3 - TORQUE SETTINGS

Frame torque settings

Part	Thread (mm)	Nm ±10% Tolerance	Notes
	Front Sprocket		
Chain sprocket fixing	.....	186 *	GREASE B
Front sprocket cover screw	M 6x1	6	
	Optical Devices		
Screws securing LH/RH headlight to light assembly	6x1	6	
Webasto screws	6x1	3	
Screws securing studs to LH/RH light assembly	.....	8	Lock 2
Headlight assembly /steering tube screw	6x1	8	
Sprayguard/headlight assembly screws	6x1	5	Lock 2
Tail light assembly screws under silencer	5x0.8	3	
Tail light screw	.....	3	
Screw securing tail light heat shield to silencer	6x1	8	
Number plate light nut	6x1	1,5	
RH/LH headlight fairing support screw	6x1	10	
Headlight adjuster knob screw	Self-tapping	1	
Nut securing reflector support to number plate support	.....	4	
	Instruments		
Pin securing front wiring harness to instrument panel	6x1	2,2	
	Front Fork		
Steering head screw	8x1.25	23*	Grease B
Bottom yoke screws	8x1.25	14*	In sequence 1-2-1 Grease B
Steering head tube screw	8x1.25	22*	Grease B
Fork end screw	8x1.25	19*	Grease B - Sequence 1-2-1
Steering bearing ringnut	35x1	20	Grease B – Back off 30°
Steering damper / steering head screw	6x1	10	Lock 1
Steering head tube locating dowel	12x1	19	Grease B
BOGE steering damper ball joint (749/749S)	.....	8	Lock 3
Steering pin	37x1	*	*Fully inserted with Lock 8
Steering damper support screw	6x1	8	Lock 2
Steering limit lock nut	8x1.25	18	Lock 2 (apply Loctite to nut thread)
Screw securing steering limit plate to bottom of steering head on 749	.....	5	Lock 2
Screw securing front brake pipe guides to RH fork leg (749S)	4x0.7	1,3	
	Electrical System		
Wire clamp nut on battery contact plate	5x1	5	
Lower battery support bolt	5x0.8	8	
Upper battery support bolt	6x1	10	
Screw securing horn to bracket	6x1	10	
Screw securing horn bracket to horizontal cylinder head side cover	6x1	10	
Nut securing horn to bracket	12x1	20	
Starter motor nut	6x1	5	Grease B
Screw securing fuse box support to light assembly	5x10	2,5	
Cable / contactor nut	6x1	4	
RH switch screw	.....	1	

Part	Thread (mm)	Nm ±10% Tolerance	Notes
LH switch screw	.....	0,8	
Coil / head nut	6x1		
Voltage regulator / battery support screw	6x1	3	
Keyswitch screw	6x1	10	* Tighten down the Lock 2 screw head until it fails
Key cover cap nut	6x1	8	
Immobilizer antenna	.....	.....	Assemble on assembly line applying Loctite 11 between the antenna and switch cover
Heat shield / battery support screws	Self-tapping	1,3	
Ground cable screw	6x1	8	
Speed sensor screw	6x1	10	
ECU screw	6x1	8	
	Front brake		
Front brake calliper screw	10x1.5	43*	Grease B
Front brake bleeder connector	6x1	12	
Front/rear brake hose clamp	10x1	20	
Front brake master cylinder / handlebar screw	6x1	9	1 (UP)-2-1 Sequence
Screw securing front brake line guide to steering yoke	.....	1,3	
	Rear brake		
Rear brake calliper screw	8x1.25	25*	Grease B
Rear brake master cylinder screw	6x1	10	
Rear brake master cylinder bracket screw	10x1.5	43	Lock 5
Screw securing brake fluid reservoir to frame	6x1	2	
Rear brake lever pin	10x1.5	29	Lock 2
Brake pedal adjuster screw	.....	2,3	
Rear brake pedal light switch	.....	5	
Rear brake control rod nut	6x1	7,5	
Screw securing footpeg to brake lever	.....	12	
	Rear Swingarm		
Chain sliding shoe screw	6x1	10	Lock 2
Swingarm pivot shaft screw	15x1.25	72*	
Lower chain sliding shoe screw	6x1	10	Lock 2
Calliper plate pin	10x1.5	33*	Lock 8
Chain tensioner slide ring nut	.....	5	
Chain tensioner slider adjuster nuts for aluminium alloy box-section swing arm	8x1.5	8	
Screw securing plastic/carbon fibre chain cover for aluminium alloy box-section swing arm	6x1	4	Lock 2
Screw securing rear brake pipe clip to box-section swing arm	5x0.8	5	
Self-shearing screw on box-section swing arm	6x1	9	
	Handlebars - Clutch Control		
Handlebar screw	8x1	25*	
Clutch master cylinder / handlebar screw	6x1	9	
Clutch pipe connector	10x1	20	
Clutch slave cylinder screw	6x1	10	
Throttle control screw	6x1	10	

