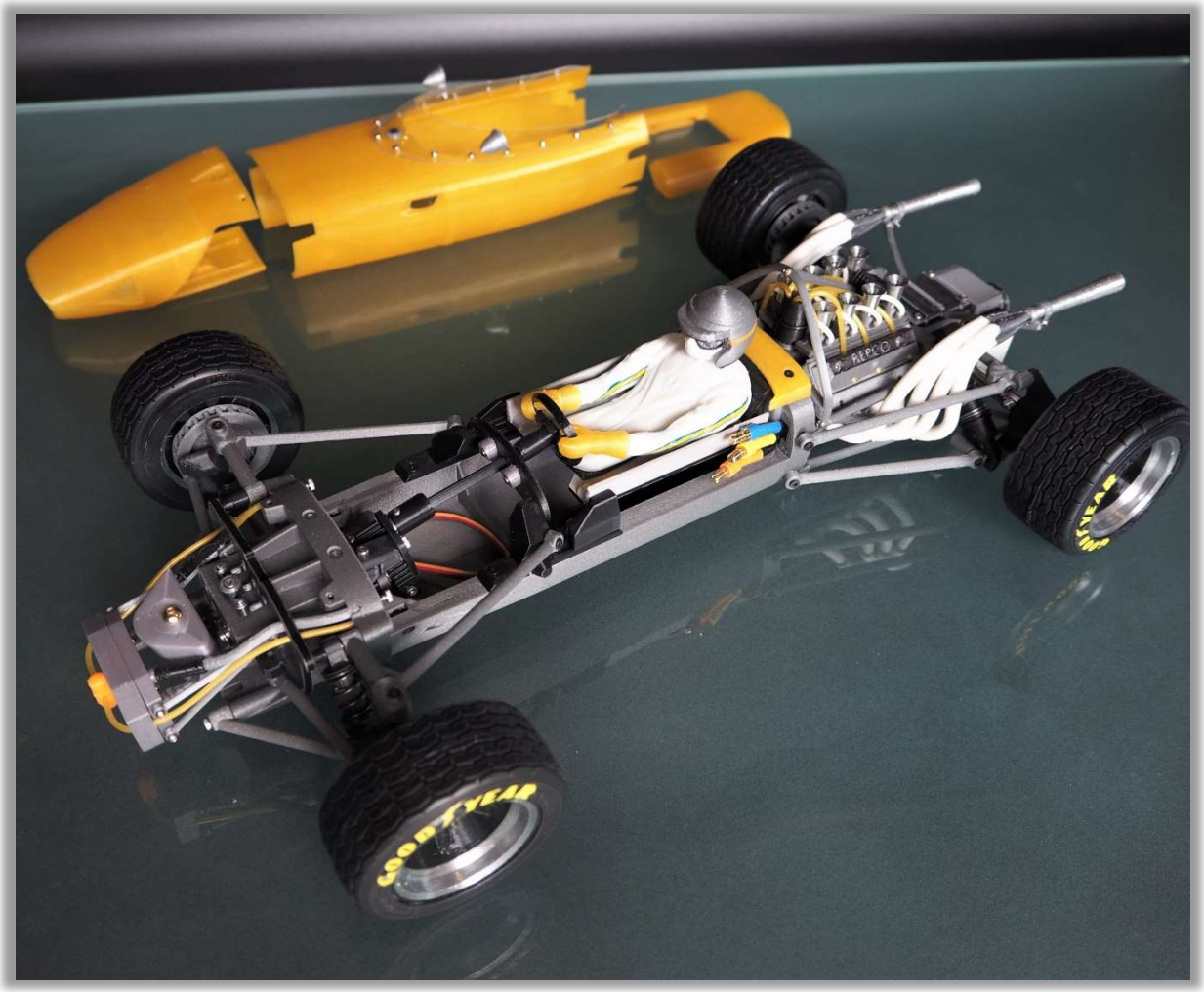
ASSEMBLY MANUAL

Grand Prix Car “Type-BT”



STEP 1 – THANK YOU!

- We would like to thank you for purchasing the GP3D Grand Prix “Type-BT” RC car kit. This model is inspired by the legendary achievements of Sir Jack Brabham highlighted by his unique achievement in Formula 1 winning the 1966 World Championship in a car bearing his own name!
- This kit is a totally new fusion of radio control cars, plastic model making, 3D printing and of course the glorious and iconic “Grand Prix” era of the 1960’s.
- The various printed components have been made from carefully selected polymers to achieve various characteristics, such as; strength, flexibility, impact resistance, colour and texture. This results in scale looks and colours (without the need for painting unless desired!) whilst ensuring a cool functional RC car.
- The inherent nature of 3D printing parts means for a given material and shape it will not be quite as strong as an injection moulded equivalent. To counteract this, we have carefully selected and utilised the latest available high quality and hence higher cost 3D printing filaments to ensure a good durability when compared to other plastic moulded RC kits. More information about these materials is covered in the next step!
- We hope you love and enjoy building and driving this model, so we are always available to help and support with any questions or issues you may have. We would also love to receive pictures of your finished model in your chosen livery that we can add to our online Customer Gallery!
- Please contact us if needed: grand.prix.3d@gmail.com
- Information and spare parts are available in our online shop: www.GrandPrix3D.store

