

Precision Aero Products

Precision F3A Drive (V2)

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Instruction Manual

Thank you for choosing to purchase a Precision Aero Products Precision F3A Drive. This product is proudly designed and manufactured in Australia by Precision Aero Products. The Precision F3A Drive incorporates all our learnings about belt reduction systems in recent years. Particular attention has been paid to the mounting system to provide both stability and quietness.



We have partnered with EGODRIFT to supply the motors. Based on our testing, we believe EGODRIFT motors are superior. There are two motor options available for the Precision F3A Drive, High KV (small props) and Low KV (big props).

The Precision F3A Drive is comprised of the following items:

- Precision Drive Assembly (1).
- M4 x 8mm Cap Head SS Screw (4).
- 4mm AC Ply Firewall (1).
- 4mm AC Ply Rear Support Side parts (2).
- Installation Drill Jig (1) 82 and 86mm.
- This Instruction Manual (1).

Safety Precautions:

- Electric motors can cause serious harm or injury. During initial testing/setup of your drive, we suggest running it without a propeller fitted.
- Only use balanced, undamaged propellers.
- Ensure all loose wiring is safely kept away from the rotating motor and belt drive.
- The propeller nut tightness should be checked after five (5) flights. Some propeller hubs can compress a little causing a loose prop.
- If excessive vibration is detected stop and check your propeller and ensure all fasteners are tight.

ESC Types:

The drive has been tested with JETI Mezon 95 OPTO Light, JETI Spin99, Futaba/OS MC9100A. A D3 Governor ESC will be in testing soon. Basically, any of the ESC's currently used in F3A will be fine. The ESC should be capable of handling 100A and 10S batteries.

ESC Settings:

- Timing 9 degrees.
- 10 Poles.
- Ratio 4.3:1.
- Brake starting point 15%.

Suggested Propellers:

- High KV Motor 20" x 13" (Tested on Mejzlik 20" x 13" EL with in flight RPM 7,000 in vertical up line).
- Low KV Motor 22" x 12" to 22" x 13". (Tested on CK Aero 22" x 12.5" EP with in flight RPM 6,600 in vertical up line).

Belt Tension:

The belt tension is adjustable. You don't want the belt to be too tight as it will introduce added drag/friction for no gain. When correctly adjusted you should see 2-3mm of belt deflection. To adjust the tension, loosen the four(4) motor screws and two(2) front motor shaft support plate screws. Then adjust the tension using the fitted adjuster to shift the motor. Then tighten all screws and check the belt deflection. During our testing we have not seen any notable belt stretch at all.



Loosen these six
(6)screws



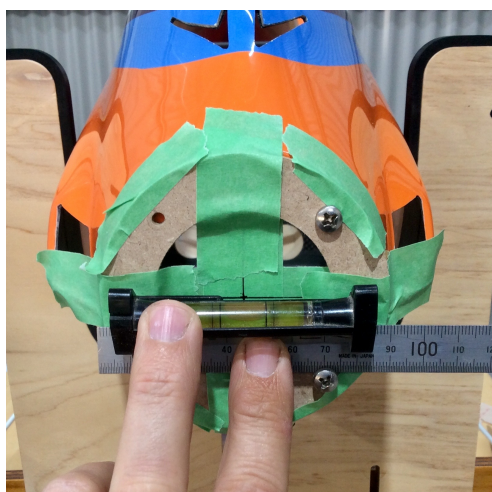
Belt tension screw

Installation:

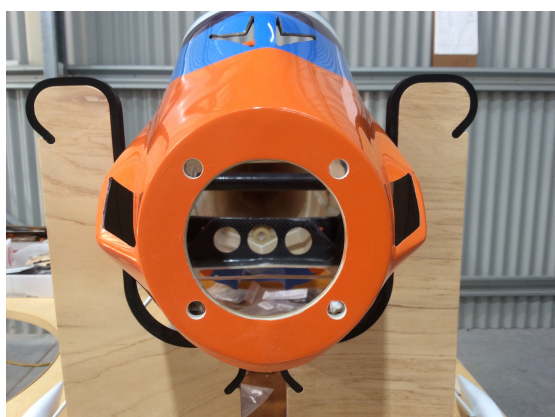
Included with the drive is an AC Ply Firewall, AC Ply Rear support side parts and an MDF installation drill jig. The jig is used to drill the nose ring of your model and then to align/trim the firewall before gluing it into the Fuselage.