Part	Thread (mm)	Nm ±10% Tolerance	Notes
Rear Shock Absorber			
Screw securing shock absorber to swing arm	10x1.25	42*	Grease B
Screw securing shock absorber to rocker arm	10x1.25	42*	Grease B
Screw securing shock absorber reaction arm to rocker arm	10x1.25	42*	Grease B
Nut securing suspension rocker arm to frame	10x1.25	42*	Grease B
Front and Rear Mudguards			
Front mudguard screw	6x1	3	Lock 2
Screws securing number plate to silencer	6x1	5	
Number plate holder screws	6x1	6	
Bolt securing reflector support to number plate support	6x1	4	
Footpegs and Levers			
Front/rear footpeg mounting plate screw	8x1.25	24	Lock 2
Clutch slave cylinder screw	6x1	10	Lock 1
Nut securing UNIBALL to gear rod	.....	10	
Screw securing gear change linkage adjuster	6x1	8	
Gear pedal shaft	8x1.25	23	Lock 2
Footpeg guard screw	5x0.8	5	Lock 2
Front and Rear Wheels			
Rear wheel nut	30x1.5	180*	Grease B
Front wheel spindle nut	25x1.25	63*	Grease B (apply to thread under nut head and to wheel spindle)
Fixings securing cush drive pins to sprocket	.....	55*	Lock 5 (LH threads)
Chain ring nuts	10x1.25	46*	Grease B
Front/rear brake disc screw	8x1.25	25*	Lock 2
Fuel Tank			
Fuel tank drain hose clamp nut	6x1	10	
Tank filler cap screws	5x0.8	5	
Fuel tank flange nuts	6x1	8	
Fuel tank pipe clamp screw	.....	1,5	
Fuel tank connector cover	4x0.7	1,6	
Exhaust System			
Central M8 screw securing silencer + heat shield to subframe	8x1.25	24	
M6 screw securing silencer + heat shield to subframe	6x1	10	
Screw securing front footpeg and exhaust pipe guard	6x1	10	Lock 2
Nut securing rear wiring conduit to silencer	6x1	8	
Nuts securing exhaust pipe to cylinder head	6x1	9	
Stainless steel plugs to exhaust pipe retainers	1/8 gas	25	
Screw securing exhaust pipe to frame	6x1	9	
Screw securing heat shield to exhaust pipe	6x1	3	
Seat			
Seat lock ringnut	.....	5,5	
Screw securing seat/fuel tank/tail guard assembly to subframe	6x1	10	
Seat mounting screw	.....	6	
Nut securing seat to fuel tank	8x1.5	24	

