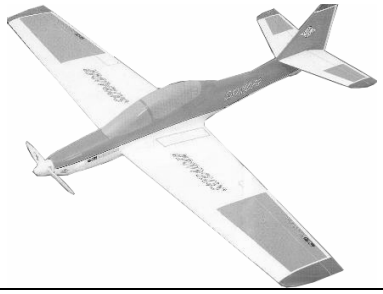
Assembly Instructions

Skyraider

RC-Electric Flight Aircraft
Part-Nr. 1339/00



Technical Data:

Wingspan	ca. 1125 mm
Length Overall	ca. 855 mm
Wing Area	ca. 19.75 dm^2
Elevator Area	ca. 5.65 dm^2
Total Surface Area	ca. 25.4 dm^2
Aspect Ratio	6.4
Flying Weight with 8 Cells P-90SCR	ca. 960 g
Wing Loading	ca. 48.6 g/dm^2
Flying Weight with 8 Cells Sanyo 700	ca. 860 g
Wing Loading	ca. 43.5 g/dm^2
Total Surface Area Load -	
Flying Weight 860-960 g	ca. 33.86 - 37.8 g/dm^2

RC-Functions:
Elevator
Aileron
Rudder(optional)

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Configuration for drive with 8 cells:		**Part.-Nr.**
a) RACE 400-6,0 V with Gearbox	2.07:1	7121/04
or	2.33:1	7121/05
with Propeller	8.5"x6"	7228/28 or 7229/28
b) RACE 400-6,0V with Gearbox	2.64:1	7121/06
or	3.00:1	7121/07
with Propeller	8.5"x7"	7228/31 or 7229/31
c) RACE 400-7,2 V with Gearbox	1.50:1	7120/01
or	1.66:1	7120/02
with Propeller	8.5"x6"	7228/28 or 7229/28

Configuration for drive with 10 Cells:

a) RACE 400-6,0 V with Gearbox	3.00:1	7121/07
with Propeller	8.5"x6"	7228/28 or 7229/28
b) RACE 400-7,2V with Gearbox	2.07:1	7120/04
or	2.33:1	7120/05
with Propeller	8.5"x6"	7228/28 or 7229/28
c) RACE 400-7,2V with Gearbox	2.64:1	7120/06
with Propeller	8.5"x7"	7228/31 or 7229/31

Before the installation the engine is set up (continue for details), partly run in and tested with all drive components. We recommend 40 A speed controllers with switched off EMK brake.

"Skyraider" is not a typical sport model of its kind but is more like a scale model in that even a full size aircraft could be designed along similar lines. A combination of a large wing area, lightweight construction throughout (the undercarriage has been dispensed with), an airfoil developed by ourselves (semi-symmetrical with an exceptionally low RE number) and other features met the necessary requirements for use of a 400 ERS motor and gearbox.

The flying performance of the Skyraider is amazing - ranging from (almost) walking speed to around 70kph (estimated). It is fully aerobatic, uncritical to fly, allows very easy hand launching and problem-free handling makes flight convenient from small RC flight fields.

Since the demand on the drive unit is very high, the following performance enhancement tuning motor work should be considered: - with the help of the timing adjuster adapter part no. 7329/34 for motor timing, rotate the motor mounting/bearing plate around 20° - 30° against the engine's direction of rotation. This corresponds in linear measurement to a distance of 5mm to 7 mm, based on the motor case.

Interference Suppression Capacitor (x 3) attachment. As absolute minimum a condenser (capacitor) must be attached of 0.1 µF to 1 µF directly between the motor connectors as well as another one with approx. 47 nF from each engine connector to the motor casing

Gearbox transmission. Carefully take the drift wheel off from the brass socket (don't take off completely!), dampens with one drop Loctite No. 601 or 603, push the wheel back again

Ball bearings may also be bonded into the gearbox housing using the same adhesives.

Lubricate gear cogs with high viscosity gear oil (e.g. titanium helicopters oil).

