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FOREWORD

This service manual explains the maintenance requirements for the Honda Monkey Z50Jz-1 and Honda Gorilla Z50Jz-3.
Maintenance details pertaining to the Z50Jz-7 that have been altered from the Z50Jz-3 and can only be found in chapter 16.
Any maintenance details for the Z50Jm (Monkey Baha) which differ from the Z50Jz-1 and Z50Jf-7, as well as any standard parts that have been altered will only be listed as they come up in the course of explaining Z50Jz-1 and Z50Jf-7.
Block diagrams have been used to make the explanations in this service manual easier to follow.
Be aware that there may be certain areas on your vehicle that will differ from what is stated here.

June 2007
Honda Co. Ltd

1. SPECIFICATIONS

SPECIFICATIONS

Model			HONDA Monkey Z50J I	HONDA Gorilla Z50JIII	Fuel system		Air cleaner type		Urethane foam type	
Length			1.340m	1.365m			Fuel tank capacity		5 ℓ	9 ℓ
Width			0.600m	0.625m		Carburetor	Model		PA11	
Height			0.845m	0.875m			Throttle bore diameter		13mm	
Wheelbase			0.895m				Venturi diameter		11mm (equivalent)	
Engine model			Z50J E				Air valve type		Manually operated piston type	
Engine capacity			49cm^3		Electric system	Ignition system	Type		Magnetic ignition	
Fuel type			Unleaded Fuel Only				Ignition timing		30˚(BTDC/fixed)	
Vehicle weight		Front axle load	28kg	30kg			Ignition plug		(NGK) C5HA, C6HA (ND) U16FS-L, U20FS-L	
		Rear axle load	35kg	37kg						
		Total	63kg	67kg			Ignition clearance		0.6~0.7mm	
Passengers			Rider only			Battery	Type and number		6N2A- 2C, 1	
Gross vehicle body weight		Front axle load	42kg	44kg			Capacity		2Ah(10)	
		Rear axle load	76kg	78kg	Power transmission system	Clutch	Type		Wet type multi-plated, auto-centrifugal	Wet type single-plated coil spring
		Total	118kg	122kg			Operating method		Mechanical	
Tyres		Front wheel	3.50-8 -2 PR				Engine-to-transmission speed reduction ratio		3.722	4.312
		Rear wheel	3.50-8-2 PR			Transmission	Type		Perpetually engaged	
Minimum ground clearance			0.150m				Gear ratio	1st Gear	3.181	2.692
Performance	Braking distance (Initial speed)		3.5m (20km/h)					2nd Gear	1.823	1.823
	Hill-climbing ability		0.32					3rd Gear	1.190	1.300
	Minimum turning radius		1.4m					4th Gear	-	0.958
Engine	Starting Method		Kick start			Speed reduction system	Primary	Gear type	Chain	
	Type		4 Stroke					Speed reduction rate	3.083	2.583
	No. and location of cylinders		Forward tilting 80 ˚ 1 cylinder							
	Combustion chamber type		Hemisphere		Running system	Front Axle	Caster angle		25˚ 00'	
	Valve train		1 overhead cam chain driven				Trail		42mm	
	Bore x stroke		39.0 x 41.4mm			Tyre Pressure		Front	1.0kg/cm²	
	Compression		8.8					Rear	1.25kg/cm²	
	Compression pressure		12.0kg/cm²-1,000rpm			Steering Angle		Left side	42˚	
								Right side	42˚	
	Maximum output		2.6ps/7,000rpm			Brake system		Front	Wire type leading trailing	
	Maximum torque		0.3kgm/5,000rpm					Rear	Rod type leading trailing	
	Valve	Intake	Open	7˚(BTDC) (1mm lift)		Suspension system		Front wheel	Telescopic	
			Close	12˚(ABDC) (1mm lift)				Rear wheel	Swing arm	
		Exhaust	Open	22˚(BBDC) (1mm lift)		Frame			Back bone	
			Close	2˚(BTDC) (1mm lift)		Front cushion oil			Grease	
		Valve clearance	Intake	0.05mm (when cold)		Certification no.			I- 1320	
			Exhaust	0.05mm (when cold)						
	RPM under no-load (idling)		1,500rpm							
	Lubrication System	Lubrication system		Combination of pumping and droplet lubrication						
		Oil pump		Trochoid						
		Oil filter type		Full flowing filtration, combination of centrifugal and strainer filtration						
		Oil capacity		0.8						

2. MAINTENANCE INFORMATION

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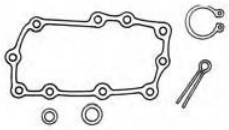
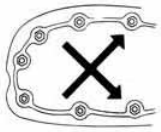
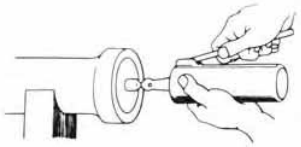
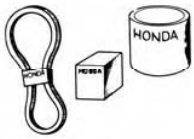
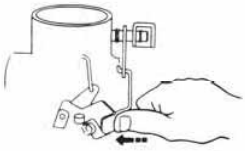
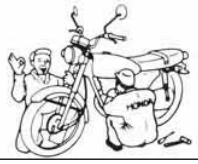
Specialized tools	2-2	Wiring	2-6
Tightening torque	2-3	Fault diagnosis	2-10

Cautions for operation

When disassembling, replace gaskets, O-rings, snap rings, split pins (divided pin). 	After disassembling parts, wash thoroughly before carrying out inspection and measurement. Apply oil to sliding surfaces when reassembling. 
When tightening bolts, nuts, and screws, fit them lightly first, and then tighten to the specified tightening torque working from the one with the largest diameter to the smallest, and inward to outward diagonally. 	Apply or insert the specified grease or its equivalent to the designated areas. 
Always use either Honda parts or those recommended by Honda when replacing parts or using lubrication products. 	Make sure that all parts are tightened and operate properly after assembling. 
Always use the specialized tools or ones similar for such operations that require them. 	When there are more than 2 persons working on the bike at one time, always take the necessary steps to ensure each other's safety. 

Symbols – the following symbols are used throughout this manual to indicate cautionary points or methods of operation.

: Apply oil
Unless otherwise specified use Honda GN4 or equivalent

: Use specialized tools

: Caution required

: Danger or important operation

12-3 : Refer to 12-3

Specialized tools

Specialized tool		Similar tool	
Tool name	Tool No.	Tool name	Tool No.
Oil gauge	72401-0010000		
36mm spanner	07902-0010000	Pin spanner	07702-0010000
Tappet adjust wrench	07908-0010000	Tappet adjusting (B) Tappet adjust wrench 8x9	07708-0030400 07708-0030100
14mm lock nut wrench	07716-0020100		
Flywheel holder	07925-0010000	Universal holder	07725-0030000
Flywheel puller	07933-0010000	Flywheel rotor puller	07733-0010000
Valve guide remover	07942-MA60000		
Bearing driver	07947-0450000	Bearing driver outer 32x35 Bearing driver pilot 12mm	07746-0010100 07746-0040200
Driver handle	07949-2860000	Bearing driver handle(A)	07749-0010000
		Valve spring compressor	07757-0010000
Valve guide reamer	07984-MA60001		
Clutch holder	07923-0400000	Universal holder	07725-0010101
Rear cushion compressor	07959-3290001		
Ball race driver	07944-1150001		

Tightening torque

Engine related

Part to tighten		No. of places	Screw diameter (mm)	Tightening torque (kg-m)
Tappet cap		2	30	1.0-1.4
Valve adjust nut		2	5	0.7-1.1
Cylinder head	Nut	4	6	0.9-1.2
	Bolt	1	6	0.8-1.2
Cam sprocket bolt		3	5	0.8-1.2
Cylinder bolt		1	6	0.8-1.2
R. and L. crank case cover screw		11	6	0.7-1.1
Clutch lock nut		1	14	3.5-4.5
Shift drum stopper bolt		1	6	0.9-1.4
Drain bolt		1	12	2.0-2.5
Drive sprocket bolt		2	6	0.8-1.2
Flywheel nut		1	10	3.0-3.8

Frame related

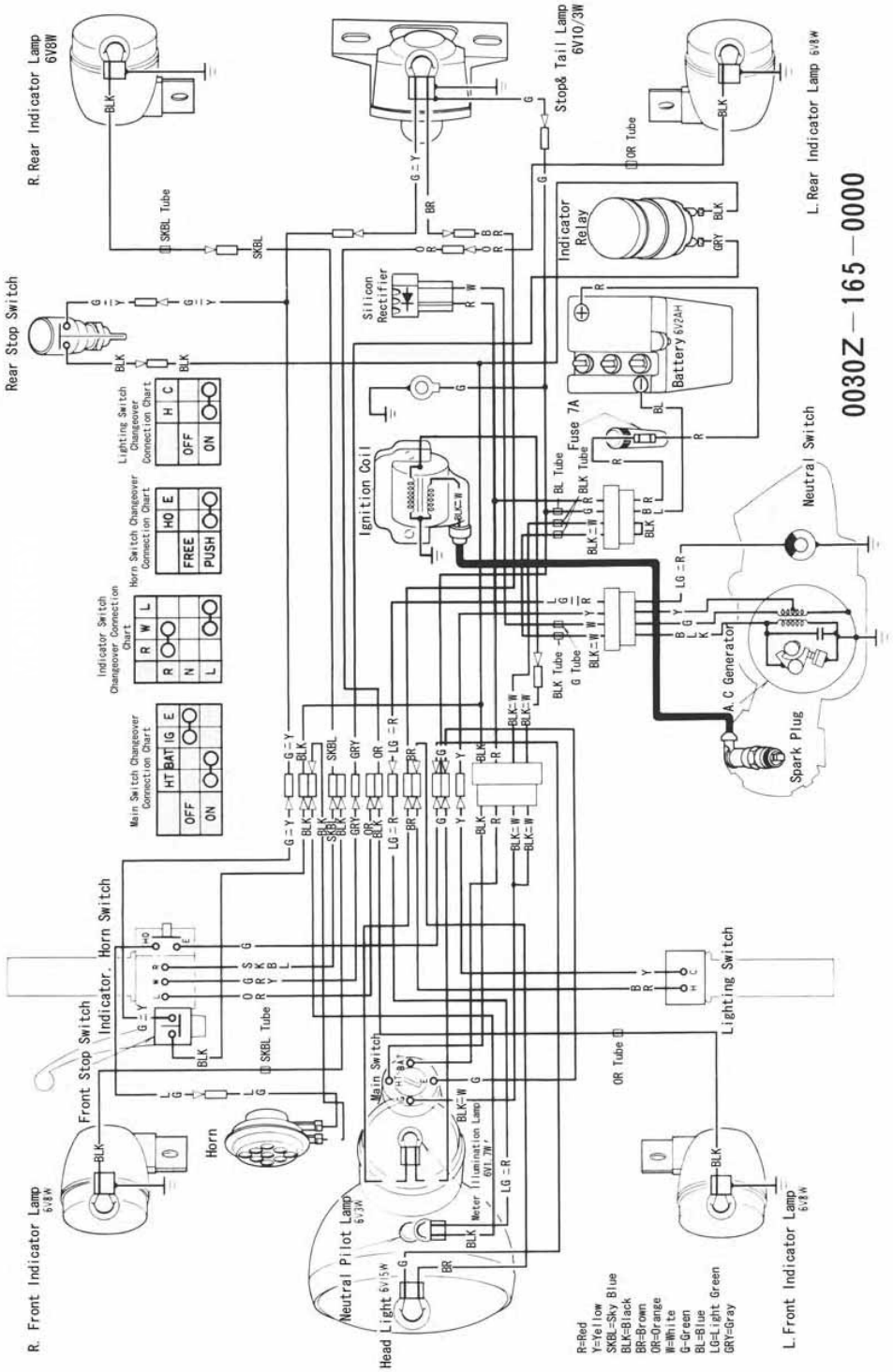
Part to tighten	No. of places	Screw diameter (mm)	Tightening torque (kg-m)
Steering stem nut	1	24	6.0-8.0
Front fork top bridge bolt	2	10	1.8-2.5
Front axle nut	1	12	3.5-5.0
Rear axle nut	1	12	3.5-5.0
Rear cushion nut	4	10	2.5-3.5
Rear fork pivot nut	1	10	2.5-3.5
Engine hanger bolt	2	8	2.0-2.5
Driven sprocket bolt	3	8	1.8-2.3

