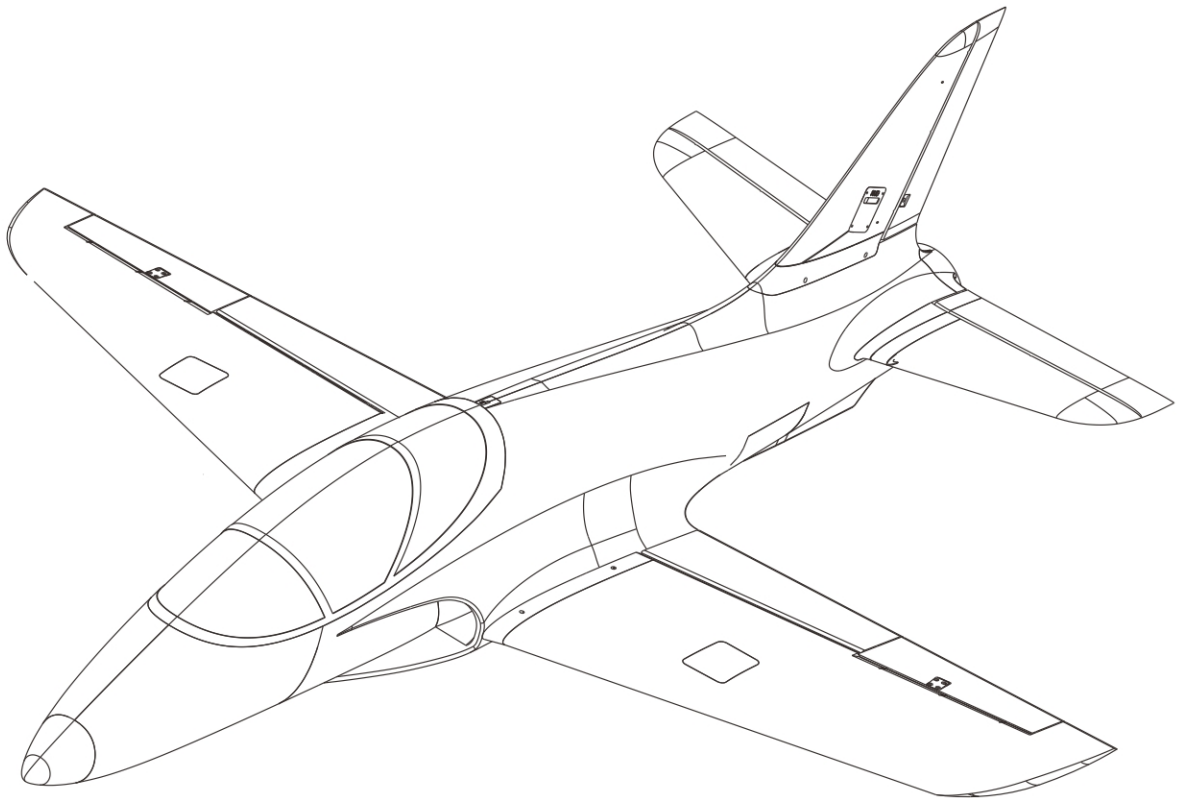


HSDJETS[®]

TURBOJET SUPER VIPER ASSEMBLY AND DEBUGGING GUIDE

V3.0



Product S/N:

Want to learn more about the product video,
pictures, and other matters of attention Please
log in: www.hsdr.com

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SUPER VIPER JET

Product Summary

Super Viper is a classic model that independently designed and developed by HSDJETS. In order to let pilots to enjoy a better flight experience, HSDJETS has always been pursuing a excellence, leading by example, leading the industry trend, and constantly upgrading products. This version is completely upgraded and optimized in appearance, structure, material, and control system, etc. In terms of appearance, the shape of the main parts such as the main wing and the fuselage are further optimized. In terms of structure, after careful calculation, unnecessary weight is removed and the structure is more reasonable and stronger now. In terms of material, in order to pursue more perfect flight performance, it will be upgraded again on the basis of the original material, including the main components such

as the fuselage, main wing, and elevator, all of which are made of high multiples of EPO foam. In terms of control, it is the biggest highlight of this product optimization upgrade. HSDJETS has invested in the independent development of an exclusive control system to fully integrate the landing gear, various channel servos, power, lighting and other systems to reduce complicated wiring. In order to take into account the beauty of the body and equipment cabin, the back line is used to hide all the connecting wires or wires below the second floor. Except the battery connection, the equipment cabin has no other wire material, it is clean and beautiful.

The new version of this Super Viper is coming up.

Kindly Note:

More about it, kindly check the link of HSDJETS website: www.hsdrc.com

Warm Prompt

The service life of the turbine is directly related to the operation environment and operation methods. The turbine uses the most streamlined structure to achieve the most extreme working state. Each spare part is designed and produced in the extreme, and the working conditions are extremely harsh.

Do not dismantle the inlet and spindle structures by yourself. In case the turbine is dismantled, it must be re-installed in accordance with the specifications to achieve the original performance. Arbitrary assembly will cause the turbojet body to lose balance, and high-speed operation will cause serious consequences.

Safety Instructions

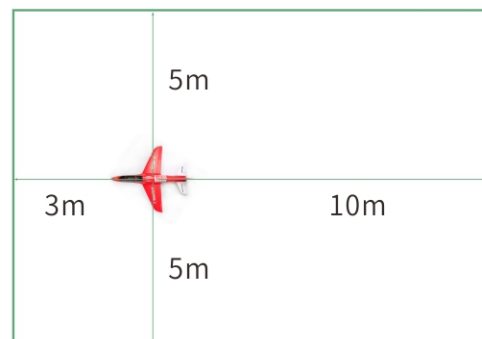
※ Please be sure to read the following safety instructions and prepare the emergency equipment before operation.

The micro-turbine is only use on the aircraft moel. The operating state of the turbine is in a high speed and high temperature, which is quite dangerous. Users must read the product instructions before using the turbine. be familiar with the operation procedures of various functions, and understand the safety risks that may result from wrong operations. Wrong operations or parameter settings may cause damage to the engine equipment and endanger to the personal safety. Please strict compliance with product operation regulations.

※ If you are operating the turbojet engine for the first time, please work with someone with experience.

1. Safe distance

The turbine works at a very high speed. All persons must keep a safe distance to the turbine when it is running. The turbine must keep a distance of three meters in front of it. A distance of five meters in the left and right sides, and a distance of ten meters should be kept in the rear due to there is high temperature and heat from the tail pipe.



Safety Instructions

2. Personal Safety Protection and Fire Emergency Equipment

Carbon dioxide extinguishers should be prepared at any time and placed within 2 meters of the engine. In case of danger, persons present can use it immediately. Dry powder fire extinguisher is strictly prohibited. If the powder is sprayed into the turbine, it will cause serious wear and tear of the turbine. Suggesting to use of soundproof earmuffs and goggles. The soundproof earmuffs can block the huge sound pressure and prevent hearing damage. After filling the turbine tank with fuel, the fuel equipment must be placed at a distance out of three meters. The goggles can prevent oil or foreign bodies from splashing.