When the engine is provided with speed controller run it in with minimum load (e.g. with e-prop 6" x 5 ", part nos. 7228/11) for approx. 10 - 15 min. After run-in time is completed, the propeller intended for flight can be installed.

Adhesives:
Some weight can be saved by selection of the correct adhesive. Use Cyanoacrylate (from here on referred as cyano) where possible, thin or thick viscosity. The thin viscosity penetrates into the wood structure and reinforces it substantially. Balsa may be pressed (laminated) together, or stuck point to point. A supply of humid or damp air (e.g. breathing air) accelerates the adhesion. Caution: Cyanoacrylate superglues are dangerous! Do not inhale vapour - ensure sufficient ventilation! Note the instructions on the packing!

Polyester Laminating Resin (fibreglass resin + catalyst) is used building this model. It compares favourably with a fast operating epoxy glue by requiring less adhesive for a strong join (= weight). It penetrates well, gluing into the smallest joints. For some work epoxy should be thickened with thixotropiermittel so it can be laid directly on and will not flow away. These products may be obtained from good model suppliers.

Sanding:
While the fuselage is epoxy the rest of the model is created from balsa wood, therefore sanding has special importance. Sanding-blocks fitted with fresh sandpaper are a prerequisite for the successful building of the model! Two sandings are required with (280 x 50 x 20mm and 230 x 25 x 20 mm), please check that they are done absolutely level. If necessary, while working on a corner or bend sandpaper it twice. Stick the sandpaper strips to the bar with thin, double-sided tape (e.g. tape for carpets. A sheet with a middle (approx. 100 to 150 grade) is recommended, together with another more fine (approx. 240) grit sheet. Sand sections made from thin balsa wood more gradually (e.g. the two-piece trailing edge) depress on the building board and chamfer for grain. Substantial sections or parts structures (vertical stabiliser fin) may also be sanded freehand. A more exact finish is achieved from the sanding bar in almost in all situations. With the sanding bar, the small building inaccuracies present are removed by continuously smoothing flat, or evenly curved finish. These are available in most model shops; many types have self-adhesive paper strip of different grits. Advantages are a very sharp abrasive with long life span; dust does not clog them. They sand evenly and quickly and are ideal for use with harder woods.

Preparation for Building:
The pre-cut balsa and wood part sheets are shown reduced at the end of these building instructions. On the basis of this illustration write part numbers on the components with soft pencil. Then separate the components with a balsa knife from the pre-cut sheets. Cut out the plywood sections. Sand or adapt all component sections before installation in the model. Use a level (flat) building board for construction. Deviations from the assembly sequence set out in these assembly instructions may be made on your own discretion, but exercise care in this case!
Use building instructions for constant reference, together with building stage photos fig. 1-12, parts list, plans showing engine with gearbox, servos, receiver, speed controller and flight NiCd battery packs.
Mini or the larger micro size servos and a small receiver are appropriate for this model.
If the model is to be flown with 10 cells, we recommend reducing the wing incidence angle (EWD) from the 1.0° shown on plans to between 0.5° and 0.75°.

In addition the elevator assembly at the fuselage is accordingly redone.
First we want to complete the fuselage. With a sanding bar smooth all rough edges to the fuselage exactly according to size in plan / plan view. This is to achieve a gap-free fuselage edge join later. Cleanly prepare the inside profile of the whole fuselage is to become thin here. Since the fuselage is to be painted later, it can be sanded ready now with wet 400-grade sandpaper. A matt surface ensures a good adhesion of lacquer/paint.
Fit the two-piece heading frame/firewall (2 + 3) stick thoroughly into the fuselage. Drill out 3.2 mm diam. holes in the motor mount heading frame/firewall (2 + 3). Drill out frame 5 at the heading frame align and with 3.2mm diam likewise drill out, front edge over again somewhat approximately work. Reinforce with thin cyano according to plan. Fit motor mount frame / firewall (2+3) with screws M 3 x 15, protect nuts with Stabilit Express.
Drill 2.1 - 2.2 mm diam. holes for Bowden cable (8) in frames (5) and (6) just as for the three drilled holes over again in the back at the fuselage here, using a round file as required. Use the following procedure for simplest installation of the Bowden cable (and fitting frame (5) into the fuselage: End of the Bowden cable (in the back) must be in length in each case approx. 25 mm gradated its, so that can successively introduced into those drilled holes!
Recommended length: from frame (5) - for rudder = 210 mm. elevator left = 185 mm, on the right = 160 mm. Glue Bowden cable in frame (5) with thin cyano - see also fig. 1.