Standard tightening torque

Part name	Tightening torque: (kgf m)	Part name	Tightening torque: (kgf m)
5mm bolt, nut	0.45-0.6	5mm screw	0.35-0.5
6mm bolt, nut	0.8-1.2	6mm screw	0.7-1.1
8mm bolt, nut	1.8-2.5	6mm flange bolt, nut	1.0-1.4
10mm bolt, nut	3.0-4.0	8mm flange bolt, nut	2.4-3.0
12mm bolt, nut	5.0-6.0	10mm flange bolt, nut	3.0-4.0

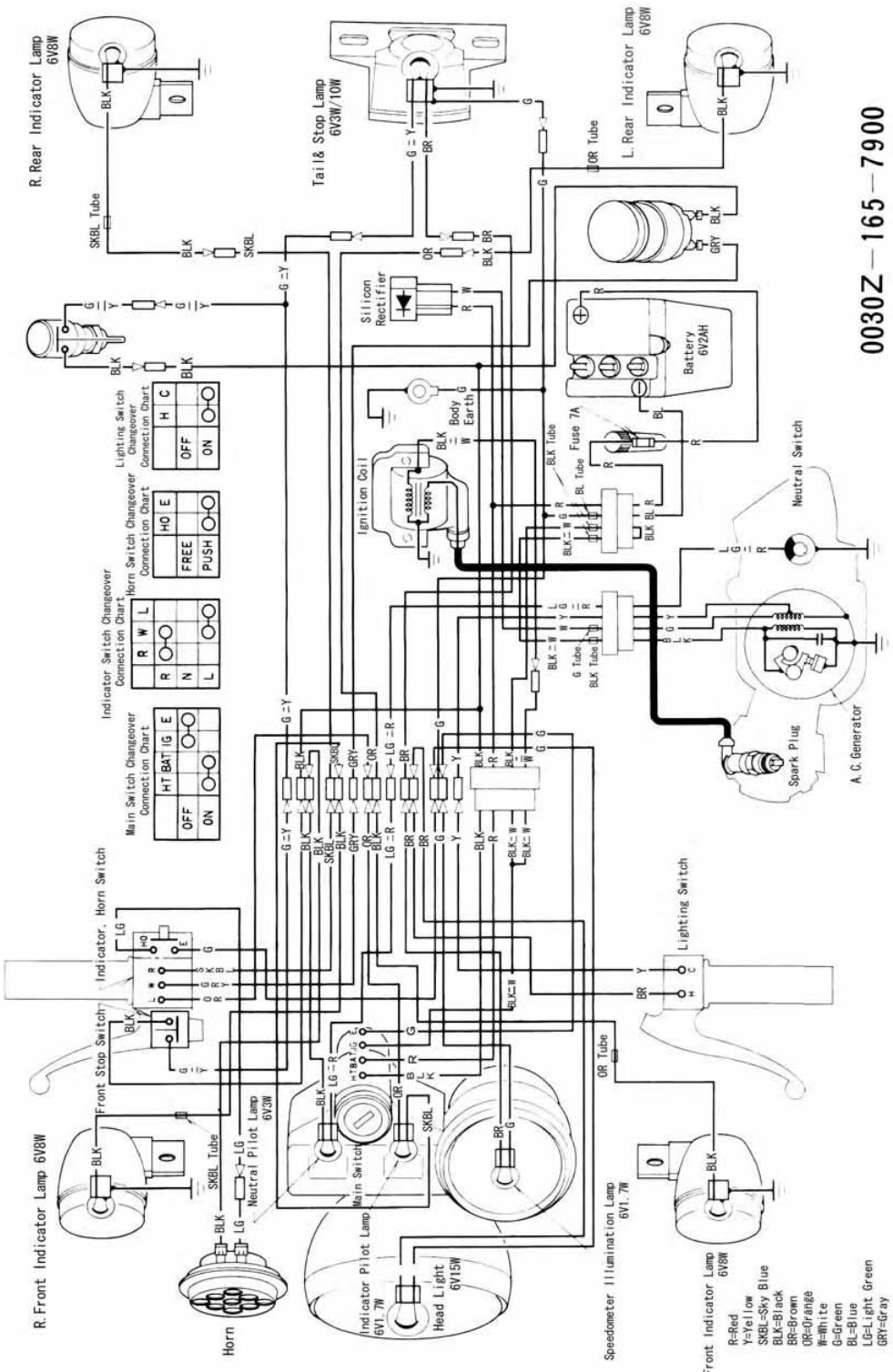
2-4

Wiring diagram



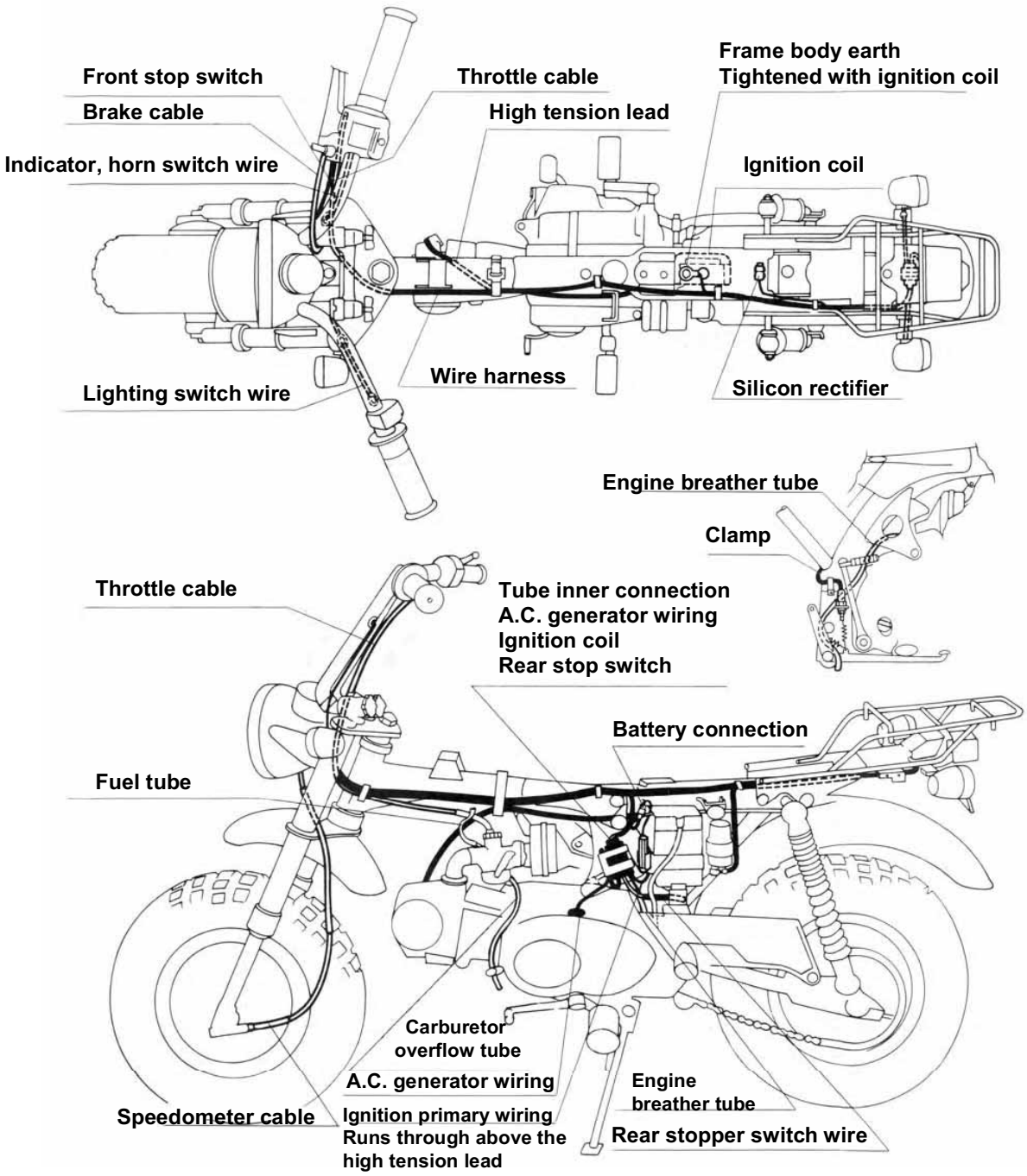
2-5

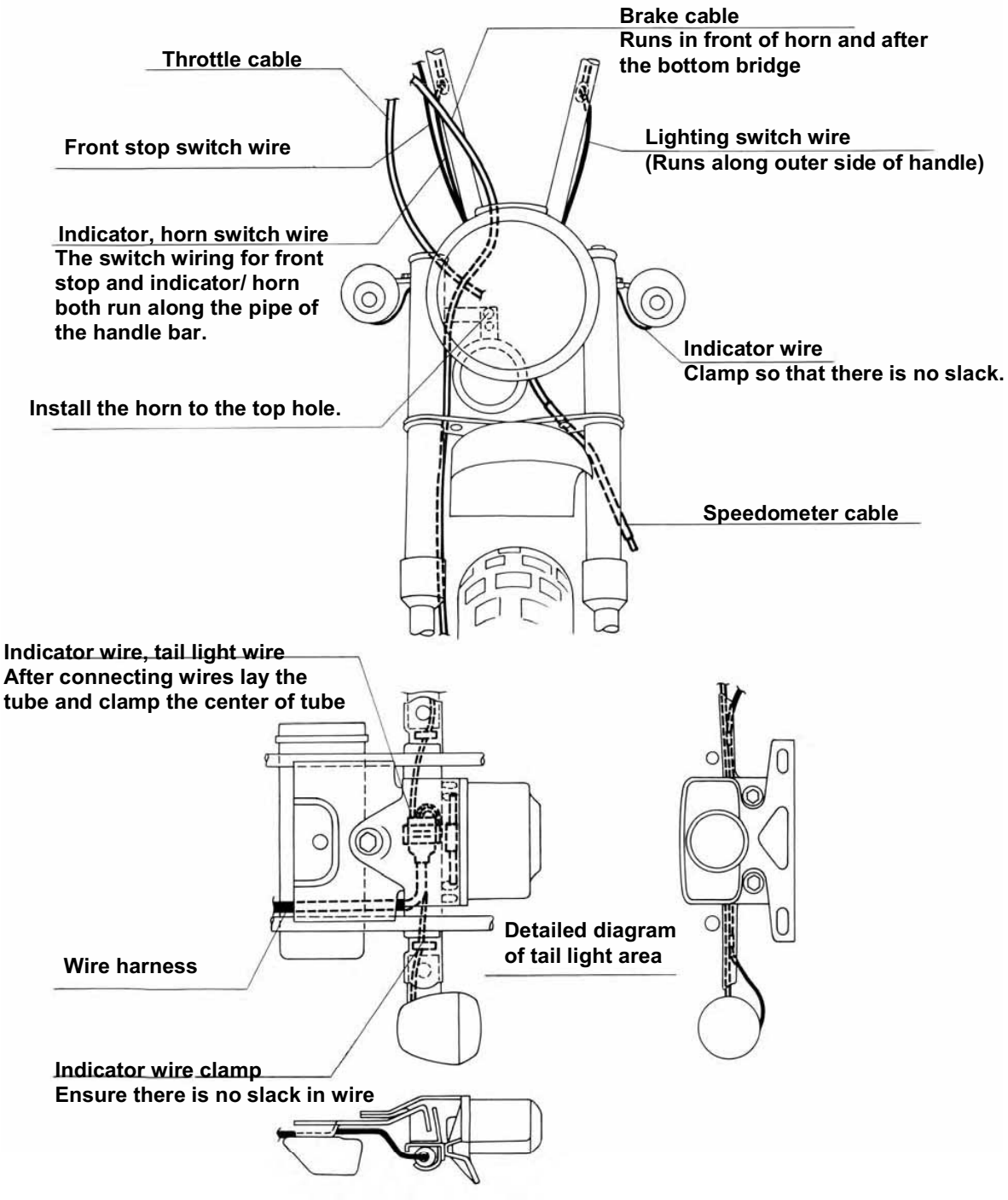
Wiring diagram

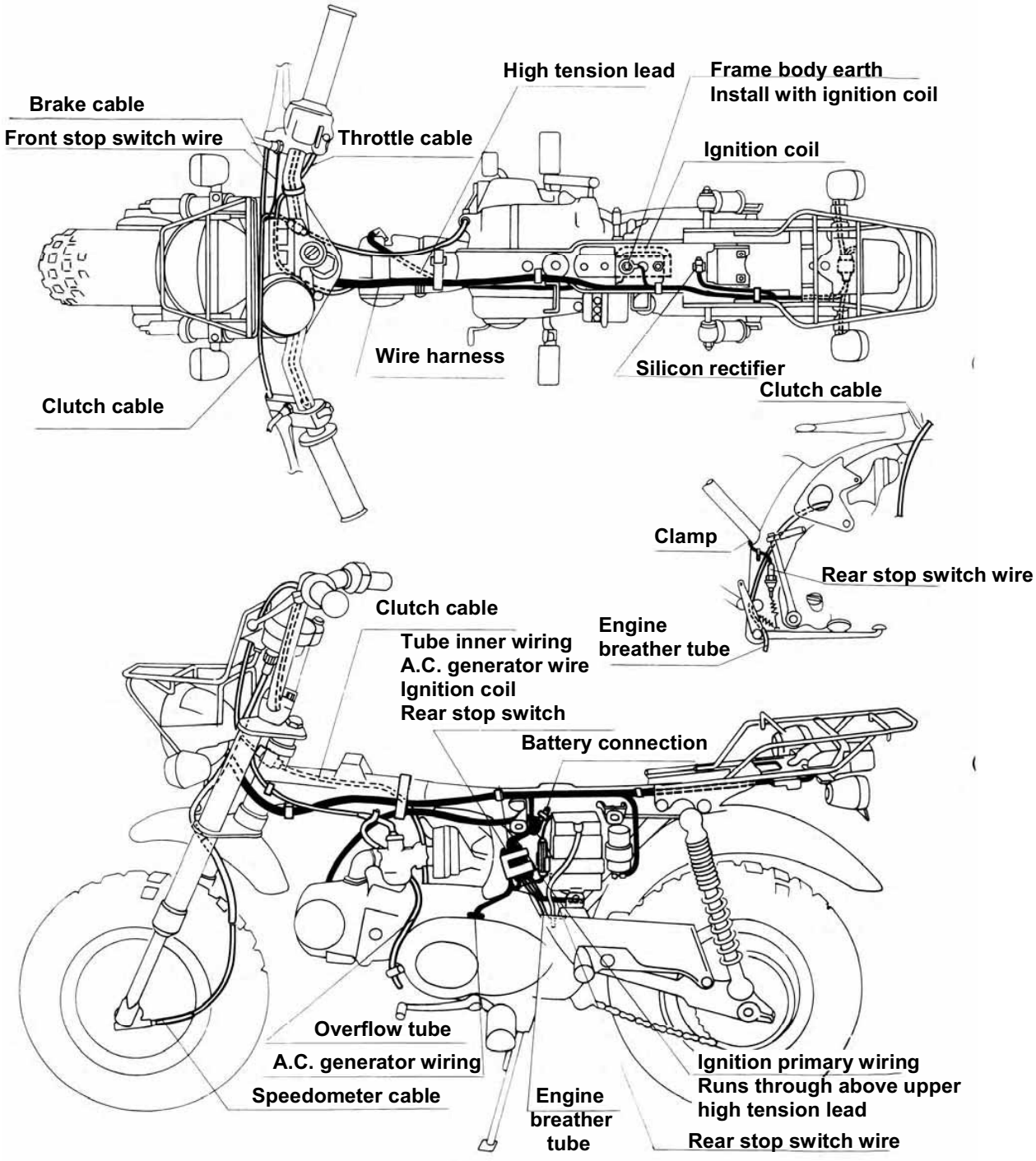


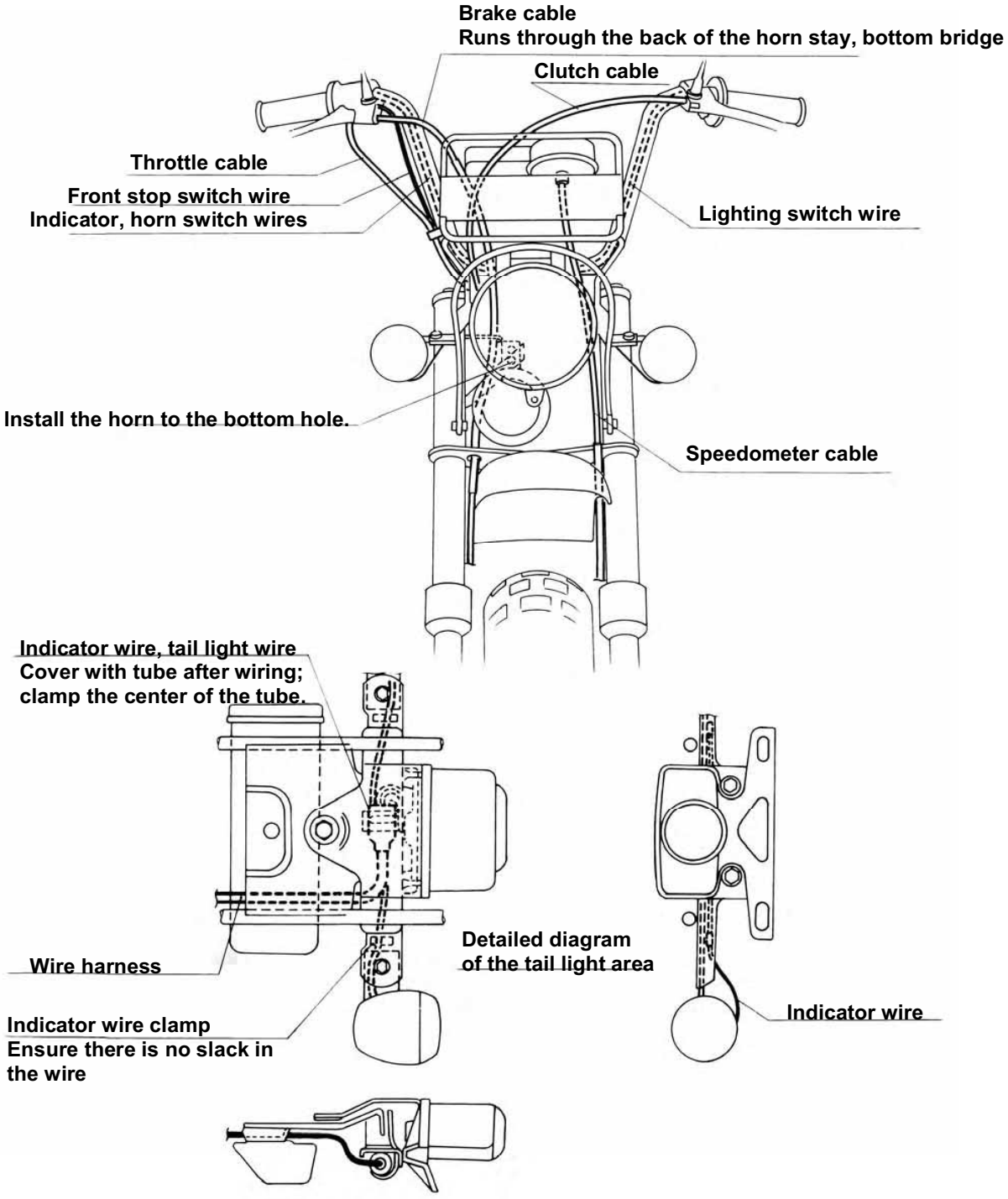
Wiring Schematic

Monkey



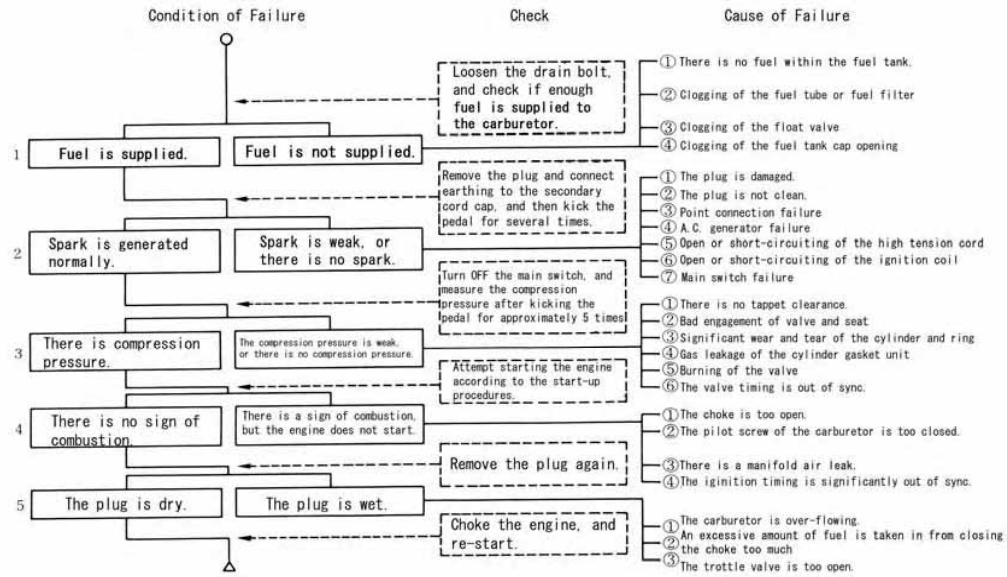

Brake cable
Runs in front of horn and after the bottom bridge
Throttle cable
Front stop switch wire
Lighting switch wire
(Runs along outer side of handle)
Indicator, horn switch wire
The switch wiring for front stop and indicator/ horn both run along the pipe of the handle bar.
Indicator wire
Clamp so that there is no slack.
Install the horn to the top hole.
Speedometer cable
Indicator wire, tail light wire
After connecting wires lay the tube and clamp the center of tube
Detailed diagram of tail light area
Wire harness
Indicator wire clamp
Ensure there is no slack in wire


Brake cable
Front stop switch wire
Throttle cable
High tension lead
Frame body earth
Install with ignition coil
Ignition coil
Wire harness
Silicon rectifier
Clutch cable
Clutch cable
Clamp
Rear stop switch wire
Clutch cable
Tube inner wiring
A.C. generator wire
Ignition coil
Rear stop switch
Engine
breather tube
Battery connection
Overflow tube
A.C. generator wiring
Speedometer cable
Engine
breather
tube
Ignition primary wiring
Runs through above upper
high tension lead
Rear stop switch wire

