

SPECIFICATIONS

A. GENERAL SPECIFICATIONS

Basic color	Crystal Silver
Dimensions:	
Overall length	2180mm (85.8 in.)
Overall width	835mm (32.9 in.)
Overall height	1150mm (45.3 in.)
Seat height	810mm (31.9 in.)
Wheelbase	1465mm (57.7 in.)
Minimum ground clearance	145mm (5.7 in.)
Caster (steering head angle)	27°
Trail	110mm (4.3 in.)
Weight:	
Net	229 kg (505 lbs.)
Engine:	
Type	D.O.H.C., air-cooled, triple
Bore x stroke x cylinders	68mm x 68.6mm x 3
Displacement	747cc
Compression ratio	8.5: 1
Compression pressure (warm engine)	142 lbs in ² (±14 lbs in ²)
Lubrication:	
Lubrication system	Pressure lubricated, wet sump
Delivery pump type	Trocoïd
Carburetion:	
Manufacture	Mikuni
Type, I.D. No., Quantity	BS34, constant velocity, 1J701, 3 pcs.
Rated venturi size	34mm
Air filter	Dry foam rubber
Ignition:	
Type	Battery/coil
Spark plug	NGK BP-7ES, Champion N-7Y
Charging	
Type	Three-phase, regulated alternator
Manufacture, I.D. No.	Hitachi LD120-02
Maximum output	14.5 Volt/18 amp
Battery type	12 volt 14 amp-hour
Battery dimensions	134 x 166 x 89mm
Regulator	Hitachi TL1Z-80
Rectifier	Stanley DE-4404, Silicon, full wave
Starting	Transmission coupled kick Mitsuba Electric SM-224C
Primary drive	
Type	Hy-Vo silent chain
Teeth, ratio	45/27 1.666
Clutch	Wet, multiple disc.

Transmission:		Constant mesh, 5-speed, drum shifter		
Type		32/13	2.461	13.285
Teeth, ratio, overall	1st	27/17	1.588	8.636
	2nd	26/20	1.300	7.069
	3rd	23/21	1.095	5.955
	4th	22/23	0.956	5.201
	5th			
Secondary Drive:		Shaft drive		
Type		Spur gear, 34/32, 1.063		
Transmission Output:		Bevel gear, 19/18, 1.056		
Type, teeth, ratio		Bevel gear, 32/11, 2.909		
Middle gear case				
Type, teeth, ratio				
Final gear case				
Type, teeth, ratio				
Chassis:		Tubular steel double cradle		
Frame		Telescopic fork, 175mm (6.9 in.)		
Suspension:		Swing arm, 75mm (3.0 in.)		
Front (type, travel)		3.25 H 19 Bridgestone		
Rear (type, travel)		4.00 H 18 Bridgestone		
Tires:		Dual hydraulic disc		
Front		Single hydraulic disc		
Rear		17L.(4.5 US gal.) Regular leaded or unleaded		
Brakes:		1.85 x 19 Cast Aluminum		
Front		2.15 x 18 Cast Aluminum		
Rear				
Fuel tank				
Wheels:				
Front				
Rear				

B. MAINTENANCE SPECIFICATIONS

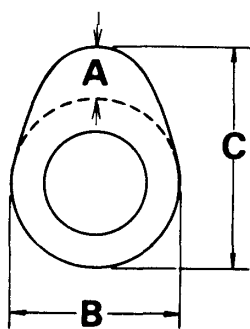
1. Engine

Engine Oil Capacity		
Dry	3500cc	(3.7 US qt.)
Oil and filter change	3200cc	(3.4 US qt.)
Oil change	2800cc	(3.0 US qt.)
Recommended lubricant:		
If temperature does not go below 5°C (40°F)	SAE 20W40 SE motor oil	
If temperature does not go above 15°C (60°F)	SAE 10W30 SE motor oil	

