EP CONCEPT SR

Instruction Manual Addendum

The EP Concept SR is a helicopter better suited for intermediate to expert fliers. In the hands of an advanced flyer the EP Concept can fly for a long time and execute loops, rolls and even inverted flight with a few hop-up parts. However, being electric-powered, the EP does not have sufficient reserve power to get a beginner out of an emergency situation, and it is more delicate than its glow engine-powered big brothers. Beginners can learn to fly with the EP Concept SR but it is not ideal. If this is your first attempt at flying a model helicopter please check with a hobby shop to see if there is a helicopter expert in your area. He can make sure your EP is properly setup and give you valuable advice to save you time and money.

Please use this instruction manual addendum while you build your EP Concept SR. It contains additional information to help you build your EP and make sure it is assembled correctly and ready for flight. The step numbers in this addendum match the steps in the instruction manual. We suggest that you insert reference marks in the EP Concept SR manual where we have indicated a change or addition in the supplement.

REQUIRED FOR OPERATION (page 2)

1. EP helicopter radio control system and batteries

The EP Concept SR requires a *helicopter* radio control system with 4 standard-size servos, an electronic speed controller and a mini gyro. If you already have a helicopter radio control system, you can purchase the electronic speed control and mini gyro separately. There are complete EP helicopter radio control systems available that include the correct EP heli speed controller but these systems also include **micro servos**. The EP Concept SR requires **standard-size servos** so you would have to purchase them separately. Advanced heli pilots looking for the most performance can convert their EP Concept SR to accept micro servos by purchasing the Kyosho servo mount set (KYOE9349) for micro servos.

There are various brands of radio control equipment available that will work in the EP Concept. Here are the order numbers and descriptions for Futaba brand items described above...

FUTK11** 5NLH Helicopter radio control system w/4 S133 micro servos and MC114H speed control (requires KYOE9349 Mount Set)

FUTK10** 5NLH w/4 S148 Standard servos

FUTK24** 6VHe w/4 S133 Micro servos and MC114H speed control (requires KYOE9349 Mount Set)

FUTK23** 6VH w/4 S148 Standard servos

FUTM0808 G155 Mini gyro

FUTM0710 S148 Standard servo

FUTM0630 S133 Micro servo

Some radio control systems require AA dry-cell batteries but the ones listed above include rechargeable NiCd batteries and a charger.

2. NiCd Flight Battery and Charger

Operation of your EP Concept SR requires two sets of batteries. The radio control system transmitter requires batteries and as described above, these may be AA-size dry-cell batteries or rechargeable NiCd's. An additional battery is required on-board the EP to power the electric motor. This same battery powers the servos and receiver. An additional on-board receiver battery is not required.

The following batteries are recommended:

Standard
KYOE9390 8.4V-1700mAh SCR* NiCd Battery

High Performance
KYOE9391 9.6V-1700mAh SCR NiCd Battery

*8.4 volts-1700 milliampere hours (capacity of the battery) SCR (rapid discharge – desirable for high performance models like a race car or the EP Concept).

Many types of battery chargers are available that will do the job of fast charging your EP Concept batteries. Here are some of our recommendations.

920 AC/DC Digital Multi-Charger (HCAP0190)
930 DC Peak Detection Charger (HCAP0195)

3. **Tools required**

The EP Concept SR includes the required metric Hex Wrenches. In addition, you will need the following tools:

#1 Phillips Screwdriver	Needle Nose Pliers
#1 Hobby Knife and #11 Blades	Wire Cutters

The following items are also recommended

Thread Locking Compound (KYOC5451)
Kyosho Blade Balancer (KYOE9327)
Kyosho Lexan® scissors (KYOR1010)

BEFORE YOU BEGIN (page 3)

1. Read through the manual before you begin construction. The illustration below is not the first step of construction but only an **Example**.

2. Look through all the parts and packages. If you find any open bags inspect them carefully for missing parts. If you find anything missing contact your hobby dealer or call the Helicopter Hot Line at (217) 398-2834.

