User Manual
Version

<table>
<thead>
<tr>
<th>Version</th>
<th>Description</th>
<th>Date</th>
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</thead>
<tbody>
<tr>
<td>1.0</td>
<td>NM&amp; L200 User Manual</td>
<td>15-11-2013</td>
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<tr>
<td>1.1</td>
<td>Maintenance modifications</td>
<td>13-07-2014</td>
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<td>1.2</td>
<td>Rubber Upgrade</td>
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1 Overview

L200 catapult is a foldable system specially designed for reliable aircraft launch. It is a portable and easy to use tool that permits to takeoff from almost any field.

1.1 Typical applications

L200 has been designed for accomplishing with requirements of the most demanding aerial systems operators. Some of the main uses of the platform are:

- Small aircraft launcher for demanding applications.
- Takeoff from any terrain.
- Takeoff from boat and moving vehicles.
- Civil and military environments.

1.2 Package Content:

<table>
<thead>
<tr>
<th>Units</th>
<th>Item</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>L200 catapult</td>
</tr>
<tr>
<td>1</td>
<td>L200 catapult carrying bag</td>
</tr>
<tr>
<td>1</td>
<td>Remove before flight stick</td>
</tr>
</tbody>
</table>

2 Mounting

The system is ready to use on delivery, user just need to unfold the catapult and control the installed servo in order to operate the catapult.

2.1 Servo Connection

Embedded servo permits to remotely launch the catapult. It has two positions for operation, one for load and one for launch. Factory default values for launch and load are as follow:

<table>
<thead>
<tr>
<th>Position</th>
<th>PWM Signal</th>
</tr>
</thead>
<tbody>
<tr>
<td>Launch</td>
<td>1900</td>
</tr>
<tr>
<td>Load</td>
<td>1000</td>
</tr>
</tbody>
</table>

⚠️ Caution!! PWM value may slightly vary depending on mounting; make sure that servo is not in stall at any position.

Servo power must be set to DC 4.8 – 6V, connection diagram for servo connector (Amphenol T 3260 001) is shown below:
Figure 1: Servo connector

<table>
<thead>
<tr>
<th>Signal</th>
<th>Pin</th>
<th>Notes</th>
</tr>
</thead>
<tbody>
<tr>
<td>GND</td>
<td>1</td>
<td>Negative (-)</td>
</tr>
<tr>
<td>VIN</td>
<td>2</td>
<td>Positive (+)</td>
</tr>
<tr>
<td>Signal</td>
<td>3</td>
<td>PWM signal</td>
</tr>
</tbody>
</table>

⚠️ Caution!! It is recommended to disconnect power from servo when not in use for avoiding accidental launch.

2.2 Aircraft Adaptor

L200 aircraft adaptor permits to use the L200 catapult with any aircraft in the weight range admitted by the system.

In order to position the adaptor within the aircraft, place it with the piston on the aircraft nose direction. Maintain the aircraft mass centre behind the piston.
3 Operation

Before performing a launch, read the safety recommendations and make sure that there is enough clear space in front of the catapult and there are no people behind the aircraft.

3.1 Unfolding

Two steps must be followed to unfold the catapult.

- Put the rail in straight position

Pull from catapult ends until click sounds.

Make sure that black positioners are well positioned.
- Position the legs

Open fixing tabs.

Stretch legs to the desired position.

Close fixing tabs firmly.
Unscrew the fixing system and position the legs to the desired height.

In order to fold the catapult after the operation, follow the same steps in the inverse order.

3.2 Load

Connect the cart carrier to the cart. Pull up the cable to freely release it.

Insert the remove before flight stick.
Load the catapult using the handle until the cart carrier reached the servo sticks.

Pull the pushing mechanism up.

Position the aircraft within the catapult cart.
3.3 Launch

Pull from the handle so it can turn freely

Remove the Remove Before Flight stick

Activate the servo to perform the launch
4 **Maintenance**

It is recommended to perform maintenance after 200 launches. Maintenance Kit includes replacement for both, load cable and launching rubber.

4.1 **Cable**

Cable provided on the maintenance kit has the proper length in order to be assembled into the catapult. One side must be attached to the reel and the other must be connected to the cart carrier, as shown in the pictures.

![Figure 2: Reel](image)

![Figure 3: Cart Carrier](image)

Cable must be firstly inserted into the reel, using the hole on the reel and the prisoner to fix it. Then use the handle to roll it into the reel.

In order to install the cable on the cart carrier side; insert it trough the holes into the black cylinder and use the brass piece to fix it.

⚠️ Images used on the manual may differ from the L200 unit received.
5 Safety

- Do not launch the catapult without an aircraft. It may seriously damage the system.
- Always operate the system in an open space.
- Avoid the use of the system near other people or goods.
- Always make sure that there is a clean area in front of the catapult before launching.
- Do not operate the system painting to other people.
- Always stay behind the aircraft for launching.
- Read carefully the operator manual before operating the system.
- Use always the remove before flight stick when operating the system.
- Use and stick to fix the catapult to the ground before launching.