

FUEL

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SERVICE ADJUSTMENT PROCEDURES

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SPECIFICATIONS

GENERAL SPECIFICATIONS

<Conventional carburettor>

Items	Vehicles for Europe, Vehicles for General Export (With auto-choke carburettor) and for GCC	Vehicles for General Export (With manual choke carburettor)
Fuel tank		
Capacity lit. (U.S.gal., Imp.gal.)	50 (13.2, 11.0)	50 (13.2 11.0)
Fuel		
Return system	Equipped	Equipped
Fuel pump		
Type	Mechanical diaphragm	Mechanical diaphragm
Driven by	Camshaft	Camshaft
Discharge pressure kPa (kg/cm ² , psi)	19 – 26 (0.19 – 0.26, 2.7 – 3.7)	19 – 26 (0.19 – 0.26, 2.7 – 3.7)
Carburettor		
Type	Down-draft, 2-barrel, conventional, Aisan	Down-draft, 2-barrel, conventional, Aisan
Body	Aluminum	Aluminum
Choke type	Automatic (wax type)	Manual
Choke breaker delay valve	Equipped	Not equipped
Identification model No.		
<M/T>	5EU A	5XU A
<A/T>	5EV A	5XU B
Throttle bore		
Primary mm (in.)	28 (1.1024)	28 (1.1024)
Secondary mm (in.)	32 (1.2598)	32 (1.2598)
Fuel cut solenoid valve	ON/OFF type solenoid valve	ON/OFF type solenoid valve
Dash pot		
<M/T>	Control valve type	Control valve type
<A/T>	Conventional type	Conventional type
Distributor advance angle control vacuum nipple	Equipped	Equipped
EGR valve control vacuum nipple	Equipped (on A/T)	Not equipped
Idle limiter cap	Equipped	Not equipped
Idle compensator		
Thermo valve	Bimetal type	Bimetal type
Cold mixture heater		
Type	PTC heater*	—

NOTE

PTC: Positive Temperature Coefficient

*: Other than vehicles for GCC

Items	Vehicles for Turkey	Vehicles for Australia
Fuel tank Capacity lit. (U.S.gal., Imp.gal.)	50 (13.2, 11.0)	50 (13.2, 11.0)
Fuel Return system	Equipped	Equipped
Fuel pump Type Driven by Discharge pressure kPa (kg/cm ² , psi)	Mechanical diaphragm Camshaft 19 – 26 (0.19 – 0.26, 2.7 – 3.7)	Mechanical diaphragm Camshaft 19 – 26 (0.19 – 0.26, 2.7 – 3.7)
Carburettor Type Body Choke type Choke breaker delay valve Identification model No. <M/T> <A/T> Throttle bore Primary mm (in.) Secondary mm (in.) Fuel cut solenoid valve Dash pot <M/T> <A/T> Distributor advance angle control vacuum nipple EGR valve control vacuum nipple Idle limiter cap	Down-draft, 2-barrel, conventional, Aisan Aluminum Automatic (wax type) Equipped 5WU A 5WU B 28 (1.1024) 32 (1.2598) ON/OFF type solenoid valve Control valve type Conventional type Equipped Not equipped Not equipped	Down-draft, 2-barrel, conventional, Mikuni Resin Automatic (wax type) Equipped (on A/T) 30-32 DID TA-342 30-32 DID TA-343 30 (1.1811) 32 (1.2598) ON/OFF type solenoid valve – – Equipped Equipped Not equipped
Idle compensator Thermo valve	Bimetal type	Bimetal type
Cold mixture heater Type	–	PTC heater

