

PERFORMANCE

Engine

1ZZ-FE Engine

The 1ZZ-FE engine is an in-line, 4-cylinder, 1.8-liter, 16-valve DOHC engine.

This engine for 2WD meets the ULEV (Ultra Low Emission Vehicle) requirements and offers fuel economy and low emissions.

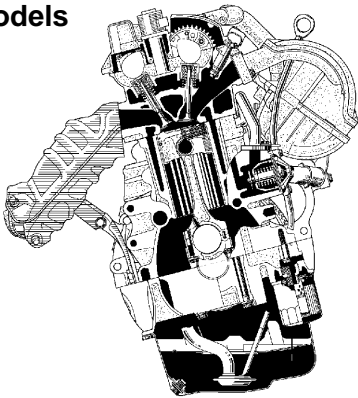
This engine for 4WD meets the LEV (Low Emission Vehicle) requirements.

The VVT-i (Variable Valve Timing-intelligent) system and the DIS (Direct Ignition System) have been adopted on these engines in order to achieve optimal engine performance, fuel economy and low emissions.

Specifications

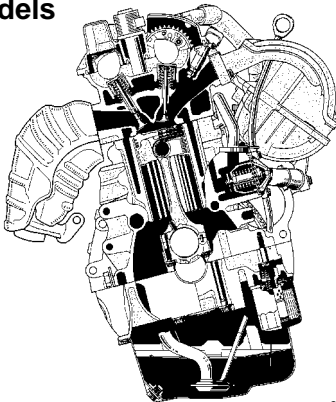
Engine Type		1ZZ-FE
No. of Cyls. & Arrangement		4-Cylinder, In-line
Valve Mechanism		16-Valve DOHC, Chain Drive
Displacement		1794 cm ³ (109.4 cu. in.)
Bore x Stroke		79.0 mm x 91.5 mm (3.11 in. x 3.60 in.)
Compression Ratio		10.0 : 1
Maximum Output [SAE-NET]	2WD	97 kW/6000 rpm (130 HP @ 6000 rpm)
	4WD	92 kW/6000 rpm (123 HP @ 6000 rpm)
Maximum Torque [SAE-NET]	2WD	170 N·m/4200 rpm (125 lb·ft @ 4200 rpm)
	4WD	161 N·m/4200 rpm (118 lb·ft @ 4200 rpm)