Middle gear case capacity: Final Gear case capacity Recommended lubricant If temperature does not go below 5°C (40°F) If temperature does not go above 15°C (60°F) All weather	375cc (13 oz.) 300cc (100 oz.) SAE 90 Hypoid gear oil, GL-4 SAE 80 Hypoid gear oil, GL-4 SAE 80W90 Hypoid gear oil, GL-4
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Cranking pressure (at sea level) Maximum difference between cylinders	10 ± 1 kg/cm ² (142 ± 14 psi) 1.0 kg/cm ² (14 psi)
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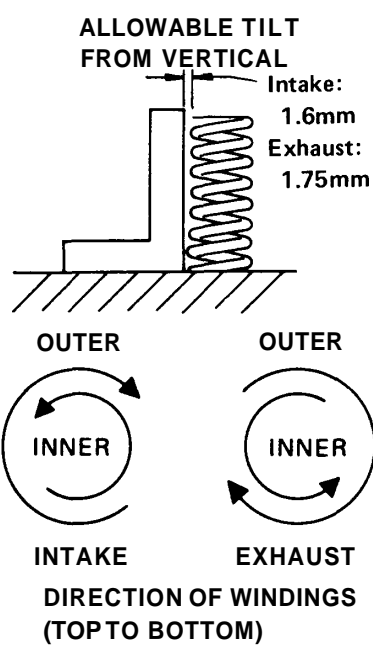
Camshafts



Dimensions	Standard size	Wear limit
Intake	A 8.518mm	
	B 28.285 ± 0.05mm	28.13mm
	C 36.803 ± 0.05mm	36.75mm
Exhaust	A 8.018mm	-----
	B 28.285 ± 0.05mm	28.13mm
	C 36.303 ± 0.05mm	36.15mm

Camshaft bearing surface diameter	24.97~24.98mm (0.9830~0.9835 in.)
Camshaft-to-cap clearance :	
Standard	.020~.054mm (.0008~.002 in.)
Maximum	.160mm (.006in.)
Camshaft runout limit	0.1 mm (.004 in)

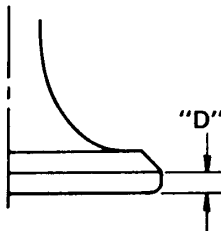
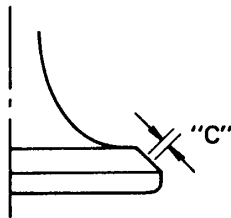
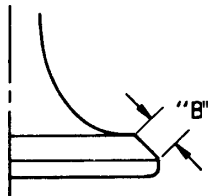
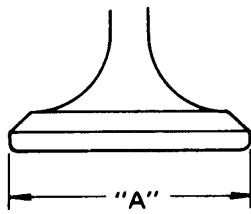
Valves



	INNER	OUTER
	INTAKE/EXHAUST	INTAKE/EXHAUST
Free length	35.6mm	39.9mm
Spring rate (kg/mm)	K1 1.84 K2 2.36	K1 3.32 K2 4.18
Installed length (valve closed)	31.5mm	34.5mm
Installed pressure (valve closed)	7.5 ± 0.75kg	17.5 ± 1.2kg
Compressed length (valve open)	23.0mm	26.0mm
Wire diameter	2.8mm	3.9mm
Number of windings	7.75	6.4
Winding O.D.	15+0.3mm 0	21.6 0 - 0.3mm

Valve stem run-out maximum	.03mm (.0012 in.)
Valve seat width standard/maximum	1.3mm (.050 in.) / 2.0mm (.080 in.)

INTAKE



Clearance (Cold engine)	0.16~0.20mm
"A" head diameter	36 + 0.2 0mm
"B" face width	2.26 ± 0.57mm
"C" seat width	1.3 ± 0.15mm
"D" margin thickness	1.2 ± 0.2mm
Stem diameter (O.D.)	7 + .010mm -.025mm
Guide diameter (I.D.)	7 + .019mm -.010mm
Stem-to-guide clearance	0.020~0.041mm

EXHAUST

Clearance (Cold engine)	0.2 1~0.25mm
"A" head diameter	31 + 0.2mm 0mm
"B" face width	2.26 ± 0.57mm
"C" seat width	1.3 ± 0.15mm
"D" margin thickness	1.2 ± 0.2mm
Stem diameter (O.D.)	7 +.025mm -.040 mm
Guide diameter (I.D.)	7 + .019mm -.010mm
Stem-to-guide clearance	0.035~0.059mm

Cylinder and Piston

Cylinder material
 Cylinder liner
 Standard bore size standard maximum
 Cylinder taper limit
 Cylinder out-of-round limit
 Piston clearance standard maximum

Aluminum
 Pressed in; special cast iron
 68.00~68.02mm / (2.677~2.678 in.)
 68.10mm (2.681)
 0.05mm (.002 in.)
 0.01mm (.0004 in.)
 0.050~0.055mm / (.0020~.0022 in.)
 0.1mm (.004 in.)

