

Engine torque settings

Part	Thread (mm)	Nm	Min.	Max.	Notes
Idler and tensioner pulley bolts	M20x1	50	45	55	LOCK 2 or TB1324
Camshaft pulley retaining nut	M17x1	71	64	78	GREASE A
Rocker arm shaft covers	M12x1.25	15	14	16	LOCK 2 or TB1324
Coolant temperature sensor on coolant outlet union	M12x1.5	23	20	26	LOCK 4 – Restrain the insert when tightening
Cylinder head nut:	M10x1.5				Apply GREASE C to the underside of the nut and the thread of the stud
Stage 1	20				
Stage 2	40	38	42		
Stage 3	60	57	63		
Cam cap bolt:	M8x1.25	Apply Shell Ultra 4 grease			
Stage 1		10	9	11	
Stage 2		22.5	21	25	
Coil retaining screw	M6x1	10	9	11	
Pulley flange retaining bolts	M6x1	10	9	11	
Rocker cover bolt	M6x1	10	9	11	
Exhaust manifold stud	M6x1	10	9	11	LOCK 2 or TB1324
Vacuum gauge connection screw on cylinder head	M6x1	5	4	6	LOCK 2 or TB1324
Evaporative emissions canister fitting on cylinder head	M6x1	5	4	6	LOCK 2 or TB1324
Air breather fitting on horizontal cylinder head	M6x1	5	4	6	LOCK 2
Air breather blanking screw on vertical cylinder head	M6x1	10	9	11	LOCK 6
Intake manifold bolt	M6x1	10	9	11	
Bolts securing coolant unions to cylinder head	M5x1	8	7	9	pre-applied Tecnologic 150 threadlocker
Oil cartridge	M16x1.5	11	10	12	Engine oil on gasket
Oil cartridge nipple	M16x1.5	42	38	46	LOCK 2 or TB1324
Oil pick-up pipe plug	M14x1.5	24	21	27	LOCK 5 or TB1375B
Oil drain plug	M12x1.5	20	18	22	
Clutch cover oilway blanking plug	M10x1.5	15	13	17	LOCK 5
Neutral sensor	M10x1.25	10	9	11	
Oil pump adapter bolt	M10x1				LOCK 5 or TB1375B
Clutch cover inner oilway screw	M10x1.5	15	13	17	LOCK 5
Cylinder head/barrel stud	M10x1.5	25	23	26	LOCK 2 or TB1324
Hor. cylinder cover + swingarm attachment bolt:	M8x1.25				
Stage 1		19	22	28	
Stage 2		25	22	28	
Vertical cylinder cover bolt:	M8x1.25				
Stage 1		19	22	28	
Stage 2		25	22	28	
Gear stop lever bolt	M8x1.25	18	16	20	LOCK 2 or TB1324
Blow-by valve bolt	M6x1	10	9	11	
Chain side secondary bearing retaining bolt	M6x1	10	9	11	LOCK 2
Clutch side primary bearing retaining bolt	M6x1	10	9	11	LOCK 2 or TB1324
Crankcase screw – idler area	M6x1	10	9	11	

