

### 3 - TORQUE SETTINGS

#### Frame torque settings

Application	Thread (mm)	Nm Tolerance $\pm 10\%$	Notes
<b>Chain, front sprocket</b>			
Chain sprocket fixing		186 *	GREASE B
Front sprocket cover retaining screw	M 6x1	6	
<b>Light units</b>			
Left headlight support to light unit screws	M 6x1	6	
Right headlight support to light unit screws	M 6x1	3	
Studs to light unit screws		10	
Left headlight support to right headlight support screws	M 6x1	10	
Splashguard to headlight assembly screw	M 6x1	5	
Tail light assembly retaining screw underneath silencer	M 5x0.8	3	
Tail light heat guard to silencer screw	M 6x1	8	
Number plate light nut	M 6x1	1.5	
Right and left headlight fairing support retaining screw	M 6x1	10	
<b>Front fork</b>			
Steering head screw	M 8x1.25	23 *	GREASE B
Bottom yoke screw	M 8x1.25	14 *	Sequence 1-2-1 GREASE B
Steering tube retaining screw	M 8x1.25	22 *	GREASE B
Fork bottom end screw	M 8x1.25	19 *	GREASE B Sequence 1-2-1
Steering bearing ring nut	M 35x1	20 *	GREASE B - Slacken by 30°
Steering damper to cylinder head screw	M 6x1	10	LOCK 1
Steering tube reference peg	M 12x1	19	GREASE B
BOGE steering damper ball joint		8	LOCK 3
OHLINS steering damper ball joint	M 8x1	8	LOCK 3
Steering shaft	M 37x1	*	* fully home with LOCK 8
Steering damper support screw	M 6x1	8	LOCK 2
<b>Electric system</b>			
Cables to battery terminal plate nut	M 5x1	5	
Battery mount retaining screw	M 5x0.8	8	
Battery mount retaining screw	M 6x1	10	
Horn bracket to horizontal head covers screw	M 6x1	10	
Horn to bracket nut	M 12x1	20	
Starter motor nut	M 6x1	5	GREASE B
Fuse box support to light unit screw	M 5x10	4	
Cables to contactor nut	M 6x1	4	
Right switch retaining screw	.....	1	

<b>Application</b>	<b>Thread (mm)</b>	<b>Nm Tolerance ±10%</b>	<b>Notes</b>
Left switch retaining screw	.....	0.8	
Coil to head nut	M 6x1		
Voltage regulator to battery mount screw	M 6x1	3	
Key-operated switch retaining screw	M 6x1	10	
Key cover blind nut	M 6x1	8	* tighten screw until head shears LOCK 2
Speed sensor retaining screw	M 6x1	10	
Electronic control unit retaining screw	M 6x1	8	
<b>Front brake</b>			
Front brake caliper retaining screw	M 10x1.5	43 *	GREASE B
Rear brake bleed nipple	M 6x1	12	
Front/rear brake bleed union	M 10x1	20	
Front brake caliper to handlebar screw	M 6x1	9	Sequence 1 (UP) -2-1
<b>Rear brake</b>			
Rear brake caliper retaining screw	M 8x1.25	25 *	GREASE B
Pin securing caliper holder plate to swingarm	M 8x1.25	25 *	LOCK 3
Master cylinder support screw	M 6x1	10	
Master cylinder bracket support screw	M 10x1.5	43	LOCK 5
Brake fluid reservoir to frame screw	M 6x1	2	
Rear brake lever pin	M 10x1.5	29	LOCK 2
Brake pedal adjusting dowel	.....	2.3	
Rear brake pedal light switch	.....	5	
Rear brake actuating rod nut	M 6x1	7.5	
Rear brake hose clips to swingarm screw	M 5x0.8	5	
Footpeg to brake lever screw	.....	12	
<b>Rear swingarm</b>			
Chain sliding shoe retaining screw	M 6x1	10	LOCK 2
Lower chain sliding shoe retaining screw	M 6x1	10	LOCK 2
Caliper plate pin	M 12x1.25	33	LOCK 8
Chain tensioner plate ring nut	.....	5	
Swingarm pivot shaft retaining screw		72 *	
<b>Handlebar, clutch control</b>			
Handlebar retaining screw	M 8x1	25 *	GREASE B - Sequence 1-2-1
Clutch master cylinder to handlebar screw	M 6x1	9	Sequence 1 (UP) -2-1
Clutch nose union	M 10x1	20	
Clutch transmission unit retaining screw	M 6x1	10	
Throttle control retaining screw	M 6x1	10	
<b>Rear shock absorber</b>			
Shock absorber to swingarm screw	M 10x1.25	42 *	GREASE B
Shock absorber to rocker arm screw	M 10x1.25	42 *	GREASE B
Shock absorber linkage to rocker arm screw	M 10x1.25	42 *	GREASE B
Suspension rocker arm to frame nut	M 12x1.25	42 *	GREASE B