Piston Rings

Design
 End gap (installed)
 Side clearance

Top	2nd	Oil
0.2~0.4mm	0.2~0.4mm	0.2~0.9mm
0.04~0.08mm	0.03~0.07mm	

Crankshaft and Connecting Rods: Main bearing oil clearance Rod bearing oil clearance Main journal run-out (maximum)	0.022~0.044mm (.0009~.0017 in.) 0.032~0.054mm (.0013~.0021 in.) 0.03mm (.0012 in.)
Oil Pump Housing-to-outer rotor clearance Outer rotor-to-inner rotor clearance	.090~.015mm (.0035~.0059 in.) .03 ~.09mm (.0011~.0035 in.)
Clutch Friction plate thickness standard minimum Clutch plate warp maximum Clutch spring length standard minimum Clutch push rod run-out maximum Clutch lever freeplay (end of lever)	3.0mm (0.12 in.) 2.8mm (0.11 in.) 0.05mm (.002 in.) 42.8mm (1.685 in.) 41.5mm (1.634 in.) 0.4mm (.016in.) 13~26mm (0.5~1.0 in)
Transmission shaft run-out maximum	.08mm (.001 in.)
Middle gear case lash	0.1 ~0.2mm (.004~.008in.)

2. Carburetion

Manufacturer	Mikuni	Float level	26.5 ±2.5mm (from gasket surface)
Model, I. D. No.	BS34,1J701	Pilot screw	2¼ turns
Main jet	No. 145	Air jet, Main	1.0mm
Needle jet	Y-2	Air jet, Pilot	1.6mm
Pilot jet	No. 17.5	Throttle valve	No. 140
Starter jet	No. 45	Inlet valve size	2.0mm
Jet needles / Clip position	4H11/3	Engine idle speed	1050 ~ 1150 r.p.m.

3. Chassis

<p>Wheels and Tires</p> <p>Rim run-out, vertical</p> <p>Rim run-out, horizontal</p> <p>Tire pressure, front, normal riding</p> <p>High speed or with passenger</p> <p>Tire pressure, rear, normal riding</p> <p>High speed or with passenger</p>	<p>2.0mm (.080 in.)</p> <p>1.0mm (.040 in.)</p> <p>1.8 kg/cm² (26 p.s.i.)</p> <p>2.0 kg/cm² (28 p.s.i.)</p> <p>2.0 kg/cm² (28 p.s.i.)</p> <p>2.3 kg/cm² (33 p.s.i.)</p>
<p>Brakes</p> <p>Recommended fluid</p> <p>Minimum boiling point</p> <p>Pad thickness wear limit</p> <p>Brake disc maximum deflection</p> <p>Brake disc minimum thickness</p> <p>Front brake freeplay (end of lever)</p> <p>Rear brake freeplay (end of pedal)</p>	<p>DOT No. 3</p> <p>240°C (464°F)</p> <p>5.5mm (0.18 in.)</p> <p>0.15mm (.006 in.)</p> <p>6.5mm (0.26 in.)</p> <p>5.0~10.0mm (0.2~0.4 in.)</p> <p>5.0~10.0mm (0.2~0.4 in.)</p>
<p>Front forks</p> <p>Spring (upper) free length</p> <p>preload length</p> <p>Spring (lower) free length</p> <p>preload length</p> <p>Spring rate (0~100mm travel)</p> <p>(100~175mm travel)</p> <p>Fork oil capacity (each side)</p>	<p>55.8mm (2.2 in.)</p> <p>50.8mm (2.0 in.)</p> <p>448.3mm (17.65 in.)</p> <p>423.3mm (16.67 in.)</p> <p>0.5 kg/mm (28 lbs/in.)</p> <p>0.6 kg/mm (33.6 lbs./in.)</p> <p>170cc (5.75 US fl. oz.)</p>
<p>Rear shock absorbers</p> <p>Spring free length</p> <p>Spring preload length</p> <p>Spring rate (0~45mm travel)</p> <p>(45~75mm travel)</p>	<p>253mm (9.95 in.)</p> <p>228 mm (9.0 in.)</p> <p>1.9 kg/mm (106 lbs./in.)</p> <p>2.6 kg/mm (145 lbs./in.)</p>

