YAMAHA

XT600Z(U) '88

3AJ-AE1

SUPPLEMENTARY SERVICE MANUAL

FOREWORD

This Supplementary Service Manual has been prepared to introduce new service and new data for the XT600Z. For complete information on service procedures, it is necessary to use this Supplementary Service Manual together with following manual.

XT600 Service Manual 2KF-ME1

XT600Z(U)
SUPPLEMENTARY SERVICE MANUAL

1st Edition, November 1987

Printed in Japan

NOTICE

This manual was written by the Yamaha Motor Company primarily for use by Yamaha dealers and their qualified mechanics. It is not possible to put an entire mechanic's education into one manual, so it is assumed that persons using this book to perform maintenance and repairs on Yamaha motorcycles have a basic understanding of the mechanical concepts and procedures inherent in motorcycle repair technology. Without such knowledge, attempted repairs or service to this model may render it unfit to use and/or unsafe.

Yamaha Motor Company, Ltd. is continually striving to improve all models manufactured by Yamaha. Modifications and significant changes in specifications or procedures will be forwarded to all Authorized Yamaha dealers and will, where applicable, appear in future editions of this manual.

TECHNICAL PUBLICATIONS
SERVICE DEVISION
MOTORCYCLE GROUP
YAMAHA MOTOR CO., LTD.

HOW TO USE THIS MANUAL

PARTICULARLY IMPORTANT INFORMATION

This material is distinguished by the following notation.

NOTE: **A NOTE** provides key information to make procedures easier or clearer.

CAUTION: **A CAUTION** indicates special procedures that must be followed to avoid damage to the motorcycle.

WARNING: **A WARNING** indicates special procedures that must be followed to avoid injury to a motorcycle operator or person inspecting or repairing the motorcycle.

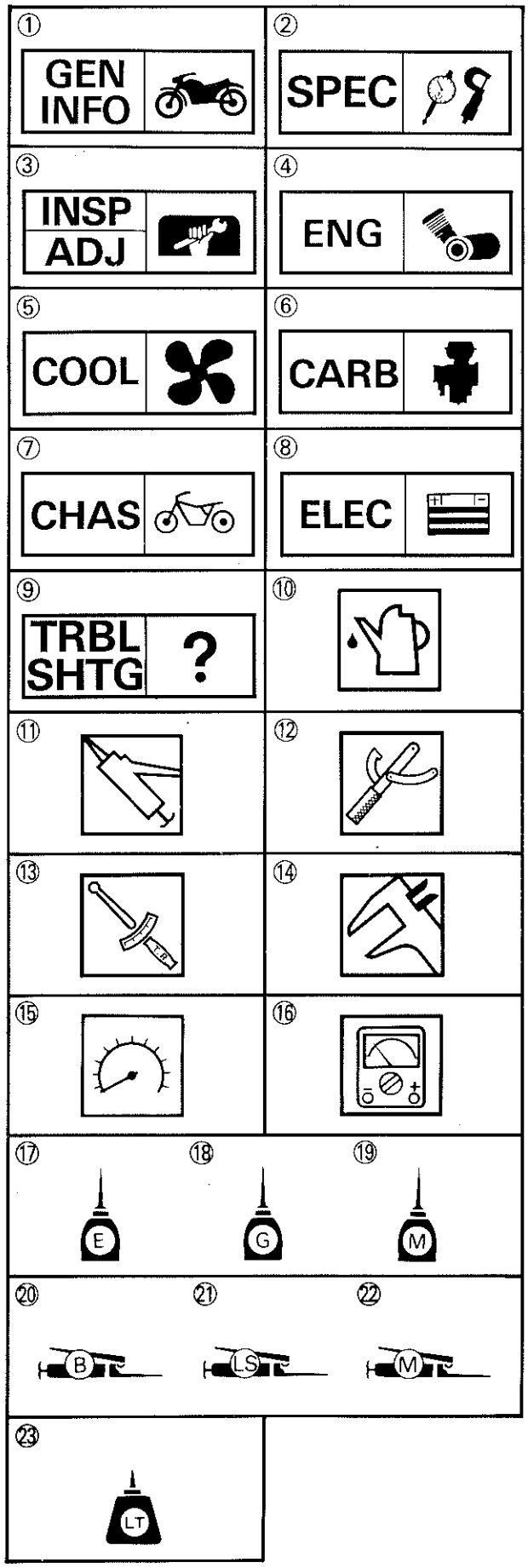
MANUAL FORMAT

All of the procedures in this manual are organized in a sequential, step-by-step format. The information has been compiled to provide the mechanic with an easy to read, handy reference that contains comprehensive explanations of all disassembly, repair, assembly, and inspection operations.
In this revised format, the condition of a faulty component will precede an arrow symbol and the course of action required will follow the symbol, e.g.,

- Bearings
  Pitting/Damage→ Replace.

EXPLODED DIAGRAM

Each chapter provides exploded diagrams before each disassembly section for ease in identifying correct disassembly and assembly procedures.



ILLUSTRATED SYMBOLS (Refer to the illustration)

Illustrated symbols ① to ⑨ are designed as thumb tabs to indicate the chapter's number and content.

① General information
② Specifications
③ Periodic inspection and adjustment
④ Engine
⑤ Cooling system
⑥ Carburetion
⑦ Chassis
⑧ Electrical
⑨ Troubleshooting

Illustrated symbols ⑩ to ⑯ are used to identify the specifications appearing in the text.

⑩ Filling fluid
⑪ Lubricant
⑫ Special tool
⑬ Tightening
⑭ Wear limit, clearance
⑮ Engine speed
⑯ Ω, V, A

Illustrated symbols ⑰ to ㉓ in the exploded diagram indicate grade of lubricant and location of lubrication point.

⑰ Apply engine oil
⑱ Apply gear oil
⑲ Apply molybdenum disulfide oil
⑳ Apply wheel bearing grease
㉑ Apply lightweight lithium-soap base grease
㉒ Apply molybdenum disulfide grease
㉓ Apply locking agent (LOCTITE®)

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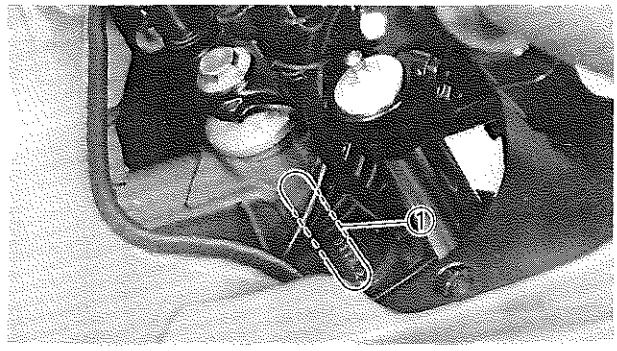
GENERAL INFORMATION



MOTORCYCLE IDENTIFICATION

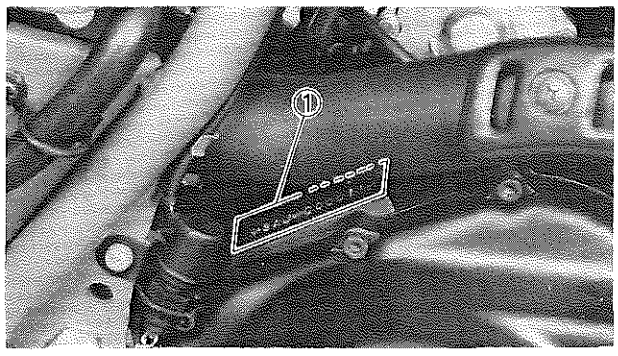
FRAME SERIAL NUMBER

The frame serial number ① is stamped into the right side of the steering head pipe.

Starting Serial Number:	
XT600Z	3AJ-000101
XT600Z	3AJ-031101
XT600Z	3AJ-033101
XT600Z	3DS-000101
XT600ZU	3DE-000101

ENGINE SERIAL NUMBER

The engine serial number ① is stamped into the elevated part of the right rear section of the engine.



Starting Serial Number:	
XT600Z	3AJ-000101
XT600Z	3AJ-031101
XT600Z	3AJ-033101
XT600Z	3DS-000101
XT600ZU	3DE-000101

NOTE:

- The first three digits of these numbers are for model identifications; the remaining digits are the unit production number.
- Designs and specifications are subject to change without notice.

SPECIFICATIONS

(D): For Germany
(DK): For Denmark
(N): For Norway
(S): For Sweden
(GB): For England
(E): For Spain
(NL): For Holland
(O): For Oceania and S. Africa
(SF): For Finland
(F): For France
(I): For Italy
(B): For Belgium
(GR): For Greece
(CH): For Switzerland
(P): For Portugal

GENERAL SPECIFICATIONS

Model	XT600Z(U)
Model Code Number:	3AJ1 (D)(F)(I)(B)(GB)(S)(GR)(P) 3AJ2 (E) 3AJ3 (NL)(N)(SF)(DK) 3DS1 (CH) 3DE1 (O)
Engine Starting Number:	3AJ1-000101 3AJ2-031101 3AJ3-033101 3DS1-000101 3DE1-000101
Frame Starting Number:	3AJ1-000101 3AJ2-031101 3AJ3-033101 3DS1-000101 3DE1-000101
Dimensions:	
Overall Length	2,210 mm (87.0 in) 2,290 mm (90.2 in) (D) (S) (DK) (N) 2,340 mm (92.1 in) (SF)
Overall Width	835 mm (32.9 in)
Overall Height	1,340 mm (52.8 in)
Seat Height	890 mm (35.0 in)
Wheelbase	1,460 mm (57.5 in)
Minimum Ground Clearance	255 mm (10.0 in)
Basic Weight:	
With Oil and Full Fuel Tank	185 kg (408 lb)
Minimum Turning Radius:	2,300 mm (90.6 in)
Engine:	
Engine Type	Air cooled 4-stroke, SOHC
Cylinder Arrangement	Forward inclined single cylinder
Displacement	595 cm^3
Bore × Stroke	95 × 84 mm (3.74 × 3.31 in)
Compression Ratio	8.5 : 1
Compression Pressure	
Standard	1,100 kPa (11 kg/cm^2 156 psi)
Starting System	Electric starter

Model		XT600Z(U)
Lubrication System:		
Type		Dry sump
Engine Oil Type		SAE 20W40 type SE motor oil or SAE 10W30 type SE motor oil
Oil Capacity:		
Periodic Oil Change		1.9 L (1.7 Imp qt, 2.0 US qt)
With Oil Filter Replacement		2.0 L (1.8 Imp qt, 2.1 US qt)
Total Amount		2.4 L (2.1 Imp qt, 2.5 US qt)
Oil Tank Capacity		1.7 L (1.5 Imp qt, 1.8 US qt)
Air Filter:		
Type		Wet type element
Oil Type		Foam-air-filter oil or SAE 10W30 motor oil
Fuel:		
Type		Regular gasoline
Fuel Tank Capacity		23.0 L (5.1 Imp gal, 6.1 US gal)
Fuel Reserve Amount		3.1 L (0.7 Imp gal, 0.8 US gal)
Carburetor:		
Type/Quantity		Y27PV/1 pc.
Manufacturer		TEIKEI
Spark Plug:		
Type/Plug Gap		DPR7EA-9/0.8~0.9 mm (0.031~0.035 in) DPR8EA-9/0.8~0.9 mm (0.031~0.035 in)
Manufacturer		NGK
Clutch:		
Type		Wet, multiple-disc
Transmission:		
Type		Constant mesh 5-speed
Operation		Left foot operation
Primary Reduction System		Spur gear
Primary Reduction Ratio		74/31 (2.387)
Secondary Reduction System		Chain drive
Secondary Reduction Ratio		38/15 (2.533) (CH) 40/15 (2.677) (D)(F)(I)(B)(GB)(S)(E)(NL)(N)(SF)(DK)
Gear Ratio:	1st	31/12 (2.583)
	2nd	27/17 (1.588)
	3rd	24/20 (1.200)
	4th	21/22 (0.954)
	5th	19/24 (0.792)
Chassis:		
Frame Type		Diamond
Caster Angle		27.5°
Trail		109 mm (4.29 in)

Model		XT600Z(U)
Tire:		
Type		With tube
Size:	Front	3.00S21-4PR
	Rear	4.60S18-4PR
		120/80-18-62P (IRC)
Manufacturer:	Front	BRIDGESTONE (TW25)
		IRC (GP110)
	Rear	BRIDGESTONE (TW26)
		IRC (GP110)
Tire Pressure (Cold tire):		
Maximum Load*		180 kg (397 lb)
	(Front)	34 kg (75 lb)
	(Rear)	146 kg (322 lb)

Cold Tire Pressure	Front	Rear
Up to 90 kg (198 lb) load*	150 kPa (1.5 kg/cm^2, 21 psi)	150 kPa (1.5 kg/cm^2, 21 psi)
90 kg (198 lb) ~ Maximum load*	150 kPa (1.5 kg/cm^2, 21 psi)	180 kPa (1.8 kg/cm^2, 26 psi)
Off-road riding	100 kPa (1.0 kg/cm^2, 14 psi)	100 kPa (1.0 kg/cm^2, 14 psi)
High speed riding	150 kPa (1.5 kg/cm^2, 21 psi)	150 kPa (1.5 kg/cm^2, 21 psi)

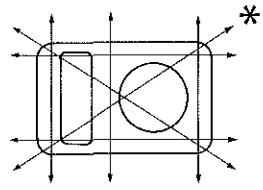
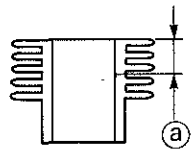
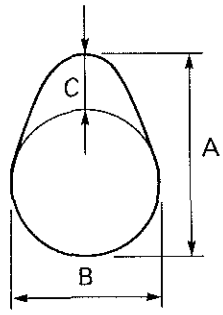
*Load is total weight of cargo, rider, passenger, and accessories.

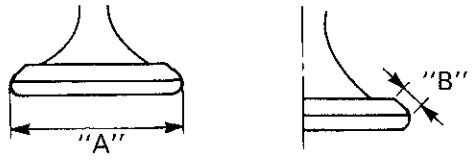
Brake:	
Front Brake Type	Single disc brake
Front Brake Operation	Right hand operation
Rear Brake Type	Single disc brake
Rear Brake Operation	Right foot operation
Suspension:	
Front	Telescopic fork
Rear	Swingarm (New Monocross)
Shock Absorber:	
Front	Coil—Air spring/Oil damper
Rear	Coil—Gas spring/Oil damper
Wheel Travel:	
Front	255 mm (10.0 in)
Rear	225 mm (8.9 in)
Electrical:	
Ignition System	CDI
Generator System	A.C. magneto generator
Battery Type	GM12AZ
Battery Capacity	12V, 12AH
Headlight Type	Quartz bulb (Halogen)
	(D)(B)(S)(E)(F)(GR)(P)(GB)(O)
	Bulb type (I)(DK)(SF)(NL)(CH)(N)

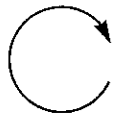
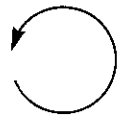
Model	XT600Z(U)
Bulb Wattage (Quantity):	
Headlight	12V 60W/55W (1 pc.) (D)(E)(B)(S)(F)(GR)(P) 12V 55W (1 pc.) 12V 35W/35W (2 pcs.) (I)(DK)(GB)(O)(SF)(NL) 12V 60W/55W (1 pc.) (CH)(N)
Tail/Brake Light	12V 5W/21W (1 pc.)
Flasher Light	12V 21W (4 pcs.)
Auxiliary Light	12V 4W (1 pc.) (D)(E)(B)(S)(F)(GR)(P)(SF)(NL)(CH)(N) 12V 4W (2 pcs.) (I)(DK) 12V 3.4W (2 pcs.) (GB) (O)
Meter Light	12V 3.4W (2 pcs.)
"NEUTRAL" indicator Light	12V 3.4W (1 pc.)
"HIGH BEAM" indicator Light	12V 3.4W (1 pc.)
"TURN" indicator Light	12V 3.4W (1 pc.)

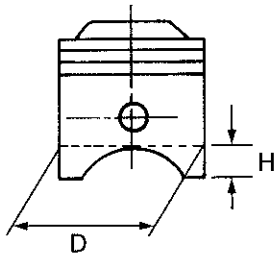
MAINTENANCE SPECIFICATIONS

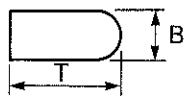
ENGINE

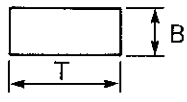
Model	XT600Z(U)
Cylinder Head: Warp Limit 	0.03 mm (0.0012 in) * Lines indicate straightedge measurement.
Cylinder: Bore Size <Wear Limit> Measuring Point ⓐ 	94.97 ~ 95.02 mm (3.739 ~ 3.741 in) <95.1 mm (3.744 in)> 40 mm (1.6 in)
Camshaft: Drive Method Camshaft Outside Diameter Shaft-to-cap Clearance Cam Dimensions Intake "A" "B" "C" Exhaust "A" "B" "C"  Camshaft Runout Limit	Chain drive (Left) 22.967 ~ 22.980 mm (0.904 ~ 0.905 in) 0.020 ~ 0.054 mm (0.0008 ~ 0.0021 in) 36.52 ~ 36.62 mm (1.438 ~ 1.442 in) 30.01 ~ 30.11 mm (1.181 ~ 1.185 in) 6.51 mm (0.256 in) 36.70 ~ 36.80 mm (1.445 ~ 1.449 in) 30.07 ~ 30.17 mm (1.184 ~ 1.188 in) 6.63 mm (0.261 in) 0.03 mm (0.0012 in)

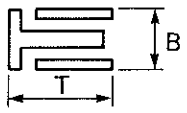
Model	XT600Z(U)	
Cam Chain:		
Cam Chain Type	75 – 010	
Number of Links	126 Links	
Cam Chain Adjustment Method	Automatic	
Rocker Arm/Rocker Arm Shaft:		
Rocker Arm Inside Diameter	12.000 ~ 12.018 mm (0.472 ~ 0.473 in)	
Shaft Outside Diameter	11.976 ~ 11.991 mm (0.471 ~ 0.472 in)	
Arm-to-shaft Clearance	0.009 ~ 0.042 mm (0.0003 ~ 0.002 in)	
Valve, Valve Seat, Valve Guide:		
Valve Clearance (Cold):		
Intake	0.07 ~ 0.12 mm (0.003 ~ 0.005 in)	
Exhaust	0.12 ~ 0.17 mm (0.005 ~ 0.007 in)	
Valve Dimensions:	Intake	Exhaust
"A" Head Diameter	36.9 ~ 37.1 mm (1.45 ~ 1.46 in)	31.9 ~ 32.1 mm (1.25 ~ 1.26 in)
"B" Face Width	2,26 mm (0.09 in)	←
"C" Seat Width	1.0 ~ 1.2 mm (0.04 ~ 0.05 in)	←
"D" Margin Thickness	1.0 ~ 1.4 mm (0.04 ~ 0.06 in)	0.8 ~ 1.2 mm (0.03 ~ 0.05 in)
		
Stem Outside Diameter:		
Intake	6.975 ~ 6.990 mm (0.274 ~ 0.275 in)	
Exhaust	6.955 ~ 6.970 mm (0.273 ~ 0.274 in)	
Guide Inside Diameter:		
Intake	7.000 ~ 7.012 mm (0.275 ~ 0.276 in)	
Exhaust	7.000 ~ 7.012 mm (0.275 ~ 0.276 in)	
Stem-to-guide Clearance:		
Intake	0.010 ~ 0.037 mm (0.0004 ~ 0.001 in)	
Exhaust	0.030 ~ 0.057 mm (0.001 ~ 0.002 in)	
Stem Runout Limit	0.01 mm (0.0004 in)	
Valve Seat Width:		
Intake	1.0 ~ 1.2 mm (0.04 ~ 0.05 in)	
Exhaust	1.0 ~ 1.2 mm (0.04 ~ 0.05 in)	

Model	XT600Z(U)	
Valve Spring:	Inner Spring	Outer Spring
Free Length:		
Intake	40.1 mm (1.58 in)	43.8 mm (1.72 in)
Exhaust	40.1 mm (1.58 in)	43.8 mm (1.72 in)
Set Length (Valve Closed):		
Intake	22.7 mm (0.89 in)	34.2 mm (1.35 in)
Exhaust	22.7 mm (0.89 in)	34.2 mm (1.35 in)
Direction of winding		
(Top View)	Clockwise 	Counterclockwise 
Tilt Limit:		
Intake	2.5°/1.7 mm (0.07 in)	←
Exhaust	2.5°/1.7 mm (0.07 in)	←
Piston:		
Piston Size "D"	94.915~94.965 mm (3.737~3.739 in)	
Measureing Point "H"	5.0 mm (0.20 in)	
Over Size 2nd	95.5 mm (3.760 in)	
Over Size 4th	96.0 mm (3.780 in)	
Piston Off-set	2.0 mm (0.08 in)	
Piston Off-set Direction	Intake side	
Piston-to-cylinder Clearance	0.045~0.065 mm (0.002~0.003 in)	
<Limit>	<0.1 mm (0.004 in)>	
Piston Ring:		
Type:		
Top Ring	Barrel	
2nd Ring	Plain	
Dimensions (B × T):		
Top Ring	B = 1.2 mm (0.047 in) T = 3.8 mm (0.150 in)	
2nd Ring	B = 1.2 mm (0.047 in) T = 3.8 mm (0.150 in)	
Oil Ring	B = 2.5 mm (0.098 in) T = 3.4 mm (0.134 in)	
End Gap (Installed):		
Top Ring	0.30~0.45 mm (0.012~0.018 in)	
2nd Ring	0.30~0.45 mm (0.012~0.018 in)	
Oil Ring	0.20~0.70 mm (0.008~0.028 in)	

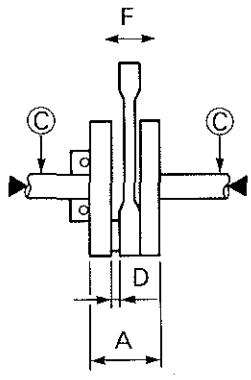








Model	XT600Z(U)
Piston Ring:	
Side Clearance (Installed):	
Top Ring	0.04 ~ 0.08 mm (0.002 ~ 0.003 in)
2nd Ring	0.03 ~ 0.07 mm (0.001 ~ 0.003 in)
Crankshaft:	
Crank Width "A"	74.95 ~ 75.00 mm (2.950 ~ 2.953 in)
Runout Limit "C"	0.03 mm (0.0012 in)
Big End Side Clearance "D"	0.25 ~ 0.75 mm (0.010 ~ 0.030 in)
Small End Free Play "F"	0.8 ~ 1.0 mm (0.031 ~ 0.039 in)
Balancer:	
Drive Method	Spur gear
Clutch:	
Friction Plate:	
Thickness	2.72 ~ 2.88 mm (0.107 ~ 0.113 in)
Quantity	6 pcs.
Wear Limit	2.6 mm (0.102 in)
Friction Plate:	
Thickness	2.94 ~ 3.06 mm (0.116 ~ 0.120 in)
Quantity	2 pcs.
Wear Limit	2.8 mm (0.110 in)
Clutch Plate:	
Thickness	1.2 mm (0.047 in)
Quantity	7 pcs.
Warp Limit	0.2 mm (0.008 in)
Clutch Spring:	
Free Length	34.6 mm (1.362 in)
Quantity	5 pcs.
Minimum Free Length	32.6 mm (1.283 in)
Clutch Housing:	
Thrust Clearance	0.070 ~ 0.071 mm (0.003 in)
Clutch Release Method	Inner push, cam push
Transmission:	
Main Axle Runout Limit	0.08 mm (0.003 in)
Drive Axle Runout Limit	0.08 mm (0.003 in)
Shifter:	
Type	Cam drum and guide bar



Model		XT600Z(U)	
Carburetor:		Except for Germany	For Germany
I.D. Mark		3AJ 10	3AJ 00
Main Jet	(M.J.)		
Primary Carburetor		#155	#165
Secondary Carburetor		#125	←
Main Air Jet	(M.A.J.)		
Primary Carburetor		φ1.0	←
Secondary Carburetor		φ1.2	←
Jet Needle	(J.N.)		
Primary Carburetor		5C47—3/5	5C48—3/5
Secondary Carburetor		5X76—3/5	5X76—3/5
Needle Jet	(N.J.)	φ2.6	←
Cutaway	(C.A.)	5.5	←
Pilot Outlet	(P.O.)	φ0.8	←
Pilot Jet	(P.J.)	#48	←
Bypass 1	(B.P.1)	φ1.0	←
Pilot Screw	(P.S.)	1 5/8 turns out	←
Valve Seat Size	(V.S.)	φ2.5	←
Starter Jet	(G.S.)	#80	←
Fuel Level	(F.L.)	5.0 ~ 7.0 mm (0.20 ~ 0.28 in)	←
Float Height	(F.H.)	25.0 ~ 27.0 mm (0.98 ~ 1.06 in)	←
Engine Idle Speed		1,250 ~ 1,350 r/min	←
Lubrication System:			
Oil Filter:			
Type		Paper type	
Oil Pump:			
Type		Trochoid type	
Tip Clearance		0.12 mm (0.005 in)	
Side Clearance		0.03 ~ 0.08 mm (0.001 ~ 0.003 in)	
Bypass Valve Setting Pressure		80 ~ 120 kPa (0.8 ~ 1.2 kg/cm^2, 11 ~ 17 psi)	
Relief Valve Operating Pressure		80 ~ 120 kPa (0.8 ~ 1.2 kg/cm^2, 11 ~ 17 psi)	
Oil Pressure		13 kPa (0.13 kg/cm^2, 1.8 psi) at 1,300 r/min	
Pressure Checking Location		Oil cleaner chamber	

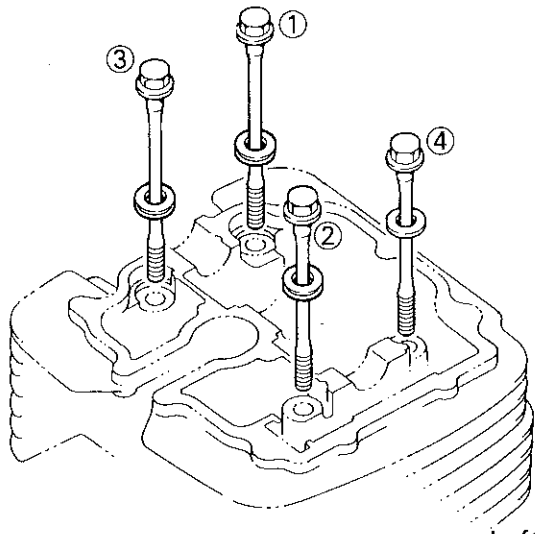
Model	XT600Z(U)				
Tightening torque:					
Part to be tightened	Thread size	Tightening torque			Remarks
		Nm	m•kg	ft•lb	
Cylinder head					
Flange bolt	M8 ×1.25	29	2.9	21	
Stud bolt	M10×1.25	20	2.0	14	
Hexagon socket head bolt	M6 ×1.0	10	1.0	7.2	
Stud bolt	M6 ×1.0	7	0.7	5.1	
Spark plug	M12×1.25	18	1.8	13	
Cylinder head cover					
Hexagon socket head bolt	M6 ×1.0	10	1.0	7.2	
Tappet cover (Intake)					
Hexagon socket head bolt	M6 ×1.0	10	1.0	7.2	
Tappet cover (Exhaust)	M32×1.5	12	1.2	8.7	
Gear unit (Tachometer)					
Hexagon socket head bolt	M6 ×1.0	10	1.0	7.2	
Flat head screw	M6 ×1.0	7	0.7	5.1	
Cylinder					
Cap nut	M8 ×1.25	22	2.2	16	
Nut	M10×1.25	42	4.2	30	
Hexagon nut	M10×1.25	42	4.2	30	
Hexagon socket head bolt	M6 ×1.0	10	1.0	7.2	
Balancer gear					
Hexagon nut	M16×1.0	60	6.0	43	
Rotor (A.C. magneto)					
Hexagon nut	M14×1.5	120	12.0	85	
Locknut (Valve clearance adjuster)					
Hexagon nut	M6 ×1.0	14	1.4	10	
Cam sprocket					
Flange bolt	M7 ×1.0	20	2.0	14	
Cam chain tensioner					
Hexagon socket head bolt	M6 ×1.0	10	1.0	7.2	
Blind plug	M16×1.0	20	2.0	14	
Flange bolt	M6 ×1.0	8	0.8	5.8	
Rocker arm shaft					
Hexagon socket head bolt	M6 ×1.0	10	1.0	7.2	
Oil pump					
Hexagon socket head bolt	M6 ×1.0	10	1.0	7.2	
Oil strainer					
Panhead screw	M6 ×1.0	7	0.7	5.1	
Drain plug (crankcase)	M14×1.5	30	3.0	22	
Oil cleaner cover					
Hexagon socket head bolt	M6 ×1.0	10	1.0	7.2	
Screw	M5 ×0.8	5	0.5	3.6	

Model	XT600Z(U)				
Part to be tightened	Thread size	Tightening torque			Remarks
		Nm	m•kg	ft•lb	
Oil hose					
Hexagon socket head bolt	M6 ×1.0	10	1.0	7.2	
Union nut	M16×1.5	50	5.0	36	
Delivery pipe					
Union bolt	M8 ×1.25	18	1.8	13	
Carburetor joint					
Bolt	M6 ×1.0	10	1.0	7.2	
Clamp (Carburetor joint)					
Screw	M4 ×0.7	2	0.2	1.4	
Air filter case					
Flange bolt	M6 ×1.0	10	1.0	7.2	
Exhaust pipe					
Flange nut	M6 ×1.0	10	1.0	7.2	
Exhaust pipe protector					
Bind head screw	M6 ×1.0	7	0.7	5.1	
Muffler protector					
Bind head screw	M6 ×1.0	7	0.7	5.1	LT
Band (Exhaust pipe and muffler)					
Flange bolt	M8 ×1.25	20	2.0	14	LT
Muffler					
Flange bolt	M8 ×1.25	40	4.0	29	
Crankcase					
Hexagon socket head bolt	M6 ×1.0	10	1.0	7.2	
Stud bolt	M10×1.25	20	2.0	14	
Clamp (C.D.I. magneto lead)					
Panhead screw	M6 ×1.0	7	0.7	5.1	
Crankcase cover (Right)					
Hexagon socket head bolt	M6 ×1.0	10	1.0	7.2	
Crankcase cover (Left)					
Hexagon socket head bolt	M6 ×1.0	10	1.0	7.2	
Stopper plate (Bearing)					
Flat head screw	M6 ×1.0	7	0.7	5.1	LT
Ratchet wheel guide					
Hexagon bolt	M6 ×1.0	10	1.0	7.2	
Pressure plate					
Flange bolt	M6 ×1.0	8	0.8	5.8	
Clutch boss					
Hexagon nut	M20×1.0	90	9.0	65	
Primary drive gear					
Hexagon nut	M20×1.0	120	12.0	85	
Push lever					
Panhead screw	M8 ×1.0	12	1.2	8.7	
Push rod					
Hexagon nut	M6 ×1.0	8	0.8	5.8	
Drive sprocket					
Hexagon nut	M18×1.0	110	11.0	80	

Model	XT600Z(U)				
Part to be tightened	Thread size	Tightening torque			Remarks
		Nm	m•kg	ft•lb	
Stopper plate (Oil seal)					
Hexagon bolt	M6 ×1.0	10	1.0	7.2	
Stopper lever					
Bolt	M6 ×1.0	10	1.0	7.2	
Change pedal					
Hexagon bolt	M6 ×1.0	10	1.0	7.2	
Stator coil					
Panhead screw	M6 ×1.0	7	0.7	5.1	LT
Pickup coil					
Panhead screw	M6 ×1.0	7	0.7	5.1	LT
Neutral switch	M10×1.25	20	2.0	14	
Starter motor					
Flange bolt	M6 ×1.0	10	1.0	7.2	

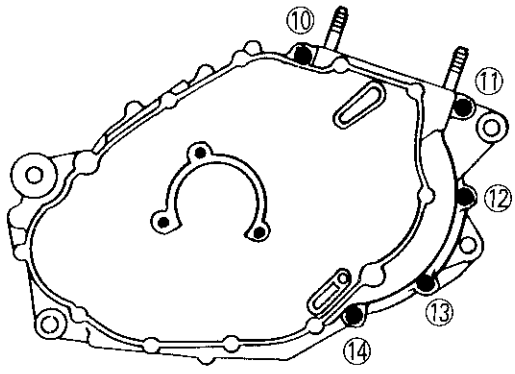
Tightening sequence:

Cylinder head

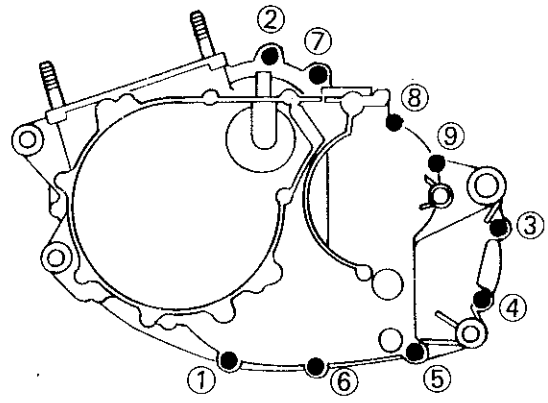


Crankcase

Right-hand



Left-hand



CHASSIS

Model	XT600Z(U)
Steering System:	
Bearing Type	Taper roller bearing
Front Suspension:	
Front Fork Travel	255 mm (10.0 in)
Fork Spring Free Length	603 mm (23.7 in)
<Minimum Free Length>	<593 mm (23.3 in)>
Spring Rate/Stroke (K1)	2.25 N/mm (0.225 kg/mm, 12.6 lb/in)/ Zero~76.0 mm (Zero~3.0 in)
(K2)	4.6 N/mm (0.46 kg/mm, 25.3 lb/in)/ 76.0~255 mm (3.0~10.0 in)
Optional Spring	No
Oil Capacity	517 cm^3 (18.2 Imp oz, 17.5 US oz)
Oil Level	120 mm (4.72 in) From top of inner tube fully compressed without spring
Oil Grade	Fork oil 10W or equivalent
Enclosed Air Pressure:	
Standard	Zero kPa (Zero kg/cm^2, Zero psi)
Minimum~Maximum	Zero~100 kPa (Zero~1.0 kg/cm^2, Zero~14 psi)
Rear Suspension:	
Shock Absorber Travel	74 mm (2.9 in)
Spring Free Length	244.5 mm (9.6 in)
Fitting Length	235 mm (9.3 in)
Spring Rate/Stroke	90 N/mm (9.0 kg/mm, 504 lb/in)/ Zero~65.0 mm (0.0~2.6 in)
Optional Spring	No
Enclosed Gas Pressure	1,500 kPa (15 kg/cm^2, 213 psi)
Swingarm:	
Free Play Limit	1.0 mm (0.039 in) at swingarm end Move swingarm end side to side.
Side Clearance	0.3 mm (0.012 in) at swingarm pivot
Front Wheel:	
Type	Spoke wheel
Rim Size	1.60×21
Rim Material	Aluminum
Rim Runout Limit:	
Vertical	2.0 mm (0.079 in)
Lateral	2.0 mm (0.079 in)

MAINTENANCE SPECIFICATION

Model	XT600Z(U)
Rear Wheel:	
Type	Spoke wheel
Rim Size	MT2.50×18
Rim Material	Aluminum
Rim Runout Limit:	
Vertical	2.0 mm (0.079 in)
Lateral	2.0 mm (0.079 in)
Drive Chain:	
Type/Manufacturer	DID 520V6/DAIDO
Number of Links	104
Chain Slack	30~40 mm (1.18~1.57 in)
Front Disc Brake:	
Type	Single
Disc Outside Diameter	267 mm (10.5 in)
Disc Thickness	4.0 mm (0.16 in)
Pad Thickness	6.8 mm (0.27 in)
<Wear Limit>	<0.8 mm (0.03 in)>
Master Cylinder Inside Diameter	12.7 mm (0.5 in)
Caliper Cylinder Inside Diameter	38.1 mm (1.5 in)
Brake Fluid Type	DOT No. 4 or DOT No. 3
Rear Disc Brake:	
Type	Single
Disc Outside Diameter	220 mm (8.66 in)
Thickness	5.0 mm (0.20 in)
Pad Thickness	6.0 mm (0.24 in)
<Wear Limit>	<0.8 mm (0.03 in)>
Master Cylinder Inside Diameter	12.7 mm (0.5 in)
Caliper Cylinder Inside Diameter	34.9 mm (1.37 in)
Brake Fluid Type	DOT No. 4 or DOT No. 3
Brake Lever and Pedal:	
Brake Lever Free Play	2.0~5.0 mm (0.08~0.20 in) At end of brake lever.
Brake Pedal Position	5.0~10.0 mm (0.20~0.40 in) Below top of footrest.
Clutch Lever and Throttle Grip:	
Clutch Lever Free Play	2.0~3.0 mm (0.08~0.12 in) At pivot of clutch lever.
Throttle Cable Free Play	2.0~5.0 mm (0.08~0.20 in) At grip flange.

Model	XT600Z(U)				
Tightening torque:					
Part to be tightened	Thread size	Tightening torque			Remarks
		Nm	m•kg	ft•lb	
Front fork/Handlebar:					
Handle crown and inner tube	M8 ×1.25	23	2.3	17	
Handle crown and steering shaft	M14×1.25	77	7.7	56	
Handlebar	M8 ×1.25	20	2.0	14	
Steering shaft and ring nut	M25×1.0	6	0.6	4.3	Refer to "NOTE"
Clamp (Front brake hose)	M8 ×1.25	10	1.0	7.2	
Master cylinder cap (Front brake)	M4 ×0.7	2	0.2	1.4	
Cowling stay and frame	M6 ×1.0	23	2.3	17	
Cowling stay and cowling	M6 ×1.0	7	0.7	5.1	
Meter mounting bolt	M8 ×1.0	7	0.7	5.1	
Horn and frame	M6 ×1.0	7	0.7	5.1	
Main switch and handle crown	M6 ×1.0	7	0.7	5.1	LT
Handlebar holder	M10×1.25	7	0.7	5.1	
Cable holder (Speedometer cable)	M5 ×0.8	1	0.1	0.7	
Cowling and fuel tank	M5 ×0.8	4	0.4	2.9	
Windscreen and cowling	M5 ×0.8	1	0.1	0.7	
Engine mount:					
Engine stay (Front) and frame	M10×1.25	64	6.4	46	
Engine stay (Front) and engine	M10×1.25	64	6.4	46	
Engine stay (Upper) and frame	M10×1.25	64	6.4	46	
Engine stay (Upper) and engine	M10×1.25	64	6.4	46	
Engine (Rear) and frame	M10×1.25	64	6.4	46	
Engine protector and frame	M6 ×1.0	10	1.0	7.2	
Rear shock absorber/Swingarm:					
Pivot shaft	M14×1.5	85	8.5	61	
Swingarm and relay arm	M12×1.25	59	5.9	43	
Relay arm and connecting rod	M10×1.25	32	3.2	23	
Connecting rod and frame	M10×1.25	32	3.2	23	
Rear shock absorber and frame	M12×1.25	59	5.9	43	
Chain tensioner	M8 ×1.25	23	2.3	17	
Chain case and swingarm	M6 ×1.0	4	0.4	2.9	
Chain protector and swingarm	M6 ×1.0	7	0.7	5.1	
Chain guide and swingarm	M6 ×1.0	7	0.7	5.2	
Bolt (at swingarm end)	M6 ×1.0	3	0.3	2.2	
Front wheel/Rear wheel:					
Front wheel axle and nut	M14×1.5	110	11.0	80	
Rear wheel axle and nut	M16×1.5	90	9.0	65	
Front axle holder	M6 ×1.0	8	0.8	5.8	
Brake caliper (Front) and front fork	M10×1.25	35	3.5	25	
Brake caliper (Rear) and bracket	M10×1.25	35	3.5	25	
Bracket and swingarm	M10×1.25	45	4.5	32	

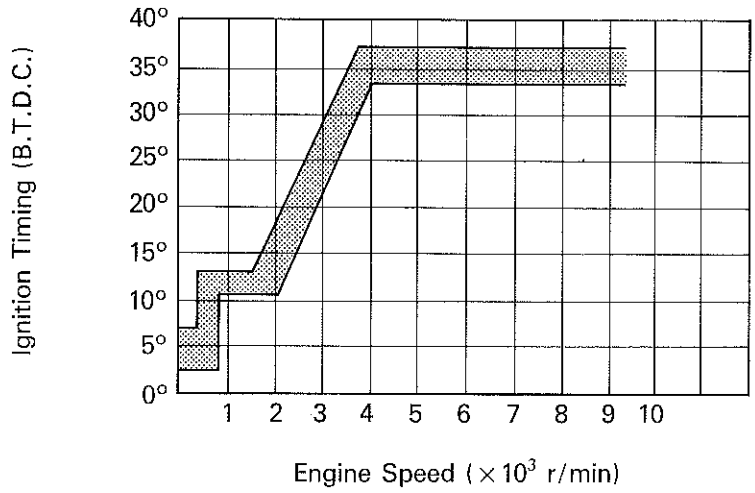
Model	XT600Z(U)				
Part to be tightened	Thread size	Tightening torque			Remarks
		Nm	m•kg	ft•lb	
Footrest/Pedal/Stand:					
Sidestand and frame	M10×1.25	40	4.0	29	
Rear brake switch and frame	M6 ×1.0	4	0.4	2.9	
Footrest (For rider) and frame	M10×1.25	45	4.5	32	
Footrest (For passenger) and frame	M8 ×1.25	20	2.0	14	
Master cylinder (Rear brake) and frame	M8 ×1.25	20	2.0	14	
Reservoir tank (Rear brake) and frame	M6 ×1.0	4	0.4	2.9	
Tank/Seat/Cover/Fender:					
License bracket	M6 ×1.0	5	0.5	3.6	
Rear reflector	M5 ×0.8	4	0.4	2.9	
Oil tank and oil hose	M6 ×1.0	10	1.0	7.2	
Drain bolt (Oil tank)	M8 ×1.25	18	1.8	13	
Special bolt (Oil tank)	M12×1.25	20	2.0	14	
Helmet holder and frame	M6 ×1.0	4	0.4	2.9	
Seat and frame	M6 ×1.0	10	1.0	7.2	
Front fender and lower bracket	M6 ×1.0	7	0.7	5.1	
Rear fender	M6 ×1.0	7	0.7	5.1	
Battery box and frame	M6 ×1.0	7	0.7	5.1	
Fuel tank stay and frame	M6 ×1.0	7	0.7	5.1	
Fuel tank and frame	M6 ×1.0	7	0.7	5.1	
Fuel pump and frame	M5 ×0.8	5	0.5	3.6	
Fuel pump and clamp	M6 ×1.0	7	0.7	5.1	
Oil tank and frame	M8 ×1.25	10	1.0	72	
Oil cooler and frame	M6 ×1.0	7	0.7	5.1	
CDI unit and mud guad	M6 ×1.0	4	0.4	2.9	
License bracket and taillight	M6 ×1.0	7	0.7	5.1	
Regulator and battery box	M6 ×1.0	7	0.7	5.1	
Regulator and battery box	M16×1.25	35	3.5	25	
Regulator and battery box	M12×1.25	24	2.4	17	

NOTE:

1. First, tighten the ring nut approximately 38 Nm (3.8 m•kg, 27 ft•lb) by using the torque wrench, then loosen the ring nut one turn.
2. Retighten the ring nut to specification.

