



**WORKSHEET 2-2**  
**Data List Information – Test Drive**

|         |                 |        |              |
|---------|-----------------|--------|--------------|
| Vehicle | Year/Prod. Date | Engine | Transmission |
|---------|-----------------|--------|--------------|

**Worksheet Objectives**

In this worksheet you will use the Diagnostic Tester to obtain and view relevant information and observe data lists while driving the vehicle. You will then relate this information to the different components and technologies of the hybrid system.

**Tools and Equipment**

- Vehicle
- Diagnostic Tester
- TIS Machine w/Tech View

**Section 1 – HV ECU Data List**

1. Connect the Diagnostic Tester to DLC3. Start the vehicle (READY light ON).
2. Go to **HV ECU, Data List**.
3. Create a **User Data** list with the following items:
  - MG1 REV
  - MG2 REV
  - MG1 TORQ
  - MG2 TORQ
  - POWER RQST
  - ENGINE SPD
  - VEHICLE SPEED

**Note: Remember that when REV and TORQ are the same (both + positive or both – negative) the component is being used as a MOTOR. When REV and TORQ are different (ie. REV + & TORQ -) the component is a GENERATOR.**

4. From a stop, lightly accelerate to 20 mph. Record the following values:

|              |            |
|--------------|------------|
| MG1 REV -    | MG1 TORQ - |
| MG2 REV -    | MG2 TORQ - |
| ENGINE SPD - |            |

5. Is MG1 being used as motor or a generator?

\_\_\_\_\_

6. Is MG2 being used as a motor or generator?

\_\_\_\_\_

7. Is the engine running?

\_\_\_\_\_

8. Bring vehicle speed up to approximately 35 mph. Record the following values:

|              |            |
|--------------|------------|
| MG1 REV -    | MG1 TORQ - |
| MG2 REV -    | MG2 TORQ - |
| ENGINE SPD - |            |

9. Is MG1 being used as motor or a generator?

\_\_\_\_\_

10. Is MG2 being used as a motor or generator?

\_\_\_\_\_

11. Is the engine running?

\_\_\_\_\_

12. Bring vehicle speed up to approximately 45 mph. Record the following values:

|              |            |
|--------------|------------|
| MG1 REV -    | MG1 TORQ - |
| MG2 REV -    | MG2 TORQ - |
| ENGINE SPD - |            |

13. Is MG1 being used as motor or a generator?

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14. Is MG2 being used as a motor or generator?

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15. Is the engine running?

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## SECTION 2 – Battery ECU Data List

1. With the Diagnostic Tester, select Battery ECU and enter the Data List.

2. Create a User Data list (use YES/NO keys to turn ON) with the following:

- BATTERY SOC
- BATT TEMP 1
- BATT TEMP 2
- BATT TEMP 3
- BATT TEMP 4
- BATT BLOCK V1
- BATT BLOCK V2

3. What is the battery SOC?

4. What is the AVG battery temperature?

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5. What is the voltage of the battery blocks? V1 \_\_\_\_\_ V2 \_\_\_\_\_.

6. From a standing start accelerate to 20 mph. How is the temperature changing?

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7. Is SOC (State Of Charge) changing?

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8. Cruise at approx 35 mph. How is the temperature changing?

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9. How is the SOC changing?

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10. Accelerate full throttle to approx 45 mph. How is the temperature changing?

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11. How is the SOC changing? Discharge \_\_\_\_\_ Charge \_\_\_\_\_.

**Return to the shop.**



**SELF ASSESSMENT 2-2**  
**Data List Information – Test Drive**

|       |       |
|-------|-------|
| Name: | Date: |
|-------|-------|

**Self-assessment Objectives**

Review this sheet as you are doing the Data List Information worksheet. Check off either category after completing the worksheet and instructor presentation. Ask the instructor if you have questions. The **Comments** section is for you to write notes on where to find the information, questions, etc.

I have questions

I know I can

| Topic   |  |  | Comment |
|---|--|--|---------|
| Create User Data from the HV ECU Data List.             |  |  |         |
| Determine if MG1 is being used as a motor or generator. |  |  |         |
| Determine if MG2 is being used as a motor or generator. |  |  |         |
| View the Battery ECU Data List.                         |  |  |         |
| Determine the SOC (State of Charge).                    |  |  |         |
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**Notes**