

This manual can be downloaded from the following website:

<http://www.richenpower.com/services/>

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Or scan the QR code to have the manual and service/repair information on Alibaba.com



Alibaba Shop

Read This First

Apply H2 Hybrid UAV Generator for extremely long endurance as following steps:

1 Getting Started	2 Operation
3 Maintenance	4 Trouble Shooting

Checking the bundled items

- H2 (1)
- Cable (1)
- LiPo Battery 12S (1)
- Battery Cable (1)
- Control Unit (1)

Complimentary Accessories

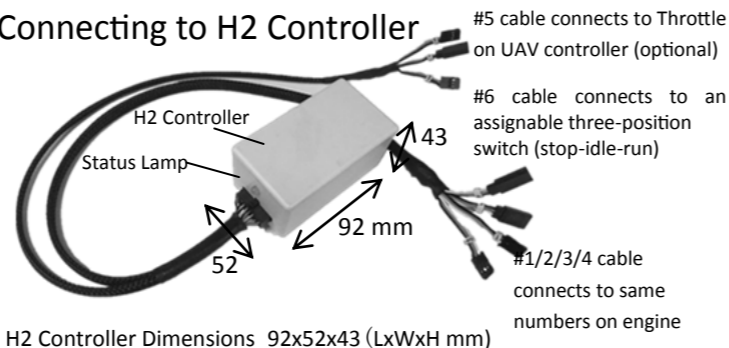
- Fuel Mixer (1) *
- Oil (1) *
- Starter & Battery 4S (1) *
- Fuel Tank (1) *

*Accessories are consumable items, please buy at Alibaba.com when you need more.

Specification

	H2
Weight	4.0kg(8.8lbs) w/o Accessories / 5.2kg(11.5lbs) Total
Power	1.8kW(2.4hp) Continuous / 2.0kW(2.6hp) Max. Power
Dimension (L x W x H)	260 x 312 x 325 mm/10 x 12 x 12 in
Applicable UAV Types	Multicopters & VTOL Fix-wings
Max. Take-off Weight	18kg (39.7lbs) or UAV suggested
Output Voltage	12 S (49V)
Fuel consumption	750 g/kw · h (hovering 1.5 L/h)
Service Temperature	-20 ~ 40 °C / -4 ~ 104 °F
Ceiling (above the sea)	2000 m
Rotating direction	Clock wise (view from starter)

