NEXUS 30

Instruction Manual Supplement

Please use this instruction manual supplement while you build your Nexus 30. It contains additional important information on some of the assembly steps to help you understand your Nexus and make sure you complete each operation correctly.

KYOSHO®
THE FINEST RADIO CONTROL MODELS

Thank you for purchasing the Kyosho Nexus 30. The Nexus breaks new ground in its ease of assembly and maintenance, in addition to its simplicity, durability and stable flight characteristics. We think you will agree that you have made the right buying decision when you decided on the Nexus 30.

If you need technical assistance before or during the construction, flying or repair of your helicopter, please feel free to call our Kyosho Helicopter Hot Line. You can reach our knowledgeable staff at (217) 398-2834 between the hours of 9:00 A.M. and 5:00 P.M. Central time. We will be glad to give you a hand with any problem or question you may encounter.

Please take the time to read through both the instruction manual and this supplement before beginning construction of your helicopter.

REQUIRED FOR OPERATION

Following is a list of items you'll need to get your Nexus 30 in the air. Many manufacturers offer engines, radio systems and other required items. In this manual we've listed the specific brand names and part numbers that are proven to work best with your Nexus.

1. Radio Control System and Gyro

You'll need a **helicopter** radio control system with five servos. This manual shows installation and gives specific setup instructions on the Futaba® 6VH Skysport helicopter radio system. The Skysport comes with four servos so you will have to purchase a fifth servo separately.

The Skysport will take you from learning to hover up through intermediate aerobatics such as loops, rolls, 540 degree stall turns, autorotations and more. The Skysport also includes rechargeable NiCd batteries.

If you're confident that your flying skills will advance rapidly or if you're just thinking ahead, you may consider purchasing a more advanced heli radio system. The Futaba Super Seven and the 8UAF are good investments. Both of these radios are referred to as "computer" radios and are programmable. This means you can program numerous functions and parameters into your radio for the easiest, most accurate setup and greatest utilization of your heli. In English, your heli will be able to do more. You still have to learn the basics and you won't really realize the added benefits of these functions until you are well into forward flight.

Examples of some of these features are ATV's (adjustable travel volume) which allows you to tell each servo exactly how far left and right (or up and down) to travel. This makes mechanical setup a little less critical and allows for virtually infinite fine tuning. Separate throttle and pitch curves are another feature of programmable computer radios. You can tell the throttle and collective pitch servos how much throttle and pitch you want at certain stick positions (called pitch and throttle curves). This allows you to, (1) control the rotor head speed at all times and, (2) use different pitch/throttle ratios for different types of flying. For example, for just hovering you usually want a little slower rotor head speed, with about -1 to 0 degrees pitch when the collective pitch/throttle stick is low (for landing) and about 8 to 10 degrees of pitch at high stick. Forward flight and maneuvers such as loops and stall turns usually require a higher rotor head speed with about -3 degrees and 9 degrees. You can access these (and more) pitch and throttle curves with just a flick of the switch during flight. Instantly you have basically a whole different helicopter setup to perform a different type of flight.

Yet another advantage of computer radios is multiple model memory. Later on, if you own two or three helicopters you can store each individual helicopters program in the transmitter. You don't have to keep buying complete new radio systems (although a brand new receiver, five servos, a battery pack and switch can still be costly). The Super Seven has room for four models and the 8-channel Futaba can store 8 models.

If you have already purchased a five- or six-channel radio system don't feel left behind because of all this fancy computer radio talk. You have your hands full as it is and it will be quite some time before you can really utilize all of these functions. All beginners should focus on the basics of learning to hover in all orientations (O.K. not inverted!) before moving into forward flight and aerobatics. Here are the order numbers for some of the equipment we've mentioned above...

Futaba 6VH 6 channel heli radio FUTK23**
with four S148 servos

5th S148 servo FUTM0710

Futaba 7UHFS Super Seven FM FUTK57**
heli radio w/4 S5101 servos

5th S5101 ball bearing servo FUTM0097

8UHF 8 channel FM heli radio FUTM82**
w/4 S3001 servos

5th S3001 ball bearing servo FUTM0029

** This means that you fill in the channel number you require when purchasing the radio system. For example, if you found that nobody at your flying field uses channel 35, you could order your Skysport on channel 35 which would be FUTK2335. If you have no particular frequency preference you would order FUTK23** and a frequency would be randomly selected.

Let's talk about Gyros. For some reason the gyro is viewed as one of those "oh yeah, we have to get one of those things too" items. This leads to the question, "Do we really need a gyro?" The answer is yes. A gyro greatly improves the stability of a helicopter. Beginners would find it impossible to learn without a gyro and no expert would be caught without one at a contest or demonstration. A gyro is kind of like an automatic pilot for the Yaw function (rudder) of a helicopter. Generally, the tail rotor (rudder) is the hardest function to master. The tail rotor is also the most important function to a beginner because it tells the helicopter which direction to "face." When learning to hover, you always stand behind the helicopter so all the control functions have the same orientation as you (right is right, left is left, forward is forward, etc.). If the helicopter turns sideways, this orientation is different and you can become confused.

There are two types of mechanical gyros: ball bearing and non ball bearing. A ball bearing gyro will last longer, has greater sensitivity and most have two sensitivity settings you can switch in flight. For hovering you want more sensitivity. For forward flight you require less sensitivity from the gyro. A non ball bearing gyro is less expensive and will do the job just fine for beginners and intermediate fliers.

Futaba G-154 non ball bearing gyro FUTM0806
Futaba G-153 ball bearing, ...FUTM0805
dual setting gyro

2. Engine and Muffler

We recommend the O.S.® Max .32 F-H or the .32 SX-H. The F-H is a reliable engine for any 30-size helicopter and fits perfectly in the Nexus 30. The SX-H is O.S.'s latest high performance .30 engine yielding about 20% more horsepower than the F-H. Once again, if you are thinking ahead and plan on learning aerobatics rapidly you may consider the SX-H.

The engine does not come with a glow plug. The O.S. No. 8 is recommended and is a medium reach, highly durable plug that will outlast others and eliminate some of the fiddling around at the flying field that can be caused by a worn out glow plug.

O.S. Max .32 F-H Helicopter Engine OSMG1932
O.S. Max .32 SX-H Helicopter Engine OSMG1940
O.S. Max No. 8 glow plug.....OSMG2691

3. Fuel and Fuel Pump

The model engine in your Nexus 30 requires a special type of model engine fuel containing a percentage of nitromethane, methanol and oil. The model fuel is usually sold by the gallon and is graded by nitromethane content. Generally, the more nitro the more power the engine will produce. Also, the more nitro the more expensive the fuel. Most beginners, sport and intermediate pilots use 10% to 15% nitro.

For future reference, there is a trend these days of advanced flyers moving toward the 30% nitromethane range. This higher nitro fuel also contains a higher percentage of oil to keep the engine thoroughly lubricated at the higher R.P.M and power outputs. You can tell when somebody is using "30%" because lots of smoke pours out of the exhaust though the engine is running smoothly.

