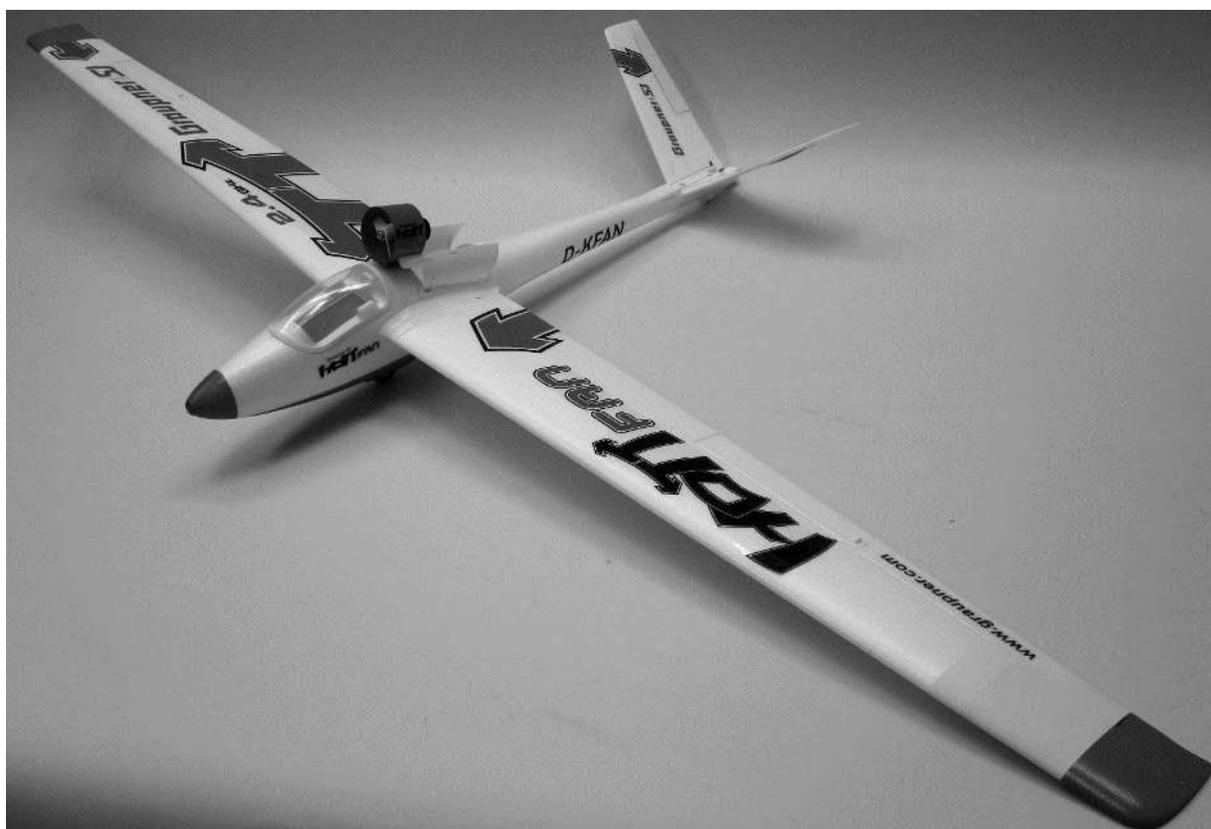


OPERATING INSTRUCTIONS

HoTT-FAN



ARTF RC model aircraft fitted with retractable ducted fan unit

This model requires a HoTT COMPUTER SYSTEM

It is essential to read and observe the special safety notes included in these operating instructions and the appendix. If you ever dispose of the model, please be sure to pass on the complete operating instructions to the new owner.

Introduction

The Graupner/SJ **HoTT-FAN** is a particularly attractive RC model aircraft which offers an excellent performance in the air. The original carton can be used as a convenient method of storing, protecting and transporting the model.