NOTE

PTC: Positive Temperature Coefficient

<Variable-venturi carburettor>

Items	Vehicles for Europe, Vehicles for General Export (With auto-choke carburettor) and for GCC	Vehicles for General Export (With manual choke carburettor)
Fuel tank Capacity lit. (U.S.gal., Imp.gal.)	50 (13.2, 11.0)	50 (13.2, 11.0)
Fuel Return system	Equipped	Equipped
Fuel pump Type Driven by Discharge pressure kPa (kg/cm ² , psi)	Mechanical diaphragm Camshaft 19 – 26 (0.19 – 0.26, 2.7 – 3.7)	Mechanical diaphragm Camshaft 19 – 26 (0.19 – 0.26, 2.7 – 3.7)
Carburettor Type Body Choke type Identification model No. 4G13-M/T A/T 4G15-M/T A/T Throttle bore mm (in.) Fuel cut solenoid valve Dash pot <M/T> <A/T> Distributor advance angle control vacuum nipple EGR valve control vacuum nipple VRV control vacuum nipple Vacuum switch control vacuum nipple Idle limiter cap	Down-draft, variable-venturi, conventional, Aisan Aluminum Automatic (wax type) 31A, 34F* ¹ 35D 51A, 62A* ² 51B, 62B* ⁴ 42 (1.65) ON/OFF type solenoid valve Equipped* ² Equipped Equipped Equipped* ³ Not equipped Not equipped Not equipped Equipped* ⁵	Down-draft, variable-venturi, conventional, Aisan Aluminum Manual 32B 32C 52C 52D 42 (1.65) ON/OFF type solenoid valve Not equipped Equipped Equipped Not equipped Not equipped Not equipped Not equipped
Idle compensator Thermo valve Cold advance control thermo valve	Bimetal type Equipped	Bimetal type Not equipped

NOTE

*1: Vehicles for Hong Kong and Singapore

*2: Vehicles for Europe with 4G13 engine only

*3: Excluding vehicles with 4G13-M/T engine for Hong Kong and Singapore

*4: Vehicles built from June 1992

*5: Vehicles built up to May 1992

Items	Vehicles for Turkey	Vehicles for Australia
Fuel tank Capacity lit. (U.S.gal., Imp.gal.)	50 (13.2, 11.0)	50 (13.2, 11.0)
Fuel Return system	Equipped	Equipped
Fuel pump Type Driven by Discharge pressure kPa (kg/cm ² , psi)	Mechanical diaphragm Camshaft 19 – 26 (0.19 – 0.26, 2.7 – 3.7)	Mechanical diaphragm Camshaft 19 – 26 (0.19 – 0.26, 2.7 – 3.7)
Carburettor Type Body Choke type Identification model No. 4G13-M/T A/T 4G15-M/T A/T Throttle bore mm (in.) Fuel cut solenoid valve Dash pot <M/T> <A/T> Distributor advance angle control vacuum nipple EGR valve control vacuum nipple VRV control vacuum nipple Vacuum switch control vacuum nipple Idle limiter cap	Down-draft, variable-venturi, conventional, Aisan Aluminum Automatic (wax type) 32F 32D 52A 52B 42 (1.65) ON/OFF type solenoid valve Not equipped Equipped Equipped Not equipped Not equipped Not equipped Not equipped	Down-draft, variable-venturi, conventional, Aisan Aluminum Automatic (wax type) – – 53G, 63C*1 53H, 63D*1 42 (1.65) ON/OFF type solenoid valve Not equipped Equipped Equipped Equipped Equipped Equipped Not equipped
Idle compensator Thermo valve Cold advance control thermo valve	Bimetal type Equipped	Bimetal type Equipped

NOTE

*1: Vehicles built from June 1992

<FBC>

Items	Specifications
Fuel Return system	Equipped
Fuel pump Type Drive by Discharge pressure kPa (kg/cm ² , psi)	Mechanical diaphragm type Camshaft 19 – 26 (0.19 – 0.26, 2.7 – 3.7)
Carburettor Type Choke type Heater Identification model No. <For Switzerland> <For West Germany> <Other model> Throttle bore mm (in.) Primary Secondary Feedback solenoid valve Slow cut solenoid valve Dash pot Throttle position sensor Bowl vent valve Mixture control valve	Down-draft, 2-barrel, feedback type Automatic (electric type) PTC heater 30-32 DID EF-335 30-32 DID EF-336 30-32 DID EF-334 30 (1.181) 32 (1.260) Duty cycle solenoid Duty cycle solenoid Conventional type Variable resistor type Vacuum type Vacuum type
Engine control unit Identification model No.	E2T56071
Input sensor Engine coolant temperature sensor Oxygen sensor Vacuum switch	Thermistor type Zirconia sensor Contact type switch
Output actuator Secondary air control solenoid valve Cold advance control solenoid valve	ON-OFF solenoid valve ON-OFF solenoid valve

