



Aquila AT01

**NORMAL
&
EMERGENCY**

CHECKLIST

DAILY INSPECTION

CAUTION

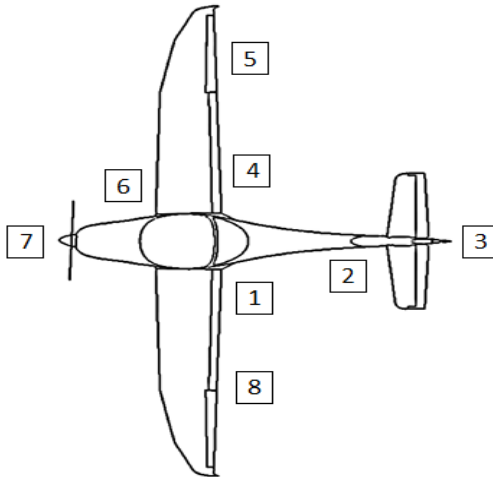
The daily inspection begins by checking all 3 fuel sumps for water and contamination. This is to be done before the aircraft is moved.

1. Tank drain (left / right wing) Drain and visually inspect
2. Electrical fuel pump drain..... Drain and visually inspect

A) CABIN

1. Aircraft documentation..... Check On Board
2. Ignition key..... Removed
3. ALT/BAT Switch..... On
4. Warning lights (ALT1, FUEL)..... Illuminate
5. Warning lights (ALT2, VOLT) Illuminate
6. ALT1 switch..... Off
7. Engine instruments..... Check
8. Fuel quantity..... Check
9. Nav lights switch..... On, check, off
10. Landing light switch..... On, check, off
11. Instruments lights switch..... On, check, off
12. Bat switch..... Off
13. ELT..... Check operational
14. Foreign objects..... Check and Remove
15. Baggage..... Stowed and Secured
16. Canopy..... Check condition
and cleanliness
17. Flashlights..... Check (night VFR)

B) EXTERIOR CHECK, VISUAL INSPECTION



CAUTION

Visual inspection means the following:

Inspection for mechanical damage, dirt, cracks, delamination, excessive play, looseness, leakages, incorrect attachment, foreign objects and general condition.

1. Left main landing gear

- a) Landing gear strut..... Visual inspection
- b) Wheel fairing..... Visual inspection
- c) Tire pressure..... Check
- d) Tire slip marking..... Check
- e) Tire, wheel, brake..... Visual inspection
- f) Chocks..... Remove

2. Fuselage

- a) Fuselage shell..... Visual inspection
- b) Skid plate..... Visual inspection
- c) Tail tie-down..... Disconnect

3. Empennage

- a) Elevator..... Visual inspection
- b) Horizontal stabilizer..... Visual inspection
- c) Rudder..... Visual inspection, fitting and bolt connection, proper control cable connection and safe-tied.
- d) Vertical stabilizer..... Visual inspection

4. Right main landing gear

- a) Landing gear strut..... Visual inspection
- b) Wheel fairing..... Visual inspection
- c) Tire pressure..... Check
- d) Tire slip marking..... Check
- e) Tire, wheel, brake..... Visual inspection
- f) Chocks..... Remove

5. Right wing

- a) Entire wing surface(upper/under side)... Visual inspection
- b) Fuel vent..... Check if clear
- c) Flap..... Visual inspection
- d) Aileron and inspection window..... Visual inspection
- e) Wing tip, Nav-light and ACL..... Visual inspection
- f) Fuel level..... Check with dipstick and verify with the indicated fuel level on the fuel gauge
- g) Fuel tank filler cap..... Check if closed
- h) Wing tie-down..... Disconnect

6. Nose section, cowling

WARNING

Before cranking the propeller: ignition and ALT1/BAT switch OFF, set the parking brake.

RISK OF BURNS!

