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.

Specifications

- Wing Span: 80.5 in / 2040 mm
- Wing Area: 1155 sq in / 74.5 sq dm
- Flying Weight: 15 lbs / 6800 g
- Fuselage Length: 70.5 in / 1790 mm

*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.

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 !
### Parts List

<table>
<thead>
<tr>
<th>Part Description</th>
<th>Quantity</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>COVERING:</strong></td>
<td></td>
</tr>
<tr>
<td>TOUGHLON STL100 WHITE</td>
<td></td>
</tr>
<tr>
<td>TOUGHLON STL201 BLACK</td>
<td></td>
</tr>
<tr>
<td>TOUGHLON STL312 BRIGHT RED</td>
<td></td>
</tr>
<tr>
<td>TOUGHLON STL330 CADMIUM YELLOW</td>
<td></td>
</tr>
<tr>
<td>TOUGHLON STL351 DARK BLUE</td>
<td></td>
</tr>
<tr>
<td>TOUGHLON STL370 SILVER</td>
<td></td>
</tr>
<tr>
<td><strong>1. MAIN WING</strong></td>
<td></td>
</tr>
<tr>
<td>MAIN WING -- 1 pair</td>
<td></td>
</tr>
<tr>
<td>RETRACTABLE LANDING GEAR -- 1 set</td>
<td></td>
</tr>
<tr>
<td>RETRACTABLE LANDING GEAR COVER -- 1 pair</td>
<td></td>
</tr>
<tr>
<td>M2 NUT -- 12 pcs</td>
<td></td>
</tr>
<tr>
<td>SCREW PM2x20mm -- 12 pcs</td>
<td></td>
</tr>
<tr>
<td>WASHER d2xD4mm -- 24 pcs</td>
<td></td>
</tr>
<tr>
<td>BALSA 2.5x2x18mm (For Main Wheel Cover) -- 2 pcs</td>
<td></td>
</tr>
<tr>
<td><strong>3. WING TUBE</strong></td>
<td></td>
</tr>
<tr>
<td>Ø25.4x730mm -- 1 pc.</td>
<td></td>
</tr>
<tr>
<td>Ø9.6x394mm -- 1 pc.</td>
<td></td>
</tr>
<tr>
<td><strong>4. SCREW PM3x75mm</strong></td>
<td>2 pcs</td>
</tr>
<tr>
<td>WASHER d3xD7mm -- 8 pcs</td>
<td></td>
</tr>
<tr>
<td><strong>5. LINKAGE CONNECTOR Ø2.1mm (For Main Wing)</strong></td>
<td>2 sets</td>
</tr>
<tr>
<td>COVERING FILM 45x80mm -- 2 pcs</td>
<td></td>
</tr>
<tr>
<td><strong>6. SCREW PWA2x8mm</strong></td>
<td>16 pcs</td>
</tr>
<tr>
<td>WASHER 8x18x21mm (For Aileron &amp; Flap Servo) -- 8 pcs</td>
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</tr>
<tr>
<td><strong>7. SCREW PB2x30mm</strong></td>
<td>6 pcs</td>
</tr>
<tr>
<td>FUEL TUBE Ø6x5mm -- 2 pcs</td>
<td></td>
</tr>
<tr>
<td>STRAPER PL4112102 -- 4 pcs</td>
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</tr>
<tr>
<td><strong>8. FUSELAGE</strong></td>
<td></td>
</tr>
<tr>
<td>STRABILIZER &amp; ELEVATOR -- 1 set</td>
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</tr>
<tr>
<td>STRABILIZER TUBE Ø6.2x60mm -- 1 pc</td>
<td>2 pcs</td>
</tr>
<tr>
<td>SCREW PWAx12mm -- 2 pcs</td>
<td></td>
</tr>
<tr>
<td><strong>9. SCREW PB2x20mm</strong></td>
<td>6 pcs</td>
</tr>
<tr>
<td>FUEL TUBE Ø6x5mm -- 2 pcs</td>
<td></td>
</tr>
<tr>
<td>STRAPER PL4112102 -- 4 pcs</td>
<td></td>
</tr>
<tr>
<td><strong>10. VERTICAL FIN &amp; RUDDER</strong></td>
<td>1 set</td>
</tr>
<tr>
<td>**11. TAIL LANDING GEAR PL7100002 -- 1 set</td>
<td></td>
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<tr>
<td>TAIL WHEEL Ø30mm PL3111300 -- 1 pc</td>
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<tr>
<td><strong>12. SCREW PB2x30mm</strong></td>
<td>3 pcs</td>
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<tr>
<td>TRI-HORN M3x14mm (L) PL4111185 -- 2 sets</td>
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<tr>
<td>PUSHROD Ø1.8x80mm w/ Threads (For Elevator Servos) -- 2 pcs</td>
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</tr>
<tr>
<td>**13. ENGINGE MOUNT PL5911120 -- 1 set</td>
<td></td>
</tr>
<tr>
<td>SOCKET HEAD SCREW M6x30mm -- 4 pcs</td>
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</tr>
<tr>
<td>WASHER 6x65mm -- 4 pcs</td>
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<tr>
<td>**14. FUEL TANK 800cc PL1111810N -- 1 set</td>
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<tr>
<td>CABLE TIE 1.5x8x400mm -- 1 pc</td>
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<tr>
<td>**15. SPINNER (w/ alu.back plate) Ø127mm PH22W1270 -- 1 set</td>
<td></td>
</tr>
<tr>
<td>PLASTIC TUBE Ø2x20mm -- 1 pc</td>
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<tr>
<td><strong>16. COWLNG</strong></td>
<td></td>
</tr>
<tr>
<td>TRANSPARENT 3D TEMPLATE -- 1 pc</td>
<td></td>
</tr>
<tr>
<td><strong>17. UNDER COWLNG</strong></td>
<td></td>
</tr>
<tr>
<td>SCREW PWA2x12mm -- 2 pcs</td>
<td></td>
</tr>
<tr>
<td><strong>18. LINKAGE CONNECTOR Ø2.1mm (For Main Wing)</strong></td>
<td>2 sets</td>
</tr>
<tr>
<td>COVERING FILM 45x80mm -- 2 pcs</td>
<td></td>
</tr>
<tr>
<td><strong>19. PLYWOOD 2x65x80.5mm (Aileron &amp; Flap Servo Stand)</strong> -- 4 pcs</td>
<td></td>
</tr>
<tr>
<td><strong>20. SCREW PB2x30mm</strong></td>
<td>6 pcs</td>
</tr>
<tr>
<td><strong>21. SCREW PWM3x13mm</strong></td>
<td>3 pcs</td>
</tr>
<tr>
<td>AIR SCOOP -- 1 pc</td>
<td></td>
</tr>
<tr>
<td><strong>22. CANOPY</strong></td>
<td></td>
</tr>
<tr>
<td>PILOT PC001102A -- 1 pc</td>
<td></td>
</tr>
<tr>
<td><strong>23. DCALS:</strong></td>
<td></td>
</tr>
<tr>
<td>A100RPO24851101</td>
<td></td>
</tr>
</tbody>
</table>