NOTE

PTC: Positive Temperature Coefficient

<MPI-SOHC>

Items	Vehicles for Europe	Vehicles for General Export
Fuel		
Tank capacity lit. (U.S.gal., Imp.gal.)	50 (13.2, 11.0)	50 (13.2, 11.0)
Fuel pump		
Type	Electrical, in-tank type	Electrical, in-tank type
Throttle body		
Identification model No.		
<M/T>	AC46-200	AC46-201
<A/T>	AC46-202	
Throttle bore mm (in.)	46 (1.81)	46 (1.81)
Throttle position sensor	Variable resistor type	Variable resistor type
Idle speed control servo	Electric motor	Electric motor
Idle position switch	Contact type, within idle speed control servo	Contact type, within idle speed control servo
Motor position sensor	Variable resistor type	Variable resistor type
Mixture adjusting screw (variable resistor)	—	Variable resistor type
Engine control unit		
Identification model No.	E2T33474A	E2T33476A
Input sensor		
Air flow sensor	Karman vortex type	Karman vortex type
Barometric pressure sensor	Semiconductor diffusion-type sensor	Semiconductor diffusion-type sensor
Intake air temperature sensor	Thermistor type	Thermistor type
Engine coolant temperature sensor	Thermistor type	Thermistor type
Oxygen sensor	Zirconia sensor	—
Vehicle speed sensor	Reed switch type	Reed switch type
Inhibitor switch	Contact switch type	Contact switch type
Crank angle sensor	Photo diode sensor	Photo diode sensor
Output actuator		
Control relay		
Identification model No.	E8T06871	E8T06871
Injector type and number	Electromagnetic 4	Electromagnetic 4

Items	Vehicles for Europe	
	4G13 engine	4G92 engine
Fuel		
Tank capacity lit. (U.S.gal., Imp.gal.)	50 (13.2, 11.0)	50 (13.2, 11.0)
Fuel pump		
Type	Electrical, in-tank type	Electrical, in-tank type
Throttle body		
Identification model No.	ACN46-300	ACN50-205
Throttle bore mm (in.)	46 (1.81)	50 (1.97)
Throttle position sensor	Variable resistor type	Variable resistor type
Idle speed control servo	DC motor type DC motor type by-pass air control system with the Fast Idle Air Valve (FIAB)	DC motor type DC motor type by-pass air control system with the Fast Idle Air Valve (FIAB)
Idle position switch	Rotary contact type, within throttle position sensor	Rotary contact type, within throttle position sensor
Servo valve position sensor	Hall element type	Hall element type
Mixture adjusting screw (variable resistor)	—	—
Engine control unit		
Identification model No.	E2T36677	E2T38974*1, E2T38977*2
Sensors		
Air flow sensor	—	Karman vortex type
Barometric pressure sensor	—	Semiconductor diffusion-type
Vacuum sensor (manifold absolute pressure sensor)	Semiconductor type	—
Intake air temperature sensor	Thermistor type	Thermistor type
Engine coolant temperature sensor	Thermistor type	Thermistor type
Oxygen sensor	Zirconia type	Zirconia type
Vehicle speed sensor	Reed switch type	Reed switch type
Inhibitor switch	—	Contact switch type
No. 1 cylinder top dead centre sensor	Photo interruptor type	Hall element type
Crank angle sensor	Photo interruptor type	Hall element type
Actuators		
Control relay type	Contact switch type	Contact switch type
Control relay identification model No.	E8T06877	E8T06877
Injector type and number	Electromagnetic 4	Electromagnetic 4

