

RF600RV ('97-MODEL)

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NOTE:

The specifications and service data are the same as those of the '96-MODEL.

12-1 RF600RV ('97-MODEL)

SPECIFICATIONS

DIMENSIONS AND DRY MASS

Overall length	2 160 mm (85.0 in) E18, 22
	2 110 mm (83.1 in) Others
Overall width	710 mm (28.0 in)
Overall height	1 175 mm (68.3 in)
Wheelbase	1 430 mm (56.3 in)
Ground clearance	120 mm (4.7 in)
Seat height	790 mm (31.1 in)
Dry mass	195 kg (429 lbs)

ENGINE

Type	Four-stroke, liquid-cooled, DOHC, TSCC
Valve clearance, IN	0.10—0.20 mm (0.004—0.008 in)
EX	0.20—0.30 mm (0.008—0.012 in)
Number of cylinders	4
Bore	65.0 mm (2.559 in)
Stroke	45.2 mm (1.780 in)
Displacement	599 cm ³ (36.6 cu. in)
Corrected compression ratio	12.0 : 1
Carburetor	BDST33, four . . . E18 BDST36, four . . . Others
Air cleaner	Non-woven fabric element
Starter system	Starter motor
Lubrication system	Wet sump

TRANSMISSION

Clutch	Wet multi-plate type
Transmission	6-speed constant mesh
Gearshift pattern	1-down, 5-up
Primary reduction ratio	1.744 (75/43)
Gear ratios, Low	3.142 (44/14)
2nd	2.058 (35/17)
3rd	1.650 (33/20)
4th	1.428 (30/21)
5th	1.280 (29/23)
Top	1.120 (28/25)
Final reduction ratio	3.071 (43/14) . . . E18 3.000 (42/14) . . . Others
Drive chain	RK50MFOZ1, 108 links

CHASSIS

Front suspension	Telescopic, coil spring, oil damped, spring preload adjustable
Rear suspension	Link type, spring preload 7-way adjustable, damping force 4-way adjustable
Front suspension stroke	120 mm (4.7 in)
Rear suspension travel	130 mm (5.1 in)
Caster	25°
Trail	103 mm (4.06 in)
Steering angle	30°
Turning radius	3.2 m (10.5 ft)
Front brake	Disk brake, twin
Rear brake	Disk brake
Front tire size	120/70ZR17
Rear tire size	160/60ZR17

ELECTRICAL

Ignition type	Electronic ignition (Transistorized)
Ignition timing	4° B.T.D.C. below 1500 r/min . . . E18 7° B.T.D.C. below 1500 r/min . . . Others
Spark plug	NGK CR9E or NIPPONDENSO U27ESR-N
Battery	12V 28.8kC (8 Ah)/10 HR
Generator	Three-phase A.C. generator
Main fuse	30A
Fuse	15/15/10/15/10A
Headlight	12V 60/55W
Position light	12V 4W . . . except E24
Turn signal light	12V 21W x 4
Taillight	12V 5W
Brake light	12V 21W x 2
License plate light	12V 5W
Speedometer light	12V 1.7W x 2
Tachometer light	12V 1.7W x 2
Neutral indicator light	12V 3.4W
High beam indicator light	12V 3.4W
Turn signal indicator light	12V 3.4W
Oil pressure indicator light	12V 3.4W
Fuel indicator light	12V 3.4W
Temp. meter light	12V 1.7W

CAPACITIES

Fuel tank, including reserve	17.0 L (4.5/3.7 US/Imp gal)
Reserve	4.0 L (1.1/0.9 US/Imp gal)
Engine oil, oil change	3 000 ml (3.2/2.6 US/Imp qt)
with filter change	3 300 ml (3.5/2.9 US/Imp qt)
overhaul	3 900 ml (4.1/3.4 US/Imp qt)
Engine coolant	2 450 ml (2.6/2.2 US/Imp qt)
Front fork oil	503 ml (17.0/17.7 US/Imp oz)

SERVICE DATA**VALVE + GUIDE**

Unit: mm (in)

