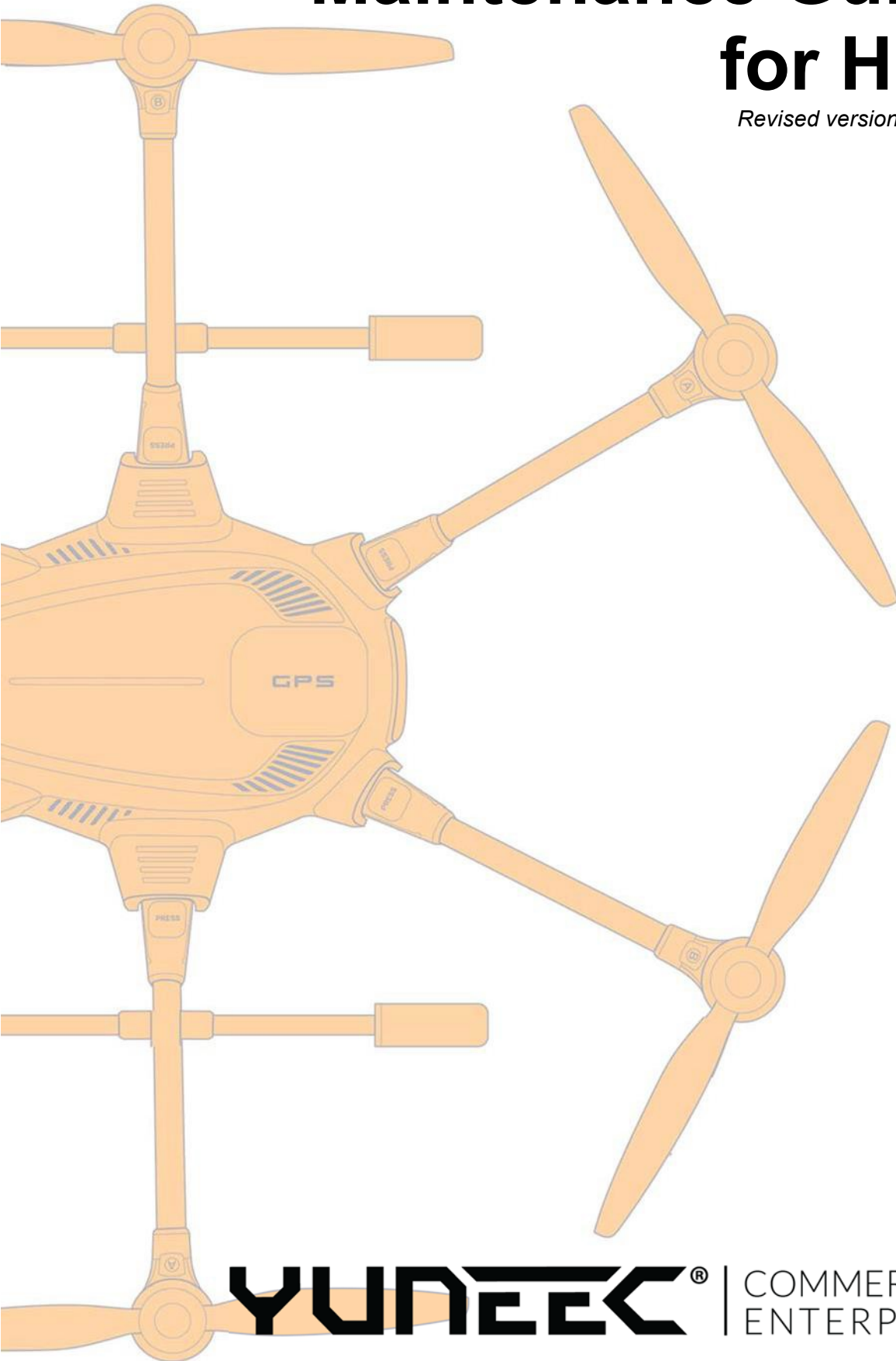


Maintenance Guide for H520

Revised version 9.14.18



YUNEEC® | COMMERCIAL
ENTERPRISE

Dear customer / pilot

Yuneec recommends integrating this document into the Company's policies / procedures / operations documentation.

