

SERVICE SPECIFICATIONS

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SQRE4T15B ENGINE MANAGEMENT SYSTEM

Torque Specifications

Description	Torque (N·m)
Coolant Temperature Sensor	14 ± 1
Intake Pressure/Temperature Sensor Fixing Bolt	6 ± 1
Knock Sensor Fixing Bolt	20 ± 5
Crankshaft Position Sensor Fixing Bolt	8 ± 2
Camshaft Position Sensor Fixing Bolt	8 ± 1
VVT Control Valve Fixing Bolt	8 ± 2
ECU Fixing Bolt	7 ± 1

04



SQRE4T15B ENGINE MECHANICAL

SQRE4T15B Engine Specifications

Item	Specifications	
Type	Vertical, in-line 4-cylinder, water-cooled, 4-stroke, DOHC, turbocharged water-cooled	
Type	SQRE4T15B	
Valve Number Per Cylinder	4	
Cylinder Diameter (mm)	77	
Piston Stroke (mm)	80.5	
Displacement (ml)	1498	
Compression Ratio	9.5:1	
Ignition Type	Individual ignition	
Ignition Sequence	1 - 3 - 4 - 2	
Rated Power (kW)	108	
Max. Torque (N·m)	210	
Max. Torque Speed (r/min)	1750 - 4000	
Rated Power Speed (r/min)	5500	
Min. Fuel Consumption Rate (g/kW·h)	275	
Fuel Octane Number (Not Less Than)	Unleaded gasoline, octane number 92	
Oil Grade	SM SAE-5W-30 SM SAE-5W-40 SM SAE-10W-40	
Oil Capacity (L)	4.7 ± 0.2	
Starting Type	Electrical starting	
Cooling Type	Forced circulation type antifreeze cooling	
Lubrication Type	Compound type (pressure, splash lubrication)	
Cylinder Compression Pressure (bar) (180 - 250) r/min	7 - 10	
Oil Pressure (bar)	Idling speed (700 ± 50 r/min)	Not less than 0.7
	High speed (2000 r/min)	Not less than 2.5

Engine Mechanical Specifications

Item			Specifications
Camshaft	Cam height	Intake cam (mm)	37.07 - 37.31
		Exhaust cam (mm)	36.94 - 37.18
	Camshaft diameter (it is same for intake and exhaust camshafts) (mm)	1st journal	33.934 - 33.95
		2nd ~ 5th journal	23.947 - 23.96
	Camshaft axial clearance	Intake cam (mm)	0.15 - 0.2
		Exhaust cam (mm)	0.15 - 0.2
Cylinder head	Lower surface flatness (mm)		0.04
	Overall height (mm)		141.05
	Surface grinding limit		Never grind

Item			Specifications
Valve	Valve head margin thickness	Intake valve (mm)	0.68 - 1.1
		Exhaust valve (mm)	0.48 - 0.9
	Valve Stem Diameter	Intake valve (mm)	5.98 ± 0.008
		Exhaust valve (mm)	5.96 ± 0.008
	Valve face sealing width	Intake valve (mm)	1.154
		Exhaust valve (mm)	1.307
	Clearance between valve stem and guide	Intake valve (mm)	0.012 - 0.043
		Exhaust valve (mm)	0.032 - 0.063
	Angle between conical surfaces of valve face	Intake valve	90°
		Exhaust valve	90°
	Height	Intake valve (mm)	107.75 - 108.25
		Exhaust valve (mm)	106.07 - 106.57
Valve Spring	Free height (mm)		47.8
	Operating preload (N)/operating height (mm)		229 - 251/41
Valve Guide	Inner diameter (mm)		6 - 6.015
	Depression depth (mm)		16 ± 0.3
Piston	Piston skirt diameter (mm)		76.947 - 76.907
	Piston pin hole diameter (mm)		18.010 - 18.025
Piston Ring	Piston ring side clearance (mm)	First Ring	0.02 - 0.065
		Second Ring	0.02 - 0.06
	Piston ring end gap (mm)	First Ring	0.2 - 0.3
		Second Ring	0.3 - 0.5
Piston Pin	Diameter (mm)		17.995 - 18
	Length (mm)		45/0/-0.3
Crankshaft	Crankshaft main journal	Diameter (mm)	Standard value: 50 Limit value: 49.979
		Coaxially (mm)	0.05
		Cylindricity (mm)	0.007
		Roundness (mm)	0.004
	Connecting rod journal	Diameter (mm)	Standard value: 50 Limit value: 49.984
		Parallelism to main journal (mm)	0.008
Cylinder Block	Overall height (mm)		274.9
	Bore roundness/straightness (mm)		0.008/0.01
	Upper surface flatness (mm)		0.04
	Surface grinding limit		Never grind
Connecting Rod	Connecting rod big end hole axial clearance (mm)		0.15 - 0.40
	Connecting rod bearing shell radial clearance (mm)		0.026 - 0.075

Engine Torque Specifications

Description	Torque (N·m)
Ignition Coil Fixing Bolt	8 ± 1
Idler Pulley Fixing Bolt	50 + 5
Tensioner Fixing Bolt	50 + 5
Cylinder Head Cover Fixing Bolt	1st step: 3 + 2 2nd step: 8 + 3
Crankshaft Pulley Fixing Bolt	1st step: 100 ± 10 2nd step: 120° ± 10°
Crankshaft Timing Hole Fixing Bolt	40 + 5
Hydraulic Tensioner Fixing Bolt	9 + 3



