GROUP 16

ENGINE ELECTRICAL <Vehicles for General Export>

GENERAL

OUTLINE OF CHANGES

- The specifications of alternator for vehicles with 4G92 engine and automatic transmission for Singapore have been changed. (75A → 90A)
- A high altitude compensation system has been added to vehicles with 4G1 carburettor engine. The service points which are different from the previous procedures have been established to correspond to this.

CHARGING SYSTEM

SPECIFICATIONS

GENERAL SPECIFICATIONS
ALTERNATOR

4G92 ENGINE FOR SINGAPORE

Items	Specifications
Type	Battery voltage sensing
Rated output V/A	12/90
Voltage regulator	Electronic built-in type

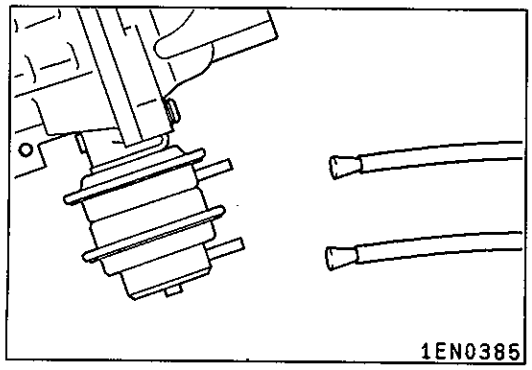
IGNITION SYSTEM

SPECIFICATIONS

SERVICE SPECIFICATIONS

4G1 CARBURETTOR ENGINE (WITH HIGH ALTITUDE COMPENSATION SYSTEM)

Items		Specifications
Centrifugal advance (at 5,700 r/min)	4G13	11–20° BTDC
	4G15	4–13° BTDC
Vacuum advance (at 55 kPa)		15–26° BTDC
High-altitude advance (at 12 kPa)		4–13° BTDC



SERVICE ADJUSTMENT PROCEDURES

CENTRIFUGAL ADVANCE CONTROL DEVICE INSPECTION <Carburettor with high altitude compensation system>

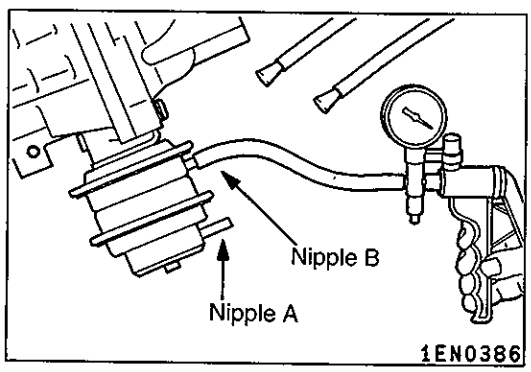
(1) Start the engine and run it at idle.
(2) Disconnect the vacuum hose from the vacuum controller, and then plug the end of the vacuum hose.
(3) Increase the engine speed gradually and check the ignition timing. At this time, check that the ignition timing advances smoothly as the engine speed increases.

Standard value:
4G13 11–20° BTDC (at 5,700 r/min)
4G15 4–13° BTDC (at 5,700 r/min)

(4) If the following problem occurs, disassemble the distributor and check.

Problem	Probable cause
Excessive advance	Worn-out governor spring
Sudden advance	Broken spring
Insufficient advance or hysteresis is too large	Incorrect operation of governor weight or cam

VACUUM ADVANCE CONTROL DEVICE INSPECTION <Carburettor with high altitude compensation system>



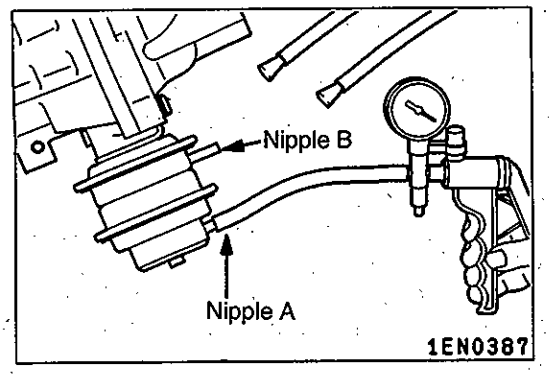
(1) Start the engine and run it at idle.
(2) Disconnect the vacuum hoses from the vacuum controller, and then plug the ends of the vacuum hoses.
(3) Connect a hand vacuum pump to the nipple B which the vacuum hose with the black stripe was connected to.
(4) Gradually increase the vacuum with the hand vacuum pump, and check the ignition timing. At this time, check that the ignition timing advances smoothly as the vacuum increases.

Standard value: 15–26° BTDC (at 55 kPa)

(5) If the following problem occurs, disassemble the distrbutor and check.

Problem	Probable cause
Excessive advance	Worn-out vacuum controller spring
Sudden advance	Broken spring
Insufficient advance or hysteresis is too large	Incorrect operation of breaker base
Does not advance	Broken diaphragm

(6) Disconnect the hand vacuum pump.



(7) Connect the hand vacuum pump to the nipple A which the vacuum hose with the light blue stripe was connected to.
(8) Gradually increase the vacuum with the hand vacuum pump, and check the ignition timing.

Standard value: 4–13° BTDC (at 12 kPa)

(9) If the advance is outside the standard value range, disassemble and check the distributor.