

Design	1-cylinder 4-stroke engine with balancer, water-cooled
Displacement (450 XC ATV)	448 cm ³ (27.34 cu in)
Displacement (525 XC ATV)	510 cm ³ (31.12 cu in)
Stroke	72 mm (2.83 in)
Bore (450 XC ATV)	89 mm (3.5 in)
Bore (525 XC ATV)	95 mm (3.74 in)
Compression ratio	11:1
Idle speed	1,500... 1,600 rpm
Control	4 valves controlled via rocker arm and overhead camshaft, camshaft drive via simplex chain
Valve diameter, intake	35 mm (1.38 in)
Valve diameter, exhaust	30 mm (1.18 in)
Valve clearance, cold, intake	0.10... 0.15 mm (0.0039... 0.0059 in)
Valve clearance, cold, exhaust	0.10... 0.15 mm (0.0039... 0.0059 in)
Crankshaft bearing	2 cylinder roller bearing
Conrod bearing	Needle bearing
Piston pin bearing	Bronze bush
Pistons (450 XC ATV)	Cast light alloy
Pistons (525 XC ATV)	Forged light alloy
Piston rings	1 compression ring, 1 oil scraper ring
Engine lubrication	Pressure circulation lubrication with 2 rotor pumps
Primary transmission	31:78 straight tooth spur gears
Clutch	Multidisc clutch in oil bath / hydraulically activated
Transmission ratio	
1st gear	14:35

2nd gear	17:33
3rd gear	19:30
4th gear	21:28
5th gear	23:26
Reverse gear	14:19:34
Generator	12 V, 200 W
Ignition	Contactless controlled fully electronic ignition with digital ignition adjustment, type Kokusan
Spark plug	NGK DCPR 8 E
Spark plug electrode gap	0.6 mm (0.024 in)
Cooling	Water cooling, permanent circulation of coolant by water pump
Starting aid	Electric starter

Capacity - engine oil

Engine oil	2.00 l (2.11 qt.)	External temperature: $\geq 0\text{ }^{\circ}\text{C}$ ($\geq 32\text{ }^{\circ}\text{F}$)	Engine oil (SAE 10W/50) (☛ p. 195)
		External temperature: $< 0\text{ }^{\circ}\text{C}$ ($< 32\text{ }^{\circ}\text{F}$)	Engine oil (SAE 5W/40) (☛ p. 195)

Capacity - coolant

Coolant			
With compensating tank	1.50 l (1.59 qt.)	Coolant (☛ p. 194)	
		Coolant (mixed ready to use) (☛ p. 194)	
Without compensating tank	1.30 l (1.37 qt.)	Coolant (☛ p. 194)	
		Coolant (mixed ready to use) (☛ p. 194)	

Screw, cable holder in generator cover	M4		Loctite® 243™
Screw, timing chain securing guide	M5	6 Nm (4.4 lbf ft)	Loctite® 243™
Screw, locking lever	M5	6 Nm (4.4 lbf ft)	Loctite® 243™
Screw, ignition pulse generator	M5	6 Nm (4.4 lbf ft)	Loctite® 243™
Screw, gear sensor	M5	6 Nm (4.4 lbf ft)	Loctite® 243™
Screw, rocker arm shaft	M5	6 Nm (4.4 lbf ft)	–
Locking screw for bearing	M5	6 Nm (4.4 lbf ft)	Loctite® 243™
Screw, oil pump cover	M5	6 Nm (4.4 lbf ft)	Loctite® 222
Screw, oil filter cover	M5	6 Nm (4.4 lbf ft)	–
Screw, locking shaft lever	M5	6 Nm (4.4 lbf ft)	Loctite® 243™
Screw, stator bracket	M5	6 Nm (4.4 lbf ft)	Loctite® 243™
Nut, adjusting screw, valve clearance	M6x0.75	11 Nm (8.1 lbf ft)	–
Oil jet, piston cooling	M6x0.75	4 Nm (3 lbf ft)	Loctite® 243™
Screw, drive wheel for balancer	M6	10 Nm (7.4 lbf ft)	Loctite® 243™
Screw, exhaust flange	M6	10 Nm (7.4 lbf ft)	Loctite® 243™
Screw, vent hose bracket	M6	10 Nm (7.4 lbf ft)	Loctite® 243™
Screw, timing chain guide rail	M6	6 Nm (4.4 lbf ft)	Loctite® 243™
Screw, clutch cover	M6	10 Nm (7.4 lbf ft)	–
Screw, clutch spring	M6	8 Nm (5.9 lbf ft)	Loctite® 243™
Screw, bearing stud, starter engine	M6	10 Nm (7.4 lbf ft)	Loctite® 243™
Screw, engine housing	M6x30	10 Nm (7.4 lbf ft)	–
Screw, engine housing	M6x45	10 Nm (7.4 lbf ft)	–
Screw, engine housing	M6x60	10 Nm (7.4 lbf ft)	–
Screw, engine housing	M6x65	10 Nm (7.4 lbf ft)	–