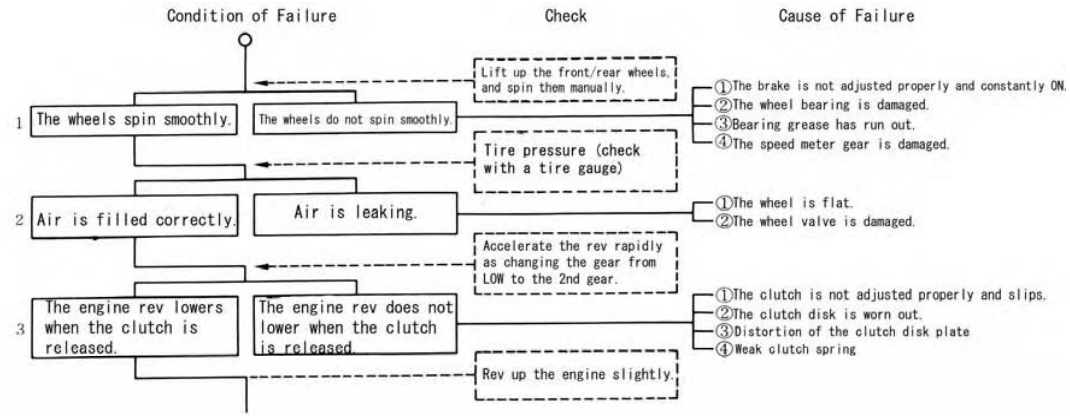

Brake cable
Runs through the back of the horn stay, bottom bridge
Clutch cable
Throttle cable
Front stop switch wire
Indicator, horn switch wires
Lighting switch wire
Install the horn to the bottom hole.
Speedometer cable
Indicator wire, tail light wire
Cover with tube after wiring;
clamp the center of the tube.
Detailed diagram
of the tail light area
Wire harness
Indicator wire clamp
Ensure there is no slack in
the wire
Indicator wire

