

Cavalon pro Emergency Procedures – extract from POH, RSUK0334.

1.1 Engine Failure

In case of an engine failure the following action is recommended:

Engine failure during take-off run

- Maintain directional control using sensitive but appropriate pedal input
- With the rotor/stick remaining aft, let gyroplane decelerate. Wheel brakes may be used to assist
- At walking speed level-off rotor disc, use wheel brakes and bring rotor to a stop

Engine failure after lift-off and below 150 ft AGL

- The climb-out should be performed according to the Height-Velocity-Diagram in CHAPTER 5
- When engine failure occurs, and if height permits, immediately lower nose to enter glide attitude and maintain airspeed.
- Continue straight ahead.
- Maintain airspeed until ground is approached, then perform flare.
- If a low level engine failure, with low groundspeed, then an aggressive and immediate flare may be required

Engine failure at night

- Consider wind speed and direction
- Both landing lights should be turned on at 400ft or below
- Select a suitable landing site – the landing lights make the ground visible in full dark from around 400ft
- If time allows, a restart may be attempted, see “Air restart procedure” below
- Perform a landing into wind and/or upslope if possible
- Make a faster descent at 60KIAS (~70mph), to allow more time in the flare to make a safe landing.
- Prior to touch-down switch OFF Main Switch

WARNING

Engine failure at high speed, hands-off, will result in a nose drop and right yaw of about 20-25degrees, requiring pilot intervention to raise the nose. At light weight the nose drop will be rapid.

WARNING

Always plan your route to remain within safe gliding distance to areas where a safe forced landing can be performed in case of an engine failure. A landing in high trees or open waters may end fatally.

NOTE

The best engine-off glide ratio is about 1:3 at 50 kts. Depending on a possible headwind the glide may be extended by slightly increasing airspeed. It is heavily recommended to practice your forced landing capabilities regularly, preferably with a qualified flight instructor.

1.2 Air Restart Procedure (if safe! Plan for a forced landing first!)

- Airspeed 50-60KIAS (whilst restart is possible at all permitted airspeeds and altitudes, this airspeed is optimum)
- Check fuel valve OPEN
- Check fuel pump(s) ON
- Check both magnetos ON
- Propeller in FINE pitch
- Throttle slightly open
- With the left hand, turn the Main Switch/Starter key completely to OFF, then START
- If possible, allow engine and oil to warm-up before full power is applied

NOTE

The starter interlock function prevents inadvertent starter engagement. Before attempting an engine start, the interlock must be reset by turning the Main Switch/Starter key to OFF.

1.3 Landing into Trees or High Vegetation

- Assume the surface of the treetops or vegetation as level
- Plan touch-down and flare with minimum ground speed and minimum rate of descent
- As soon as the wheels contact the vegetation bring the rotor disc to level attitude to avoid partial blade tip contact with vegetation
- Shut down engine by switching magnetos OFF and master switch OFF

1.4 Degradation of Engine Power

A gradual decay in engine RPM, accompanied by a rough running engine or even vibration may be an indicator for carburettor icing, even though with a turbo charger this is very unlikely. In this case, continue with a high power setting and change altitude into air which is less susceptible to carburettor icing.

If the situation cannot be corrected be prepared for further loss of power and ultimately engine failure.

NOTE

Carburettor icing is very unlikely with a 914F engine because the turbo pressurisation heats the air before it reaches the airbox and carburettors.

1.5 Evacuating the Aircraft

In normal circumstances occupants should never leave the aircraft while the propeller or the rotors are turning. If abandoning the aircraft in an emergency the pilot should turn off the engine magneto switches and turn the master switch to "OFF" if this can be done without endangering the occupants.

If abandoning the aircraft with either the propeller and/or the rotors turning the occupants should follow a path in line with the nose of the aircraft, to minimise the risk of being struck by either the rotor or the propeller.

Occupants should be briefed before flight on emergency evacuation procedures, including:

- Actions to be taken in the event of a forced landing
- Operation of the seat harness
- Disconnection of any intercom leads or other connections to the aircraft before evacuation
- How to open the doors
- How to safely exit and move away from the aircraft

1.6 Smoke and Fire

Indications of smoke should be treated in the same way as a fire.

NOTE

The fire warning system will illuminate a RED flashing warning lamp on the panel when the special cable in the engine bay has melted due to the effect of high temperatures (fire). This lamp shows solid red when a fault is detected.

