YAMAHA

XT600

SERVICE INFORMATION

SPECIFICATIONS

(G): For Germany
(D): For Denmark
(N): For Norway
(Sw): For Sweden
(E): For England

GENERAL SPECIFICATIONS

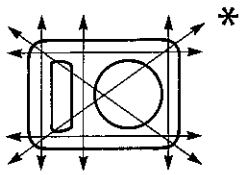
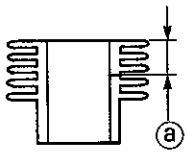
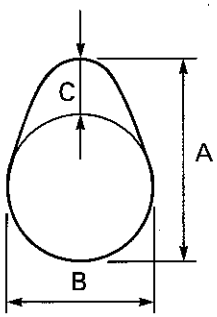
Model	XT600	
Model Code Number:	2KF	2NF
Engine Starting Number:	2KF-000101	2NF-000101
Frame Starting Number:	2KF-000101	2NF-000101
Dimensions:		
Overall Length	2,210 mm (87.0 in) 2,290 mm (90.2 in) (G) (D) (N) (Sw)	
Overall Width	885 mm (34.8 in)	
Overall Height	1,230 mm (48.4 in)	
Seat Height	885 mm (34.8 in)	
Wheelbase	1,440 mm (56.7 in)	
Minimum Ground Clearance	265 mm (10.4 in)	
Basic Weight:		
With Oil and Full Fuel Tank	153 kg (337 lb)	
Minimum Turning Radius:	2,200 mm (86.6 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	Kick starter	
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	2.0 L (1.8 Imp qt, 2.1 US qt)	
With Oil Filter Replacement	2.1 L (1.9 Imp qt, 2.2 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	

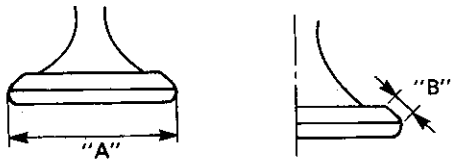
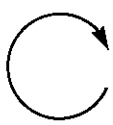
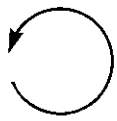
Model		XT600	
Fuel:			
Type		Regular gasoline	
Fuel Tank Capacity		13.0 L (2.9 Imp gal, 3.4 US gal)	
Fuel Reserve Amount		2.0 L (0.4 Imp gal, 0.5 US gal)	
Carburetor:			
Type/Quantity		Y27PV/1 pc.	
Manufacturer		TEIKEI	
Spark Plug:			
Type/Plug Gap		DR7ES/0.6~0.7 mm (0.024~0.028 in) DPR7EA-9/0.8~0.9 mm (0.031~0.035 in) DPR8EA-9/0.8~0.9 mm (0.031~0.035 in)	
Manufacturer		N.G.K.	
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		39/15 (2.600) .....(2KF) 40/15 (2.677) .....(2NF)	
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		27.25°	
		27.12° (This is for "4.00S18-4PR" rear tire used in Germany only.)	
Trail		109 mm (4.29 in)	
		107 mm (4.21 in) (This is for "4.00S18-4PR" rear tire used in Germany only.)	
Tire:		Except for Germany	For Germany
Type		With tube	←
Size:	Front	3.00S21-4PR	←
	Rear	4.60S18-4PR	4.00S18-4PR 4.60S18-4PR
Manufacturer:	Front	BRIDGESTONE (TW25)	←
		DUNLOP (K850A)	←
	Rear	BRIDGESTONE (TW26)	←
		DUNLOP (K850A)	←

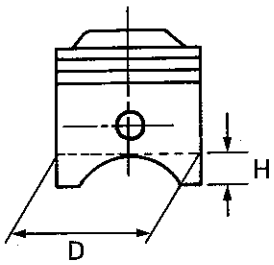
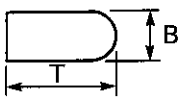
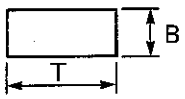
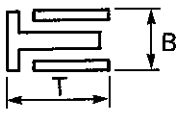
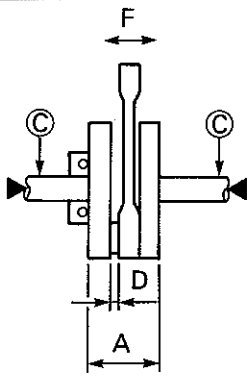
Model	XT600	
Tire Pressure (Cold tire):		
Maximum Load*	202 kg (445 lb)	
Cold Tire Pressure	Front	Rear
Up to 90 kg (198 lb) load*	150 kPa (1.5 kg/cm^2, 21 psi)	150 kPa (1.5 kg/cm^2, 21 psi)
90 kg (198 lb) ~ Maximum load*	150 kPa (1.5 kg/cm^2, 21 psi)	180 kPa (1.8 kg/cm^2, 26 psi)
Off-road riding	100 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	235 mm (9.3 in)	
Electrical:		
Ignition System	C.D.I.	
Generator System	A.C. magneto generator	
Battery Type	GM4A-3B or FB4L-B	
Battery Capacity	12V, 4AH	
Headlight Type	Quartz bulb (Halogen)	
Bulb Wattage (Quantity):		
Headlight	12V 60W/55W (1 pc.)	
Tail/Brake Light	12V 5W/21W (1 pc.)	
Flasher Light	12V 21W (4 pcs.)	
Auxiliary Light	12V 4W (1 pc.)	
	12V 3.4W (1 pc.) (E)	
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	XT600
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 in (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)
Cam Chain: Cam Chain Type Number of Links Cam Chain Adjustment Method	 75 — 010 126 Links Automatic
Rocker Arm/Rocker Arm Shaft: Rocker Arm Inside Diameter Shaft Outside Diameter Arm-to-shaft Clearance	 12.000 ~ 12.018 mm (0.472 ~ 0.473 in) 11.976 ~ 11.991 mm (0.471 ~ 0.472 in) 0.009 ~ 0.042 mm (0.0003 ~ 0.002 in)
Valve, Valve Seat, Valve Guide: Valve Clearance (Cold): Intake Exhaust	 0.07 ~ 0.12 mm (0.003 ~ 0.005 in) 0.12 ~ 0.17 mm (0.005 ~ 0.007 in)

Model	XT600	
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)	
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)	←

Model	XT600
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)
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)
	

Model	XT600	
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	
Kick Starter:		
Type	Ratchet type	
Decompression Device:		
Type	Kick synchronous	
Carburetor:	For 2KF	For 2NF
I. D. Mark	2KF 10	2KF 00
Main Jet (M.J.)		
Primary Carburetor	#125, #135 (G)	#138
Secondary Carburetor	#120	←
Main Air Jet (M.A.J.)		
Primary Carburetor	φ0.9	←
Secondary Carburetor	φ0.9	←

Model		XT600	
		For 2KF	For 2NF
Jet Needle	(J.N.)		
Primary Carburetor		5C41—4/5 5C42—3/5 (G)	5C42—3/5
Secondary Carburetor		5X74—3/5 5X74—4/5 (G)	5X74—4/5
Needle Jet	(N.J.)	φ2.6	←
Cutaway	(C.A.)	5.5	←
Pilot Outlet	(P.O.)	φ0.8	←
Pilot Jet	(P.J.)	#46, #48 (G)	#48
Bypass 1	(B.P.1)	φ1.0	←
Pilot Screw	(P.S.)	1 and 1/2 turns out 3 turns out (G)	3 turns out
Valve Seat Size	(V.S.)	φ2.5	←
Starter Jet	(G.S.)	#76	←
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	

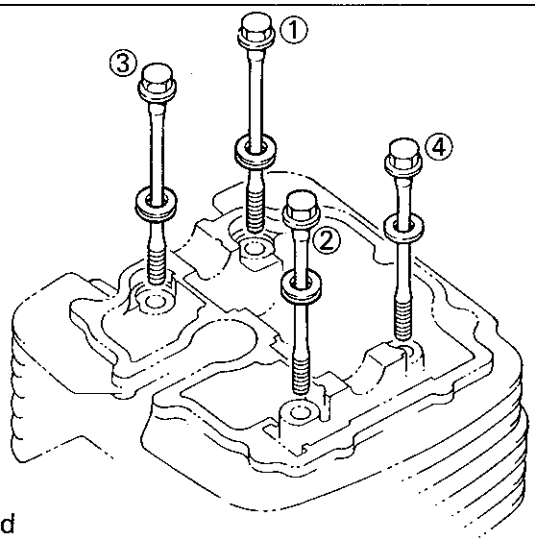
Model	XT600				
Tightening torque:					
Part to be tightened	Thread size	Tightening torque			Remarks
		Nm	m•kg	ft•lb	
Cylinder head					
Flange bolt	M8 ×1.25	29	2.9	21	
Stud bolt	M10×1.25	20	2.0	14	
Hexagon socket head bolt	M6 ×1.0	10	1.0	7.2	
Stud bolt	M6 ×1.0	7	0.7	5.1	
Spark plug	M12×1.25	18	1.8	13	
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	90	9.0	65	
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	
Decompression cam					
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	XT600				
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	
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	LT
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	
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	
Decompression lever					
Hexagon nut	M6 ×1.0	8	0.8	5.8	
Kick crank					
Hexagon bolt	M8 ×1.25	20	2.0	14	
Panhead screw	M6 ×1.0	7	0.7	5.1	
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	

Model	XT600				
Part to be tightened	Thread size	Tightening torque			Remarks
		Nm	m•kg	ft•lb	
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	
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	

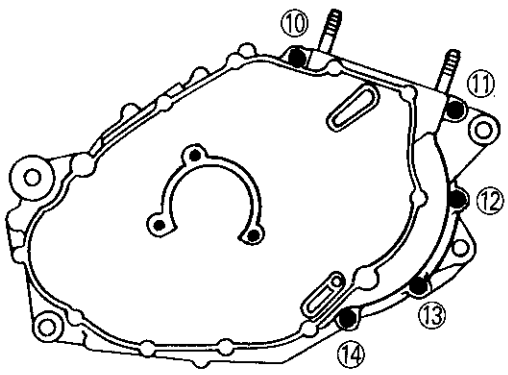
Tightening sequence:

Cylinder head

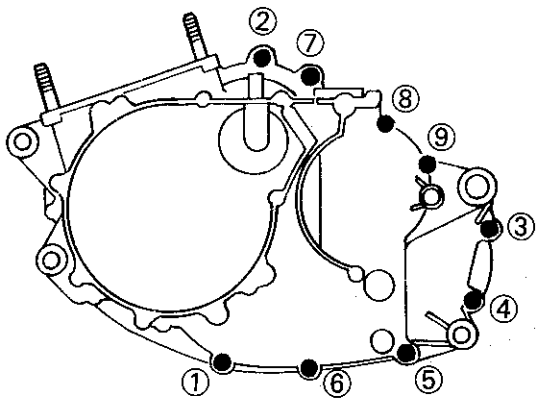


Crankcase

Right-head



Left-hand



CHASSIS

Model	XT600
Steering System:	
Bearing Type	Taper roller bearing
Front Suspension:	
Front Fork Travel	255 mm (10.0 in)
Fork Spring Free Length	414.5 mm (16.3 in)
<Minimum Free Length>	<410.0 mm (16.1 in)>
Spring Rate (K1)	4.6 N/mm (0.46 kg/mm, 25.3 lb/in)
Stroke (K1)	0.0~255.0 mm (0.0~10.04 in)
Optional Spring	No
Oil Capacity	537 cm^3 (18.9 Imp oz, 18.1 US oz)
Oil Level	140 mm (5.51 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	82 mm (3.2 in)
Spring Free Length	253.5 mm (10.0 in)
Fitting Length	241.5 mm (9.5 in)
Spring Rate (K1)	100 N/mm (10.0 kg/mm, 551 lb/in)
Stroke (K1)	0.0~82.0 mm (0.0~3.2 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	0.4~0.7 mm (0.016~0.027 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)

Model	XT600
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	520 VC/DAIDO
Number of Links	102
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. 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
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	XT600				
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	95	9.5	68	
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	
Headlight stay and lower bracket	M6 ×1.0	7	0.7	5.1	
Headlight stay and headlight	M6 ×1.0	7	0.7	5.1	
Lower bracket and front fork	M8 ×1.25	23	2.3	17	
Cap bolt (Front fork)	M38×1.0	23	2.3	17	
Damper rod and outer tube	M14×1.5	62	6.2	45	
Handlebar holder (Lower)	M10×1.25	30	3.0	22	
Cable holder (Speedometer cable)	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	5.1	
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	XT600				
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	
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	
Clamp and battery box	M6 ×1.0	5	0.5	3.6	
Relay stay and battery box	M6 ×1.0	5	0.5	3.6	
Side cover and frame	M6 ×1.0	7	0.7	5.1	
Meter/Horn/Main switch:					
Meter and handle crown	M6 ×1.0	7	0.7	5.1	
Horn and lower bracket	M6 ×1.0	7	0.7	5.1	
Main switch and handle crown	M6 ×1.0	7	0.7	5.1	

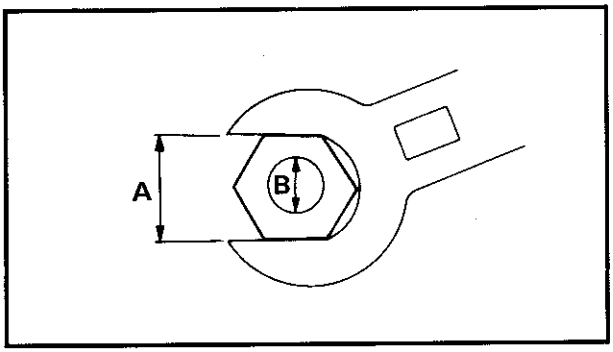
NOTE:

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.

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
Decompression camshaft	E
Rotor and rotor housing (Oil pump)	E
Kick gear, Kick gear axle	E
Kick idle gear and shaft (Kick idle gear)	E
Kick crank boss	M
Bearing (Decompression lever)	M
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

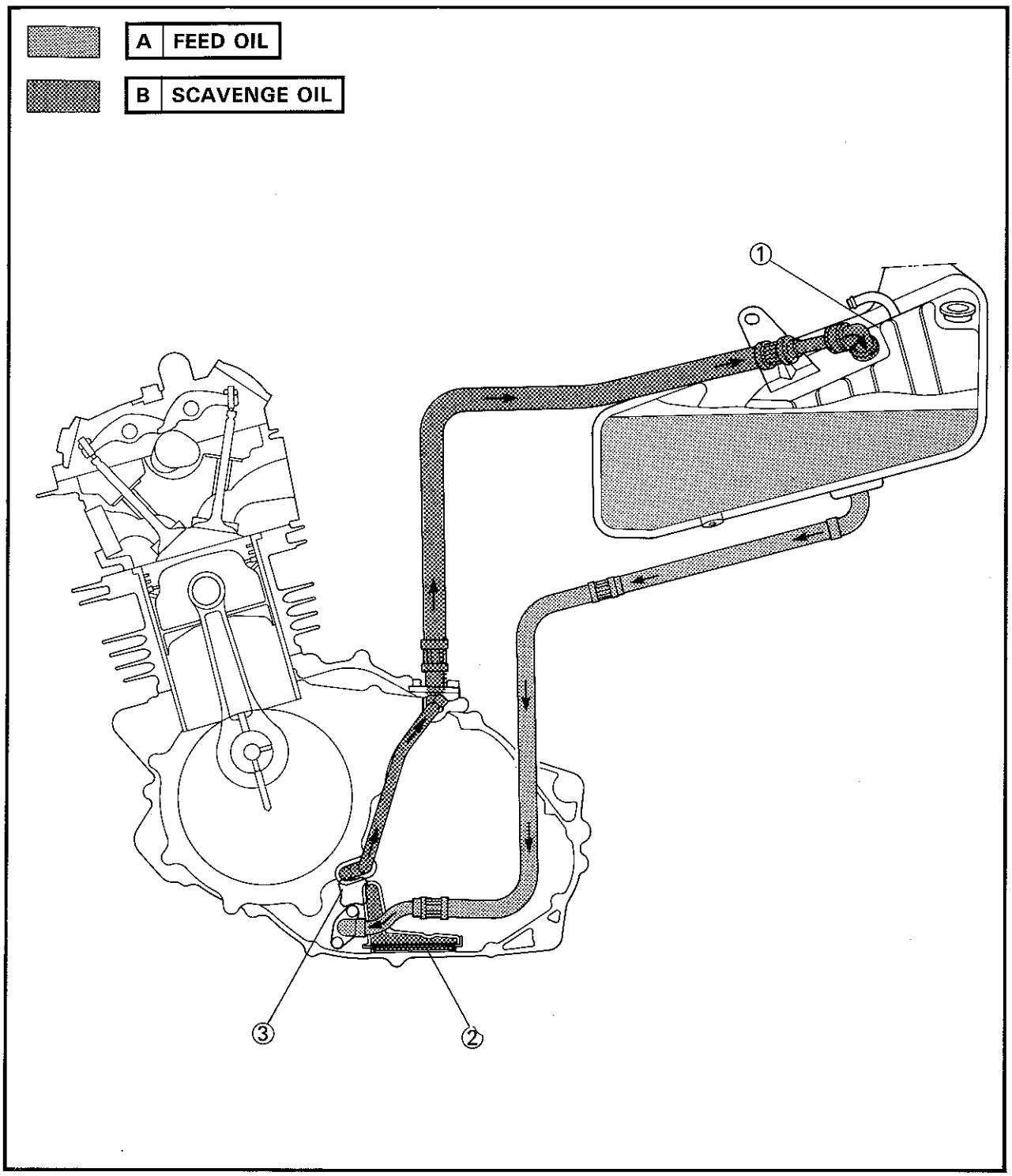
LUBRICATION POINTS AND LUBRICANT TYPE

CHASSIS

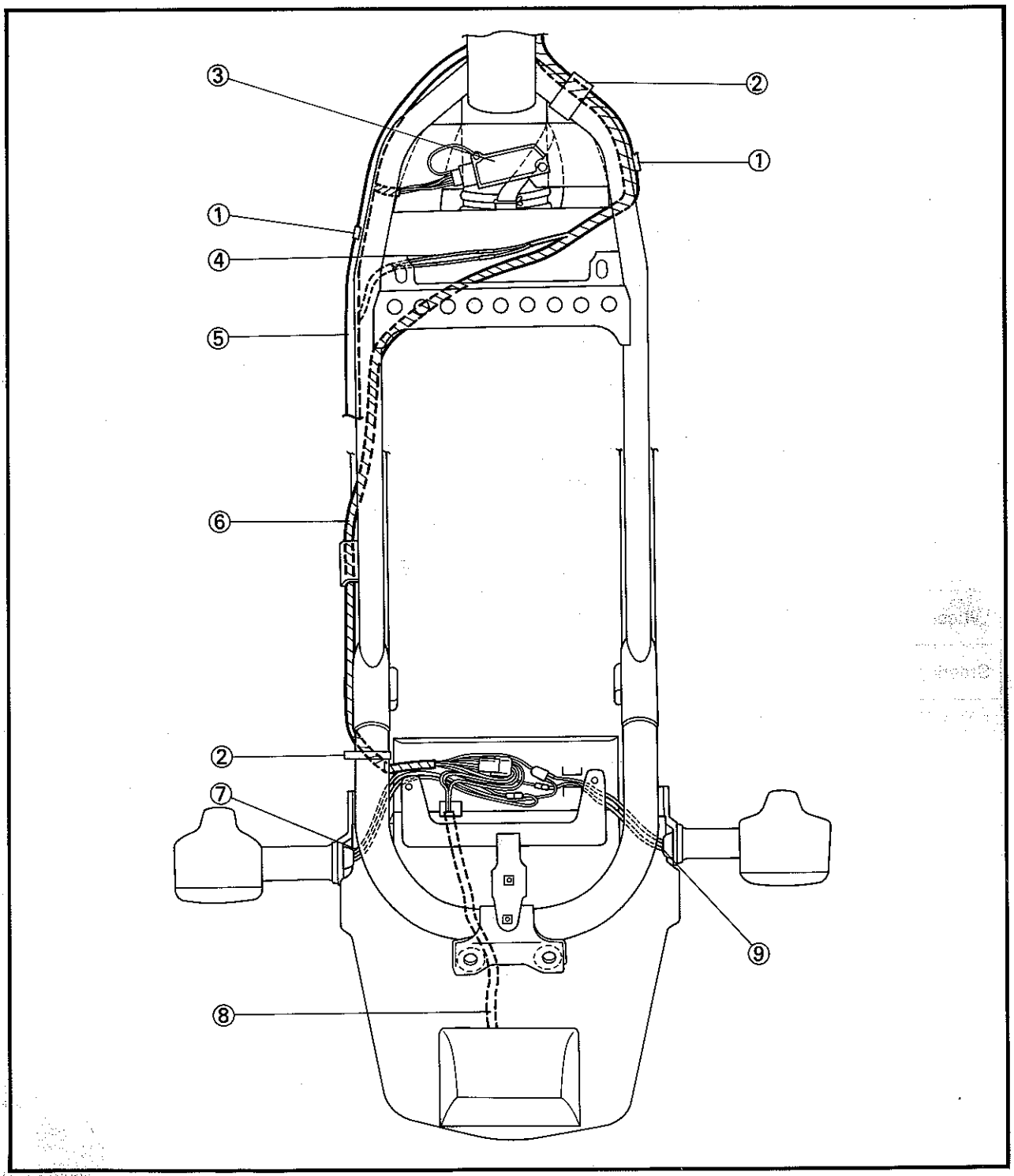
Lubrication Points (Part name)	Lubricant Type
Gear unit (Speedometer)	LS
Oil seal lips (All)	LS
Wheel axle (Front wheel and rear wheel)	LS
Rear wheel hub and clutch hub	LS
Bush (Swingarm) and thrust cover	LS
Pivot shaft (Swingarm)	LS
Bushes (Rear shock absorber)	LS
Bushes (Relay arm and connecting rod)	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



① Clamp
② Band
③ Rectifier/Regulator
④ Sidestand switch lead
⑤ Breather hose (Oil tank)
⑥ Wireharness
⑦ Flasher light lead (Left)
⑧ Taillight lead
⑨ Flasher light lead (Right)



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)

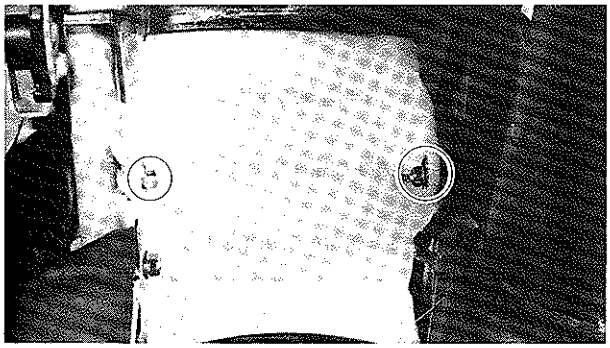
ITEM	REMARKS	BREAK-IN 1,000 (600)	EVERY 6,000 (4,000) or 6 months	EVERY 12,000 (8,000) or 12 months
Valve clearance	Check/Adjust valve clearance.	○	○	○
Spark plug	Check/Clean/Replace if necessary.	○	○	○
Air filter	Clean. Replace if necessary.		○	○
Carburetor	Check/Adjust idle speed, starter operation.	○	○	○
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.		○	○
Decompression system	Check/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	Check operation. Clean or replace if necessary.	○	○	○
Battery	Check specific gravity. Check breather pipe for proper operation.		○	○