04—SERVICE SPECIFICATIONS

Description	Torque (N·m)
Movable Guide Rail Fixing Bolt	12 + 2
Fixing Guide Rail Fixing Bolt	9 + 3
Upper Guide Rail Fixing Bolt	9 + 3
Phaser Fixing Bolt	105 + 5
Camshaft Bearing Cap Fixing Bolt	1st step: 9.5 ± 1.5 2nd step: 9.5 ± 1.5
Cylinder Head Fixing Bolt	1st step: 40 ± 5 2nd step: 90° ± 5° 90° ± 5°
Variable Timing Control Solenoid Valve	6 + 2
Camshaft Position Sensor Fixing Bolt	8 + 3
Lifting Eye Fixing Bolt	20 + 5
Coupling Bolt Between Rear Mounting Upper Body and Lower Body	105 ± 10
Coupling Bolt Between Rear Mounting Upper Body and Transmission	80 ± 5
Coupling Bolt Between Rear Mounting Lower Body and Sub Frame	150 ± 10
Coupling Bolt and Nut Between Left Mounting Cushion and Bracket	80 ± 5
Coupling Bolt Between Left Mounting Cushion and Body	70 ± 5
Coupling Bolt Between Left Mounting Bracket and Transmission	60 ± 5
Coupling Bolt Between Right Mounting Cushion and Engine	80 ± 5
Coupling Bolt Between Right Mounting Cushion and Body	70 ± 5
Knock Sensor Fixing Bolt	20 ± 5
Cooling Pipe Assembly I Fixing Bolt	20 + 5
Oil Pump Movable Guide Rail Fixing Bolt	12 + 2
Oil Deflector Fixing Bolt	8 + 3
Crankshaft Frame Fixing Bolt	27 + 3
Crankshaft Main Bearing Fixing Bolt (Frame)	1st step: 45 ± 5 180° ± 10°
Connecting Rod Bearing Cap Fixing Bolt	1st step: 15 + 3 2nd step: 60° ± 2°

Lubrication Areas during Engine Assembly

Lubrication Area	Note
Valve Guide Bottom Hole	SM 10W - 40
Intake Valve Retainer Bottom Hole	SM 10W - 40
Exhaust Valve Retainer Bottom Hole	SM 10W - 40
Cylinder Head OCV Valve Opening	SM 10W - 40
Check Valve	SM 10W - 40
Valve Stem Part	SM 10W - 40
Valve Oil Seal Lip	SM 10W - 40
Valve Lifter Circumcircle and Lifter Hole	SM 10W - 40
Camshaft Journal and Bearing Seat Hole	SM 10W - 40
Cam Surface	SM 10W - 40
Camshaft Phaser Assembly Front Control Valve	SM 10W - 40
Rocker Arm Roller	SM 10W - 40
Timing System	SM 10W - 40
Cylinder Bore	SM 10W - 40
Main Bearing Cap Bolt	SM 10W - 40
Connecting Rod Bearing Shell and Connecting Rod Journal	SM 10W - 40
Main Bearing Shell and Crankshaft Main Journal	SM 10W - 40
Piston Pin Circumcircle Surface	SM 10W - 40

Lubrication Area	Note
Crankshaft Front and Rear Oil Seal Journal and Oil Seal Lip	SM 10W - 40
Piston Ring Groove	SM 10W - 40
Cylinder Bore Inner Wall	SM 10W - 40
Crankshaft Front and Rear Oil Seal External Circular Surface	SM 10W - 40
Strainer O-ring	SM 10W - 40
Oil Pump Inlet	SM 10W - 40
Oil Filter Module Oil Inlet on Cylinder Block	SM 10W - 40
Oil Filter O-ring	SM 10W - 40
Dipstick Tube O-ring	SM 10W - 40

Areas with Seal Gum Applied during Engine Assembly

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Area with Seal Gum Applied	Seal Gum
Coolant Temperature Sensor	Loctite 243
Bowl Plug	Loctite 11747
"T" Position of Junction Area Between Timing Chain Cover and Cylinder	Loctite 5900H
Timing Chain Cover	Loctite 5900H
Upper Guide Rail Bolt	Loctite 243
Cylinder Block Plug	Loctite 577
Cylinder Block Frame Assembly	Loctite 518/5182
Deflector Mounting Bolt Thread	Loctite 243
Strainer Mounting Bolt Thread	Loctite 243
Oil Pump Mounting Bolt Thread	Loctite 243
Oil Pan Installation Surface Frame	Loctite 5900H
Oil Pressure Switch Thread	Loctite 577

Non-reusable Part

Non-reusable Part	
Valve Oil Seal	Replace it
Cylinder Head Bolt and Gasket	Replace it
Cylinder Gasket	Replace it
Crankshaft Rear Oil Seal	Replace it
Crankshaft Front Oil Seal	Replace it
Connecting Rod Bearing Cap Fixing Bolt	Replace it
Flywheel Fixing Bolt (MT + DCT)	Replace it
Main Bearing Cap Fixing Bolt (Frame)	Replace it
O-ring (Installation Surface Between Frame and Cylinder Block)	Replace it



