

TIGHTENING TORQUES

1199 PANIGALE (all versions)

WARNING: Tightening torque values reported below are subject to change.

Application description	Thread pitch	Torque: [Nm]±10% *[Nm]±5%	Notes
ACCESSORY AND OUTFIT ASSEMBLY			
AF FL steel ring nut - Passenger seat strap fastener	M6x1	8	SHELL RETINAX HDX2 (Under head only)
SIDE STAND ASSEMBLY			
Finished side stand pivot - Side stand pivot pack fastener	M8x1,25	25	SHELL RETINAX HDX2
Finished centring rod pin - Rod reference dowel fastener for side stand spring	M6x1	5	LOCTITE 601
Pin for spring centring rod hinge - Pin fastening for spring centring rod hinge		Driving and Riveting	
Side stand magnet - Side stand magnet fastener		Attachment with silicone and Riveting	
CHAIN-SPROCKET ASSEMBLY			
TBEI screw M5x8 10.9 - Sprocket cover fastener	M5x0,8	4	LOCTITE 243
TCEIF screw M10x1.25x30 10.9 - Sprocket fastener	M10x1,25	55*	SHELL RETINAX HDX2
TCEIF screw M6x18 10.9 chain slider fastener	M6x1	13	
LIGHT ASSEMBLY			
AF screw 3.5x10 - Cover to conveyor fastener (only base version)	3,5	1	
AF screw 3.5x10 - Conveyor to headlight fastener (only S version)	3,5	1	
TBEIF screw M5x12 - Conveyor to headlight fastener (only base version)	M5x0,8	4	
TEF screw M5x25 8.8 - Headlight to support fastener	M5x0,8	5	SHELL RETINAX HDX2
AF screw 4.5x12 UNI 9707 - Headlight to tail guard fastener	M4,5 af	3	
TBEIF screw M5x16 10.9 - Special fastener to subframe	M5x0,8	6	
TCEIF screw M5x12 8.8 - Turn indicator to number plate holder fastener	M5x0,8	3	
INSTRUMENT ASSEMBLY			
AB FL M5 nut serpress - Silent block to headlight support fastener	M5x0,8	3	

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FRONT FORK ASSEMBLY			
Steering shaft to bottom yoke fastener	M37x1	40	LOCTITE 128455
TCEIF screw M6x22 8.8 - Base clamps on forks fastener	M6x1	8*	SHELL RETINAX HDX2 (Seq: 1-2-3 / 2-1-3)
Nut M6 UNI 5588 - Steering limit stop screw fastener	M6x1	10	LOCTITE 243
TCEI special screw M5x9 collar 1.8x8.5-Bottom yoke to splashguard fastener	M5x0,8	5	
TCEI screw M6x25 8.8 - Marzocchi fork feet clamps to clevis pin fastener (only STD version)	M6x1	6*	SHELL RETINAX HDX2 (Seq: EST-INT-EST)
Ohlins fork feet clamps to clevis pin fastener (only S version)	M8x1,25	19*	SHELL RETINAX HDX2
TCEIF screw M8x25 8.8 - Steering head clamps to fork fastener	M8x1,25	22*	SHELL RETINAX HDX2
TCEIF screw M8x25 8.8 - Steering head clamps to steering shaft fastener	M8x1,25	22*	SHELL RETINAX HDX2
Finished steering bearing ring nut - Steering shaft pack fastener	M35x1	25*	AGIP PV2 (White Grease)
Screw - Eyelet to Ohlins steering damper fastener (only S version)	M8x1,25	10	LOCTITE 601
TBEIF screw M6x30 10.9 - Steering damper to frame fastener	M6x1	10	LOCTITE 222
TCEIF screw M6x18 8.8 - Steering damper to handlebars fastener	M6x1	10	LOCTITE 222
ELECTR.-ELECTRONIC ASSEMBLY			
TCEIF screw M5x22 8.8 - Electric system supports to frame fastener	M5x0,8	5	LOCTITE 222
TEF screw M6x22 10.9 - Battery support to engine fastener	M6x1	10	
TCEI screw M5x9 collar 8.5 - Cover to battery support fastener	M5x0,8	5	
AF screw 5x16 - Fuse cable protection to battery support fastener	M5 af	3	
TEIC screw - Cable eyelet to battery fastener	-	-	
TCEIF screw M6x10 8.8 - Cable eyelet to solenoid starter fastener	M6x1	4	
Nut - Cable eyelet to starter motor fastener	M5x0,8	3	AGIP PV2 (White Grease)
TBEIF M5x14 black large head screw - Wiring bracket to head fastener	M5x0,8	4	LOCTITE 222
M5 self-locking nut serpress - Solenoid starter support to generator cover fastener	M5x0,8	6	
TEF M6x25 screw - Voltage rectifier fastener	M6x1	8	
TBEI screw M5x10 8.8 - ECU bracket fastener	M5x0,8	3	