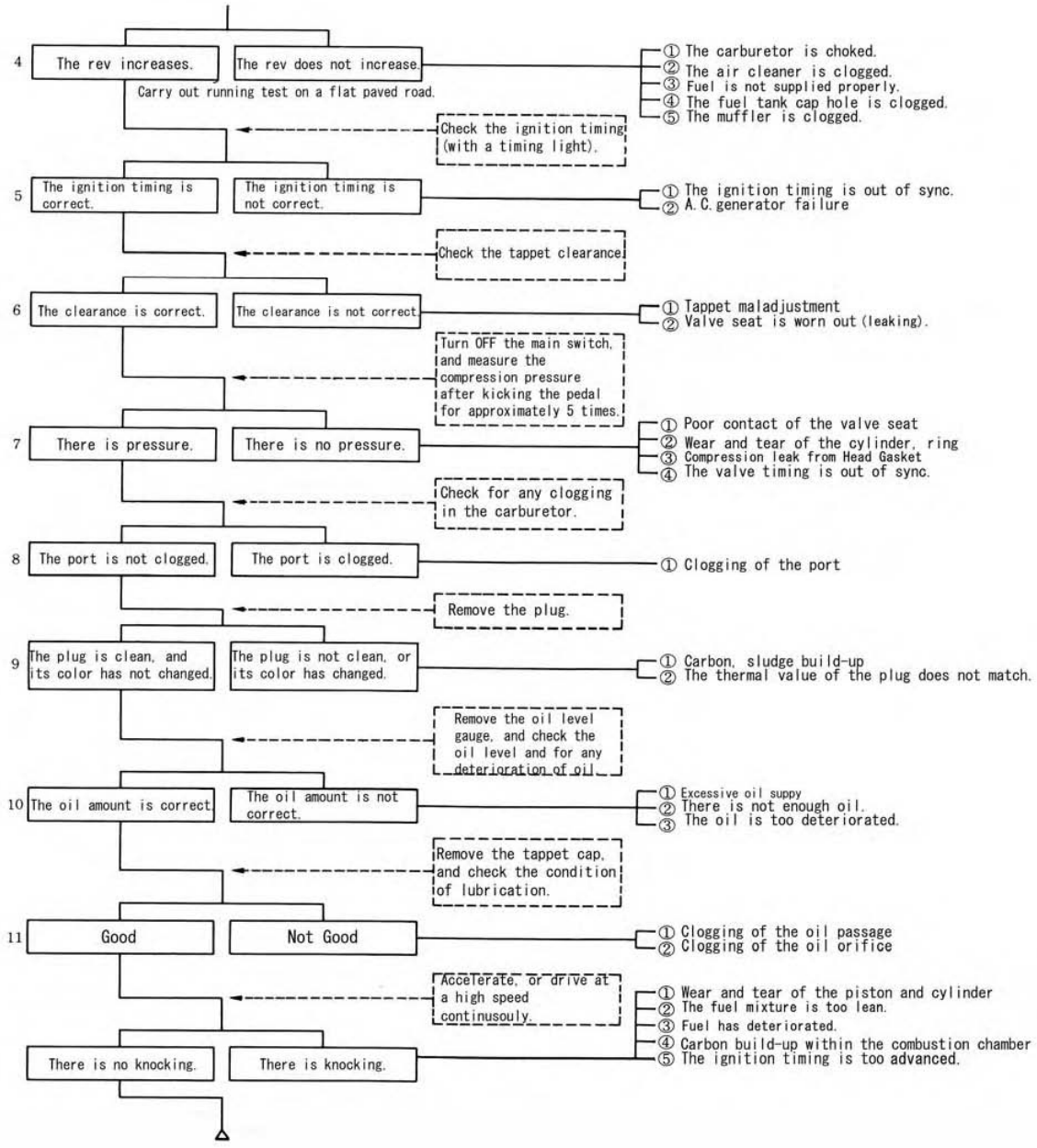
Fault diagnosis

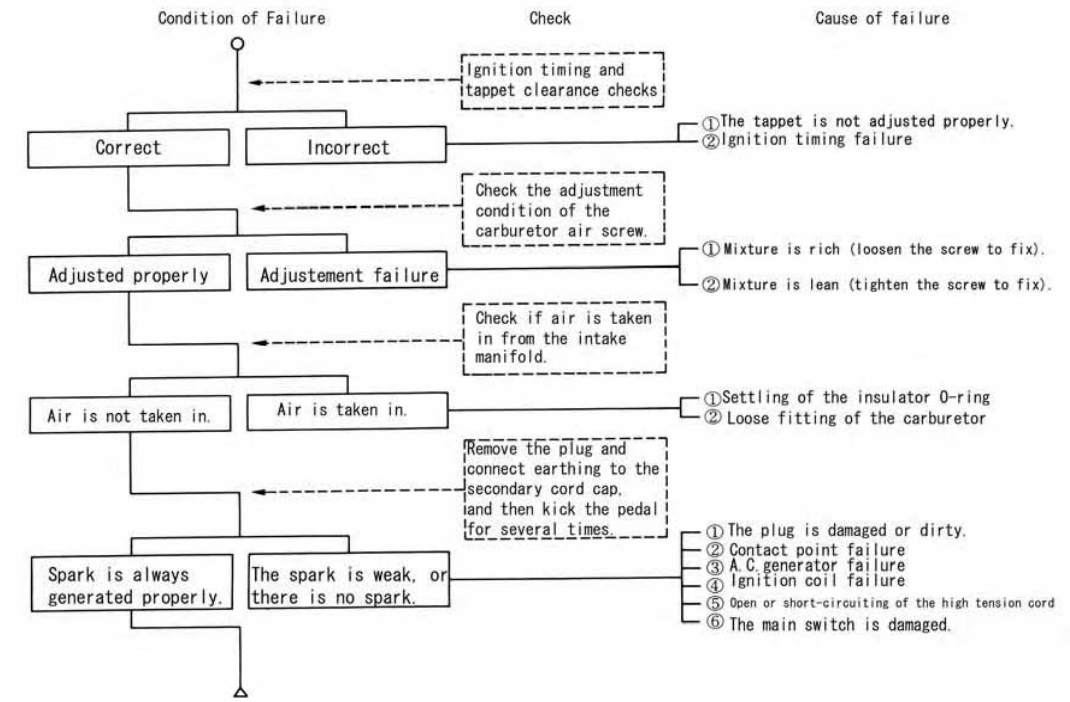
Unable to start or difficulty starting

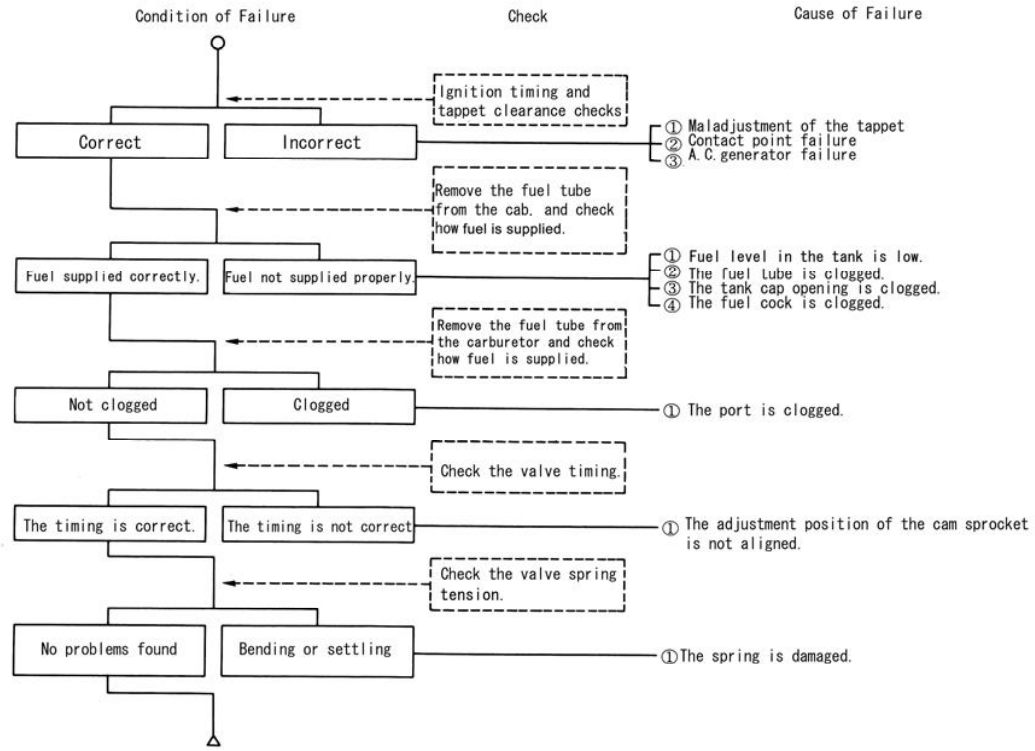


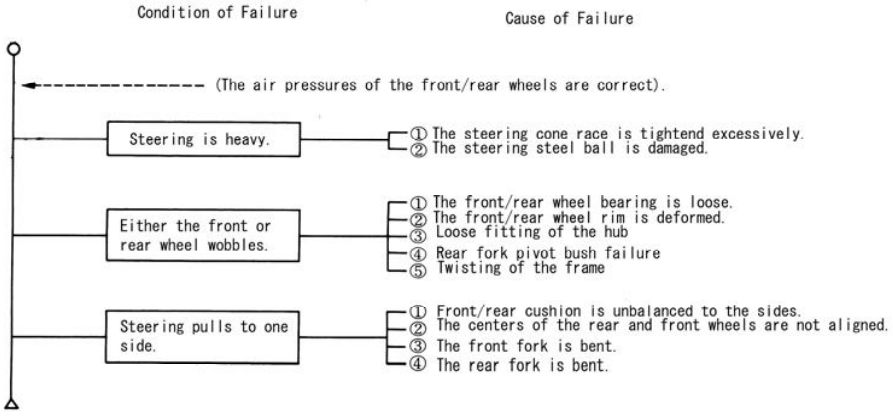
Poor acceleration or low power

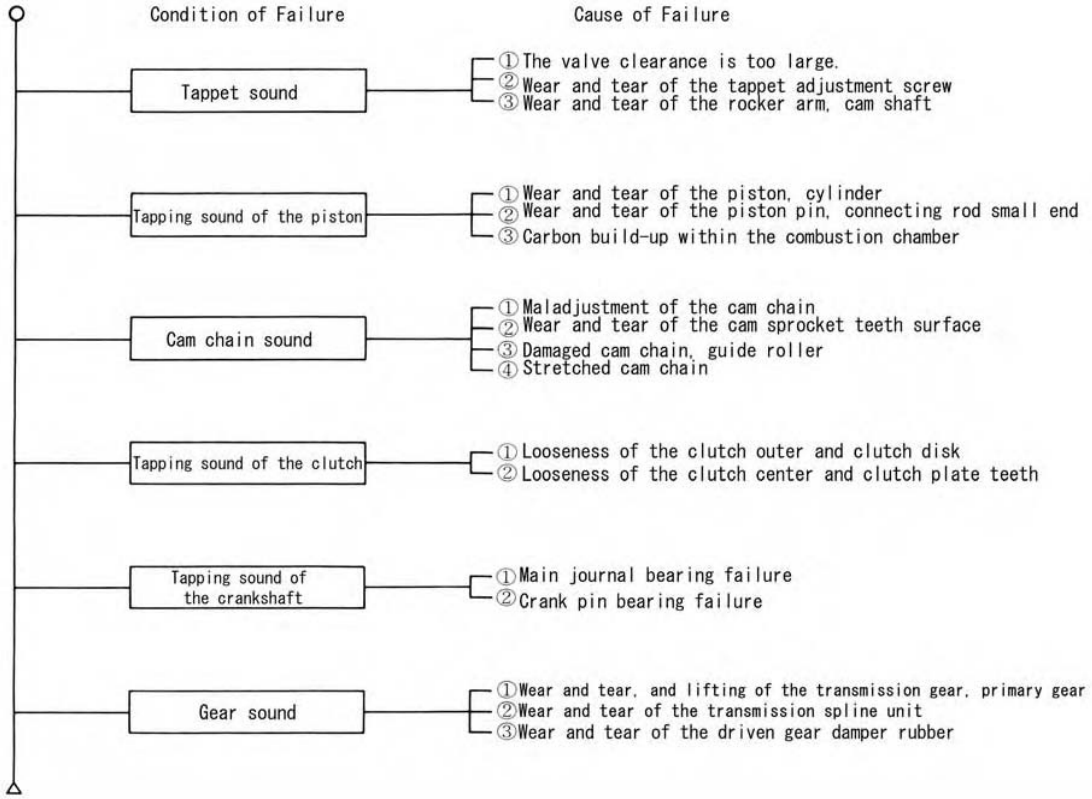



4
The rev increases.
The rev does not increase.
① The carburetor is choked.
② The air cleaner is clogged.
③ Fuel is not supplied properly.
④ The fuel tank cap hole is clogged.
⑤ The muffler is clogged.
Carry out running test on a flat paved road.
Check the ignition timing (with a timing light).
5
The ignition timing is correct.
The ignition timing is not correct.
① The ignition timing is out of sync.
② A.C.generator failure
Check the tappet clearance.
6
The clearance is correct.
The clearance is not correct.
① Tappet maladjustment
② Valve seat is worn out (leaking).
Turn OFF the main switch, and measure the compression pressure after kicking the pedal for approximately 5 times.
7
There is pressure.
There is no pressure.
① Poor contact of the valve seat
② Wear and tear of the cylinder, ring
③ Compression leak from Head Gasket
④ The valve timing is out of sync.
Check for any clogging in the carburetor.
8
The port is not clogged.
The port is clogged.
① Clogging of the port
Remove the plug.
9
The plug is clean, and its color has not changed.
The plug is not clean, or its color has changed.
① Carbon, sludge build-up
② The thermal value of the plug does not match.
Remove the oil level gauge, and check the oil level and for any deterioration of oil.
10
The oil amount is correct.
The oil amount is not correct.
① Excessive oil suppy
② There is not enough oil.
③ The oil is too deteriorated.
Remove the tappet cap, and check the condition of lubrication.
11
Good
Not Good
① Clogging of the oil passage
② Clogging of the oil orifice
Accelerate, or drive at a high speed continusouly.
① Wear and tear of the piston and cylinder
② The fuel mixture is too lean.
③ Fuel has deteriorated.
④ Carbon build-up within the combustion chamber
⑤ The ignition timing is too advanced.
There is no knocking.
There is knocking.


Condition of Failure
Check
Cause of failure
Ignition timing and tappet clearance checks
Correct
Incorrect
①The tappet is not adjusted properly.
②Ignition timing failure
Check the adjustment condition of the carburetor air screw.
Adjusted properly
Adjustement failure
① Mixture is rich (loosen the screw to fix).
② Mixture is lean (tighten the screw to fix).
Check if air is taken in from the intake manifold.
Air is not taken in.
Air is taken in.
①Settling of the insulator O-ring
② Loose fitting of the carburetor
Remove the plug and connect earthing to the secondary cord cap, and then kick the pedal for several times.
Spark is always generated properly.
The spark is weak, or there is no spark.
① The plug is damaged or dirty.
② Contact point failure
③ A.C.generator failure
④ Ignition coil failure
⑤ Open or short-circuiting of the high tension cord
⑥ The main switch is damaged.


Condition of Failure
Check
Cause of Failure
Ignition timing and tappet clearance checks
Correct
Incorrect
① Maladjustment of the tappet
② Contact point failure
③ A.C.generator failure
Remove the fuel tube from the cab. and check how fuel is supplied.
Fuel supplied correctly.
Fuel not supplied properly.
① Fuel level in the tank is low.
② The fuel tube is clogged.
③ The tank cap opening is clogged.
④ The fuel cock is clogged.
Remove the fuel tube from the carburetor and check how fuel is supplied.
Not clogged
Clogged
① The port is clogged.
Check the valve timing.
The timing is correct.
The timing is not correct
① The adjustment position of the cam sprocket is not aligned.
Check the valve spring tension.
No problems found
Bending or settling
①The spring is damaged.


Condition of Failure
Cause of Failure
(The air pressures of the front/rear wheels are correct).
Steering is heavy.
① The steering cone race is tightend excessively.
② The steering steel ball is damaged.
Either the front or rear wheel wobbles.
① The front/rear wheel bearing is loose.
② The front/rear wheel rim is deformed.
③ Loose fitting of the hub
④ Rear fork pivot bush failure
⑤ Twisting of the frame
Steering pulls to one side.
① Front/rear cushion is unbalanced to the sides.
② The centers of the rear and front wheels are not aligned.
③ The front fork is bent.
④ The rear fork is bent.


Condition of Failure
Cause of Failure
Tappet sound
①The valve clearance is too large.
②Wear and tear of the tappet adjustment screw
③Wear and tear of the rocker arm, cam shaft
Tapping sound of the piston
①Wear and tear of the piston, cylinder
②Wear and tear of the piston pin, connecting rod small end
③Carbon build-up within the combustion chamber
Cam chain sound
①Maladjustment of the cam chain
②Wear and tear of the cam sprocket teeth surface
③Damaged cam chain, guide roller
④Stretched cam chain
Tapping sound of the clutch
①Looseness of the clutch outer and clutch disk
②Looseness of the clutch center and clutch plate teeth
Tapping sound of the crankshaft
①Main journal bearing failure
②Crank pin bearing failure
Gear sound
①Wear and tear, and lifting of the transmission gear, primary gear
②Wear and tear of the transmission spline unit
③Wear and tear of the driven gear damper rubber

3. CHECK, ADJUSTMENT

Check and maintenance method-------- 3-1
Engine Oil---------- 3-5
Oil Filter ---------- 3-5
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Clutch adjustment ----------3-10
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Rear Brake ----------3-13
Stop lamp switch check ----------3-14
Drive chain ----------3-14

Check and maintenance method

The following check and maintenance methods are based on the revision of the Japanese Road Trucking Vehicle Law. Carry out check and maintenance according to the local laws and legislations in your area.

1) "○" indicates to be checked.
2) "☆" indicates the regular replacement of safety parts.

The replacement intervals are based on the performance of vehicles used under normal running conditions. If the running condition of your vehicle differs significantly, you must replace parts accordingly.

Check and maintenance item			Check and maintenance intervals				Criteria
			Before operation	1 month	For personal use		
					Every 6 months	Every 12 months	
Steering mechanism	Handle bars	Play, looseness, vibration					
		Operating condition				○	
	Front wheels	Rotating angles to the left and right				○	
	Steering fork	Damage					
		Installation condition of fork spindle			○	○	Indicates steering stem
		Looseness of fork spindle bearing				○	Indicates steering stem
Braking mechanism	Brake pedal	Play and clearance from the floor plate when the pedal is pressed in			○	○	Play Front brake (lever type) 10-20mm Rear brake (pedal type) 10-20mm
		Distance from floor plate and performance	○				
		Brake effectiveness		○	○	○	
	Rods and cables	Looseness, vibration and damage		○		○	

Check and maintenance item			Check and maintenance timing				Criteria
			Before operation	1 month	For personal use		
					Every 6 months	Every 12 months	
Braking mechanism	Brake drum and brake shoe	Clearance between the drum and lining			○	○	
		Wear and tear of the sliding part and lining				○	Indicator type Lining thickness standard: 4.0mm Wear usage limit: 111mm
		Wear and tear or damage of the drum				○	Drum diameter standard 110mm Usage limit 111mm There is no damage in the drum panel.
Running device	Wheel	Tyre air pressure	○		○	○	(Unit kg/ cm²) Front wheel / Rear wheel 1 rider only – General road: 1.00 / 1.25 Motor way: / General road: / Tyre spec.: 3.50-8 -2PR / 3.50-8 -2PR
		Cracking and damage of tyre					
		Depth of tyre groove and abnormal wear and tear	○		○	○	Leftover groove: Front wheel up to 0.8mm Rear wheel up to 0.8mm
		Metal shards, stones, or other objects imbedded in tyre	○		○	○	
		Looseness of the wheel nut and wheel bolt			○	○	Tightening torque: Front axle nut: 3.5-5.0kgm Rear axle nut: 3.5- 5.0kgm
		Damage of the rim, side ring, and wheel disk		○		○	Wheel rim deflection at the rim end Front 2.0mm or less, rear 2.0mm
		Looseness of front wheel bearing				○	
		Looseness of rear wheel bearing				○	
Suspension	Spring chassis	Damage				○	Check for broken, bent or sagged cushion springs
	Suspension arm	Looseness of joint and arm damage				○	
	Clutch	Lever play			○	○	Clutch lever play (only Gorilla) 10- 20mm
		Operation					