SQRE4T15B FUEL SUPPLY SYSTEM

Torque Specifications

Description	Torque (N·m)
Fuel Pump Pressure Cap Tightening Torque	400
Filler Tube Assembly Fixing Bolt	7 + 1
Filler Tube End Bracket Fixing Bolt	7 ± 1
Activated Charcoal Canister Filter	7 ± 1
Fuel Tank Fixing Strap Fixing Bolt	23 ± 2
Fuel Rail Fixing Bolt	20 + 5
Worm Clamp	3 ± 0.5

Fuel Pressure Specifications

SQRE4T15B	Pressure (kPa)
Fuel Rail Fuel Pressure - Key (ON)	400
Fuel Rail Fuel Pressure - Engine Idling	400
Fuel Rail Fuel Pressure - Key (OFF)	400 (pressure should not be less than 1 kPa within 48 hours)

SQRE4T15B EXHAUST SYSTEM

Torque Specifications

Description	Torque (N·m)
Coupling Bolt Between Activated Charcoal Canister Assembly and Fuel Tank	7 ± 1
Upstream Oxygen Sensor	45 ± 5
Downstream Oxygen Sensor	45 ± 5
Coupling Bolt Between Activated Charcoal Canister Filter and Body	7 ± 1
PCV Valve Tightening Torque	4 ± 1



SQRE4T15B INTAKE SYSTEM

Torque Specifications

Description	Torque (N·m)
Coupling Screw Between Air Filter Upper Housing and Lower Housing	1.3 ± 0.2
Air Filter Assembly Fixing Bolt	7 ± 1
Air Direct Pipe Fixing Bolt	7 ± 1
Electronic Throttle Assembly Fixing Bolt	8 + 3
Electronic Accelerator Pedal Fixing Bolt	9 ± 1.5
Muffler Assembly Fixing Bolt	9 ± 1.5
Low Temperature Radiator Assembly Fixing Bolt	5 ± 1
Intake Manifold Fixing Bolt	20 + 5
Water Inlet Pipe Fixing Bolt	5 ± 1

SQRE4T15B EXHAUST SYSTEM

Torque Specifications

Description	Torque (N·m)
Precatalytic Converter Assembly Bracket Fixing Bolt	20 + 5
Upstream Oxygen Sensor	45 ± 5
Downstream Oxygen Sensor	45 ± 5
Coupling Bolt Between Precatalytic Converter Assembly and Front Exhaust Pipe Assembly	45 ± 5
Coupling Nut Between Precatalytic Converter Assembly and Turbocharger	33 ± 3 \ 40 ± 3
Coupling Nut Between Main Catalytic Converter Assembly and Front Exhaust Pipe Assembly	45 ± 5
Coupling Nut Between Main Catalytic Converter Assembly and Front Muffler Assembly	45 ± 5
Coupling Nut Between Front Muffler Assembly and Rear Muffler Assembly	45 ± 5
Turbocharger Bracket Fixing Bolt	23 ± 3.5
Turbocharger Heat Insulator Fixing Bolt	9 ± 1.5
Turbocharger Heat Insulator II Fixing Bolt	8 + 3
Turbocharger Fixing Nut	25 ± 5
Exhaust By-pass Control Solenoid Valve Fixing Bolt	3 + 2
Electric Water Pump Assembly Fixing Bolt	8 + 3
Electric Water Pump Bracket Fixing Bolt	8 + 3
Hollow Bolt Torque	25 + 5



SQRE4T15B COOLING SYSTEM

Torque Specifications

Description	Torque (N·m)
Expansion Tank Fixing Bolt	5 ± 1
Thermostat Housing Fixing Bolt	8 + 3
Thermostat Seat Fixing Bolt	8 + 3
Coolant Temperature Sensor	15 ± 1
Cooling Fan Fixing Bolt	5 ± 1
Radiator Upper Crossmember Fixing Bolt	9 ± 1
Water Pump Fixing Bolt	8 + 3
Coupling Bolt Between Radiator and Condenser	7 ± 1
Water Pump Pulley Fixing Bolt	20 + 5
Discharge Steel Pipe Fixing Bolt	8 + 3
Smart Inlet Grille Fixing Bolt	5 ± 1

Coolant Capacity

Item	Capacity (L)
Cooling System	9.0 ± 0.5

Coolant Concentration

G11 Additive	Soft Water
53%	47%

Coolant Freezing Point

Item	Freezing Point Value (°C)
Coolant	-40

Cooling System Test Pressure

Item	Test Pressure (bar)
Cooling System (Test Pressure)	1.2

SQRE4T15B LUBRICATION SYSTEM

System pressure

Status	Pressure (bar)
Idling Speed (700 ± 50 r/min)	Higher than 0.7
High Speed (2000 ± 50 r/min)	Higher than 2.5

Oil

Engine Type	E4T15B+MT
Charging Capacity (L)	Replace oil filter and lubricant at same time: 4.7 ± 0.2
Oil Type	SM SAE-5W-30 SM SAE-5W-40 SM SAE-10W-40
Others	1. If lubricant needs to be added during maintenance, it is recommended to add to middle of upper center of dipstick side oil head. 2. Do not exceed upper line of dipstick while adding lubricant, or it will affect the engine performance.

