FunCub

Baukasten / kit # **21 4243**

MULTIPLEX®

Version 1.0

(D) Sicherheitshinweise

Prüfen Sie vor jedem Start den festen Sitz des Motors und der Luftschraube - insbesondere nach dem Transport, härteren Landungen sowie Abstürzen. Prüfen Sie ebenfalls vor jedem Start den festen Sitz und die richtige Position der Tragflächen auf dem Rumpf.

Akku erst anstecken, wenn Ihr Sender eingeschaltet ist und Sie sicher sind, dass das Bedienelement für die Motorsteuerung auf "AUS" steht.

Im startbereiten Zustand nicht in den Bereich der Luftschraube greifen!
Vorsicht in der Luftschraubendrehebene - auch Zuschauer zur Seite bitten!

Zwischen den Flügen die Motortemperatur durch vorsichtige Fingerprobe prüfen und
vor einem Neustart den Motor ausreichend abkühlen lassen. Die Temperatur ist richtig, wenn Sie den Motor problemlos berühren können. Insbesondere bei hohen Außentemperaturen kann dieses einige Minuten dauern.

Denken Sie immer daran: Niemals auf Personen und Tiere zufliegen.

(F) Conseils de sécurité

Avant chaque décollage, vérifiez la fixation du moteur et de l'hélice, notamment après le transport, après les atterrissages violents et après un “Crash”. Vérifiez également, avant chaque décollage la fixation ainsi que le positionnement de l’aile par rapport au fuselage.

Ne branchez l’accu de propulsion que si vous êtes sûr que votre émetteur est allumé et que l’élément de commande moteur est en position “ARRET”.

Ne mettez pas vos doigts dans l’hélice! Attention à la mise en marche, demandez également aux spectateurs de reculer.

Entre deux vols, vérifiez en posant un doigt dessus, la température du moteur, laissezle refroidir suffisamment avant le prochain décollage. La température est correcte si vous pouvez maintenir votre doigt ou votre main sur le moteur. Le temps de refroidissement peut varier jusqu’à 15 minutes s’il fait particulièrement chaud.

Pensez-y toujours: ne volez jamais vers ou au-dessus des personnes ou des animaux.

(GB) Safety notes

Before every flight check that the motor and propeller are in place and secure - especially after transporting the model, and after hard landings and crashes. Check also that the wing is correctly located and firmly secured on the fuselage before each flight.

Don’t plug in the battery until you have switched on the transmitter, and you are sure that the motor control on the transmitter is set to “OFF”.

When the model is switched on, ready to fly, take care not to touch the propeller. Keep well clear of the propeller disc too, and ask spectators to stay back.

Allow the motor to cool down after each flight. You can check this by carefully touching the motor case with your finger. The temperature is correct when you can hold your finger on the case without any problem. On hot days this may take up to 15 minutes.

Please keep in mind at all times: don’t fly towards people or animals.

(I) Note di sicurezza

Prima di ogni decollo controllare che il motore e la eliche siano fissati stabilmente - specialmente dopo il trasporto, atterraggi duri e se il modello è precipitato. Controllare prima del decollo anche il fissaggio e la posizione corretta delle ali sulla fusoliera.

Collegare la batteria solo quando la radio è inserita ed il comando del motore è sicuramente in posizione ”SPENTO”.

Prima del decollo non avvicinarsi al campo di rotazione della eliche. Attenzione alla eliche in movimento - pregare che eventuali spettatori si portino alla dovuta distanza di sicurezza!

Tra un volo e l’altro controllare cautamente con le dita la temperatura del motore e farli raffreddare sufficientemente prima di ogni nuovo decollo. La temperatura è giusta se si possono toccare senza problemi. Specialmente con una temperatura esterna alta questo può durare fino a 15 minuti.

Fare attenzione: Non volare mai nella direzione di persone ed animali.

(E) Advertencias de seguridad

Compruebe antes de cada despegue que el motor y la hélice estén fuertemente sujetados, sobretodo después de haberlo transportado, de aterrizajes más fuertes así como después de una caída. Compruebe igualmente antes de cada despegue que las alas estén bien sujetas y bien colocadas en el fuselaje.

Conectar la batería, cuando la emisora esté encendida y Usted esté seguro que el elemento de mando para el motor esté en ”OFF”.

No meter la mano en la zona inmediata a la hélice cuando el avión esté a punto de despegar. ¡Cuidado con la zona de la hélice! ¡Pedir a los espectadores que se aparten!

Entre los vuelos hay que comprobar cuidadosamente la temperatura del motor con el dedo y dejar que el motor se enfríe antes de volver a despegar. La temperatura es correcta, si puede tocar el motor sin problemas. Sobretodo en el caso de temperaturas del ambiente muy altas, esto puede tardar unos 15 minutos.

Recuerde: No volar nunca hacía personas o animales.

FunCub GB # 21 4243

Examine your kit carefully!
MULTIPLEX model kits are subject to constant quality checks throughout the production process, and we sincerely hope that you are completely satisfied with the contents of your kit. However, we would ask you to check all the parts **before** you start construction, referring to the Parts List, as **we cannot exchange components which you have already modified**. If you find any part is not acceptable for any reason, we will readily correct or exchange it once we have examined the faulty component. Just send the offending part to our Model Department. Please be **sure** to include the enclosed **complaint form, duly completed**. We are constantly working on improving our models, and for this reason we must reserve the right to change the kit contents in terms of shape or dimensions of parts, technology, materials and fittings, without prior notification. Please understand that we cannot entertain claims against us if the kit contents do not agree in every respect with the instructions and the illustrations.

Caution!
Radio-controlled models, and especially model aircraft, are by no means playthings in the usual sense of the term. Building and operating them safely requires a certain level of technical competence and manual skill, together with discipline and a responsible attitude at the flying field. Errors and carelessness in building and flying the model can result in serious personal injury and damage to property. Since we, as manufacturers, have no control over the construction, maintenance and operation of our products, we are obliged to take this opportunity to point out these hazards and to emphasise your personal responsibility.

Recommended equipment:

Min. *RX-7-light* M-Link receiver	Order No. **5 5810**
or *RX-9-DR* M-LINK receiver	Order No. **5 5812**
or *RX-7-Synth IPD* 35 MHz A-band	Order No. **5 5880**
alternatively 40 / 41 MHz band	Order No. **5 5882**
2 Tiny-S servos (rudder, elevator)	Order No. **6 5121**
2 Nano-S servos (aileron)	Order No. **6 5120**
Optional: 2 / 3 additional Nano-S servos (for landing flaps and aero-tow release)	Order No. **6 5120**
Power set: "FunCub" power set including brushless motor, speed controller, propeller, driver and accessories.	Order No. **33 2649**
Recommended battery: Li-BATT eco 3/1-2000 (M6)	Order No. **15 7231**

Adhesive:

Zacki ELAPOR® 20 g	VE 20	Order No. **59 2727**
Zacki ELAPOR® super liquid, 10 g	VE 20	Order No. **59 2728**

Tip!

"FunCub" power set, Li-BATT powered	Order No. **33 3649**
As above, but including Li-BATT eco 3/1-2000 (M6) flight battery	

Tools:
Scissors, balsa knife, combination pliers, screwdriver.

Specification:

Wingspan	1400 mm
Overall length	980 mm
All-up weight	approx. 1130 g
Wing area	38 dm²
Wing loading	min. 30 g/dm²
RC functions	Aileron, rudder, elevator, throttle Optional landing flaps and aero-tow release

Important note
This model is not made of styrofoam™, and it is not possible to glue the material using white glue, polyurethane or epoxy; these adhesives only produce a superficial bond which gives way when stressed. Use medium-viscosity cyano-acrylate glue for all joints, preferably our Zacki-ELAPOR®, # 59 2727 - the cyano glue optimised specifically for ELAPOR® particle foam.
If you use Zacki-ELAPOR® you will find that you do not need cyano 'kicker' or activator for most joints. However, if you wish to use a different adhesive, and are therefore obliged to use kicker / activator spray, we recommend that you apply the material in the open air as it can be injurious to health.

1. Before assembling the model
Please check the contents of your kit before you start working on it. You will find **Figs. 1 + 2** and the Parts List helpful here.

