

Design	1-cylinder 4-stroke engine, water-cooled	
Displacement (all 400 models)	393.4 cm <sup>3</sup> (24.007 cu in)	
Displacement (all 450 models)	449.3 cm <sup>3</sup> (27.418 cu in)	
Displacement (all 530 models)	510.4 cm <sup>3</sup> (31.147 cu in)	
Stroke (all 400 models)	55.5 mm (2.185 in)	
Stroke (all 450 models)	63.4 mm (2.496 in)	
Stroke (all 530 models)	72 mm (2.83 in)	
Bore	95 mm (3.74 in)	
Compression ratio (all 400 models)	11.1:1	
Compression ratio (all 450/530 models)	11.9:1	
Idle speed	1,550... 1,650 rpm	
Control	OHC, 4 valves controlled via rocker arm, drive via tooth/wheel chain	
Valve diameter, intake	39.5 mm (1.555 in)	
Valve diameter, exhaust	31.7 mm (1.248 in)	
Valve clearance		
Outfeed at: 20 °C (68 °F)	0.12... 0.17 mm (0.0047... 0.0067 in)	
Infeed at: 20 °C (68 °F)	0.10... 0.15 mm (0.0039... 0.0059 in)	
Crankshaft bearing	2 grooved ball bearings	
Conrod bearing	Needle bearing	
Piston pin bearing	not a bearing bush - DLC-plated piston pins	
Pistons	Forged light alloy	
Piston rings	1 compression ring, 1 oil scraper ring	
Engine lubrication	Pressure circulation lubrication with 2 rotor pumps (engine) / 1 rotor pump (transmission)	
Primary transmission	33:76	
Clutch	Multidisc clutch in oil bath / hydraulically activated	
Transmission ratio		
1st gear	14:36	
2nd gear	17:32	
3rd gear	19:28	
4th gear	22:26	
5th gear	24:23	
6th gear	26:21	
Generator	12 V, 150 W	
Ignition	Contactless controlled fully electronic ignition with digital ignition adjustment, type Kokusan	
Spark plug	NGK LKAR 8AI - 9	
Spark plug electrode gap	0.9 mm (0.035 in)	
Cooling	Water cooling, permanent circulation of coolant by water pump	
Starting aid	Electric starter / kickstarter	

## Capacity- engine oil

Engine oil	0.60 l (0.63 qt.)	Engine oil (SAE 10W/50) (☛ p. 106)
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## Capacity - gear oil

Gear oil	0.90 l (0.95 qt.)	Engine oil (SAE 10W/50) (☛ p. 106)
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## Capacity - coolant

Coolant	0.95 l (1 qt.)	Coolant (☛ p. 106)
		Coolant (mixed ready to use) (☛ p. 106)