NOTE

*1: <2WD>

*2: <4WD>

Items	Vehicles for General Export	
	4G15 engine	4G92 engine
Fuel		
Tank capacity lit. (U.S.gal., Imp.gal.)	50 (13.2, 11.0)	50 (13.2, 11.0)
Fuel pump		
Type	Electrical, in-tank type	Electrical, in-tank type
Throttle body		
Identification model No.		
<M/T>	AC46-201* ¹ , AC46-302* ²	ACN50-205
<A/T>	AC46-201* ¹ , AC46-302* ²	ACN50-205
Throttle bore mm (in.)	46 (1.81)	50 (1.97)
Throttle position sensor	Variable resistor type	Variable resistor type
Idle speed control servo	Electric motor	DC motor type DC motor type by-pass air control system with the Fast Idle Air Valve (FIAB)
Idle position switch	Contact type, within idle speed control servo	Rotary contact type, within throttle position sensor
Motor position sensor	Variable resistor type	—
Servo valve position sensor	—	Hall element type
Mixture adjusting screw (variable resistor)	Variable resistor type	—
Engine control unit		
Identification model No.	E2T33476* ¹ , E2T33482* ³ , E2T36675* ⁶	E2T38974
Sensors		
Air flow sensor	Karman vortex type	Karman vortex type
Barometric pressure sensor	Semiconductor diffusion-type	Semiconductor diffusion-type
Intake air temperature sensor	Thermistor type	Thermistor type
Engine coolant temperature sensor	Thermistor type	Thermistor type
Oxygen sensor	—	Zirconia type
Vehicle speed sensor	Reed switch type	Reed switch type
Inhibitor switch	Contact switch type	Contact switch type
No. 1 cylinder top dead centre sensor	Photo interruptor type	Hall element type
Crank angle sensor	Photo interruptor type	Hall element type
Actuators		
Control relay type	Contact switch type	Contact switch type
Control relay identification model No.	E8T06871* ³ , E8T06875* ⁴	E8T06877
Injector type and number	Electromagnetic 4	Electromagnetic 4

NOTE

*1: Vehicles built up to April 1989

*2: Vehicles built from May 1989

*3: Vehicles built up to December 1988

*4: Vehicles built from January 1989

*5: Vehicles built from May 1989 to May 1990

*6: Vehicles built from June 1990

Items	Vehicles for Australia	
	4G15 engine	4G92 engine
Fuel		
Tank capacity lit. (U.S.gal., Imp.gal.)	50 (13.2, 11.0)	50 (13.2, 11.0)
Fuel pump		
Type	Electrical, in-tank type	Electrical, in-tank type
Throttle body		
Identification model No.		
<M/T>	AC46-002* ¹ , AC46-050* ² , AC46-152* ³	ACN50-105
<A/T>	AC46-050* ² , AC46-153* ³	ACN50-105
Throttle bore mm (in.)	46 (1.81)	50 (1.97)
Throttle position sensor	Variable resistor type	Variable resistor type
Idle speed control servo	Electric motor	DC motor type DC motor type by-pass air control system with the Fast Idle Air Valve (FIHV)
Idle position switch	Contact type, within idle speed control servo	Rotary contact type, within throttle position sensor
Motor position sensor	Variable resistor type	—
Servo valve position sensor	—	Hall element type
Mixture adjusting screw (variable resistor)	—	—
Engine control unit		
Identification model No.	E2T14371* ⁴ , E2T36672* ³	E2T36680
Sensors		
Air flow sensor	Karman vortex type	Karman vortex type
Barometric pressure sensor	Semiconductor diffusion-type	Semiconductor diffusion-type
Intake air temperature sensor	Thermistor type	Thermistor type
Engine coolant temperature sensor	Thermistor type	Thermistor type
Oxygen sensor	Zirconia type	Zirconia type
Vehicle speed sensor	Reed switch type	Reed switch type
Inhibitor switch	Contact switch type	Contact switch type
No. 1 cylinder top dead centre sensor	Photo interruptor type	Hall element type
Crank angle sensor	Photo interruptor type	Hall element type
Actuators		
Control relay type	Contact switch type	Contact switch type
Control relay identification model No.	E8T06875	E8T06877
Injector type and number	Electromagnetic 4	Electromagnetic 4

