

## Frame tightening torque values

Part	Thread (mm)	Nm $\pm$ 10% Tolerance	Notes
ACCESSORIES AND OUTFIT			
Footpeg — pannier low. bracket retainer	M6x1	10	GREASE B
Heat guard to pannier retainer	M6x1	8	
D-Air accelerometer bracket retainer	M5x0.8	3	
D-Air accelerometer bracket to fork bottom end retainer	M5x0.8	5	
STAND			
Stand sensor retaining screw	M6x1	5	pre-applied threadlocker
Stand retaining screw	M8x1.5	18	GREASE B
Central stand retaining screw	M18x1.5	50	pre-applied threadlocker
Spring retainer pin	M6x1	10	LOCK 2
CHAIN - FRONT SPROCKET			
Sprocket retaining nut	M25x1.5	186 $\pm$ 5%	GREASE B
Sprocket cover retaining screw	M6x1	6	LOCK 2
LIGHTS			
Headlight to front subframe retainer	M5x0.8	5	LOCK 2
Tail light retaining screw	M5x0.8	5	
Rear turn indicator retaining screw	M5x0.8	3	LOCK 2
Left rear-view mirror retaining screw	M10x1.25	40	
Right rear-view mirror retaining screw with left threading	M10x1.25	40	
Front turn indicators on hand guards	AF 3.5	0.45	
Number plate light retaining screw		1.5	
INSTRUMENT PANEL			
Retainer on instrument panel	Silent Block M5	Manual	
Instrument panel retaining nut on panel	M5	3	
FRONT FORK			
Steering head clamp retaining screws	M6x1	10*	GREASE B - Sequence: 1-2-1
Screw retaining steering bearing ring nut on head	M8x1.25	18*	GREASE B

Screw securing handlebar stud bolt on head	M10x1.25	45*	LOCK 2
Bearing preload ring nut fastener	M35x1	30*	GREASE B - Sequence: 1-2-1
Steering stop adjuster lock nut fastener	M8x1.25	18	
Bottom yoke terminal screws	M8x1.25	16*	GREASE B - Sequence: 1-2-1
Handlebar U-bolt retaining screw	M8x1.25	25*	GREASE B - Sequence: 1-2-3-4-3
Screw securing front brake hose guide to bottom yoke	M6x1	10	
SACHS bottom end clamp retaining screws		10*	Sequence: 1-2-1
Screws retaining splash guard to bottom yoke	M5x0.8 special screw	3	pre-applied threadlocker
Hands free control pin retaining screw	M6x1	6	LOCK 2
Bottom yoke to accelerometer fastener	M5x0.8	5	
Accelerometer to bracket fastener	M5x0.8	5	
Accelerometer bracket to left fork bottom end fastener	M5x0.8	5	
Kahaba fork bottom end clamp retainer	M8x1.25	19*	GREASE B
LH accelerometer bracket to left fork bottom end fastener	M5x0.8	5	
ELECTRICAL - ELECTRONIC SYSTEM			
Hands-Free retainer	M6x1	shear screw	LOCK 2
Hands-Free antenna retainer	AF4	1	
Electrical components support front retaining screws	M6x1	10	
Rear vibration damping pads to compartment retaining nuts	M6x1	5	
Battery bracket retaining screw	M5x0.8	5	
Front screw retaining starter contactor bracket to compartment	AF5	2	
Screws retaining regulator bracket to compartment	M6x1	5	
Screws securing regulator to bracket	M6x1	10	
Bosch inertial platform on bracket retainer	M6x1	6	
Bosch inertial platform on compartment retainer	AF4	1	
Cable ring to compartment retainer	AF4	1	
Fuse support bracket fastener	AF5	2	
Seat lock cover to compartment bracket retainer	AF4	1	