Maintenance is divided into two categories, preventive and targeted maintenance.

Preventive maintenance is planned and performed by the user according to the manufacturer's recommendations.

Targeted Maintenance is a required maintenance or part replacement as per Yuneec's guidelines, which must be performed at specified intervals. This type of maintenance can be done by the user, or must be done in detail by a Yuneec Authorized Service Center.

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INSPECTION OF THE AIRCRAFT

This guide contains the basics for inspection. However, you should keep in mind that the inspection of the unmanned aircraft is only a small part of flight safety. Always be aware of weather conditions, airspace, flight restrictions and the area in which the unmanned aircraft will be present. Make sure that there are no people, land or hazards/objects on the ground in the affected areas that could be damaged during flight operations.

Maintenance logging is an industry best practice that is required by some jurisdictions to comply with regulatory requirements.

Always follow the local flight regulations!

FIRMWARE

We recommend that you always install the latest firmware/software on all Yuneec aircraft and related products.

Failure to update the aircraft, ground station, and camera system may result in flight errors for which Yuneec cannot be held responsible. For more information, visit www.yuneec.com. At the request of the user, Yuneec's DataPilot™ OTA application automatically updates all firmware and software applications.

REQUIRED FOR BASIC MAINTENANCE TOOLS

We recommend a toolset consisting of the following elements:

- Phillips screwdriver PH 00
- Phillips screwdriver PH 0
- Phillips screwdriver PH1 1.5-mm
- Hexagon screwdriver 2.0 mm
- Hexagon screwdriver 2.5-mm
- Hexagon screwdriver
- Small cable clamp
- One bottle of bearing lubricant (Tri-Flow with needle lubricant)
- Loupe
- Microfiber cleaning cloth
- Lens cleaning cloth compressed air spray
- Small hand vacuum cleaner
- Small hairbrush

ROUTINE MAINTENANCE (before flying / everytime)

Yuneec recommends that you take off and land on clean, level ground surfaces. Dust, dirt, sand, leaves, and other light particles can cause Foreign Object Damage (FOD), shortening operating time and causing sudden aircraft failure during flight operations. Take off and land on a clean surface, e.g. on a clean concrete, wood or plastic surface or on a dry textile. For take-off and landing, a clean take-off and landing space should be used. It should be made of a heavy material and secured so that the side edges are not raised by the downdraft. Make sure that the take-off and landing area provides sufficient space for the landing gear and the downdraft caused by the propeller. *Never take off directly from a sandy, soft soil or a dirty concrete surface.*

Aircraft

Make sure that: the engines are turning smoothly; the battery is fully charged; the battery is completely located/locked in the flying frame; the propellers are locked on the engine; the propellers have no dents, cuts or other damage (replace if necessary); the propellers are symmetrically arranged (if necessary, replace); the landing gear is at the appropriate angle; the gimbal is properly attached to the pin rails; the gimbal vibration dampers are seated correctly and secured with the pins; the camera is completely free of movement.
If the aircraft is more than 8 kilometers from the last calibration, recalibrate the compass / GPS.

ST16S ground station

Make sure that: the remote control is fully charged; at least 7 satellites for the aerial antenna (s) are permanently attached; the openings are not blocked.
For each flight, always keep the unmanned aircraft about half a meter above the ground (*so that it does not fly at eye level!*) and then check that it is properly controlled.
Before starting the job, check the forward/reverse/down/up/down and yaw functions.

MAINTENANCE after 25 flying hours (about 15 hours per cycle)

Aircraft

Remove dust and dirt particles from the gimbal vibration dampers. Make sure that: the arm lock is working properly;
the leading engine cable sleeve in the flight frame has no signs of wear. Use compressed air spray to remove dirt and dust particles from the engines.
Turn the motors by hand and check that there are no solid particles of dirt in the interior, and that all propellers turn smoothly.
Remove dirt and dust particles from the foot actuators and check that the feet are tight.
Survey the camera rails for signs of wear.
Check that the camera filter threads are in perfect condition. Make sure all screws are tight. If necessary, tighten screws manually.
Make sure that the cooling fan turns constantly and does not make any unusual noise.
Remove dust particles from the arms/feet.
Clean the sonar connections and remove dust and dirt particles. Calibrate the compass, accelerometer, and gimbal

ST16S ground station

Make sure all screws are tight.
If necessary, tighten screws manually (picture with screw positions). Check the openings for safety and dust contamination.
Vacuum these out if necessary. Yuneec recommends that you do not blow out these holes with compressed air.
Make sure that the switch mounting rings are tight.