2WD Models

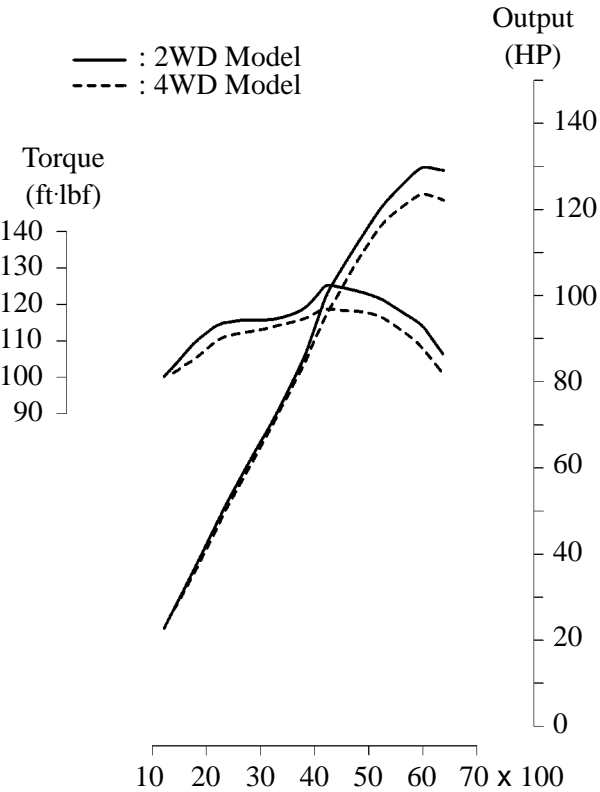


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4WD Models



221EG02



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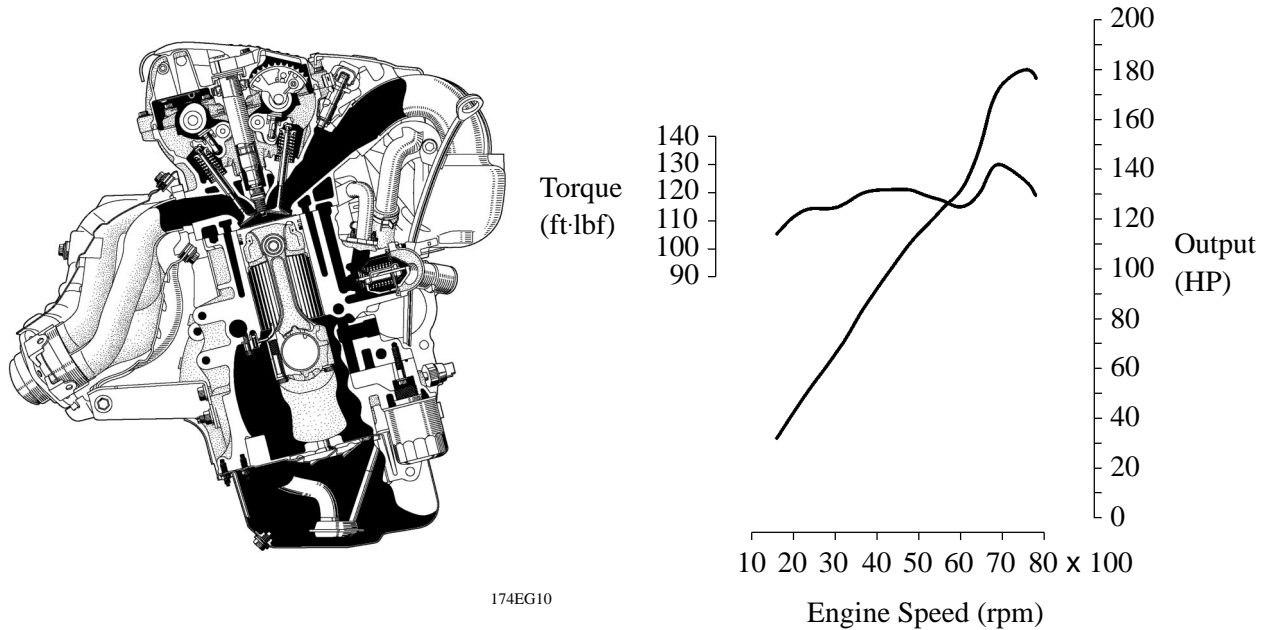
2ZZ-GE Engine

The 2ZZ-GE engine is an in-line, 4-cylinder, 1.8-liter, 16-valve DOHC engine.

The VVTL-i (Variable Valve Timing and Lift-intelligent) system and the DIS (Direct Ignition System) have been adopted on these engines in order to achieve optimal engine performance, fuel economy and low emissions.

Specifications

Engine Type	2ZZ-GE
No. of Cyls. & Arrangement	4-Cylinder, In-line
Valve Mechanism	16-Valve DOHC, Chain Drive
Displacement	1796 cm ³ (109.5 cu. in.)
Bore x Stroke	82.0 mm x 85.0 mm (3.23 in. x 3.35 in.)
Compression Ratio	11.5 : 1
Maximum Output [SAE-NET]	134 kW/7600 rpm (180 HP @ 7600 rpm)
Maximum Torque [SAE-NET]	176 N·m/6800 rpm (130 lb·ft @ 6800 rpm)



Manual Transaxle

- The C59, 5-Speed manual transaxle, accommodates the torque of the 1ZZ-FE engine.
- The C60, cross-ratio 6-Speed manual transaxle, accommodates the torque of the 2ZZ-GE engine.

Gear Ratios

Transaxle Type	C59	C60
Engine Type	1ZZ-FE	2ZZ-GE
1st	3.166	3.166
2nd	1.904	2.050
3rd	1.310	1.481
4th	0.885	1.166
5th	0.725	0.916
6th	—	0.725
Reverse	3.250	3.250

Automatic Transaxle

2WD

- A 4-speed A246E automatic transaxle “ECT (Electronically Controlled Transaxle)” has been adopted for the 1ZZ-FE engine.
- A 4-speed U240E automatic transaxle “Super ECT (Electronically Controlled Transaxle)”, which has been adopted for the 2ZZ-GE engine, is compact and realizes a high level of response and smooth shifting.