2. The fuselage
The first step is to glue the latch catches **22** and the motor mounts **37** in both fuselage shells.
Fig. 3

3. Installing the servos
Check that the elevator and rudder servos are a snug fit in the fuselage shells **3 + 4** and apply a drop of glue to the mounting lugs to secure them. Fix the servo leads in place using paper masking tape, so that the wires and connectors cannot cause damage, and do not get in the way when the shells are joined.
Fig. 4

4. Control "snakes"
Prepare the control snakes **54 / 56** and **55 / 57**: cut the outer and inner sleeves to length, and slip the steel pushrods **52 / 53** inside them. Install the swivel pushrod connectors in the outermost hole of the rudder and elevator horns. Note that the pre-formed pushrod end should be connected to the second hole from the outside of the servo output arm. Lay the fuselage shells down flat so that they are not distorted.
Figs. 5 - 6

5. Preparing the wing spreader plates
Clip together the wing spreader plates **33 + 34**, using a pair of flat-nose pliers if necessary, and glue the joints. Glue the prepared wing spreader plates in the right-hand fuselage shell.
Fig. 7

6. Joining the fuselage shells
Offer up the fuselage shells **3 / 4**, initially without glue. When you are confident that everything fits properly, the shells can be glued together. Keep the fuselage perfectly straight while the glue is curing.
Fig. 7

7. Preparing the elevator pushrod connector
Fit the swivel pushrod connector **25** for the elevator **8** in the outermost hole of the elevator horn **24**, and secure it with the washer **26** and nut **27**. **Caution:** take care to fit the connector with the barrel on the outside (see drawing). Be careful when fitting the retaining nut: tighten it just to the point where the barrel rotates smoothly, but without lost motion, and then use the point of a needle to apply a tiny drop of cyano or paint to the nut threads to prevent it working loose. Fit the socket-head grubscrew **28** in the swivel pushrod connector **25** using the allen key **29**. Glue the horn **24** in the recess of the elevator **8**, with the row of linkage holes facing forward.
Fig. 8

8. Attaching the tailplane
Place the tailplane on the fuselage "dry" - without glue - and check that it is possible to set it exactly horizontal; minor trimming to the tailplane saddle might be necessary. When you are satisfied, glue the tailplane in place, and immediately align it accurately. **Fig. 9**

9. Fin and tailwheel unit
Fit the steel wire tailwheel unit **76** through the glue-fitting tailwheel bracket **36** and the glue-fitting rudder horn **35**. Bend the straight end of the wire through 90°, as close to the horn surface as possible, as shown in **Fig. 10**.
Glue the rudder horn **35** in the slot in the rudder, but only apply cyano to the bottom surface. Allow the glue to harden, then cut a slot about 1.5 mm wide above the horn to accept the tailwheel wire. Wipe off any excess adhesive. Rotate the wire tailwheel unit **76** until it is located over the rudder horn **35**, and align the parts carefully before gluing it in place with a little cyano. Install the swivel pushrod connector, and lock the nut with a drop of paint or glue as previously described.
Fig. 11

Install the tailwheel **77** as shown: fit one wheel retainer (tubular rivet) **78** on the wire axle, followed by the wheel, and finally the second retainer.
Fix both wheel retainers **78** to the axle with a drop of cyano.
Fig. 12

10. Gluing the fin to the fuselage
Check that the fin assembly is a snug fit in the fuselage and tailplane, and glue it in place as shown.
Fig. 13

11. Main undercarriage
The main undercarriage **70** can now be prepared for installation:
Slip a collet **72** onto each axle (right and left), and secure them with the socket-head grubscrews **73**. Fit the wheels **71** on the axles and secure them with two further collets **72** and grubscrews **73**. Adjust the collet spacing to ensure that the wheels rotate freely. **Fig. 15**

The undercarriage bracket **74** can now be glued to the underside of the fuselage: press it in firmly before applying the adhesive. **Fig. 14**
Push the main undercarriage unit **70** into the bracket until it engages, then fit the retaining screw **75** to secure it.
Fig. 15

12. The wings
The wing panels **6 / 7** should not be glued together!
Before you install the spars in the wings, offer up the tubular spars **50 / 51** and the spar joiners **30 / 31** "dry" to check that the parts fit neatly.
Please note: the front spar joiner **30** is deeper than the rear joiner **31**.
When you are confident that everything fits properly, glue the

spars **50 / 51** and the spar joiners **30 / 31** in the right-hand wing panel **only**.
Fig. 16

Allow the glue to set hard, then push the second set of spars into the end of the spar joiners (don't glue them!). Fit the left-hand wing panel on the projecting spars and spar joiners and check that the parts fit together neatly. When you are satisfied, apply adhesive to the spar recess of the left-hand wing panel, and glue the wing panel in place; take care to position the parts accurately.
Fig. 17

13. Freeing the ailerons and landing flaps
The ailerons are an integral part of the wing panels **6** and **7**; release them by cutting along the recessed lines at both ends. Move the ailerons up and down repeatedly to "free up" the hinge lines, but take care not to over-stretch them - don't separate the ailerons from the wings!
If you intend using the landing flaps, release them in the same way by cutting at both ends, then separate them from the wing panels. Sand the cut lines smooth and flat.
Figs. 18 / 19

Position the flaps against the wings with the top and bottom surfaces flush, and fix them in place temporarily using paper masking tape. Check that the flaps still follow the wing airfoil accurately. If you do not wish to fit working landing flaps, the projecting part can simply be cut off.
Fig. 20

If you do wish to install working landing flaps, assemble the six offset hinges from parts **41** and **42**.
Spray a very thin coat of cyano activator (kicker) into the horn recesses in the flaps, and allow it to air-dry for about sixty seconds. The prepared hinges can now be glued in the recesses in the landing flaps as shown.
Fig. 21

Insert the pivot barrels **43** in the holes of both aileron horns.
Fit the socket-head grubscrews **28** in the pivot barrels **43** using the allen key **29**.
Glue the horns **41+44** in the appropriate recesses in the ailerons.
Fig. 22

14. Installing the aileron servos
Set the aileron servos to neutral (centre) from the transmitter, then fit the output arms on them in such a way that the arms project at 90° to one side of the case - 1 x left and 1 x right (mirror-image pair).
Check that the servos are a snug sliding fit in the moulded-in recesses in the wing panels **6** and **7**; Note that the output shaft should be towards the wing leading edge.
Depending on the type of servo you are using, you may find that minor trimming is required to the servo recesses. The servos can be secured with a drop of hot-melt glue or cyano applied to the slots in the wings which accommodate the servo mounting lugs: press the servos into the recesses immediately after applying the glue, and apply another drop of adhesive to each mounting lug if required for security.

15. Installing the aileron pushrods
Connect the pre-formed end of the aileron pushrods 45 to the outermost hole in the servo output arm, and slip the plain end through the swivel pushrod connectors attached to the aileron horns. Hold the ailerons at neutral, and tighten the grubscrews 28 to clamp the pushrods in place.
16. Installing the landing flap servos
Set the flap servos to "neutral" from the transmitter. Fit the long output arms on the servos in such a way that the levers are positioned at 70° at the neutral position (see template in Fig. 23). The servos should form a mirror-image pair, i.e. one left, one right. Cut out the template if required.

Connect the pre-formed end of the landing flap pushrods 46 to the servo output arms at a distance of about 23 mm from the servo shaft centre, and slip the plain end through the swivel pushrod connectors 25. With the servos at centre, set the flaps to the neutral position and tighten the grubscrews 28 to clamp the pushrods in place.
Fig. 24

Once everything is correctly assembled, you can separate the wing panels again by sliding them apart in the centre.

17. Aero-tow mechanism
The aero-tow mechanism **47** can be installed at any time.
The aero-tow unit should be glued in the recess in the right-hand wing panel. Set the servo to "neutral" and fit the output arm on the servo, facing directly forward. Connect the tow-release pushrod **48** to the servo output arm, then bend it to the shape shown and cut it to length. Secure the servo in the recess in the underside of the wing with a little hot-melt glue or cyano.
Fig. 25

18. Trial assembly
Fit the wing panels together, place the wing on the fuselage, and fix it in place using the two plastic screws **32**. The projecting areas on the underside of the wing centre section automatically keep the wing in the correct position.
Fig. 26

19. Power set:
The model is designed for the MULTIPLEX FunCub power set, Order No. **33 2649**. The current drain with a 3S LiPo flight battery and the standard propeller (supplied) is:
approx. 23 A
The power set consists of a Himax C 3516-0840 motor, MULTIcont BL-30 S-BEC speed controller, 13 x 4" propeller, propeller driver and spinner.
Fig. 27

20. Attaching the motor bulkhead to the motor mount
The motor sidethrust and downthrust can be adjusted in conjunction with the motor mounts **37** and the motor bulkhead **38**. The motor mounts are installed asymmetrically as standard: when the four adjustment screws **39** are set flush, the motor is positioned with maximum possible sidethrust and no downthrust, which is our recommended basic setting. These settings apply when looking at the motor bulkhead from the tail.
Fig. 28

The grubscrews should project from the rear of the motor bulkhead by the amounts stated below:

Upper left:	3.0 mm
Upper right:	3.0 mm
Lower left:	1.5 mm
Lower right:	1.5 mm

The screws should project by the stated values.
You will need to make minor adjustments during test-flying!

21. Installing the motor
Fix the motor to the motor bulkhead **38** using the screws included in the power set. Install this assembly using the screws **40**, as shown in **Fig. 27**.

22. Installing the canopy latch catches
Fit the canopy **5** into the fuselage from the front, sliding it in towards the wing, and only then push it down at the front. Fit the two latch tongues **23** "dry", and carefully position them flush. Apply thick cyano to the serrated areas, then insert the latch tongues into the slots in the canopy. Slide the canopy into the fuselage, and allow the latch tongues to engage in the latch catches **22**. Immediately position the canopy accurately on the fuselage while the glue is still wet. Wait for about one minute before carefully opening the canopy again. Apply more glue to the latch tongues if necessary.
Fig. 29

23. Installing the flight pack and receiver
The space for the flight battery is under the canopy, and extends back under the wing saddle. Stick the strips of Velcro (hook-and-loop) tape **20 / 21** in this area to secure the battery.
The speed controller fits in the side of the fuselage adjacent to the flight pack. Install the receiver under the wing saddle, again using the Velcro strips **20 / 21**.
Fig. 30

Do not connect the battery to the speed controller unless the transmitter is already switched on, and you are sure that the throttle control is at the "OFF" position.
Connect the servo plugs to the receiver. Switch the transmitter on, connect the flight battery to the speed controller, and the controller to the receiver.
Now switch the motor on briefly so that you can check the direction of rotation of the propeller (when checking the motor be sure to hold the model securely, and remove any loose, lightweight objects in front of and behind the model). If the motor spins in the wrong direction, reverse two of the wires at the motor - do not reverse the flight battery!