<p>Ignition timing retarded</p> <p>advanced</p> <p>advance starts</p>	<p>10° @ 1100 rpm</p> <p>38.5° ± 1.5° @ 2,900 rpm</p> <p>1550 + 200 rpm</p> <p>0</p>
<p>Spark plug</p> <p>Electrode gap</p>	<p>NGK BP-7ES or Champion N-7Y</p> <p>0.7~ 0.8mm (.028~.032 in)</p>
<p>Spark plug cap resistance</p>	<p>5.0 K ohms</p>
<p>Contact point gap</p> <p>Spring tension</p>	<p>0.3~0.4mm (.012 ~.016 in)</p> <p>750 ± 100g (26.5 ± 3.5 oz)</p>
<p>Condenser capacity</p> <p>Insulation resistance</p>	<p>0.22µF ± 10%</p> <p>10 M ohms or more</p>
<p>Ignition coil type</p> <p>Spark gap 6V</p> <p>12V</p> <p>Primary resistance (20°C)</p> <p>Secondary resistance (20°C)</p>	<p>Hitachi CM11-52A</p> <p>6mm @ 100 rpm</p> <p>7mm @ 5,000 rpm</p> <p>4.0 ± 0.4 ohms</p> <p>11.0 ± 1.1K ohms</p>

Starter motor type Armature coil resistance (20°C) Field coil resistance (20°C) Brush length standard minimum Brush spring pressure Armature mica undercut	Mitsuba SM-224C 0.007 ohms 0.01 ohms 12.5mm (0.5 in) 5.5mm (0.22 in) 620 ± 60g (22.0 ± 2.0 oz) 0.5 ~ 0.8mm (0.02 ~ 0.03 in)
Battery type Charging rate	Yuasa YB 14L 1.4 amps for 10 hours
Generator type No load voltage Field (inner) coil resistance(20°C) Stator (outer) coil resistance (20°C)	Hitachi Ld 120-02 14.5 ± 0.5V 4.04 ± 0.4 ohms 0.48 ± 0.05 ohms
Regulator type Regulated voltage Core gap Yoke gap Point gap	Hitachi TLIZ-80 14.5 ± 0.5V 0.6 ~ 1.0mm (.024 ~.040 in) 0.9mm (.035 in) 0.3 ~ 0.4mm (.012 ~.016 in)
Starter relay switch Cut-in voltage Winding resistance (20°C)	Hitachi A104-70 6.5 V 3.5 ohms
Lighting Headlight Taillight/stoplight License light Flasher light Flasher pilot light Meter lights High beam indicator light Oil pressure warning light Neutral light	Sealed beam 12V50/40W 12V 8/27W (two bulbs) 12v 8W 12V 27W (four bulbs) 12V 3.4W (two bulbs) 12V 3.4W (two bulbs) 12v 3.4w 12v 3.4w 12v 3.4w