Divide steel wire (9) in the centre - slide successively directly into the holes in the fuselage and appropriate Bowden cable, i.e. e.g.: hole rudder - Bowden cable rudder, elevator left Bowden cable left, etc. If all steel wire is eingafddelt (they serve as guides of the respective Bowden cable into correct drilled hole), one can slide frame (5) by the Bowden cables into the fuselage. At first the rudder cable comes to the drilled hole. Help with tweezers, until it is through, with frame (5) firmly on. From the front check if frame (5) fits in the fuselage well, if not reposition it. Also making allowance for the length of (5) in the fuselage. Note: the fuselage moulding has a very thin wall - that frame (5) may thus touch the wall even, otherwise there is embossment to the fuselage surface! Once in place, protect frame (5) in the fuselage with a few drops of thin cyano (with a strip import). It is not rigidly glued solid, it protects the Bowden cable approximately to only bend! The same applies to fitting frame (6) here. Insert Bowden cable in (6); protect frame with thin cyano only.
Servotray (7) is not glued until after frames (20) and (21) are inserted. Cut to length from part (4) 5 units approx. 30 mm large sections, align heading frame (2+3) exactly in the fuselage protect with thin cyano. The cuts of (4) with a drop thin cyano provided, insert and with finger, from the inside to the fuselage, and laminate or attach. Glue sections thoroughly with thin cyano, possibly additionally with thickened laminating resin. After the glue has set. While the fuselage is empty, line the area with a self-adhesive foam disk (approx. 3mm thick) for the protection of the speed controller, according to plan
Tips to the assembly of the control units: -. For building the tail fin begin with the end rail of tail outer frame (15). Stick on the plan a firm cover of sturdy film, the centre (plan view), sand pointed. Into the stabiliser centre (18) make a recess (pushing towards the end rail), cut to length in front, and glue. Repeat for swept back cross tail outer frame (15); check the correct sweep angle with previously presented outer frame (15). Prepare & glue wing tip edge from unused remainders of stabiliser centre (18). Only then insert leading edge of tail outer frame (15) and then the diagonal lattice structure (16). Pin rudder temporarily to the fin, enabling correct shaping of top wing tip edge (rudder and fin). Drill 3 mm diam. holes for the control horns with a sharp drill bit, run in 2-3 drops each thin cyano and leave. Drill again after the glue sets.
Insert vertical fin into the fuselage, align, the end rail of tail outer frame (15) as required in the back does, thereby corresponding with the fuselage edge slot for the tail fin. In area of the canopy attach an even cross rib, so that the vertical stabiliser can be inserted vertically. Assuming appropriate experience of the builder this can be glued with thin cyano into the fuselage - for most builders gluing with laminating resin is the safer way. Use featherweight spring cramps for the epoxy bowl during setting of the glue so that the thin moulding does not get indentations from the cramp.
Cover the fin with paper/film. Fill the junction of fin and upper fuselage with high-speed cement / microballoons and sand. Now the whole fuselage with fin can be provided with undercoat and wet sanded. This is the prerequisite for an easy and perfect lacquer finish.