A fuel pump is required to pump the fuel out of your container into the fuel tank on the helicopter. You may use a hand-crank pump or an electric pump. Some prefer the hand-crank type for its reliability (no battery required) while others prefer an electric pump because of its speed. Hobbico® makes a fuel pump that operates from 6 volts or 12 volts. You'll also need a few feet of fuel tubing and a fuel can fittings set to hookup the system.

Hobbico Top Fueler Electric HCAP3100
6-12 volt pump
3' Great Planes Fuel Line.....GPMQ4131
Hobbico Hand Crank Fuel Pump.....HCAP3010
Great Planes® Fuel Can Fittings Set GPMP4155

4. Engine Starting Equipment

You'll need a 1.5 volt battery and a connector to light the glow plug for starting the engine. Various units are available, but one of the most popular is the one-piece, compact type where the battery and clip are one unit. We recommend the long reach Great Planes Pro-Glo™ (GPMP2013) w/charger (w/o battery) and the Sanyo single 1200 mAh NiCd battery (SANP3006).

To start the engine you'll need a 12V battery and an electric starter. If you're on a budget you can use the 12V battery in a car or motorcycle, but a smaller hobby battery that you can keep in your field box is much more convenient.

12 Volt Sealed Hobby Battery HCAP0800
6" x 3-3/4" x 2-1/2"
Hobbico TorqMaster™ 90 Electric Starter....HCAP3200
12 Volt, 5 amp Lead Acid battery HCAP0850
12 Volt Charger for either battery above HCAP0200

5. Adhesives and Lubrication

A small amount of 6-minute or 30-minute epoxy is required to glue the main rotor blade root covers (reinforcements) to the rotor blades at step 46. 30-minute epoxy is recommended because it allows you more time to position and clamp the root covers, but 6-minute epoxy may be used if you have done this operation before and can work quickly. No other glue is required.

Liquid thread locking compound is required on many of the fasteners used in the Nexus. Loctite "Blue" works well. Do not let the thread locking compound contact the plastic. Some thread locking compounds can deteriorate plastic.

A small amount of grease is required to lubricate the tail drive wire at step 23. Any automotive or hobby grease works well. A plastic compatible lubricating oil is also required in several locations. Many hobby shops offer oil ideal for special hobby applications.

6. Fuel Filter

Somewhere in the fueling system you should have a fuel filter. Any small particle that gets lodged in your engine's carburetor can cause wasted time at the flying field while you fiddle with the engine not knowing why it won't start. The Great Planes Fuel Can Fittings set listed in the "Fuel and Fuel Pump" section above has a fuel filter that is placed inside the fuel can, but some fliers prefer an in-line fuel filter between the carburetor and fuel tank as well.

In Line Fuel Filter (on board) GPMQ4150
1876 Fuel Filter KYOE8076

7. Tools

The most important tools are included with your Nexus 30 kit. These are the correct size metric hex wrenches and a *long reach* glow plug wrench and 10mm socket wrench for the propeller nut on the engine. Other tools you'll need are a No. 0, 1 and 2 Phillips screwdrivers, needle nose pliers or hemostats, two pliers (to simultaneously tighten the 4mm nuts on the rotor head axle at step 22), wire cutters and a No. 1 hobby knife and No. 11 blades. A set of ball drivers is not required but virtually a necessity for speeding up assembly. A ball driver is a hex wrench in the form of a

screwdriver that makes tightening and loosening socket head bolts much faster. Here are the sizes you'll need:

GPMR8010.....1.5 mm
GPMR8011.....2 mm
GPMR8012.....2.5 mm
GPMR8013.....3 mm

ASSEMBLY TIPS

Step 1
A. The tolerance between the **(83) 5 x 10mm Bearing** and the **(381) Clutch Drum** is very close. If you do not align the bearing with the clutch drum during installation, the bearing may become jammed. To align the bearing with the clutch drum, first apply a drop of thread lock to the **(382) Drive Pinion** and thread it into the clutch drum. Slide the 5 x 10mm bearing onto the **(380) Starter Shaft**. Slide the bearing and starter shaft through the clutch drum and into the drive pinion.

B. ***Carefully*** tighten the drive pinion to the clutch drum with a pliers.

C. There is no "up" or "down" to the **(383) Starter Bearing Case** – it doesn't matter which way it goes on.

D. Use thread lock on the **4 x 5mm Set Screw**. Make sure the screw is tightened onto the "flat spot" on the starter shaft.

Step 2
A. Use thread lock on the **4 x 5mm Set Screw** and make sure it is tightened onto the "flat spot" on the **(419) Bevel shaft**.

B. Make sure the distance between the bearings is **22.5 mm**.

Step 3
A. Confirm that you have set the 22.5 mm spacing between the bearings on the bevel shaft. When you place the bevel shaft with the bearings in the Main Frame (R), the shaft should be able to move back and forth a small amount (approximately .002"). This measurement is not critical but some free play is desirable.

B. Cut two 4mm long pieces from the **Fuel Tubing** supplied in the NE-7 bag. These will be the **(393) Bushings** used on the 3 x 10mm screws.

C. Do not tighten the 3 x 8 mm and 3 x 10mm cap screws all the way.

Step 4 The "KYOSHO" logos on the **(31) Elevator Links** should face away from each other (outward).

Step 5 Refer to the small Additional Instruction Sheet.
A. Securely tighten the 3 x 8mm F/H screws and use thread lock on them.

B. Do not overtighten the 3 x 18mm Cap Screw and 3mm Nylon Locking Nut. Too much force will distort the **(46) Oneway Shaft** and interfere with autorotation capability. Since the nut is a locking nut, it does not require much force to secure it. Once it stops turning do not tighten it any further against the oneway shaft.

Step 6 Assemble the parts in this order:
A. Install the **(373) Insert Nuts** in the **Upper Ball Bearing Case** and the **(387) Lower Ball Bearing Case**.

B. Fit the upper ball bearing case to the upper bearing on the **Main Mast Assembly**.

C. Fit the lower bearing case (with bearing) to the bottom of the main mast.

D. Fit the main mast assembly with the bearing cases to the right main frame.

E. Fasten the upper, then the lower bearing cases to the right main frame with the **3 x 15mm Screws**.

Step 7 Assemble the parts in this order:
A. Fasten the **(212) Linkage Balls** to the **(188) Pitch Lever** and **(418) Elevator Lever** with the 2 x 10mm and 2 x 8mm screws as shown.

B. Fasten one **E-ring** to the **3 x 14mm Shaft**.

C. Fit the pitch lever to the right main frame. Then secure it with the shaft and the second E-ring.

D. Secure the elevator lever to the elevator arm with the **3 x 10mm Screw** and washer.

Step 9
A. Do not to forget to install the bevel gear and shaft if it has fallen out during the previous steps.

B. Do not tighten the 3 x 8mm and 3 x 10mm screws all the way.

Step 10
A. Remove the **Drive Washer** from the engine but leave the **Thrust Washer** in position as the drawing in the manual shows. The drive washer is the largest aluminum washer and the thrust washer is the thin steel washer.

B. You should lock the crankshaft in order to securely tighten the **(376) Cooling Fan** onto the engine. This may be done by removing the four screws on the backplate of the engine and inserting a wood or plastic dowel between the crankshaft and the connecting rod. **Do not use anything metal to do this job.** A toothbrush handle or a wooden dowel works well for this.