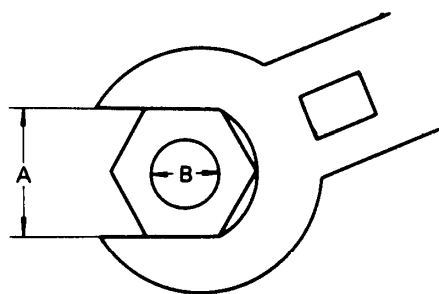
C. Torque Specifications

Engine	
Spark plug	1.5 ~ 2.5 m-kg (11.0 ~18.0 ft-lbs.)
Cam cap nut	0.8 ~ 1.0m-kg (6.0 ~ 7.0 ft-lbs.)
Rod cap	3.8 m-kg (27 ft-lbs.)
Starter clutch bolt	2.8 ~ 3.2 m-kg (20 ~ 23 ft-lbs.)
Shift cam locating bolt	1.3 ~ 2.1 m-kg (9 ~ 15 ft-lbs.)
Detent assembly	4.0 ~ 4.5 m-kg (29 ~ 32 ft-lbs.)
Transmission bearing caps	1.8 ~ 2.2 m-kg (13 ~ 16 ft-lbs.)
Crankcase bolts 8mm	2.0 m-kg (14 ft-lbs.)
10mm	3.7 m-kg (27 ft-lbs.)
Clutch holding nut	8 m-kg (58 ft-lbs)
Clutch spring screws	0.8 ~ 1.0m-kg (6.0 ~ 7.0 ft-lbs.)
Middle gear case mounting screws	2.0 ~ 2.5 m-kg (14 ~ 18 ft-lbs.)
Rotor holding bolt	3.0 ~ 4.0 m-kg (22 ~ 29 ft-lbs.)
Bearing housing bolt	2.0 ~ 2.4 m-kg (14 ~ 17 ft-lbs.)
Oil pipe union bolt	2.0 ~ 2.2 m-kg (14 ~ 16 ft-lbs.)
Oil pump drive gear nut	8.0 ~ 12.0 m-kg (58 ~ 87 ft-lbs.)
Crankshaft turning nut	1.5 ~ 2.9 m-kg (11 ~ 21 ft-lbs.)
Cylinder head 8mm	2.0 m-kg (14 ft-lbs.)
10mm	3.5 m-kg (25 ft-lbs.)
Cylinder holding nuts	2.0 m-kg (14 ft-lbs.)
Camshaft cap nuts	1.0 m-kg (7 ft-lbs.)
Engine mounting bolts 10mm	5.0 ~ 6.0 m-kg (36 ~ 43 ft-lbs.)
12mm	8.0 ~ 11.0 m-kg (58 ~ 80 ft-lbs.)
Engine oil drain plug	3.9 ~ 4.7 m-kg (28 ~ 34 ft-lbs.)
Oil filter mounting bolt	3.0 ~ 3.4 m-kg (22 ~ 25 ft-lbs.)
Middle gear drain plug	3.9 ~ 4.7 m-kg (28 ~ 34 ft-lbs.)
Chassis	
Front axle nut	7.0 ~ 10.0 m-kg (50 ~ 72 ft-lbs.)
Front axle holder nuts	1.3 ~ 2.3 m-kg (9 ~ 17 ft-lbs.)
Rear axle nut	12.0 ~ 18.0 m-kg (87 ~ 130 ft-lbs.)
Rear axle pinch bolt	0.45 ~ 0.75 m-kg (3.0 ~ 5.0 ft-lbs.)
Brakes	
Caliper support bolt	1.5 ~ 2.0 m-kg (11 ~ 15 ft-lbs.)
Caliper mounting bolt	4.5 ~ 5.0 m-kg (28 ~ 35 ft-lbs.)
Brake hose union bolt	2.3 ~ 2.8 m-kg (16 ~ 20 ft-lbs.)
Disc mounting bolt	1.7 ~ 2.2 m-kg (12 ~ 16 ft-lbs.)
Front fork pinch bolt	1.3 ~ 2.3 m-kg (9 ~ 17 ft-lbs.)
Steering stem top bolt	6.6 ~ 10.5 m-kg (48 ~ 76 ft-lbs.)
Swing arm pivot lock nut	8.0 ~ 10.0 m-kg (58 ~ 72 ft-lbs.)
Rear shock absorber nut	2.3 ~ 3.7 m-kg (20 ~ 27 ft-lbs.)

General Torque Specifications

This chart specifies torque for standard fasteners with standard I.S.O. pitch threads. Torque specifications for special components or assemblies are included in the applicable sections of this book.

To avoid warpage, tighten multi-fastener assemblies in a criss-cross fashion, in progressive stages, until full torque is reached. Unless otherwise specified, torque specifications call for clean, dry threads. Components should be at room temperature.



A. Distance across flats

B. Outside thread diameter

A	B	TORQUE SPECIFICATION		
		m-kg	ft-lb	in-lb
10mm	6mm	1.0	7.2	85
12mm	8mm	2.0	15	175
14mm	10mm	3.5 - 4.0	25 - 29	300 - 350
17mm	12mm	4.0 - 4.5	29 - 33	350 - 400
19mm	14mm	4.5 - 5.0	33 - 36	400 - 440
22mm	16mm	5.5 - 6.5	41 - 49	480 - 570
24mm	18mm	5.8 - 7.0	42 - 50	500 - 600
27mm	20mm	7.0 - 8.3	50 - 60	600 - 700
Spark plug		2.5 - 3.0	20 - 22	230 - 250