Prepare fire extinguisher or powerful hairdryer and earmuffs.

Carbon dioxide extinguishers or the turbine dedicated power Hairdryer should be prepared at any time, and use earmuffs to block the huge sound pressure to prevent hearing damage.

It must be a carbon dioxide fire extinguisher.



OR



The turbine dedicated power Hairdryer

Recommend

+



Earmuffs(headset)

The pictures for reference only.

Dry powder fire extinguisher is strictly prohibited. If the powder is sprayed into the turbine, it will cause serious wear and tear of the turbine.

3. Turbine fuel and specialized lubricants

The kerosene or diesel oil can be used in the turbine, must mix with 5 % turbine special lubricant regardless when you use one of each of them. We recommend the use of Mobil Pegasus II turbojet special lubricant.

1 L = 0.8 kg, one pot mix with 20 L(16 kg)

Recommend



The pictures for reference only.

SUPER VIPER JET

Safety Instructions

4. Other security matters

※ When the engine is running, the air intake is like the vacuum. Do not draw your hand close to the air intake of the engine to prevent it from being inhaled. The air intake should be kept clear and the signal transmission wire should be properly fixed.

※ The engine inlet is suggested to be equipped with protective isolation net to prevent serious damage to the engine caused by foreign bodies.

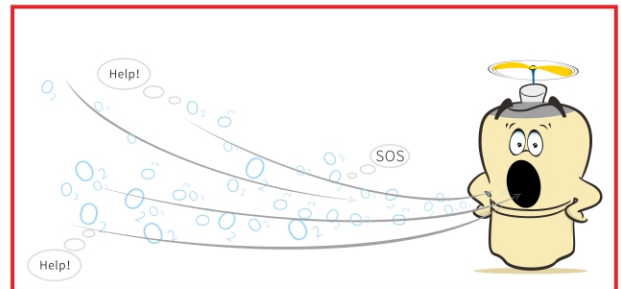
※ There will be a large amount of high temperature heat when the engine is working, and the exhaust temperature can be as high as 650 °C. Please pay attention to the insulation and protection measures of the surrounding equipment.

※ It is absolutely forbidden to start the turbine indoors. When the turbine is working, it will consume a lot of oxygen. It may cause suffocation of indoor personnel. The hot air and strong air flow that are discharged may ignite dry inflammable materials and blow debris.

※ The turbine jet's flying speed is extremely fast. It is necessary to pay attention to the distance of the operating airspace and the safety of civilian buildings and personnel and vehicles on the ground.

※ The turbine jet can easily reach speeds above 300km/h. Therefore, it is necessary to pay attention to the reliability of the aircraft's rudder surface. It is recommended that the aircraft should be equipped with wing deceleration or wheel braking equipment.

※ The AMA Association of the United States has a maximum speed limit of 320km/hr.

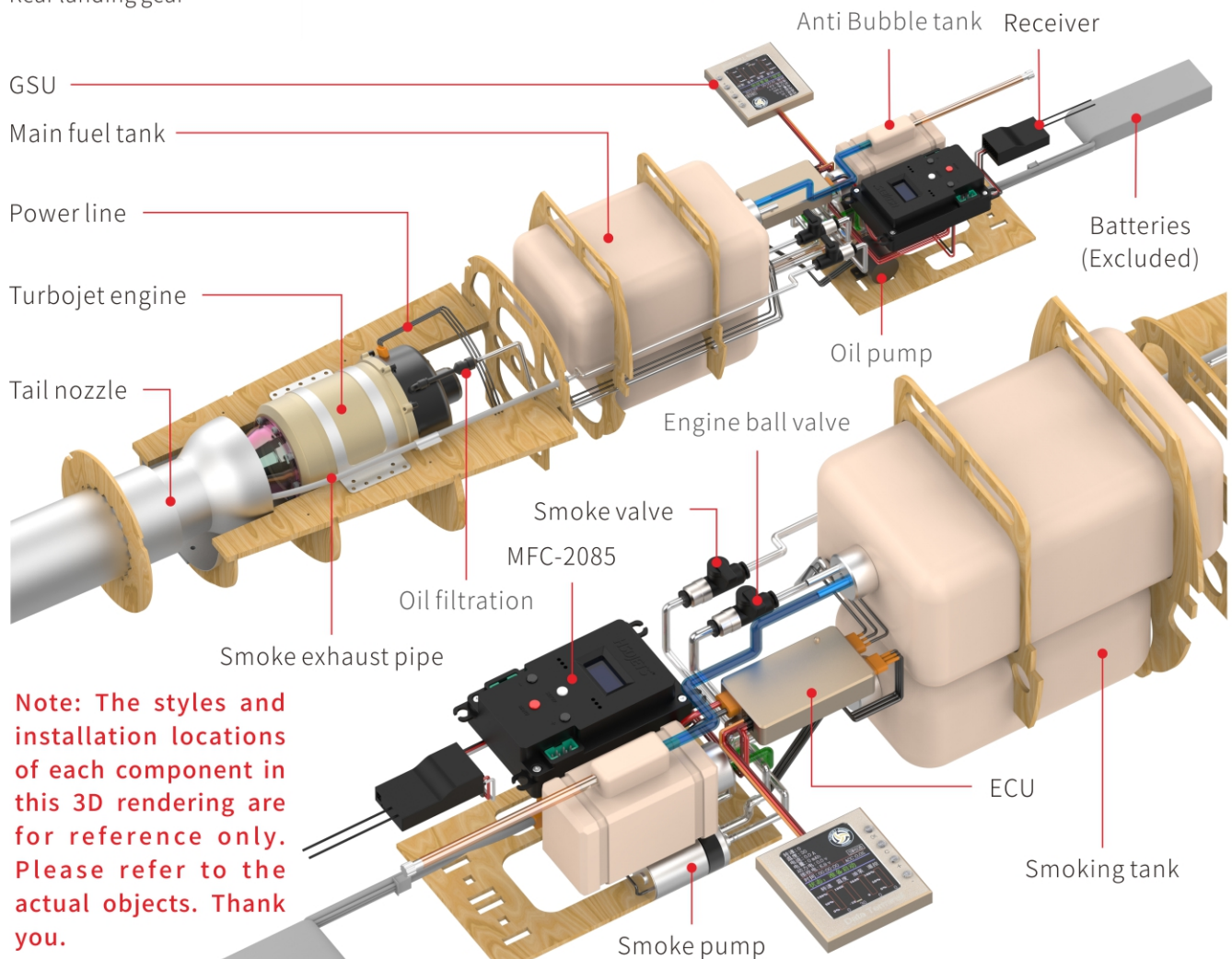
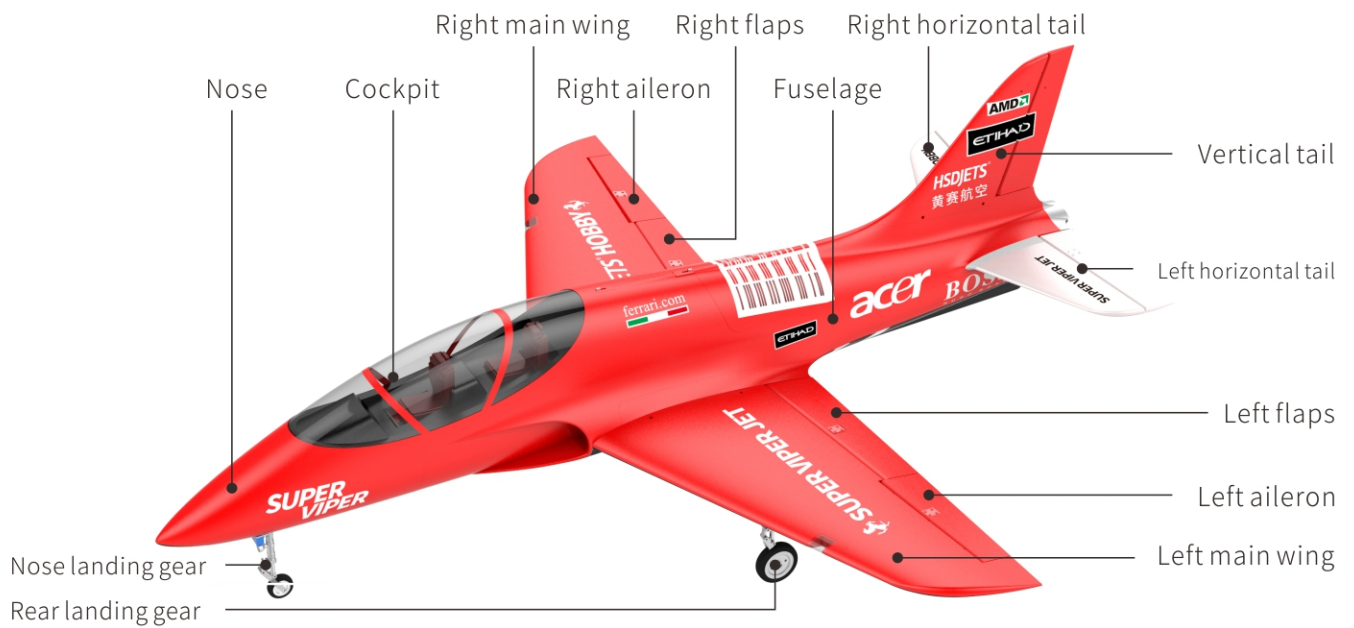


