**Test Cell Start-Up Procedure**

1. Turn air handler to **TEST**
2. Turn MSS to **Standby**
3. Reset Kistler charge amp (one)
   1. Hit **RESET**, then **OPERATE**
4. Check engine oil level (use 0w-20)
5. Check fuel level. If adding fuel, blend in 3-4 oz Techron per new tank
6. Verify fuel valves are on (all North to South except one at the bottom)
7. Ensure chilled water valves are on
8. Check coolant level in radiator tower and intercooler reservoir
9. Inspect driveshaft, engine mounts, exhaust system. Verify tight and connected
10. Bar engine over at least 2 revolutions.
11. Check switches
    1. Battery Switch ON & Charger Switch ON
12. Turn on lambda sensor (in operator cabinet) to “measure”
13. Turn on Hartzell
14. Make sure starter clutch fluid level above MIN (brake fluid)

**Clear Engine Codes, if any**

1. Select SwRI E-stop on RPECS keyboard
   1. Press “I” enter for ign on & “0” to turn off
2. Disconnect RPECS CAN cable (green/yellow wires)
3. Enable Drive
4. Check/clear codes w/ Autoenginuity Giotto
5. Close Giotto and reconnect RPECS CAN cable

**Horiba Bench Startup and Calibration**

1. Calibrate Horiba bench
   1. Menu > Command, STBY > CAL

**Engine Start-Up Procedure**

1. Verify cabinet lambda power supply is on and at 14 volts
2. **LAUNCH** dyno, then **STARTER**, **AUTOMATIC**
3. Engine should starter start and sync with dyno
4. Select **CAS** (if equipped)

**Pre-Run Checks**

1. Verify engine is running
2. Verify oil pressure > 200 kpa
3. Verify fuel pressure **~ 60psi (400 kPa)**
4. **Set coolant temperature setpoint = 85 C**
5. **Set oil temperature setpoint = 95 C**
6. **Set intercooler temperature setpoint = 35 C**
7. Get ambient HC/CO in i-Test
   1. Unselect **Heated Probe**
   2. Select **Ambient Probe**
   3. Select **Sample**
   4. Wait until ambHC and ambCO stabilize
   5. Select **Standby**
   6. Unselect **Ambient Probe**
   7. Select **Heated Probe**
   8. Select **Sample**
   9. Turn MSS to **Measure**

**Engine Warm-Up Procedure**

1. Manual ramp to RPM= 1500, pedal = 5 until oil temp >65 C
2. Enter **R** to initiate the RPECS Log
3. Check all data channels are active
4. Check MIL status on the vehicle (confirm no check engine light)

**Begin New Test**

1. Select **New Test**
   1. Change test info, date, etc. & continue
   2. Increment (new Test Number; run number reset to 0) or continue (continue with previous test and next run number)
2. Start each new test with a Common Mode Daily Check
   1. Wait until **Oil Temp = 80 C** & **Water Temp = 90 C**
   2. **Common mode is 2000 RPM, 25% pedal (~>154Nm)**
   3. Single mode log
   4. Ensure consistency with previous Common Mode runs
3. Begin Mapping
   1. Verify map points are defined
   2. Confirm mapping Stability Limits are as follows:
      1. Fuel Stat = 0.05
      2. Torque = 5.00 Nm
      3. Temperature = 3.0 C
      4. Time Out = 240 seconds
   3. Confirm mapping Temperature Limits are as follows:
      1. 105 = Oil Pan =115
      2. 100 = Coolant = 105
      3. 850 = Turbine In – 900
      4. 850 = Cat1 Out – 950

**Engine Shut-Down Procedure**

1. Select **Shutdown** – (automatically RPM = 1000, pedal = 0)
2. Select cool down mode
3. Turn air handler to **OFF**
4. Switch off ignition current probe
5. Switch off battery switch
6. Switch off ECM sensor enable
7. Turn off ECM power supply
8. Turn MSS to **Hibernate**