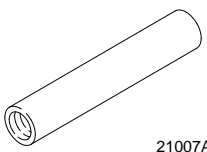
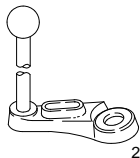
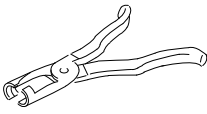
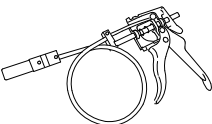


## Seals – Valve Stem – Renew (all) (21 238 0)

### Special Tools

 21007A	<b>21-007 A</b> Valve stem seal installer
 21056	<b>21-056</b> Valve spring compressor
 21165	<b>21-165</b> Valve stem seal pliers
 24003	<b>24-003</b> Remover/installer, cooling hose clamps

### Materials

Coolant	
Sealer	SPM-2G-3121-A
Spark plug thread lubricant (Never Seez)	ESE-M1244-A

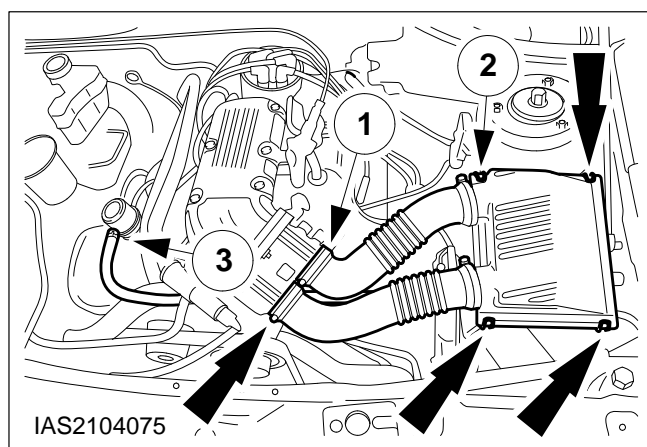
### Remove

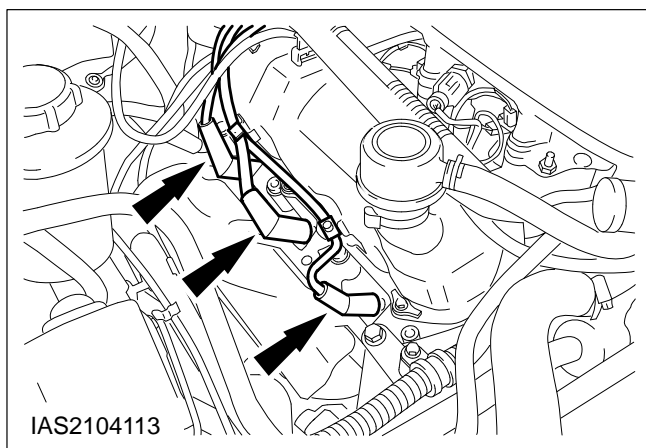
#### 1. Preparatory measures.

- Make a note of the radio keycode.
- Make a note of the preset radio stations.
- Detach the battery cover (one nut).
- Disconnect the battery negative lead.
- Open the coolant expansion tank.

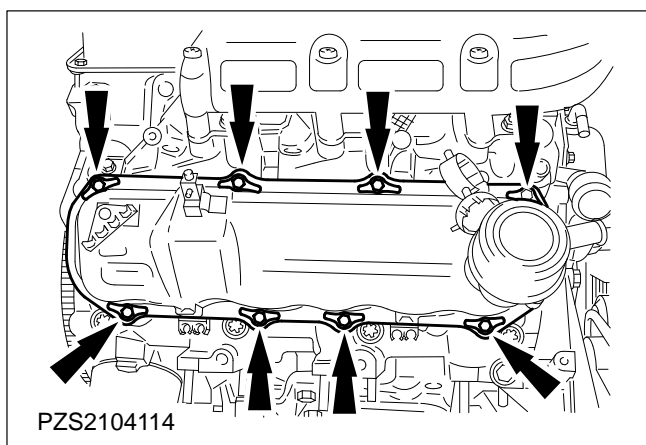
#### 2. Detach the upper part of the air cleaner housing.

- 1 Remove the intake pipes from the throttle housing (two clamps).
- 2 Unclip the upper part of the air cleaner housing (four clips).
- 3 Disconnect the positive crankcase ventilation (PCV) hose.