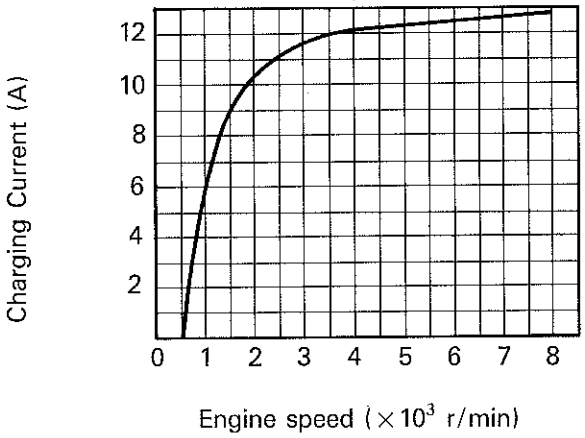
ELECTRICAL

Model	XT600Z(U)
Voltage:	12V
Ignition System:	
Ignition Timing (B.T.D.C.)	12° at 1,200 r/min
Advanced Timing (B.T.D.C.)	36° at 6,000 r/min
Advancer Type	Electrical Type



C.D.I.:	
Magneto Model/Manufacturer	VCD92/NIPPON DENSO
Pickup Coil Resistance	92~138Ω at 20°C (68°F)
(Color)	(Blue/Yellow—Black/Yellow)
	92~138Ω at 20°C (68°F)
	(Green/White—Black/Yellow)
Source Coil Resistance	112~132Ω at 20°C (68°F)
(Color)	(Brown—Red)
C.D.I. Unit Model/Manufacturer	QAB52-50/NIPPON DENSO
Ignition Coil:	
Model/Manufacturer	J0138-50/NIPPON DENSO
Minimum Spark Gap	6.0 mm (0.24 in)
Primary Coil Resistance	0.15~0.21Ω at 20°C (68°F)
Secondary Coil Resistance	3.8~5.8 kΩ at 20°C (68°F)

MAINTENANCE SPECIFICATION

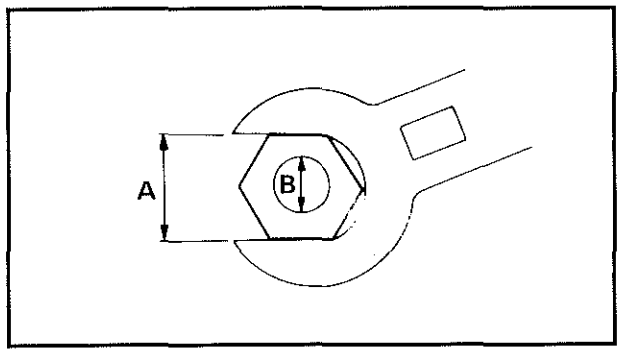
Model	XT600Z(U)
Spark Plug Cap:	
Type	Resin type
Resistance	8 ~ 12kΩ at 20°C (68°F)
Charging System:	
Type	A.C. magneto generator
Model/Manufacturer	VCD92/NIPPONDENSO
Output	14V 12A at 5,000 r/min
	
Charging Coil Resistance (Color)	0.7 ~ 1.1Ω at 20°C (68°F) (W—W)
Voltage Regulator/Rectifier:	
Model/Manufacturer	SH569/SHINDENGEN
Voltage Regulator:	
Type	Semi conductor-short circuit type
No Load Regulated Voltage	14.3 ~ 15.3V
Rectifier:	
Capacity	25A
Withstand Voltage	240V
Battery:	
Specific Gravity	1.280
Starter Motor:	
Model/Manufacturer	SM13/MITSUBA
Output	0.8kW
Brush Overall Length	12 mm (0.47 in)
<Limit>	<5 mm (0.20 in)>
Brush Spring Pressure	680 ~ 920 g (24.0 ~ 32.4 oz)
<Limit>	<520 g (13.6 oz)>
Commutator Dia.	28 mm (1.10 in)
<Limit>	<27 mm (1.06 in)>
Mica Undercut	0.7 mm (0.028 in)
Starter Switch:	
Model/Manufacturer	I26-22011-D000/HONDA LOCK
Amperage Rating	100A

Model	XT600Z(U)
Horn:	
Type	Plane type
Quantity	1 pc.
Model/Manufacturer	YF-12/NIKKO
Maximum Amperage	2.5A
Flasher Relay:	
Type	Condenser type
Model/Manufacturer	FZ249SD/NIPPON DENSO *FJ245EF/NIPPON DENSO.....(D)*
Self Cancelling Device	No
Flasher Frequency	75~95 cycles/min
Wattage	21W×2+3.4W
Circuit Breaker:	
Type	Fuse
Amperage for Individual	20A

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 crisscross 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 (Nut)	B (Bolt)	General torque specifications		
		Nm	m•kg	ft•lb
10 mm	6 mm	6	0.6	4.3
12 mm	8 mm	15	1.5	11
14 mm	10 mm	30	3.0	22
17 mm	12 mm	55	5.5	40
19 mm	14 mm	85	8.5	61
22 mm	16 mm	130	13.0	94



A: Distance across flats
B: Outside thred diameter

DEFINITION OF UNITS

Unit	Read	Definition	Measure
mm cm	millimeter centimeter	10^{-3} meter 10^{-2} meter	Length Length
kg	kilogram	10^{3} gram	Weight
N	Newton	1 kg × m/sec^2	Force
Nm m•kg	Newton meter Meter kilogram	N × m m × kg	Torque Torque
Pa N/mm	Pascal Newton per millimeter	N/m^2 N/mm	Pressure Spring rate
L cm^3	Liter Cubic centimeter	—	Volume or capacity
r/min	Rotation per minute	—	Engine speed

LUBRICATION POINTS AND LUBRICANT TYPE

ENGINE

Lubrication Points (Part name)	Lubricant Type
Oil seal lips (All)	LS
Bearing retainer	E
Crank Pin	E
Connecting rod (Big end)	E
Piston and piston ring	E
Boss (Balancer drive gear)	E
Piston pin	E
Valve stem and valve guide	M
Oil seal (Valve stem end)	M
Rocker arm shaft and rocker arm	E
Cam and bearing (Camshaft)	E
Rotor and rotor housing (Oil pump)	E
Push rod	LS
Primary driven gear and main axle	E
Sliding gear (Transmission)	M
Free movement gear (Transmission)	M
Shift fork and guide bar	E
Shift cam and bearing (Shift cam)	E
Shift shaft	E
Crankcase mating surfaces	Yamaha Bond No. 1215
Mating surfaces (Cylinder head and cylinder head cover)	Yamaha Bond No. 1215

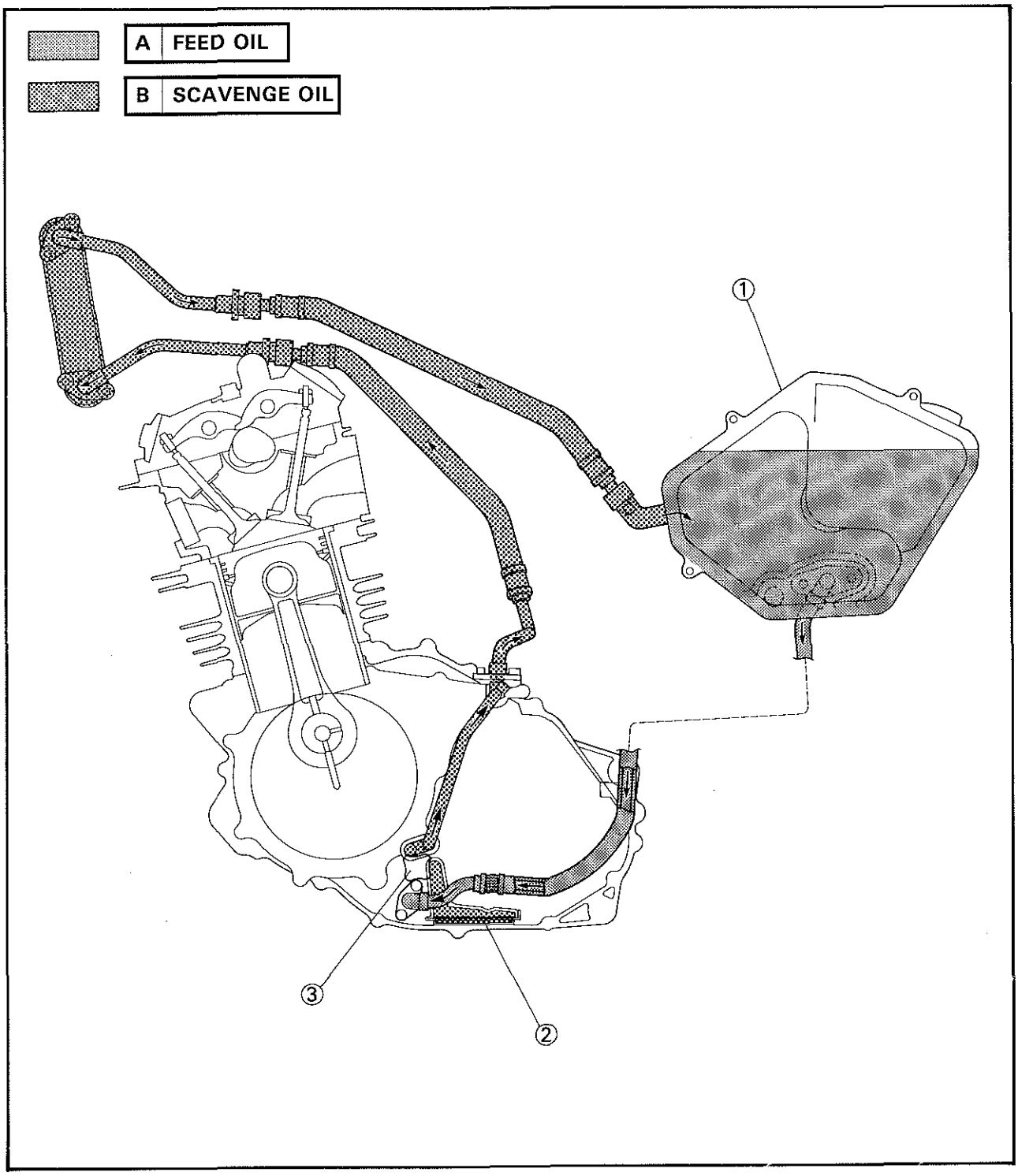
LUBRICATION POINTS AND LUBRICANT TYPE

CHASSIS

Lubrication Points (Part name)	Lubricant Type
Gear unit (Speedometer)	LS
Oil seal lips (All)	LS
Wheel axle (Front wheel and rear wheel)	LS
Rear wheel hub and clutch hub	LS
Bush (Swingarm) and thrust cover	LS
Pivot shaft (Swingarm)	LS
Bushes (Rear shock absorber)	LS
Bushes (Relay arm and connecting rod)	LS
Bearings (Relay arm and connecting rod)	LS
Pivoting points (Brake pedal and change pedal)	LS
Bearings (Steering head)	LS
Right handlebar end	LS
Pivoting points (Brake lever and clutch lever)	LS
Clutch cable end	LS
Pivoting point (Sidestand)	LS
Bushes (Chain tensioner)	LS
Grease nipple (Swingarm)	LS
Grease nipple (Relay arm)	LS
Grease nipple (Connecting arm)	LS

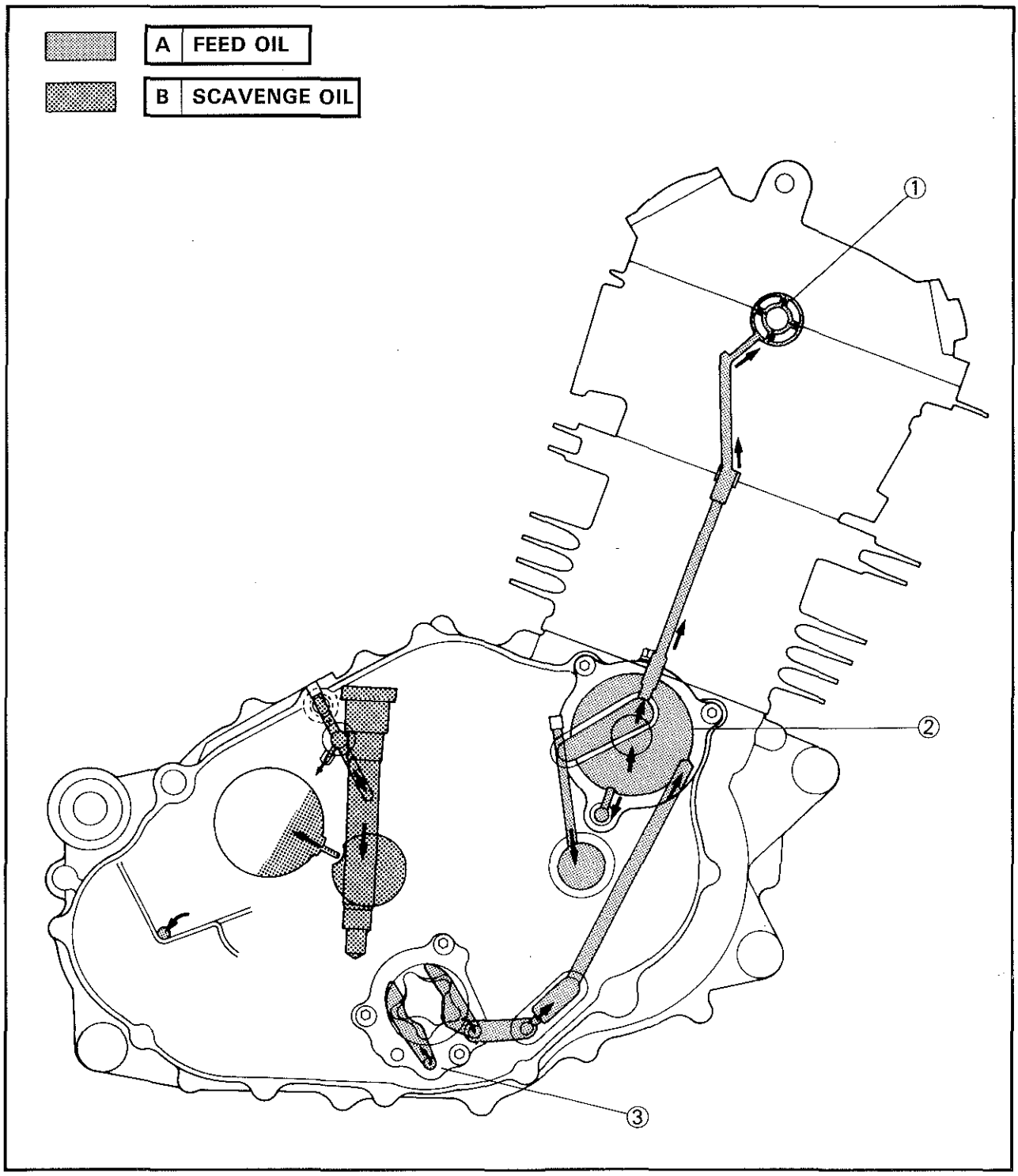
LUBRICATION DIAGRAM

① Oil tank
② Oil strainer
③ Oil pump

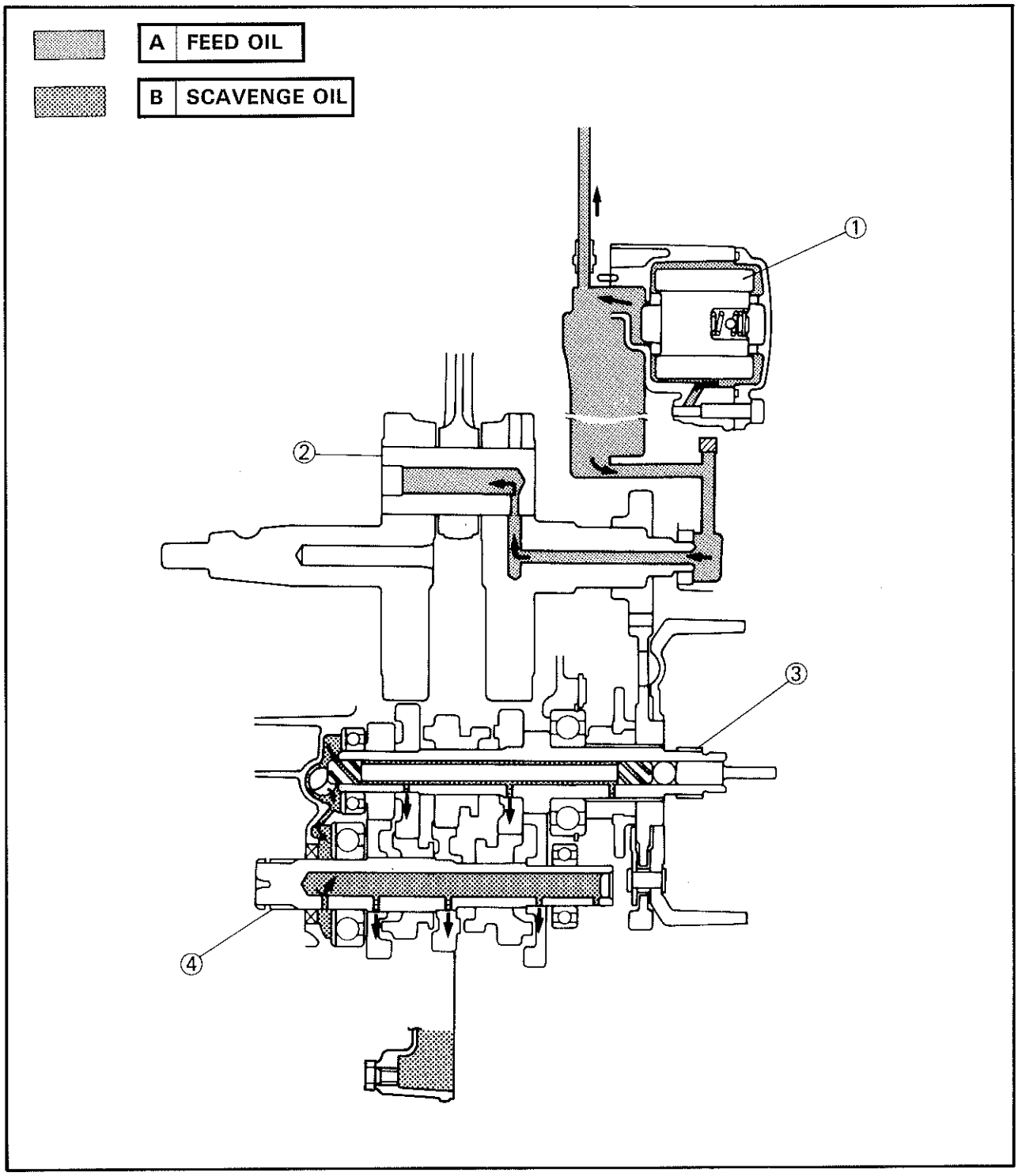


LUBRICATION DIAGRAM

① Camshaft
② Oil cleaner
③ Oil pump

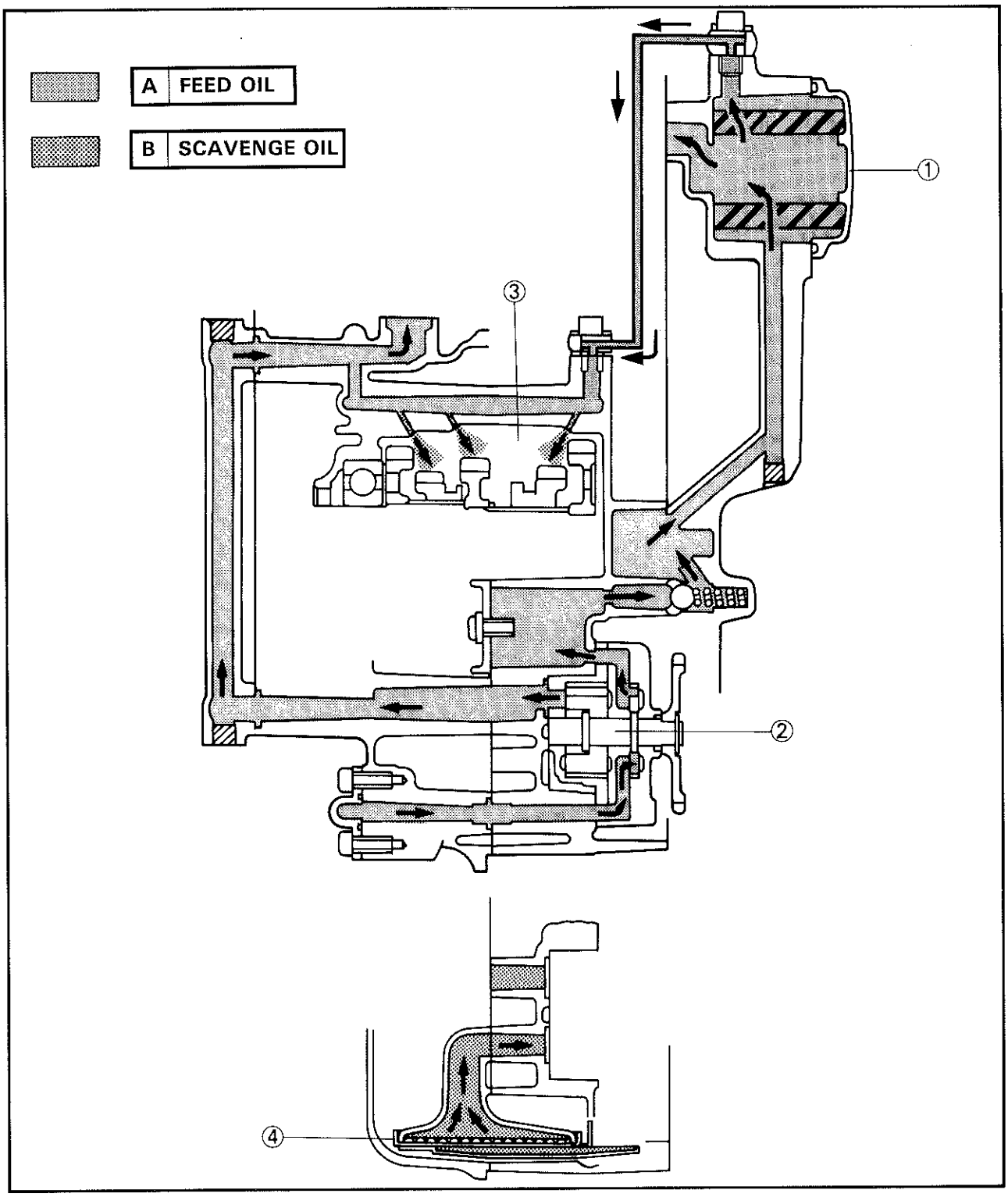


① Oil cleaner
② Crank pin
③ Main axle
④ Drive axle



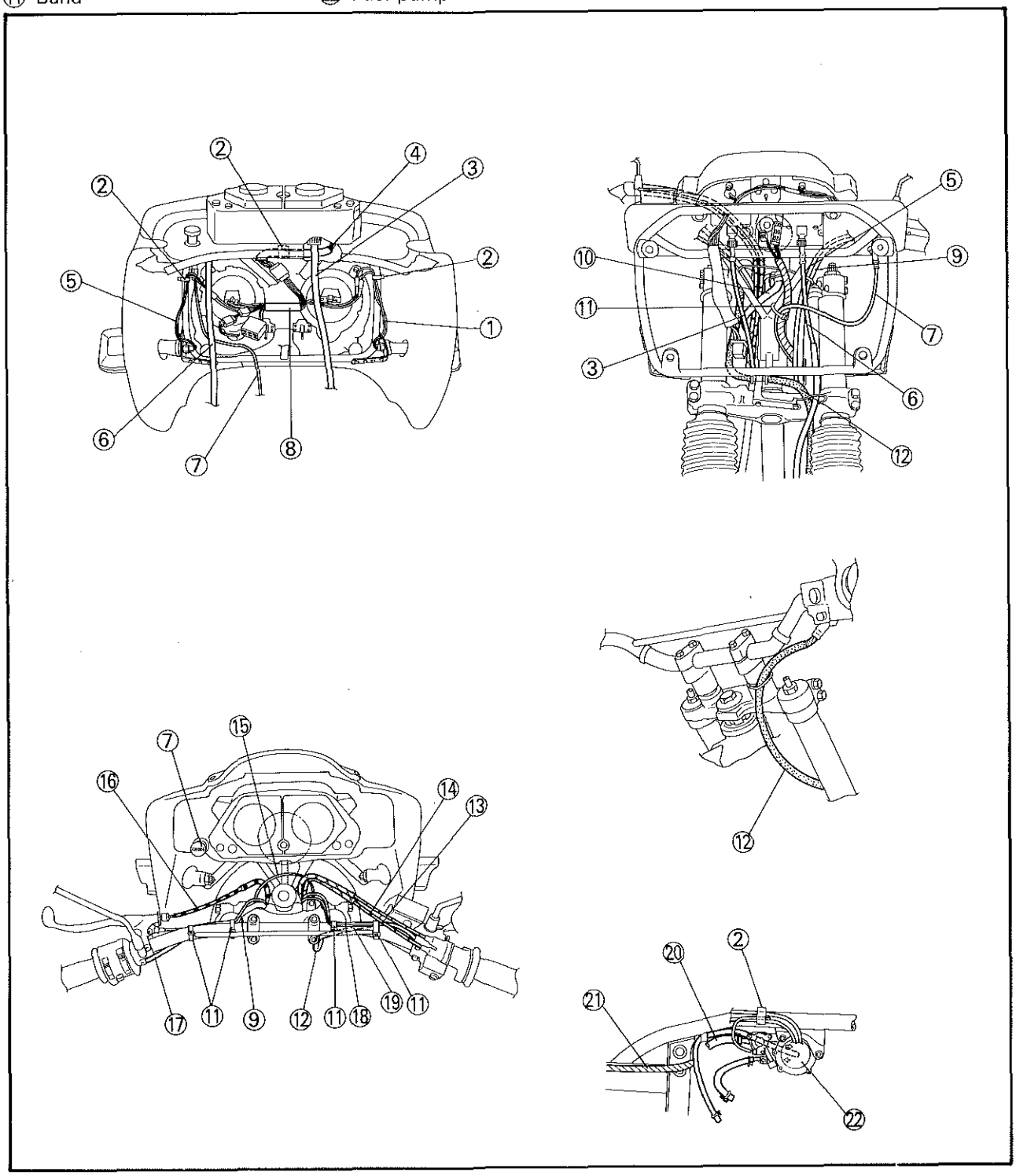
LUBRICATION DIAGRAM

① Oil cleaner
② Oil pump
③ Shift cam
④ Oil strainer

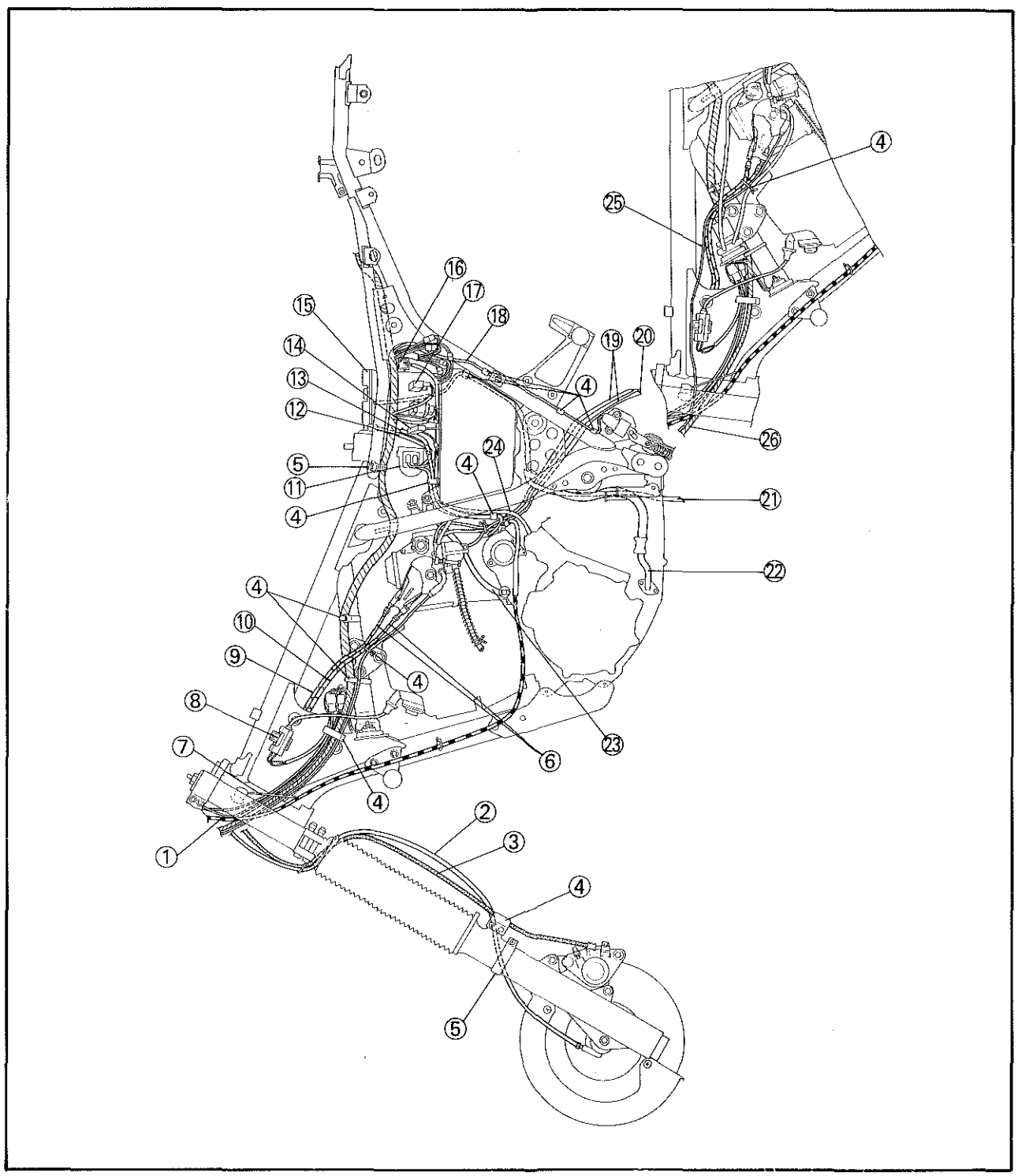


CABLE ROUTING

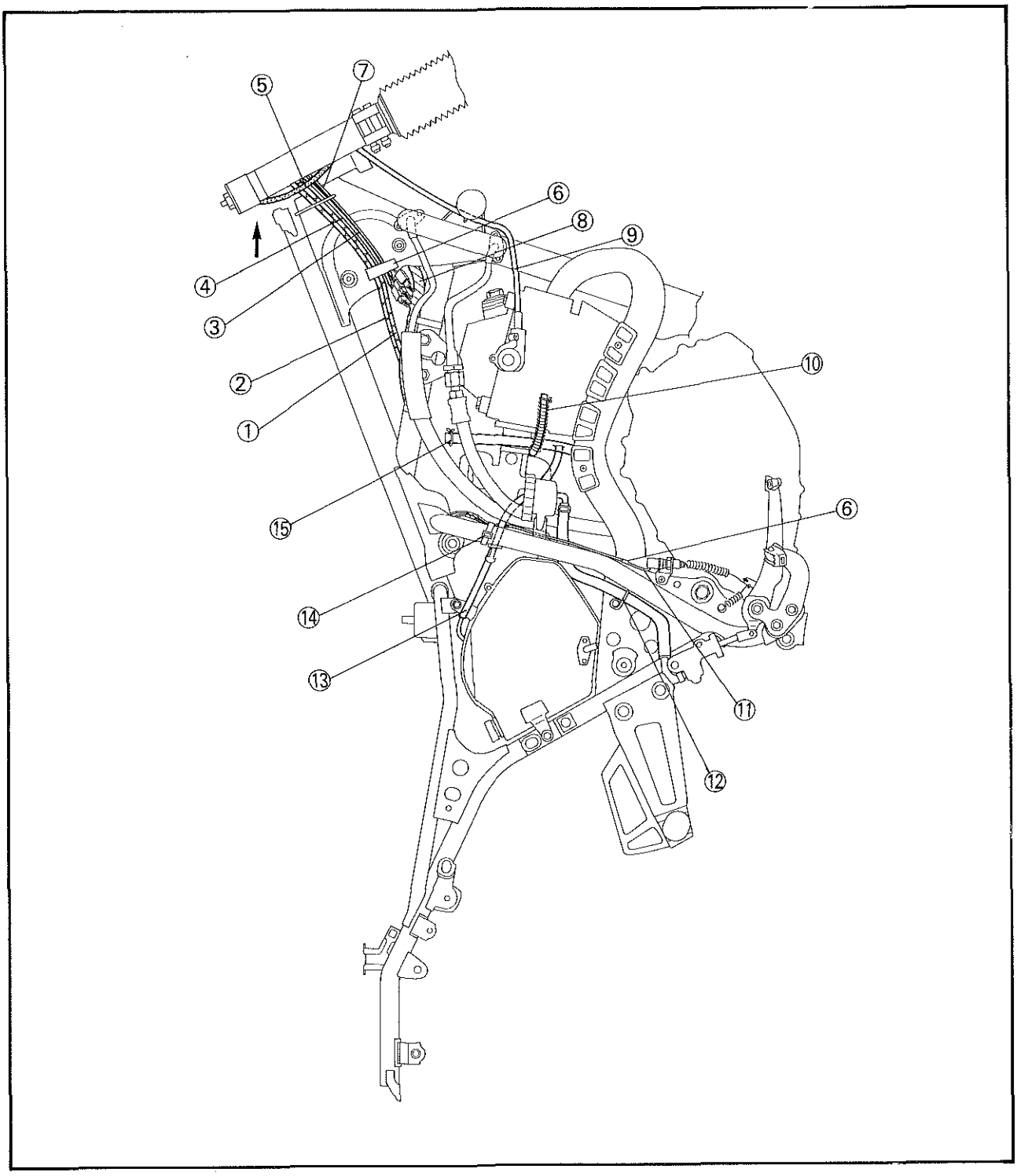
① Flasher light lead (Right)
② Clamp
③ Tachometer cable
④ Meter lead
⑤ Flasher light lead (Left)
⑥ Speedometer cable
⑦ Starter cable
⑧ Headlight lead
⑨ Clutch switch lead
⑩ Main switch lead
⑪ Band
⑫ Brake hose
⑬ Throttle cable 2
⑭ Throttle cable 1
⑮ Cable guide
⑯ Clutch cable
⑰ Handlebar switch lead (Left)
⑱ Handlebar switch lead (Right)
⑲ Stop switch lead
⑳ Fuel hose
㉑ Wireharness
㉒ Fuel pump



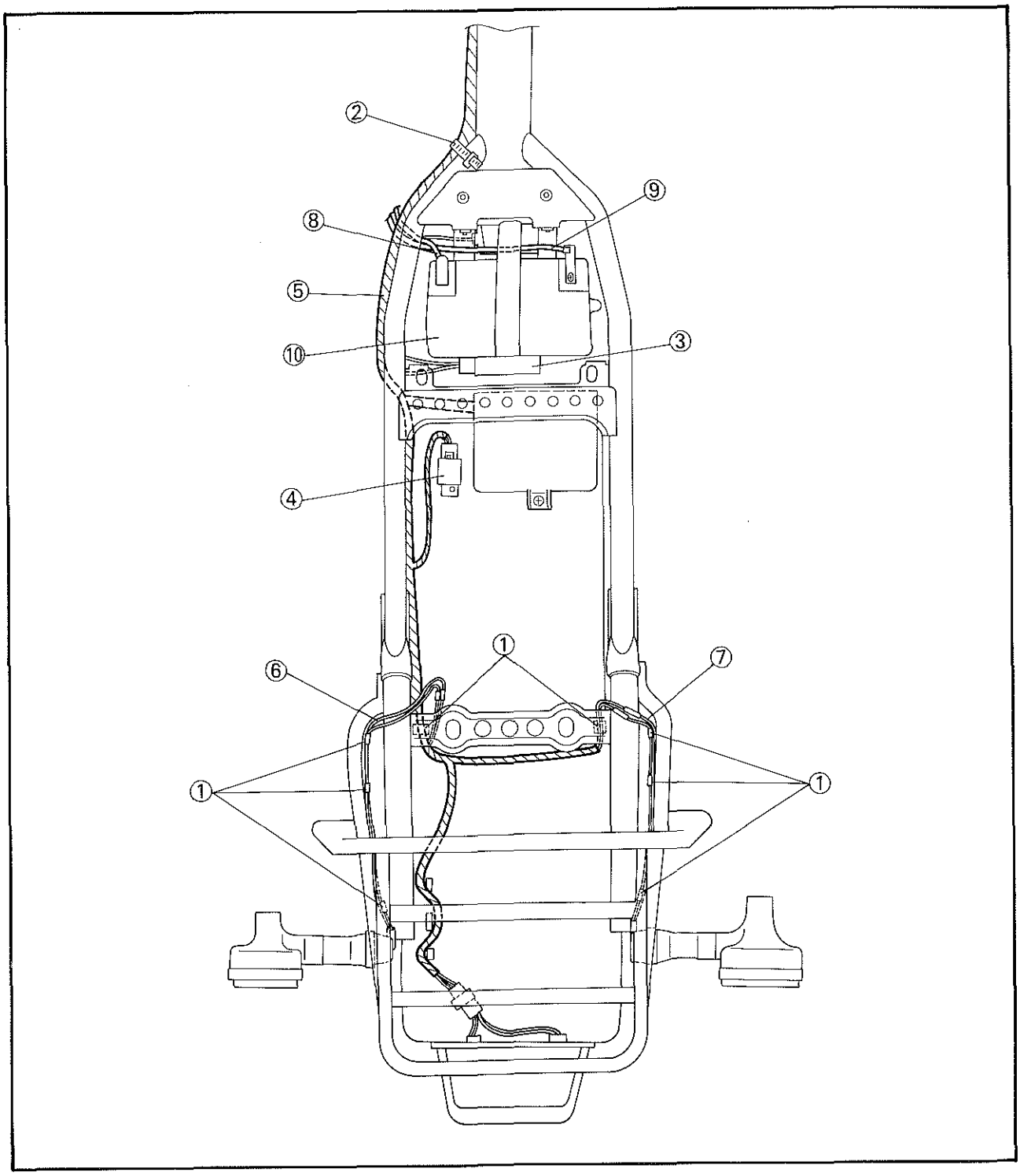
① Clutch cable
② Speedometer cable
③ Brake hose
④ Clamp
⑤ Band
⑥ Throttle cable
⑦ Cable guide
⑧ Ignition coil
⑨ Throttle cable 1
⑩ Throttle cable 2
⑪ Starter switch ass'y
⑫ Battery lead ⊕
⑬ Battery lead ⊖
⑭ Fuse
⑮ Battery
⑯ Rectifier/Regulator
⑰ Flasher relay
⑱ Sidestand switch lead
⑲ Breather hose (Carburetor)
⑳ Overflow hose (Carburetor)
㉑ Breather hose (Battery)
㉒ Oil hose
㉓ Breather hose (Crankcase)
㉔ CDI magneto lead
㉕ Starter cable
㉖ Wireharness



① Throttle cable 1
② Throttle cable 2
③ Stop switch lead
④ Handlebar switch lead (Right)
⑤ Cable guide
⑥ Clamp
⑦ Main switch lead
⑧ Wireharness
⑨ Tachometer cable
⑩ Fuel hose
⑪ Stop switch lead
⑫ Holder
⑬ Breather hose (Oil tank)
⑭ Band
⑮ Breather hose



① Clamp
② Band
③ Rectifier/Regulator
④ Sidestand switch relay
⑤ Wireharness
⑥ Flasher light lead (Left)
⑦ Flasher light lead (Right)
⑧ Battery lead ⊕
⑨ Battery lead ⊖
⑩ Battery



PERIODIC INSPECTION AND ADJUSTMENT

INTRODUCTION

This chapter includes all information necessary to perform recommended inspections and adjustments. These preventive maintenance procedures, if followed, will ensure more reliable vehicle operation and a longer service life. The need for costly overhaul work will be greatly reduced. This information applies to vehicles already in service as well as new vehicles that are being prepared for sale. All service technicians should be familiar with this entire chapter.

