

Precision Aero Products

Alchemy/PRO Plettenberg Advance 30-10 Mount Kit

<http://www.precisionaeroproducts.com.au>
sales@precisionaeroproducts.com.au



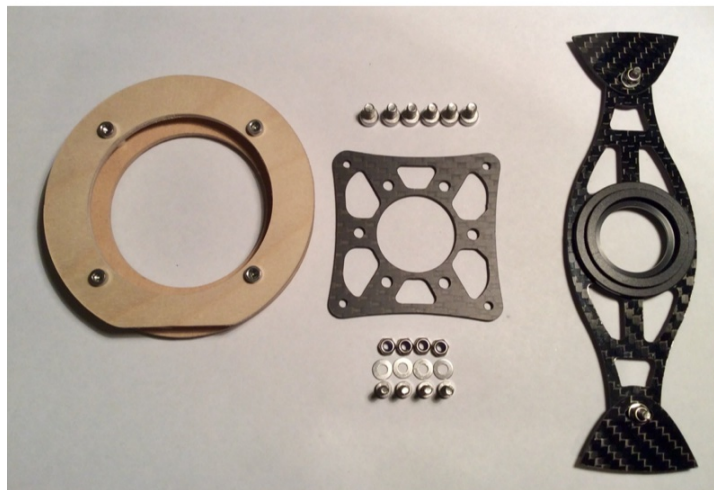
Installation Notes

Thank you for choosing to purchase a Precision Aero Products Alchemy/Pro Plettenberg Advance 30-10 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 and accurate. It also eliminates the need to use the heavy motor whilst the adhesive cures on the firewall.

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

The kit is comprised of the following items:

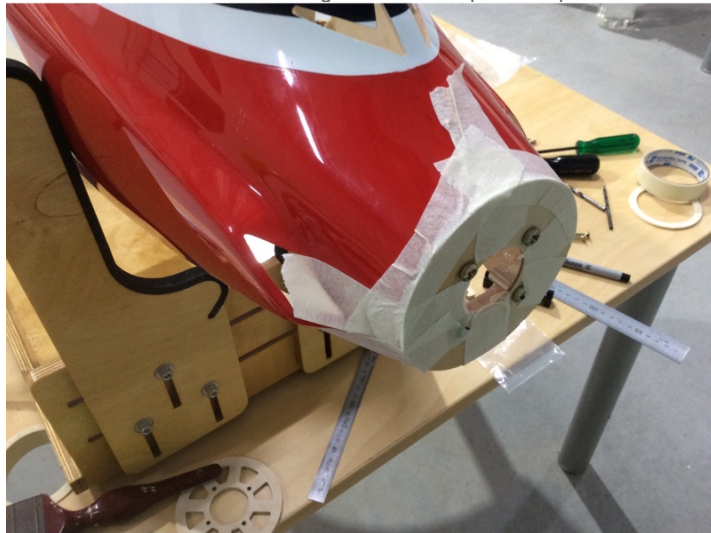
- 4mm AC Ply Firewall – Alchemy/Pro.
- 3mm MDF Nose ring drill jig (88mm).
- 2.5mm Carbon Motor Plate.
- 5mm OD, 7mm long Aluminium stand-offs (4).
- M3 x 12mm SS Screws (4). For Final Mounting of carbon motor plate to firewall.
- M3 x 6mm SS Screws (4). MDF nose ring to standoff.
- M3 x 8mm SS Screws (4). Firewall to standoff whilst adhesive cures.
- M4 x 8mm SS Screws (6). To attach motor to 2.5mm carbon motor plate.
- M3 SS Flat Washers (8). For rear support and final mounting of carbon motor plate to firewall.
- M3 SS Nyloc Nuts (6). For rear support and final mounting of carbon motor plate to firewall.
- 1.5mm Carbon Rear Support (1).
- 1.5mm Carbon Side Parts (2).



Additional items & tools required:

- Masking tape – low tack green painters tape if available.
- Small spirit level.
- Steel ruler.
- 3mm drill bit.
- 5.5 to 6mm drill bit.
- Electric drill.
- M3 x 15mm screws and M3 nuts. (To help drill the nose ring on the model).
- 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.