Caution: keep well clear of the propeller blades: serious injury risk!

24. Deploying the aerial on the underside of the fuselage
The receiver aerial can be routed down and out of the underside of the fuselage, and then deployed aft towards the tail. You will need to pierce a hole through the fuselage floor, working from the inside of the fuselage. Slip the aerial through the hole from the inside, and fix it to the fuselage with a strip of adhesive tape. If the aerial is longer (35 / 40 MHz), allow the loose end to trail freely.

25. Setting the control surface travels
Setting the correct control surface travels is important if you wish the model to respond to the control commands in a balanced manner.

Up-elevator (stick back, towards you)	25 mm
Down-elevator (stick forward, away from you)	22 mm
Left rudder	25 mm
Right rudder	25 mm
Up-aileron	22 mm
Down-aileron	12 mm

The travels should always be measured at the widest part of the control surface.
The control surface throws are not critical, and if you are unable to set the exact stated travels using your transmitter's adjustment facilities, that's no problem. If the discrepancy is relatively great, you will need to re-connect the linkage using a different hole at the horn or servo output arm.
If you intend to fly the model as a trainer, we recommend that you reduce the control surface travels to about 50 - 60% of the stated values.

26. Gilding the lily - applying the decals
The kit is supplied with a multi-colour decal sheet **2**. Cut out the individual name placards and emblems and apply them to the model in the position shown in the kit box illustration, or in an arrangement which you find pleasing. The decals cannot be re-positioned once applied, so place them carefully!

27. Setting the Centre of Gravity
Like any other aircraft, the FunCub must be balanced at a particular point in order to achieve stable flying characteristics. Assemble your model ready to fly, and install the flight battery.

The Centre of Gravity (CG) should be at a position 80 mm aft of the root leading edge, i.e. at the fuselage sides. Mark this point on both sides of the fuselage.
Support the model at this position on two fingertips, and it should balance level. If not, you can move the flight battery forward or aft to correct the balance point. Once the correct position is found, mark the location of the flight pack inside the model to ensure that it is always replaced in the same position. The CG location is not critical - 10 mm forward or aft of the stated position presents no problems.
Fig. 31

28. Preparations for the first flight
Please wait for a day with as little breeze as possible for the model's initial test-flight. The evening hours are often ideal for calm conditions.
Be sure to carry out a range check before the first flight, using the procedure described in your RC system instructions. If you encounter a problem, please don't risk a flight.
Send the whole system (including battery, switch harness and servos) to the Service Department of your RC system manufacturer and ask them to check it.

The first flight ...
The FunCub should always be launched exactly into any wind.
If you are a beginner to model flying we strongly recommend that you ask an experienced model pilot to help you for the first few flights.

29. Taking off from a hard strip
If you have access to a hard landing strip, a ground take-off is always the safest option.
Once the model is test-flown you will be able to take off and land from rough grass, i.e. without a mown strip - and precisely that is the charm of this model.

30. Hand-launching
Please don't try unpowered test-glides with this model - the result is invariably a damaged airframe. The FunCub should be hand-launched with the motor running at half-throttle, and always pointing directly into wind.
Ask an experienced modeller to hand-launch your aircraft for you.
The launcher should run forward for two or three paces, then

give the machine a powerful straight launch, with the wings and fuselage level. Use the controls to hold the model in a steady, gentle climb - remember to keep the rate of ascent shallow and the airspeed high!
Allow the aeroplane to climb to a safe height, then adjust the trims on the transmitter until it flies in a perfectly straight line “hands off”. While the model is still at a safe altitude, throttle back and try out the controls on the glide. Carry out a “dry run” landing approach at a safe height so that you are prepared for the real landing when the battery runs flat.

Don’t try any tight turns at first, and especially not on the landing approach at low altitude. It is always better to land safely at some distance from you, than to force the model back to your feet and risk a heavy landing.

31. Safety
Safety is the First Commandment when flying any model aircraft.
Third party insurance should be considered a basic essential. If you join a model club suitable cover will usually be available through the organisation. It is your personal responsibility to ensure that your insurance is adequate. Make it your job to keep your models and your radio control system in perfect order at all times. Check the correct charging procedure for the batteries you are using. Make use of all sensible safety systems and precautions which are advised for your system. An excellent source of practical accessories is the MULTIPLEX main catalogue, as our products are designed and manufactured exclusively by practising modellers for other practising modellers.

Always fly with a responsible attitude. You may think that flying low over other people’s heads is proof of your piloting skill; others know better. The real expert does not need to prove himself in such childish ways. Let other pilots know that this is what you think too.
Always fly in such a way that you do not endanger yourself or others. Bear in mind that even the best RC system in the world is subject to outside interference. No matter how many years of accident-free flying you have under your belt, you have no idea what will happen in the next minute.

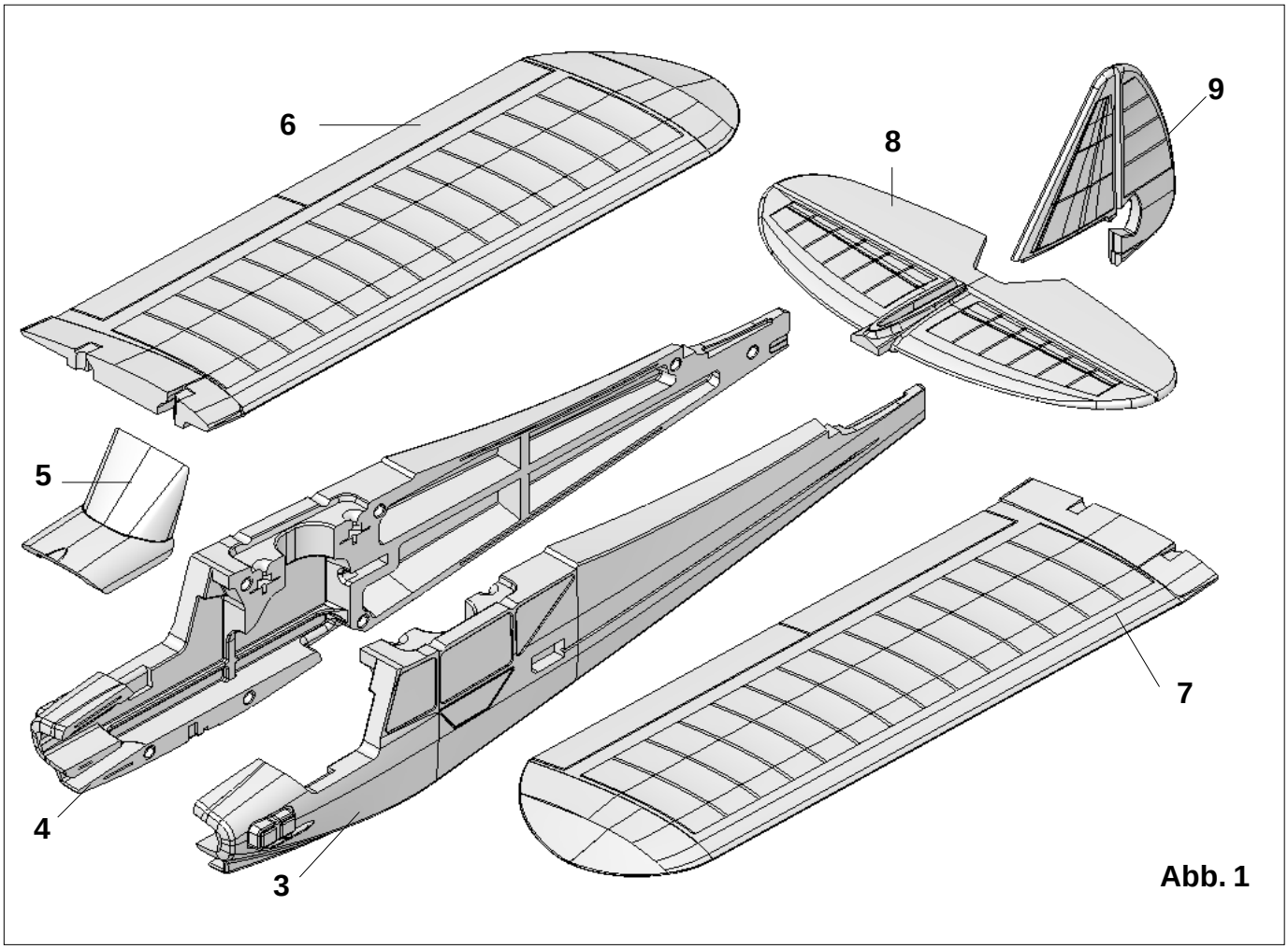
We - the MULTIPLEX team - hope you have many hours of pleasure building and flying your new model.

