

'SpeedSafe' Electronic Speed Limiter for Honda TRX420 & TRX500 from 2014



Applicable models for this product:

Honda Fourtrax Rancher - TRX420TM1, TRX420FM1, TRX420FM2, TRX420FA2 (420cc EFI liquid cooled motor)

Honda Fourtrax Foreman - TRX500FM1, TRX500FM2 (475cc EFI liquid cooled motor)

The 'SpeedSafe' speed limiter is an electronic speed limiter for fitment to ATV's (Quad Bikes).

It is a 'stand-alone' device or may be added to an existing 'QuadCruise' cruise control installation. A cruise control cannot be added to an existing speed limiter installation without replacing most of the parts.

The 'SpeedSafe' speed limiter can be set to any speed desired. The 'SpeedSafe' speed limiter allows full use of the available power on the ATV up to the limiting speed. The limiting speed is normally set to 25kph (15mph), but can be set to any speed the owner/manager desires.

'Tamper Resistant' and 'Standard' configurations are available.

When 'Tamper Resistant' is selected, in most cases any interference with the speed limiter (disconnecting electrical plugs, removing a fuse or other 'tampering' and most failure modes) will result in the vehicle not running. When 'Standard' is selected, in most cases disconnecting wires or removing the fuse will disable the speed limiter, allowing the vehicle to operate normally. The hardware for both versions is the same, with a minor change to one wiring connection. **You MUST specify if you want 'tamper proof' or 'standard' configuration when the unit is ordered in order to get the correct default setting.**

When the vehicle reaches the limiting speed, the speed limiter causes the engine to misfire, progressively cutting engine power by controlling the operation of the fuel injector. . There are several different operating modes available.

When 'Soft Cut Mode' is selected, at the limiting speed the engine develops a slight but rapid misfire. If the operator tries to go faster by applying more throttle, the speed limiter makes the misfire worse as speed increases. The 'range' of the speed variation from slight misfire to severe misfire is selectable (0.5kph to 8kph in several steps) as well as the 'rate' of the misfire (2, 4 or 6 'misfires' per second). The misfire is so severe at the highest cut rate, the vehicle cannot exceed the maximum speed. If a very 'firm' limit is desired, a low speed range (0.5kph) would be selected, if a 'soft' limit is desired a high speed range (8kph) would be selected. The 'rate' of the misfire also effects the 'feel' of the limiter, but not the operation. 2 misfires per second is very rough, 6 is smoother.

When 'Hard Cut Mode' is selected, at the limiting speed the engine is cut several times a second (4 to 5 times per second). The severity of the cut or misfire is selectable to produce a moderate 'roughness' in the misfire to a more severe misfire. If the limiting speed is exceeded by 2kph, the engine is cut completely until the speed drops below the 2kph 'buffer'.

'Penalty Mode' can also be selected when using either soft or hard cut modes. If the operator persists in running on the limit (causing misfire) for more than 5 seconds, the limiting speed is reduced progressively and is held for a period of time. If the operator keeps the speed below the limiting speed, after the time has elapsed, the original limiting speed is restored. The amount of the speed reduction and the penalty time period are both selectable.

The following provides a brief description of the component locations of the 'SpeedSafe' electronic speed limiter.

Current draw is approximately 0.020 amp (0.28 watts).

Installed weight of the speed limiter by itself (not including cruise control parts) is approximately 0.5kg (depending on model).

Refer to the line drawing on the back of this sheet to identify the component numbers in the text.

The **Computer (1)** is installed in the rear storage compartment.



The **Setup Control Switch (2)** is hand held for setup of the speed limiter, and is then removed from the vehicle. This remains fitted to the vehicle when the cruise control is fitted, but there is a specific set of instructions that must be followed so that the speed limiter setup cannot be altered by the operator accidentally or intentionally.



In most cases, the vehicle speed is detected from the vehicles speedometer speed sender (VSS). Some models (usually base models with manual shift transmission) the vehicle does not have a speedometer or a sender. In these cases, the speed limiter kit can be supplied with a **speed sensor (3)** that is mounted on the rear axle.