Part	Thread (mm)	Nm ±10% Tolerance	Notes
Seat lock screw	5x0.8	5	
Nut securing brackets and passenger belt to dual seat under frame	6x1	10	
Passenger belt screw	6x1	9*	
Screw securing rider seat grabhandle with seat/tank/tail guard assembly to frame	6x1	10	
Air Intake Oil Breather			
Clamp securing oil breather hose to breather valve	.....	1,5	
Oil breather tank screw	6x1	4	
Air intake funnel screw	5x0.8	5	
Air intake funnel spring screw	5x0.8	3	Lock 2
Throttle body clamp	.....	2	
Air box cover screw	Self-tapping	2	
Canister feed			
Screw securing canister pipe to manifold union	.....	1,5	
Screw securing canister bracket to horizontal head side cover	6x1	10	
Nuts securing canister support to bracket	6x1	10	
Screw securing throttle body to air box	6x1	10	
Fairings			
Front fairing air scoop screw	Self-tapping	8	
Fixing screw on Wellnut on / lower part of RH/LH half fairing	6x1	1,5	
Screw securing upper half fairings to lower half-fairings and baffles	5x0.8	5	Lock 2
Front fairing screw	6x1	8	
RH and LH fairing support screw	6x1.5	10	
LH fairing support screw	10x1	20	
Single-seater tail guard screw	5x0.8	1,2	Lock 2
Front shield screw	6x1	2,5	Lock 2
RH/LH air scoop cover screw	.....	0,8	
Fixing for fairing pin mounting side fairings to front fairing	5x0.8	5	Lock 2
RH/LH side fairing assembly plate screw	5x0.8	5	
Stand			
Side stand plate screw	10x1.5	43	Lock 5
Side stand sensor cable clamp bolt	6x1	10	
Side stand pivot shaft nut	.....	19	Lock 10 (apply Grease B to stand pivot shaft)
Stand sensor screw	6x1	10	
Frame			
Screw securing rear subframe to frame	8x1.25	30	
Nut securing engine to frame	12x1.25	60*	Grease B
Seat slide screw	Self-tapping	...	Lock 2
Oil cooler			
Oil cooler nipple	14x1.5	23	Lock 1
Oil cooler screw	6x1	10	
Oil pipe union on cooler with TWIN SEAL O-ring	16x1.5	25*	Lubricate with engine oil (Shell Advance Ultra 4)
Oil pipe union on crankcase with Twin Seal O-ring	16x1.5	25*	Lubricate with engine oil (Shell Advance Ultra 4)

Part	Thread (mm)	Nm ±10% Tolerance	Notes
	Liquid cooling		
Screw securing LH side of radiator to frame	6x1	10	Grease B
Coolant hose clamps	.....	2,5	
Screw securing radiator hose clamp to vertical cylinder head	.....	1	
Cable clamp bolt and nut	6x1	10	
Radiator retaining pin on RH side of frame	.....	10	
Water drain plug on pump cover	.....	20	

* dynamic safety-critical point; locking torque tolerance within Nm ± 5%.