The **HoTT-FAN** is fitted with a highly efficient retractable ducted fan power unit which gives the model an excellent climb rate, at the same time generating a pleasant sound reminiscent of a turbine. The model is based on Bob Carlton's Super Salto, and this combination simulates the full-size aircraft very closely. The original machine is powered by a PBS TJ-100 turbine.

Please take the time to read through these operating instructions **before attempting to fly the model**.

Pack contents

1. Ready-made fuselage with factory-fitted retractable power unit and detachable canopy. HPD 2512-5000 7.4 V BRUSHLESS motor, including BRUSHLESS CONTROL 22 speed controller and 58 mm Ø fan unit, ready to run. Four mini-servos installed, ready to use. Part-painted, with decals already applied.
2. Pair of wing panels with aileron linkages, decals applied.
3. V-tail panels with decals already applied.
4. Polythene bag of small hardware items.
5. Operating instructions with integrated safety notes in German, English and French.

Essential accessories (not included)

Graupner/SJ MX-12 HoTT computer system

Order No. 33112

ULTRA QUICK 70 battery charger

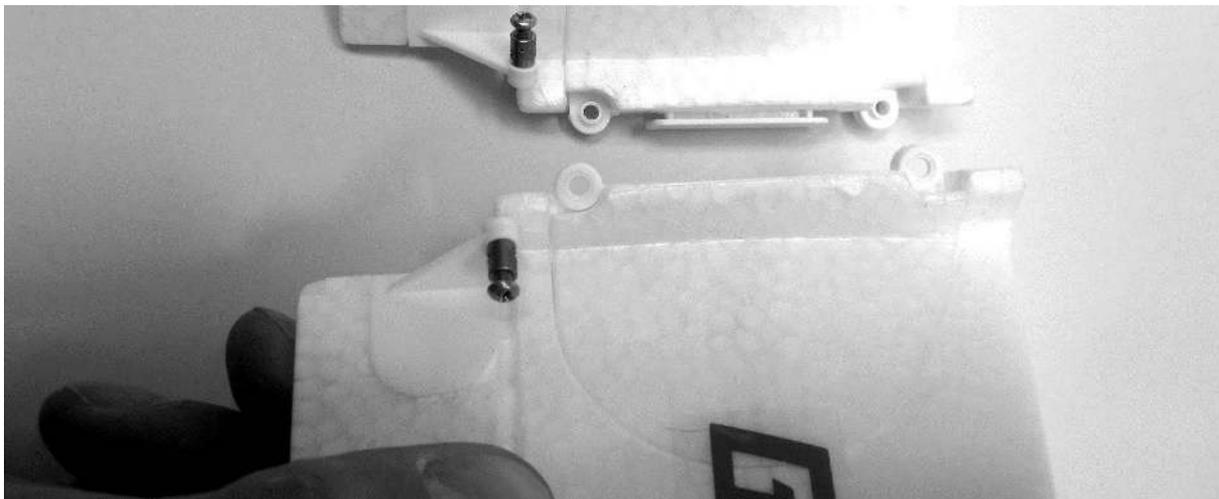
Order No. 64070

LiPo battery, 45C 3/1600 11.1 V

Order No. 9717.3

Assembling the model

The airframe requires very little assembly work, but the following notes must be followed carefully to ensure that the model flies safely.