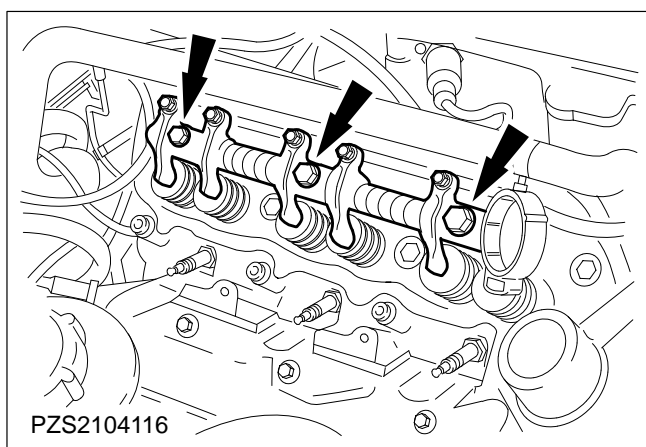




3. Disconnect the HT leads (right-hand side shown).

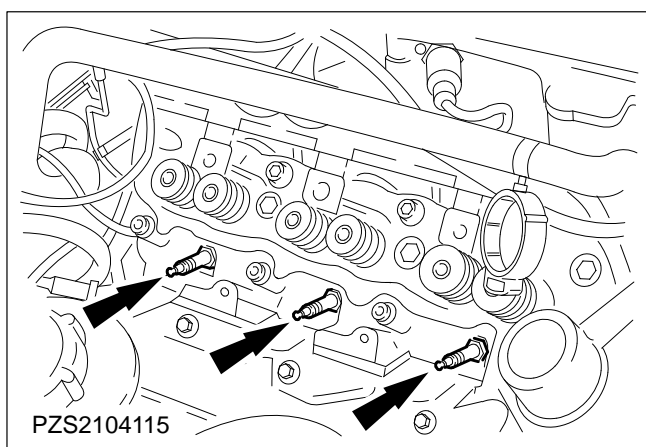


4. Detach the cylinder head covers (eight bolts and washers each).

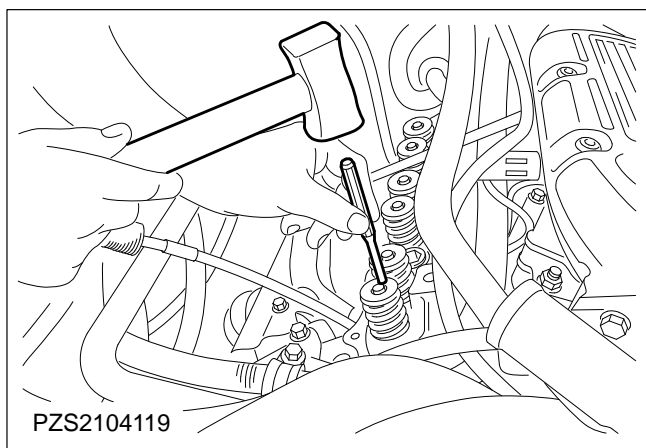


5. Detach the rocker shafts.

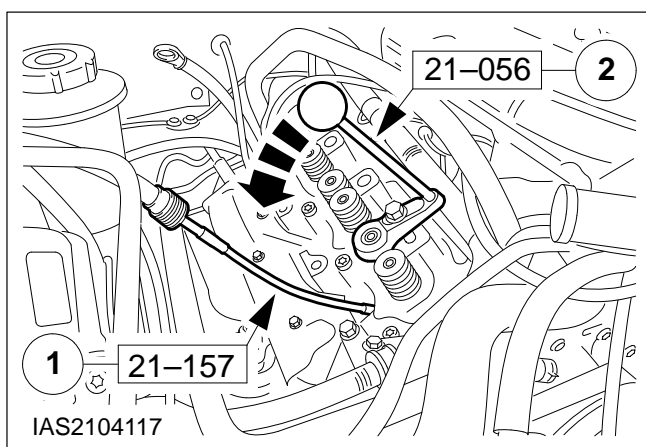
Withdraw the push rods in the correct sequence and keep them in order.