C. Apply a small drop of thread lock to the threads on the crankshaft and install the cooling fan. With the crankshaft locked, tighten the cooling fan by hand. Wrap a rag around the cooling fan to get a better grip and keep from breaking the fins.

D. Install the propeller nut with just a drop of thread lock. Use the deep socket wrench provided with the kit or a 10mm socket wrench to tighten the propeller nut. Lock the crank shaft the same way you did for tightening the cooling fan.

E. Replace the backplate of the engine.

F. Install the **(377) Clutch Shoes** with the 3 x 6mm screws as shown. Use thread lock on the screws.

G. Use thread lock on the 2 x 10mm screw and nut to secure the **(212) Linkage Ball** to the plastic carburetor arm (supplied with this kit) as shown in the drawing. Temporarily install the carb arm on the engine. See step 38 on page 20 for approximate positioning of the arm. The exact position will be determined when you set up the radio.

Step 11
Install the engine. Notice the **(378) Starter Coupling** keys into the cooling fan. Apply a very small amount of thread lock – 1/2 a drop if possible – on the 3 x 14mm screws and do not tighten them until step 12.

Step 12
Adjust the *gear mesh* or *back lash* of the main gear and the pinion gear by moving the start cone and start shaft toward the front or rear of the helicopter. Once the mesh is set, tighten the screws in the starter bearing case and the engine mount.

Step 13 Assemble these parts in this order:
A. Insert the **(392) Silicone Tube** (thin – the clear one) onto the **(390) Tank Nipple**.

B. Slide the **(391) Tank Grommet** onto the silicone tube. Then insert the **(110) Tank Weight** onto the silicone tube.

C. Slide the tank weight and the silicone tube through the hole in the tank. Then fit the tank grommet into the tank.

D. While twisting it, carefully push the tank nipple into the tank grommet. Try to push the tank nipple into the grommet without pushing the grommet through the hole in the tank. It may help to lubricate the tank nipple with some saliva. If you accidentally push the grommet into the tank, you can easily pull it out with a piece of wire and a hook bent on one end.

E. Use a sharp hobby knife to trim the excess plastic from around the nipple on the top of the fuel tank so the fuel line will form a proper seal.

F. Don't forget to attach the fuel lines to the tank before you install it into the main frame.

Step 16
Make sure the "KYOSHO" logo on the **(30) Aileron Link Rod** faces outward.

Step 18 Assemble the parts in the following order:
A. Fasten the linkage balls to the **(350) Stabilizer Seesaw** with the 2 x 8mm screws.

B. Insert the 5 x 8mm white **(351) Plastic Bushings** into the **(358) Rotor Head**.

C. Secure the seesaw to the rotor head with the **(352) 3 x 5mm Steel Collars** and the 3 x 10mm screws.

Step 19
A. Be sure you install the **(7) Hiller Control Lever** in the direction shown (with the set screw facing toward the bottom of the rotor head). Use thread lock on the set screw even though you do not tighten it during this step.

B. Only temporarily tighten the set screws.

Step 20 Assemble the parts in the following order:
A. Thread the **(148) Stabilizer Blades** onto the stabilizer bar approximately 30mm each, or about 20 turns. It is most important that each stabilizer blade is threaded onto the stabilizer bar **the same distance**.

B. Measure the distance between the **(436) Stopper** and the stabilizer blade on each side of the stabilizer bar. Adjust the position of the stabilizer bar until the distance between each stopper and stabilizer blade is the same.

C. Remove the set screw from one of the stoppers, then reinstall with thread lock. Do the same for the other set screw. This is done one at a time so you do not change the distance you set in step B.

D. Insert the **(417) Jig** into the rotor head and securely tighten the set screw in the hiller control lever.

E. With the jig inserted in the rotor head and the wrench in the set screw of the hiller control lever, set both stabilizer blades so they are parallel with the seesaw and each other.

F. Balance the stabilizer blades by placing a piece of vinyl tape on the lighter blade.

Step 21
It may be difficult to center the **(355) Feathering Shaft** in the **(356) Rubber Dampers** and the rotor head. You may apply a few drops of oil to the feathering shaft to facilitate installation but the feathering shaft will *self align* when the rotor grips are installed in the next step.

Step 22
A. The 5 x 13mm **Bearings** and the 10 x 13mm **Spacer** must be aligned with the **Rotor Grip** in order to install them. If a bearing or spacer initially goes in crooked, do not force it the rest of the way. This will only jam the bearing or spacer in the rotor grip and make removal even more difficult. Position the bearing in the end of the rotor grips between the top and bottom rotor grip *arms*. Slide the bearing down the rotor grip arms with the partially round recesses guiding the bearing into the cavity.

B. Once both rotor grips are in position, use two 4mm wrenches or two pliers to simultaneously tighten the 4mm nuts on both ends of the feathering shaft.

Step 23
Liberally grease the **(404) Tail Drive Shaft** with automotive grease or similar and slide it in and out of the **(235) Shaft Guides** to thoroughly coat the insides of the guides and the wire.

Step 24

A. Fit the tail **(78) Output Gear** onto the tail **(82) Output Shaft**. The end of the shaft that the gear goes onto is the end with the threaded hole for the 3 x 4mm set screw. Insert the 2 x 12mm **(79) Pin** through the gear and the shaft, then secure the pin with the 3 x 4mm set screw and a drop of thread lock.

B. Insert the 5 x 7mm white plastic **(84) Collar** onto the shaft followed by a 5 x 10 bearing. Then install the assembly in the **(80) Right Tail Gearbox** as shown in the manual.

C. Fit two **(76) 8 x 14mm Bearings** onto the **(77) Tail Input Gear**. Then insert the gear and bearings into the right tail gear case.

D. Insert the tail drive shaft into the **(75) Tail Drive Joint**. You may need to use a pliers to push the shaft **all the way** into the drive joint. Align the **flat spot** near the end of the shaft with one of the threaded holes in the drive joint for the set screw.

E. Apply a drop of thread lock to the 4 x 5mm set screw and insert it into the hole in the drive joint that aligns with the flat spot on the shaft. Securely tighten the set screw. There is no need to install another set screw into the other hole in the drive joint. If the set screw is secured with a little thread lock and it is keyed into the flat spot on the tail drive shaft, the system is secure. Periodically check the tightness of the 4 x 5mm set screw through the "window" in the tail gearbox at the flying field.

F. Insert the tail drive joint into the tail input gear then fit the right tail gearbox to the tail boom. The "boss" or raised hole in the gearbox keys into the hole near the end of the tail boom.

G. Fit a 5 x 10mm bearing into the left **(81) Tail Gearbox** as shown in the manual.

H. Fit the left tail gearbox to the right gearbox and the boom. No grease is required on the tail gears. Hold the tail gearbox together with the 2.6mm screws and nuts as shown.

Note: The nuts used in this step are the regular hex nuts, not the locking nuts with the nylon insert. Use thread lock on the nuts.