***: Lithium base grease

NOTE:

Brake system:

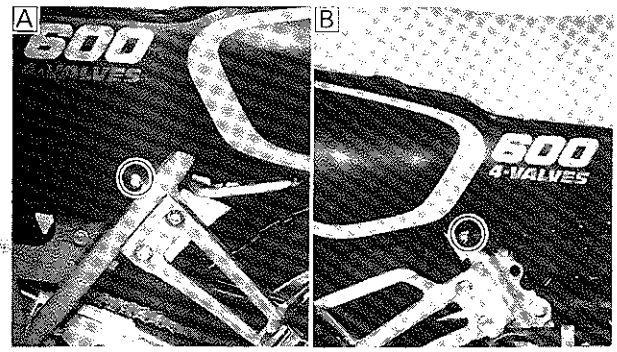
1. When disassembling the master cylinder or caliper cylinder, replace the brake fluid. Normally check the brake fluid level and add the fluid as required.
2. We recommended that, on the inner parts of the master cylinder and caliper cylinder, replace the oil seals every two years.
3. We recommended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



SEAT, FUEL TANK AND COVER

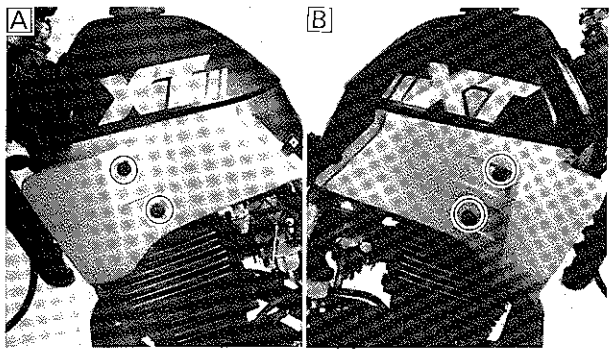
REMOVAL

1. Remove:
   • Seat



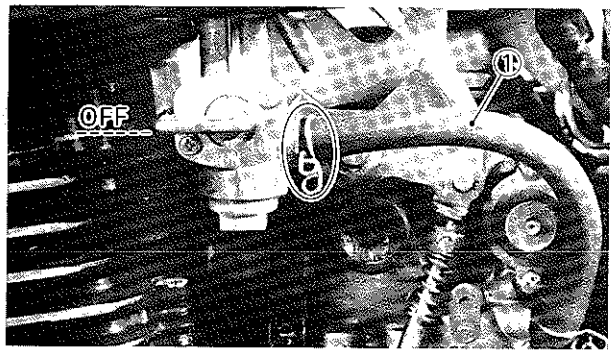
2. Remove:
   • Side cover

A Left
B Right



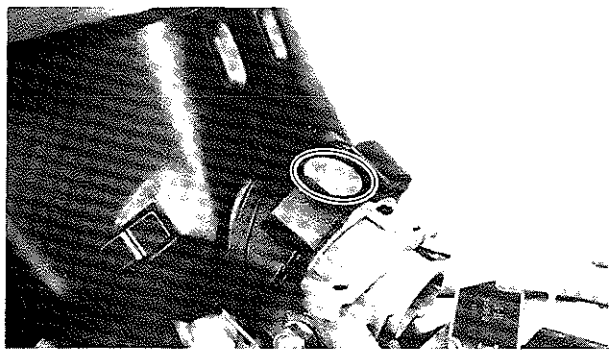
3. Remove:
   • Air scoop

A Left
B Right

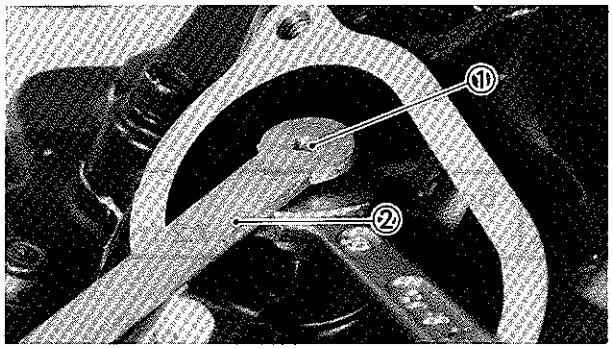


4. Turn the fuel cock to "OFF".

5. Disconnect:
   • Fuel hose ①



6. Remove:
   • Fuel tank



•Turn the adjuster ① clockwise or counter-clockwise with the Valve Adjusting Tool ② until proper clearance is obtained.

Valve Adjusting Tool:
P/N. 90890-01311

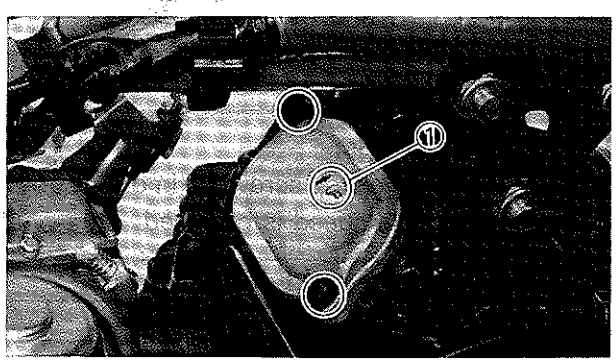
•Hold the adjuster to prevent it from moving and thoroughly tighten the locknut.

Locknut:
14 Nm (1.4 m•kg, 10 ft•lb)

•Measure the valve clearance.
•If the clearance is incorrect, repeat above steps until the proper clearance is obtained.

8. Install:
   •Plugs
   •Tappet cover (Intake)
   •Tappet cover (Exhaust)
   •Spark plug

Tappet Cover (Exhaust):
12 Nm (1.2 m•kg, 8.7 ft•lb)
Bolt (Tappet Cover—Intake):
10 Nm (1.0 m•kg, 7.2 ft•lb)
Spark Plug:
18 Nm (1.8 m•kg, 13 ft•lb)



NOTE:
The tappet cover (Intake) should be installed with the arrow mark ① upward.

9. Install:
   - Fuel tank
   - Air scoop
   - Seat

	Bolt (Seat): **10 Nm (1.0 m•kg, 7.2 ft•lb)**

CAM CHAIN ADJUSTMENT

Adjustment free.

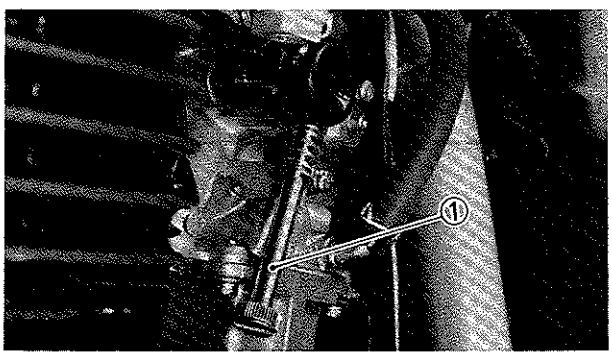
IDLE SPEED ADJUSTMENT

1. Start the engine and let it warm up.
2. Attach:
   - Engine Tachometer
     To spark plug lead.

	Engine Tachometer: **P/N. 90890-03113**

3. Check:
   - Engine idle speed
     Out of specification→Adjust.

	Engine Idle Speed: **1,250~1,350 r/min**



4. Adjust:
   - Engine idle speed

Adjustment steps:
- Turn the throttle stop screw ① in or out until specified idle speed is obtained.

Turn in	**Idle speed becomes higher.**
Turn out	**Idle speed becomes lower.**

INSP ADJ

NOTE:

After adjusting the engine idle speed, the throttle cable free play should be adjusted.

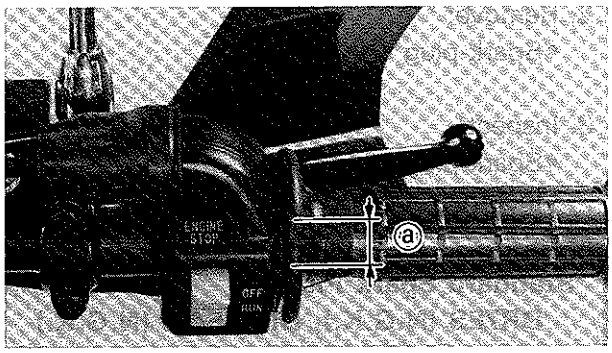
THROTTLE CABLE FREE PLAY ADJUSTMENT

NOTE:

Before adjusting the throttle cable free play, the engine idle speed should be adjusted.

1. Remove:
   - Seat
   - Air scoop
   - Fuel tank

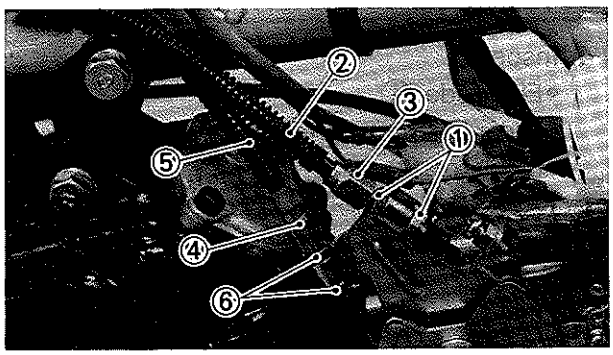
   Refer to the "SEAT, FUEL TANK AND COVER" section.



2. Check:
   - Throttle cable free play ⓐ

   Out of specification→Adjust.

Throttle Cable Free Play:
2~5 mm (0.08~0.20 in)



3. Adjust:
   - Throttle cable free play

Adjustment steps:
- Loosen the locknuts ① on the throttle cable 1 ②.
- Turn the adjuster ③ clockwise or counterclockwise until proper free play is obtained.

•If the play is still incorrect after the adjuster is loosened 5 mm (0.2 in), make an adjustment with the adjuster ④ on the throttle cable 2 ⑤.
⑥ Locknuts

•Tighten the locknuts.

4. Install:
   •Fuel tank
   •Air scoop
   •Seat

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

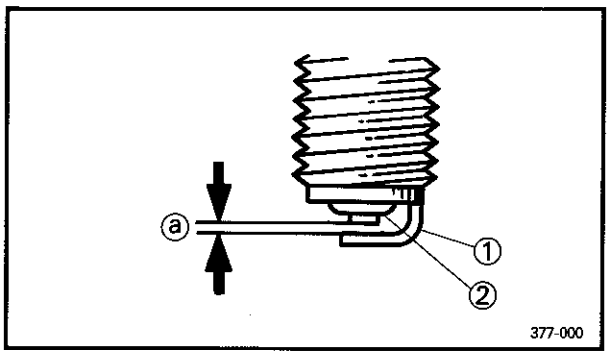
SPARK PLUG INSPECTION

1. Remove:
   •Seat
   •Air scoop
   •Fuel tank
   Refer to the "SEAT, FUEL TANK AND COVER" section.

2. Remove:
   •Spark plug

3. Inspect:
   •Spark plug type
   Incorrect→Replace.

Standard Spark Plug:
DR7ES (N.G.K.), DPR7EA-9 (N.G.K.)
DPR8EA-9 (N.G.K.)



4. Inspect:
   •Electrode ①
   Wear/Damage→Replace.
   •Insulator ②
   Abnormal color→Replace.
   Normal color is a medium-to-light tan color.

5. Clean the spark plug with a spark plug cleaner or wire brush.
6. Measure:
   • Plug gap ⓐ
   Use a Wire Gauge or Feeler Gauge.
   Out of specification → Regap.

Spark Plug Gap:
DR7ES
0.6 ~ 0.7 mm (0.024 ~ 0.028 in)
DPR7EA-9, DPR8EA-9
0.8 ~ 0.9 mm (0.031 ~ 0.035 in)

7. Tighten:
   • Spark plug
   Before installing a spark plug, clean the gasket and plug surfaces.

Spark Plug:
18 Nm (1.8 m•kg, 13 ft•lb)

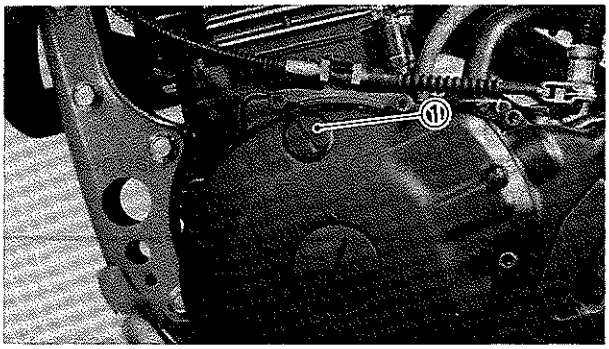
NOTE:
Finger-tighten the spark plug before torquing to specification.

8. Install:
   • Fuel tank
   • Air scoop
   • Seat

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

IGNITION TIMING CHECK

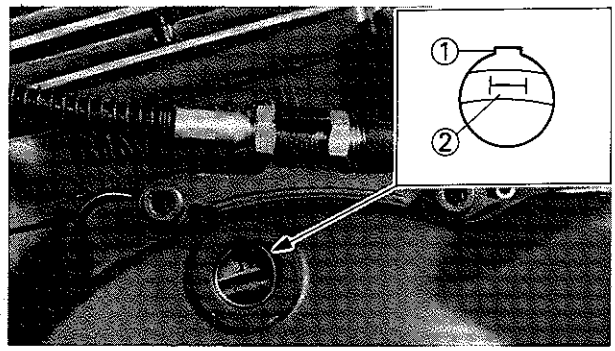
1. Start the engine and let it warm up.



2. Remove:
   • Plug ①

3. Attach:
   • Engine Tachometer
   • Timing Light
   To spark plug lead.

Engine Tachometer:
P/N. 90890-03113
Timing Light:
P/N. 90890-03109



4. Check:
   • Ignition timing

Checking steps:
• Warm up the engine and let it at the specified speed.

Engine Speed:
1,200 r/min

• Visually check the stationary pointer ① to verify it is within the required firing range ② indicated on the flywheel.
Incorrect firing range→Check timing plate and/or pickup assembly (tightness damage).

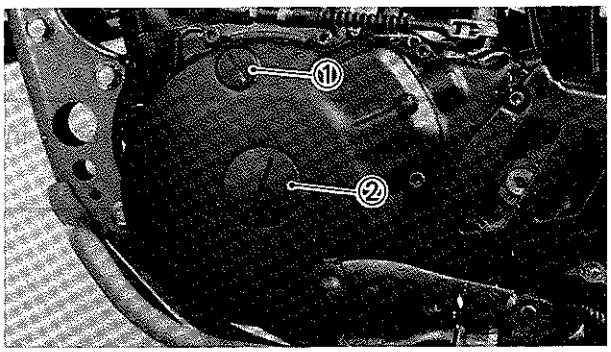
5. Install:
   • Plug
   • Fuel tank
   • Air scoop
   • Seat

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

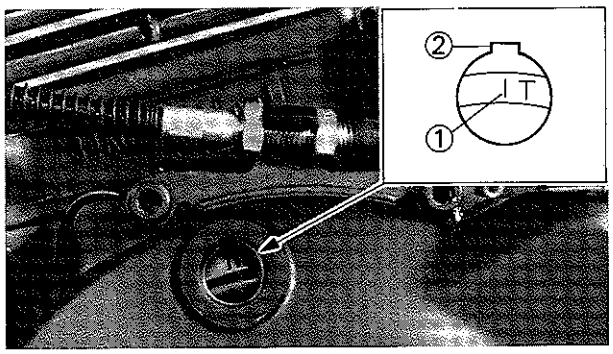
DECOMPRESSION CABLE FREE PLAY ADJUSTMENT

NOTE:

Before adjusting the decompression cable free play, the valve clearance should be adjusted.



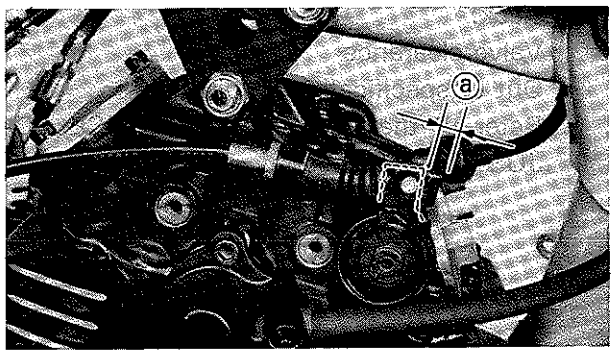
1. Remove:
   - Plug ①
   - Plug ②



2. Align the "T" mark ① on the rotor with the stationary pointer ② on the crankcase. When the "T" mark is aligned with the stationary pointer, the piston is at Top Dead Center (T.D.C.).

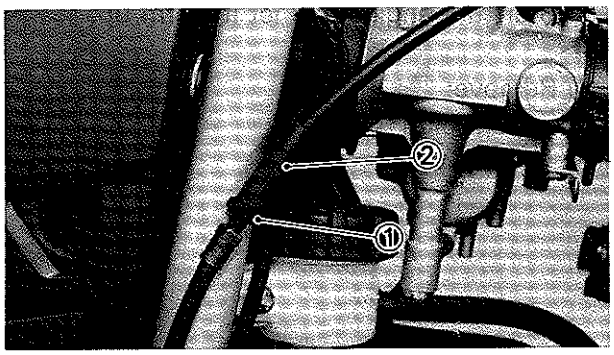
NOTE:

Be sure piston is at Top Dead Center (T.D.C.) on compression stroke when checking and adjusting free play.



3. Check:
   - Decompression cable free play ⓐ
     Out of specification→Adjust.

Decompression Cable Free Play:
0.5 mm (0.02 in)



4. Adjust:
   - Decompression cable free play

Adjustment steps:
- Loosen the locknut ①.
- Turn the adjuster ② in or out until the specified free play is obtained.



Turn in	Free play is increased.
Turn out	Free play is decreased.
•Tighten the locknut.	

5. Install:
   •Plug

COMPRESSION PRESSURE MEASUREMENT

NOTE:

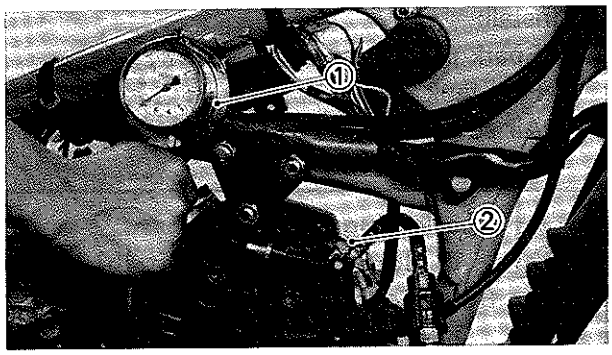
Insufficient compression pressure will result in performance loss.

1. Remove:
   •Seat
   •Air scoop
   •Fuel tank
   Refer to the "SEAT, FUEL TANK AND COVER" section.

2. Check:
   •Valve clearance
   Out of specification→Adjust.
   Refer to the "VALVE CLEARANCE ADJUSTMENT" section.

3. Start the engine and let it warm up.

4. Remove:
   •Spark plug



5. Attach:
   - Compression Gauge ①
   - Adapter ②

Compression Gauge:
P/N. 90890-03081
Adapter:
P/N. 90890-04082

6. Check:
   - Compression pressure

Checking steps:
- Crank over the engine with the kick crank with the throttle wide-open until the compression reading on the gauge stabilizes.

WARNING:

When cranking the engine, ground all of the spark plug lead to prevent sparking.

- Check readings with specified levels (See chart).

Compression Pressure (at Sea Level):
Standard:
1,100 kPa (11 kg/cm^2, 156 psi)
Minimum:
900 kPa (9 kg/cm^2, 128 psi)
Maximum:
1,200 kPa (12 kg/cm^2, 171 psi)

- If pressure falls below the minimum level:

1) Squirt a few drops of oil into the affected cylinder.
2) Measure the compression again.

Compression Pressure (with oil introduced into cylinder)	
Reading	**Diagnosis**
Higher than without oil	**Worn or damaged pistons**
Same as without oil	**Defective ring(s), valves, cylinder head gasket or piston is possible.**
Above maximum level	**Inspect cylinder head, valve surfaces, or piston crown for carbon deposits.**

7. Install:
   - Spark plug
   - Fuel tank
   - Air scoop
   - Seat

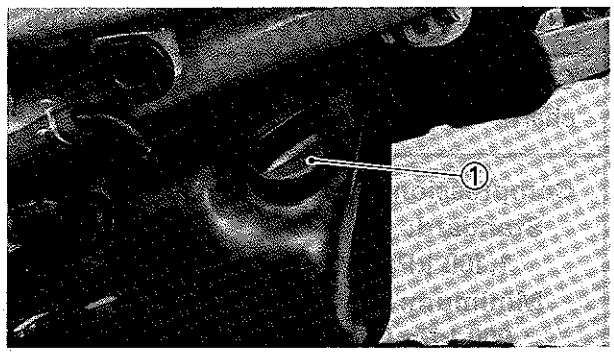
Spark Plug:
18 Nm (1.8 m•kg, 13 ft•lb)
Bolt (Seat):
10 Nm (1.0 m•kg, 7.2 ft•lb)

ENGINE OIL LEVEL INSPECTION

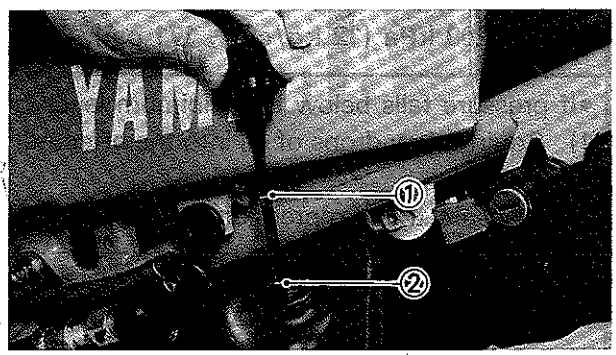
1. Place the motorcycle on a level place.

NOTE:

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



2. Remove:
   - Side cover (Left)
   - Oil tank cap ①



3. Inspect:
   - Oil level

   Oil level should be between the maximum ① and minimum ② marks.

NOTE:

When inspecting the oil level, do not screw the oil level gauge into the oil tank. Insert the gauge lightly.

Oil level is incorrect→Add the oil up to the minimum level.

