

Precision Aero Products

Alchemy/PRO Adverrun Single Drive Mount Kit

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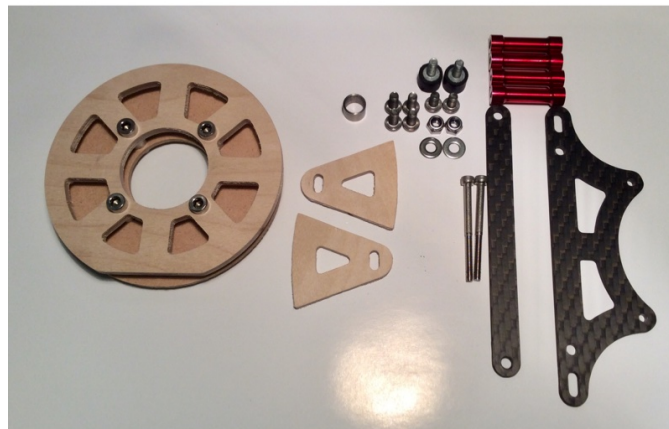
Installation Notes

Thank you for choosing to purchase a Precision Aero Products Alchemy/Pro Adverrun Single Drive Mount Kit. This product is proudly designed and manufactured in Australia by Precision Aero Products. The aim of the product is to make the installation process easy, accurate and also upgrade the drive mounting system. It also eliminates the need to use the heavy drive assembly whilst the adhesive cures on the firewall.

Note: Some of the pictures shown are an Allure Biplane being fitted out with an Adverrun Single. The principle of assembly is the same.

The kit is comprised of the following items:

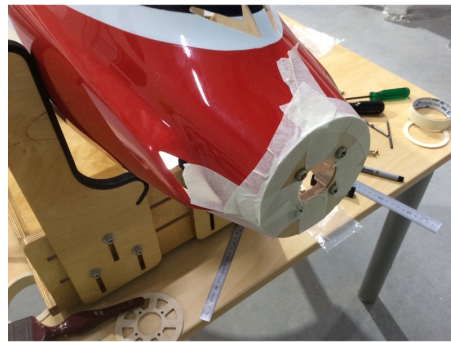
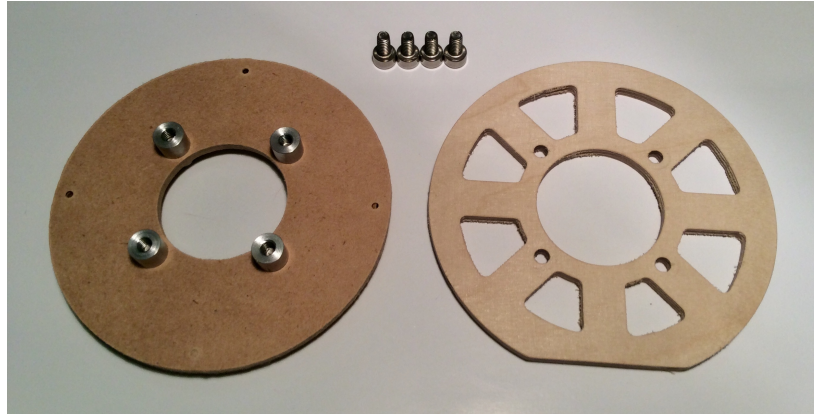
- 4mm AC Ply Firewall – Alchemy/Pro.
- 3mm MDF Nose ring jig (88mm).
- 3mm AC Ply Side Parts (2).
- 3mm Carbon Rear Support (1).
- 2.5mm Carbon Cross Brace (1).
- 8mm OD, 6mm long Aluminium stand-offs (4).
- 30mm Standoff M4 (2).
- 30mm Standoff M3 hole (2).
- 7mm long Stainless Steel prop hub spacer (1).
- M4 x 10mm SS BH Screws (4).
- M4 x 8mm SS BH Screws (2).
- M4 x 8mm SS Screws (4).
- M4 x 6mm SS Screws (4).
- M4 SS Flat Washers (6).
- M4 SS Nyloc Nuts (2).
- M3 x 40mm SS Cap HD Screws (2).
- 10 x 8mm Rubber Isolators (2).



Additional items & tools required:

- Masking tape – low tack green painters tape if available.
- Small spirit level.
- Steel ruler.
- Dremel tool with sanding drum (optional).
- Epoxy resin (30 minute).
- Glass powder (optional).
- Carbon tow 12k (optional).
- Methylated Spirits or IPA.
- Personal Protective Equipment (PPE) – Dust mask, eye protection and rubber gloves.