In case of fire the following action is recommended:

Smoke or fire on ground

- Both magnetos OFF and master switch OFF to shut-down engine and fuel pumps
- If safe to do so, operate the fire extinguisher (see below notes)
- Evacuate aircraft
- Close fuel shut-off valve
- Extinguish fire and have damage inspected

Fire in flight

- Open ventilation for fresh air
- If safe to do so, operate the fire extinguisher (see below)
- Initiate an emergency landing
- Initiate emergency call, if time and situation permits
- As soon as a power-off landing can be assured, shut down engine by switching magnetos OFF and master switch OFF
- Continue procedure as described in "Engine Failure" and "Smoke or fire on ground"

The Cavalon Pro gyroplane has an in-built Halon gas fire extinguisher system that may be used in two ways:

- By removing the safety clip then depressing the trigger handle with the extinguisher still fitted on its mounting bracket, extinguishing agent is discharged through pipes into the equipment compartment and engine bay behind the cockpit
- By releasing the extinguisher from its mounting bracket then removing the safety clip the extinguisher may be used as a hand-held device. If directed inside the cockpit, ensure adequate ventilation to avoid the risk of asphyxia.
- If the extinguisher is discharged, even partially, it must be replaced.

NOTE

Clear instructions for use of the extinguisher are printed on the extinguisher bottle, and on a placard adjacent to the bottle. Read them before use!

1.7 Off-field Landing

A precautionary landing at a non-prepared site may be performed at pilot's discretion in order to avoid unexpected weather, in case of severe illness of the pilot or a passenger, or if technical defects are suspected, for example sudden and severe rotor vibrations.

- Select a suitable landing site from safe altitude, considering slope, wind speed and direction
- Fly a reconnaissance pattern to check for obstacles, especially power lines, wires, and cables in the approach and go-around path
- Overfly the landing site to check for obstructions such as fences, ditches, rocks, height of vegetation, and select most suitable touch-down zone
- Perform a normal approach and touch-down into wind with minimal ground speed

1.8 Flight Control Malfunction

In case of a flight control failure the gyroplane can be controlled with the remaining primary and secondary controls, including power and trim. An immediate reduction of power, and corresponding reduction in speed may be necessary to avoid pitch oscillations (phugoid) or other effects affecting dynamic or static stability. Navigate to a suitable landing site with wide and shallow turns and approach against the wind

1.8.1 Engine Power Control / Throttle

Throttle jammed open or max

Navigate to a suitable landing site with the power set. If over safe terrain, magneto switches may be used to control power. When within gliding distance to the selected landing site, shut-down engine to perform a power-off landing as per Emergency Procedure "Engine failure".

NOTE

In case of a control cable breakage the carburettor will be automatically set to full throttle position.

Throttle jammed closed

Land as per Emergency Procedure "Engine failure". Residual power may be used to extend the glide.

1.8.2 Rudder Malfunction

In case of a stuck or loose rudder, continue flight to a suitable, preferably wide landing site that allows a landing into the wind. If necessary reduce power to avoid excessive side slip. Align gyroplane prior to touch-down, using engine torque or lateral control input to the side where the nose is pointed.

1.8.3 Rotor Head Control

In case of a rotor head control malfunction, control pitch attitude using careful trim input and power setting. Use rudder for directional control and for shallow turns. In some conditions it may be appropriate to reduce power/speed in order to avoid phugoid effects or a possible negative yaw-roll coupling. Approach landing site with wide and shallow turns.

1.8.4 Trim runaway

Failure of a trim selector switch or pneumatic valve may result in trim runaway (where the trim system runs to one extreme and pushes the control stick accordingly). Although the average pilot is able to resist the out-of-trim stick force and continue to fly the aircraft it may be possible to reduce the stick load by intervention:

- (i) High forward stick load required to prevent aircraft nose rising (this will be coincident with a high air-pressure reading) – briefly turn the Flight/Brake selector to "Brake" to deplete system air pressure. If the air compressor is heard to start and the pressure rises again then pull the circuit-breaker marked "Comp" to stop the compressor. Repeat the brief selection of "Brake" to deplete system air pressure as required.
- (ii) High aft stick load required to prevent aircraft diving (this will be coincident with low or zero air pressure) – check "Comp" circuit breaker, if activated push to reset then try to trim aircraft nose-up. If unsuccessful then continue to expedited landing. Note: reset the circuit-breaker once only.
- (iii) High roll-left or roll-right stick load required to maintain balanced flight (coincident with high air-pressure reading). Pull the "Comp" circuit breaker to prevent further increase in air pressure and attempt to re-trim. If unsuccessful then continue to expedited landing. Do not select "Brake" in an attempt to reduce air pressure as this will disturb the pitch trim (in which the out-of-trim forces are significantly higher)

1.8.5 Pitch oscillation recovery

There are generally two types of pitch oscillation: that caused by pilot over control ('PIO, Pilot Induced Oscillation') and that caused by aerodynamic oscillation.

PIO is not generally found on two seat gyroplanes due their inherent stability. It is initiated by the pilot over-controlling the stick. If a situation develops where a divergent aircraft pitching oscillation is occurring in sympathy with fore-aft control stick inputs, firstly stop the control input – do NOT try to control PIO with the stick.

For both situations, smoothly closing the throttle whilst maintaining a level flight attitude will return the aircraft to a stable, slow speed condition very quickly, from which the pilot can recover to normal flight.

Recovery from PIO or aerodynamic oscillation can result in height loss.

1.8.6 Vibration

A gyroplane is subject to a number of out of balance forces which will generate different levels of vibration depending on the engine and rotor rpms, and on loading conditions. Rotors are normally balanced two seated, so a reduction in occupant loading will naturally change the rotor response.

1. Engine and propeller. Vibration in this area will change with engine rpm, and can therefore be affected and isolated by the pilot. The propeller is normally balanced to less than 0.1ips, meaning low vibration. Vibration will increase as the propeller gets dirty, and will also increase if damaged. A sudden change in flight will indicate a fault has developed, either through an impact (loose luggage, bird strike etc. passing through the propeller) or by some mechanical failure. In the event the pilot should make a precautionary landing for evaluation. Propeller damage may also be evident from a change in noise level.

Upon landing, carefully check the propeller for damage, loose bolts or evidence of mechanical failure within the prop or engine. Especially check the engine to engine bearer connections, and the engine bearer to airframe connections.

2. Rotor.

Rotors will vibrate in flight due to tracking errors (side to side stick shake), rotor CG misalignment with the axis of the bearing in the flat plane (oscillatory stick shake), and also in the vertical plane (two per rev shake). The amount of shake will not suddenly change in flight or between flights unless there has been mechanical failure, external influence or rotor strike.

Vibration will increase (and performance decrease dramatically) with dirt build up on the rotor blades, so before any analysis make sure they are clean.

If there is a change in vibration in flight make a precautionary landing and investigate. If on rotor startup, stop and investigate.

Check items:

Rotor impact with tail of aircraft.

Hanger damage e.g. twist or distortion of trailing edge.

Blade bent from ground handling.

If after a recent re-assembly of the rotor, that the blades and hubs are serial-number matched, and that the shim washers are correctly matched to the hub bar and rotor tower.

A reduction in vibration may be caused by increased flexibility between the rotor head and the occupant. This may be control system looseness, so check all system joints for tightness, and also for cracks at the base of the mast. Check security of all fastenings between the rotor and the pilot.

Check also for any cracks or other damage to the primary structure; body, tail, keel tube, rotor head, rotor, mast.

1.8.7 OTHER EQUIPMENT FAILURE

Good judgement must be used in monitoring instruments, and timely action taken should a reading be in doubt. If in doubt, make a precautionary landing and resolve the issue rather than continuing a flight.

Actions recommended:

ASI failure: In level flight fly with an engine rpm of 4,200 lightly laden to 5,000 heavily laden which will give approx 45-60KIAS, propeller in mid pitch range. When descending (nose down) throttle back to approx 3,000 to 3,500rpm to prevent overspeed. Continue to your designated landing site, maintaining speed for a flare on landing in the final descent. Leave plenty of space to land in should the flare be prolonged. Experience will aid judgement of the best engine rpm to maintain to match the desired flight speed and payload.

Altimeter failure: In a gyroplane it is reasonably easy to judge height. If in controlled airspace ensure the controlling authority is informed to prevent traffic conflict. Otherwise continue to a safe landing using navigational skills to avoid potential collisions.