3. Study the following **Example** to see how to read the manual and understand the symbols used.

6. Make sure you confirm the correct size and type of screw used in each step. Carefully compare the screws with the diagram at each step.

7. Do not over tighten the self-tapping screws. Sometimes the screws require force to screw all the way in so you must use the proper size Phillips screwdriver.

NiCd BATTERY CHARGING (page 4)

Before you check the operation of your radio and the servos (re)charge your batteries. If this is the first time you have operated your battery charger follow the manufacturer's instructions **carefully**. NiCd batteries hold a lot of energy and if you do not properly charge your batteries in the manner described by the manufacturer you could damage the charger, batteries and your radio control system.

THE "PERSONAL FREQUENCY MONITOR" (page 4)

The Personal Frequency Monitor will allow you to confirm if anybody at the flying field is on the same frequency as you. If you are flying your model and somebody who is on the same frequency as you accidentally turns on their transmitter, a crash will surely result. Most flying fields have reliable frequency control systems but the Personal Frequency Monitor is a good backup system for busy flying fields. The Personal Frequency Monitor requires a crystal on the same frequency you fly with which is plugged into the Monitor. Crystals are available separately.

SET-UP THE RADIO SYSTEM AND CHECK THE OPERATION (page 5)

The illustrations in this manual show the Futaba 6H Sky Sport radio control system. Most other radio systems operate in the same manner so if you have another type you may still follow these instructions. Read the instructions with your radio control system then set your system as shown in the following steps.

Not all of the following steps require additional notes. Reference the step in the manual where indicated in this addendum. The first step in the manual that requires an additional note is step 3.

Step 3 (page 6)
I. To mark the servos and cords, wrap a small piece of masking tape on the cord. Use a felt-tip pen to mark the number of the servo on the masking tape.

II. The drawings in the manual show the servos with the grommets (rubber bushings) mounted on them. The grommets are **not used** on the EP Concept so do not fit the grommets to your servos.

Step 4 (page 6)
The diagram of the radio control transmitter is incorrect for the way radio controllers are setup in the United States. To correct the drawing, use a pen to cross out "Elevator Control" where indicated by the "up/down arrow" on the left stick. Write in "Throttle/Pitch Control." Cross out "Throttle/Pitch Control" on the right stick and write in "Elevator Control." where indicated by the up/down arrow on the right stick. The diagram shown **was** for "Mode 1" operation which is used by fliers in other countries. With the diagram corrected for throttle/pitch on the left stick and the elevator on the right stick, Mode 2 operation is properly shown. The radio control system you have purchased is Mode 2.

Step 5 (page 7)
High point (high end) adjustment
The speed controller is set so that when the throttle stick is at 60% and higher, full power is delivered to the motor. This is because at 60% throttle stick full motor power is always used and only additional collective pitch is added.

Step 6 (page 7)
The switch on the gyro should be set to **"Normal."**

Step 8 (page 8)
I. Trim the (106) **Pitch Control Pipe** to 18-1/2".

II. If the Pitch Control Pipe is difficult to slide through the hole in the guides you may slightly enlarge the holes with a hobby knife or a #45 drill.

Step 9 (page 8)
Apply a small drop of thread lock to the 3 x 3mm Set Screw.

Step 10 (page 8)
Remember, the grommets are not used on the servos even though the sketches show them.

Step 11 (page 9)
I. Enlarge the hole in the servo wheel (or horn) so the (115) **Tail Linkage Guide** will fit. Use your hobby knife or a #49 drill.