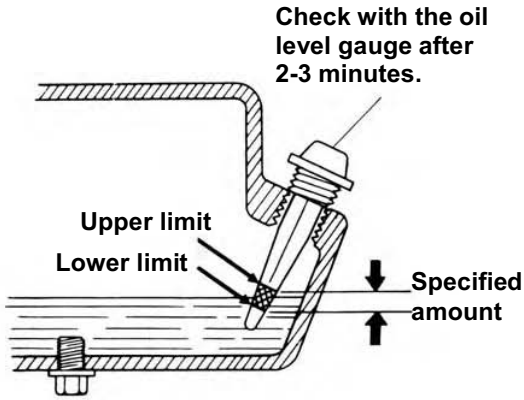
Check and maintenance item			Check and maintenance timing				Criteria
			Before operation	1 month	For personal use		
					Every 6 months	Every 12 months	
Power transmission	Transmission	Oil leakage and oil level			○	○	Oil level, stick gauge within upper and lower limits
		Looseness of operation mechanism				○	
	Chain and sprocket	Looseness of chain		○	○	○	Chain adjustment, MAX freeplay 10-20mm
		Sprocket installation state and wear				○	
Electronic devices	Ignition	Ignition plug condition					Plug gap 0.6- 0.7mm
		Ignition timing			○	○	Alignment mark on flywheel, ignition timing BTDC30±2° / 1,500rpm
		Contact breaker condition			○	○	Point gap 0.3- 0.4mm
	Battery	Fluid volume			○	○	Fluid level within upper and lower limits
		Fluid relative density				○	Fluid temperature at 20℃, relative density 1,260- 1,280
		Terminal connection condition				○	
	Electric wiring	Looseness and damage to connectors				○	
Engine	Main body	Catch/ Start condition and abnormal sound			○	○	
		Low speed operation and acceleration		○			Idling rpm: 1,500±100rpm
		Condition of exhaust					
		Condition of air cleaner element			○	○	
		Valve clearance		○		○	When cold, intake 0.05±0.02mm exhaust 0.05±0.02mm
		Cam chain adjustment		○	○	○	Semi-automatic
	Lubrication system	Oil level and condition					Oil level, stick gauge within upper and lower limits
		Oil leakage			○	○	
		Oil level					
		Oil filter clogging				○	
		Engine oil replacement		○			First time 1,000km, every 3,000km after first replacement
	Fuel system	Fuel amount	○				
		Fuel leakage			○	○	
		Condition of throttle valve and choke valve					
		Fuel filter clogging				○	
		Fuel hose replacement					Every 4 years

Check and maintenance item		Check and maintenance timing				Criteria
		Before operation	1 month	For personal use		
				Every 6 months	Every 12 months	
Lighting system and direction indicator	Operation			○	○	
	Flashing condition, dirt/dust or damage	○				
Alarm and locking system	Operation				○	
Rear view mirror	Condition of reflection	○				
Reflector and vehicle registration number plate/ vehicle number plate	Dirt/ dust or damage	○				
Gauge	Operation				○	
Exhaust pipe and muffler	Loose in fitting and damage				○	
	Muffler function				○	
Frame	Looseness and damage				○	
Parts where abnormalities were found when last driven	Make sure that there are no abnormalities in the relevant parts	○				
Others	Lubrication condition of chassis parts					

ENGINE OIL

Oil level check

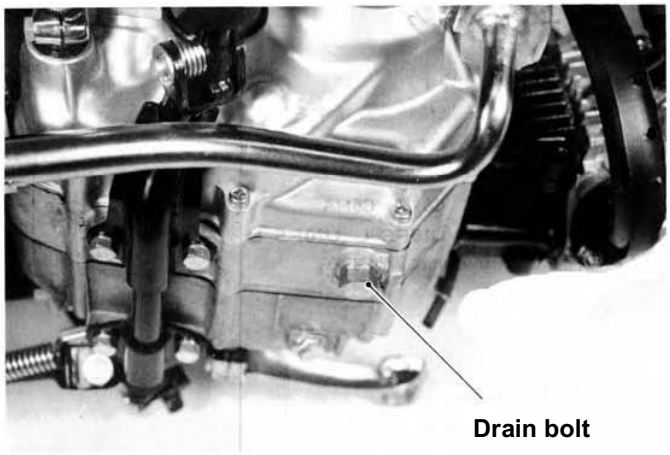
Stop the engine and place the vehicle up right on a level surface. Wait 2-3 minutes and then check the oil level without screwing in the oil level gauge. If the oil level has dropped as far as the lower limit, top up engine oil until it reaches the upper limit.



Oil Replacement

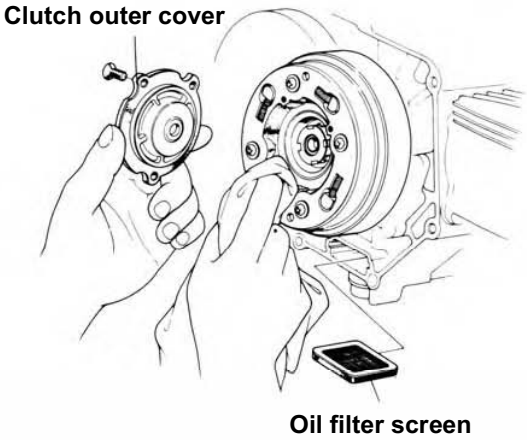
✻ Remove oil when it is still warm.

Remove the oil level gauge.
Detach the drain bolt, and remove oil.
Kick over the kick start several times to discharge the leftover oil.
Attach the drain bolt.
Torque: 2.0- 2.5kg・m



✻ Make sure that there is no damage to the sealing washer.

Pour engine oil.
Oil capacity: 0.8ℓ
Recommended oil: HONDA GN4 or equivalent Oil
Start the engine, and check for any oil leakage. Stop the engine and check the oil level.

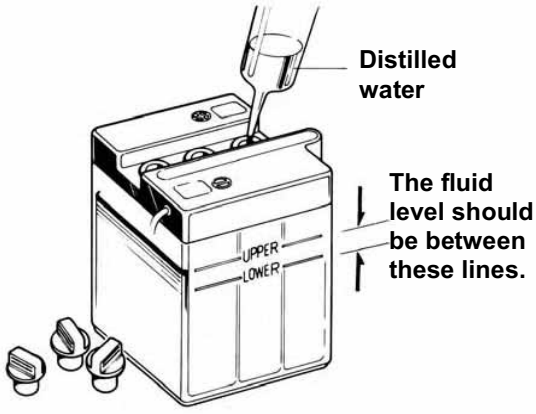


OIL FILTER

Cleaning the oil filter
Remove the engine oil.
Remove the kick pedal, and detach the R. crankcase cover.
Remove the clutch outer cover, and clean inside with a waste cloth.
Detach the oil filter screen, and remove any dust or grime.
Attach the oil filter screen, clutch outer cover, and R. crankcase cover.
Pour in engine oil and start the engine to check for oil leaks or any other problems.

BATTERY
Check the battery fluid.
If the battery fluid level has dropped as far as "LOWER", add distilled water until the fluid level reaches "UPPER".

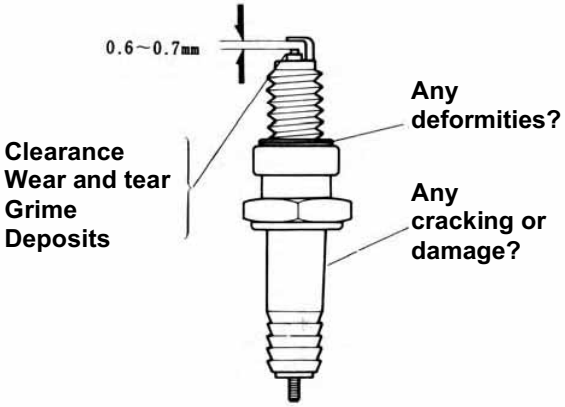
● Checking the fluid density (⇒ Chapter 15)
● Charging the battery (⇒Chapter 15)



SPARK PLUG
Remove the spark plug.
Check for any singeing and for any dust, grime, or debris adhered to the plug. If there is any clean with a plug cleaner or wire brush.

Specified plug: NGK C5CHA C6HA, ND U16FS-L U20FS-L

Make adjustments to the plug clearance so that it is between 0.6-0.7mm.



COMPRESSION PRESSURE
Warm up the engine. Remove the spark plug and fit the compression gauge. Open the choke and throttle fully. Strongly kick over the kick start approximately 5 times to measure the compression pressure.

Compression pressure: 10-12kg/cm^2

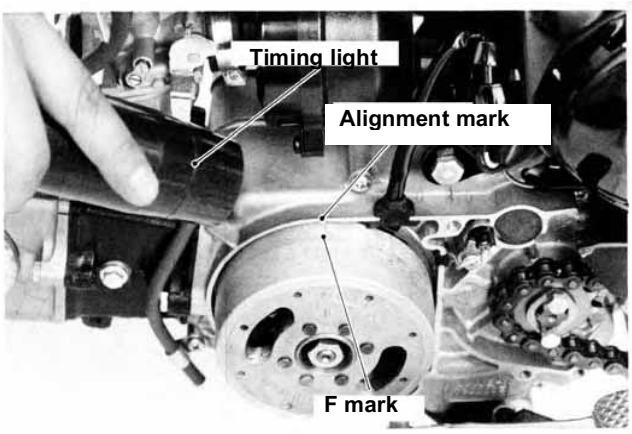
If the compression pressure is low, check the following items:
Compression leakage from the valve
Maladjustment of the tappet
Breakage of the cylinder head gasket
Wear and tear of the piston ring
Wear and tear of the piston, cylinder

If the compression pressure is high, this may be due to carbon build-up within the combustion chamber or the piston head.

IGNITION TIMING

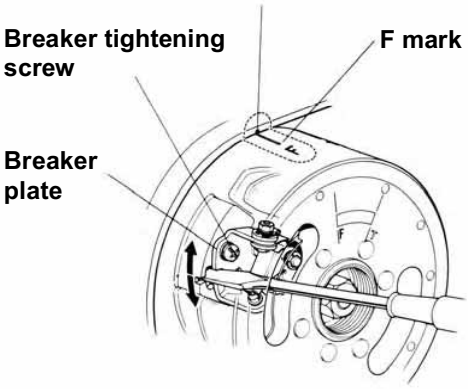
Ignition timing adjustment (with timing light)

Remove the L. crankcase cover.
Use a timing light to make sure that the alignment mark is in line with the "F" during idling.
Check the point clearance after making adjustment.



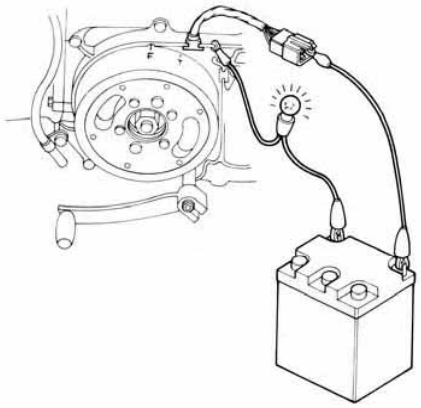
Alignment mark

Loosen the adjustment screw, and move the breaker plate to make this adjustment.



Ignition timing adjustment (with lamp)

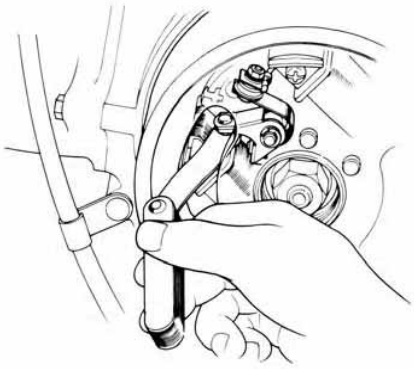
Remove the L. crankcase cover.
Remove the battery from the frame, and connect one side of a 6V 5W lamp to the positive terminal and the other side to earth.
Detach the A.C. generator coupler, and connect it to the negative terminal and the primary wire (Black) of the coupler.



Turn the crank in its rotating direction. The timing is correct if the lamp dims when the mark is aligned with the "F".

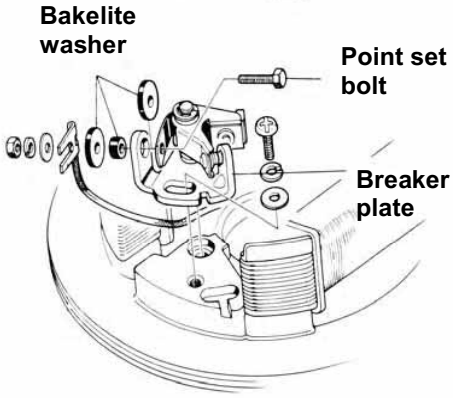
Checking the point clearance

After making adjustment to the ignition timing, turn the crankshaft to the position where the point is at its maximum opening. Use a thickness gauge to measure the point clearance.



Point clearance: 0.3- 0.4mm
Replace the point if the clearance is outside the rated value.
Attach the L. crankcase cover.

