

MFA

HUGHES 500E

CONVERSION KIT



MODEL FLIGHT
ACCESSORIES

MFA HUGHES 500E CONVERSION KIT FOR THE SPORT 500.

1/88.

DESCRIPTION:

This kit converts the MFA Sport 500 helicopter into a near scale model of the full size Hughes 500E helicopter. It is not simply a quick add-on vacuum formed plastic body like a lot of scale conversions, but consists of high quality glassfibre mouldings and hardware that has been integrated into the Sport 500 design from the outset. You probably will have noticed the characteristic Hughes 500E swept forward undercarriage legs on the Sport 500. Also you may have wondered what the unused mounting bracket at the rear of the chassis and the spare mounting hole at the front of the chassis were for, now you know! The Sport 500's tail boom and support are dispensed with to be replaced with the scale glassfibre tail boom so, obviously saving unnecessary weight. The two front scale body halves are each retained simply with two screws so, the superb engine and mechanics accessibility of the Sport 500 is retained. The fuel tank mounting is also changed slightly and is larger in capacity.

PLEASE NOTE: If you have purchased this conversion kit at the same time as the Sport 500 kit, we recommend that you build and fly the Sport 500 first. If, on the other hand, you already have some helicopter experience, the choice is yours! The flying performance of the Hughes 500E is excellent and the slight increase in weight does not have any discernable effect on performance. There is also the advantage that there is 'more to look at' when flying some distance away, so helping orientation. The full size Hughes 500E helicopter is an extremely attractive aircraft and the model lends itself to colourful paint schemes.

ADDITIONAL ITEMS REQUIRED:

ADHESIVE: MFA 'Yellow' or 'Green' Hyloglue (pt.no.666) or similar wood type Super Glue (use for all glued joints on the model).

PAINT: Clear dope, sanding sealer or other suitable primer for the wood parts. Spray colour enamel or epoxy as desired.

SANDPAPER: Wet & Dry paper, grade 1000 and 400 approx.

FUEL SHUT OFF: MFA fuel & water restrictor (pt.no.391), for shutting off the fuel to the engine while filling the tank.

TRIM TAPE: MFA 1.5mm black 'Snake tape' (pt.no.216) for door outlines. Also some 1/4" trim tape (pt.no.96) useful for paint masking although you should have this left over from the Sport 500.

TOOLS: Fine toothed saw and fine toothed round file for cutting and contouring the glassfibre. Alternatively, a Como drill with small carborundum disc (pt.no.412D1, 414D1) and drum sander (pt.no.533D, 534D) is easier, quicker and inexpensive. Also the tools that were used for the Sport 500.

ASSEMBLY:

1. Remove the tail boom (H.45) & tail boom support (H.49) from your Sport 500 chassis. Now remove the tail rotor/gearbox assembly from the fin and detach the tail drive rod (H.75) from the front tail drive coupling (H.34) only. Remove the complete F.1 - F.5 radio mount assembly (disconnect the control links at the servo ends only) from the chassis. Remove the servos, receiver, switch and gyro. Remove the complete rotor, swash plate driver (H.36), swash plate (H.1) and the three swash plate-to-T bellcrank links.