PERIODIC MAINTENANCE/LUBRICATION INTERVALS

Unit: km (mi)

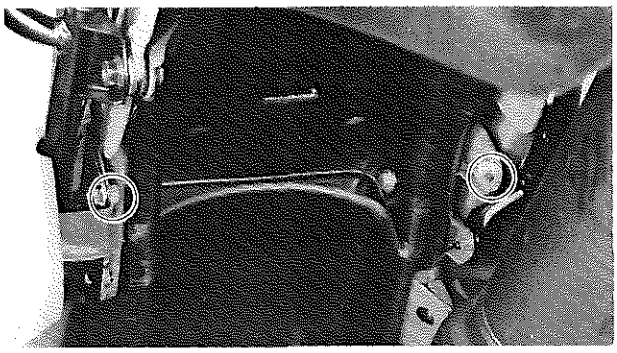
ITEM	REMARKS	BREAK-IN 1,000 (600)	EVERY 6,000 (4,000) or 6 months	EVERY 12,000 (8,000) or 12 months
Valve clearance	Check/Adjust valve clearance.	○	○	○
Spark plug	Check/Clean/Replace if necessary.	○	○	○
Air filter	Clean. Replace if necessary.		○	○
Carburetor	Check/Adjust idle speed, starter operation.	○	○	○
Fuel line	Check fuel hose for cracks or damage.		○	○
Engine oil	Replace (Warm engine before draining).	○	○	○
Engine oil filter/ Oil strainer	Replace filter element and clean oil strainer.	○	○	○
Brake	Check operation/fluid leakage/See NOTE./ Adjust if necessary.		○	○
Clutch	Check operation/Adjust if necessary.		○	○
Swingarm pivot/ Swingarm	Check swingarm assembly for looseness. Clean and lube.***	CHECK	○	○
Wheels	Check balance/damage/runout/spoke tightness.		○	○
Wheel bearings	Check bearings assembly for looseness/damage. Replace if damaged.		○	○
Steering bearing	Check bearings assembly for looseness. Moderately repack every 24,000 (16,000) or 24 months.***	CHECK		CHECK
Front forks	Check operation/oil leakage.		○	○
Rear shock absorber	Check operation/oil leakage.		○	○
Drive chain	Check and adjust slack/alignment/clean/lube.	EVERY 500 (300)		
Fittings/Fasteners	Check all chassis fittings and fasteners.	○	○	○
Sidestand switch (For Europe)	Check operation. Clean or replace if necessary.	○	○	○
Battery	Check specific gravity. Check breather pipe for proper operation.		○	○

***: Lithium base grease

NOTE:

Brake system:

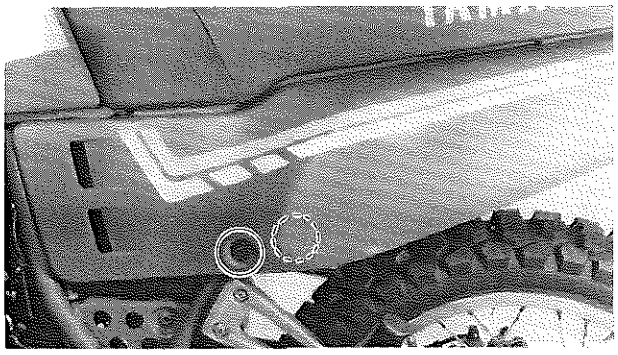
1. When disassembling the master cylinder or caliper cylinder, replace the brake fluid. Normally check the brake fluid level and add the fluid as required.
2. We recommended that, on the inner parts of the master cylinder and caliper cylinder, replace the oil seals every two years.
3. We recommended that, replace the brake hoses every four years, or if cracked or damaged.



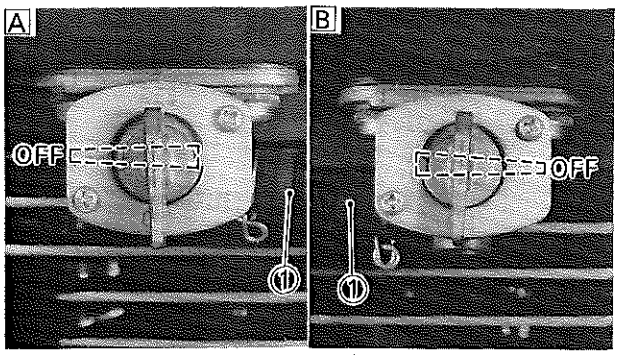
SEAT, FUEL TANK AND COVER

REMOVAL

1. Remove:
   • Seat



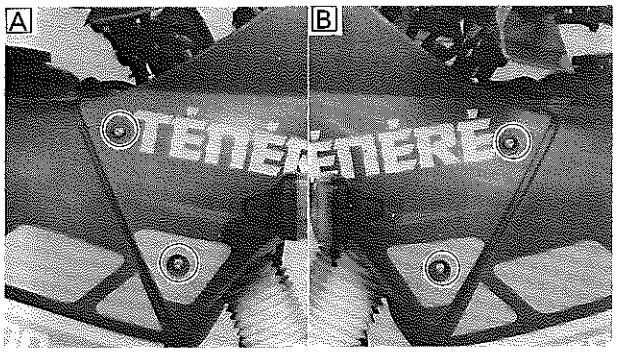
2. Remove:
   • Side cover



3. Turn the fuel cock levers (Left and right) to "OFF".

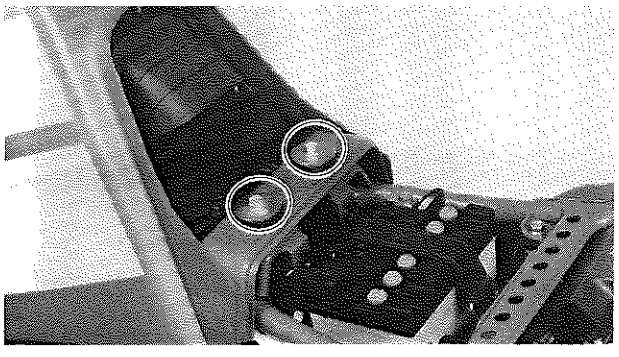
4. Disconnect:
   • Fuel hoses (Left and right) ①

A Left
B Right



5. Remove:
   • Fuel tank

A Left
B Right



INSTALLATION

Reverse the "REMOVAL" procedure. Note the following points.

1. Install:
   - Side cover
   - Seat
   - Fuel tank

Bolt (Side Cover):
7 Nm (0.7m•kg, 5.1 ft•lb)
Bolt (Seat):
10 Nm (1.0m•kg, 7.2 ft•lb)
Bolt (Cowl and Fuel Tank)
4 Nm (0.4m•kg, 2.9 ft•lb)

ENGINE

ENGINE OIL LEVEL INSPECTION

1. Inspect:
   - Engine oil level
     Oil level low→Add sufficient oil.

Engine oil level inspection steps:
- Place the motorcycle on a level place.

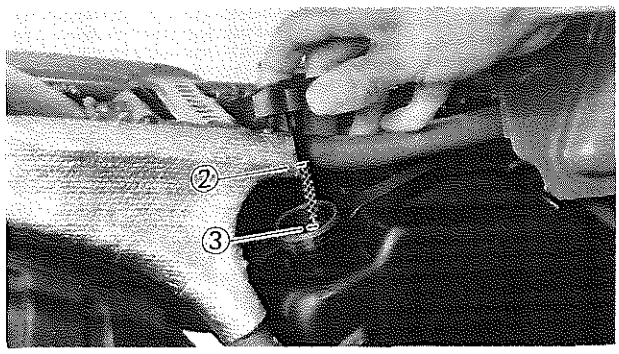
NOTE:

Be sure the motorcycle is positioned straight up and on both wheels.

- Remove the side cover (Right).
- Remove the oil tank cap ① completely out, and then just rest the cap in the hole.

NOTE:

When checking, do not screw the oil level gauge ① into the oil tank. Insert the gauge lightly. For accuracy, check with the motorcycle held upright.



- Pull up the cap, and inspect the oil level whether or not it is between maximum ② and minimum level ③.
  Sufficient oil→Start the engine.
  Insufficient oil→Add the oil up to the minimum level and start the engine.

CAUTION:

When the oil tank is empty, never start the engine.

- Warm up until the oil temperature rises to approximately 60°C (140°F).
- Idle the engine more than 10 seconds while keeping the motorcycle upright, and stop the engine.
- Inspect the oil level with the oil tank cap, and apply the engine oil to the maximum level.

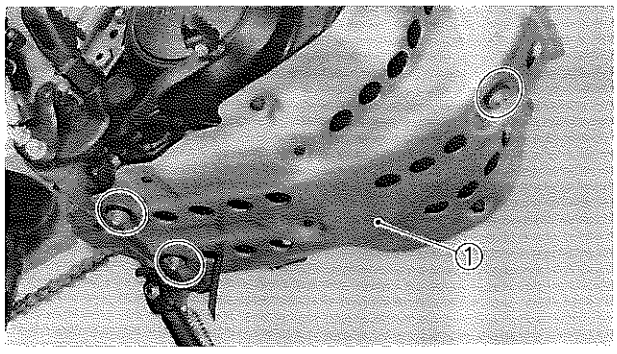
WARNING:

Never attempt to remove the oil tank cap just after high speed operation. The heated oil could spout out, causing danger. Wait until the oil cools down to approximately 60°C (140°F).

ENGINE OIL REPLACEMENT

CAUTION:

The replacement of engine oil should be made through the drain holes in the crankcase and the oil tank. To drain the oil, never disconnect the oil hose at the engine side, or engine damage way result.



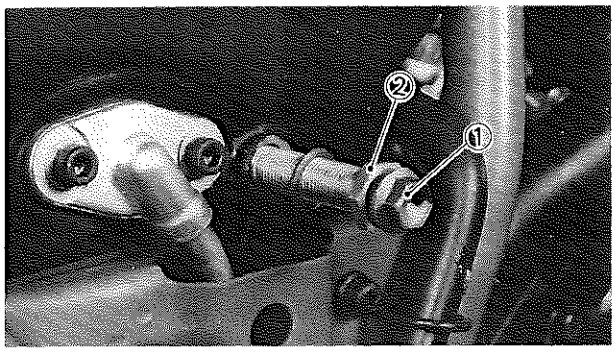
Engine Oil Replacement (Without Oil Filter)

1. Start the engine and stop after a few minutes of warming up.
2. Remove:
   - Engine guard ①
   - Side cover (Right)
3. Place the oil receiver under the engine.
4. Remove:
   - Oil tank cap
   - Drain plug (Crankcase) ①
   - Air bleed screw ②
   - Filter cover screw ③

   Drain the engine oil.

NOTE:

The oil filter cover is secured by three screws. The lower one should be removed so that the filter cavity will drain.



5. Loosen:
   - Drain plug (Oil tank) ①
   - Special bolt ②

NOTE:

- Loosen the special bolt as far as its groove.
- Before removing the drain bolt, loosen out the special bolt to a sufficient length that will protect the frame from the dripping oil.

6. Remove:
   - Drain plug (Oil tank)

   Drain the engine oil.

7. Inspect:
   - Gasket (Drain plug-Crankcase)
   - Gasket (Drain plug-Oil tank)

   Damage→Raplace.

8. Tighten:
   - Components in above list (Steps "6~2")

Drain Plug (Crankcase):
30 Nm (3.0 m•kg, 22 ft•lb)
Drain Plug (Oil Tank):
18 Nm (1.8 m•kg, 13 ft•lb)
Special Bolt (Oil Tank):
20 Nm (2.0 m•kg, 14 ft•lb)
Screw (Filter Cover):
10 Nm (1.0 m•kg, 7.2 ft•lb)
Air Bleed Screw:
5 Nm (0.5 m•kg, 3.6 ft•lb)

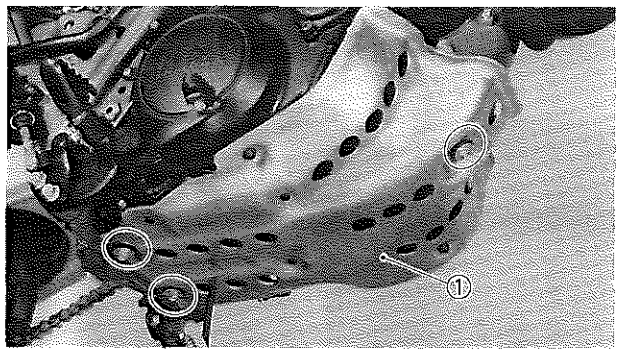
9. Fill:
   - Oil tank

Recommended Oil:
SAE 20W40 Type SE Motor Oil
Periodic Oil Change:
1,9 L (1,7 Imp qt, 2,0 US qt)

CAUTION:

Do not allow foreign material to enter the oil tank.

10. Inspect:
    - Oil leaks
    - Oil level
    - Oil pressure

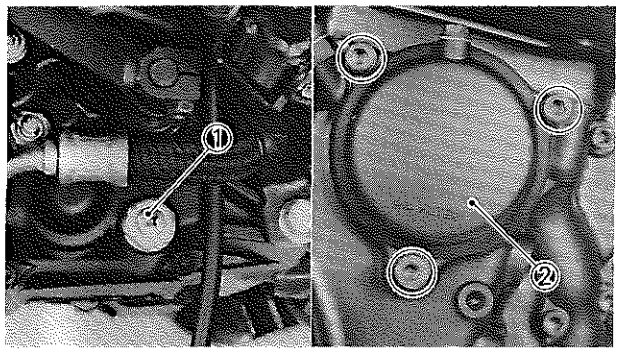


Engine Oil Replacement (With Oil Filter)

1. Start the engine and stop after a few minutes of warm up.

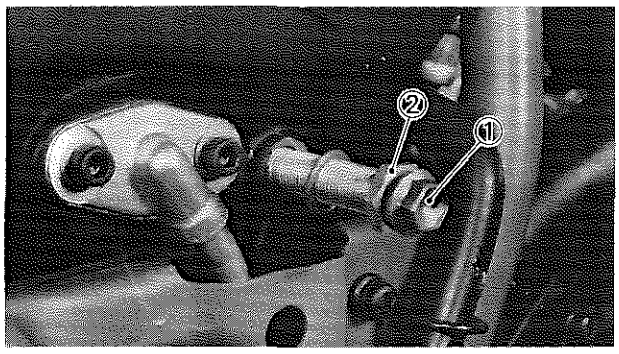
2. Remove:
    - Engine guard ①
    - Side cover (Right)

3. Place the oil receiver under the engine.



4. Remove:
    - Oil tank cap
    - Drain plug (Crankcase) ①
    - Oil filter cover ②
    - Oil filter

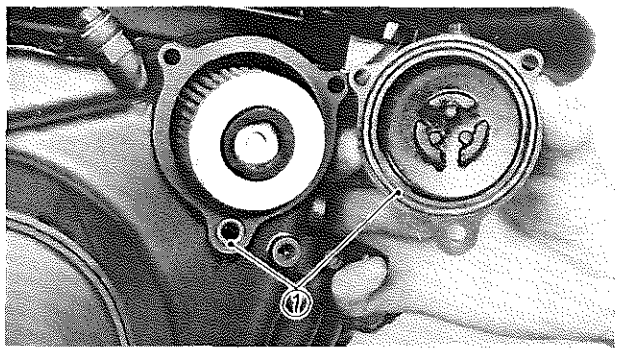
    Drain the engine oil.

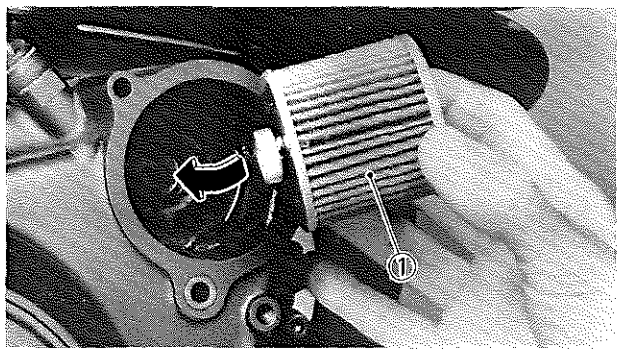


5. Loosen:
    - Drain plug (Oil tank) ①
    - Special bolt ②

NOTE:

- Loosen the special bolt as far as its groove.
- When the drain plug is removed, the oil flows out. Before removing the drain bolt, loosen out the special bolt to a sufficient length that will protect the frame from the dripping oil.





6. Remove:
   - Drain plug (Oil tank)
     Drain the engine oil.

7. Inspect:
   - Gasket (Drain plug-Crankcase)
   - Gasket (Drain plug-Oil tank)
   - O-rings ①
     Damage→Replace.

8. Install:
   - Oil filter (New) ①
   - Oil filter cover

9. Tighten:
   - Components in above list (Step "6~2").

Drain Plug (Crankcase):
30 Nm (3.0 m•kg, 22 ft•lb)
Drain Plug (Oil Tank)
18 Nm (1.8 m•kg, 13 ft•lb)
Special Bolt (Oil Tank):
24 Nm (2.4 m•kg, 17 ft•lb)
Bolts (Filter Cover):
10 Nm (1.0 m•kg, 7.2 ft•lb)
Air Bleed Screw:
5 Nm (0.5 m•kg, 3.6 ft•lb)

10. Fill:
    - Oil tank

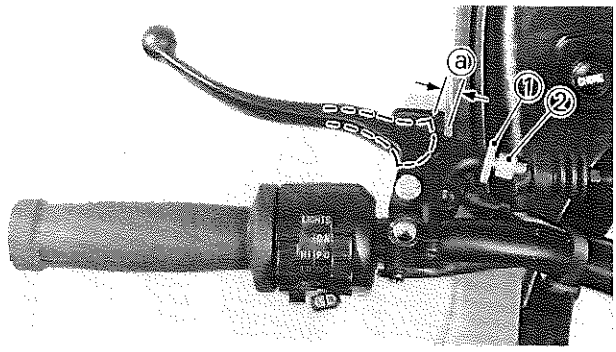
Recommended Oil:
SAE 20W40 Type SE Moter Oil
With Oil Filter Replacement:
2.0 L (1.8 Imp•qt, 2.1 US qt)

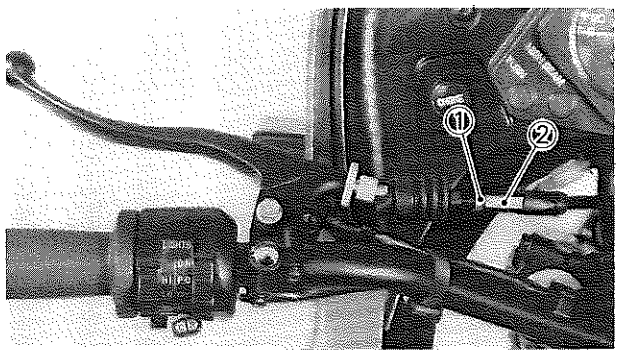
CAUTION:

Do not allow foreign meterial to enter the oil tank.

11. Install:
    - Oil tank cap

12. Inspect:
    - Oil leaks
    - Oil level
    - Oil pressure





CLUTCH ADJUSTMENT

Free Play Adjustment

1. Remove:
   - Brush guard (Left)
2. Loosen:
   - Locknuts ①
3. Adjust:
   - Free play ⓐ

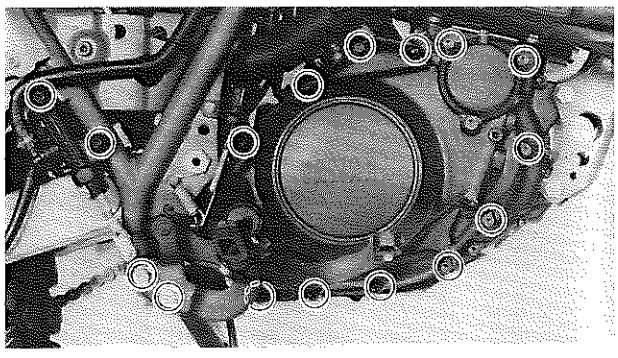
   Turn the adjusters ② until the free play is within the specified limits.

Free Play ⓐ
2 ~ 3 mm (0.08 ~ 0.12 in)

4. Tighten:
   - Locknuts

NOTE:

The above procedure provides for maximum cable free play to allow for proper clutch actuating mechanism adjustment.



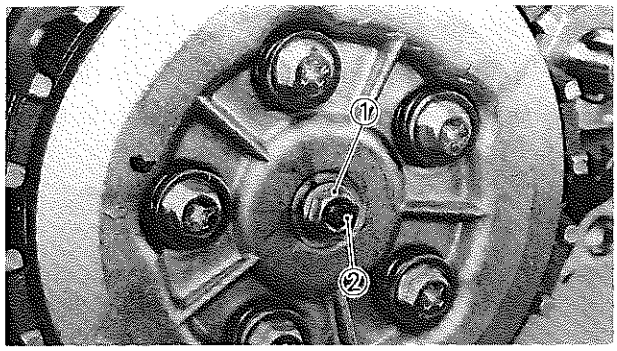
Mechanism Adjustment

1. Loosen:
   - Cable length adjuster locknuts (Fully)
2. Tighten:
   - Cable length adjusters (Until tight)
3. Drain:
   - Engine oil

   Refer to the "ENGINE OIL REPLACEMENT" section.
4. Remove:
   - Engine guard
   - Brake pedal assembly
   - Crankcase cover (Right)
   - Starter motor bracket

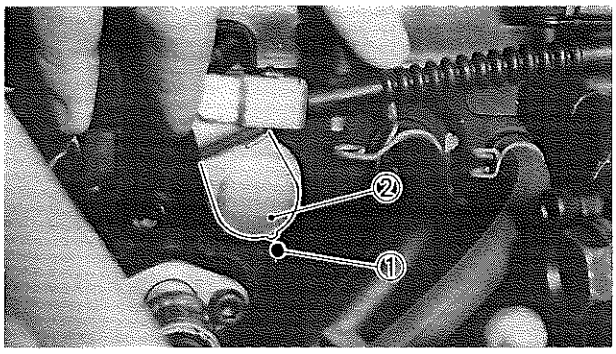
CLUTCH ADJUSTMENT

INSP ADJ



5. Loosen:
   - Locknut ①
6. Push the push lever toward the front of the engine with your finger until it stops.

② Adjuster



7. Adjust:
   - Free play

   With the push lever in this position, turn the adjuster either in or out until the push lever mark ② and crankcase match mark ① are aligned.
8. Tighten:
   - Locknut

	Locknut: **8 Nm (0.8 m•kg, 5.8 ft•lb)**

9. Install:
   - Crankcase cover (Right)

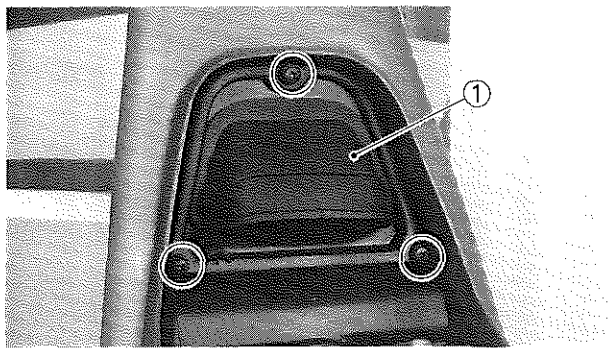
	Screw (Crankcase Cover): **10 Nm (1.0 m•kg, 7.2 ft•lb)**

10. Fill:
    - Oil tank
    - Crankcase

    Refer to the "ENGINE OIL REPLACEMENT" section.

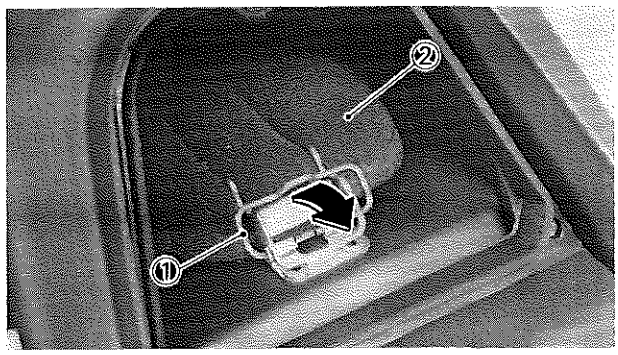
11. Adjust:
    - Clutch cable free play

    Refer to the "Cable Free Play Adjustment" section.



AIR FILTER CLEANING

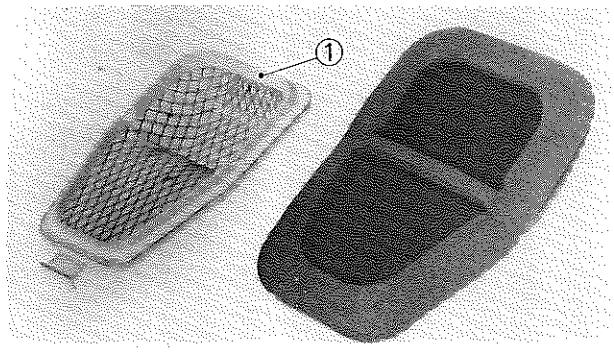
1. Remove:
   - Seat
   - Air filter case cover ①



2. Remove:
   - Element holder ①
   - Air filter element ②

CAUTION:

The engine should never be run without the air filter element; excessive piston and/or cylinder wear may result.



3. Remove:
   - Filter element guide ①

4. Clean:
   - Air filter element

Cleaning steps:

- Wash the element gently, but thoroughly, in solvent.

WARNING:

Never use low flash point solvents such as gasoline to clean the air filter element. Such solvent may lead to a fire or explosion.

- Squeeze the excess solvent out of the filter and let dry.

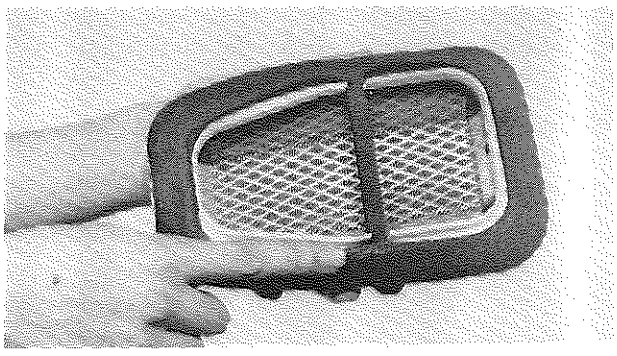
CAUTION:

Do not twist the filter element when squeezing the filter element.

5. Inspect:
   • Air filter element
   Damage → Replace.
6. Pour a small quantity of foam-air-filter oil or Air cooled 2-cycle engine oil onto the filter element and work thoroughly into the porous foam material.

NOTE:

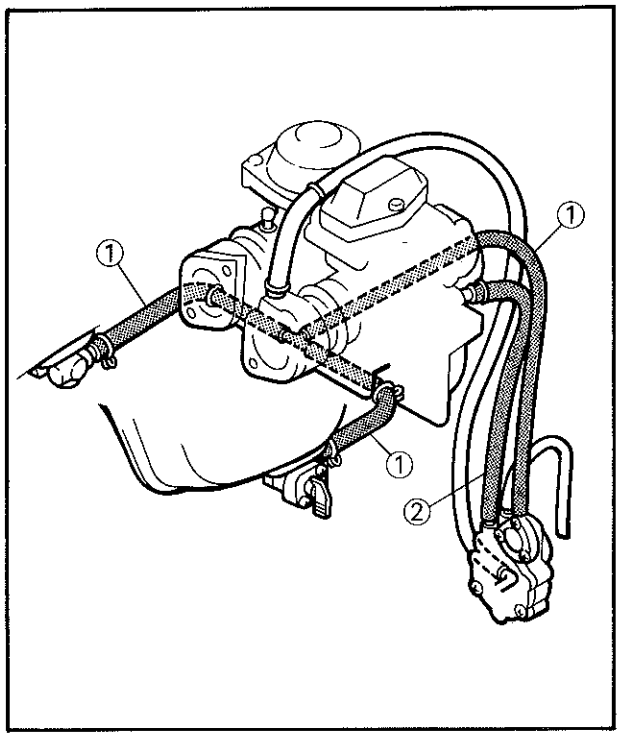
In order to function properly, the element must be damp with oil at all times, but not dripping with oil.



7. Install:
   • Components in above list (Step "3 ~ 1")

NOTE:

Fit the filter element on the filter case and coat the sealing edge of the element with light grease to provide an airtight seal.



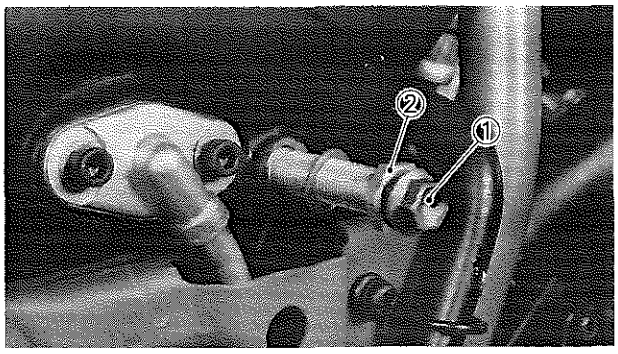
FUEL LINE INSPECTION

1. Inspect:
   • Fuel hoses (Fuel cocks-Fuel pump) ①
   • Fuel hose (Fuel pump-Carburetor) ②
   Cracks/Damage → Replace.
   Clogs → Clean.

ENGINE OIL TANK STRAINER CLEANING

CAUTION:

Never fail to bleed the hose of air when removing the oil hose (Oil tank-crankcase), disassembling the engine, and cleaning the engine oil tank strainer.



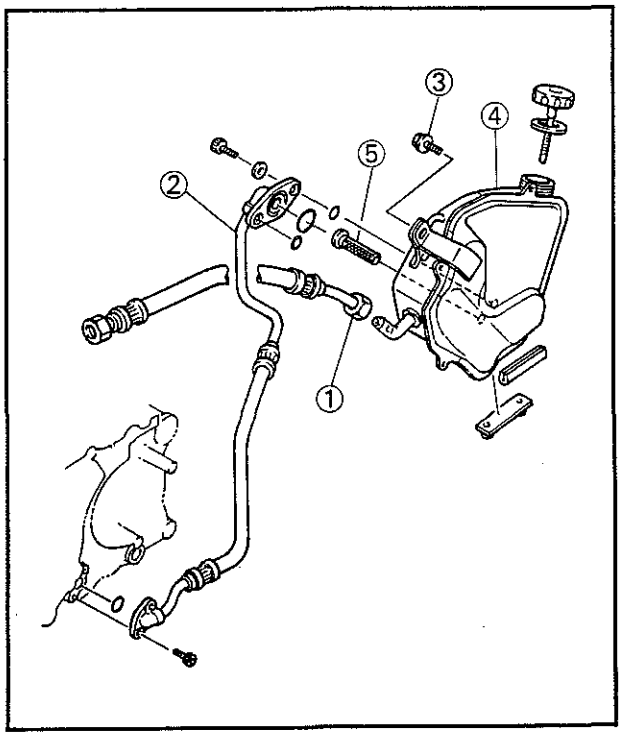
Removal

1. Remove:
   - Engine guard
   - Side cover (Right)
   - Oil tank cap
2. Loosen:
   - Drain plug (Oil tank) ①
   - Special bolt ②

NOTE:

- Loosen the special bolt as far as its groove.
- Before removing the drain bolt, loosen out the special bolt to a sufficient length that will protect the frame from the dripping oil.

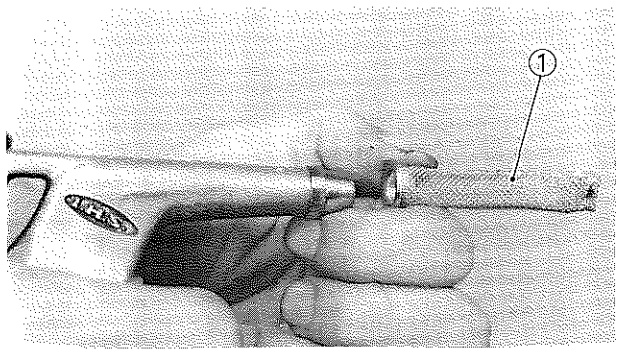
3. Place the oil receiver under the special bolt end.

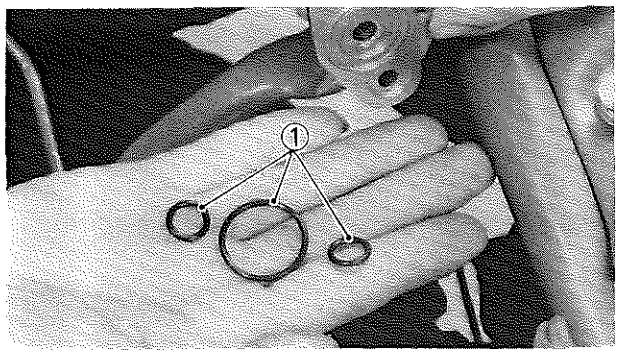


4. Remove:
   - Drain bolt (Oil tank)

   Drain the engine oil.
5. Disconnect:
   - Oil hose (Upper) ①
   - Oil hose (Lower) ②
6. Remove:
   - Bolts (Oil tank) ③
   - Oil tank ④
   - Oil strainer ⑤

ENGINE OIL TANK STRAINER CLEANING





Cleaning

1. Clean:
   - Oil strainer ①
     Blow out the oil strainer with compressed air.
   - Oil tank
     Clean it with solvent.

NOTE:

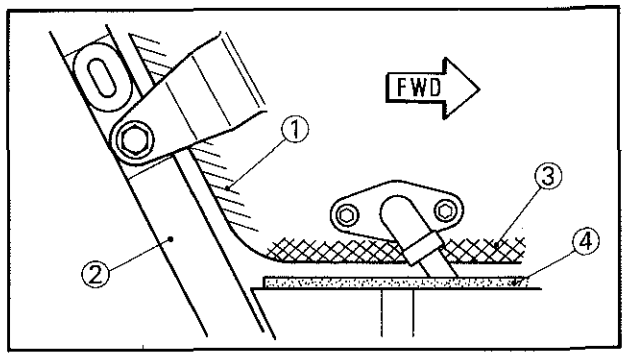
After cleaning the inside of oil tank, remove the solvent thoroughly.

2. Inspect:
   - O-rings ①
     Damage→Replace.

Installation

When installing the side covers, reverse the removal procedure.
Note the following points.

1. Install:
   - Oil tank
   - Oil strainer
   - O-rings



CAUTION:

- **Be sure to provide clearance between the oil tank rear ① and the frame ②.**
- **Make sure that the oil tank bottom ③ is in contact with the damper ④.**

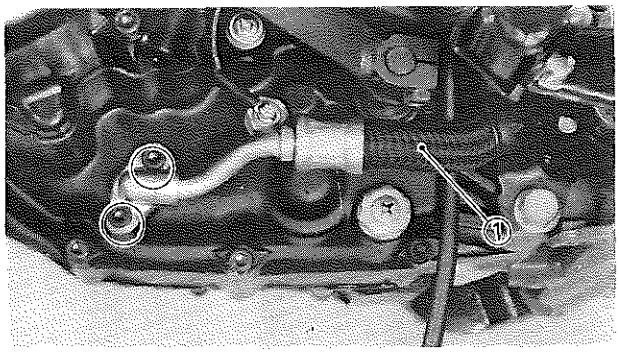
	Bolts (Oil Tank): **10 Nm (1.0 m•kg, 7.2 ft•lb)**

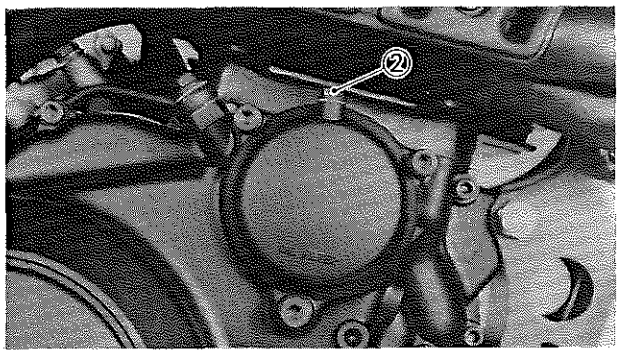
2. Connect:
   - Oil hose (Upper)
   - Oil hose (Lower)

	Nut (Oil Hose-Upper): **35 Nm (3.5 m•kg, 25 ft•lb)** **Bolts (Oil Hose-Lower):** **10 Nm (1.0 m•kg, 7.2 ft•lb)**

3. Tighten:
   - Special bolt
   - Drain bolt (Oil tank)

Drain Plug (Oil Tank):
18 Nm (1.8 m•kg, 13 ft•lb)
Special Bolt (Oil Tank)
20 Nm (2.0 m•kg, 14 ft•lb)





4. Bleed:
   - Air bubbles (Oil hose)

Oil hose (Oil tank-Crankcase) air bleeding steps.
- Put the engine oil into the oil tank.

CAUTION:

Put the engine oil more than minimum level.

- Place the motorcycle on level place.
- Disconnect the oil hose (Crankcase side) ①.
- Keep the engine oil running out until air bubbles disappear.
- When air bubbles are expelled compltetely, connect the oil hose.

Bolts (Oil Hose):
10 Nm (1.0 m•kg, 7.2 ft•lb)

- Remove the air bleed screw ②.
- Start the engine and race it approximately 10 times in a speed range of idling to 3,000 r/min.
- Inspect the engine oil condition of the bleed hole. If the engine oil flows out, the oil pressure is good.

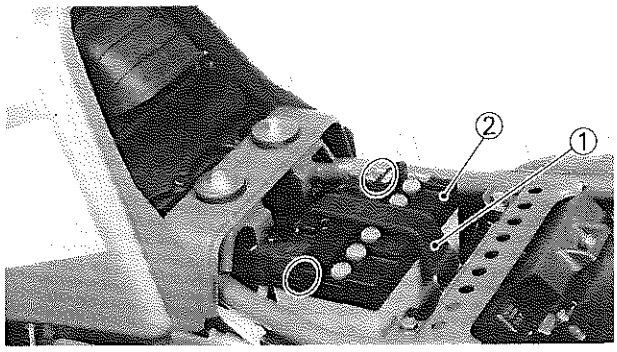
CAUTION:

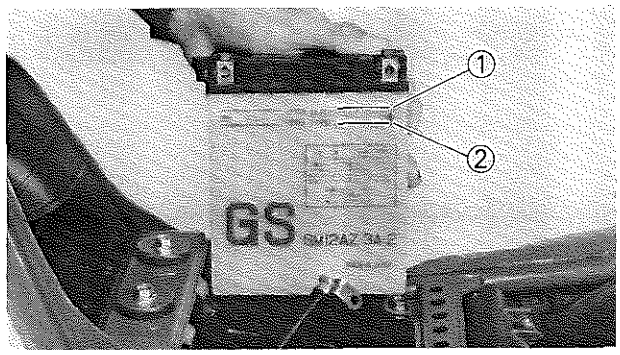
If no oil comes out after a lapse of one minute, turn off the engine immediately so it will not seize.

- Tighten the air bleed screw.

Air Bleed Screw:
5 Nm (0.5 m•kg, 3.6 ft•lb)

- Add the engine oil and check the engine oil level.
  Refer to "ENGINE OIL LEVEL INSPECTION" section.





ELECTRICAL

BATTERY INSPECTION

1. Remove:
   - Seat
   - Band ①
   - Battery ②

NOTE:

Disconnect the negative lead first, and then disconnect the positive lead.

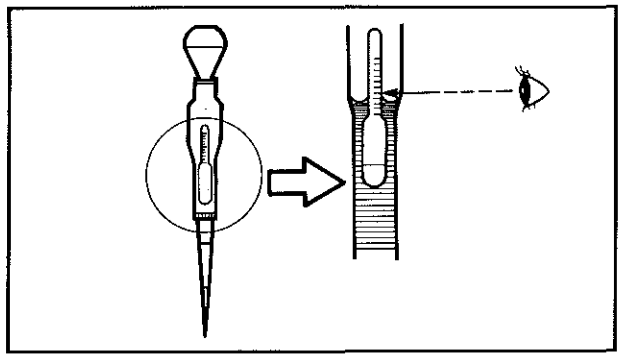
2. Check:
   - Fluid level

   Incorrect→Refill.

   Fluid level should be between upper ① and lower ② level marks.

CAUTION:

Normal tap water contains minerals which are harmful to a battery; therefore, refill only with distilled water.



3. Inspect:
   - Battery fluid specific gravity

   Out of specifcation→Charge.

Charging Current:
1.2 Amps/10 Hrs.
Specific Gravity:
1.280 at 20°C (68°F)

WARNING:

Battery electrolyte is dangerous; it contains sulfuric acid and therefore is poisonous and highly caustic.

Always follow these preventive measures:

- **Avoid bodily contact with electrolyte as it can cause servere burns or permanent eye injury.**
- **Wear protective eye gear when handling or working near batteries.**

Antidote (EXTERNAL):

- **SKIN — Flush with water.**

•EYES — Flsh with water for 15 minutes and get immediate medical attention.

Antidote (INTERNAL):

•Drink large quantities of water or milk (follow with milk of magnesia) beaten egg, or vegetable oil. Get immediate medical attention.

Batteries also generate explosive hydrogen gas, therefore you should always follow these preventive measures:

•Charge batteries in a well-ventilated area.

•Keep batteries away from fire, sparks, or open flames (e.g., welding equipment, lighted cigarettes, etc.)

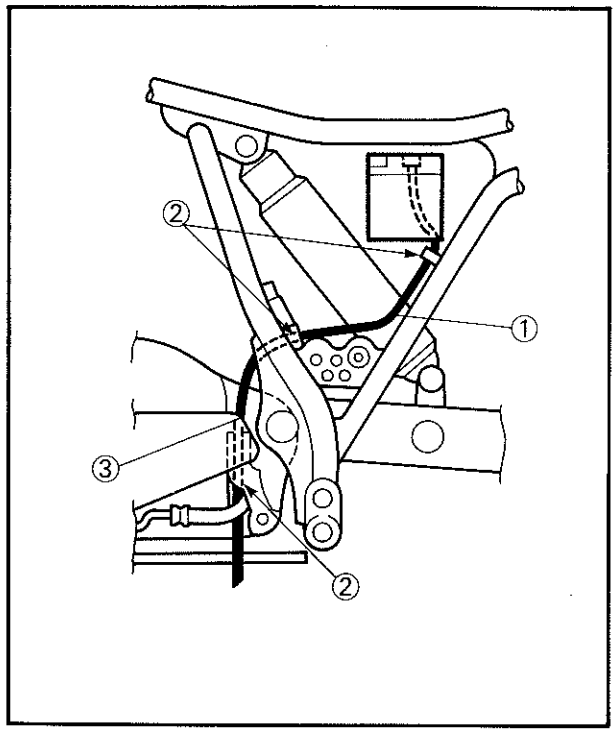
•DO NOT SMOKE when charging or handling batteries.

KEEP BATTERIES AND ELECTROLYTE OUT OF REACH OF CHILDREN.

4. Inspect:
   •Battery breather hose
   Obstruction→Remove.
   Damage→Replace.
5. Install:
   •Battery

NOTE:

Connect the positive lead first, and then connect the negative lead.



6. Connect/Inspect:
   •Battery breather hose ①
   Be sure the hose is properly attached and routed.

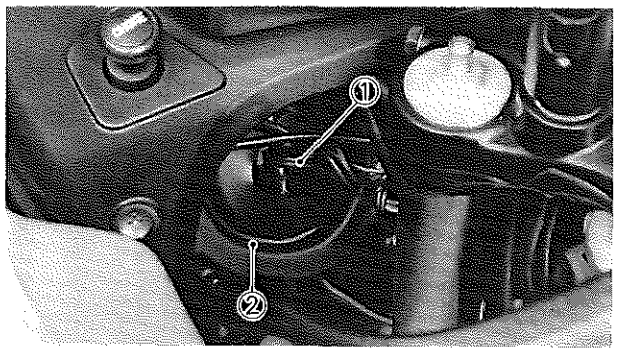
② Pass through guide.
③ Pass inside rear arm.