Seat lock to glove compartment retaining nut	M22x1.5	3	
Retainer securing battery cables and starter motor to starter contactor	M6x1	4	
Central vertical coil to bracket fastener	M6x1	9	
Central vertical coil to RH frame retainer	M5x0.8	5	
Horizontal coils to bracket fastener	M6x1	9	
Central horizontal coils to RH frame retainer	M5x0.8	5	
LH vertical coil to support bracket fastener	M5x0.8	5	
Temperature sensor to airbox cover fastener	AF3	0.5	
Temperature sensor to central conveyor fastener	AF3	0.9	
Map sensor to lower airbox support retainer	AF5	2	
Retainer securing horn to support bracket	M8x1.25	22	
Horn bracket to horizontal cylinder retainer	M6x1	10	
Power socket to glove compartment retainer	M18x1	3	
Rear brake STOP switch to support	M8x1	5	
Power socket to headlight fairing retainer	M18x1	3	
Starter motor cable retainer	M6x1	5	GREASE D
Screw securing ground cable to crankcase	M6x1	10	
Knock sensor retaining screw	M8x1	25	
BRAKE SYSTEM: ABS			
ABS control unit bracket retaining screws	M6x1	5	
Front calliper retainer	M10x1.25	45*	GREASE B
Rear calliper fastener	M8x1.25	25*	GREASE B
Brake master cylinder and stop sensor bracket to footpeg holder plate retainer	M6x1	10	
Fluid reservoir to bracket fastener	M5x0.8	2	
Rear brake fluid reservoir support to subframe fastener	M5x0.8	2	
Front brake master cylinder clamp	M6x1	10	
Retainer securing front brake fluid reservoir to hand guard	M5x0.8	2	
Rear brake hose guide to swinging arm fastener	M6x1	5	
Retainer securing ABS control unit to bracket	M6x1	8	
Front ABS sensor retainer	M6x1	10	
Rear ABS sensor retainer	M6x1	10	

Filler plug on ABS control unit retainer	M12x1	32*	
Two front calliper bleed screws, one front brake and one rear brake	M6x1	5.5	
Front break plug screw retainer	M4x0.7	0.7	
Filler plug on control unit retainer	M10x1	24.5*	
Filler plug to front RH calliper Version S	M10x1	24.5*	
RH front calliper bleed retainer, base version	M10x1	24.5*	
Front LH calliper to union retainer	M10x1	24.5*	
Filler plug to front LH calliper Version S	M10x1	24.5*	
REAR SWINGING ARM			
Upper sliding shoe and chain guard retaining screw	M5x0.8	5	LOCK 2
Lower chain sliding shoe retaining screw	M5x0.8	5	LOCK 2
Eccentric hub screw	M12x1.25	35*	GREASE B - Sequence: 1-2-1
Swingarm shaft screw	M15x1.25	72*	GREASE B
Rear brake calliper holder plate locking pin	M12x1.25	33*	LOCK 8
Accelerometer to brake line protection fastener	AF5	2.5	
HANDLEBAR - CLUTCH CONTROL			
Clutch master cylinder retaining screws	M6x1	10	Sequence: 1(UP)-2-1
Screws retaining hand guard to master cylinder	M6x1	10	
Screws retaining hand guard to clamp	M5x0.8	5	
Screws retaining clutch slave cylinder to casing	M6x1	10	Sequence: 1-2-3-1
Throttle control retaining screws	M5x0.8	4.5	
Clutch fluid reservoir retaining screw	M5x0.8	2	
Handlebar counterweight fastener	M6x1	10	
Right-hand heated handgrip fastener	AF4	2.8	GREASE B
Lower to upper hand guard fastener	AF 3.5	0.45	
Filler plug to clutch slave cylinder retainer	M10x1	24.5*	
Clutch bleed on master cylinder retainer	M6x1	5.5	
REAR SUSPENSION			
Rear shock absorber upper retaining screw	M10x1.25	50*	GREASE B
Rear shock absorber lower retaining screw	M10x1.5	42*	GREASE B