Step 25 Assemble the parts in this order:

A. Insert the 6 x 10mm **(232) Metal Bushings** (bronze colored) into the **(86) Tail Pitch Ring**. Then insert the **(91) Tail Slide Bushing** through the bearings.

B. Mount both **(179) Tail Rod Ends** to the **(178) Tail Pitch Yoke** with the **(180) 2 x 8mm Pins**.

C. Thread the tail pitch yoke onto the tail slide bushing. The threads are reversed so you will have to turn the yoke counter clockwise to tighten it. Try to start the yoke onto the slide bushing as straight as possible. If it initially goes on crooked, remove the yoke and try again. Tighten the yoke until it contacts the tail pitch ring. At this point the assembly is too tight, so loosen the yoke (clockwise) until it and the bushing can freely spin in the pitch ring with minimal free play. Adjust the tightness of the yoke to remove as much free play as possible yet allow the pitch ring to rotate freely.

D. Add a few drops of oil to the slide bushing where it contacts both bearings.

E. Assemble the **(243) Tail Center Hub** by securing the 5 x 10mm bearings with the 3 x 14mm screws as shown in the manual. Don't forget to apply a drop of thread lock to the screws.

F. Slide the slide bushing and yoke assembly onto the tail output shaft, followed by the tail center hub as shown in the photo. Secure the tail center hub to the tail output shaft with the pointed 3 x 4mm set screws. Use thread lock on the set screws. Confirm that you have tightened the 3 x 14mm screws that hold the bearings onto the center hub.

Step 26

Tighten the 3 x 16mm screws so the tail rotor blades are not "locked down" yet cannot "flop around" in the tail rotor grips. If the tail rotor blades are too tight in the tail grips this can translate stress to the tail gears and tail drive shaft if the tail rotor blades contact the ground upon a rough landing.

Step 27

Tighten the 2 x 12mm screw so you can slide the 2mm washer between the head of the screw and the **(85) Tail Pitch Lever**.

Step 29 Assemble the parts in this order:

A. Slide one **(410) Aluminum Skid** into two **(181) Braces**.

B. Slide the other skid into the braces.

C. Fasten the braces onto the main frames with the 3 x 20mm screws.

D. Position the skids as shown. Then secure them to the braces with the 3 x 4mm set screws.

Hint: Use only the rear set screws and let the skids "float" in the front brace. This will make your landing gear a little more flexible and possibly avoid damage in case of a crash.

Step 31

A. Install all the ball ends so the "Kyosho" logo faces outward.

B. After the rotor head is installed on the main mast and the 3 x 20mm screw is tightened, adjust the length of the **Stabilizer Control Rod** so the following conditions occur:

1. Both rods are exactly the same length.
2. The Kyosho logo faces outward on each ball end.
3. The length of the stabilizer control rods **perfectly** matches the distance between the balls on the swash plate and the balls on the hiller control lever. To confirm this, first connect the stabilizer control rods to the hiller lever (on the rotor head). Connect one of the rods to the swash plate. Match the bottom of the other (unconnected) rod to the ball on the other side of the swash plate **but do not connect it**. See if the length of the rod is correct. If the ball end is a little *above* the ball on the swash plate, then you will have to lengthen **both** control rods a little. If the ball end is a little *below* the ball on the swash plate, then you will have to **shorten** both control rods a little. If the adjustment is within only one turn, it is okay to adjust only one rod.

Note: If the stabilizer control rods are too short, this will tend to pull the swash plate apart causing premature wear or a crash. If you cannot get the rods adjusted to perfectly match the distance between the hiller lever and the swash plate, it is O.K. to "error" slightly on the longer side so a little *down force* is applied to the swash plate.

Step 32 Assemble the parts in this order:
A. Mount the rubber grommets included with your radio system to your servos. Do not use the brass eyelets.

B. Fit the throttle and aileron servo in the left side of the servo frame. Make sure they are in the orientation shown on the drawing.

C. Insert the screws through the frame and the servo grommets. Then use the 2.6 x 12 TP screws included with your Nexus kit and the **(96) Servo Plates** to mount the servos. Do not overtighten the screws. Some modelers have a tendency to overtighten the screws and "kill" the grommets. Just a little "squish" is all that is required.

D. Mount the elevator, collective pitch and rudder servos to the right side of the servo frame the same way you mounted the other servos.

Step 33
A. Mount the on/off switch and the gyro as shown in the manual. Use the Kyosho double-sided foam tape supplied with the Nexus. **Use two layers of foam tape for the gyro.** The gyro is a sensitive unit and can be damaged by vibration a little easier than other components, so it should be thoroughly isolated. The sides or top of the gyro should not contact any part of the helicopter.

B. Intermediate or **experienced** fliers may mount the receiver, battery pack and remaining gyro components with double-sided foam tape as shown. This method proves to be secure and tidy but does not thoroughly protect those components in a crash. It is recommended that **beginners** wrap at least the **receiver** in 1/4" foam rubber (the same kind model airplane fliers use), then mount it on top of the battery pack with rubber bands. This way your receiver (the single most expensive component of your helicopter) is better protected in case of, well, you know.

Note: If you need to purchase more double-sided mounting tape, here are the part numbers: KYOE4115 is the thick Kyosho foam mounting tape and is ideal for mounting the more delicate radio components like your gyro and receiver. BOLC3001 is the number for the Bolink® foam mounting tape. It is thin and sticks very well to all of the different types of plastic used in the helicopter. The Bolink foam mounting tape is great for mounting switches, the gyro amp and the battery pack. You should always keep both kinds of foam mounting tape at your work bench and in your field box. Clean both surfaces to be mounted with denatured alcohol (available from the hardware store).

Step 34
A. Make a "one arm servo arm" from one of the four or six arm servo arms supplied with your radio system. The best way to do this is to cut off the unused arms with wire cutters, then smooth the remaining "stubs" with a file or sandpaper. It's easiest to go ahead and make all the arms now so they are ready when you get to the other controls.

B. Use one of the 2 x 100mm rods and a ball end to make the elevator linkage rod as shown in the manual.

C. Connect the rod to the servo arm in the **outer** hole. This will provide the most throw (travel) possible with most beginner helicopter radio systems such as the Futaba 6V-H Skysport. When it's time to set up the radio, we will show you how to adjust the Dual Rates in order to decrease the throw for learning to hover.

NOTE: This instruction manual shows you how to set up your Nexus with the Futaba 6VH Skysport. The Skysport is a beginner helicopter radio system with the necessary functions to fly a helicopter and perform aerobatics such as loops, rolls, 540 degree stall turns and similar intermediate maneuvers. If you do not have the Skysport you may still follow along because these setups will still give you a good starting point.

D. Before we continue, set your Skysport transmitter to the following conditions:

Servo reversing: Reverse channels 1, 2, 3 and 4.

Dual Rates (D/R): Both switches in the "off" position. Use a small screwdriver to set both rates (aileron and elevator) to 30% (the "notch" between the 2 and 4 on the dial).

Throttle ATV (TH. ATV): The throttle ATV allows you to "tell" the throttle servo arm how far it can travel. This is important for fine tuning your throttle control to make sure you can get full throttle when the stick is advanced and a reliable idle when the stick is brought back for landing (and while starting your model). Set the High and Low dials to 80%.