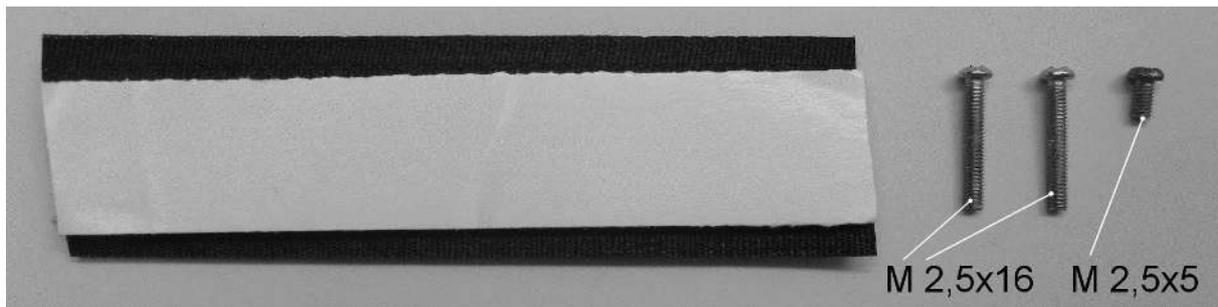


The first step is to join the two V-tail panels as shown in the photo.

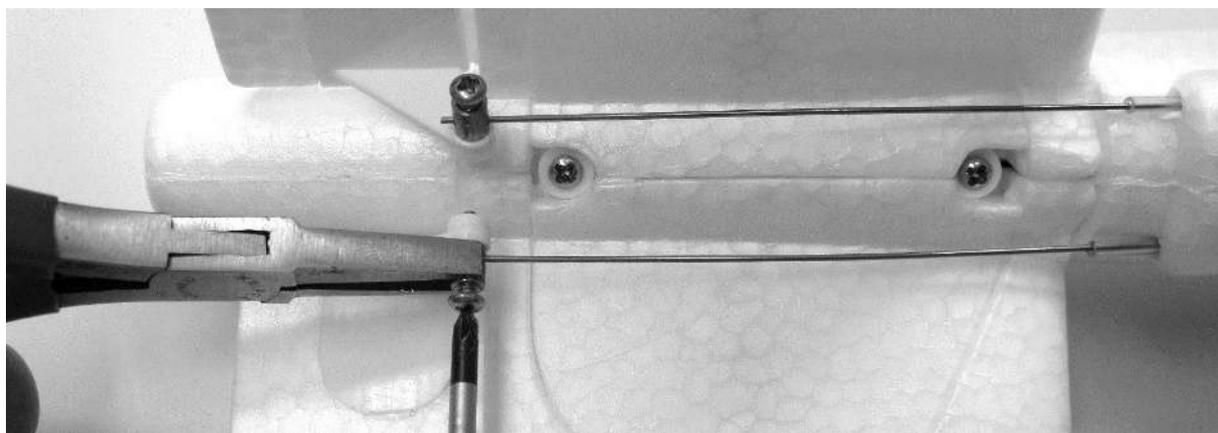
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The illustration shows the fixings (hook-and-loop tape) for the LiPo flight battery, the M2.5 x 16 retaining screws for the V-tail assembly, and the M2.5 x 5 clamping screw for the swivel pushrod connector. You will find these parts in the polythene bag of small hardware items.