NOTE

*1: Vehicles built up to April 1989

*2: Vehicles built from May 1989 to May 1990

*3: Vehicles built from June 1990

*4: Vehicles built up to May 1990

<MPI-DOHC>

Items	Vehicles for Europe* ⁹ , Vehicles for Australia	Vehicles for Europe* ¹⁰
Fuel		
Tank capacity lit. (U.S.gal., Imp.gal.)	50 (13.2, 11.0)	50 (13.2, 11.0)
Fuel pump		
Type	Electrical, in-tank type	Electrical, in-tank type
Throttle body		
Identification model No.	AC54-200* ¹ , AC54-206* ² , AC54-300* ² , AC60-304* ⁵ , AC54-050* ⁷	AC54-317
Throttle bore mm (in.)	54 (2.13)* ⁹ , 60 (2.36)* ⁶	54 (2.13)
Throttle position sensor	Variable resistor type	Variable resistor type
Idle speed control servo	Stepper motor type (Stepper motor type bypass air control method with fast idle air valve attached)	Stepper motor type (Stepper motor type bypass air control method with fast idle air valve attached)
Mixture adjusting screw (variable resistor)	Variable resistor type* ⁴	–
Idle position switch	Contact type	Rotary contact type, within throttle position sensor
Engine control unit		
Identification model No.	E2T33277* ¹ , E2T34377* ^{1,3} , E2T34380* ² , E2T34381* ^{2,3} , E2T35878* ⁵ , E2T36778* ⁷	E2T38376
Sensors		
Air flow sensor	Karman vortex type	Karman vortex type
Barometric pressure sensor	Semiconductor diffusion-type sensor	Semiconductor diffusion-type sensor
Intake air temperature sensor	Thermistor type	Thermistor type
Engine coolant temperature sensor	Thermistor type	Thermistor type
Oxygen sensor	Zirconia type* ³	Zirconia type
Vehicle speed sensor	Reed switch type	Reed switch type
Top dead centre sensor	Photo interruptor type	Hall element type
Crank angle sensor	Photo interruptor type	Hall element type
Actuators		
Control relay type	Contact switch type	Contact switch type
Control relay identification model No.	E8T06771	E8T06877
Injector type and number	Electromagnetic 4	Electromagnetic 4

NOTE

*1: Vehicles built up to April 1989

*2: Vehicles built from May 1989

*3: Vehicles with catalytic converter

*4: Vehicles without catalytic converter

*5: Vehicles built from Dec. 1989

*6: Vehicles built from June 1990

*7: Vehicles for Australia

*8: Vehicles built up to Dec. 1989 for Europe, Vehicles for Australia

*9: Vehicles built up to May 1992

*10: Vehicles built from June 1992

Items	Vehicles for General Export
Fuel	
Tank capacity lit. (U.S.gal., Imp.gal.)	50 (13.2, 11.0)
Fuel pump	
Type	Electrical, in-tank type
Throttle body	
Identification model No.	AC54-200* ¹ , AC54-300* ² , AC60-304* ³
Throttle bore mm (in.)	54 (2.13), 60 (2.36)* ³
Throttle position sensor	Variable resistor type
Idle speed control servo	Stepper motor type (Stepper motor type bypass air control method with fast idle air valve attached)
Mixture adjusting screw (variable resistor)	Variable resistor type
Idle position switch	Contact type
Engine control unit	
Identification model No.	E2T34378* ¹ , E2T34382* ² , E2T36775* ³
Sensors	
Air flow sensor	Karman vortex type
Barometric pressure sensor	Semiconductor diffusion-type sensor
Intake air temperature sensor	Thermistor type
Engine coolant temperature sensor	Thermistor type
Oxygen sensor	—
Vehicle speed sensor	Reed switch type
Top dead centre sensor	Photo interruptor type
Crank angle sensor	Photo interruptor type
Actuators	
Control relay type	Contact switch type
Control relay identification model No.	E8T06771
Injector type and number	Electromagnetic 4

