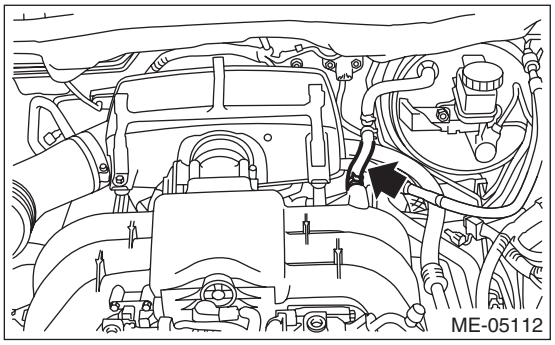
# 5. Intake Manifold Vacuum

## A: INSPECTION

1) Warm up the engine.
2) Remove the collector cover.
3) Disconnect the brake booster vacuum hose from the intake manifold, and install the vacuum gauge.




4) 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)***

5) After inspection, install the related parts in the reverse order of removal.

| 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 |