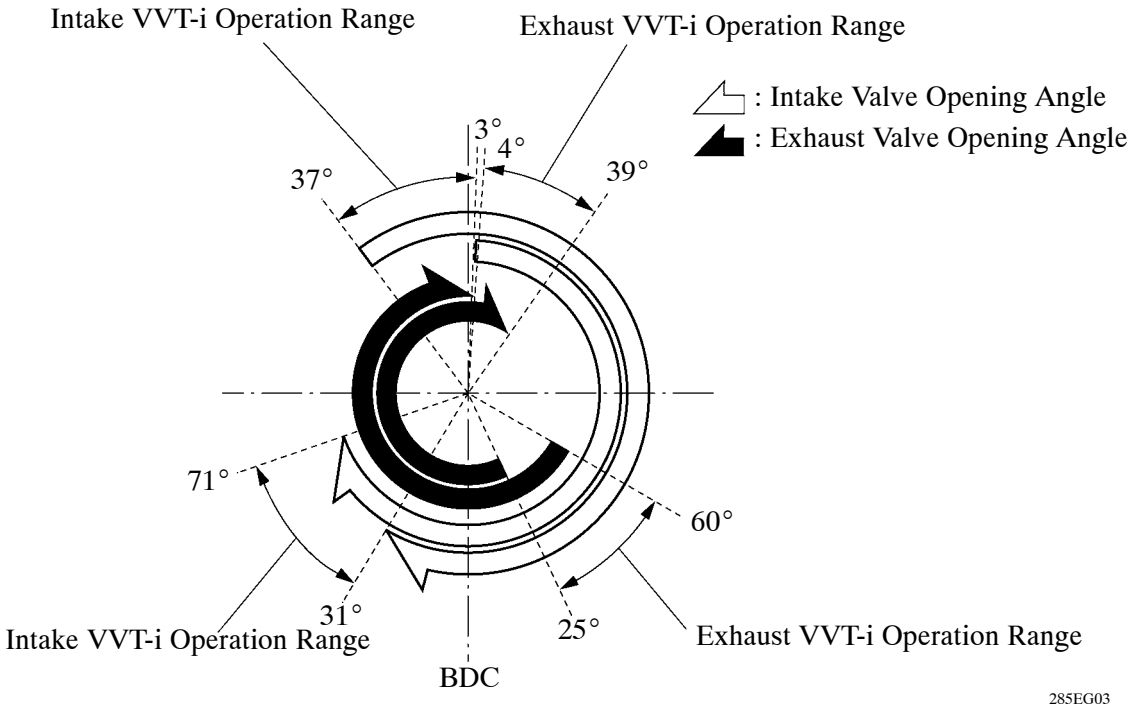
▶ Valve Timing ◀



2. Features of 2GR-FE Engine

The 2GR-FE engine has achieved the following performance through the use of the items listed below.

(1) High performance and reliability

(2) Low noise and vibration

(3) Lightweight and compact design

(4) Good serviceability

(5) Clean emission and fuel economy

Item		(1)	(2)	(3)	(4)	(5)
Engine Proper	A steel laminate type cylinder head gasket is used.	○				
	An upright intake port is used.	○		○		
	A taper squish shape is used for combustion chamber.	○				○
	A cylinder block made of aluminum alloy is used.			○		
	The skirt portion of the piston is applied with resin to reduce friction.	○	○			○
	An oil pan No. 1 made of aluminum alloy is used.		○	○		
Valve Mechanism	The Dual VVT-i (Variable Valve Timing-intelligent) system is used.	○				○
	Hydraulic lash adjusters are used.	○	○		○	
	Timing chains and chain tensioners are used.		○	○	○	
	Roller rocker arms are used.	○				○
Lubrication System	An oil filter with a replaceable element is used.				○	

(Continued)

Item		(1)	(2)	(3)	(4)	(5)
Cooling System	The TOYOTA Genuine SLLC (Super Long Life Coolant) is used.				○	
Intake and Exhaust System	The linkless-type throttle body is used.			○	○	
	The intake air chamber made of plastic is used.			○		
	A stainless steel exhaust manifold is used.			○		○
	An ultra thin-wall, high-cell density ceramic type TWC (Three-Way Catalytic converter) is used.					○
Fuel System	The fuel delivery pipe made of plastic is used.			○		
	A compact 12-hole type fuel injector is used.	○				○
	Quick connectors are used to connect the fuel hose with the fuel pipe.				○	
Ignition System	The DIS (Direct Ignition System) makes ignition timing adjustment unnecessary.	○			○	○
	The long-reach type spark plugs are used.	○				
Charging System	A segment conductor type alternator is used.	○		○		
	An alternator pulley with a clutch is used.					○
Starting System	The PS (Planetary reduction-Segment conductor motor) type starter is used.			○		
Serpentine Belt Drive System	A serpentine belt drive system is used.			○	○	
Engine Control System	The MRE (Magnetic Resistance Element) type VVT sensors are used.	○				
	The ETCS-i (Electronic Throttle Control System-intelligent) is used.	○				○
	The ACIS (Acoustic Control Induction System) is used.	○				○
	The charging control is used.	○				