

## CHAPTER 7. APPENDICES

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## 7-1. GENERAL SPECIFICATIONS

### A. General

Model:	
Model (I.B.M. No.)	3L8
Frame I.D. & Starting Number	3L5-700101
Engine I.D. & Starting Number	3L5-700101
Dimension:	
Overall Length	1,550 mm (61.0 in)
Overall Width (standard)	670 mm (26.4 in)
Overall Height (standard)	965 mm (38.0 in)
Seat Height	705 mm (27.8 in)
Wheelbase	1,050 mm (41.3 in)
Minimum Ground Clearance	120 mm ( 4.7 in)
Weight:	
Net Weight	43 kg (95 lb)
Performance:	
Minimum Turning Radius	1,500 mm (59.1 in)

### B. Engine

Description:	
Engine Type	Air cooled 2-stroke, Gasoline, Reed valve
Engine Model	3L5
Displacement	49 cc (3.0 cu.in)
Bore x Stroke	40.0 mm x 39.2 mm (1.575 in x 1.543 in)
Compression Ratio	6.0 : 1
Starting System	Kick
Ignition System	C.D.I.
Lubrication System	Separate lubrication (Yamaha Autolube)
Cylinder head:	
Volume (with spark plug)	7.0 cc (0.43 cu.in)
Cylinder:	
Material	Special cast iron
Bore Size	40 mm (1.57 in)
Taper Limit	0.05 mm (0.002 in)
Out of Round Limit	0.01 mm (0.0004 in)
Piston:	
Piston Clearance	0.035 ~ 0.047 mm (0.0014 ~ 0.0019 in)
Piston Over Size	40.25 mm, 40.50 mm (1.585 in, 1.594 in)
Piston Ring:	
Piston Ring Design (Top)	Keystone ring
Piston Ring Design (2nd)	Keystone ring
Ring End Gap (Installed) (Top)	0.15 ~ 0.35 mm (0.006 ~ 0.014 in)
Ring End Gap (Installed) (2nd)	0.15 ~ 0.35 mm (0.006 ~ 0.014 in)
Ring Groove Side Clearance (Top)	0.03 ~ 0.05 mm (0.001 ~ 0.002 in)
Ring Groove Side Clearance (2nd)	0.03 ~ 0.05 mm (0.001 ~ 0.002 in)
Small End Bearing	
Type	Needle bearing
Big End Bearing:	
Type	Needle bearing

Crankshaft:		
Crankshaft Assembly Width (F)		$38 \begin{smallmatrix} 0 \\ -0.05 \end{smallmatrix}$ mm ( $1.50 \begin{smallmatrix} 0 \\ -0.002 \end{smallmatrix}$ in)
Crankshaft Deflection (A)		0.03 mm (0.0012 in)
Connecting Rod Big End Side Clearance (C)		0.35 ~ 0.55 mm (0.014 ~ 0.021 in)
Connecting Rod Small End Deflection (S)		0.4 ~ 0.8 mm (0.016 ~ 0.031 in)
Crank Bearing Type (Left)		6203-C <sub>3</sub>
Crank Bearing Type (Right)		6203-C <sub>3</sub>
Crank Oil Seal Type (Left)		SD17—35—7
Crank Oil Seal Type (Right)		SD23—35—7
Clutch:		
Clutch Type		Wet, Centrifugal automatic
Primary Reduction Ratio & Method		63/33 (1.909), gear
Clutch Shoe — Thickness		1.0 mm (0.040 in)
Clutch Shoe Spring — Free Length		34.5 mm (1.36 in)
Clutch Shoe Spring — Set Weight		3.6 kg (7.94 lb)
Clutch-in Revolution		2,700 r/min
Clutch-stall Revolution		3,500 r/min
Transmission:		
Secondary Reduction Ratio & Method		19/15 (1.266), bevel wheel gear
Transmission Gear Oil Quantity & Type		Exchange: 300 cc (0.32 US.qt) Total: 350 cc (0.37 US.qt) Yamalube 4-cycle oil or SAE 10W/30 motor oil
Reduction Ratio & Method		57/10 (5.700), bevel wheel gear
Kick Starter:		
Type		Ratchet type
Intake:		
Air Cleaner Type		Oiled foam rubber
Reed Valve		
Bending Limit		0.8 mm (0.031 in)
Valve Lift		$4.8 \pm 0.2$ mm ( $0.19 \pm 0.008$ in)
Tightening Torque		0.08 m·kg (0.6 ft·lb)
Carburetor:		
Type & Manufacturer		VM12SC, MIKUNI
I.D. Mark		3L500 (3L501) ( ); Air cleaner type No. 3L5-702401
Main Jet (M.J.)		#75 (#70)
Air Jet (A.J.)		2.5
Jet Needle-clip Position (J.N.)		3Q3-3 (3T3-2)
Needle Jet (N.J.)		E-0
Cutaway (C.A.)		1.0 (4.0)
Pilot Jet (P.J.)		#45 (#40)
Air Screw (turns out) (A.S.)		1-3/4 (1-1/2)
Starter Jet (G.S.)		#35
Fuel Level (F.L.)		$22.0 \pm 1.0$ mm ( $0.87 \pm 0.04$ in)
Engine Idling Speed		1,700 r/min