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Torque Specifications

Description	Torque (N·m)
Drain Plug	35 ± 3
Oil Filter	22 - 25 or sealing ring contacts with flange, tighten it for 3/4 to 1 turn
Oil Pressure Switch	20 ± 2
Oil Pan Fixing Bolt	20 + 5
Coolant Tube I Assembly Fixing Bolt	20 ± 5
Oil Filter Module Assembly Fixing Bolt	40 + 5
Oil Pump Fixing Bolt	20 + 5
Oil Dipstick Tube Fixing Bolt	8 + 3



SQRE4T15B IGNITION SYSTEM

Torque Specifications

Description	Torque (N·m)
Spark Plug	20 ± 3
Ignition Coil Fixing Bolt	8 ± 2

Spark Plug Specifications

Description	Specifications
Engine Type	SQRE4T15B
Spark Plug Type	3707AAG
Spark Plug Gap (mm)	0.7 - 0.8

SQRE4T15B STARTING SYSTEM

Torque Specifications

Description	Torque (N·m)
Starter Power Cable Nut	13 ± 2
Starter Fixing Bolt	45 ± 5



SQRE4T15B CHARGING SYSTEM

Torque Specifications

Description	Torque (N·m)
Battery Pressure Plate Fixing Bolt	5 ± 1
Battery Tray Fixing Bolt	25 ± 4
Alternator Output Cable Fixing Nut	13 ± 2
Alternator Fixing Bolt	40 + 5
Alternator Bracket Fixing Nut	40 + 5
Idler Pulley Fixing Bolt	50 + 5

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Battery Specification

Engine Type	Type	Specifications
SQRE4T15B	Valve Controlled Battery	12V 70Ah\60Ah 720A
SQRE4T15B	Common Lead-acid Battery	12V 70Ah\60Ah 480A

621 MHB

Torque Specifications

Description	Torque (N·m)
Coupling Bolt Between Differential Gear Ring and Differential Case	106 ± 6
Coupling Bolt Between Oil Separator and Clutch Case	17 ± 6.8
Coupling Bolt Between Oil Separator and Transmission Case	17 ± 6.8
Coupling Bolt Between Oil Separator Set and Transmission Case	17 ± 6.8
Reverse Gear Arm Bracket Set Bolt	17 ± 3.4
Coupling Bolt Between Clutch Case and Transmission Case	29.4 ± 5.9
Locating Bolt Between Reverse Idler Gear Shaft and Transmission Case	30 ± 9
Coupling Bolt Between Inner Select Lever and Outer Select Lever	28 ± 5.6
Locating Bolt Between Locating Mechanism Set and Transmission Case	29.4 ± 8.8
Transmission Case Hexagon Socket Head Plug	24.5 ± 7.4
Transmission Case Self-locking Plug	22.0 ± 6.6
Fixing Bolt Between Hexagon Head Plug and Clutch Case	39 ± 11
Fixing Bolt Between Hexagon Head Plug and Transmission Case	39 ± 11
Reverse Switch Sub-assembly	44 ± 8.8
Neutral Switch x Transmission Case	7 ± 2.8

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621MHB Transmission Gear Ratio

Type	621 MHB
Gear position	1st
	2nd
	3rd
	4th
	5th
	6th
	Reverse
	Final Drive Ratio



625DCT TRANSMISSION

Torque Specifications

Description	Torque (N·m)
Transmission Control Module Mounting Bolt	26 - 28
Motor Mounting Bolt	5 - 6
Sensor Mounting Bolt	9 - 11
Filler Plug and Drain Plug	48 - 56
Clutch Actuator Bolt	18 - 20
Guide Bolt	7 - 9
Shift Lever Bolt	26 - 28

625 DHA Transmission Gear Ratio

Type		625 DHA
Gear position	1st	4.538
	2nd	2.35
	3rd	1.302
	4th	1.021
	5th	0.907
	6th	0.702
	Reverse	3.661
	Final Drive Ratio	1/2/5/6 final drive ratio 1: 4.158
	Final Drive Ratio	3/4/R final drive ratio 2: 4.648

CLUTCH

Torque Specifications

Description	Torque (N·m)
Clutch Pedal Fixing Nut	23 ± 2
Clutch Pressure Plate	23 ± 2
Release Bearing Fixing Bolt	12 ± 1.8
Clutch Master Cylinder Fixing Nut	25 ± 3

Clutch Driven Disc Specifications

Measurement Item	Specification (mm)
Clutch Driven Disc Standard Thickness	6.5 ± 0.2
Minimum rivet depth	1

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Distance Between Clutch Master Cylinder and Clutch Pedal

Measurement Item	Specification (mm)
Distance Between Clutch Master Cylinder and Clutch Pedal	125



DRIVE SHAFT

Torque Specifications

Description	Torque (N·m)
Drive Shaft Fixing Nut	270 ± 20
Coupling Nut Between Steering Knuckle and Control Arm Ball Pin	95 ± 10

DIFFERENTIAL

Torque Specifications

Description	Torque (N·m)
Final Drive Driven Gear Bolt	137 ± 3

Clearance Specification

Description	Acceptable Range (mm)
Clearance Between Differential Case and Planetary Gear	0.025 - 0.150



