**INTRUDER 90R**

**Specifications**

- **Wing Span**: 63.0 in / 1600 mm
- **Wing Area**: 688 sq in / 44 sq dm
- **Flying Weight**: 6.8 lbs / 3100 g
- **Fuselage Length**: 59.0 in / 1500 mm

* Specifications are subject to change without notice.*

**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.

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**Required**:
- 0.60 cu.in. displacement 2-stroke
- 0.91 cu.in. displacement 4-stroke
- 4-channel radio w/ 5 standard servos

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**FACTORY PRE-FABRICATED**
**ALMOST-READY-TO-FLY (ARF) SERIES**
MADE IN CHINA
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 not extend to the parts that are good before gluing to defective parts during assembly. Warranty will not cover any parts modified by customer.

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

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

1. **MAIN WING** -- 1 pair
2. **SCREW PB2x16mm** -- 2 pcs
   - **SCREW PB2x18mm** -- 4 pcs
   - **SCREW PW2x8mm** -- 8 pcs
   - **FUEL TUBE Ø6x5mm** -- 4 pcs
   - **STRAPE PL4112102** -- 2 pcs
   - **CLEVIS PL4112103** -- 2 pcs
   - **TRI-HORN M3x14mm PL4111185** -- 2 sets
   - **PUSHROD Ø1.8x115mm w/ Threads (For Aileron)** -- 2 pcs
   - **SERVO MOUNTING PANEL PL5310000** -- 1 pair
3. **WING TUBE Ø25.4x234mm** -- 1 pc.
4. **MAIN LANDING GEAR** -- 1 set
   - **SCREW PA3x12mm** -- 8 pcs
   - **WHEEL Ø52mm PL3111520** -- 2 pcs
   - **COLLAR Ø4.1mm w/ set screw** -- 4 sets
   - **PLATE 12x20mm (For Main Landing Gear) PL4114020** -- 4 pcs
5. **FUSELAGE** -- 1 pc.
   - **STABILIZER & ELEVATOR** -- 1 set
   - **SCREW PW3x12mm** -- 2 pcs
   - **STABILIZER TUBE D9.5x296mm** -- 1 pc.
   - **WIRE Ø3x97mm** -- 1 pc.
6. **VERTICAL FIN & RUDDER** -- 1 set
7. **ENGINE MOUNT (PL5111070)** -- 1 set
   - **SOCKET HEAD SCREW M4x25mm** -- 4 pcs
   - **WASHER d4xD12mm** -- 4 pcs
8. **FRONT LANDING GEAR** -- 1 set
   - **COLLAR Ø4.1mm w/ set screw** -- 4 sets
   - **WHEEL Ø52mm PL3111520** -- 1 pc.
   - **STEERING ARM Ø4.1mm PL4112401** -- 1 set
9. **FUEL TANK 320cc PL1111320** -- 1 set
   - **BALS 10x10x89mm (For Fuel Tank Position Fixing)** -- 1 pc.
10. **SOCKET HEAD SCREW M4x30mm** -- 4 pcs
    - **WASHER d4xD12mm** -- 8 pcs
    - **M4 NUT** -- 8 pcs
11. **SCREW PB2x22mm** -- 6 pcs
    - **CLEVIS PL4112103** -- 2 pcs
    - **FUEL TUBE Ø6x5mm** -- 2 pcs
    - **TRI-HORN M3x14mm (L) PL4111185** -- 2 sets
    - **PUSHROD Ø1.8x760mm w/ Threads (For Elevator)** -- 2 pcs
12. **SCREW PB2x16mm** -- 3 pcs
    - **FUEL TUBE Ø6x5mm** -- 1 pc.
    - **CLEVIS PL4112103** -- 1 pc.
    - **TRI-HORN M3x14mm (L) PL4111185** -- 1 set
    - **PUSHROD Ø1.8x870mm w/ Threads (For Rudder)** -- 1 pc.
13. **LINKAGE CONNECTOR Ø2.1mm HW7111060** -- 2 sets
14. **STRAPE PL4112102** -- 2 pcs
    - **FUEL TUBE Ø6x5mm** -- 2 pcs
    - **SPONGE 60x70x90mm (For Radio Equipment)** -- 1 pc.
    - **FRONT WHEEL PUSHROD Ø1.4x375mm** -- 1 pc.
    - **PLASTIC TUBE d2.5xD4x330mm** -- 1 pc.
    - **THROTTLE PUSHWIRE Ø1.2x425mm** -- 1 pc.
    - **PLASTIC TUBE d2xD3x330mm** -- 1 pc.
    - **PUSHROD Ø1.8x80mm (For Elevator)** -- 1 pc.
    - **PUSHROD CONNECTOR 4x9x20mm PL4410010** -- 1 set
15. **SOCKET HEAD SCREW M4x30mm** -- 2 pcs
    - **WASHER d4xD15mm** -- 2 pcs
    - **SCREW PWM3x13mm** -- 1 pc.
    - **PLYWOOD 2x24x68mm (Wing Protection)** -- 1 pc.
    - **BELLY PAN** -- 1 pc.
16. **COWLING** -- 1 pc.
    - **TRANSPARENT 3D TEMPLATE** -- 1 pc.
    - **SOCKET HEAD SCREW M2x12mm** -- 4 pcs
    - **SPINNER Ø70 PL2111070** -- 1 set
17. **CANOPY** -- 1 pc.
    - **SCREW PW2x8mm** -- 3 pcs
    - **SILICON GROMMET d1.5xD6.5mm** -- 3 pcs
18. **DECALS A050RDEC** -- 1 set