Cockpit Canopy
Cut out cockpit canopy (13) carefully with small scissors step by step to fit the fuselage. Operate with sharp file put on the edges, which can be sanded moving back and forth parallel to the edge. This achieves a "bending and waving" of the section resulting in suitable actually even outlines.
Cleanly prepare the air vents with a 2mm-diam drill, sharp pointed balsa knife and small rat tail file. Still more protection must organised for the operational activity of the cab latch plate (14) - see plan.
The canopy is supported in front by the glued half frame (11) with dowel (12). First drill (11) with 3mm diam. on marks. Reinforce drillings with thin cyano, then chamfer the lower edge only, which sand fuselage off after. Use the 3mm diam in (11) as drilling template for the 2 fuselage drillings. Protect both dowel (12) inserts thickly with cyano. Then check carefully that the canopy has a suitable fit. If all is ok, tape is used on fuselage, which presses on (11 + 12) and Stabilit express sticks canopy together. Fix with tape to the fuselage, until adhesive sets.
The fuselage side view shows how the cab latch plate is to be glued in. First protect thickly with cyano at assembly; glue with Stabilit express. End of the pin mark with e.g. soft coloured pencil, align canopy to the fuselage and using the pin mark transfer over the position to be drilled on the fuselage. Drill this out first gradually approx. 2 - 2.5 mm diam, repeat with small rat tail file, until you can lock the motor cowling cleanly at the fuselage. Two lengths of (4) are glued into the canopy from the inside so that the canopy sides sit cleanly on the fuselage - see fuselage side view and fig. 3.

Wings:
First depress solidly the main spar (26) provided with spar reinforcing (32) - best done with laminating resin or white glue. Cuts still have to be made for the ribs into the spar reinforcing (32). A fretsaw with a fine sawblade (e.g. for metal) is the correct tool. Chamfer topside of rear spar (27) external end to match the plan profile. Glue on spar reinforcing (33), cut for the rib train. The assembly begins directly on the plan taken off