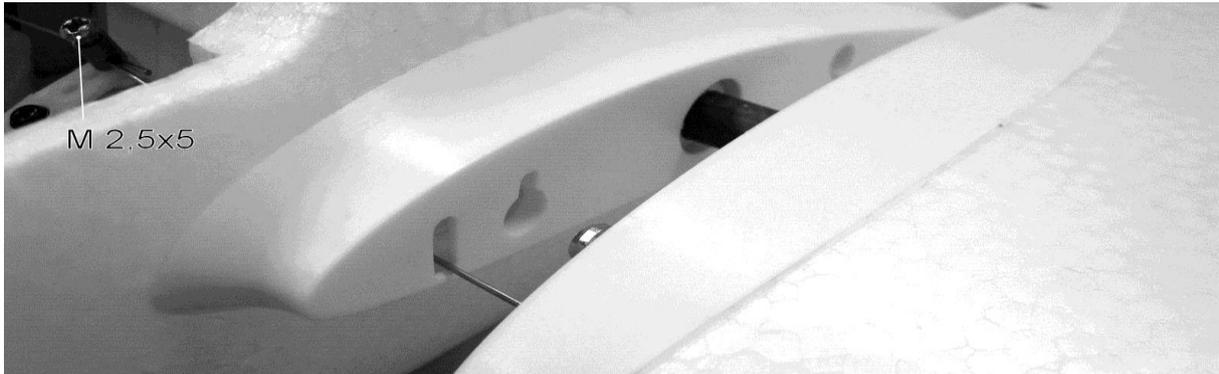


The photo shows the V-tail assembly unscrewed from the fuselage, with the tail pushrods fitted through the connector barrels. Set both servos to centre before tightening the clamping screws, and grip the barrel firmly in a pair of pliers while you tighten the screw. **Caution: the pushrods must be securely clamped once you have tightened the screws. If a pushrod comes adrift, the model could crash.**

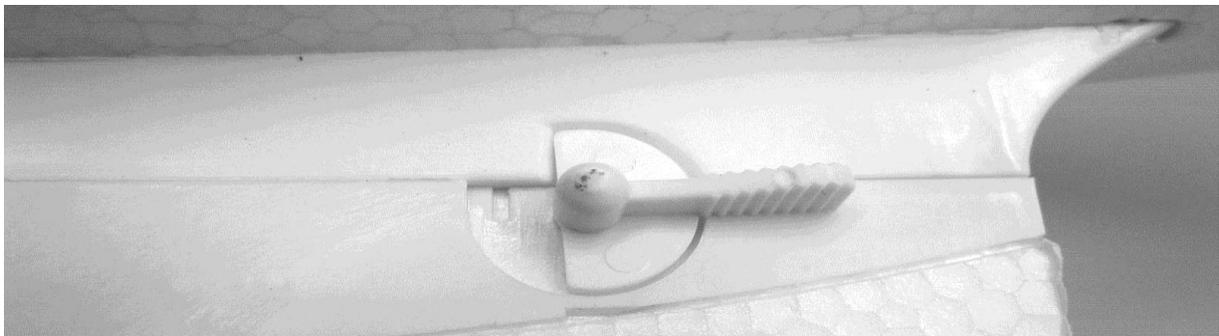


The canopy is opened by holding it at the rear on both sides, and pulling it upwards.

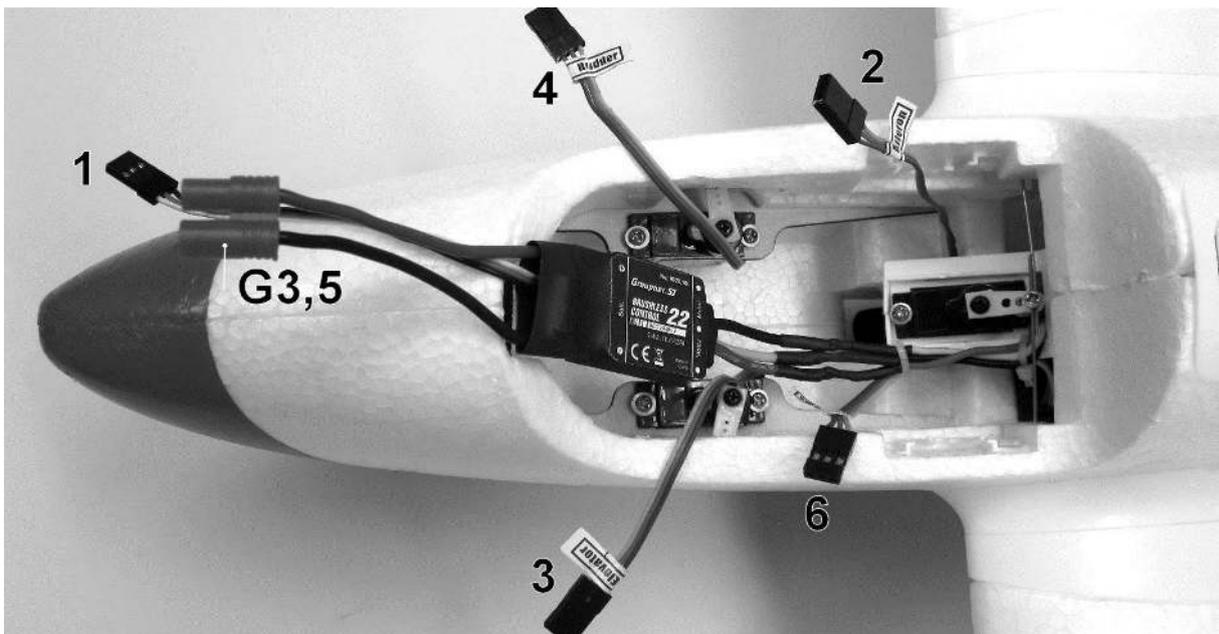
With the canopy removed, slide both wing panels onto the joiner and up to the fuselage, threading the aileron pushrods through the pushrod connector barrel.