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

Engine torque settings

Part	Thread (mm)	Nm	Min.	Max.	Notes
Blow-by valve	M 40x1.5	40	36	44	
Mesh filter blanking cap	M 32x1.5	42	38	46	
Coolant intake manifold	M 30x1.5	30	27	33	LOCK 6
Oil temperature sensor holder ringnut	M 30x1.5	38	34	42	LOCK 4
Crankshaft gear nut	M 12x1.25	190	170	209	GREASE B
Injection generator rotor nut	M 24x1	270	256	284	ENGINE OIL
Crankshaft gear nut	M 22x1	190	171	209	GREASE B
Oil drain plug	M 22x1.5	42	38	46	
Oil mesh filter	M 22x1.5	42	38	46	
Coolant outlet union	M 22x1.5	27	25	30	LOCK 5
Engine fan thermo switch	M 22x1.5	42	38	46	LOCK 4
Oil filler cap	M 22x1.5	5	5	6	
Fixed/mobile tensioner pin	M 20x1	50	45	55	LOCK 2 or THREE BOND 1324
Dry clutch drum nut	M 20x1	190	180	200	GREASE B
Steel/aluminium crankshaft blanking cap	M 20x1	15	13,5	16,5	THREE BOND 1375B
Cylinder head timing pulley nut	M 17x1	71	64	78	GREASE A
Gearbox drum locator screw	M 16x1.5	30	27	33	
Oil filter nipple	M 16x1.5	42	38	46	LOCK 2 or THREE BOND 1324
Oil filter cartridge	M 16x1.5	11	10	12	Engine oil on gasket
Mesh filter duct plug	M 15x1	20	18	22	LOCK 5 or THREE BOND 1375B
By-pass pump cap	M 15x1	25	22	28	LOCK 5 or THREE BOND 1375B
Ringnut securing timing pulleys on layshaft shaft	M 15x1	71	64	78	GREASE A
Timing pulley ringnuts on cylinder heads	M 15x1	71	64	78	GREASE A
Generator cover inspection plug	M 15x1	20	18	22	THREE BOND 1215
Fixed tensioner bearing screw	M 14x2	50	45	55	GREASE C
Sump oil intake pipe plug	M 14x1.5	24	21	27	LOCK 5 or THREE BOND 1375B
Layshaft timing shaft gear nut	M 14x1	55	50	60	GREASE A
Radiator connection plug	M 14x1.5	24	21	27	LOCK 5 or THREE BOND 1375B
Radiator connection blanking plug	M 14x1.5	27	24	30	LOCK 5 or THREE BOND 1375B
Oil cooler nipple	M 14x1.5	27	24	30	LOCK 5 or THREE BOND 1375B
Pick-up sensor inspection screw	M 12x1	15	13	17	LOCK 2 or THREE BOND 1324
Ground connection screw	M 12x1	18	16	19	LOCK 2 or THREE BOND 1374
Oil temperature sensor	M 12x1.5	18	16	19	LOCK 4
Coolant temperature sensor (control unit)	M 12x1.5	23	20	26	LOCK 4
Spark plugs	M 12x1.25	20	18	22	

Part	Thread (mm)	Nm	Min.	Max.	Notes
Cylinder head nuts: 1 Apply GREASE C 2 Ist stage tightening to 15 Nm 3 2nd stage tightening to 30 Nm (min.28 max.32) 4 Final stage tightening to 48 Nm (min.28 max.32)	M 10x1.5				
Connecting rod screws: 1 Apply GREASE B to thread 2 Tighten to 35 Nm at 50 rpm 3 2 second pause, then back off through 360° a 30 rpm 4 Tighten to 20 Nm at 30 rpm 5 Tighten to 35 Nm at 10 rpm 6 7 Check torque: 70-103 Nm	M 10x1				
Oil pump duct plug	M 10x1.5	fully home with tool 15	13	17	LOCK 5 or THREE BOND 1375B
Cylinder head studs	M 10x1.5	25	23	26	LOCK 2 or THREE BOND 1324
Pressure switch	M 10x1	19	17	21	
Reduction bush	M 10x1				LOCK 5 or THREE BOND 1375B
Spark plug	M 10x1	15	13	17	
Water pump cover plug	M 10x1	20	18	22	
Neutral light switch	M 10x1.25	10	9	11	
Clutch-side casing service cap	M 10x1.5	15	13	17	LOCK 5 or THREE BOND 1375B
Oil circuit plug - drain side	M 10x1	15	13	17	LOCK 2 or THREE BOND 1374
Crankshaft grub screws	M 8x1.25	13	11	15	THREE BOND 1375B
Mobile tensioner pin	M 8x1.25	26	23	29	LOCK 2 or THREE BOND 1324
Fixed tensioner pin	M 8x1.25	26	23	29	LOCK 2 or THREE BOND 1324
Gearshift pawl bolt	M 8x1.25	25	22	28	
Gear stop lever screw	M 8x1.25	18	16	20	LOCK 2 or THREE BOND 1324
Oil pump screws	M 8x1.25	26	23	29	
Dry clutch housing screws	M 8x1.25	35	33	37	LOCK 4
Crankcase screws:	M 8x1.25				GREASE B
1st stage		19	17	21	
Final Stage		25	22	28	
Rocker cover screws:	M 8x1.25				GREASE B
1st stage		10	9	11	
Final stage		22,5	21	25	
Crankcase drilled bolt	M 8x1.25	20	18	22	GREASE B
Ground screw	M 8x1.5	13	11	15	
Tensioner eccentric nut	M8x1.25	25	22	28	GREASE A
Screws for cylinder head side cover on timing side	M 6x1	10	9	11	LOCK 2 or TB 1324
Clutch spring screws	M 6x1	6	5	7	