NOTE

*1: Vehicles built up to April 1989

*2: Vehicles built from May 1989

*3: Vehicles built from June 1990

<Diesel engine>

NOTES

Items	Specifications
Fuel tank Capacity lit. (U.S.gal., Imp.gal.)	50 (13.2, 11.0)
Fuel Return system	Equipped
Fuel injection pump Type Rotation direction Injection sequence Cam lift mm (in.) Plunger diameter mm (in.) Governor type Feed pump type Fast idle system	Distribution type Clockwise (viewed from driving side) 1-3-4-2 2.2 (0.0866)* ¹ , 2.43 (0.9567)* ² 9 (0.3543)* ¹ , 10 (0.3937)* ² Half all speed Vane type Wax type
Injection nozzle Nozzle type Holder type	Throttle type Screw-in type

NOTE

*1: 4D65 engine

*2: 4D68 engine

SERVICE SPECIFICATIONS

E13CB--

<Conventional carburettor>

Items	Specifications
Standard value	
Accelerator cable play mm (in.)	1 – 2 (0.04 – 0.08)
Choke cable play mm (in.)	2 – 3 (0.08 – 0.12)
Choke breaker opening mm (in.)	
AISAN TYPE	1.7 – 1.9 (0.067 – 0.075)
MIKUNI TYPE	1.5 – 1.7 (0.059 – 0.067)
Fuel cut solenoid valve resistance Ω	
AISAN TYPE	90 [at 20°C (68°F)]
MIKUNI TYPE	48 – 60 [at 20°C (68°F)]
Cold mixture heater Ω	Should be conductive [approx. 1 at 20°C (68°F)]

<Variable-venturi carburettor>

Items	Specifications
Standard value	
Unloader opening mm (in.)	8 (0.31) or more
Fast-idle speed r/min.	
Manual-choke carburettor	3,000 $\pm$ 200
Auto-choke carburettor	2,700 $\pm$ 200

<FBC>

Items	Specifications
Standard value	
Accelerator cable play mm (in.)	1 – 2 (0.04 – 0.08)
Carburettor	
Throttle position sensor	
Adjusting voltage [throttle valve fully closed] V	0.250
Electric choke heater Ω	Should be conductive [approx. 6 resistance at 20°C (68°F)]
Choke breaker opening mm (in.)	
1st stage	1.4 – 1.6 (0.055 – 0.063)
2nd stage	2.9 – 3.1 (0.114 – 0.122)
Fast idle rpm [at no load, after warm up, 2nd stage] r/min.	2,700 $\pm$ 200
Feedback solenoid valve coil resistance Ω	54 – 66 [at 20°C (68°F)]
Slow cut solenoid valve coil resistance Ω	48 – 60 [at 20°C (68°F)]
Throttle position sensor total resistance k Ω	3.5 – 6.5
Input sensor	
Coolant temperature sensor resistance k Ω	2.5 [at 20°C (68°F)] 0.3 [at 80°C (176°F)]
Oxygen sensor output voltage V	Approx. 1
Vacuum switch kPa (kg/cm ² , psi)	
ON	More than 41 (0.41, 5.8)
OFF	Less than 27 (0.27, 3.9)
Output actuator	
Throttle opener control solenoid valve resistance for power steering and electrical load Ω	36 – 44 [at 20°C (68°F)]
Cold advance control solenoid valve resistance Ω	36 – 44 [at 20°C (68°F)]
Cold mixture heater Ω	Should be conductive [approx. 1 at 20°C (68°F)]

<MPI-SOHC>

Items	Specifications
Standard value	
Accelerator cable play mm (in.)	
<M/T>	1 – 2 (0.04 – 0.08)
<A/T>	3 – 5 (0.12 – 0.20)
Fuel pressure regulator pressure kPa (kg/cm ² , psi)	
Vacuum hose disconnection	330 – 350 (3.3 – 3.5, 47 – 50)
Vacuum hose connection	Approx. 270 (2.7, 38)
Basic idle speed r/min.	
Vehicles for Europe and General Export	800 $\pm$ 50, 750 $\pm$ 50* ¹
Vehicles for Australia	700 $\pm$ 50* ² , 750 $\pm$ 50* ³ , 800 $\pm$ 50* ⁴
Throttle position sensor adjustment voltage (at curb idle) V	0.48 – 0.52
Throttle body	
Throttle position sensor resistance k Ω	3.5 – 6.5