2. Remove the fuel tank, fuel tank clips (H.45), fuel tank plate (H.50) and the three M4 x 25 screws & nuts that attach the motor mount to the chassis. Re-attach the motor mount to the chassis with 3 M4 x 12 screws & nuts (re-check the toothed belt alignment and tension).
3. Cut out the 4mm ply parts S.1 - S.5 and glue together as shown in Fig.37 in the Sport 500 instructions. Fuel proof the back of S.1 and attach to the chassis with 3 M4 x 12 screws & nuts. NOTE: S.1 is mounted lower down than on the Sport 500, leaving the uppermost chassis hole clear, Fig.1. Re-install the receiver, servos, switch, and gyro. Re-install the nicad but note that it is now mounted right at the front (1.2 AH capacity illustrated). Fit the new body hold down brackets (S.24) supplied (note these have smaller screws than the ones on the Sport 500) Fig.1.
4. Assemble the new fuel tank (68) and attach to the chassis with the fuel tank bracket (S.25) mounted on to the top front M4 x 12 screw with an extra M4 nut (Fig.2). The front of the tank fits in to the hole in S.1. Re-attach the fuel tubing but fit the Fuel Restrictor on to the tank-to-engine tube (see SETTING UP regarding the use of this).
5. Cut out the rear former, H.6, fuel proof it and attach the other two hold down brackets (H.103) to the printed side. Note: the printed side faces to the rear of the model.
6. Cut out the rear of the tail boom moulding (S.14) to clear the tail gearbox, tail pitch crank, pitch change nylon tube (S.26) outlet and drill the 7 holes (3mm) in the marked positions (Fig.3). Also drill (5mm) the 4 holes down the middle of the tail boom in the marked positions to take the front and rear tail drive supports (H.38 & H.39), the rear one is shown drilled in Fig.3. Also drill (4mm) the very front of the tail boom for the front hold down screw & nut and the 4 large holes on the top to clear the mast and links (Fig.4). Finally cut away the flange underneath the extreme front in the marked position. Note that other sections of this flange may require slight trimming to clear links etc. Cut out and glue the plastic 'roof' (S.21) into position on to the top of the tail boom (Fig.5).
7. Glue the front tail drive support (H.38) which is the slightly longer of the two 5mm aluminium rods into the boom. Note: the cross hole that is 20mm from one end of the rod should be on the LEFT of the tail boom when viewed from the rear. Similarly glue the rear tail drive support (H.39) into the tail boom, with the hole that is 16mm from one end on the LEFT of the tail boom. Make sure that the cross holes are facing forward and back. Suggestion: to make inserting these easier, a small hole can be drilled into one end of the rods and a piece of scrap wire can be temporarily inserted so that there is 'something to hold'. Make sure these are glued as thoroughly as possible and they can now be filed and sanded down flush with the boom sides if desired. Drill two 6mm (approx) holes through the bottom of the tail boom immediately underneath the two drive supports, for oiling (Fig.6).
8. Temporarily attach the front of the tail boom to the top chassis hole with an M4 x 12 screw & nut and, at the same time, fit the rear former (S.6) into the tail boom. Now temporarily attach the rear former to the chassis with 2 M4 x 12 screws & nuts. Trim the flange if necessary to clear the two 'T' bellcranks. Glue the rear former (S.6) to the tail boom to hold it in position and when dry, remove the complete tail boom/former and glue the joint thoroughly.
9. Paint the tail boom at this stage. To prepare the glassfibre for spraying, remove any rough edges and seams with the 400 grade wet & dry and then flatten the entire surface with the 1000 grade. Now spray paint as desired.
10. Drill and cut out the fin (S.11), tailplane (S.12) and top fins (S.13). Sand to aerofoil sections and glue together with half of the 6mm triangle balsa (S.29) on either side of the fin, to reinforce the tailplane to fin joint (Fig.7). Using the dope/sanding sealer or other primer,

paint on two or three coats (sanding between each with the 1000 wet & dry) and finish off with spray colour as desired. Attach the fin to the tail boom with 3 M3 x 8 screws & nuts. Feed the 3mm nylon tube (S.26) through the slot in the tail boom and through the 3mm hole in the rear former, glue it into position.

11. Feed the tail drive rod through the two supports and attach the tail gearbox/rotor assembly with 4 M3 x 8 screws & nuts (Fig.8). Thread the cable down the nylon tube and solder on the rear threaded adaptor (704). Attach the ball clevis and re-attach to the tail pitch crank (H.26), Fig.9.

12. Carefully cut right round the edge of each front body moulding (S.15) to the marked line. Then cut away the rear top area as marked, the rear window on each side (for glow plug clip access and fuel tank visibility) and finally the bottom undercarriage clearance. Drill the two 5mm holes in each side for the nylon retaining bolts, Fig.10.

13. Carefully sellotape (or use the trim tape) the two body halves together, ensuring accurate alignment, Fig.11. This can be done before or after spraying as desired. Drill and cut out the 10 triangle pieces (S.7 to S.10), Cut the 6.5mm dowel (S.28) into approximately 12mm lengths and pair them off as shown in Fig.12, gluing the dowel into one side only. Now glue the triangles (still joined in pairs) carefully into the body in the approximate positions as indicated in Fig.10, a pair of S.7 and a pair of S.10 is shown glued in, Fig.13. When dry, separate the two halves and glue the triangles more thoroughly as necessary.

14. Re-fit the tail boom, connect up the tail drive rod and glue the 3mm tube into the front former, Fig.14. Solder the other threaded connector to the cable (making sure the tail pitch will be correct) and re-connect to the servo. Re-fit the rotor assembly and re-connect the links to the swash plate and attach the anti-rotation arm to the rear of the roof with a brass ball, M2 x 12 screw and 2 nuts, Fig.15. Check the swash plate is level as before. Fit the two body halves, Fig.16. Add the water slide transfers.

SETTING UP:

1. Check the balance, as on the Sport 500, the mast should lean very slightly forward when picked up by the fly bar with the rotors for and aft.

2. Oil the two tail supports (H.38 & H.39) through the holes in the bottom of the tail boom (do this fairly regularly). Re-oil and grease the other bearings as detailed in the Sport 500 instructions as necessary.

3. Close the Fuel Restrictor and fill the tank (because of the slightly higher tank position, the fuel will gravity feed into the engine and possibly flood it if this is not done). The tank position gives an excellent engine run and pressure feed from the silencer is no longer necessary (can still be used if desired) but needs the above technique for filling. Release the restrictor and start the engine as usual, to check everything as well as correct radio functioning. The initial checking and running of the engine can be done with the body halves removed but, do not attempt to fly the model like this as the balance will be incorrect.

4. Now fit the body halves, re-start the engine and set the trim as detailed in the Sport 500 instructions. When you are satisfied all is in order, the model is ready to fly. We hope you enjoy your Hughes 500E, it performs extremely well and looks superb on the ground and in the air!