Compass failure: Resort to map, aided by GPS if available, fly at a speed to suit navigational requirements or make a precautionary landing if unable to identify position.

Rotor RPM gauge failure: This is not essential for safe flight, and rotor rpm cannot normally be affected in flight unless significant "g" or negative "g" is exerted – and then will only provide an indication of the rpm. If failed in flight, repair on landing

Engine RPM: The engine is rpm self-limiting by propeller pitch in flight. If the indication fails, replace on landing. Use audio cues to establish rpm
Oil pressure, oil temp and CHT/coolant temp. A failure of one gauge can indicate an engine fault or simply a gauge fault. Watching the other gauges will indicate the likely failure mode.

For example,

1. Gauge suddenly goes to full scale deflection, other gauges reading normally – likely gauge fault
2. Oil pressure falls to zero, possible loss of pressure. Stop engine, make precautionary landing
3. CHT/coolant temp gradually or suddenly rises above max temp. Possible loss of coolant. Cross-refer to the coolant warning lamp, if this indicates the temperature is OK, then continue with caution. If not, stop engine, make precautionary landing
4. Oil temp suddenly falls to zero, other gauges reading normal – probable gauge failure. Cross refer to oil pressure gauge, if there is pressure there is likely to be temperature.
5. Oil temp rises above maximum, other gauges normal – possible very low oil level, blocked radiator or thermostat. Stop engine, make precautionary landing.
6. Fuel level gauge suddenly falls to zero or FSD. Probable gauge failure, but always cross check to predicted fuel burn. Low fuel light will light as a backup.
7. Fuel pressure gauge gradually reducing – possible blocked filter or no fuel. Turn on back up pump and check if full pressure returns. No pressure probably means no fuel. If engine keeps running it is a faulty indication.

Sudden, large deflections are normally unlikely, with the exception of loss of pressure readings.

1.8.8 Door open in flight.

A door open in flight is NOT catastrophic. The door hinge line is angled to the oncoming airflow such that if left open before take-off, or opened in flight, the oncoming airflow will naturally close the door.

Note, yawing the aircraft such that the open door is downwind will allow the door to open more, but on straightening out the oncoming airflow closes the door. If the yaw is such that the open door is upwind, then the oncoming airflow keeps the door firmly shut.

In the event of this occurrence, fly the aircraft and ignore the open door until it is safe to lock it. This will be either on the ground, by a passenger (if it is on their side) or by slowing and trimming the aircraft at a safe speed that allows the pilot to release hand(s) for the closure task.

1.9 Warning and Caution Lights

1.9.1 GEN or Low Volt Indicator Light

The GEN lamp, when lit, indicates that there is no voltage being supplied from the internal generator/regulator circuit to the battery. The Gen2 lamp, when lit, indicates that there is no voltage being supplied from the external generator to the battery.

Both are normally lit when the engine is stationary or at very low rpm.

These lamps are normally not lit in flight, but may be seen to pulse gently in low light conditions.

The LOW VOLT lamp, when lit, indicates that the available voltage from the battery has dropped below 12v.

If the GEN and GEN2 lamps and the LOW VOLT lamp are on with the engine running at more than 2,500rpm, then it is likely that the charging circuits have failed, and that the aircraft is operating on battery power alone.

If only the LOW VOLT lamp is lit, then the aircraft voltage demand has exceeded supply, and demand must be reduced in order for the lamp to extinguish. NOTE! When lit, this lamp also indicates that the strobes, nav lights, anti-collision lights and 12v socket have been turned off automatically, with automatic reconnection when the supply exceeds demand.

Required Action

If any of the indicators are permanently lit, switch off all unnecessary electrical consumers, it is recommended to perform a precautionary landing within 30 minutes. The battery is expected, if in good condition, to provide 30 minutes* of reserve power to supply the aircraft P2 fuel pump, instrumentation and avionics, after which time this electrical equipment may cease to function. In the event of battery failure the P1 fuel pump is supplied with electrical power directly from the engine's internal generator so the engine may continue to run. However, be prepared for an engine failure.

*depends on condition of battery

Further information:

No power in the cabin indicates either the main circuit fuse has failed, or that the battery has failed and the pump protection relay has opened. In this case the P1 primary fuel pump remains powered by the regulator directly, maintaining fuel supply to the engine. The turbo control unit is not powered in this instance, and will remain in whatever position it was in when power was lost – so mixture and manifold pressure control will be lost. Take care to only use the minimum power required to land safely to prevent engine damage. In this case the primary (P1) fuel pump will continue to run until the engine's internal generator stops providing electrical energy. If required, fuel supply can be shut off via the fuel shut-off valve.

