Super Frontier-20

0.20-0.25 cu.in. displacement 2-cycle
0.26 cu.in. displacement 4-cycle

Radio required: 4 channels, 4 servos airplane radio

Specifications

<table>
<thead>
<tr>
<th>Specifications</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Wing Span</td>
<td>54.0 in / 1360mm</td>
</tr>
<tr>
<td>Wing Area</td>
<td>496 sq in / 32 sq dm</td>
</tr>
<tr>
<td>Flying Weight</td>
<td>3.5-4.0 lbs / 1500-1700g</td>
</tr>
<tr>
<td>Fuselage Length</td>
<td>44.0 in / 1170mm</td>
</tr>
</tbody>
</table>

Warning! This model is not a toy. It is designed for maximum performance. Please seek advice if one is not familiar with this kind of engine powered precision model. Operating this model without prior preparation may cause injuries. Remember, safety is the most important thing. Always keep this instruction manual at hand for quick reference.

THE WORLD MODELS MANUFACTURING CO. LTD.
FACTORY PRE-FABRICATED ALMOST-READY-TO-FLY (ARF) SERIES
MADE IN CHINA
www.theworldmodels.com
Before You Begin

1. Read through the manual before you begin, so you will have an overall idea of what to do.

2. Check all parts. If you find any defective or missing parts contact your local dealer. Please DRY FIT and check for defects for all parts that will require CA or Epoxy for final assembly. Any parts you find to be defective after the gluing process may be difficult to remove for warranty replacement. The manufacturer will replace any defective parts, but will be difficult to extend to the good parts that are good before gluing to defective parts during assembly.

3. Symbols used throughout this instruction manual comprise of the following:

- **AB**: Apply epoxy glue.
- **C.A**: Apply instant glue (C.A. glue, super glue.)
- **L/R**: Assemble left and right sides the same way.
- **Ensure smooth non-binding movement while assembling.**
- **Peel off shaded portion covering film.**
- **Cut off shaded portion.**
- **Drill holes with the specified diameter (here: 3mm).**
- **Must be purchased separately!**
- **Pay close attention here!**
- **Warning!**
  - Do not overlook this symbol!
Parts List

1. FUSELAGE – 1 pc
2. MAIN WING (w/Wing Joiner) – 1 pair
3. STABILIZER & ELEVATOR – 1 set
4. VERTICAL FIN & RUDDER – 1 set
5. ENGINE MOUNT PL5111-030 – 1 set
6. SPINNER Ø45mm – 1 pc
7. FUEL TANK 200cc – 1 set
8. WHEEL Ø050mm – 3 pcs
9. SPONGE 75x75x70mm (For Radio Equipment) – 1 pc
10. FRONT LANDING GEAR – 1 pc
11. MAIN LANDING GEAR – 1 pair
12. PUSHROD:
   - WOODEN ROD Ø6x300mm (For Rudder Servo) – 1 pc
   - WOODEN ROD Ø6x420mm (For Elevator Servo) – 1 pc
   - METAL ROD Ø1.8x175mm (For Rudder Servo) – 1 pc
   - METAL ROD Ø1.8x175mm (For Elevator Servo) – 1 pc
   - METAL ROD Ø1.8x250mm w/Threads (For Rudder Servo) – 1 pc
   - METAL ROD Ø1.8x130mm w/Threads (For Elevator Servo) – 1 pc
   - METAL ROD Ø1.8x130mm w/Threads (For Aileron Servo) – 2 pcs
   - METAL ROD Ø1.2x400mm (For Front Wheel & Throttle) – 2 pcs
13. PUSHWIRE:
   - FRONT WHEEL & THROTTLE PUSHWIRE d2xD3x300mm – 2 pcs
14. WOODEN PARTS:
   - BALSA 7x8x30mm (For Aileron Servo) – 1 pc
   - PLYWOOD (Fin Tip) 10x39mm – 1 pc
   - PLYWOOD 144x64mm (For Fixing Stabilizer) – 1 pc
   - PLYWOOD 2x20x55mm (Wing Protection) – 1 pc
   - PLYWOOD 3x8x30mm (For Aileron Servo) – 2 pcs
   - PLYWOOD 10x10x71mm (For Fixing Fuel Tank) – 1 pc
   - WOODEN ROD Ø6x115mm (For Fixing Wing) – 2 pcs
   - WING JOINER 9x20.5x140mm – 1 pc
15. PLASTIC PARTS:
   - STRAPER (FOR AILERON & ELEVATOR SERVO) – 3 pcs
   - PLASTIC RING (FOR AILERON HORN) – 2 pcs
   - HORN (FOR RUDDER & ELEVATOR) – 2 sets
   - STEERING ARM (FOR FRONT WHEEL) – 1 pc
   - PLASTIC PLATE (FOR MAIN LANDING GEAR) – 2 pcs
   - CLEVIS – 4 pcs
16. METAL PARTS:
   - NUT 3mm – 10 pcs
   - LINKAGE CONNECTOR 2.1mm – 3 sets
   - COLLAR 3.1mm – 8 pcs
   - SCREW PA3x12mm – 4 pcs
   - SCREW PM2x12mm – 4 pcs
   - SCREW PM3x16mm – 2 pcs
   - SCREW PM3x22mm – 4 pcs
   - SCREW PM3x25mm – 4 pcs
   - WASHER d3x07mm – 12 pcs
   - WASHER d3x12mm – 4 pcs
17. FUEL TUBE Ø6x55mm – 7 pcs
   - HEAT-SHRINK TUBE Ø6x40mm – 4 pcs
18. RUBBER BAND 60x4mm – 8 pcs
19. DECALS PN:ST200015 – 1 set
1. Main Wing