- a) Check oil level..... Turn the propeller several times in the direction of engine rotation to pump oil from the engine back into the oil tank. Check if between the min. and max. markings) replenish as required.
- b) Check coolant level..... Verify coolant level in the the overflow bottle (between min. and max. markings). Replenish as required
- c) Air intakes Check if clear
- d) Cooler intake..... Check if free from obstructions
- e) Cowling..... Visual inspection, check Camlock fasteners.
- f) Propeller and spinner..... Visual inspection
- g) Propeller blades..... Check for cracks / damage

7. Nose landing gear

- a) Nose gear strut..... Visual inspection
- b) Wheel fairing..... Visual inspection
- c) Tire pressure..... Check
- d) Tire slip marking..... Check
- e) Tire, wheel..... Visual inspection
- f) Shock absorber unit..... Visual inspection
- g) Chocks and tow bar..... Removed

8. Left wing

- a) Entire wing surface(upper/under side).... Visual inspection
- b) Fuel vent..... Check if clear
- c) BAT switch..... On
- d) Stall warning..... Press to upper detent, warning tone is audible
- e) BAT switch..... Off
- f) Pitot/static tube..... Remove cover, check if all openings are clear
- g) Wing tip, Nav-light and ACL..... Visual inspection
- h) Aileron and inspection window..... Visual inspection
- i) Fuel level..... Check with dipstick and verify with the indicated fuel level on the fuel gauge
- j) Fuel tank filler cap..... Check if closed
- k) Flap..... Visual inspection
- l) Wing tie-down..... Disconnect

PRE-FLIGHT INSPECTION (WALK AROUND)

1. Daily inspection..... Confirm has been carried out
2. Tow bar..... Remove
3. Fuel level..... Check with dipstick and verify
With the indicated fuel level
on the fuel gauge

WARNING

Before cranking the propeller: ignition and ALT1/BAT switch OFF, set the parking brake.

RISK OF BURNS!

4. Check oil level..... Turn the propeller several
times in the direction of engine
rotation to pump oil from the
engine back into the oil tank.
Check if between the min. and
max. markings
5. Check coolant level..... Verify coolant level in the
overflow bottle (between min.
and max. markings). Replenish
as required.
6. Tie-down straps..... Remove
7. Baggage door..... Check if closed and locked
8. Pitot cover..... Remove
9. Control locks..... Remove
10. Seating position..... Adjust and lock, check that
nose wheel steering and
brakes can be operated
11. Carburetor heat..... Check for free movement, then
PUSH (OFF)
12. Cabin heat..... Check for free movement, then
PUSH (OFF)
13. Choke..... Check for free movement and
automatic reset
14. Throttle..... Check for free movement, then
set IDLE
15. Propeller control lever..... Check for free movement, then
set in START position
16. Weight and balance..... Within limits

BEFORE ENGINE START -UP

Daily and pre-flight inspection.....	Completed
Passenger briefing.....	Completed
Seats.....	Adjusted
Seat belts and harnesses.....	Fastened
Canopy.....	Closed and Locked
Parking brake	Set
Control column.....	Check for free movement, and correct control surface deflections
Fuel selector valve.....	Switch to less fullest tank
Carburetor heat.....	Press (off)
Throttle.....	Idle
Propeller control lever.....	Start position
Avionics switch.....	Off
Circuit breakers.....	Check all in
Attitude indicator.....	Cage (pull)
ALT/BAT switch.....	On
Alternator 1+2 warning light.....	Illuminates
Fuel warning light.....	Illuminates
Anti-collision light (ACL) switch.....	On

ENGINE START-UP

NOTE

The starter may not be operated for more than 10 seconds at a time, allow the starter to cool off for at least 2 min between attempts.

Fuel pump	On
Fuel warning light.....	Out
Throttle -cold engine.....	IDLE
-hot engine.....	2 cm Opened
Choke -cold engine.....	Pull (and keep pulled)
-hot engine.....	Press (off)
Brakes.....	Press both pedals
Propeller area.....	Clear
Ignition switch.....	Start, then both
Oil pressure.....	Check if pressure rises

CAUTION

The oil pressure has to show rising values within 10 seconds after engine start, otherwise shut down the engine immediately!

Alternator 1+2 warning light.....	Off
Fuel pump.....	Off

BEFORE TAXIING

CAUTION

Warm up the engine for approx. 2 min at 800 RPM **BEFORE** taxiing and then at 1000 RPM until the oil temp. reaches 50°C

Avionics / PFD switch.....	On
Avionics and flight instruments.....	Set up
Engine instruments.....	Check
Voltmeter.....	Check if needle is within the green range
Trim switch and indication.....	Functional check
Flap switch and indication.....	Functional check, then UP

ALTERNATOR TEST at 1000 RPM (FOR NIGHT-VFR ONLY)