Point replacement
Remove the flywheel (10-3).
Remove the primary wire of the contact breaker.
Remove the breaker plate screw, and replace the contact breaker point.
After replacement, make adjustment to the ignition timing, and check the point clearance.

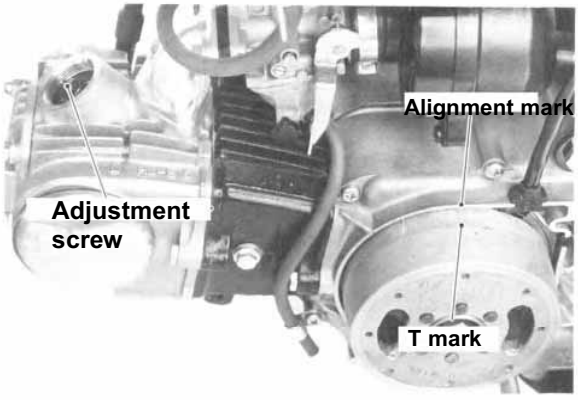


Tappet adjustment

✻ Carry out tappet clearance check and adjustment when the engine has cooled down.

Remove the top and bottom tappet caps.

✻ Insert a waste cloth as a small amount of oil may seep out.

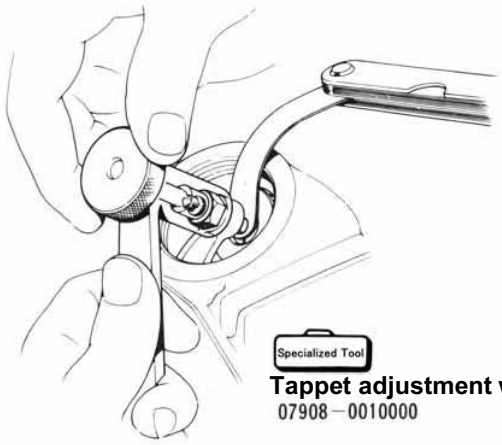


Remove the L. crankcase cover.
Turn the crankshaft in its rotating direction and align the alignment mark with the "T" on compression TDC.

Carry out tappet clearance check and adjustment.
Tappet clearance
IN: 0.05±0.02mm
EX: 0.05±0.02mm

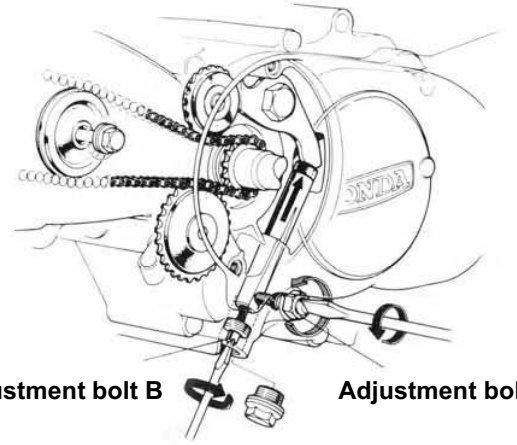
Loosen the lock nut, and carry out adjustment using the adjustment screw.

✻ After tightening the lock nut, recheck the clearance.



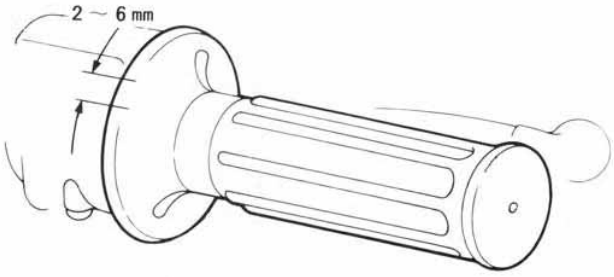
Tappet adjustment wrench
07908－0010000

CAM CHAIN ADJUSTMENT
The cam chain is automatically adjusted by the spring when first the 8mm lock nut and then adjustment bolt A are loosened. If the cam chain continues to make noise, remove the sealing bolt while loosening adjustment bolt A, and tighten adjustment bolt B gradually until the noise stops.

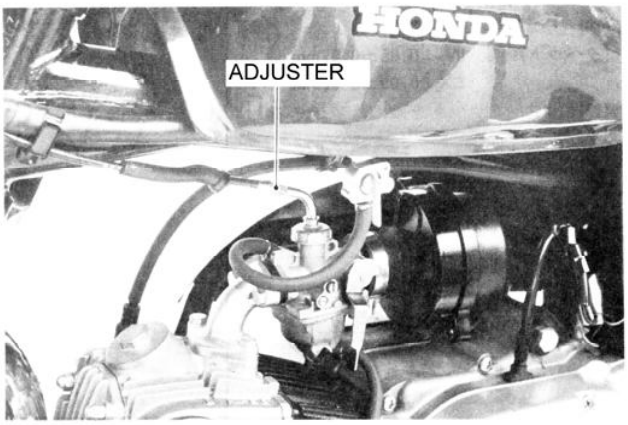

Adjustment bolt B **Adjustment bolt A**

CARBURETOR ADJUSTMENT
Throttle cable adjustment

Check for play in the throttle grip.
Play: 2-6mm



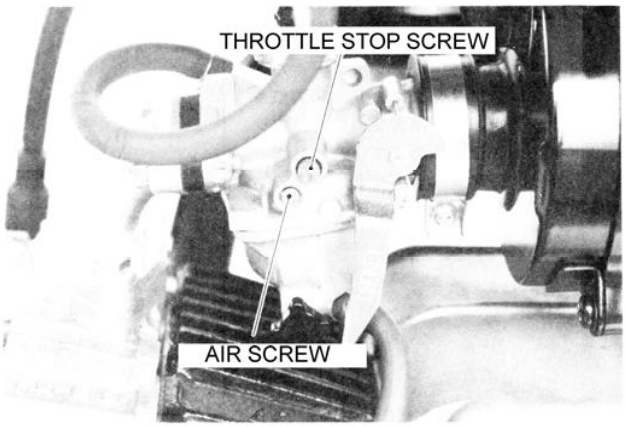
Carry out adjustment by turning the adjuster. If adjustment is not possible, replace the throttle cable.



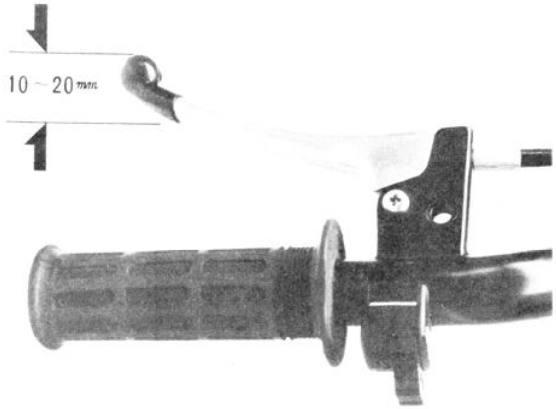
Idling adjustment

✻ Carry out adjustment after warming up the engine.

1. Turn the throttle stop screw to the left, and adjust the idling speed to the MIN speed that can be maintained.
2. Turn the air screw to the left and right, and adjust it to the position where the MAX idling speed can be obtained.
3. Regain the rated idling speed using the throttle stop screw.
4. Turn the air screw further to check for any fluctuation of idle speed. If there is any fluctuation, repeat steps 2-4 to gain the rated idling speed.
5. Check for throttle response and free play.



	Standard value
Idling engine speed	1,5000rpm
Air screw reverse turn	1 1/2



CLUTCH ADJUSTMENT

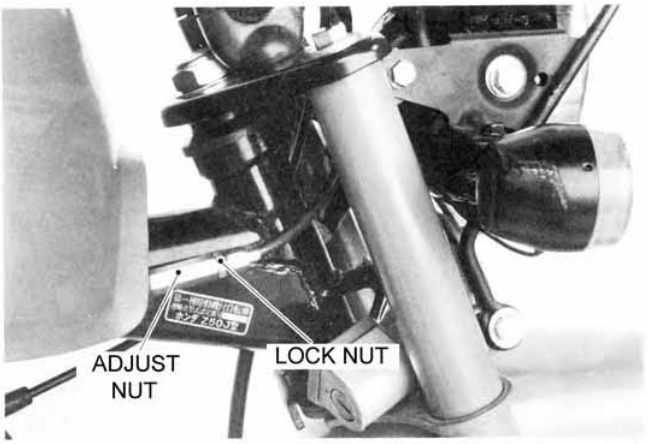
Manual clutch

Check for any play in the clutch lever.

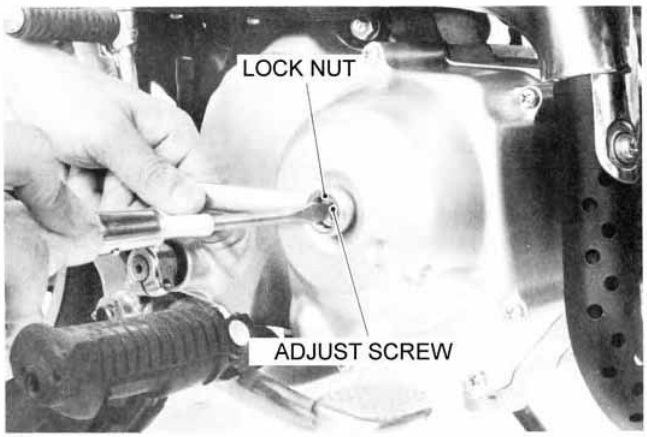
Play: 10- 20mm

Loosen the lock nut so that the play in the clutch lever is between 10-20mm, and make adjustment to the clutch cable using the adjustment nut.

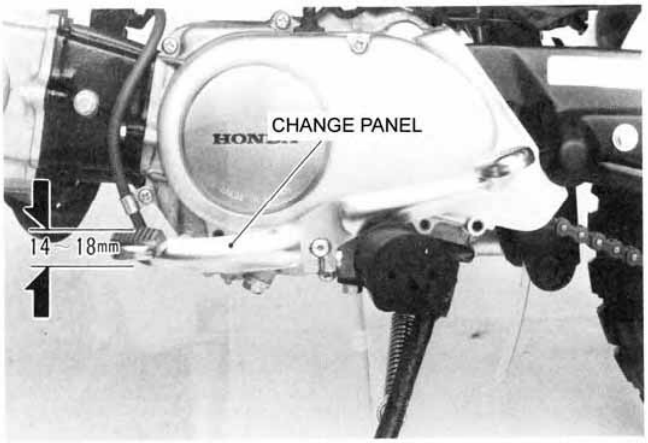
✻ Start the engine when adjustment has been made and make sure gear changes can be carried out smoothly that the engine does not stall and that the vehicle does not move forward abruptly.



Automatic centrifugal clutch
Loosen the lock nut, and turn the adjustment screw to the right by approximately 1 turn. Then, turn the screw to the left until it becomes slightly heavy.
Turn the screw back to the right 1/8-1/4 turns from the position where the screw became heavy.



✻
Make sure that the adjustment screw does not turn along with the lock nut when tightening the nut.
- Start the engine after making adjustment in order to check that the clutch is disengaged and has changed smoothly and that there is no slipping of the clutch.



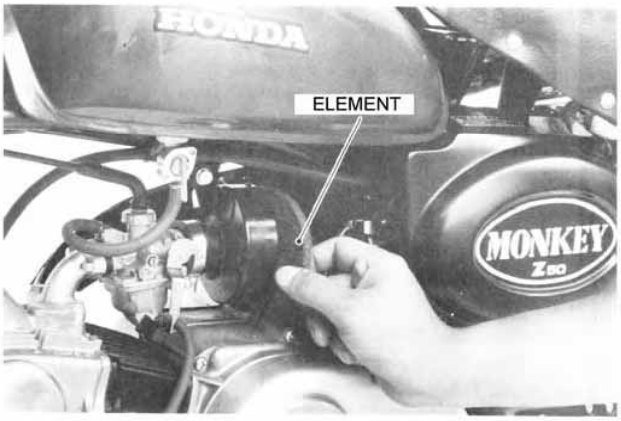
The clutch has to be disengaged when the tip of the change pedal has stepped down by 14-18mm.