CAUTION:

When inspecting the battery, be sure the breather hose is routed correctly. If the breather hose touches the frame or exits in such a way as to cause battery electrolyte or gas to exit onto the frame, structural and cosmetic damage to the motorcycle can occur.

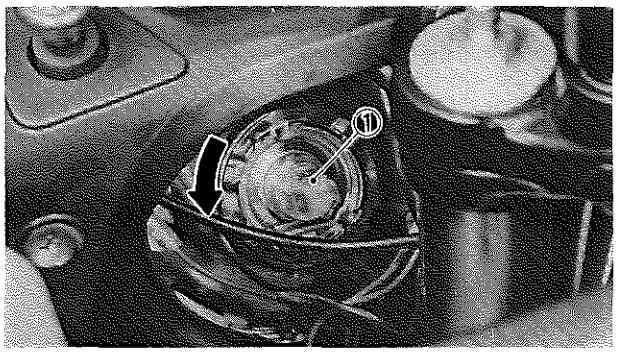
HEADLIGHT BLUB REPLACEMENT

INSP ADJ



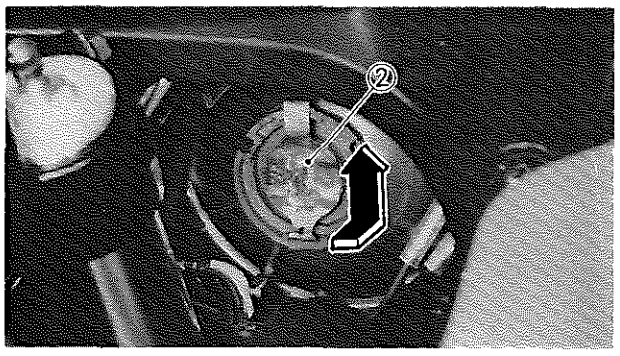
HEADLIGHT BULB REPLACEMENT

1. Disconnect:
   - Headlight leads ①
2. Remove:
   - Bulb cover ②



3. Remove:
   - Defective bulb ①

   Turn the bulb holder counterclockwise to release bulb.



- Defective bulb ②

  Remove the bulb holder and defective bulb.

WARNING:

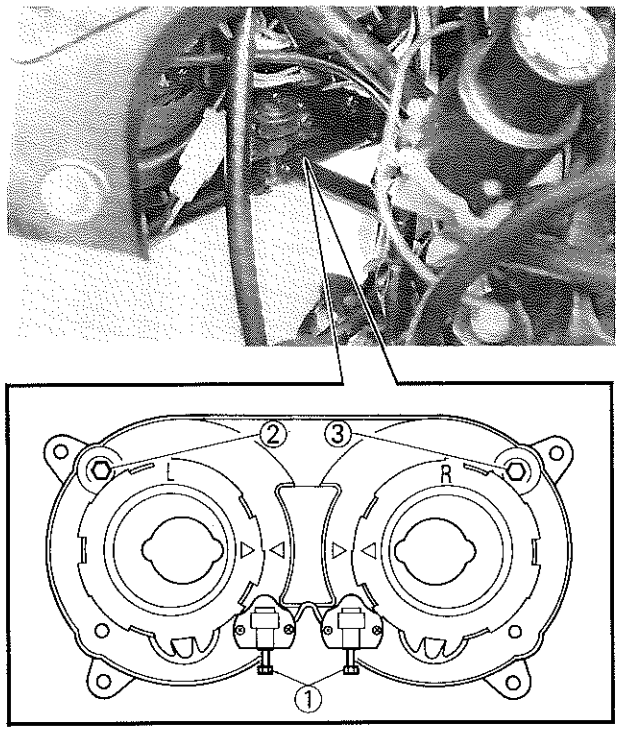
Keep flammable products or your hands away from the bulb while it is on, it will be hot. Do not touch the bulb until it cools down.

4. Install:
   - Bulb (New)

   Secure the new bulb with the bulb holder.

CAUTION:

Avoid touching glass part of bulb. Also keep it free from oil otherwise, transparency of glass, bulb life and illuminous flux will be adversely affected. If oil gets on bulb, clean it with a cloth moistened thoroughly with alcohol or lacquer thinner.



HEADLIGHT BEAM ADJUSTMENT

1. Adjust
   - Headlight beam (Vertical)

To raise the beam	**Turn the adjuster ① clockwise.**
To lower the beam	**Turn the adjuster ① counterclockwise.**

2. Adjust
   - Headlight beam (Horizontal)
   (Left)

To right the beam	**Turn the adjuster ② clockwise.**
To left the beam	**Turn the adjuster ② counterclockwise.**

(Right)

To right the beam	**Turn the adjuster ③ Counterclockwise.**
To left the beam	**Turn the adjuster ③ clockwise.**

Headlight beam variation

☼ LIGHT "ON"
○ LIGHT "OFF"

Lighting		Bulb to be used	Destination
HI	☼ ○ A	12V 55W, 12V 60/55W	Germany, Greece, Belgium, Portugal, Sweden, Spain, France
LO	○ ☼ A		
HI	A ☼ ☼ A	12V 35/35W, 12V 35/35W	Oceania and S. Africa, England, Denmark, Italy
LO	A ☼ ☼ A		
HI	☼ ☼ A	12V 35/35W, 12V 35/35W	Finland, Holland
LO	○ ☼ A		
HI	☼ A	12V 60/55W	Switzerland, Norway
LO	☼ A		

A ... Auxiliary light

ENGINE OVERHAUL

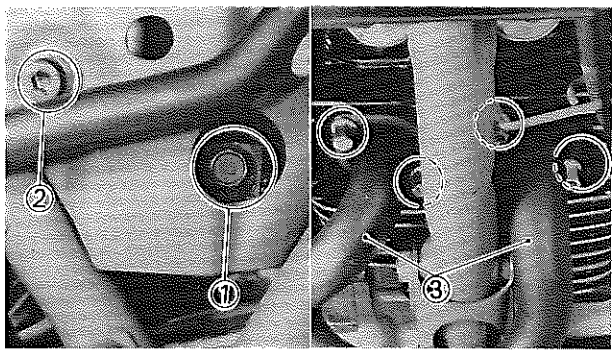
The model XT600Z features a new starter motor, improving the starting performance.
As a result, the conventional kick start system has been eliminated.

DISASSEMBLY

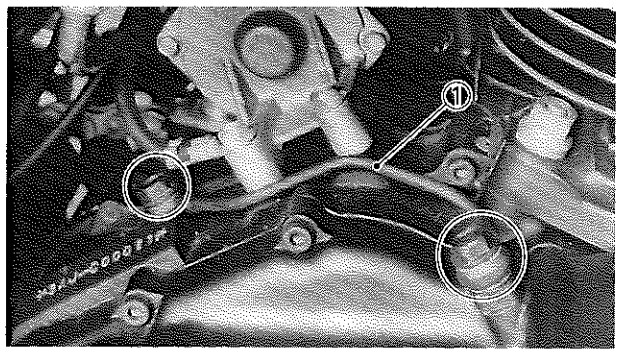
NOTE:

The following parts can be overhauled without dismounting the engine.
- Starter motor
- CDI magneto
- Starter gears

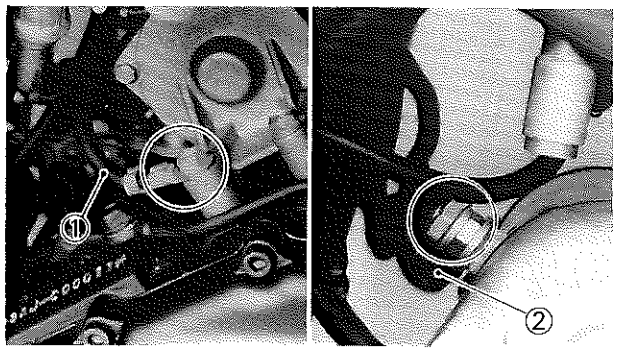
STARTER MOTOR



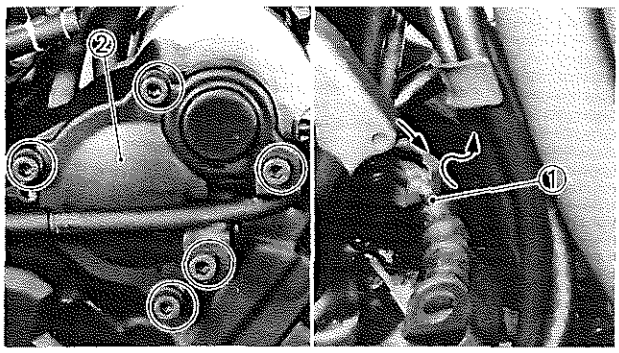
1. Loosen:
   - Bolt (Muffler band) ①
   - Bolt (Muffler) ②
2. Remove:
   - Exhaust pipe ③



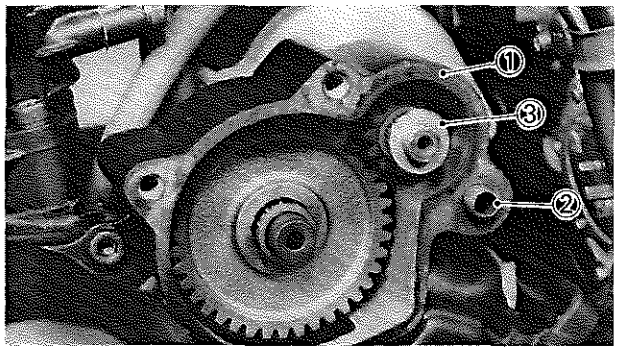
3. Remove:
   - Engine oil delivery pipe ①



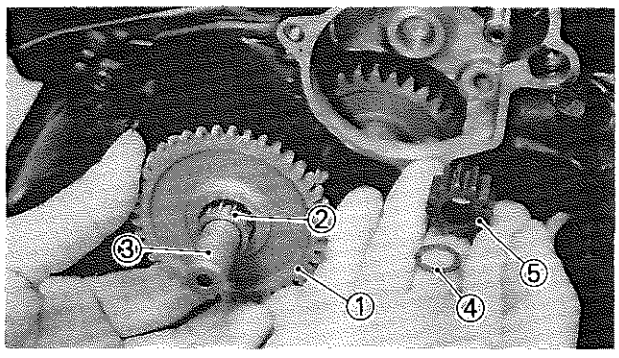
4. Disconnect:
   - Ground lead (Engine) ①
   - Starter motor lead ②



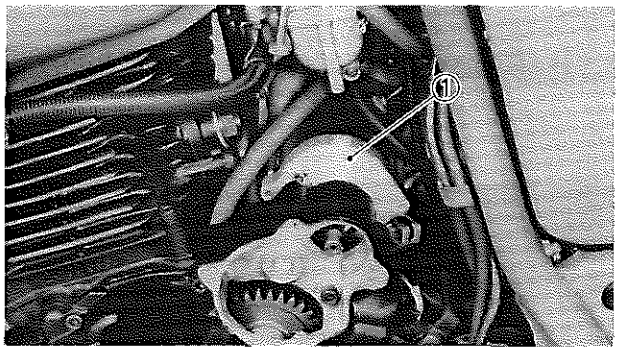
5. *Remove:*
   - Bolts (Case cover)
6. Loosen:
   - Adjuster (Clutch cable)
7. Disconnect:
   - Clutch cable ①
8. Remove:
   - Case cover ② (Starter idle gear)



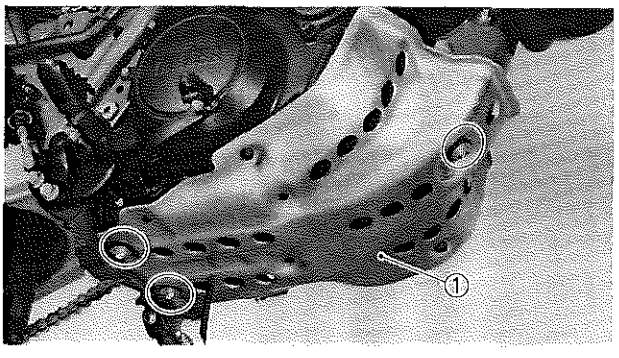
9. Remove:
   - Gasket ①
   - Dowel pin ②
   - Thrust washer ③



10. Remove:
    - Starter idle gear ① (Primary)
    - Bearing ②
    - Idle gear axle ③ (Primary)
    - Circrip ④
    - Drive gear ⑤ (Starter motor)



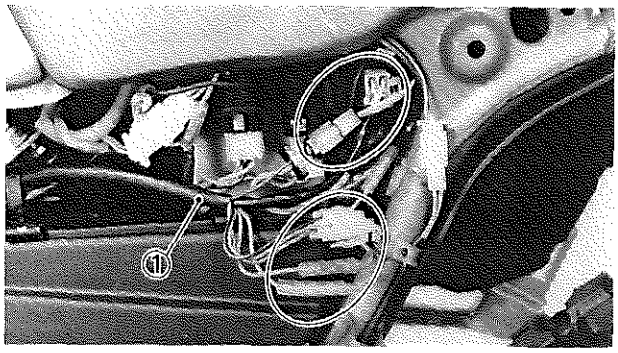
11. Remove:
    - Starter motor ①



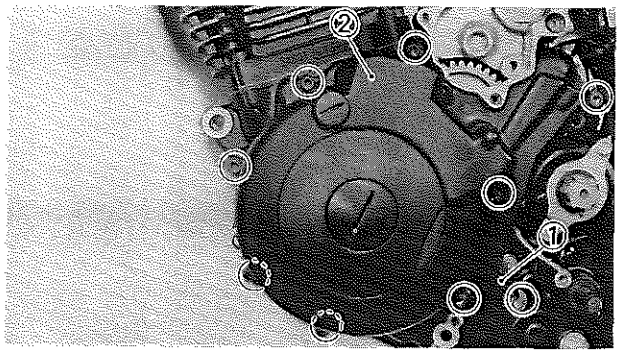
MAGNETO ROTOR AND STARTER GEARS

1. Remove:
   - Engine guard ①
   - Change pedal
   - Cover (Drive sprocket)
2. *Drain:*
   - Engine oil

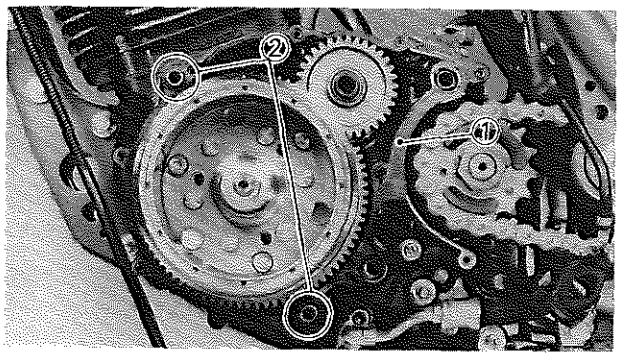
   Refer to "ENGINE OIL REPLACEMENT" section.



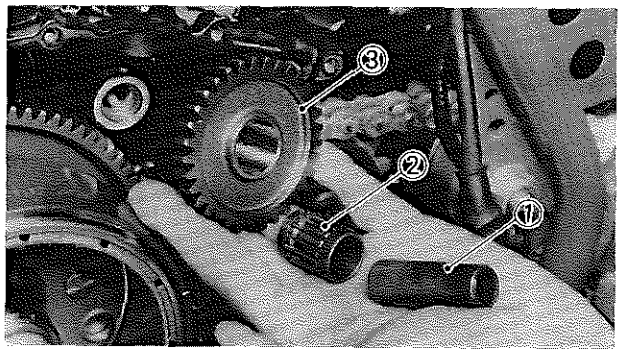
3. Disconnect:
   • *CDI magneto leads* ①



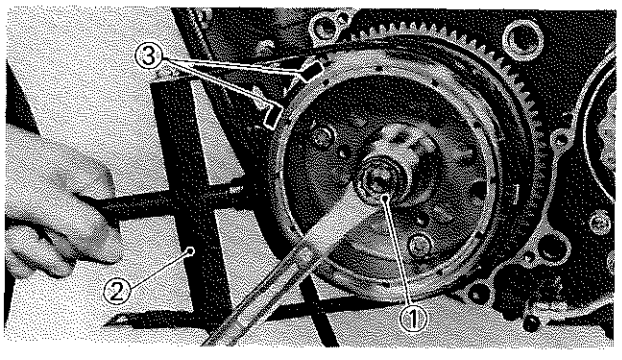
4. Disconnect:
   • Neutral switch lead ①
5. Remove:
   • Crankcase cover ② (Left)



6. Remove:
   • Gasket ① (Crankcase cover)
   • Dowel pins ②



7. Remove:
   • Idle gear axle ① (Secondary)
   • Bearing ②
   • Starter idle gear ③ (Secondary)



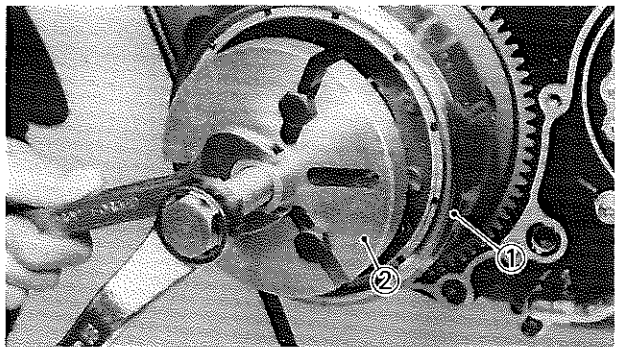
8. Remove:
   • Nut ① (Magneto rotor)
   • Plain washer

   Use the Rotor Holder ② to lock the magneto rotor.

	Rotor Holder: **90890-01701**

CAUTION:

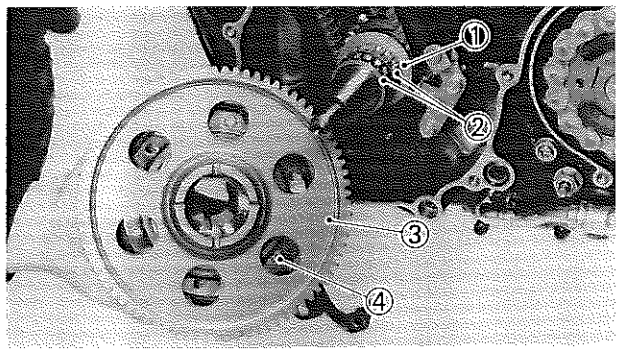
Do not allow the special tool to touch the projections ③ on the magneto rotor.



9. Remove:
   - Magneto rotor ①
   - Woodruff key

   Use the Rotor Puller ②

	Rotor Puller: 90890-01362

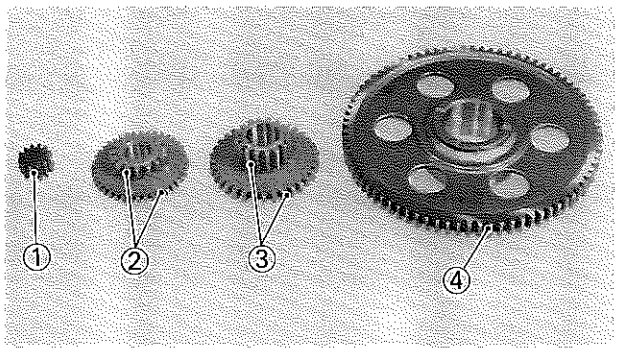


10. Remove:
    - Thrust washer ①
    - Bearings ②
    - Starter wheel gear ③

    (from magneto rotor ④)

NOTE:

For removal of the starter wheel gear, turn the gear counterclockwise as you pull it out.

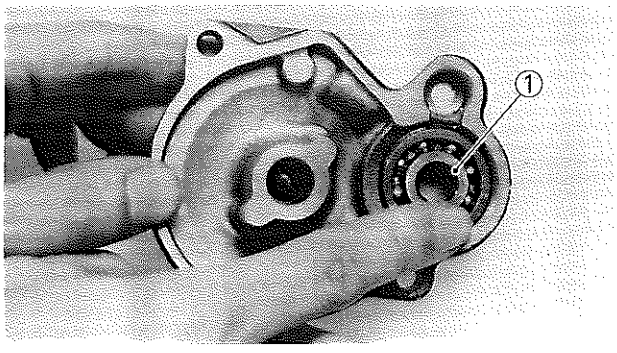


INSPECTION AND REPAIR

STARTER DRIVES

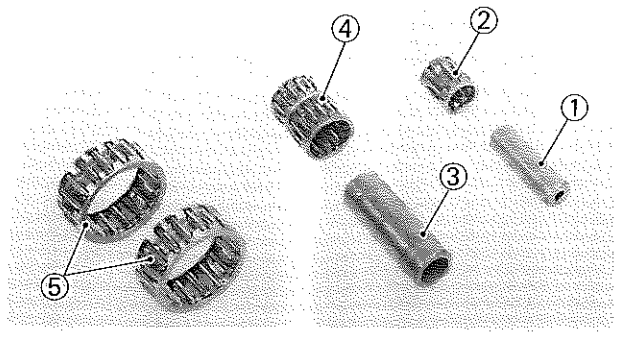
1. Inspect:
   - Drive gear ① (Starter motor)
   - Starter idle gear ②
   - Starter idle gear ③ (Secondary)
   - Starter wheel gear ④

   Wear/Cracks/Damage→Replace.



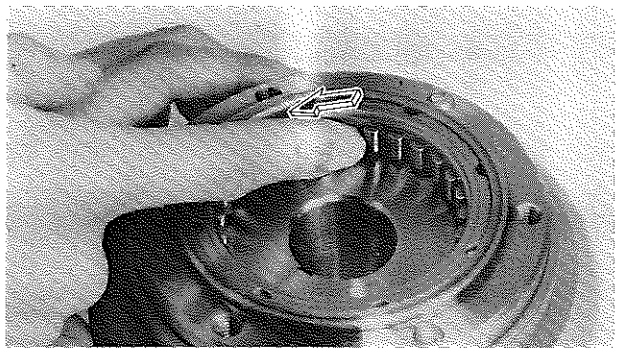
2. Inspect:
   - Bearing ① (Primary-Idle gear)

   Pitting/Damage→Replace.



3. Inspect:
   - Idle gear axle ① (Primary)
   - Bearing ② (Primary-Idle gear)
   - Idle gear axle ③ (Secondary)
   - Bearing ④ (Secondary-Idle gear)

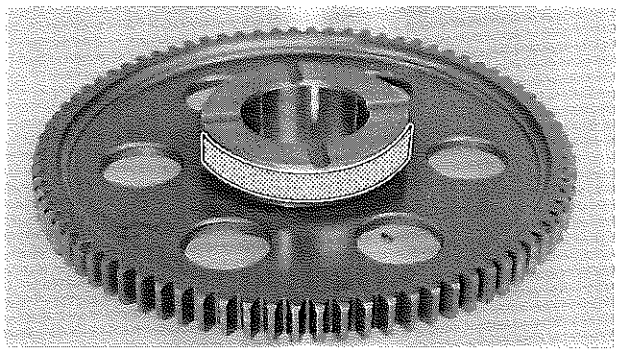
   Wear/Pitting/Damage→Replace.



4. Check:
   - Starter clutch (Roller operation)

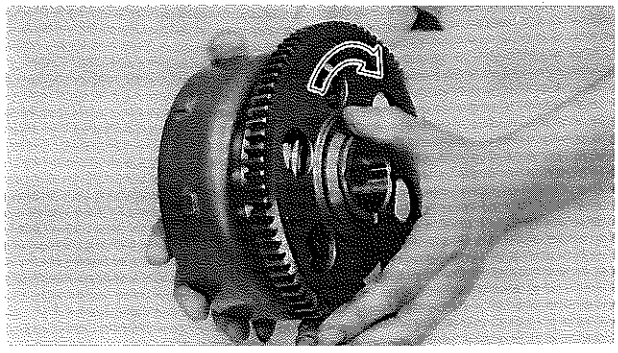
   Push the roller in arrow direction.
   Unsmooth operation→Replace starter clutch.
5. Check:
   - Pins (Starter clutch)

   Pitting/Wear/Damage→Replace starter clutch.

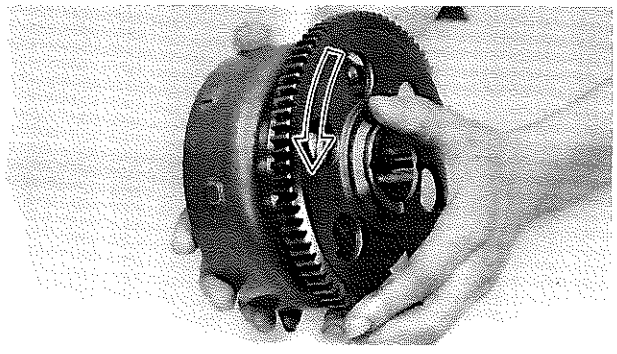


6. Inspect:
   - Contacting surfaces (Starter wheel gear)

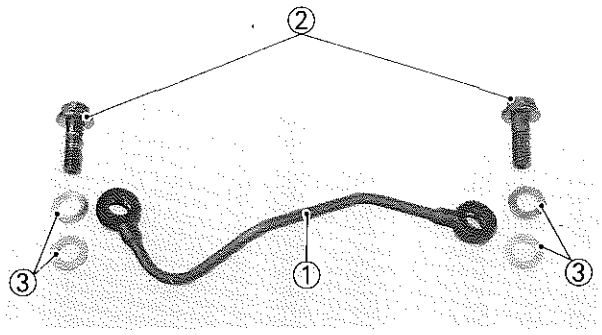
   Pitting/Wear/Damage→Replace.



7. Check:
   - Starter clutch operation



Clutch operation checking steps:
- Install the starter wheel gear to the starter clutch, and hold the starter clutch.
- When turning the wheel gear clockwise, the starter clutch and the wheel gear should be engaged.
  If not, the starter clutch is faulty. Replace it.
- When turning the wheel gear counterclockwise, the wheel gear should turn freely.
  If not, the starter clutch is faulty. Replace it.

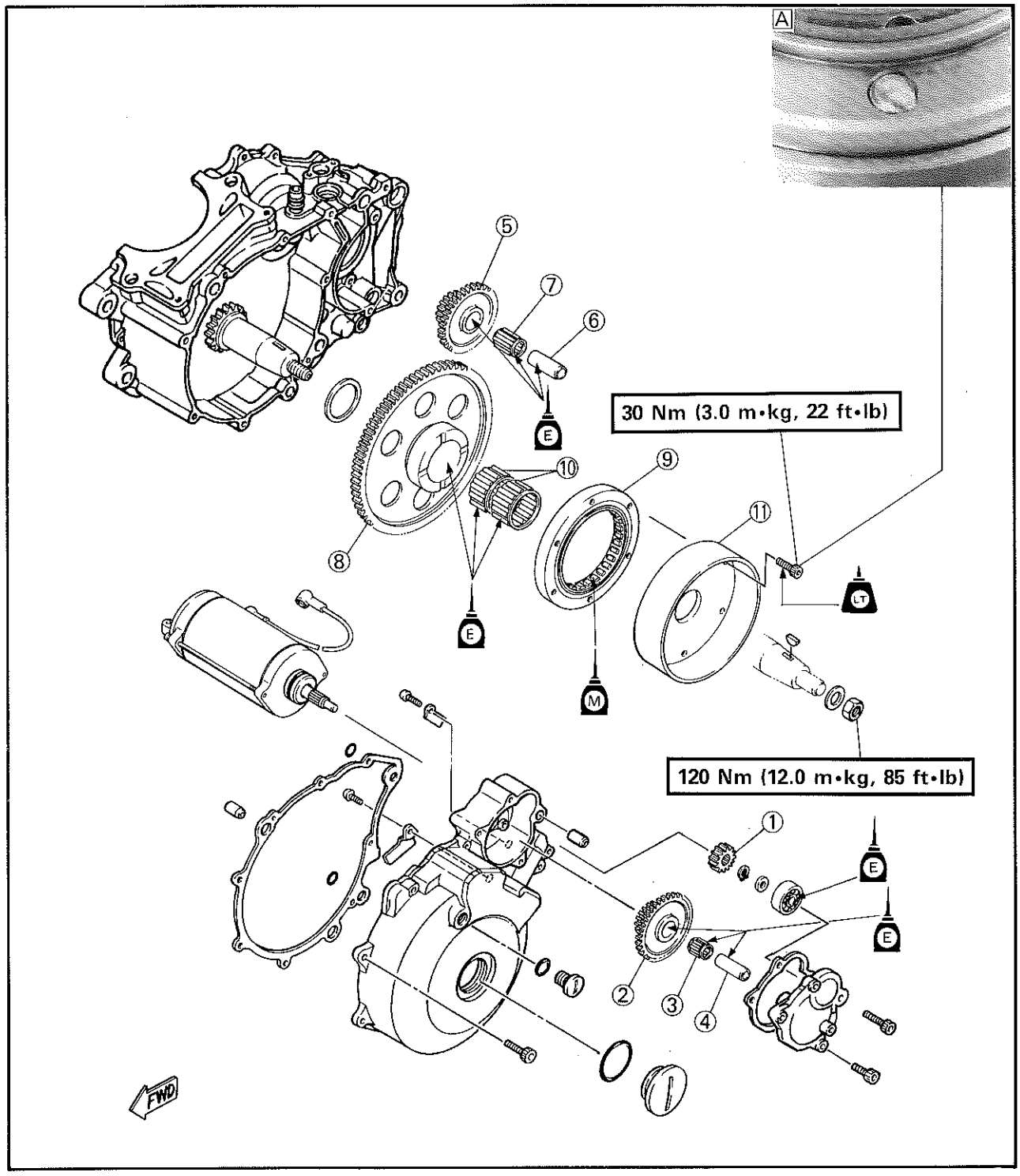


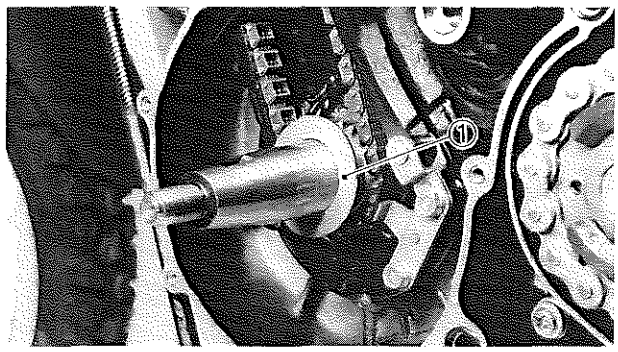
8. Inspect:
   - Engine oil delivery pipe ①
   - Union bolt ②
     Cracks/Damage→Replace.
     Clog→Blow out with compressed air.
   - Copper washer ③
     Damage→Replace.

STARTER DRIVES

① Starter motor drive gear
② Primary starter idle gear
③ Bearing
④ Primary idle gear axle
⑤ Secondary starter idle gear
⑥ Secondary idle gear axle
⑦ Bearing
⑧ Starter wheel gear
⑨ Starter clutch
⑩ Bearings
⑪ CDI magneto

A AFTER INSTALLING THE STARTER CLUTCH, CALK THE BOLT END, AS SHOWN.





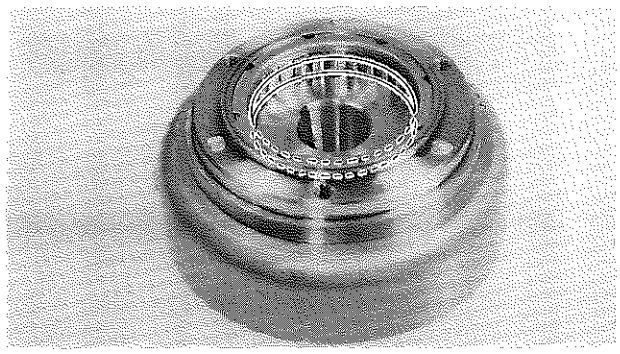
ASSEMBLY AND ADJUSTMENT

STARTER GEARS AND MAGNETO ROTOR

1. Install:
   - Thrust washer ①
     (to crankshaft)

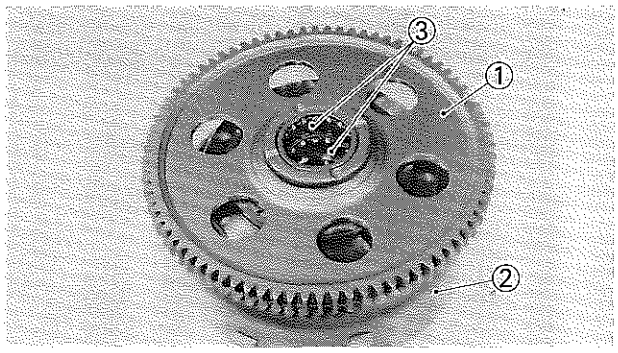
NOTE:

Apply the engine oil to the thrust washer.



2. Clean:
   - Starter clutch pin
3. Lubricate:
   - Starter clutch pin

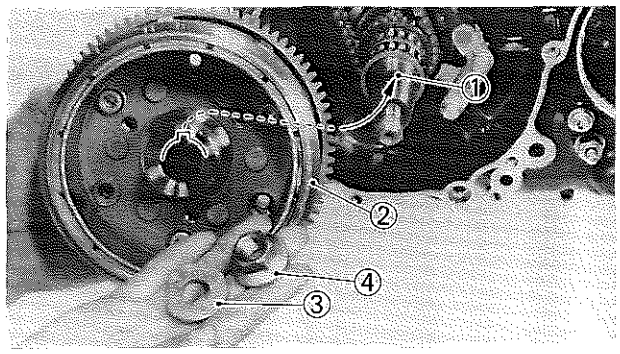
Molybdenum Disulfide Oil



4. Install:
   - Starter wheel gear ①
     (to the magneto rotor ②)
   - Bearings ③

NOTE:

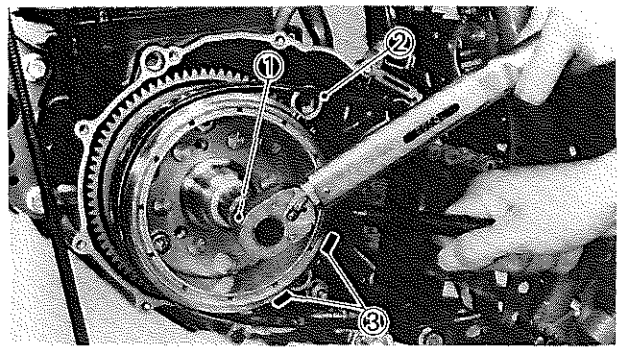
- For installation of the starter wheel gear, turn the gear counterclockwise as you push it in.
- Apply the engine oil to the bearings.



5. Install:
   - Woodruff key ①
   - Magneto rotor ②
     (with starter wheel gear)
   - Plain washer ③
   - Nut ④ (Magneto rotor)

NOTE:

- When installing the CDI magneto, make sure the woodruff key is properly seated in the key way of the crankshaft.
- Apply a light coating of lithium soap base grease to the tapered portion of the crankshaft end.



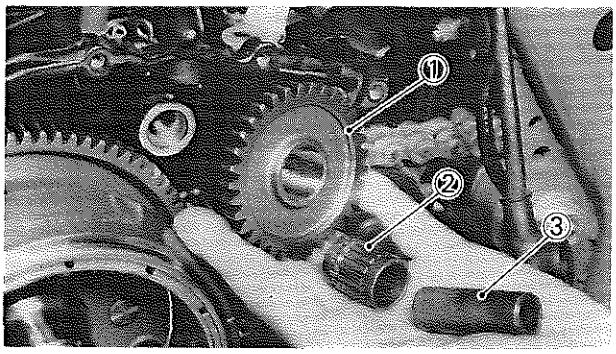
6. Tighten:
   - Nut ① (Magneto rotor)
     Use the Rotor Holder ② to lock the magneto rotor.

	Roter Holder: 90890-01701

CAUTION:

Do not allow the special tool to touch the projections ③ on the magneto rotor.

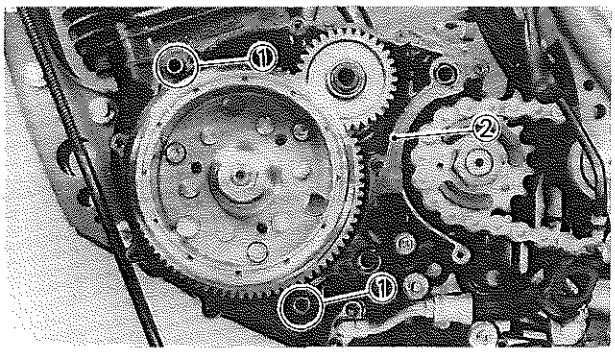
	Nut (Magneto Rotor): 120 Nm (12.0 m•kg, 85 ft•lb)



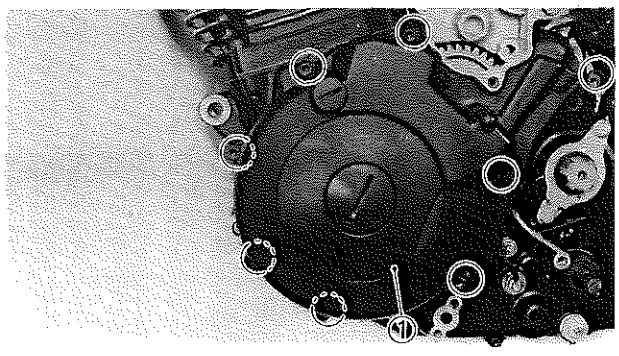
7. Install:
   - Starter idle gear ① (Secondary)
   - Bearing ②
   - Idle gear axle ③ (Secondary)

NOTE:

Apply the engine oil to the bearing and idle gear axle.



8. Install:
   - Dowel pins ①
   - Gasket ② (New)

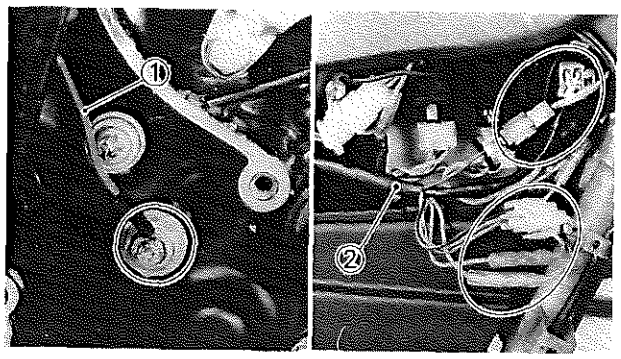


9. Install:
   - Crankcase cover ① (Left)

	Bolt (Crankcase Cover): 10 Nm (1.0 m•kg, 7.2 ft•lb)

NOTE:

- Tighten the bolts in stage, using a crisscross pattern.
- Be careful not to pinch the neutral lead.



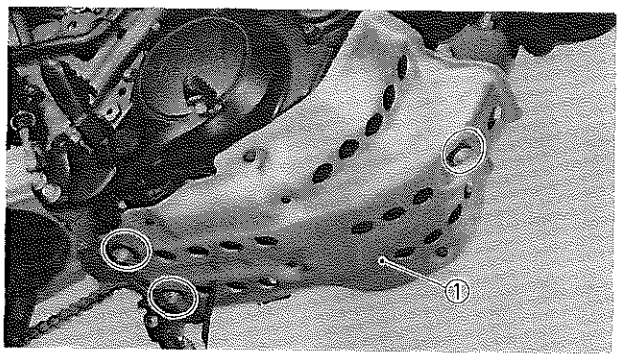
10. Connect:
    - Neutral switch lead ①
    - CDI magneto leads ②
11. Install:
    - Cover (Drive sprocket)
    - Change pedal

Bolt (Cover):
10 Nm (1.0 m•kg, 7.2 ft•lb)
Bolt (Change Pedal):
10 Nm (1.0 m•kg, 7.2 ft•lb)

12. Apply
    - Engine oil

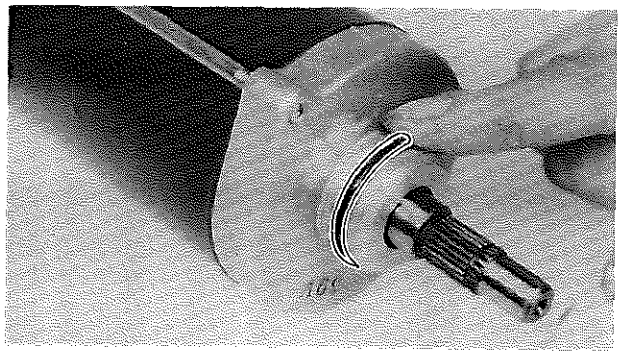
    Refer to "ENGINE OIL REPLACEMENT" section.

Oil Quantity:
2.4 L (2.1 Imp qt, 2.5 US qt)



13. Install:
    - Engine guard ①

Bolt (Engine Guard):
10 Nm (1.0 m•kg, 7.2 ft•lb)



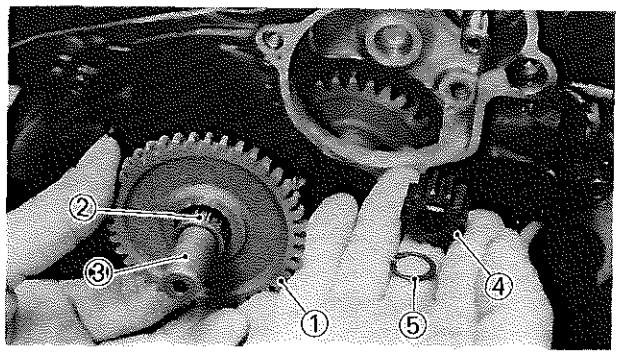
STARTER MOTOR

1. Lubricate:
    - O-ring (Starter motor)

Lithium Soap Base Grease

2. Install:
    - Starter motor

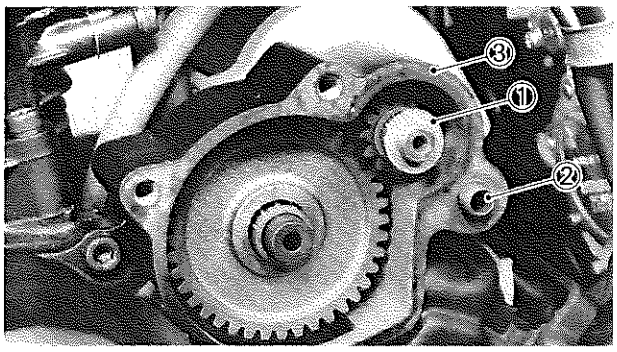
    Temperarily tighten the bolts.