CAUTION:

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

Recommended Oil:
SAE 20W40 Type SE Motor Oil or SAE 10W30 Type SE Motor Oil

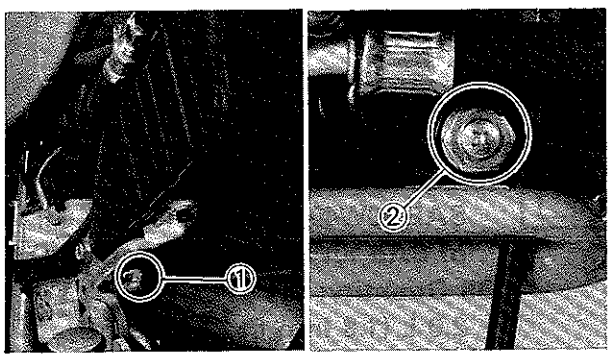
4. Start the engine and warm up until the oil temperature rises to approximately 60°C (140°F).

5. Idle the engine more than 10 seconds while keeping the motorcycle upright. Then stop the engine and add the 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).

6. Install:
   - Oil tank cap
   - Side cover (Left)

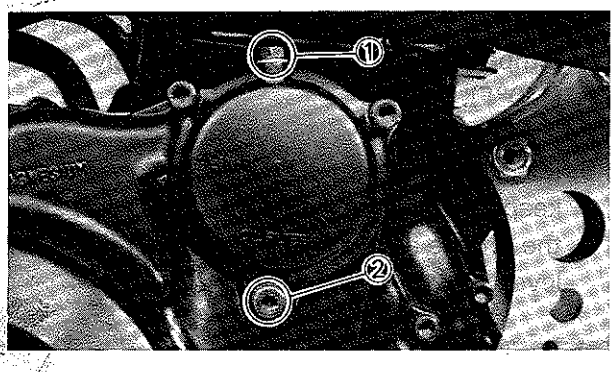


ENGINE OIL REPLACEMENT

Engine Oil Replacement (Without Oil Filter)

1. Warm up the engine for several minutes, then place a receptacle under the drain bolts.
2. Remove:
   - Oil tank cap
   - Drain bolt ① (Oil tank)
   - Drain bolt ② (Crankcase)

3. Drain:
   - Engine oil



4. Remove:
   - Air bleed screw ①
   - Bolt ② (Oil filter cover)

NOTE:

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

5. Inspect:
   - Gasket (Each)
     Damage→Replace.

6. Install:
   - Bolt (Oil filter cover)
   - Air bleed screw
   - Drain bolt (Oil tank)
   - Drain bolt (Crankcase)

Bolt (Oil 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)
Drain Bolt (Oil Tank):
18 Nm (1.8 m•kg, 13 ft•lb)
Drain Bolt (Crankcase):
30 Nm (3.0 m•kg, 22 ft•lb)

7. Fill:
   - Oil tank
   - Crankcase

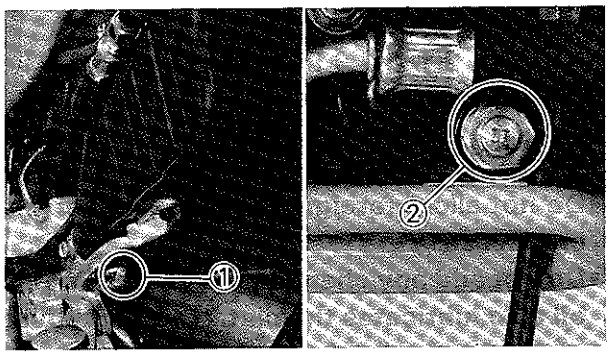
Recommended Oil:
SAE 20W40 Type SE Motor Oil
or SAE 10W30 Type SE Motor Oil
Oil Quantity:
2.0 L (1.8 Imp qt, 2.1 US qt)

CAUTION:

- **Do not allow foreign material to enter the crankcase.**
- **Do not add any chemical additives. Engine oil also lubricates the clutch and additives could cause clutch slippage.**

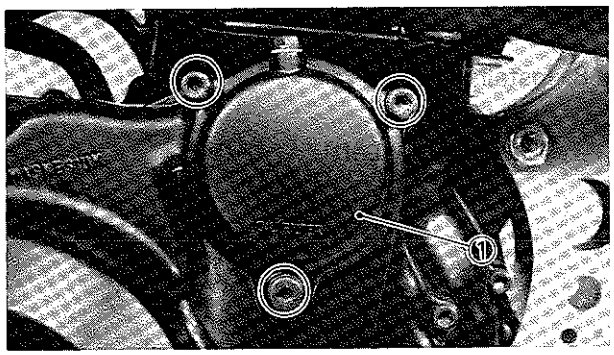
8. Install:
   - Oil tank cap
   - Side cover (Left)

9. Inspect:
   - Oil level
     Refer to the "ENGINE OIL LEVEL INSPECTION" section.
   - Oil pressure
     Refer to the "OIL PRESSURE INSPECTION" section.
   - Oil leaks



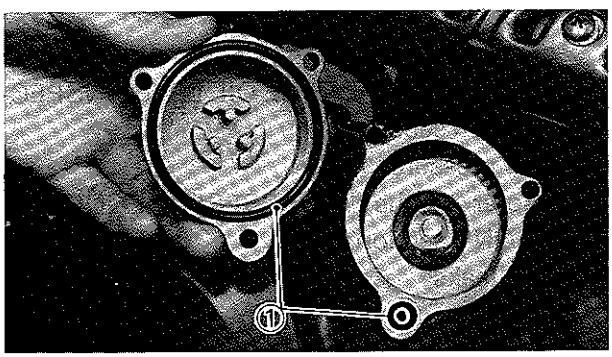
Engine Oil Replacement (with Oil Filter)

1. Warm up the engine for several minutes, then place a receptacle under the drain bolts.
2. Remove:
   - Oil tank cap
   - Drain bolt ① (Oil tank)
   - Drain bolt ② (Crankcase)



3. Drain:
   - Engine oil

4. Remove:
   - Oil filter cover ①
   - Oil filter



5. Inspect:
   - Gasket (Each)
   - O-ring ①
     Damage→Replace.

6. Install:
   - Oil filter
   - Oil filter cover
   - Drain bolt (Crankcase)
   - Drain bolt (Oil tank)



Bolt (Oil Filter Cover):
10 Nm (1.0 m•kg, 7.2 ft•lb)
Drain Bolt (Oil Tank):
18 Nm (1.8 m•kg, 13 ft•lb)
Drain Bolt (Crankcase):
30 Nm (3.0 m•kg, 22 ft•lb)

7. Fill:
   - Oil tank
   - Crankcase



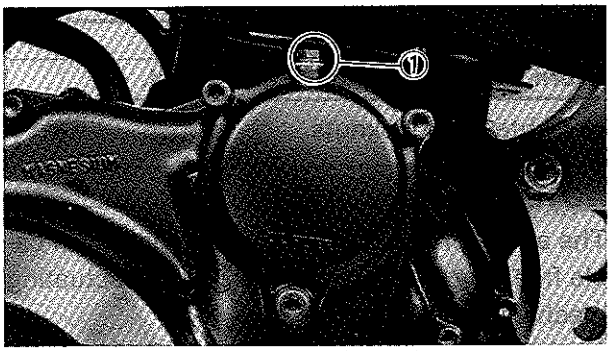
Recommended Oil:
SAE 20W40 Type SE Motor Oil
or SAE 10W30 Type SE Motor Oil
Oil Quantity:
2.1 L (1.9 Imp qt, 2.2 US qt)

CAUTION:

- **Do not allow foreign material to enter the crankcase.**
- **Do not add any chemical additives. Engine oil also lubricates the clutch and additives could cause clutch slippage.**

8. Install:
   - Oil tank cap
   - Side cover (Left)

9. Inspect:
   - Oil level
     Refer to the "ENGINE OIL LEVEL INSPECTION" section.
   - Oil pressure
     Refer to the "OIL PRESSURE INSPECTION" section.
   - Oil leaks



OIL PRESSURE INSPECTION

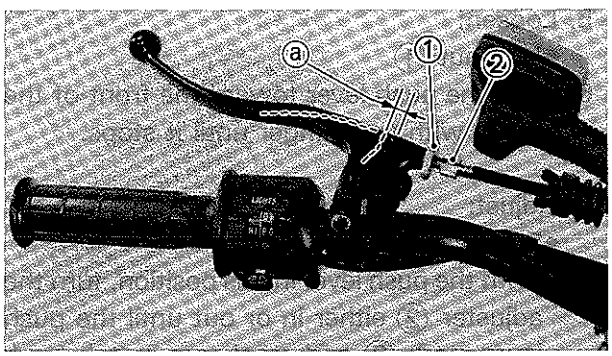
1. Remove:
   - Air bleed screw ①
2. Start the engine and keep it idling for several minutes.
3. Inspect:
   - Oil condition of the bleed hole
     Oil flows out→Oil pressure is good.
     No oil comes out→Oil pressure is bad.

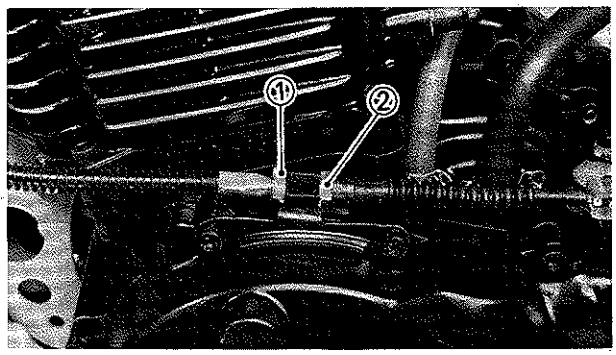
CAUTION:

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

4. Tighten:
   - Air bleed screw

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





CLUTCH ADJUSTMENT

Cable Free Play Adjustment

1. Check:
   - Clutch cable free play ⓐ
     Out of specification→Adjust.

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

2. Adjust:
   - Clutch cable free play

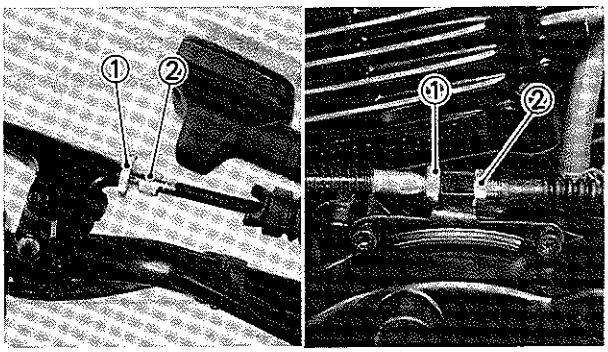
Adjustment steps:
- Loosen the locknuts ①.
- Turn the adjusters ② in or out until the specified free play is obtained.

Turn in	**Free play is increased.**
Turn out	**Free play is decreased.**

•Tighten the locknuts.

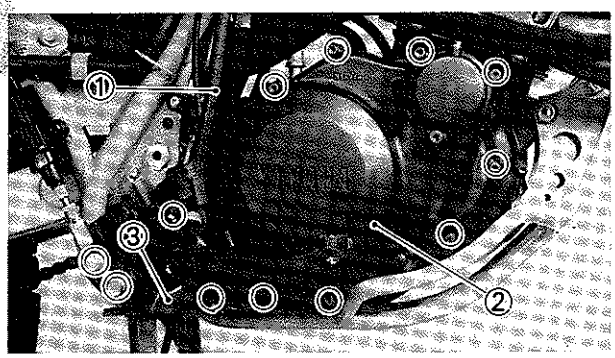
NOTE:

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

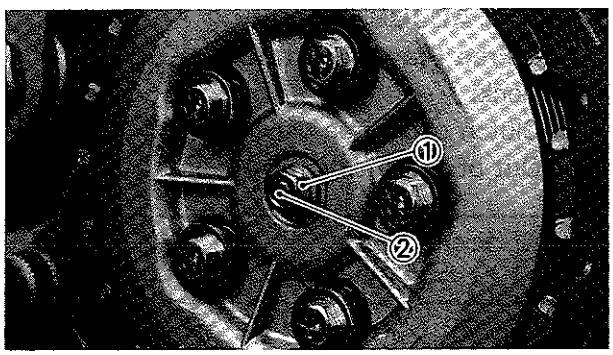


Mechanism Adjustment

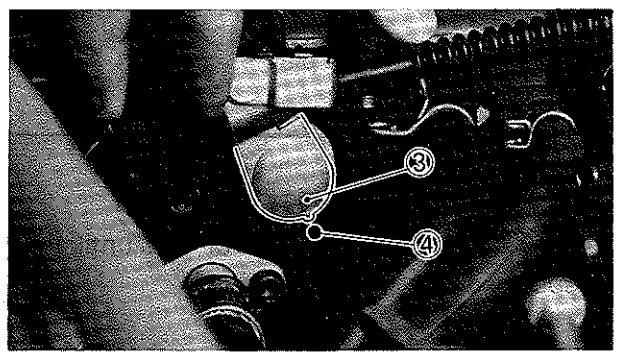
1. Loosen:
   •Locknut ①
2. Tighten:
   •Adjuster ②



3. Drain:
   •Engine oil
   Refer to the "ENGINE OIL REPLACEMENT" section.
4. Remove:
   •Kick crank ①
   •Crankcase cover ② (Right)
   •Footrest ③ (Right)



5. Loosen:
   •Locknut ①
6. Push the push lever toward the front of the engine with your finger until it stops.
7. Adjust:
   •Free play
   With the push lever in this position, turn the adjuster ② either in or out until the push lever mark ③ and crankcase match mark ④ are aligned.
8. Tighten:
   •Locknut



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

9. Install:
   - Crankcase cover (Right)
   - Kick crank

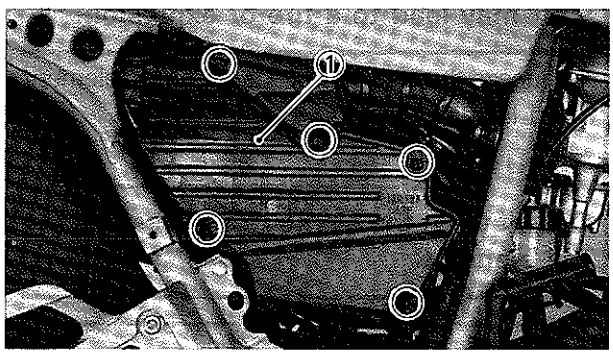
	Screw (Crankcase Cover): **10 Nm (1.0 m•kg, 7.2 ft•lb)** **Bolt (Kick Crank):** **20 Nm (2.0 m•kg, 14 ft•lb)**

10. Fill:
    - Oil tank
    - Crankcase

    Refer to the "ENGINE OIL REPLACEMENT" section.

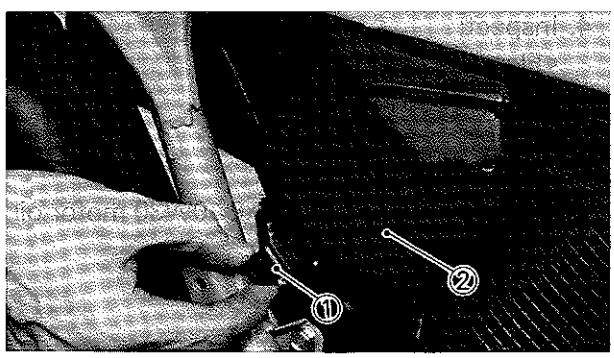
11. Adjust:
    - Clutch cable free play

    Refer to the "Cable Free Play Adjustment" section.



AIR FILTER CLEANING

1. Remove:
   - Side cover (Right)
   - Filter case cover ①



2. Remove:
   - Set plate ①
   - Air filter element ②

CAUTION:

Never operate the engine with the air filter element removed. This will allow unfiltered air to enter, causing rapid wear and possible engine damage. Additionally, operation without the filter element will affect carburetor tuning with subsequent poor performance and possible engine overheating.

3. 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 element. Such solvent may lead to a fire or explosion.

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

CAUTION:

Do not twist the element when squeezing the element.

4. Inspect:
   - Element
     Damage→Replace.

5. Apply:
   - Foam-air-filter oil or SAE 10W30 motor oil
     Onto the element.

6. Squeeze out the excess oil.

NOTE:

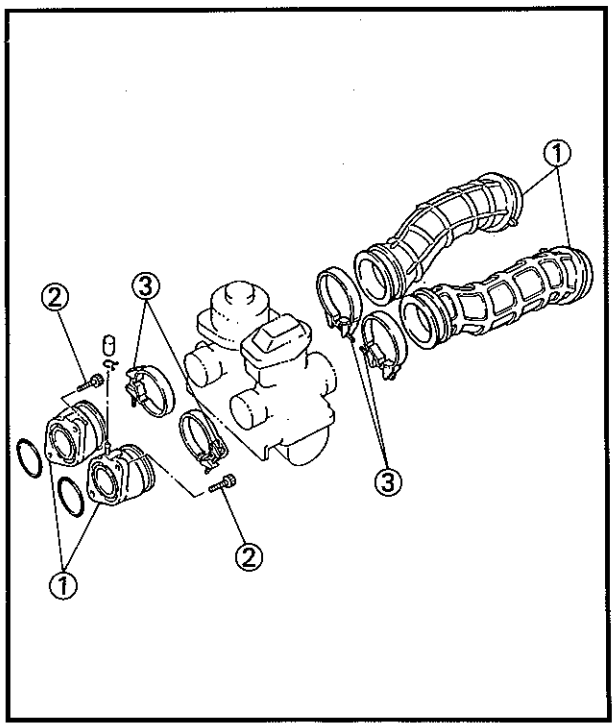
The element should be wet but not dripping.

7. Install:
   - Air filter element
   - Set plate

NOTE:

When installing the element in its case, be sure its sealing surface matches the sealing surface of the case so there is no air leak.

8. Install:
   - Filter case cover
   - Side cover (Right)

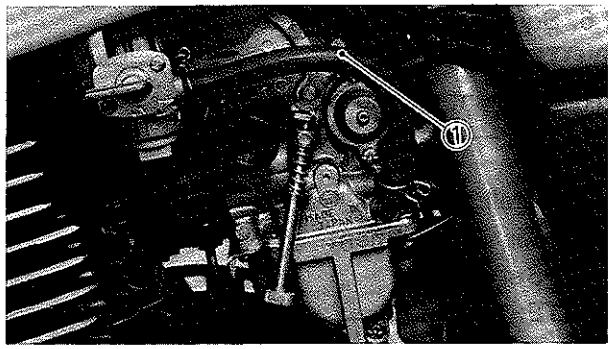


CARBURETOR JOINT INSPECTION

1. Remove:
   - Side cover (Right)

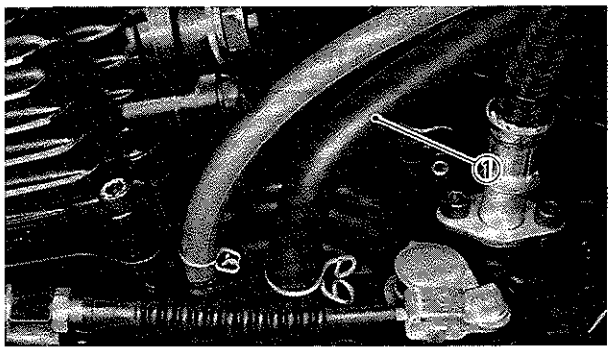
2. Inspect:
   - Carburetor joint ①
     Crack/Damage→Replace.

Bolt ② (Carburetor Joint):
10 Nm (1.0 m•kg, 7.2 ft•lb)
Screw ③ (Clamp):
2 Nm (0.2 m•kg, 1.4 ft•lb)



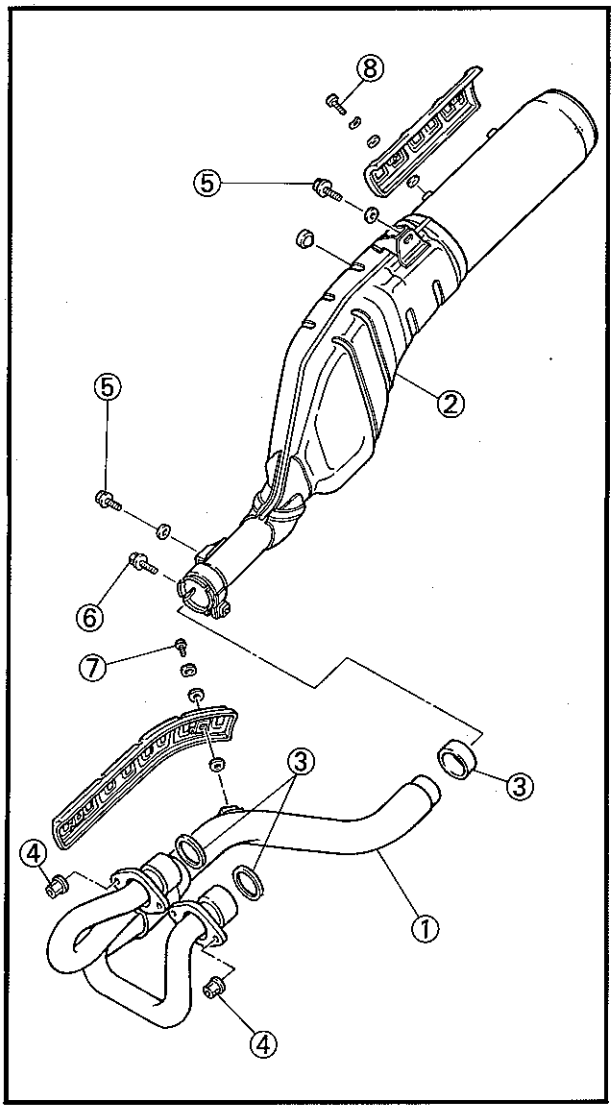
FUEL LINE INSPECTION

1. Inspect:
   - Fuel hose ①
     Crack/Damage→Replace.



CRANKCASE VENTILATION HOSE INSPECTION

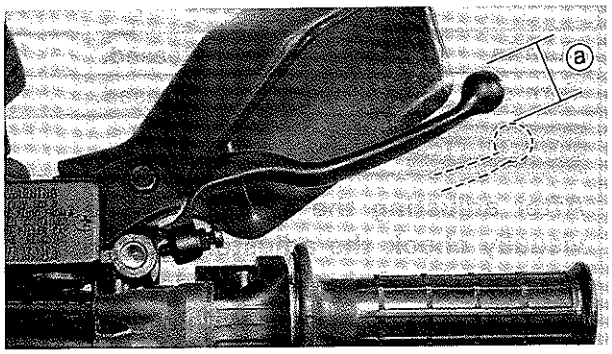
1. Inspect:
   - Crankcase ventilation hose ①
     Crack/Damage→Replace.

