Print Exit

2AR-FE ENGINE MECHANICAL ENGINE UNIT DETAILS VALVE MECHANISM

CONSTRUCTION

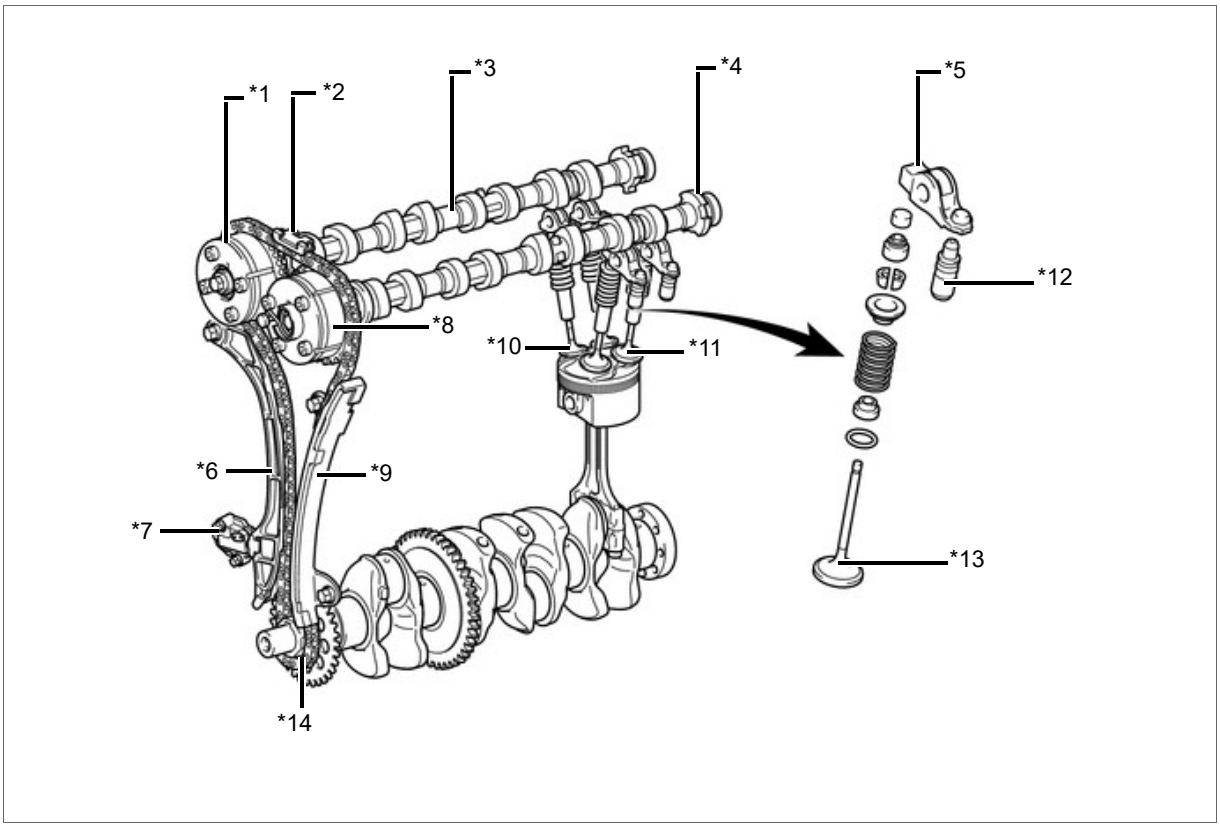
a. Each cylinder of this engine has 2 intake valves and 2 exhaust valves. Intake and exhaust efficiency is increased due to the larger total port areas.

b. This engine uses No. 1 valve rocker arm sub-assemblies with built-in needle bearings. This reduces the friction that occurs between the cams and the No. 1 valve rocker arm sub-assemblies that push the valves down, thus improving fuel economy.

c. Valve lash adjuster assemblies, which maintain a constant zero valve clearance through the use of oil pressure and spring force, are used.

d. The intake and exhaust camshafts are driven by a chain sub-assembly.

