

TORQUE SPECIFICATION

Part tightened		N·m	kgf·cm	ft·lbf
Camshaft timing sprocket x Camshaft	1ZZ-FE	45	460	33
	2ZZ-GE	54	551	40
Valve timing controller assembly x Camshaft	1ZZ-FE	45	460	33
	2ZZ-GE	54	551	40
Chain vibration damper x Cylinder block	1ZZ-FE	11	113	8
	2ZZ-GE	20.5	209	15
Chain tensioner slipper x Cylinder block	1ZZ-FE	18.5	189	14
	2ZZ-GE	20.5	209	15
Timing chain cover				
1ZZ-FE: (See page EM-25)	10 mm head bolt A	13	133	10
	10 mm head bolt C	9	92	80 in.·lbf
	10 mm head bolt others	11	113	8
	12 mm head bolt D	18.5	189	14
2ZZ-GE: (See page EM-25)	Stud (E8)	9.3	95	82 in.·lbf
	Bolt A	21	214	15
	Bolt B	11	113	8
	Bolt C	9.0	92	80 in.·lbf
	Bolt D	9.0	92	80 in.·lbf
	Stud (E8)	9.3	95	82 in.·lbf
RH engine mounting bracket x Timing chain cover	1ZZ-FE	47	479	35
	2ZZ-GE	49	500	36
Driver belt tensioner x Timing chain cover	Bolt			
	1ZZ-FE	69	704	51
	2ZZ-GE	100	1,020	74
	Nut	29	296	21
Crankshaft position sensor x Timing chain cover		9.0	92	80 in.·lbf
Crankshaft pulley x Crankshaft	1ZZ-FE	138	1,409	102
	2ZZ-GE	120	1,200	87
Chain tensioner x Timing chain cover		9.0	92	80 in.·lbf
Cylinder head cover x Cylinder head	1ZZ-FE w/ Washer	9.0	92	80 in.·lbf
	w/o Washer	11	113	8
	2ZZ-GE	10	100	7
No. 1 ventilation pipe x Cylinder head cover		10	100	7
No. 1 ventilation pipe x Intake manifold	2ZZ-GE	25	255	18
RH engine mounting insulator		52	530	38
PS pump x Engine		36	370	27
Camshaft bearing cap x Cylinder head	1ZZ-FE No. 1	23	235	17
	No. 3	13	133	10
	2ZZ-GE	18.5	189	14
Rocker No. 1 and No. 2 shaft x Cylinder head	2ZZ-GE	7.5	76	66 in.·lbf
Oil control valve housing x Cylinder head	2ZZ-GE	9.0	92	80
Oil pressure switch x Cylinder head	2ZZ-GE	13	130	9
Oil control valve filter x Cylinder head	2ZZ-GE	29	300	22
Cylinder head x Cylinder block	1ZZ-FE 1st	49	500	36
	2nd	Turn 90°	Turn 90°	Turn 90°
	2ZZ-GE 1st	35	375	26
	2nd	Turn 180°	Turn 180°	Turn 180°
Water bypass pipe x Cylinder head		9.0	92	80 in.·lbf

Intake manifold x Cylinder head				
1ZZ–FE:		18.5	189	14
2ZZ–GE: (See page EM–65)				
	Bolt A	27	275	20
	Bolt B	46	469	34
	Bolt others	34	347	25
Intake manifold stay	2ZZ–GE	24	245	18
Exhaust manifold x Cylinder head	1ZZ–FE	37	377	27
	2ZZ–GE	50	510	37
Lower heat insulator x Exhaust manifold	1ZZ–FE	12	123	9
	2ZZ–GE	20	204	15
Upper heat insulator x Exhaust manifold	1ZZ–FE	12	123	9
	2ZZ–GE	20	204	15
Exhaust manifold stay	1ZZ–FE	49	500	37
	2ZZ–GE	50	510	37
Engine hanger x Cylinder head		38	388	28
LH engine mounting		80	816	59
Rear engine mounting bracket x Transaxle		64	653	47
Rear engine mounting	Through bolt	87	887	64
Suspension member (See page EM–80)	Bolt A	52	530	32
	Bolt B	52	530	32
	Bolt C	157	1,600	116
	Bolt D	157	1,600	116
	Bolt E	39	400	29
	Nut	52	530	32
PS gear x Suspension member		45	460	33
Exhaust pipe		43	440	32
Clutch release cylinder x Transaxle		12	120	9
Clutch release cylinder bracket	Bolt A	12	120	9
	Bolt B	4.9	50	43 in.·lbf
A/C Compressor x Engine		25	255	18
ECM box stay	Nut	12	120	9
	Bolt	18	185	13
ECM box		6.9	70	61 in.·lbf
ECM cover		6.9	70	61 in.·lbf
Air cleaner case		5.0	51	44 in.·lbf
Bearing cap sub–assembly x Cylinder block	12 pointed head 1st	22	225	16
	2nd	44	449	32
	3rd	Turn 45°	Turn 45°	Turn 45°
	4th	Turn 45°	Turn 45°	Turn 45°
	Hexagon head 1ZZ–FE	18.5	189	14
	2ZZ–GE	18	185	13
Screw plug x Bearing cap sub–assembly	2ZZ–GE	43	438	32
Connecting rod cap	1ZZ–FE 1st	20	204	15
	2nd	Turn 90°	Turn 90°	Turn 90°
	2ZZ–GE 1st	30	306	22
	2nd	Turn 90°	Turn 90°	Turn 90°
Oil strainer		9.0	92	80 in.·lbf
Oil pan baffle	2ZZ–GE	9.0	92	80 in.·lbf
Oil pan		9.0	92	80 in.·lbf
Oil filter union		30	306	21

SERVICE SPECIFICATIONS – ENGINE MECHANICAL

Engine coolant drain union	1ZZ-FE	20	200	14
	2ZZ-GE	25	255	18
Knock sensor		39	400	29
Ventilation case	2ZZ-GE	8.5	87	75 in.·lbf
Water bypass pipe x Cylinder block	1ZZ-FE	9.0	92	80 in.·lbf
	2ZZ-GE			
	Bolt	8.5	87	75 in.·lbf
	Nut	10	100	7
Dipstick guide	1ZZ-FE	11	113	8
	2ZZ-GE	25	255	18
Fly wheel	1st	49	500	36
	2nd	Turn 90°	Turn 90°	Turn 90°
Drive plate		88	897	65