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TEF M6x25 screw - Coil fastener	M6x1	8	
TCEIF screw M6x25 - Map sensor fastener	M6x1	2	
TCIC screw - RbW throttle shell fastener	M5x0,8	1,5	
TCEI screw M4 - RH switch shell fastener	M4x0,7	1,3	
TCEI screw M4 - LH switch shell fastener	M4x0,7	1,3	
TCEI screw M4x12 - Side stand switch fastener	M4x0,5	3	LOCTITE 243
Key switch special retaining screw - Ignition switch fastener	M6x1	10	PRE-APPLIED THREADLOCKER
TEF screw M6x16 8.8 - Speed sensor fastener	M6x1	10	
Lambda sensor fastener	M12x1,25	25	PRE-APPLIED GREASE
AF screws M3x14 - Number plate light fastener	3	0,7	
TBEI screw M5x14 ISO 7380 - Air temperature sensor fastener	M5x0,8	3	
Rear stop light switch fastener	M8x1	5	
TEF screw M8x12 8.8 with threadlocker - Horn fastener	M8x1,25	18	PRE-APPLIED THREADLOCKER
AF screw 5x16 - Exhaust valve motor fastener	M5 af	4	
AF screw 5x16 - Motor cover to puller fastener	M5 af	4	
TBEIF screw M5x25 - Actuator to air-box bottom end fastener	M5x0,8	4	
AF screw 3.5x12 - Secondary air system hose support clamp fastener	M3,5 af	1	
Screw - M10x1 union to clutch cover fastener	M10x1	14	SHELL RETINAX HDX2
Pressure switch to remote pipe fastener	M10x1	14	SHELL RETINAX HDX2
TBEI screw M4x8 - Wiring clip to tank-seat LH cover fastener	M4x0,5	2	
TBEI screw M4x8 – Fixing GPS on Instrument panel cover	M4x0,7	1,5	
FRONT BRAKE ASSEMBLY			
TCEI screw M6x25 - Front brake master cylinder to handlebars fastener	M6x1	10	(Seq: 1-(UP)-2-1)
TCEIR screw M6x10 - Brake oil reservoir plate fastener	M6x1	10	
FI M5 self-locking nut h6 - Brake oil reservoir to plate fastener	M5x0,8	5	
Screw for hydr. union M10x1 - Brake hoses to brake master cylinder fastener	M10x1	23	

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Hydr. union screw - Brake hoses on RH calliper fastener	M10x1	23	
Hydr. union screw - Brake hoses on LH calliper fastener	M10x1	23	
Bleed M6 black - Brake system bleed fastener	M6x1		
TCEI punching screw M10x1.25x60 - Callipers to fork axle lug fastener	M10x1,25	45*	SHELL RETINAX HDX2-WITH PRE-TIGHTENING
TCEI screw M5x10 coll. 8x11.5 - Front brake hose guide to bottom yoke fastener	M5x0,8	5	
REAR SWINGING ARM ASSEMBLY			
RH swingarm shaft to engine block fastener	M20x1,5	100*	SHELL RETINAX HDX2
LH swingarm shaft to engine block fastener	M20x1,5	100*	SHELL RETINAX HDX2
TBEI screw M6x15 coll. 10x3 - Chain sliding shoes fastener	M6x1	8	PRE-APPLIED THREADLOCKER
TBEI screw M6x15 coll. 10x3 - Lower chain splashguard fastener	M6x1	8	PRE-APPLIED THREADLOCKER
TCEI screw M5x9 coll. 4 black - Upper chain splashguard fastener	M5x0,8	5	PRE-APPLIED THREADLOCKER
TCEI screw M12x1.25x40 - Swinging arm clamp on eccentric fastener	M12x1,25	25*	SHELL RETINAX HDX2 (Seq: 1-2-1)
Calliper plate holder reference peg fastener	M12x1,25	33*	LOCTITE 601
REAR BRAKE ASSEMBLY			
Screw M10x1 union fastener brake hose on pump/caliper	M10x1	23	
TCEIF screw M6x16 8.8 - Rear brake oil reservoir fastener	M6x1	2	
TCEIF screw M5x20 8.8 - Front brake master cylinder support to footpeg holder fastener	M5x0,8	6	WITH PRE-TIGHTENING
TCEIF screw M6x16 8.8 - Rear brake master cylinder support to footpeg holder fastener	M6x1	10	LOCTITE 222
TCEIF screw M6x16 8.8 - Rear brake master cylinder to support fastener	M6x1	8	
TCEIF screw M8x20 8.8 - Rear brake calliper to plate fastener	M8x1,25	25*	SHELL RETINAX HDX2
TCEI screw M5x10.5 COL.8.5x6 - Rear brake hose guide to swinging arm fastener	M5x0,8	3,5	LOCTITE 243
M5x7 special nut, coll. D8 h10.5 - Brake hose cable ring to clutch cover fastener	M5x0,8	5	
TBEI screw M6x16 retaining rear brake line tie	M6x1	8	

