PIKE PRECISION 2

Detailed settings from Jo Grini (last revision 17.11.2017):

Model mainly used for F3F competitions but some winch launches done.
Speed camber used mostly in first leg F3F or if too little ballast used.
All measurements are done from neutral point of fuse connection.
Pitch (elevator) is highly dependent on settings from: elevator throw/elevator-camber-mix/CG. Any change on one of these will affect pitch.
On average I have used half the amount of ballast compared to the Precision1

CG (Center of Gravity lengthwise) 94mm
98mm used for some days with less wind and no sidewind
Hook 102mm

Neutral camber

	Up	Down
Tail neutral -0,5mm. Expo 35%	7mm	6mm
Rudder	7mm	9mm
Ail-rud mix	2mm	2mm
Ailerons. Expo 35%	22mm	22mm
Aileron - Flap mix	6mm	6mm
Elevator – Camber mix (whole wing equal)	0	4mm

+1 degree camber (speed)

	Up	Down
Tail neutral -0,5mm. Expo 35%	8mm	7mm
Ail-rud mix	1mm	1mm
Elevator – Camber mix (whole wing equal)	0	2mm

Thermal camber 3-5mm

	Up	Down
Tail neutral -0,5mm. Expo 35%	8mm	7mm
Aileron throw. Expo 35%	24mm	15mm
Ail-rud mix	0mm	0mm
Elevator – Camber mix (whole wing equal)	0	4mm

Butterfly (max throw flaps depending on LDS and/or setup)

	50% down	100% down
Flap	32mm	64mm
Aileron	10mm	19mm
Elevator	4mm	7mm

Video of fast F3F practice:

Pike Precision 2 in 15m/s and AUW 4050g
https://vimeo.com/238202558

Slope is the 19m high Sausebakk in Norway
Pilot Jo Grini, video by Stig Magne Olsen

Standard Instructions:

Congratulations for choosing the right model! Your new Pike Precision 2.
The model is a handmade product, carefully packed for your convenience.
Please check that all items ordered are included and not damaged during transportation.
A basic model includes:

- 2 wing sections (left and right)
- 1 fuselage with nose cone and tail cone
- 2 v-tails
- 1 carbon joiner
- aileron and flaps horns (unless LDS version ordered)
- 2 pcs clevis couplers
- Wire harness
- 4 plastic servo covers

Additionally you can order:

- ballast set
- wing bags
- Fuse cover for sun protection

To complete a model you will need:

- 4 pcs metal geared servos for the wings. Min. 25Ncm/35oz.in
- 2 pcs 10-13mm servo for v-tail. Min. 20Ncm/30oz.in
- 8 clevises and 2mm threaded rods for the wings (unless LDS ordered)
- 4xAA Rx battery or 2X18650 for HV servos and a sufficient switch
- a high quality receiver
- epoxy to glue in the servos and thin cyano (CA) to secure clevises
- strong clear tape (12mm wide) to join the wings and v-tail to the fuselage

The following instructions also includes basic settings. Detailed settings might be found on separate documents on www.f3j.com

Assembling the wing:

- Sand the surface of the servos and the servo trays where the servos will be glued.
- Connect the servos and the fuse harness to the respective channels on the receiver. Check that the aileron servo arms are set 90 degrees on the servo and that the transmitter also is set to neutral. Check that the flap servo arms are set identically to approximately 20 degrees (measured from the 90°-angle) towards the flap. The transmitter should later be set to an offset so that the flap servo arms are 90 degrees on the servos. With full butterfly the servo arms on the flaps are almost straight towards the flap. This ensures full deflection of the flaps for butterfly brake and a strong holding power at full butterfly.
- Check again the servo settings and also set the offset of the flap servos. Check also that the servos move the right way.
- Mark where the servos will be glued in place by a pencil in the servo trays and ensure that the servo arm is aligned (straight line) to the line defined by the hole in the subspar and the flap horn. Some like to fix their servos to the spar. This ensures a very tight and slop free servo installation as the wing surface can bend a little.
- Glue the aileron and flap horns.
- Glue the servos in using epoxy. Use a proper amount of epoxy so that some epoxy will be pressed out on the sides of the servos when you push them in. Use some weight fixing the servos as long as the epoxy hardens to ensure that the

servo fits perfect. If the epoxy is thin it is possible to add some thixotropy agent or cotton flox.

