SR 500 1978-79 Specifications

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General Specifications

	1978	1979
Model:		2J2-020101
I.B.M. No.	2J2	
Frame I.D. and starting number	2J2-000101	
Engine I.D. and starting number	2J2-000101	2J2-020101
Dimensions:		
Overall length	2,105 mm (82.9 in)	
Overall width (standard)	835 mm (32.9 in)	
Overall height (standard)	1,150 mm (45.3 in)	
Wheel base	1,410 mm (55.5 in)	
Minimum ground clearance	165 mm (6.5 in)	
Weight:		
Net weight	163 kg (359 lbs)	
Performance:		
Climbing ability	30 deg	
Minimum turning radius	2,400 mm (94.5 in)	
Braking distance	14 m (45.9 ft) at 50km/h (31 mph)	

Engine specifications (Top)

Description:	
Engine type	Air cooled 4-stroke, forward incline, single, S.O.H.C.
Engine model	2J2
Displacement	499 cc (30.45 cu. in.)
Bore x Stroke	87 x 84 mm (3.425 x 3.307 in)
Compression Ratio	9.0 : 1
Starting system	Primary kick starter
Ignition system	C.D.I.
Lubrication system	Dry sump, trochoidal pump
Cylinder Head:	
Combustion chamber type	Hemispherical
Combustion chamber volume (with BP7ES or N-7Y)	62.4 cc (3.81 cu. in.)
Head gasket thickness	1.0 mm (.039 in)
Camshaft:	
Cam drive type	Drive chain (right side drive)
Camshaft bearing type (left)	6005C3

Camshaft bearing type (right)	6005C3 (with groove)
Cam chain type and No. of links	BF05M, 106L
Cam dimensions:	**required <allowable>**
A (Cam Height) IN.	39.23 +or- .05 mm <39.08 mm> (1.5445 +or- .0020 in <1.5386 in>)
A (Cam Height) EX.	39.25 +or- .05 mm <39.10 mm> (1.5453 +or- .0020 in <1.5394 in>)
B (Base circle) IN.	32.23 +or- .05 mm <32.08 mm> (1.2689 +or- .0020 in <1.2630 in>)
B (Base circle) EX.	32.28 +or- .05 mm <32.08 mm> (1.2709 +or- .0020 in <1.2630 in>)
C (Cam lift) IN.	7.225 mm (.2844 in)
C (Cam lift) EX.	7.253 mm (.2856 in)
Camshaft run out limit	<0.1 mm (.0039 in)>
Valve timing:	
Intake open	BTDC 44 deg
Intake close	ABDC 68 deg
Duration	292 deg
Exhaust open	BBDC 76 deg
Exhaust close	ATDC 36 deg
Exhaust duration	292 deg
Valve overlap	80 deg
Rocker arm and rocker shaft:	**required <allowable>**
Rocker arm bearing dia. (I.D.)	12.00~12.02 mm <12.05 mm> (.4724~.4732 in <.4744 in>)
Rocker arm shaft dia. (O.D.)	11.98~11.99 mm <11.96 mm> (.4714~.4720 in <.4709 in>)
Clearance	.01~.04 mm <.11 mm> (.0004~.0016 in <.0043 in>)
Valve, valve seat and valve guide:	**required <allowable>**
Valve clearance (cold): IN.	.10 mm (.0039 in)
Valve clearance (cold): EX.	.15 mm (.0059 in)
No. of valves per cylinder:	2 pcs
Valve head dia. (A): IN.	47 mm (1.85 in)
Valve head dia. (A): EX.	39 mm (1.54 in)
Valve face width (B): IN.	2.12 mm (.0835 in)
Valve face width (B): EX.	2.12 mm (.0835 in)
Valve seat width (C): IN.	1.3 mm (.051 in)
Valve seat width (C): EX.	1.3 mm (.051 in)
Valve margin thickness (D): IN.	1.3 mm (.051 in)
Valve margin thickness (D): EX.	1.3 mm (.051 in)
Valve stem outside dia.: IN.	7.97~7.99 mm (.3138~0.3146 in)
Valve stem outside dia.: EX.	7.96~7.97 mm (.3134~0.3138 in)
Valve guide inside dia.: IN.	8.01~8.02 mm (.3154~0.3157 in)
Valve guide inside dia.: EX.	8.01~8.02 mm (.3154~0.3157 in)
Valve stem to guide clearance: IN.	.02~.04 mm <.08 mm> (.0008~.0016 in <.0031 in>)