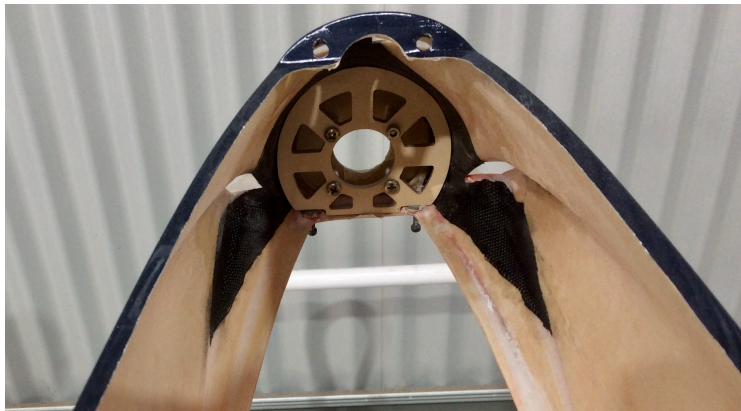
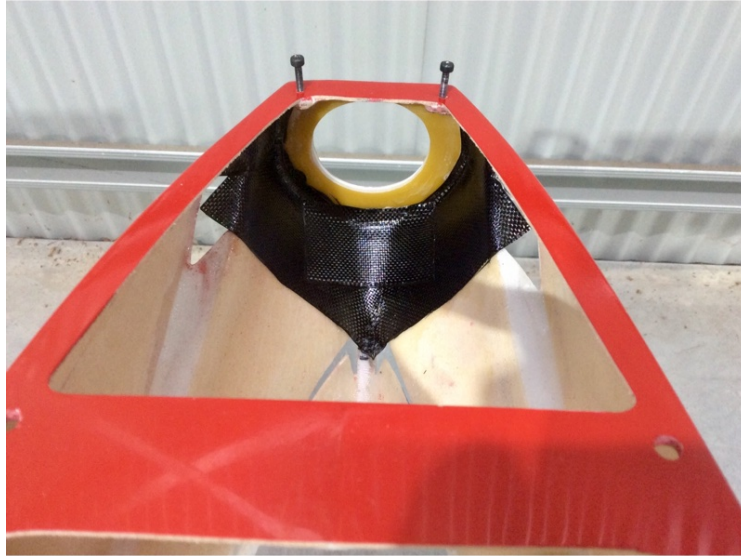
1. The first step is to level the fuselage. It makes the job much easier if the fuselage is securely held in a cradle. Using the spirit level, make sure the fuse is level. The canopy opening or undercarriage mounting can normally be used to set a reference. This can also be done with a digital angle meter.
2. The factory installed fibreglass nose ring will not be used but it can be left in place. The mount kit comes pre-assembled. Remove the MDF nose ring jig from the assembly by undoing the four M4 x 8 screws in the firewall. The outside diameter (OD) of the MDF nose ring jig is 88mm diameter. This matches the Alchemy/Pro nose ring and will be used to align the mount to the fuselage. We need to level two of the holes in the MDF. Sit a steel ruler on the top screws and then place the spirit level on the ruler. This is where an extra set of hands comes in handy (pardon the pun). Now align the MDF jig so it's concentric to the fuselage nose ring and so the spirit level is actually level. Tape the MDF to the fuselage. I've found the green painters tape works well and will not pull the paint off your fuse. With the MDF securely taped down and positioned correctly, we can now start shaping the AC Ply firewall.



3. If you removed the, re-fit the four (4) 6mm Aluminium stand-offs to it with the supplied M4 x 6mm screws and M4 Flat washers.



4. The 4mm AC Ply firewall has been deliberately cut oversized. The inside of the fuse is somewhat irregular in its shape so the firewall will need to be sanded into shape to match the fuse irregularities. If the fuselage half joining tape is standing up now would be a good time to trim it. Likewise, if you want to add some carbon cloth to the inside of the nose then this should be done before the firewall is set in place. To trim the firewall, we'll primarily use the holes in the stand-offs and the matching holes in the firewall for alignment. Time for a Dremel party! Trimming the firewall with a Dremel sanding drum makes life so easy. Take your time removing small amounts of material from the outside of the firewall whilst repeatedly testing the alignment in the fuse. You want all four holes lining up and minimal gap between the fuse side and firewall. When trimmed correctly, the front face of the firewall will rest flat on the four Aluminium stand-offs and all four screw holes should line up. Test fit the M4 x 8mm screws through the firewall into the stand-offs. We're almost there!



5. It's now time to glue the firewall in place. Remove the firewall from the fuse. Rough up the inside of the fuselage where the firewall will be glued with 220 grit sandpaper or similar. Then clean the area with methylated spirit (or IPA) and a clean cloth. I use 30-minute Pacer Z-Poxy and glass powder to glue in firewalls. I recommend using a high quality epoxy in this application. Firstly mix up your epoxy as per the manufacturers instructions. Then mix in some glass powder to give the resin some body. Use appropriate PPE when working with epoxy and glass powder. With the epoxy and glass powder well mixed, a bead can then be applied to the firewall outside edge (glued edge) all the way around. Carefully fit the firewall to the fuselage and fix into position with the four M4 x 8mm screws. Wipe any excess resin off leaving a nice fillet between the firewall and the fuse sides. Add extra epoxy and push into any gaps if required. Now go make that cup of coffee whilst the epoxy cures.