The photo shows the left-hand wing panel being fitted; note that the leading edge is angled slightly downwards.



When both wings are in place, locate the rotary latch on the underside, and turn it through 90° to hold the panels securely against the fuselage. Now immediately tighten the aileron pushrod clamping screw as described earlier. **Caution: the model could crash if the two wing panels are not secured, or if the clamping screw in the pushrod connector is not tightened properly.**



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Connect the servo leads to the receiver in the following sequence: speed controller to socket 1, aileron servo to socket 2, elevator servo to socket 3, rudder servo to socket 4, retractable power unit servo to socket 6.

Caution: please refer to the diagram on the receiver itself to ensure that the leads are connected correctly: the brown or black wire should always be at the top of the receiver.



The picture shows the receiver with all connections complete; it is installed across the bottom of the fuselage. Pierce a hole through the right-hand fuselage side for the receiver aerial.



The illustration shows the LiPo battery (3/1600 / 11.1 V) installed in the fuselage. It is retained by a strip of hook-and-loop tape about 30 mm long, applied to the battery itself. Please remember that the action of connecting the G3.5 plugs and sockets switches the receiver on. In this state unforeseen circumstances could cause the motor to burst into life without warning.

Caution: on no account touch the fan once the G3.5 plugs and sockets are connected, and keep all objects well clear of it. If you overlook this, the result could be serious injury to hands, face or eyes.

Replace the canopy on the fuselage, and your **HoTT-FAN** is ready to fly.

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Control surface travels

The control surface travels are set up correctly at the factory for around 100% servo travel. The deflections are as follows, measured in each case at the inboard trailing edge of the control surface: elevator approx. 12.5 mm up and down, ailerons approx. 15 mm up and 10 mm down.



The photo shows the model with the retractable power unit extended, but not switched on. The aeroplane's glide angle is steeper in this state, and this makes accurate spot-landings easier. It is best to set up a two-position switch on the transmitter to operate the fan unit extend / retract function. **Caution: it is very important that the servo which operates the retractable power unit should not be stalled at either end-point. If your transmitter does not have sufficient functions - electronic trims in particular - you will need to use the mixer, Order No. 9920.86.**

Centre of Gravity range

The Centre of Gravity of the **HoTT-FAN** should be in the range 50 to 60 mm with the fan unit retracted. The CG will be within this range without the need for ballast, provided that you are using the recommended LiPo flight battery. The CG position can be checked by supporting the model under both wing roots at the stated point; the model should then balance level.

First flight

First give the LiPo and transmitter batteries a full charge. **It is important to use the recommended chargers exclusively, and to observe the operating instructions and safety notes supplied with the charger.**

Prepare the model carefully before test-flying, and wait for a day with flat-calm conditions or just a light breeze, as controlling the model in windy conditions is too difficult for a beginner to model flying. A large, open field, either flat or sloping gently into wind, makes a good flying site. On no account launch the model between buildings or trees, as it will be much more difficult to control when the air is turbulent. For the first flight of any model aircraft it is helpful if an experienced modeller checks the aeroplane for you, and stands by your side during the first few flights.

