www.kievpropamerica.com

UPDATED 10/01/2015

# For engine type with ROTAX 912 series 75mm Bolt Pattern

1. Disassemble prop hub, noting orientation of prop hub halves.







The stamped number on each Hub half must remain adjacent to each other during re-assembly!

- 2. Inspect each blade and remove any tape or glue residue from brass leading edges. Install propeller blades into their positions between the hub halves. Use caution to not drop or hit blade tips on the ground or hard surface. The tips are the most fragile area of the prop! NOTE: There is a tiny hole in the tip that must remain open to expel any moisture or condensation trapped inside the blade. If it is clogged, open by pushing in a straight pin.
- 3. Install shoulder bolts with the washers and Nyloc nuts and tighten slightly to hold blades in place.









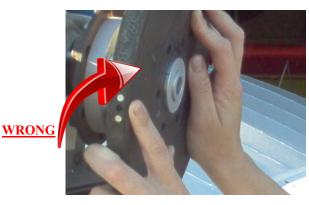




NOTE: Depending on your application, there may be a small machined insert that fits into the hub and / or spacer.

4. On Rotax 912 applications, the hub does not require the insert for bolting directly onto the prop flange. However, if you are installing a KievProp Spacer, you will need to install the supplied insert <u>into the prop hub</u>.
IMPORTANT! On Pusher configurations with the propeller installed, make sure that there is at least 3.75" clearance between anything

forward of the properties. If clearance is less, you will require a spacer on the gearboxes properties before mounting the propeller.





**NOTE:** On all applications, if you are using a Spinner, install the backing plate between the spacer and the hub. When using the machined insert, **ALWAYS** attach into the HUB and not under the backing plate (as pictured above, left)! Install Spinner dome to the backing plate after you have run the engine, rechecked the torque as instructed below and are satisfied that everything is correct. Otherwise, removal of the Spinner dome will be necessary.

### **SECURING ASSEMBLED PROP TO ENGINE:**

- 5. Secure (finger tight) the propeller to the engine with the supplied 8.8 X 1.25mm bolts, washers and nuts.

  NOTE: The supplied bolts are grade 8.8 metric and the nuts are metric Nyloc. Some clients prefer using AN5 bolts and metal jam nuts or castellated nuts. These are available from Aircraft Spruce & Specialty Co. or from us at an additional cost.
- 6. With all bolts slightly tightened, you can easily adjust the pitch on the blades. Make sure at this time that the leading edge of all blades are facing in the correct direction and are not backwards.
- 7. Set the reference scale on the protractor to the recommended arbitrary starting point and clamp in place.

### Typical ROTAX starting points:

912UL, between 9 and 10 912ULS, between 11 and 14, Due to variations more adjustments are usually required to dial in the "perfect" pitch setting.

8. Fit the aluminum end of the protractor into the center hole of the prop hub so that





the aluminum ears are both touching the flat face of the hub. Be careful to keep the "ears" flat against the hub for accurate adjustments.



**PUSHER** 



9. For Pusher aircraft, place the notched end of the protractor against the trailing edge of each prop blade. For Tractor applications, the notched end should be on the Leading edge of each blade. Rotate the blade until it sits flat against the leading and trailing edge of the protractor.



**IMPORTANT**: Ensure that the ears on the protractor are flush against the hub when the setting the blade angle. To hold the blade setting, carefully torque the two nuts on the shoulder bolts to 3-4 foot lbs. Repeat procedure for the other blades.

10. When all blade angles have been set and using a calibrated torque wrench, tighten the Nyloc nuts sequentially with 5 ft. lb. increments to **16.5-foot lb.** This will help to insure proper tracking. Check the pitch of all blades again, and once satisfied, begin torquing the (center) mounting hardware sequentially, opposing and with 5 ft. lb. increments to **16.5 lb.** A 13mm crows foot on the end of the torque wrench works well to access the nuts on the backside of the gearbox prop flange. Double-check the pitch setting again. Do not under torque.

## WARNING!!! DO NOT OVER OR UNDER TORQUE BOLTS! NEVER START ENGINE WITHOUT PROPER TORQUE ON BOLTS OR DAMAGES INCLUDING LOSS OF PROPELLER, INJURY OR DEATH MAY RESULT!!!

- 11. A static check of rpm's must be performed before flight. Refer to engine manual for specific instructions. With engine off, make sure your throttle has full travel and the carburetors are adjusted properly and open fully. **NOTE:** <u>DO NOT FLY UNTIL YOU HAVE CHECKED AND RECHECKED YOUR PROPELLER FOR PROPER MOUNTING AND PERFORMED A STATIC CHECK OF R.P.M.'s.</u> If you cannot reach recommended RPM, you may be OVER Pitched. Exceeding recommended rpm is an indication of UNDER pitched. Do not run in this condition or engine damage may result. Once satisfied, it is good practice to place a \*painted reference mark on each bolt head and Nyloc.
- 12. Re-check torque of prop bolts after first hour of operation and as routine maintenance.
- \* If there is any sign of the reference marks moving, it may be a sign that the Nylocs are loose. This indicates that the torque value or clamping force is too low. In this case, it is necessary to remove all six mounting bolts and check for wear. If wear on the bolt or threads are present, DO NOT USE, order new hardware!

If you have followed these instructions exactly and your bolts have still loosened, DO NOT FLY! Check the condition of your prop and hardware. Have your torque wrench checked for proper calibration.

Never over torque or "STRETCH" prop bolts! The standard prop bolt for this propeller is a Grade 8.8 X 1.25 metric and will fit the Rotax 75mm bolt pattern. NEVER OVER TORQUE or exceed established recommended usage of prop bolts. Check for wear and deterioration of prop attachment hardware during maintenance and Annual/Conditional Inspections. Replace when ANY signs of wear or corrosion are present.

### MAXIMUM ALLOWABLE PROP SPEED IS 2700

#### DISCLAIMER:

PROPELLER DRIVEN AIRCRAFT ARE EXTREMELY DANGEROUS. MAKE SURE THERE ARE NO TOOLS OR LOOSE ITEMS THAT MAY CONTACT THE PROPELLER DURING OPERATION. MAKE SURE AREA IS CLEAR BEFORE STARTING THE ENGINE AND NO ONE IS FORWARD OR IN THE AREAS OF THE PROPELLER ARC.

THE PILOT IS FINAL AUTHORITY FOR THE SAFETY OF EACH FLIGHT. KIEVPROP AMERICA, THEIR DEALERS, REPRESENTATIVES AND ASSOCIATES ARE NOT RESPONSIBLE FOR INSTALLATION ERRORS AND / OR ATTACHMENT HARDWARE. THE INSTALLER / PILOT / OWNER MUST ASSUME  $\underline{ALL}$  RISKS ASSOCIATED WITH THE PROPELLER AND  $\underline{ALL}$  RELATED ACCESSORIES AND PARTS.



