

## Trimble UX5 & UX5 HP Launcher

Before you use the launcher provided with the Trimble® UX5 or UX5 HP aerial imaging rover make sure that you have read and understood all safety requirements in this guide.

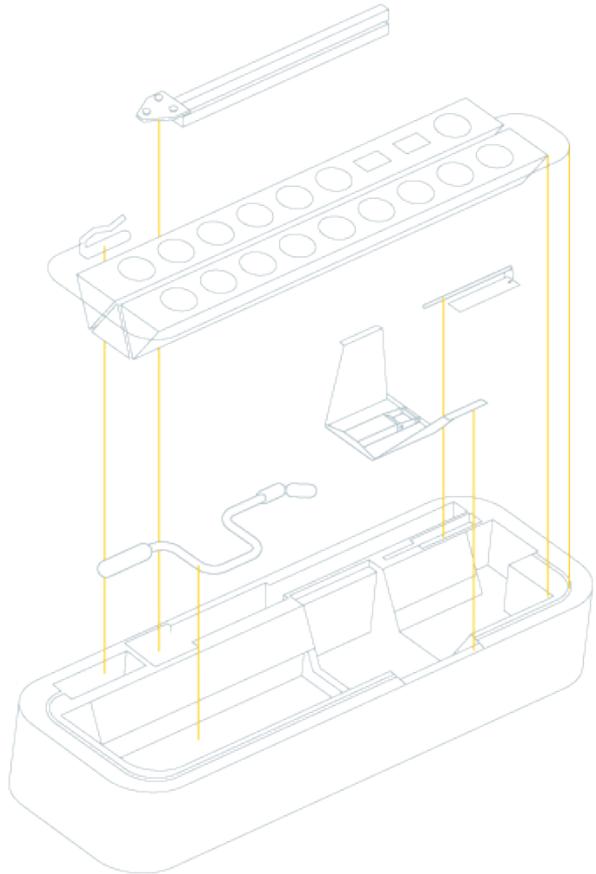
This guide explains how to:

- Prepare the launcher.
- Use the launcher to launch the Trimble UX5 or UX5 HP aerial imaging rover.
- Disassemble the launcher.

### Before you head out to the field

Make sure the launcher bag contains the following items:

- Safety pin.
- Launch dock with lock pin.
- V-support.
- Crank.
- Launch slide with elastics.
- *Trimble UX5 & UX5 HP Launcher Quick Start Guide* (this document)



## Assembling the launcher

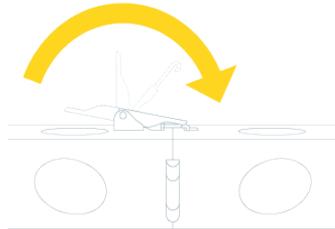
You are prompted to prepare the launcher during the flight checklist.

1. Unfold the launch slide.



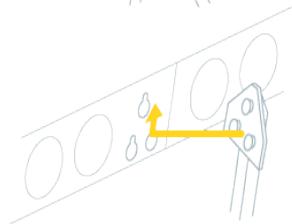
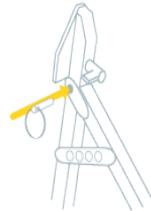
**CAUTION** – Take care when unfolding the launch slide as there are sharp edges that can cause finger cuts.

2. Secure each section of the launch slide by lifting the appropriate handle and hooking it into the next section of the launch slide. Close the handles.



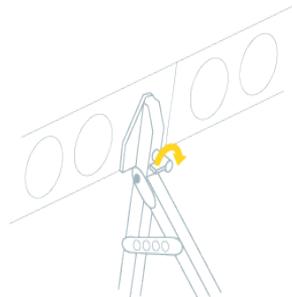
3. Unfold and secure the V-support with the lock pin.

To attach the V-support to the launch slide, make sure the knob is pointing to the left and then insert the V-support pins in the reserved holes, situated approximately 2/3 of the length of the launch slide. Turn the knob to the right to tighten.



4. Pull the ends of the launcher cord out of the launch slide so that the cord lies on top of the launch slide.

**Note** – If the launcher cord is blocked while the elastics are not tightened, pull the release handles upward to unblock them.



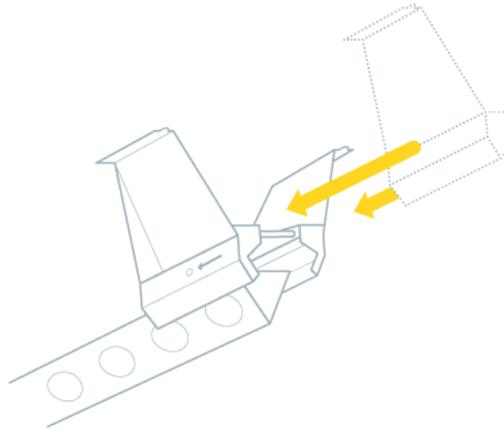


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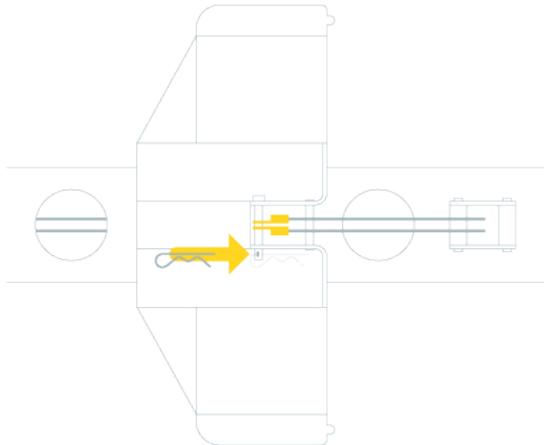
**CAUTION** – Never push the release handles when there is tension on the launcher cord. You will damage the elastics. If there is tension on the launcher cord, see step 1 of “Disassembling the launcher.”

