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# Fuel Injector Balance Test

## TASK OBJECTIVE

At the completion of this task the technician will be able to properly perform an injector balance test. Further skills will be demonstrated by explaining why a balance test would be necessary.

**INTRODUCCTION**

Another test that can be performed on any multiple injector system while the fuel pressure gauge is installed on the vehicle: It is called an injector balance test.

For the injector balance test BUDS can be used to activate the injectors for a predetermined amount of pulses. First the fuel pump is activated using BUDS and the fuel pressure is checked. With the gauge at full pressure, one injector is activated with BUDS and the pressure drops and it’s recorded. Then the fuel pump is activated again. The next injector is activated and the pressure drops and it’s again recorded. This sequence is repeated until all injectors have been activated and recorded. All the injectors should deliver the same amount of fuel. We say that they are all balanced. All the readings should be within 10 KPA or (1.4 PSI) of each other. If the reading of for one injector was off by more than that, the pintle inside the injector could be sticking or the injector screen could be clogged with debris.

**PROCEDURES**

Follow the steps and answer the questions below:

|  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 1. Activate the fuel pump with BUDS. | | | | | | | | | | |
| 1. Is the fuel pressure within the specifications? | YES |  | NO |  |  | | | | | |
| 1. Activate injector #1 with BUDS. | | | | | | | | | | |
| 1. Record the value the fuel pressure dropped here \_\_\_\_\_\_\_\_\_ | | | | | | | | | | |
| 1. Activate the fuel pump with BUDS. | | | | | | | | | | |
| 1. Activate injector #2 with BUDS | | | | | | | | | | |
| 1. **Note: If the activation time is shorter swap the injector connector with the #3 and activate the injector #3 with BUDS** | | | | | | | | | | |
| 1. Record the value the fuel pressure dropped here \_\_\_\_\_\_\_\_\_ | | | | | | | | | | |
| 1. Activate the fuel pump with BUDS. | | | | | | | | | | |
| 1. Activate injector #3 with BUDS | | | | | | | | | | |
| 1. Record the value the fuel pressure dropped here \_\_\_\_\_\_\_\_\_ | | | | | | | | | | |
| 1. Record the **difference** of the fuel pressure drop here \_\_\_\_\_\_\_\_\_ | | | | | | | | | | |
| 1. Is the fuel pressure drop of all the injectors within the specifications? | | | | | | YES |  | NO |  |  |

**QUESTIONS**

1. What have you learned from this task?

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2. What would be indicated if the fuel pressure drop difference of one injector was more than 10 KPA (1.4 PSI)?

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1. What would be indicated if the fuel pressure drop difference of one injector was less than 10 KPA (1.4 PSI)?

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**Instructor sign off-- Go \_\_\_\_\_\_\_\_\_\_**