ITEM	STANDARD		LIMIT	
Valve diam.	IN.	25.5 (1.00)	—	
	EX.	22.5 (0.89)	—	
Valve lift	IN.	E-04 and others	8.3 (0.33)	—
		E-18	6.6 (0.26)	—
	EX.	E-04 and others	7.9 (0.31)	—
		E-18	6.1 (0.24)	—
Tappet clearance (when cold)	IN.	0.10–0.20 (0.004–0.008)	—	
	EX.	0.20–0.30 (0.008–0.010)	—	
Valve guide to valve stem clearance	IN.	0.020–0.047 (0.0008–0.0019)	—	
	EX.	0.030–0.057 (0.0012–0.0022)	—	
Valve stem deflection	IN. & EX.	—	0.35 (0.014)	
Valve guide I.D.	IN. & EX.	4.500–4.512 (0.1772–0.1776)	—	
Valve stem O.D.	IN.	4.465–4.480 (0.1758–0.1764)	—	
	EX.	4.455–4.470 (0.1754–0.1760)	—	
Valve stem runout	IN. & EX.	—	0.05 (0.002)	
Valve head thickness	IN. & EX.	—	0.5 (0.02)	
Valve seat width	IN. & EX.	0.9–1.1 (0.035–0.043)	—	
Valve head radial runout	IN. & EX.	—	0.03 (0.001)	
Valve spring free length (IN. & EX.)	—		43.0 (1.69)	
Valve spring tension (IN. & EX.)	18.6–21.4 kg (41.0–47.2 lbs) at length 38 mm (1.5 in)		—	

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CAMSHAFT + CYLINDER HEAD

Unit: mm (in)

ITEM	STANDARD			LIMIT
Cam height	IN.	E-04	36.312—36.368 (1.4296—1.4318)	36.02 (1.418)
		E-18,33	34.542—34.598 (1.3599—1.3621)	34.25 (1.348)
		Others	36.312—36.368 (1.4296—1.4318)	36.02 (1.418)
	EX.	E-04	35.902—35.958 (1.4135—1.4157)	35.61 (1.402)
		E-18,33	34.122—34.178 (1.3433—1.3456)	33.83 (1.332)
		Others	35.902—35.958 (1.4135—1.4157)	35.61 (1.402)
Camshaft journal oil clearance	IN. & EX.	0.032—0.066 (0.0013—0.0026)		0.150 (0.0059)
Camshaft journal holder I.D.	IN. & EX.	22.012—22.025 (0.8666—0.8671)		—
Camshaft journal O.D.	IN. & EX.	21.959—21.980 (0.8645—0.8654)		—
Camshaft runout	IN. & EX.	—		0.10 (0.004)
Cam chain pin (at arrow "3")	13th pin			—
Cylinder head distortion	—			0.20 (0.008)

CYLINDER + PISTON + PISTON RING

Unit: mm (in)

ITEM	STANDARD			LIMIT
Compression pressure	1 000—1 500 kPa (10—15 kg/cm ²) (142—213 psi)			800 kPa (8 kg/cm ²) (114psi)
Compression pressure difference	—			200 kPa (2 kg/cm ²) (28 psi)
Piston to cylinder clearance	0.040—0.060 (0.0016—0.0024)			0.120 (0.0047)
Cylinder bore	65.000—65.015 (2.5591—2.5596)			65.090 (2.5626)
Piston diam.	64.945—64.970 (2.5569—2.5579) Measure at 15 mm (0.6 in) from the skirt end.			64.880 (2.5543)
Cylinder distortion	—			0.20 (0.008)
Piston ring free end gap	1st	R	Approx. 7.5 (0.29)	6.0 (0.24)
	2nd	R	Approx. 8.0 (0.31)	6.4 (0.25)
Piston ring end gap	1st	0.25—0.40 (0.010—0.016)		0.5 (0.02)
	2nd	0.25—0.40 (0.010—0.016)		0.5 (0.02)

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ITEM	STANDARD		LIMIT
Piston ring to groove clearance	1st	—	0.18 (0.007)
	2nd	—	0.18 (0.007)
Piston ring groove width	1st	0.83–0.85 (0.032–0.033)	—
	2nd	0.82–0.84 (0.032–0.033)	—
	Oil	1.51–1.53 (0.059–0.060)	—
Piston ring thickness	1st	0.77–0.79 (0.030–0.031)	—
	2nd	0.77–0.79 (0.030–0.031)	—
Piston pin bore	16.002–16.008 (0.6210–0.6302)		16.030 (0.6311)
Piston pin O.D.	15.996–16.000 (0.6298–0.6299)		15.980 (0.6291)

CONROD + CRANKSHAFT

Unit: mm (in)