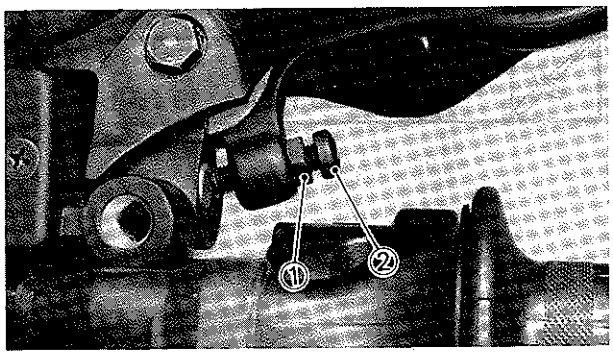


EXHAUST SYSTEM INSPECTION

1. Inspect:
   - Exhaust pipe ①
   - Muffler ②
     Crack/Damage→Replace.
   - Gasket ③
     Exhaust gas leaks→Replace.

Nut ④ (Exhaust Pipe):
10 Nm (1.0 m•kg, 7.2 ft•lb)
Bolt ⑤ (Muffler):
40 Nm (4.0 m•kg, 29 ft•lb)
Bolt ⑥ (Clamp):
20 Nm (2.0 m•kg, 14 ft•lb)
Screw ⑦ (Protector):
7 Nm (0.7 m•kg, 5.1 ft•lb)
Use LOCTITE®.
Screw ⑧ (Protector):
7 Nm (0.7 m•kg, 5.1 ft•lb)
Use LOCTITE®.





CHASSIS

FRONT BRAKE ADJUSTMENT

1. Check:
   - Brake lever free play ⓐ
     Out of specification→Adjust.

Free Play:
2~5 mm (0.08~0.20 in)

2. Adjust:
   - Brake lever free play

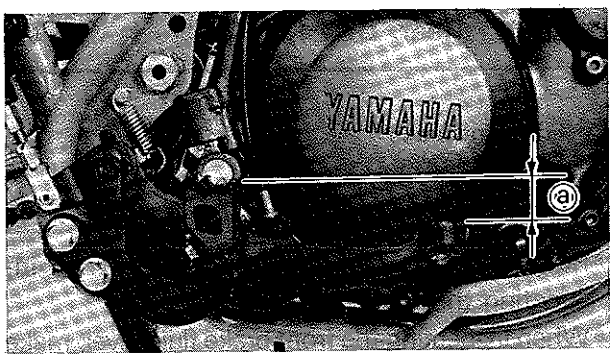
Adjustment steps:
- Loosen the locknut ①.
- Turn the adjuster ② in or out until the specified free play is obtained.

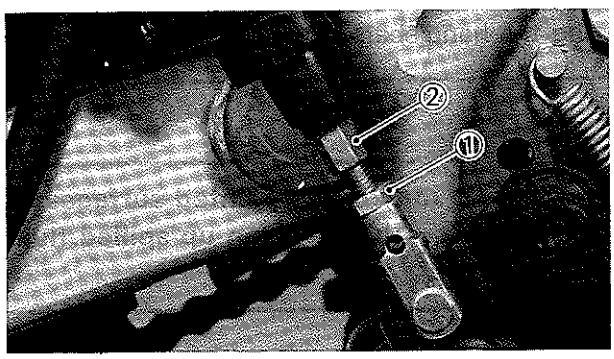
Turn in	**Free play is decreased.**
Turn out	**Free play is increased.**

- Tighten the locknut.

CAUTION:

Proper lever free play is essential to avoid excessive brake drag.





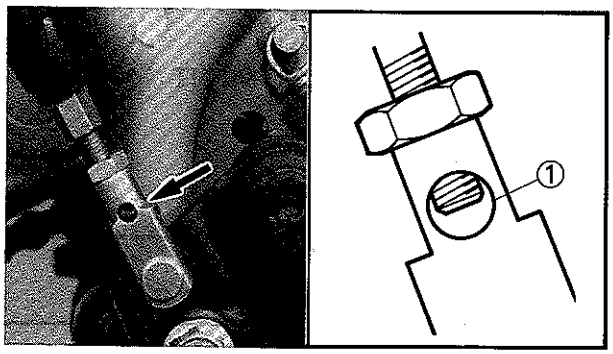
REAR BRAKE ADJUSTMENT

1. Check:
   - Brake pedal height ⓐ
     Out of specification→Adjust.

Brake Pedal Height:
5~10 mm (0.2~0.4 in)
Below Top of Footrest.

2. Adjust:
   - Brake pedal height

Adjustment steps:
- Loosen the locknut ①
- Turn the adjuster ② in or out until the specified pedal height is obtained.



Turn in	Pedal height is increased.
Turn out	Pedal height is decreased.

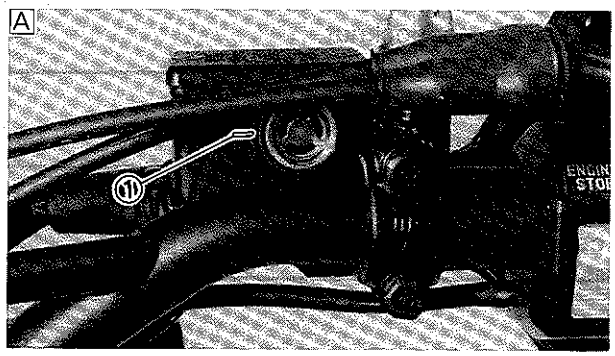
WARNING:

After adjusting the brake pedal height, visually check the adjuster end through the hole ① of the joint holder. The adjuster end must appear within this hole.

- Tighten the locknut.

Locknut:
26 Nm (2.6 m•kg, 19 ft•lb)

A



B



BRAKE FLUID INSPECTION

1. Place the motorcycle on a level surface.

2. Inspect:
   - Brake fluid level
     Fluid level is under "LOWER" level line ①→Replenish.

Recommended Brake Fluid:
Front: DOT No. 3
Rear: DOT No. 4

A For front brake
B For rear brake

NOTE:

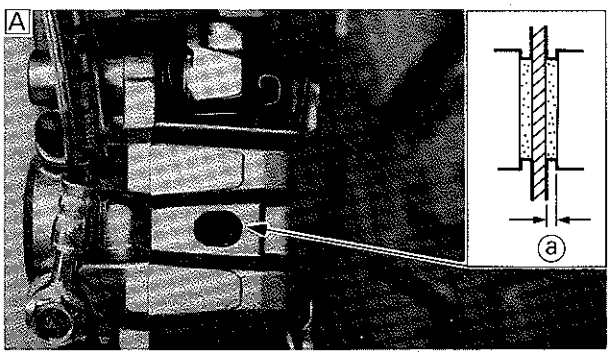
- Position the motorcycle straight up when inspecting the brake fluid level.
- When inspecting the front brake fluid level, make sure the master cylinder top is horizontal by turning the handlebars.

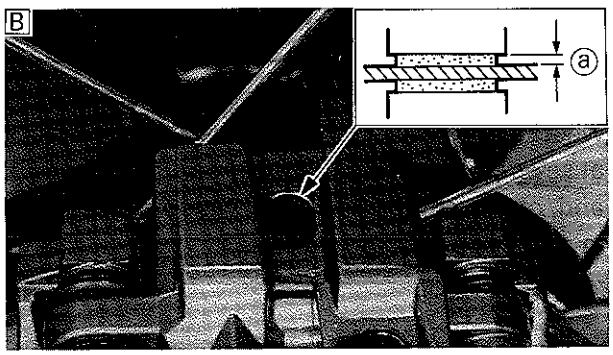
CAUTION:

Brake fluid may erode painted surfaces or plastic parts. Always clean up spilled fluid immediately.

WARNING:

- **Use only the designated quality brake fluid: otherwise, the rubber seals may deteriorate, causing leakage and poor brake performance.**
- **Refill with the same type of brake fluid; mixing fluids may result in a harmful chemical reaction and lead to poor performance.**
- **Be careful that water does not enter the master cylinder when refilling. Water will significantly lower the boiling point of the fluid and may result in vapor lock.**





BRAKE PAD INSPECTION

1. Activate the brake lever or brake pedal.
2. Check:
   - Pad thickness ⓐ
     Out of specification→Replace.

Wear Limit:
0.8 mm (0.031 in)

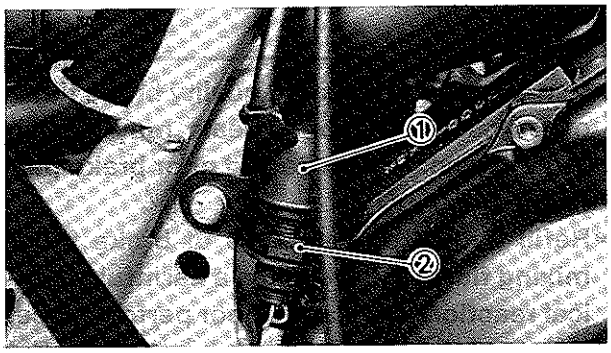
Refer to the "BRAKE PAD REPLACEMENT" section in the CHAPTER 6 for replacement.

A Front brake
B Rear brake

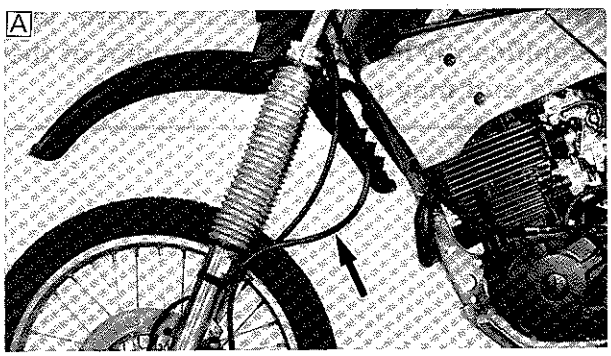
BRAKE LIGHT SWITCH ADJUSTMENT

NOTE:

The brake light switch is operated by movement of the brake pedal.
Proper adjustment is achieved when the brake light comes on just before the brake begins to take effect.

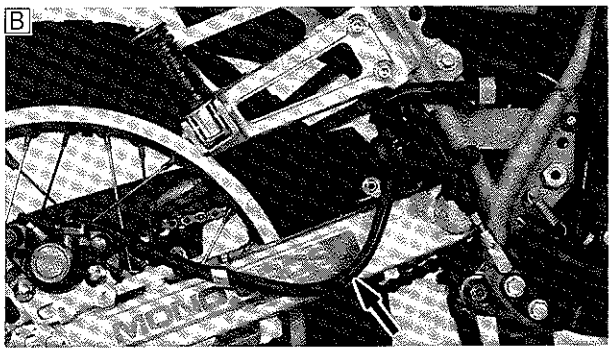


1. Hold the switch body ① with your hand so that it does not rotate and turn the adjusting nut ②.



BRAKE HOSE INSPECTION

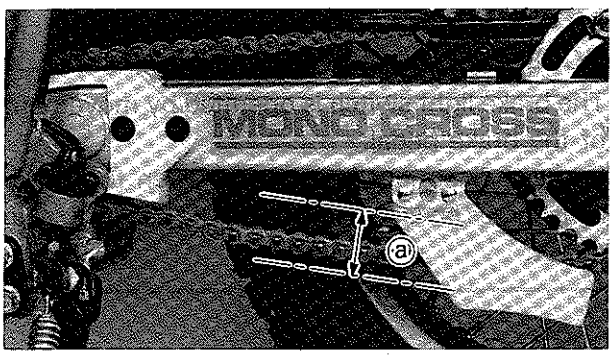
1. Inspect:
   - Brake hose
     Crack/Damage→Replace.
     Refer to the "FRONT AND REAR BRAKE" section in the CHAPTER 6 for replacement.



DRIVE CHAIN SLACK ADJUSTMENT

NOTE:

Before checking and/or adjusting, rotate the rear wheel through several revolutions and check slack at several points to find the tightest point. Check and/or adjust the chain slack with the rear wheel in this "tightest" position.



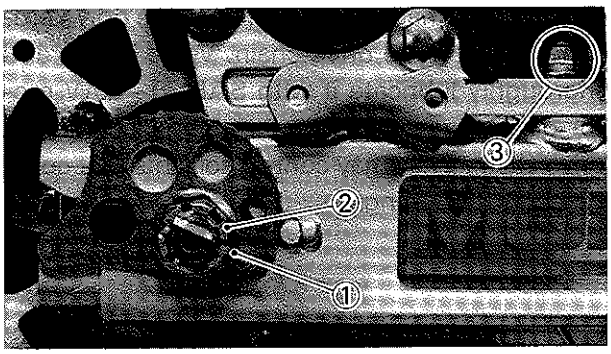
1. Check:
   - Drive chain slack ⓐ
     Out of specification→Adjust.

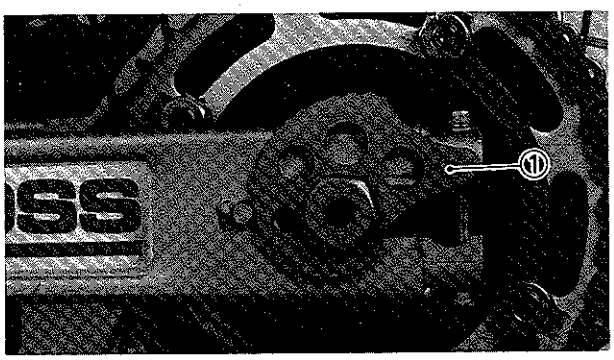
Drive Chain Slack:
30~40 mm (1.18~1.57 in)

NOTE:

To check the chain slack, the motorcycle must stand vertically with its both wheels on the ground and without a rider.

2. Adjust:
   • Drive chain slack





Adjustment steps:

CAUTION:

Too small chain slack will overload the engine and other vital parts; keep the slack within the specified limits.

• Remove the cotter pin ① and loosen the axle nut ②.

• Loosen the bolt ③ (Caliper bracket).

• Turn the chain puller ① clockwise or counterclockwise until the specified slack is obtained.

NOTE:

Turn each chain puller exactly the same amount to maintain correct axle alignment. (There are marks on each side of swingarm and on each chain puller; use them to check for proper alignment).

• Tighten the axle nut and bolt (Caliper bracket).

Axle Nut:
90 Nm (9.0 m•kg, 65 ft•lb)
Bolt (Caliper Bracket):
45 Nm (4.5 m•kg, 32 ft•lb)

• Install the cotter pin

WARNING:

Always use a new cotter pin on the axle nut.

DRIVE CHAIN LUBRICATION

The chain consists of many parts which work against each other. If the chain is not maintained properly, it will wear out rapidly, therefore, form the habit of periodically servicing the chain. This service is especially necessary when riding in dusty conditions.

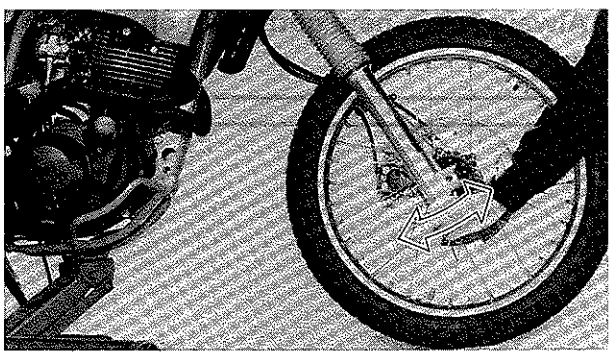
This motorcycle has a drive chain with small rubber O-rings between the chain plates. Steam cleaning, high-pressure washes, and certain solvents can damage these O-rings. Use only kerosene to clean the drive chain. Wipe it dry, and thoroughly lubricate it with SAE 30~50W motor oil. Do not use any other lubricants on the drive chain. They may contain solvents that could damage the O-rings.

STEERING HEAD ADJUSTMENT

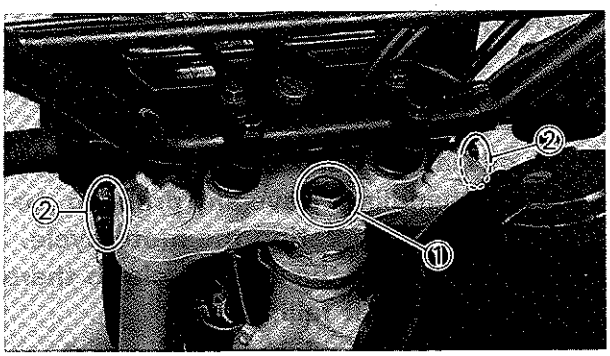
WARNING:

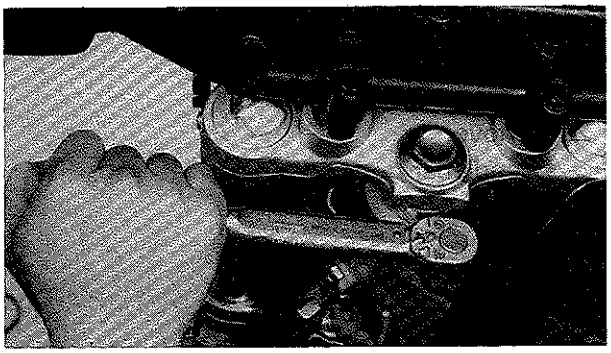
Securely support the motorcycle so there is no danger of it falling over.

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



2. Check:
   - Steering assembly bearings
     Grasp the bottom of the forks and gently rock the fork assembly back and forth.
     Looseness→Adjust steering head.





3. Adjust:
   • Steering head

Adjustment steps:
• Loosen the bolt ① (Steering shaft) and bolt ② (Handle crown).

• Tighten the ring nut using the Ring Nut Wrench.

Ring Nut Wrench:
90890-01403

NOTE:
Set the torque wrench to the ring nut wrench so that they form a right angle.

Ring Nut (Initial Tightening):
38 Nm (3.8 m•kg, 27 ft•lb)

• Loosen the ring nut one turn.
• Retighten the ring nut using the Ring Nut Wrench.

WARNING:
Avoid over-tightening.

Ring Nut (Final Tightening):
6 Nm (0.6 m•kg, 4.3 ft•lb)

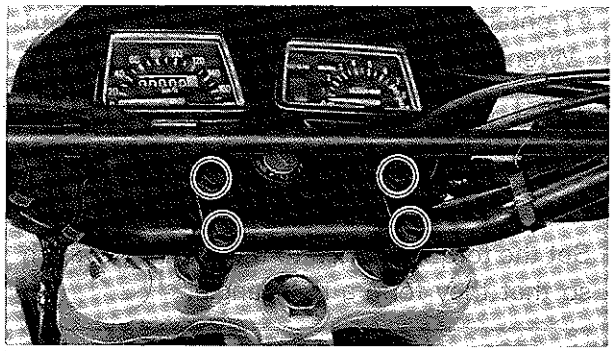
• Tighten the bolt (Steering shaft) and bolt (Handle crown).

Bolt (Steering Shaft):
95 Nm (9.5 m•kg, 68 ft•lb)
Bolt (Handle Crown):
23 Nm (2.3 m•kg, 17 ft•lb)

FRONT FORK OIL REPLACEMENT

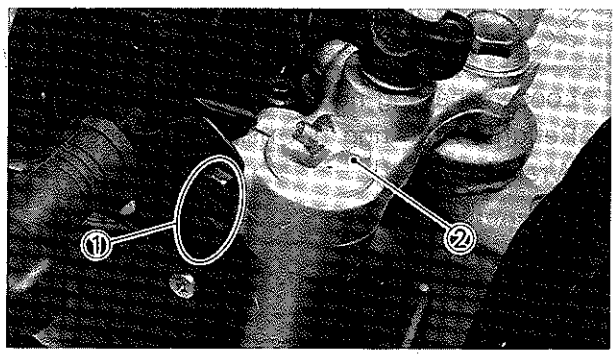
WARNING:

•Fork oil leakage can cause loss of stability and safe handling. Have any problem corrected before operating the motorcycle.
•Securely support the motorcycle so there is no danger of it falling over.



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

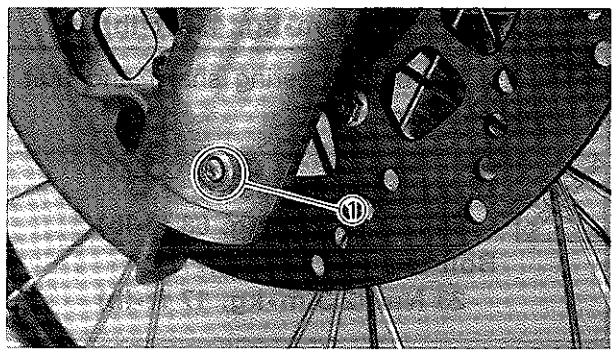
2. Remove:
   •Handlebar



3. Keep the valve open by pressing it for several seconds so that the air can be let out of the inner tube.

4. Loosen:
   •Bolt ① (Handle crown)

5. Remove:
   •Cap bolt ②



6. Place an open container under the drain hole.

7. Remove:
   •Drain screw ①

WARNING:

Do not let oil contact the disc brake components. If any oil should contact the brake components, it must be removed before the motorcycle is operated. Oil will cause diminished braking capacity and will damage the rubber components of the brake assembly.

8. After most of the oil has been drained, slowly pump the forks up and down to remove any remaining oil.

9. Inspect:
   - O-ring (Cap bolt)
   - Gasket (Drain screw)

   Damage→Replace.

10. Install:
    - Drain screw
    - Gasket (Drain screw)

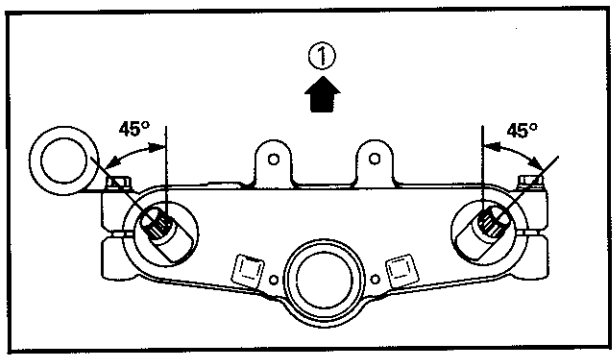
11. Fill:
    - Fork oil

Front Fork Oil Capacity (Each Fork):
537 cm³ (18.9 Imp oz, 18.2 US oz)
Recommended Oil:
Fork Oil 10W or Equivalent

12. After filling, slowly pump the forks up and down to distribute the oil.

13. Install:
    - Cap bolt

Cap Bolt:
23 Nm (2.3 m•kg, 17 ft•lb)

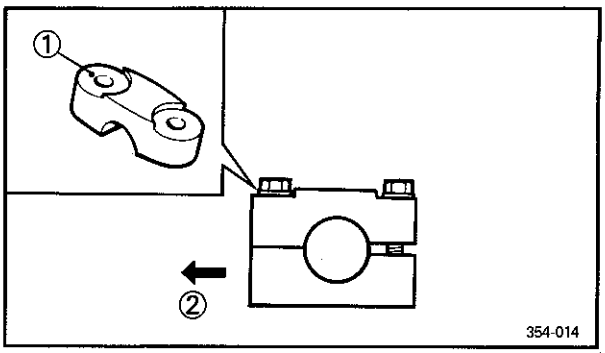


NOTE:

If the air valve does not face as shown, loosen the pinch bolts on the under bracket and reset the forks in the following procedure:

a. Level the top of the inner fork tube with the top of the steering crown.
b. Face the air valve as shown.