<b>Application</b>	<b>Thread (mm)</b>	<b>Nm Tolerance ±10%</b>	<b>Notes</b>
<b>Front and rear mudguards</b>			
Front mudguard retaining screw	M 6x1	3	LOCK 2
Number plate holder to silencer screws	M 6x1	5	
Number plate holder retaining screw	M 6x1	6	
Number plate holder support retaining screw	M 6x1	2	
<b>Footpegs and levers</b>			
Rear brake lever pin	M 10x1.5	29	LOCK 2
Front and rear footpeg support retaining screw	M 8x1.25	24	LOCK 2
Gearbox link rod retaining screw	M 6x1	10	LOCK 1
Gearbox actuating rod UNIBALL nut	.....	10	
Gearbox actuating rod adjuster retaining screw	M 6x1	8	
Gear change pedal retaining pin	M 8x1.25	23	LOCK 2
Footpeg support to frame retaining screws	M 8x1.25	24	LOCK 2
Footpeg guard retaining screw	M 5x0.8	5	LOCK 2
<b>Front and rear wheel</b>			
Rear wheel nut	M 30x1.5	180 *	GREASE B
Front wheel shaft nut	M 25x1.5	63 *	GREASE B (grease under head of nut and wheel shaft)
Cush drive pins to rear chain sprocket fixing	.....	55 *	LOCK 5 (left hand thread)
Rear chain sprocket nuts	M 10x1.25	46 *	GREASE B
Front/rear brake disk retaining screw	M 8x1.25	25 *	LOCK 2
<b>Fuel tank</b>			
Fuel tank drain tube retainer nut	M 6x1	10	
Filler plug screw	M 5x0.8	5	
Flange to tank nuts	M 6x1	8	
Tank fuel pipe clamps retaining screw	.....	1.5	
<b>Exhaust system</b>			
M8 center screw securing silencer and heat guard to subframe	M 8x1.25	24	
M6 screw securing silencer and heat guard to subframe	M 6x1	10	
Front footpeg and exhaust pipe guard retaining screw	M 6x1	10	LOCK 2
Nut securing rear wiring harness guide tube to silencer	M 6x1	10	
Exhaust pipe to head nuts	M 6x1	9	
Stainless steel plugs to exhaust pipes fixing	1/8 gas	25	
Exhaust pipe to frame and crankcase support screw	M 6x1	9	
<b>Seat</b>			
Seat lock ring nut	.....	5.5	

<b>Application</b>	<b>Thread (mm)</b>	<b>Nm Tolerance <math>\pm 10\%</math></b>	<b>Notes</b>
Screw securing seat - fuel tank - tail guard assembly to rear subframe	M 6x1	6	
Seat anchoring plate screw	M 5x0.8	5	
Seat anchor point retaining screw	.....	6	
Seat to fuel tank nut	M 5x0.8	5	
Seat lock retaining screw	M 5x0.8	10	
Passenger bracket and grab strap to under seat fixing nut (biposto)	M 6x1	10	
Passenger grab strap retaining screw	M 6x1	9 *	
Screw securing rider seat grip and fuel tank-seat-tail guard assembly to frame	M 6x1	10	
<b>Oil intake / breather</b>			
Clip for oil breather hose at breather valve end	...	1.5	
Oil breather valve case retaining screw	M 6x1	4	
Intake funnels retaining screw	M 5x0.8	5	
Intake funnel springs retaining screw	M 5x0.8	3	LOCK 2
Throttle body clip		2	
Airbox cover to airbox body screw	Self-tapping	2	
<b>Fuel system, Canister</b>			
Canister hose to manifold fitting screw	.....	1.5	
Canister bracket support to horizontal head cover screw	M 6x1	10	
Canister support to bracket nuts	M 6x1	10	
Throttle body to airbox body screw	M 6x1	10	
<b>Fairing</b>			
Headlight fairing conveyors retaining screws	Self-tapping	8	
Upper and lower fairing jointing screw/ deflector retaining screw	M 5x0.8	5	LOCK 2
Headlight fairing retaining screw	M 6x1	8	
Right fairing bracket retaining screw	M 10x1.5	10	
Left fairing bracket retaining screw	M 6x1	20	
Monoposto tail guard retaining screw	M 5x0.8	1.2	LOCK 2
Front shield retaining screw	M 6x1	2.3	LOCK 2
Right and left conveyor cover retaining screw	.....	0.8	
Right and left fairing jointing plate retaining screw	M 5x0.8	5	
<b>Stand</b>			
Side stand plate retaining screw	M 10x1.5	36	LOCK 5
Side stand sensor wire retainer screw	M 6x1	10	
Side stand pivot nut		19	LOCK 5 (apply GREASE B to stand pivot)
Side stand sensor retaining screw	M 6x1	10	
<b>Frame</b>			
Rear subframe retaining screw	M 6x1.25	30	LOCK 2
Engine to frame mounting bolt fixing nut	M 12x1.25	60 *	GREASE B

