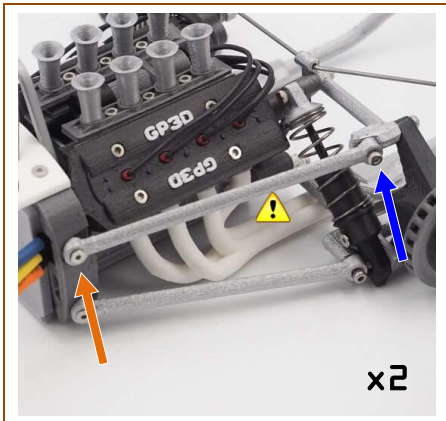
- Open out **ONLY** this hole in the Rear Suspension Arm Upper with the **2mm** drill bit. Do not drill the other two holes as they are both threads for M2 hex bolts.
- Layout the Anti-roll bar assembly from the previous STEP and Rear Suspension Arm Upper (L & R) as shown. And partially thread the M2 hex bolt x12mm through the inner hole of the Rear Suspension Arm Upper then through the Rear Anti-roll Bar Support flat side first.
- ⚠ Note; the totally flat side of the Anti-roll Bar Supports should be facing backwards towards you when laid out as shown.
- Now line up the M2 hex bolts x12mm with the inner holes in the back of the Motor Plate suspension mounts. Note these are **NOT** the same 'outer' holes the top of the Shock uses. Screw in until it just clamps the movement of the Rear Suspension Arm and Anti-roll Bar Supports – then back it out a little so that the Rear Suspension Arm Upper can rotate up & down easily. Make sure both sides are equal.

STEP 16 – REAR UPPER LINKS ATTACHMENT



- Layout the Rear Anti-roll Bar Links as shown with the flat side facing down and then take note of the diagonal hole; the part with this hole on the left is therefore the Left side, and the part with this hole on the right becomes the Right side. Open out this hole with the **1.5mm** drill if required to be able to slide the Rear Anti-roll Bar through easily.
 - Partially thread the M1.6 hex bolt x5mm into the top of the Rear Anti-roll Bar Links. For now, ensure these do not encroach into the diagonal hole as the Anti-roll Bar needs to slide through.
 - Attach the Rear Suspension Arm Upper to the Rear Upright with the M2 hex bolt x10mm. Tighten until it just clamps the Rear Suspension Arm Upper against the Upright and the back out enough to allow easy up and down movement of the suspension.
 - Slide the Anti-roll Bar Link onto the end of the Anti-roll Bar approximately ~15mm only...
 - Then; secure the bottom end of the Anti-roll Bar Link with the M2 hex bolt x4mm.
 - ⚠ You can leave the M1.6 as-is and the Anti-roll Bar to slide free to minimise the effect of the Anti-roll Bar. Or you can tighten it down holding the Anti-roll Bar Link approximately vertical until the M1.6 hex bolt x4mm clamps onto the Anti-roll Bar to have maximum Anti-roll Bar effect.
- x2** Repeat for the other side.

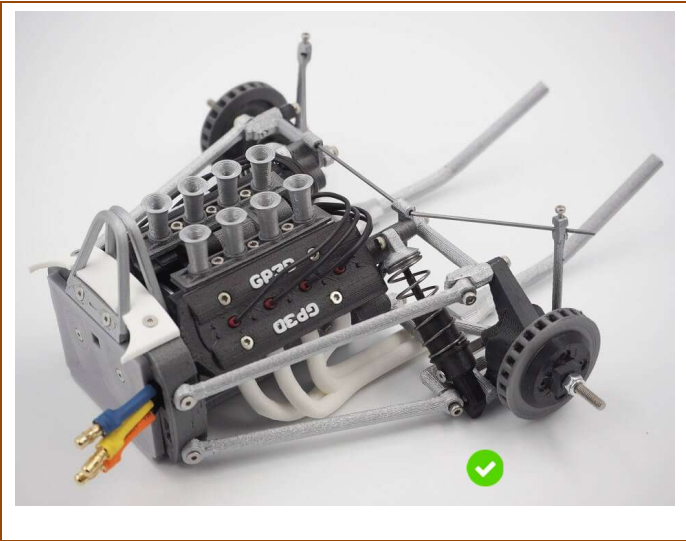
STEP 17 – REAR TRAILING LINK UPPER



x2 Repeat for the other side.

- Secure the rearward end of the Rear Trailing Link Upper with the M2 hex bolt x10mm. Note the hole is angled backwards slightly and therefore aligns 90 degrees with the Rear Trailing Link Upper angle. Leave a 0.5mm gap between the hex bolt head and the Link to allow it to rotate with the suspension action.
- ⚠ Trailing link orientation front to back doesn't matter, however you'll note one side is slightly flat from the print bed, therefore ensure that flat side is facing inwards.
- Attach the front of the Rear Trailing Link Upper with the M2cs hex bolt x10mm to the upper hole in the side of the Rear Bulkhead. Again, note the hole is angled backwards to align 90 degrees with the Suspension Link and not the Rear Bulkhead, and leave a 0.5mm gap between the M2cs hex bolt head and the Link to allow it to rotate with the suspension action.

STEP 18 – REAR SUSPENSION – COMPLETED



- ✔ Ensure your assembly matches the picture.