Throttle Hold (TH. HOLD): Throttle Hold is a function that allows you to "send" the throttle to idle, thus disengaging the clutch on the engine so the rotor blades will "freewheel." Even though the engine is held at idle and you no longer control the throttle, you still have control of the collective pitch. Throttle hold is activated by a switch on the top of the radio. On nearly all heli radios the switch is on the top right (as it is on the Skysport). Throttle hold is mainly used for practicing autorotations (engine off landings). You can "turn the engine off" by flipping the throttle hold switch and perform the autorotation. After you land you can turn the throttle hold off and climb back into the air without having to re-start the engine.

Although beginners will not be practicing autorotations for quite some time (when learning to hover you do not have enough altitude or coordination to try this) it is a good idea to activate the throttle hold function so it can be used in an emergency. If an instance arises when there is **no doubt** that you are going to crash, and especially if you are in a panic situation and your helicopter is heading out of control in a dangerous direction (towards a vehicle, building, person, etc.), flip the throttle hold switch. At least the machine will

impact without the rotor head under power (though still spinning!) and cause less damage to itself and whatever it crashes into. To become acquainted with the throttle hold switch, flip it on and off while your helicopter is sitting on the ground with the engine running at a fast idle. If the throttle hold is set up properly, the engine should immediately go to a regular, slow idle. **Bring the throttle stick back down before turning the throttle hold switch off.**

Set the dial on the **Throttle Hold** adjustment to "2."

Idle Up: Idle up is used for aerobatics and is also turned on by a switch on top of the radio (on the left side). When the idle up switch is turned on, the throttle will not drop below a certain position (set by you) even if you lower the collective pitch stick (and the pitch on the rotor head). There are instances when even though the pitch of the rotor blades is lowered, we still want engine power (unlike landing). If you were to perform a loop or a roll, for example, with idle up turned on, during the instant that the helicopter is upside down you would pull the collective stick back to reduce the pitch of the rotor blades. With idle up turned on, the rotor head would not slow down even though the pitch reduced. Thus, it would hold the helicopter in the air even though it is inverted.

Some flyers use idle up just for general flying around, too. The idea is to maintain rotor head speed even if you are lowering the collective pitch during general adjustments to your altitude. For beginners we recommend that you **do not** activate the idle up function. It would be quite a surprise if you accidentally turned on idle up while learning to hover (or starting the engine)! Once you are into forward flight you can activate idle up and turn it on **during flight**. When you are ready to experiment with idle up, set the dial to about "3" to start with. This means that as you lower the throttle/collective stick and it passes 30%, the throttle will not drop below this setting.

Revolution Mixing (REVO MIX): Revolution Mixing automatically adds or subtracts **tail rotor pitch** depending if the helicopter is climbing or descending. The reason for the tail rotor in the first place is to keep the helicopter from spinning around itself due to the torque of the spinning main rotor blades. If you do not understand the concept of torque just ask this question: Why should the helicopter spin the rotor blades but not the rotor blades spin the helicopter? Well, without tail rotor blades both the helicopter *and* the rotor blades *do* spin (this is exactly what happens if your tail rotor system fails). You can't fly a model that is spinning around out of control. So, they stick tail rotor blades out on a long "pole" (boom) to hold the helicopter in one position. Now only the main rotor blades and *not the helicopter* will spin. By varying the pitch of the tail rotor blades you can make the helicopter turn ("face" a different direction). This axis about which the helicopter "turns", by the way, is called the Yaw axis and is centered on the main rotor shaft.

Back to Revo Mixing. The amount of torque that the tail rotor blades must counteract (to hold the helicopter straight) is not always the same. During a climb you are *adding* pitch and power to the main rotor blades so they generate *more torque*, thus requiring *more* tail rotor pitch to hold the helicopter straight. Revo mixing automatically adds in this extra tail rotor pitch so the helicopter will climb without turning and without you having to add much extra tail rotor pitch yourself. The same thing happens during descent. As you lower the collective stick to descend, pitch and power is decreased so the torque generated by the rotor head is also decreased. Revo mixing automatically takes some of the pitch out of the tail rotor blades so the helicopter can descend without turning.

Set both the UP and DOWN Revo Mix to "4."

PIT. CURVE (Pitch Curve): This allows you to fine tune the maximum main rotor blade pitch (when the collective stick is pushed forward) and the minimum main rotor blade pitch (when the collective stick is pulled back). Actually, it's just like the throttle ATV where you can adjust how far the servo arm will travel in each direction. Generally, if everything else is set up correctly, the most important thing concerning rotor blade pitch is how much you have "on the top" and how much you have "on the bottom." If the engine sags and the main rotor blades slow when you fully advance the collective pitch stick you probably have too much pitch at the top. You can just subtract some of that pitch by reducing the HI pitch curve on the transmitter. If, during landing, the helicopter comes down too quickly or suddenly, you can add a little main rotor blade pitch to the low end (some think of it as "taking out some of the low pitch") by turning the LOW Pitch Curve dial to a smaller number.

Set the HI pitch curve to "6" and the LOW pitch curve to "3."

Turn on the TH. HOLD (switch 1) and REVO. MIX (switch 3). Leave the IDLE UP switch (switch 2) inactivated for now. By the way, the CCW/CW switch (switch 4) tells the transmitter which way your main rotor blades spin so the revolution mixing will work properly. The rotor blades on your Nexus spin clockwise, so leave the switch in the CW position. You have a seven channel receiver so leave the Pitch Channel switch (PIT. CH., switch 5) in the "CH.6" position.

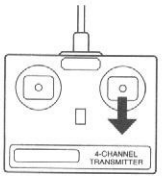
Note: The settings given above for the adjustable trimmers are suggested starting points for your Nexus and the Futaba 6VH Skysport. As you proceed and near completion of your Nexus we will show you how to make final adjustments. You probably will not be able to perform the maneuvers required to check all of the adjustments explained above.

Step 35

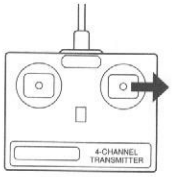
Make the collective pitch rod from one of the 2 x 109mm rods and a ball end. Connect the rod to the servo arm using the **middle** hole. Make sure you insert the rod from **behind** the servo arm as shown in the manual.

Note: The drawings of the transmitters in this manual show a "Mode I" set-up. Mode I is where the left stick on the transmitter controls the elevator and the right stick controls the throttle/collective. However, nearly all fliers in the U.S. fly on Mode II where the above situation is reversed - the *right* stick controls the elevator and the *left* stick controls throttle/collective. All other controls are the same. **Your transmitter is set up on Mode II.** Keep this in mind when studying the drawings of the transmitter in this manual.

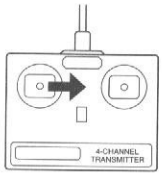
HELICOPTER RADIO SETUP



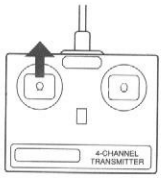
SWASHPLATE TILTS BACK



SWASHPLATE TILTS RIGHT



TAIL SLIDE BUSHING MOVES OUTWARD (HELICOPTER TURNS RIGHT)



CARBURETOR WIDE OPEN AND FULL COLLECTIVE PITCH

Step 36
Connect the rudder linkage rod to the **middle** hole of the rudder servo arm. Route the rod first through the molded-in guide in the frame, then through the passages in the main frame below the main gear.