Nav lights switch.....	On
Landing light switch.....	On
Instrument light switch.....	On
- ammeter indication in "+" zone (charge)	
ALT1 switch.....	Off
- ammeter indication in "-" zone (discharge)	
ALT2 circuit breaker.....	Pull
- increase of discharge.....	ALT 2 OK
- no change.....	ALT 2 damaged
ALT2 circuit breaker.....	Push
ALT1 switch.....	On
- ammeter indication bounce up to high positive values and decline thereafter.....	ALT 1 OK
- no change.....	ALT 1 Damaged
All switches.....	As required

TAXIING

Parking brake.....	Release
Brakes.....	Check
Nose wheel steering	Check function/free movement
Flight instruments and avionics.....	Check

BEFORE TAKE-OFF

Brakes.....	Apply
Parking brake.....	Set
Compass reading/gyro instruments.....	Check setting
Fuel selector valve.....	Switch to fullest tank
Fuel warning light.....	Off
Engine instruments.....	Check if within green range
Throttle.....	Set 1700 RPM
Ignition.....	Magneto Switch R-Both, L-Both Max drop: 120 RPM Max difference L/R: 50 RPM
Carburetor Heat.....	Pull (on) Check: -RPM drop: 20-50 Push (off)
Propeller control lever.....	Switch 3 times High-Low RPM Check: -RPM drop; 200 ±50 RPM -Increase in manifold pressure -Constant oil pressure
Throttle.....	Idle
Fuel Pump.....	On
Flaps.....	T/O
Trim.....	White marking
Circuit breakers.....	Check all in
Control column.....	Check for free movement
Seats belts and harnesses.....	Fastened and Tightened
Canopy.....	Closed and locked
Parking brake.....	Release

RUNWAY ITEMS

Landing Light..... On
Runway direction..... Checked
Transponder..... ALT
Propeller control lever..... 2300 - 2385 RPM

NOTE

During take-off and climb at take-off power the RPM is intended to be in the caution area because the maximum continuous RPM is exceeded. This is acceptable for MAX. 5 minutes.

TAKE-OFF

Throttle..... Wide open
Tachometer..... Check if within 2300 – 2385 RPM
Control column..... Neutral during initial ground roll
Rudder pedals..... Maintain direction
Rotate speed..... 50 KIAS
Climb speed..... 57 KIAS

CAUTION

For the shortest take-off distance over a 50-foot obstacle at sea level:

Rotate speed..... 50 KIAS
Climb speed..... 52 KIAS

CLIMB

Throttle..... Wide open
Propeller control lever (max. 5 minutes)..... 2385 RPM, thereafter 2260 RPM
Engine instruments..... Check if in green range
Flaps..... UP
Climb speed..... 65 KIAS
Fuel Pump..... Off
Landing light..... Off
Trim switch..... set as required

CRUISE

Throttle.....	As required
Propeller control lever.....	Between 1650 and 2260 RPM
Flaps.....	UP
Trim switch.....	Set as required
Engine instruments.....	Check if in green range
Fuel balance.....	Check every 30 min

CAUTION

During flights above pressure altitude of 6000 ft. the fuel pressure warning light must be monitored closely. If the fuel warning light goes ON, the fuel pump must be switched ON to prevent fuel vapour formation in the fuel system.

DESCENT

Throttle.....	As required
Propeller control lever.....	Set above 2000 RPM
Carburetor heat.....	As required
Oil/cylinder head temperature.....	Monitor

APPROACH

Seats belts and harnesses.....	Check secure
Fuel pump.....	On
Carburetor heat.....	pull (on)
Throttle.....	As required
Airspeed.....	80 KIAS
Flaps.....	T/O
Trim switch.....	As required

FINAL

Flaps..... LDG
Airspeed..... 65 KIAS
Propeller control lever..... High RPM
Landing light..... On

GO-AROUND

Throttle..... Wide open
Propeller control lever..... High RPM
Carburetor heat..... Push (off)
Flaps..... T/O
Airspeed..... 65 KIAS

AFTER LANDING

Throttle..... Idle
Flaps..... UP
Carburetor heat..... Push (off)
Fuel pump..... Off
Transponder..... Stby
Landing Light..... Off

ENGINE SHUT DOWN

Throttle..... Idle
Parking brake..... Set
Flaps..... LDG
Trim..... White marking
Avionics switch..... Off
Ignition switch..... Off (slowly in steps)
Electrical Equipment..... Off
Lights..... Off
ALT/BAT switch..... Off

