FUN IS ALL THE RAGE
RAGE RC

MDF
MICRO DUCTED FAN SERIES

F-16



Micro Ducted Fan Airplane with PASS (Pilot Assist Stability Software) System

Specifications:

Wingspan	12.25” (311mm)
Length	16.38” (416mm)
Weight with Battery	4.1oz (116g)
Motor	1112/11000Kv Brushless
Battery	2S 7.4v 550mAh 35C Lipo
Transmitter (RTF Version only)	4-ch, 2.4GHz system with 3-position PASS switch and Stunt Button
Airplane Control	3-Channels - throttle, aileron,and elevator
Aileron Control	2g servo
On-Board-Electronics	2.4GHz receiver w/ gyro and integrated 2-gram servo (elevator)

Safety Precautions

Age Recommendation; 14 years and up. This is not a toy.

As the owner and/or operator of this plane, you are responsible to make sure that injury to others or damage to property is avoided.

Make sure that you are familiar with the entire instruction manual before operation.

Battery Warnings

Important Notice: Mishandling of LiPo batteries can result in fire, personal injury and/or property damage!

- Ensure that batteries are properly charged before flying.
- If at any time that battery begins to balloon or swell, discontinue use immediately.
- Always store batteries at room temperature in a dry environment.
- Do not store or transport your LiPo batteries in direct sunlight or in a hot vehicle.
- Make sure to inspect all batteries before charging and do not charge damaged batteries.
- Always disconnect the battery after charging and allow the charger to cool before the next charge.
- Never leave charging batteries unattended.
- Never charge batteries in extremely hot or cold temperatures, near combustible materials, or in direct sunlight.

Box Contents

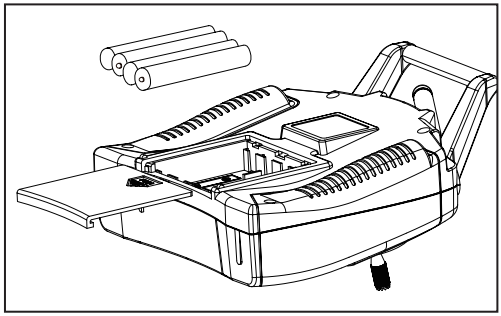


Charging Instructions

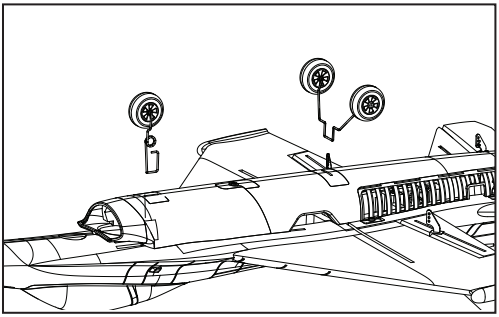


1. Unplug the battery from your plane.
2. Plug the charger into the USB port on your computer or USB adapter.
3. Connect battery to the charger.
4. The charging process may take up to 3 hours. As a safety precaution, never charge the battery for longer than 4 hours. The red LED will light up solid when the charger is plugged into a power source. The LED will flash when a battery is plugged in, indicating it is charging. The LED will turn off when the charging cycle is complete.