6. After an hour of curing it should be ok to carefully remove the jig and standoffs. Remove all the masking tape and M4 x 8mm screws. Again, take care when removing the masking tape. If you need to add more epoxy to the firewall do that now. There will also be a small gap between the firewall and factory fitted nose ring. This can gap can be filled with epoxy and glass powder if desired. An optional extra is to add a length of 12k carbon tow around the firewall circumference.



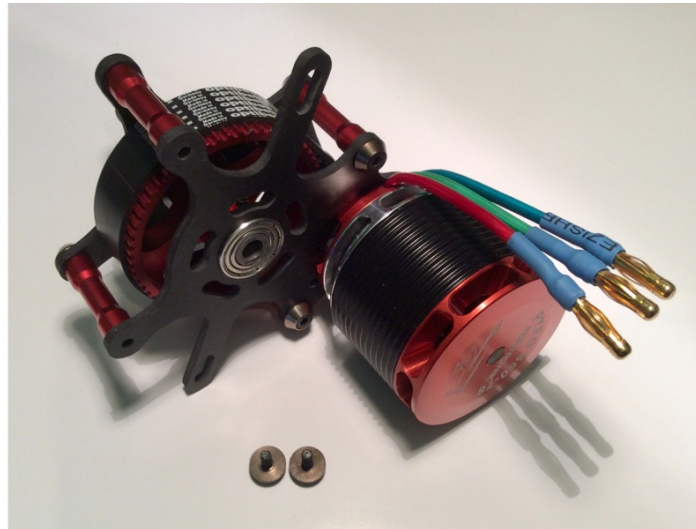
7. You can now test fit the Adverrun Single Drive to the fuselage using the M4 x 8mm screws. Replace the Adverrun supplied 5mm prop hub spacer with the 7mm one provided in this kit. If all has gone well, the spinner should be nicely centred to the fuse nose ring. You should also have a uniform spinner to nose ring gap. The gap should be approximately 2-3mm.



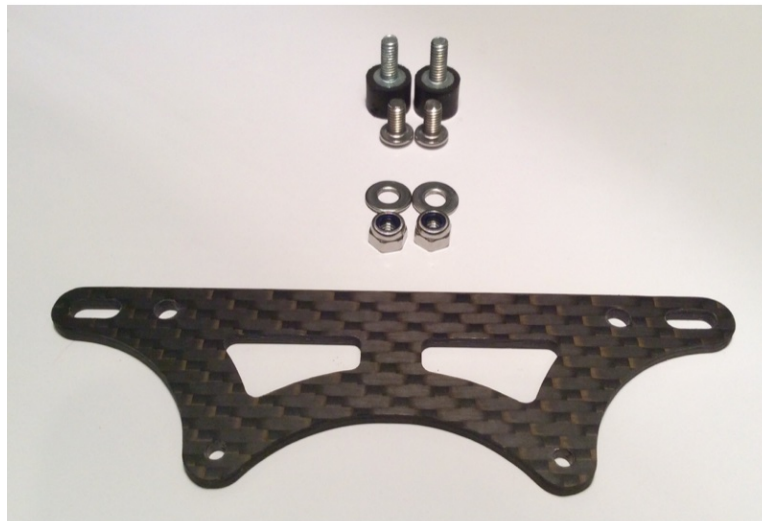
8. The Rear support is built into the Adverrun Single Drive however our testing has found that upgrading the rear mount improves the drives performance.