Screw, cable holder in generator cover	M4	4 Nm (3 lbf ft)	<b>Loctite® 243™</b>
Oil jet, rocker arm lubrication	M5	2 Nm (1.5 lbf ft)	<b>Loctite® 243™</b>
Oil jet, piston cooling	M5	2 Nm (1.5 lbf ft)	<b>Loctite® 243™</b>
Screw, locking lever	M5	6 Nm (4.4 lbf ft)	<b>Loctite® 243™</b>
Screw, ignition pulse generator	M5	6 Nm (4.4 lbf ft)	<b>Loctite® 243™</b>
Locking screw for bearing	M5	6 Nm (4.4 lbf ft)	<b>Loctite® 243™</b>
Screw, oil pump cover	M5	6 Nm (4.4 lbf ft)	<b>Loctite® 222</b>
Oil jet, conrod lubrication	M6x0.75	4 Nm (3 lbf ft)	–
Bleeding connection, transmission	M6	4 Nm (3 lbf ft)	<b>Loctite® 243™</b>
Nut, water-pump wheel	M6	8 Nm (5.9 lbf ft)	<b>Loctite® 243™</b>
Screw, kickstarter stop	M6	10 Nm (7.4 lbf ft)	<b>Loctite® 243™</b>
Screw, timing chain securing guide	M6	8 Nm (5.9 lbf ft)	<b>Loctite® 243™</b>
Screw, exhaust flange	M6	10 Nm (7.4 lbf ft)	–
Screw, torque governor	M6	10 Nm (7.4 lbf ft)	<b>Loctite® 243™</b>
Screw, starter motor	M6	10 Nm (7.4 lbf ft)	–
Screw, kickstarter spring hanger	M6	10 Nm (7.4 lbf ft)	–
Screw, timing chain guide rail	M6	8 Nm (5.9 lbf ft)	<b>Loctite® 243™</b>
Screw generator cover	M6x25	10 Nm (7.4 lbf ft)	–
Screw generator cover	M6x40	10 Nm (7.4 lbf ft)	–
Screw, gear oil level check	M6	8 Nm (5.9 lbf ft)	–
Screw, clutch cover	M6x25	10 Nm (7.4 lbf ft)	–
Screw, clutch cover	M6x30	10 Nm (7.4 lbf ft)	–
Screw, clutch spring	M6	10 Nm (7.4 lbf ft)	–
Screw, engine housing	M6x60	10 Nm (7.4 lbf ft)	–
Screw, engine housing	M6x75	10 Nm (7.4 lbf ft)	–
Screw, camshaft bearing support	M6	10 Nm (7.4 lbf ft)	<b>Loctite® 243™</b>
Screw, oil filter cover	M6	10 Nm (7.4 lbf ft)	–
Screw, shift drum locating	M6	10 Nm (7.4 lbf ft)	<b>Loctite® 243™</b>
Screw, shift lever	M6	10 Nm (7.4 lbf ft)	<b>Loctite® 243™</b>
Screw, timing chain tensioning rail	M6	8 Nm (5.9 lbf ft)	<b>Loctite® 243™</b>
Screw, stator bracket	M6	10 Nm (7.4 lbf ft)	<b>Loctite® 243™</b>
Plug, vacuum connection	M6	5 Nm (3.7 lbf ft)	<b>Loctite® 243™</b>
Screw, valve cover	M6	10 Nm (7.4 lbf ft)	–
Screw, water pump cover	M6x25	10 Nm (7.4 lbf ft)	–
Screw, water pump cover	M6x55	10 Nm (7.4 lbf ft)	–
Screw, idler	M6	10 Nm (7.4 lbf ft)	<b>Loctite® 243™</b>
Screw, cylinder head	M6	10 Nm (7.4 lbf ft)	–
Screw, rocker arm bearing	M7x1	15 Nm (11.1 lbf ft)	–
Plug, oil channel	M7	9 Nm (6.6 lbf ft)	<b>Loctite® 243™</b>
Screw, kickstarter	M8	25 Nm (18.4 lbf ft)	<b>Loctite® 243™</b>
Plug, crankshaft location	M8	10 Nm (7.4 lbf ft)	–
Balancer shaft nut	M10x1	40 Nm (29.5 lbf ft)	–
Screw, unlocking of timing chain tensioner	M10x1	10 Nm (7.4 lbf ft)	–
Screw, engine sprocket	M10	60 Nm (44.3 lbf ft)	<b>Loctite® 243™</b>
Plug, oil channel	M10	15 Nm (11.1 lbf ft)	<b>Loctite® 243™</b>