① Forward



14. Tighten:
    • Bolt (Handle crown)

	Bolt (Handle Crown): **23 Nm (2.3 m•kg, 17 ft•lb)**

15. Install:
    • Handlebar

	Bolt (Handlebar): **20 Nm (2.0 m•kg, 14 ft•lb)**

NOTE:

The upper handlebar holder should be installed with the punched mark ① forward.

② Forward

CAUTION:

First tighten the bolts on the front side of the handlebar holder, and then tighten the bolts on the rear side.

16. Adjust:
    • Air pressure
    Refer to the "FRONT FORK ADJUSTMENT" section.

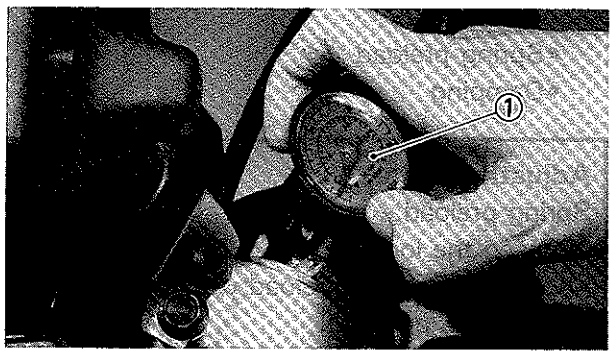
FRONT FORK ADJUSTMENT

NOTE:

The air pressure of the front forks can be adjusted to suit rider's preferance, weight, and the course conditions.

WARNING:

Always adjust each air pressure to the same setting. Uneven adjustment can cause poor handling and loss of stability.



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

NOTE:

When checking and adjusting the air pressure, there should be no weight on the front end of the motorcycle.

2. Check:
   - Air pressure
     Out of specification→Adjust.
     Use air check gauge ①.

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

3. Adjust:
   - Air pressure

Adjustment steps:
- Remove the valve cap.

Use an air pump or pressurized air supply.	**Increase the air pressure.**
Release the air by pushing the valve.	**Decrease the air pressure.**

CAUTION:

Never exceed the maximum pressure, or oil seal damage may occur.

WARNING:

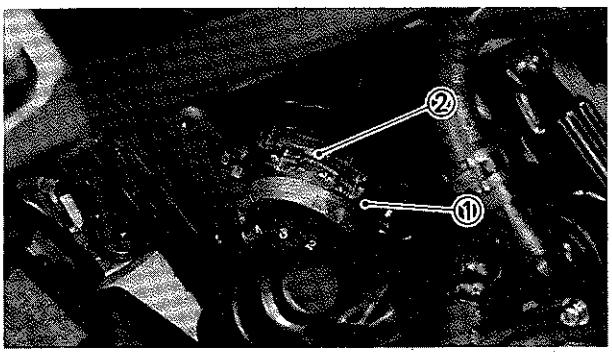
The difference between both the left and right tubes should be 10 kPa (0.1 kg/cm^2, 1.4 psi) or less.

- Install the valve cap securely.

REAR SHOCK ABSORBER ADJUSTMENT

NOTE:

The spring preload and damping of the rear shock absorber can be adjusted to suit rider's preferance, weight, and the course conditions.



1. Adjust:
   - Spring preload
   - Damping

Adjustment steps:

Spring preload

- Loosen the locknut ①.
- Adjust the spring preload with the adjuster ② (spring preload).

Turn the adjuster clockwise.	**Increase the spring preload.**
Turn the adjuster counterclockwise.	**Decreased the spring preload.**

Standard Length:
239 mm (9.4 in)
Minimum Length:
228.5 mm (9.0 in)
Maximum Length:
248.5 mm (9.8 in)

NOTE:

- When adjusting, use the special wrench which is included in the owner's tool kit.
- The length of the spring (installed) changes 1 mm (0.04 in) per turn of the adjuster.

CAUTION:

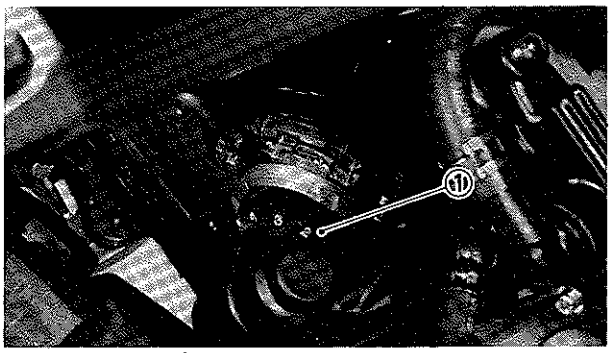
Never attempt to turn the adjuster beyond the maximum or minimum setting.

- Tighten the locknut.

Locknut:
70 Nm (7.0 m•kg, 50 ft•lb)

CAUTION:

Always tighten the locknut against the spring adjuster and torque the locknut to specification.



Adjustment steps:

Damping

- Adjust the damping with the damping adjuster ①.

	Hard		S.T.D.	Soft	
Adjuster position	5	4	3	2	1

CAUTION:

Never attempt to turn the adjuster beyond the maximum or minimum setting.

RECOMMENDED COMBINATIONS OF THE FRONT FORK AND THE REAR SHOCK ABSORBER SETTINGS

Use this table as a guide for specific riding and motorcycle load conditions.

	Front fork	Rear shock absorber		Loading condition	
	Air pressure	Spring length	Damping adjuster	Solo rider	With passenger
1.	0~40 kPa (0~0.4 kg/cm^2, 0~5.7 psi)	239 mm (9.4 in)	1~3	○	
2.	0~40 kPa (0~0.4 kg/cm^2, 0~5.7 psi)	234 mm (9.2 in)	4~5		○

TIRE INSPECTION

WARNING:

Tire inflation pressure should be checked and adjusted when the temperature of the tire equals the ambient air temperature. Tire inflation pressure must be adjusted according to total weight of cargo, rider, passenger, and accessories (fairing, saddlebags, etc. if approved for this model), and vehicle speed.

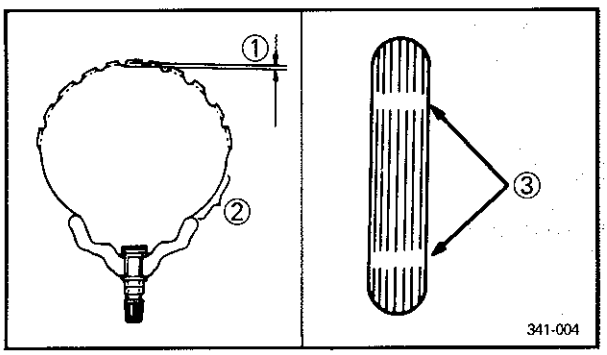
1. Check:
   - Tire pressure
     Out of specification→Adjust.

Basic weight: With oil and full fuel tank	153 kg (337 lb)	
Maximum load*	202 kg (445 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)
High speed riding	150 kPa (1.5 kg/cm^2, 21 psi)	150 kPa (1.5 kg/cm^2, 21 psi)
Off-road riding	100 kPa (1.0 kg/cm^2, 14 psi)	100 kPa (1.0 kg/cm^2, 14 psi)

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

2. Adjust:
   • Air pressure

Adjustment steps:	
• Remove the valve cap.	
Use an air pump or pressurized air supply.	Increase the air pressure.
Release the air by pushing the valve.	Decrease the air pressure.
• Install the valve cap securely.	



3. Inspect:
   • Tire surfaces
   Wear/Damage → Replace.

Minimum Tire Tread Depth:
(Front and Rear)
1.0 mm (0.04 in)

① Tread depth
② Side wall
③ Wear indicator

WARNING:

• It is dangerous to ride with a wornout tire. When a tire tread begins to show lines, replace the tire immediately.
• Patching a punctured tube is not recommended. If it is absolutely necessary to do so, use great care and replace the tube as soon as possible with a good quality replacement.

WHEEL INSPECTION

1. Inspect:
   • Wheels
   Damage/Bends → Replace.

NOTE:

Always balance the wheel when a tire or wheel has been changed or replaced.

WARNING:

Never attempt even small repairs to the wheel.

2. Tighten:
   • Valve stem locknut

	**1.5 Nm (0.15 m•kg, 1.1 ft•lb)**

WARNING:

Ride conservatively after installing a tire to allow it to seat itself properly on the rim.

CABLE INSPECTION AND LUBRICATION

WARNING:

Damaged cable sheath may cause corrosion and interfere with the cable movement. An unsafe condition may result so replace such cable as soon as possible.

1. Inspect:
   • Cable sheath
   Damage → Replace.

2. Check:
   • Cable operation
   Unsmooth operation → Lubricate.

Recommended Lubricant:
SAE 10W30 Motor Oil

NOTE:
Hold cable end high and apply several drops of lubricant to cable.

LEVER AND PEDAL LUBRICATION

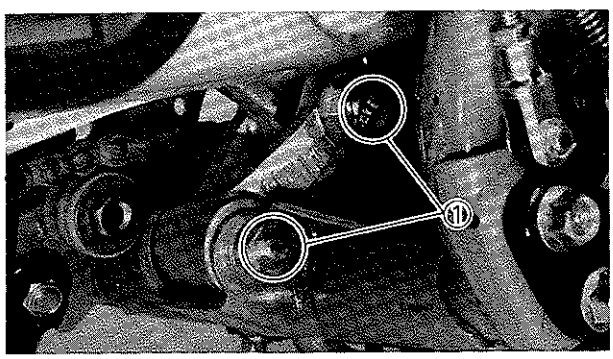
Lubricate pivoting parts of each lever and pedal.

Recommended Lubricant:
SAE 10W30 Motor Oil

SIDESTAND LUBRICATION

Lubricate the sidestand at pivot points.

Recommended Lubricant:
SAE 10W30 Motor Oil

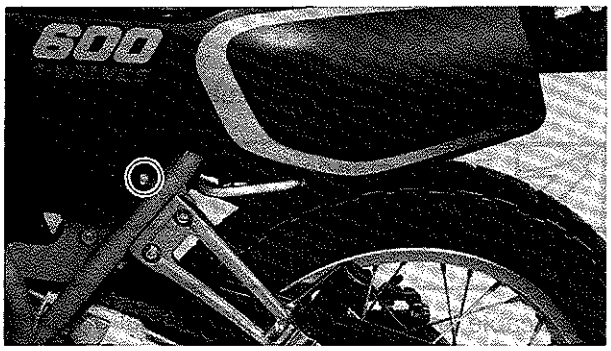


SWINGARM AND RELAY ARM LUBRICATION

Lubricate the swingarm and relay arms at their pivoting points.

Light Weight Lithium Soap Base Grease

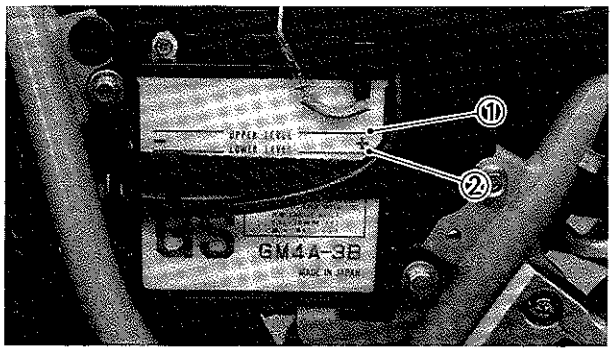
① Grease nipple



ELECTRICAL

BATTERY INSPECTION

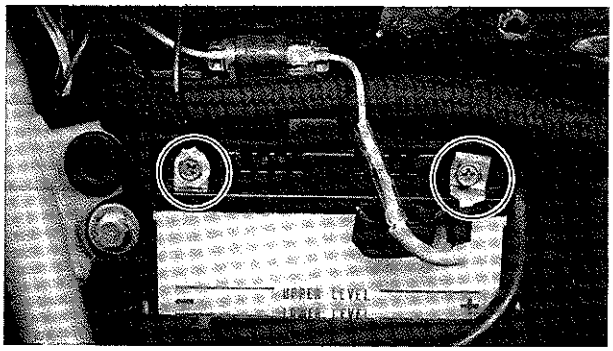
1. Remove:
   - Side cover (Left)



2. Inspect:
   Fluid level should be between upper ① and lower ② level marks.
   Incorrect→Refill.

CAUTION:

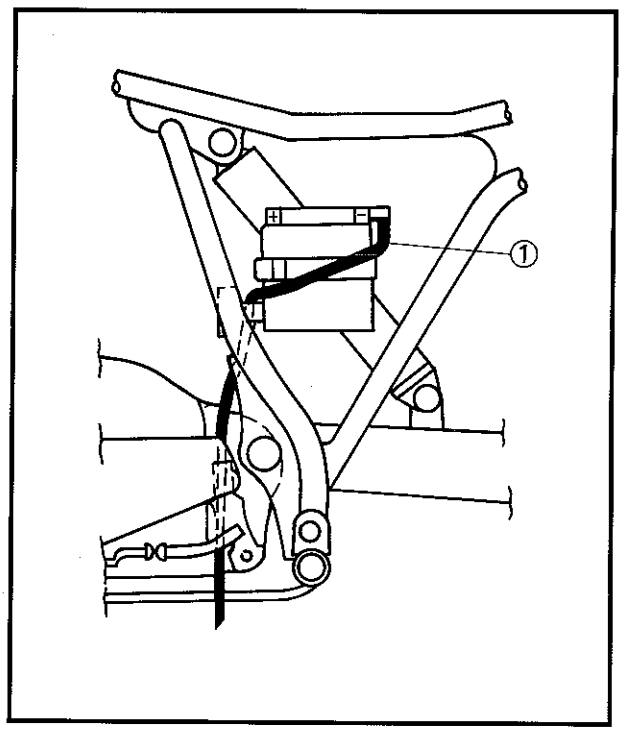
Refill with distilled water only; tap water contains minerals harmful to a battery.



3. Inspect:
   - Battery terminal
     Dirty terminal→Clean with wire brush.
     Poor connection→Correct.

NOTE:

After cleaning the terminals, apply grease lightly to the terminals.

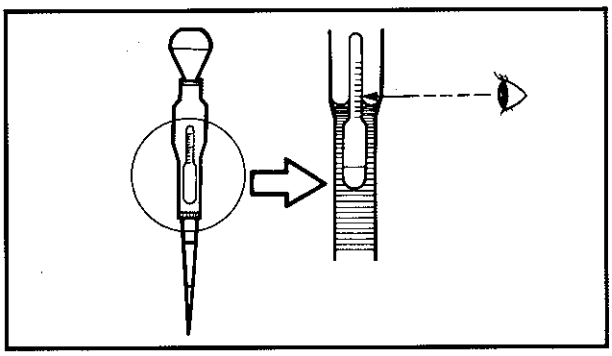


4. Connect:
   - Breather pipe ①
     Be sure the hose is properly attached and routed.

5. Inspect:
   • Breather pipe
     Obstruction → Remove.
     Damage → Replace.

CAUTION:

When inspecting the battery, be sure the breather pipe is routed correctly. If the breather pipe 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.



6. Check:
   • Specific gravity
     Less than 1.280 → Recharge battery.

Charging Current:
0.4 amps/10 hrs
Specific Gravity:
1.280 at 20°C (68°F)

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.

CAUTION:

Always charge a new battery before using it to ensure maximum performance.

INSP ADJ



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 severe burns or permanent eye injury.**
- **Wear protective eye gear when handling or working near batteries.**

Antidote (EXTERNAL):

- **SKIN—Flush with water.**
- **EYES—Flush with water for 15 minutes and get immediate medical attention.**

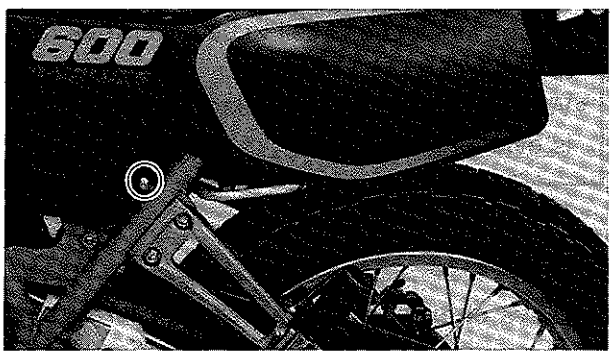
Antidote (INTERNAL):

- **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:

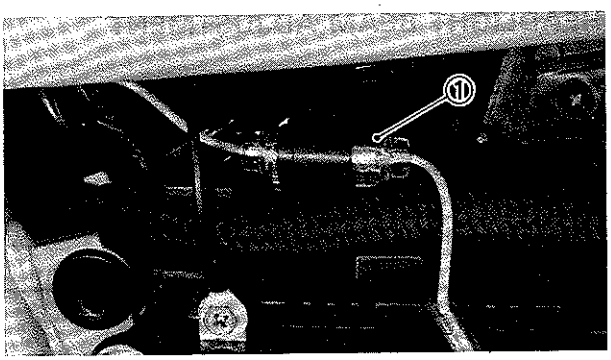
- **Charge batteries in a well-ventilated area.**
- **Keep batteries away from fire, sparks, or open flames (e.g., welding equipment, lighted cigarettes, etc.)**
- **DO NOT SMOKE When charging or handling batteries.**

KEEP BATTERIES AND ELECTROLYTE OUT OF REACH OF CHILDREN.

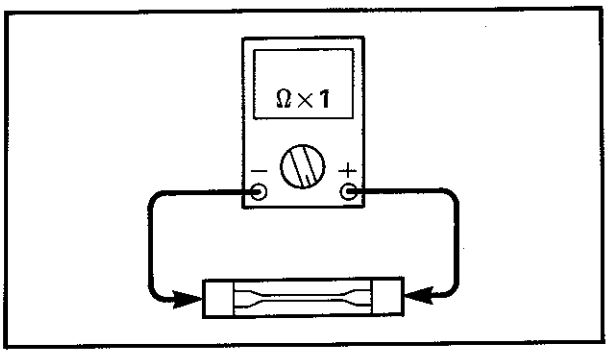


FUSE INSPECTION

1. Remove:
   - Side cover (Left)



2. Remove:
   • Fuse ①



3. Inspect:
   • Fuse

Inspection steps:
• Connect the Pocket Tester to the fuse and check it for continuity.

NOTE:
Set the tester selector to "Ω×1" position.

Pocket Tester:
90890-03112

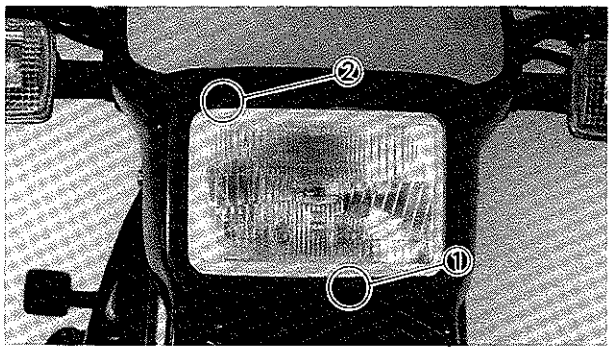
• If the tester is indicated at ∞. The fuse is blown, replace it.

4. Replace:
   • Blown fuse

Blown fuse replacement steps:
• Turn off ignition and the circuit.
• Install a new fuse of proper amperage.
• Turn on switches to verify operation of electrical device.
• If fuse blows immediately again, check circuit in question.

WARNING:

Do not use fuses of higher amperage rating than recommended. Extensive electrical system damage and fire could result from substitution of a fuse of improper amperage.



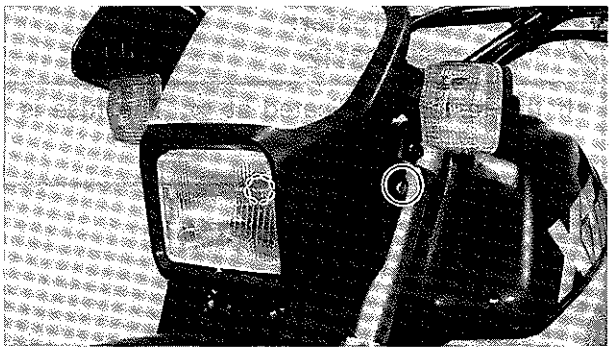
HEADLIGHT BEAM ADJUSTMENT

1. Adjust:
   - Headlight beam (Vertical)

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

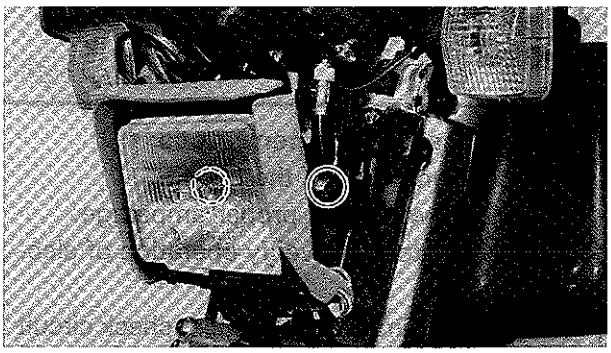
2. Adjust
   - Headlight beam (Horizontal)

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

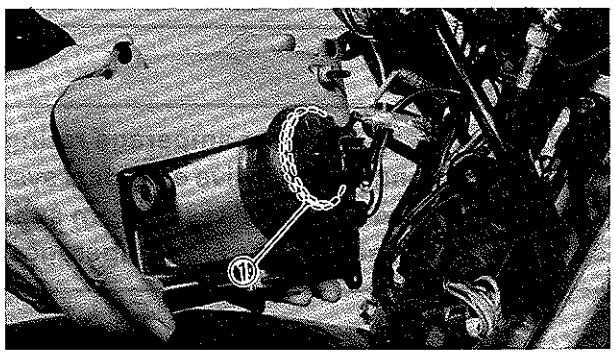


HEADLIGHT BULB REPLACEMENT

1. Remove:
   - Cowling (Headlight)



2. Remove:
   - Headlight lens unit



3. Remove:
   - Bulb holder ①
   - Bulb

NOTE:

Turn the bulb holder counterclockwise and remove the 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.

5. Install:
   - Headlight lens unit
   - Cowling (Headlight)

ENGINE OVERHAUL

ENGINE REMOVAL

NOTE:

It is not necessary to remove the engine in order to remove the following components:

- Cylinder head
- Cylinder
- Piston/Piston ring
- Camshaft/Rocker arm/Valve
- Clutch
- Primary drive gear
- Kick axle
- Oil pump
- Shift shaft
- A.C. magneto

ENGINE OIL

1. Drain:
   - Engine oil

   Refer to the "ENGINE OIL REPLACEMENT" section in the CHAPTER 3.

SEAT AND FUEL TANK

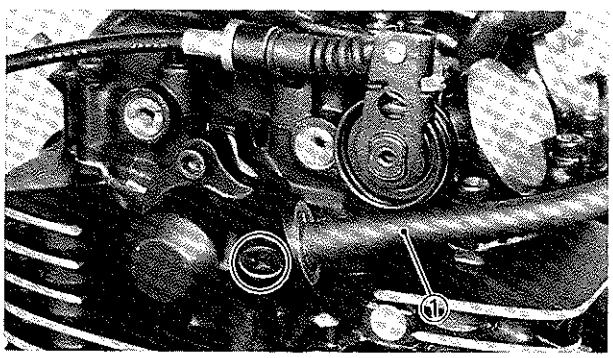
1. Remove:
   - Seat
   - Air scoop
   - Fuel tank

   Refer to the "SEAT, FUEL TANK AND COVER" section in the CHAPTER 3.