3. Install:
    - Idle gear axle ① (Primary)
    - Bearing ②
    - Starter idle gear ③ (Primary)
    - Drive gear ④ (Starter motor)
    - Circlip ⑤

NOTE:

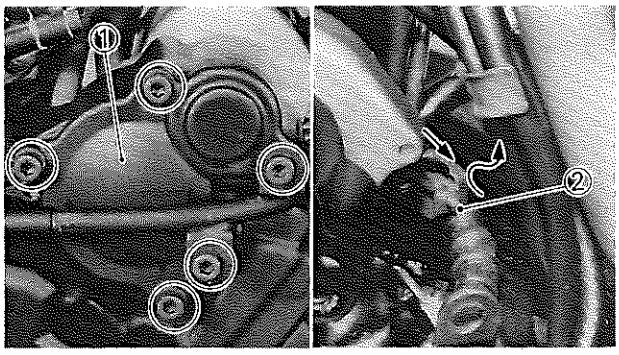
Apply the engine oil to the idle gear axle and bearing.



4. Install:
   - Thrust washer ①
   - Dowel pin ②
   - Gasket ③

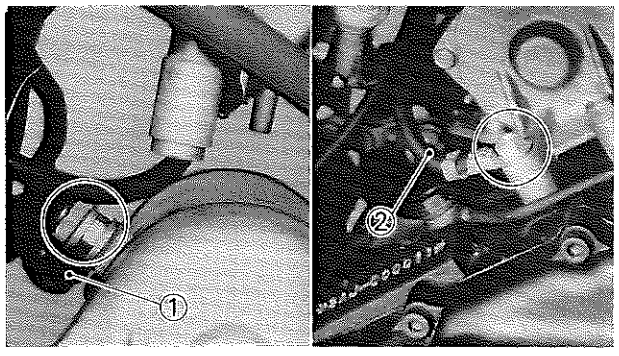
NOTE:

Apply the molybdenum disulfide oil to the thrust washer.



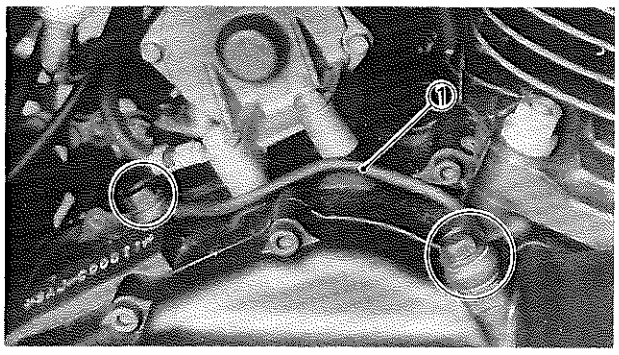
5. Install:
   - Case cover ① (Starter idle gear)
6. Connect:
   - Clutch cable ②
7. Tighten:
   - Bolts (Case cover)

	Bolt (Case Cover) **10 Nm (1.0 m•kg, 7.2 ft•lb)**



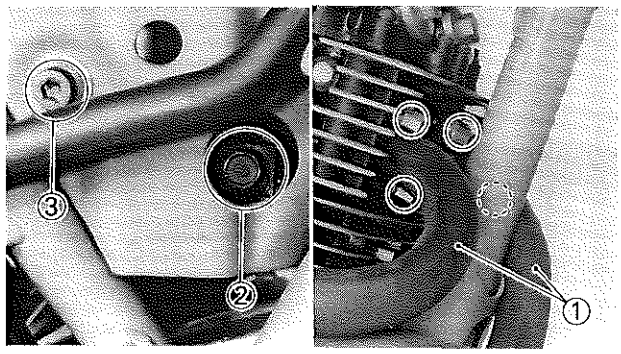
8. Connect:
   - Starter motor lead ①
   - Ground lead ② (Engine)
9. Tighten:
   - Bolts ③ (Starter motor)

	Bolt (Starter Motor) **10 Nm (1.0 m•kg, 7.2 ft•lb)**



10. Install:
    - Engine oil delivery pipe ①

	Union Bolt (Delivery Pipe): **18 Nm (1.8 m•kg, 13 ft•lb)**



11. Install:
    - Exhaust pipe ①

	Nut (Exhaust Pipe): **10 Nm (1.0 m•kg, 7.2 ft•lb)** **Bolt ② (Muffler Band):** **20 Nm (2.0 m•kg, 14 ft•lb)** **Bolt ③ (Muffler):** **40 Nm (4.0 m•kg, 29 ft•lb)**

12. Adjust:
    • Clutch cable free play

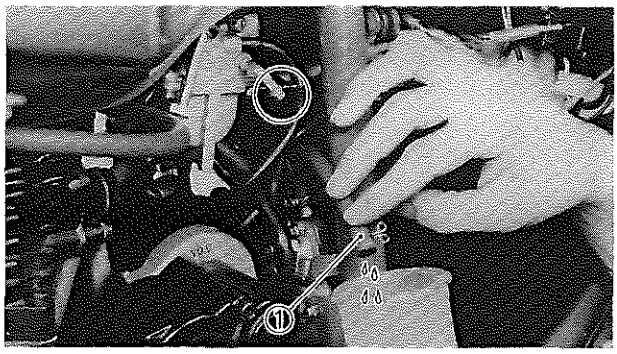
Free Play:
2 ~ 3 mm (0.08 ~ 0.12 in)

Refer to the "CLUTCH ADJUSTMENT" section.

FUEL PUMP

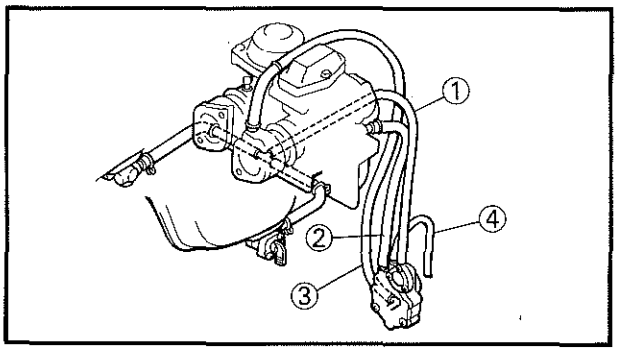
PUMP OPERATION INSPECTION

1. Inspect:
   - *Fuel pump operation*



Pump operation inspection steps:
- Turn the fuel cocks (Right and left) to "ON".
- Disconnect the fuel hose ① from the carburetor. (Fuel pump — Carburetor)
- Place the receptacle under the fuel hose end.
- Turn the main switch to "ON".
- Push the starter switch.
- Check the fuel flows out from the fuel hose ① end.

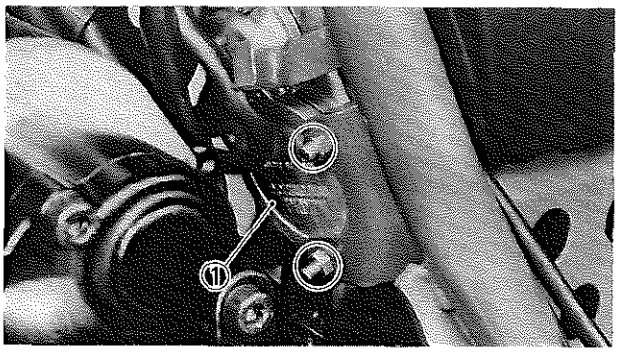
  If fuel does not flow out, refer to "FUEL PUMP INSPECTION" section.



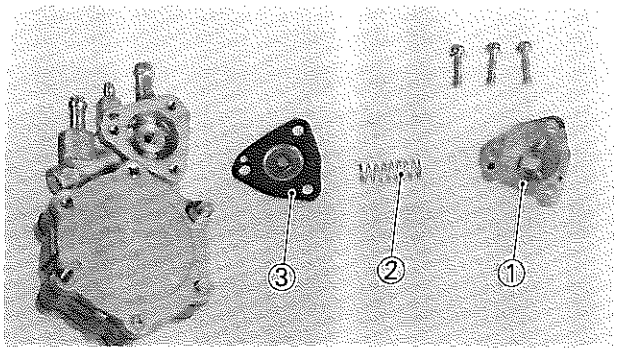
FUEL PUMP INSPECTION

Removal

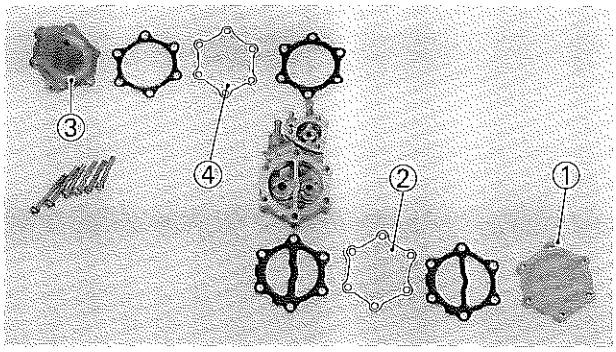
1. Turn the fuel cocks (Right and left) to "OFF".
2. Disconnect:
   - Fuel hose ① (Fuel tank-Fuel pump)
   - Fuel hose ② (Fuel pump-Carburetor)
   - Pulser hose ③
   - Air vent hose ④ (Fuel pump)



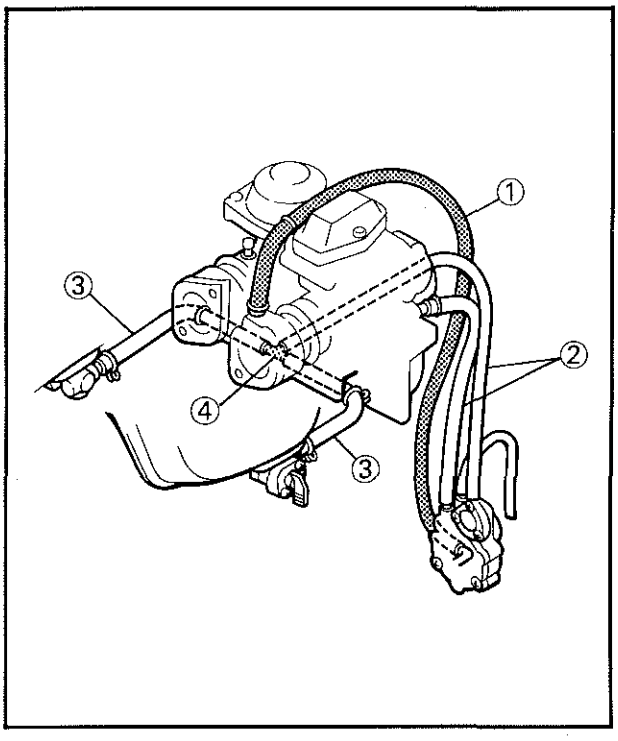
3. Remove:
   - Fuel pump assembly ①



4. Remove:
   - Diaphragm cover ①
   - Spring ②
   - Diaphragm ③ (Bypass)



5. Remove:
   - Fuel pump cover ① (Upper)
   - Diaphragm ② (Main)
   - Fuel pump cover ③ (Lower)
   - Diaphragm ④ (Main)

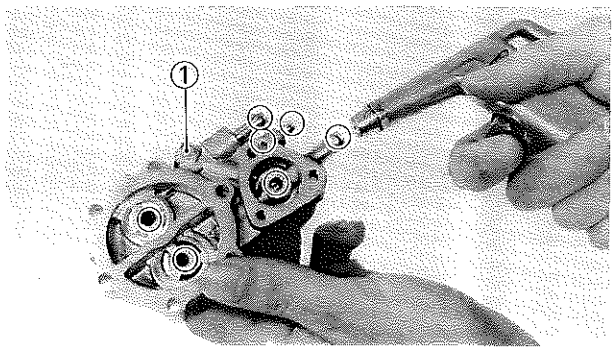


Inspection

1. Inspect:
   - Pulser hose ①
   - Air vent hose ② (Fuel pump)

   Damage/Clogs/Cracks→Replace.
2. Inspect:
   - Fuel hoses ③
   - Fuel hose joint ④

   Damage/Clogs/Cracks→Replace.



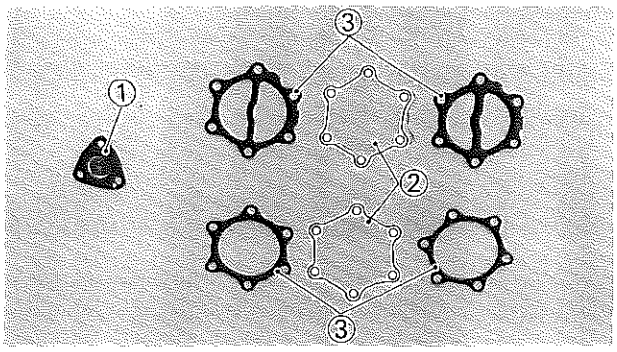
3. Inspect:
   - Fuel pump body ①

   Contamination→Clean.

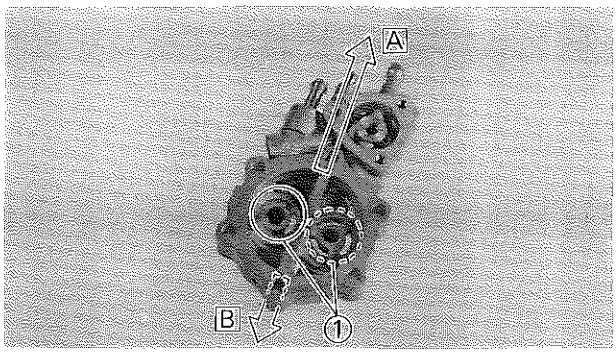
   Cracks/Damage→Replace fuel pump assembly.

NOTE:

- Use a petroleum based solvent for cleaning.
- Blow out all passage with compressed air.

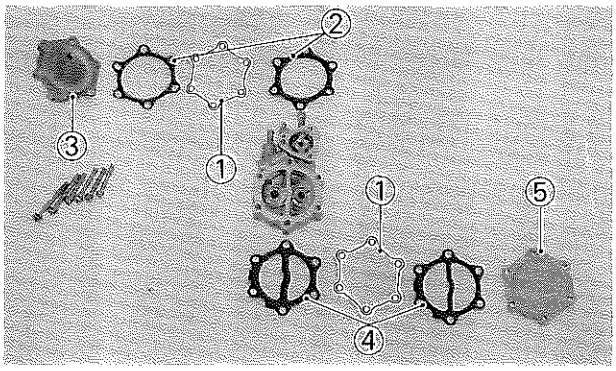


4. Inspect:
   - Diaphragm ① (Bypass)
   - Diaphragms ② (Main)
     Torn/Fatigue/Cracks→Replace fuel pump assembly.
   - Gaskets ③ (Upper and lower)
     Torn/Damage→Replace fuel pump assembly.



5. Inspect:
   - Valves ①
     Clacks/Damage→Replace fuel pump assembly.

A Upper side
B Lower side

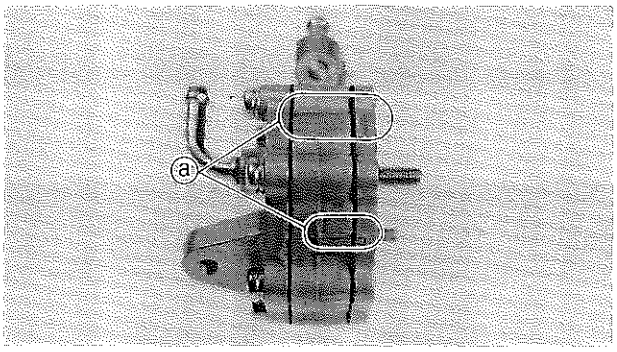


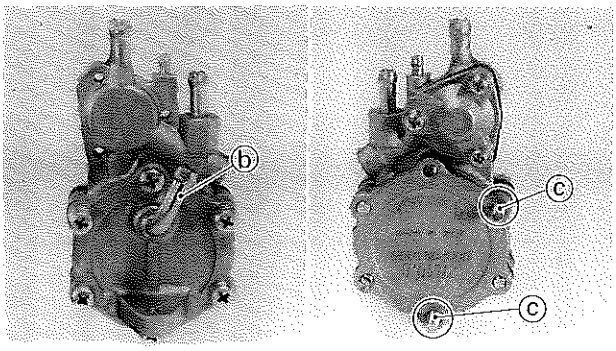
Assembly and Installation

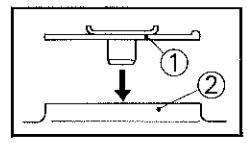
1. Install:
   - Diaphragm ① (Lower)
   - Gaskets ② (Lower)
   - Fuel pump cover ③ (Lower)
   - Diaphragm ④ (Upper)
   - Gaskets ⑤ (Upper)
   - Fuel pump cover ⑥ (Upper)

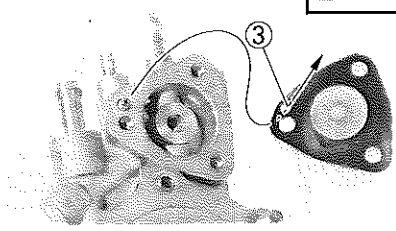
NOTE:

- Gaskets with two tabs should be installed upper side.
- Fuel pump cover with arrow marks should be installed upper side.
- Align the tabs ⓐ of the fuel pump cover and gaskets with those of the pump body.
- Locate the pulser hose joint ⓑ of the lower pump cover as shown.
- Install the two longer screws ⓒ at the location as shown.







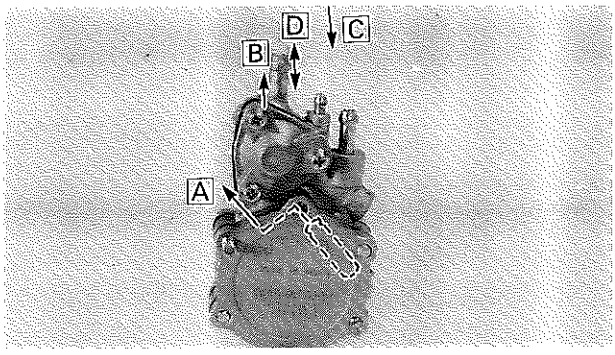


2. Install:
   - Diaphragm (Bypass) ①
   - Spring
   - Diaphragm cover

② Fuel pump body

NOTE:

Align the hole ③ on the diaphragm (Bypass) with the pin on fuel pump body.



3. Install:
   - Fuel pump assembly
4. Connect:
   - Pulser hose
   - Fuel hose (Fuel pump-Carburetor)
   - Fuel hose (Fuel tank-Fuel pump)
   - Air vent hose (Fuel pump)

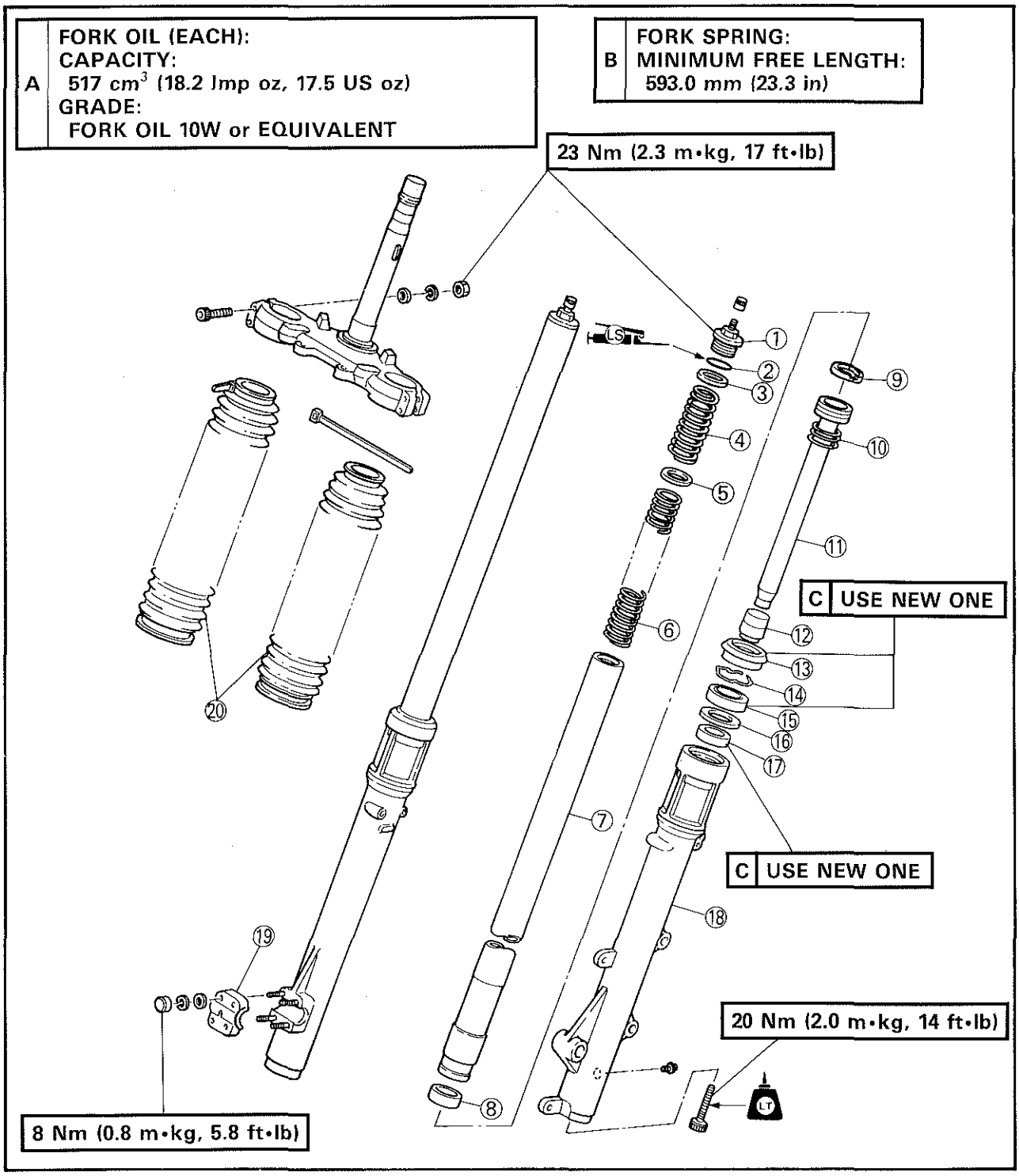
NOTE:

Be sure to connect the hoses correctly, when connecting.

A TO INTAKE MANIFOLD
B TO CARBURETOR
C FROM FUEL TANK
D TO AIR VENT HOSE

FRONT FORK

① Cap bolt
② O-ring
③ *Spring seat*
④ Fork spring (Small)
⑤ Spring seat
⑥ Fork spring (Large)
⑦ Inner fork tube
⑧ Guide bush
⑨ Piston ring
⑩ Rebound spring
⑪ Damper rod
⑫ Oil lock piece
⑬ *Dust seal*
⑭ Retaining clip
⑮ Oil seal
⑯ Washer
⑰ Slide metal
⑱ Outer fork tube
⑲ Axle holder
⑳ Fork boot



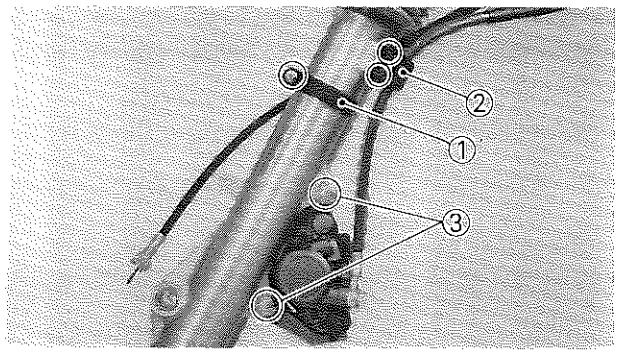
REMOVAL

1. Elevate the front wheel by placing a suitable stand under the engine.

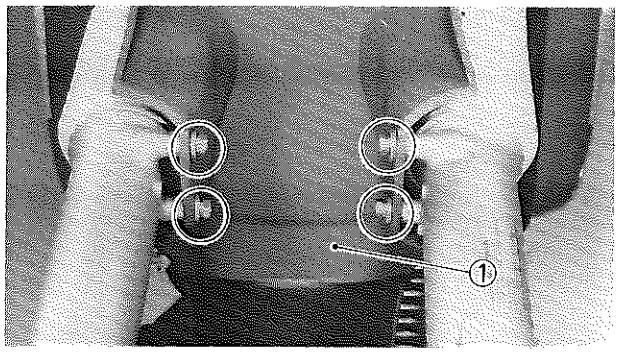
WARNING:

Support the motorcycle securely so there is no danger of it falling over.

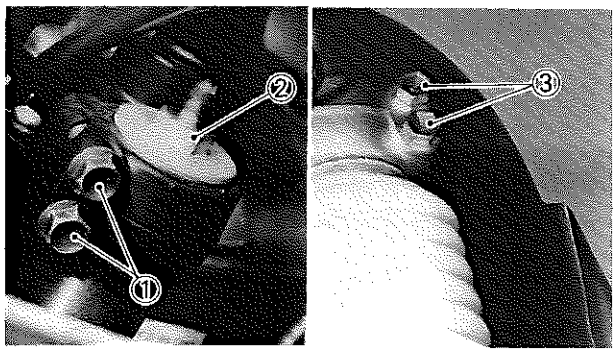
2. Remove:
   - Front wheel
     Refer to the "FRONT WHEEL — REMOVAL" section.



3. Remove (For left-hand front fork):
   - Holder ① (Speedometer cable)
   - Holder ② (Brake hose)
   - Bolt ③ (Brake caliper)



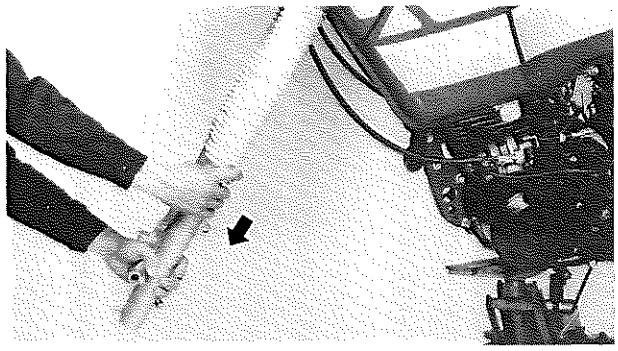
4. Remove:
   - Front fender ①



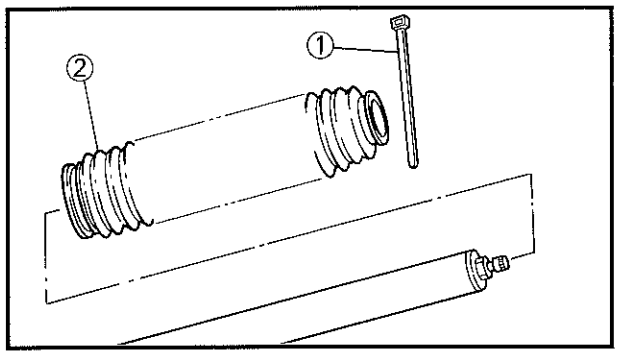
5. Loosen:
   - Pinch bolts ① (Handle crown)
   - Cap bolt ②
   - Pinch bolts ③ (Under bracket)

WARNING:

Support the fork before loosening the pinch bolts.

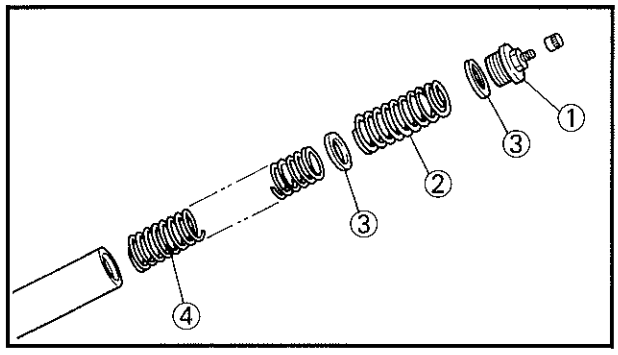


6. Remove:
   • Front fork

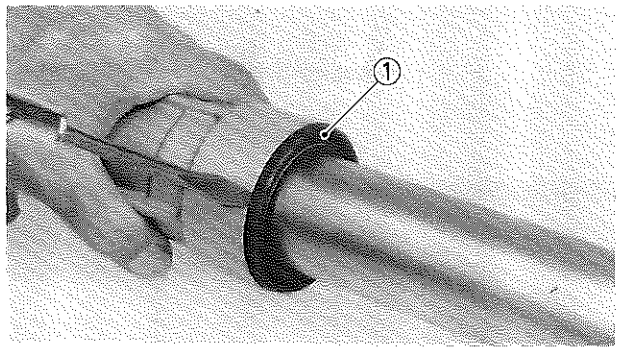


DISASSEMBLY

1. Remove:
   • Clamp ① (Fork boot)
   • Fork boot ②



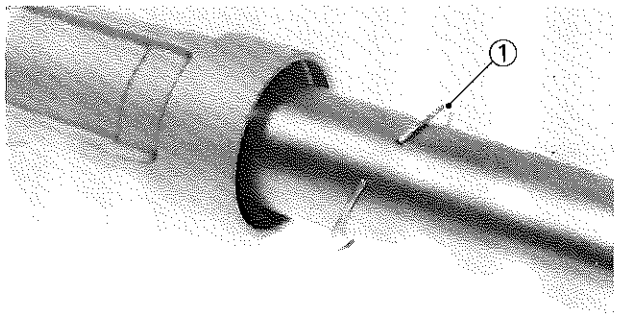
2. Remove:
   • Cap bolt ①
   • Fork spring ② (Small)
   • Spring seat ③
   • Fork spring ④ (Large)



3. Drain:
   • Fork oil
4. Remove:
   • Dust seal ①

NOTE:

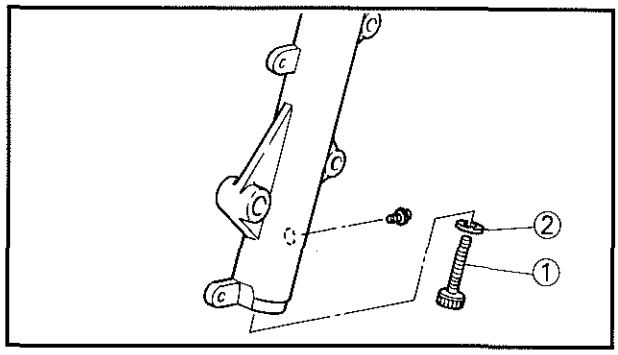
Use a slotted-head screwdriver, and be careful not to damage the outer fork tube.



5. Remove:
   • Retaining clip ①

NOTE:

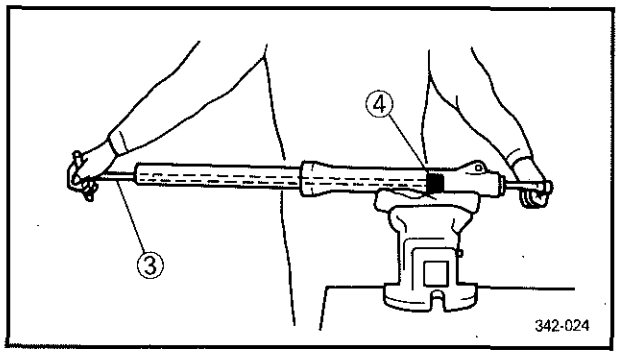
Use a thin screwdriver, and be careful not to scratch the inner fork tube.

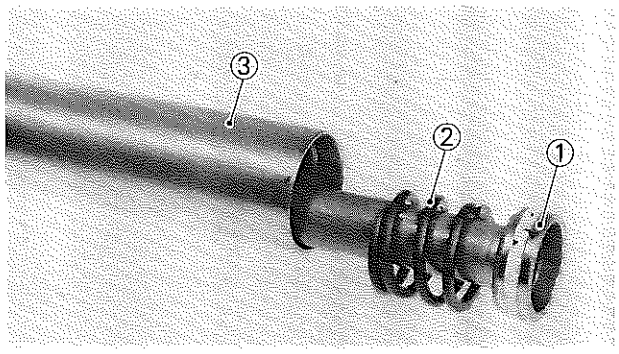


6. Remove:
   - Bolt ① (Damper rod)
   - Washer ② (Copper)

   Use the T-Handle ③ and Holder ④ to lock the damper rod.

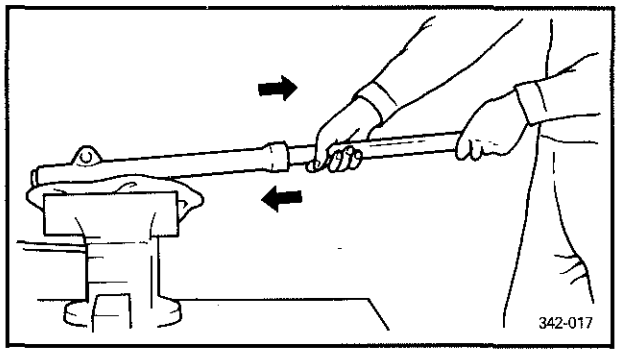
T-Handle:
90890-01326
Holder:
90890-01294





7. Remove:
   - Damper rod ①
   - Rebound spring ②

   (Out of inner fork tube ③)

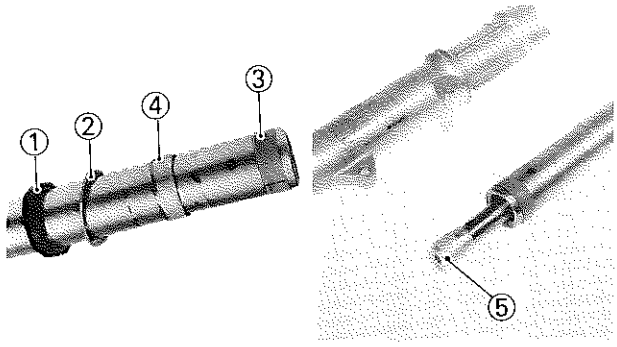


8. Remove:
   - Inner fork tube

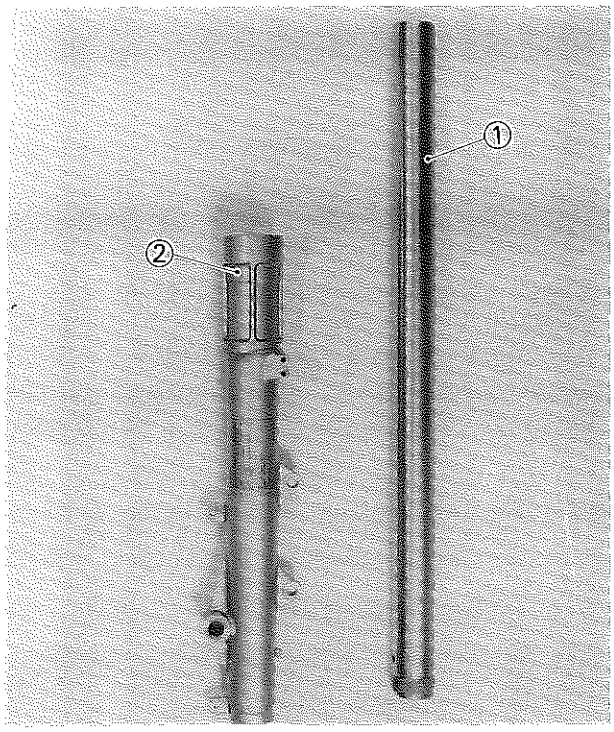
Removal steps:
- Hold the fork leg horizontally.
- Pull out the inner fork tube from the outer tube by forcefully, but carefully, withdrawing the inner fork tube.

CAUTION:

Avoid bottoming the inner tube in the outer tube during the above procedure, as the oil lock piece will be damaged.



9. Remove:
   - Oil seal ①
   - Washer ②
   - Guide bush ③
   - Slide metal ④
   - Oil lock piece ⑤



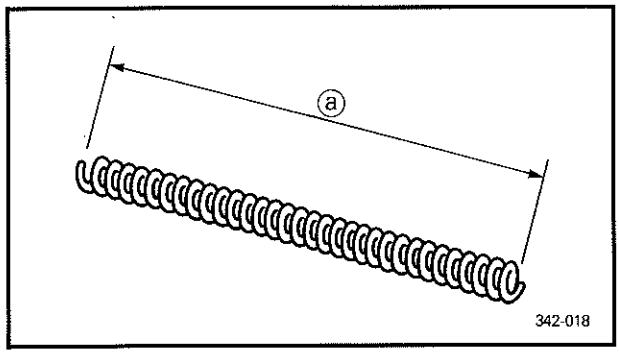
INSPECTION

1. Inspect:
   - Inner fork tube ①
   - Outer fork tube ②

   Scratches/Bends/Damage→Replace.

WARNING:

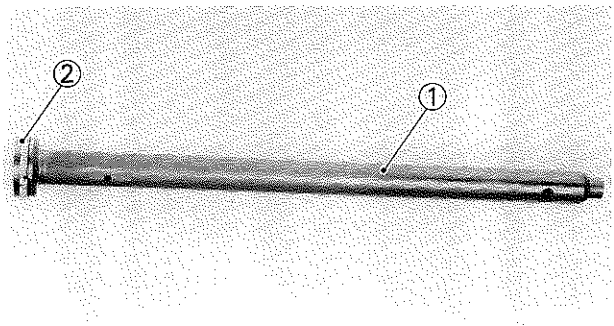
Do not attempt to straighten a bent inner fork tube as this may dangerously weaken the tube.



2. Measure:
   - Fork spring (Large) free length ⓐ

   Out of specification→Replace.

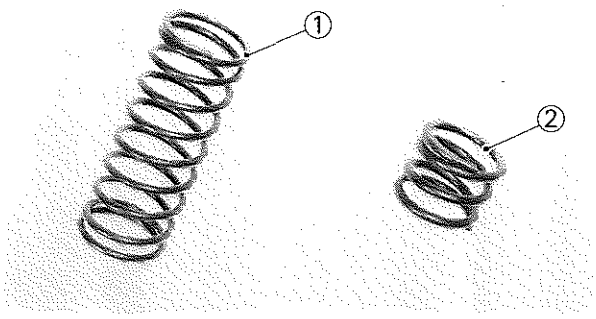
Fork Spring (Large) Free Length:
603.0 mm (23.7 in)
Minimum Free Length:
593.0 mm (23.3 in)



3. Inspect:
   - Damper rod ①

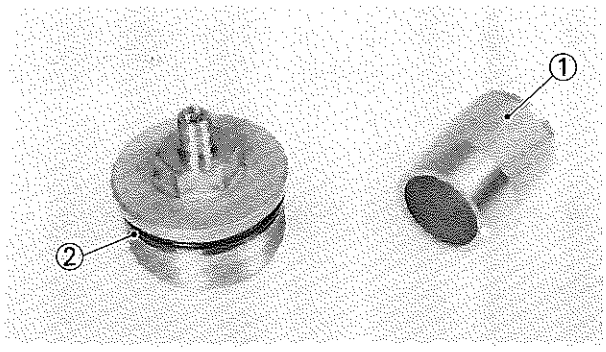
   Wear/Damage→Replace.
   Contamination→Blow out all oil passages with compressed air.
   - Piston ring ②

   Wear/Damage→Replace.



4. Inspect:
   - Rebound spring ①
   - Fork spring ② (Small)

   Wear/Damage→Replace.



5. Inspect:
   - Oil lock piece ①
   - O-ring ② (Cap bolt)

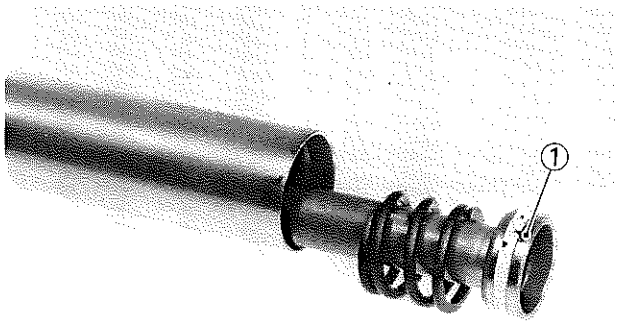
   Damage→Replace.

ASSEMBLY

Reverse the "DISASSEMBLY" procedure.
Note the following points.

NOTE:

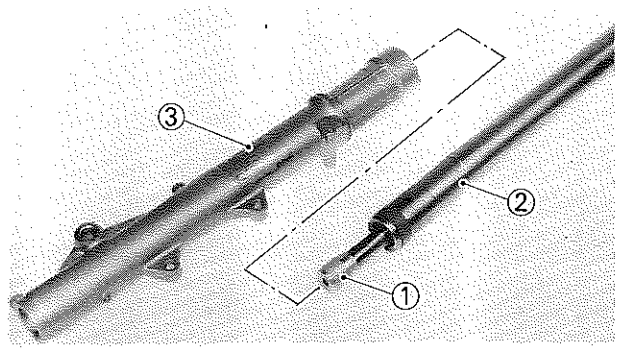
- In front fork reassembly, be sure to use following new parts.
  - ✻Guide bush
  - ✻Slide bush
  - ✻Oil seal
  - ✻Dust seal
- Make sure all components are clean before reassembly.



1. Install:
   - Damper rod ①

CAUTION:

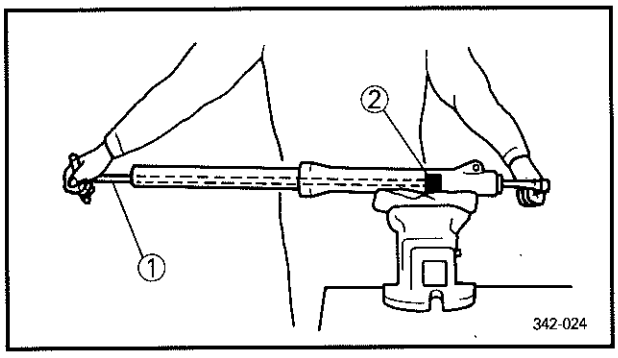
Allow the damper rod to slide slowly down the inner fork tube until it protrudes from the bottom, being careful not to damage the inner fork tube.



2. Install:
   • Oil lock piece ①
3. Lubricate:
   • Inner fork tube ② (Outer surface)

FORK OIL 10W OR EQUIVALENT

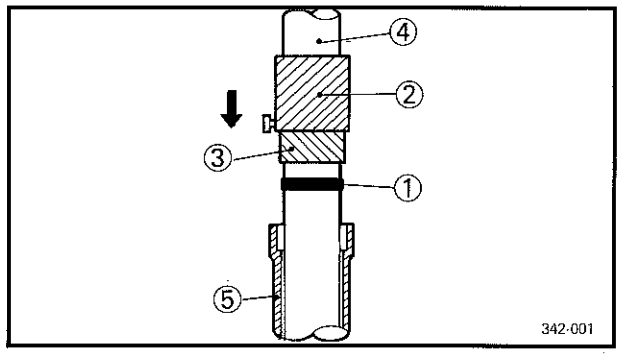
③ Outer fork tube



4. Tighten:
   • Bolt (Damper rod)
   Use the T-Handle ① and Holder ② to lock the damper rod.

T-Handle:
90890-01326
Holder:
90890-01294

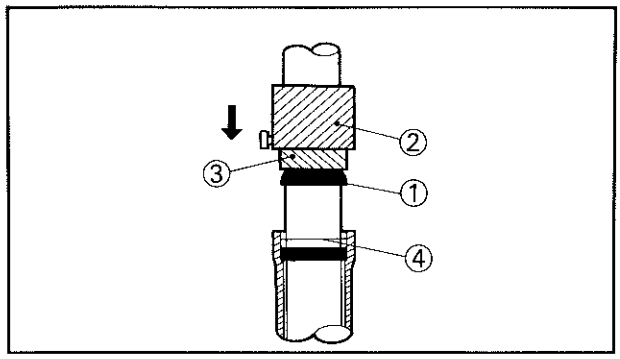
Bolt (Damper Rod):
20 Nm (2.0 m•kg, 14 ft•lb)
Apply LOCTITE®.