Special tip:

The service life of the turbine jet will be directly affected by the operate environment and operate mode. The turbine jet uses the most streamlined structure to achieve the most extreme operating state. Each spare part is designed and produced with high precision, and the rotating parts have undergone high-speed dynamic balance correction, as the working conditions are therefore extremely demanding. Users should not dismantle the turbine. Once the turbine is dismantled, it must be re-installed in accordance with the specifications to achieve the original performance. Arbitrary disassembly / assembly will cause the turbine body to lose balance. High speed operation can cause the leaf disintegration or damage to the combustion chamber or other severe consequences.

* Turbine manufacturers also do not provide any product safety and maintenance guarantees for users to disassemble / assemble by themselves.

Super viper description of each component

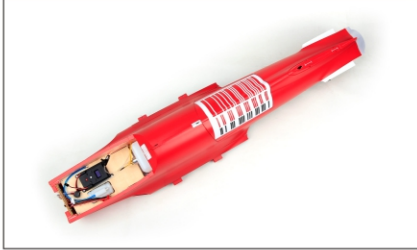


Note: The styles and installation locations of each component in this 3D rendering are for reference only. Please refer to the actual objects. Thank you.

SUPER VIPER JET

Super viper install instructions

1. Open the box(PNP version): Take the fuselage, left and right main wings, nose, cockpit, vertical tail, left and right flat tail, manual, wing reinforcement bar, flat tail reinforcement bar, decals, accessories package and other items in order. Check the packing items according to the packing item list in the manual. If there are any missing, please contact the dealer to make it up.



Fuselage×1



Left main wing×1



Right main wing×1



Nose×1



Cockpit×1



Vertical tail ×1



Left horizontal tail×1



Right horizontal tail×1

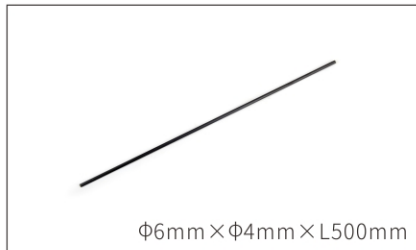


Manual×1



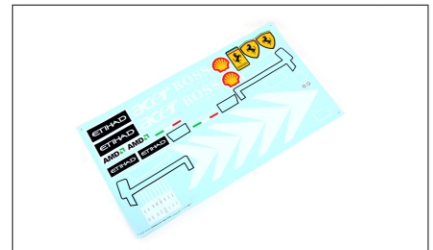
φ16mm×φ12mm×L598mm

Main wing reinforcement bar×1



φ6mm×φ4mm×L500mm

Horizontal tail reinforcement bar×1



Decals×1

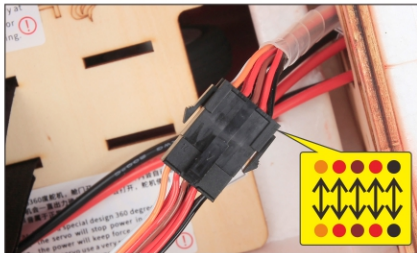
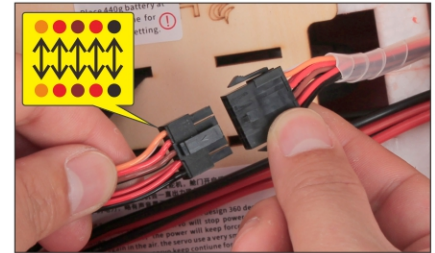
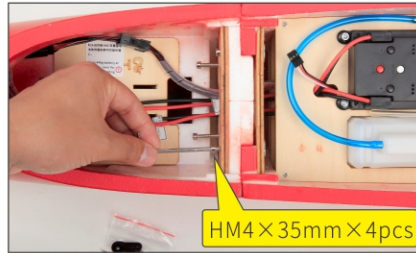
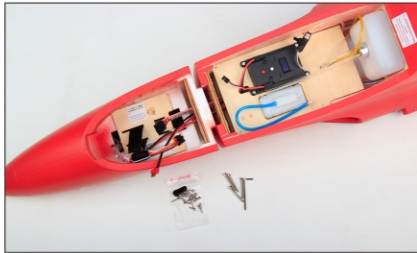