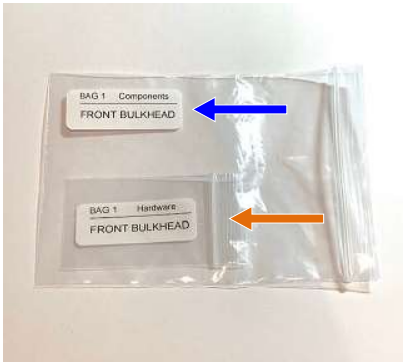
STEP 2 – TERMINOLOGY

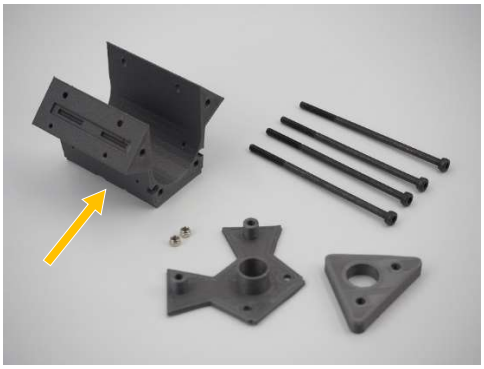
3D Printing	All the plastic components in this kit are 3D printed using the latest equipment and high quality, high-cost materials.
Nylon G	Nylon is a very impact resistant plastic. We use MatterHackers NylonG which is glass fibre impregnated nylon and is used for most of the main chassis, bulkheads, engine bay, gearbox casing and suspension components.
PC Blend	Is a blended variant of polycarbonate from Prusa and is extremely strong and impact resistant. It's used in the wheels, shocks, uprights, steering, gears, axles, trumpets and mirrors.
TPU	Is an amazing flexible polymer we have used for the body shell and the 'active' driver figure! This material is super tough and capable of absorbing any impacts. The kit comes with **gold** colour body parts; however, we also offer these parts as customisable/options printed in a range of available colours. The texture and finish perfectly captures the essence of the grand prix cars of the 1960's era. You can also paint them with any flexible paint, such as polycarbonate paint to achieve your favourite driver/livery!
PETG/Carbon	Is a strong and hard polymer we have used for many of the cosmetic parts.
Brim	For some of the printed parts a thin extra material layer is used during printing to ensure the part does not prematurely detach from the print bed, this is called a 'brim'. Similar to injection moulded parts removed from the sprue, you will need to remove the brim material and clean up the edges with a scalpel and/or sand paper.
Hairs/blobs	During the printing process sometimes very fine 'hairs' or small 'blobs' of plastic remain on the part. We remove most of these during post processing the components, but you can also clean up also using a scalpel and/or sand paper.
M1.6, M2, M2.5, M3	These four sizes of bolts/washers/nuts are used in this kit. Bolts all have Allen socket heads.
M#**cs**	The 'cs' part refers to counter sunk head.
M#**button**	The 'button' part refers to button head.
M# **x10mm**	Measurement in millimetres indicates the length of the screw thread. For socket/button head this excludes the head, for counter sunk includes the head.
M# **nylock** nut	The nylock nuts have the nylon insert part of the thread to resist coming loose.

STEP 3 – ICONS & SYMBOLS

Dotted line	Dotted line indicates assembly path/routing of bolts into parts
Arrow	Indicates direction of part for movement to assemble
Reverse Angle	Inset image showing the reverse/different angle
Make 2	Indicates you need to repeat this step to build 2 items, or Left and Right.
Leave loose	Leave slightly loose (in some cases a future step will tighten)
Drill	Drill out existing hole with provided 2mm or 1.5mm drill bit
NO Drill	Do **NOT** drill holes (as bolt threads in)
Clean up	Clean up part/edges with scalpel and/or sand paper
Gentle	Exercise care and love and gently tighten!
Information	Indicates some extra information or hints or options
Very Important!	Highlights a very important item to take note
Check	Check your assembly matches the picture