CARBURETOR

1. Remove:
   - Carburetor

   Refer to the "CARBURETOR—REMOVAL" section in the CHAPTER 5.

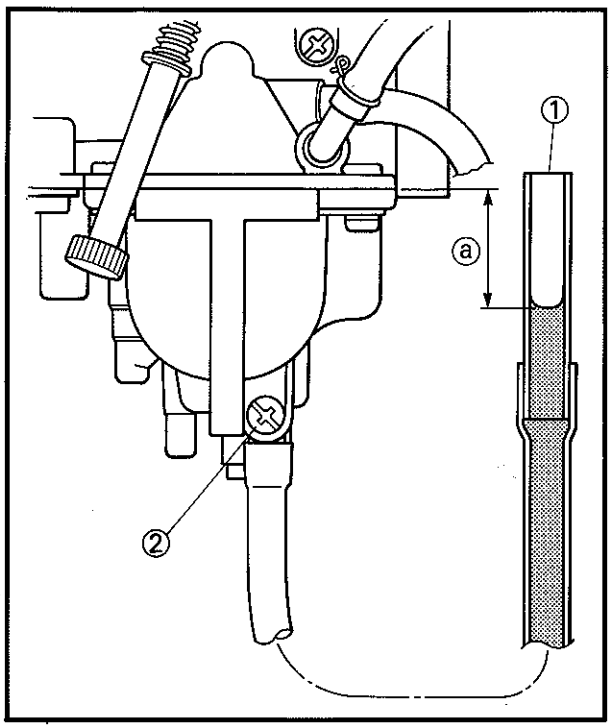


CLUTCH CABLE AND TACHOMETER CABLE

1. Remove:
   - Tachometer cable ①

4. Install:
   • Seat

	Bolt (Seat): **10 Nm (1.0 m•kg, 7.2 ft•lb)**



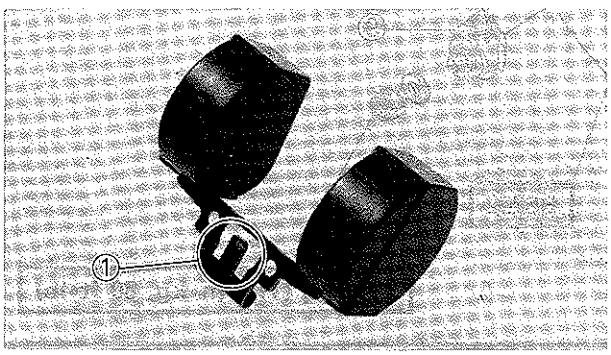
FUEL LEVEL ADJUSTMENT

1. Place the motorcycle on a level place.
2. Use a garage jack under the engine to ensure that the carburetor is positioned vertically.
3. Attach the Fuel Level Gauge ① to the float chamber nozzle.

	Fuel Level Gauge: **P/N. 90890-01312**

4. Loosen the drain screw ②, and warm up the engine for several minutes.
5. Measure:
   • Fuel level ⓐ
   Out of specification→Adjust.

	Fuel Level: **5.0~7.0 mm (0.20~0.28 in)** **Below the Carburetor Body Edge.**



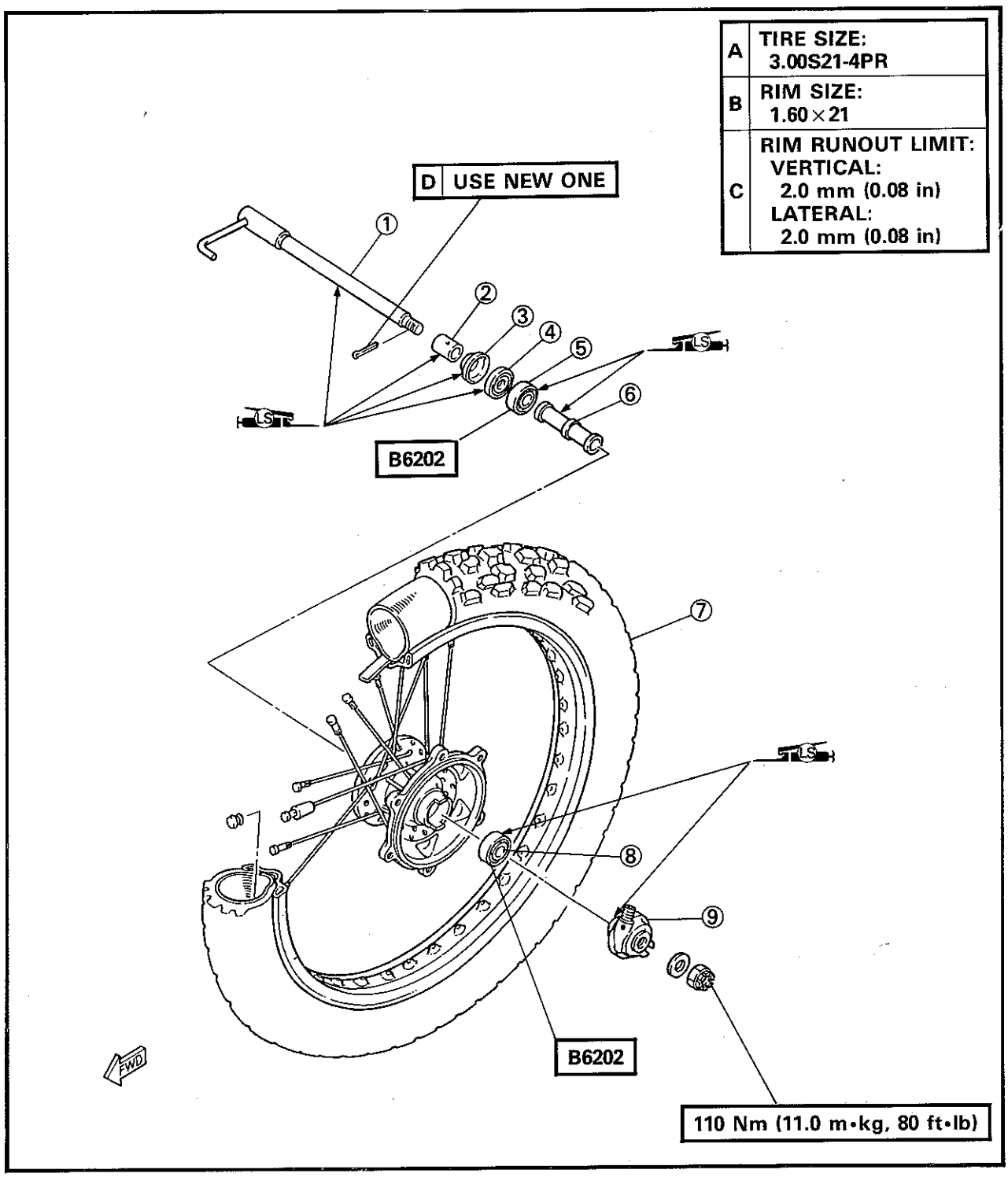
6. Adjust:
   • Fuel level

Adjustment steps:
- Remove the carburetor.
- Inspect the valve seat and needle valve.
- If either is worn, replace them both.
- If both are fine, adjust the float height by bending the float tang ① on the float.
- Recheck the fuel level.

CHASSIS

FRONT WHEEL

① Wheel axle
② Collar
③ Dust cover
④ Oil seal
⑤ Bearing
⑥ Collar
⑦ Front wheel
⑧ Bearing
⑨ Gear unit (Speedometer)

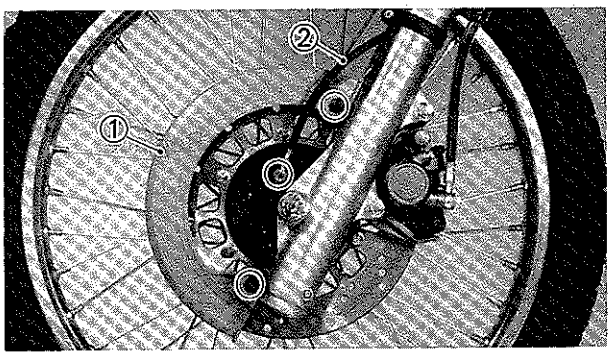


REMOVAL

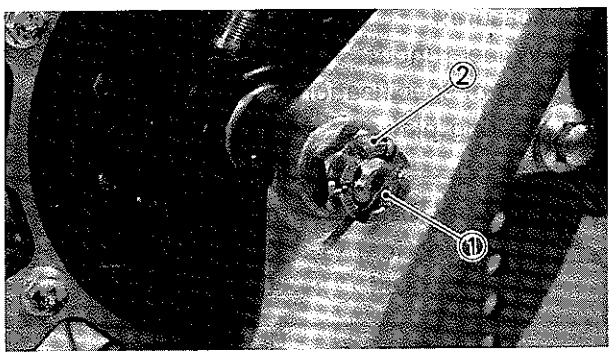
1. Elevate the front wheel by placing a suitable stand under the engine.

WARNING:

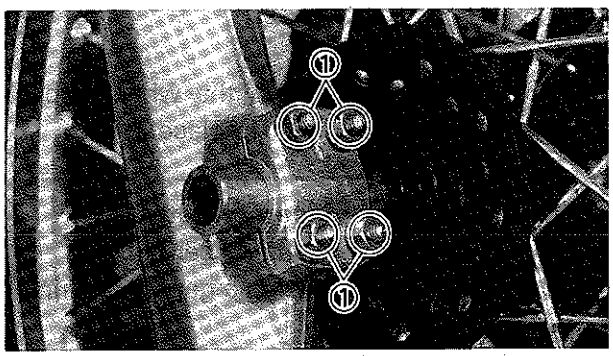
Support the motorcycle securely so there is no danger of it falling over.



2. Remove:
   - Disc cover ①
   - Speedometer cable ②



3. Remove:
   - Cotter pin ①
   - Axle nut ②
   - Plain washer

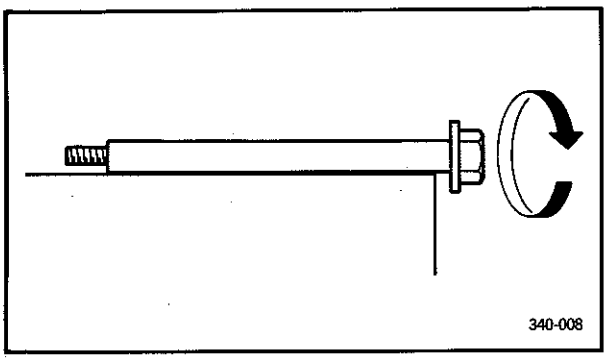


4. Loosen:
   - Nut ① (Axle holder)

5. Remove:
   - Wheel axle
   - Front wheel
   - Gear unit (Speedometer)
   - Collar

NOTE:

Do not depress the brake lever when the wheel is off the motorcycle otherwise the brake pads will be forced shut.



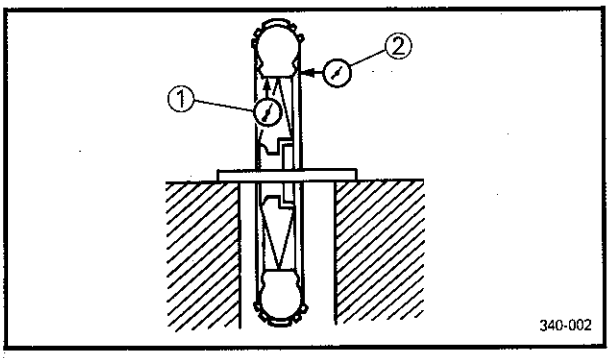
INSPECTION

1. Eliminate any corrosion from parts.
2. Inspect:
   - Wheel axle
     Roll the axle on a flat surface.
     Bends→Replace.

WARNING:

Do not attempt to straighten a bent axle.

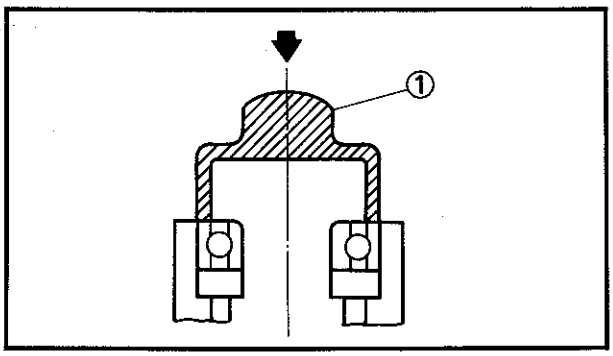
3. Inspect:
   - Wheel
     Cracks/Bends/Warpage→Replace.



4. Measure:
   - Wheel runout
     Out of specification→Check the wheel and bearing play.

Rim Runout Limits:
Vertical ①: 2.0 mm (0.08 in)
Lateral ②: 2.0 mm (0.08 in)

5. Check:
   - Wheel bearings
     Bearings allow play in the wheel hub or wheel turns roughly→Replace.



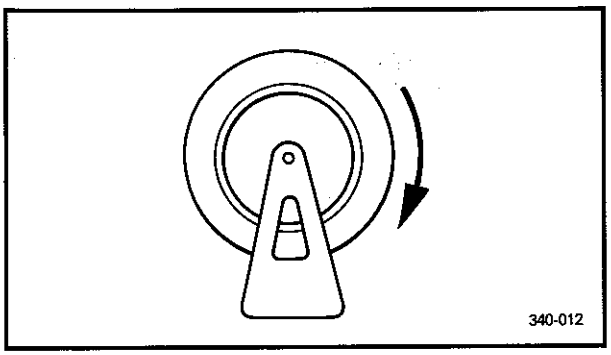
Wheel bearing replacement steps:
- Clean the outside of the wheel hub.
- Remove the bearing using a general bearing puller.
- Install the new bearing.

NOTE:

Use a socket ① that matches the outside diameter of the race of the bearing.

CAUTION:

Do not strike the inner race of balls of the bearing. Contact should be made only with the outer race.

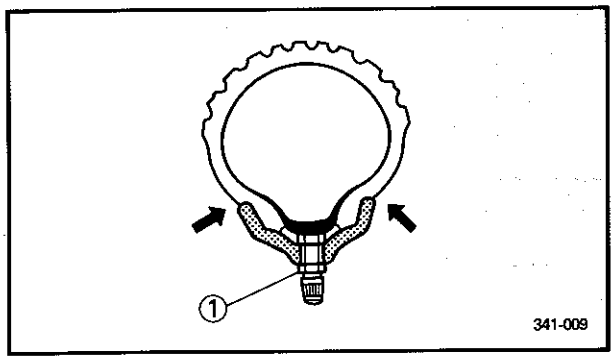


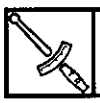
6. Check:
   - Wheel balance
     Wheel is not statically balanced if it comes to rest at the same point after several light rotations.
     Out of balance→Install appropriate balance weight at lightest point (on top).

NOTE:
Balance wheel with brake disc installed.

WARNING:

- **After mounting a tire, ride conservatively to allow proper tire to rim seating. Failure to do so may cause an accident resulting in motorcycle damage and possible operator injury.**
- **After a tire repair or replacement, be sure to torque tighten the valve stem locknut ① to specification.**



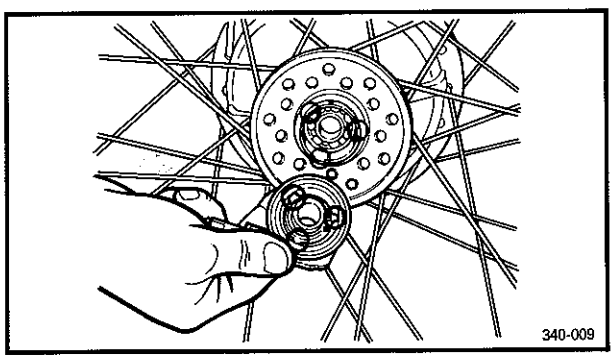


Valve Stem Locknut:
1.5 Nm (0.15 m•kg, 1.1 ft•lb)

INSTALLATION

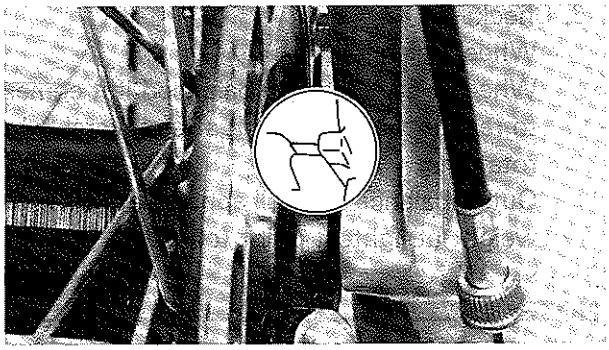
When installing the front wheel, reverse the removal procedure. Note the following points.

1. Apply:
   - Lithium base grease
     Lightly grease to the oil seal and gear unit.



2. Install:
   - Gear unit assembly

NOTE:
Make sure the projections inside the gear unit are meshed with the flats in the wheel hub.



3. Install:
   - Front wheel assembly

NOTE:

Be sure the boss on the outer fork tube correctly engages with the locating slot on the gear unit assembly.

4. Tighten:
   - Nut (Axle holder)
   - Axle nut

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

5. Install:
   - Cotter pin

NOTE:

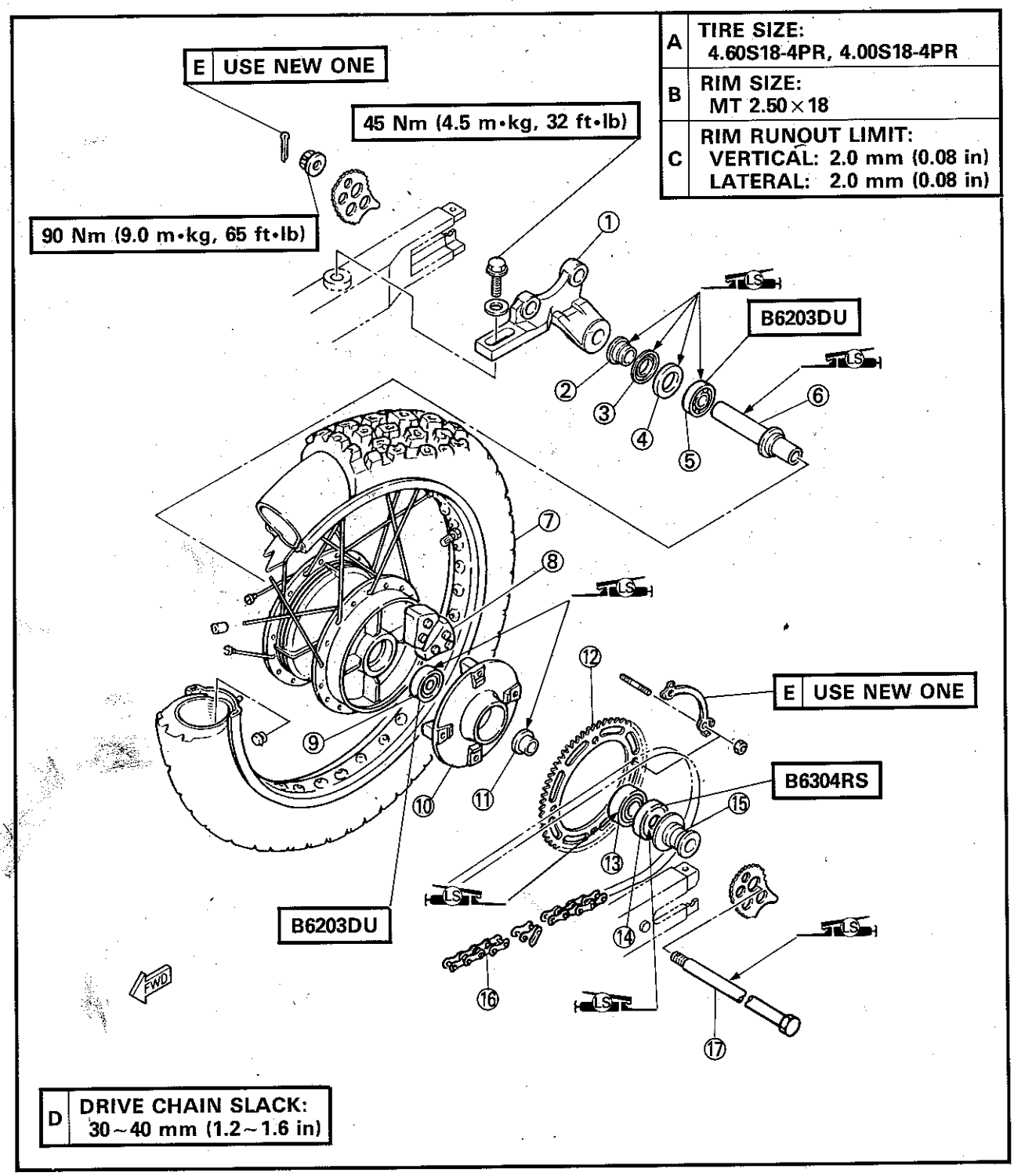
Bend the ends of the cotter pin.

WARNING:

Always use a new cotter pin.

REAR WHEEL

① Caliper bracket
② Collar
③ Dust cover
④ Oil seal
⑤ Bearing
⑥ Collar
⑦ Rear wheel
⑧ Damper
⑨ Bearing
⑩ Clutch hub
⑪ Collar
⑫ Driven sprocket
⑬ Bearing
⑭ Oil seal
⑮ Collar
⑯ Drive chain
⑰ Wheel axle

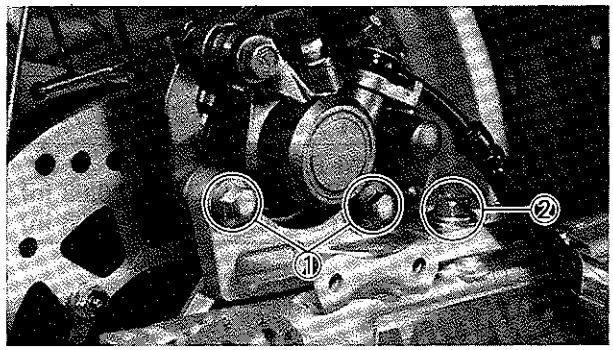


REMOVAL

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

WARNING:

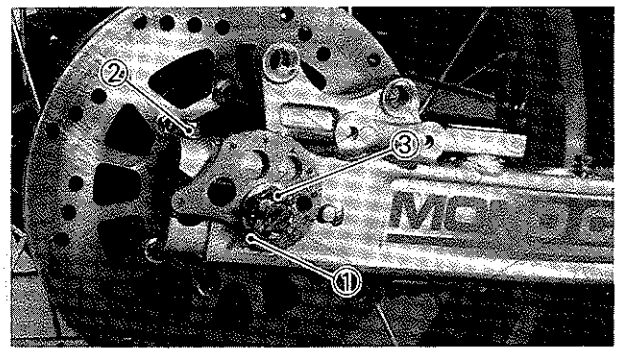
Support the motorcycle securely so there is no danger of it falling over.



