
General Specifications

Engine

Engine Type	4-stroke, Inline, 2-cylinder, DOHC, Liquid cooled, 8-Valve
Displacement	649 cc
Bore x Stroke	83.0 x 60.0 mm
Compression Ratio	11.3:1
Maximum Torque	48.5 lb-ft at 7,000 rpm
Throttle Body	Keihin 38mm (2)
Ignition System	12 V Battery & Coil, Transistorized Breakerless
Ignition Advance	Electronic
Crankshaft Rotation	Clockwise from ignition (RH side)
Cylinder Number Method	Left to Right: 1-2
Firing Interval/Order	180°
Cylinder Material	Aluminum alloy with chrome composite plating
Fuel	Min 91 Research/87 Avg. Oct. Unleaded OK
Coolant	50% distilled water /50% ethylene glycol base antifreeze.
—Capacity	1.3 qt.
—Level	Level with radiator filler neck.

Transmission

Clutch Type	Wet, Multi-disc, Manual
Transmission	6-speed, Constant mesh, Return shift
Shift Pattern (Bottom up)	1-N-2-3-4-5-6 (w/Neutral Finder)
Gear Ratios	—1st 2.438 (39/16)
—2nd	1.714 (36/21)
—3rd	1.333 (32/24)
—4th	1.111 (30/27)
—5th	0.966 (28/29)
—6th	0.852 (23/27)
Primary Ratio	2.095 (88/42)
Final Ratio	3.067 (46/15)
Overall Ratio (Top Gear)	5.473

Chassis

Wheelbase	1410 mm (55.5 in.)
Seat Height	790 mm (31.1 in.)
Ground Clearance	145 mm (5.7 in.)
Dry Weight	178 kg (393 lb.)
Max Recom Load	186 kg (410 lb.)
Fuel Tank Capacity	4.1 U.S. gal.
Tire Size	—Front 120/70 17
—Rear	160/60 17
Brake Type	—Front Dual Disc
—Rear	Single Disc
Brake Size	—Front 272 mm Effective Diameter
—Rear	184 mm Effective Diameter
Wheel Travel	—Front 120 mm (4.7 in.)
—Rear	125 mm (4.9 in.)

Model Identification

Year & Model	'08 EX650A8F:Ninja 650R
Colors	1. Lime Green (777) 2. Metallic Diablo Black (17K) 3. Sunbeam Red (H1)
VIN Range	JKAEXEA1✓8A036001 -
Engine No. Range	ER650AE000001 -
Engine No. Location	Upper crankcase, front side

Tuning Specifications

Engine

Valve Clearance (Cold)	Intake: 0.15-0.21 mm Exhaust: 0.22-0.31 mm
— Adjustment Method	Shim under bucket
Compression Pressure	213 psi
Spark Plug	NGK CRE9E1A-9
—Gap	0.8-0.9 mm
Ignition Timing—Idle	10° BTDC at 1,300 rpm
—Full	35° BTDC at 4,800 rpm
Air Screw	Sealed—not adjustable
Idle Speed	1,300 ±50 rpm
Engine Oil	SE Class SAE 10W40
—w/Filter Change	2.0 qt.
—No Filter Change	1.8 qt.
—Level	Centered, wait 5 min, middle of window

Chassis

Fork Oil	SAE 10W
—Capacity	495-493 cc
Tire Pressure (Cold)	
—Front	33 psi
—Rear	36 psi
Drive Chain Slack	30-40 mm (1.2-1.6 in.) (STD)