AXLE

Torque Specifications

Description	Torque (N·m)
Front Drive Shaft Assembly Locking Nut	270 ± 20
Self-locking Nut Between Steering Tie Rod Assembly Ball Pin and Front Steering Knuckle Assembly	45 ± 5
Coupling Nut Between Front Control Arm Assembly Ball Pin and Front Steering Knuckle Assembly	95 ± 9
Coupling Bolt Between Control Arm and Control Arm Ball Pin	150 ± 10
Coupling Bolt Between Front Shock Absorber Assembly and Front Steering Knuckle Assembly	240 ± 24
Locking Nut Between Front Shock Absorber Assembly and Front Steering Knuckle Assembly	240 ± 24
Coupling Bolt Between Front Stabilizer Bar Assembly and Front Sub Frame Welding Assembly	25 ± 3
Coupling Bolt Between Rear Part of Front Sub Frame Bracket and Body	120 ± 12
Coupling Bolt Between Front Sub Frame Welding Assembly and Body	180 ± 18
Coupling Bolt Between Rear Lower Control Arm and Rear Steering Knuckle	110 ± 11
Coupling Bolt Between Rear Lower Control Arm and Rear Sub Frame	110 ± 11
Coupling Bolt Between Rear Upper Control Arm and Rear Steering Knuckle	160 ± 16
Coupling Nut Between Rear Upper Control Arm and Rear Sub Frame	110 ± 11
Coupling Nut Between Connecting Rod Assembly and Rear Sub Frame Assembly	110 ± 11
Coupling Bolt Between Connecting Rod Assembly and Rear Steering Knuckle	160 ± 16
Coupling Nut Between Rear Stabilizer Bar and Rear Steering Knuckle	60 ± 6
Rear Stabilizer Bar Fixing Bolt	25 ± 4
Coupling Bolt Between Rear Trailing Arm Assembly and Rear Steering Knuckle	110 ± 11
Coupling Bolt Between Rear Trailing Arm and Mounting Bracket	120 ± 12
Coupling Bolt Between Rear Trailing Arm Bracket and Body Side Member	60 ± 6
Coupling Bolt Between Rear shock absorber and Body	60 ± 6
Coupling Bolt Between Rear Shock Absorber Assembly and Rear Steering Knuckle Assembly	160 ± 16
Coupling Bolt Between Rear Sub Frame and Body	120 ± 12

SUSPENSION

Torque Specifications

Description	Torque (N·m)
Coupling Nut Between Front Stabilizer Link Assembly and Front Shock Absorber Assembly	60 ± 5.0
Coupling Bolt Between Front Shock Absorber Assembly and Front Steering Knuckle Assembly	240 ± 24
Coupling Nut Between Front Shock Absorber Assembly and Front Steering Knuckle Assembly	240 ± 24
Coupling Nut Between Front Shock Absorber Assembly and Body	60 ± 6.0
Coupling Nut Between Front Control Arm Assembly Ball Pin and Front Steering Knuckle Assembly	95 ± 9
Coupling Bolt between Front Part of Control Arm and Sub Frame	180 ± 18
Coupling Nut Between Front Part of Front Control Arm Assembly and Front Sub Frame Welding Assembly	180 ± 18
Coupling Bolt Between Rear Part of Front Control Arm Assembly and Front Sub Frame Welding Assembly	180 ± 18
Coupling Nut and Bolt Between Front Control Arm Ball Pin Assembly and Front Control Arm Assembly	150 ± 10
Coupling Nut Between Front Stabilizer Bar Assembly and Front Stabilizer Link Assembly	60 ± 6
Coupling Bolt Between Front Sub Frame Welding Assembly and Steering Gear Assembly	180 ± 18
Coupling Bolt Between Front Part of Front Sub Frame Welding Assembly and Body	180 ± 18
Coupling Bolt Between Front Sub Frame Welding Assembly and Body	180 ± 18
Coupling Bolt Between Rear Part of Front Sub Frame Bracket and Body	120 ± 12
Coupling Bolt Between Rear Shock Absorber Assembly and Body	60 ± 6.0
Coupling Bolt Between Rear Shock Absorber Assembly and Rear Steering Knuckle Assembly	160 ± 16
Coupling Nut Between Rear Stabilizer Bar and Rear Steering Knuckle	60 ± 6.0
Coupling Nut Between Rear Stabilizer Bar and Rear Sub Frame	25 ± 4.0
Coupling Bolt Between Rear Trailing Arm and Mounting Bracket	120 ± 12
Coupling Bolt Between Rear Trailing Arm and Steering Knuckle	110 ± 11
Coupling Nut Between Upper Control Arm and Rear Steering Knuckle	160 ± 16
Coupling Nut Between Upper Control Arm and Rear Sub Frame	110 ± 11
Coupling Nut Between Lower Control Arm and Rear Sub Frame	110 ± 11
Coupling Nut Between Connecting Rod Assembly and Rear Sub Frame Assembly	110 ± 11
Coupling Bolt Between Connecting Rod Assembly and Rear Steering Knuckle	160 ± 16
Coupling Bolt Between Rear Trailing Arm Bracket and Body Side Member	60 ± 6.0
Coupling Bolt Between Rear Sub Frame and Body	120 ± 12