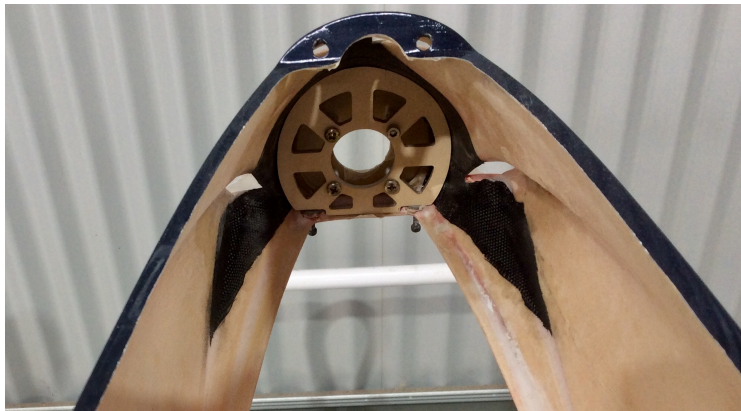
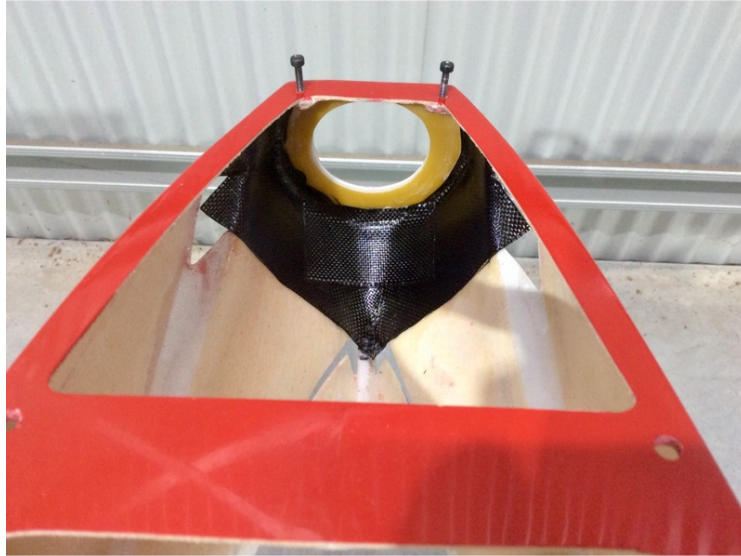
1. The first step is to level the fuselage. It makes the job much easier if the fuselage is securely held in a cradle. Using the spirit level, make sure the fuse is level. The canopy opening or undercarriage mounting can normally be used to set a reference. This can also be done with a digital angle meter.
2. The factory installed fiberglass nose ring is somewhat irregular on its installation with respect to the front face of the fuselage. We need to eliminate this variable if we want our firewall accurately aligned to the front face. The mount kit comes pre-assembled. Remove the MDF nose ring drill jig from the assembly by undoing the four M3 screws. The outside diameter (OD) of this MDF nose ring drill 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. Temporarily push two of the M3 screws into the MDF drill Jig. Using the top two holes will be easier. Then sit the steel ruler on the 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 drill jig so it's concentric to the fuselage nose ring and so the spirit level is actually level. Now 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 drilling holes. Using your 3mm drill bit and electric drill, drill the first hole in the fuse nose ring. A sharp drill bit will be an asset here, as you will be drilling through fiberglass plate. Once the first hole is drilled, check the MDF has not moved and is still aligned ok. Then insert one of the M3 screw and a nut and tighten them. Repeat this process for the remaining three holes one at a time.



3. The MDF drill jig can now be removed from the model and set aside temporarily. Take care when removing the tape to ensure you don't lift paint. Gently warming the tape with your wife's hair dryer will soften the glue easing removal. We now want to open up the M3 holes using a 5.5 - 6mm drill bit. This will allow clearance for the 5mm OD Aluminium stand-offs. Opening the holes will also cater for the mount screws once the firewall is glued in later.
4. Take the MDF drill jig and fit the four (4) 6mm Aluminium stand-offs to it with the supplied M3 x 6mm screws. If the 5.5 -6mm drill maintained it's centre, the MDF drill jig with stand-offs should fit back onto the nose and be aligned well to the fuse nose ring. If the holes are slightly out of alignment adjust as required with a suitable round file. Also check alignment with the spirit level. When happy with the alignment, tape the MDF drill jig to the nose again. Also check that the four stand-offs protrude past the factory installed fibreglass nose ring.

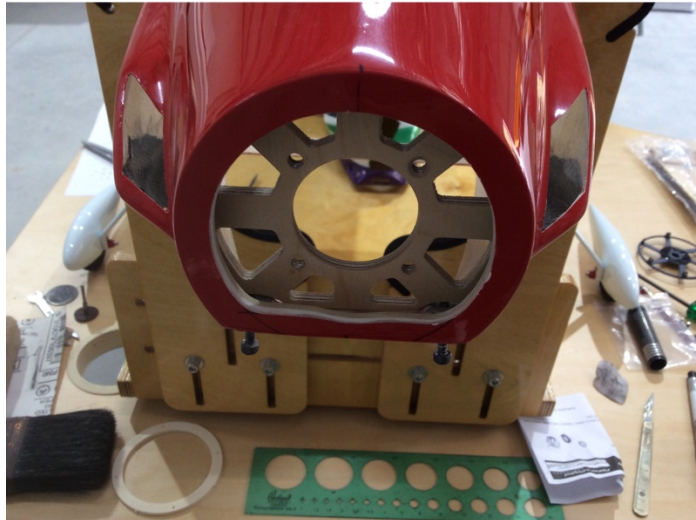


5. The 4mm AC Ply firewall has been deliberately cut oversized. The inside of the fuse is somewhat irregular in its shape so the firewall will need to be sanded into shape to match the fuse irregularities. If the fuselage half joining tape is standing up now would be a good time to trim it. Likewise, 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 M3 x 8mm screws through the firewall into the stand-offs. We're almost there!



6. 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 M3 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.

7. After an hour of curing it should be ok to carefully remove the jig and standoffs. Remove all the masking tape and M3 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 but try not to get any in the area where the four screws to attach the 2.5mm carbon plate will pass. An optional extra is to add a length of 12k carbon tow around the firewall circumference.



8. You can now test fit the motor to the fuselage. Attach the carbon motor plate to the firewall using M3 x 12mm screws along with M3 flat washers and lock nuts. The Plettenberg Advance is then attached to the carbon motor plate with the supplied M4 x 8mm screws. Then fit the Plettenberg thrust washer, spinner backplate, propeller and spinner cone. If all has gone well, the spinner should be nicely centred to the fuse nose ring and you should have a uniform gap of approximately 2-3mm between the spinner and nose ring.
9. The Rear support pushes onto the rear of the Plettenberg Advance. The carbon side parts will need to be roughed up with 220 grit sand paper where they are to be glued to the fuse sides. The side parts can be trimmed if needed to match the fuse sides. Glue the side parts in place with 30 minute epoxy resin and glass power (optional).

