

TORQUE SPECIFICATION

Part tightened		N·m	kgf·cm	ft·lbf
Timing gear case x Injection pump		18	185	13
Injection pump x Injection pipe union nuts		24.5	250	18
Injection pipe x Injection pump	1HZ	14.7	150	11
	1HD-T	24.5	250	18
Injection pump x Distributive head plug	1HZ	16.7	170	12
	1HD-T	25.5	260	19
Injection pump x Injection pump stay bracket	1HD-FTE	39	398	29
Injection pump x Injection pump stay		69	700	51
Intake heater x Intake shutter		19.6	200	14
Camshaft x No.1 camshaft timing pulley		98	1,000	72
Timing gear cover x timing belt tensioner		13	130	10
Timing gear cover x Idler pulley		34.5	350	25
Injection pump drive gear x Injection pump	1HZ, 1HD-T	103	1,050	76
	1HD-FTE	137	1,397	101
Idler gear x Timing belt tensioner		68	694	50
Timing gear cover x Cylinder block		19.6	200	14
Oil pipe x Cylinder block, Vacuum pump		18	185	13
Vacuum pump x Timing belt cover		39	400	29
Crankshaft x Crankshaft pulley		430	4,400	317
Cylinder head x Cylinder block	1st	68.6	700	51
	2nd	Turn 90°	Turn 90°	Turn 90°
	3rd	Turn 90°	Turn 90°	Turn 90°
Cylinder head x bearing cap	No.1 journal 1HZ, 1HD-T	25	250	18
	Other journal 1HZ, 1HD-T	18	185	13
Cylinder head x bearing cap	1HD-FTE	25	250	18
Camshaft oil seal retainer x Cylinder head		19.6	200	14
Cylinder head cover x Cylinder head		6.4	65	57 in.·lbf
Water outlet x Cylinder head		19.6	200	14
Nozzle leakage pipe x Injection nozzle	1HD-T	12.3	125	9
Nozzle leakage pipe x Injection nozzle	1HZ	29	300	22
Glow plug x Cylinder head		12.7	130	9
Intake manifold assembly x Cylinder head		19.6	200	14
Intake pipe x Intake manifold		19.6	200	14
Cylinder head x bearing cap		25	250	18
EGR pipe x Intake pipe	1HD-FTE	19.6	200	14
EGR pipe x Exhaust manifold	1HD-FTE	39.2	400	29
Exhaust manifold x Cylinder head		41.7	425	31
Main bearing cap x Cylinder block	12 pointed head 1st	103	1,050	76
	2nd	Turn 90°	Turn 90°	Turn 90°
	6 pointed head	18	185	13
Connecting rod cap x Connecting rod	1st	36.8	375	27
	2nd	Turn 90°	Turn 90°	Turn 90°
Cylinder head x Cylinder head cover	1HZ, 1HD-T	6.4	65	57
	1HD-FTE	8	8	71
Engine mounting brackets x Cylinder block		68.6	700	51

1HZ, 1HD-T, 1HD-FTE ENGINE (RM617E)

SERVICE SPECIFICATIONS – ENGINE MECHANICAL

Injection pump stay x Cylinder block	68.6	700	51
Alternator bracket x Cylinder block	68.6	700	51
Rear end plate x Cylinder block	18	185	13
Flywheel (M/T), Drive plate (A/T) x Crankshaft	127.4	1,300	94
Oil pan x Cylinder block	15.7	160	12
Oil strainer x Main bearing cap	8.8	90	78 in.·lbf
Check valve x Cylinder block	27	275	20
Oil cooler assembly x Cylinder block	19.6	200	14