Lubrication:	
Autolube Pump-Color Code	Yellow
Autolube Pump-Minimum Stroke	0.20 ~ 0.25 mm (0.008 ~ 0.010 in)
Autolube Pump-Maximum Stroke	0.95 ~ 1.10 mm (0.037 ~ 0.043 in)
Oil Tank Capacity	0.8 lit (0.8 U.S.qt)
Oil Grade	Yamalube 2-cycle oil or equivalent

### C. Chassis

Frame:	
Frame Design	Steel tube underbone
Steering System:	
Caster	25°
Trail	7.5 mm (2.95 in)
Number & Size of Balls in Steering Head	
Upper Race	26 pcs 5/32 in
Lower Race	26 pcs 5/32 in
Lock to Lock Angle	100°
Front Suspension:	
Type	Telescopic fork
Damper Type	Coil spring
Front Fork Cushion Travel	45 mm (1.77 in)
Front Fork Spring	
Free Length	78.0 mm (3.86 in)
Spring Constant	$k_1 = 0.55 \text{ kg/mm}$
Wire Diameter x Winding Outside Diameter	$\phi 3.2 \text{ mm (0.13 in)} \times \phi 26.8 \text{ mm (1.06 in)}$
Inner Tube Outside Diameter	$\phi 22.2 \text{ mm (0.87 in)}$
Rear Suspension:	
Type	Unit swing
Damper Type	Coil spring, Oil damper
Rear Shock Absorber Travel	30 mm (1.18 in)
Rear Wheel Travel	50 mm (1.97 in)
Rear Shock Absorber Spring	
Free Length	150.5 mm (5.93 in)
Set Length	145.5 mm (5.73 in)
Spring Constant	$k_1 = 6.32 \text{ kg/mm}$
Wire Diameter x Winding Outside Diameter	$\phi 6.4 \text{ mm (0.25 in)} \times \phi 39.0 \text{ mm (1.54 in)}$
Fuel Tank:	
Capacity	2.3 lit (0.6 U.S.gal)
Fuel Grade	Regular leaded gasoline
Wheel:	
Tire Size (Front)	2.00—14—4PR
(Rear)	2.25—14—4PR
Tire Pressure (Front)	1.25 kg/cm <sup>2</sup> (18 psi)
(Rear)	2.00 kg/cm <sup>2</sup> (28 psi)
Rim Size (Front)	1.20 x 14
(Rear)	1.20 x 14
Rim Run Out Limit (Front/Rear)	
Vertical	0.7 mm (0.028 in)
Lateral	1.3 mm (0.051 in)
Drive Shaft	
Lubricating Grease: Grade	Lithium base wheel bearing grease (EX. SHELL LETHINAX A)
Quantity	10 g (0.4 oz)