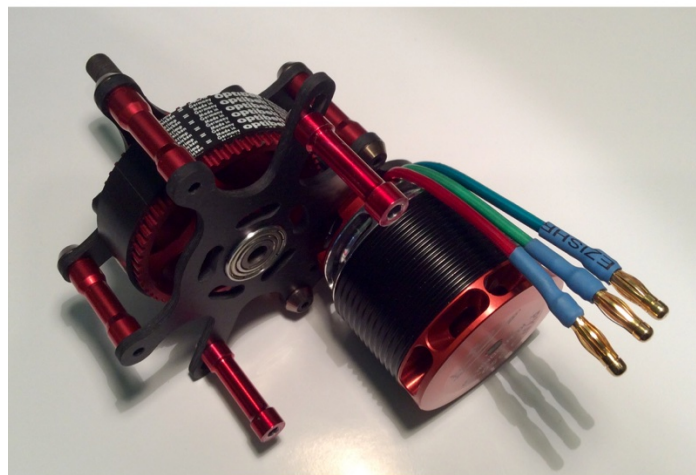
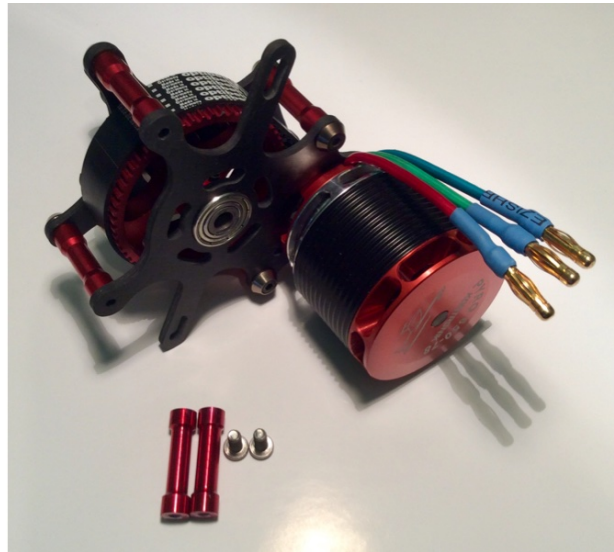
9. Firstly, remove the top two M3 x 8mm screws from the top of your Adverrun Single Drive. The M3 Cone washers will be reused so set them aside for the moment.



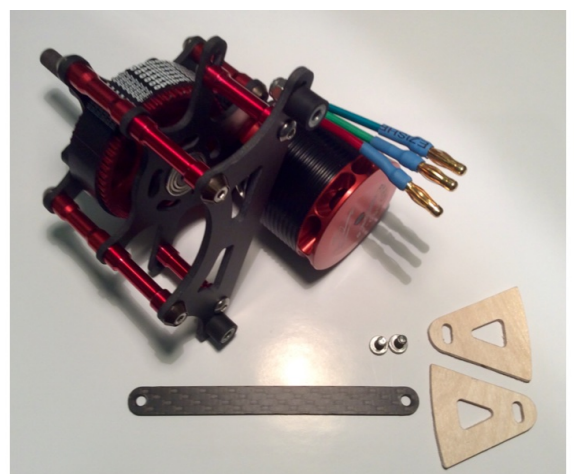
10. Next take the carbon rear support, M4 Nylon Nuts, M4 Flat washers and 10 x 8mm Rubber isolators and assemble them as shown.



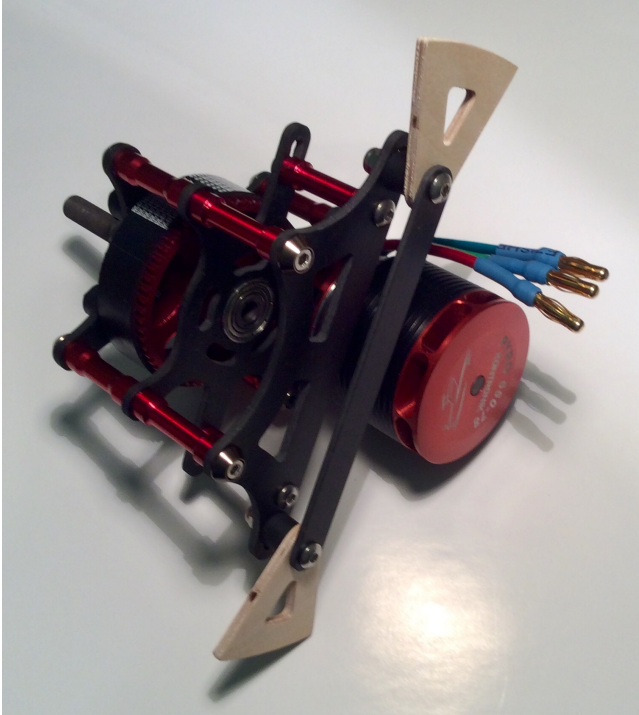
11. Next take the 30mm Standoffs M4 (2) and M4 x 10mm Button Head Screws and loosely assemble them to the elongated holes as shown.



12. Now take the 30mm Standoffs M3 holes (2) and M2 x 40mm CAP Head Screws, M3 Cone Washers, M4 x 10mm Button Head Screws (2) and the 3mm Carbon Rear Support and assemble them as shown.



13. The drive can now be re-fitted to the model. The fuse sides will need to be roughed up with 220 grit sand paper where the 3mm AC Ply Side Parts are to be glued. The side parts can be trimmed if needed to match the fuse sides. The 2.5mm Carbon Cross Brace is secured to the 10 x 8mm Rubber Isolators with M4 x 8 Button Head Screws. When happy with the fit, glue the side parts in place with 30 minute epoxy resin and glass power (optional). Carbon cloth can also be used to strengthen the bond further. This completes the job.



If you have any questions in relation to the use of this product, please feel free to contact us at: sales@precisionaeroproducts.com.au