Application description	Thread pitch	Torque: [Nm]±10% *[Nm]±5%	Notes
GR. ABS			
Special screw with collar M6-M5 - ABS bracket to horizontal head fastener	M6x1	10	
Nut retaining ABS control unit rubber block to mounting bracket	M6x1	8	
M12 union fastening ABS brake lines to control unit	M12x1	23	
M10x1 union fastening ABS brake lines to control unit	M10x1	23	
TCEI special screw M5x9 col. 4x8.5 fastening ABS compartment cover at the front	M5x0,8	3	
Special nut M5x7 col D8 h10.5 fastening ABS compartment cover at the rear	M5x0,8	5	
Black special screw M5x10col. 8x11.5 fastening front and rear ABS line grommets to frame	M6x1	5	LOCTITE 243
NUMBER PLATE HOLDER ASSEMBLY			
AF screws 5x16 - Lower to upper number plate holder fastener	M5 af	5	
TCEIF screws M5x22 8.8 - Number plate holder to subframe fastener	M5x0,8	6	
TBEIF screw M6x14 10.9 - Number plate holder plate to number plate holder fastener	M6x1	5	
AF nut M4 UNI 7473 - Cat's eye to number plate holder plate fastener	M4x0,5	2	
HANDLEBAR - CLUTCH CONTROL ASSEMBLY			
TCEI screw M6x25 - Clutch master cylinder to handlebars fastener	M6x1	10	(Seq: 1-(UP)-2-1)
TCEIR screw M6x10 DIN 7984 8.8 - Clutch fluid reservoir plate fastener	M6x1	-	
FL.M5 self-locking nut H.6 - Brake oil reservoir to plate fastener	M5x0,8	-	
Special screw M10x1 union fastener	M10x1	-	
Bleed M6 black - Brake system bleed fastener	M6x1	-	
Hydraulic union screw - M10x1 union fastener	M10x1	-	
TCEI screw M6x30 8.8 - Clutch piston to engine block fastener	M6x1	10	(Seq: 1-2-3-1)
TCEIF screw M8x22 8.8 - Handlebars clamp to forks fastener	M8x1,25	22*	SHELL RETINAX HDX2

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TCEIR screw M6x25 DIN6912 8.8 - Handlebars clamp to tube fastener	M6x1	8	SHELL RETINAX HDX2 (Seq: EST-INT-EST)
Counterweight to handlebars fastener	M18x1,5	25	LOCTITE 222
REAR SUSPENSION ASSEMBLY			
TCEIF screw M8x20 8.8 - Tripod to engine block	M8x1,25	25*	SHELL RETINAX HDX2
M14x1.5 rocker arm finished screw - Half rocker arms to LH tripod fastener	M14x1,5	60*	SHELL RETINAX HDX2
TEF mach. special screw M6x25 col 6.5x13 - Suspension linkage clamp fastener	M6x1	10*	SHELL RETINAX HDX2
Suspension special retaining screw - Suspension linkage to swinging arm fastener	M10x1,25	45*	SHELL RETINAX HDX2
AF FL steel ring nut M10x1.25 - Suspension linkage to rocker arm fastener	M10x1,25	45*	SHELL RETINAX HDX2
TCEI screw M10x45 10.9 - Shock absorber to engine block fastener	M10x1,5	45*	SHELL RETINAX HDX2
TCEIF screw M10x55 8.8 - Shock absorber to rocker arm fastener	M10x1,5	45*	SHELL RETINAX HDX2
TBEI special screw M5x12 - Shock absorber spring protection fastener	M5x0,8	6	
Rear suspension linkage center distance adjustment	M14x1	-	AGIP PV2 (White Grease)
FRONT MUDGUARD ASSEMBLY			
AF screw 3.5x10 - Mudguard clamp fastener	M3,5 af	0,4	
TBEI M6x14 large head screw - Mudguard to bracket fastener	M6x1	10	
WATER RADIATOR ASSEMBLY			
TCEIF screw M5x22 - Radiator assembly to frame fastener	M5x0,8	6	SHELL RETINAX HDX2
TBEIF M5x14 black large head screw - Radiator assembly to horizontal head fastener	M5x0,8	4	LOCTITE 222
TBEI black special screw M5x12 - Radiator assembly cover fastener	M5x0,8	2,5	
TCEIF screw M5x14 8.8 - Upper radiator to radiator assembly fastener	M5x0,8	5	SHELL RETINAX HDX2
M10x1 union - Exchanger breather pipe eyelet fastener	M10x1	14	
AF screw 5x16 - Solenoid valve to front puller fastener	M5 af	3	
AF screw 5x16 - Rear puller to front puller fastener	M5 af	4	
TCEIF screw M5x22 - Puller to radiator assembly fastener	M5x0,8	5	SHELL RETINAX HDX2