<b>Application</b>	<b>Thread (mm)</b>	<b>Nm Tolerance ±10%</b>	<b>Notes</b>
Seat pulley screw	Self-tapping	...	LOCK 2
<b>Oil cooler</b>			
Oil cooler nipple	M 14x1.5	23	LOCK 1
Oil cooler retaining screw	M 6x1	6	
Head oil pipe fitting at cooler end	M 10x1	12	LOCK 2
Oil pipe fitting at cooler end with Twin-Seal	M 16x1.5	32 *	Lubricate with engine oil (Shell Advance Ultra4)
<b>C</b> Oil pipe fitting at crankcase end with Twin-Seal	M 16x1.5	32 *	Lubricate with engine oil (Shell Advance Ultra4)
<b>Liquid cooling</b>			
Radiator retaining screw on left side of frame	M 6x1	10	GREASE B
Coolant hose clamps	.....	2.5	
Wire retainer screw and nut	M 6x1	10	
Radiator mounting lug on right side of frame	.....	10	

\* Critical point for dynamic safety. Tightening torque tolerance must be Nm ± 5%.



**Note**

For product specifications and symbols, refer to "Product specifications" (Section A 2).

## Engine torque settings

Application	Thread (mm)	Nm Tolerance $\pm 10\%$	Note
Blow-by valve	M 40x1.5	40	
Oil breather cover	M 40x1.5	40	
Mesh filter duct plug	M 32x1.5	42	
Coolant intake union	M 30x1.5	30	LOCK 6
Oil temperature sensor ring nut	M 30x1.5	38	LOCK 4
Crankshaft gear fixing nut	M 25x1.5	190 *	GREASE B
Generator rotor nut	M 24x1	270	ENGINE OIL
Oil drain plug	M 22x1.5	42	
Oil mesh filter	M 22x1.5	42	
Coolant delivery union	M 22x1.5	25	LOCK 6
Oil filler plug	M 22x1.5	5 *	
Crankshaft gear nut	M 22x1	190	GREASE B
Dry clutch drum nut	M 20x1	190 *	GREASE B
Fixed / mobile tensioner pin	M 20x1	50	LOCK 9 or THREE BOND 1324
Crankshaft blanking cap	M 20x1	Fully home with tool	THREE BOND 1375B
Head timing belt roller ring nut	M 17x1	71	GREASE A
Generator cover inspection plug	M 15x1	20	THREE BOND 1215
Gearbox drum locating screw	M 16x1.5	30	
Oil filter nipple	M 16x1.5	42	LOCK 9 or THREE BOND 1324
Oil cartridge filter	M 16x1.5	11	Engine oil on seal
Mesh filter duct plug	M 15x1	20	LOCK 5 or THREE BOND 1375B
By-pass pump plug	M 15x1	25	LOCK 5 or THREE BOND 1375B
Ring nut for belt rollers on timing lay shaft	M 15x1	71	GREASE A
Ring nut for belt rollers on heads	M 15x1	71	GREASE A
Oil sump intake duct plug	M 14x1.5	24	LOCK 5 or THREE BOND 1375B
Cooler duct plug	M 14x1.5	24	LOCK 5 or THREE BOND 1375B
Oil cooler nipple	M 14x1.5	24	LOCK 5 or THREE BOND 1375B
Fixed tensioner bearing stop screw	M 14x2	50	GREASE C
Nut for timing lay shaft gear	M 14x1	55 *	GREASE A
Deep sump oil drain plug	M 12x1.50	20	
Oil temperature sensor	M 12x1.5	18 *	LOCK 4
Coolant temperature sensor (ECU)	M 12x1.5	23	LOCK 4
Pick-up inspection screw	M 12x1	15	LOCK 9 or THREE BOND 1324
Head nuts, 1st snug	M 10x1.5	15	GREASE C
2nd snug		30	
final		48	
Oil pump duct plug	M 10x1.5	fully home with tool 15	LOCK 5 or THREE BOND 1375B
Head stud bolts	M 10x1.5	25 *	LOCK 9 or THREE BOND 1324