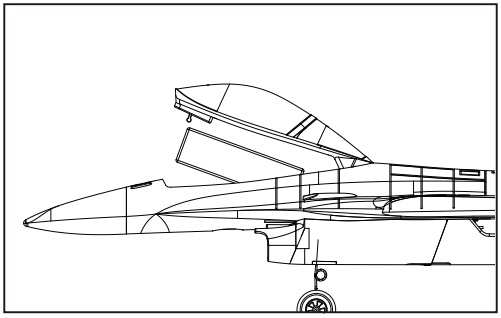
Setup Instructions



1. Install 4 AA batteries (included) in the transmitter.

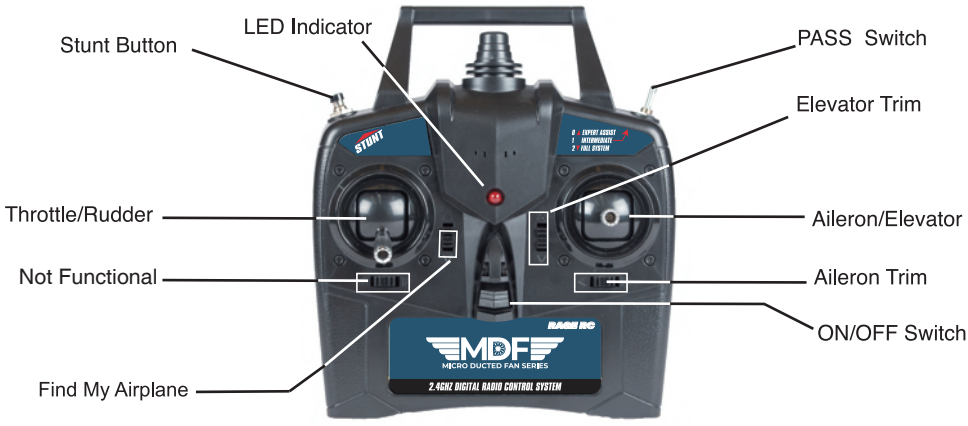


2. Install the landing gear into the wings as shown above, press until gear clicks into place.



3. Connect the battery to the receiver, then push the battery into the fuselage.

Transmitter Layout

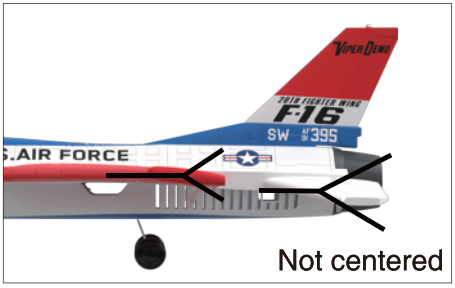


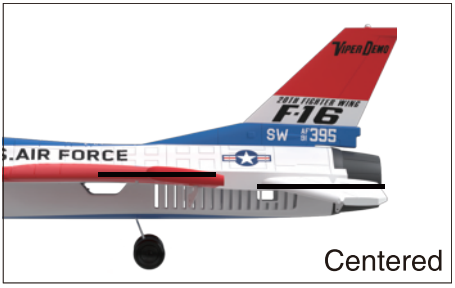
Centering Control Surfaces

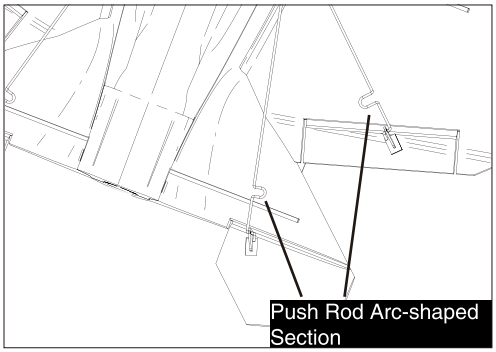
NOTE: Turn the PASS switch off (expert mode) before you complete the steps below. See more information in "PASS System" section.

With the transmitter turned on and the battery connected to the ESC (and installed in the battery compartment), it is now possible to check the center of all control surfaces.

NOTE: Make sure that all digital trims on the transmitter are centered before making manual adjustments.







If the aileron is not properly centered, adjust the push rod length by bending the arc-shaped section slightly with needle nose pliers until the aileron is centered.

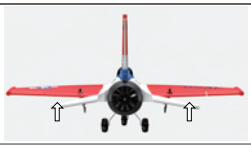
Please Note: It is unlikely that you will need to make these adjustments to your new model. Any final adjustments can be made with the trim buttons as shown on page 6.

Arming the Motor

To prevent damage to the aircraft and surroundings, the throttle channel is locked each time the transmitter is turned on. Follow the instructions below to unlock the throttle and arm the motor.

CAUTION: Raise the throttle stick up to max position until you hear a "beep" sound. Then pull the throttle stick down to min position until you hear a second "beep" sound. The motor is now armed. When the throttle stick is raised again the motor will start.

Checking Control Movement

Transmitter Operaton	Reaction
Aileron Stick	
Aileron Stick	

Make sure the airplane is in neutral flying position. With the aircraft power on and PASS set at Expert Assist, check the elevator and aileron response as shown above.