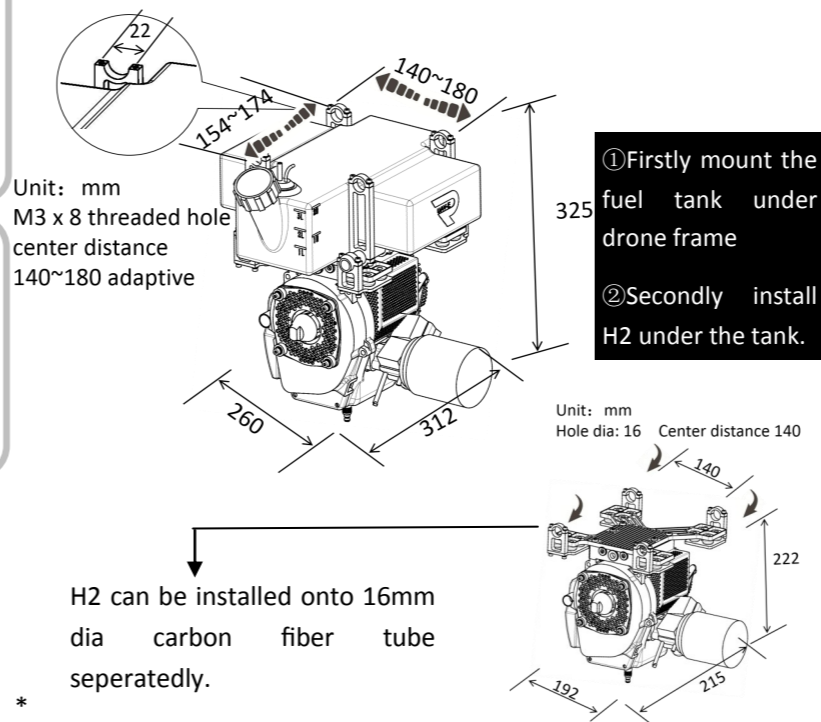
Connecting to H2 Controller



Getting Started

1 INSTALLING TO UAV

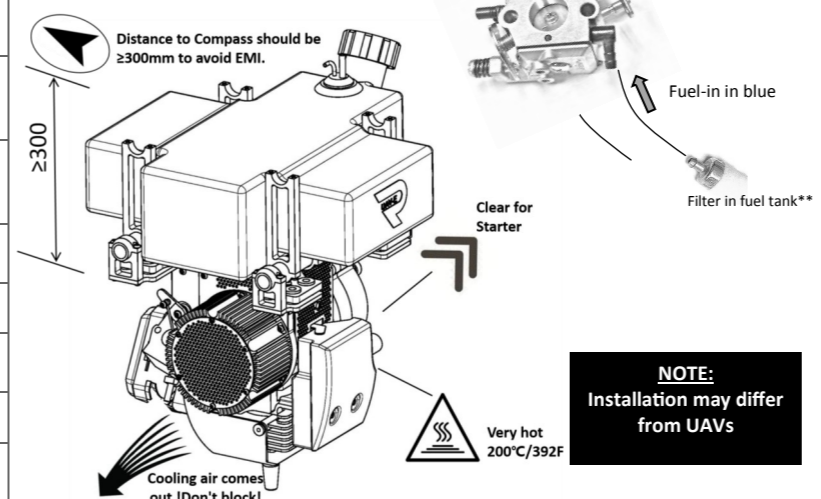
Installing H2 to UAV, default is suspended



NOTES: default mount is suspended. Other modes may lead to damper failure

Fuel supply

**Tank fuel filter must have 85µm or equivalent mesh



2 FUEL

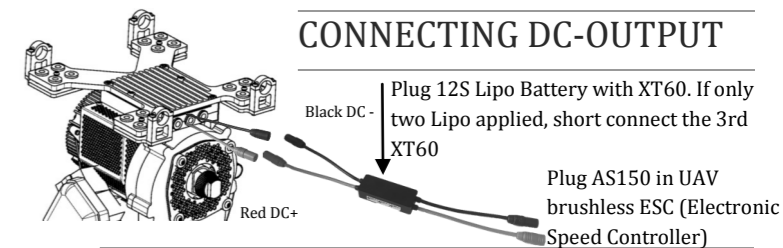
Using Fuel Mixer to mix gasoline and oil

- ① Filling gasoline (octane over 95) until Mixer mark.
- ② Filling oil *** until Mixer mark
- ③ up-side down to mix the fuel

gasoline/oil at 25: 1

***Using recommended 2 cycle engine oil or JASO FC/FD ISO-L-EGD grade oil

CONNECTING DC-OUTPUT

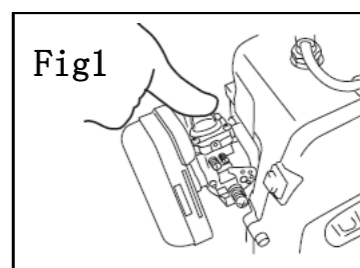


3 ENGINE RUNNING-IN

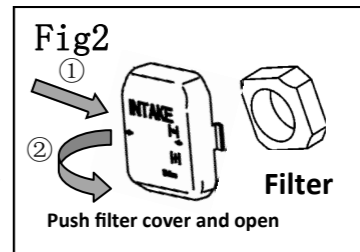
Running-in is completed. Plug-in and play.

Operation

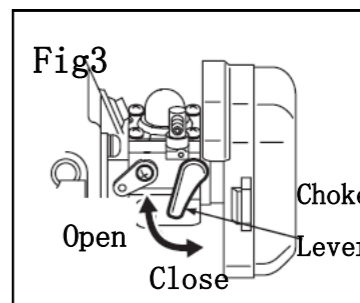
1 STARTING



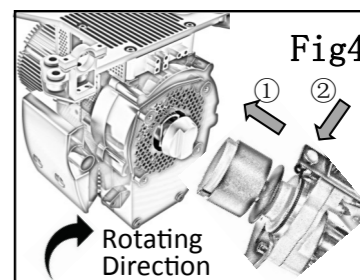
1. Before every start, push the primer pump several times until overflow fuel flows out from yellow pipe. (Fig.1)



2. Check if the filter is clogged. (Fig.2)



3. Power on and switch the three-position switch to "idle". Make sure the status lamp on H2 controller is "green". If not, please see Trouble Shooting chapter.



