**Test Cell Start-Up Procedure**

1. Turn air handler to TEST
2. Turn on cabinet power supply (lambda PS) set to 14 volts
   1. -6 enable, -1 measure
3. Reset Kistler charge amps (4 boxes in cabinet)
   1. Hit **RESET**, then **OPERATE** (Box #1)
4. Turn ON the battery box switch
5. Check engine oil level (use 5w-30)
6. Check coolant level
7. Check fuel level and type
8. Verify fuel valves are on
9. Ensure chilled water valves are on
10. Check coolant level in radiator tower and intercooler reservoir
11. Inspect driveshaft, engine mounts and exhaust system. Verify everything is tight and connected.

**Horiba Bench Startup and Calibration**

1. Calibrate Horiba bench
   1. Ensure Cell 9 is selected – Line operator
   2. Menu > Command, STBY > CAL
   3. Ensure Cell 9 is selected

**RPECS Start-Up Procedure**

1. Login = Root, PW = Beer
2. RPECS – Escape Cell 9
3. M - monitor

**i-Test and Vehicle Start-Up Procedure**

1. Put vehicle PRNDL lever in P position
2. Launch I-Test (yellow button)
   1. Yes, OK
3. Select “dyno”
4. Select “motoring” (wait for launch and dyno spin up)
5. Pull the Ignition push/pull button & watch for exhaust temperatures to read out (indicates engine is running)
6. Run procedure “clear DTC’s” (check engine light on dash)
7. RPECS screen type “T” (turns off CAN)
8. Open scan tool and clear DTC
9. Check that check engine light is off on dash
10. Press R on the RPECS logging – to record the test data
11. Place vehicle PRNDL in N position
12. Select Manual ramp
    1. **1500 rpm & 15% throttle & 10 sec ramp**
    2. Begin Ramp for start-up
13. Wait for warm-up temperatures to reach 90degC
    1. For coolants
14. Take **Common Mode** points after warm-up
    1. **2000 rpm & 30% throttle & 10 sec ramp**

**Pre-Run Checks**

1. Verify engine is running
2. Verify oil pressure > 200 kpa
3. Verify Fuel Pressure ~ 60psi (490 kPa)
4. Set coolant temperature setpoint = 90 C
5. Set oil temperature setpoint = 90 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
8. Verify RPECS is logging – select R if needed to ensure the data is being recorded
9. Verify CAS screen is active & matching the numbers on the i-Test screen

**Begin New Test**

1. Select **New Test**
   1. Change test info, date, etc.
   2. Continue
   3. 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. 1500 rpm 15% pedal until oil is 65 C minimum
   2. **Common mode is 2000 RPM & 30% throttle**
   3. Wait until Oil Temp is 80C & Water Temp is 90C
   4. Single mode log
   5. Ensure consistency with previous Common Mode runs
3. Begin mapping

**Scan Tool Hook-Up Procedure to Clear DTCs**

1. Ensure the engine is off, not spinning
2. Disconnect RPECS CAN wire in the test cell cabinet
3. Connect OBD Service Tool connector on the console
4. Select the “Enable Drive” button in i-Test
5. Turn on the Scan Tool IDS software
6. RPECS screen type “T” (turns off CAN)
7. Pull the ignition button ON
8. Select the software toolbox icon
   1. Double-click the “self test”
   2. Double-click “All CMDTCs”
   3. Select the eraser icon on the right to clear the DTCs
   4. Select the green check mark
   5. Cycle the vehicle ignition button
9. Exit the software program
10. Reverse Steps #6 thru #2

**Engine Shut-Down Procedure**

1. Manual Ramp down to RPM = 1500, pedal = 15
2. After a few minutes, Manual Ramp down to RPM = 1000, pedal = 0
3. Place vehicle PRNDL in P position
4. Push the push/pull ignition button IN to shutdown
5. Let dyno motor for 5 minutes to allow a cool down period
6. Select “Shutdown”
   1. Stop Dyno then Shutdown Cell
7. Turn air handler to OFF
8. Turn both battery switches to OFF
9. Turn off cabinet power supply (lambda PS)
   1. -6 Disable