2. Main Wing

Cut out to fit in the aileron servo

3. Main Wing

Cut out the Monokote.

! Warning!

Securely glue together. If coming off during flights, you lose control of your airplane which leads to accidents!

Plywood 2x20x55mm

L/R
7 Engine Mount

PM3x 22mm Screw 4
d3 x D7mm Washer 4

3mm
PM3x 22mm

8 Front Wheel

3mm Set Screw 4
3.1mm Collar 4

Completed

9 Fuel Tank

Fuel Tank 200cc

Install plywood 10x10x71mm
(For fixing fuel tank)

Top View
10 Engine

- PM3 x 25mm Screw: 4
- 3mm Washer: 8
- 3mm Nut: 8

Install Engine Position Spinner Ø45mm

3mm Ø106mm 3.2mm 3mm

If the engine throttle control is on the opposite side, install the throttle pushwire accordingly.

Install the throttle servo with the drive pinion on the same side of throttle pushwires.

Raise throttle servo if necessary to provide clearance between throttle and front wheel pushwires.

11 Landing Gear

- PA3 x 12 Screw: 4

12 Landing Gear

- 3mm Set Screw: 4
- 3.1mm Collar: 4

Ω50mm 3mm Set Screw 3.1mm Collar
13 Rudder Pushrod

- Ø1.8x175mm Heat-shrink Tube
- Ø1.8x250mm
- Ø6x300mm

Be careful not to scorch the heat-shrink tube!

Completed 600mm

14 Elevator Pushrod

- Ø1.8x175mm Heat-shrink Tube
- Ø1.8x130mm
- Ø6x420mm

Be careful not to scorch the heat-shrink tube!

Completed 660mm

15 Servo Set

- LINKAGE CONNECTOR
  - 3x3mm Set Screw 3
  - Linkage Connector 3
  - 2mm Nut 3
  - 2mm Washer 6

N.I. Included with the Radio Set.

Throttle Servo, Rudder Servo, Front Wheel Servo.

Please refer to attached sheet for linkage connector installation.
16 Radio Equipment

17 Radio Equipment

- Install and arrange the servo as shown in the diagram

Throttle Servo

Fuel Tank

Battery Receiver

Elevator Servo

Rudder Servo

Receiver/Battery

Sponge Sheet 75x75x70mm

18 Rudder Pushrod

PM2 x 12mm Screw 2

Rudder Pushrod

Line up the horns to the edge of the Rudder Servo diagram.

Fuel Tube Ø6x5mm

Clevis Horn

PM2x12mm
19 Elevator Pushrod

- **PM2 x 12mm Screw**
- **Elevator Pushrod**
- **Bottom View**

20 Main Wing

- **Wooden Rod** Ø6x115mm
- **Equal length on both sides, then apply CA glue.**

21 Main Wing

- **D6x4mm Rubber Band**
- **To hold tightly, two rubber bands are needed together for each mounting. In total, eight rubber bands are used for this step.**
22 Wing Setting

Adjust the wing and fuselage configuration as in the diagram.

23 Control Throws

Adjust the control throws as shown in the diagram. These throws are good for general flying. You can adjust according to your personal preference.

- Rudder
  - 25mm
  - 25mm

- Elevator
  - 15mm
  - 15mm

- Aileron
  - 8mm
  - 8mm

24 C.G.

The ideal C.G. position is 75mm (2.95 in) behind the leading edge measured at where the wing meets the fuselage. In order to obtain the C.G. specified, add weight to the fuselage or move the battery position. Check the C.G. before flying.
Warning!

Important Safety Precautions

# First time flyer should never fly by himself / herself. Assistance from experienced flyer is absolutely necessary.

# Pre-flight adjustment must be done before flying, it is very dangerous to fly a badly pre-adjusted aircraft.

# SUPER FRONTIER-20 is specially designed to be powered by 2C 20-25 or 4C 26 engine, using a more powerful engine does not mean better performance. In fact, over powered engine may cause severe damage and injuries.

# Make sure the air field is spacious, never fly the plane too close to people and never get too close to a running propeller.

# If you find wrinkles on the covering as a result of weather changes, you can use hot iron to remove the wrinkles. Please begin with lower temperature setting and gradually raise the temperature until the wrinkles are gone. Too hot an iron may damage the covering.

# Check and re-tighten up all factory assembled screws, use thread locker if applicable.