1.9.2 Low Volt

Battery voltage of the system has dropped below a safe value. Refer to chapter above. Aircraft lights and the 12V power receptacle will be disabled automatically.

1.9.3 BOOST WARN Light 'Boost' (red)

Continuously lit

If continuously lit, the maximum admissible boost pressure was exceeded. Reduce power into normal operating range and consider restricted engine performance or boost control malfunction. Record duration and have maintenance action performed.

Blinking

When blinking, the allowable 5 minutes take-off power time limit has been exceeded. Reduce power into continuous range. Record duration and have maintenance action performed.

1.9.4 BOOST CAUTION Light 'Caution' (orange)

A blinking BOOST CAUTION light indicates a problem with the turbo/boost control, its sensors or the servo. Engine power is degraded and continuous operation may lead to engine damage. Perform a precautionary landing considering reduced engine performance and be prepared for engine failure.

1.9.5 Fire warning

Refer to emergency procedure "Smoke and Fire" above

The Fire Warning system works by constantly checking the resistance of a special cable mounted in both the engine bay and in the battery and fuel pump bay. This cable contains two wires where the insulation between the two wires melts beyond 180degC, creating a short circuit. The cable has a resistor at the end of the cable to give a known standard resistance of the detection loop.

This lamp will flash three times when the keyswitch is turned on. This indicates the system has made a satisfactory self test. The lamp will then normally remain off.

The lamp will light a solid red when a fault has been detected (eg a short circuit to ground or open circuit). A repair is required.

The light will flash brightly if a closed circuit is detected. This indicates that the cable temperature has exceeded 180degC, and therefore that a fire may be present. Action as '3.6, Smoke and Fire'

1.9.6 Low Fuel

The LOW FUEL warning light is triggered as soon as 5 litres or less of useable fuel remain in the tank. Perform a power-on landing at the nearest suitable location and be prepared for engine failure after approximately 10 minutes remaining flight time.

1.9.7 Pitot




The PITOT lamp is coloured green to indicate at night that the power is turned on to the pitot tube heating.

1.9.8 Fan

The thermo switch of the engine mounted electrical blower has closed, fan is activated. Monitor engine instruments and mind higher electrical power consumption. If possible, reduce engine power and increase speed.

1.9.9 Water Temperature Indication

The water temperature indication illustrates three colour-coded temperature ranges of the engine cooling water:

INDICATION	TEMP.RANGE	CORRECTIVE ACTION
 Red light	Above 120 °C	Further reduce power. If condition cannot be corrected, land as soon as practicable.
 Yellow light	105 – 120 °C	Reduce power and increase air speed.
 Green light	Below 105 °C	Normal operation

1.9.10 Water level

The water level indicates amber when the level is below minimum.

1.10 Parameters out of Limits

PARAMETER	EXCURSION	CORRECTIVE ACTION
Engine Oil Temperature	Upper limit or yellow arc	Reduce power and increase air speed. If condition cannot be corrected, land as soon as practicable.
	Lower limit	Allow engine to warm-up on ground.
	Within lower yellow arc	Uncritical because this is the temperature of the oil on return to the engine having passed through the oil cooler. It is known through the flight test program that the oil is far hotter as it leaves the engine. NOTE that the oil temperature sensor is mounted in the engine, not in the oil tank (Cavalon recreational has the sensor in the oil tank)
Cyl. Head Temperature or Coolant Temperature (depending on engine fitment)	Upper limit	Reduce power and increase air speed. If condition cannot be corrected, land as soon as practicable.
Engine Oil Pressure	Upper limit or yellow arc	Reduce power. If condition cannot be corrected, have maintenance action performed prior to next flight.
	Lower limit	If combined with other indications, such as rising oil temperature or unusual engine behaviour, shut-down engine and perform a power-off landing as per Emergency Procedure "Engine failure". Otherwise, monitor engine instruments carefully and land as soon as practicable. Have maintenance action performed.
Fuel Pressure	Upper limit	Investigate on landing, there is no flight safety effect
	Lower limit	This may indicate low fuel, (especially if the indication drops to zero), or filter blockage. The two fuel pumps have their own filters, so turn on pump two and note pressure increase. An increase will indicate blocked P1 post pump filter. No change will indicate a pre pump filter issue. If the engine is running, continue to fly. If insufficient fuel pressure make a precautionary landing.