TIRE AND WHEEL

Torque Specifications

Description	Torque (N·m)
Wheel Mounting Bolt	130 ± 10

Tire Type

Description	Type
Tire Type	215/60R17, 225/65R17, 235/55R18

04 Rim Type

Description	Type
Rim Type	17 × 6.5J, 18 × 7.5J

Cold Tire Pressure (Before 4-wheel alignment)

Description	Tire Pressure (kPa)
Front Tire	230 ± 10
Rear Tire	230 ± 10
T-type Tire (Rated inflation pressure)	420 ± 20

BRAKE CONTROL SYSTEM

Torque Specifications

Description	Torque (N·m)
Wheel Mounting Bolt	110 ± 10
Fixing Nut Between ABS/ESP Control Module Assembly and Mounting Bracket	8 ± 2
Fixing Bolt Between ABS/ESP Control Module Assembly Mounting Bracket and Body	23 ± 3.5
Front Wheel Speed Sensor Fixing Bolt	9 ± 1.5
Rear Wheel Speed Sensor Fixing Bolt	9 ± 1.5
Coupling Bolt Between Brake Pipe and ABS/ESP Control Module Assembly	16 ± 2

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BRAKE

Torque Specifications

Description	Torque (N·m)
Wheel Mounting Bolt	110 ± 10
Master Cylinder Mounting Nut	13.7 ~ 21.6
Fixing Plug Between Brake Master Cylinder Assembly and Brake Pipe	18 ± 2
Fixing Nut Between Vacuum Booster Assembly and Brake Pedal Assembly	23 ± 2
Fixing Nut Between Brake Pedal Assembly and Body	23 ± 2
Coupling Plug Between Front Brake Caliper Assembly and Front Brake Hose Assembly	20 ± 2
Coupling Bolt Between Front Brake Caliper Assembly and Front Steering Knuckle Assembly	90 ~ 110
Front Brake Disc Locating Screw	4.5 ± 0.5
Front Brake Caliper Bleeder Plug	9 ~ 11
Guide Bolt Between Front Brake Caliper Fixing Bracket and Front Brake Cylinder Assembly	22 ~ 32
Coupling Plug Between Front Brake Hose Assembly and Front Brake Pipe	18 ± 2
Coupling Bolt Between Rear Brake Caliper Assembly and Rear Brake Hose Assembly	27 ± 2
Coupling Bolt Between Rear Brake Caliper Assembly and Brake Caliper Mounting Board Assembly	90 ~ 110
Rear Brake Disc Locating Screw	4.5 ± 0.5
Rear Brake Caliper Bleeder Plug	9 ~ 11
Guide Bolt Between Rear Brake Caliper Fixing Bracket and Rear Brake Cylinder Assembly	22 ~ 32
Coupling Plug Between Rear Brake Hose Assembly and Brake Pipe	18 ± 2
Parking Actuator Mechanism Fixing Screw	9 ~ 11

Front Disc Brake

Description	Standard Thickness (mm)	Minimum Thickness (mm)	Brake Disc Runout (mm)
Front Brake Disc	25	23	Less than 0.06 Ω
Front Brake Lining	11	2	-

Rear Disc Brake

Description	Standard Thickness (mm)	Minimum Thickness (mm)	Brake Disc Runout (mm)
Rear Brake Disc	10	8	Less than 0.06 Ω
Rear Brake Lining	10.2	2	-

ELECTRONIC PARKING BRAKE SYSTEM

Torque Specifications

Description	Torque (N·m)
Left Integrated Caliper Motor Fixing Bolt	10 ± 1.0
Right Integrated Caliper Motor Fixing Bolt	10 ± 1.0
Left Integrated Caliper Guide Pin Bolt	30 ± 2.0
Right Integrated Caliper Guide Pin Bolt	30 ± 2.0



ELECTRONIC POWER STEERING

Torque Specifications

Description	Torque (N·m)
Coupling Nut Between Steering Tie Rod and Steering Knuckle	45 ± 5
Coupling Bolt Between Steering Gear Input Shaft and Steering Column with Intermediate Shaft Assembly	1st step: 20 ± 2 N·m 2nd step: $90^\circ \pm 5^\circ$
Steering Gear Fixing Bolt	180 ± 18
Fixing Nut of Steering Gear Lower Joint Boot	1.5 ± 0.5

AIR CONDITIONING

Torque Specifications

Description	Torque (N·m)
Expansion Valve Fixing Bolt	9 ± 1.5
Hose Clamp Fixing Bolt	9 ± 1.5
Compressor Fixing Bolt	25 ± 3
Compressor Intake and Exhaust Line Fixing Bolt	25 ± 3
Condenser Fixing Nut	9 ± 1
A/C Line Fixing Bolt	9 ± 1
HVAC Fixing Nut	5 ± 1
HVAC Fixing Bolt	7 ± 1
HVAC Self-tapping Screw	2.5 ± 0.5

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Refrigerant Charging Specification

Description	Charging Capacity (g)
R134a Refrigerant (Dual-evaporator Automatic A/C)	925 ± 15
R134a Refrigerant (Single-evaporator Electric A/C)	550 ± 15

R134a Refrigerant

Description	Charging Capacity (ml)
Evaporator Replacement	20
Compressor Assembly Replacement	Supplement according to actual pouring amount
Condenser Replacement	20
A/C Line Replacement	10