4. Close the Choke Lever (Fig.3), ①Push hard the starter to H2, ②Push the start button for 2 seconds. Hear firing noise disconnect starter from H2. (In case of engine warm condition, choking may not be necessary)

5. Open the Choke (Fig.3). Push start button for 2~3 seconds. Pull the starter until hearing firing noise (Fig.4)

! NOTES: Led on H2 controller is "solid green", H2 is able to start. If the led is "green & red flashing", maintenance is required. H2 is still able to start. Led is "red flashing" and controller Beeps, H2 is unable to start. See Trouble Shooting

Important

Over choking may cause starting difficulty due to wet spark plug. In this case change spark plug or dry it, and try to start again.

2 RUN

- Before starting make sure the controller LED working as the Three position switch, refering to Trouble shooting.
- Switch the three-position switch to "run",** and monitoring the UAV input voltage.
- Voltage should be at 49 ± 1V**
- Run H2 for 1 minute for warm up.
- Take-off by moving throttle or running Auto-pilot program
- Voltage may drop 2~3 V when encounters air turbulence or maneuver. **If the voltage drop rapidly to under 45 V** Please pay attention. Land and inspect when necessary.

Important

- H2 has LiPo Battery with capacity of 90-second emergency landing. Contact us for bigger capacity.

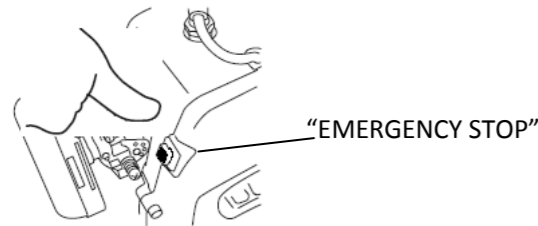
3 STOP

- Be sure to have H2 cool down for 30 seconds at "idle" after flight.**
- Switch the three-position switch to "stop".** H2 will stop.

NOTES

- Fuel ran out may completely damage H2. Monitor fuel level with given sensor and land before fuel ran out. DISPLAY is optional for fuel level sensor incompatible flight controllers like DjiA3

- H2 has "EMERGENCY STOP" bottom.



Gasoline is flammable! At the end of the day or during long-distance transport, the fuel tank should be emptied. Fuel shall be properly stored.

Maintenance

- Correct maintenance is necessary to keep H2 high performance
- H2 controller lamp blinks "green and red". H2 is reaching the maintenance cycle (50 hours). H2 is still able to start. Please follow the MAINTENANCE in separate manual.

Important

- If H2 is NOT maintained at every 50 hours cycle, it will lead to performance degradation.
- The controller lamp stops to blink "green and red" 2 hours after every 50 hours cycle.

Trouble Shooting

1) unable to start

	LED	Possible Cause	Solution
Three-Position Switch	Off	Switch is not on "idle"	Switch to "idle"
	Off	Power is off	Check power wiring and voltages.
	Green or green flashing	EMERGENCY STOP switch failure	Exchange
Filter overflow or clogged		Carburetor overflow	Repaire carburetor or exchange
		Bad environmental air condition	Wash the filter with mixed gasoline
Wiring	Stop, idle & run position LED "red flashing" and beeps	#6 wire Three-position switch cable is not connected	Check wiring, change flight controller or RC receiver channel
Maintenance cycle exceeded	Controller led "green and red flashing"	Maintenance cycle exceeded	Operate maintenance
Starter		Rotating direction wrong or voltage lower than 15V	Clock wise (view from starter) or charge the 4S battery

2) lack of power or unstable running

	LED	Possible Cause	Solution
Unstable running		Water in fuel, wrong, poor fuel quality or mixed longer than 2 months	Change with proper fuel
		Poor oil quality	Change with good oil
		H2 controller failure	Contact us
Lack of power	"green & red flashing"	Maintenance required	Operate maintenance
		Filter clogged	Wash the filter with mixed gasoline
		Caburetor clogged	Clean (as below)
Voltage drops rapidly after take-off	"red flashing"	Voltage is too low	Run H2 for 1 minutes until "solid green" before take-off
Others		Structure failure	Contact us