Start the fan unit, and launch the model firmly forward into any breeze; do not throw it! Running forward for a few paces gives the right launch speed. The model's nose should be inclined up by about 15° when it leaves the launcher's hand.

It is essential to trim the model carefully, especially during the first flight; this is carried out by adjusting the trim buttons below and to one side of the primary sticks. Adjust the aileron trim so that the model flies straight and level. Always land directly into wind, with the fan switched off. Slow the model down just before touch-down by cautiously applying up-elevator. Always land into wind.

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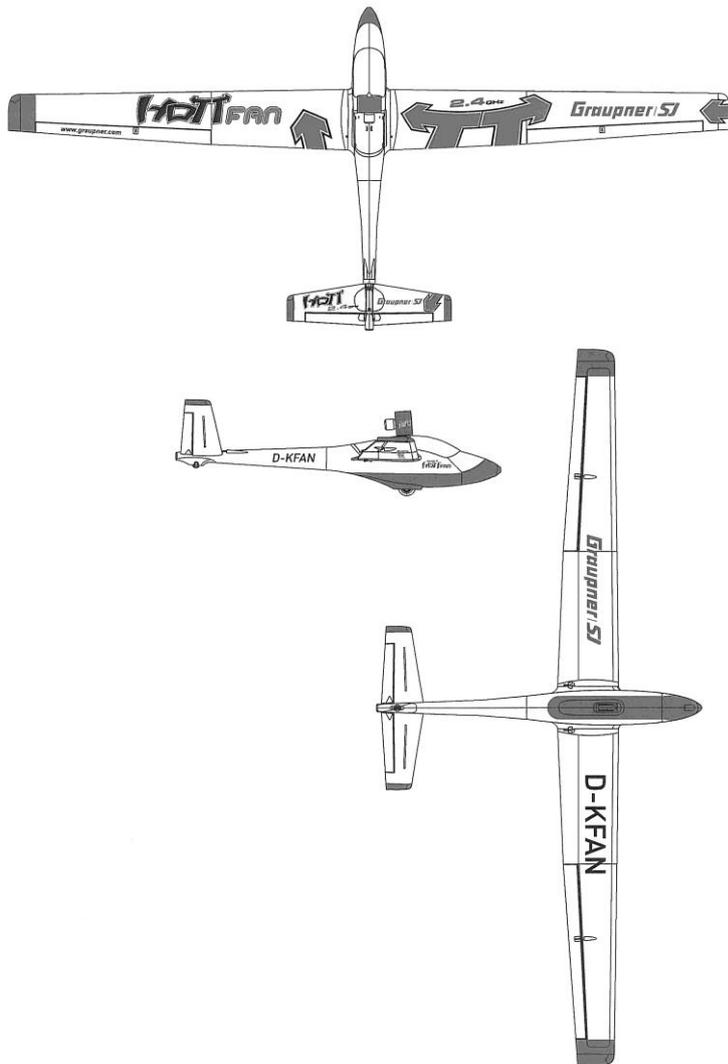
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Please note that the G3.5 plugs and sockets must be disconnected after every motor run and after every flight. This is for safety reasons, and also protects the LiPo battery from damage. Even when the model is not in use, a small current flows whenever the G3.5 plugs and sockets are connected. In the long-term this could deep-discharge the LiPo battery, and cause irreparable damage to the pack.

All of us at GRAUPNER/SJ Modellbau hope you have many fine flights with your new

HoTT-FAN



Specification - HoTT-FAN

Wingspan approx.	1800 mm
Overall length approx.	810 mm
Wing airfoil	Eppler E-195
Tailplane airfoil	NACA 008
Wing area approx.	22.6 dm ²
Tailplane area approx.	4.2 dm ²
Total surface area approx.	26.8 dm ²
Total surface area loading approx.	31.7 g/dm ²
All-up weight approx.	850 g
Scale	1 : 7.5

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Adhesives and replacement parts (not included)

Cyano-acrylate adhesive*

Order No. 5821

Cyano-acrylate activator*

Order No. 953.150

Ready-made fuselage, complete

Order No. 9920.200

L.H. wing panel

Order No. 9920.301

R.H. wing panel

Order No. 9920.302

V-tail panels

Order No. 9920.4

*Only necessary if repairs are required to the model

Environmental protection notes

The presence of this symbol on a product, in the user instructions or the packaging, means that you must not dispose of that item in the ordinary domestic waste when the product comes to the end of its useful life. The correct method of disposal is to take it to your local collection point for recycling electrical and electronic equipment.