Hobbs Time..... Note

ENGINE FAILURE DURING TAKE-OFF RUN

Throttle	Idle
Brakes	Apply as required

ENGINE FAILURE IMMEDIATELY AFTER TAKE-OFF

Airspeed.....	70 KIAS
Fuel selector valve.....	Switch to Fullest tank
Fuel pump.....	On
Ignition switch.....	Both
Throttle.....	Full OPEN
Propeller control lever.....	High RPM
Choke.....	press (off)
Carburetor heat.....	pull (on)

Before landing (if possible);

Fuel selector valve.....	Off
Ignition switch.....	Off
ALT/BAT switch.....	Off

WARNING

With BAT switch in off position;
Stall warning system inoperative and flap position cannot be changed!

IN-FLIGHT ENGINE FAILURE

Engine Roughness;

Carburetor heat.....	Pull (on)
Fuel pump.....	On
Ignition switch.....	Switch to R-Both, then L-Both
Throttle.....	maintain setting

If Roughness continues;

Throttle.....	Reduce to min. required
Precautionary landing.....	Perform

LOSS OF OIL PRESSURE

Oil temperature..... Check

If oil pressure sinks below the green range and the oil temperature remains normal;

..... **Land at the nearest airfield**

If oil pressure sinks below the green range and the oil temperature rises:

Throttle.....	Reduce to min. required for flight
Precautionary landing.....	Perform, engine may fail suddenly

LOSS OF FUEL PRESSURE

Fuel pump.....	On
Fuel selector valve.....	Switch to Fullest, or other tank
Fuel pump.....	Off, when warning light FUEL turns off

NOTE

After switching fuel tanks, it may take up to 8 seconds for full pressure to be built up.

If warning light FUEL remains alight;

Fuel pump.....	On, Land at the nearest Airfield. Engine may fail suddenly
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ENGINE RESTART PROCEDURE WITH STOPPED PROPELLER

Non-essential electrical equipment.....	Off
ALT/BAT switch.....	On
Propeller control lever.....	High RPM
Fuel selector valve.....	Switch to fullest tank
Fuel pump.....	On
Throttle.....(warm engine)	2 cm opened
	(cold engine) Idle
Choke.....(warm engine)	pushed (Off)
	(cold engine) Pull (on)
Ignition switch.....	Both, then start

When power is restored:

Oil Pressure.....	Check
Choke.....	pushed (off)
Electrical equipment.....	Switch On (as required)
Oil Temperature.....	Check

NOTE

The engine can also be restarted by windmilling if the airspeed is increased to approx. 120 kts.

ENGINE RESTART PROCEDURE WITH WINDMILLING PROPELLER

At airspeeds above 60 kts the propellor continues to windmill with engine off.

Airspeed.....	78 KIAS
ALT1/BAT switch.....	On
Fuel selector valve.....	Switch to fullest, or other tank
Propeller control lever.....	High RPM
Fuel pump.....	On
Ignition switch.....	Both
Throttle.....(warm engine)	2 cm opened
	(cold engine) Idle
Choke.....(warm engine)	Pushed (OFF)
	(cold engine) Pull (ON)

When power is restored:

Oil Pressure.....	Check
Choke.....	Pushed (off)
Electrical equipment.....	Switch On (as required)
Oil Temperature.....	Check

CAUTION

If, after a forced landing, the aircraft flips over, an emergency hammer can be used to break through the canopy. For this purpose an emergency hammer is attached to the back of the right hand seat.

PRECAUTIONARY LANDING

Locate suitable field..... Consider wind direction, terrain, obstructions

Seats belts and harnesses..... Tight

Initiate descent

If possible: overfly landing site at a low altitude and inspect (wind direction, terrain and obstructions)

Abeam the touchdown point;

throttle as required

propeller control lever..... High RPM

Carburetor heat..... pushed (off)

Fuel pump..... On

Flaps..... down (LDG)

Airspeed..... 60 KIAS

Touch down with lowest possible speed.