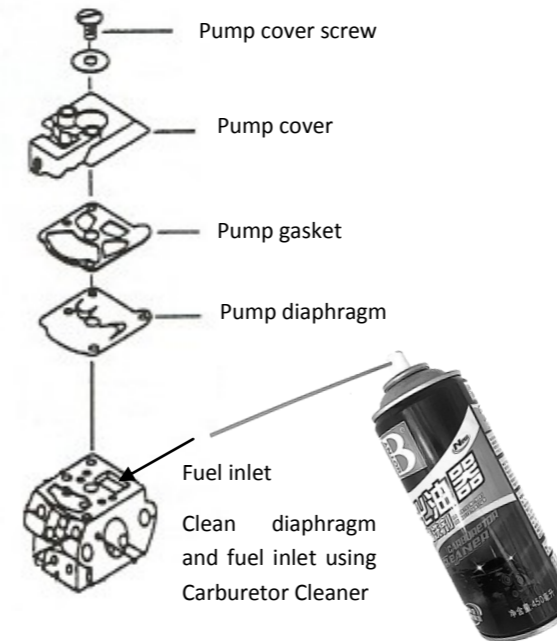
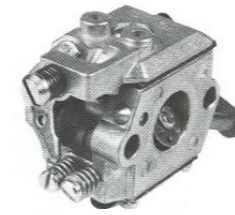
Carburetor Cleaning

Dirty operating environment (dusty) or unfiltered fuel can lead to clogging of carburetor and lack of power. It can be solved by simple carburetor cleaning.

- Remove fuel pump cover screw and pump cover
- Clean diaphragm and fuel inlet using carburetor cleaner
- Reassemble the puimp cover and make sure gasket and diaphragm direction is correct.

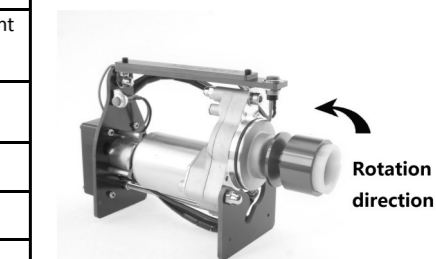
NOTES

Do NOT disassemble carburetor from H2. Only remove pump cover and clean diaphragm and fuel inlet.



Multirotor

H2 UAV Engine Hybrid Multirotor Power Configuration					
Motor	Propeller	Prop. Number	Voltage V	Max. Takeoff Weight KG	Norm Takeoff Weight KG
Dji E2000Pro 6010kv130	21x7 Plastic	6	48	14.5	13.5
TmotorU8kv135	Tmotor22x6.6Pro CF	6		15.8	14.2
TmotorU10kv100	JXF/Tmotor24x9 CF	6		16.5	14.8
TmotorU10kv100	JXF/Tmotor26x8.5/26x9.2 CF	6		18.3	15.5
TmotorU10kv80 or TmotorU8llkv85	Tmotor28x9.2 CF	6		19.5	16.5
TmotorU10kv100	JXF29x9.5 CF or Tmotor29x9.5 CF	4		18.0	16.2
Dji E5000 M10kv120	Dji 28x8	4		20.0	18.0



Rotating direction: Clock wise (view from starter)

Accessories	
Number	Items
422014	Starter Rubber
421013	Starter Battery
522012	Starter
422011	Oil
422006	Spark Plug
422007	Spark Plug screwer
422008	3.5 Liter default fuel tank
422010	Fuel Filter
422009a	Fuel Pipe (Fuel in in blue)
422009b	Fuel Pipe (Fuel out in yellow)
422015	Fuel Mixer
421002	LiPo Battery 4S 1800mah 75C
421017	Fuel Level Sensor
421019	Air Filter
422018	4.3 Liter square fuel tank (optional)

Before starting make sure the controller LED working as the Three position switch. If LED doesn't work, please check your RC receiver channel configuration.

LED	Three position switch	Instruction
Off	Stop	
Solid green	Idle	Flashing green & beeps if voltage lower than 46 V
Off	Run	Flashing red if voltage lower than 47V
Flashing red	Stop, Idle & Run	#6 wire not connected