MULTIPLEX Modellsport GmbH & Co. KG
Product development and maintenance

Klaus Michler

Parts List - FunCub

Part No.	No. off	Description	Material	Dimensions
1	1	Building instructions		
2	1	Decal sheet		500 x 880 mm
3	1	L.H. fuselage shell	Moulded Elapor foam	Ready made
4	1	R.H. fuselage shell	Moulded Elapor foam	Ready made
5	1	Canopy	Moulded Elapor foam	Ready made
6	1	L.H. wing panel	Moulded Elapor foam	Ready made
7	1	R.H. wing panel	Moulded Elapor foam	Ready made
8	1	Tailplane	Moulded Elapor foam	Ready made
9	1	Fin	Moulded Elapor foam	Ready made
70	1	Main undercarriage unit	Spring steel, 2.5 Ø	Ready made
71	2	Lightweight wheel	Plastic, EPP	120 Ø, hub bore 2.6 mm
Small parts set, motor mount				
20	3	Velcro tape, hook		25 x 60 mm
21	3	Velcro tape, loop		25 x 60 mm
22	2	Latch catch	Inj.-moulded plastic	Ready made
23	2	Latch tongue	Inj.-moulded plastic	Ready made
24	1	Glue-fitting horn	Inj.-moulded plastic	Ready made
25	4	Swivel pushrod connector	Metal	Ready made, 6 mm Ø
26	4	Washer	Metal	M2
27	4	Nut	Metal	M2
28	6	Socket-head grubscrew	Metal	M3 x 3 mm
29	1	Allen key	Metal	1.5 mm A/F
30	1	Front spar joiner, “deep”	Inj.-moulded plastic	Ready made
31	1	Rear spar joiner, “shallow”	Inj.-moulded plastic	Ready made
32	2	Screw	Plastic	M5 x 50 mm
33	2	Wing spreader plate A	Inj.-moulded plastic	Ready made, M5
34	2	Wing spreader plate B	Inj.-moulded plastic	Ready made, M5
35	1	Glue-fitting horn, tailskid	Inj.-moulded plastic	Ready made
36	1	Glue-fitting tailwheel bracket	Inj.-moulded plastic	Ready made
37	2	Motor mount	Inj.-moulded plastic	Ready made
38	1	Motor bulkhead	Inj.-moulded plastic	Ready made
39	4	Motor bulkhead adjustment screw	Metal	M3 x 10 mm
40	2	Motor bulkhead mounting screw	Metal	M3 x 16 mm
41	8	“Twin” control surface horn	Plastic	Ready made
42	6	“Twin” horn bracket	Plastic	Ready made
43	2	Pivot barrel	Metal	Ready made, 6 mm Ø
44	2	Glue-fitting horn, landing flaps	Inj.-moulded plastic	Ready made
45	2	Pre-formed aileron pushrod (Z-bend)	Metal	1 Ø x 90 mm
46	2	Pre-formed flap pushrod (Z-bend)	Metal	1 Ø x 105 mm
47	1	Aero-tow mechanism	Inj.-moulded plastic	Ready made
48	1	Aero-tow release pushrod (Z-bend)	Metal	1 Ø x 90 mm
Wire and rod set				
50	2	Front tubular spar	CRP tube	8 Ø x 6 x 400 mm
51	2	Rear tubular spar	CRP tube	8 Ø x 6 x 100mm
52	1	Elevator pushrod (Z-bend)	Metal	0.8 Ø x 510 mm
53	1	Rudder pushrod (Z-bend)	Metal	0.8 Ø x 510 mm
54	1	Elevator snake outer sleeve	Plastic	3/2 Ø x 480 mm
55	1	Rudder snake outer sleeve	Plastic	3/2 Ø x 480 mm
56	1	Elevator snake inner sleeve	Plastic	2/1 Ø x 500 mm
57	1	Rudder snake inner sleeve	Plastic	2/1 Ø x 500 mm
Undercarriage set				
72	4	Collet	Metal	2.7 Ø / 8 x 5 mm
73	4	Socket-head grubscrew	Metal	M3 x 3 mm
74	1	Undercarriage bracket	Plastic	Ready made
75	1	Screw	Metal	M3 x 12 mm
76	1	Tailwheel unit	Metal	1.3 mm Ø
77	1	Lightweight tailwheel	Plastic, EPP	53 Ø, hub bore 1.6 mm
78	2	Tailwheel retainer (tubular rivet)	Metal rivet	2.0 Ø x 0.2 x 3 mm


6
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8
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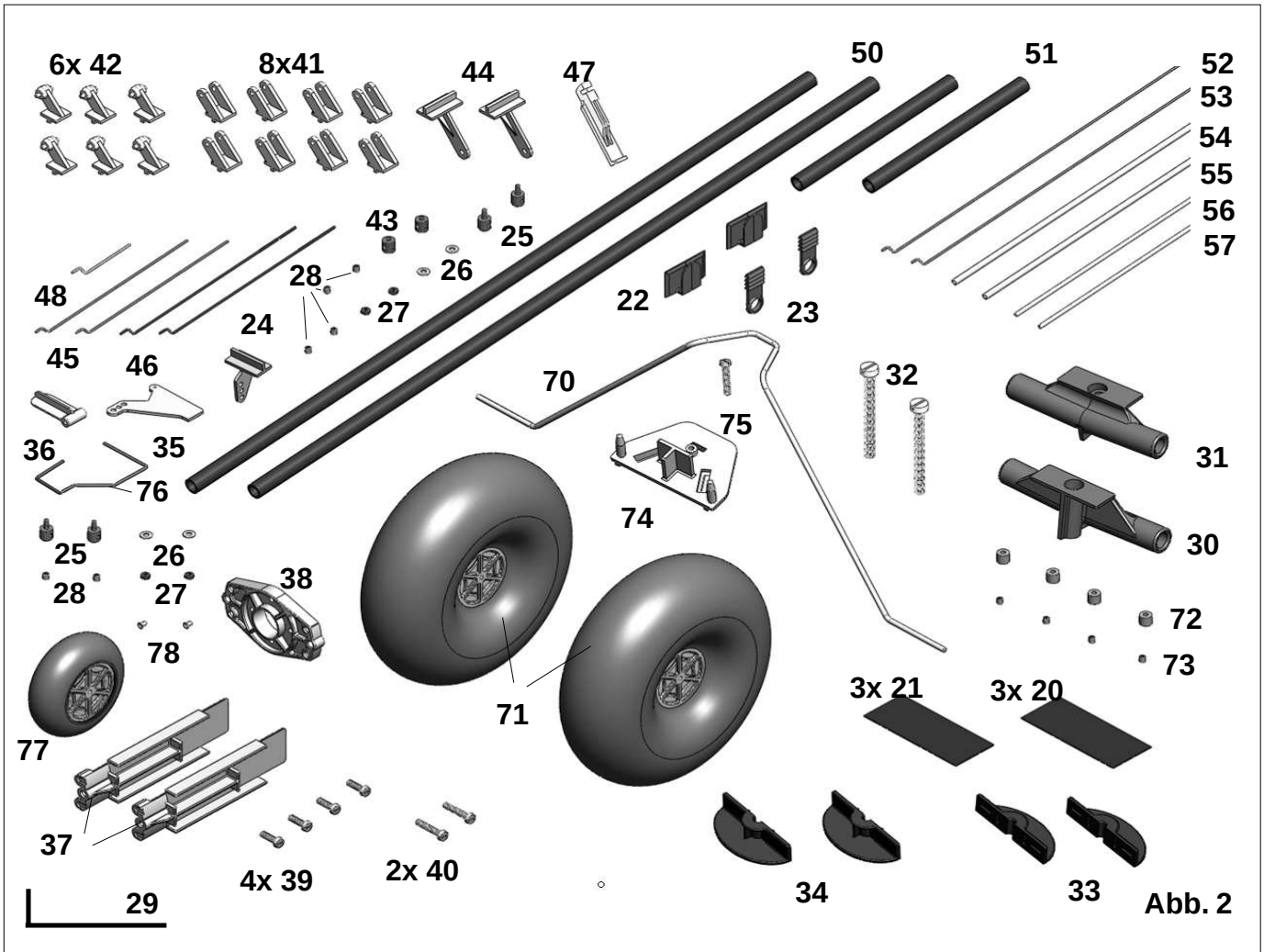
4
3

Abb. 1


6x 42
8x41
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3x 21
3x 20
77
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4x 39
2x 40
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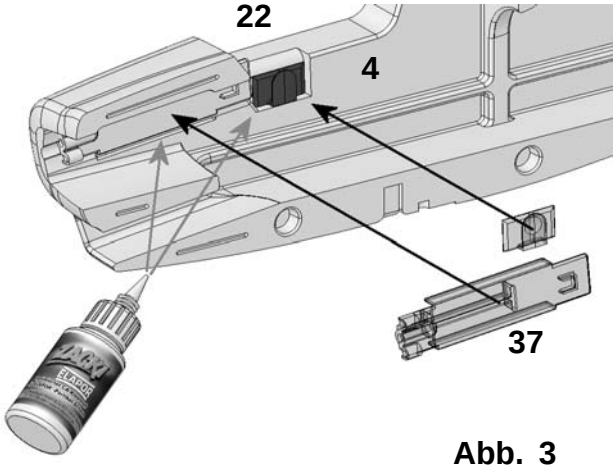
29