Step 37
Make the aileron linkage from the second 2 x 100mm rod and a ball end. Connect the rod to the outer hole of the aileron servo arm.

Step 39
Position the **(420) Tail linkage joint** so that it is centered on both rudder control rods when the **(85) Tail pitch lever** is at a 90 degree angle (as shown in the manual) and the rudder servo arm is at 90 degrees (as shown in step 36). Use thread lock on both 3 x 4mm set screws.

Step 40
Attach the tail boom braces so the heads of 2 x 5mm TP screws face away from the fuel tank.

Step 42
Use a #11 hobby knife to cut along the line and remove the shaded portion of the body. Here are some hints for cutting this type of plastic:

A. Use a sharp knife blade. A #11 blade is recommended.

B. Do not rush this stage of finishing. Cut only a little at a time and proceed **VERY SLOWLY**.

C. It is easiest and safest to cut the plastic by **puncturing** it (not slicing it). Push the blade into the plastic. You may provide a **little** pressure to move the blade forward as you push it into the plastic. This cut should only be about 1/8" longer than the blade itself for a total slit that is about 1/2" long. Remove the blade and make another cut the same way. Repeat this process until you have separated the shaded area from the rest of the body.

D. As you are cutting, pay attention to the position of your hand and fingers **inside** the body.

E. Widen the holes in the body slightly so they will align with the **(108) Body Catch**.

Step 43
Cut out the canopy along the scribed lines. Test fit the canopy on the body and trim it as needed for the best fit. Cut the holes in the canopy for the screws before you apply the black canopy frame stickers.

Here are some tips for applying the stickers:
A. Use a sharp #11 hobby knife to cut the stickers from the sheet. Cut accurately along the **inside** of each piece. You do not have to cut accurately along the **outside** of each piece because the excess will be trimmed to match the windshield.

B. Mix a solution of about 1/2 cup of tap water and 1 tsp. of liquid dish washing soap. This will allow you to accurately position the sticker. Remove the individual sticker from its paper backing and dip it into the soap and water solution.

C. Position the sticker on the canopy and adjust its location until it fits perfectly. It is O.K. if some of the black portion of the sticker overhangs the canopy. This will be trimmed off later. Once the sticker is in position, squeegee the soap and water from underneath. A piece of soft balsa wood works well for a squeegee.

D. Position the rest of the stickers on the canopy in the same manner.

E. Use your #11 knife to trim off the excess stickers that hang off the edges of the canopy.

Step 44
Use the same soap and water technique to apply the stickers to the body and tail fins. If you do not have a container large enough to dip the body stickers into, you can liberally wet the body with the soap and water and *then* apply the sticker. The wetter the body, the easier it will be to position the stickers. In fact, you can even dip your fingers into the soap and water so the stickers don't stick to your fingers. Use a balsa squeegee to remove the water from beneath the stickers. When all of the stickers are in position, you can use a heat gun to really "nail down" the stickers. The heat will shrink any small wrinkles and help bond the stickers to the contours of the body. Be careful. Too much heat can deform the stickers and the canopy.

Step 46 Follow these steps to finish the main rotor blades:
A. Use a sharp #11 blade to remove the heat shrink covering from **only the holes** of each rotor blade.

B. Position the **(362)** and **(363) Root covers** on each rotor blade. **Note:** The root cover with the "Kyosho" logo goes on the top of each rotor blade.

C. Use a felt-tip pen to trace the outline of each root cover on the rotor blades. Remove the root covers.

D. Use your #11 knife to **carefully** cut the covering 1/16" inside the outlines you drew and remove that portion of covering. This exposes the bare wood so the root covers can be glued directly to the blade. You can wash away the ink lines from the felt-tip pen with alcohol.

E. Use coarse sandpaper to roughen the insides of all four root covers.

F. Glue the root covers to the blades with epoxy. **Make sure you glue the top root cover to the top of each blade.** The top root cover is the one with the Kyosho logo on it. 30-minute epoxy is recommended, but you may use 6-minute epoxy if you mix one batch and glue the root covers to one blade. Then mix another batch and glue the root covers to the other blade. Before the epoxy cures, screw the 3 x 12mm screws into the root covers as shown in the manual. This will help clamp the root covers to the blades. Use a C-clamp to clamp the other end of the root covers to the blades while the epoxy is curing. Wipe away excess epoxy before it cures with a cloth dampened with alcohol. **Before the epoxy cures** inspect the 4mm hole that the rotor blade bolts go through and make sure the hole is not blocked with epoxy. *This is a lot to do with 6-minute epoxy so make sure you know the procedure, or use 30-minute epoxy to allow more working time.*

G. Allow the epoxy to fully cure before removing the clamps or before flying.

Step 47

You must balance the main rotor blades before flying. Kyosho makes a blade balancer that handles .30-size and .60-size blades. We know you are eager to get your Nexus into the air quickly, so we will tell you an alternate way to balance your rotor blades if you have not yet purchased a balancer.

Do not underestimate the importance of balancing your rotor blades. If you purchase only one accessory for your helicopter, it should be a blade balancer. Most of the problems helicopter fliers (beginners and intermediate fliers alike) encounter are caused by out-of-balance rotor blades. Parts wear quickly, delicate radio components (gyros, servos, receivers) can fail without warning, the helicopter can be difficult to control and performance in all phases is reduced if the rotor blades have not been balanced.

Until you purchase a balancer, you can roughly balance the rotor blades directly on the rotor head. Disconnect the controls and remove the rotor head from the main shaft. Bolt the rotor blades in the rotor grips. As accurately as you can, confirm that the blades are perpendicular to the stabilizer bar and parallel to each other. Lift the rotor head by the stabilizer bar with the first finger of each hand and notice which blade drops. Of course this is the heavier blade. Place a piece of tracking tape (from the decal sheet) on the lighter blade near the tip. *Test the balance again by lifting the rotor head. Adjust the position of the tape until balance is achieved. Nearly all wood rotor blade sets require tape. Usually only one piece or* just a portion of one piece of tape is all that is required. If you notice vibration while learning to hover, reposition the tape until the vibration is gone.

Step 48

As you can see in the Pitch reference table, there are different pitch settings for different types of flying: Hovering, Normal Flight, Loops and Stall Turns, etc. These "pitch settings" are called Pitch Curves. The hovering pitch curve calls for 0 degrees at the low end, 6 degrees in the middle and 10 degrees at the top end. This pitch curve is ideal for hovering and will provide the correct rotor head speed for stability and control. As you can see the cardboard pitch gauge provides these settings. The Futaba Skysport has only one pitch curve available, but when you are ready for forward flight and aerobatics you can compromise the pitch curves to find a setup that will be suitable for both hovering and aerobatics. Computerized helicopter systems allow you to access several different pitch curves (and throttle curves) during flight at the flick of a switch. This is something you will not need until you are accomplished at hovering and very comfortable with forward flight and intermediate aerobatics.