<b>Brake:</b> <b>Front Brake</b> Type Drum Diameter (Limit) Shoe Diameter x Width Lining Thickness/Wear Limit Shoe Spring Free Length <b>Rear Brake</b> Type Drum Diameter Shoe Diameter x Width Lining Thickness/Wear Limit Shoe Spring Free Length	Drum brake $\phi 80$ mm (3.15 in) $\phi 80 \times 17$ mm (3.15 x 0.67 in) 3.5 mm/2 mm (0.138 in/0.079 in) 44.5 mm (1.75 in)  Drum brake $\phi 80$ mm (3.15 in) $\phi 80 \times 17$ mm (3.15 x 0.67 in) 3.5 mm/2 mm (0.138 in/0.079 in) 44.5 mm (1.75 in)
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#### D. Electrical

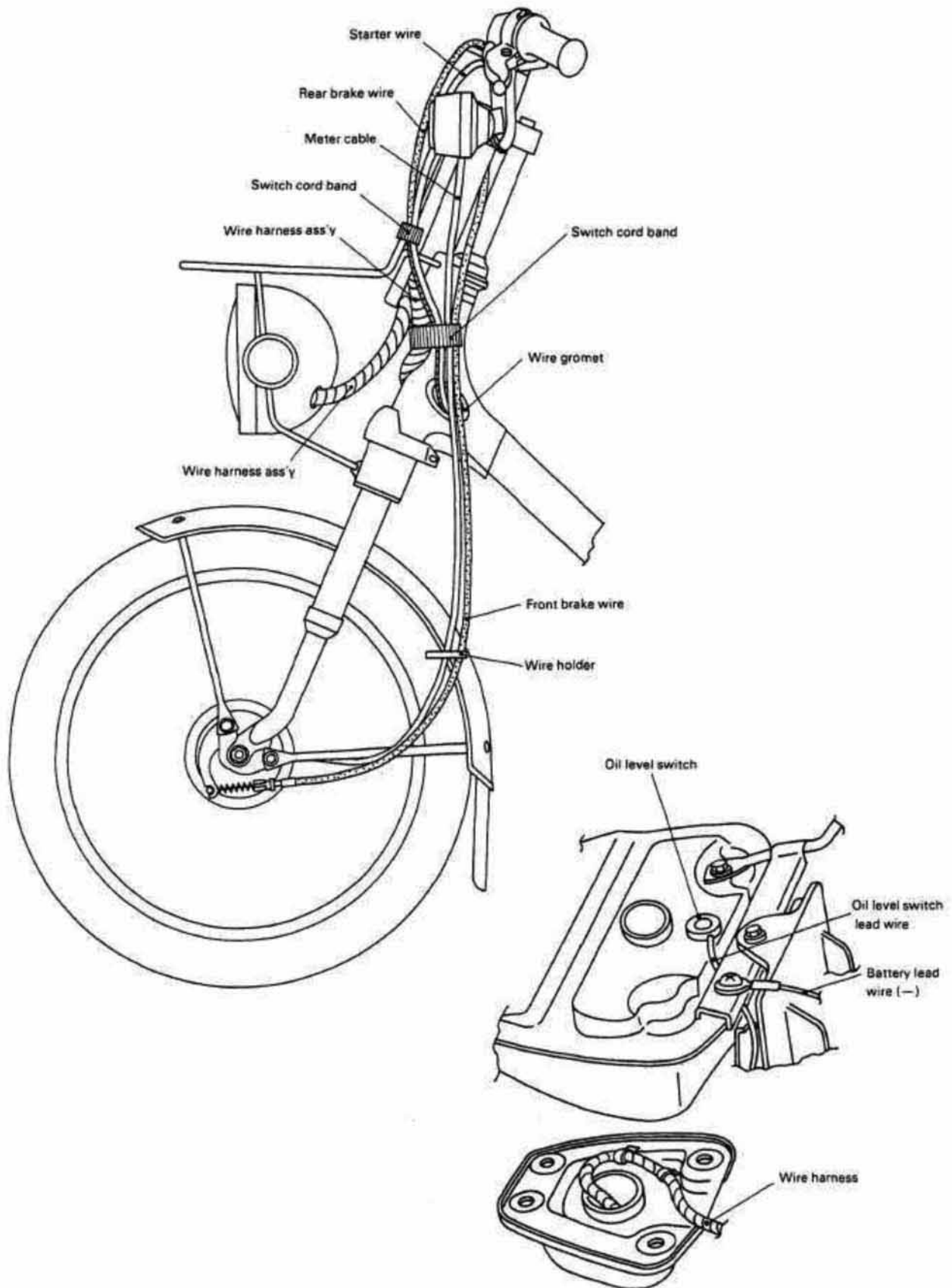
<b>Ignition System:</b> Model/Manufacturer Voltage Pulser Coil Resistance (White/Red-Black) Charge Coil Resistance (Black/Red-Black)	F3L6/Yamaha 6V $20\Omega \pm 10\%$ at 20°C (68°F) $295\Omega \pm 10\%$ at 20°C (68°F)
<b>Ignition Timing:</b>	0.94 mm (0.037 in) (Not adjustable)