Perform the inspection flight. Log the inspection/maintenance.

MAINTENANCE after 100 flying hours (about 45 hours per cycle)

Aircraft

Check the clearance by lifting each motor and applying slight pressure to the side. Check the motors for signs of movement **(1)**.

Make sure that: the ventilation areas are free of dirt and dust particles; the motor cable sleeve leading into the flight frame has no signs of wear; the propellers have no cracks, signs of stress or corrosion holes; the cooling fan turns smoothly **(1)**;

the arm lock is working properly; adjust if necessary. Remove dirt particles from the actuators, motors and cooling fan by brushing, spraying or vacuuming.

Replace the gimbal vibration damper and gimbal vibration damper locks

Examine the gimbal rail for signs of wear and stress marks **(1)**.

Make sure that the screws of the gimbal rail are tight.

Make sure the gimbal arms turn freely.

Examine the quick connector pins for the camera for signs of wear and clean them if necessary. We recommend that you apply cleaning solution for electronic components to a paper or cleaning cloth.

Check that the camera lens threads are in perfect condition. Check that the propeller locks are in good working order, for signs of wear and that they are working properly.

Replace the propeller locks and springs if they show signs of wear. Remove all dirt and dust from the motors and push them by hand to make sure there are no dirt particles in them, that they do not turn too sluggishly and that all propellers have one and the same rotating motion.

Remove dirt and dust particles from the foot actuators. Remove dirt and dust particles from the foot actuators and check that the feet are firmly seated.

Check the landing gear feet for signs of wear. Check all screws and tighten them manually if necessary

ST16S ground station

Remove the battery and see if the connections are dirty. Clean the vents/fans with the hand vacuum or manual blower (do not use compressed air).

Clean the joystick axle with the small hairbrush.

Make sure the gimbal controller is secure and make any necessary adjustments. Make sure the throttle control is tight and make any necessary adjustments. Replace the screen protector if necessary. Check the screws on the frame/handle.

Make sure that the switch mounting rings are tight.

Perform the inspection flight. Log the inspection/maintenance.

(1) If there is wear/damage, we recommend having this work done by a Yuneec service workshop!

ANNUAL AIRCRAFT MAINTENANCE (Pilot / Owner)

Aircraft

Perform the following steps in the recommended 100-flight maintenance procedure:

Check the housing for cracks / breakages.

Check all feet and connections for cracks and check the connection points. Make sure all connections are in good condition.

Swap out the landing pads on the feet.

Replace the gimbal vibration dampers.

Replace the safety pins of the gimbal vibration dampers.

Lubricate the gimbal attachment points.

Replace the arm locks and springs.

Remove any dirt and dust from the motors and push them by hand to make sure there are no debris particles in them, that they do not turn too sluggishly and that all of the propellers have one and the same rotating motion. Check for lubrication and possible lubrication worn marks on the bearings.

Remove dirt and dust particles from the foot actuators and check that the feet are tight.

Make sure that all moving parts are stable and fully functional.

Remove and tighten all Allen screws if necessary.

Update the firmware.

Calibrate the compass, GPS, accelerometer and gimbal.

ST16S ground station

Update the firmware.

Update all software applications.

Remove the battery.

Clean the vents/fans with the hand vacuum or manual blower (do not use compressed air).

Check the screws on the frame/handle.

Make sure all connectors are in perfect condition.

Clean the battery terminals with contact spray.

Check that the threads of the tilting units are tight.

ANNUAL AIRCRAFT MAINTENANCE (Authorized Service)

ATTENTION: The following work must be carried out by a specialist workshop or an authorized branch of Yuneec!