with a clear foil. The wing has a semi-symmetrical profile, which does not lay its lower surface evenly on the building board! Therefore we recommend building exactly according to the assembly guidance instructions!
Place lower trailing edge skin (29) on the building board run plan, fix solidly. When inserting the ribs (34 - 43) check that they actually sit down binding to the crossbeam inside. If necessary cut (into the ribs) again. Drill 2mm diam holes for the Bowden cable (8) through ribs (34) to (39). Align main spar (26) and rear spar (27) with assigned ribs, without sticking, in the way measured in the plan. Align rib (34) with lower trailing edge skin (29) in accordance with plan and stick together with thin cyano. The same applies for external rib (43). Align main spar in approx. 3 places underlaid, as per the plan view. Now all ribs can be stuck together with lower trailing edge skin (29) using thin cyano. From a piece of balsa, glue a termination rib of aileron - see plan. Glue wing false leading edge (44) to front of the ribs - lower edge corresponds with the lower corner of ribs. All gluing of ribs - cross-beam to be made - able now first with thin cyano only, then with somewhat thinned white glue. When dry, remove from the building board.
Repeat binding bottom of wing false leading edge (44) to the ribs. At part (28) on the plan fix solidly (sie is only enough to approx. centre of the main spar), set the structure right, solidly fix main spar with pins to the building board. Gluing main spar:- wing skin (28) can become fixed with thin cyano. Work drop by drop, about 10 - 15 mm per drop. This also applies to gluing wing false leading edge (44) with wing skin (28).
Iinsert trapezoid edge (47) in under the front wing upper skin (28). The approx. 150 mm gluing in section leads, by pressure of the wing false leading edge (44) from above, to ensure an even process of the wing false leading edge (44). Next cross section cut - trapeziod edge (47) away, detach main spar from the building board. Now the ribs is attached for wing skin (28) - with 1 drop thin cyano approx. mid - span of main spar - wing false leading edge (44). The ribs are only then stuck together for skin volt - again with thin cyano drop by drop.
Cut skin between ribs (34) to (36) to size from wing sheeting (31), glue in. Carefully fit rib capping strips (48), glue in. Place unused remainder of outer frame (15) as aileron reinforcement as shown in profile cross section C-C. Sand to fit (eine mounting plate of control horn in the aileron), glue.
If one servo will control ailerons, the Bowden cable pipe (8) can now be inserted into the ribs. Drill out a 2mm passage obliquely through the main spar for the Bowden cable, finish up with sharp balsa knife. Seal this area with Stabilit express!
Finish passage and apertures for snake (8) through ribs as required, then protect with thin cyano. The snake (8) end vor to the rib (34) - see structural drawing. Finish gap in (34) according to cross-section cut A-A!
A suggestion is shown in the plan for 2 servo aileron controls (the nicest selection). CARE! 4 Servos are operating in this set-up! The receiver's BEC current supply could be insufficient! At least 1 amp must be available for servos! Done over again as next following step the vertical/permanent standing above wing false leading edge (44) make the correct profile with a small, sharp plane and sand smooth.
Now the trailing edge area comes again on the isolated building board. Upper trailing edge skin (30) is glued on. For this thixotropiermittel thickened laminating resin, is the best choice! Position upper trailing edge skin (30) precisely on the sanded range from lower trailing edge skin (29) and on the ribs, align, pin in place. On the trailing edge place a strip of clear film, then the 5x10 mm auxiliary strip, pressure with pins firmly to the building board!
Attach other 5x5 mm auxiliary strips according to cross-section cut A-A, leave to set -!
Remove from the building board, under the trailing edge a 5x5 mm auxiliary strip to shift, which fix solidly on building board. Now also fix the main spar solidly, so that the wing lower skin (28) the building board beruhrt. Thus the geometrical airfoil symmetry is determined, which can do wing upper (28) is glued on with white glue. Re-use the auxiliary strips for pressing down of the wing skin (28) on the ribs. Trim & glue the middle skin from wing sheeting (31).
Prepare a 20 mm broad strip of wing sheeting (31) to take the exit of the Bowden cable end (8) with thin cyano, with sharp knife remove rising end after profile drawing, trial fit rib capping strips (48), glue, leave to dry.
Sand the surface of the wing evenly, glue to wing leading edge (45).
Sand last rib (43) evenly, glue to wing tip edge over again (46) with white glue, finishing with plane. Now first, precision follows ". According to plan remove the corner from trailing edge and lower skin - For all in the rear half of the profile - according to cross-section cut H-H rear spar in plan sheet 1 sand to chamfer. First put the wing with trailing edge into the fuselage, then the remainder falls into line, press forward, which can be pressed. Scope of the edge transitions must easily on the wing. Do the skin, or the fuselage opening repeat as required.
Grind the wing cleanly, finally bind, the inner end through e.g. stuck with tape. Apply woodfiller, sand with with sander (400 grade).
Mark ailerons dimensions according to the plan, remove skin with a sharp balsa knife. The wing tip edge and ribs best with fretsaw with fine sawblade strokes. Dispose one more over a motor saw (dremel), can be made all at one time. Evenly sand cuts with a sanding bar, to trapezoid edges (47) following cross-section