<b>Ignition Coil:</b> Model/Manufacturer Spark Gap Primary Winding Resistance Secondary Winding Resistance Diode Spark Plug Type/Manufacture Spark Plug Gap C.D.I. Unit: Model/Manufacturer C.D.I. Magneto: Model/Manufacturer	C2T4/Yamaha 7 mm (0.28 in) $1.6\Omega \pm 10\%$ at 20°C (68°F) $6.6k\Omega \pm 20\%$ at 20°C (68°F) No BP4HS (N.G.K.) 0.6 ~ 0.7 mm (0.024 ~ 0.028 in) 2E9-MO/Yamaha F3L6/Yamaha
<b>Charging System:</b> Flywheel Magneto Charging Output  Charge Coil Resistance (Black-White) Lighting Output  Lighting Coil Resistance (Black-Blue) Rectifier Type Capacity Withstand Voltage Rating Battery Model/Manufacture Capacity Charging Rate Specific Gravity	$1.0 \pm 0.5A/5,000$ r/min $1.7 \pm 0.5A/8,000$ r/min $0.38\Omega \pm 10\%$ at 20°C (68°F) 6.5V or more/4,000 r/min 7.7V or less/8,000 r/min $0.28\Omega \pm 10\%$ at 20°C (68°F) DE4504, S5108 4A 400V Silicon 6N4-2A-2/GS, FURUKAWA, YUASA 6V-4AH 0.4A x 10 hours 1.26 at 20°C (68°F)