ITEM	STANDARD		LIMIT
Conrod small end I.D.	16.010–16.018 (0.6303–0.6306)		16.040 (0.6315)
Conrod big end side clearance	0.10–0.20 (0.004–0.008)		0.30 (0.010)
Conrod big end width	20.95–21.00 (0.825–0.827)		—
Crank pin width	21.10–21.15 (0.831–0.833)		—
Conrod big end oil clearance	0.032–0.056 (0.0013–0.0022)		0.080 (0.0031)
Crank pin O.D.	33.976–34.000 (1.3376–1.3386)		—
Crankshaft journal oil clearance	0.020–0.044 (0.0008–0.0017)		0.080 (0.0031)
Crankshaft journal O.D.	33.976–34.000 (1.3376–1.3386)		—
Crankshaft thrust clearance	0.055–0.110 (0.0022–0.0043)		—
Crankshaft thrust bearing thickness	Right side	2.425–2.450 (0.0955–0.0965)	—
	Left side	2.350–2.500 (0.0925–0.0984)	—
Crankshaft runout	—		0.05 (0.002)

12-5 RF600RV ('97-MODEL)**OIL PUMP**

ITEM	STANDARD	LIMIT
Oil pump reduction ratio	1.898 (75/43 x 37/34)	—
Oil pressure (at 60°C, 140°F)	Above 300 kPa (3.0 kg/cm ² , 43 psi) Below 600 kPa (6.0 kg/cm ² , 85 psi) at 3 000 r/min.	—

CLUTCH

Unit: mm (in)

ITEM	STANDARD	LIMIT
Clutch lever play	10–15 (0.4–0.6)	—
Drive plate thickness	2.12–2.28 (0.083–0.090)	1.82 (0.072)
Driven plate distortion	—	0.10 (0.004)
Clutch spring free length	—	47.5 (1.87)

THERMOSTAT + RADIATOR + FAN

ITEM	STANDARD	LIMIT	
Thermostat valve opening temperature	74.5–78.5°C (166.1–173.3°F)	—	
Thermostat valve lift	Over 7 mm (0.28 in) at 90°C (194°F)	—	
Radiator cap valve opening pressure	110 kPa (1.1 kg/cm ² , 15.6 psi)	—	
Cooling fan thermo-switch operating temperature	ON	Approx. 105°C (221°F)	—
	OFF	Approx. 100°C (212°F)	—
Engine coolant temperature gauge resistance	50°C (122°F)	Approx. 153.9 Ω	—
	80°C (176°F)	Approx. 51.9 Ω	—
	100°C (212°F)	Approx. 27.4 Ω	—
	120°C (248°F)	Approx. 16.1 Ω	—

TRANSMISSION + DRIVE CHAIN

Unit: mm (in) Except ratio

ITEM	STANDARD	LIMIT	
Primary reduction ratio	1.744 (75/43)	—	
Final reduction ratio	E-03,18,33	3.071 (43/14)	—
	The others	3.000 (42/14)	—
Gear ratios	Low	3.142 (44/14)	—
	2nd	2.058 (35/17)	—
	3rd	1.650 (33/20)	—
	4th	1.428 (30/21)	—
	5th	1.260 (29/23)	—
	Top	1.120 (28/25)	—

ITEM	STANDARD		LIMIT
	Shift fork to groove clearance	0.10—0.30 (0.004—0.012)	
Shift fork groove width	5.00—5.10 (0.197—0.201)		—
Shift fork thickness	4.80—4.90 (0.189—0.193)		—
Drive chain	Type	RK50MFOZ1	
	Links	108 links, ENDLESS	
	20-pitch length	— 319.4 (12.6)	
Drive chain slack	30—40 (1.2—1.6)		—
Gearshift lever height	70 (2.8)		—

CARBURETOR

ITEM	SPECIFICATION		
	E-03, U.S.A.	E-33, U.S.A. (Calif. model)	E-37
Carburetor type	MIKUNI BDST36SS	MIKUNI BDST33SS	MIKUNI BDST36SS
Bore size	36 mm	33 mm	36 mm
I.D. No.	21EG	21EH	21EN
Idle r/min.	1 300 ± 100 r/min	1 350 ± 100 r/min	1 200 ± 100 r/min
Float height	6.9 ± 1.0 mm (0.27 ± 0.04 in)		
Main jet (M.J.)	#112.5	#107.5	#112.5
Main air jet (M.A.J.)	0.7 mm	0.6 mm	#1&4: 0.6 mm, #2&3: 1.0 mm
Jet needle (J.N.)	5E97	5E99	5D44-3rd
Needle jet (N.J.)	0-9	0-8	0-9
Throttle valve (Th.V.)	#120	←	#125
Pilot jet (P.J.)	#15	#10	#12.5
Starter jet (G.S.)	#47.5	←	←
Pilot screw (P.S.)	PRE-SET	←	PRE-SET (1-½ turns out)
Throttle cable play	0.5—1.0 mm (0.02—0.04 in)		