6. Remove the spark plugs.

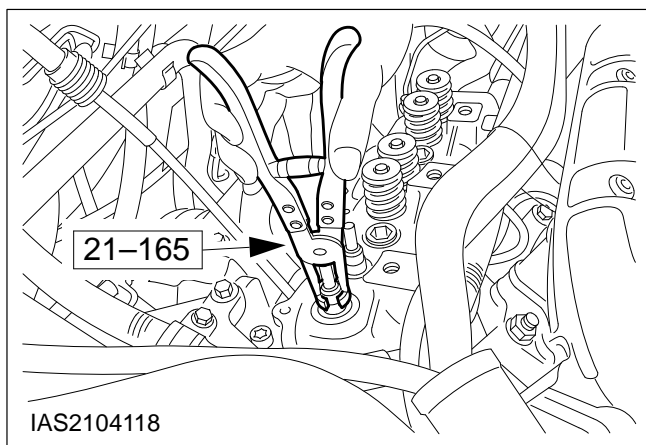


- 7. Release the valve collets by tapping on the valve heads.**



- 8. Remove the valve springs.**

- 1 Screw the compressed air line connector into the threaded holes of the spark plugs.
- 2 Tension the valve springs using the special tool.
  - Remove the valve collets.
  - Relax the valve springs and remove the valve spring retainers and the valve springs.

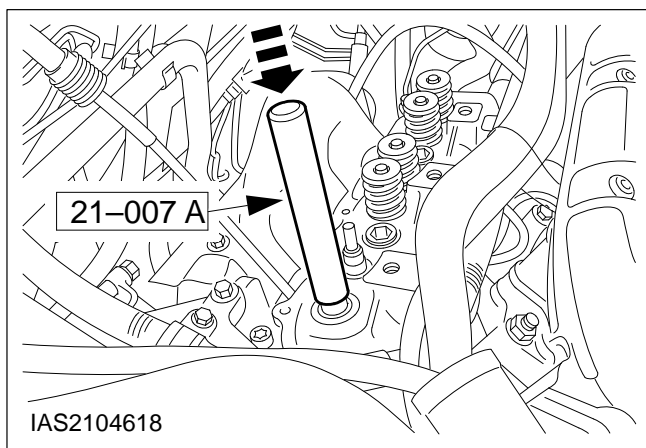


- 9. Remove the valve stem seals.**

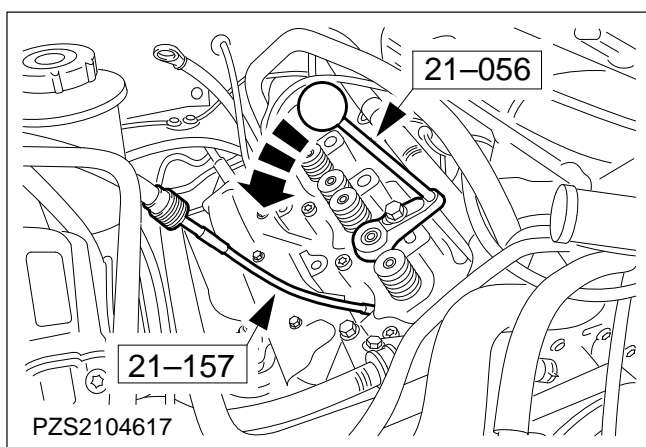
- 10. Repeat steps 7. to 9. for all valves.**

### Install

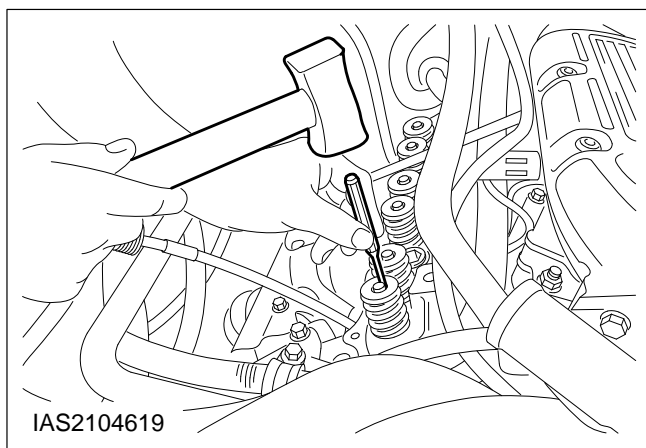
- 11. Lubricate the valve stem with hypoid oil.**
- 12. Cover the valve collet grooves with suitable film.**