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TCEI black screw M5x9 collar 4 Puller to sump fastener	M5x0,8	4	PRE-APPLIED THREADLOCKER
Clamp - Water pipes to radiators and distributor fastener	-	2,5	
FOOTPEG, LEVER AND LINKAGE ASSEMBLY			
TCEIF screw M8x20 8.8 - LH tripod to engine block fastener	M8x1,25	25*	SHELL RETINAX HDX2
TCEIF screw M8x35 8.8 - LH tripod and side stand to engine block fastener	M8x1,25	25*	SHELL RETINAX HDX2
TCEIF screw M8x22 8.8 - LH tripod clamp to swingarm shaft fastener	M8x1,25	8*	SHELL RETINAX HDX2
TCEIF screw M8x22 8.8 - LH footpeg support plate to tripod fastener	M8x1,25	25*	SHELL RETINAX HDX2
TCEIF screw M5x12 8.8 - LH heel guard to footpeg holder plate fastener	M5x0,8	6	
Gearchange lever pin - Gearbox pedal to footpeg holder plate fastener	M8x1,25	25	AGIP PV2 (White Grease) on collar
Nut M6 H4 - Ball joint to rod fastener	M6x1	5	LOCTITE 222
Quick-shift actuator to rod fastener	M8x1,25	15	LOCTITE 222
TBEI screw M6x18 - Complete rod to gearbox pedal fastener	M6x1	10	LOCTITE 222
TCEIF screw M6x20 8.8 - Complete rod to gear change lever fastener	M6x1	10	
TCEIF screw M6x20 8.8 - Gear change lever clamp to selector shaft fastener	M6x1	10	
TCEIF screw M8x20 8.8 - RH tripod to engine block fastener	M8x1,25	25*	
TCEIF screw M8x22 8.8 - RH tripod clamp to swingarm shaft fastener	M8x1,25	8*	SHELL RETINAX HDX2
TCEIF screw M8x22 8.8 - RH footpeg support plate to tripod fastener	M8x1,25	25*	SHELL RETINAX HDX2
TCEIF screw M5x12 8.8 - RH heel guard rear fastener	M5x0,8	6	LOCTITE 243
TCEIF screw M5x20 8.8 - RH heel guard/pump support front fastener	M5x0,8	6	LOCTITE 243
Gearchange lever pin - Rear brake lever to footpeg holder plate fastener	M8x1,25	25	AGIP PV2 (White Grease) on collar
Nut M6 UNI5588 - Rear brake lever adjusting screw fastener	M6x1	8	
Nut M6 UNI5588 - Fork to rear brake linkage fastener	M6x1	7,5	
Rear brake fork pin - Rear brake linkage to brake lever fastener	M6x1	10	LOCTITE 243
TCEIF screw M6x16 8.8 - Passenger footpeg holder plate fastener	M6x1	10	
TCEIF screw M8x30 8.8 - Footpeg holder plates to subframe front fastener	M8x1,25	25	

Application description	Thread pitch	Torque: [Nm]±10% *[Nm]±5%	Notes
TCEIF screw M8x20 8.8 - Footpeg holder plates to subframe rear fastener	M8x1,25	25	
REAR MUDGUARD ASSEMBLY			
TCEI screw M5x8 collar 4 black - Rear mudguard to swinging arm fastener	M5x0,8	5	PRE-APPLIED THREADLOCKER
FRONT WHEEL ASSEMBLY			
Torx screw M8x20 - Brake discs and phonic wheel to rim fastener	M8x1,25	30*	
Front wheel nut - Front wheel pack to fork LH leg fastener	M25x1,25	63*	SHELL RETINAX HDX2 (on thread and under head)
REAR WHEEL ASSEMBLY			
Driving pin special screw - Driving pin fastener	M8x1	25*	DRILOC 218
TBEI screw M5x8 A2 FF - Rear phonic wheel fastener	M5x0,8	5*	LOCTITE 243
M10x1 polygonal flanged nut - Rear sprocket cush drive damper fastener	M10x1	44	LOCTITE 243
M48 rear wheel nut - Rear wheel nut (sprocket side)	M48x1,5	230*	SHELL RETINAX HDX2 (on thread and under head)
M48 rear wheel nut - Rear wheel nut (wheel side)	M48x1,5	230*	SHELL RETINAX HDX2 (on thread and under head)
Rear wheel eccentric hub assembly	-		SHELL RETINAX LX2
FUEL TANK ASSEMBLY			
Al tank rear pin fastener	M8x1,25	18	
Male quick-coupling fastener CPC PLCD240-04V	1/4 NPT	5,5*	LOCTITE 577
TCEIF screw M6x35 8.8 - Tank front hinge spacer fastener	M6x1	10	SHELL RETINAX HDX2
TCEIF screw M5x12 8.8 - Tank plug fastener	M5x0,8	4	
FI nut M5 - Tank support upper bracket front fastener	M5x0,8	6	
TBEIF screw M6x30 10.9 - Tank support upper bracket rear fastener	M6x1	10	SHELL RETINAX HDX2
EXHAUST ASSEMBLY			
Copper M6 flanged self-locking nut - Manifold to head fastener	M6x1	10	
TEF screw M5x10 - Heat guard to horizontal manifold fastener	M5x0,8	5	
CO plug fastener	G 1/8" A	25	COPPER GREASE