NOTE

*1: 4G13 engine

*2: Vehicles built up to May 1990

*3: Vehicles built from June 1990 up to May 1992

*4: Vehicles built from June 1992

Items	Specifications
Motor position sensor total resistance k Ω	4 – 6**
Idle speed control servo motor coil resistance [at 20°C (68°F)] Ω	5 – 35
Mixture adjusting screw (variable resistor) total resistance k Ω	4 – 6**
Input sensor	
Intake air temperature sensor resistance [at 20°C (68°F)] k Ω	2.7, 2.6**
Coolant temperature sensor resistance k Ω	
20°C (68°F)	2.5
80°C (176°F)	0.3
Oxygen sensor output voltage V	0.6 – 1.0**
Output actuator	
Injector coil resistance [at 20°C (68°F)] Ω	13 – 16

NOTE

*1: Vehicles without catalytic converter

*2: Vehicles with catalytic converter

*3: 4G13 engine

*4: 4G15 and 4G37 engine

<MPI-DOHC>

Items	Specifications
Standard value	
Accelerator cable play mm (in.)	1 – 2 (0.04 – 0.08)
Fuel pressure regulator pressure kPa (kg/cm ² , psi)	
Vacuum hose disconnection	330 – 350 (3.3 – 3.5, 47 – 50)
Vacuum hose connection	Approx. 270 (2.7, 38)
Basic idle speed r/min.	
Vehicles for Europe and General Export	850 $\pm$ 50, 800 $\pm$ 50**
Vehicles for Australia	750 $\pm$ 50
Throttle position sensor adjustment voltage (at curb idle) V	0.48 – 0.52
Throttle body	
Throttle position sensor resistance k Ω	3.5 – 6.5
Idle speed control servo motor coil resistance [at 20°C (68°F)] Ω	28 – 33
Mixture adjusting screw total resistance k Ω	4 – 6**
Input sensor	
Intake air temperature sensor resistance [at 20°C (68°F)] k Ω	2.7
Coolant temperature sensor resistance k Ω	
20°C (68°F)	2.5
80°C (176°F)	0.3
Oxygen sensor output voltage V	0.6 – 1.0**
Output actuator	
Injector coil resistance [at 20°C (68°F)] Ω	13 – 16

NOTE

*1: Vehicles without catalytic converter

*2: Vehicles with catalytic converter

*3: 4G93 engine

<Diesel engine>

Items	Specifications
Standard value	
Accelerator cable play mm (in.)	1 – 2 (0.04 – 0.08)
Injection pressure	
Standard kPa (kg/cm ² , psi)	12,000 – 13,000 (120 – 130, 1,707 – 1,849)
Output actuator	
Fuel cut solenoid valve resistance Ω	9 – 12