**COVERING**
- TOUGHLON STL 100 WHITE
- TOUGHLON STL 201 BLACK
- TOUGHLON STL 320 ORANGE

A050RPO28881306

P.2
1 Main Wing

- Bottom View

Aileron Servo Lead

- Pre-glued

2 Aileron Servo

- Bottom View

Ø1mm pilot holes for The World Models tri-horn are pre-drilled. Please look for pin-hole marks at under side of control surfaces.

PB2 x 16mm Screw
PB2 x 18mm Screw
PWA2 x 8mm Screw

Ø6x5mm Fuel Tube
ª1.8x115mm Pushrod
M3x14mm Tri-horn

N.I.

L/R

LWM PL8210010 CLEVIS WRENCH

A050RPO28881306 P.3
3 Main Wing

Wing Tube Ø25.4x234mm

One side only for detachable wing.

4 Main Landing Gear

PA3x12mm Screw 8
3mm Set Screw 4
4.1mm Wheel Collar 4

L/R

Bottom View

Wheel Ø52mm

Bottom View

Completed
5 Stabilizer & Elevator

![Diagram of stabilizer and elevator components]

- **PWA 3 x 12mm Screw**: 2
- **D9. 5x296mm**: Pre-glued
- **Bottom View**
- **Top View**

6 Vertical Fin & Rudder

![Diagram of vertical fin and rudder components]

- **M3 x 6mm Set Screw**: 2
- **Ø3x97mm**: Pre-glued
- **Bottom View**
- **Top View**
- **Completed**
7 Engine Mount

- **M4x25mm Socket Head Screw**: 4
- **d4 x D12mm Washer**: 4

![Engine Mount Diagram]

*Engine Mount PL511070*

8 Front Landing Gear

- **3mm Set Screw**: 4
- **4.1mm Wheel Collar**: 4

![Front Landing Gear Diagram]

*Completed*

9 Fuel Tank

- **Fuel Tank 320cc**
- **Install Balsa 10x10x89mm (For Fuel Tank Position Fixing)**

![Fuel Tank Diagram]

*Bottom View*
11 Elevator Pushrod

- Ø1mm pilot holes for The World Models tri-horn are pre-drilled. Please look for pin-hole marks at under side of control surfaces.

- Elevator Pushrod Ø1.8x760mm

- ø4 x D9mm Washer
- M4 Nut
- M4x30mm Socket Head Screw
- 4
- d4 x D9mm Washer
- 8
- M4 Nut
- 8

- TWM PL8210010 CLEVIS WRENCH
- PB2 x 22mm Screw
- 6

- Lengths:
  - 42mm
  - 170mm

- Installed Engine Position
- Bottom View
12 Rudder Pushrod

- Ø1mm pilot holes for The World Models tri-horn are pre-drilled.
- Please look for pin-hole marks at under side of control surfaces.