Accessories package×1

100mm signal line (JR male+JR male)×8pcs
 3mm Inner hexagonal wrench×1pcs
 HM3×14mm×2pcs
 HM4×35mm×4pcs
 HM3×10mm×2pcs
 HA3×14mm×4pcs
 HA3×8mm×8pcs

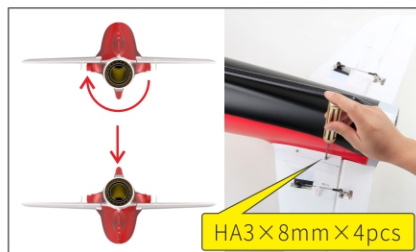
Super viper install instructions

2. Install the nose and fuselage: Take the nose and fuselage from the PE bags, and place them on a flat and clean table, make the four screw holes of the nose to match the corresponding four screw holes of the fuselage, and use screws(HM4 × 35mm × 4pcs) to fix. Then connect the signal wiring at the head end and the fuselage respectively. The color of the wire should connect with the same color and can not be inserted backwards. Note: If you want to be more secure, you can apply EPO glue to the contact section of the fuselage and screw it before fixing it.



Note: The color of the wire should connect with the same color and can not be inserted backwards.

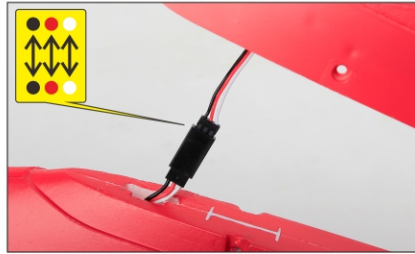
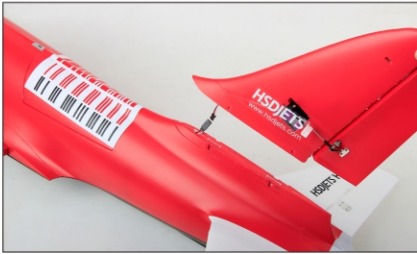
3. Install the left and right horizontal tails: First, the horizontal tail reinforcement bar(ϕ 6mm × ϕ 4mm × L500mm) is passed through the designated hole position of the fuselage and ensure that the length of the flat tail reinforcement rod at the left and right ends of the fuselage must be equal, and then fix the left and right horizontal tail to the bar, before fully fixing, the servo signal lines of fuselage side and horizontal tail side should be inserted. Note: wire color to color, can not be inserted backwards. After the installation is in place, it is fixed with a screw(HA3 × 8mm × 4pcs) (the screw is locked from the bottom of the aircraft, it is recommended to flip the aircraft 180 degrees fixed screw).



SUPER VIPER JET

Super viper install instructions

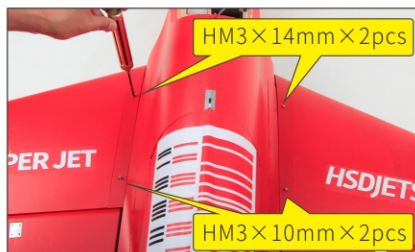
4. Install the Vertical tail: take the tail from the PE bag and install the tail in the designated position of the fuselage. Before fixing, insert the servo signal line of the tail side and the signal line of the fuselage side firstly. Note: The wire color is to same color, can not be inserted backwards; After the installation is in place, fix with the screws(HA3 × 8mm × 4pcs).



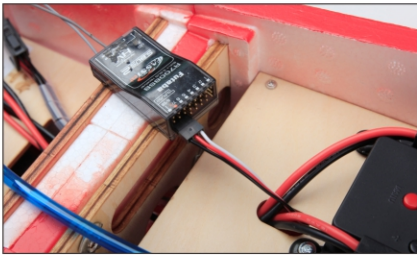
Note: The color of the wire should connect with the same color and can not be inserted backwards.



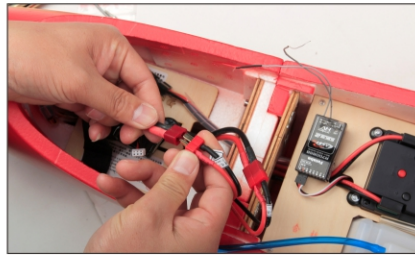
5. Install the main wing: make the main wing reinforcement rod($\phi 16\text{mm} \times \phi 12\text{mm} \times L598\text{mm}$) to pass through the designated hole position of the fuselage, and ensuring that the length of the main wing reinforcement rod at the left and right ends of the fuselage must be equal, and then fix the main wings. Before fully embedding, ensure to insert the signal lines of the main wing side end and the fuselage side. After installation, fix with the screw (HM3 × 14mm × 2pcs, HM3 × 10mm × 2pcs).



First test and adjustment after assembly



1. To find the S-BUS line at the location of the Super Integrated Control Box and connected to the receiver S-BUS port. (Note: If the receiver does not support S-BUS, the integrated control box needs to be connected to the PWM signal line connection;)



2. Connect the Super integrated control box with 2 sets of 2S lipo batteries;



3. Open the radio transmitter.



4. Super integrated control box start up. (For details on start up operations, kindly see the MFC-2085 multi-function flight controller system english menu introduction & quick entrance)

5. Check the Super Integrated Control Box S-BUS mode channel settings. The factory default channel is: S-BUS Setting

(Note: You can change the default gear switch position according to your own custom channel.)

- | | |
|------------------------|----------------------------------|
| 1.AUX1 CH(default CH1) | 7.AUX7 CH(default CH7) |
| 2.AUX2 CH(default CH2) | 8.AUX8 CH |
| 3.AUX3 CH(default CH4) | 9.A/B LIGHT CH (default CH3) |
| 4.AUX4 CH(default CH6) | 10.NAV,LIGHT CH (default CH9) |
| 5.AUX5 CH | 11.WHEEL BRAKE CH (default CH8) |
| 6.AUX6 CH(default CH3) | 12.LANDING GEAR CH (default CH5) |

6. Aileron test: Check whether the aileron action is correct

Right model throttle radio transmitter



Aileron standard action



Possible ailerons reverse action



Note: If there is no special explanation, this user guide is introduced by default with the right model throttle radio transmitter as an example.