The pushrod lengths and transmitter adjustments we have provided should allow you to arrive at the settings on the pitch gauge. To confirm this, mount the main rotor blades to your helicopter. Slide the cardboard pitch gauge about halfway onto one of the blades to set the pitch range. Turn the transmitter and the receiver on. Start by checking the pitch when the collective stick is in the "neutral" position. Set the main rotor blade pitch by adjusting the length of the pitch rod until you get 6 degrees pitch when the transmitter stick is in neutral. Adjust the length of the other pitch rod so it is the same as the one you just adjusted. Now set the low and high end pitch setting. Move the pitch stick all the way forward and adjust the HI trimmer on the transmitter as shown in the manual until the pitch gauge indicates 10 degrees. If you cannot obtain the 10 degrees high end pitch by adjusting the trimmer, you will have move the pushrod to another hole on the pitch servo. If you have too much pitch, move the pushrod *inward* one hole on the servo arm. If you do not have enough pitch, move the pushrod *out* one hole on the servo arm. Reset the center pitch by adjusting the length of the pitch pushrod as you did earlier. Return the collective stick to high and adjust the trimmer on the transmitter to obtain the 10 degrees high end pitch. Set the low end pitch in the same manner.

Step 49

Always make these final checks **before each flight**. Many times you can avoid a crash just by becoming familiar with the critical areas of inspection and knowing what to look for.

Examine all practical screws, nuts, bolts for tightness. Pay special attention to the set screw that fastens the tail drive wire to the tail output shaft. That set screw can be checked through the "window" in the right tail gear case.

Make sure you have installed the screw that holds the servo arms to the servos. Check all five servos.

Carefully follow the rest of the instruction manual to make *final adjustments and equipment checks prior to your first flight. Study the Hovering lessons to get an idea of what to expect and how to proceed with your training schedule.*

NEXUS 30 Replacement Parts

You can easily purchase replacement parts for your kit. All of the parts identified by key numbers are usually not available individually, but offered in convenient parts packs. To determine which parts pack you need, find the key number for the part within the manual, then consult the guide below. When referring to the part you need, always use the stock number and the pack number. For instance, if you need a Key (29), ask for stock # KYOE1120, pack # H3012.

Stock #	Pack #	Description	Contents
KYOE1030	H-3003	Hiller Control Lever Set	**6,7** x1
KYOE1060	H-3006	3 x 13mm Ball Bearing	**56** x2
KYOE1120	H-3012	Swashplate Assembly	**29** x1
KYOE2020	H-3016	Mast Bearing	**40,49** x1
KYOE2040	H-3018	Pitch Slider Set	**42,43, 44,45** x1
KYOE2200	H-3034	Secondary Shaft Brg	**18,56** x1
KYOE3020	H-3039	Tail Wing Set	**72,74** x1
KYOE3030	H-3040	8 x 14mm Ball Bearing	**76** x2
KYOE3040	H-3041	Tail Gear Set	**77,78** x1
KYOE3050	H-3042	Tail Gear Case	**80,81** x1
KYOE3060	H-3043	Tail Output Shaft	**79,82** x1
KYOE 3080	H-3045	Tail Slide Ring Set	**86,87,91** x1
KYOE4010	H-3054	Body Catch Set	**107,108** x1
KYOE4020	H-3055	Servo Mnting Plate Set	**97** x2 **96** x10
KYOE1150	H-3063	Stabilizer Bar	**4** x2
KYOE4080	H-3064	Antenna Pipe	**103** x5
KYOE4115	H-3072	Double-Sided Tape	**153** x2
KYOE1330	H-3104	Stabilizer Blade	**148** x2
KYOE6210	H-3123	Tail Pitch Lever Set	**27,84, 85,178** x1 **179,180** x2
KYOE6240	H-3126	Tail Boom	**177** x1
KYOE6271	H-3130	2mm Shaft Guide	**235** x3
KYOE3095	H-3243	Tail Rotor Blade	**210** x2
KYOE6298	H-3272	Main Gear Housing	**234** x1
KYOE5511	H-3306	Starter Bearing Case	**383** x1
KYOE5515	H-3308	Stabilizer Seesaw	**350** x1 **212,351, 352** x2
KYOE5517	H-3309	Cyclic Lever Link	**361** x2
KYOE5519	H-3310	Spacer Set	**16,17,354** x2
KYOE5521	H-3311	Feathering Shaft	**355** x2
KYOE5523	H-3312	Stab Seesaw Damper	**356** x4
KYOE5525	H-3313	Main Rotor Head	**417** x1 **357,358** x2
KYOE5527	H-3314	3mm Stopper	**436** x2
KYOE5529	H-3315	Mixing Lever Set	**22,23,26,27 28,361** x2
KYOE5531	H-3316	Mixing Base	**21** x1 **360** x2
KYOE5533	H-3317	Main Rotor Blade	**236,362, 363** x2
KYOE5535	H-3318	Decal	**415** x1
KYOE5537	H-3319	Linkage Set	**30** x1 **359,368** **411,412** x2 **163** x4 **10** x18
KYOE5539	H-3320	Main Rotor Grip	**212,353** x2
KYOE5541	H-3321	Main Mast	**364** x1
KYOE5543	H-3322	Main Gear	**365** x1
KYOE5545	H-3323	Pitch Rod Guide	**366** x1
KYOE5547	H-3324	Mast Stopper	**367** x1
KYOE5549	H-3325	Main Frame Set	**369,370** x1
KYOE5551	H-3326	Insert Nut Set	**372** x4 **373** x6
KYOE5553	H-3327	Elevator Lever	**212,374** **418** x1 **31,59** x2
KYOE5555	H-3328	Engine Mount	**375** x1
KYOE5557	H-3329	Cooling Fan	**376** x1
KYOE5559	H-3330	Clutch Shoe	**377** x2
KYOE5561	H-3331	Starter Shaft	**378,379, 380** x1
KYOE5563	H-3332	Clutch Drum	**209,381** x1
KYOE5565	H-3333	Tail Bracket	**405** x1
KYOE5567	H-3334	Nexus Body Set	**413** x1
KYOE5569	H-3335	Nexus Canopy	**414** x1
KYOE5571	H-3336	Tail Support	**406** x2 **407** x4
KYOE5573	H-3337	Tail Linkage Set	**408,409, 420** x1
KYOE5575	H-3338	Landing Gear Set	**181,410** x2 **102** x4
KYOE5577	H-3339	Drive Pinion Gear	**382** x1
KYOE5579	H-3340	Starter Cone Set	**384,385** x1
KYOE5581	H-3342	Bevel Pinion Gear	**386** x1
KYOE5583	H-3343	Bevel Shaft	**419** x1
KYOE5585	H-3344	Mast Bearing Case	**387** x1 **388** x2
KYOE5587	H-3345	Fuel Tank	**110,389, 390,391, 392,394** x1 **393** x2
KYOE5589	H-3346	Servo Frame	**395** x1
KYOE5591	H-3347	Rod Guide	**403** x2
KYOE5593	H-3348	Tail Drive Shaft	**404** x2
KYOE5595	H-3349	Aileron Lever	**33,36,37, 188** x1 **212,230** x2
KYOE7135	H-6028	Lever Bushing	**371** x7
KYOE6273	H-6034	Tail Drive Coupling	**57,58** x1
KYOE7230	H-6047	Tail Drive Joint	**75** x1
KYOE7714	H-6053R	Tail Center Hub	**243** x1 **438** x2
KYOE7265	H-6054	Tail Rotor Grip	**244,245** x2
KYOE6415	Z8007	Linkage Ball	**212** x10
KYOE5597	1192	Rotor Grip	**437** x4
KYOC2533	1806	Body Hook Set	**237,238,239, 240,241** x2
KYOC2197	1901	M5 x 10 Ball Bearing	**83** x2
KYOB4445	94542	Adjustable Muffler	**396,397,398, 399,400,401, 402** x1
KYOB4446	94542A	Muffler Gasket	**435** x5
KYOC2763	96381	Tail Pitch Slide Bushing	**232** x4
KYOE2060	H-3020	Oneway Shaft	**46,150** x1
KYOE2070	H-3021	Oneway Housing	**48** x1