Swing The Plane	PASS Reaction
	
	

With the aircraft power on and in either Full or Partial Assist, check the aileron and elevator response as shown above.

PASS System Control

0 - Away From You - Expert Assist
1 - In the Middle - Partial Assist (MID)
2 - Towards You - Full Assist (BEGINNER)



The PASS System comes pre-installed in the airplane to help make flying a smoother experience. In either assist mode, the PASS System greatly reduces stress on the pilot and makes the plane easier and even more fun to fly.

The PASS System has 3 levels of control.

Full Assist (switch toward pilot) In this position the bank and dive angles of the airplane are greatly restricted and the plane will return to level flight when the sticks are released.

Partial Assist (switch in middle) In this position the bank and dive angles are increased, but the plane still returns to level flight when the sticks are released.

Expert Assist (switch away from pilot) This position utilizes gyro mixing without wing-leveling, providing basic stabilization, while allowing expert pilots more overall control of the airplane.If orientation or control is lost, simply switch to one of the other 2 assist modes to regain control.

Binding Instructions

Binding is the process of programming the receiver to recognize the GUID (Globally Unique Identifier) code of a single specific transmitter. When a receiver is bound to a transmitter, the receiver will only respond to that specific transmitter. If you need to rebind for any reason, please follow the steps below.

1. Keep the transmitter switched OFF with the throttle stick at bottom position.
   NOTICE: Keep PASS switch at Partial or Full assist position.
   NOTICE: Make sure you keep the plane still in a calm, stable position when initializing the PASS system.
2. Connect the battery to the plane, then turn on the transmitter within 5 seconds.
3. The receiver LED will flash for 3 to 8 seconds before binding automatically.
4. After the receiver LED stops flashing, the binding process is complete and you are ready to fly.

Digital Trim



Digital trims allow you to adjust the center position of the ailerons and elevator surfaces. Each time a trim button is pressed in either direction, the servo output for that surface will adjust slightly. If the trim button is held in place, the output for that surface will move in that direction until the trim button is released or the output reaches its end. When you hear the longer “beep” sound, the trim is centered.

Pass System Calibration



1. Make sure the airplane is set in level flying position. Note that the tail of the airplane needs to be propped up to make the wings level.
2. Lower the throttle stick to min (low) position.
3. Turn on the transmitter and plug in the battery to power on the airplane
4. Do NOT unlock the throttle at this point.
5. Hold the sticks as shown for several seconds.
6. When you hear a “beep” sound, it means the PASS system is calibrated based on the position of the airplane.

NOTE: This process is only required if the model is not performing properly when in PASS mode. Perform this with the airplane held in a level flying position.

NOTE: The aircraft has been calibrated at the factory. You don’t actually need to calibrate again. We suggest that you only calibrate when you are sure that the PASS system is not working correctly.

Flight Checklist

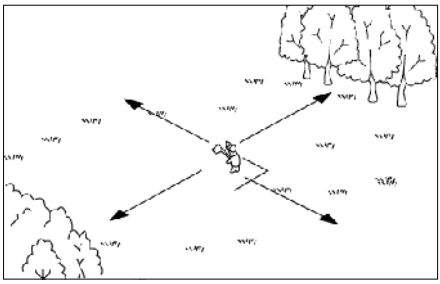
IMPORTANT NOTE: Although this section can be used as a quick start guide, we strongly suggest that you read the entire manual before proceeding. This checklist is NOT intended to replace the content included in this instruction manual.

- Always turn the transmitter on first.
- Ensure the throttle control stick is at bottom position before connecting the battery.
- Fly the model (hand-launch or take off from a flat/level surface).
- Land the model (on a flat/level surface).
- Unplug the battery from airplane.
- Always turn off the transmitter last.

Find a Flying Field

Based on the size and weight of the plane it is typically considered to be a "park flyer" class airplane. As a result it is best to fly the plane at a local park, schoolyard, flying field or other area that is large enough and free of people and obstructions. We recommend and area the size of at least one football/soccer field. However, even larger areas are better suited and preferred especially when learning how to fly. Do NOT fly in parking lots, crowded neighborhood areas or in areas that are not free of people or obstructions.