	Part	Thread (mm)	Nm	Min.	Max.	Notes
A	Outer crankcase screw	M6x1	9	8.5	9.5	
	Oil pick-up gauze filter bolt	M6x1	14	13	15	
	Left-hand side crankcase cover screw	M6x1	10	9	11	
B	Bosch sensor bolt	M6x1	10	9	11	
	Right-hand side crankcase cover screw	M6x1	9	8.5	9.5	
	Chain cover oil circuit blanking screw	M6x1	5	4	6	LOCK 5
C	Right-hand side crankcase cover screw	M6x1	9	8.5	9.5	
	Under-piston oil jet retaining screw	M5x0.8	8	7	9	LOCK 2 or TB1324
	Oil cooler nipple	M14x1.5	27	24	30	LOCK 5 or TB1375B
D	Vertical cylinder cover bolt: Stage 1	M8x1.25	19	22	28	
	Stage 2		25	22	28	
	Crankcase hollow screw	M8x1.25	20	18	22	
E	Left-hand side crankcase cover screw	M6x1	10	9	11	
	Drylock left-hand side crankcase cover screw	M6x1	10	9	11	pre-applied Loctite 516
	Starter motor mounting bolt	M6x1	10	9	11	LOCK 2 or TB1324
F	Starter motor rear bolt	M6x1	10	9	11	LOCK 2 or TB1324
	Idler gear shaft retaining bolt	M6x1	10	9	11	LOCK 2 or TB1324
	Front sprocket retaining nut	M24x1	190	171	209	GREASE B
G	Flywheel retaining nut	M24x1	330	313	346	LOCK 5
	Connecting rod cap bolts: Stage 1	M10x1	35			Apply GREASE B to thread
	Pause for 2 sec., then back off through 360° Stage 2		20			
H	Stage 3		35			
	Stage 4, Angle-tighten 65°±1° Torque check		70±103			
	Crankshaft grub screw	M8x1.25	13	11	15	TB 1375B
L	Drilled crankshaft grub screw	M8x1.25	13	11	15	TB 1375B
	Selector drum locating screw	M16x1.5	30	27	33	
	Gear stop lever screw	M8x1.25	18	16	20	LOCK 2 or TB1324
M	Selector claw bolt	M8x1.25	25	22	28	
	Selector claw locator nut	M6x1	10	9	11	
	Selector claw bolt	M6x1	9	8.5	9.5	LOCK 2 or TB1324
N	Idler and tensioner pulley bolts	M20x1	50	45	55	LOCK 2 or TB1324
	Camshaft pulley retaining nut	M15x1	71	64	78	GREASE A
	Timing belt driveshaft gear nut	M14x1	55	50	60	GREASE A
P	Idler and tensioner pulley nut	M8x1.25	25	22	28	GREASE A
	Timing belt cover screw	M6x1	10	9	11	LOCK 2 or TB1324
	Self-tapping screw for timing belt cover filter	M3.5				
	Dry clutch centre nut	M25x1	250	236	264	LOCK 5
	Oil filler plug	M22x1.5	5	5	6	
	Wet clutch centre nut	M20x1	120	115	125	GREASE B
	Oil temperature sensor	M12x1.5	18	16	19	LOCK 4
	Oilway blanking plug	M10x1	20	18	22	LOCK 5

Part	Thread (mm)	Nm	Min.	Max.	Notes
Dry clutch drum bolts	M8x1.25	35	33	37	LOCK 4
Right-hand side crankcase cover screw	M6x1	9	8.5	9.5	
Clutch spring bolt	M5x0.8	5	5	7	
Coolant inlet union	M30x1.5	25	23	27	LOCK 5
Coolant outlet union	M22x1.5	25	23	27	LOCK 5
Pick-up sensor inspection screw	M12x1	15	13	17	LOCK 2 or TB1324
Water pump cover plug	M10x1	20	18	22	
Spark plug	M10x1	12	11	13	
Coolant pump bearing stop screw	M6x1	10	9	11	LOCK 2 or TB1324
Stator wiring clamp bracket bolt	M6x1	10	9	11	LOCK 2 or TB1324
Water pump cover plug	M6x1	10	9	11	
Left-hand crankcase cover screw	M6x1	10	9	11	
Inspection cover screw	M6x1	4.5	4.5	6	
Alternator rotor/flywheel bolt	M6x1	13	11	15	LOCK 2 or TB1324
By-pass pump cap	M15x1	25	22	28	LOCK 2 or TB1324
Oil pump retaining bolt	M6x1	10	9	11	
Oil pump retaining bolt	M8x1.25	26	23	29	
Oil pump retaining bolt	M6x1	10	9	11	
Coolant outlet union	M22x1.5	25	23	27	LOCK 5
Coolant circuit hose clamps		2.5	2	3	

\* dynamic safety-critical point; tightening torque must be within Nm  $\pm$  5%.



Notes

For product specifications and symbols, see "Product specifications" (Sect. A 2).

A

B

C

D

E

F

G

H

L

M

N

P