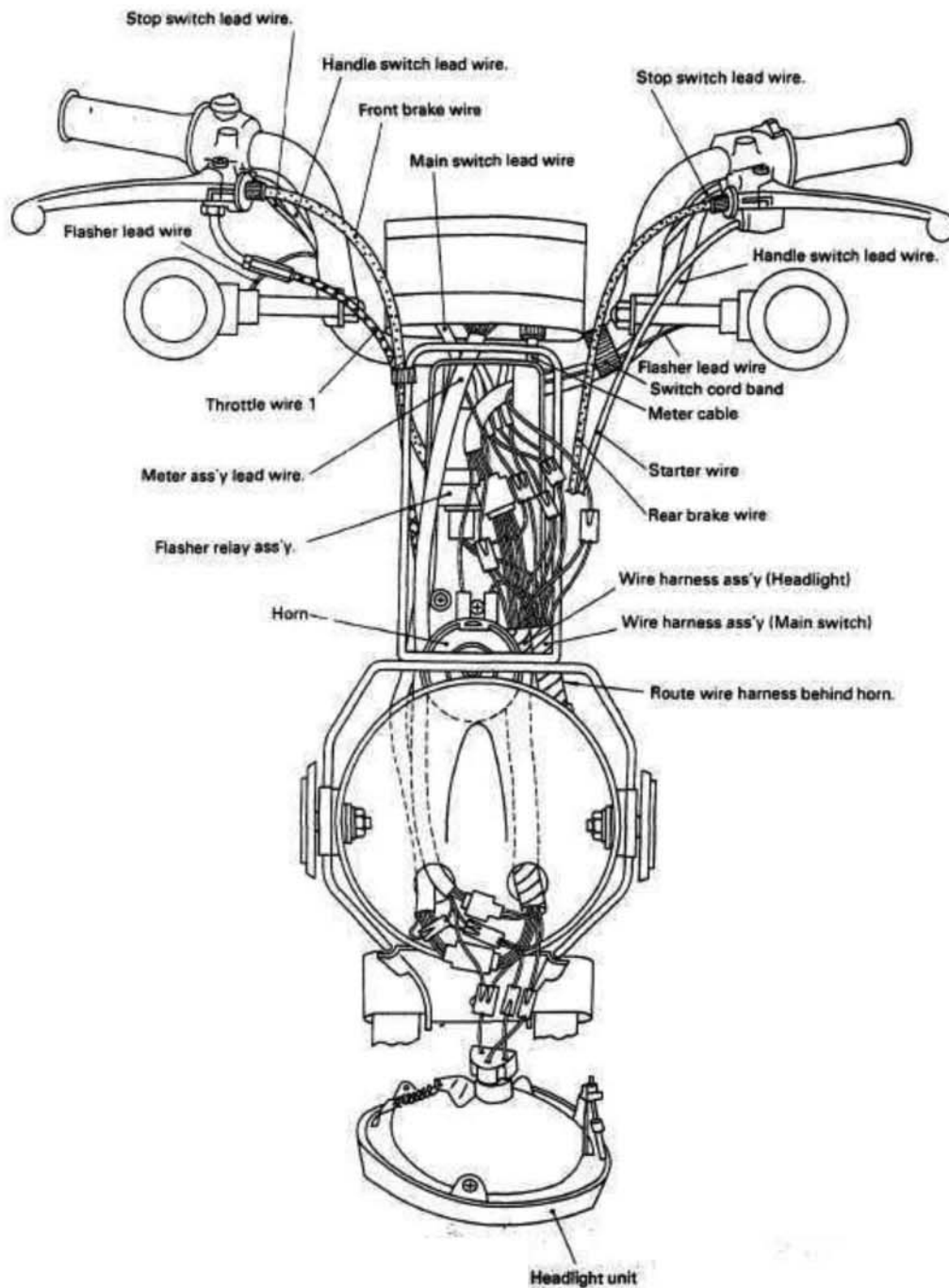
Lighting System:	
Headlight Type	Semi-Sealed beam
Bulb Wattage/Q'ty	
Headlight Wattage	6V, 20W/20W
Tail/Stop Light Wattage	6V, 5.3W/25W
Flasher Light Wattage	6V, 17W
Flasher Pilot Light Wattage	6V, 3W
Meter Light Wattage	6V, 3W
High Beam Indicator Light Wattage	6V, 3W
Oil Warning Light Wattage	3V, 3W
Horn:	
Model	GF-6
Maximum Amperage	1.5A
Flasher Relay:	
Model	FR9T11
Type	Heat-Ribbon type
Flasher Frequency	90 cycle/min
Fuse:	
Rating/Q'ty	10A/1 pc