<b>Application</b>	<b>Thread (mm)</b>	<b>Nm Tolerance ±10%</b>	<b>Note</b>
Casing service plug on clutch side	M 10x1.5	15	LOCK 5 or THREE BOND 1375B
Screws in general	M 10x1.5	45	
Neutral light switch	M 10x1.25	10	
Con-rod bolts: 1st snug 2nd snug Tighten up to yield point, angle (55°/95°)	M 10x1	20±1 35±1 70/103	GREASE E
Pressure switch	M 10x1	19	
Reduction bushing	M 10x1		LOCK 5 or THREE BOND 1375B
Spark plug	M 10x1	15	
Coolant pump cover plug	M 10x1	20	
Drilled screw for oil delivery to heads	M 10x1	15	
Earth screw	M 8x1.5	13	
Crankshaft dowels	M 8x1.25	13	THREE BOND 1375B
Gear stopper screw	M 8x1.25	18	LOCK 9 or THREE BOND 1324
Oil pump screws	M 8x1.25	26	
Dry clutch housing screws	M 8x1.25	35 *	LOCK 4
Casing drilled screw	M 8x1.25	20	GREASE B
Fixed tensioner pin	M 8x1.25	26	LOCK 9 or THREE BOND 1324
Mobile tensioner pin	M 8x1.25	26	LOCK 9 or THREE BOND 1324
Fluid recovery breather screw	M 8x1.25	2.2	
Tensioner eccentric nut	M 8x1.25	25	GREASE A
Cam support screws: 1st snug 2nd tightening	M 8x1.25	10 22.5	GREASE B
Casing jointing screws: 1st snug tightening	M 8x1.25	19 25	GREASE B
Screws in general	M 8x1.25	25	
Gearbox pawl screw	M 8x1	25	
Intake and exhaust flange stud bolts	M 6x1	5 *	LOCK 9 or THREE BOND 1324
Intake manifold nuts	M 6x1	10	
Head timing-side cover screws	M 6x1	10	LOCK 9 or THREE BOND 1324
Casing jointing screws	M 6x1	10	
Starter motor screws	M 6x1	10	LOCK 9 or THREE BOND 1324
Starter idle gear pin screw	M 6x1	10	LOCK 9 or THREE BOND 1324
Coolant pump bearing stop screw	M 6x1	10	LOCK 2 or THREE BOND 1324
Generator stator retaining screws	M 6x1	10	LOCK 9 or THREE BOND 1324
Flywheel / rotor screws	M 6x1	13	LOCK 9 or THREE BOND 1324
Gearbox bearing retaining plate screws	M 6x1	10 *	LOCK 9 or THREE BOND 1324

<b>Application</b>	<b>Thread (mm)</b>	<b>Nm Tolerance <math>\pm 10\%</math></b>	<b>Note</b>
Coolant drain screw on union	M 6x1	5 *	LOCK 9 or THREE BOND 1324
Intake manifold fuel pump union	M 6x1	2.5	LOCK 9 or THREE BOND 1324
Bosch pick-up retaining screws	M 6x1	10	LOCK 9 or THREE BOND 1324
Fluid expansion reservoir bracket retaining screws	M 6x1	9	
Spark plug tube screws	M 6x1	10	LOCK 9 or THREE BOND 1324
Battery mount stud bolt	M 6x1	10	LOCK 9 or THREE BOND 1324
Battery mount lower stud bolt	M 6x1	10	LOCK 9 or THREE BOND 1324
Cylinder side cover screws	M 6x1	10	LOCK 9 or THREE BOND 1324
Head cover stud bolts	M 6x1	10	LOCK 9 or THREE BOND 1324
Driven belt roller flange retaining screws	M 6x1	10	
Cylinder coolant inlet union screw	M 6x1	10	LOCK 9 or THREE BOND 1324
Gearbox pawl screw	M 6x1	10	LOCK 9 or THREE BOND 1324
Head/cylinder coolant cover screws	M 6x1	6 *	
Sight glass cover screws	M 6x1	4.5 *	
Head coolant outlet union screws	M 6x1	10	
Rocker arm shaft cover screws	M 6x1	10	
Intake / exhaust valve cover screws	M 6x1	10	
Clutch cover screws	M 6x1	10	
Generator cover screws	M 6x1	10	
Head cover nut	M 6x1	10	
Radiator mounting peg 999	M 6x1	5	LOCK 2 or THREE BOND
Screws in general	M 6x1	10	
Intake manifold plug	M 5x0.8	3 *	
Clutch spring screws	M 5x0.8	5 *	GREASE A
Intake manifold nipple	M 5x0.8	3 *	LOCK 9 or THREE BOND 1324
Head oil pipe fixing screw	M 5x0.8	5 *	LOCK 9 or THREE BOND 1324
Screws in general	M 5x0.8	5 *	
Water hose clips		2.5	

\* Critical point for dynamic safety. Tightening torque tolerance must be  $Nm \pm 5\%$ .



**Note**

For product specifications and symbols, refer to "Product specifications" (Section A 2)