Screw securing Sachs preload adjuster to support	M6x1	10	
Angular sensor con-rod to swinging arm support sensor retainer	M6x1	5	
Angular sensor to sensor plate retainer	M5x0.8	3	
Angular sensor plate to engine support retainer	AF5	2	
FRONT MUDGUARD			
Screw securing mudguard to fork	M6x1	5	
Screw securing hose guide to mudguard	M5x0.8	3	
LIQUID COOLING			
Radiator upper retaining screw	M6x1	10	
Screw securing cowling bracket on radiator on threaded pin head	M6x1	6	
Radiator lower retaining screw	M6x1	8	
Expansion reservoir retaining screw	M5x0.8	5	
Tie on water pump hose fastener	Ties/clamps	3	
Expansion reservoir hose tie on radiator fastener	Ties/clamps	1	
Expansion reservoir hose tie on reservoir fastener	Ties/clamps	1	
Water hose clamp on radiator fastener	Ties/clamps	3	
Horizontal cylinder bleed tie	Ties/clamps	1	
Water bleeder cap on left casing	Ties/clamps	15	
FOOTPEGS AND LEVERS			
Brake lever and gearbox on frame plate retaining screws	M8x1.25	23	pre-applied threadlocker
Brake lever spacer retaining screw	M6x1	10	
Screw securing gearbox lever on shaft	M6x1	10	LOCK 1
Gearchange transmission rod joint retaining screws	M6x1	10	
Passenger footpeg holder retaining screws	M8x1.25	24	pre-applied threadlocker
Brake lever rear lug pivot screw	M6x1	5	LOCK 2
Brake lever adjuster screw nut	M6x1	5	
Brake master cylinder control rod nut	M6x1	7.5	
RH and LH footpeg holder plates to subframe retainer	M10x1.5	42	
LH footpeg holder plate to engine retainer	M10x1.5	42	
REAR MUDGUARD			
Screw securing mudguard to swinging arm right side	M5x0.8	5	

Screw securing mudguard to swinging arm+brake hose guide	M5x0.8	5	
Screw securing carbon mudguard to swinging arm+hose guide (PP)	M5x0.8	5	
Screw securing carbon mudguard to swinging arm right side (PP)	M5x0.8	5	
Screw securing splash guard to swinging arm	M6x1	10	pre-applied threadlocker
FRONT WHEEL			
Screw securing brake discs and phonic wheel to wheel rim	M8x1.25	30*	LOCK 2
Wheel shaft retaining nut	M25x1.25	63*	GREASE B underhead and Pin thread
Front wheel (angle) valve retaining nut	M8x1.25	9	LOCK 2
REAR WHEEL			
Screw securing phonic wheel to disc	M5x0.8	5	pre-applied threadlocker
Brake disc retaining screw	M8x1	27	pre-applied threadlocker
Right and left rear wheel retaining screw		230	
Silentblock retaining nut	M10x1	44	LOCK 2
Rear wheel valve retaining hexagon nut	M8x1.25	9	
FUEL TANK			
Fuel tank plug retaining screw	M5x0.8	4	
Front block retaining screws	M6x1	10	
RH and LH plates to tank support retainer	M6x1	5	
Fuel sensor ring nut retainer		8	
GAC retaining nuts	M5x0.8	6	
Tank support to engine special screw/nut retainer	M6x1	5	
Bracket to canister support retainer with blind nuts	M6x1	5	
Canister support to engine fastener	M5x0.8	5	
EXHAUST			
Right and left con-rod to pre-silencer fastener	M6x1	10	
Right and left con-rod to footpeg holder fastener	M6x1	10	
CO plug	G 1/8	25	
Pre-silencer to vertical pipe retainer		18	
Lambda sensor fastener	M18x1.5	24.5	