4WD

A 4-speed U341F automatic transaxle “Super ECT (Electronically Controlled Transaxle)”, which has been adopted for the 1ZZ-FE engine, is compact and realizes a high level of response and smooth shifting.

Gear Ratios

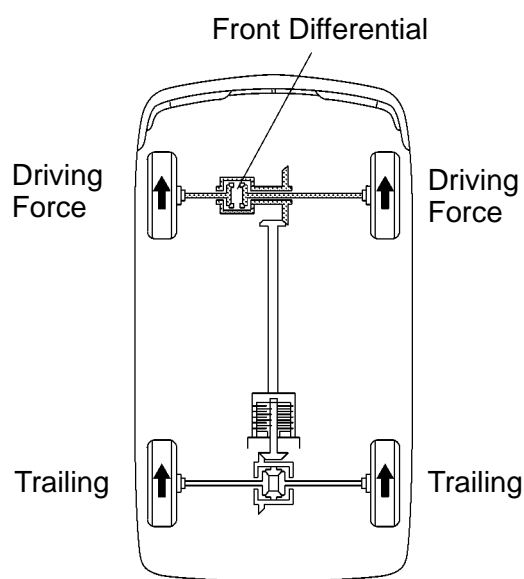
Engine Type	1ZZ-FE		2ZZ-GE
Drive Type	2WD	4WD	2WD
Transaxle Type	A246E	U341F	U240E
1st	4.005	2.847	3.943
2nd	2.208	1.552	2.197
3rd	1.425	1.000	1.413
4th	0.981	0.700	1.020
Reverse	3.272	2.343	3.145

V-Flex Full Time 4WD System

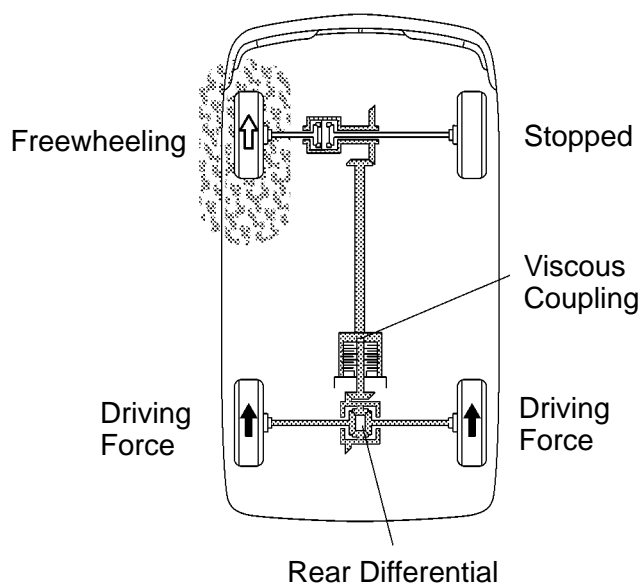
The V-Flex full-time 4WD system, which optimally distributes the drive force to the front and rear wheels when the front wheel slip has been adopted on the 4WD model with the 1ZZ-FE engine.

In this system, the viscous coupling that is provided in the rear differential provides both the function of the center differential and the function to limit the operation of the front and rear wheels.

As a result, a simple, compact, and lightweight system has been realized.