2. Remove:
   - Bolt ① (Brake caliper)
   - Bolt ② (Caliper bracket)

NOTE:

Do not depress the brake pedal when the wheel is off the motorcycle as the brake pads will be forced shut.



3. Remove:
   - Cotter pin ①
   - Bolt ②
   - Axle nut ③

4. Remove:
   - Rear wheel
   - Caliper bracket
   - Wheel axle

NOTE:

Before removing the rear wheel, push the wheel forward and remove the drive chain.

INSPECTION

1. Inspect:
   - Rear wheel axle
   Refer to the "FRONT WHEEL—INSPECTION" section.

2. Inspect:
   - Wheel
   Refer to the the "FRONT WHEEL—INSPECTION" section.

3. Measure:
   - Wheel runout
   Refer to the "FRONT WHEEL—INSPECTION" section.

4. Check:
   - Wheel bearings
   Refer to the "FRONT WHEEL—INSPECTION" section.

5. Check:
   - Wheel balance
   Refer to the "FRONT WHEEL—INSPECTION" section.

INSTALLATION

When installing the rear wheel, reverse the removal procedure. Note the following points.

1. Apply:
   - Lithium base grease
   Lightly grease to the oil seal lips.

2. Adjust:
   - Drive chain slack



Drive Chain Slack:
30~40 mm (1.18~1.57 in)

Refer to the "DRIVE CHAIN SLACK ADJUSTMENT" section in the CHAPTER 3.

3. Tighten:
   - Axle nut
   - Bolt (Swingarm end)
   - Bolt (Caliper bracket)
   - Bolt (Brake caliper)



Axle Nut:
90 Nm (9.0 m•kg, 65 ft•lb)
Bolt (Swingarm End):
3 Nm (0.3 m•kg, 2.2 ft•lb)
Bolt (Caliper Bracket):
45 Nm (4.5 m•kg, 32 ft•lb)
Bolt (Brake Caliper):
35 Nm (3.5 m•kg, 25 ft•lb)

4. Install:
   - Cotter pin

NOTE:

Bend the ends of the cotter pin.

WARNING:

Always use a new cotter pin.

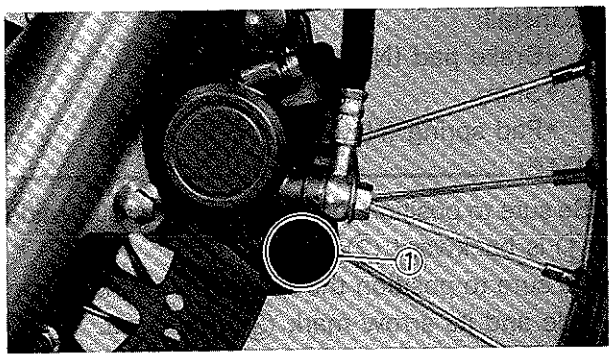
CAUTION:

Disc brake components rarely require disassembly. Do not disassemble components unless absolutely necessary. If any hydraulic connection in the system is opened, the entire system should be disassembled, drained, cleaned and then properly filled and bled upon reassembly. Do not use solvents on brake internal components.
Solvents will cause seals to swell and distort. Use only clean brake fluid for cleaning. Use care with brake fluid. Brake fluid is injurious to eyes and will damage painted surfaces and plastic parts.

BRAKE PAD REPLACEMENT

NOTE:

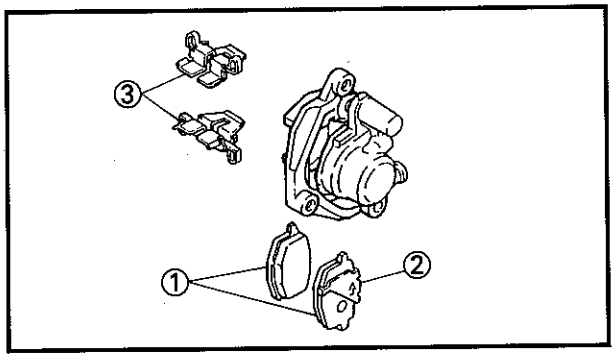
It is not necessary to disassemble the brake caliper and brake hose to replace the brake pads.



Front Brake

1. Remove:
   - Retaining bolt ①

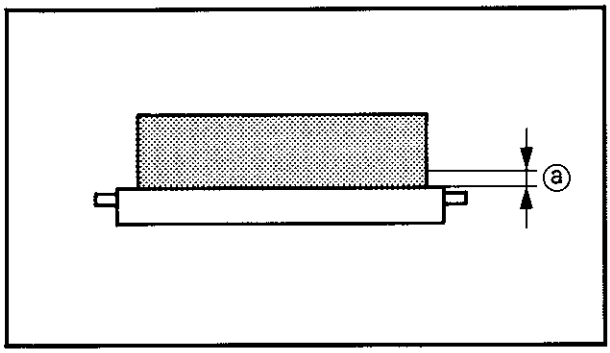
2. Turn the caliper body counterclockwise.



3. Remove:
   - Brake pad ①
   - Shim ②
   - Pad spring ③

NOTE:

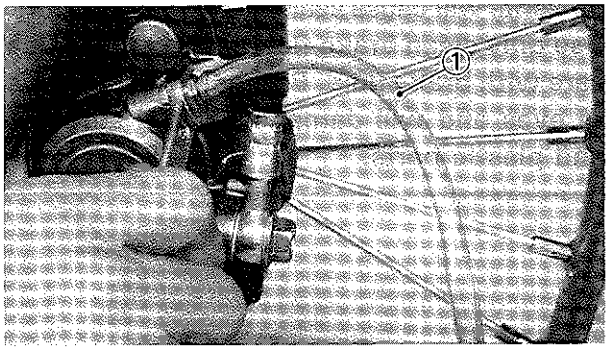
Replace the pad springs as a set if pad replacement is required.



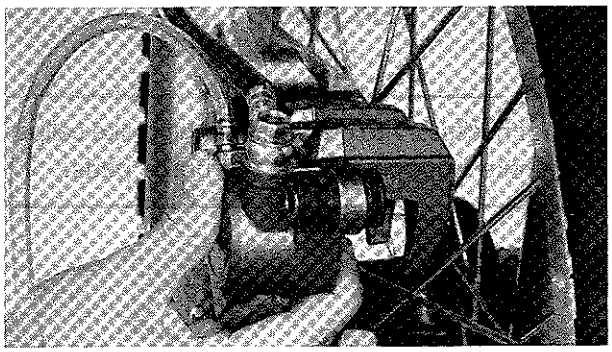
NOTE:

Replace the pads as a set if either is found to be worn to the wear limit. ⓐ

Wear Limit:
0.8 mm (0.031 in)



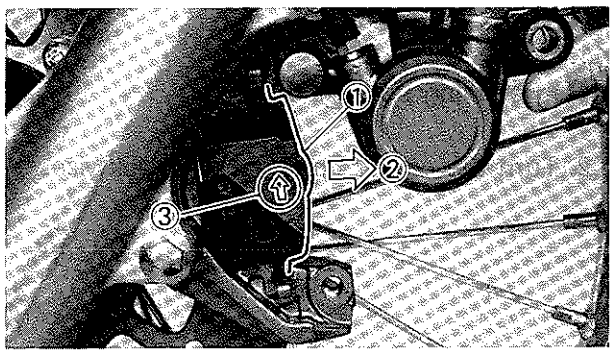
4. Connect a suitable hose ① tightly to the caliper bleed screw. Then, place other end of this hose into an open container.



5. Loosen the caliper bleed screw and push the piston into the caliper by your finger.

6. Tighten:
   - Caliper bleed screw

Caliper Bleed Screw:
6 Nm (0.6 m•kg, 4.3 ft•lb)



7. Install:
   - Brake pad (New)
   - Shim
   - Pad spring (New)

NOTE:

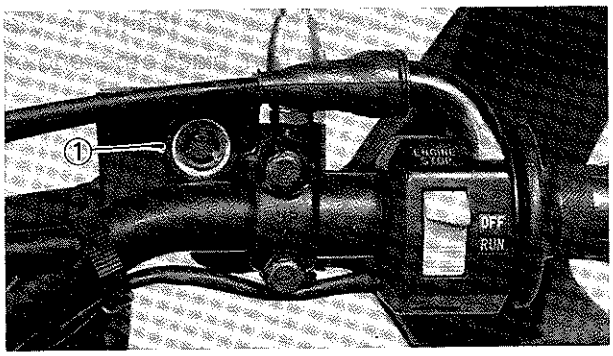
- Be sure to position the pad so that its round side ① is backward ②.
- Be sure to position the shim so that it is piston side and its arrow mark ③ is upward.

8. Apply:
   - Lithium soap base grease

   To the retaining bolt.

9. Install:
   • Retaining bolt

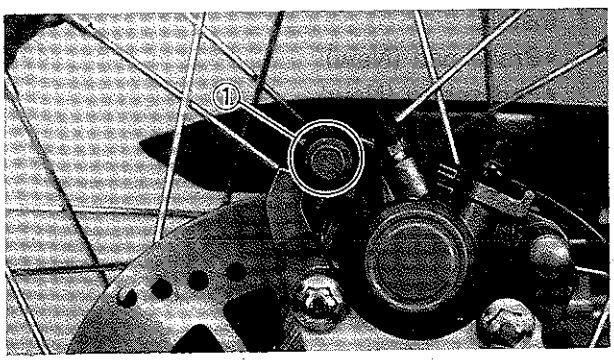
	Retaining Bolt: **18 Nm (1.8 m•kg, 13 ft•lb)**



10. Inspect:
   • Brake fluid level
   Refer to the "BRAKE FLUID INSPECTION" section in the CHAPTER 3.

① "LOWER" level line

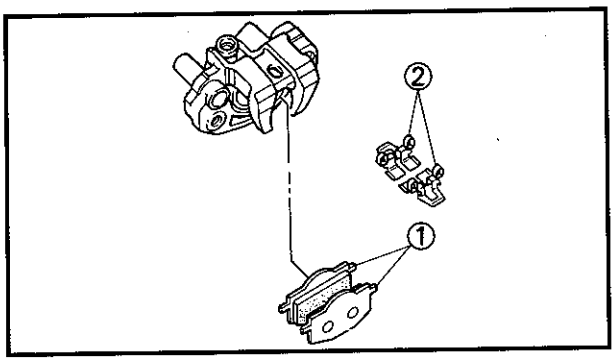
11. Check:
   • Brake lever operation
   A softy or spongy filling→Bleed brake system.
   Refer to the "AIR BLEEDING" section in the CHAPTER 6.



Rear Brake

1. Remove:
   • Retaining bolt ①

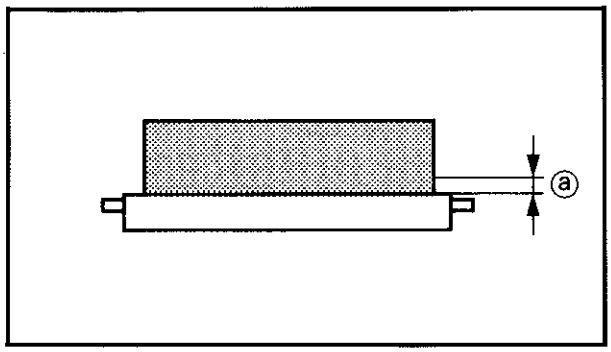
2. Turn the caliper body clockwise.



3. Remove:
   • Brake pad ①
   • Pad spring ②

NOTE:

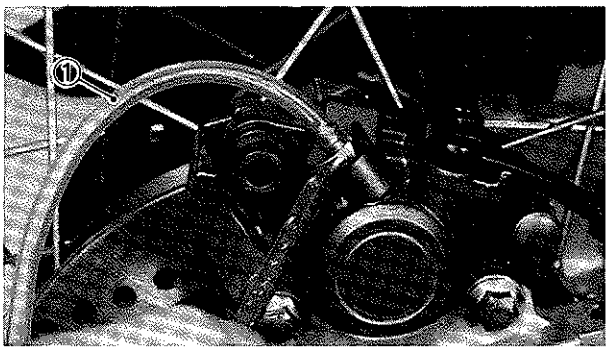
Replace the pad springs as a set if pad replacement is required.



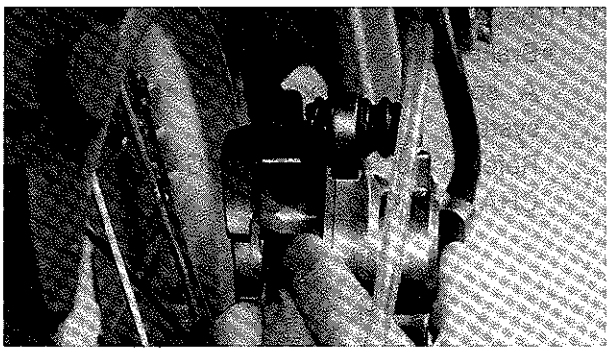
NOTE:

Replace the pads as a set if either is found to be worn to the wear limit ⓐ.

Wear Limit:
0.8 mm (0.031 in)



4. Connect a suitable hose ① tightly to the caliper bleed screw. Then, place other end of this hose into an open container.



5. Loosen the caliper bleed screw and push the pistons into the caliper by your finger.

6. Tighten:
   - Caliper bleed screw

Caliper Bleed Screw:
6 Nm (0.6 m•kg, 4.3 ft•lb)

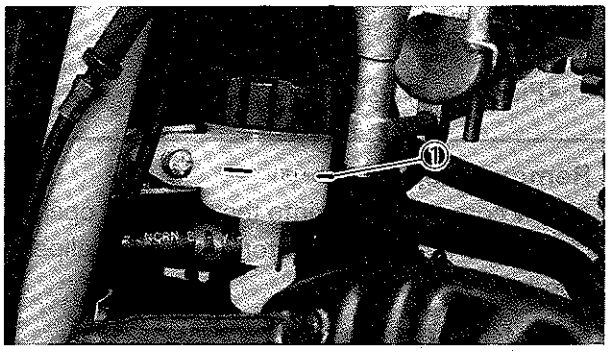
7. Install:
   - Brake pad (New)
   - Pad spring (New)

8. Apply:
   - Lithium sope base grease

   To the retaining bolt.

9. Install:
   - Retaining bolt

Retaining Bolts:
18 Nm (1.8 m•kg, 13 ft•lb)



10. Inspect:
    - Brake fluid level
      Refer to the "BRAKE FLUID INSPECTION" section in the CHAPTER 3.

① "LOWER" level line

11. Check:
    - Brake pedal operation
      A softy or spongly filling→Bleed brake system.
      Refer to "AIR BLEEDING" section in CHAPTER 6.

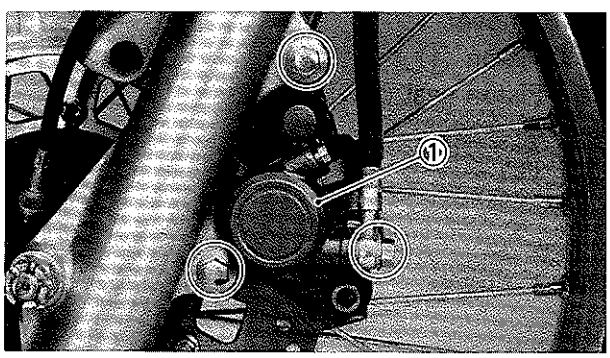
CALIPER DISASSEMBLY

NOTE:

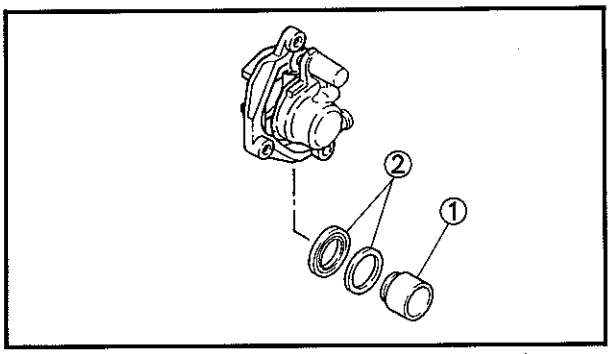
Before disassemblying the front brake caliper or rear brake caliper, drain the brake system of its brake fluid.

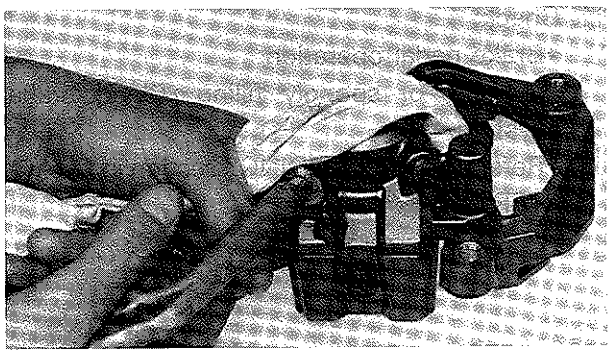
Front Brake

1. Remove:
   - Brake pad
   - Shim
   - Pad spring
     Refer to the "BRAKE PAD REPLACEMENT" section in the CHAPTER 6.



2. Remove:
   - Caliper body ①





3. Remove:
   - Piston ①
   - Piston seal ②

Remove steps:
- Blow compressed air into the tube joint opening to force out the piston from the caliper body.

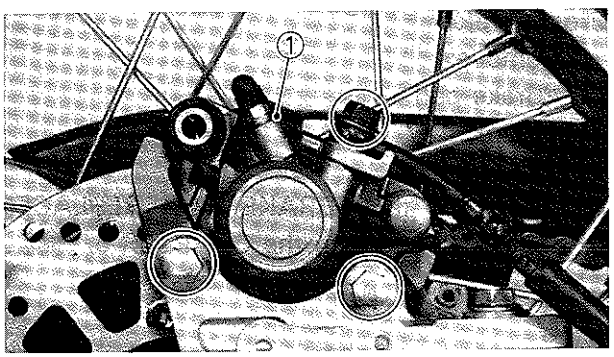
WARNING:

- **Never try to pry out the piston.**
- **Cover the piston with a rag. Use care so that piston does not cause injury as it is expelled from the cylinder.**

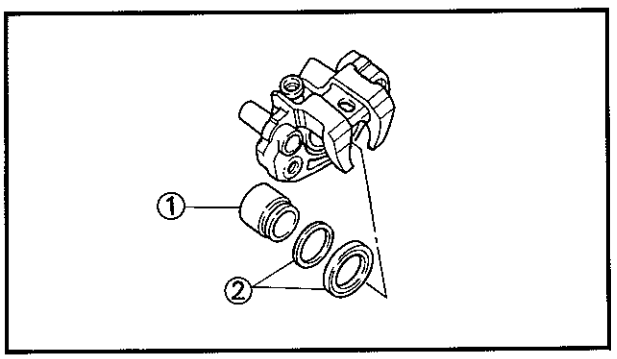
Rear Brake

1. Remove:
   - Brake pads

   Refer to the "BRAKE PAD REPLACEMENT" section in the CHAPTER 6.



2. Remove:
   - Caliper body ①



3. Remove:
   - Piston ①
   - Piston seal ②

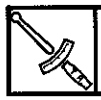
9. Adjust:
   • Drive chain slack



Prive Chain Slack:
30 ~ 40 mm (1.18 ~ 1.57 in)

Refer to the "DRIVE CHAIN SLACK ADJUSTMENT" section in the CHAPTER 3.

10. Install:
   • Rear wheel



Nut (Rear Wheel Axle):
90 Nm (9.0 m•kg, 65 ft•lb)

Refer to the "REAR WHEEL—INSTALLATION" section in the CHAPTER 6.

11. Install:
   • Seat

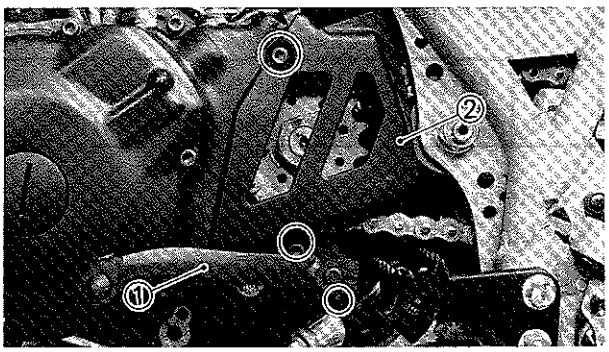


Bolt (Seat):
10 Nm (1.0 m•kg, 7.2 ft•lb)

DRIVE CHAIN AND SPROCKET

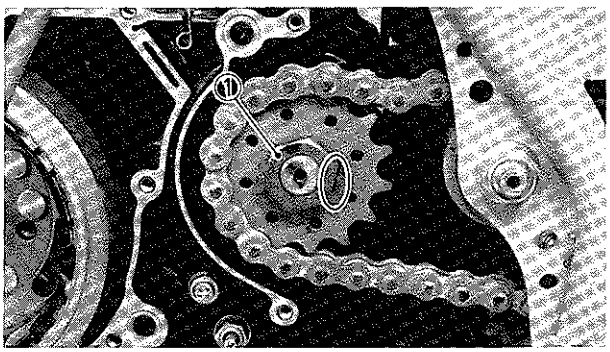
NOTE:

Before removing the drive chain and sprockets, drive chain slack and 10-link length of drive chain should be measured.



REMOVAL

1. Remove:
   - Change pedal ①
   - Cover ② (Drive sprocket)



2. Remove:
   - Drive sprocket ①

NOTE:

Before removing the nut (Drive sprocket), straighten the lock washer tab.

3. Elevate the rear wheel by placing a suitable stand under the engine.

WARNING:

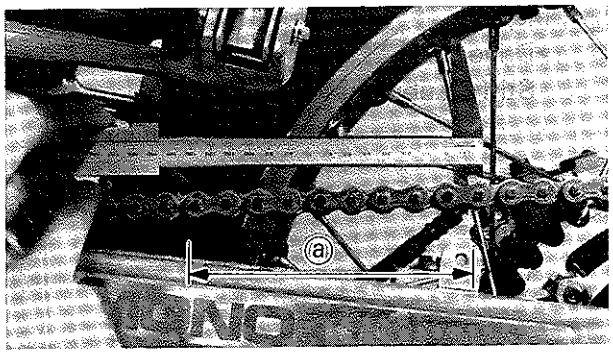
Support the motorcycle securely so there is no danger of it falling over.

4. Remove:
   - Rear Wheel

   Refer to the "REAR WHEEL—REMOVAL" section in the CHAPTER 6.

5. Remove:
   - Swingarm
   - Drive chain

   Refer to the "REAR SHOCK ABSORBER AND SWINGARM—REMOVAL" section in the CHAPTER 6.