CARBURETOR

ITEM	SPECIFICATION			
	E-02 and others	E-22,24	E-18	E-22-U type
Carburetor type	MIKUNI BDST36SS	←	MIKUNI BDST33SS	MIKUNI BDST36SS
Bore size	36 mm	←	33 mm	36 mm
I.D. No.	21EF	21EJ	21EL	21EK
Idle r/min.	1 200 ± 100 r/min	1 300 ± 100 r/min	←	←
Float height	6.9 ± 1.0 mm (0.27 ± 0.04 in)			

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ITEM	SPECIFICATION			
	E-02 and others	E-22,24	E-18	E-22-U type
Main jet (M.J.)	# 112.5	←	# 110	# 120
Main air jet (M.A.J.)	# 1&4: 0.6 mm, # 2&3: 1.0 mm	←	0.6 mm	0.7 mm
Jet needle (J.N.)	5D44-3rd	←	5E93-4th	5D44-2nd
Needle jet (N.J.)	0-9	←	0-8	←
Throttle valve (Th.V.)	# 125	←	# 120	# 125
Pilot jet (P.J.)	# 12.5	←	# 10	# 12.5
Starter jet (G.S.)	# 47.5	←	←	←
Pilot screw (P.S.)	PRE-SET (1-½ turns out)	←	←	PRE-SET (1 turn out)
Throttle cable play	0.5–1.0 mm (0.02–0.04 in)			

ELECTRICAL

Unit: mm (in)

ITEM	SPECIFICATION		NOTE
Ignition timing	4° B.T.D.C. below 1 500 r/min.		E-33
	7° B.T.D.C. below 1 500 r/min.		Others
Firing order	1-2-4-3		
Spark plug	Type	NGK: CR9E ND: U27ESR-N	
	Gap	0.7–0.8 (0.028–0.032)	
Spark performance	Over 8 (0.3) at 1 atm.		
Signal coil resistance	(Black–Green) Approx. 135–200 Ω		Tester range: (x 100 Ω)
Ignition coil resistance	Primary	⊕ tap – ⊖ tap Approx. 2.4–3.2 Ω	Tester range: (x 1 Ω)
	Secondary	Plug cap – Plug cap Approx. 30–40 kΩ	Tester range: (x 1 kΩ)
Generator	Slip ring O.D.	Limit: 14.0 (0.55)	ND
	Brush length	Limit: 4.5 (0.18)	
Generator Max. output	Approx. 405 W at 5 000 r/min		The rotation of the generator
Regulated voltage	Above 13.5 V at 5 000 r/min.		
Starter motor	Commutator under-cut	Limit: 0.2 (0.008)	ND
Starter relay resistance	3–5 Ω		
Battery	Type designation	YTX9-BS	
	Capacity	12 V 28.8 kC (8 Ah)/10 HR	
	Standard electrolyte S.G.	1.320 at 20°C (68°F)	
Fuse size	Headlight	HI	15 A
		LO	15 A
	Turn signal	15 A	
	Ignition	10 A	
	Taillight	10 A	
	Main	30 A	

Unit: W

WATTAGE

ITEM		SPECIFICATION	
		E-03,24,28,33	The others
Headlight	HI	60	←
	LO	55	←
Position light			4
Taillight		5	←
Brake light		21 × 2	←
Turn signal light		21 × 4	←
Tachometer light		1.7 × 2	←
Speedometer light		1.7 × 2	←
Turn signal indicator light		3.4	←
High beam indicator light		3.4	←
Neutral indicator light		3.4	←
Oil pressure indicator light		3.4	←
Fuel level indicator light		3.4	←
License light		5	←
Engine coolant temp. meter light		1.7	←

BRAKE + WHEEL

Unit: mm (in)