Valve stem to guide clearance: EX.	.04~.06 mm <.1 mm> (.0016~.0024 in <.0039 in>)
Valve springs:	**required <allowable>**
Free length: Inner	45.3 mm <43.9 mm> (1.783 in <1.728 in>)
Free length: Outer	44.6 mm <43.3 mm> (1.756 in <1.703 in>)
Spring rate: Inner	K1= 1.67, K2 = 2.12 [kg/mm] (K1 = 93.5, K2 = 119 [lb/in])
Spring rate: Outer	K1 = 3.60, K2 - 4.63 [kg/mm] (K1 = 202, K2 = 259 [Ib/in])
Installed length (valve closed): Inner	38.0 mm (1.496 in)
Installed length (valve closed): Outer	40.0 mm (1.575 in)
Installed pressure (valve closed): Inner	12.2 kg (26.9 lb)
Installed pressure (valve closed): Outer	16.4 kg (36.2 lb)
Compressed length (valve open): Inner	28.0 mm (1.102 in)
Compressed length (valve open): Outer	30.0 mm (1.181 in)
Compressed pressure (valve open): Inner	33.4 kg (73.6 lb)
Compressed pressure (valve open): Outer	62.7 kg (138.2 lb)
Wire diameter: Inner	3.1 mm (.122 in)
Wire diameter: Outer	4.4 mm (0.173 in)
Winding outside diameter: Inner	23.4 mm (.921 in)
Winding outside diameter: Outer	32.9 mm (1.295 in)
Tilt limit from vertical: Inner	1.97 mm (.0776 in)
Tilt limit from vertical: Outer	1.97 mm (.0776 in)
Cylinder:	**required <allowable>**
Material	Aluminum alloy with cast iron sleeve
Bore size	87.00 ~87.02 mm <87.1 mm> (3.4252 ~3.4260 in <3.429 in>)
Taper limit	<.05 mm> (<.0020 in>)
Out Of round limit	<.01 mm> (<.0004 in>)
Piston:	**required <allowable>**
Piston clearance	.050 ~ .055 mm (.0020 ~ .0022 in)
Piston clearance measuring position (from piston skirt bottom)	7.2 mm (.283 in)
Piston pin bore size	20.00 ~ 20.02 mm <20.08 mm> (.7874 ~ .7882 in <.7905 in>)
Piston pin outside diameter	19.99 ~ 20.00 <19.96 mm> (.7870 ~ .7874 in <.7858 in>)
Piston pin length	75 mm (2.95 in)
Over size piston diameter: 1 st	87.25 mm (3.4350 in)
Over size piston diameter: 2nd	87.50 mm (3.4449 in)
Over size piston diameter: 3rd	87.75 mm (3.4547 in)
Over size piston diameter: 4th	88.00 mm (3.4646 in)
Piston ring:	**required <allowable>**
Piston ring design: Top ring	Plain ring
Piston ring design: 2nd ring	Plain ring
Piston ring design: Oil ring	Oil ring with expander
Ring end gap (installed): Top ring	.3 ~ .5 mm <0.8 mm> (.012 ~ .020 in <.030 in>)