5. Install:
   • Guide bush ①
   Use the Fork Seal Driver Weight ② and Adapter ③.

Fork Seal Driver Weight:
90890-01367
Adapter:
90890-01381

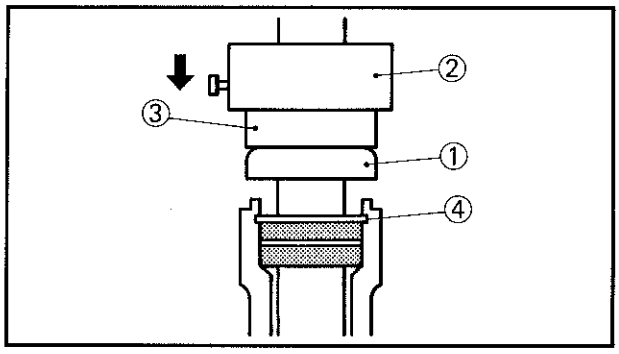
④ Inner fork tube
⑤ Outer fork tube



6. Install:
   - Oil seal ①
     Use the Fork Seal Driver Weight ② and Adapter ③.

Fork Seal Driver Weight:
90890-01367
Adapter:
90890-01381

④ Washer



7. Install:
   - Dust seal ①
     Use the Fork Seal Driver Weight ② and Adapter ③.

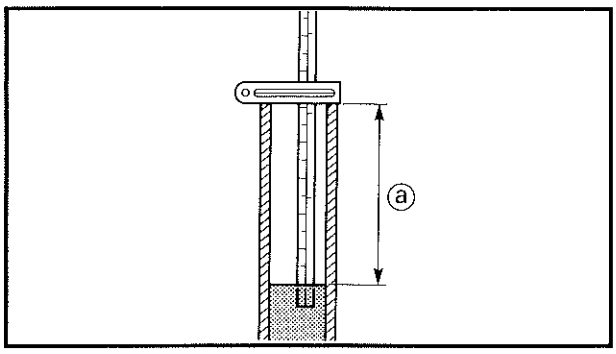
Fork Seal Driver Weight:
90890-01367
Adapter:
90890-01381

④ Retaining clip

8. Fill:
   - Front fork

Fork Oil Capacity:
517 cm³ (18.2 Imp oz, 17.5 US oz)
Grade:
Fork Oil 10W or Equivalent

NOTE:
After filling the front fork with fork oil, slowly pump the front fork up and down to distribute oil.



9. Measure:
   - Oil level ⓐ

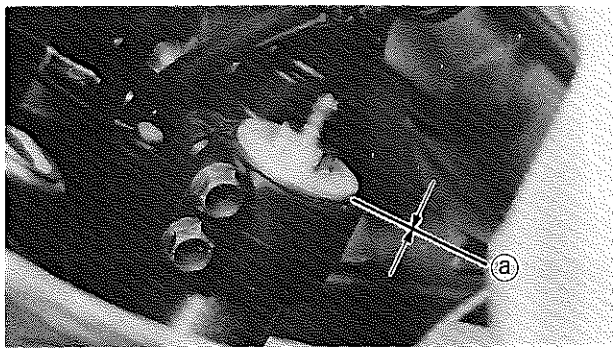
   Out of specification→Add or reduce oil.

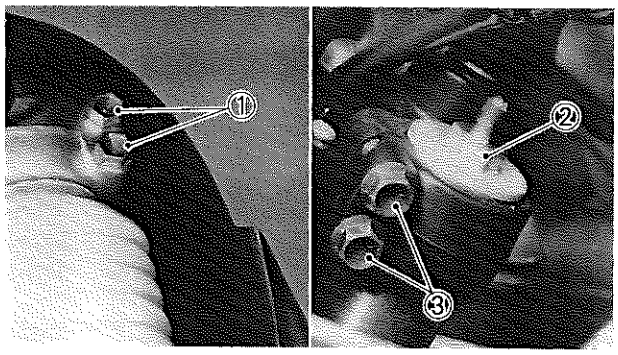
Oil Level:
120 mm (4.72 in)
From the top of the inner fork tube.

NOTE:

- When measuring the oil level, fully compress the inner fork tube without the fork spring.
- Place the front fork on upright position.

10. Before installing the front fork, temporary tighten the cap bot.





INSTALLATION

Reverse the "REMOVAL" procedure.
Note the following points.

1. Install:
   - Front fork

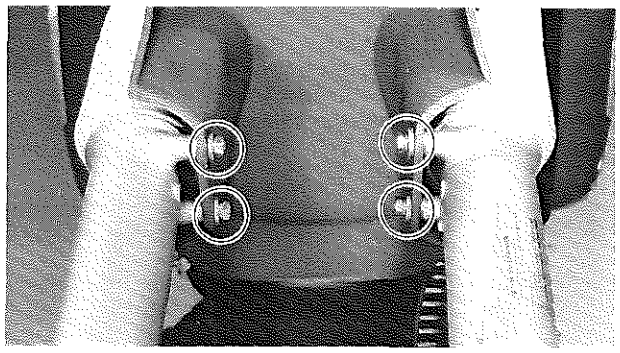
   Temporary tighten the pinch bolts.

NOTE:

Position the inner fork tube end in such a way that it is flush ⓐ with the top of the handle crown.

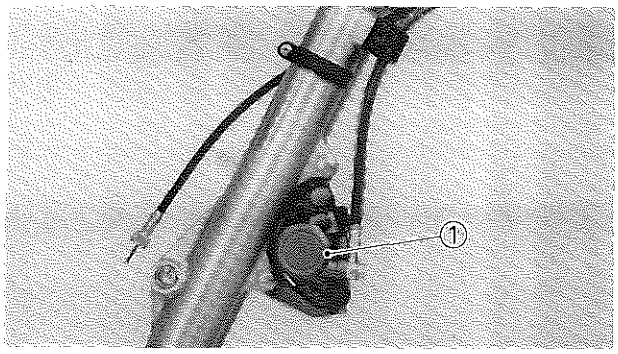
2. Tighten:
   - Pinch bolts ① (Under bracket)
   - Cap bolt ②
   - Pinch bolts ③ (Handle crown)

Pinch Bolt (Under Bracket):
23 Nm (2.3 m•kg, 17 ft•lb)
Cap Bolt:
23 Nm (2.3 m•kg, 17 ft•lb)
Pinch Bolt (Handle Crown):
23 Nm (2.3 m•kg, 17 ft•lb)



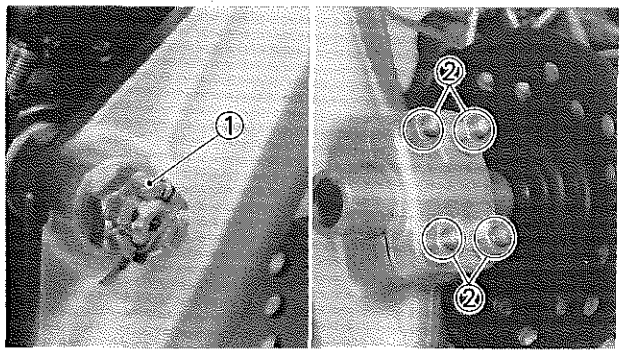
3. Install:
   • Front fender

	Bolt (Front Fender): **8 Nm (0.8 m•kg, 5.8 ft•lb)**



4. Install:
   • Brake caliper ①

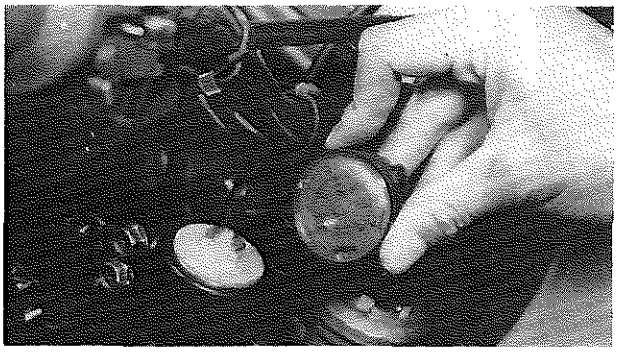
	Bolt (Brake Caliper): **35 Nm (3.5 m•kg, 25 ft•lb)**



5. Install:
   • Front wheel

	Nut ① (Wheel Axle): **110 Nm (11.0 m•kg, 80 ft•lb)** **Nut ② (Axle Holder):** **8 Nm (0.8 m•kg, 5.8 ft•lb)**

Refer to the "FRONT WHEEL — INSTALLATION" section.



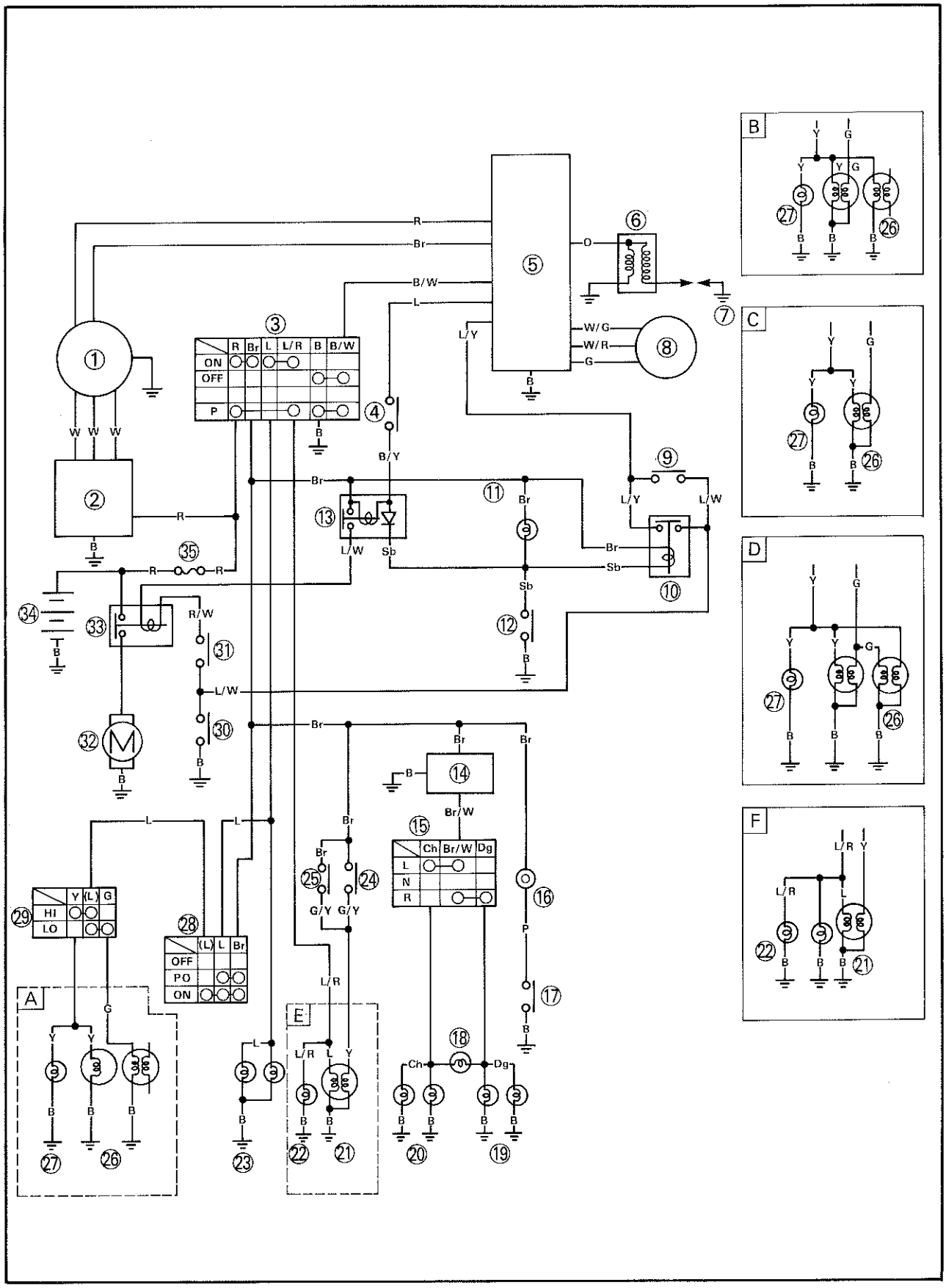
6. Adjust:
   • Air pressure (Front fork)

Standard Air Pressure: **Zero kPa (Zero kg/cm^2, Zero psi)** **Maximum Air Pressure:** **100 kPa (1.0 kg/cm^2, 14 psi)**

Refer to the "FRONT FORK ADJUSTMENT" section in the CHAPTER 3.

ELECTRICAL

XT600Z(U) CIRCUIT DIAGRAM



XT600Z(U) CIRCUIT DIAGRAM

① CDI magneto
② Rectifier/Regulator
③ Main switch
④ Clutch switch
⑤ CDI unit
⑥ Ignition coil
⑦ Spark plug
⑧ Pick-up coil
⑨ Sidestand switch
⑩ Neutral relay
⑪ "NEUTRAL" indicator light
⑫ Neutral switch
⑬ Starting circuit cut-off relay
⑭ Flasher relay
⑮ "TURN" switch
⑯ Horn
⑰ "HORN" switch
⑱ "TURN" indicator light
⑲ Flasher light (Right)
⑳ Flasher light (Left)
㉑ Tail/Brake light
㉒ Auxiliary light
㉓ Meter light
㉔ Front brake switch
㉕ Rear brake switch
㉖ Headlight
㉗ "HIGH BEAM" indicator light
㉘ "LIGHTS" switch
㉙ "LIGHTS" (Dimmer) switch
㉚ "ENGINE STOP" switch
㉛ "START" switch
㉜ Starting motor
㉝ Starter relay
㉞ Battery
㉟ Fuse

[A] D, F, B, S, GR, P, E
[B] SF, NL
[C] N, S
[D] I, GB, DK
[E] Except for I, GB, DK
[F] I, GB, DK

COLOR CODE

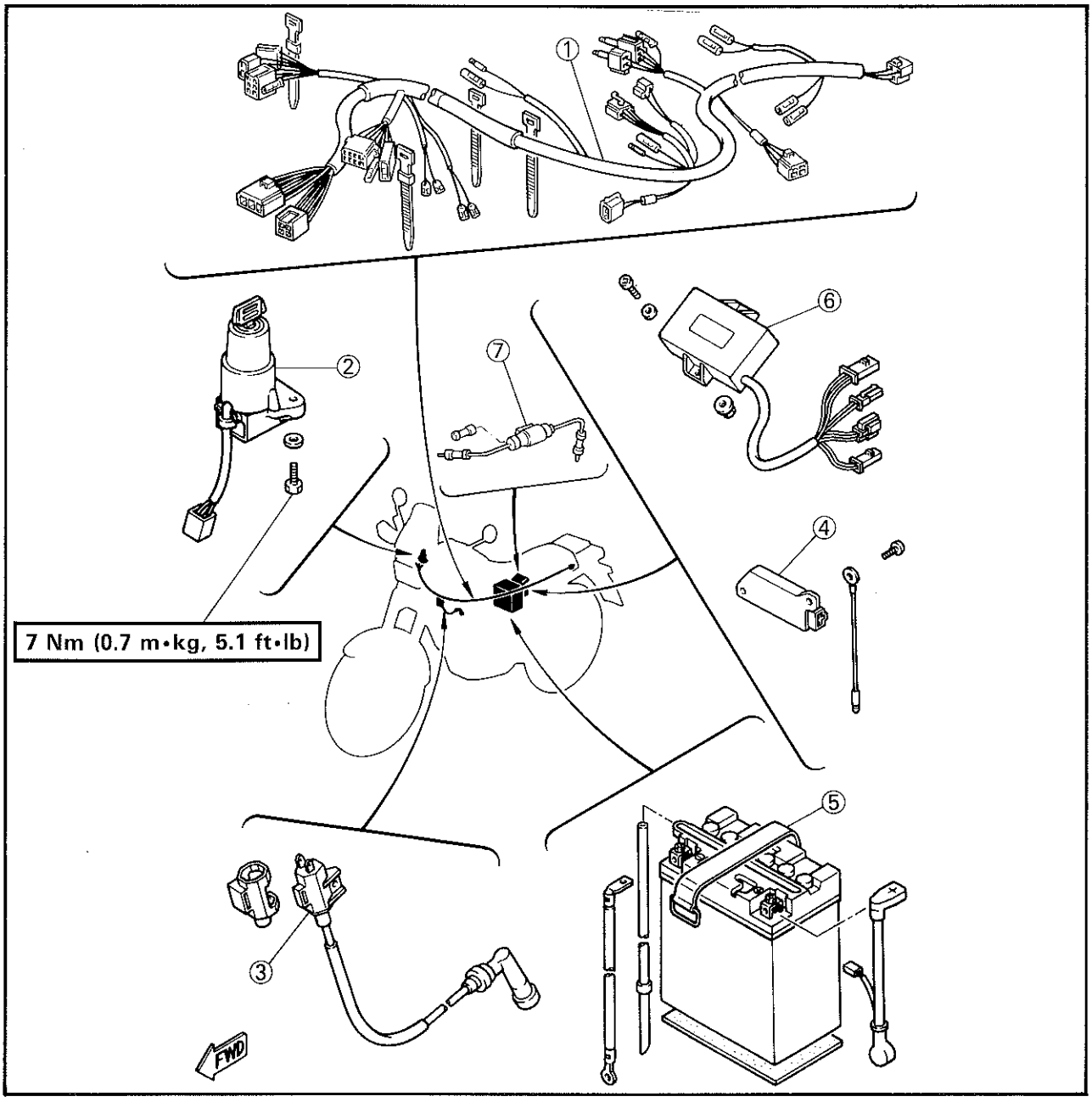
B	Black	Y	Yellow
Br	Brown	B/W	Black/White
Ch	Chocolate	B/Y	Black/Yellow
Dg	Dark green	Br/W	Brown/White
G	Green	L/W	Blue/White
L	Blue	G/Y	Green/Yellow
O	Orange	L/R	Blue/Red
P	Pink	L/Y	Blue/Yellow
R	Red	W/G	White/Green
Sb	Sky blue	W/R	White/Red
W	White	R/W	Red/White

ELECTRICAL COMPONENTS

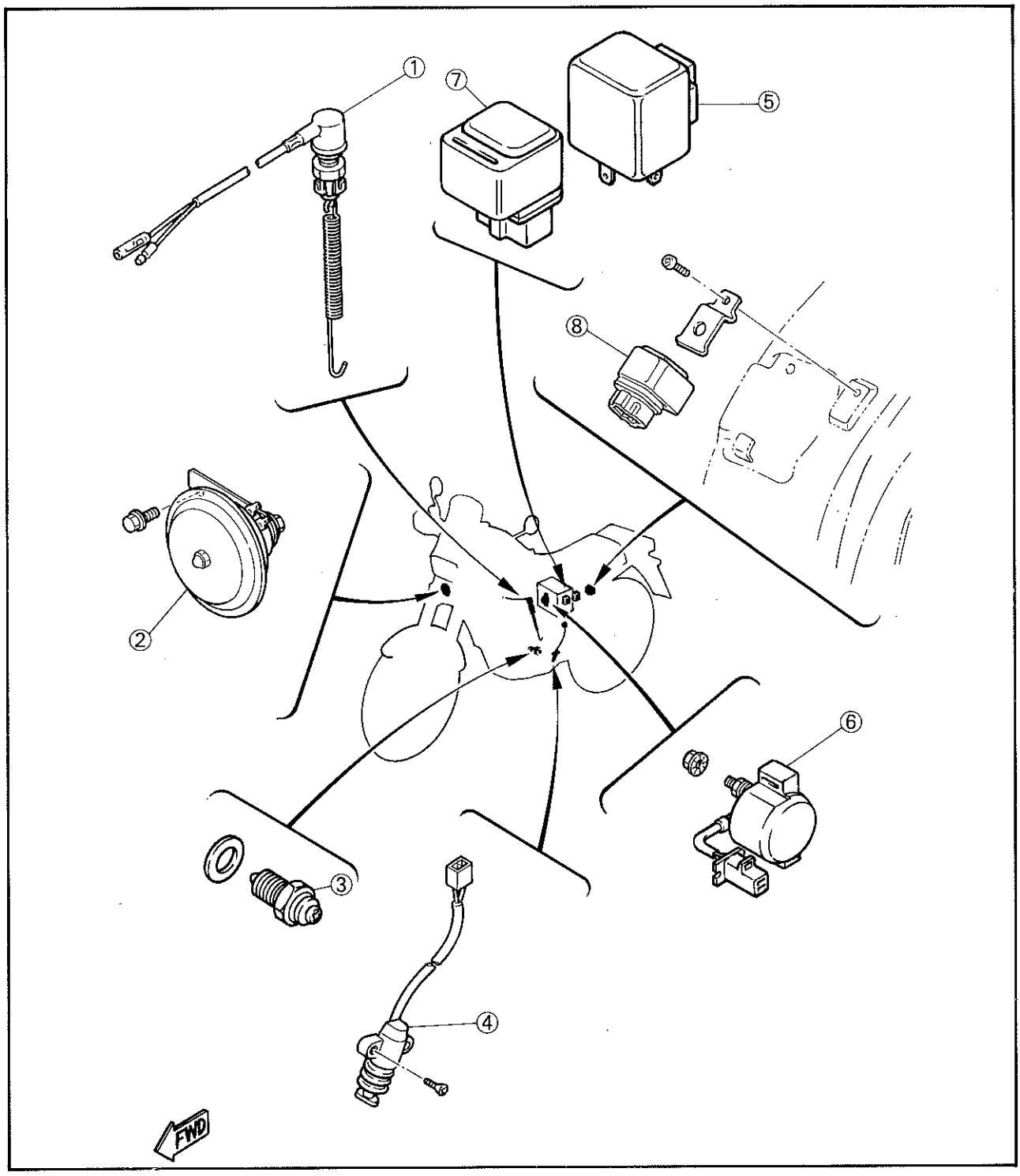
① Wireharness
② Main switch
③ Ignition coil
④ Rectifier/Regulator
⑤ Battery
⑥ CDI unit
⑦ Fuse

IGNITION COIL:
PRIMARY COIL RESISTANCE:
0.15 ~ 0.21Ω at 20°C (68°F)
SECONDARY COIL RESISTANCE:
3.8 ~ 5.8kΩ at 20°C (68°F)

BATTERY:
CAPACITY:
12V 12AH
SPECIFIC GRAVITY:
1.280



① Rear brake switch
② Horn
③ Neutral switch
④ Sidestand switch
⑤ Flasher relay
⑥ Starter relay
⑦ Starting circuit cut-off relay
⑧ Neutral relay



TROUBLESHOOTING

QUICK REFERENCE CHART

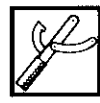
Trouble mode / Inspection parts	Erroneous operation of starter motor.								Starter motor starts but no ignition.				Malfunction during operations.						
	Starter motor	Side-stand	Clutch lever	Gear					Sidestand	Clutch lever	Gear		Engine stops during operation.	When warm, engine stops and can't be restarted.	When handlebar is steered, engine stops.	Engine malfunctions at high speed.	Knocking	Engine stops in rainy weather.	Electric shock.
		—	—	N	IN GEAR					—									
		—	—		HOLD		RELEASE												
		—	—		DOWN	UP	DOWN	UP											
	STOP	RUN	STOP	RUN	RUN	Starter motor runs weakly.	Relay clicks and starter motor doesn't run.	With main switch on. Starter motor runs.											
A BATTERY	1					1	1												
B FUSE	2																		
C STARTER MOTOR	3					2	2												
D STARTER RELAY	4						3	1											
E MAIN SWITCH	5																		
F STARTER SWITCH	6																		
G "ENGINE STOP" SWITCH	7																		
H NEUTRAL SWITCH	8																		
I STARTING CIRCUIT CUT-OFF RELAY	9																		
J CLUTCH SWITCH			1	*1	1														
K SIDESTAND SWITCH		*1	*2	*2						*6	*6								
L SPARK PLUG									1	*1	1	1	1			1	1		
M SPARK PLUG CAP									2	*2	2	2	2			2	2	1	
N IGNITION COIL									3	*3	3	3	3		1	3	3	2	
O SOURCE COIL									4	*4	4	4	4		2				
P PICKUP COIL									5	*5	5	5	5		3				
Q NEUTRAL RELAY		*2		*3					6	*7	*7	*6							
R WIREHARNESS	10	*3	3	*4	2				7	*8	8	7	6	1			4		
S CDI UNIT	11	*4	4	*5	3				8	*9	9	8	7		4	4	5		

*: Except for Oceania and South Africa.

NOTE:

- A ~ Q & S indicates the location of the parts-connectors for checking.
- Use the following special tools in this troubleshooting.

Pocket Tester:
90890-03112

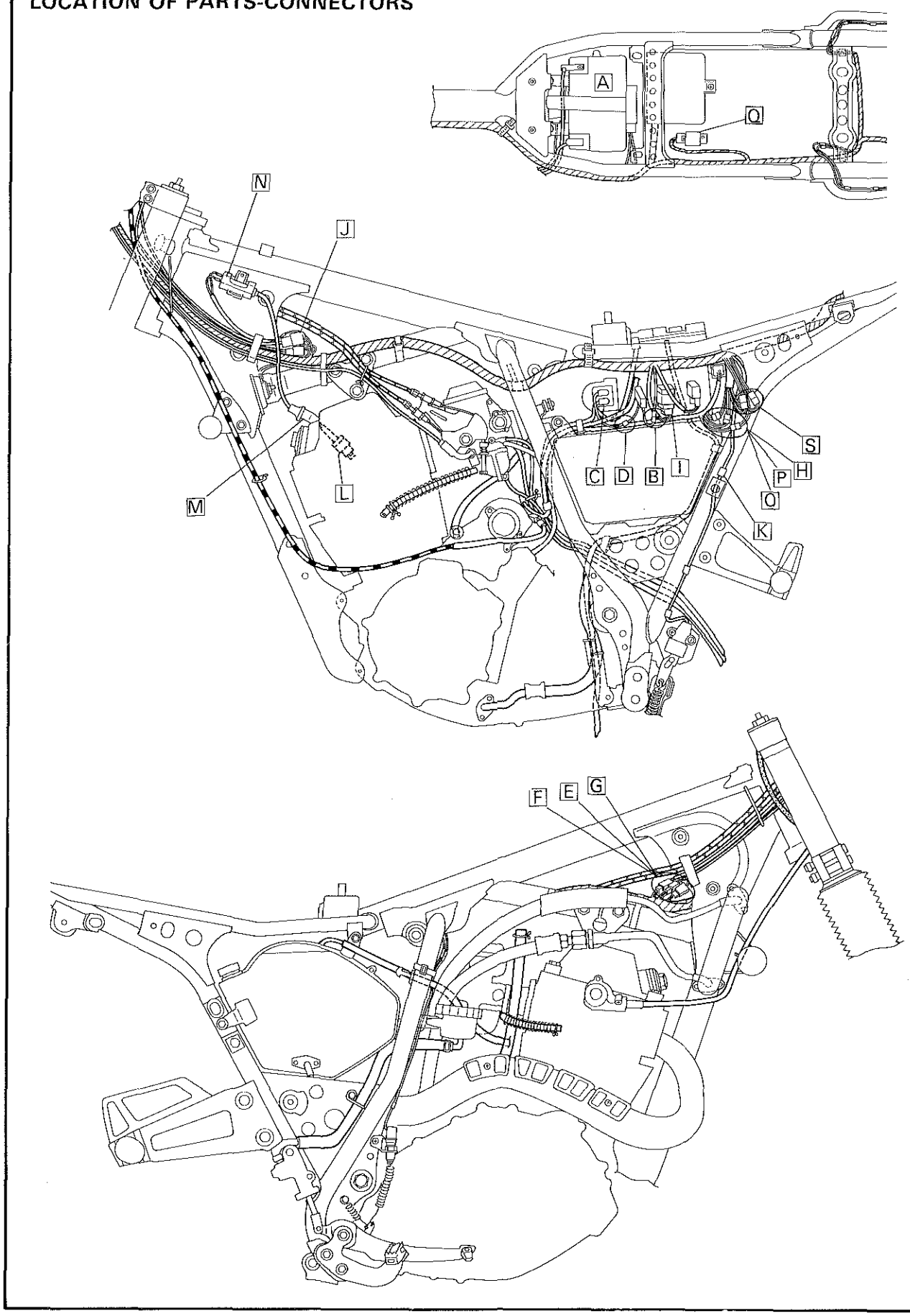


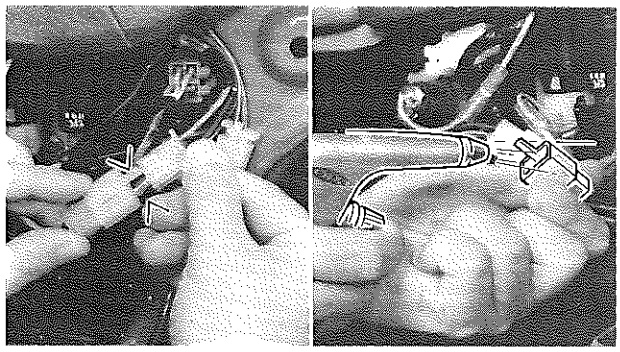
Dynamic Spark Tester:
90890-03144

HOW TO USE CHART:

Step 1. Look for an approprial trouble mode from the motorcycle phenomenon.
Step 2. Procced to checking in the ascending order of the numbers.
Step 3. Look for the location by reference to the "LOCATION OF PARTS-CONNECTORS". (P.82)
Step 4. Go to further details of checking. (P. 83 ~ 102)

LOCATION OF PARTS-CONNECTORS



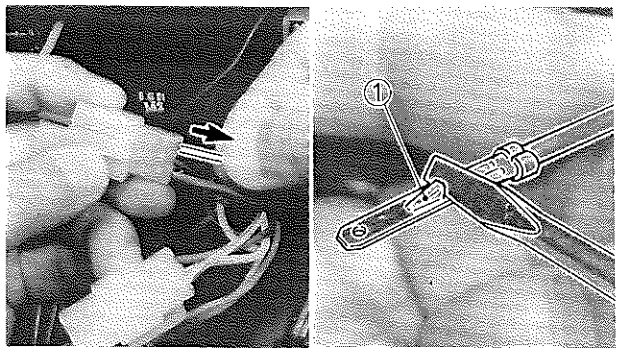


GENERAL INFORMATION

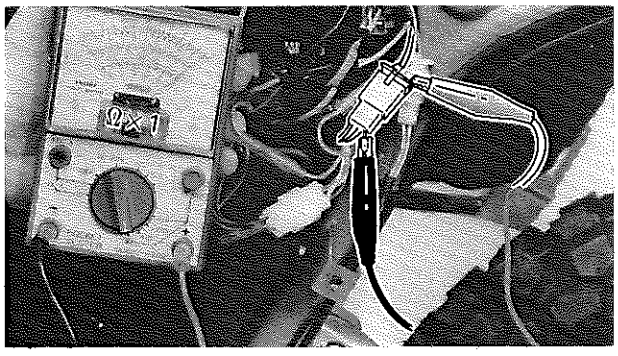
Connection Inspection

Dealing with stains, rust, moisture, etc. on the connector.

1. Disconnect:
   • Connector
2. Dry each terminal by an air blower.



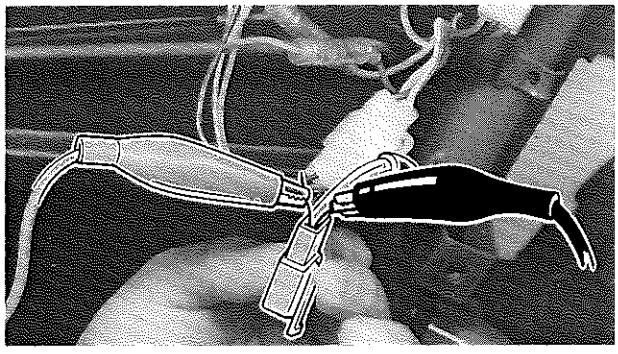
3. Connect and disconnect the connector two to three times.
4. Pull the lead to check that it will not come off.
5. If the terminal comes off, bend up the pin ① and reinsert the terminal into connector.

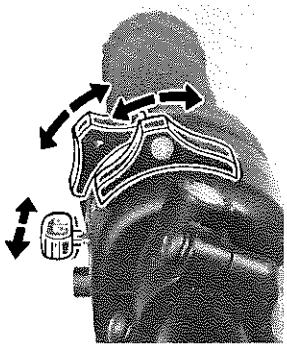


6. Connect:
   • Connector
7. Check for continuity by a tester.

NOTE:

- If there is no continuity, clean the terminals.
- Be sure to perform the above steps 1 to 7 when checking the wireharness.
- When replacing the CDI unit, be sure to check its connector.
- For a field remedy, use a contact revitalizer available on the market.
- Use the tester on the connector as shown.





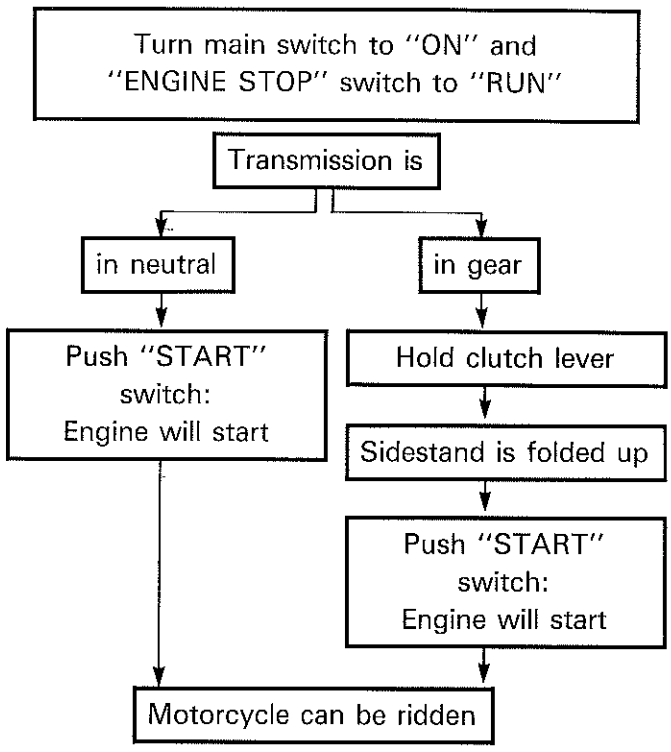
Switch Inspection

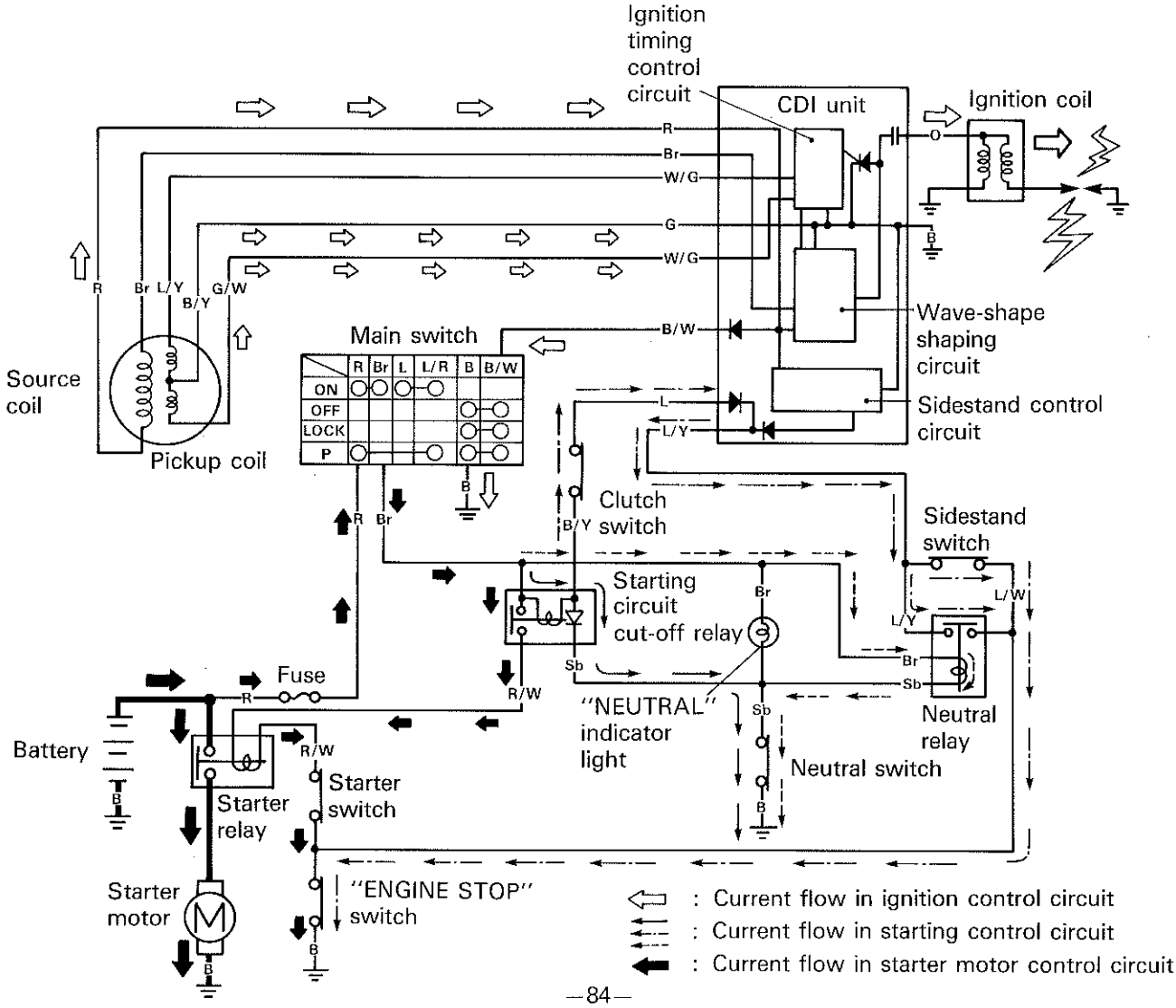
1. Before checking the switch, be sure to turn it on and off serveral times.
2. Check the switch two or three times.
   If a different resistance value is indicated even once, replace the switch.

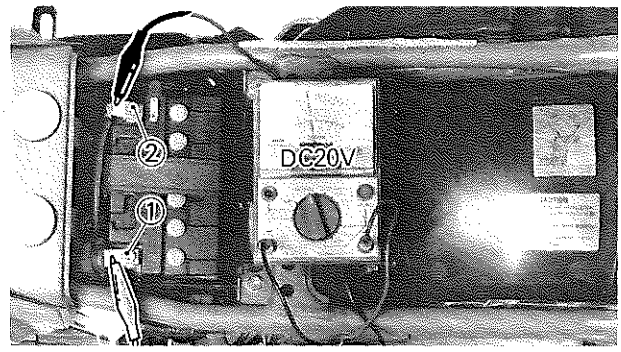
IGNITION AND STARTING CIRCUIT SYSTEM

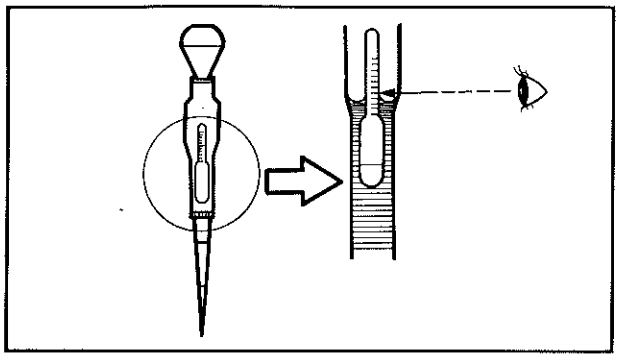
Features

- In neutral, the starter motor will run in any condition of the clutch lever and sidestand.
- In any shifted gear, the starter motor will not run unless the clutch lever is gripped and the sidestand is folded up.
- The engine will stall, if the sidestand is put down during operation in any shifted gear.

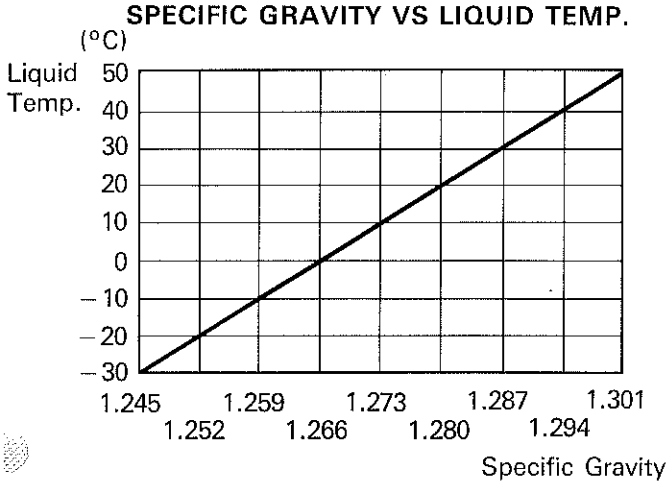


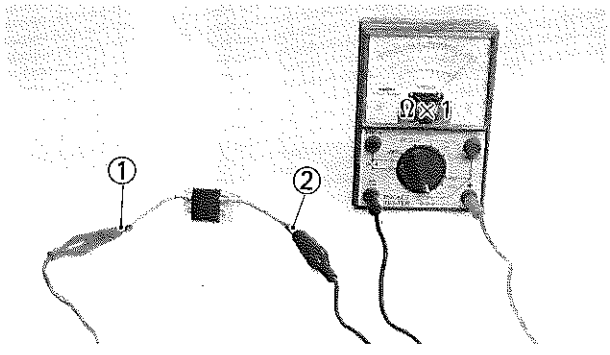






SPECIFIC GRAVITY VS LIQUID TEMP.