II. Position the Pitch Control Pipe in the guides on the boom so the front is 3/4" from the Tail Linkage Guide.

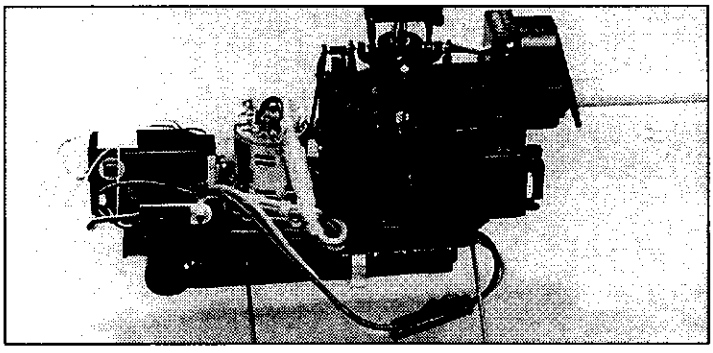
Step 12 (page 9)
The (164) **Servo Mount (D)** looks just like the (160) **Servo Mount (B)** used in step 16. The way to differentiate (164) from (160) is to compare the two side by side. The (164) **Servo Mount** is **shorter** and should be used for step 12.

Step 16 (page 10)
There is a screw installed in the hole to be used for the (160) **Servo Mount (B)**. Remove the screw and use the 2.6 x 14mm screw shown to fasten the mount.

Step 17 (page 11)
Install the servo wheel **before** you mount the servo.

Step 18 (page 11)
I. Change the distance on the Stabilizer Control Rod from 47mm to 44mm.

II. Use liquid thread lock on the 2mm nut.



Step 19 (page 12)
I. There are many wires to sort in this step. It is important, especially on a small, electric helicopter like the EP Concept that all the wiring is as neat as possible. This way you can be sure that the controls are connected properly and securely and there will be no chance of one of the wires interfering with the controls or becoming disconnected or worn. Reference the photos in this step or on the box to see how to route all the wires. Use small nylon straps or pieces of silicone fuel tubing to tie some of the wires together. The fuel tubing is installed by stretching it open with needle nose pliers or hemostats and inserting the wires one at a time.

II. Do not connect the motor wires until after the adjustments at step 23 have been done.

Step 20 (page 12)
Don't forget that the drawing in the instruction manual shows a Mode 1 transmitter but the set you have purchased is Mode 2. The elevator control is on the right stick and the throttle/collective pitch is on the left stick for your Mode 2 system.

Step 21 (page 13)
See the separate manual for mounting the landing gear, tail fins and body.

Step 2 (Body instruction manual)
Use thread lock on the 2mm nuts.

Step 3 (Body instruction manual)
Be **extremely careful** while trimming the body. You may use a hobby knife with a sharp #11 blade or the Kyosho Lexan® scissors.

Step 23 (page 13)
Cut out the Pitch Gauge so it will fit onto the main rotor blades.

The remainder of the instruction manual provides information to setup the EP Concept SR and make it ready for flight without any additional notes. Please follow the rest of the instructions in the manual to setup your EP Concept SR. Keep in mind that the drawings of the transmitter show a Mode 1 set-up but your system is Mode 2.

WARRANTY INFORMATION

- For 90 days after you purchase your EP Concept SR, Kyosho will either repair or replace, at no charge, any incorrectly made part.
- Make sure you SAVE THE RECEIPT OR INVOICE you were given when you bought your model! It's your proof of purchase and we must see it before we can honor the warranty.
- To send your EP Concept SR in for repairs covered under warranty, you should send your helicopter to Kyosho's authorized U.S. repair facility:

  Hobby Services
  1610 Interstate Drive
  Champaign, Illinois 61821
  Attn: Service Department
  Phone: (217) 398-0007
  9:00 A.M. - 5:00 P.M.
  Central Time M-F

- For details on your return, be sure to follow steps 1-4 under the "Repair Services Available Anytime" section.

Limit of our Liability:
Our liability under this warranty is limited to the repair or replacement by Hobby Services of defective parts and does not include cost of shipping to us. Hobby Services does pay the shipping expense to return warranty items to you.