Aircraft

The following work/inspection will be done by your specialist workshop

Inspection in the H520

- remove any dirt and dust particles.
- Inspect the motherboard for cracks or fractures.
- Remove dust and dirt particles from the GPS module.
- Inspect all solder joints
- Replace the battery connector
- Secure all metal parts with threadlockers

Inspect camera

- Open camera and remove dust and dirt particles.
- Clean the lens board.
- Clean the antennas.
- Inspect the antenna connection
- Check the attachment points and connections
- Check the sensors for function
- perform manual calibration

ST16S ground station

- Check the fan bearings
- Clean the joystick connection points with contact spray.
- Clean potentiometer of gimbal controls with contact spray
- Clean potentiometer of gas controls with contact spray.
- Removal of dust and dirt particles from the electronic components.

Perform the inspection flight. Log the inspection/maintenance.

PARTS EXCHANGE RECOMMENDED BY THE MANUFACTURER

20 Flights

Propeller

100 Flights

Landing pads/feet

200 Flights

Replace the battery every 200-250 cycles.

The battery cycles should be logged in the aircraft's log book.

If multiple batteries are used, give each battery a unique designation for error-free logging.

Dispose of batteries properly, according to the legal regulations of your country.

Deliver the batteries to a recycling center.

400 Flights

Inspect the mechanical and electrical condition of the motors and replace defective parts if necessary.

Replace the landing gear actuators. Replace the engine lock / locking mechanism. Replace the internal cooling motor.

Replace the fan of the ST16S ground station. Replace the battery of the ST16S ground station.

BATTERIES

Batteries may fail if they are overheated or dropped. If there are warped or distorted batteries in the case, they must be disposed of immediately to avoid immediate failure, which may result in loss of energy during flight operations or explosion. Self-contained battery units must not be repaired!

Dispose of batteries properly, according to the legal regulations of your country.

Deliver the batteries to a recycling center.

CHECKLIST FOR INSPECTION

Owner: _____ Date: _____

Tested unit: _____ Serial number _____

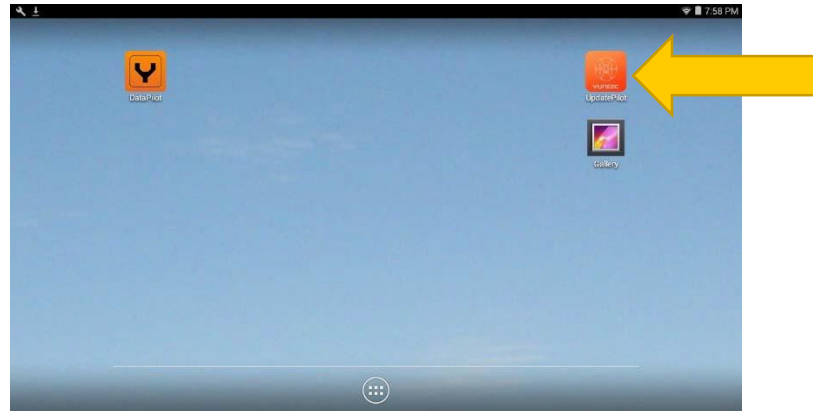
- Firmware has been updated to current version.
- Nuts and tilting units of the ST16S have been tested.
- The motor shafts and propellers are in good condition.
- The battery packs are properly installed and snap into place.
- The landing gear is in a good condition, and is properly extended and retracted.
- The camera has been installed and is in good condition.
- The camera rails are in good condition.
- The LED indicators have been checked.
- The telemetry function works and the data recorded with it is correct.
- The commissioning sequence is normal.
- The accelerometer has been successfully tested.
- Compass calibration was checked.
- The GPS signal has found and detected enough satellites.
- The stationary floating test was carried out.
- The image acquisition was tested from above.
- The function and quality of the camera have been tested.
- How good the response of the aircraft is in manual mode or without GPS was tested.
- The WayPoint / Survey function has been tested.
- RTL and automatic landing have been tested.
- GPS was retrieved during flight.
- It has been tested whether the motors and the battery have a normal operating temperature.
- The video / image recordings were examined for discrepancies.
- The device was cleaned.

Maintenance performed by: _____ Date: _____

Remarks:

USE OF UPDATEPILOT

UpdatePilot™ (installed on the ST16S Multifunction Display) can be used to update the AutoPilot, Gimbal, H520 Camera Firmware and DataPilot™ application, and even the UpdatePilot™ application itself.