### E. Tightening Torque

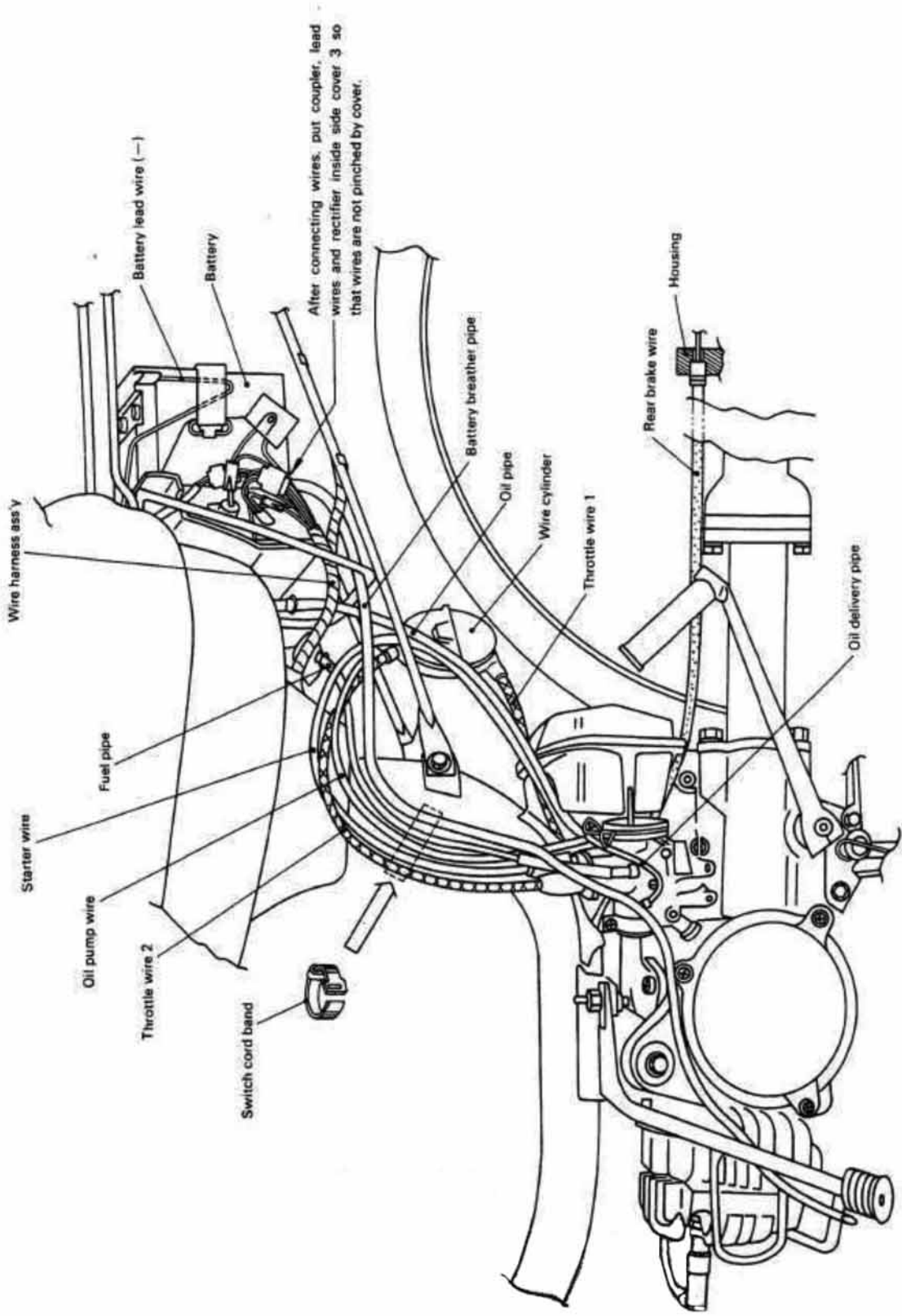
	Tightening torque	
Engine:		
Cylinder head holding nut	M6	1.0 m-kgr ( 7 ft-lb)
Spark plug	M14	2.0 m-kgr (14 ft-lb)
Oil pump	M5	0.4 m-kgr ( 3 ft-lb)
Primary drive gear	M10	3.0 m-kgr (22 ft-lb)
Kick crank	M6	1.0 m-kgr ( 7 ft-lb)
Reed valve—Manifold	M6	0.9 m-kgr ( 6.5 ft-lb)
Generator (Rotor)	M12	4.0 m-kgr (30 ft-lb)
Generator (Stator)	M6	0.9 m-kgr ( 6.5 ft-lb)
Exhaust pipe	M6	1.0 m-kgr ( 7 ft-lb)
Cover plate (Main axle)	M6	1.0 m-kgr ( 7 ft-lb)
Screw (Middle driven pinion)	M45	6.0 m-kgr (43 ft-lb)
Cover plate (Ring gear)	M6	1.0 m-kgr ( 7 ft-lb)
Screw (Drive pinion)	M35	5.0 m-kgr (36 ft-lb)
Chassis:		
Front wheel shaft nut	M10	4.0 m-kgr (30 ft-lb)
Rear wheel shaft nut	M12	6.0 m-kgr (43 ft-lb)
Rear cushion—Upper	M8	2.3 m-kgr (17 ft-lb)
Rear cushion—Lower	M8	2.3 m-kgr (17 ft-lb)
Footrest (Front)	M8	2.0 m-kgr (14 ft-lb)
Footrest (Rear)	M8	2.0 m-kgr (14 ft-lb)
Meter ass'y—Handle comp.	M5	0.4 m-kgr ( 3 ft-lb)
Rear arm—Engine	M8	2.5 m-kgr (18 ft-lb)
Rear arm—Housing	M8	2.5 m-kgr (18 ft-lb)
Bracket main stand	M6	1.0 m-kgr ( 7 ft-lb)
Engine mounting bolt	M10	5.0 m-kgr (36 ft-lb)