Abb. 2



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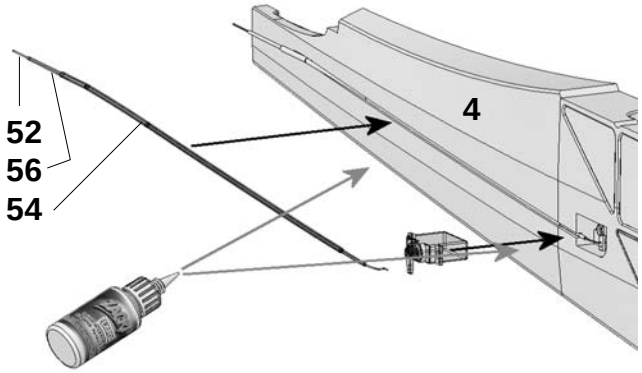


Abb. 4

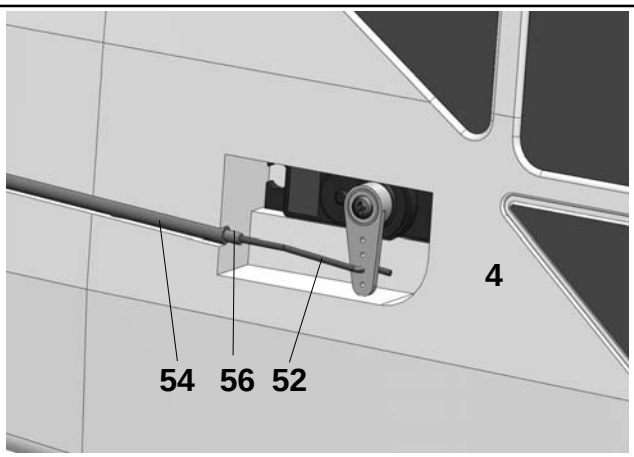


Abb. 5

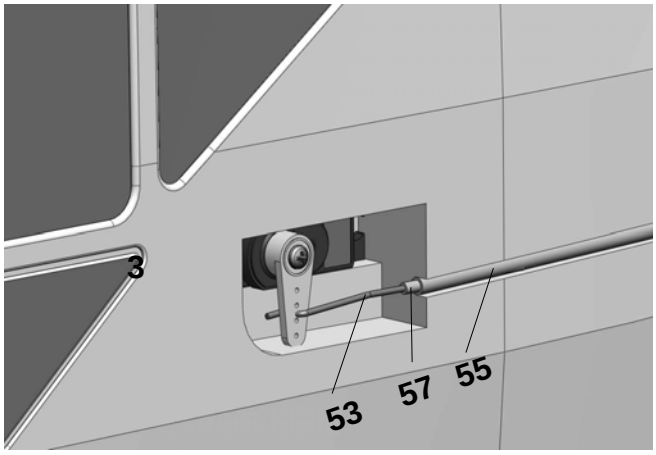


Abb. 6

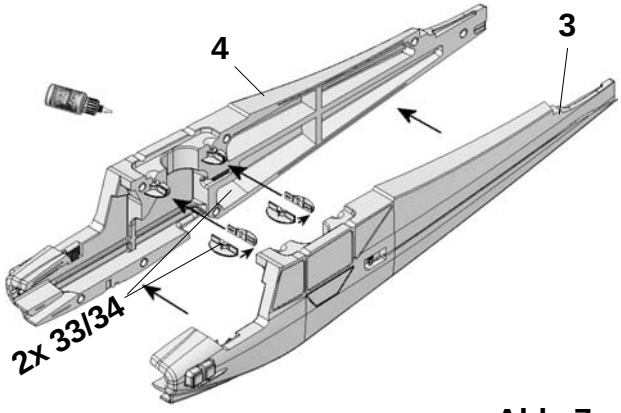


Abb. 7

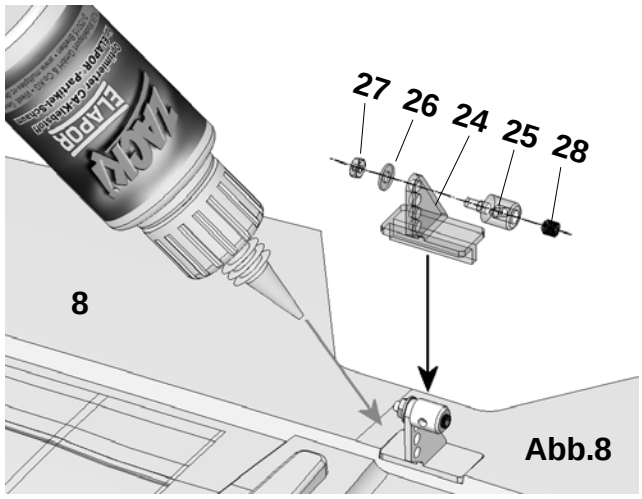


Abb.8

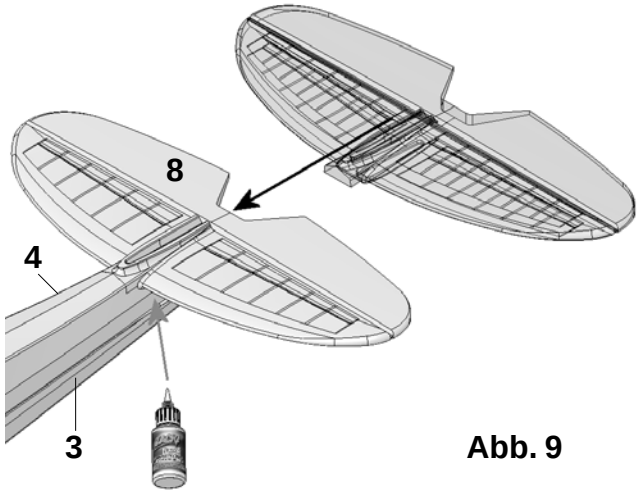


Abb. 9

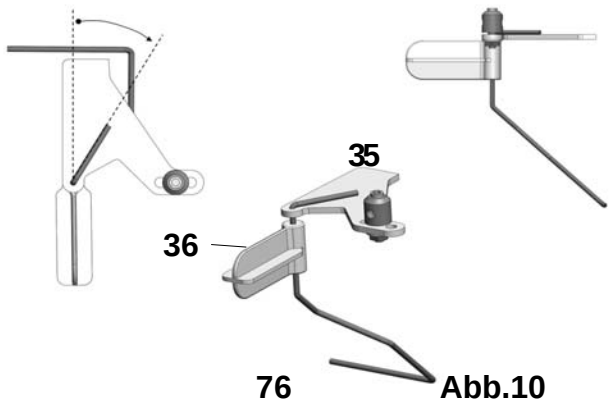


Abb.10

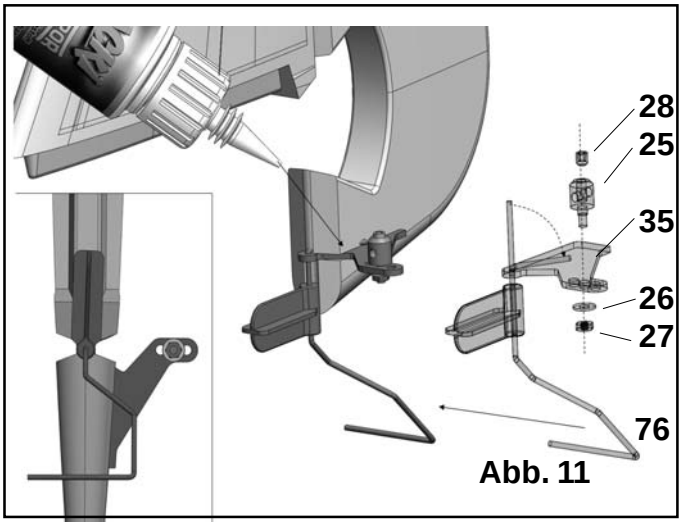
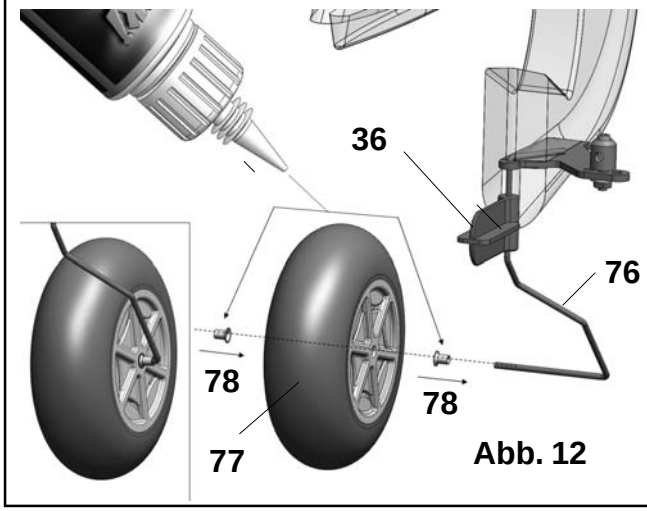