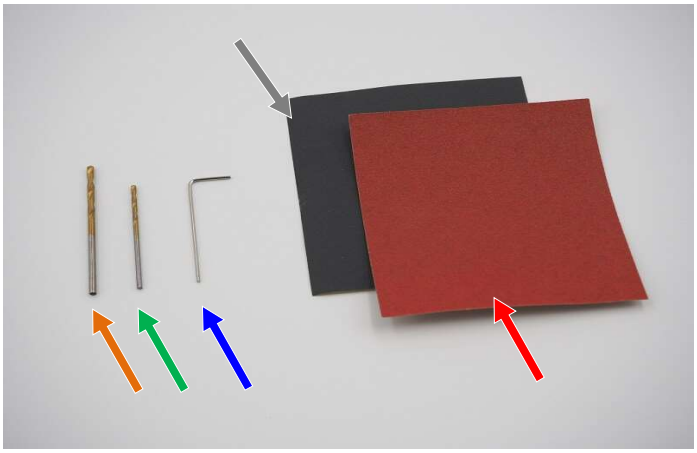
STEP 4 – LABELS GUIDE





Bags	All the bags are labelled with a bag number and name and a type. Each Bag number/name comes as a pair! A larger and smaller bag.
Bag Number	Bags are numbered in the sequence and correspond exactly to each SECTION of the assembly manual.
Bag Name	Each bag is named, also corresponding to the assembly section.
Bag Type	Each bag in the pair contains either; Components or Hardware.
Bag Type: **Components**	The larger bag containing parts for the SECTION, and also contains the ***smaller hardware bag.***
Bag Type: **Hardware**	The small bag contains all the required hardware such as screws, nuts, shims, bearings etc.
Other parts	Some larger parts are not bagged or labelled, but these will be identifiable in the images! E.g.: Engine Bay!

STEP 5 – TOOLS



The kit includes:

0.9 Allen key (1x)	0.9mm (if you use your own please ensure it's good quality and not worn, as this can easily cause the M2 grub screws to be damaged)
2mm drill bit (1x)	Used to open up any holes in the printed parts to ensure precision clearances, e.g. the suspension hinge pin holes. Only use drill where indicated!
1.5mm drill bit (1x)	Used for the scale spark plug lead wire holes and windscreen mounting holes.
Sand paper (1x)	180 grit – coarse; to clean up the printed parts edges
Sand paper (1x)	600 grit – fine; to polish any corner/edges to look pretty!

Others required:

Allen drivers	1.3mm, 1.5mm, 2.0mm & 2.5mm
Socket Driver	5.5mm (for the M3 wheel nuts)
Scalpel	Trimming excess material off plastic parts. Optionally cutting out stickers.
Scissors	Cutting out stickers.
Silicon Grease	Any thick silicone-based grease – used for the friction shock lubrication. Normal ~thin shock oil NOT recommended as shocks are not sealed.
Double-sided tape	Secure your ESC and Receiver….and Transponder maybe?

Optional:

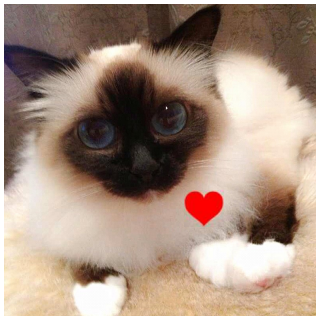
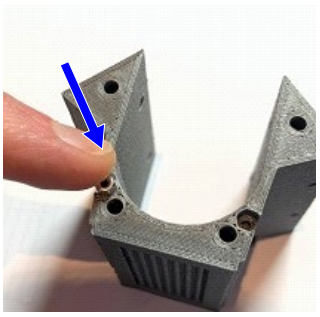
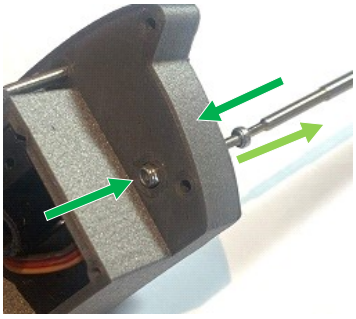
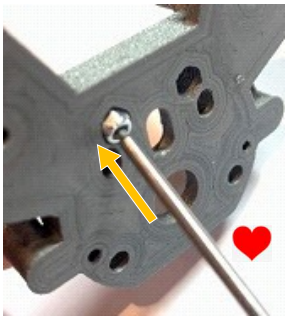
Small Pliers	Can be useful, e.g.: inserting and removing the suspension hinge pins.
Tweezers	Pick up/hold smaller screws/items!
Callipers/ruler	For measuring screws to ensure correct usage

STEP 6 – SPARES BAG

- A selection of hardware spares has been provided in a separate bag

If you lose or damage a screw when building use one from this bag.

STEP 7 – TECHNIQUES

- Always be **GENTLE** when tightening screws for this entire build! A little trick to keep in mind is imagine yourself softly petting our kitten 'Oreo'.
- Nothing should be over tightened as this can damage the printed parts. As soon as you feel the bolt bottom-out tight → then STOP! ;-)
- Where **nuts** are inserted into printed parts you can use one of three techniques;
- 1. Push in with your fingers.
- 2a. Pull the nut in by inserting the appropriate screw from the other side and tighten lightly until the nut is pulled into the recess and seated.
- 2b. Alternatively pull back on the bolt with your fingers once threaded in the nut, this may be sufficient to pull the nut into its recess.
- 3. Push in using an appropriate Allen driver <u>from the nylon side</u> where the hex nut easily slides into the hex shaped hole– but be **very careful** and only use this method where light force only is required as this method can damage the nylock insert part if excess pushing force is used.

STEP 8 – THAT'S IT…. LET'S GET BUILDING!!!