Motor support to subframe plate retainer	M5x0.8	5	
Retainer securing valve motor to support	AF4	2	
Bowden cable adjuster to exhaust retaining nut	M6x1	2.5	
Nut securing exhaust to vertical head	M6x1	10	
Nut securing exhaust to horizontal head	M6x1	10	
Heat guard nut tightening	M6x1	5	
Plastic heat guard to glove compartment retainer	M5x0.8	5	
Plastic heat guard to glove compartment retainer	AF4	2	
Silencer central cover to split tail pipe silencer retainer	M5x0.8	5	
Upper and lower cover to silencer fastener	M5x0.8	5	
Split tail pipe clamp retainer	M8x1.25	22	GREASE B
Secondary air system actuator to airbox fastener	AF5	2	
RH silencer con-rod to subframe plate retainer	M6x1	10	
SEAT			
High seat RH and LH aesthetic support retaining screws	M5x0.8	4	
High seat support retaining screws	M5x0.8	4	
Rider seat adjustment eccentric retaining screw	M5x0.8	2	
Passenger rider seat spacer retaining screw	M5x0.8	2	
Seat latch special retaining screw	M6x1	8	
FRAME			
Frame-plate adjuster retaining screws	M10x1.5	50*	GREASE B
Frame to engine front retaining screw with special nut	M12x1.5	60*	GREASE B
Frame to engine rear retaining screw with special nut	M2x1.5	60*	GREASE B
Adjuster retainer	M 20x1	80*	GREASE B
Rear subframe RH and LH to crankcase lower retainer	10x1.25	42*	LOCK 8
Rear junction plate retainer	M6x1	10	LOCK 2
Side pannier plate to rear subframe retainer	M6x1	10	
RH and LH side panels to RH and LH rear subframe special retaining screws	M5x0.8	5	
Subframe junction upper plate retainer	M8x1.25	25*	GREASE B
Glove compartment to rear subframe retainer	M8x1.25	18	
RH and LH retainer to rear subframe	M5x0.8	2	

Screw retaining front subframe to frame on steering tube	M8x1.25	25	
Adjuster pre-tightening	M20x1	0.6	
Swinging arm pivot plug retainer	M22x1.5	50	
RH and LH heat guard to rear subframe plate retainer	AF4	1	
OIL COOLER			
Fastener securing union to oil cooler	M14x1.5	23	LOCK 1
Pipe to radiator union retainer	M16x1.5	18*	Lubricate with engine oil
Radiator upper retainer	M6x1	5	
Fastener securing pipe plate on casing	M6x1	10	LOCK 2
Pressure switch fastener	M14x1.5	19*	Lubricate with engine oil
Temperature sensor fastener	M8x1.25	9	
AIR INLET/OIL BREATHER			
Throttle body assembly to airbox fastener	M5x0.8	5	
Blow-by to airbox retainer	AF5	3	
Wiring cover to airbox fastener	AF5	3	
Upper to lower airbox retainer	AF5	3	
Airbox filter cover retainer	AF5	3	
Blow-by pipe clamp		2	
Connector bracket fastener	AF5	2	
FUEL SYSTEM			
Retainer securing funnels to throttle bodies	M5x0.8	5	
Bosch injector cap retainer	M5x0.8	5	
Airbox to intake manifolds retaining clamps		2.5	
FAIRINGS			
Headlight fairing to headlight retainer	M5x0.8	3	
Central conveyor to cover retainer	AF5	2	
Conveyor lower panel to upper cover retainer	M5x0.8	2	
Tank cover assembly to upper cover retainer	M5x0.8	2	
Tank cover to RH and LH conveyor retainer	M5x0.8	2	
Tank cover assembly to tank retainer	M5x0.8	4	
RH and LH panels to rear subframes retainer	M5x0.8	5	

RH and LH cowling structure retainer	M5x0.8	2	
Right and left cowling to radiator bracket fasteners	M5x0.8	5	
Right and left cowling bracket to radiator fastener	M6x1	6	
Screw securing thermoformed windscreen to support	M5x0.8	3	
Windscreen support block retainer	AF 4.5	2	
Sump guard RH bracket to crankcase fastener	M6x1	10	
Sump guard LH bracket to crankcase fastener	M6x1	10	
LH and central RH sump guard retainer	M5x0.8	5	
Right and left sump guard to brackets fastener	M5x0.8	5	
Sump guard to footpeg holder plate RH and LH retainers	M8x1.25	20	
Sump guard on lower vibration damping pad fastener	M8x1.25	24	
Panel support to front subframe retainer	M6x1	3	
Front subframe to panel fixed support retainer	M6x1	3	
Rod to windscreen support fastener	M10x1	2	LOCK 2
Windscreen support release retainer	M5x0.8	3	LOCL 1