**COVERING:**
- TOUGHLON STL100 WHITE
- TOUGHLON STL201 BLACK
- TOUGHLON STL312 BRIGHT RED
- TOUGHLON STL330 CADMIUM YELLOW
- TOUGHLON STL351 DARK BLUE
- TOUGHLON STL370 SILVER
1 Main Wing

Bottom View

L/R

2 Retractable Landing Gear

PM2x8mm Screw
- 12

d2xD4mm Washer
- 12

M2 NUT
- 24

Balsa 2.5x21x86mm

M2 NUT

PM2x8mm

d2xD4mm Washer

L/R

3 Main Wing

Ø25.4x730mm

Ø9.6x394mm

Pre-glued

A100RPO24851101 P.3
6 Flap & Aileron Servo

**PWA2x8mm Screw**

- **Bottom View**

- **BALSA 8x18x21mm**

- **PLYWOOD 2x65x80.5mm**

7A Flap & Aileron Servo

**PB2x25mm Screw**

- **Bottom View**

- **Straper**

- **Fuel Tube Ø6x5mm**

- **PB2x30mm**

- **Pushrod (For Flap) Ø1.8x85mm**

- **M3x14mm**

- **Fuel Tube Ø6x5mm**

- **M3x14mm**

- **PB2x25mm**

- **Pushrod (For Aileron) Ø1.8x80mm**

- **Fuel Tube Ø6x5mm**

- **M3x14mm**

**Ø1mm pilot holes for World Models tri-horn are pre-drilled. Please look for pin-hole marks at under side of control surfaces.**
If you use one channel operation of the flaps, connect the two servos by Y-harness and cut slot on one of the servo holder plate opposite to the existing slot.

The existing slots are for 2 channels (mixing) operation of the flaps.