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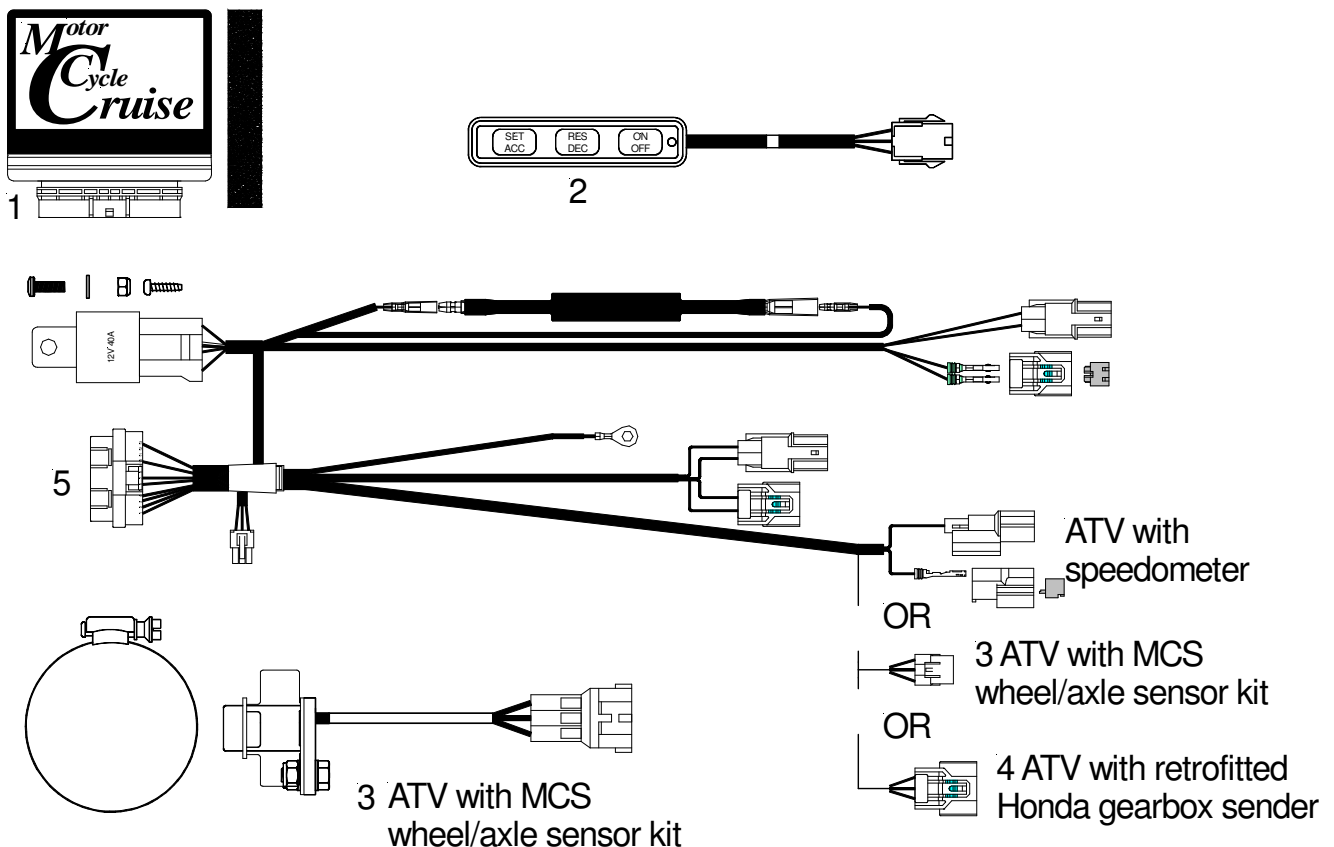
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Some customers do not want to fit a sensor on the axle. In these cases a **genuine Honda speedometer sender (4)** may be purchased from your local Honda dealer and it can be fitted to the vehicle's gearbox. In most cases, this requires the rear case of the engine/transmission must be removed from the transmission and the hole for the speed sensor must be machined (drilled) to allow the sender to be fitted. **All wiring for the sender is part of the speed limiter wiring harness, but the Vehicle Speed Sender (VSS) is NOT supplied in the kit, it must be purchased separately from your local Honda dealer. Many of our corporate customers select this version.**



The **Wiring Harness (5)** is dedicated to the vehicle. Power for the speed limiter is sourced from the vehicles rear brake light switch connector. The rear brake light switch is disconnected and matching plugs on the speed limiter loom are connected to the vehicle's plugs. Speed signal is sourced from the vehicle's speedometer sender using the same method as the brake switch connection, OR an optional rear axle speed sensor (for vehicles that are not fitted with a speedometer), OR the genuine Honda speed sender may be fitted to the transmission. The speed limiter is connected to the engine fuel injector to cut the engine, also using the same method as the brake switch connection. Ground is sourced from the negative terminal of the battery.



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