After Touch down;

Brakes..... Apply as required

Fuel selector valve..... Off

Ignition switch..... Off

ALT1/BAT switch..... Off

EMERGENCY LANDING

Airspeed;

Flaps in LDG position.....	60 KIAS
Flaps in T/O position.....	65 KIAS
Flaps in UP position.....	70 KIAS
Fuel selector valve.....	Off
Ignition switch.....	Off
Seats belts and harnesses.....	Tight
COM (ATC).....	Report location and intention
ALT1/BAT switch.....	Off

WARNING

With ALT1/BAT switch OFF:

- Stall warning inoperative
- Flap Position cannot be changed
- Landing light is OFF

SMOKE AND FIRE

ENGINE FIRE ON GROUND

Fuel selector valve.....	Off
throttle	Wide OPEN
ALT1/BAT switch.....	Off
Ignition switch.....	Off
Aircraft.....	Evacuate

ENGINE FIRE IN-FLIGHT

Throttle	Wide OPEN
Fuel selector valve.....	Off
Cabin heat.....	pushed (Off)
Canopy slide-window.....	Full open
Perform a precautionary landing without engine power as described on page 20.	

ELECTRICAL FIRE WITH SMOKE ON GROUND

ALT/BAT switch..... Off

If engine is running:

Throttle..... Idle

Fuel selector valve..... Off

Ignition switch..... Off

Canopy..... Open

Fire Extinguisher (if installed)..... USE as required

ELECTRICAL FIRE WITH SMOKE IN FLIGHT

ALT1/BAT switch..... Off

ALT2 circuit breaker..... Pull

Avionics switch..... Off

All switches (except ignition) off

Cabin vents..... Open

Canopy slide-window..... Open

Fire Extinguisher (if installed)..... use only if smoke persists

Land immediately..... refer to forced landing.

After landing and aircraft comes to a halt;

engine..... Shut down

canopy..... open

after engine stops..... evacuate aircraft

CAUTION

When a large amount of smoke is present or the fire extinguisher has been used, ventilate the cabin by unlocking the canopy latch. If possible, the fire extinguisher should be secured after use.

WARNING

Turing the ALT1/BAT switch OFF and simultaneously pulling OFF the ALT2 circuit breaker turns off all electrical and electronic equipment, including flaps, stall warning and landing light!

INADVERTENT FLIGHT IN ICING CONDITIONS

In the event of an inadvertent icing encounter, use the following procedure:

Carburetor heat..... Pull (on)
Propeller RPM..... Increase
Cabin heat..... pull (on)
Immediately leave the region in which the icing has occurred.
Move the control surfaces periodically, to keep them moveable.

POWER-OFF GLIDING

Flaps..... UP
Airspeed..... 78 KIAS
Demonstrated glide ration..... 14 (2.3 NM/1000ft altitude loss)

SPIN RECOVERY PROCEDURE

Rudder..... Full deflection opposite
direction of rotation
Elevator..... Neutral or slightly forward
Aileron..... Neutral
Throttle..... Idle
Flaps..... UP
Rudder..... Neutral when rotation stops
Elevator..... Carefully ease out of dive

LANDING WITH A FLAT TIRE

Flaps..... LDG

-Perform touch down on that side of the runway that is opposite of the defective tire, this allows the use of the entire runway width to correct any directional changes caused by the defective tire.

(Example; left tire defective, land on the right side of the runway.)

-Perform touch down with undamaged main tire first. Lower nose wheel as quickly as possible to improve controllability on the ground.

-roll out with full aileron deflection in the direction of the undamaged main tire, this reduces de load on the damaged tire.

-When landing with a deflective nose wheel;

touch down with minimum speed. Keep nose wheel off the ground as long as possible.

ELECTRICAL SYSTEM MALFUNCTIONS

COMPLETE ELECTRICAL SYSTEM FAILURE

Flight altitude.....	Stabilize
ALT1/BAT switch.....	Check if ON
ALT2 circuit breaker.....	Reset if tripped
BAT circuit breaker.....	Reset if tripped
ALT1 circuit breaker.....	Reset if tripped
If power is not restored.....	Land at nearest airfield

ALTERNATOR FAILURE:

ALT1 warning light illuminates and / or ammeter shows discharge

ALT1 switch.....	Switch OFF then ON (10 sec interval)
ALT1 circuit breaker.....	RESET if tripped

If ALT1 warning light remains alight;

ALT1 circuit breaker.....	Pull
ALT1 switch.....	Off
All non-essential equipment.....	Off
Devices connected at 12 VDC receptacle.....	Off

-monitor voltmeter and ammeter readings

-Land at the nearest airfield

ALT2 WARNING LIGHT ILLUMINATES

ALT2 circuit breaker.....	RESET if tripped
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If alternator 2 warning light remains on:

ALT2 circuit breaker.....	Pull
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ALT1 AND ALT2 WARNING LIGHTS ILLUMINATE

When both alternator warning lights illuminate, the VOLT warning light also indicates, that the electrical system is no longer receiving current from the alternators.