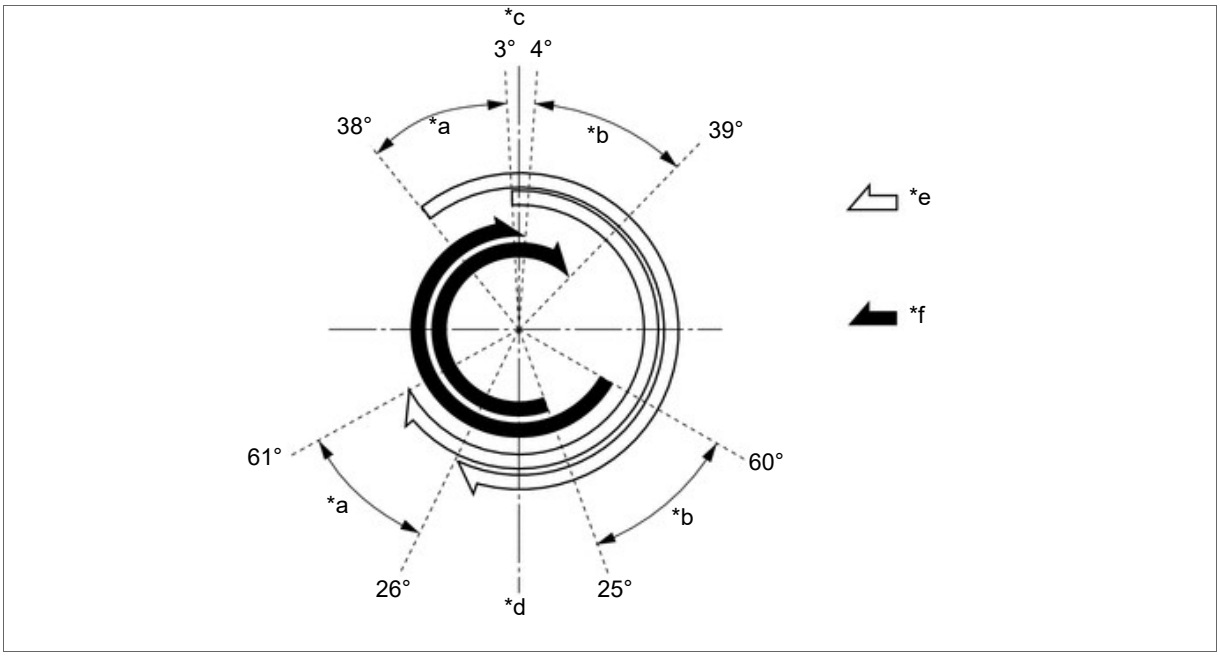
e. This engine has the dual Variable Valve Timing-intelligent (VVT-i) system which controls the intake camshaft and exhaust camshaft to provide optimal valve timing according to driving conditions. With the use of this system, lower fuel consumption, higher engine performance, and fewer exhaust emissions have been achieved.



*1	Camshaft Timing Gear Assembly	*2	No. 2 Chain Vibration Damper
*3	Camshaft	*4	No. 2 Camshaft
*5	No. 1 Valve Rocker Arm Sub-assembly	*6	Chain Tensioner Slipper
*7	No. 1 Chain Tensioner Assembly	*8	Camshaft Timing Exhaust Gear Assembly
*9	No. 1 Chain Vibration Damper	*10	Intake Valve
*11	Exhaust Valve	*12	Valve Lash Adjuster Assembly
*13	Valve	*14	Chain Sub-assembly

Valve Timing

Intake camshaft	Open	3° to 38° BTDC
	Close	61° to 26° ABDC
Exhaust camshaft	Open	60° to 25° BBDC
	Close	4° to 39° ATDC



*a	VVT-i Operation Range (Intake)	*b	VVT-i Operation Range (Exhaust)
*c	TDC	*d	BDC
*e	Intake Valve Opening Angle	*f	Exhaust Valve Opening Angle