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Copper M6 flanged self-locking nut - Manifold to head fastener	M6x1	10	
Co plug fastener	G 1/8" A	25	COPPER GREASE
TCEIF screw M6x14 8.8 - Exhaust silencer to central body fastener	M6x1	10	
DEF nut M6 - Front bracket to silencer fastener	M6x1	10	
TBEIF screw M8x30 - Front bracket to engine block fastener	M8x1,25	25	SHELL RETINAX HDX2
TEF screw M6x20 - Rear bracket to silencer fastener	M6x1	10	
TBEIF screw M8x30 - Rear bracket to engine block fastener	M8x1,25	25	SHELL RETINAX HDX2
TBEI screw M5x10 8.8 - Heat guard to vertical manifold fastener	M5x0,8	4	
M5 self-locking nut serpress - Bowden cable heat guard to sump screws fastener	M5x0,8	6	
TCEIF screw M5x16 8.8 fastening silencer bracket to footpeg bracket tailpipe (only JAP version)	M5x0,8	6	LOCTITE 243
TCEIF screw M6x22 8.8 fastening silencer bracket to tailpipe (only JAP version)	M6x1	15	
Self-tapping nut steel ring M8-8 fastening tailpipe bracket spring unit to tailpipe silencer bracket (only JAP version)	M8x1,25	15	
TBEI screw M5x10 8.8 fastening heat shield to carbon tailpipe (only JAP version)	M5x0,8	4	
SEAT ASSEMBLY			
TCEI special screw M5x18 black - Seat spacer to tank bracket fastener	M5x0,8	5	
FRAME ASSEMBLY			
M10x1 polygonal flanged nut - Frame to engine head fastener	M10x1	45*	SHELL RETINAX HDX2
Cap for ABS on frame fasteners (no ABS version)	M5x0,8	5	LOCTITE 243
TCEIF screw M6x16 8.8 - Switch bracket to frame lateral fasteners	M6x1	10	SHELL RETINAX HDX2
TBEIF screw M6x12 10.9 - Switch bracket to frame central fastener	M6x1	10	SHELL RETINAX HDX2
Subframe-frame finished retaining screw - Rear subframe to frame fastener	M8x1,25	28*	SHELL RETINAX HDX2

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Subframe-engine finished retaining screw - Rear subframe to vertical head fastener	M8x1,25	22*	SHELL RETINAX HDX2
AF screw 4x12 - Clip fastener for secondary air system tube	M4	2	
M8 th. finished screws with collar - Tail guard compartment to rear subframe fastener	M8x1,25	18	
M6 special finished screw - tank support - Tank support lower bracket to rear subframe fastener	M6x1	10	SHELL RETINAX HDX2
Seat lock retaining nut - Seat lock nipple to side body panel fastener	M22x1,5	3	
TBEIF screw M6x10 - Seat lock latch to tail guard compartment fastener	M6x1	8	
OIL BREATHE AIR INTAKE UNIT			
TCEI M6 frame special finished front screw - Front subframe to frame lower fastener	M6x1	10	SHELL RETINAX HDX2
TEF screw M6x20 8.8 - Front subframe to frame upper	M6x1	10	SHELL RETINAX HDX2
TBEIF screw M5x10 10.9 - Instrument panel cover to front subframe fastener	M5x0,8	3	LOCTITE 222
SUPPLY ASSEMBLY			
TCEI screw M6x18 8.8 - Throttle body to intake manifold fastener	M6x1	10	LOCTITE 222
FI nut M5 - Intake funnels to throttle body fastener	M5x0,8	6	
TEF screw M5x14 8.8 - Injector caps to throttle body/injector fastener	M5x0,8	6	
TBEI screw M5x18 - GAC to fuel tank fastener	M5x0,8	5	SHELL RETINAX HDX2
TCEI special screw M5x9 coll. 4x8.5 fastening canister bracket to ABS special screws (Only USA-CAL version)	M5x0,8	6	
FAIRING ASSEMBLY			
TEF screw M5x25 8.8 - Headlight fairing to subframe fastener	M5x0,8	5	
Windscreen Tb special retaining screw - Windscreen to headlight fairing fastener	M4x0,5	0,2	
TCEI special screw M5x8 coll. 8x15 - Headlight fairing splashguard to headlight fastener	M5x0,8	5	
TBEI black special screw M5x12 - LH upper side fairing to headlight fairing fastener	M5x0,8	2,5	