When the aileron action is opposite to the specified action, you can adjust it with the 2 ways as below:

- (1). to find the reverse setting menu of servo in the radio transmitter menu, and switch in the aileron item to the forward direction.
- (2). Adjust directions of the aileron servo through the Super integrated control box (for details, pls see the MFC-2085 multi-function flight controller system english menu introduction & quick entrance);

SUPER VIPER JET

First test and adjustment after assembly

Aileron adjustment: After the setting, the standard position of the rudder surface will be adjusted. The aileron rudder surface should be in the same plane as the wing. If there is an upward or downward adjustment, it can be adjusted by physical adjustment or system adjustment;

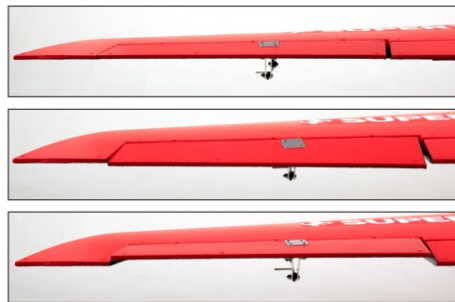
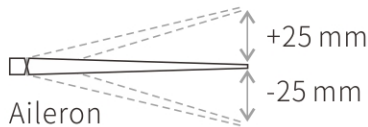
- (1). Physical adjustment: by adjusting the length of the pull rod to change the rudder surface angle to keep it in the same plane as the wing;
- (2). System adjustment A: fine-tuning by the radio transmitter;

- (3). System Adjustment B: Adjust the neutral point of the servo through the Super integrated control box (for details, pls see the MFC-2085 multi-function flight controller system english menu introduction & quick entrance);

The radio transmitter is recommended to use the 100 % amount of servo, adjusting the EXP curve under the same amount of servo, it recommends to adjust to 50 % EXP value in the first time; Can adjust according to the personal operating habits.



Suggest the amount of servo:



7. Elevation test: Check whether the elevate action is correct

Right model throttle radio transmitter

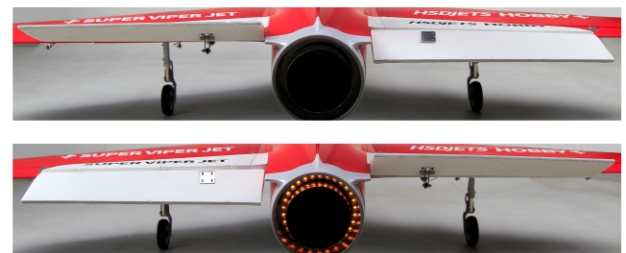
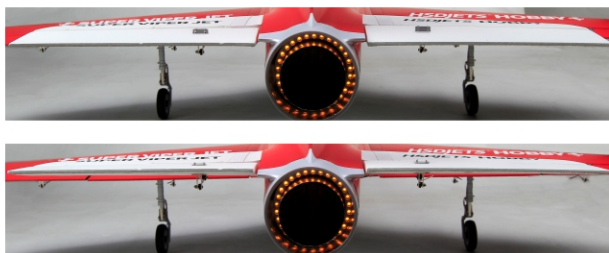


Elevation standard action



Note: If there is no special explanation, this user guide is introduced by default with the right model throttle radio transmitter as an example.

Possible elevation reverse action



When the elevate action is opposite to the specified action, you can adjust it with the 2 ways as below:

- (1). to find the reverse setting menu of servo in the radio transmitter menu, and switch in the elevate item to the forward direction.
- (2). Adjust directions of the elevate servo through the Super integrated control box (for details, pls see the MFC-2085 multi-function flight controller system english menu introduction & quick entrance);

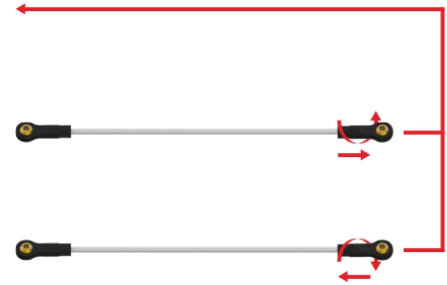
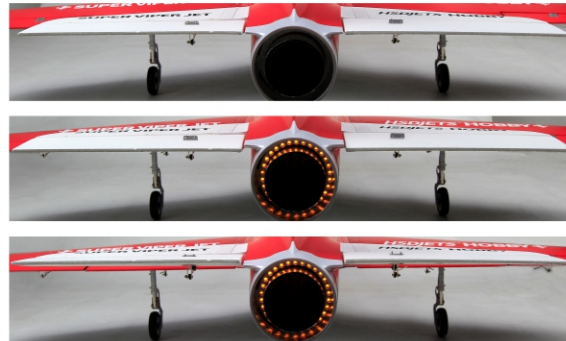
First test and adjustment after assembly

Elevation adjustment: After the setting, the standard position of the rudder surface will be adjusted. The elevate rudder surface should be in the same plane as the horizontal tail. If there is an upward or downward adjustment, it can be adjusted by physical adjustment or system adjustment;

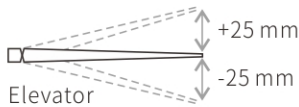
- (1). Physical adjustment: by adjusting the length of the pull rod to change the rudder surface angle to keep it in the same plane as the wing;
- (2). System adjustment A: fine-tuning by the radio transmitter;

- (3). System Adjustment B: Adjust the neutral point of the servo through the Super integrated control box (for details, pls see the MFC-2085 multi-function flight controller system english menu introduction & quick entrance);

The radio transmitter is recommended to use the 100 % amount of servo, adjusting the EXP curve under the same amount of servo, it recommends to adjust to 50 % EXP value in the first time; Can adjust according to the personal operating habits.



Suggest the amount of servo:



8. Direction test: Check whether the direction action is correct

Direction standard action

Right model throttle radio transmitter



Note: If there is no special explanation, this user guide is introduced by default with the right model throttle radio transmitter as an example.

SUPER VIPER JET

First test and adjustment after assembly

Possible direction reverse action

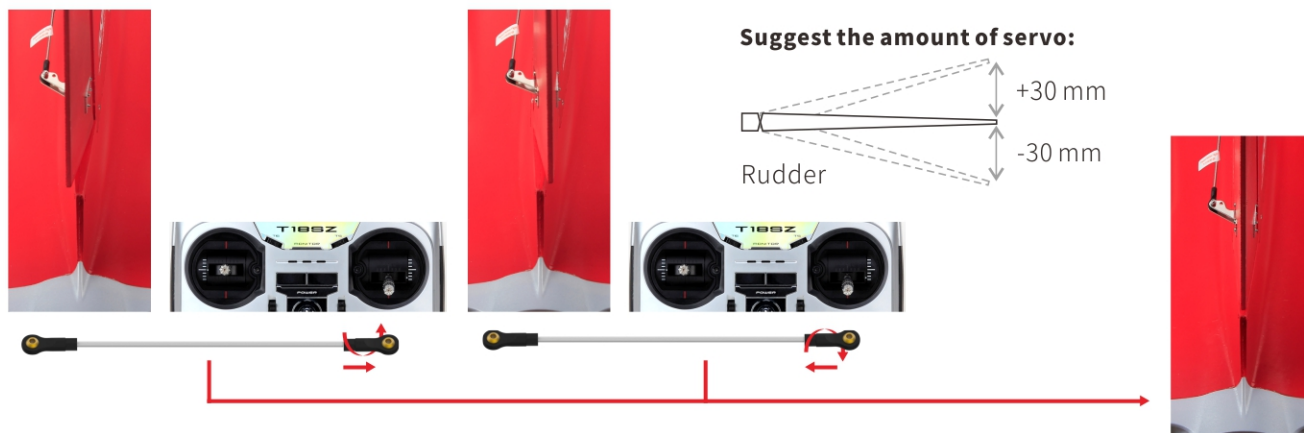


When the direction action is opposite to the specified action, you can adjust it with the 2 ways as below:

- (1). to find the reverse setting menu of direction in the radio transmitter menu, and switch in the direction item to the forward direction.
- (2). Adjust directions of the direction servo through the Super integrated control box (for details, pls see the MFC-2085 multi-function flight controller system english menu introduction & quick entrance);

Direction adjustment: After the setting, the standard position of the rudder surface will be adjusted. The direction rudder surface should be in the same plane as the vertical tail. If there is a left or right deviation need to be adjusted to vertical center, it can be adjusted by physical adjustment or system adjustment;

- (1). Physical adjustment: by adjusting the length of the pull rod to change the rudder surface angle to keep it in the same plane as the wing;
 - (2). System adjustment A: fine-tuning by the radio transmitter;
 - (3). System Adjustment B: Adjust the neutral point of the servo through the Super integrated control box (for details, pls see the MFC-2085 multi-function flight controller system english menu introduction & quick entrance);
- The radio transmitter is recommended to use the 100 % amount of servo, can adjust according to the personal operating habits.
- The front landing gear steering is adjusted with the direction of the rudder surface. If you need to adjust one of them alone, it can be completed by adjusting the neutral point of the servo through the Super integrated control box. (for details, pls see the MFC-2085 multi-function flight controller system english menu introduction & quick entrance);



First test and adjustment after assembly

9. Flap test: Check whether the flap action is correct

Flap standard action

Right model throttle radio transmitter



Note: If there is no special explanation, this user guide is introduced by default with the right model throttle radio transmitter as an example.

Possible flap reverse action

The flap compensation:
Factory default compensation 5%,
customers according to their own needs can be increased or reduced;

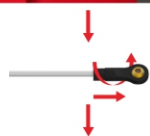


When the two flaps don't move in the same direction: adjust directions of the flap servo through the Super integrated control box (for details, pls see the MFC-2085 multi-function flight controller system english menu introduction & quick entrance);

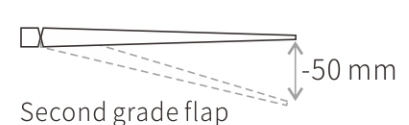
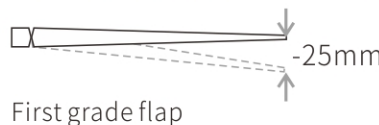
Flaps adjustment: After the setting, start checking the flaps rudder surface, if the angles of the flaps rudder surface are consistent in first grade, and whether the angles of the flaps rudder surface are consistent in second grade. If the angles of the rudder surfaces on both sides are inconsistent, it can be adjusted by physical adjustment or system adjustment;

(1). Physical adjustment: by adjusting the length of the pull rod to change the angle of the rudder surface to keep it at the same angle as the two rudder surfaces;

(2). Through the Super integrated control box to adjust the wing steering gear stroke to solve (for details, pls see the MFC-2085 multi-function flight controller system english menu introduction & quick entrance); The radio transmitter is recommended to use the 100% amount of servo, can adjust according to the personal operating habits.



Suggest the amount of servo:



SUPER VIPER JET

First test and adjustment after assembly

10. Landing gear testing and adjustment:

Note: The Super integrated control box insert a avoid error retraction program. After each power on, the landing gear retraction function is used for the first time. It is necessary to move the landing gear switch of the radio transmitter back and forth to remove the avoid error retraction program;

Check whether the landing gear is working properly. If the landing gear retract, the landing gear lamp is open, indicating that the landing gear is the opposite, the reason is the positive and negative pole lines of the electric retraction are reverse inserted. It is necessary to replace the positive and negative poles of the electric retraction from the Super integrated control box (for details, pls see the MFC-2085 multi-function flight controller system english menu introduction & quick entrance);

If the three are not in the same step and one up and two down or two up and one down, to change the insertion of positive and negative poles to solve.(for details, pls see the MFC-2085 multi-function flight controller system english menu introduction & quick entrance);

MFC-2085 Super Integrated Control Box has a one-click retractable landing gear function (for details, pls see the MFC-2085 multi-function flight controller system english menu introduction & quick entrance);



Standard landing gear action

Possible landing gear reverse action



First test and adjustment after assembly

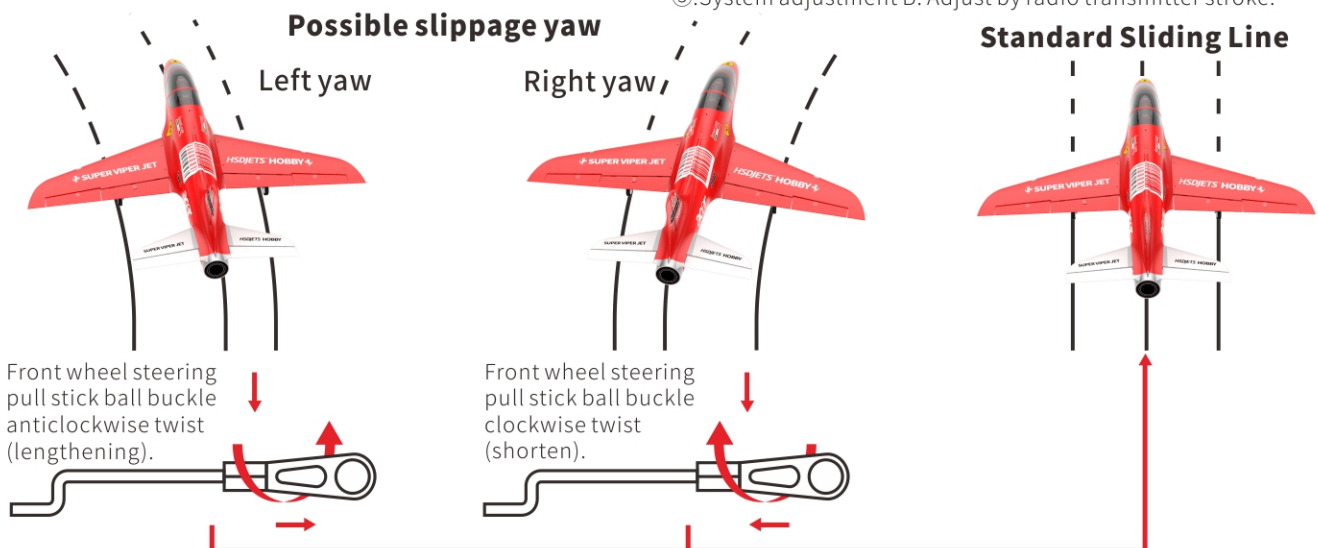
11. Ground test and adjustment: After the above process is gradually completed, power the plane and do straight slide test to check whether the stroke volume of the front steering servo is full. If the steering is yaw or the steering angle is too large, it can be adjusted by physical adjustment or system adjustment:

(1).Steering yaw adjustment:

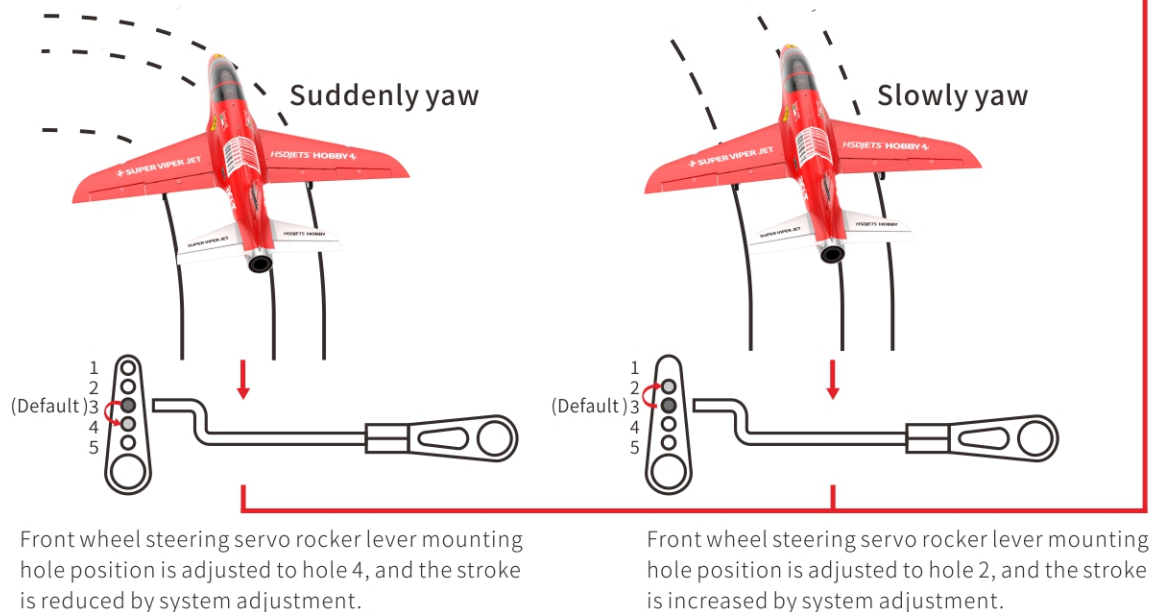
- ①. physical adjustment: Complete it by adjusting the length of the front wheel steering rod;
- ②. System Adjustment A: Adjust the servo stroke by the Super Integrated Control Box(for details, pls see the MFC-2085 multi-function flight controller system english menu introduction & quick entrance);
- ③.System adjustment B: Adjust by radio transmitter stroke.

(2).Excessive adjustment of steering angles:

- ①.Physical adjustment: adjust the install holes of the pull rod in the rocker arm of the steering servo of the front wheel;
- ②.System Adjustment A: Adjust the servo stroke through the Super Integrated Control Box(for details, pls see the MFC-2085 multi-function flight controller system english menu introduction & quick entrance);
- ③.System adjustment B: Adjust by radio transmitter stroke.



The skid yaw angle over or smaller may happened during the operation



SUPER VIPER JET

First test and adjustment after assembly

12. Pre-takeoff center of gravity test: Before the aircraft takes off, it is necessary to confirm whether the center of gravity of the aircraft is correct. The center of gravity of the Super snake is located behind the front edge of the main wing: 170mm.



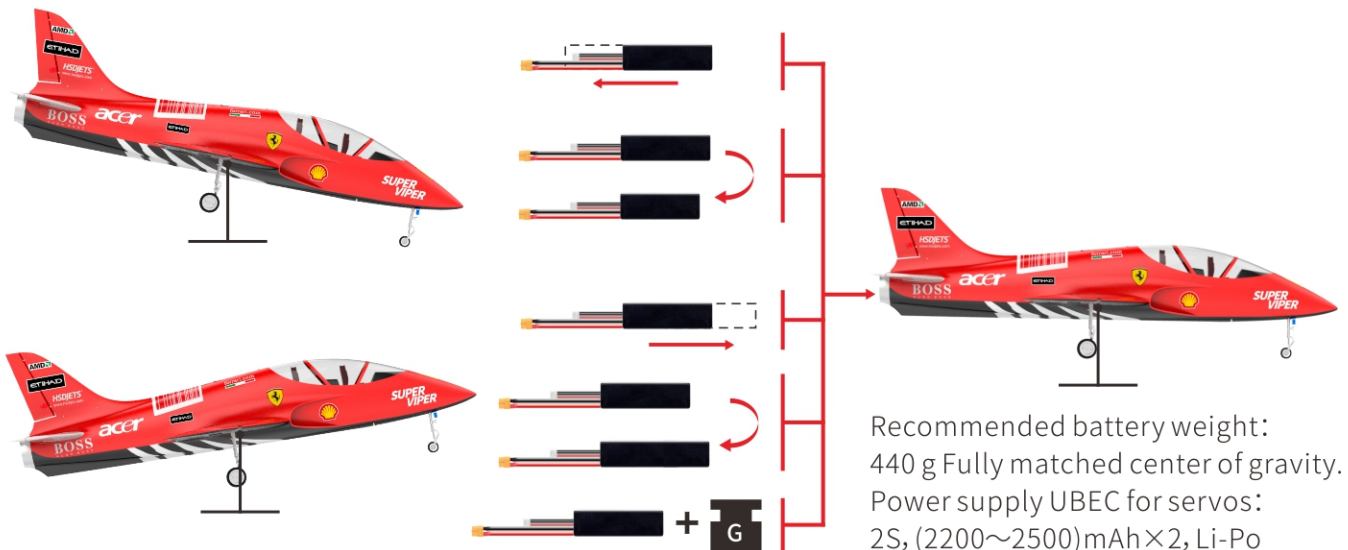
A general method for testing the center of gravity.



Center of gravity adjustment: If the center of gravity position is not correct, it must be adjusted. There are generally two situations:

A, the nose is overweight (the nose of the aircraft is drooping during the center of gravity testing on the ground), can move the battery back to the tail or replaced with a smaller capacity battery that within the scope of the aircraft's electricity demand;

B, the nose is too light (the nose of the aircraft is upwards during the center of gravity testing on the ground), move the battery forward to the nose or replaces the larger capacity battery that within the scope of the aircraft's electricity demand;

