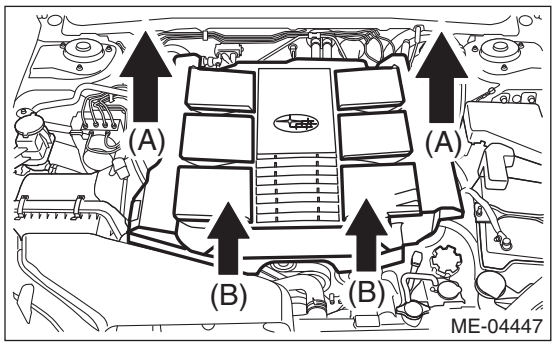
# 5. Intake Manifold Vacuum

## A: INSPECTION

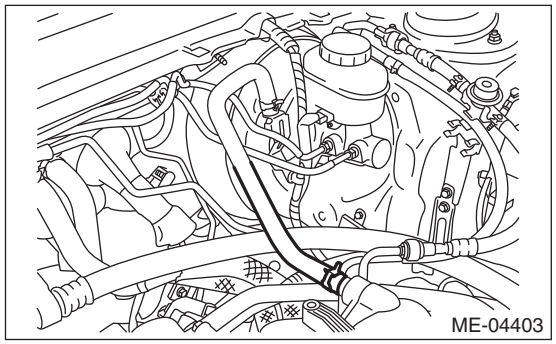
1) Warm up the engine.
2) Remove the collector cover.

NOTE:
Follow these procedures for removal of the collector cover.

(1) Lift up the rear side holding two positions (A).
(2) Lift up the front side holding two positions (B) while moving it in the forward direction of the vehicle.




3) Remove the air intake boot. <Ref. to IN(H6DO)-7, REMOVAL, Air Intake Boot.>
4) Disconnect the brake booster vacuum hose from the intake manifold, and attach the vacuum gauge.




5) Install the air intake boot. <Ref. to IN(H6DO)-7, INSTALLATION, Air Intake Boot.>
6) Keep the engine at idle speed and read the vacuum gauge indication.

NOTE:
Condition of engine inside can be diagnosed by observing the behavior of the vacuum gauge needle as described in table below.

***Intake manifold vacuum (at idling, A/C OFF):***
***Standard***
***Less than –60.0 kPa (–450 mmHg, –17.72 inHg)***

| Diagnosis of engine condition by measurement of intake manifold vacuum | |
|---|---|
| Vacuum gauge indication | Possible engine condition |
| 1. Needle is steady but lower than standard value. This tendency becomes more evident as engine temperature rises. | Leakage around intake manifold gasket, disconnection or damage of vacuum hose |
| 2. Needle intermittently drops to position lower than standard value. | Leakage around cylinder |
| 3. Needle drops suddenly and intermittently from standard value. | Sticky valve |
| 4. When engine speed is gradually increased, needle begins to vibrate rapidly at certain speed, and then vibration increases as engine speed increases. | Weak or broken valve springs |
| 5. Needle vibrates above and below standard value in narrow range. | Defective ignition system |