INSPECTION PARTS

A Battery Inspection

1. Inspect:
   - Battery terminal
   - Battery voltage

	Tester lead (Red)	Tester lead (Black)	Battery voltage	Range
	Positive ①	Negative ②	12~14V	DC20V

Out of specification→Recharge battery or replace battery.

2. Inspect:
   - Fluid level
   - Specific gravity

Specific Gravity:
1.260~1.280 at 20°C (68°F)

Out of specification→Recharge battery or replace battery.

Replace the battery if:
- Battery voltage will not rise to a specific value or bubbles fail to rise even after many hours of charging.
- Sulfation of one or more cells occurs, as indicated by the plates turning white, or an accumulation of material exists in the bottom of the cell.
- Specific gravity readings after a long, slow charge indicate one cell to be lower than the rest.
- Warpage or buckling of plates or insulators is evident.

Refer to the "BATTERY IN SPECITION" section in the CHAPTER 3.

B Fuse Inspection

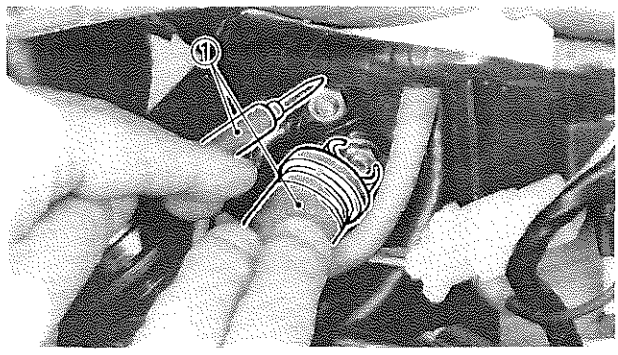
1. Inspect:
   - Fuse for continuity
   - Fuse holder

	Tester lead (Red)	Tester lead (Black)	Continuity	Range
	Fuse holder lead ①	Fuse holder lead ②	Continuous	Ω×1

Non-continuous→Replace fase or fuse holder.
Loose terminal→Replace fuse or fuse holder.

Amperage for Individual:
20A

Refer to the "FUSE INSPECTION" section in the CHAPTER 3.

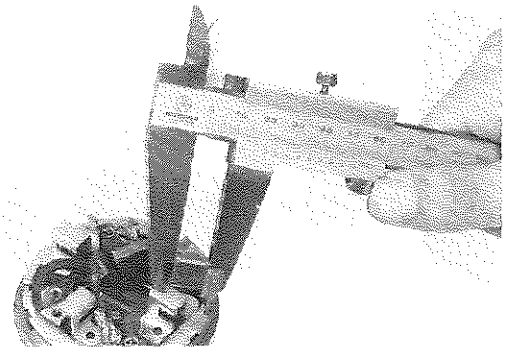


C Starter Motor Inspection

1. Main switch to "ON".
2. Inspect:
   - Starter motor
   Use the jumper lead ①.
   Starter motor does not run→Go on to steps 3 to 8.

WARNING:

- **For inspection, make sure that the engine is in neutral.**
- **This check is likely to produce sparks, so *be sure that no flammable gas or fluid is in* the vicinity.**
- **If the jumper lead is in contact with the frame, it will cause a heavy shortcircuit.**

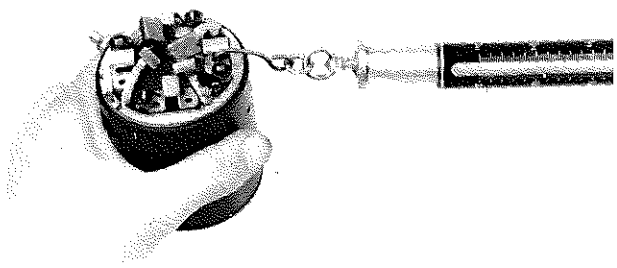


3. Meassure:
   - Brush length (Each)

Minimum Brush Length:
5.0 mm (0.20 in)

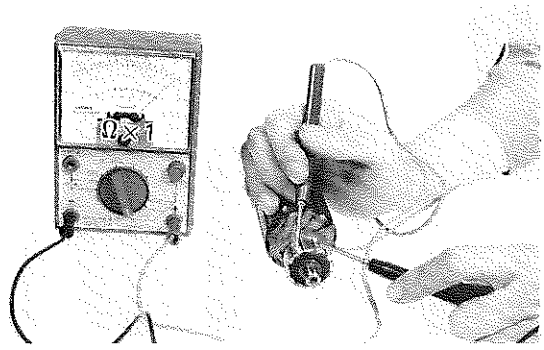
Out of specification→Replace brush assembly.
Damaged surface of contact with commutator→Replace brush assembly

4. Inspect:
   - Brush spring

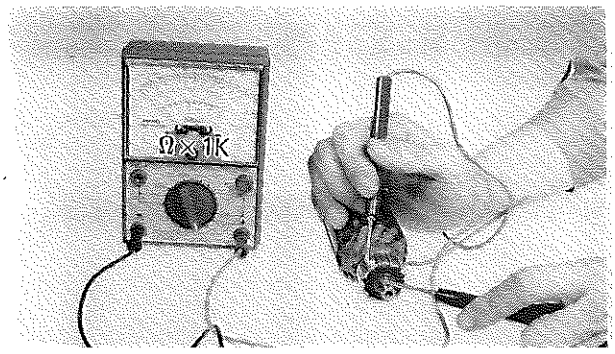


Brush Spring Pressure:
680~920 g (23.9~32.4 oz)

Out of specification→Replace brush assembly.
Fatigue/Damage→Replace brush assembly.



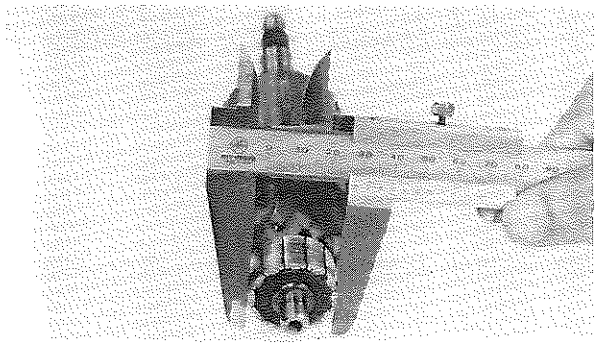
5. Inspect:
   • Commutator condition
   Damaged, worn, and burned surface of commutator → Replace armature coil



6. Inspect:
   • Armature coil for continuity

	Tester lead (Red)	Tester lead (Black)	Continuity	Range
	Commutator	Commutator	Continuous	Ω×1
	Commutator	Iron core	Non-continuous	Ω×1k

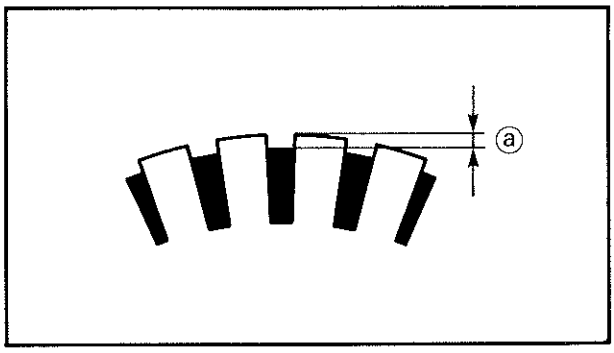
Bad condition → Repair armature coil or replace armature coil.



7. Measure:
   • Commutator diameter

Outside Diameter Limit:
27 mm (1.06 in)

Out of specification → Replace armature coil.

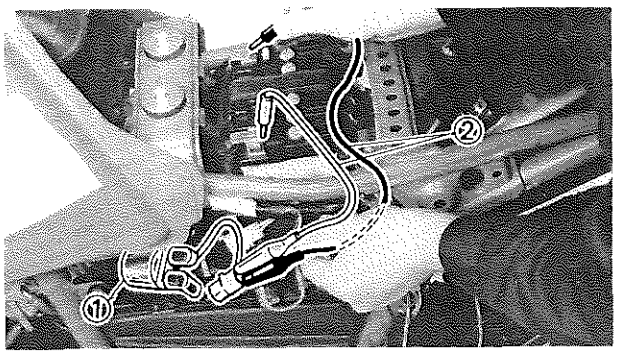


8. Measure:
   • Mica undercut ⓐ:
   Out of specification → Scrape mica using a hacksaw blade.

Mica Undercut ⓐ:
0.7 mm (0.028 in)

NOTE:

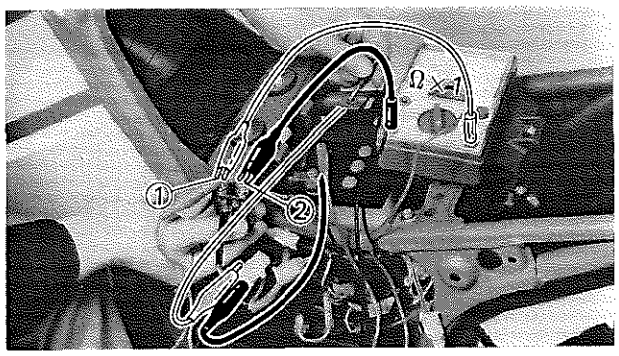
The mica insulation of the commutator must be undercut to ensure proper operation of the commutator.



D Starter Relay Inspection

1. Inspect:
   - Starter relay ①
     Use the jumper leads ②.

     Starter motor does not run→Go on to steps 2 and 3.



2. Disconnect:
   - Starter relay leads and connector
3. Inspect:
   - Starter relay for continuity

	Tester lead (Red)	Tester lead (Black)	Voltage applied	Voltage not applied	Range
	Terminal ①	Terminal ②	×	○	Ω×1
	○: Continuity × : Nocontinuity				

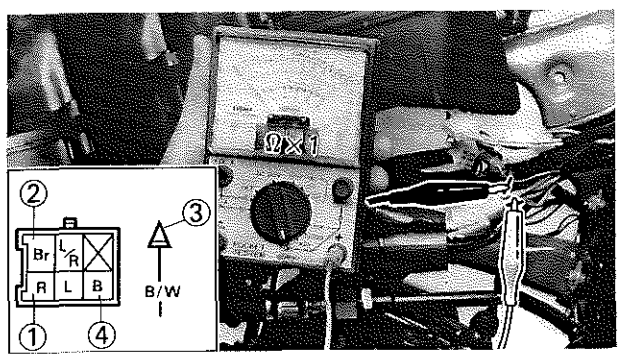
Bad condition→Replace starter relay.

E Main Switch Inspection

1. Inspect:
   - Flasher operation

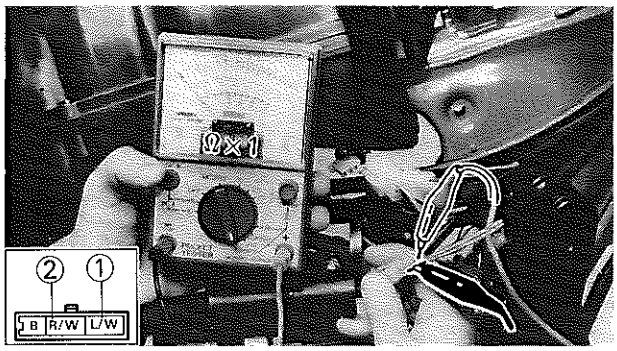
     Flasher does not move→Go on to steps 2 and 3.

2. Disconnect:
   - Main switch coupler
3. Inspect:
   - Main switch for continuity



	Tester lead (Red)	Tester lead (Black)	ON	OFF	Lock	P	Range
	Red ①	Brown ②	○	×	×	×	Ω×1
	Black/White ③	Black ④	×	○	○	○	
	○: Continuity × : Nocontinuity						

Bad condition→Replace main switch.

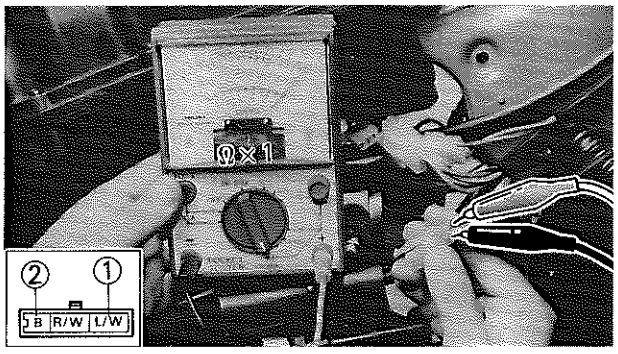


F Starter Switch Inspection

1. Disconnect:
   - Starter switch connector
2. Inspect:
   - Starter switch for continuity

	Tester lead (Red)	Tester lead (Black)	OFF	PUSH	Range
	Blue/White ①	Red/White ②	×	○	Ω×1
	○: Continuity ×: Nocontinuity				

Bad condition→Replace starter switch.

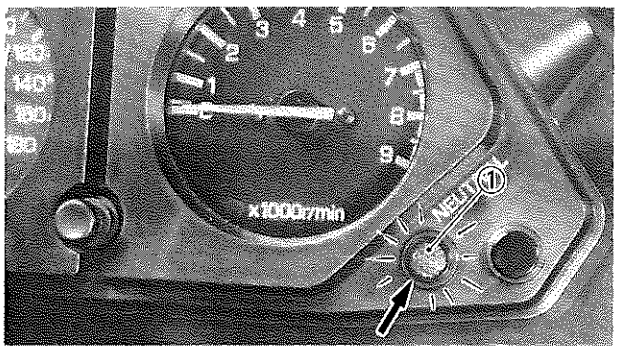


G "ENGINE STOP" Switch Inspection

1. Inspect:
   - "ENGINE STOP" switch for continuity

	Tester lead (Red)	Tester lead (Black)	OFF	RUN	Range
	Blue/White ①	Black ②	×	○	Ω×1
	○: Continuity ×: Nocontinuity				

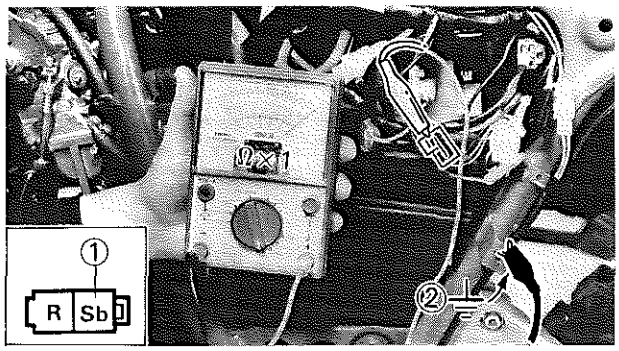
Bad condition→Replace "ENGINE STOP" switch.

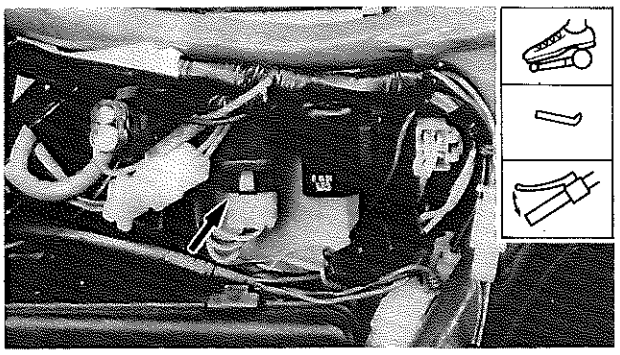


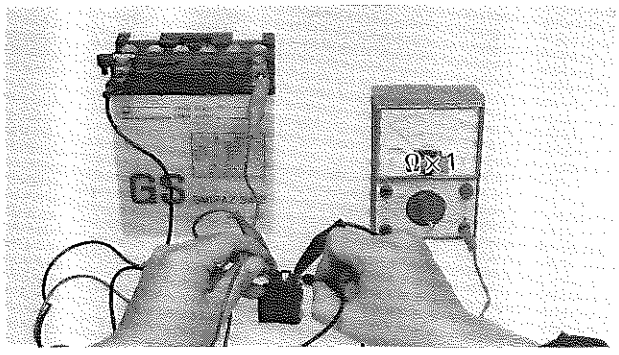
H Neutral Switch Inspection

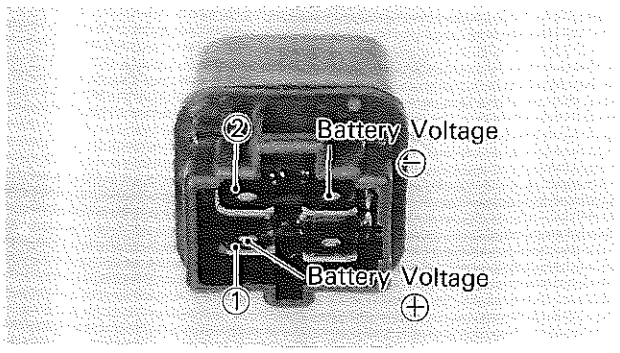
1. Main switch to "ON".
2. Shift in neutral.
3. Inspect:
   - "NEUTRAL" indicator light ①

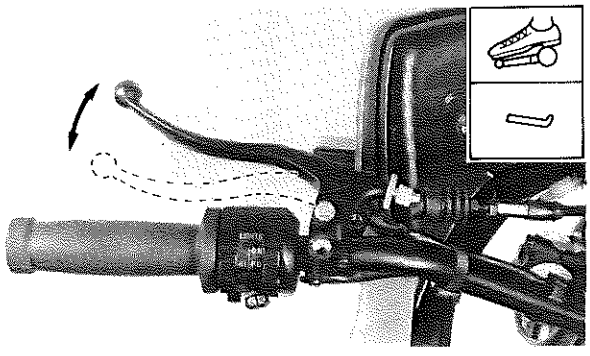
   Not glowing→Go on to steps 4 and 5.











4. Disconnect:
   - Neutral switch connector
5. Inspect:
   - Neutral switch for continuity

	Tester lead (Red)	Tester lead (Black)	Neutral	In gear	Range
	Sky blue ①	Ground ②	○	×	Ω×1
	○: Continuity × : Nocontinuity				

Bad condition→Replace neutral switch.

I Starting Circuit Cut-Off Relay Inspection

1. Main switch to "ON".
2. Shift in other than neutral.
3. Sidestand is folded up.
4. Inspect:
   - Starting circuit cut-off relay for operation clicks
     No clicks can be heard even if the clutch lever is held→Go on to steps 5 and 6.
5. Disconnect:
   - Starting circuit cut-off relay connector
6. Inspect:
   - Starting circuit cut-off relay for continuity

	Tester lead (Red)	Tester lead (Black)	Voltage applied	Voltage not applied	Range
	Terminal ①	Terminal ②	×	○	Ω×1
	○: Continuity × : Nocontinuity				

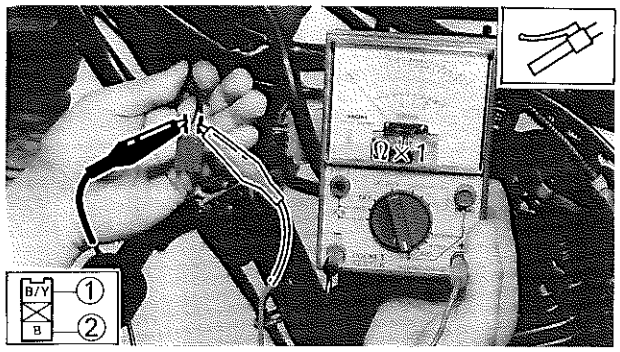
Bad condition→Replace starter relay.

NOTE:

Apply the voltage as shown.

J Clutch Switch Inspection

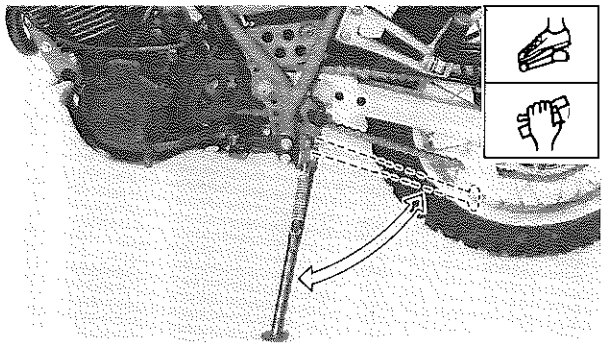
1. Main switch to "ON".
2. Shift in other than neutral.
3. Sidestand is folded up.
4. Inspect:
   - Starting circuit cut-off relay for operation clicks
     No clicks can be heard even if the clutch lever is held→Go on to steps 5 and 6.



5. Disconnect:
   • Clutch switch connector
6. Inspect:
   • Clutch switch for continuity

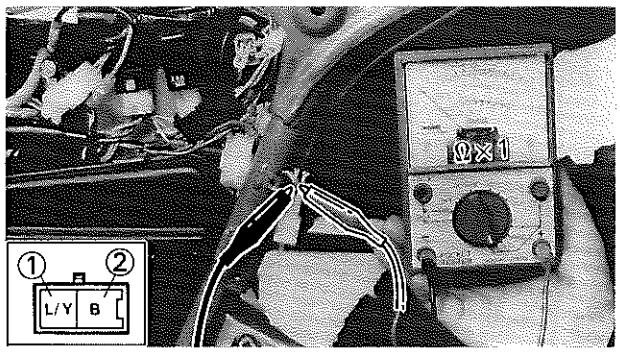
	Tester lead (Red)	Tester lead (Black)	Hold	Release	Range
	Black/ Yellow ①	Black ②	○	×	Ω×1
	○: Continuity ×: Nocontinuity				

Bad condition→Replace clutch switch.



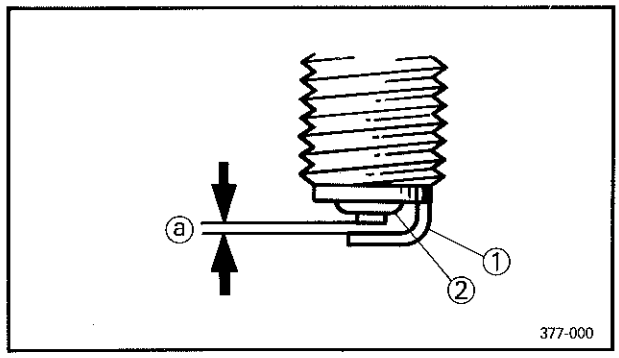
K Sidestand switch inspection

1. Main switch to "ON".
2. Shift in other than neutral.
3. Hold the clutch lever.
4. Inspect:
   • Starting circuit cut-off relay for operation clicks
   No clicks can be heard even if the sidestand is folded up→Go on to 5 and 6.



5. Disconnect:
   • Sidestand connector
6. Inspect:
   • Sidestand switch for continuity

	Tester lead (Red)	Tester lead (Black)	Up	Down	Range
	Blue/ Yellow ①	Black ②	○	×	Ω×1
	○: Continuity ×: Nocontinuity				



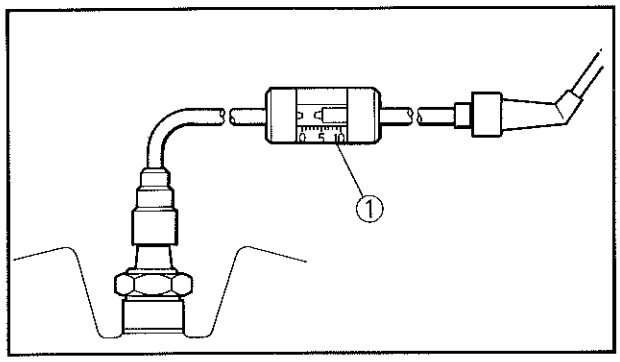
L Spark Plug Inspection

1. Inspect:
   - Electrode ①
     Wear/Damage→Replace spark plug.
   - Insulator ②
     Abnormal color→Replace spark plug.
2. Measure:
   - Plug gap ⓐ
     Use a Wire Gauge or Feeler Gauge

Spark Plug Gap:
0.8~0.9 mm (0.03~0.04 in)

Out of specification→Replace spark plug.

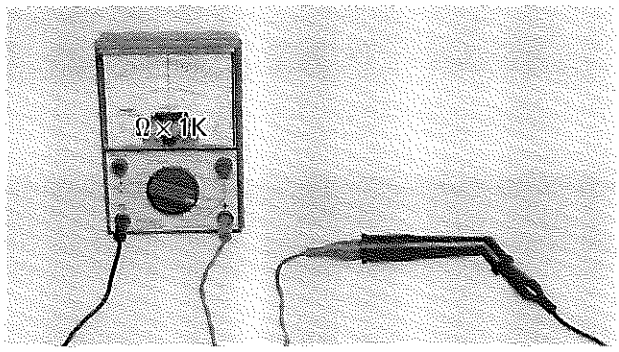
Refer to the "SPARK PLUG INSPECTION" section in the CHAPTER 3.



3. Measure:
   - Spark gap
     Use a Dynamic Spark Tester ①.

Minimum Spark Gap:
6 mm (0.24 in)

Meets specification→Replace spark plug



M Spark Plug Cap Inspection

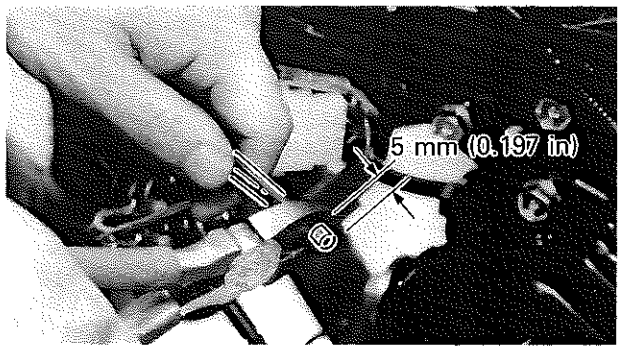
1. Inspect:
   - Spark plug cap resistance

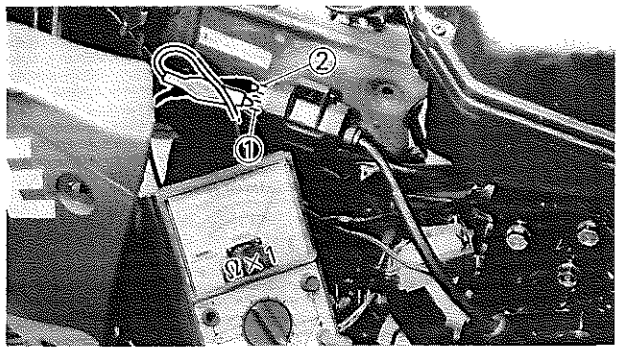
Spark Plug Cap Resistance:
8~12kΩ at 20°C (68°F)

Out of specification→Replace spark plug cap.

NOTE:

Check the spark plug lead for any fault when fitting the spark plug cap to it. If any fault is found, cut the spark plug lead 5 mm (0.197 in) at its tip.



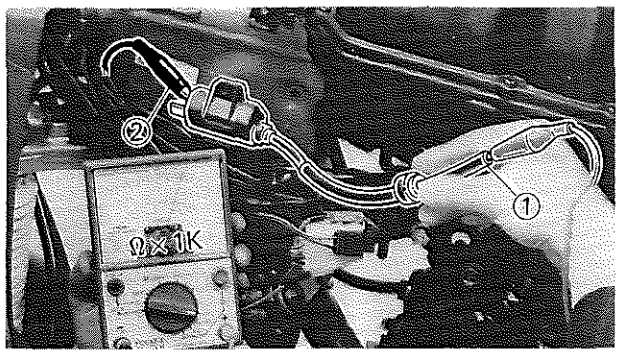


N Ignition Coil Inspection

1. Disconnect:
   - Primary coil connector
2. Inspect:
   - Primary coil resistance

	Tester lead (Red)	Tester lead (Black)	Specificated resistance	Range
	Terminal (Orange) ①	Terminal (Black) ②	0.15 ~ 0.20Ω at 20°C (68°F)	Ω×1

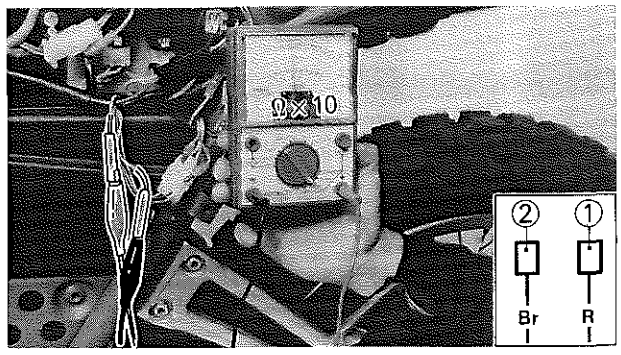
Out of specification → Replace ignition coil.



3. Inspect:
   - Secondary coil resistance

	Tester lead (Red)	Tester lead (Black)	Specificated resistance	Range
	Spark plug lead ①	Terminal (Black) ②	3.8 ~ 5.8kΩ at 20°C (68°F)	Ω×1k

Out of specification → Replace ignition coil.

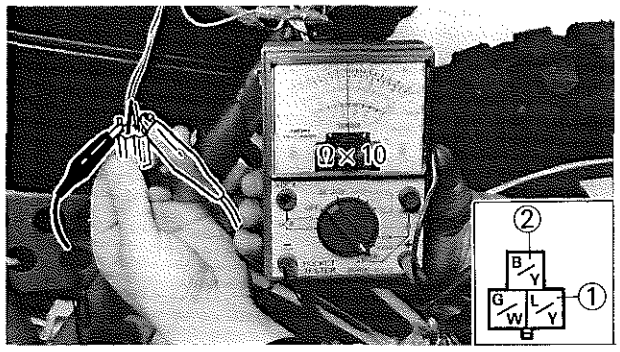


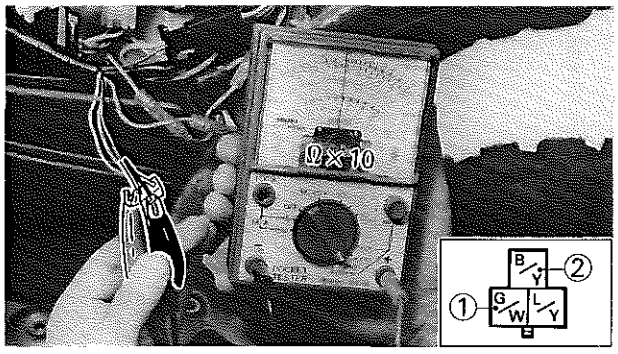
O Source Coil Resistance Inspection

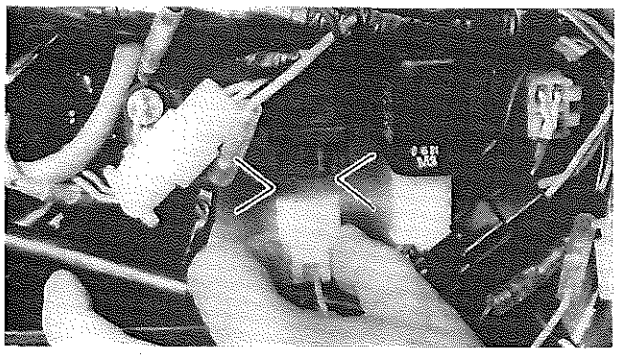
1. Disconnect:
   - Source coil connector
2. Inspect:
   - Source coil resistance

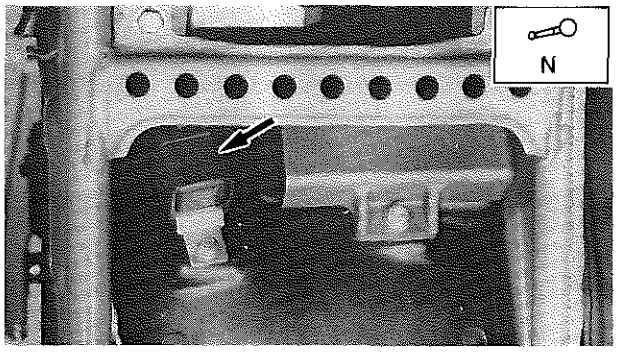
	Tester lead (Red)	Tester lead (Black)	Specificated resistance	Range
	Red ①	Brown ②	115 ~ 173Ω at 20°C (68°F)	Ω×10

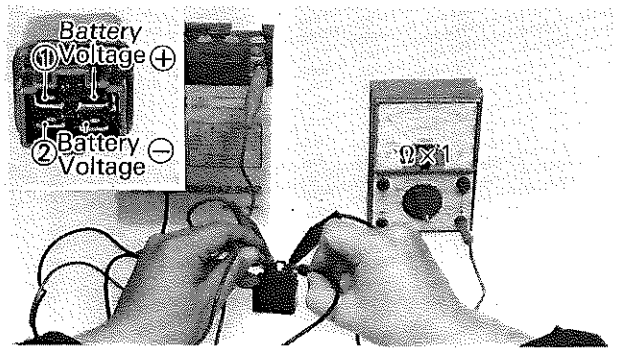
Out of specification → Replace source coil.











P Pickup Coil Resistance Inspection

1. Disconnect:
   - Pickup coil connector
2. Inspect:
   - Pickup coil (For high speed)

	Tester lead (Red)	Tester lead (Black)	Specificated resistance	Tester selection
	Blue/Yellow ①	Black/Yellow ②	92 ~ 138Ω at 20°C (68°F)	Ω × 10

Out of specification → Replace pickup coil.

3. Inspect:
   - Pickup coil (For low speed)

	Tester lead (Red)	Tester lead (Black)	Specificated resistance	Tester selection
	Green/White ①	Black/Yellow ②	92 ~ 138Ω at 20°C (68°F)	Ω × 10

Out of specification → Replace pickup coil.

Q *Neutral Relay Inspection*

1. Disconnect:
   - Starting circuit cut-off relay connector
2. Shift in neutral.
3. Inspect:
   - Neutral relay for opertion clicks

   No clicks can be heard even if the main switch is turned on → Go on to 4 and 5.
4. Disconnect:
   - Neutral relay connector
5. Inspect:
   - Neutral relay for continuity

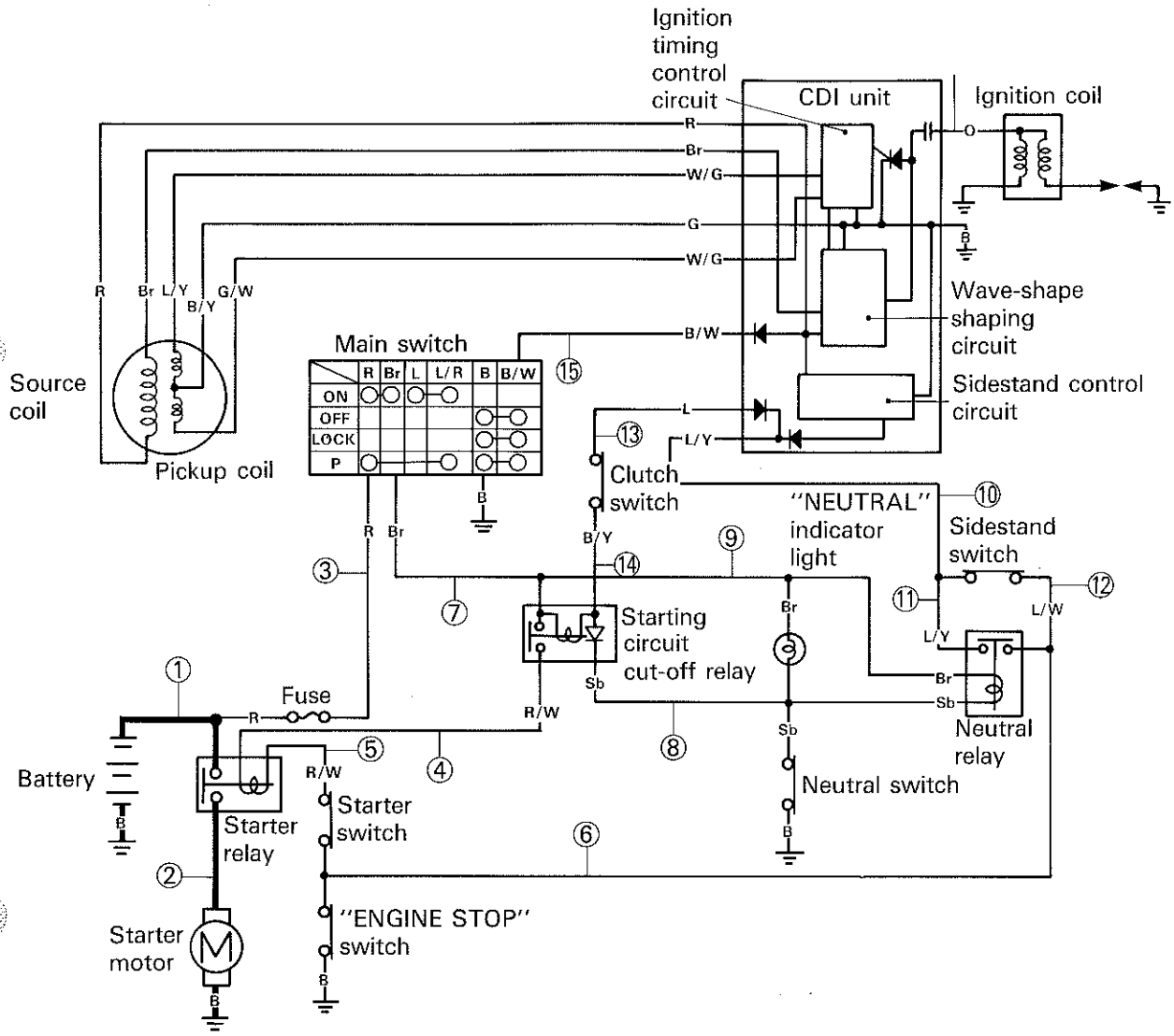
	Tester lead (Red)	Tester lead (Black)	Voltage applied	Voltage not applied	Range
	Terminal ①	Terminal ②	×	○	Ω × 1
	○: Continuity × : Nocontinuity				

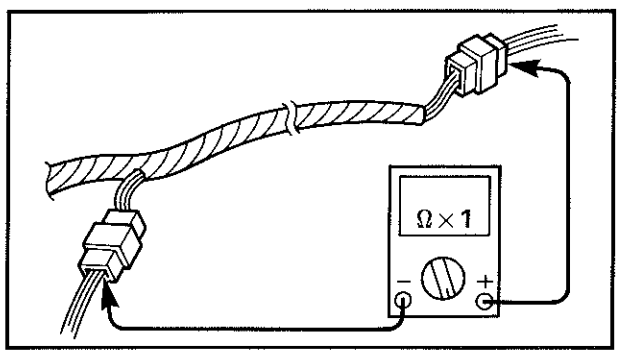
Bad condition → Replace neutral relay.

R Wireharness Inspection

Starter System Check: ① ② ③ ④ ⑤ ⑥ ⑦ ⑧ ⑨ ⑩ ⑪ ⑫ ⑬ ⑭

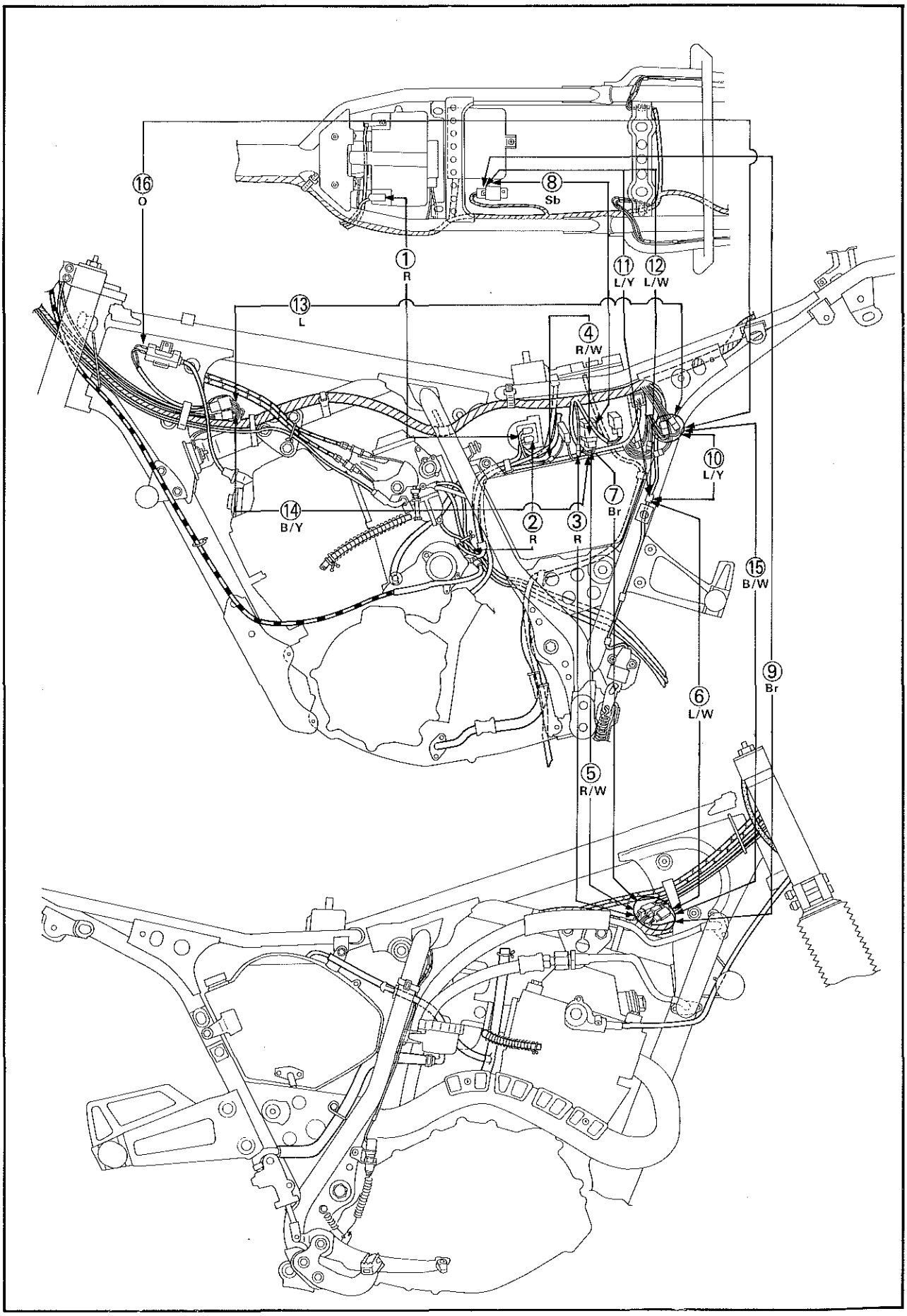
Ignition System Check: ⑮ ⑯

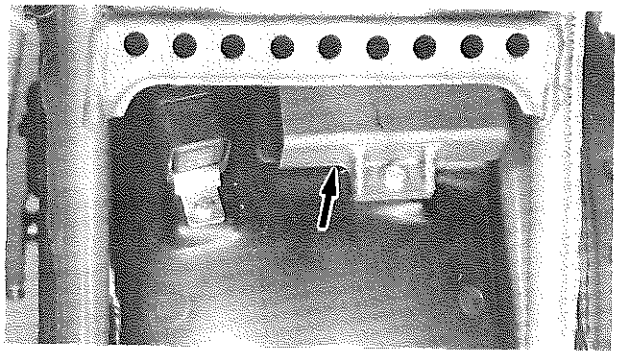




NOTE:

- Check the continuity with the connector connected, as shown.
- For the connector shape, refer to the color wiring diagram.