**13. Install the valve stem seals.**

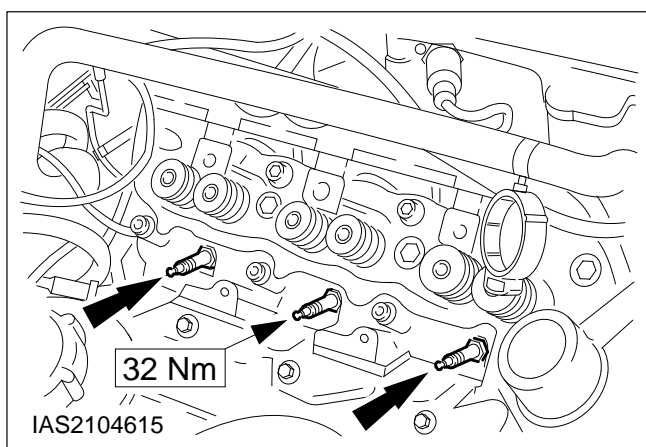
Remove the tape from the valve stem.

**14. Install the valve springs.**

- Fit the valve springs with the valve spring retainers and tension them.
- Insert the valve collets.

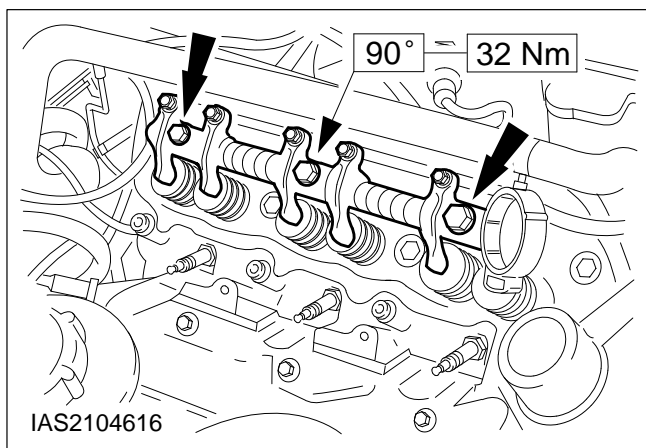
**15. Make sure that the valve collets are seated correctly.**

**16. Repeat steps 11. to 15. for all valves.**



**NOTE:** Apply lubricant (Never Seez, ESE-M1244-A) to the spark plug threads.

**17. Fit the spark plugs.**

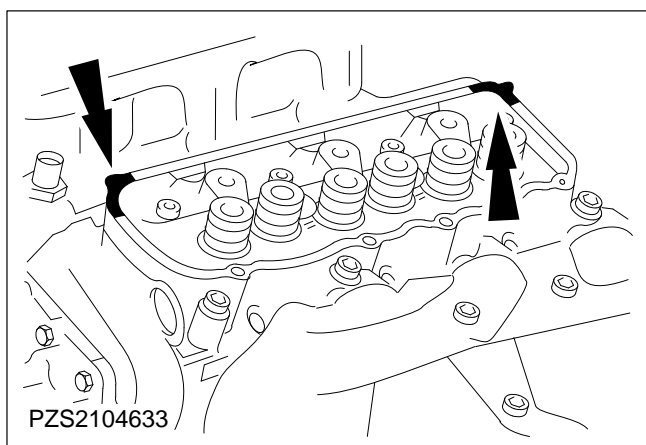


### 18. Attach the rocker shafts.

- Lubricate the push rods with oil and fit them.

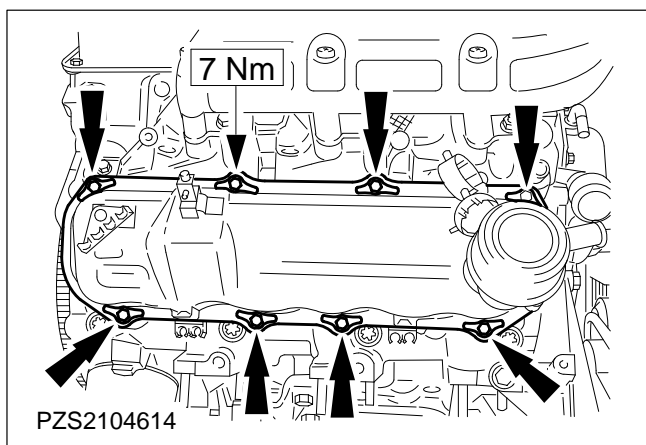
**⚠ CAUTION:** Do not move the rocker arm adjusting bolts.