Ring end gap (installed): 2nd ring	.3 ~ .5 mm <.8 mm> (.012 ~ .020 in <.031 in>)
Ring end gap (installed): Oil ring	.2 ~ .9 mm <1.0 mm>
Ring groove side clearance: Top ring	.04 ~ .08 mm <.15 mm> (.0016 ~ .0031 in <.0059 in>)
Ring groove side clearance: 2nd ring	.03 ~ .07 mm <.15 mm> (.0012 ~ .0028 in <.0059 in>)
Ring groove side clearance: Oil ring	N.A.
Over size piston ring: Ist	87.25 mm (3.4350 in)
Over size piston ring: 2nd	87.50 mm (3.4449 in)
Over size piston ring: 3rd	87.75 mm (3.4547 in)
Over size piston ring: 4th	88.00 mm (3.4646 in)
Big end bearing:	
Type	Needle bearing
Inside dia. x outside dia. x width	34 x 42 x 24 mm (1.34 x 1.65 x .94 in)
Needle dia. x quality	IKO 4 mm (.16 in) x 18 pcs KOYO 4 mm (.16 in) x 17 pcs.
Crankshaft:	**required <allowable>**
Crankshaft assembly width (F)	74.95 ~ 75.00 mm (2.9508 ~ 2.9528 in)
Crankshaft deflection (D)	<.03 mm (.0012 in) or less>
Connecting rod large end side clearance (C)	.35 ~ .65 mm (.0138 ~ .0256 in)
Connecting rod small end deflection (P)	.8 ~ 1.0 mm <2.0 mm> (.0315 ~ .0394 in <0.079 in>)
Crank pin outside dia. x length	34 x 74 mm (1.34 x 2.91 in)
Crank bearing type; Left	6306 SH2-9-C4
Crank bearing type; Right	6307 SH2-9-C4 with special heat treatment
Crank oil seal type: Left	SD-30-60-6
Crank oil seal type: Right	S-14-25-5.5 special
Clutch:	**required <allowable>**
Clutch type	Wet, multiple disc type
Clutch push mechanism	Inner push, cam axle type
Primary reduction ratio and method	77/30 (2.566), spur gear
Primary reduction gear back lash number	148 ~ 150
Primary drive gear back lash number	21.79 +0 -.04 mm (4 Teeth)
Primary driven gear back lash number	52.71 +0 -.04 mm (9 Teeth)
Friction plate: Thickness/quantity	2.8 mm <2.5 mm> /8 pcs. (.110 in <.098 in> /8 pcs.)
Clutch plate: Thickness/quantity	1.2 mm /7 pcs. (.047 in /7 pcs.)
Clutch plate: Warp limit	<.05 mm (.0020 in)>
Clutch spring: Free length/quantity	41.2 mm <40.0 mm> /6 pcs. (1.622 in <1.575 in> /6 pcs.)
Clutch spring: Spring set weight	19.8 x 6 kg/25 mm (43.7 6 lb/.984 in)
Clutch spring: Spring constant	1.22 kg/mm (68.3 lb/in)
Clutch housing thrust clearance	.10 ~ .21 mm (.004 ~ .008 in)
Push rod bending limit	<.2 mm (.0079 in) or less>
Push lever axle: Bearing type and size	Needle bearing (17-21.5-15) x 2 pcs.
Push lever axle: Oil seal type and size	SD-17-28-6

Transmission:	
Type	Constant mesh. 5 speed
Gear ratio: 1st	33/14 (2.357)
Gear ratio: 2nd	28/18 (1.555)
Gear ratio: 3rd	25/21(1.190)
Gear ratio: 4th	22/24 (0.916)
Gear ratio: 5th	21/27 (0.777)
Bearing type: Main axle (Left)	Needle bearing (20-32-12)
Bearing type: Main axle (Right)	4205
Drive axle (Left)	6305 special
Drive axle (Right)	Needle bearing (20-36-12)
Drive axle (Left)	SD-35-62-10
Secondary reduction ratio and method	44/16 (2.750), chain
Shifting mechanism:	
Operation system	Return type, left foot operation
Shifting type	Guide bar type, cam drum system
Oil seal type: Change lever	SDO-14-24-6
Kick starter:	
Type	Ratchet type
Oil seal type Kick axle	SD-25-35-7
Compression release:	
Type	Manual, wire linked cam axle type
Lever free play	2 mm (.079 in)
Oil seal type	SD-12-17-2.5-2NR
Air cleaner:	
Type/quantity	Dry foam rubber / l pc.
Carburetor:	
Type and manufacturer	VM34SS MIKUNI
I.D. mark	2J200
Main jet (M.J.)	#300
Airjet (A.J.)	#80
Jet needle: Clip position (J.N.)	6FL25-2
Needle jet (N.J.)	P-8
Cutaway (C.A.)	3.5
Pilot jet (P.J.)	#25
Mixture screw turns out	Preset
Starter jet (G.S.)	#50
Float height	23.5 +or- 1 mm (.925 +or- .039 in)
Idling engine speed	1100 r/min
Lubrication:	**required <allowable>**
Transmission gear and engine sump oil Quantity	Total amount: 2.4 lit (2.5 US.qt) (2.11 Imp. qt) Periodic oil change: 2.0 lit (2.1 US.qt) (1.76 Imp. qt) Exchange with oil filter: 2.1 lit (2.2 US.qt) 1.85 IMP.qt)
Type engine oil	Yamalube 20W / 40 motor oil or equivalent
Oil pump: Type	Trochoidal pump
Oil pump: Housing inside diameter	40.65 ~ 40.68 mm <40.85> (1.6004 ~ 1.6016 <1.6083 in>)

