

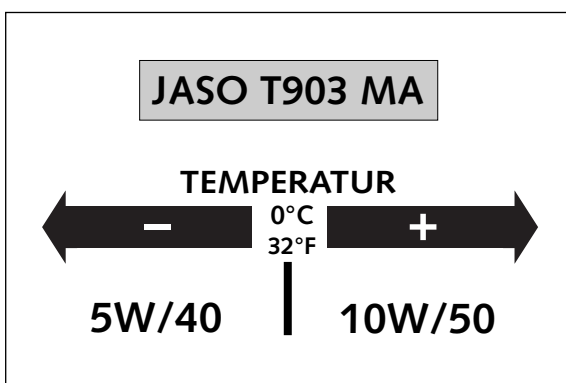
TECHNICAL DATA – ENGINE 250/450/525 SX, MXC, EXC RACING 2004

Type	250 EXC	450 SX	450 MXC	450 EXC	525 SX	525 MXC	525 EXC
Design	Liquid-cooled single cylinder 4-stroke engine with balancer shaft						
Displacement	250 cc	449 cc	448 cc		510 cc		
Bore/Stroke	75 / 56.5 mm	95 / 63.4 mm	89 / 72 mm		95 / 72 mm		
Ratio	12 : 1		11 : 1				
Fuel	unleaded fuel with at least RON 95 (USA = Premium RON 91)						
Valve timing	4 valves over rocker arm and 1 overhead camshaft, camshaft drive through single chain						
Camshaft	5532	590/5521	590/5521		55/21	590/5521	
Valve diameter Intake	28 mm	35 mm (Titan)	35 mm				
Valve diameter Exhaust	24 mm	30 mm (Titan)	30 mm				
Valve clearance cold Intake	0.12 mm (0.0047 in)						
Valve clearance cold Exhaust	0.12 mm (0.0047 in)						
Crank shaft bearing	2 cylinder roller bearing						
Connecting rod bearing	needle bearing						
Top end bearing	bronze bushing						
Piston aluminium alloy -	cast	forged	cast		forged		
Piston rings	1 compression ring, 1 oil scraper ring						
Engine lubrication	pressure circulation lubrication with two rotor pumps						
Engine oil	full synthetic oil (Motorex Power Synt 4T 10W/50)						
Quantity of engine oil	1.25 liters						
Primary ratio	straight geared spur wheels 33:76 Z						
Clutch	multi disc clutch in oil bath						
Transmission claw shifted	6-speed	4-speed	6-speed	6-speed	4-speed	6-speed	6-speed
Gear ratio							
1 st Gear	14:38	16:32	16:32	14:34	16:32	16:32	14:34
2 nd Gear	16:36	18:30	18:30	17:31	18:30	18:30	17:31
3 rd Gear	19:34	20:28	20:28	19:28	20:28	20:28	19:28
4 th Gear	21:32	22:26	22:26	22:26	22:26	22:26	22:26
5 th Gear	23:30	-	24:24	24:23	-	24:24	24:23
6 th Gear	22:25	-	21:18	26:21	-	21:18	26:21
Ignition system	contactless DC-CDI ignition with digital advanced system by KOKUSAN						
Generator	12V 150W	12V 40W	12V 150W		12V 40W	12V 150W	
Spark plug	NGK DCPR 8 E						
Spark plug gap	0.6 mm (0.02367 in)						
Cooling system	liquid cooled, permanent rotation of cooling liquid through mechanically driven water pump						
Cooling liquid	1 liter, 40% antifreeze, 60% water, at least -25° (-13° F)						
Starting equipment	kick-electric starter	kickstarter	kick - electric starter		kickstarter	kick - electric starter	

BASIC CARBURATOR SETTING				
	250 EXC RACING Six Days	250 EXC RACING 11 kW	450 EXC RACING 12 kW	450 SX RACING
Type	Keihin FCR-MX 37	Keihin FCR-MX 37	Keihin FCR-MX 39	Keihin FCR-MX 41
Carburator-setting number	3700A	3700A	3900A	4122A
Main jet	160	160	178	185
Jet needle	OBETP	OBEKT	OBDVR	OBDTP
Idling jet	42	42	42	40
Main air jet	200	200	200	200
Idling air jet	100	100	100	100
Needle position	3. rd from top	3. rd from top	3. rd from top	4. rd from top
Starting jet	85	85	85	85
Mixture control screw open	1,25	0,75	1,25	1
Slide	15	15	15	15
Performance restrictor	–	Slide stop	Slide stop	–
Stop pump membrane	858 / 2,15 mm	858 / 2,15 mm	858 / 2,15 mm	858 / 2,15 mm
Hot start device	–	–	–	2,2 mm

BASIC CARBURATOR SETTING			
	525 EXC RACING Six Days	525 EXC RACING 525 MXC RACING 12 kW	525 SX RACING
Type	Keihin FCR-MX 39	Keihin FCR-MX 39	Keihin FCR-MX 41
Carburator-setting number	3900A	3900B	4125A
Main jet	178	178	185
Jet needle	OBDTN	OBDVT	OBDTP
Idling jet	42	42	42
Main air jet	200	200	200
Idling air jet	100	100	100
Needle position	2. rd from top	3. rd from top	4. rd from top
Starting jet	85	85	85
Mixture control screw open	1,5	1,25	1,5
Slide	15	15	15
Performance restrictor	–	Slide stop	–
Stop pump membrane	858 / 2,15 mm	858 / 2,15 mm	858 / 2,15 mm
Hot start device	–	–	2,5 mm

TIGHTENING TORQUES		
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



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).

! CAUTION !

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