ALT1 switch..... Switch OFF then ON
ALT1 circuit breaker..... RESET if tripped
ALT2 circuit breaker..... RESET if tripped

If ALT1 and ALT2 warning lights remains on:

ALT1 circuit breaker..... Pull
ALT2 circuit breaker..... Pull
ALT1 switch..... Off

VOLT WARNING LIGHT ILLUMINATES OR BLINKS

Both alternators supplies either too low (permanent red light) or too high voltage (red flashing light)

ALT1 switch..... Switch OFF then ON
Approx.. 10 sec interval
ALT1 circuit breaker..... RESET if tripped
ALT2 circuit breaker..... RESET if tripped

If the low voltage warning light remains on:

ALT1 circuit breaker..... Pull
ALT2 circuit breaker..... Pull
ALT1 switch..... Off

LOW VOLTAGE INDICATION

Low voltage indication ON THE GROUND ;

Engine speed..... Increase RPM until the needle moves into the Green arc. (RPM should be below 1350)

All non-essential equipment..... off, until the needle moves into Green arc.

If the needle remains on the red-green shaded or yellow arc..... Do not fly until problem is eliminated.

Low voltage indication IN FLIGHT;

All non-essential equipment..... Turn off until the needle moves into Green arc.

If the needle remains on the green-red shaded or yellow arc Alternator is defective. Proceed with 'Alternator failure' checklist page 25

Low voltage indication WHILE LANDING;

After landing..... Proceed with 'Low voltage indication on the ground' checklist.

FLAP CONTROL SYSTEM MALFUNCTION

FLAP POSITION INDICATOR OR FLAP ACTUATOR MALFUNCTION

Flap actuator circuit breaker..... Reset if tripped

Flap control circuit breaker..... Reset if tripped

Flap position..... visually confirm on the left wing

Airspeed..... maintain within white arc on the airspeed indicator

Flap switch..... Switch through all positions.

TRIM CONTROL SYSTEM MALFUNCTION

TRIM SYSTEM INOPERATIVE

Trim actuator circuit breaker..... Reset if tripped
Trim control circuit breaker..... Reset if tripped
Trim switch..... Repeatedly press "Nose Up"
and then "Nose Down"

Land at the nearest airfield

TRIM ACTUATOR RUNAWAY

Control column..... Hold in position
Trim actuator circuit breaker..... Pull
Trim switch..... check if pressed or jammed

If the problem is obvious, and can be solved:

Trim actuator circuit breaker..... Reset

If the problem cannot be solved;

..... Land at nearest airfield

AVIONICS MALFUNCTION

COMPLETE AVIONICS FAILURE

Avionics switch..... Switch Off then On, approx. 20 sec interval.

If the switch trips to the off position;
..... Land at nearest airfield

RECEIVE MODE FAILURE OF COM-EQUIPMENT

Push to talk switch..... Check pilot's & co-pilot's PTT switches are not pressed or jammed, etc. Check connectors

Head-set..... Switch off squelch momentarily
If no noise is audible: Check head-set connectors.

TRANSMIT MODE FAILURE OF COM-EQUIPMENT

Transmit-signal TX..... Check if displayed while transmitting

Selected frequency..... Check, if correct

Microphone..... check, if necessary replace head-set

If the problem cannot be eliminated, set transponder to 7600 (radio-failure) as required

STARTER MALFUNCTION

During engine start on ground, power transmission from the starter to the engine is defect (a continuing en excessive howling tone is audible)

Throttle Idle

Ignition switch..... Off

Repair damage before conducting planned flight

IN-FLIGHT FAILURES AND MALFUNCTIONS

SELF ACTUATING RELEASE AND OPENING OF THE CANOPY IN FLIGHT

Keep calm, there is no imminent danger

Flight attitude..... Stabilize flight attitude/altitude

Airspeed..... 65 – 75 KIAS

Canopy..... Close and lock canopy in flight if possible. Check the canopy locking and the position of the canopy locking lever continuously until landing. If this is not possible to close the canopy, continue flight with open canopy and land at the nearest airfield