We also suggest flying over grass as it is a much more forgiving surface that causes less damage in the unfortunate event of a crash. Short grass is better for takeoffs and landings as grass that is too long can cause the airplane to nose-over/flip and be damaged. An ideal flying area allows for takeoffs and landings on a smoother surface (such as asphalt) and flying over grass.



Flying Conditions

It is typically best to fly on days that are calm without wind, especially when learning how to fly. It is strongly suggested flying only in calm conditions until you are familiar with the controls and handling of the model. Even light winds can make it much more difficult to learn to fly, and in some cases can even carry the model beyong your line of sight. Also, if you are a first-time or low-time pilot, we highly recommend that you allow a more experienced pilot to test fly and properly trim the model before attempting your first flight.A proven flyable and properly trimmed model is significantly easier and more enjoyable to fly. After you have properly trimmed the airplane in calm conditions and become familiar with its handling/capabilities you will be able to fly in light winds or depending on your experience and comfort level, in winds up to 5 to 7 mph.

Do NOT fly on days when significant moisture, such as rain or snow, is present.

Stunt Function Button

The stunt button allows the pilot to perform a roll or loop automatically when flying in either PASS assist mode. As shown in the below diagrams, while flying in either mode, press the stunt button on the left shoulder of the transmitter and you will hear several beeps. While the transmitter is beeping, simply move the aileron stick either direction for auto-roll or move the elevator stick to "up elevator" (stick down) to perform a loop.

NOTE: the Stunt function will not be enabled when flying in Expert Assist position.





Press the Stunt Function Button then move the aileron stick in either direction to auto-roll the aircraft. After completing the roll the aircraft will return to level flight.



Press the Stunt Function Button then move the elevator stick down (up elevator) to auto-loop the aircraft. After completing the loop the aircraft will return to level flight.

Important Signal Alerts

Signal Loss Alert

When the airplane begins to fly out of the range of the transmitter signal, or there is signal interference in the area, the transmitter will beep 4 times together as an alert and continue that pattern. When that pattern of beeps is heard, return the airplane back into range of the signal as soon as possible.

Flight Battery Alert

When the flight battery is low on power, both the transmitter and receiver will beep continuously to alert the pilot. Return the airplane as soon as possible to replace or charge the flight battery before the next flight.

Transmitter Battery Alert

When the transmitter batteries are low on power, the transmitter LED will begin flashing and beep once at a time in a pattern. When you hear a pattern of one beep at a time, return and land the airplane as soon as possible to replace the transmitter batteries.

Find My Plane

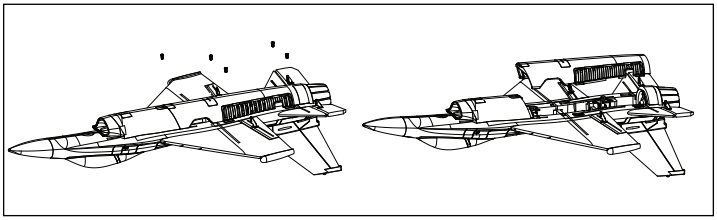
When the airplane has crashed and cannot be found, press and hold the Find My Airplane button for 3 seconds until there is a beeping sound. The beeping indicates that Find My Airplane has been activated and the airplane will continue to beep 4 times repeatedly. Follow the sound to locate the airplane. **Note that the airplane power must be on for this function to work.**

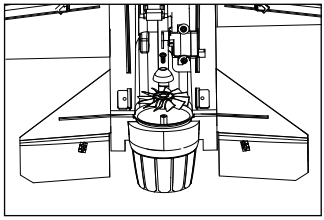


Fan Blade Replacement

Follow the below steps to replace a broken fan blade. You will need to use a Phillips screwdriver and a pliers (not included).

1. Using the screwdriver, loosen the screws on the vent cover and remove it from the aircraft.
2. Loosen the screw from the spinner and remove the spinner and broken fan blade.
3. Replace the broken fan blade and reassemble the parts by reversing the steps.