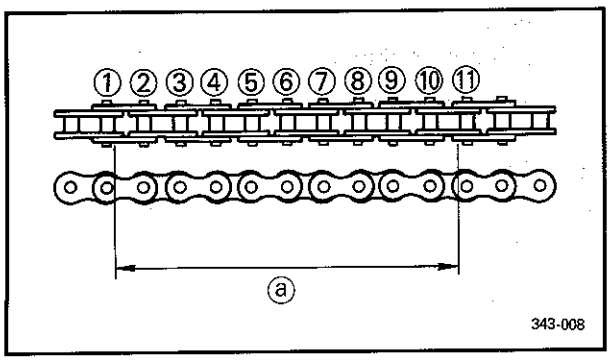


INSPECTION

1. Measure:
   - 10-link length ⓐ (Drive chain)

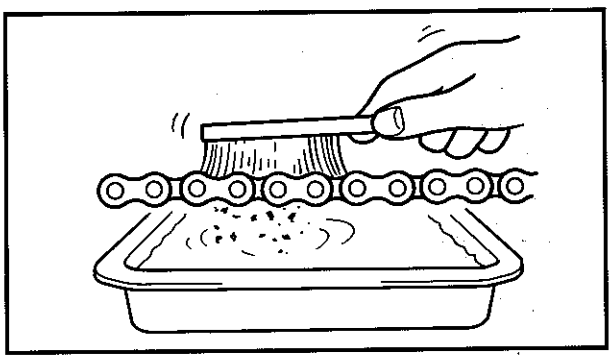
   Out of specification→Replace drive chain.

10-Link Length Limit:
150.2 mm (5.91 in)



NOTE:

- For measurement make the chain tense by finger.
- 10-link length is a measurement between the insides of the ① and ⑪ rollers as shown.
- Two or three different 10-link lengths should be measured.

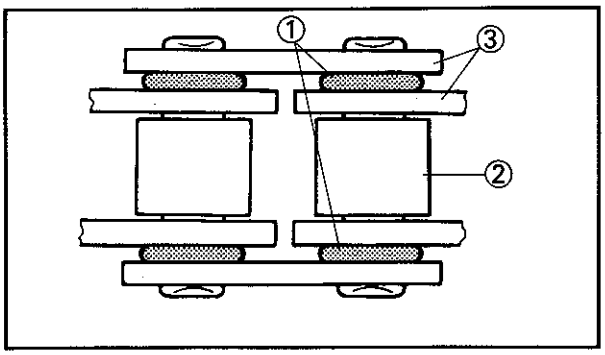


2. Clean:
   - Drive chain

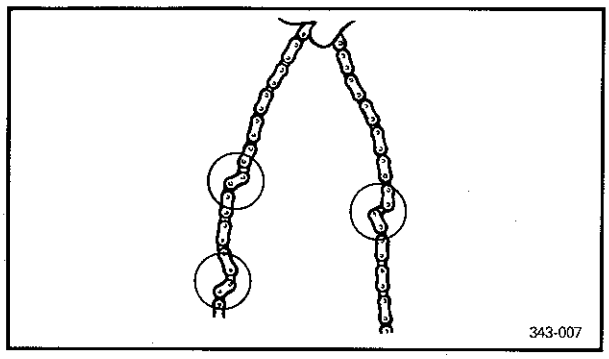
   Place it in kerosene, and brush off as much dirt as possible. Then, dry the chain.

CAUTION:

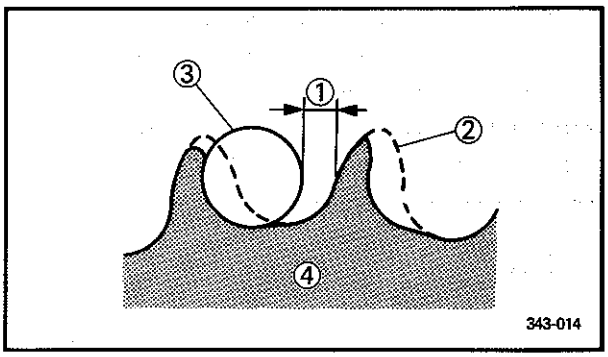
- **The solvents can damage the O-rings. Use only kerosene to clean the chain.**
- **Do not use wire brush to clean the chain.**



3. Inspect:
   - O-rings ① (Drive Chain)
     Damage→Replace drive chain.
   - Rollers ② and side plates ③
     Damage/Wear→Replace drive chain.

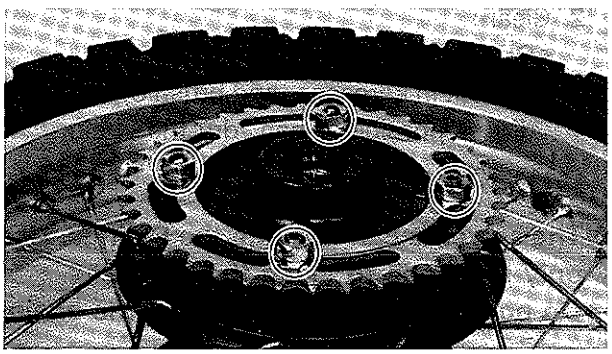


4. Inspect:
   - Drive chain
     Stiff→Lubricate or replace.



5. Inspect:
   - Drive and driven sprockets
     Wear/Damage→Replace.

① 1/4 tooth
② Correct
③ Roller
④ Sprocket



Driven sprocket replacement steps:
- Straighten the lock washer tabs and remove the driven sprocket.
- Install a new driven sprocket and lock washers.

WARNING:

Always use new lock washers.

Nuts (Driven Sprocket):
32 Nm (3.2 m•kg, 23 ft•lb)

- Bend the lock washer tabs along the nut flats.

INSTALLATION

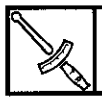
Reverse the "REMOVAL" procedure.
Note the following points.

1. Install:
   • Swingarm



Nut (Pivot Shaft):
85 Nm (8.5 m•kg, 61 ft•lb)
Nut (Frame—Connecting Arm):
32 Nm (3.2 m•kg, 23 ft•lb)

2. Install:
   • Drive sprocket



Nut (Drive Sprocket):
110 Nm (11.0 m•kg, 80 ft•lb)

WARNING:

Always use a new lock washer.

NOTE:

After tightening the nut, bend the lock washer tab along the nut flats.

3. Install:
   • Rear wheel
   Refer to the "REAR WHEEL—INSTALLATION" section in the CHAPTER 6.



Axle Nut:
105 Nm (10.5 m•kg, 75 ft•lb)

4. Adjust:
   • Drive chain slack
   Refer to the "DRIVE CHAIN SLACK ADJUSTMENT" section in the CHAPTER 3.



Drive Chain Slack:
30~40 mm (1.18~1.57 in)

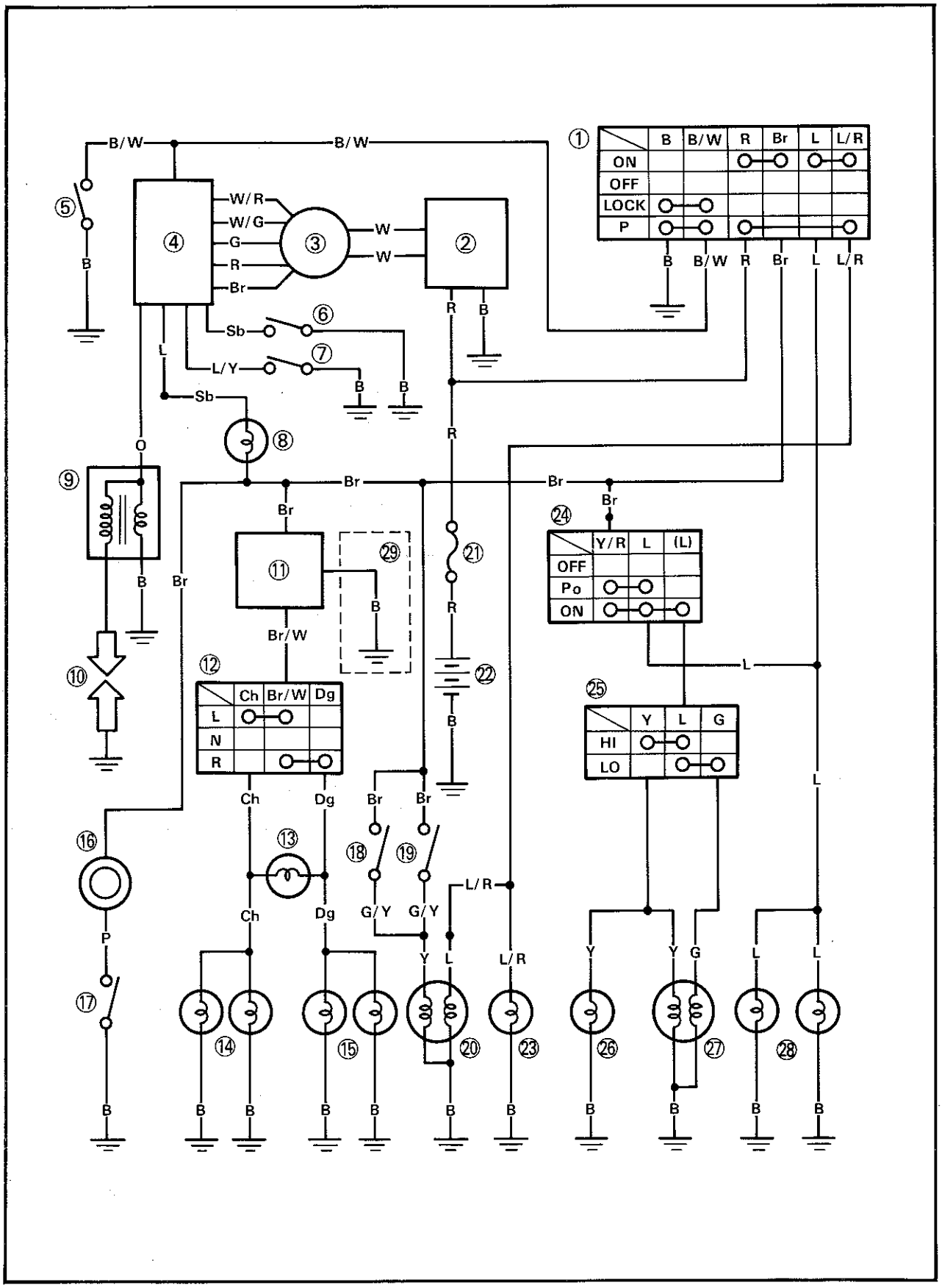
5. Install:
   • Cover (Drive sprocket)
   • Change pedal)

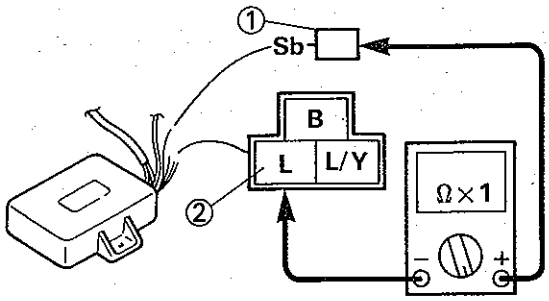


Bolt (Cover):
10 Nm (1.0 m•kg, 7.2 ft•lb)
Bolt (Change Pedal):
10 Nm (1.0 m•kg, 7.2 ft•lb)

ELECTRICAL

XT600 CIRCUIT DIAGRAM





• Check the C.D.I. unit for continuity.

NOCONTINUITY

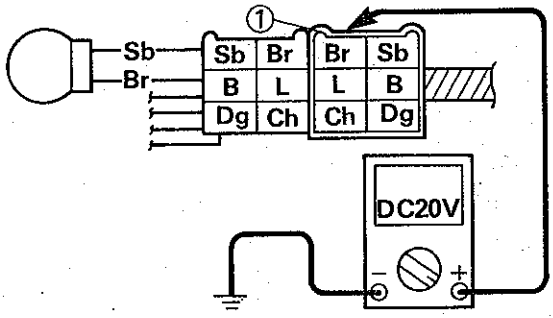
C.D.I. unit is faulty, replace it.

CONTINUITY

4. Voltage

• Connect the Pocket Tester (DC20V) to the bulb socket connector.

Tester (+) Lead→Brown ① Lead
Tester (–) Lead→Frame Ground



• Turn the main switch to "ON".
• Check for voltage (12V) on the "Brown" lead at bulb socket connector.

OUT OF SPECIFICATION

Wiring circuit from main switch to bulb socket connector is faulty, repair.

MEETS SPECIFICATION (12V)

Bulb socket is faulty, replace it.

TROUBLESHOOTING

NOTE:

The following troubleshooting does not cover all the possible causes of trouble. It should be helpful, however, as a guide to troubleshooting. Refer to the relative procedure in this manual for inspection, adjustment and replacement of parts.

STARTING FAILURE/HARD STARTING

FUEL SYSTEM	PROBABLE CAUSE
Fuel tank	• Empty • Clogged fuel filter • Deteriorated fuel or fuel containing water or foreign material
Fuel cock	• Clogged fuel hose
Carburetor	• Deteriorated fuel, fuel containing water or foreign material • Clogged pilot jet • Clogged pilot air passage • Sucked-in air • Deformed float • Groove-worn needle valve • Improperly sealed valve seat • Improperly adjusted fuel level • Improperly set pilot jet • Clogged starter jet • Starter plunger malfunction
Air cleaner	• Clogged air filter

STARTING FAILURE/HARD STARTING

TRBL SHTG ?

ELECTRICAL SYSTEM

	PROBABLE CAUSE
Spark plug	• Improper plug gap • Worn electrodes • Wire between terminals broken • Improper heat range • Faulty spark plug cap
Ignition coil	• Broken or shorted primary/secondary • Faulty spark plug lead • Broken body
C.D.I. unit system	• Faulty C.D.I. unit • Faulty source coil • Faulty pick-up coil • Broken woodruff key
Switches and wiring	• Faulty main switch • Faulty engine stop switch • Broken or shorted wiring • Faulty neutral switch • Faulty sidestand switch

COMPRESSION SYSTEM

	PROBABLE CAUSE
Cylinder and cylinder head	• Loose spark plug • Loose cylinder head or cylinder • Broken cylinder head gasket • Broken cylinder gasket • Worn, damaged or seized cylinder
Piston and piston rings	• Improperly installed piston ring • Worn, fatigued or broken piston ring • Seized piston ring • Seized or damaged piston
Crankcase and crankshaft	• Improperly seated crankcase • Seized crankshaft

POOR IDLE SPEED PERFORMANCE

POOR IDLE SPEED PERFORMANCE	PROBABLE CAUSE
Carburetor	• Improperly returned starter plunger • Clogged or loose pilot jet • Clogged pilot air jet • Improperly synchronized carburetors • Improperly adjusted idle speed (Throttle stop screw) • Improper throttle cable play • Flooded carburetor
Air cleaner	• Clogged air filter

POOR MEDIUM AND HIGH SPEED PERFORMANCE

FUEL SYSTEM	PROBABLE CAUSE
Fuel tank	• Clogged fuel filter • Deteriorated fuel or fuel containing water or foreign material
Fuel cock	• Clogged fuel hose
Carburetor	• Deteriorated fuel, fuel containing water or foreign material • Sucked-in air • Deformed float • Groove-worn needle valve • Improperly sealed valve seat • Improperly set clip position of jet needle • Improperly adjusted fuel level • Clogged or loose main jet • Clogged or loose main nozzle.
Air cleaner	• Clogged air filter

POOR MEDIUM AND HIGH SPEED PERFORMANCE

TRBL SHTG ?

ELECTRICAL SYSTEM

	PROBABLE CAUSE
Spark plug	• Improper plug gap • Worn electrodes • Wire between terminals broken • Improper heat range • Faulty spark plug cap
C.D.I. unit system	• Faulty C.D.I. unit • Faulty source coil • Faulty pick-up coil

COMPRESSION SYSTEM

	PROBABLE CAUSE
Cylinder and cylinder head	• Loose spark plug • Broken cylinder head gasket • Broken cylinder gasket • Loose cylinder head or cylinder • Worn, damaged or seized cylinder
Piston and piston ring	• Improperly installed piston ring • Worn, fatigued or broken piston ring • Seized piston ring • Seized or damaged piston
Crankcase and crankshaft	• Improperly seated crankcase • Seized crankshaft

FAULTY GEAR SHIFTING

HARD SHIFTING

	PROBABLE CAUSE
Clutch	• Improperly adjusted clutch cable • Improperly adjusted push lever position • Improper engagement of push lever and push rod • Warped clutch plate • Swollen friction plate • Broken clutch plate
Engine oil	• High oil level • Improper quality (High viscosity) • Deterioration

CHANGE PEDAL DOES NOT MOVE

	PROBABLE CAUSE
Shift shaft	• Bent shift shaft
Shift cam and shift fork	• Groove jammed with impurities • Seized shift fork • Bent shift fork guide bar
Transmission	• Seized transmission gear • Jammed impurities • Incorrectly assembled transmission

JUMP-OUT GEAR

	PROBABLE CAUSE
Shift shaft	• Improperly adjusted shift lever position • Improperly returned stopper lever
Shift fork	• Worn shift fork
Shift cam	• Improper thrust play • Worn shift cam groove
Transmission	• Worn gear dog

CLUTCH SLIPPING/DRAGGING

CLUTCH SLIPPING

	PROBABLE CAUSE
Clutch	• Improperly adjusted clutch cable • Loose clutch spring • Fatigued clutch spring • Worn friction plate • Worn clutch plate
Engine oil	• Low oil level • Improper quality (Low viscosity) • Deterioration

CLUTCH DRAGGING

	PROBABLE CAUSE
Clutch	• Improperly adjusted clutch cable • Improperly adjusted push lever position • Improper engagement of push lever and push rod • Warped clutch plate • Swollen friction plate • Broken clutch boss
Engine oil	• High oil level • Improper quality (High viscosity) • Deterioration

IMPROPER KICKING

SLIPPING

	PROBABLE CAUSE
Kick axle assembly	• Low tension of kick spring • Worn kick axle • Worn or damaged kick idle gear • Worn or damaged kick gear • Damaged kick spring • Kick spring coming off • Damaged kick spring stopper
Engine oil	• Improper quality (Low viscosity) • Deterioration

HARD KICKING

	PROBABLE CAUSE
Kick axle assembly	• High tension of kick spring • Seized kick gear • Seized kick idle gear
Engine oil	• Improper quality (High viscosity) • Deterioration
Cylinder, piston and piston ring	• Damaged or seized cylinder • Damaged or seized piston • Damaged or seized piston ring
Crankcase and crankshaft	• Improperly seated crankcase • Improperly seated crankshaft • Damaged or seized crankshaft • Damaged or seized crankshaft bearing

KICK CRANK NOT RETURNING

	PROBABLE CAUSE
Kick axle assembly	• Damaged kick spring • Kick spring coming off • Damaged kick spring stopper

FAULTY BRAKE

POOR BRAKING EFFECT

PROBABLE CAUSE

- Worn brake pad
- Worn brake disc
- Air in brake fluid
- Leaking brake fluid
- Faulty cylinder kit cup
- Faulty caliper kit seal
- Loose union bolt
- Broken brake hose
- Oily or greasy brake disc
- Oily or greasy brake pad
- Improper brake fluid level

FRONT FORK OIL LEAKAGE AND FRONT FORK MALFUNCTION

OIL LEAKAGE

PROBABLE CAUSE

- Bent, damaged or rusty inner tube
- Damaged or cracked outer tube
- Damaged oil seal lip
- Improperly installed oil seal
- Improper oil level (too much)
- Loose damper rod holding bolt
- Broken cap bolt O-ring
- Loose drain bolt
- Damaged drain bolt gasket

MALFUNCTION

PROBABLE CAUSE

- Bent, deformed or damaged inner tube
- Bent or deformed outer tube
- Damaged fork spring
- Worn or damaged slide metal
- Bent or damaged damper rod
- Improper oil viscosity
- Improper oil level

INSTABLE HANDLING

INSTABLE HANDLING

INSTABLE HANDLING	PROBABLE CAUSE
Handlebars	• Improperly installed or bent
Steering	• Improperly installed handle crown • Bent under-bracket • Improperly installed steering shaft (Improperly tightened ringnut) • Damaged bearing or bearing race
Front forks	• Uneven oil levels on both sides • Uneven air pressures on both sides • Broken spring • Twisted front forks
Tires	• Uneven tire pressures on both sides • Incorrect tire pressure • Unevenly worn tires
Wheels	• Incorrect wheel balance • Deformed wheel • Loose bearing • Bent or loose wheel axle • Excessive wheel run-out
Frame	• Twisted • Damaged head pipe • Improperly installed bearing race
Swingarm	• Worn bearing or bush • Bent or damaged
Rear shock absorber	• Fatigued spring • Improperly adjusted spring preload and damping • Oil leakage
Drive chain	• Improperly adjusted chain slack

FAULTY SIGNAL AND LIGHTING SYSTEM

HEADLIGHT DARK

PROBABLE CAUSE

- Improper bulb
- Too many electric accessories
- Hard charging (Broken charging coil and/or faulty rectifier/regulator)
- Incorrect connection
- Improperly grounded
- Poor contacts (main or light switch)
- Bulb life expired

BULB BURNT OUT

PROBABLE CAUSE

- Improper bulb
- Faulty battery
- Faulty rectifier/regulator
- Improperly grounded
- Faulty main and/or light switch
- Bulb life expired

FLASHER DOES NOT LIGHT

PROBABLE CAUSE

- Improperly grounded
- Discharged battery
- Faulty "TURN" switch
- Faulty flasher relay
- Broken wireharness
- Loosely connected coupler
- Bulb burnt out

FLASHER KEEPS ON

PROBABLE CAUSE

- Faulty flasher relay
- Insufficient battery capacity (nearly discharged)
- Bulb burnt out
- Faulty "TURN" switch

FAULTY SIGNAL AND LIGHTING SYSTEM/ OVERHEATING

TRBL SHTG ?

FLASHER WINKS SLOWER

PROBABLE CAUSE
- Faulty flasher relay
- Insufficient battery capacity (nearly discharged)
- Improper bulb
- Faulty main and/or "TURN" switch

FLASHER WINKS QUICKER

PROBABLE CAUSE
- Improper bulb
- Faulty flasher relay

HORN IS INOPERATIVE

PROBABLE CAUSE
- Faulty battery
- Faulty main and/or horn switch
- Improperly adjusted horn
- Faulty horn
- Broken wireharnes

OVERHEATING

OVERHEATING

PROBABLE CAUSE

Ignition system
- Improper spark plug gap
- Improper spark plug heat range
- Faulty C.D.I. unit

Fuel system
- Improper carburetor main jet (Improper setting)
- Improperly adjusted fuel height
- Clogged air cleaner element

Compression system
- Heavy carbon build-up

Engine oil
- Incorrect oil level
- Improper oil viscosity
- Inferior oil quality

Brake
- Dragging brake