Screw, cylinder head	M10x1.25	Tightening sequence: Tighten diagonally, beginning with the rear screw on the chain shaft. Step 1 10 Nm (7.4 lbf ft) Step 2 30 Nm (22.1 lbf ft) Step 3 50 Nm (36.9 lbf ft)	lubricated with engine oil
Nut, rotor	M12x1	60 Nm (44.3 lbf ft)	–
Spark plug	M12x1.25	15... 20 Nm (11.1... 14.8 lbf ft)	–
Gear oil drain plug with magnet	M12x1.5	20 Nm (14.8 lbf ft)	–
Plug, SLS	M12x1.5	20 Nm (14.8 lbf ft)	–
Oil pressure control valve plug	M12x1.5	20 Nm (14.8 lbf ft)	–
Plug, rocker arm	M14x1.25	20 Nm (14.8 lbf ft)	–
Plug, gear oil screen	M16x1.5	20 Nm (14.8 lbf ft)	–
Plug, engine oil screen	M17x1.5	20 Nm (14.8 lbf ft)	–
Nut, inner clutch hub	M18x1.5	80 Nm (59 lbf ft)	–
Nut, primary gear	M20LHx1.5	100 Nm (73.8 lbf ft)	<b>Loctite® 243™</b>
Plug, timing chain tensioner	M24x1.5	30 Nm (22.1 lbf ft)	–

## 400 EXC

Carburetor type	KEIHIN FCR-MX 39
Carburetor identification number	3900N
Needle position	5th position from top
Idle mixture adjusting screw	
Open	0.75 turn
Pump membrane stop	2.15 mm (0.0846 in)
Main jet	180
Jet needle	OBDYU (OBDTQ)
Idling jet	42
Idle air jet	100
Cold start jet	65 (85)
Leakage nozzle	40
Slide stop	present

## 400 XC-W USA

Carburetor type	KEIHIN FCR-MX 39
Carburetor identification number	3900W
Needle position	1st position from top
Idle mixture adjusting screw	
Open	1.75 turns
Pump membrane stop	2.15 mm (0.0846 in)
Main jet	180
Jet needle	OBDTQ
Idling jet	42
Idle air jet	100
Cold start jet	85
Leakage nozzle	40

## 450 EXC, 450 EXC SIX DAYS

Carburetor type	KEIHIN FCR-MX 39
Carburetor identification number	3900I
Needle position	4th position from top
Idle mixture adjusting screw	
Open	1.75 turns
Pump membrane stop	2.15 mm (0.0846 in)
Main jet	180
Jet needle	OBDYU (OBDTQ)
Idling jet	40
Idle air jet	100
Cold start jet	65 (85)
Leakage nozzle	40
Slide stop	present

## 450 XC-W

Carburetor type	KEIHIN FCR-MX 39
Carburetor identification number	3900L
Needle position (450 XC-W USA)	1st position from top
Needle position (450 XC-W ZA)	4th position from top
Idle mixture adjusting screw (450 XC-W ZA)	
Open	1.5 turns
Idle mixture adjusting screw (450 XC-W USA)	
Open	1.75 turns
Pump membrane stop	2.15 mm (0.0846 in)
Main jet (450 XC-W USA)	180
Main jet (450 XC-W ZA)	185
Jet needle	OBDTQ
Idling jet	40
Idle air jet	100
Cold start jet	85
Leakage nozzle	40

## 530 EXC, 530 EXC SIX DAYS

Carburetor type	KEIHIN FCR-MX 39
Carburetor identification number	3900J
Needle position	5th position from top
Idle mixture adjusting screw	
Open	1.5 turns
Pump membrane stop	2.15 mm (0.0846 in)
Main jet	180
Jet needle	OBDZT (OBDTR)
Idling jet	40
Idle air jet	100
Cold start jet	65 (85)
Leakage nozzle	40
Slide stop	present

## 530 XC-W

Carburetor type	KEIHIN FCR-MX 39
Carburetor identification number	3900M
Needle position (530 XC-W USA)	1st position from top
Needle position (530 XC-W ZA)	4th position from top
Idle mixture adjusting screw (530 XC-W ZA)	
Open	1.5 turns
Idle mixture adjusting screw (530 XC-W USA)	
Open	2.0 turns
Pump membrane stop	2.15 mm (0.0846 in)
Main jet (530 XC-W USA)	180
Main jet (530 XC-W ZA)	185
Jet needle	OBDTR
Idling jet	40
Idle air jet	100
Cold start jet	85
Leakage nozzle	40