Before commencing assembly, please read these instructions thoroughly.

**Handyman Twins** (GM070XM)

![Image of Handyman Twins model]

**Specifications**

- Wing Span: 36.4 in / 925 mm
- Wing Area: 346 sq in / 22.3 sq dm
- Flying Weight: 28.3 oz / 800 g
- Fuselage Length: 41.5 in / 1055 mm
- Requires: 4-channel radio w/ 4 micro servos, 2 x Outrunner Motor KM28251025 w/ Propeller Adaptor HW234040R & HW2340400, 2 x 15A Brushless ESC, 8x4E & 8x4P Propeller, 3 cells 11.1V 1800 mAh Li-Po battery & charger.

⚠️ **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 electric 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.

*Specifications are subject to change without notice.*
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. For pre-assembled kits, please check proper functions of all servos on the ground before flying. Servo gears could be damaged when control surfaces are hit during transportation of models. The manufacturer will replace any servos due to manufacturer’s defect, but will not cover plane crashes due to damaged servos not detected before flying.

Symbols used throughout this instruction manual comprise of the following:

- **Apply epoxy glue.**
- **Apply instant glue (C.A.glue, super glue.)**
- **Apply thread locker**
- **Must be purchased separately !**
- **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).**
- **Pierce the shaded portion covering film.**
- **Pay close attention here!**
- **Warning!** Do not overlook this symbol !

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

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GM070XMPO30681411
Parts List

1. DECALS: GM070XM DEC -- 1 set
   MAIN WING -- 1 pair
   STABILIZER & ELEVATOR -- 1 set
   VERTICAL FIN & RUDDER -- 1 set
   FUSELAGE -- 1 set
   BATTERY COVER -- 1 set

2. Hinges PL4115050 -- 4 pcs

3. Hinges PLL4115050 -- 3 pcs

4. DECALS FOR RUDDER -- 1 set

5. Horn PL4113103 -- 1 pc.
   SERVO MOUNT -- 2 pcs

6. FUEL TUBE D2x4x4mm -- 2 pcs
   CLEVIS PL4112105 -- 1 pc.
   STRAPER PL4112106 -- 1 pc.
   PUSHROD Ø1.4x125mm w/ Threads (For Rudder) -- 1 pc.

7. Horn PL4113103 -- 1 pc.
   SERVO MOUNT -- 2 pcs

8. FUEL TUBE D2x4x4mm -- 2 pcs
   CLEVIS PL4112105 -- 1 pc.
   STRAPER PL4112106 -- 1 pc.
   PUSHROD Ø1.4x50mm w/ Threads (For Elevator) -- 1 pc.

9. TAIL LANDING GEAR -- 1 set
   SCREW PA2x50mm -- 2 pcs
   TAIL WHEEL Ø23mm PL3510230 -- 1 pc.

10. MAIN LANDING GEAR Ø2.5mm -- 1 set
    COLLAR Ø2.6mm w/ Screw -- 2 sets
    MAIN WHEEL Ø40mm PL3116040 -- 2 pcs
    SCREW PM2x14mm -- 1 pc.
    M2 NYLON INSERT LOCK NUT -- 1 pc.
    WASHER d2x5mm -- 2 pcs
    PLYWOOD 21x40x2.5mm (For Main Landing Gear) -- 1 pc.

11. NOSE PIECE -- 1 pc.

12. HORN PL4113103 -- 2 pcs
    Hinges PLL4115050 -- 8 pcs
    SERVO MOUNT -- 4 pcs

13. FUEL TUBE D2x4x4mm -- 4 pcs
    CLEVIS PL4112105 -- 2 pcs
    STRAPER PL4112106 -- 2 pcs
    PUSHROD Ø1.4x76mm w/ Threads (For Aileron) -- 2 pcs

14. PLYWOOD 30x60x4mm (L) (For Motor) -- 1 pc.
    PLYWOOD 30x60x4mm (R) (For Motor) -- 1 pc.
    SOCKET HEAD SCREW M3x8mm -- 8 pcs
    WASHER d3x7mm -- 8 pcs
    8x4E PROPELLER PL6210804 -- 1 set
    8x4P PROPELLER PL6210804P -- 1 set

15. WING TUBE Ø6x365mm -- 1 pc.
    SCREW PM3x10mm -- 2 pcs
    BATTERY TIE 180mm -- 1 pc.
    BATTERY MAT 2x50x150mm -- 2 pcs
1 Decals

- Cut out decal sheet, peel off backing sheet and apply on fuselage, stabilizer and wings.

**Main wings**

- Top View
- Bottom View

**Stabilizer**

- Top View
- Bottom View

- After applying the thunderbolt decals across the hinge line, cut it to allow free movement of the Stabilizer.

**Rudder**

- Right View
- Left View

**Fuselage**

- Left View
- Right View
2 Stabilizer & Elevator

- For pre-assembled version, the hinges are factory glued.

3 Vertical Fin & Rudder

- For pre-assembled version, the hinges are factory glued.

4 Decals for Rudder

- After applying the thunderbolt decals across the hinge line, cut it to allow free movement of the Rudder.

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5. Rudder Servo & Horn

- For pre-assembled version, the horn is factory glued and servo installed.