Replacement Parts

Item Number	Description
RGRA1700	F-16 Ducted Fan Jet RTF
RGRA1701	F-16 Ducted Fan Jet RFRT (Rage)
RGRA1720	Printed Fuselage
RGRA1721	Printed Tail Unit
RGRA1722	Nose Cone
RGRA1723	Bottom Fuselage Cover
RGRA1724	1112/11,000Kv Brushless Motor
RGRA1725	15A BL ESC with XT-30
RGRA1726	4-ch RX Board with Gyro & Servos
RGRA1727	2g Aileron Servo
RGRA1728	Complete EDF Unit
RGRA1729	EDF Blade
RGRA1730	Full Push Rod Set
RGRA1731	Landing Gear
RGRA1732	2S 7.4V 550mAh 35C LiPo with XT-30
RGRA1733	2.4GHz Transmitter
RGRA1732	2S LiPo USB Charger
RGRA1652	Servo Horns (Set of 4)

See your local hobby shop or place of purchase first. If unavailable, parts can be ordered direct at www.ragerc.com or call 1-866-724-3811 M-F 9:00-5:00PM Mountain Time.

Limited Warranty

Warranty Period: Rage R/C warrants that the Micro Ducted Fan Series (“Product”) will be free from original factory defects in materials and workmanship upon purchase (“Warranty Period”). What is Not Covered - This warranty is not transferable and does not cover (a) cosmetic damage, (b) damage due to acts of God, accident, misuse, abuse, negligence, commercial use, or due to improper use, installation, operation or maintenance, (c) modification to any part of the Product, (d) attempted service by anyone other than a Rage R/C authorized service center, or (e) Product not purchased from an authorized Rage R/C dealer.

OTHER THAN THE EXPRESS WARRANTY ABOVE, RAGE R/C MAKES NO OTHER WARRANTY OR REPRESENTATION, AND THREFORE DISCLAIMS ANY AND ALL IMPLIED WARRANTIES, INCLUDING, WITHOUT LIMITATION, THE IMPLIED WARRANTIES OF NON-INFRINGEMENT, MERCHANTABILITY AND SUITABILITY FOR A PARTICULAR PURPOSE. THE PURCHASER ACKNOWLEDGES THAT THEY ALONE HAVE DETERMINED THAT THE PRODUCT WILL MEET THE REQUIREMENTS OF THEIR INTENDED USE.

Purchaser’s Remedy - Rage R/C’s sole obligation and purchaser’s sole and exclusive remedy shall be that Rage R/C will, at its option, either (a) service, or (b) replace, any Product determined by Rage R/C to be defective. Rage R/C reserves the right to inspect any and all Product(s) involved in a warranty claim. Service or replacement decisions are at the sole discretion of Rage R/C. Proof of purchase is required for all warranty claims. SERVICE OR REPLACEMENT AS PROVIDED UNDER THIS WARRANTY IS THE PURCHASER’S SOLE AND EXCLUSIVE REMEDY.

Limitation of Liability - RAGE R/C SHALL NOT BE LIABLE FOR SPECIAL, INDIRECT, INCIDENTAL OR CONSEQUENTIAL DAMAGES, LOSS OF PROFITS OR PRODUCTION OR COMMERCIAL LOSS IN ANY WAY, REGARDLESS OF WHETHER SUCH CLAIM IS BASED IN CONTRACT, WARRANTY, TORT, NEGLIGENCE, STRICT LIABILITY OR ANY OTHER THEORY OF LIABILITY, EVEN IF RAGE R/C HAS BEEN ADVISED OF THE POSSIBILITY OF SUCH DAMAGES.

Further, in no event shall the liability of Rage R/C exceed the individual price of the Product on which liability is asserted. As Rage R/C has no control over use, setup, final assembly, modification or misuse, no liability shall be assumed nor accepted for any resulting damage or injury. By the act of use, setup or assembly, the user accepts all resulting liability. If you as the purchaser or user are not prepared to accept the liability associated with the use of the Product, purchaser is advised to return the Product immediately in new and unused condition to the place of purchase.

Law - These terms are governed by Utah law (without regard to conflict of law principals). this warranty gives you specific legal rights, and you may also have other rights which vary from state to state. Rage R/C reserves the right to change or modify this warranty at any time without notice.

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