## Engine tightening torque values

Description	Thread length	Thread pitch	Torque (Nm)			Notes
Head						
VVT blanket plug		M22x1	20	18	22	
Fixed and mobile tensioner pin		M20x1	50	45	55	LOCK 2 or TB1324
OCV oil filter plug		M16x1	20	22.5	25	Motor Oil
Temperature sensor on water union		M12x1.5	20	23	26	LOCK 4 - Hold insert while tightening
Rocker arm shaft blanking plug		M12x1.5	15	14	16	LOCK 2
Timing variator securing screw		M11x1				
Snug torque			20 Nm			
Angular backlash manual check						
Tightening			90 Nm			
Angular backlash manual check						
Nut for head/cylinder stud bolt		M10x1.5				
Snug torque			20			GREASE C on nut underhead and on stud bolt thread
Preload torque			40	38	42	
Tightening torque			60	57	63	
Camshaft cap retaining screw		M8x1.25				Apply engine oil
Preload torque			10	9	11	
Tightening torque			22.5	21	25	
Knock sensor		M8x1.25	25	22.5	27.5	
Exhaust manifold stud bolt		M6x1	10	9	11	LOCK 5
OCV retainer		M6x1	13.5	12.5	14.5	
Horizontal head air breather union		M6x1	2.5	2	3	LOCK 2
Secondary air cover retaining screw		M5x0.8	6	5	7	
Head cover retaining special stud bolt screw		M6x1	10	9	11	
Head cover retaining stud bolt special nut		M6x1	10	9	11	
Head cover retaining screw		M6x1	10	9	11	

Pick-up sensors to head cover retaining screw	M6x1	8	7	9	
Screw securing water unions to head	M5x1	6	5	7	Pre-applied threadlocker on new part - LOCK 2 for reuse
MAP sensor special screw	M6x1	5	4	6	
Vertical head air breather screw with washer	M6x1	8	7	9	LOCK 2
Union for canister	M6x1	5	4	6	
Covers					
Water intake union	M30x1.5	25	23	27	LOCK 5
Water delivery union	M22x1.5	25	23	27	LOCK 5
Wet clutch fluid filler cap	M20x2.5	5	4.5	5.5	
Pick-up inspection screw	M12x1	15	13	17	LOCK 2
Water pump cover plug	M10x1	15	13.5	16.5	
Clutch recess blanking plug + washer	M10x1	11	10	12	
Water pump bearing retaining screw	M6x1	10	9	11	
Timing inspection cover screw	M6x1	5	4.5	5.5	
Alternator cover closing screw	M6x1	13	12.5	14.5	
Water pump cover closing screw	M6x1	13	12.5	14.5	
Water pump closing screw (blind hole)	M6x1	13	12.5	14.5	
Generator stator retaining screw	M6x1	10	9	11	LOCK 2
Clutch cover closing screw	M6x1	13	12.5	14.5	
Radial pick-up retaining screw	M6x1	10	9	11	
Soundproofing panel retaining screw	M6x1	12	10	14	
Casing					
Oil cartridge	M16x1.5	11	10	12	Engine oil on seal
Nipple for oil cartridge	M16x1.5	42	38	46	LOCK 2 or TB1324
Oil intake service hole plug	M16x1.5	24	21	27	LOCK 5
Oil drain plug with magnet	M12x1.5	20	18	22	TB1215
Clutch casing oil delivery channel blanking plug	M10x1.5	15	13	17	LOCK 5
Clutch oil channel tapered plug	M10x1	20	18	22	LOCK 5