6. Rudder Pushrod

7. Elevator Servo & Horn

- For pre-assembled version, the horn is factory glued and servo installed.
8 Elevator Pushrod

9 Tail Landing Gear

10 Main Landing Gear

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P.6
For pre-assembled version, the hinges and horn are pre-glued, and servo installed.
13 Aileron Pushrod

- Fuel Tube d2xD4 x4mm
- Straper
- Plastic Stand
- Pushrod Ø1.47/6mm
- Clevis

**L/R Bottom View**

14 Motor Installation

- **M3x8mm Socket Head Screw** 8
- **M3x8mm Washer** 8

- The propellers should curve to the front.

1. 8x4E Propeller PL6210804
   - Plywood 30x60x4mm(L)
   - Plywood 30x60x4mm(R)
   - M5 Nut (Reverse)

2. 8x4P Propeller PL6210804P
   - Propeller Adaptor HW234040R
   - M3x8mm 4x0.7mm
   - M3x8mm 4x0.7mm

3. Decal for Motor Plywood
   - Cut unprinted section of decal sheet to tape motor wires in groove.

**Bottom View**

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Insert carbon fiber wing tube into right wing, align the anchor holes and apply the PM Screw.

Insert the right wing into the Fuselage. Insert the left wing onto the carbon wing tube, press the wings against the fuselage align the anchor holes and apply the PM Screw.
Plug in with red+/black- reversed will damage the ESC.

Connect the three motor wires of the left motor to the left ESC, and right motor to the right ESC. Connect the throttle control wires of the two ESCs to the Y-chord. The single output plug of the Y-chord should be connected to the throttle channel of the receiver to control the throttle. Connect the power input plugs of the two ESCs to the EZ Power Y-Chord, the single output plug of the EZ Power Y-Chord should be connected to the battery before flying. (The same procedure applies to other types of connectors.)

- Plug in the Aileron Servos wire to channel 1
- Plug in the Elevator Servo wire to channel 2
- Plug in the ESC Throttle wire to channel 3
- Plug in the Rudder Servo wire to channel 4
17 Battery Cover

18 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.

- Elevator: 50mm 50mm
- Rudder: 60mm 60mm
- Ailerons: 40mm 40mm

19 C.G.

The ideal C.G. position is 120mm (4.7 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.

http://www.thewingmaker.com/instructionManuals.php

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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.

# **Handyman Twins** is specially designed to be powered by **KM28251025 Outrunner Motor**.

# Make sure the air field is spacious, never fly the plane too close to people and never get too close to a running propeller. Extreme caution should be exercised when working with electric powered models. Make sure the propeller is cleared of all objects, especially your hands before connecting the battery to the model. Make sure you understand the operation of the ESC (Electronic Speed Control) by studying the ESC manual. Once you plug in the battery for electric powered model, always treat the propeller as a rotating one, as accidental movement of the throttle stick will spin the propeller and could cause injuries.

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

### (ZWM ACCESSORIES)

<table>
<thead>
<tr>
<th>Optional Part</th>
<th>Code No.</th>
<th>Size</th>
<th>Package</th>
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<tbody>
<tr>
<td>3 - Pin EZ Connector</td>
<td>KP0011310</td>
<td>40A Max. Current</td>
<td>1 set</td>
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<td>- Ideal for electric models</td>
<td></td>
<td></td>
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<td>2 - Pin EZ Connector</td>
<td>KP0011210</td>
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<td>- Ideal for electric models</td>
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<tr>
<td>180mm Y-Cord</td>
<td>KW0021800</td>
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<td>1 pc</td>
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<tr>
<td>EZ Power Y-Cord For Twin ESC</td>
<td>KW1210060</td>
<td></td>
<td>1 pc</td>
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<tr>
<td>EZ Connector Puller</td>
<td>PL8210030</td>
<td></td>
<td>1 set</td>
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### Clevis Wrench

- Special tool for clevis installation.
- Suitable for standard and small (EP) clevis.

<table>
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<td>PL8210010</td>
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### Propeller Adaptor

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<tr>
<th>Code No.</th>
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<td>HW2340400</td>
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</tbody>
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### Outrunner Motor

- **Kv (rpm/V):** 1025
- **Operating Power:** 110W
- **Operating Voltage:** 2-3S Li-Po
- **Operating Current:** 10A
- **Peak Current:** 15A (max. 15 sec.)
- **Internal Resistance:** 50 m ohms
- **Diameter:** 27.6mm
- **Length:** 25mm
- **Weight:** 40g
- **Shaft Diameter:** 3mm
- **Shaft Length:** 14 mm
- **Mounting Screw:** M3 (Front)
- **Distance of Mounting Holes:** 16mm and 19mm

<table>
<thead>
<tr>
<th>Code No.</th>
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<tr>
<td>KM28251025</td>
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### EZ Connector Puller

<table>
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<tr>
<th>Code No.</th>
<th>Size</th>
<th>Package</th>
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</thead>
<tbody>
<tr>
<td>PL8210030</td>
<td></td>
<td>1 set</td>
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**GM070XMPO30681411**
Optional Parts

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<tr>
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</thead>
<tbody>
<tr>
<td>PL6210804</td>
<td>8x4E Propeller</td>
<td>1 pc</td>
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<tr>
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<td>8x4P Propeller</td>
<td>1 pc</td>
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