

TECHNICAL SPECIFICATIONS – ENGINE 450 SUPERMOTO FACTORY REPLICA 2004

Engine	450
Design	Liquid-cooled single cylinder 4-stroke engine with balancer shaft
Displacement	448 ccm
Bore / Stroke	89 / 72 mm
Ratio	12,7 : 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	8/33
Valve diameter	Intake: 35 mm Exhaust: 30 mm
Valve clearance cold	Intake: 0,12 mm Exhaust: 0,12 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 oil scraper ring
Engine lubrication	pressure circulation lubrication with 2 rotor pumps
Engine oil	see table page 24 #
Engine oil quantity	1.25 liters (0.33 US gallons)
Primary ratio	straight geared spur wheels 33 : 76 teeth
Clutch	multi disc clutch in oil bath
Transmission	6-speed claw shifted
Gear ratio	1st 16:32 2nd 18:30 3rd 20:28 4th 22:26 5th 24:24 6th 21:18
Ignition system	contactless DC-CDI ignition with digital advanced system type KOKUSAN 4K3A
Spark plug	NGK DCPR8-E
Spark plug gap	0,6 mm
Cooling system	liquid cooled, permanent rotation of cooling liquid through mechanic driven water pump
Cooling liquid	1 liter (0.26 US gallons) 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!

ASSEMBLY CLEARANCE, WEAR LIMIT	
Crank shaft	axial play 0.1 - 0.2 mm
	run out of crank stud max. 0.12 mm
Connecting rod bearing	radial play max. 0.05 mm
	axial play max. 1.10 mm
Piston forged	assembly clearance max. 0.12 mm
Piston rings end gap	compression ring max. 0.80 mm
	oil scraper ring max. 1.00 mm
Valves	seat sealing intake max. 1.50 mm
	seat sealing exhaust max. 2.00 mm
	run out of valve heads max. 0.05 mm
	valve guides diameter max. 6.20 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 23.50 mm
Clutch	Length of springs min. 41.5 mm (new 43.00 mm)
	wear limit organic min. 1.90 mm
Transmission shafts	axial play 0.1 - 0.4 mm

TIGHTENING TORQUES - ENGINE 450 SUPERMOTO FACTORY REPLICA 2004		
Hexagon collar screw, engine case, clutch cover, ignition cover	M6	10 Nm
Oil drain plug	M12x1,5	20 Nm
Allan head plug oil, screen short	M16x1,5	10 Nm
Hexagon plug, oil screen long	M20x1,5	15 Nm
Collar screw for oil filter cover	M5	6 Nm
Plug pressure valve	M12x1,5	20 Nm
Jet screw and hollow screw, oil line	M8	10 Nm
Screws, oil pump cover	M5	Loctite 222 + 6 Nm
Hexagon collar screw, cylinder head top section	M6	10 Nm
Hex.collar screw, cylinder head top section, water pump cover	M6	8 Nm
Hexagon collar screw, exhaust flange	M6	Loctite 243 + 8 Nm
Cylinder head screw	M10	40/50 Nm
Allan head screw, camshaft gear	M8	Loctite 243 + 28 Nm
Stop screw, autodecompression	M5	Loctite 222 + 8 Nm
Allan head screw, cap rocker arm	M5	5 Nm
Counter nuts, valve adjustment screw	M6x0,75	11 Nm
Allan head screw, primary gear, free wheel	M6	Loctite 648 + 16 Nm
Hexagon nut, primary gear	M20x1,5	Loctite 243 + 150 Nm
Allan head screw, balancer shaft gear	M6	Loctite 243 + 8 Nm
Nut for inner clutch hub	M18x1.5	Loctite 243 + 150 Nm
Hexagon collar screw, clutch spring	M6	8 Nm
Allan head screw, shift roller locking piece	M6	Loctite 243 + 10 Nm
Hexagon collar screw, locking lever	M5	Loctite 243 + 6 Nm
Hexagon collar screw, shift roller	M5	Loctite 243 + 6 Nm
Hexagon collar screw securing guide, chain guide, chain tensioner	M6	Loctite 243 + 8 Nm
Hexagon collar screw, clip	M5	Loctite 243 + 6 Nm
Hexagon collar screw, chain adjuster	M6	8 Nm
Hexagon collar screw, stator MXC/EXC	M6	Loctite 243 + 8 Nm
Hexagon collar screw, stator SX	M5	Loctite 243 + 6 Nm
Hexagon collar screw, pulser coil	M5	Loctite 243 + 6 Nm
Hexagon collar nut, flywheel	M12x1	60 Nm
Hexagon collar screw, bump part kickstarter	M6	Loctite 243 + 8 Nm
Hexagon collar screw, spring hanger kickstarter	M6	Loctite 243 + 10 Nm
Hexagon collar screw, cover E-starter, only SX	M6	Loctite 243 + 8 Nm
Hexagon collar screw, hanger vent hose	M6	Loctite 243 + 8 Nm
Allan head screw, kickstarter	M8	Loctite 243 + 25 Nm
Hexagon collar screw, shift lever	M6	Loctite 243 + 10 Nm
Hexagon screw, engine sprocket	M10	Loctite 243 + 60 Nm
Spark plug	M10	10 - 12Nm
Spark plug	M12x1,25	20 Nm

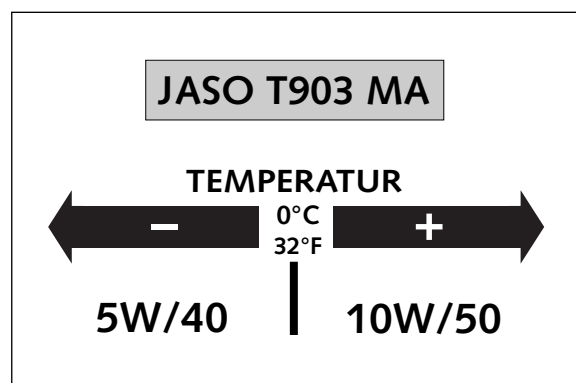
BASIC CARBURETOR SETTING	
	450 SUPERMOTO FACTORY REPLICA
Carburetor	Keihin FCR MX 41
Main jet	185
Needle jet	OBDTP
Idling jet	40
Main air jet	200
Idling air jet	100
Needle position from top	4th
Throttle valve	15
Starting jet	85
Mixture control screw	1 turn open

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Engine oil

Only use fully synthetic engine oils that meet the JASO MA quality requirements (see information on the can).

KTM recommends Motorex Power Synt 4T in the 10W/50 viscosity (for temperatures over 0°C, 32°F) or 5W/40 (for temperatures under 0°C, 32°F).



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CAUTION

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