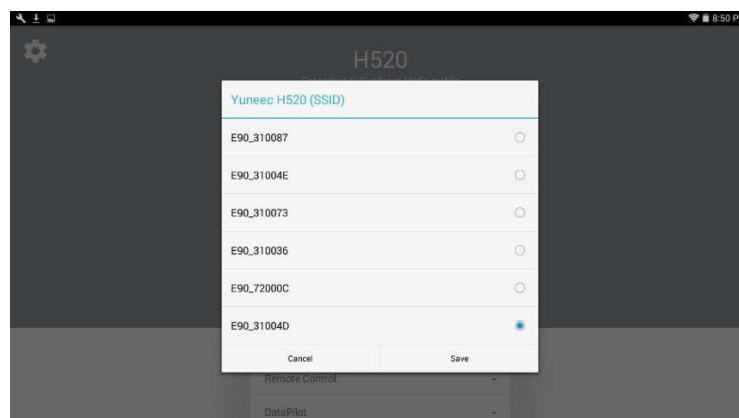
Link the ST16S to a Wi-Fi network.

Insert a fully charged battery into the H520. The UpdatePilot application does not update the firmware when the battery level is less than 50%.

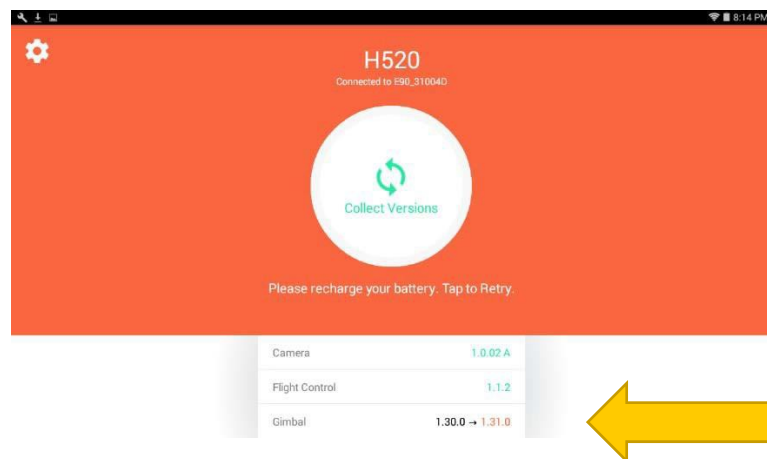
Open DataPilot™ and link the application to the aircraft / camera.

Open the UpdatePilot™ application by tapping the icon that appears on the ST16S screen. The application will open.

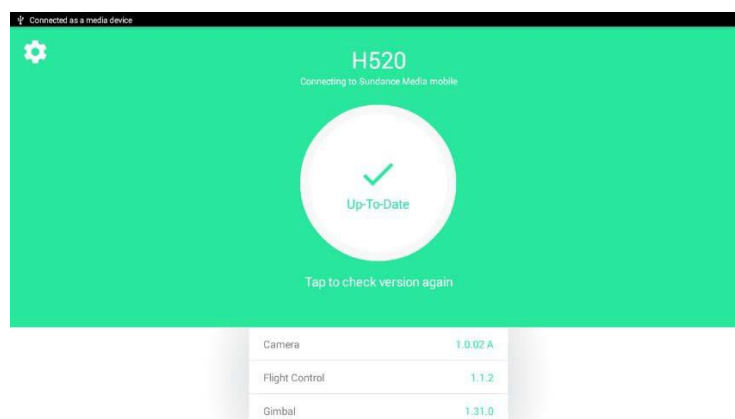
Select the camera that needs updating. The device list displays all the cameras that have ever been linked to the application.



After UpdatePilot™ has linked to the camera, the application displays the firmware/components that are not up to date.



UpdatePilot™ can take some time to update all components. We ask you to be patient while the software downloads the necessary firmware and software updates. When the download/update process is complete, the application alerts you by changing its background color.



Close UpdatePilot™, restart the Hexacopter H520 and recalibrate it before the next flight.
(Recalibration is not mandatory. However, it is best practice to recalibrate an unmanned aircraft after a firmware or software update .)

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