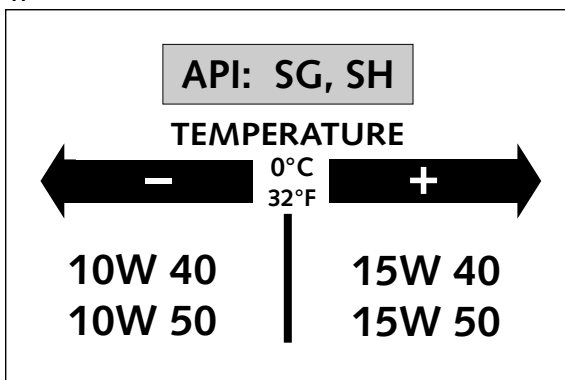


TECHNICAL SPECIFICATIONS – ENGINE 660 SUPERMOTO FACTORY REPLICA 2003

Engine	660 LC4
Design	Liquid-cooled single cylinder 4-stroke engine with balancer shaft
Displacement	653 ccm
Bore / Stroke	102 / 80 mm
Ratio	12,5 : 1
Fuel	unleaded premium gasoline with a least RON 95
Valve timing	4 valves over rocker arm and 1 overhead camshaft, camshaft drive through single chain
Camshaft	MSP1
Valve diameter	Intake: 36 mm Exhaust: 32 mm
Valve clearance cold	Intake: 0,15 mm Exhaust: 0,15 mm
Crank shaft bearing	2 cylinder roller bearing
Connecting rod bearing	needle bearing
Top end bearing	bronze bushing
Piston	forged aluminium alloy
Piston rings	1 compression ring, 1 taper face ring, 1 oil scraper ring
Engine lubrication	two Eaton-oilpumps
Engine oil	see table #
Engine oil quantity	1,6 liters (0,42 US gallons)
Primary ratio	straight geared spur wheels 31 : 79 teeth
Clutch	multi disc clutch in oil bath
Transmission	5-speed claw shifted
Gear ratio	1st 15:33 2nd 15:24 3rd 18:21 4th 20:19 5th 22:18
Ignition system	contactless DC-CDI ignition with digital advanced system type KOKUSAN 4K3
Generator	12V 110W
Spark plug	NGK DCPR8-E
Spark plug gap	0,9 mm
Cooling system	liquid cooled, permanent rotation of cooling liquid through mechanic driven water pump
Cooling liquid	at least -25°C* (-13°F)
Starting equipment	Kickstarter, cold start knob and hot start knob on carburetor

* USE DISTILLED WATER FOR RACING – CAUTION AT TEMPERATURES BELOW ZERO.!

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Engine oil

Use only synthetic oil brands, which meet quality requirements (Motorex Power Synt 4T) of API-classes SG or SH (informations on bottles) or higher.

! CAUTION !

POOR OIL QUALITY OR MINOR QUANTITY EFFECT EARLY ENGINE-WEAR.

BASIC CARBURETOR SETTING

	660 SUPERMOTO FACTORY REPLICA
Carburetor	Keihin FCR MX 41
Main jet	185
Needle jet	OBEKR
Idling jet	48
Main air jet	200
Idling air jet	100
Needle position from top	4th
Throttle valve	15
Starting jet	85

TIGHTENING TORQUES - ENGINE 660 SUPERMOTO FACTORY REPLICA 2003			
Hexagon nut at primary gear	M20x1,5	Loctite 243 + 220 Nm	(162 ft.lb)
Collar nut flywheel	M12x1 left	60 Nm	(44 ft.lb)
Hexagon nut for inner clutch hub	M18x1,5	Loctite 243 + 80 Nm	(59ft.lb)
Kickstarter stop screw	M12x1,5	50 Nm	(37ft.lb)
Allan head screw oil pumps	M6	Loctite 243 + 8 Nm	(6ft.lb)
Hexagon screw camshaft gear	M10	Loctite 243 + 35 Nm	(25ft.lb)
Allan head screw cylinder head top sect.	M6x25/m6x35/M6x65/M6x70 (8.8)	8 Nm	(6ft.lb)
Allan head screw cylinder head top sect.	M7x50/M7x55 (12.9)	20 Nm	(15ft.lb)
Cylinder head screws	M10	60 Nm	(44ft.lb)
Collar nuts at cylinder base	M10	50 Nm	(37ft.lb)
Hexagon screw chain sprocket	M10	Loctite 243 + 40 Nm	(30ft.lb)
Oil drain plug	M22x1,5	30 Nm	(22ft.lb)
Magnetic plug	M12x1,5	20 Nm	(15ft.lb)
Plug bypass valve	M12x1,5	20 Nm	(15ft.lb)
Hollow screws oil lines	M8x1	10 Nm	(7ft.lb)
Hollow screws oil lines	M10x1	15 Nm	(11ft.lb)
Jet screw clutch cover	M8	10 Nm	(7ft.lb)
Screw plug timing-chain tensioner	M12x1,5	20 Nm	(15ft.lb)
Counternuts valve adjusting screws	M7x0,75	20 Nm	(15ft.lb)
Crankshaft locking bolt	M8	25 Nm	(19ft.lb)
Spark plug	M12x1,25	20 Nm	(15ft.lb)
Engine mounting bolt	M8	40 Nm	(30ft.lb)
Engine mounting bolt	M10	70 Nm	(52ft.lb)

ASSEMBLY CLEARANCE, WEAR LIMIT	
Crank shaft	axial play 0.15 - 0.25 mm
	run out of crank stud max. 0.04 mm
Connecting rod bearing	radial play max. 0.05 mm
	axial play max. 1.00 mm
Cylinder 400	bore max. 89.04 mm
Cylinder 640	bore max. 101.04 mm
Piston forged	assembly clearance max. 0.12 mm
Piston rings end gap	compression rings max. 0.60 mm
	oil scraper ring max. 0.80 mm
Valves	seat sealing intake max. 1.50 mm
	seat sealing exhaust max. 2.00 mm
	run out of valve heads max. 0.03 mm
	valve guides diameter max. 7.05 mm
Oil pumps	clearance outer rotor - housing max. 0.20 mm
	clearance outer rotor - inner rotor max. 0.20 mm
Bypass valve	minimum spring length 25.00 mm
Clutch	Length of springs min. 30.5 mm (new 33.00 mm)
	wear limit organic min. 2.50 mm
Camshaft	diameter of bearing bolt (needle bearing) min. 19.97 mm
Transmission shafts	axial play 0.10 - 0.40 mm