**Stabilizer & Elevator**

- **PWA3X 12mm Screw**
  - 2

- **A A’** (Stabilizer)
- **B B’** (Main Wing)
  - **B = B’**

- **Ø9.6x260mm**

- **PWA3X 12mm**
  - Pre-glued
9 Elevator Pushrod

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

PB2x20mm Screw 6

L/R

10 Vertical Fin/Rudder

Vertical Fin/Rudder assembly is pre-glued. Please handle with care.

PA3x12mm Screw 2
3mm Set Screw 1
2.1mm Collar 1

11 Tail Landing Gear

Tail Landing Gear assembly is pre-glued. Please handle with care.

PA3x12mm 2mm
3mm Set Screw 1

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12 Rudder Pushrod

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

13 Engine Mount

- Apply thread locker to screws.
- Blind nuts are off-centered to keep the spinner at the fuselage axis.

A. Inverted mount with Pitts type muffler.
B. Inverted mount for stock muffler installation.
Illustration is for inverted mounting. You can mount the engine upright or sideways simply by rotation the engine mount. Thrust angles will not be affected.

Make sure the rounded edges are facing the shock absorbing SILICON PAD.

Install Engine position

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

Please refer to the attached sheet for linkage connector installation.
Install and arrange the servos as shown in the diagram.
Secure the scoop by fastening the screws.

PWM3x13mm Screw 3

Make sure the screws hit the reinforcement plywood.

Secure the scoop by fastening the screws.

PWM3x13mm Screw 3

Apply double-sided tape

Make sure the screws hit the reinforcement plywood.
Adjust the control throws as shown in the diagram. These throws are good for general flying. You can adjust according to your personal preference.

The ideal C.G. position is 175mm (6.9 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.

# P-51 MUSTANG G.S. is specially designed to be powered by 2C 160 or 4C 180 engine (Glow), using a more powerful engine does not mean better performance. In fact, over powered engine may cause structural 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.

---

**Landing Gear**

Should you need to bend the landing gear wire, use the radio control to open or close the gear to 25% from fully retracted position and switch off the receiver. It is safer to bend the wire in this position. Bending the wire in fully open position may damage the supporting structure.

---

**ANTI-VIBRATION MOUNT INSTALLATION**

**For Engine Mount (PL5911120)**

1. ----- KM3x18mm Screw
2. ----- Copper Tube
3. ----- M3 Nylon Insert Lock Nut
4. ----- 3mm Washer
5. ----- PM3x35mm

Make sure the rounded edges are facing the shock absorbing SILICON PAD.
**Flying Tips**

1. Due to location of landing wheel ahead of plane C.G., hard landing may cause the wing to bounce up. This when combines with high landing speed may cause the plane to rise up, stall and result in even harder landing. Please use long landing approach. Descend the plane slowly until it touches down smoothly on the runway.

2. We recommend delaying the installation of wheel covers (section 3 of manual) until you are familiar with the flying characteristics of the model after the first few flights. Operate the retracts in low air speed, as the wheel covers may induce large drag during high air speed and cause difficulties in retracting the wheels. Adjust the angle of the wheel covers to minimize drag.

3. When flaps are lowered, nose of model will rise. Check effect of flaps at higher altitude altitude to avoid surprises during landing.

# When Flaps are lowered, nose of model will rise. The nose-up rise with the speed at which the models is flying when you lower the flaps and the extent to which they are lowered. Check effect of flaps at higher altitude to avoid surprises during landing. You may apply down trim of the elevator to compensate for the nose-up effect when lowering the flaps. Taking off with flaps lowered is not recommended, as the increased drag may require a longer runway and more engine power for the model.
Should you require to bend the landing gear wire, please insert a round metal bar into the spring ring and apply force there as leverage. Bending the wire directly may damage the mounting block structure.
After fastening the round nut, make sure that the linkage connector can rotate freely.

Drill 2mm hole at servo horn.

Insert linkage connector into servo horn.

Make sure shoulder of screw is cleared from servo horn. Add washer to reduce play if necessary.

Tighten up the round nut against the shoulder. Apply CA or permanent thread locker.

After fastening the round nut, make sure that the linkage connector can rotate freely.

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.

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.
Ducted Fan  Pattern
Warbirds     Funfly
Scale       Electric
Sports       Glider
Trainer      Boat
Accessories
Covering
   (Lightex / Toughlon)

The World Models Manufacturing Co., Ltd.
www.theworldmodels.com

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