

TECHNICAL DATA – ENGINE 400/520 SX, MXC, EXC RACING 2001

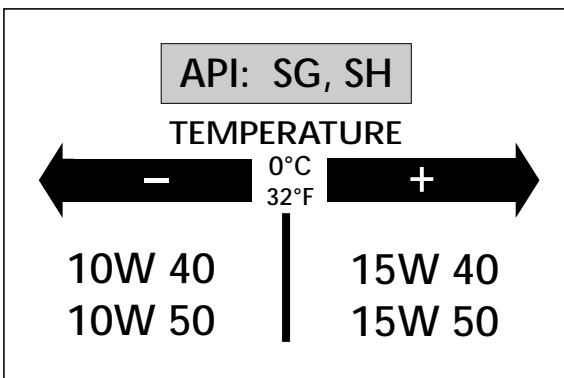
Type	400 SX	400 MXC	400 EXC	520 SX	520 MXC	520 EXC
Design	Liquid-cooled single cylinder 4-stroke engine with balancer shaft					
Displacement	398 ccm			510 ccm		
Bore/Stroke	89 / 64 mm			95 / 72 mm		
Ratio	11 : 1					
Fuel	unleaded premium gasoline with at least RON 95					
Valve Timing	4 valves over rocker arm and 1 overhead camshaft, camshaft drive through single chain					
Camshaft	0121			5521		
Valve diameter	Intake: 35 mm			Exhaust: 30 mm		
Valve clearance cold	Intake: 0;10 mm			Exhaust: 0,15 mm		
Crank shaft bearing	2 cylinder roller bearing					
Connecting rod bearing	needle bearing					
Top end bearing	bronze bushing					
Piston	alluminium alloy cast			alluminium alloy forged		
Piston rings	1 compression ring, 1 oil scraper ring					
Engine lubrication	pressure circulation lubrication with two rotorpumps					
Engine oil	fullsynthetic oil (Shell Advance Ultra 4)					
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	6-speed	6-speed	4-speed	6-speed	6-speed
Gear ratio						
1 st Gear	16:32	16:32	14:34	16:32	16:32	14:34
2 nd Gear	18:30	18:30	17:31	18:30	18:30	17:31
3 rd Gear	20:28	20:28	19:28	20:28	20:28	19:28
4 th Gear	22:26	22:26	22:26	22:26	22:26	22:26
5 th Gear	24:24	24:24	24:23	-	24:24	24:23
6 th Gear	21:18	21:18	26:21	-	21:18	26:21
Ignition system	contactless DC-CDI ignition with digital advanced system by KOKUSAN					
Generator	12V 40W		12V 110W			
Spark plug	NGK CR8 EK					
Spark plug gap	0,6 mm					
Cooling system	liquid cooled, permanent rotation of cooling liquid through mechanic driven water pump					
Cooling liquid	1 liter, 40% antifreeze, 60% water, at least -25° (-13° F)					
Starting equipment	kickstarter	kick - electric starter		kickstarter	kick - electric starter	

BASIC CARBURETOR SETTING

	400 SX RACING 400 MXC/EXC RACING	400 EXC RACING (12kW) 520 EXC RACING (12,5kW)	520 MXC/EXC RACING	520 SX RACING
Type	MX-FCR39	MX-FCR39	MX-FCR39	MX-FCR39
Carb.-setting number	031299	130799	100699	250899
Main jet	175	175	175	175
Jet needle	OBDTM	OB DVR (OBDTM)	OBDTM	OBDTM
Idling jet	48	48	48	48
Main air jet	200	200	200	200
Idling air jet	100	100	100	100
Needle clip position	4th from top	3rd from top	2nd from top	3rd from top
Starting jet	85	85	85	85
Mixture control screw open	1	1,25	2,5	1
Throttle valve	15	15	15	15
Performance restrictor	-	slide stop 24,5 mm	-	-
Stop pump membrane	055	055	055	055

TIGHTENING TORQUES

Hexagon collar screw engine case, clutch cover, ignition cover	M6	8 Nm	(6 ft.lb)
Oil drain plug	M12x1,5	20 Nm	(15 ft.lb)
Allan head plug oil screen short	M16x1,5	10 Nm	(7 ft.lb)
Hexagon plug oil screen long	M20x1,5	15 Nm	(11 ft.lb)
Plug pressure valve	M12x1,5	20 Nm	(15 ft.lb)
Jet screw and hollow screw oil line	M8	10 Nm	(7 ft.lb)
Screws oil pump cover	M5	Loctite 243 + 6 Nm	(5 ft.lb)
Hex.collar screw cylinderhead top section, water pump cover	M6	8 Nm	(6 ft.lb)
Hexagon collar screw exhaust flange	M6	Loctite 243 + 8 Nm	(6 ft.lb)
Cylinder head screw	M10	40/50 Nm	(30/35 ft.lb)
Allan head screw camshaft gear	M8	Loctite 243 + 28 Nm	(21 ft.lb)
Stop screw autodecompression	M5	Loctite 243 + 6 Nm	(5 ft.lb)
Allan head screw cap rocker arm	M5	5 Nm	(4 ft.lb)
Counter nuts valve adjustment screw	M6x0,75	13 Nm	(10 ft.lb)
Allan head screw primary gear, free wheel	M6	Loctite 243 + 18 Nm	(13 ft.lb)
Hexagon nut primary gear	M20x1,5	Loctite 243 + 150 Nm	(132 ft.lb)
Allan head screw balancer shaft gear	M6	Loctite 243 + 8 Nm	(6 ft.lb)
Hexagon collar screw clutch spring	M6	8 Nm	(6 ft.lb)
Allan head screw shift roller locking piece	M6	Loctite 243 + 8 Nm	(6 ft.lb)
Hexagon collar screw locking lever	M5	Loctite 243 + 6 Nm	(6 ft.lb)
Hexagon collar screw securing guide, chain guide, chain tensioner	M6	Loctite 243 + 8 Nm	(6 ft.lb)
Hexagon collar screw chain adjuster	M6	8 Nm	(6 ft.lb)
Hexagon collar screw stator MXC/EXC	M6	Loctite 243 + 8 Nm	(6 ft.lb)
Hexagon collar screw stator SX	M5	Loctite 243 + 6 Nm	(5 ft.lb)
Hexagon collar screw pulser coil	M5	Loctite 243 + 6 Nm	(5 ft.lb)
Hexagon collar nut flywheel	M12x1	60 Nm	(44 ft.lb)
Hexagon collar screw bump part kickstarter	M6	Loctite 243 + 8 Nm	(6 ft.lb)
Hexagon collar screw spring hanger kickstarter	M6	Loctite 243 + 8 Nm	(6 ft.lb)
Hexagon collar screw cover E-starter, only SX	M6	Loctite 243 + 8 Nm	(6 ft.lb)
Hexagon collar screw hanger vent hose	M6	Loctite 243 + 8 Nm	(6 ft.lb)
Allan head screw kickstarter	M8	Loctite 243 + 25 Nm	(19 ft.lb)
Hexagon collar screw shift lever	M6	Loctite 243 + 8 Nm	(6 ft.lb)
Hexagon screw engine sprocket	M10	Loctite 243 + 60 Nm	(44 ft.lb)



Engine oil

Use only oil brands, which meet quality requirements (Shell Advance Ultra 4) of API-classes SG or SH (informations on bottles) or higher.

! CAUTION !

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