cuts C-C and D-D carefully glue to - again with thin cyano (align, depress, stick point for point). Plane away protruding part of (47), sand smooth.
When the second wing is built, drill to place the control horns. To find the correct position insert a length of wire (9) in and through the Bowden cable pipe (8), and through the cross hole on control horn. The most friction free place for the control horns that which bends the wire the least from the place it springs to naturally. Drill 3 mm diam in the same way as for the elevator/rudder.
Now again the fuselage at the series is, we have to insert frames (20) and (21). Do these over again as required - they do not allow pressing on the fuselage bowl! Both insert a flattening into the fuselage, in front up to impact plate nose depressed. First accommodate frame (20), with feather/spring cramps with the main spar together depress, align carefully. Attach with thin cyano at the fuselage wall only (above). Fix frame (21) solidly in the same way, remove a flattening.
Important: After the wing is inserted, skin stress can arise at the fuselage - wing join (its edge). So the fuselage bowl must remain flexible in this area - i.e. frames (20) and (21) allow in this phase with fuselage only (approx. 20 mm length), pages (approx. 10 mm of Length) to be only stuck together above. The remainder still remains free!! See cross-section cuts B-B and C-C.
Fit in both Servotray, (7) and (22+23), fix with thin cyano - see fig. 3.
Fit in motor cowling (10), with installed engine and align crank, install with 4 2mm 6.5 mm tapping screws.
Now the fuselage and vertical stabilizer can be painted completely. We recommend to both sand and to cover fin before assembly. Areas which must be still stuck remain without covering film. In addition, the,v inserts a flattening into the fuselage " - form in approximately adjust and end vom fuselage edge to the surface CIB bearing. Do the same with the fin.
The wings dihedral V"-form is shown in the plan - without appropriate block to the support brace run here nothing - should also the fuselage be in approximately horizontally proped.
First make the gluing spar frames. Best with laminating resin or white glue, cross-beams with frames with featherweight cramps operated mounted together. Check plan view, from the front roll attitude (vertical stabiliser fin), trailing edge must IAB-clean-be correct with the formed upper course! Leave to set. Second stage: stick edge of fuselage with thin cyano on the skin of wing. Operate gradually, in sections of approx. 60-70 mm, so that the area pressure itself let leave a thin viscosity laminating resin the gluing scope wing fuselage of the fuselage internal distinguished. The resin with staff marriages economically, gezieft lay on, flow leave.
Now the final gluing of the frames can be made - with thin viscosity, or thickened laminating resin if necessary. The upper fuselage edge can possibly still be corrected with ribbon, or a strip of self adhesive film. Fasten rudder with hinge strip according to plan. Insert stabiliser fin into the slot, which check wing incidence angle (EWD) is according to plan +1.0°. Thin laminating resin is again the most suitable glue, although it becomes warm watery thin and gets into the closest slots. Wipe the remainder off carefully. Now fasten the finished covered elevator with hinge strip.
Install adjustable snake connectors onto servo disks and insert steel snake control wire of rudder & elevator. Control horn in the glueing area as follows roughen up: put down on a hard document, present a sharp, round needle file, pressure and and roll. Slide steelwire (9) into the Bowden cable, control horn into the drilled hole, the wire (9) into the cross hole, so that the control horn is correctly oriented. Control horn approx. above 0.5 mm over, lay on thin cyano with a stick. Shorten the provided screws M2 on approx. 18 mm, so that they wedge the control wire correctly and do not stick out too far.
A detailed diagram in the plan shows how the aileron servo control disk is set up. Ailerons are fastened on with hinge strip - control wire into the Bowden cable, in the Servo joining and on 16 mm gekurzten control horn wedge. Switch on transmitter (trim lever to centre / zero) adjust all wire (9), elevators, rudder, ailerons to centre.
Now construct the flight NiCd pack accommodation. In addition two approx. 45 mm large sections of NiCd tray bearer (24) according to fuselage plan, chamfer sand again (fuselage side view), stick on frames (20) and (21). NiCd battery tray (25) in the fuselage place, mark position of holes with 2 mm diam drill bit. Plan, Fig. 8 and 9 show three visible foam strips, approx. 2 mm thick.
Make a mounting plate from the aluminum strip as in cross-section cut G-G. NiCd pack location must be secure, so that the position of the model's center of gravity cannot alter! This is to be determined on the fully equipped model, thus also with the Empf antenna shifted in the fuselage - before bolting to the NiCd battery tray (25). When the NiCd pack position is ascertained, install the aluminum mounting plate. To see how front aluminum latch should be, refer plan fuselage side view and fig. 8
Fig. 9 shows the attachment of a 10-cell 700mAh NiCd pack. The rear mounting plate is something free for inserting all NiCd pack variants battery packs. Approximately it will slip in the back secured with an india rubber single cell.

For the first flight we recommend the forward center of gravity position. Advantage is maximum with the 10 cell version. Exponential control of elevator and ailerons proved most favourable, and is recommended for all drive motor/NiCd variations!
Now that building is finished, now the RC system can be programmed. Control surface travel on the plan serves as a guide only, everyone adapts it to their own flight preference. Not much special needs to be said about flying Skyraider. With some aileron experience everyone can control the model. Hand starts are very easy, fig. 12 shows how the model is to be held for hand launching. Shift quite easily into the air, no throwing is necessary. With 8 cells fitted, the aircraft's flying ability is impressive. With 10 cells it's potential increases so that the skill of the pilot sets the only practical limits.