SUPPLEMENTAL RESTRAINT SYSTEM

Torque Specifications

Description	Torque (N·m)
Coupling Bolt Between Front Passenger Airbag Assembly and Instrument Panel Crossmember Assembly	23 ± 2
Coupling Bolt Between Curtain Shield Airbag Assembly and Body	10 ± 1
Coupling Bolt Between SRS Control Module Assembly and Body	9 ± 1

PEPS SYSTEM

Torque Specifications

Description	Torque (N·m)
Hexagon Flange Nut	7 ± 1



CONSTANT SPEED CRUISE SYSTEM

Torque Specifications

Description	Torque (N·m)
Steering Wheel Quick Button	0.7 ± 0.2

LIGHTING SYSTEM

Bulb Specifications

Bulb Name	Nominal Light Source (Model/Type)
Headlight	12V HB3
Rear Fog Light	12V P21W
Front Position Light	12V LED
Rear Position Light	12V LED
Brake Light	12V P21W
High Mounted Stop Light	12V LED
Back-up Light	12V W16W
Front Turn Signal Light	12V PWY24WSV
Rear Turn Signal Light	12V PY21W
Side Turn Signal Light	13.5V 4414AAY
License Plate Light	12V LED
Daytime running light	12V LED

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Torque Specifications

Description	Torque (N·m)
Headlight Assembly Fixing Bolt	3.5 ± 0.5
Daytime running light	1.5 ± 0.5
High Mounted Stop Light Fixing Nut	2.0 ± 0.5
Rear Fog Light Fixing Screw	1.5 ± 0.5
Interior Front Dome Light Fixing Screw	2.5 ± 0.5
Rear Combination Light Movable Part Nut	3.5 ± 0.5
Rear Combination Light Fixed Part Nut	1.5 ± 0.5
Back Door Trim Light Fixing Nut	3.5 ± 0.5
License Plate Light Protector Fixing Screw	1.5 ± 0.5



WIPER AND WASHER

Torque Specifications

Description	Torque (N·m)
Front Wiper Arm Assembly Fixing Nut	18 ± 2
Wiper Motor and Link Rod Assembly Fixing Bolt	9.5 ± 1.5
Rear Wiper Arm Assembly Upper Fixing Nut	10 ± 1.5
Rear Wiper Motor Assembly Fixing Bolt	10 ± 1.5
Washer Fluid Reservoir Assembly Fixing Bolt	7 ± 1
Front Wiper Motor Assembly Fixing Bolt	10 ± 1.5
Guide Pipe Fixing Bolt	5 ± 1

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DOOR LOCK

Torque Specifications

Description	Torque (N·m)
Engine Hood Lock Assembly Fixing Nut	9 ± 1
Front Door Lock Assembly Fixing Screw	9 ± 1
Front Door Key Cylinder Assembly Fixing Screw	5 ± 1
Front Door Lock Striker Assembly Fixing Screw	23 ± 2
Rear Door Lock Assembly Fixing Screw	9 ± 1
Rear Door Lock Striker Assembly Fixing Screw	23 ± 2
Back Door Lock Assembly Fixing Screw	10 ± 1
Back Door Lock Striker Assembly Fixing Screw	23 ± 2
Front Door Outside Handle Fixing Screw	5 ± 1
Front Door Glass Rear Lower Guide Rail Fixing Bolt	7 ± 1
Rear Door Glass Rear Lower Guide Rail Fixing Bolt	7 ± 1
Rear Foot Transition Duct Fixing Screw	1.5 ± 0.5
Gear Shift Control Mechanism Fixing Bolt	20 ± 3



INSTRUMENT CLUSTER

Torque Specifications

Description	Torque (N·m)
Instrument Cluster Fixing Screw	1.5 ± 0.5

AUDIO/VISUAL SYSTEM

Torque Specifications

Description	Torque (N·m)
No Disc DVD/Wireless Communication Head Unit Fixing Screw	1.5 ± 0.5
Front Speaker Fixing Screw	2 ± 0.5
Rear Speaker Fixing Screw	2 ± 0.5
Combination Antenna Fixing Nut	5 ± 1



PARKING RADAR SYSTEM

Torque Specifications

Description	Torque (N·m)
Reversing Radar Control Module Fixing Nut	3.5 ± 0.5
License Plate Light Protector Fixing Screw	2.0 ± 0.5
Front Camera Self-tapping Screw	3 ± 0.5
Ignition Switch Controller Bracket Fixing Bolt	7 ± 1
4 Fixing Nuts on Panoramic View Controller	7 ± 1

TIRE PRESSURE MONITORING SYSTEM

Torque Specifications

Description	Torque (N·m)
Body Control Module Fixing Nut	5 ± 1
Tire Pressure Sensor Fixing Nut	8 ± 1



BODY CONTROL MODULE

Torque Specifications

Description	Torque (N·m)
Body Control Module (BCM) Fixing Nut	7 ± 1

HORN

Torque Specifications

Description	Torque (N·m)
Horn Bracket Fixing Nut	16 ± 2



WINDSHIELD/WINDOW GLASS

Torque Specifications

Description	Torque (N·m)
Front Door Outer Weather Bar Fixing Screw	1 ± 0.2
Front Door Glass Rear Guide Rail Assembly Fixing Bolt	7 ± 1
Front Door Power Glass Regulator Fixing Nut	7 ± 1
Rear Door Outer Weather Bar Fixing Screw	1 ± 0.2
Rear Door Glass Guide Rail Assembly Fixing Screw	1.5 ± 0.5
Rear Door Glass Guide Rail Assembly Fixing Bolt	7 ± 1
Rear Door Power Glass Regulator Fixing Nut	7 ± 1