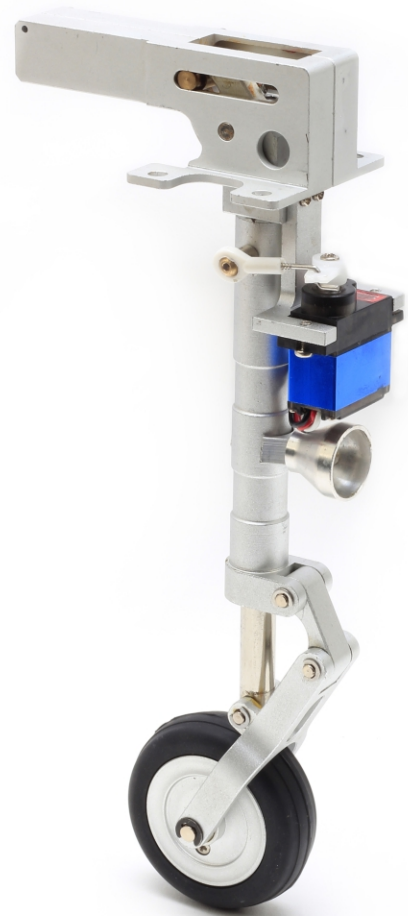
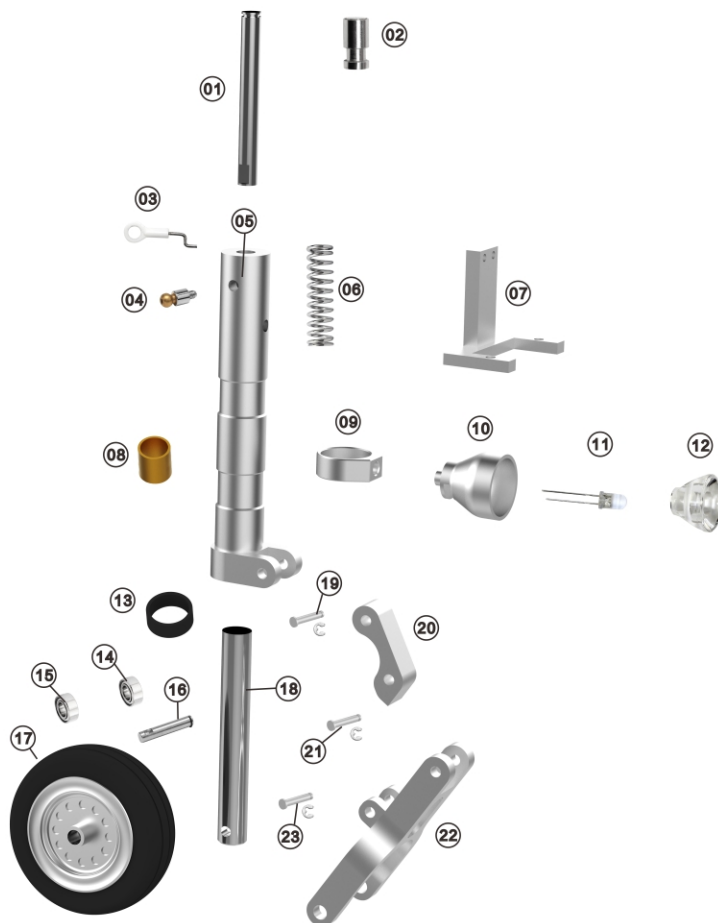
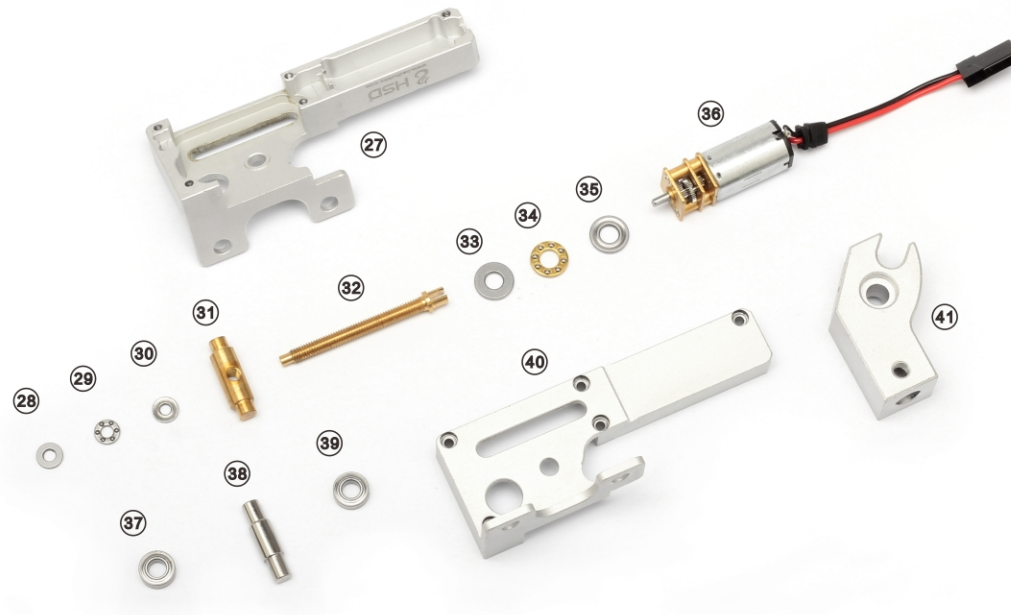


SUPER VIPER JET

Super viper landing gear decomposition graph



Super viper landing gear decomposition graph



Turbojet super viper specification and configuration

Specifications:

Wingspan	1500mm / 59.05in
Length	1663mm / 65.47in
Take off weight	6500g / 229.28oz
Recommended engine thrust	6~7 Kg / 13.2~15.4 lb
Crusising speed	250km/h
Flying time	About 5 minutes. (Full throttle)
Main wing area	43.8 dm ²
Loading of airfoil surface	148.4g/dm ²
Main material	EPO
Painting surface	Matte paint
Suitable experience level	<input type="checkbox"/> Zero basis <input type="checkbox"/> Beginner <input type="checkbox"/> Intermediate <input checked="" type="checkbox"/> Advanced
Pnp assembly difficulty	<input type="checkbox"/> ☆(10mins) <input type="checkbox"/> ★(20mins) <input checked="" type="checkbox"/> ★☆(30mins) <input type="checkbox"/> ★★(60mins) <input type="checkbox"/> ★★★(120mins)
Operate suitable for age	Above 18 years of age
Working temperature	0°C ~ 40°C

Configuration:

Remote control channel	8CH (This product does not contain remote control and receiver)
Control system	MFC-2085
Servo	25g×7 PCS, 12g×2 PCS
Recommended battery	2S / 2200~2500 mAh×2 PCS Li-Po T Plug (This product does not contain any batteries)
Aileron	Yes
Flaps	Yes
Horizontal tail	Yes
Vertical tail	Yes
Smoke on system	Yes
LED light system	Yes
Electromagnetic Brake	Yes
Reinforced gyro	Selective configuration

🌐 www.hsdrc.com www.hsdgo.com

✉ hsd@hsdjetshuangasai.com

📍 Company address : HSDIndustry Park, Aigang Industry District, Huaide, Humen Town, Dongguan City, Guangdong Province,China (Post: 523926)

📍 Production address : Building F6, Standardized Factory Buildings , Xixiu Industrial Park, Xixiu District, Anshun City, Guizhou Province,China (Post: 561099)



扫码关注，谢谢支持！