Oil pump: Housing depth (delivery)	4.03 ~ 4.06 mm <4.09 mm> (.1587 ~ .1598 in <.1610 in>)
Oil pump: Housing depth (scavenger)	18.03 ~ 18.06 mm <18.09 mm> (.7098 ~ .7118 in <0.7122 in>)
Oil pump: Rotor diameter	40.53 ~ 40.56 mm <40.50 m> (1.5957 ~ 1.5968 in <1.5945 in>)
Oil pump: Rotor thickness (delivery)	3.98 ~ 4.00 mm <3.95 mm>
Rotor thickness (scavenger)	(.1567 ~ .1575 in <.1555 in>)
Outer rotor and housing clearance	17.98 ~ 18.00 mm <17.95 mm>)
Side clearance	.09 ~ .15 mm <.35 mm> (.0035 ~ .0059 in <.0138 in>)
Tip clearance	.03 ~ .08 mm <0.14 mm> (.0012 ~ .0031 in <.0055 in>)
Check valve opening pressure	.07 ~ .12 mm <.35 mm> (.0028 ~ .0047 in <.00138 in>)
By-pass valve opening pressure	.18 kg/cm2 (2.56 lb/in2)
Oil cleaner type	1.0 kg/cm2 (14.2 lb/in2) Paper type

Chassis specification (Top)

Frame:	
Frame design	Tubular steel semi double cradle
Steering system:	
Caster	27.5 deg (62.5 deg)
Trail	117 mm (4.6 in)
Steering head ballbearings:	
Upper race	22 pcs. 3/16 in
Lower race	19 pcs. 1/4 in
Lock to lock angle	L.R. 41.5 deg
Front suspension:	
Type	Telescopic forks
Front fork cushion travel	150 mm (5.9 in)
Front fork spring:	445 mm (17.52 in)
Free length	417 mm (16.42 in)
Set length	3.6 x 24.3 mm (.14 x 0.96 in)
Wire dia. x winding dia.	K1 = .4 kg/mm (0 ~ 100 mm)
Spring constant	(22.4 lb/in (0 ~ 3.94 in) K2 = .504 kg/mm (100 ~ 150 mm) (28.2 lb/in (3.94 ~ 5.91 in)
Inner tube outside diameter	35 mm (1.38 in)
Oil seal type	SD-35-48-10.5
Front fork oil: Quantity	182 cc (6.15 oz) (6.41 IMP.oz)
Front fork oil: Type	Yamaha fork oil 10 Wt. or equivalent
Rear suspension:	**required <allowable>**
Type	Swing arm
Damper type	Coil spring, oil damper

Rear shock absorber travel	80 mm (3.15 in)
Rear wheel travel	110 mm (4.33 in)
Rear shock absorber spring:	
Free length	216.5 mm (8.52 in)
Set length (soft position)	198 mm (7.80 in)
Wire dia. x winding dia.	7.5 x 61 mm (.30 x 2.40 in)
Spring constant	K1 = 1.8 kg/mm (O ~ 50 mm) (100.8 lb/in (0 ~1.97 in) K2 = 2.1 kg/mm (50 ~ 80 mm) (117.6 lb/in (1.97 ~ 3.15 in)
Swing arm free play (limit)	<1 mm (0.039 in)>
Pivotshaft:	16 mm (0.63 in)
Outside dia.	L.R. Needle bearing (22-29-20)
Bearing type and size	L.R. Thrust needle bearing (22-40.15-6)
Dust seal type	L.R. OSO-35-41.5-8
Fuel tank:	
Capacity	12 lit (3.2 US.Gal) (2.6 IMP.gal)
Fuel grade	Regular gasoline
Wheel:	**required <allowable>**
Type	Casting wheel
Tire size and pattern: Front	3.50-S19-4PR. lug type
Tire size and pattern: Rear	4.00-S18-4PR. lug type
Rim type: Front	1.85-19 / Aluminum
Rim type: Rear	2.15-18 / Aluminum
Rim runout (limit): Front/Rear	<2 mm> (<.08 in>)
Rim hopping (limit): Front/Rear	<2 mm> (<.08 in>)
Bearing type:	
Front wheel (Left)	6303ZZ
Front wheel (Right)	6303Z
Rear wheel (Left)	6203RS
Rear wheel (Right)	6303ZZ
Oil seat type:	
Front wheel (Left)	.....
Front wheel (Right)	SD-28-47-7-1
Meter gear	SDD-45-56-6
Rear wheel (Left)	SD-25-40-8
Rear wheel (Right)	SD-28-47-7-1
Secondary drive chain:	
Type	DID 50 HDSS
Number of links	103L +Joint
Chain pitch	15.875 rnm (.6250 in)
Chain free play	20 mm (0.79 in)
Brakes:	
Type	Hydraulic disc type
Disc size (Outside dia x thickness)	
Front	298 x 5 mm (11.73 x .02 in)
Rear	267 x 5 mm (10.51 x .02 in)
Disc wear/limit	<4.5 mm> (<.18 in>)