We strongly suggest laminating the inside of your fuselage nose with light weight (120-150g/sqm) carbon cloth. This will improve the strength and rigidity of the nose area. Some models come with carbon in the nose already.

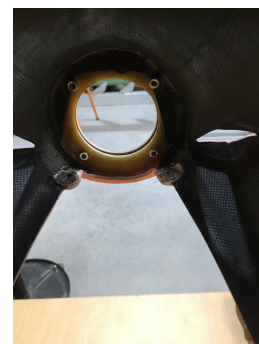
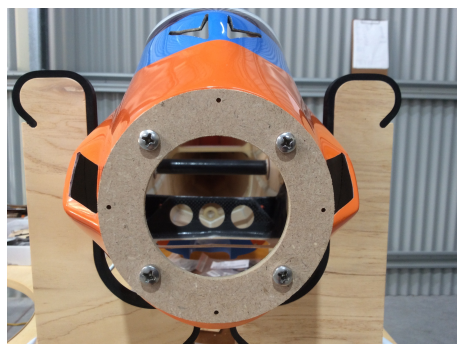


The included drill jig is aligned to the nose ring and taped in position with masking tape. A level can be used to help align the jig as shown. Drill one M4 hole and then fit an M4 screw and nut to hold the jig firmly. Repeat for the remaining three holes.

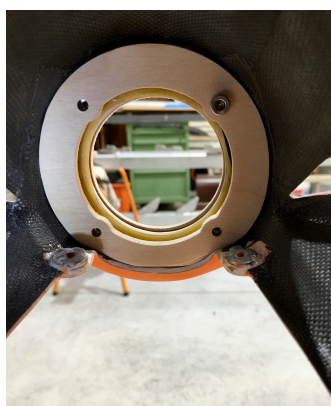


Remove the drill jig. Then open the holes out to 7mm that will allow the jig standoffs to pass through and later the included M4 x 8mm CAP Head mounting screws.

Fit the standoffs to the drill jig and refit this assembly to your nose ring align and tape it into place. The standoffs are now used as a tool to adjust the firewall to fit your fuse.



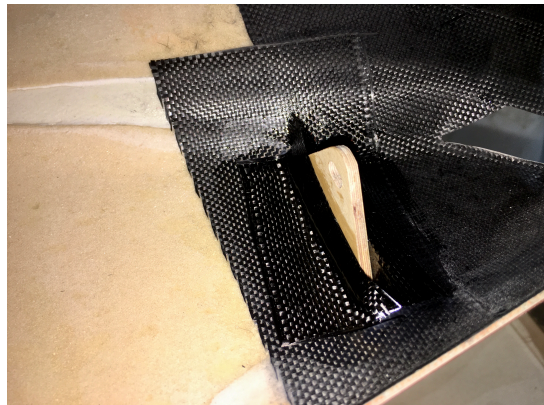
When trimmed correctly, the firewall should sit flat on all four standoffs and not foul with the fuse sides. Take your time here to get a neat fit. Once happy with the fit, glue the firewall into position with a quality 30 minute epoxy. We use Pacer brand 30 minute epoxy resin. The firewall is held in place by four M4 screws whilst the epoxy cures. As an option, you can run some 12k carbon tow around the circumference of the firewall for extra strength.



With the epoxy cured, you can now remove the M4 screws and remove the jig. The firewall is now done. You can test fit the drive into the model to check spinner clearance. If necessary, the spinner clearance can be adjusted by adding a collar or M8 flat washer behind the prop hub/collet.

The rear support needs to be fitted with the drive fitted into the model. The AC ply rear support side parts can be trimmed with a Dremel to suit your specific fuse. We suggest a patch of carbon cloth on the fuse sides where the rear support side parts are to be glued. Use quality 30 minute epoxy to glue the side parts into position. Afterwards, some strips of carbon cloth either side of the rear support side parts will aid strength.

We also recommend using a small drop of Loctite 243 on all screws.



*Prototype Drive pictured above.

Warranty:

The warranty period is twelve (12) months from the date of purchase. This warranty covers workmanship and materials. Crash damage is not covered nor is obvious misuse or modification to the drive or motor.

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