- Fit the rocker shafts and screw in the bolts.
- Tighten the bolts.

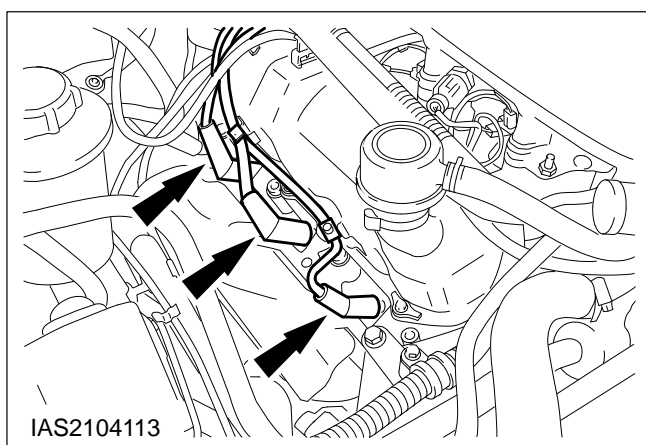


### 19. Coat the contact faces of the cylinder head cover flange with sealer (SPM-2G-3121-A).

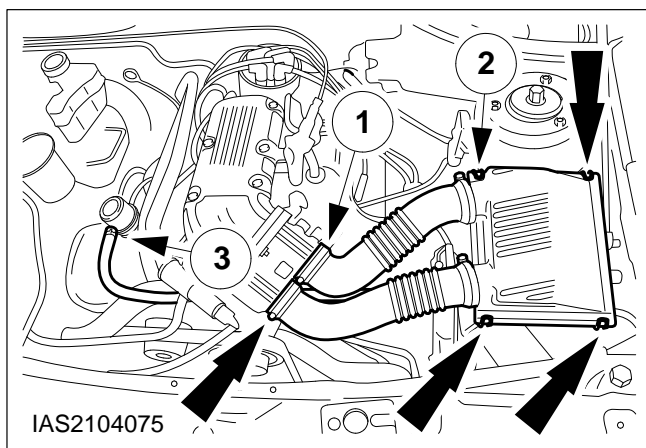
Fit the gaskets with the adhesive-coated side facing upwards.



### 20. Fit the cylinder head covers (eight bolts and washers each).

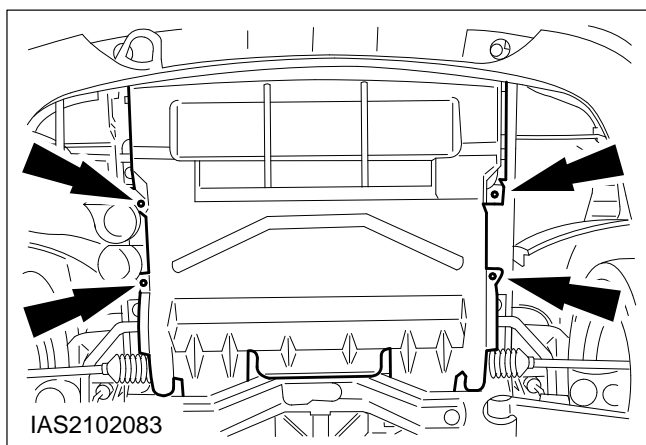


### 21. Connect the HT leads.



## 22. Attach the upper part of the air cleaner housing.

- 1 Connect the intake pipes to the throttle body (TB) (two clamps).
- 2 Clip the upper part of the air cleaner housing in place (four clips).
- 3 Fit the positive crankcase ventilation (PCV) hose.



## 23. Finishing operations:

- Top up the coolant.
- Check the fluid levels and rectify as necessary.
- Check the routing of the vacuum hoses and the wiring and secure them using cable ties as required.
- Connect the battery negative lead.
- Enter the radio keycode.
- Reprogramme the preset radio stations.
- Reset the clock.
- Carry out a road test to enable the PCM module to collect data.
- Check the engine and cooling system for leaks (visual check).
- Attach the engine undershield.