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TBEI black special screw M5x12 - LH upper side fairing to electric system support fastener	M5x0,8	2,5	
TBEI black special screw M5x12 - LH upper side fairing to lower side fairing retainer	M5x0,8	2,5	
TCEI black special screw M5x9 coll. 4x8.5 - LH lower side fairing to LH tripod fastener	M5x0,8	5	
TCEI black special screw M5x9 coll. 4x8.5 - LH lower side fairing to rear puller fastener	M5x0,8	2,5	
TBEI black special screw M5x12 - RH upper side fairing to headlight fairing fastener	M5x0,8	2,5	
TBEI black special screw M5x12 - RH upper side fairing to electric system support fastener	M5x0,8	2,5	
TBEI black special screw M5x12 - RH upper side fairing to lower side fairing retainer	M5x0,8	2,5	
TCEI black special screw M5x9 coll. 4x8.5 - RH lower side fairing to tripod fastener	M5x0,8	5	
TCEI black special screw M5x9 coll. 4x8.5 - RH lower side fairing to rear puller fastener	M5x0,8	2,5	
TCEI special screw M5x8.5 coll. 6 - Lower side fairing to radiator assembly fastener	M5x0,8	2,5	
TBEI black special screw M5x12 - Side fairing to radiator assembly fastener	M5x0,8	2,5	
TBEI black special screw M5x12 - LH side body panel to subframe fastener	M5x0,8	2,5	
TCEIR screw M5x14 UNI 9327 8.8 black - LH side body panel to tail guard compartment fastener	M5x0,8	2,5	
TBEI black special screw M5x12 - RH side body panel to subframe fastener	M5x0,8	2,5	
TCEIR screw M5x14 UNI9327 8.8 black - RH side body panel to tail guard compartment fastener	M5x0,8	2,5	
TCEIR screw M5x14 UNI 9327 8.8 black - Tail guard body to tail guard compartment fastener	M5x0,8	2,5	
TCEIR screw M5x14 UNI 9327 8.8 black - Tail guard body to tail guard side body panels fastener	M5x0,8	2,5	
Switch cover special retaining nut - Ignition switch cover to bracket fastener	M5x0,8	8	
TBEI black special screw M5x12 fastening ignition switch cover to scoop covers	M5x0,8	2,5	
TEF screw M5x8 8.8 fastening sound-deadening unit (Japan) to engine (only JAP version)	M5x0,8	5	

Application description	Thread length	Thread pitch	Torque [Nm]			Notes
			Rated	Min	Max	
GEAR SHIFT						
Gear stopper lever retaining screw	16	M6x1	10	9	11	Loctite 243 or TB 1324
Gearbox drum flange screw	20	M8x1	25	23	27	Loctite 243 or TB 1324
GEARBOX AND CLUTCH						
FCC clutch spring flange screw	45	M6x1	9	8	10	
Clutch drum nut		M25x1,5	190	180	200	Engine oil Shell Advance Ultra 4
TIMING SYSTEM						
Blow-by impeller retaining screw	16	M5x0,8	8	7	9	
Decompressor system mass M5 retaining nut		M5x0,8	8	7	9	
Driving pin support retaining screw	20	M6x1	13	12	14	
Camshaft driving gear retaining screw	16	M6x1	19	18	20	Loctite 243 or TB 1324
Timing sliding shoe retaining pin	16	M8x1,25	20	18	22	
Timing tensioner		M20x1,5	25	23	27	
IGNIT.						
Rotor to flywheel retaining screw	18	M6x1	13	11	15	Loctite 128455 or TB 1375B
NGK MAR9A-J spark plug		M10x1	12	11	13	
Flywheel retaining screw	41	M16x1	150	140	160	Apply Shell Retinax HDX2 grease under screw head
						Apply engine oil Shell Advance Ultra 4 on the thread
CONNECTING ROD						
Crankshaft dowel	8	M8x1,25	13	11	15	Loctite 128455 or TB 1375B
Con-rod screw (steel con-rods)	37,5	MJ11x1,25	1) remove the screws and apply Pankl PLB 05 grease on thread and under head			
			2) tighten the screws to 20 [Nm]			
			3) tighten the screws to 40 [Nm]			
			4) Rotate by 55° ±1° to tighten			
			5) Torque check: 120 - 165 [Nm]			