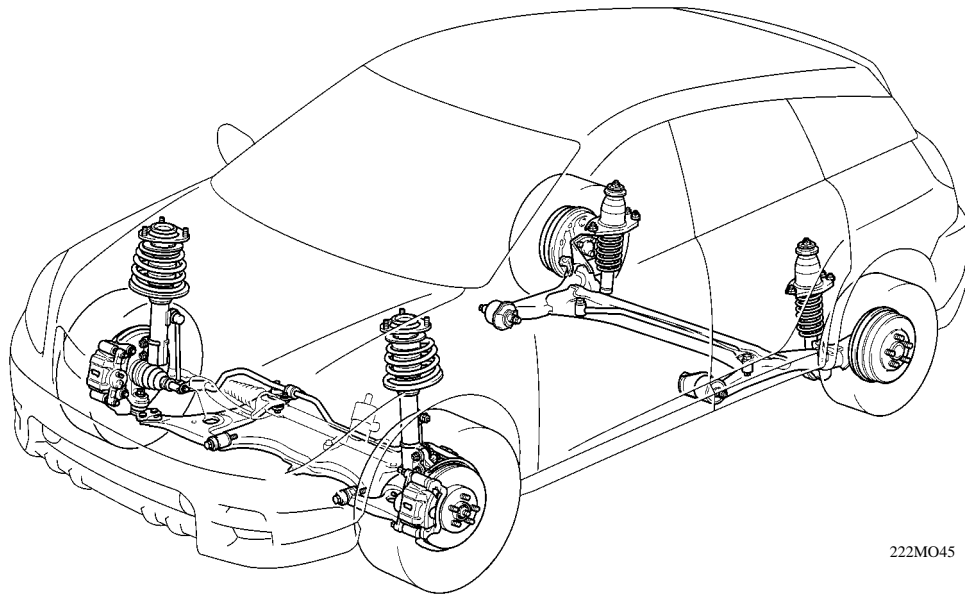


During Normal Driving

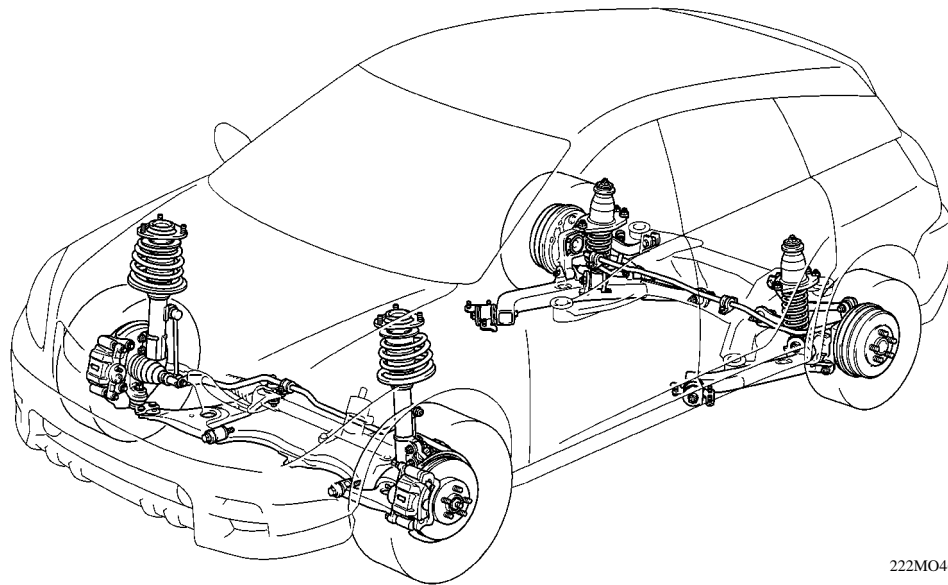


During Rotational Difference

Suspension



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2WD

222MO46

4WD

Front Suspension

A MacPherson strut type front suspension has been adopted.

- The suspension stroke has been achieved to ensure riding comfort.
- Excellent suspension geometry has ensured the vehicle's straight-line stability and steering linearity.
- Low-pressure (N₂) gas sealed front shock absorbers with a multi-leaf type linear control valve has been adopted to realize both driving stability and riding comfort.
- A stabilizer bar that provides excellent drivability and stability is standard equipment.

Rear Suspension (2WD)

A torsion beam type rear suspension with toe-correct bushings has been adopted.

- Bushings with a large amount of toe correction have been adopted to ensure stability and controllability.
- Rebound springs have been adopted on the shock absorbers to ensure excellent cornering performance.
- A multi-leaf type linear control valve has been adopted in the shock absorber to ensure excellent driving performance.
- A stabilizer bar that provides excellent drivability is standard equipment.

Rear Suspension (4WD)

A double-wishbone type rear suspension has been adopted.

- A multi-leaf type linear control valve has been adopted in the shock absorber to ensure excellent driving performance.
- The newly designed rear suspension is excelled in disturbance stability and rigidity against side forces.