Individual markings indicate which materials can be recycled and re-used. You can make an important contribution to the protection of our shared environment by re-using the product, re-cycling the basic materials or re-processing redundant equipment in other ways.

Dry cells and rechargeable batteries must be removed from the device and taken separately to a suitable battery disposal centre.

If you don't know the location of your nearest disposal centre, please enquire at your local council office.

Safety Notes

It is a legal requirement to obtain third-party insurance before you operate any model aircraft. Before attempting to operate the model for the first time it is essential to read right through the operating instructions attentively. You alone are responsible for the safe operation of your RC model aircraft. Young persons must be supervised by a responsible adult who is aware of the possible hazards involved in the operation of model aeroplanes.

In legal terms our models are classed as aircraft, and as such are subject to legal regulations and restrictions which must be observed at all times. Our brochure "Modellflugrecht, Paragraphen und mehr" (Model Aviation Law, Legal Requirements and more) is available under Order No. 8034.02, and contains a summary of all these rules; your local model shop should have a copy which you can read.

It is important to use only those parts included in the kit, together with other genuine Graupner accessories and replacement parts as recommended expressly by us. Even if you change a single component, you can no longer be sure that the whole system will work reliably, and such changes also invalidate your guarantee.

Avoid short-circuits at all times.

The high energy density of batteries involves a constant risk of explosion and fire.

The only way to protect people from injury, and avoid property damage, is to build the model carefully, and in accordance with the building instructions. Nobody would climb into a full-size sailplane and try to fly it without first completing a course of training. Model flying is just such a skill, and has to be learned in exactly the same way.

However, as manufacturers we have no means of influencing the way you build and operate your RC model aircraft, and for this reason we can do no more than point out the hazards expressly. We accept no further liability.

If you need help, please enlist the aid of an experienced modeller, join a model club or enrol at a model flying training school. Model shops and the specialist model press are also good sources of information. The best course is always to join a club and fly at the approved model flying site.

The operator must be in full possession of his bodily and mental capabilities. As with car driving, it is not permissible to fly a model aircraft under the effect of alcohol or drugs.

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Make sure that all passers-by and onlookers are aware of the hazards involved in the operation of your model. Remind spectators to keep a safe distance from the model.

Always maintain a safe distance between your model and other people or objects. Never fly low over people or directly towards them.

Radio-controlled models should only be flown in a temperature range of -5° to +35°C. More extreme temperatures can lead to changes in battery capacity, material characteristics, the strength of glued joints and other unwanted effects.

All model flyers should behave in a way which minimises the danger to people and property. Never act in any manner which will disturb other pilots, or have an adverse effect on safe, orderly flying at the site.

Don't operate your model aeroplane in the vicinity of overhead power cables, industrial sites, residential areas, public roads, school playgrounds or sports fields etc.

Pre-flight checks

Check that the radio control system works correctly and at full range before every flight: switch on the transmitter and receiving system, and ensure that all the control surfaces work smoothly, and deflect in the correct "sense" in relation to the stick movements.

If you are a beginner to this type of model flying, we recommend that you enlist an experienced model pilot to help you check and test-fly the model.

Please don't ignore our warnings. They refer to hazardous materials and processes which, if ignored, can result in fatal injury or serious damage to property.

Propellers powered by a motor constitute a permanent hazard and represent a real risk of injury. Don't touch them with any part of your body. For example, a propeller spinning at high speed can easily cut your finger badly.