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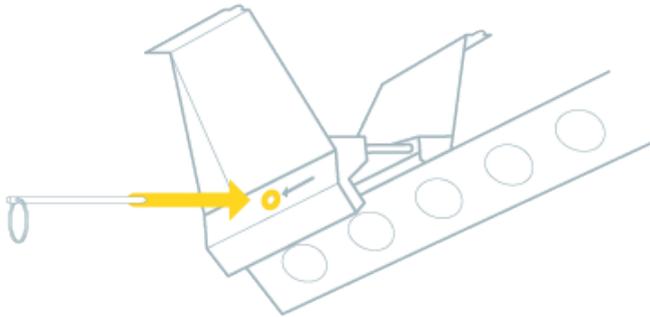
5. Position the launch dock on the end of the launch slide with the tabs on the launch dock pointing toward the direction of launch.
6. Slide the launch dock over the ends of the launcher cord.



7. To attach the ends of the launcher cord to the launch dock, remove the lock pin from the launch dock and then slide the lock pin through the holes in the launch dock, attaching the ends of the launcher cord as you do so. Secure the lock pin.

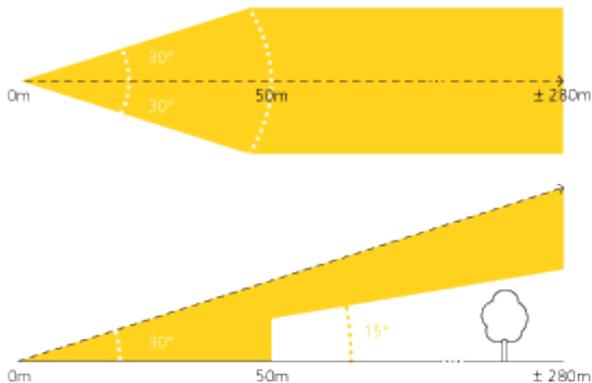


8. Slide the launch dock over the hook at the beginning of the launch slide. Make sure the launch dock clicks into position and the trigger is not blocked.



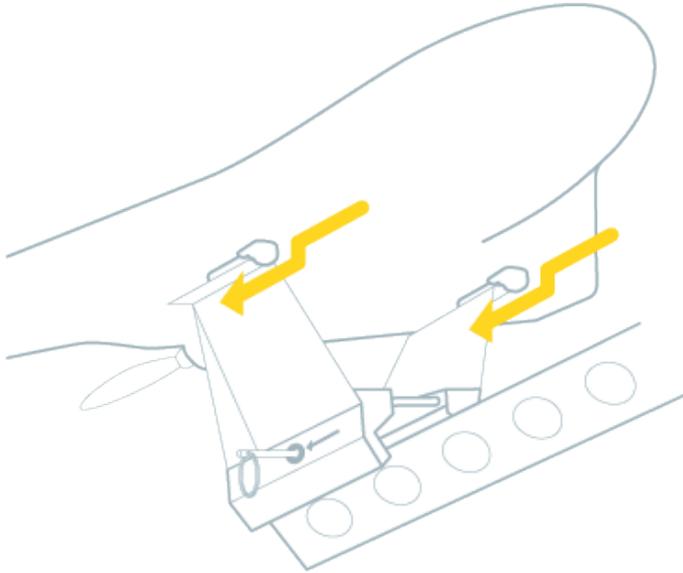
**WARNING** – Always keep the safety pin inserted in the launch dock. Remove the safety pin only just before launch. Early removal of the safety pin can result in accidental release of the launcher, causing serious personal injury and damage to the rover or launcher.

9. Insert the safety pin into the launch dock.
10. Position the launcher at the planned takeoff location, with the launch direction pointing into the planned takeoff direction.
11. Make sure the takeoff location is free of obstacles:
- From 0 m to 50 m (164 ft): No obstacles within  $30^\circ$  to the left and right.
  - From 50 m to 280 m (164 ft to 919 ft): No obstacles above the  $15^\circ$  safety angle and within 25 m (82 ft) to the left and right of the launch direction.



## Placing the rover onto the launcher

1. Position the rover at the front of the launch dock and use your finger tips to guide the launcher slats on the underside of the rover onto the lips of the launch dock.



2. Use the artificial horizon indicator in the Aerial Imaging software to check the pitch and roll of the rover on the launch dock:

The pitch angle should be between  $20^\circ$  and  $30^\circ$  and the roll angle should be between  $-5^\circ$  and  $5^\circ$ . The horizon should be positioned parallel to the rover on the artificial horizon indicator.