Abb. 11



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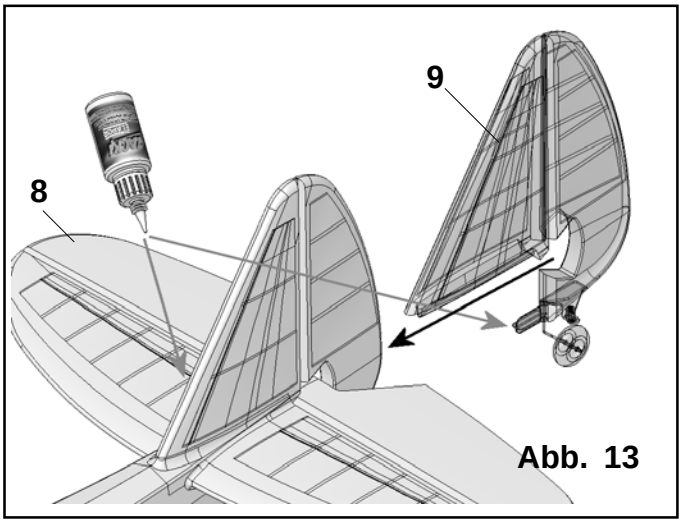


Abb. 13

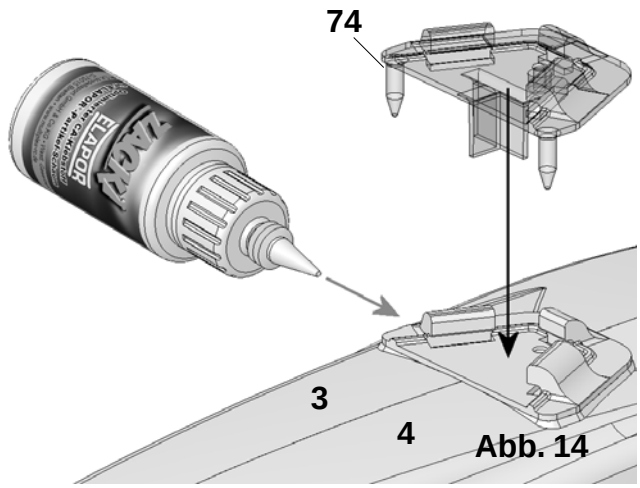


Abb. 14

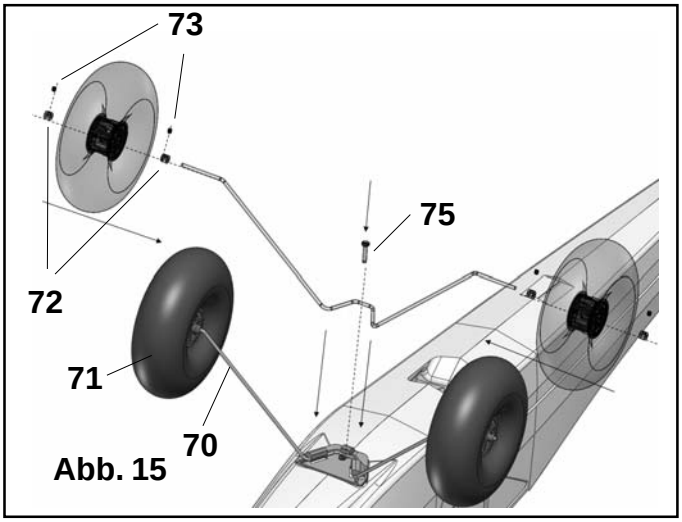


Abb. 15

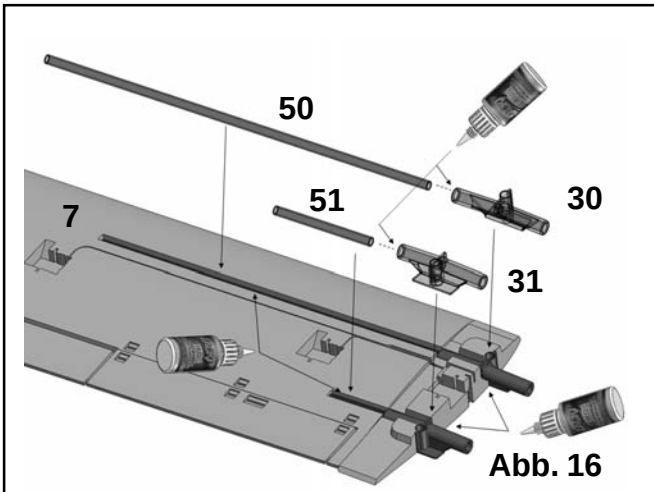


Abb. 16

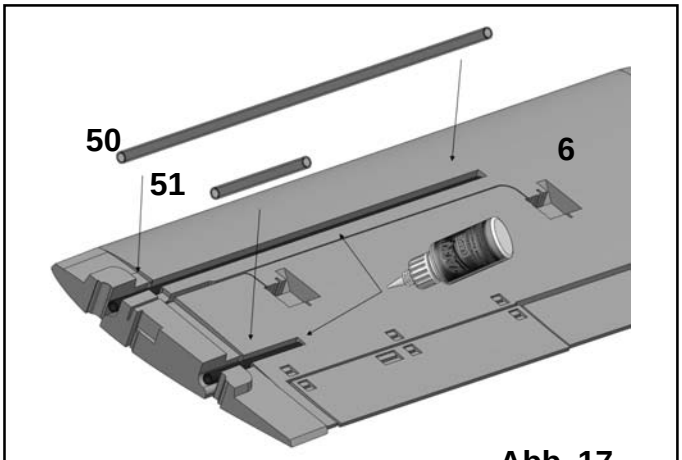


Abb. 17

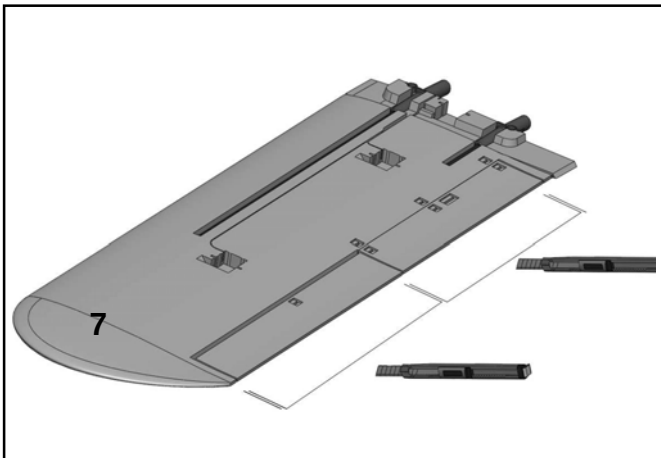


Abb. 18

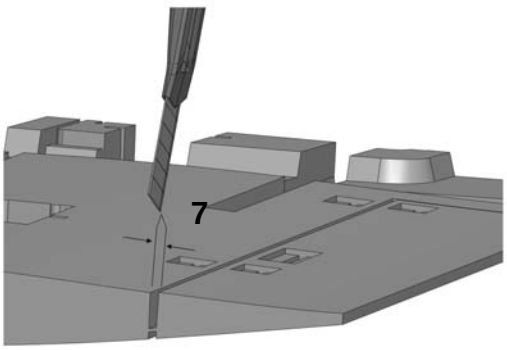


Abb. 19

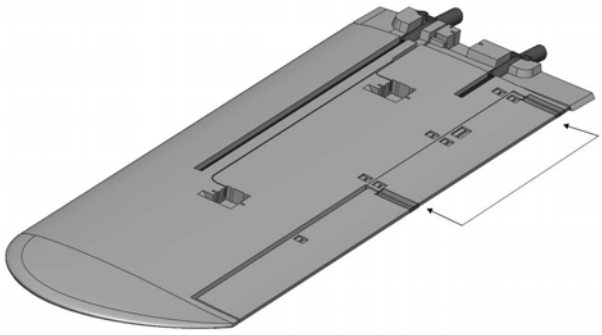


Abb. 20

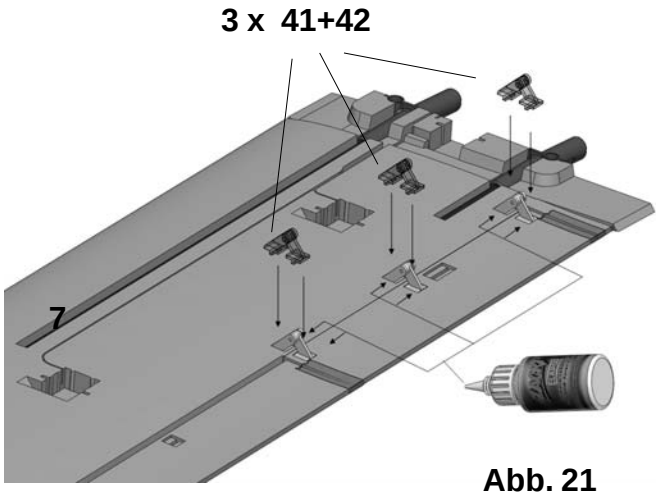


Abb. 21

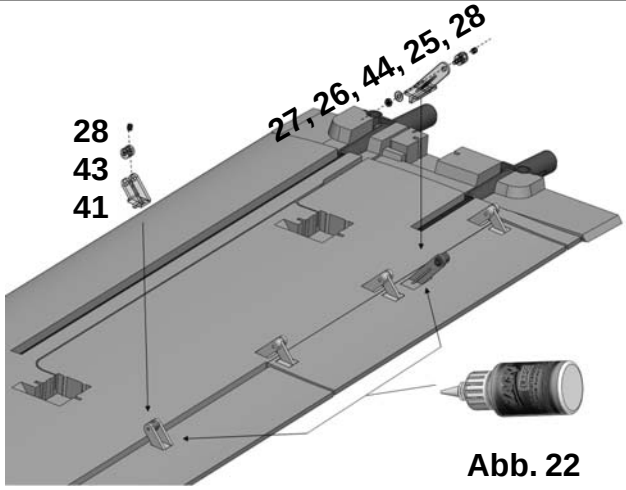


Abb. 22

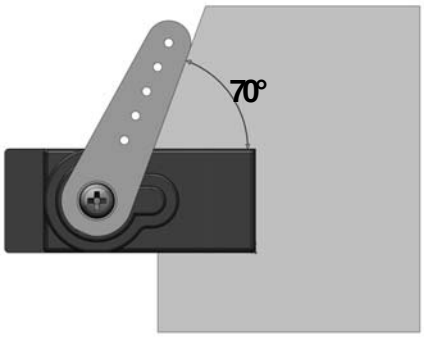


Abb. 23

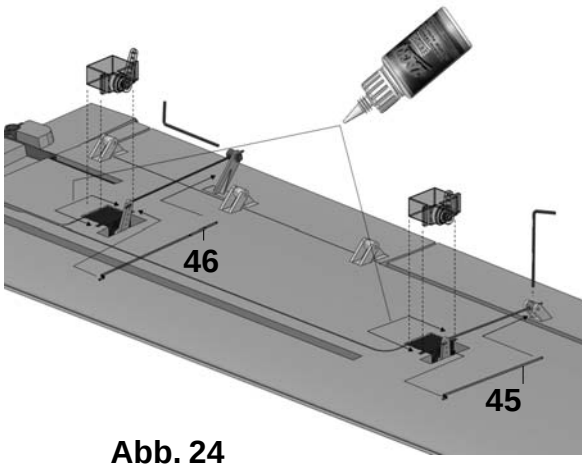


Abb. 24

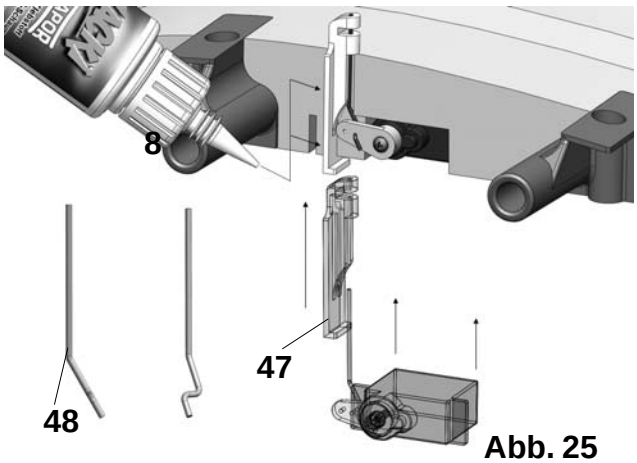


Abb. 25

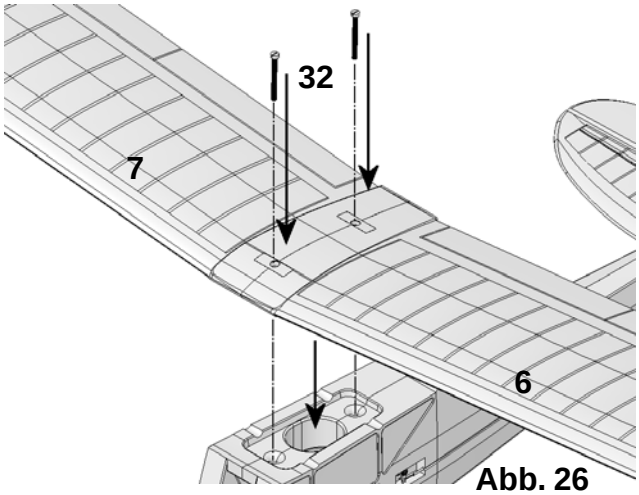


Abb. 26

Antriebsatz / Powerset
33 2649

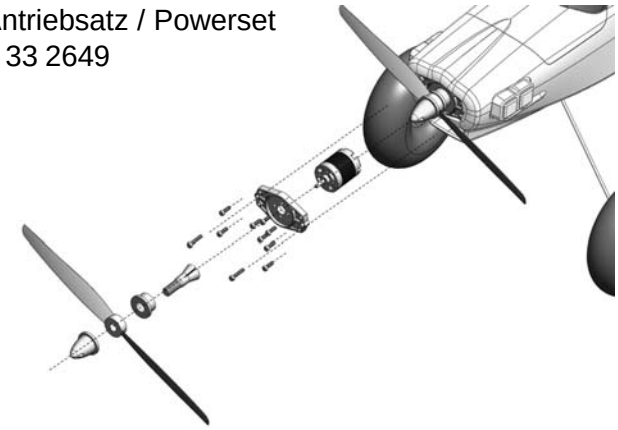


Abb. 27

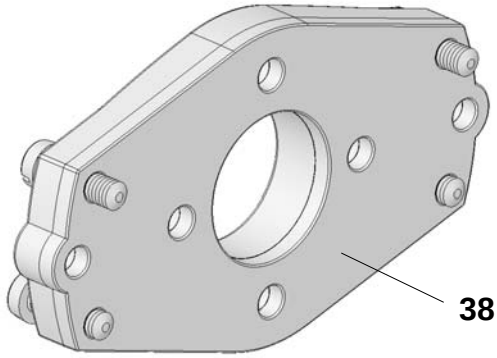


Abb. 28

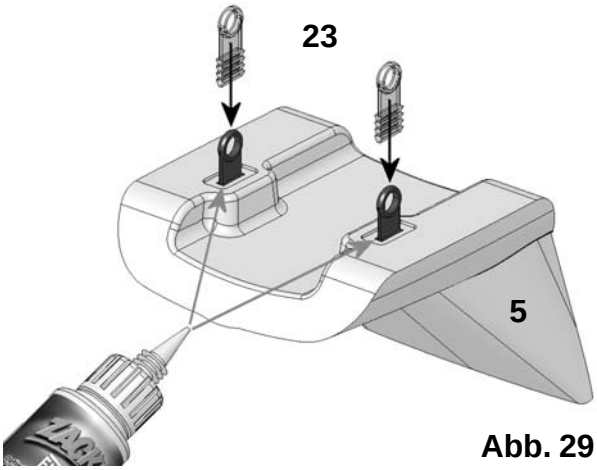


Abb. 29

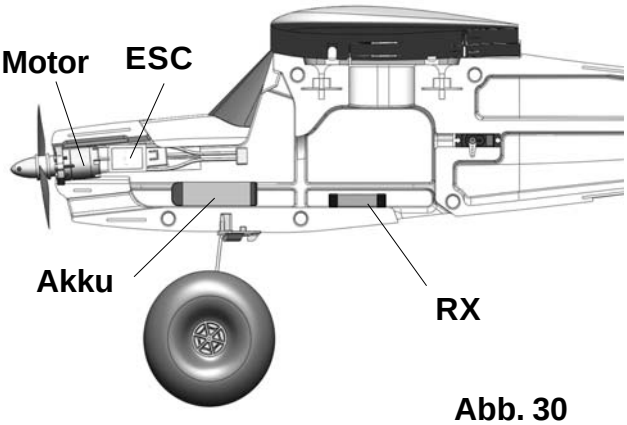


Abb. 30