13 Servo Set

- 3 x 3mm Set Screw
- Linkage Stopper
- 2mm Nut
- 2mm Washer

14 Radio Equipment

- Install and arrange the servo as shown in the diagram.
15 Main Wing

- First insert the grommet to the canopy then apply screw.

16 Cowling

- Please refer to attached sheet for usage of the transparent 3D template.
- First insert the grommet to the cowling then apply screw.

17 Canopy

- First insert the grommet to the canopy then apply screw.
18 Wing Setting

Adjust the wing and fuselage configuration as shown in the diagrams.

TO INCREASE INCIDENCE ANGLE, LOOSE BOTTOM SET SCREW AND THEN TIGHTEN TOP SET SCREW. TO REDUCE INCIDENCE ANGLE, LOOSE TOP SET SCREW AND THEN TIGHTEN BOTTOM SET SCREW. DON'T OVER TIGHTEN SET SCREWS AS THE INCIDENCE ANGLE ADJUSTER ARE MADE OF PLASTICS.
Adjust the control throws as shown in the diagram. These throws are good for general flying. You can adjust according to your personal preference.

**19 Control Throws**

- **Elevator**
  - 20mm
  - 20mm

- **Rudder**
  - 35mm
  - 35mm

- **Aileron**
  - 8mm
  - 8mm

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The ideal C.G. position is 156mm (6.14in.) 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. If you are converting this model to electric, please move the C.G. forward 10% of current C.G. distance from leading edge to compensate for weight of fuel.

**20 C.G.**

The ideal C.G. position is 156mm (6.14in.) 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. If you are converting this model to electric, please move the C.G. forward 10% of current C.G. distance from leading edge to compensate for weight of fuel.

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**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.

- # **INTRUDER 90R** is specially designed to be powered by 2C 0.60 / 4C 0.91 engine, using 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. Don't use hot iron near the seams or edges, hot iron will melt the glue and shrink the covering at the same time, causing the seams to pull away.

- # Check and re-tighten up all factory assembled screws, use thread locker if necessary.
Product Registration Form (US Customers)

We would like to share with you any relevant information regarding your model, including product news and free upgrade parts when applicable. Please fill in the following and send to AirBorne Models, 4749-K, Bennett Drive, Livermore, CA 94551 USA.

1. Name:_______________________________________________________

2. Address:____________________________________________________

3. Phone #:____________________ E-mail:________________________

4. Model:_____________________________________________________

Wing QC#_________ Fuselage QC# ____________________________
(QC numbers are stamped on wing and fuselage)

5. Date of Purchase:___________________________________________

6. Store Name:________________________________________________

Please call AirBorne Models at 925 371 0922 for any assistance in filling this form. Thank you very much for purchasing our product.
Usage of the transparent 3D template

This transparent 3D template is used for position guidance of the actual cutting of the pre-painted cowling.

1.
2.
3.
4.

Simply cut the transparent 3D template to fit your engine and exhaust pipe, then slide onto the actual cowling and use as template to mark the openings required for final cutting.
Optional Parts

(ACCESSORIES)

180mm Extension

<table>
<thead>
<tr>
<th>Code No.</th>
<th>Size</th>
<th>Package</th>
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<tbody>
<tr>
<td>KW0011800</td>
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180mm Y-Cord

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Charge Receptacles

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Field Stand

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<tr>
<td>MS9111430</td>
<td>600 x 240 x 310mm</td>
<td>1 pc</td>
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Fuel Filler

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<tr>
<td>PL8110030</td>
<td>15 x 22 x 49mm</td>
<td>1 x 1 pc</td>
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Clevis Wrench

[Image of Clevis Wrench]

<table>
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<tbody>
<tr>
<td>PL8210010</td>
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<td>1 set</td>
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Special tool for clevis installation. Suitable for standard and small (EP) clevis.

Standard Servo

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</table>

[Image of Servo]

Speed: 0.17 sec / 60° @ 4.8V
0.14 sec / 60° @ 6.0V
Torque: 3.2kg.cm / 44.8 oz - in @ 4.8V
4.1kg.cm / 57.4 oz - in @ 6.0V
Size: 40.8 x 20 x 37mm /
1.60 x 0.79 x 1.46 in
Weight: 39.4 g / 1.39 oz