Part	Thread (mm)	Nm	Min.	Max.	Notes
Stator cable clamp bracket screws	M 6x1	10	9	11	LOCK 2 or THREE BOND 1324
Intake and exhaust flange studs	M 6x1	5	5	7	LOCK 2 or THREE BOND 1324
Starter motor screws	M 6x1	10	9	11	LOCK 2 or THREE BOND 1324
Starter idle gear shaft screw	M 6x1	10	9	11	LOCK 2 or THREE BOND 1324
Coolant pump bearing stop screw	M 6x1	10	9	11	LOCK 2 or THREE BOND 1324
Generator stator bolts	M 6x1	10	9	11	LOCK 2 or THREE BOND 1324
Rotor / flywheel bolts	M 6x1	13	11	15	LOCK 2 or THREE BOND 1324
Gearbox bearing retaining plate screws	M 6x1	10	9	11	LOCK 2 or THREE BOND 1324
Coolant drain bolt on union	M 6x1	8	7	8	LOCK 2 or THREE BOND 1324
Fuel pump / intake manifold union	M 6x1	2,5	2	3	LOCK 2 or THREE BOND 1324
Bosch pick-up screws	M 6x1	10	9	11	
Fluid recovery tank bracket nut	M 6x1	9	8	10	
Spark plug cap screws	M 6x1	10	9	11	LOCK 2 or THREE BOND 1324
Battery support stud	M 6x1	10	9	11	LOCK 2 or THREE BOND 1324
Battery support lower stud	M 6x1	10	9	11	LOCK 2 or THREE BOND 1324
Cylinder-side cover screws	M 6x1	10	9	11	LOCK 2 or THREE BOND 1324
Cylinder head cover studs	M 6x1	10	9	11	LOCK 5 or THREE BOND 1375B
Driven pulley flange screws	M 6x1	10	9	11	
Cylinder coolant inlet union screw	M 6x1	10	9	11	LOCK 2 or THREE BOND 1324
Gearshift pawl screw	M 6x1	10	8,5	9,5	LOCK 2 or THREE BOND 1324
Cylinder heads/cylinders coolant cover screws	M 6x1	6	6	8	
Inspection cover screws	M 6x1	4,5	4,5	6	
Cylinder head coolant outlet union screw	M 6x1	10	9	11	
Rocker shaft cover screws	M 6x1	10	9	11	
Intake/exhaust valves cover screws	M 6x1	10	9	11	
Intake manifold nuts	M 6x1	10	9	11	
Crankcase screws	M 6x1	9	8,5	9,5	
Clutch cover screws	M 6x1	9	8,5	9,5	
Generator cover screws	M 6x1	10	9	11	
Cylinder head cover nut	M 6x1	10	9	11	
Intake manifold plug	M 5x0.8	3	2	3	
Clutch spring screws	M 5x0.8	5	5	7	GREASE A

Part	Thread (mm)	Nm	Min.	Max.	Notes
Manifold nipple	M 5x0.8	3	2	3	LOCK 2 or THREE BOND 1324
Coolant hose clamps		2,5	2	3	
Cylinder head oil hose screws	M 5x0.8	5	5	7	LOCK 2 or THREE BOND 1324
General threaded fasteners	M 10x1.5	45	40	50	
General threaded fasteners	M 8x1.25	25	22	28	
General threaded fasteners	M 6x1	10	9	11	
General threaded fasteners	M 5x1	5	5	7	

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