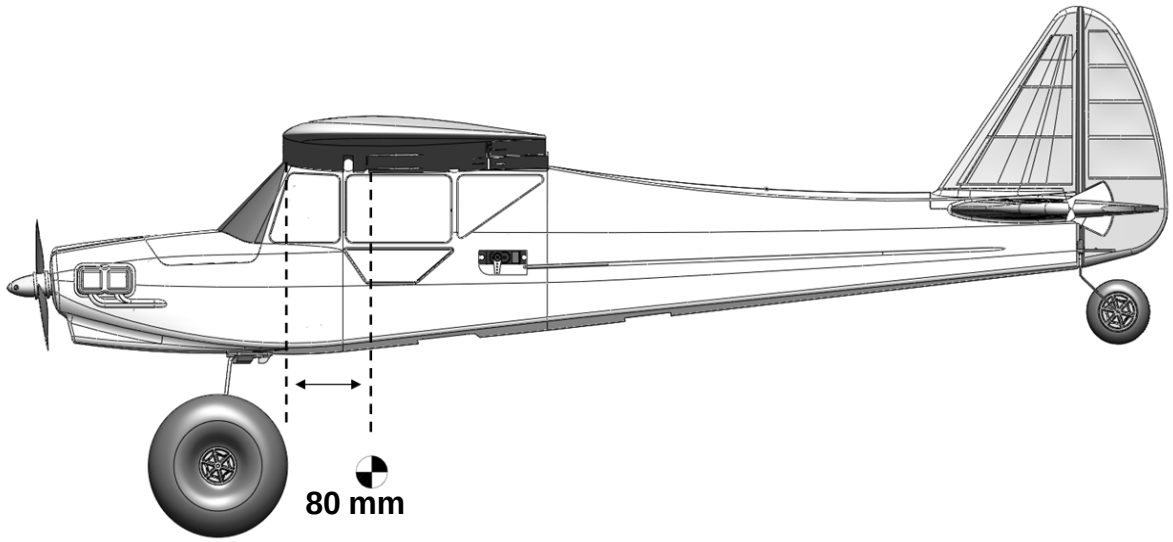


Abb. 31


MULTIPLEX
FunCub

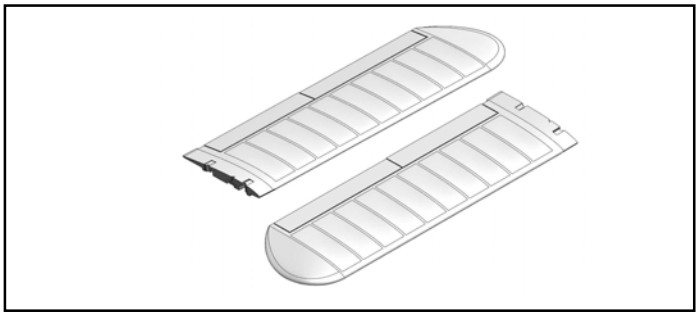

FunCub
MULTIPLEX

Ersatzteile
Replacement parts
Pièces de rechanges
Parti di ricambio
Repuestos

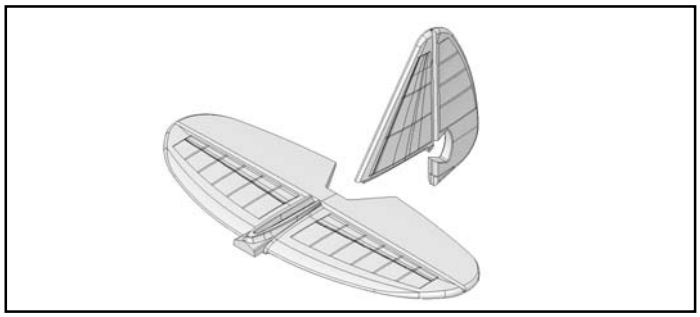
FunCub

(bitte bei Ihrem Fachhändler bestellen)
(please order from your model shop)
(S.V.P. à ne commander que chez votre revendeur)
(da ordinare presso il rivenditore)
(por favor, diríjase a su distribuidor)

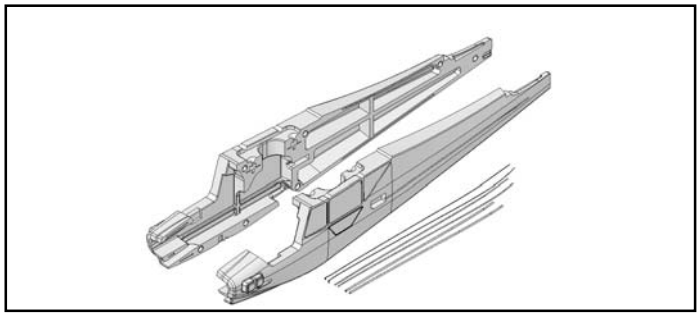
 # 22 4113
Tragflächen
Wing panels
Ailes
Ali
Alas



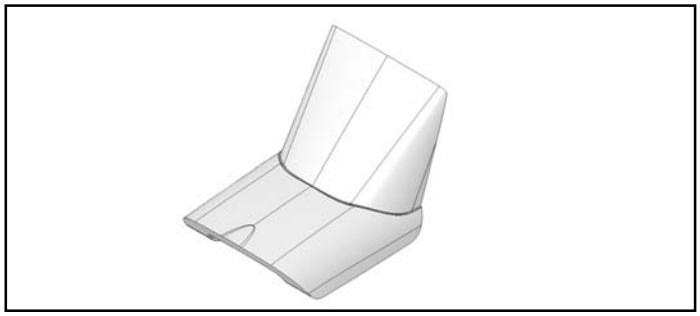
 # 22 4140
Leitwerkssatz
Tail set
Kit de stabilisateurs
Piani di coda
Kit de empenajes



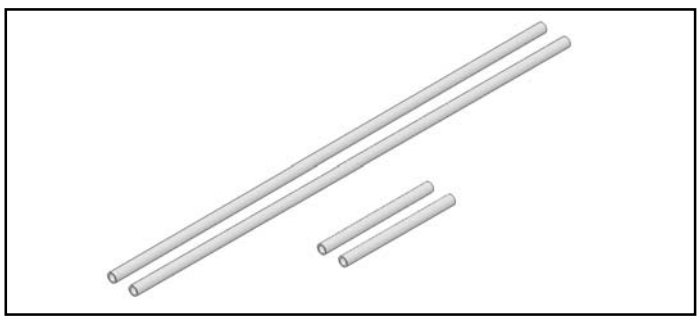
 # 22 4137
Rumpfhälften + Bowdenzüge
Fuselage shells + snakes
Moitié de fuselage + tringlerie
Semigusci fusoliera + bowden
Fuselaje + transmisiones bowden



 # 22 4138
Kabinenhaube
Canopy
Verrière
Capottina
Cabina



 # 72 3130
CFK Holmrohr
CFRP Wing joiner
Tube en fibre de carbo
Tubi in carbonio
Tubo Fibra de vidrio