Application description	Thread length	Thread pitch	Torque [Nm]			Notes
			Rated	Min	Max	
Primary drive sprocket/gearwheel retaining screw	34,5	M18x1,5	150	140	160	Apply engine oil Shell Advance Ultra 4 on the thread
Horizontal timing sprocket retaining ring nut		M35x1,5	270	260	280	Apply STABURAGS NBU 30 PTM grease under head, Loctite 243 on thread. Warm up till 200°C and install gear.
COVERS						
Clutch cover closing screw	25	M6x1	13	12	14	
Clutch cover closing screw	30	M6x1	13	12	14	
Cover retaining special screw	25	M6x1	13	12	14	
Clutch protection soundproofing cov. retaining screw	10	M6x1	10	9	11	Loctite 243 or TB 1324
Clutch protection cover closing screw	25	M6x1	10	9	11	
Hydraulic union screw on pressure sensor pipe		M10	14	12	16	
Oil pressure sensor		M10	14	12	16	
Oil filler cap		M20x2,5	5	4,5	5,5	
Stator retaining screw	25	M6x1	10	9	11	Loctite 243 or TB 1324
Pick-up retaining screw	18	M6x1	10	9	11	
Generator cover closing screw	25	M6x1	13	12	14	
Generator cover closing screw	30	M6x1	13	12	14	
Cover retaining special screw	25	M6x1	13	12	14	
Pick-up sight glass		M12x1,25	15	13	17	
Engine timing sight glass		M27x1,5	27	24	30	
Gear shift cover closing screw	20	M6x1	13	12	14	
Oil sump closing screw	25	M6x1	13	12	14	
Cover retaining special screw	25	M6x1	13	12	14	
Oil filler cap with magnet		M14x1,5	14	13	15	TB 1215

Application description	Thread length	Thread pitch	Torque [Nm]			Notes
			Rated	Min	Max	
CASING						
Piston oil squirters and secondary shaft oil tube retaining screw	10	M5x0,8	8	7	9	Loctite 243 or TB 1324
Casing closing screw	75	M6x1	13	12	14	
Exchanger casing closing special screw	75	M6x1	13	12	14	Loctite 243 or TB 1324
Casing closing screw	45	M6x1	13	12	14	
Needle roller bearing retaining screw	10	M6x1	10	9	11	Loctite 243 or TB 1324
Casing closing screw	50	M8x1,25	25	23	27	Apply Shell Retinax HDX2 grease on thread
Clutch oil adjustment screw locking nut		M8x1	15	13	17	
Intake side cylinder/head stud bolt		M8x1,25	16	14	18	Loctite 128455 or TB 1375B
LH thread pin on oil pump driving gear	9	M8x1	16	14	18	Loctite 128455 or TB 1375B
Oil circuit closing tapered plug		M8x1	13	12	14	
Holed tapered plug	8	M8x1	10	9	11	
Cylinder/head stud bolt		M10x1,25	25	23	27	Loctite 128455 or TB 1375B
Oil delivery duct closing tapered plug		M12x1,5	20	18	22	
Gear sensor	15	M12x1,25	12	11	13	
Crankshaft locking hole plug at T.D.C.		M12x1,25	15	14	16	
Blow-by oil return pipe		M12x1,5	8	7	9	
Piston pin sight glass		M30x2	45	40	50	Apply engine oil Shell Advance Ultra 4 on the thread
ELECTR. START.						
Starter motor retaining screw	30	M6x1	13	12	14	Loctite 243 or TB 1324
COOLING CIRCUIT						
Water distributor halves retaining screw	12	M5x0,8	4	3	5	Loctite 243 or TB 1324
Distributor to casing retaining screw	16	M5x0,8	6	5	7	
Water pump cover retaining screw	20	M6x1	13	12	14	