Brake

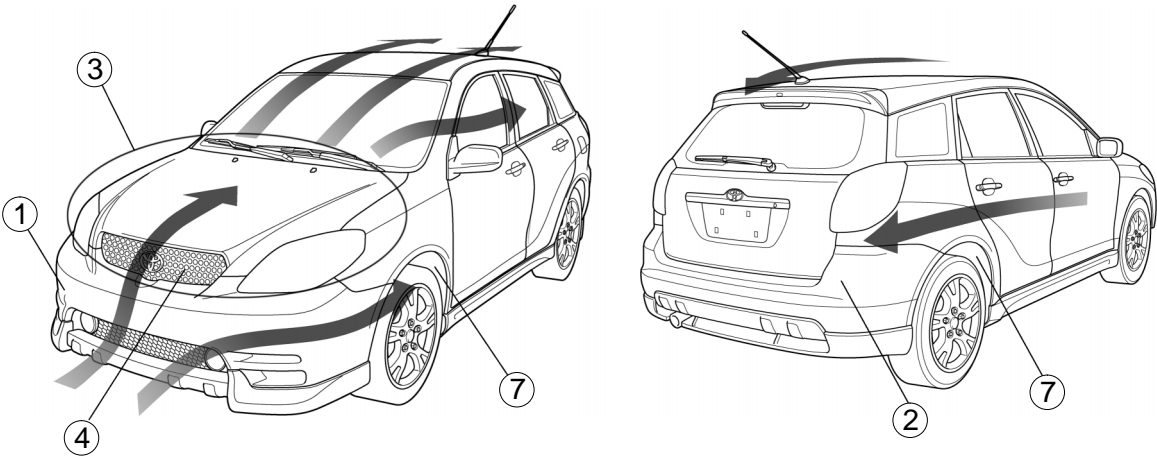
- Front ventilated disc brakes and rear leading-trailing drum brakes have been adopted on the models equipped with the 1ZZ-FE engine.
- Front ventilated disc brakes and rear solid disc brakes have been adopted on the models with the 2ZZ-GE engine.

Aerodynamics

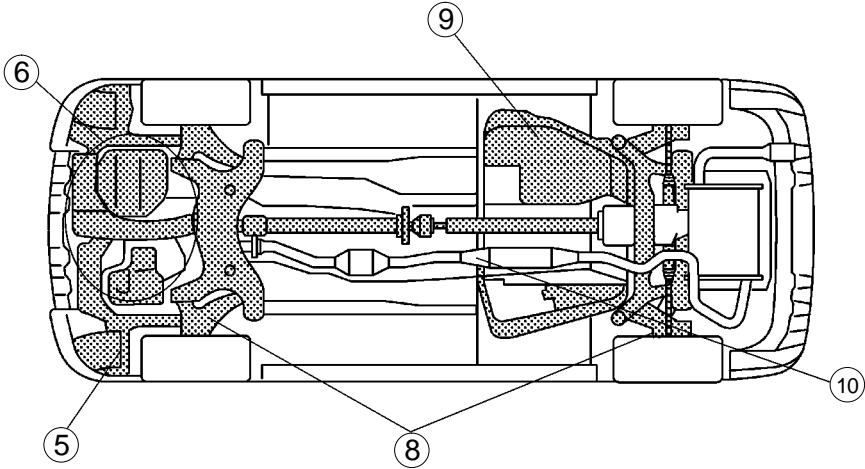
Improved aerodynamic characteristics have been achieved by optimizing the vehicle's exterior shape and controlling the under-floor airflow.

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No.	Part Name	Optimized Areas
①	Front bumper	Optimized height and shape
②	Rear bumper	Optimized height and shape
③	Hood	Smooth shape with minimal offset
④	Radiator grille	Optimized area
⑤	Front air spats	Rectified airflow around front tires
⑥	Engine under cover	Smooth and flat shape
⑦	Fender liners	Smooth and flat shape
⑧	Suspension parts	Flat placement and optimized shapes
⑨	Fuel tank	Flat placement and optimized shape
⑩	Exhaust pipe	Flat placement and optimized shape



222MO70



222MO72