1.11 Outside Air Temperature and Rotor Bearing Temperature

Outside Air Temperature (OAT) and Rotor Bearing Temperature (RBT) indicators are provided for condition monitoring of the rotor bearing. Both readings should be more or less equal. If, in stabilized conditions, RBT rises suddenly above OAT, have bearing inspected. OAT is also indicated within the Aspen PFD (where fitted).

1.12 Loss of Visibility

In case of canopy misting, open air vents and windows to ensure proper ventilation. If the situation cannot be corrected or occurs suddenly, such as after a bird strike or canopy icing, maintain safe attitude by visual reference to the sides, using the open sliding window, if necessary. When at safe height, stabilize the aircraft at 50KIAS and clear the viewing obstruction by using a hand through the sliding window or from the inside. If forward vision is still impaired or lost, continue flight in a side slip, using the open sliding window for visual reference. Land at the nearest suitable location and align just prior to touch-down.

1.13 Recovery System / Rotor System

This gyroplane is not equipped with a ballistic recovery system. However, its rotor system which is in permanent autorotation serves as such a system. Therefore, the entire rotor system including its rotor head with blade attachments and the corresponding components of the flight controls have to be inspected and maintained carefully. If any undue vibration or unusual behaviour is experienced a precautionary landing should be considered.

1.14 Rotor Icing

A more than normal or constantly increasing power demand may be caused by an iced-up rotor system. This could ultimately result in a condition where altitude cannot be maintained, even at maximum power. An iced-up rotor system can also cause severe vibration. If any of the signs for rotor icing is evident, carry out a precautionary landing.

1.15 Landing with a Deflated Tyre

Plan to land directly into the wind with minimum rate of descent at touch-down, if possible on a grass runway. Maintain directional control with adequate pedal input. Consider the use of some propeller thrust to increase rudder effectivity. Lower nose gently with the nose wheel pointing straight.

Alternatively, if landing on asphalt is unavoidable, approach normally, with the intent of a zero-speed touch-down directly into wind. Only if impossible to recover the aircraft from the landing area should it be manoeuvred under its own power, as this could further damage the tire and wheel rim.

1.16 Failure of CSP/VPP Propeller

Noticeable defect:

In case of a noticeable mechanical defect, indicated by sudden vibration or noise, perform a precautionary landing.

Run-away:

Propeller pitch changes without command, usually resulting in unexpected or sudden change in engine RPM and engine manifold pressure.

Run-away to FINE: RPM will increase and propeller pitch will stop in full FINE position. Reduce power if needed, to stay within RPM limits.

Run-away to COARSE: RPM will decrease and MAP will rise until propeller pitch stops in full COARSE position. Reduce power if needed, to stay within MAP limits.

If the circuit breaker has opened, in both cases do not try to re-engage circuit breaker until the cause of the run-away has been determined. Continue according to emergency procedure 'FREEZE'.

Freeze:

Propeller pitch does not react to pilot input, engine RPM does not change while propeller pitch control is activated. Proceed according to the following table:

Before take off	Do not take-off
During take-off and climb	Try to keep climbing to a safe altitude, return to the airfield and land. If the aircraft does not climb, maintain altitude and return in a flat curve.
During cruise flight	Depending on the prop position, it should be possible to find a speed and RPM to continue the flight to the next possible landing area. Depending on the prop position your descent will look different and a go-around may have reduced climb rate.
During descent	Depending on the prop position (in case of cruise), your descent will look different and a go-around will may have reduced climb rate.
During landing	Continue approach as planned. If the prop changes to cruise and the landing looks too long, keep in mind to cut the engine.

1.17 Alternative Method of Engine Shut-down

If the engine continues running after the magnetos have been switched off use one of the following alternative methods:

Close fuel shut-off valve and starve the engine.

Alternatively

Engage full choke, wait a few seconds and open the throttle suddenly. This normally chokes the engine and causes it to stop

Alternatively

Turn master switch to off to deactivate both primary and secondary electrical fuel pump. The engine will starve after approximately 30 – 60 seconds.