NEXUS 30 Optional Parts

Stock #	Pack #	Description
KYOC5573	BS-53	Shim Set
KYOE3310	H-3048	Tail Pitch Slide Bearing – Replaces **232**
KYOE1320	H-3103	M3 x 6 x 2 Ball Bearing – x2
KYOE5513	H-3307	Deluxe Mixing Lever Set
KYOE2270	H-3106	M10 x 15 x 3 Ball Bearing
KYOE6200	H-3122	Pitch Slider Set
KYOE5025	H-3205	Main Rotor Case
KYOE5052	H-3220	Colored Tracking Tape
KYOE5120	H-3237	Hiller Control Lever – Replaces **6,7**
KYOE1135	H-3241	Thrust Bearing Set – Replaces **16,17**
KYOE1125	H-3242	Swashplate
KYOE5507	H-3304	Deluxe Mixing Base
KYOE6404	Z3004	High Performance Swashplate
KYOE6313	Z3017	High Performance Tail Drive Coupling
KYOE6748	Z6008	High Performance Tail Rotor Grip
KYOE5501	H-3301	Deluxe Stabilizer Seesaw
KYOE5503	H-3302	Deluxe Feathering Shaft
KYOE5505	H-3303	Deluxe Main Rotor Head
KYOE5509	H-3305	Deluxe Main Rotor Blade
KYOE6410	Z8006	Vibration Mounting Gel
KYOE6000	2161	Blade Balancer
KYOP0220	80592	Personal Frequency Monitor

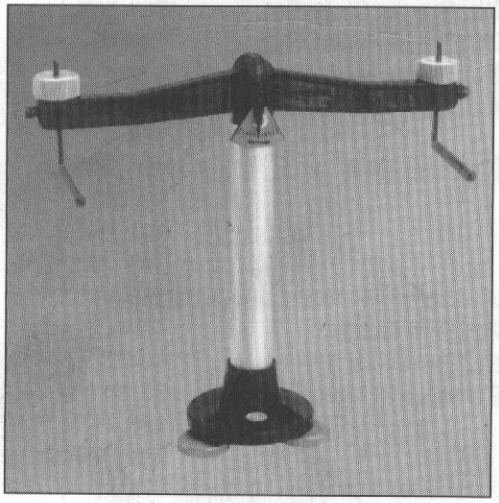
90 DAY LIMITED WARRANTY

Kyosho warrants this product to be free from defects in materials and workmanship for a period of 90 days from the date of purchase. During that period, Kyosho will, at its option, repair or replace without service charge any product deemed defective due to those causes. You will be required to provide proof of purchase (invoice or receipt). This warranty does not cover damage caused by abuse, misuse, alteration or accident. If there is damage stemming from these causes within the stated warranty period, Hobby Services will, at its option, repair or replace it for a service charge not greater than 50% of its then current retail list price. Be sure to include your daytime telephone number in case we need to contact you about your repair. This warranty gives you specific legal rights. You may also have other rights, which vary from state to state.

For service on your Kyosho product, warranty or non-warranty, send it post-paid and insured to:

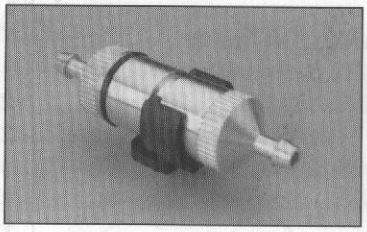
Hobby Services, 1610 Interstate Dr., Champaign, IL 61821, (217) 398-0007

BLADE BALANCER KYOE6000



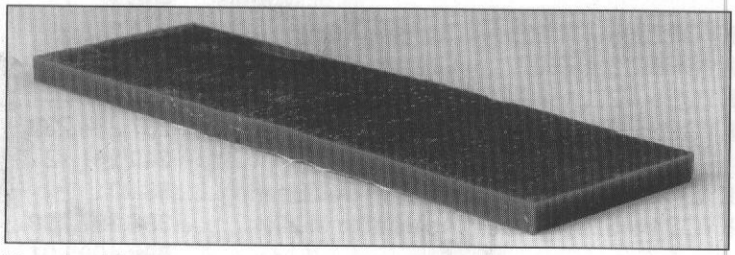
Improving your helicopter's performance in any flight mode may be as simple as diagnosing and correcting blade balance problems. With Kyosho's Blade Balancer, you'll be able to quickly and easily check your main rotor blades for the proper weight balance and center of gravity. The balancer works equally for for .30-size blades (those with a 3mm bolt hole) and .60-size blades (those with a 4mm bolt hole).

FUEL FILTER KYOE8076



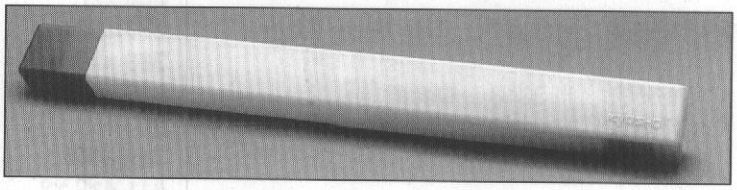
To protect your helicopter engine investment and keep it performing at its peak, use this inexpensive fuel filter to keep out dirt and debris that might otherwise cause friction and premature wear. The filter installs easily in your model's fuel line. A convenient mounting bracket is included.

VIBRATION MOUNTING GEL KYOE6410



Kyosho Vibration Mounting Gel is the perfect way to mount sensitive gyros and receivers. It's made of rubber for superior vibration dampening and both sides have a sticky surface that holds gear securely in place. Each reusable sheet measures a generous 1/4" thick x 1-3/4" wide x 5-3/4" long.

ROTOR BLADE CASE KYOE5025



Every helicopter pilot needs an extra set of main rotor blades and Kyosho's Deluxe Blade Case keeps them protected and in perfect condition until you're ready to mount them and fly. The durable plastic case holds up to two pair of .30-size blades (not included) and features a snap-lock end cap for maximum security.

Printed in USA

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