- Install the threads and clevises whilst the servo arms are set 90 degrees on the servos and the ailerons / flaps are set in neutral position. Secure the thread to the clevis with extra thin CA as this is a place with some slop. Check also thoroughly the clevis pins going into the horns and servo arms. There are clevises that can be poorly made in this special detail. Use the inner most hole on the servo arms possible to ensure full power of the servo yet providing full throw.
- Install the threads and clevises whilst the servo arms are set 90 degrees on the servos and the ailerons / flaps are set in neutral position. Secure the thread to the clevis with extra thin CA as this is a place with some slop. Check also thoroughly the clevis pins going into the horns and servo arms. There are clevises that can be poorly made in this special detail. Use the inner most hole on the servo arms possible to ensure full power of the servo yet providing full throw.
- It is recommended to install clear tape on the ends of the wings. This will prevent the paint being ripped off when the tape is applied / removed every time you go flying.
- Adjust the maximum aileron throw to 22/22mm
- Adjust the aileron throw on flaps to 6/6mm
- Adjust the crow brake flaps to as much as possible (LDS can be delivered with 2 different max throw options)
- Adjust the crowbrake on ailerons to 19mm up (possibly less for F3B landing)
- Adjust the camber for winch launch to 8-12mm flap and aileron equal. Camber for thermal is +3-5mm measured on flaps and equal along the whole trailing edge. Camber/reflex for speed is 1mm and.
- Snap flap (elevator – flap mix) can be used up to 4mm on full elevator throw. Beware snap flap might not be the most effective in all conditions / flying styles and elevator throw might need to be reduced or increased according to snap flap.
- Cut the servo covers carefully so that the servo horns fit underneath the bumps if needed.

Assembling the fuselage:

- Install the “fuse to wing”-harness in the fuselage. Roughen the green connector and fuselage fitting before you glue it.
- Install the receiver battery and receiver before servos to ensure enough space. 2x18650 cells are recommended for HV servos or with voltage regulator for standard servos. It is recommended to pack the receiver in bubble plastic or equal to absorb shocks. Both NiMh and LiFe battery is also possible. Ensure servos can use the voltage and secure the front end of the battery to absorb shocks. Use a voltage regulator if needed.
- Install the fuselage servos
- Install the receiver. Install antennas outside of the inner nose cone as this contains carbon that will affect signal reception. The outer nose cone is from flass fiber and will not affect reception noticeably so that antennas can be on inside outer nose cone. Be sure to mount antennas (if two or more is used) in a slightly different angle to each other to secure good reception in all flying angles. A range test will show that your installation is correct.
- Glue the 2mm clevis couplers to the pushrods. Pinch the coupler with a plier to ensure tight fit. Check the connection thoroughly. Glue the pushrod tube to the fuselage between canopy and the leading edge
- Adjust the elevator so that it is in neutral checking top and bottom airfoil. Full throw is 7mm up and 6mm down. Rudder throw 7mm up and 9mm down. At full crow the elevator goes down approximately 7mm depending on crow settings for wing. It is good to ensure more down throw (+10mm) possible after crow brake is set. Launch setting winch is -1mm

Assembling the model:

- Attach the two v-tails to the fuse and secure with a tiny piece of tape round the front and lower part. Carefully push the ball link in place and check that they move freely. Pinch the plastic with a plier to free them up if they are tight. The ball link can be removed by using a flat screwdriver clicking it off again. Tape on the tail cone.
- Adjust the tow hook to 100-102mm from the leading edge.
- Attach the wing with clear tape to secure at top and around leading edge.
- Check and adjust the CG (center of gravity). A suitable CG to start off is 94-98mm from leading edge. F3B 99mm, F3F sidewind 95mm – good conditions 97-98mm
- Check range according to transmitter specifications. If you cannot get the necessary range you need to: 1) Check antenna locations 2) Try another transmitter 3) Try another receiver

Settings:
All the latest detailed settings can be found on www.F3J.com. These are settings from some of the world's best pilots. You will find these setting a very good starting point.

Model cannot stay long in the sun without silver protection covers (including fuselage). Please use covers to prevent excessive heating up of the model as there could appear some deformations of model parts when model is overheated or the surface could get distortions.
F3B joiner is made of high modulus carbon fibers UMS
F3F joiner is made of standard carbon fibers
After harder landings it is necessary to check the joiner and look for cracks as it could cause failure of complete model in the next flights. The joiner is the most important structural part of your model.
We hope you will be satisfied with your new model. If you have any questions be sure to look at our webpages. Additional info about the setup and detailed pictures can be found there.
Regards
Samba Model
Webpage: www.F3J.com / Email: samba@f3j.com