TECHNICAL DATA - ENGINE TIGHTENING TORQUES

Screw, engine housing	M6x75	10 Nm (7.4 lbf ft)	–
Screw, shift drum locating	M6	10 Nm (7.4 lbf ft)	Loctite® 243™
Screw, shift lever	M6	10 Nm (7.4 lbf ft)	Loctite® 243™
Screw, timing chain tensioning rail	M6	6 Nm (4.4 lbf ft)	Loctite® 243™
Screw, starter engine	M6	10 Nm (7.4 lbf ft)	–
Screw, timing-chain tensioner	M6	10 Nm (7.4 lbf ft)	–
Plug, timing chain tensioner	M8	10 Nm (7.4 lbf ft)	–
Screw, cylinder head top section	M6x30	10 Nm (7.4 lbf ft)	–
Screw on cylinder head top section	M6x45	10 Nm (7.4 lbf ft)	–
Screw on cylinder head top section	M6x50	10 Nm (7.4 lbf ft)	–
Screw on cylinder head top section	M6x55 – 10.9	10 Nm (7.4 lbf ft)	–
Screw on cylinder head top section	M6x75	10 Nm (7.4 lbf ft)	–
Screw, water pump cover	M6	10 Nm (7.4 lbf ft)	–
Screw, cylinder head	M6	10 Nm (7.4 lbf ft)	–
Screw, valve cover	M6	10 Nm (7.4 lbf ft)	–
Jet screw, oil line	M8	10 Nm (7.4 lbf ft)	–
Banjo bolt, oil line	M8	10 Nm (7.4 lbf ft)	–
Screw, generator cover	M8	10 Nm (7.4 lbf ft)	–
Plug, crankshaft location	M8	10 Nm (7.4 lbf ft)	–
Screw, camshaft gear	M8	28 Nm (20.7 lbf ft)	Loctite® 243™
Screw, engine sprocket	M10	60 Nm (44.3 lbf ft)	Loctite® 243™
Screw, cylinder head	M10	Step 1 40 Nm (29.5 lbf ft) Step 2 50 Nm (36.9 lbf ft)	–

TECHNICAL DATA - ENGINE TIGHTENING TORQUES

Ignition rotor nut	M12x1	60 Nm (44.3 lbf ft)	–
Spark plug	M12x1.25	17 Nm (12.5 lbf ft)	–
Bleeder flange, engine case	M12x1.5		Loctite® 243™
Oil drain plug with magnet	M12x1.5	20 Nm (14.8 lbf ft)	–
Plug, oil pressure regulator valve	M12x1.5	20 Nm (14.8 lbf ft)	–
Locking screw, oil sieve, short	M16x1.5	10 Nm (7.4 lbf ft)	lubricated with engine oil
Nut, inner clutch hub	M18x1.5	120 Nm (88.5 lbf ft)	Loctite® 243™
Nut, primary gear	M20LHx1.5	150 Nm (110.6 lbf ft)	Loctite® 243™
Screw-in fitting, cooling system in cylinder head top	M20x1.5		Loctite® 577
Locking screw, oil sieve, long	M20x1.5	15 Nm (11.1 lbf ft)	–

Carburetor type	KEIHIN FCR-MX 39
Carburetor identification number	3925H
Needle position (450 XC ATV)	2nd position from top
Needle position (525 XC ATV)	3rd position from top
Idle mixture adjusting screw	
Open	1.0 turn
Pump membrane stop	2.15 mm (0.0846 in)
Main jet	170
Jet needle	OBEKR
Idling jet (450 XC ATV)	40
Idling jet (525 XC ATV)	42
Main air jet	200
Idle air jet	100
Cold start jet	85
Throttle slide	15