ITEM		STANDARD		LIMIT
Rear brake pedal height		55 (2.2)		—
Brake disc thickness	Front	4.5 ± 0.2 (0.177 ± 0.008)		4.0 (0.16)
	Rear	5.0 ± 0.2 (0.197 ± 0.008)		4.5 (0.18)
Brake disc runout (Front & Rear)		—		0.30 (0.012)
Master cylinder bore	Front	12.700 – 12.743 (0.5000 – 0.5017)		—
	Rear	12.700 – 12.743 (0.5000 – 0.5017)		—
Master cylinder piston diam.	Front	12.657 – 12.684 (0.4983 – 0.4993)		—
	Rear	12.657 – 12.684 (0.4983 – 0.4993)		—
Brake caliper cylinder bore	Leading	Front	25.400 – 25.450 (1.0000 – 1.0020)	—
			25.400 – 25.450 (1.0000 – 1.0020)	—
	Trailing	Rear	38.180 – 38.256 (1.5031 – 1.5061)	—
Brake caliper piston diam.	Leading	Front	25.335 – 25.368 (0.9974 – 0.9987)	—
			25.335 – 25.368 (0.9974 – 0.9987)	—
	Trailing	Rear	38.098 – 38.148 (1.5000 – 1.5019)	—

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ITEM	STANDARD		LIMIT
	Wheel rim runout (Front & Rear)	Axial	—
Radial		—	2.0 (0.08)
Wheel axle runout	Front	—	0.25 (0.010)
	Rear	—	0.25 (0.010)
Wheel rim size	Front	J17 × MT3.50	—
	Rear	J17 × MT4.50	—
Tire size	Front	120/70 ZR17	—
	Rear	160/60 ZR17	—
Tire tread depth	Front	—	1.6 (0.06)
	Rear	—	2.0 (0.08)

SUSPENSION

Unit: mm (in)

ITEM	STANDARD	LIMIT	NOTE
Front fork stroke	120 (4.7)	—	
Front fork spring free length	—	390 (15.4)	
Front fork oil level	92 (3.6)	—	
Rear wheel travel	130 (5.1)	—	
Swingarm pivot shaft runout	—	0.3 (0.01)	

FUEL + OIL + ENGINE COOLANT

ITEM	SPECIFICATION	NOTE
Fuel type	Use only unleaded gasoline of at least 85 pump octane ($\frac{R+M}{2}$) or 91 octane or higher rated by the research method. Gasoline containing MTBE (Methyl Tertiary Butyl Ether), less than 10% ethanol, or less than 5% methanol with appropriate cosolvents and corrosion inhibitor is permissible.	E-03,33
	Use only unleaded gasoline of at least 87 pump octane ($\frac{R+M}{2}$ method) or 91 octane or higher rated by the Research Method.	E-28
	Gasoline used should be graded 85-95 octane or higher. An unleaded gasoline is recommended.	The others
Fuel tank including reserve	16.0 L (4.2/3.5 US/lmp gal)	E-33
	17.0 L (4.5/3.7 US/lmp gal)	The others
reserve	4.0 L (1.1/0.9 US/lmp gal)	

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ITEM	SPECIFICATION		NOTE
Engine oil type	SAE 10W/40, API SF or SG		
Engine oil capacity	Change	3 000 ml (3.2/2.6 US/lmp qt)	
	Filter change	3 300 ml (3.5/2.9 US/lmp qt)	
	Overhaul	3 900 ml (4.1/3.4 US/lmp qt)	
Front fork oil type	Fork oil #10		
Front fork oil capacity (each leg)	503 ml (17.0/17.7 US/lmp oz)		
Brake fluid type	DOT 4		
Engine coolant type	Use an anti-freeze/coolant compatible with aluminum radiator, mixed with distilled water only, at the ratio of 50:50.		
Engine coolant including reserve	2 450 ml (2.6/2.2 US/lmp qt)		

TIRE PRESSURE [E-03,33 markets]

COLD INFLATION TIRE PRESSURE	SOLO RIDING			DUAL RIDING		
	kPa	kg/cm ²	psi	kPa	kg/cm ²	psi
FRONT	225	2.25	33	250	2.50	36
REAR	250	2.50	36	290	2.90	42

TIRE PRESSURE [The other markets]

COLD INFLATION TIRE PRESSURE	SOLO RIDING			DUAL RIDING		
	kPa	kg/cm ²	psi	kPa	kg/cm ²	psi
FRONT	250	2.50	36	250	2.50	36
REAR	250	2.50	36	290	2.90	42