Exclusion and/or Voidance of Warranty:
This warranty does not apply to damage or defects resulting from misuse, abnormal service, damage in shipment, damage resulting from a crash, or damage caused by the batteries. The warranty is voided if the model is modified, altered, or repaired by anyone other than Hobby Services. This warranty gives you specific legal rights, and you may have other rights that vary from state to state within the U.S. We are sorry, but we cannot be responsible for crash damage and/or resulting loss of the helicopter, engine, radio, accessories, etc.

EP CONCEPT SR PARTS LIST

KYOE9000 ...EH-01 ...Rotor Head.....**1,2,7** x 1pc
KYOE9005 ...EH-02 ...Stabilizer Blade.....**3** x 2pcs
KYOE9010 ...EH-03 ...Stabilizer Collar.....**4** x 2pcs
KYOE9015 ...EH-04 ...Flybar.....**5** x 2pcs
KYOE9020 ...EH-05 ...Hiller Control Lever.....**6** x 1pc
KYOE9025 ...EH-06 ...Flapping Hinge.....**8** x 2pcs
KYOE9030 ...EH-07 ...Feathering Shaft .....**9** x 2pcs
KYOE9040 ...EH-09 ...4x10x4mm Bearing.....**16** x 2pcs
KYOE9045 ...EH-10 ...Mixing Lever Set .....**17** x 1pc
18,19,20,
21 x 2pcs
KYOE9050 ...EH-11....Cyclic Lever Link.....**22,23** x 2pcs
KYOE9055 ...EH-12 ...Swash Plate .....**25** x 1pc
KYOE9060 ...EH-13 ...Ball End-Medium.....**12** x 10pcs
KYOE9070 ...EH-15 ...Main Rotor Blade .....**28** x 2pcs
KYOE9075 ...EH-16 ...7x14x5mm Bearing .....**29** x 1pc
KYOE9080 ...EH-17 ...Stopper-7mm .....**30** x 1pc
KYOE9085 ...EH-18 ...Pitch Slider.....**31,32,33,**
35 x 1pc
KYOE9095 ...EH-20 ...Ball End-Large .....**27** x 10pcs
KYOE9105 ...EH-22 ...Elevator Lever.....**39** x 1pc
KYOE9115....EH-24 ...Ball - 4.8mm.....**42,43** x 2pcs
KYOE9125 ...EH-26 ...Lever Shaft Set .....**112** x 1pc
51 x 2pcs
KYOE9130 ...EH-27 ...Pulley Set.....**48,100** x 1pc
46,47 x 2pcs
KYOE9140 ...EH-29 ...Pulley Shaft.....**50** x 1pc
KYOE9155 ...EH-32 ...Sub Frame (B) .....**56** x 1pc
KYOE9160 ...EH-33 ...Pinion Gear (16T) .....**57** x 1pc
KYOE9165 ...EH-34 ...Main Gear .....**58** x 1pc
KYOE9170 ...EH-35 ...Idler Gear.....**59** x 1pc
KYOE9175 ...EH-36 ...Idler Gear Shaft.....**61** x 1pc
KYOE9180 ...EH-37 ...7x14x3.5mm Bearing.....**62** x 1pc
KYOE9185 ...EH-38 ...Oneway Bearing .....**63** x 1pc
KYOE9190 ...EH-39 ...Oneway Shaft .....**64** x 1pc
KYOE9200 ...EH-41 ...Tail Rotor Grip.....**88,89** x 2pcs
KYOE9205 ...EH-42 ...Tail Center Hub .....**90** x 1pc
117 x 2pcs
KYOE9210 ...EH-43 ...3x6x2.5mm Bearing.....**91** x 2pcs
KYOE9215 ...EH-44 ...Tail Rotor.....**92** x 2pcs
KYOE9220 ...EH-45 ...Ball End-Small .....**93** x 10pcs
KYOE9225 ...EH-46 ...Tail Plate .....**94** x 1pc
KYOE9230 ...EH-47 ...Tail Pitch Ring **95,96**
97,113 x 1pc
KYOE9235 ...EH-48 ...Tail Gear Box .....**98,99** x 1pc
KYOE9240 ...EH-49 ...Tail Pitch Lever.....**101,102** x 1pc
KYOE9245 ...EH-50 ...Tail Boom .....**104** x 1pc
KYOE9250 ...EH-51 ...Tail Rotor Belt.....**105** x 1pc
KYOE9255 ...EH-52 ...Stabilizer Fin .....**108,109** x 1pc
KYOE9260 ...EH-53 ...Vertical Fin .....**110** x 1pc
KYOE9265 ...EH-54 ...Tail Linkage **106,107,115,**
116 x 1pc
KYOE9270 ...EH-55 ...Battery Holder .....**79** x 1pc
75 x 2pcs
KYOE9280 ...EH-57 ...Body Mount.....**84,103** x 1pc
83 x 2pcs
KYOE9315 ...EH-64 ...Tail Output Shaft .....**114** x 1pc
KYOE9339 ...EH-94 ...Main Rotor Grip.....**151** x 2pcs
152 x 4pcs
KYOE9340 ...EH-95 ...Servo Mount.....**157,158,160,**
162,164,166,
167 x 1pc
KYOE9341 ...EH-96 ...Elevator Link .....**40,156** x 1pc
41 x 2pcs
KYOE9342 ...EH-97 ...Main Frame Set .....**154,155** x 1pc
KYOE9343 ...EH-98 ...Sub Frame A.....**170** x 1pc
KYOE9344 ...EH-99 ...Motor Base.....**172** x 1pc
KYOE9348 ...EH-103..Linkage Rod Set **24,153,168,**
169 x 1pc
27 x 3pcs
KYOE9400 ...FH-21....3x6x2mm Bearing .....**15** x 2pcs
KYOE4115 ...H-3072..Double Sided Tape.....**111** x 1pc
KYOC4787 ...OT-052..Pinion Gear (16T) .....**173** x 1pc
KYOC2207 ...1903.....4x8mm Bearing.....**49** x 2pcs
KYOG2825...70575....K-Speed Heli Motor.....**171** x 1pc

