

## TORQUE SPECIFICATIONS

Part Tightened		N*m	kgf*cm	ft.*lbf
Engine mounting bracket front No. 1 RH x Cylinder block sub-assembly		51	520	38
Spark plug x Cylinder head cover sub-assembly		18	184	13
Ventilation pipe x Cylinder head cover sub-assembly		18	184	13
Water by - pass pipe No. 1 x Timing chain cover		18	178	13
Engine coolant temperature sensor x Cylinder block sub-assembly		20	204	15
Engine mounting bracket front No. 1 LH x Cylinder block sub-assembly		51	520	38
Oil level gage guide x Engine mounting bracket front No. 1 LH		20	204	15
Engine mounting insulator front x Body		38	387	28
Air cleaner case x Body		12	122	9
Engine under cover No. 1 x Body		30	306	22
Engine under cover No. 2 x Body		30	306	22
Balanceshaft drive gear sub-assembly x Cylinder block sub-assembly		25	250	18
Chain tensioner assembly No. 2 x Cylinder block sub-assembly		18	185	13
Chain vibration damper No. 3 x Cylinder block sub-assembly		18	185	13
Chain vibration damper No. 2 x Cylinder block sub-assembly		27	270	20
Chain vibration damper No. 1 x Cylinder head sub-assembly	Bolt	21	214	15
Chain vibration damper No. 1 x Cylinder block sub-assembly	Nut	21	214	15
Chain tensioner slipper x Cylinder block sub-assembly		21	214	15
Chain tensioner assembly No. 1 x Cylinder head sub-assembly		10	102	7
Oil pan sub-assembly x Cylinder block sub-assembly		26	265	19
Oil pan sub-assembly x Oil strainer sub-assembly		26	265	19
Oil pan sub-assembly No. 2 x Oil pan sub-assembly		9	92	80 in.*lbf
Idler pulley sub-assembly x Timing chain cover		43	438	32
Compressor and magnetic clutch x Idle pulley assembly with bracket		21	214	16
Vane pump assembly x Timing chain cover		21	214	16
Camshaft timing gear assembly x Camshaft		78	795	58
Camshaft oil delivery pipe x Cylinder head sub-assembly	Bolt A	12	122	9
	Except Bolt A	16	158	11
Camshaft timing gear x No. 2 camshaft		78	795	58
Timing chain cover x Head straight screw plug		17	170	12
Timing chain guide x Cylinder head sub-assembly		10	102	7
Cylinder head cover sub-assembly x Cylinder head sub-assembly		9	92	80 in.*lbf
Ignition coil x Cylinder head cover sub-assembly		9	92	80 in.*lbf
Cylinder head sub-assembly x Cylinder block sub-assembly	1st	39	398	29
	2nd	Turn 90°	Turn 90°	Turn 90°
	3rd	Turn 90°	Turn 90°	Turn 90°
Exhaust manifold x Cylinder head sub-assembly		36	367	27
Crankshaft pulley x Crankshaft		260	2651	192
Flywheel sub-assembly x Crankshaft	1st	27	270	20
	2nd	Turn 90°	Turn 90°	Turn 90°
Drive plate & ring gear sub-assembly		74	755	55
Battery x Battery negative terminal		3.9	40	35 in.*lbf
Engine rear oil seal retainer x Cylinder block		13	133	10
Oil filter bracket union x Oil filter bracket sub-assembly		25	255	18
Oil filter union x Oil filter bracket sub-assembly		43	439	32
Oil filter bracket union x Cylinder block		25	255	18
Oil filter bracket sub-assembly x Cylinder block		25	255	18

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Part Tightened		N*m	kgf*cm	ft.*lbf
Oil filter bracket sub-assembly x Screw plug		49	500	36
Oil filter x Oil filter bracket sub-assembly		17	175	13
Teper screw plug No. 1 x Cylinder block		25	250	18
Cylinder head x Cylinder block	1st	39	398	29
	2nd	Turn 90°	Turn 90°	Turn 90°
	3rd	Turn 90°	Turn 90°	Turn 90°
Camshaft Timing gear assembly x Camshaft		78	795	58
Camshaft Timing gear or sprocket x Camshaft No. 2		78	795	58
Camshaft bearing cap x Cylinder head	Bolt A	12	122	9
	Others	16	160	11
Chain vibration damper No. 1 x Cylinder block		21	214	15
Chain tensioner slipper x Cylinder block		21	214	15
Chain tensioner No. 1 x Cylinder block		10	102	7
Timing chain guide x Cylinder head		10	102	7
Water pump assembly x Timing chain cover		9.0	92	80 in.*lbf
Timing chain cover x Cylinder block	Bolt A	46	469	34
	Others	21	214	15
Oil pan sub-assembly x Cylinder block		26	265	19
Oil strainer sub-assembly x Oil pan sub-assembly		26	265	19
Oil pan sub-assembly No. 2 x Oil pan sub-assembly		9.0	92	80 in.*lbf
Drain plug x Oil pan sub-assembly No. 2		38	382	28
Crankshaft pulley x crankshaft		260	2,650	192
Cylinder head cover x Cylinder head		9.0	92	80 in.*lbf
Ventilation valve sub-assembly x Cylinder head cover		5.0	51	44 in.*lbf
Camshaft position sensor x Timing chain cover		8.5	87	75 in.*lbf
Crankshaft position sensor x Timing chain cover		8.5	87	75 in.*lbf
Camshaft timing control valve x Timing chain cover		8.0	82	71 in.*lbf
Chain vibration damper No. 2 x Cylinder block		27	270	20
Chain vibration damper No. 3 x Cylinder block		18	185	13
Chain vibration damper No. 4 x Cylinder block		18	185	13
Chain tensioner No. 2 x Cylinder block		18	185	13
Balanceshaft drive gear sub-assembly x Cylinder block		25	255	18
Stud bolt x Oil pan sub-assembly	Bolt A	7.5	76	66 in.*lbf
	Bolt B	3.0	31	27 in.*lbf
Straight screw plug No. 1 x Cylinder head		44	449	32
Straight screw plug No. 2 x Cylinder head		90	918	66
Stud bolt x Cylinder head	Bolt A	3.0	31	27 in.*lbf
	Bolt B	7.5	76	66 in.*lbf
	Bolt C	9.5	97	84 in.*lbf
Screw plug x Cylinder head		30	306	22
Oil nozzle No. 1 sub-assembly x Cylinder block		7.0	71	62 in.*lbf
Water drain cock sub-assembly x Cylinder block		25	250	18
Water Drain cook sub-assembly x Water Drain cook plug		13	130	9
Crankshaft bearing cap x Cylinder block	1st	39	398	29
	2nd	Turn 90°	Turn 90°	Turn 90°
Connecting rod cap x Connecting rod	1st	25	255	18
	2nd	Turn 90°	Turn 90°	Turn 90°
Balanceshaft driven gear No. 1 x No. 1 balanceshaft		36	365	26
Balanceshaft driven gear No. 2 x No. 2 balanceshaft		36	365	26

Part Tightened	N*m	kgf*cm	ft.*lbf
Balanceshaft thrust washer No. 1 x Cylinder block	18	184	13
Balanceshaft thrust washer No. 2 x Cylinder block	18	184	13