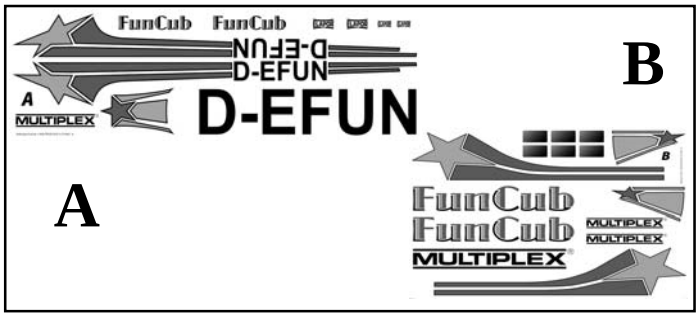


Ersatzteile
Replacement parts
Pièces de rechanges
Parti di ricambio
Repuestos

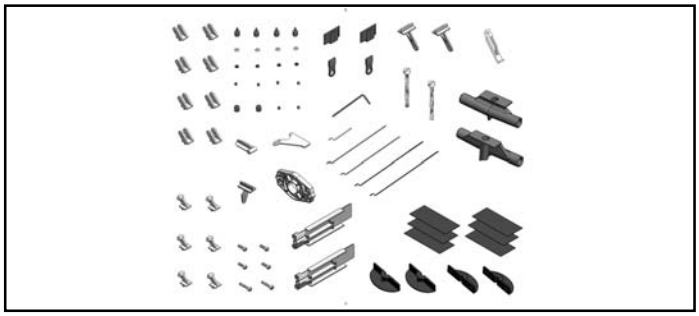
FunCub

(bitte bei Ihrem Fachhändler bestellen)
(please order from your model shop)
(S.V.P. à ne commander que chez votre revendeur)
(da ordinare presso il rivenditore)
(por favor, diríjase a su distribuidor)

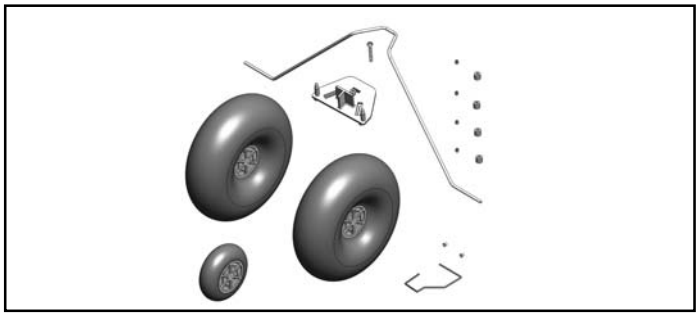
 # 72 4565
Dekorbogen
Decal sheet
Planche de décoration
Decals
Lámina decorativa



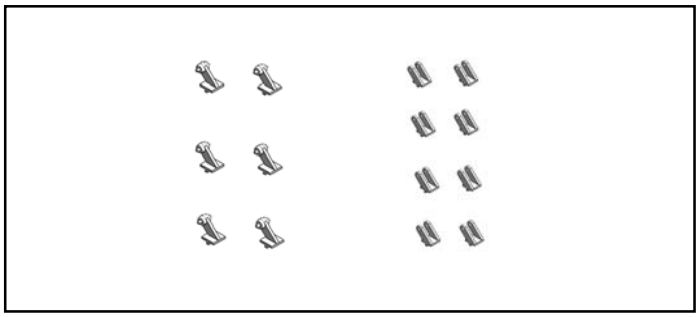
 # 22 4115
Kleinteilesatz
Small items set
Petit nécessaire
Minuteria
Piezas pequeñas



 # 22 4114
Hauptfahrwerk
Main undercarriage
Train d'atterrissage principal
Carrello principale
Tren principal



70 2010
Landeklappen Scharniere 6 Satz
Landing flap hinge, set of 6
Charnières volets à fente, lot de 6
Cerniere flap 6 pz.
bisagras de flaps, set de 6



73 3198
Räder Ø 120 mm
wheels 120 mm Ø
roues 120 mm Ø
Ruote 120 mm Ø
ruedas 120 mm Ø

73 3189
Räder Ø 54 mm
wheels 54 mm Ø
roues 54 mm Ø
Ruote 54 mm Ø
ruedas 54 mm Ø