⑯ O
⑧ Sb
① R
⑪ L/Y
⑫ L/W
⑬ L
④ R/W
⑩ L/Y
⑦ Br
⑭ B/Y
② R
③ R
⑮ B/W
⑨ Br
⑥ L/W
⑤ R/W



S CDI Unit Replacement

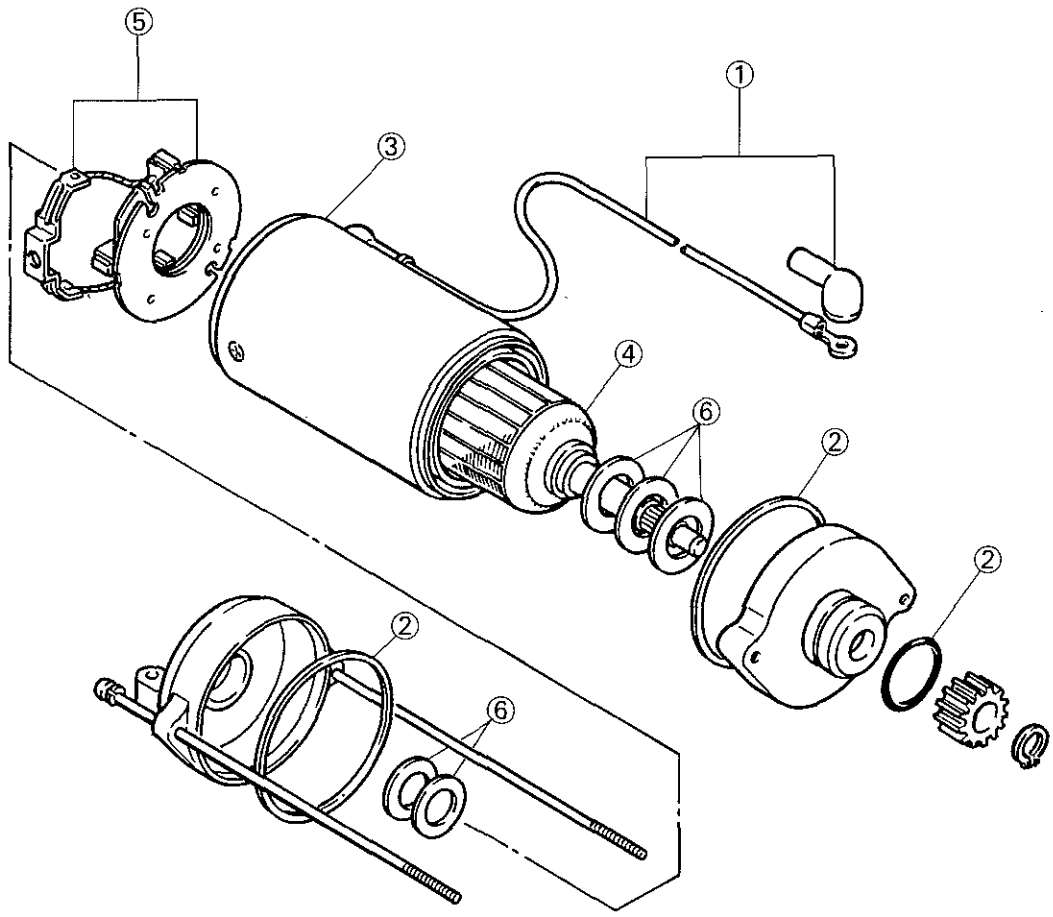
1. Inspect:
   - Connection
   Refer to page 81.

2. Replace:
   - CDI unit

STARTER MOTOR

① Starter motor lead
② O-ring
③ Yoke assembly
④ Armature coil assembly
⑤ Brush assembly
⑥ Washer

A	COMMUTATOR UNDER CUT: 0.7 mm (0.028 in)
B	COMMUTATOR DIAMETER WEAR LIMIT: 27 mm (1.06 in)
C	BRUSH WEAR LIMIT: 5.0 mm (0.20 in)



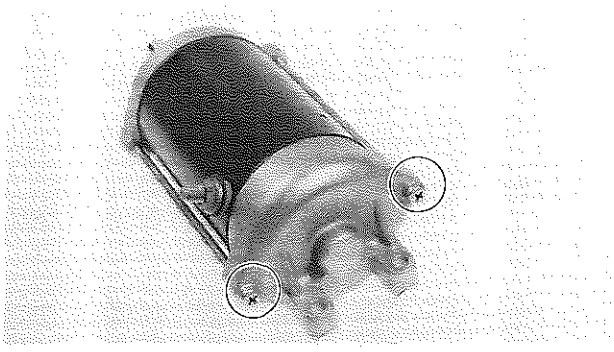
Removal

1. Remove:
   - Starter motor drive gear
   - Starter motor
   - Starter motor bracket

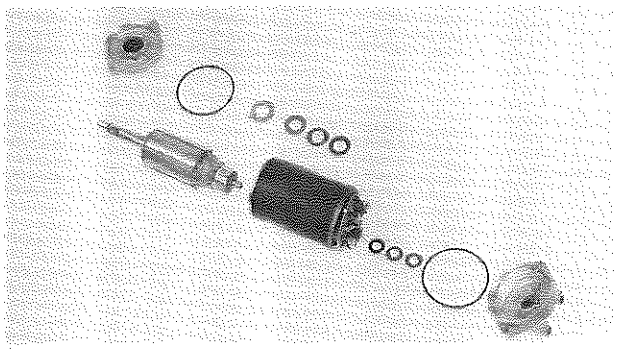
   Refer to "ENGINE OVERHAUL-STARTER MOTOR" section.

Disassembly

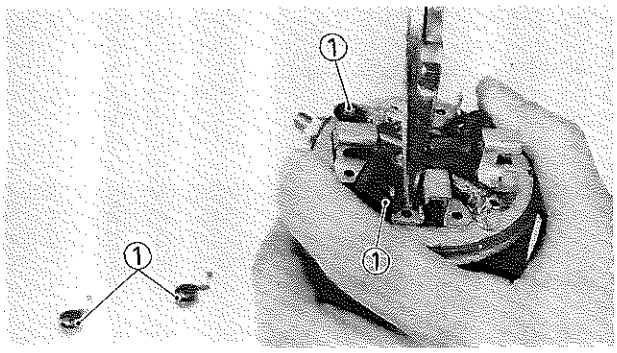
1. Remove:
   - Yoke assembly



2. Remove:
   - Armature coil assembly



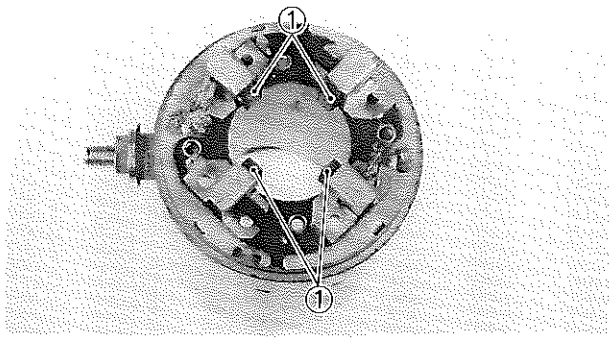
3. Remove:
   - Brush springs ①



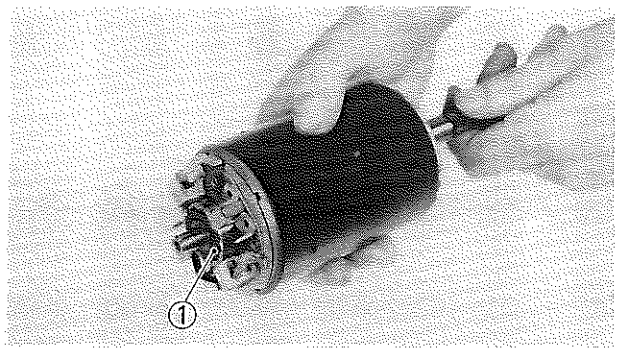
Assembly

Reverse the "Removal" and "Disassembly" procedure.

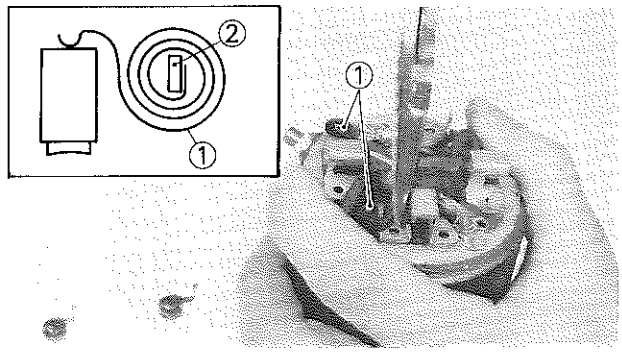
Note the following points.



1. Install:
   - Brushes ①



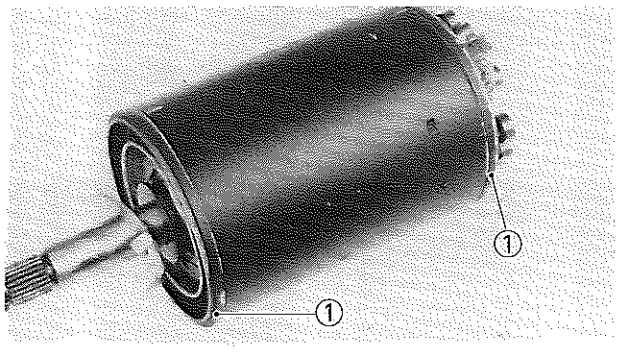
2. Install:
   - Armature coil assembly ①



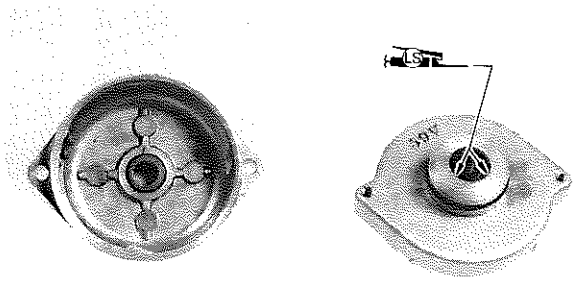
3. Install:
   - Brush springs ①

CAUTION:

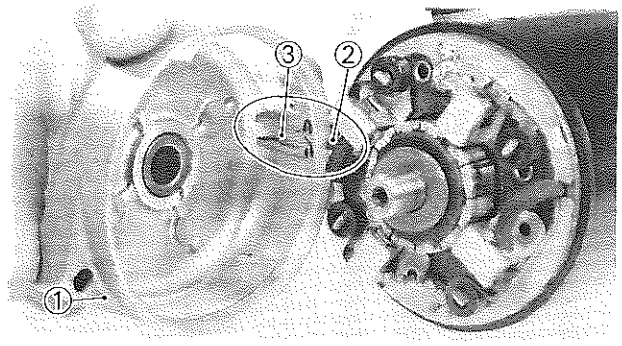
- Fit the spring ① over the spring holder ② as per the illustrated location.
- Take care not to wind the spring too much; otherwise, it may be subjected to a parmanent distortion.



4. Install:
   - O-rings (New) ①



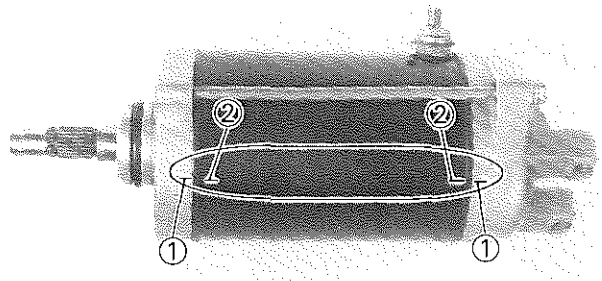
5. Apply:
   - Lithium soap base grease (To oil seal and bearing)



6. Install:
   • Cover ①

NOTE:

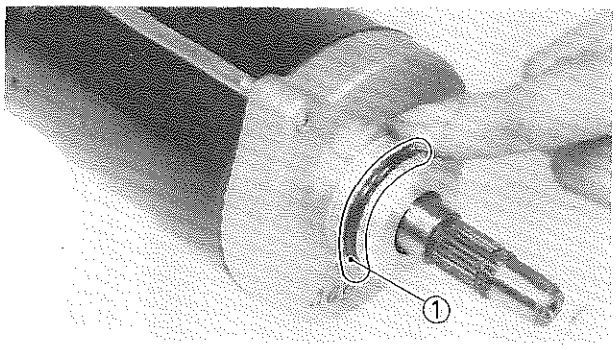
Align the projection ② on the brush plate with the slot ③ on cover ①.



7. Install:
   • Yoke assembly

NOTE:

Align the match marks ① on the bracket with the match marks ② on the housing.



8. Install:
   • O-ring (New) ①

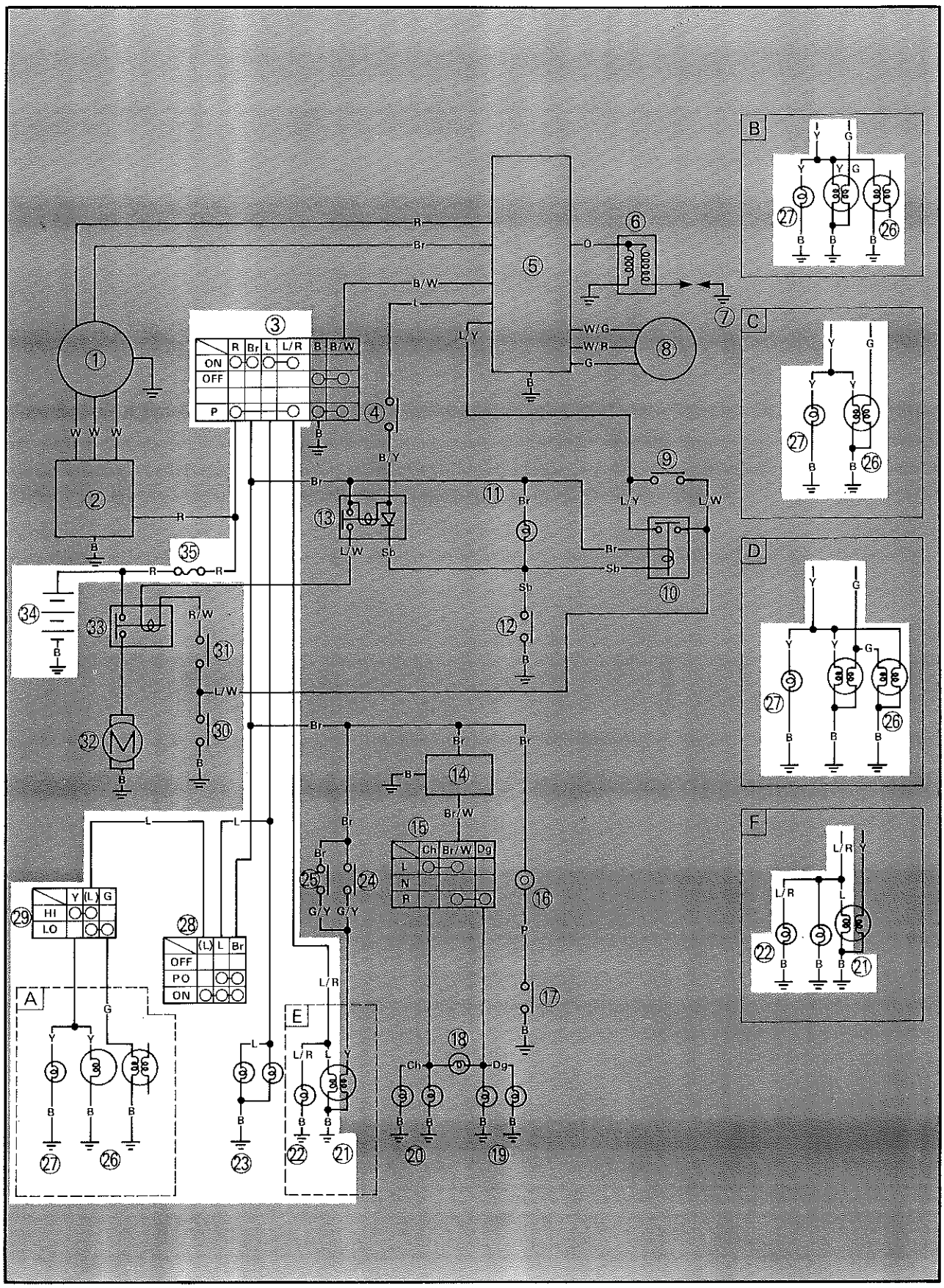
NOTE:

Apply a grease lightly.

LIGHTING SYSTEM

CIRCUIT DIAGRAM

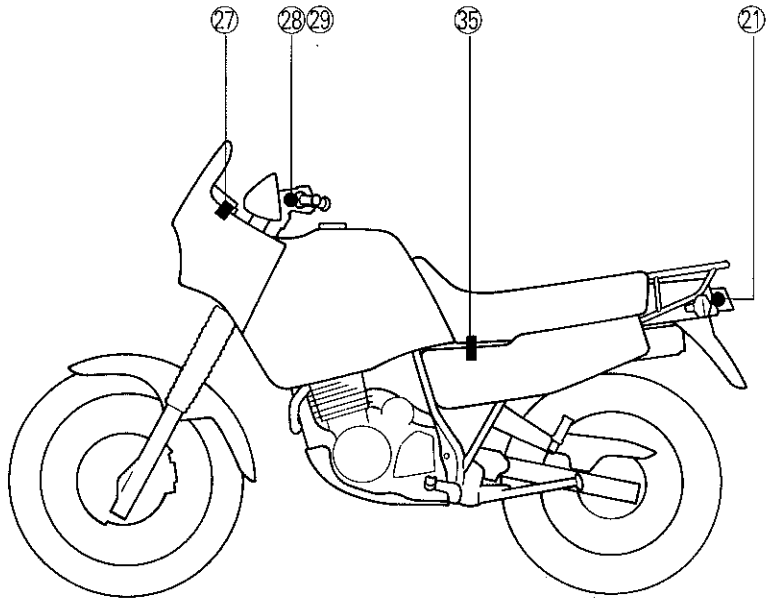
Below circuit diagram shows lighting system.

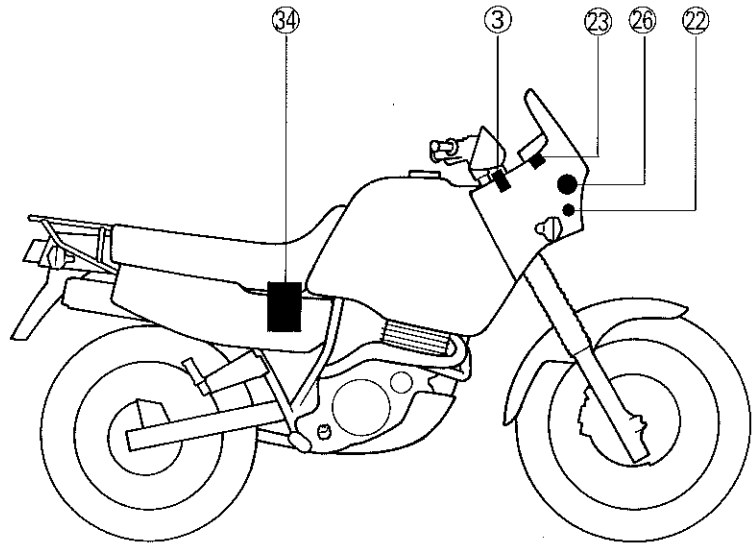


NOTE:

For the color codes, see page 78.

③ Main switch
㉑ Tail/Brake light
㉒ Auxiliary light
㉓ Meter light
㉖ Headlight
㉗ "HIGH BEAM" indicator light
㉘ "LIGHTS" switch
㉙ "LIGHTS" (Dimmer) switch
㉞ Battery
㉟ Fuse





TROUBLESHOOTING

HEADLIGHT, TAILLIGHT, AUXILIARY LIGHT AND/OR METER LIGHT DO NOT COME ON.

Procedure

Check;

1. Fuse
2. Battery
3. Main switch
4. "LIGHTS" switch
5. Wiring connection
   (Entire lighting system)

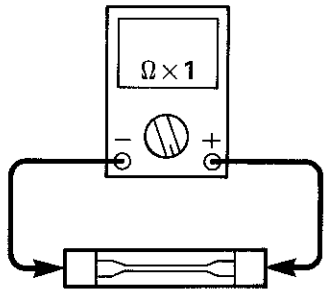
NOTE:

- Remove the following parts before troubleshooting.
  1) Seat
  2) Side cover (Left)
  3) Fuel tank
  4) Front cowl
  5) Headlight lens unit
  6) Rear cover
- Use the following special tool(s) in this troubleshooting.

	**Pocket Tester:** **P/N. 90890-03112**

1. Fuse

- Remove the fuse from the fuse case.
- Connect the Pocket Tester (Ω × 1) to the fuse.



- Check the fuse for continuity.

NOCONTINUITY → Replace fuse.

CONTINUITY → *

*

2. Battery

Check the battery condition.
Refer to the "BATTERY INSPECTION" section in the CHAPTER 3.

Specific Gravity:
1.280 at 20°C (68°F)

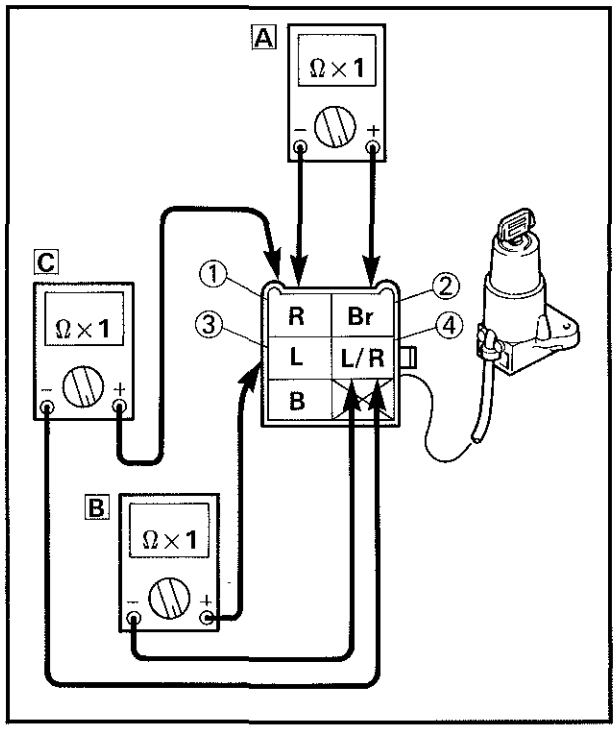
INCORRECT

- Refill battery fluid.
- Clean battery terminals.
- Recharge or replace battery.

CORRECT

3. Main switch

- Disconnect the main switch coupler (Red, Brown, Black, Blue and Blue/Red) from the wireharness.
- *Connect the Pocket Tester (Ω × 1) to the main switch leads.*
- Check the main switch for continuity.



A **Tester (+) Lead→Red (1) Lead**
Tester (−) Lead→Brown (2) Lead

Switch position	Good condition	Bad condition		
ON	○	×	×	○
OFF	×	○	×	○

B **Tester (+) Lead→Blue (3) Lead**
Tester (−) Lead→Blue/Red (4) Lead

Switch position	Good condition	Bad condition		
ON	○	×	×	○
OFF	×	○	×	○

C **Tester (+) Lead→Red (1) Lead**
Tester (−) Lead→Blue/Red (4) Lead

Switch position	Good condition	Bad condition		
PO	○	×	×	○
OFF	×	○	×	○

○: Continuity ×: Nocontinuity

BAD CONDITION

Main switch is faulty, replace it.

GOOD CONDITION

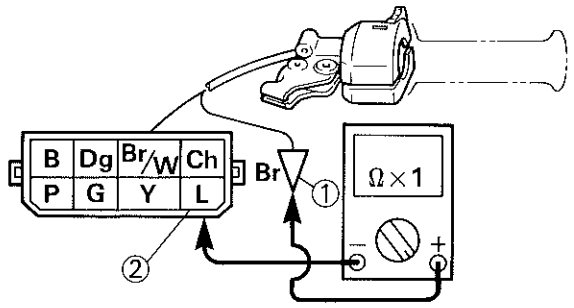
*

*

4. "LIGHTS" switch

- Disconnect the handlebar switch (Left) coupler (Pink, Green, Yellow, Blue, Black, Dark green, Brown/White and Chocolate) and Brown lead connecter from the wireharness.
- Connect the Pocket Tester (Ω×1) to the "LIGHTS" switch leads.

Tester (+) Lead→Brown ① Lead
Tester (−) Lead→Blue ② Lead



- Turn the "LIGHTS" switch to "ON", "PO" and "OFF".
- Check the "LIGHTS" switch for continuity.

Switch position	Good condition	Bad condition		
ON	○	×	×	○
PO				
OFF	×	○	×	○

○: Continuity ×: Nocontinuity

BAD CONDITION →

"LIGHTS" switch is faulty, replace handlebar switch (Left).

GOOD CONDITION ↓

5. Wiring connection

Check the entire lighting system for connections.
Refer to the "WIRING DIAGRAM" section.

POOR CONNECTION →

Correct.

CORRECT ↓

*

*

Check condition of each circuit for lighting system.
Refer to "LIGHTING SYSTEM CHECK" section.

LIGHTING SYSTEM CHECK

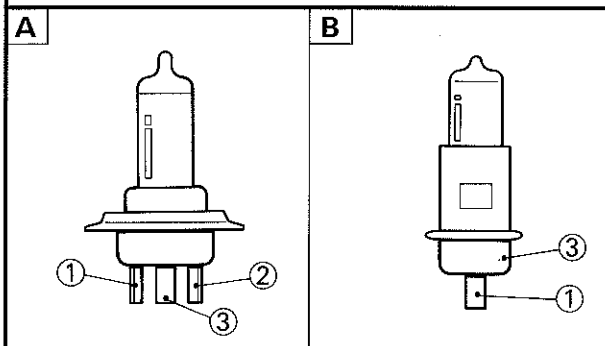
1. Headlight "HIGH BEAM" indicator light bulb do not come on.

1. Headlight bulb

- Remove the headlight bulb(s).
- Connect the Pocket Tester (Ω × 1) to the headlight bulb.

Tester (+) Lead→Terminal ①
Tester (−) Lead→Terminal ③

Tester (+) Lead→Terminal ②
Tester (−) Lead→Terminal ③



A Left B Right (For D, F, B, S, GR, P, E)

- Check the bulb for continuity.

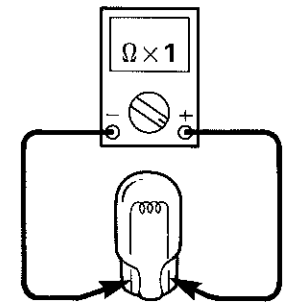
CONTINUITY

2. Bulb socket (Lighting harness)

- Install the bulb to the bulb socket.
- Disconnect the bulb socket (Indicator harness) coupler (Yellow, Dark green, Brown, Blue, Sky blue, Chocolate and Black) from the bulb socket (Lighting harness).
- Disconnect the bulb socket (Lighting harness) coupler (Dark green, Green, Chocolate, Brown, Black and Yellow) from the wireharness.
- Connect the Pocket Tester (Ω × 1) to the bulb socket (Lighting harness) coupler.

1. "HIGH BEAM" indicator light bulb

- Remove the "HIGH BEAM" indicator light bulb from the tachometer.
- Connect the Pocket Tester (Ω × 1) to the bulb.



- Check the bulb for continuity.

NOCONTINUITY

Replace bulb(s).

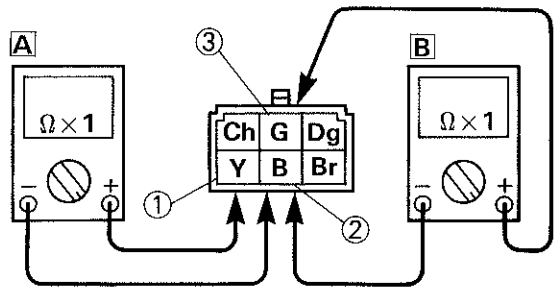
CONTINUITY

2. Bulb socket (Indicator harness)

- Install the bulb to the bulb socket.
- Remove the headlight bulb(s).
- Disconnect the bulb socket (Lighting harness) coupler (Dark green, Green, Chocolate, Brown, Black and Yellow) from the wire-harness.
- Connect the Pocket Tester (Ω × 1) to the bulb socket (Lighting harness) coupler.

A Tester (+) Lead→Yellow ① Lead
Tester (−) Lead→Black ② Lead

B Tester (+) Lead→Green ③ Lead
Tester (−) Lead→Black ② Lead



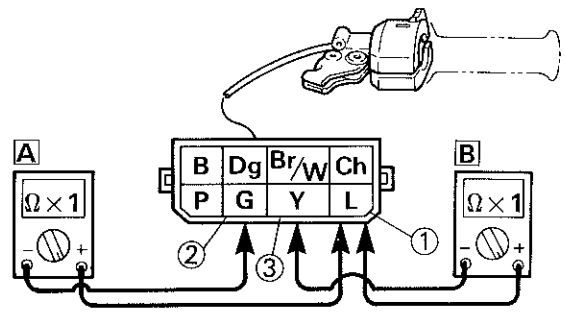
A "HI" High beam and "HIGH BEAM" indicator light
B "LO" Low beam
• Check the bulb socket for continuity.

NOCONTINUITY → Bulb socket is faulty, repair or replace it.

CONTINUITY

3. "LIGHTS" (Dimmer) switch

• Disconnect the handlebar switch (Left) copler (Pink, Green, Yellow, Blue, Black, Dark green, Brown/White and Chocolate) from the wireharness.
• Turn the "LIGHTS" switch to "ON".
• Connect the Pocket Tester (Ω×1) to the "LIGHTS" (Dimmer) switch.



• Turn the "LIGHTS" (Dimmer) switch to "HI" and "LO".
• Check the "LIGHTS" (Dimmer) switch for continuity.

A Tester (+) Lead→Blue ① Lead
Tester (−) Lead→Green ② Lead

Switch position	Good condition	Bad condition		
HI	×	○	×	○
LO	○	×	×	○

B Tester (+) Lead→Blue ① Lead
Tester (−) Lead→Yellow ③ Lead

Switch position	Good condition	Bad condition		
HI	○	×	×	○
LO	×	○	×	○

○: Continuity ×: Nocontinuity

BAD CONDITION → "LIGHTS" (Dimmer) switch is faulty, replace handlebar switch (Left).

GOOD CONDITION

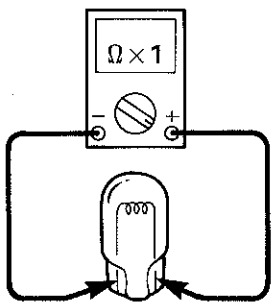
4. Wiring connection

Check the entire lighting system for connections. Refer to the "WIRING DIAGRAM" section.

2. Meter light does not come on.

1. Bulb

- Remove the meter light bulb(s) from the meter.
- Connect the Pocket Tester (Ω × 1) to the bulb.



- Check the bulb for continuity.

NOCONTINUITY → Replace bulb(s).

CONTINUITY

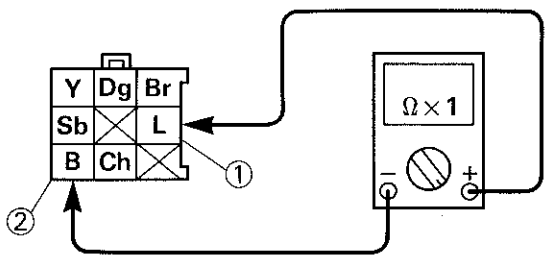
*

*

2. Bulb socket (Indicator harness)

- Install the bulb to the bulb socket.
- Disconnect the bulb socket (Indicator harness) coupler (Yellow, Dark green, Brown, Blue, Sky blue, Chocolate and Black) from the lighting harness.
- Connect the Pocket Tester (Ω × 1) to the bulb socket (Indicator harness) coupler terminals.

Tester (+) Lead → Blue (1) Lead
Tester (−) Lead → Black (2) Lead



- Check the bulb socket for continuity.

NOCONTINUITY

Bulb socket is faulty, replace or repair it.

CONTINUITY

4. Wiring connection

Check the entire lighting system for connections. Refer to the "WIRING DIAGRAM" section.

NOTE:

Perform a continuity test on the right and left circuitries with one bulb connected at a time.

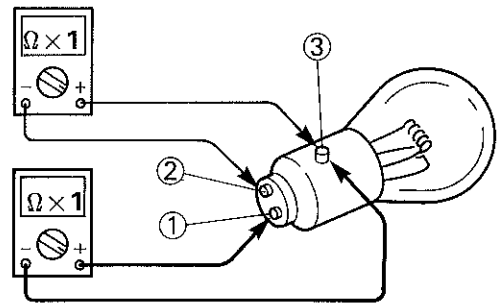
3. Taillight does not come on.

1. Bulb

- Remove the tail/brake light bulb(s).
- Connect the Pocket Tester (Ω×1) to the tail/brake light bulb.

Tester (+) Lead→Terminal ①
Tester (−) Lead→Terminal ③

Tester (+) Lead→Terminal ③
Tester (−) Lead→Terminal ②



- Check the tail/brake light bulb for continuity.

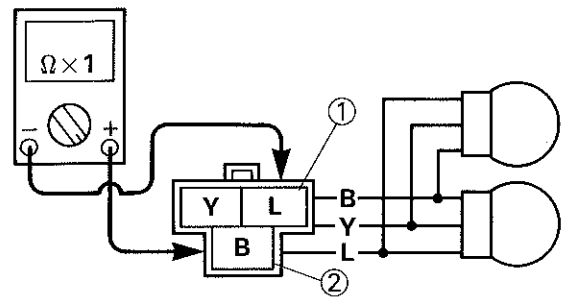
NOCONTINUITY → Replace Tail/Brake light bulb(s).

CONTINUITY ↓

2. Bulb socket

- Install the bulb(s) to the bulb socket(s).
- Disconnect the bulb socket coupler (Yellow, Blue and Black) from the wireharness.
- Connect the Pocket Tester (Ω×1) to the bulb socket coupler.

Tester (+) Lead→Blue ① Lead
Tester (−) Lead→Black ② Lead



- Check the bulb socket for continuity.

NOCONTINUITY → Bulb socket is faulty repair or replace it.

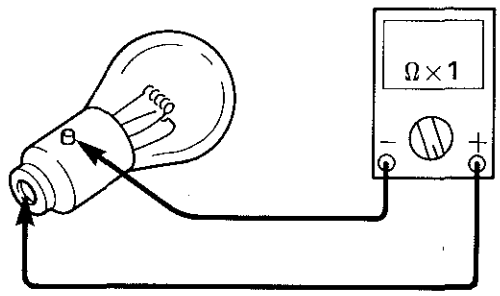
CONTINUITY ↓

*

*

3. Wiring connection
Check the entire lighting system for connections. Refer to the "WIRING DIAGRAM" section.

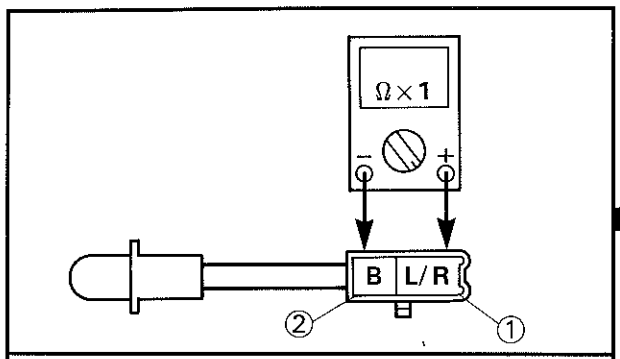
4. Auxiliary light does not come on.

1. Bulb
• Remove the auxiliary light bulb(s) from the headlight body. • Connect the Pocket Tester (Ω × 1) to the auxiliary light bulb.

• Check the auxiliary light bulb for continuity.

NOCONTINUITY → Replace auxiliary light bulb(s).

CONTINUITY

2. Bulb socket
• Install the bulb(s) to the bulb socket(s). • Disconnect the bulb socket coupler(s) (Blue/Red and Black) from the lighting harness. • Connect the Pocket Tester (Ω × 1) to the bulb socket coupler.
Tester (+) Lead → Blue/Red (1) Lead **Tester (−) Lead → Black (2) Lead**



• Check the bulb socket for continuity.

NOCONTINUITY

Bulb socket is faulty, repair or replace it.

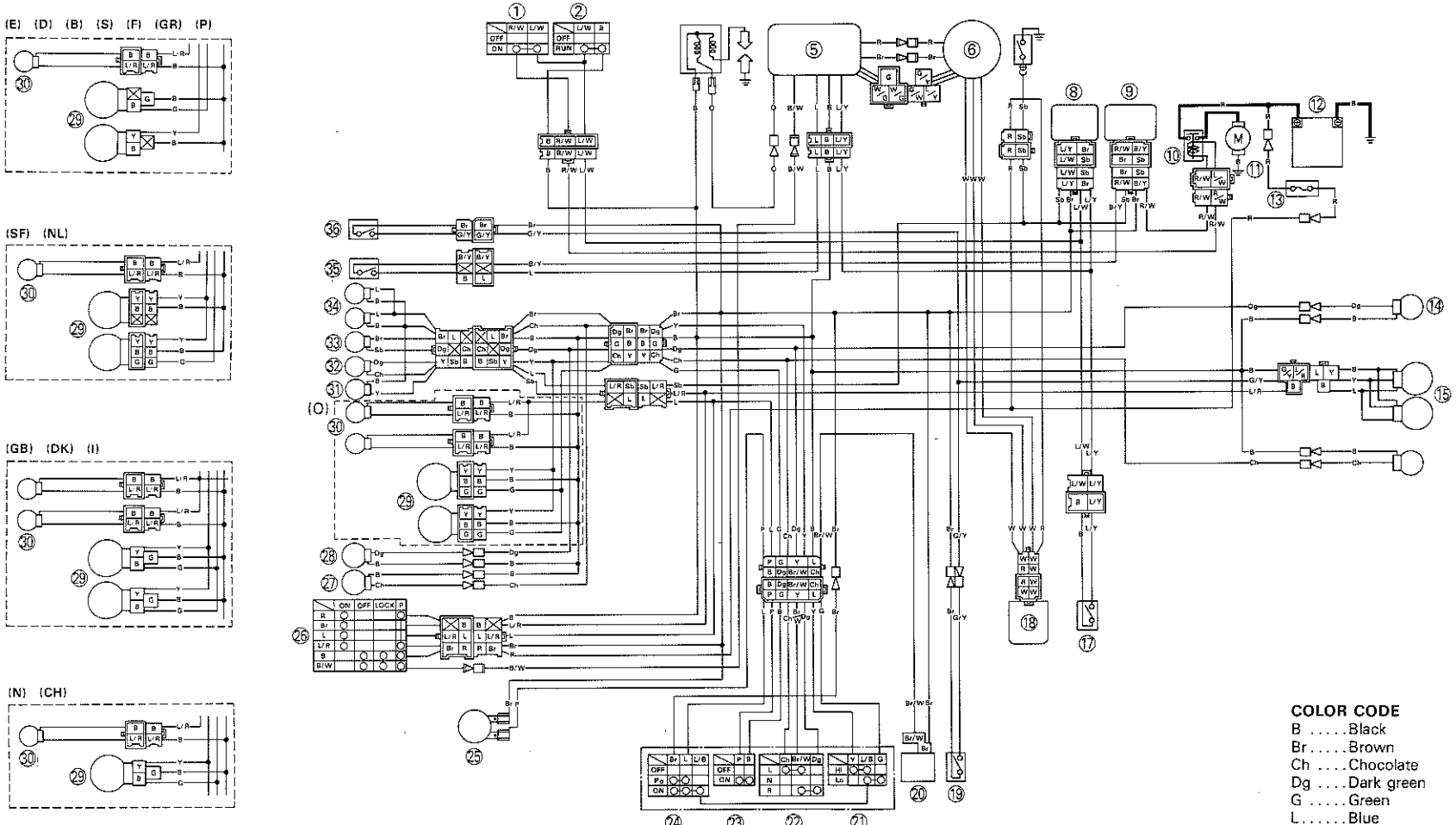
CONTINUITY

3. Wiring connection

Check the entire lighting system for connections. Refer to the "WIRING DIAGRAM" section.

XT600Z(U) WIRING DIAGRAM

F-14



① "START" switch
② "ENGINE STOP" switch
③ Ignition coil
④ Spark plug
⑤ CDI unit
⑥ CDI magneto
⑦ Neutral switch
⑧ Neutral relay (For Europe)
⑨ Starting circuit cut-off relay
⑩ Starter relay
⑪ Starting motor
⑫ Battery
⑬ Fuse
⑭ Rear flasher light (R)
⑮ Tail/Brake light
⑯ Rear flasher light (L)
⑰ Sidestand switch (For Europe)
⑱ Rectifier/Regulator
⑲ Rear brake switch
⑳ Flasher relay
㉑ "LIGHTS" (Dimmer) switch
㉒ "TURN" switch
㉓ "HORN" switch
㉔ "LIGHTS" switch
㉕ Horn
㉖ Main switch
㉗ Front flasher light (L)
㉘ Front flasher light (R)
㉙ Headlight
㉚ Auxiliary light
㉛ "HIGH BEAM" indicator light
㉜ "TURN" indicator light
㉝ "NEUTRAL" indicator light
㉞ Meter light
㉟ Clutch switch
㊱ Front brake switch

COLOR CODE

B	Black	B/W	Black/White
Br	Brown	B/Y	Black/Yellow
Ch	Chocolate	Br/W	Brown/White
Dg	Dark green	G/W	Green/White
G	Green	G/Y	Green/Yellow
L	Blue	L/B	Blue/Black
O	Orange	L/R	Blue/Red
P	Pink	L/W	Blue/White
R	Red	L/Y	Blue/Yellow
Sb	Sky blue	R/W	Red/White
W	White	W/G	White/Green
Y	Yellow		