

# **Solar Shop Kelly Startup and Shutdown Procedure.**

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**IMPORTANT! DUE TO SERIOUS POTENTIAL HAZARDS THIS IS ONLY TO BE PERFORMED UNDER THE DIRECT SUPERVISION OF A QUALIFIED SENIOR TEAM MEMBER**

With car already unpacked from the trailer.

## **INITIAL INSPECTION:**

- MASTER ISOLATOR (circuit switch with pull cable) = OFF
- Red EMERGENCY STOP button is pushed IN.
- Engage parking brake.
- THROTTLE (red knob) is turned to anti-clockwise end stop.
- REGENERATION (blue knob) is turned to anticlockwise end stop.
- The FORWARD/ REVERSE slide switch is set to FWD.
- If the driver canopy is fitted then the two connectors at left and right of removable canopy lid are connected.
- Umbilical connector, and adjacent two smaller connectors for rear camera which sit between the driver and passenger seats are connected.
- 5 cables plugged into the back of the master optimiser and it is mounted on Velcro at left of cockpit. (There are 2 round connectors in the back and 3 square plugs into the top)

## **Once these checks have been completed:**

**PRE- DRIVE CHECKS-** The driver (and passenger if required) are seated and seat belts fitted.

- Horn
- Blinkers
- Radio Communications.
- Battery temps are OK.

Battery voltage should be greater than 115volts (at least 105V). **If the battery voltage falls to 100V stop the car and shut the power off.**

## **STARTUP PROCEDURE:**

1. Turn on main power (isolator)
  - Most instruments should now come on along with reversing camera

**Precharging** – energising the motor controller:

Looking at the precharge controller the GREEN POWER LED should be on at all times to indicate that the 12V supply is present.

2. Turn contactor knob to position '2'. It can always be left in this position.
3. Twist the red stop button clockwise so that it pops out
  - Red PRECHARGE led should come on.

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4. Wait until the contactor clicks and the precharge light goes off (approx 30secs).
  - The blue "OUTPUT ON" LED should now be lit.
  - The car is now ready to drive.
5. Release the handbrake, press the Green "Motor On" button on the steering wheel and turn the throttle knob clockwise to move off.

### **DRIVING PROCEDURE (BRAKE AND MOTOR CONTROL):**

1. Use the THROTTLE to control the speed. This is a POWER control just like an accelerator pedal in a conventional car. Clockwise rotation applies more power to the motor.
2. When the brake pedal is pressed an electrical circuit lights the brake lights and disables the motor. The car will then freewheel and adjusting the throttle knob will have no effect.
3. Press the Green "Motor On" button on the steering wheel to resume throttle control. This can be done at any time – the car does not have to be stationary. Note that if the throttle is at a high setting then the car will have a significant power surge.

### **DRIVING PROCEDURE (CRUISE CONTROL):**

**WARNING – the driver must take care that the car does not travel at an excessive speed for the road and traffic conditions.**

1. Use the THROTTLE to accelerate the car to the desired speed.
2. Slowly turn the REGENERATION (blue knob) clockwise until the car starts to slow down. The car will then maintain that speed provided the THROTTLE is not reduced too much or the car tries to climb a significant hill.
3. To increase the set speed, turn the REGENERATION knob anticlockwise. To reduce the set speed, turn the REGENERATION knob clockwise.
4. If the car tries to exceed the set speed, for example running down a hill, the REGENERATION will try to reduce the car's speed to the set speed by electrical braking through the motor. This is called regenerative braking and electrical energy is generated by the motor and fed back into the battery. This can be seen on the Motor Current meter which will show a negative current.
5. When the brake pedal is pressed an electrical circuit lights the brake lights and disables the motor. The car will then freewheel and adjusting the throttle knob will have no effect.

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6. Press the Green “Motor On” button on the steering wheel to resume cruise control driving.
7. Turn the REGENERATION knob to the anticlockwise stop to change to driving with the THROTTLE knob. This can be done at any time – the car does not have to be stationary. Note that if the throttle is at a high setting then the car will accelerate to a higher speed.

### **SHUTDOWN PROCEDURE:**

1. Reduce the THROTTLE to zero (completely anti-clockwise).
2. Slow to a stop using foot brake. (This will disable the motor controller).
3. Engage the parking brake.
4. Press the RED EMERGENCY STOP button. The precharge controller will now have a RED DISCHARGE LED lit (BLUE LED will now turn off)  
Wait for this RED LED to turn off (up to 60seconds).  
The motor controller has now been de-energised.
5. Turn the main isolator to OFF (you do not have to wait for the motor controller to fully discharge in step 4 above)
6. Switch the two current readouts in the black box on the far left of the cabin off, there’s a small switch on the left side of this box.
7. The car is now off. Note that the two temperature gauges on the far left side of the cabin have their own batteries and will remain on. Everything else will be off.

### **Document Control**

<b>VERSION</b>	<b>DATE</b>	<b>CHANGES</b>	<b>PERSON</b>
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