OPTIONAL PARTS

KYOE9324 ...EH-68....Alum. Shaft Set – Replaces **50,61,114**
KYOE9325 ...EH-69 ...Alum. Feathering Shaft – Replaces **9**
KYOE9326 ...EH-70 ...Alum. Stabilizer Holder – Replaces **4**
KYOE9321 ...EH-71 ...Carbon Tail Boom – Replaces **104**
KYOE9328 ...EH-73 ...Special Pitch Slider – Replaces **31,32,33,35**
KYOE9338 ...EH-83 ...High-grade Main Rotor – Replaces **28**
KYOE9349 ...EH-104..Servo Mount Set – Use with mini servos

REPAIR SERVICE

Repair Services Available Anytime:

- After the 90-day warranty has expired, you can still have your EP Concept SR repaired for a small charge by the experts at Kyosho's authorized U.S. repair facility, Hobby Services, at the address listed under Warranty Information.
- To speed up the repair process, please follow the instructions listed below:

1. Under all circumstances, return the **ENTIRE** system: helicopter and radio.
2. Make sure the transmitter is turned off and all batteries are disconnected, and all fuel is drained from the fuel tank.
3. Send written instructions which include: a list of all items returned, a **THOROUGH** explanation of the problem and the service needed, and your phone number where you can be reached during the day. If you expect your repair to be covered under warranty, be sure to include proof of date of purchase (your store receipt or purchase invoice).
4. Also include your full return address.

Repair charges and postage may be prepaid or billed C.O.D. All repairs shipped outside the United States must be prepaid in U.S. funds only.

Specification and Description Changes
All pictures, descriptions and specifications found in this instruction manual are subject to change without notice. Kyosho maintains no responsibility for inadvertent errors in this manual.

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