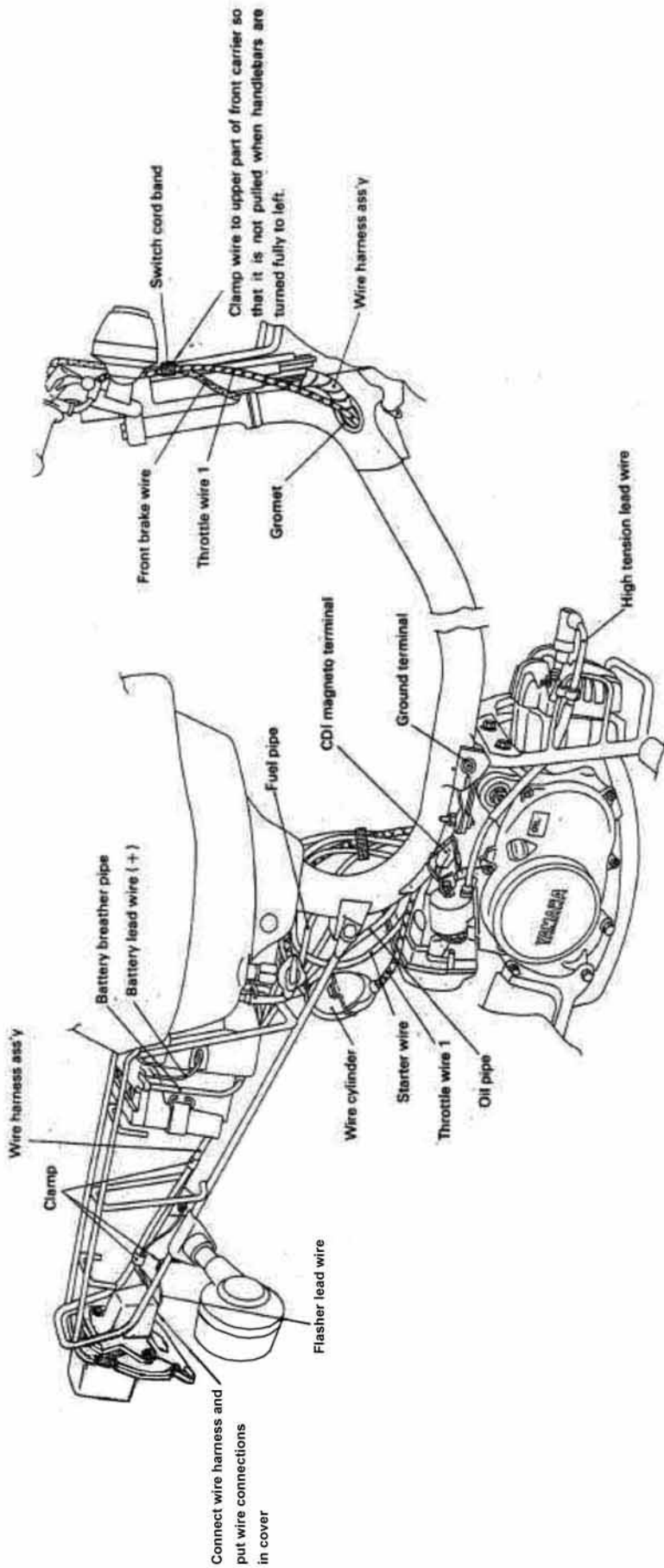
## 7-2. CABLE ROUTING



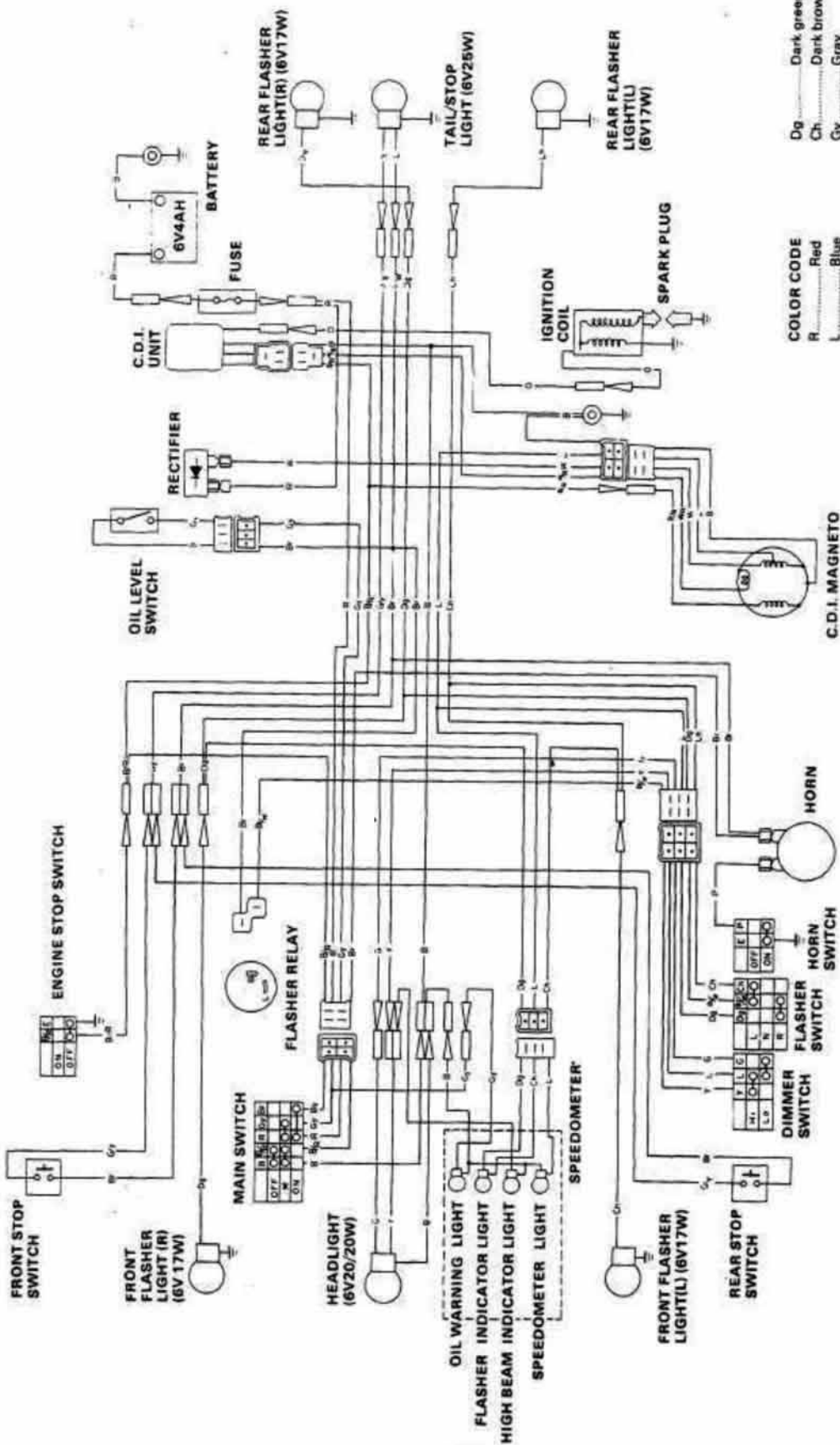








# 7-3. WIRING DIAGRAM



**COLOR CODE**

R	Red
L	Blue
B	Black
P	Pink
Y	Yellow
G	Green
O	Orange
W	White

Dg	Dark green
Ch	Dark brown
Gy	Gray
Br	Brown
G/Y	Green/Yellow
B/R	Black/Red
W/R	White/Red
Br/W	Brown/White
L/W	Blue/White