Application description	Thread length	Thread pitch	Torque [Nm]			Notes
			Rated	Min	Max	
OIL PUMP						
Oil intake filter closing AF screw	16	3x1,12	1,5	1,3	1,7	
Oil pump cover retaining screw	20	M6x1	10	9	11	
Oil filter cover retaining screw	20	M6x1	13	12	14	Loctite 243 or TB 1324
Oil intake strainer retaining screw	20	M6x1	10	9	11	Loctite 243 or TB 1324
Exchanger (on crankshaft) retaining screw	20	M6x1	13	12	14	Loctite 243 or TB 1324
Exchanger (on crankshaft) retaining screw	16	M6x1	13	12	14	Loctite 243 or TB 1324
Exchanger (on stud bolt) retaining screw	16	M6x1	13	12	14	
HEADS						
Banjo union on oil cooler		M10x1	14	12	16	
Secondary air system cover retaining screw	16	M5x0,8	6	5	7	
Blow-by union retaining screw	16	M5x0,8	6	5	7	
Closing rocker arm shaft stop plate retaining screw	10	M6x1	10	9	11	
Oil circuit closing screw	10	M6x1	8	7	9	
Screw for vacuumeter	8	M6x1	5	4	6	For Europe engines-Loctite 243 or TB 1324
MAP sensor pipe union		M6x1	5	4	6	Loctite 243 or TB 1324
Vertical head heat guard retaining and exhaust stud bolt	16	M6x1	10	9	11	Loctite 128455 or TB 1375B
Head cover retaining screw	33	M6x1	10	9	11	
Horizontal head cover special retaining screw	33	M6x1	10	9	11	Loctite 243 or TB 1324
Intake manifold retaining screw	16	M6x1	10	9	11	
Timing side head retaining screw	35	M6x1	13	12	14	
Camshaft cap retaining screw	32	M8x1,25	Apply Shell Advance Ultra 4 oil on thread and under screw head			
			10	9	11	Pre-load torque
			22,5	21	25	Tightening torque
Exhaust side cylinder/head stud bolt		M8x1,25	16	14	18	Loctite 128455 or TB 1375B

Application description	Thread length	Thread pitch	Torque [Nm]			Notes
			Rated	Min	Max	
Exhaust and intake side cylinder/head stud bolt nut		M8x1	Appl. Shell Retinax LX2 grease under nut head and on stud bolt thread			
			28,5	27	30	Tightening torque
Nut for cylinder/head stud bolt		M10x1	Appl. Shell Retinax LX2 grease under nut head and on stud bolt thread			
			20			Snug torque
			40	38	42	Pre-load torque
			60	57	63	Tightening torque
Frame/head stud bolt		M10x1,5	30	28	32	Loctite 128455 or TB 1375B
Core gas outlet hole closing tapered plug		M12x1,5	20	18	22	
Rocker arm shaft cap		M12x1,25	15	14	16	
Fixed slider pin cap		M15x1	17	16	18	Loctite 243 or TB 1324
Water outlet union	7	M24x1,5	25	23	27	

SCREW ACRONYMS:

AF	Self-tapping
AF-TBCE	Self-tapping - Hexalobular Socket Round Head Screw
AF-TBCEF	Self-tapping - Hexalobular Socket Round Flanged Head Screw
AF-TBIC	Self-tapping - Cross round head screw
AF-TBICF	Self-tapping - Cross round flanged head screw
EI	Hex. socket screw
SP-DF	Special double threading
SP-EI	Special hex. socket screw
SP-CE	Hexalobular Socket special screw
SP-TBEI	Hex. socket head special screw
SP-TBEIF	Hex. socket flanged head special screw
SP-TCEI	Special socket head cylindrical screw
SP-TCEIF	Special socket flanged head cylindrical screw
SP-TE	Special Hexagon Head Screw
SP-TEF	Special Hexagon Flanged Head Screw
TBCEI	Socket round head cylindrical screw
TBEI	Hex. socket head screw
TBEIF	Hex. socket flanged head screw
TBEITL	Hex. socket large head screw
TBIC	Cross round head screw
TCEI	Hex. socket cylindrical head screw
TCEIF	Hex. socket cylindrical flanged head screw
TCEIR	Hex. socket cylindrical low head screw
TE	Hexagon Head Screw
TEF	Flanged Hexagon Head Screw
TEFIC	Cross flanged hexagon head
TEIC	Cross hexagon head
TSPEI	Hex socket CSK flat head cap screw
TBCE	Hexalobular Socket Round Head Screw
TCCE	Hexalobular Socket Cylindrical Head Screw
TCCER	Hexalobular Socket Cylindrical Low Head Screw

NUT ACRONYMS:

DE	Hexagon Nut
DE-AF	Self-locking Hexagon Head Nut
DEB	Hexagon Nut fully home
DEC	Hexagon Cap Nut
DEF	Hexagon Flange Nut
DEF-AF	Self-locking Hexagon Flange Head Nut
DEI	Hex. castle nut
DP	Polygonal Nut
DP-AF	Self-locking Polygonal Head Nut
DPF	Polygonal Flange Nut
DPF-AF	Self-locking Polygonal Flange Head Nut