TORQUE SPECIFICATIONS

E13CC-

Items	Nm	kgm	ft.lbs.
Carburettor mounting bolts			
<Vehicles for Europe and General Export>	10 – 13	1.0 – 1.3	7 – 9
<Vehicles for Australia>	15 – 20	1.5 – 2.0	11 – 14
Fuel pump mounting bolts	9 – 14	0.9 – 1.4	7 – 10
Engine coolant temperature sensor	20 – 40	2.0 – 4.0	15 – 29
Oxygen sensor	40 – 50	4.0 – 5.0	29 – 36
Throttle position sensor attaching screw			
<FBC>	2.5 – 4.5	0.25 – 0.45	1.8 – 3.3
<MPI>	1.5 – 2.5	0.15 – 0.25	1.1 – 1.8
Delivery pipe installation bolt	10 – 13	1.0 – 1.3	7 – 9
Fuel pressure regulator installation bolt			
<MPI-SOHC>	7 – 11	0.7 – 1.1	5 – 8
<MPI-DOHC>	8 – 10	0.8 – 1.0	6 – 7
Throttle body mounting bolt, nut			
<MPI-SOHC>	10 – 13	1.0 – 1.3	7 – 9
<MPI-DOHC>	15 – 22	1.5 – 2.2	11 – 16
Throttle body stay	10 – 13	1.0 – 1.3	7 – 9
Accelerator cable adjusting bolt	4 – 6	0.4 – 0.6	3 – 4
Accelerator cable clamp bolt	3 – 5	0.3 – 0.5	2 – 4
Injection pipe clamp bolt	4 – 6	0.4 – 0.6	3 – 4
Injection pipe nut	23 – 37	2.3 – 3.7	17 – 27
Injection pump bracket bolt	30 – 42	3.0 – 4.2	22 – 30
Injection pump mounting nut	15 – 22	1.5 – 2.2	11 – 16
Injection pump mounting bolt	20 – 27	2.0 – 2.7	14 – 20
Fuel return pipe nut	30 – 40	3.0 – 4.0	22 – 29
Injection nozzle	50 – 60	5.0 – 6.0	36 – 43
Rocker cover installation bolt			
<Conventional carburettor>, <FBC>, <MPI-SOHC>	1.5 – 2.0	0.15 – 0.20	1.1 – 1.4
<MPI-DOHC>	2.5 – 3.5	0.25 – 0.35	1.8 – 2.5
<Diesel>	5.0 – 7.0	0.50 – 0.70	3.6 – 5.0

Items	Nm	kgm	ft.lbs.
Injection pump sprocket mounting nut	80 – 90	8.0 – 9.0	60 – 70
Timing check plug	14 – 20	1.4 – 2.0	10 – 14
High pressure fuel hose to pipe	32 – 42	3.2 – 4.2	23 – 30
Eye bolt	25 – 35	2.5 – 3.5	18 – 25
Accelerator arm bracket mounting nut	8 – 12	0.8 – 1.2	6 – 9
Fuel filter cartridge	12 – 14	1.2 – 1.4	9 – 10
Water level sensor	2.5 – 3.5	0.25 – 0.35	2 – 3

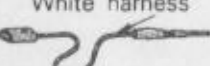
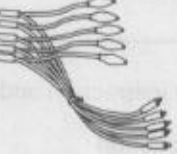
SEALANTS

E13CE

Items	Specified sealant	Quantity
Engine coolant temperature sensor threaded part	3M NUT Locking Part No. 4171 or equivalent	As required

SPECIAL TOOLS

Tool	Number	Name	Use
	MB991268*1 MB991341*2	Multi-use tester sub assembly	Checking of the self-diagnosis output NOTE *1: Vehicles built up to April 1989 *2: Vehicles built from May 1989
	(For the number, refer to GROUP 00 – Precautions before Service.)	ROM pack	
	MD998742	Hose adapter	Measurement of fuel pressure (to be used together with MD998709)
	MD998709	Adapter hose	Measurement of fuel pressure (to be used together with MD998742)
	MD998478	Harness connector (3 pin, triangle)	Throttle position sensor inspection and adjustment
	MD998474	Harness connector (8 pin, square)	• Throttle position sensor inspection and adjustment • Air flow sensor inspection • Idle position switch inspection • Variable resistor inspection
	MD998464	Harness connector (4 pin, square)	• Motor position sensor • Throttle position sensor inspection and adjustment • Idle position switch inspection • Oxygen sensor inspection
	MD998463	Harness connector (6 pin, square)	• Throttle position sensor inspection and adjustment • Variable resistor inspection • Idle speed control servo inspection • Inspection using an analyzer
	MD998460	Harness connector (4 pin, round)	Oxygen sensor inspection

Tool	Number	Name	Use
	MD998706	Injector test set	Checking of the spray condition of injectors (to be used together with MD998741)
	MD998741	Injector test adapter	Checking of the spray condition of injectors (to be used together with MD998706)
	MD998746	Clip	Checking of the spray condition of injectors
	MD998299	MAS driver	Variable resistor adjustment
 Red harness  White harness 	MB991223	Harness set connector for checking • Harness for checking pin contact pressure • Probe for commercially available tester connection (for ordinary connector)	Measurement of the terminal voltage
	MB991348	Test harness set	• Adjustment of idle position switch and throttle position sensor • Inspection using an analyzer