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REAR VIEW MIRROR

Torque Specifications

Description	Torque (N·m)
Outside Rear View Mirror Assembly Fixing Bolt	7.0 ± 1.5
Inside Rear View Mirror Assembly Fixing Bolt	1.5 ± 0.5



INSTRUMENT PANEL

Torque Specifications

Description	Torque (N·m)
Auxiliary Fascia Console Storage Box Fixing Bolt	9 ± 1
Auxiliary Fascia Console Front Protector Fixing Screw	2.5 ± 0.5
Instrument Panel Fixing Bolt	5 ± 1
Instrument Panel Fixing Screw	1.5 ± 0.5
Fixing Bolt Between Passenger Side Airbag and Crossmember	23 ± 2
Instrument Panel Crossmember Fixing Bolt	25 ± 3.5

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SEAT

Torque Specifications

Description	Torque (N·m)
Front Seat Assembly Fixing Bolt	50 ± 5.0
Seat Outer Shield Assembly Fixing Screw	1.5 ± 0.5
Seat Belt Buckle Assembly Fixing Bolt	50 ± 5.0
Seat Inside Shield Assembly Fixing Screw	1.5 ± 0.5



FOUR DOORS & TWO COVERS

Torque Specifications

Description	Torque (N·m)
Engine Hood Support Rod Fixing Screw	1.5 ± 0.5
Engine Hood Hinge Fixing Nut	22 ± 1.0
Engine Hood Lock Fixing Nut	10 ± 1.0
Front Door Inner Protector Fixing Screw	1.5 ± 0.5
Front Door Inside Handle Fixing Screw	1.5 ± 0.5
Front Door Metal Bracket Fixing Bolt	5 ± 1.0
Front Door Outside Handle Fixing Screw	5 ± 1.0
Front Door Outside Handle Base Fixing Screw	1.5 ± 0.5
Fixing Nut between Stopper and Door	24 ± 2.0
Fixing Bolt between Door and Hinge	55 ± 5.0
Fixing Bolt Between Hinge Assembly and Body	32 ± 3.0
Door Lock Striker Fixing Bolt	23 ± 2.0
Back Door Lower Protector Assembly Fixing Screw	1.5 ± 0.5
Back Door Switch Fixing Nut	3 ± 0.5

EXTERIOR

Torque Specifications

Description	Torque (N·m)
Front Bumper Assembly Fixing Screw	2.0 ± 0.5
Front Bumper Assembly Fixing Bolt	5 ± 1.0
Name Plate "CAC" Bracket Fixing Screw	1.5 ± 0.5
Front Bumper Mounting Bracket Fixing Bolt	6 ± 1.0
Front Bumper Crossmember Assembly Fixing Nut	25 ± 2.0
Front Bumper Upper Fixing Bolt	25 ± 2.0
Front Wheel House Protector Fixing Screw	2.0 ± 0.5
Wing Cover Plate Fixing Screw	6 ± 1.0
Wing Assembly Fixing Bolt	6 ± 1.0
Water Tank Lower Protector Fixing Bolt	5 ± 1.0
Rear Bumper Assembly Fixing Screw	2.0 ± 0.5
Rear Bumper Assembly Fixing Bolt	5.0 ± 1.0
Fixing Screw Between Rear Bumper Assembly and Rear Wheel House Protector	2.0 ± 0.5
Rear Bumper Mounting Bracket Fixing Bolt	6 ± 1.0
Rear Bumper Crossmember Assembly Fixing Nut	25 ± 2.0
Rear Wheel House Protector Fixing Screw	2.0 ± 0.5
Front Windshield Lower Support Assembly Fixing Screw	2.0 ± 0.5
Smart Grille Fixing Bolt	5.0 ± 1.0



INTERIOR

Torque Specifications

Description	Torque (N·m)
Front Seat Belt Assembly Lower Fixing Bolt	50 ± 5.0
B-pillar Upper Protector Assembly Fixing Screw	1.5 ± 0.5
C-pillar Upper Protector Assembly Fixing Screw	1.5 ± 0.5
C-pillar Lower Protector Assembly Fixing Screw	1.5 ± 0.5
Luggage Compartment Storage Box Assembly Fixing Screw	1.5 ± 0.5
Sun Visor Assembly Fixing Bolt	5 ± 1.0
Sun Visor Holder B Fixing Screw	2 ± 0.5
Passenger Grip Assembly Fixing Bolt	3 ± 0.5
Interior Front Dome Light Assembly Fixing Screw	2 ± 0.5
Fuel Tank Cap Opener Assembly Fixing Screw	5 ± 1.0

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SUNROOF

Torque Specifications

Description	Torque (N·m)
Sunroof Switch Assembly Fixing Screw	1.5 ± 1.0
Sunroof Mounting Bracket Fixing Bolt	9.0 ± 1.5
Glass Assembly Bracket Fixing Screw	5.0 ± 1.0



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