Clutch casing inner oil channel grub screw	M10x1.5	15	13	17	LOCK 5
Roller bearing bush hole blanking tapered plug	M10x1.5	20	18	22	LOCK 2 or TB1324
Cylinder/head stud bolt	M10x1.5	30	28	32	LOCK 2 or TB1324
Casing jointing screw in cylinder area	M10x1.5				
Preload torque		19	17	21	GREASE B on thread
Tightening torque		25	22	28	
Casing central jointing screw + swinging arm shaft	M8x1.25				
Preload torque		19	17	21	GREASE B on thread
Tightening torque		25	22	28	
Gear stopper lever retaining screw	M8x1.25	18	16	20	LOCK 2 or TB1324
Special dowel for roller bearing bush	M8x1.25	16	15	17	LOCK 2 or TB1324
Blow-by valve retaining screw	M6x1	10	9	11	
Secondary bearing (chain side) stopper screw	M6x1	10	9	11	LOCK 2 or TB1324
Primary bearing (clutch side) stopper screw	M6x1	10	9	11	LOCK 2 or TB1324
Casing jointing screw in idle gear shaft area	M6x1	10	9	11	
Casing outer jointing screw	M6x1	10	9	11	
Mesh filter cover TSPEI - TEF screws	M6x1	9	8	10	
Radial pick-up inspection screw	M6x1	10	9	11	
Oil channel service hole screw on chain casing	M6x1	5	4	6	
Blow-by valve upper shell screw	M3x0.5	1.2	1	1.4	LOCK 5
Nut retaining oil adjustment screw to clutch	M8x1	10	9	11	
Oil squirter under piston retaining screw	M5x0.8	8	7	9	LOCK 2 or TB1324
Electric starter					
Starter motor inner retaining TCEI - TCEIF screw	M6x1	10	9	11	Pre-applied threadlocker on new part - LOCK2 for reuse
Starter motor outer retaining screw	M6x1	10	9	11	
					Pre-applied threadlocker on new

Starter motor rear retaining screw		M6x1	10	9	11	part - LOCK2 for reuse
Idle gear shaft retaining screw		M6x1	10	9	11	LOCK 2 or TB1324
Connecting rods						
Flywheel retaining nut		M28x1.5				
Tightening to torque			150 Nm			
Loosen the nut						LOCK 5
Tightening to torque			330 Nm			
Primary sprocket retaining ring nut		M24x1	190	171	209	GREASE B
Balancing plug		M12x1.25	28	26	30	
Connecting rod						
Apply grease to the screws						GREASE B
Tightening			35 Nm to 50 rpm			
Pause and loosening by 360°			2 sec.			
Snug torque			20 Nm to 30 rpm			
Snug torque			35 Nm to 10 rpm			
Tightening			65° ± 1° at 14 rpm			
Torque check			70 ± 113 Nm			
Gear selector control						
Gearbox drum positioning screw		M16x1.5	30	27	33	
Gearbox pawl screw		M8x1.25	36	34	38	LOCK 2 or TB1324
Pawl positioner retaining nut		M6x1	10	9	11	
Gearbox pawl screw		M6x1	16	15	17	LOCK 2 or TB1324
Gear sensor		M12x1.25	12	11	13	
Timing system						
Timing layshaft belt roller ring nut		M15x1	71	64	78	GREASE A
Camshaft gear nut		M14x1	55	50	60	GREASE A
Fixed and mobile tensioner retaining nut		M8x1.25	25	22	28	GREASE A
Plastic cover retaining screw		M6x1	10	9	11	Pre-applied threadlocker on new part - LOCK2 for reuse

Gearbox and clutch						
FCC clutch drum nut		M25x1.5	190	180	200	GREASE B
FCC wet clutch spring screw		M6x1	10	9	11	
Ignition						
Spark plug		M10x1	12	11	13	
Rotor to flywheel retaining screw		M5x0.8	13	11	15	Pre-applied threadlocker on new part - LOCK2 for reuse
Oil pump						
Oil pump retaining screw		M8x1.25	26	23	29	
Oil pump assembling screw		M6x1	10	9	11	
Oil pump retaining screw		M6x1	10	9	11	
Cylinders						
Water delivery union		M22x1.5	25	23	27	LOCK 5
Cooling circuit						
Water circuit ties			2.5	2	3	