Disc pad thickness	11 mm (.43 in)
Pad wear limit (Minimum thickness)	<6 mm> (<.24 in>)
	14.0 mm (.55 in)
Master cylinder inside dia.	38.18 mm (1.50 in)
Caliper cylinder inside dia.	DOT #3 brake fluid
Brake fluid type	

Electrical Specifications (Top)

Voltage	12V
Ignition system:	**required <allowable>**
C.D.I.	
Model/Manufacturer	032000-045 / NIPPON DENSO
Pulser coil resistance	
High speed (White/Red-Black)	16 ohm +or- 30% at 20 deg C(68 deg F)
Low speed (White/Green-Black)	87 ohm +or-30% at 20 degC (68 deg F)
Charge coil resistance	334 ohm +or- 30% at 20degC (68 deg F)
High speed (Red-Brown)	329 ohm +or- 30% at 20 deg C (68 deg F)
Low speed (Brown-Black)	BTDC 7 deg / 1100 r/min
Ignition timing:	
Ignition advancer:	Electrical
Advance type	26.5 deg
Advance angle	1,950 r/min
Advance starting engine speed	6,000 r/min
Full advance engine speed	
Ignition coil:	029700-468 / NIPPON DENSO
Model/manufacturer	<6 mm (.24 in) / 500 r/min>
Spark gap	.98 ohm +or- 20% at 20 deg C (68 deg F)
Primary winding resistance	
Secondary winding resistance	12k ohm +or- 20% at 20 deg C (68 deg F)
Spark plug:	
Type	BP-7ES (NGK) N- 7Y (Champion)
Spark plug gap	.7 ~ .8 mm (.028 ~ .031 in)
C. D.I. unit:	
Model/Manufacturer	070000-035/NIPPON DENSO
Charging system:	032000-045 / NIPPON DENSO
AC. magneto:	M27 x P 1.0
Model/Manufacturer	14.5V-11A / 5000 r/min
Rotor puller thread size	
Output	.73 ohm +or- 30% at 20 deg C (68 deg F)
Stator coil resistance	
White-Yellow	.80 ohm +or- 30% at 20deg C (68 deg F)
White-White	
Rectifier/regulator:	
Model/Manufacturer	SH235 / SHINDENGEN
(Rectifier)	
Type	I.C. type. three phase full wave

Capacity	15A
Withstand voltage	200V
(Regulator)	
Type	I.C. type
Regulating voltage	14.5 +or- .5V
Allowable amperage	15A
Battery:	
Model/Manufacturer	12N7-3B / G.S.
Capacity	12V, 7AH
Charging rate	.7A x 10 hours
Specific gravity	1.280
Lighting system:	
Headlight type:	Sealed beam
Bulb wattage/Quantity:	
Headlight	12V, 50W/40W x 1
Taillight	12V 8W (3CP) x 1
Brake light	12V 27W (32CP) x 1
Flasher light	12V 27W (32CP) x 4
Turn indicator light	12V 3.4W x 1
Meter light	12V 3.4W x 4
High beam indicator light	12V 3.4W x 1
Neutral indicator light	12V 3.4W x 1
Horn:	
Model/Manufacturer	CF-12 / NIKKO HORN
Winding resistance	1.24 ohm +or- 10% at 20 deg C (68 deg F)
Amperage	2.5A
Flasher relay:	
Type	Condenser type
Model/Manufacturer	FN257C / NIPPON DENSO
Flasher frequency	85 +or- 10 cycle/min.
Capacity	12V 27W x 2 + 3W
Fuse:	
Rating	20A

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