Keep well clear of the rotational plane of the propeller or rotor. You never know when some part may come loose and fly off at high speed, hitting you or anybody else in the vicinity. In unfavourable circumstances this could result in serious injury. Ensure that the revolving propeller never comes into contact with any object.

Make sure that it is impossible for any object to stall or block the propeller.

Every time you intend to operate your model, check carefully that it and everything attached to it (e.g. propeller, tailplane etc.) is in good condition and undamaged. If you find a fault, do not fly the model until you have corrected it.

Radio interference caused by unknown sources can occur at any time without warning. If this should happen, your model will be uncontrollable and completely unpredictable. Never leave your radio control system unguarded, as other people might pick it up and try to use it.

Do not switch the electric motor on unless you have checked that there is nothing in the rotational plane of the propeller. Never attempt to stop the propeller when it is spinning. Electric motors with propellers fitted must only be run when firmly mounted.

If you are to fly your model safely and avoid problems, it is essential that you are aware of its position and attitude throughout each flight - so don't let it fly too far away. If you detect a control problem or interference during a flight, immediately land the model to prevent a potential accident. Model aeroplanes must always give way to full-size aircraft. Take-off and landing strips should be kept free of people and other obstacles.

Your HoTT COMPUTER RC system can only work reliably if the batteries are kept fully charged. Never use hot, faulty or damaged batteries. It is important to observe the instructions supplied by the battery manufacturer.

Please don't misunderstand the purpose of these notes. We only want to make you aware of the many dangers and hazards which can arise if you lack knowledge and experience, or work carelessly or irresponsibly. Provided that you take reasonable care, model flying is a highly creative, instructive, enjoyable and relaxing pastime.

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Manufacturer's declaration:

If material defects or manufacturing faults should arise in a product distributed by us in the Federal Republic of Germany and purchased by a consumer (§ 13 BGB), we, Graupner/SJ GmbH, D-73230 Kirchheim/Teck, Germany, acknowledge the obligation to correct those defects within the limitations described below.

The consumer is not entitled to exploit this manufacturer's declaration if the failure in the usability of the product is due to natural wear, use under competition conditions, incompetent or improper use (including incorrect installation) or external influences.

This manufacturer's declaration does not affect the consumer's legal or contractual rights regarding defects arising from the purchase contract between the consumer and the vendor (dealer).

Extent of the guarantee

If a claim is made under guarantee, we undertake at our discretion to repair or replace the defective goods. We will not consider supplementary claims, especially for reimbursement of costs relating to the defect (e.g. installation / removal costs) and compensation for consequent damages unless they are allowed by statute. This does not affect claims based on legal regulations, especially according to product liability law.

Guarantee requirements

The purchaser is required to make the guarantee claim in writing, and must enclose original proof of purchase (e.g. invoice, receipt, delivery note) and this guarantee card. The purchaser must send the defective goods to us at his own cost, using the address stated above.

The purchaser should state the material defect or manufacturing fault, or the symptoms of the fault, in as accurate a manner as possible, so that we can check if our guarantee obligation is applicable.

The goods are transported from the consumer to us and from us to the consumer at the risk of the consumer.

Duration of validity

This declaration only applies to claims made to us during the claim period as stated in this declaration. The claim period is 24 months from the date of purchase of the product by the consumer from a dealer in the Federal Republic of Germany (purchase date). If a defect arises after the end of the claim period, or if the evidence or documents required according to this declaration in order to make the claim valid are not presented until after this period, then the consumer forfeits any rights or claims from this declaration.

Limitation by lapse of time

If we do not acknowledge the validity of a claim based on this declaration within the claim period, all claims based on this declaration are barred by the statute of limitations after six months from the time of implementation; however, this cannot occur before the end of the claim period.

Applicable law

This declaration, and the claims, rights and obligations arising from it, are based exclusively on the pertinent German Law, excluding the norms of international private law, and excluding UN retail law.