Enjoy your flights with **Skyraider**!

Skyrider Part list "Skyraider" part number. 1339/00

Part Nr	Description	Qty.	Material	dimension in mm
1	Fuselage	1	epoxy	finished unit
2	heading frame -1	1	plywood	3 mm; Pre-cut
3	heading frame -2	1	plywood	3 mm; Pre-cut
4	strip		pine	2x5 mm; n.Z.
5	frame	1	plywood	3 mm; Pre-cut
6	frame	1	plywood	3 mm; Pre-cut
7	Servotray	1	plywood	3 mm; Pre-cut
8	Bowden cable snake	5	plastic	02.0 / 1.0 mm; n.Z.
9	steel wire	3	steel	00.6 mm; n.Z.
10	motor cowling	1	ABS	plastic finished unit
11	half frame	1	plywood	3 mm; Pre-cut
12	dowel		beech	03 mm; n.Z.
13	Cockpit canopy	1	ABS	plastic finished unit
14	cab latch plates	1	Brass+steel	finished unit
15	outer frame		Balsa	6x10 mm; n.Z.
16	lattice diagonal brace		Balsa	3x6 mm;; n.Z.
17	rudders	1	Balsa	187x71 / 29x6 mm
18	stabiliser centre		Balsa	25x6 mm, n.Z.
19	Elevator	2	Balsa	182x35 / 27x6 mm
20	frame	1	plywood	3 mm; Pre-cut
21	frame	1	plywood	3 mm; Pre-cut
22	Servotray	1	plywood	3 mm; Pre-cut
23	Abstutzung	1	plywood	3 mm; Pre-cut
24	NiCd Tray Bearer		lime tree	6x6 mm; n.Z.
25	NiCd Battery tray	2	plywood	3 mm; Pre-cut
26	main spar	2	Balsa	557x19 / 10x5 mm
27	Rear spar	2	Balsa	172x13,5 / 10x5 mm
28	Wing skin	4	Balsa	515x60 / 40xl, 5 mm -without chamfer
29	Lower trailing edge skin	2	Balsa	515x60 / 40xl, 5 mm with chamfer
30	Upper trailing edge skin	2	Balsa	515x60 / 40xl, 5 mm with chamfer
31	Wing sheeting	2	Balsa	498x100xl, 5 mm; n.Z.
32	Spar reinforcing	4	plywood	0.8 mm; Pre-cut
33	Spar reinforcing	4	plywood	0.8 mm; Pre-cut
34-43	Rib	2 of each.	Balsa	2 mm; Pre-cut
44	Wing false leading edge	2	Balsa	3x8 mm, n.Z.
45	Wing leading edge ledge	2	Balsa	finished unit, n.Z.
46	wing tip edge	2	Balsa	finished unit
47	Trapezoid edge	4	Balsa	3x12 mm; n.Z.
48	Rib capping strips	4	Balsa	1,5x6 mm; n.Z
auxiliary strip		4	Balsa	498x5x5 mm
auxiliary strip		2	Balsa	498x5x10 mm

Sundry Items, without Part No..

Truss head screw		1	steel	M2,5x30 mm
screw		3	steel	M3x15 mm
nut		3	steel	M3
self tapping screw		8	steel	02,2x6,5 mm
screw		4	brass	M2x12 mm
nut		4	steel	M2
End linkage		4	steel	04.5 / 02x10 mm
stop nut		4	steel / plastic	M2
control horn		5	brass	03x20 mm
screw		5	brass	M2x18 mm
grubscrew		4	steel	M3x3 mm
pin	1	steel	SW1,5 mm	

n.Z. = after drawing, part size is modified by cutting/sanding by reference to the plan.

The following items which are not contained in the parts list, are required for the building process:

Ponal express	part number.	7638/09
UHU hard		7631/02
Stabilit express		7646/01
Pattex Superglue		7639/21
Pattex Superglue gel		7639/25
Aerofix Pore Filler		7666/02
Aerofix Thinner		7675/05
hinge 19mm		