

2012 - Mazda6 - Engine

ENGINE TECHNICAL DATA [MZR 2.5]

Item	Specification
Idle speed (ATX: P, N position, MTX: Neutral position)	600—700 rpm
Ignition timing	Approx. BTDC 12°
CO concentration	Within the regulation
HC concentration	Within the regulation
Idle-up speed (ATX: P, N position, MTX: Neutral position)	A/C on : 600—850 rpm Electrical loads on: 650—750 rpm (MTX), 600—750 rpm (ATX) While turning steering wheel: 650—750 rpm
Valve clearance [Engine cold]	IN: 0.22—0.28 mm {0.009—0.011 in} EX: 0.27—0.33 mm {0.011—0.012 in}
Compression	Standard: 1,324 kPa {13.50 kgf/cm ² , 192.0 psi}[300 rpm] Minimum: 927 kPa {9.45 kgf/cm ² , 134 psi}[300 rpm] Maximum difference between cylinders: 196.1 kPa {2.0 kgf/cm ² , 28.5 psi}
Coil resistance	6.9—7.9 ohms [20°C {68°F}]
Cylinder Head Bolt Length L	145.2—145.8 mm {5.717—5.740 in}
Cylinder Head Bolt Maximum	146.5 mm {5.767 in}
Engine oil capacity (approx. quantity)	Oil replacement: 4.6 L {4.9 US qt, 4.0 Imp qt} Oil and oil filter replacement: 5.0 L {5.3 US qt, 4.4 Imp qt} Total (dry engine): 5.5 L {5.8 US qt, 4.8 Imp qt}

Oil pressure (reference value) [oil temperature: 100 °C {212 °F}]	395—649 kPa {4.03—6.61 kgf/cm ² , 57.3—94.1 psi} [3,000 rpm]
Engine coolant capacity (approx. quantity) [U.S.A. and CANADA]	MTX : 7.7 L {8.1 US qt, 6.8 Imp qt} ATX : 7.6 L {8.0 US qt, 6.7 Imp qt}
Engine coolant capacity (approx. quantity) [Except U.S.A. and CANADA]	MTX : 7.9 L {8.3 US qt, 7.0 Imp qt} ATX : 8.1 L {8.6 US qt, 7.1 Imp qt}
Cooling system cap valve opening pressure	112.8—142.2 kPa {1.151—1.450 kgf/cm ² , 16.37—20.62 psi}
Thermostat initial-opening temperature	80—84 °C {176—183 °F}
Thermostat full-open temperature	97 °C {207 °F}
Thermostat full-open lift	More than 8.0 mm {0.31 in}
Cooling fan motor No.1, No.2 standard current	17.5—20.5 A [12 V]
Fuel pressure	375—450 kPa {3.83—4.58 kgf/cm ² , 54.4—65.2 psi}
Fuel hold pressure	200 kPa {2.04 kgf/cm ² , 29.1 psi} or more
Fuel injector resistance	11.4—12.6 ohms [20 °C {68 °F}]
Battery electrolyte specific gravity [20 °C {68 °F}]	1.22—1.29
Battery parasitic draw (When the ignition is off (key is removed), all doors and the hood are closed.)	50—65 mA
Generator standard voltage [IG-ON]	Terminal B: B+ Terminal P: Approx. 1 V or less Terminal D: Approx. 0 V
Generator standard voltage [Idle, 20 °C {68 °F}]	Terminal B: 13—15 V Terminal P: Approx. 3—8 V Terminal D: Turn the electrical loads (headlights, blower motor, rear window defroster, brake lights, etc.) on and verify that the

	voltage reading increases.
Generator generated current minimum value	70% of the nominal output current (nominal output current: 100 A) [Ambient temp. 20 °C {68 °F}, voltage 13.0—15.0 V, both engine and generator are hot]
Generator rotor resistance (between slip rings) [20 °C {68 °F}]	2.0—2.3 ohms
Generator brush length	Standard: 22.5 mm {0.886 in} Minimum: 5.0 mm {0.20 in}
Generator brush spring force	Standard: 4.1—5.3 N {0.42—0.54 kgf, 1.0—1.1 lbf} Minimum: 1.7 N {0.17 kgf, 0.38 lbf}
Firing order	1—3—4—2 (all cylinders independent firing) Diagram illustrating the firing order (1-3-4-2) for the engine. The diagram shows a vertical cylinder arrangement with numbered circles (1, 2, 3, 4) representing the cylinders. Labels include 'CYLINDER No.', 'CRANKSHAFT PULLEY', and 'ENGINE'.
Spark plug type	NGK ILTR5A13G, NGK LTR5BI13
Spark plug gap (NGK ILTR5A13G)	Standard: 1.25—1.45 mm {0.049—0.057 in} New spark plug (reference): 1.25—1.35 mm {0.049—0.053 in}
Spark plug gap (NGK LTR5BI13)	Standard: 1.25—1.35 mm {0.049—0.053 in}
Spark plug resistance [25°C {77 °F}]	3.0—7.5 kilohms
Starter no-load test voltage	11 V
Starter no-load test current	90 A or less
Starter pinion gap	0.5—2.0 mm {0.02—0.07 in}

Starter armature runout	0.1 mm {0.004 in} max.
Starter commutator diameter	Standard: 29.4 mm {1.16 in} Minimum: 28.8 mm {1.13 in}
Segment groove depth of starter commutator	Standard: 0.5 mm {0.02 in} Minimum: 0.2 mm {0.008 in}
Starter brush length	Standard: 12.3 mm {0.484 in} Minimum: 5.5 mm {0.22 in}
Starter brush spring force	Standard: 15.0—20.4 N {1.53—2.08 kgf, 3.38—4.58 lbf} Minimum: 2.75 N {0.280 kgf, 0.618 lbf}

Engine oil specification

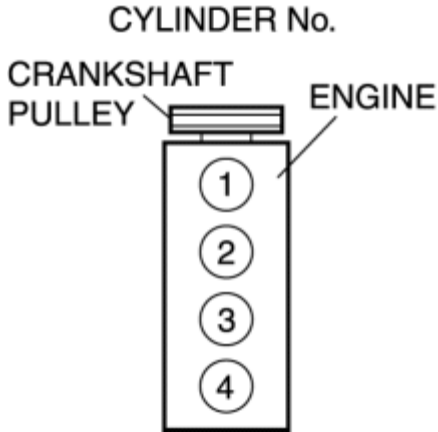
Item	U.S.A. and CANADA	Except U.S.A. and CANADA
Engine oil grade	 (ILSAC)	 (ILSAC)
		API SM or ILSAC
Engine oil viscosity	0W-20	0W-20 (If SAE 0W-20 engine oil is not available in your market, use SAE 5W-20, 5W-30 engine oil.)

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		API SM or ILSAC
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