0316H–01

TORQUE SPECIFICATION

3RZ–FE:

Part Tightened		N·m	kgf·cm	ft·lbf
Timing gear case sub–assy x Cylinder block sub–assy	Bolt A	20	200	14
	B	25	250	18
	C	44	440	32
	Nut D	20	200	14
	Rear	18	185	13
Timing gear case sub–assy x Water by–pass pipe No. 1		20	200	14
Oil strainer sub–assy x Timing gear case sub–assy		18	185	13
Oil strainer sub–assy x Cylinder block sub–assy		18	185	13
Oil pan sub–assy x Timing gear case sub–assy		13	130	9
Oil pan sub–assy x Cylinder block sub–assy		13	130	9
Stiffener plate RH (ATM) x Cylinder block sub–assy (A/T)		37	377	27
Stiffener plate RH (ATM) x Transmission housing (A/T)		37	377	27
Stiffener plate LH (ATM) x Cylinder block sub–assy (A/T)		37	377	27
Stiffener plate LH (ATM) x Transmission housing (A/T)		37	377	27
Stiffener plate RH (MTM) x Cylinder block sub–assy (M/T)		37	377	27
Stiffener plate RH (MTM) x Clutch housing (M/T)		37	377	27
Stiffener plate LH (MTM) x Cylinder block sub–assy (M/T)		37	377	27
Stiffener plate LH (MTM) x Clutch housing (M/T)		37	377	27
Crankshaft pulley x Crankshaft		260	2,650	193
Vane pump drive pulley x Crankshaft pulley		19	194	14
Compressor mounting bracket No. 1 x Cylinder block sub–assy		47	475	34
Compressor and magnetic clutch x Compressor mounting bracket No. 1		25	250	18
Engine wire x Generator assy		9.8	100	7
Fan belt adjusting bar x Cylinder block sub–assy		64	650	47
Engine under cover assy rear x Frame assy		29	296	21
Engine under cover sub–assy No. 1 x Frame assy		29	296	21
Oil pan drain plug x Oil pan sub–assy		37	375	27

5L–E:

Part Tightened		N·m	kgf·cm	ft·lbf
Timing gear case x Cylinder block		23	230	17
Oil strainer x Cylinder block		18	180	13
Oil strainer x Timing gear case		21	210	15
Oil pan x Cylinder block		18	180	13
Oil pan x Timing gear case		18	180	13
Oil pan x Engine rear oil seal retainer		18	180	13
Stiffener plate LH x Cylinder block	M10	37	380	27
	M12	69	700	51
Stiffener plate RH x Cylinder block	M10	37	380	27
	M12	69	700	51
Timing belt idler No. 2 x Timing gear case		33	340	24
Timing belt idler No. 1 x Timing gear case	12mm head	19	195	14
Oil cooler x Oil filter bracket		16	160	11
Oil filter bracket x Cylinder block		30	300	22
Vacuum pump oil inlet hose x Cylinder block		14	140	10
Oil level gage guide x Cylinder block		12	122	9
Drain plug x Oil pan		35	350	25

1KZ–TE:

Part Tightened	N·m	kgf·cm	ft·lbf
Oil drain plug	34	350	25
Oil cooler x Oil cooler cover sub–assy	16	160	12
Oil cooler cover sub–assy x Cylinder block	13	130	9
Vacuum pipe x Cylinder block			
Timing gear case assy x Cylinder block Bolt	13	130	9
Union bolt	16	160	12
Oil pan sub–assy x Cylinder block	14.5	148	11
Oil strainer sub–assy x Oil pan sub–assy	8	82	71 in.·lbf
Oil pan sub–assy No. 2 x Oil pan sub–assy	9	92	80 in.·lbf
Straight screw plug No. 1 x Timing gear case assy	44	449	33
Oil pan cover sub–assy No. 1 x Oil pan sub–assy No. 2	9	92	80 in.·lbf
Rear end plate	8	82	71 in.·lbf
Injection gear set nut	64	650	47
Idle gear No. 1 x Cylinder block	50	510	37
Timing gear case x Timing gear case assy	13	133	10
Fan belt adjusting bar x Generator	21	210	15
Crankshaft pulley set bolt	365	3,725	125
Vacuum pump assy x Timing gear case assy	21	210	15
Vane pump oil reservoir x Cylinder head	18	184	13
Camshaft oil seal retainer	10	102	7
Camshaft timing pulley x Camshaft	98	1,000	72
Cylinder head cover sub–assy x Cylinder head	9	92	80 in.·lbf

1KD–FTV:

Part Tightened	N·m	kgf·cm	ft·lbf
Oil pan x Drain plug	34	347	25
Oil cooler assy x oil cooler cover	16	163	12
Oil cooler calve sub–assy x Cylinder block	13	133	10
Oil cooler cover sub–assy x Vacuum switching valve assy	20	204	15
Electric EGR control valve assy x Intake manifold	20	204	15
Vane pump oil reservoir x Timing gear case assy and intake manifold	18	184	13
Timing belt No. 1 cover x Timing belt No. 2 cover	6.0	61	53 in.·lbf
Water hose camp x Cylinder head	18	184	13
Intercooler protector x Intercooler assy	6.0	61	53 in.·lbf
Fanshroud x Radiator assy	5.0	51	44 in.·lbf
Fan w/ fluid coupling assy x Water pump assy	18	184	13
Radiator reserve tank x Radiator assy and fanshroud	5.0	51	44 in.·lbf
Engine under cover assy rear x Frame assy	29	296	21
Engine under cover sub–assy No. 1 x Frame assy	29	296	21
Idle gear No. 1 x Service bolt	8.0	82	71 in.·lbf
Timing gear case assy x Cylinder block			
Bolt	13	130	9.0
Union bolt	16	160	12
Timing gear case assy x Vacuum transmitting pipe No. 1	8.0	82	71 in.·lbf
Oil pan sub–assy x Cylinder block	15	148	17
Oil pan sub–assy x Oil strainer	8.0	82	71 in.·lbf
Oil pan sub–assy x Oil pan sub–assy No. 2	9.0	92	80 in.·lbf
Oil pan sub–assy x Oil pan cover sub–assy	9.0	92	80 in.·lbf
Rear end plate x Cylinder block	8.0	82	71 in.·lbf
Timing gear case assy x Plug	44	449	33
Supply pump x Supply pump stay	21	214	16

Part Tightened	N·m	kgf·cm	ft·lbf
Supply pump stay x Cylinder block	21	214	16
Supply pump x Timing gear case assy	21	214	16
Idle gear No. 1 x Cylinder block	50	510	37
Timing gear case x Timing gear case assy	13	133	10
Timing gear case x Crank position sensor	8.0	82	71 in.·lbf
Timing gear case x Crank position sensor No. 2	8.0	82	71 in.·lbf
Supply pump x Supply gear	103	1,050	76
Camshaft timing pulley flange No. 2 x Pump drive shaft pulley	31	316	23
Vane pump oil reservoir x Timing gear case assy and Intake manifold	18	184	13
Vacuum pump assy x Timing gear case assy	21	214	16
Timing belt No. 1 cover x Timing belt No. 2 cover	6.0	61	53 in.·lbf
Water hose clamp x Cylinder head	18	184	13
Intercooler protector x Intercooler assy	6.0	61	53 in.·lbf
Fan w/ fluid coupling x Water pump assy	18	184	13
Air cleaner assy x Body	12	122	9.0
Engine under cover assy rear x Frame assy	29	296	21
Engine under cover sub–assy No. 1 x Frame assy	29	296	21