

CAE Performance Products Instructions

PO Box 686 Castlemaine Vic 3450

P.O. Box 686 Castlemaine Vic 3450 T: (03) 5472 1442 F: (03) 5472 4111 www.caeperformanceproducts.com.au

LS-1 Engine Harness Fitting LOOMEFI-17A NEW

Thank you for purchasing the most complete engine wiring harness on the market! Since our harnesses are so easy to install there is NO need for lengthy instructions. CAE recommends this Wiring Loom be fitted by a Qualified Person.

- **Large red wire** – This is the main power for the harness and needs to be hooked up to a good, full time power source. This can be found at, or near the battery, or at times in the car at the steering column if there are no better sources. It is wise to fuse this wire with a 60amp. Fuse if possible. **See attached note #1 if using power/relay module.**
- **Large pink wire** – This is keyed power that energizes the harness at the time the key is on. This needs to see voltage with the key in the forward position as well as crank. This is found as a pink wire commonly at the base of a GM column or at the "ignition" terminal on most after market hot rod style ignition switches. It is wise to fuse this wire with a 60amp. Fuse if possible. **See attached note #1 if using power/relay module.**
- There is a small bundle of wires for inside the vehicle which can consist of different combinations of wires, depends on your harness application. Ignore wires if not needed/included for your setup.
- **Large gray wire** – This is the feed for the fuel pump. It is already relayed and fused. Simply extend with 14 gauge wire to the positive side of your fuel pump. If you are using a high amp draw aftermarket high output fuel pump then use an auxiliary relay/fuse system to shorten the load at the rear of the vehicle is recommended, Use this gray wire as the relay trigger.
- **White Wire** – This is the tachometer output, Connect to the signal side of your tachometer. The stock LS1 output is a 4cyl output, this can be adjusted in the programming.
- **Green w/white stripe** – This is the speedometer output, connect to the signal side of your speedometer.
- **Green w/yellow stripe** – This tells the PCM that the air conditioning has been switched on. This need to connect to the positive side wire that energizes you're A/C compressor.
- **Brown w/white stripe** – This is for your check engine light. You can install a new light or use an existing dash light at the time. This wire provides the ground to turn on the light. The light bulb will need keyed power supply to the positive side if it, this can usually be found powering the other gauges.
- **Purple wire** – This wire is only needed on electronic transmission harnesses such as the 4160e/4180e etc. This wire needs to see the positive keyed power ran through the brake switch in a way that only shows power when the pedal is NOT being pressed. This is the opposite of how the standard brake light works and requires a newer style brake switch with two sets of terminals for the use of a relay. **See included diagram A.**
- **Orange wire** – This is the park/neutral wire that lets the PCM know if the car is in park/neutral or in drive gear. This wire needs to see GROUND when in Park and Neutral. This can be found on most aftermarket and stock shifters. If using a starter interrupt via a switch you will need to wire in a relay to make this work correctly.
- **See included diagram B**

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- Most engine side plugs are labelled for easy identification. Make sure to ground the ring terminal the harness to the rear of the cylinder heads. If fan wires is included you will find 1 or 2 wires at the front of the harness. These are fused and relayed and only supply fan power. You will need to ground the appropriate fan wires as per the fan manufactures.
- **Note #1 – Power relay / module** If you opt for power relay/module you have made a good choice. This simplifies the installation of the large red and pink wires for the main harness power and keyed power and lessens the load on the stock vehicle wiring. The large terminal at one end of the power relay/module will need supplied power from battery with a large 8 gauge wire. This should be fused with a large 12-140 amp fuse, these can commonly be found for car stereo amp setups. If the run is short and the wire is well protected you may opt not to fuse the wire. On the other end of the power relay/module there are two terminals, one marked 'R' for red wire, and one marked 'P' for the pink wire. Simply ground the black wire to a clean ground and run pink wire inside to a keyed power location as listed above that supplies keyed 12volt power when the keyed is on AND in crank position. The small wire carries a very small load and only energizes the relay/module so it makes for more options for connection inside the vehicle. Install the included 60amp fuses for each circuit and you are ready to go with a safe setup!

Power relay/module



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Diagram A – There are many brake switches


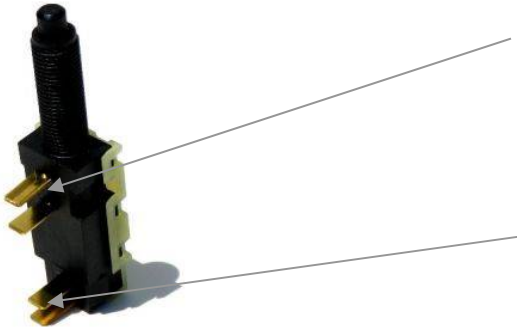
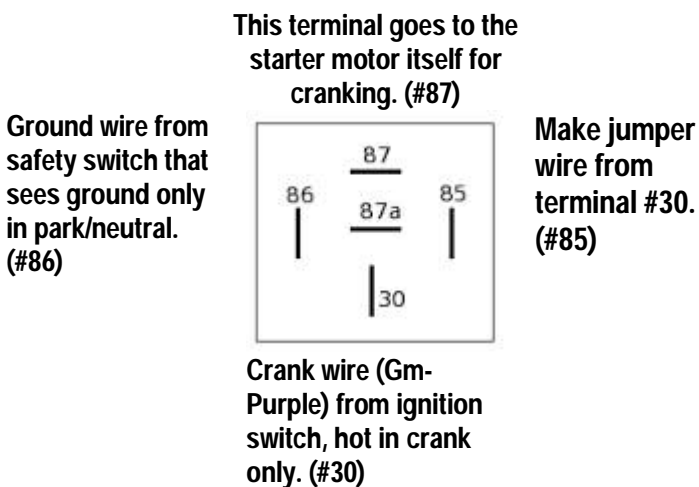
	<p>Original 2 pin style brake switch</p>
	<p>Later 4 pin brake switch</p> <p>Either set of pins will work for converter Wire ignition power to one terminal and the harnesses purple wire to the other.</p> <p>The pin pairs brake switch, connect original wires to other set.</p>

Diagram B; Hook park/neutral wire to pin 86 as well the PCM to see ground in park/neutral.

Using a standard relay for the starter motor operation with neutral safety switch.



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FUSE PANEL DIAGRAM

ECM Battery Positive 15	ECM Ignition ON 10	O2 Sensor Heaters 20
Fuel Pump 20	Trans MAF TAC 15	Fuel Injectors 15
Fan #1 B+ 30	Coil 20	Fuel Injectors 15
Fan #2 B+ 30	Coil 20	Fan Relay 15

LSX Panel Fuse Location with fans.