If you need to adjust the horizon, reposition the launcher.



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**WARNING** – Take care to ensure the rover is correctly positioned on the launch dock. An incorrect position can result in launch failure, causing serious personal injury and damage to the rover or launcher.

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## Tightening the launcher cord elastics

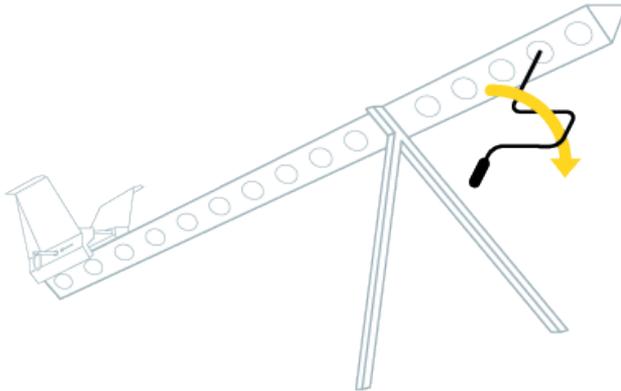
1. Insert the crank onto the nut located toward the front end of the launch slide.
2. Stretch the launcher cord using the crank. In normal circumstances, the node between the cord and elastic should be in the middle of the hole numbered “4” on the launcher.



**CAUTION** – The launcher cord stretches with every launch. When you can easily reach the last hole when tightening the cord, replace the launcher cord to prevent unsuccessful launches or damage to equipment. For more information, click *Maintenance* in the *Home* screen.

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3. Remove the crank.



## Removing the safety pin

Position yourself behind the launcher, reach carefully under the rover and then pull out the safety pin.



**WARNING** – Always take care to avoid contact with the propeller blades. If the rover receives a sudden shock while armed, the motor can unexpectedly start causing the propeller blades to move. Contact with moving propeller blades can result in serious personal injury.

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## Launching the rover

Once you have armed the system, the software prompts you to launch the aircraft.

1. Just before launch, perform the following safety checks:
  - Make sure there are no aerial objects inside the zone of operation.
  - Make sure you have a clear line of sight to the rover.
  - Make sure there are no obstacles or people near the front of the launcher.



**WARNING** – Make sure you complete each of the safety checks listed at this step. Failure to do so could result in serious personal injury and damage to the rover or launcher.

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2. When you have made sure that everything is clear in front of, above, and behind the launcher, stand behind the launcher and press the launch handle to launch the rover.



**CAUTION** – Never launch without the rover sitting on the dock as it will damage the launch dock. The design of the launcher takes into account the weight of the rover sitting on the launch dock.

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3. ***If an obstacle such as a person or animal suddenly appears in the obstacle clearance zone during takeoff***, tap the FTS icon in the Aerial Imaging software. The rover immediately powers down and returns to the ground. For more information, refer to the Aerial Imaging Help.

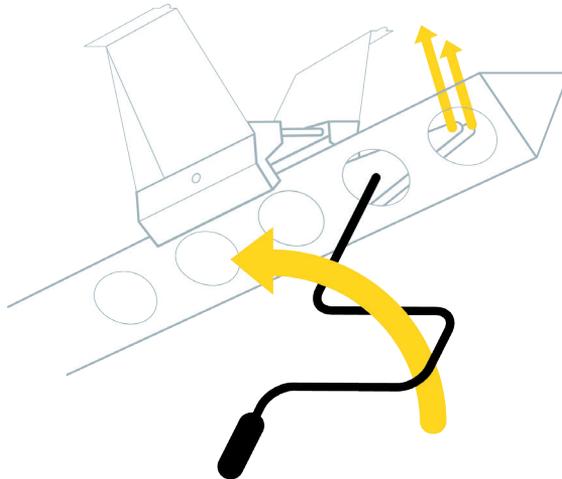
After launch, the rover flies to the first waypoint, which is highlighted in the *Dashboard* tab. If the rover is not yet at the flight height when it reaches this point, it climbs in circles of 100 m radius until it reaches the desired height.

4. After launch, release the tension on the launcher cord. Leaving tension on the launcher cord for extended periods can damage the elastics. See “Disassembling the launcher.”

## Disassembling the launcher

1. Release the tension on the launcher cord, if you have not already.

To release the tension, release the force with the crank very gently while pulling the release handles in the front of the launcher upward. This is safest done with two people, with one person carefully winding the crank counter-clockwise to counteract the force on the elastics.



2. Remove the lock pin on the launch dock and detach the launcher cord.
3. Using the crank, tighten the launcher cord so that most of the cord is in the launch slide but the end remains out. Remove the crank.
4. Slide the launch dock off the front of the launch slide.
5. To detach the V-support, turn the knob upward and then slide the pins out of the holes in the launch slide. Remove the lock pin on the V-support to fold the legs and then reinsert the lock pin.



**CAUTION** – Take care when folding the V-support legs not to jam or cut fingers.

6. Open the handle fixes on the launch slide and fold the launch slide.
7. Return all of the launcher items to the launcher bag.

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