✻ If stalling or abrupt vehicle movement occurs, wear and tear of clutch plate A, the drive plate, or the roller is a possible cause.

CLEANING THE AIR CLEANER
Remove the screw, and detach the air cleaner cover.

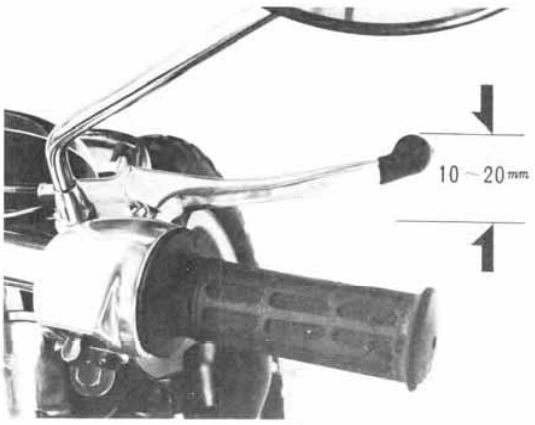
Remove the element.
Clean the element and dry.

✻ Do not clean with fuel or acidic, alkaline, or organic flammable oil.

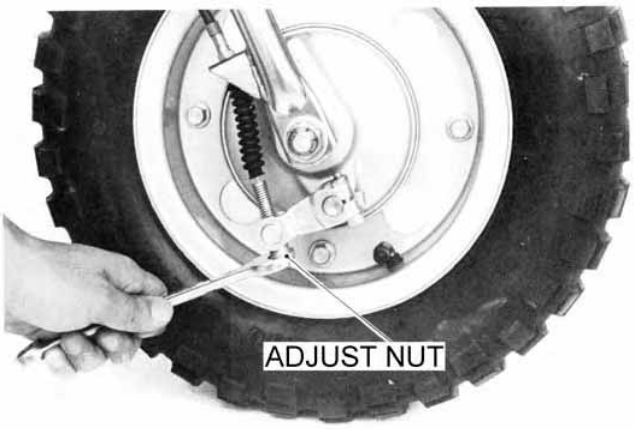


Soak the element in clean gear oil (SAE80-90) or engine oil.
Squeeze the oil out of the element and reattach.

FRONT BRAKE
Check for any play in the front brake lever.
Play: 10-20mm



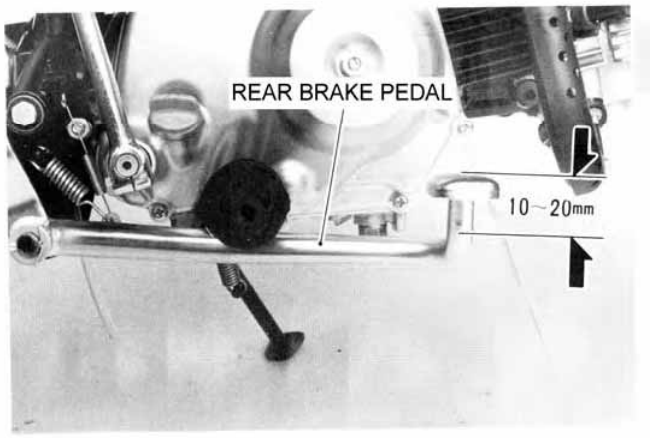
If the play is outside the rated value, turn the adjustment nut to the left or right to make adjustment.



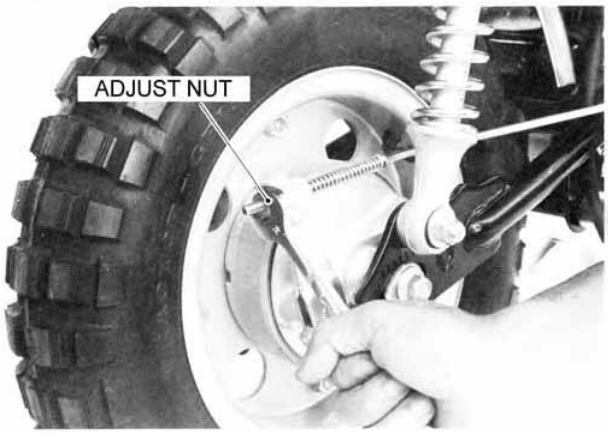
REAR BRAKE

Check for any play in the rear brake pedal.

Play: 10-20mm

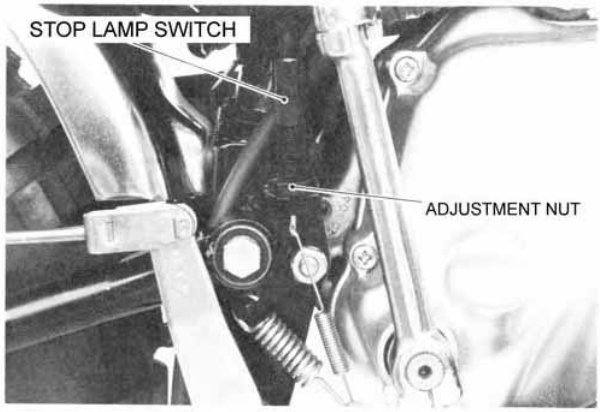


Turn the adjustment nut to the left or right to make adjustment to the play.



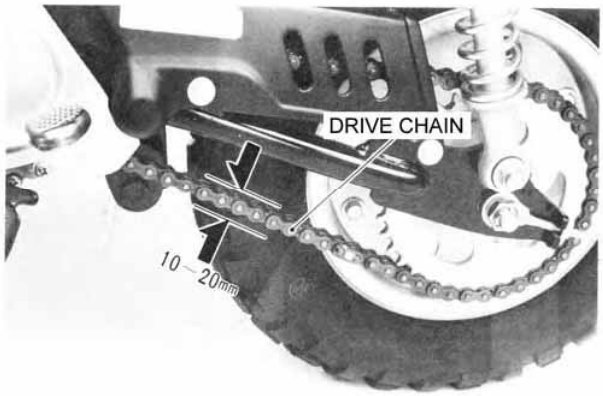
CHECKING THE STOP LAMP SWITCH

Adjust the adjustment nut so that the stop lamp comes on when the tip of the brake pedal is pressed down by 10mm.



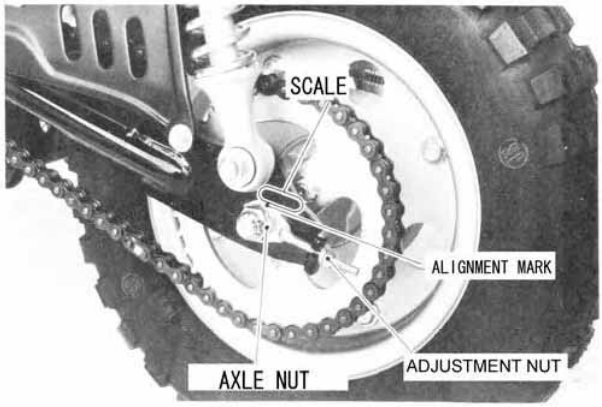
DRIVE CHAIN
Put the gear in neutral.
Check the tension of the drive chain in the middle of both sprockets.

MAX free play: 10-20mm



Use the following procedure to make adjustment:
Loosen the axle nut and turn the left and right adjustment nuts.

✻ Match both left and right alignment marks to the same scale position.



Tighten the axle nut.
Torque: 3.5- 5.0kg ◦ m

Further tighten the adjustment nut.

OIL LUBRICATION FLOW

Fault diagnosis 4-1
Maintenance information 4-1
Oil lubrication flow diagram 4-2

Fault diagnosis

Oil level is low

1. Natural oil consumption
2. Oil leakage
3. Wear and tear of the piston ring

Oil quality has deteriorated

1. Oil has not been replaced
2. Damage to the head gasket

Oil lubrication failure

1. Oil level is too low
2. Damage in the oil pump
3. Clogging of the oil filter, oil passage, or oil orifice

Maintenance information

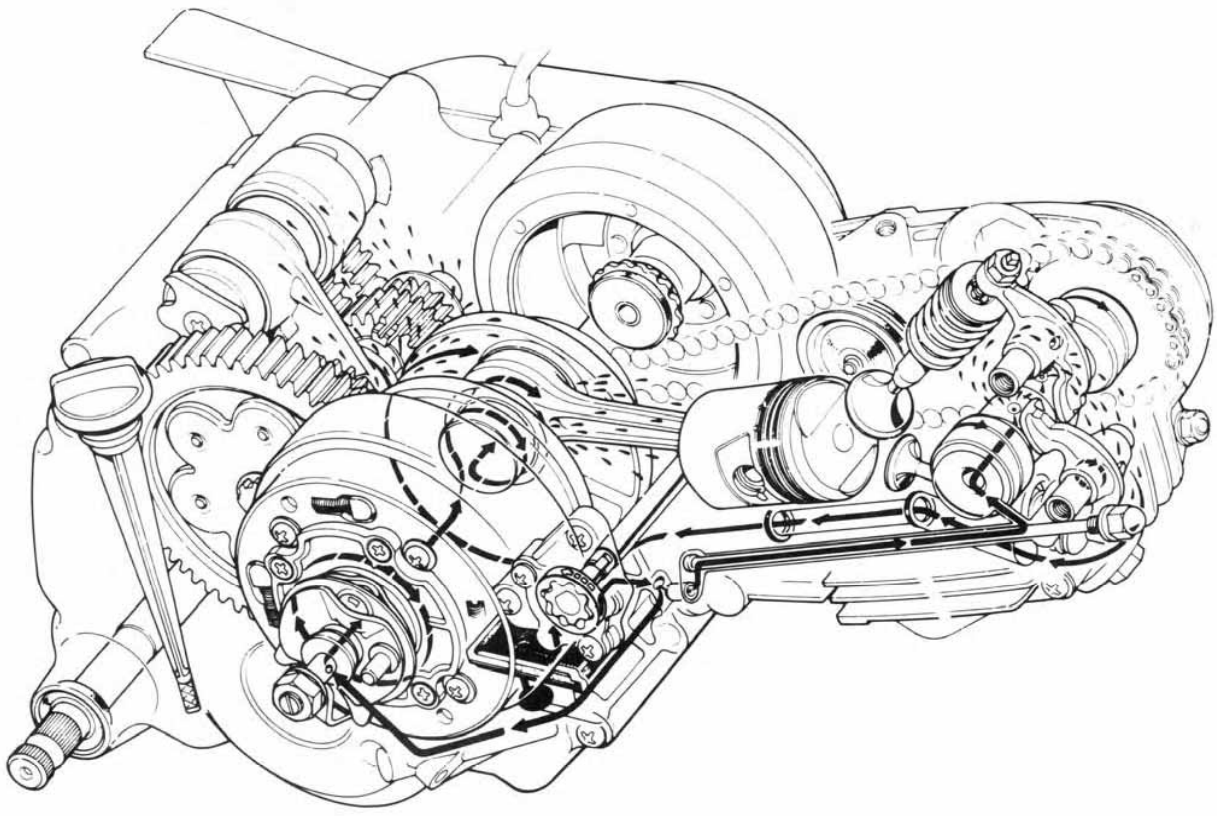
Cautionary points during operating

Oil pump: Chapter 9
Centrifugal filter: ⇒ Chapter 3
Oil filter screen: ⇒ Chapter 3

Specifications

Oil capacity	0.8
Oil used	HONDA GN4 or equivalent Oil 10W-30

OIL LUBRICATION FLOW DIAGRAM



ENGINE ATTACHMENT/ REMOVAL

Maintenance information 5-1
Engine removal 5-2
Engine attachment 5-4

Maintenance information

Cautionary points during operation

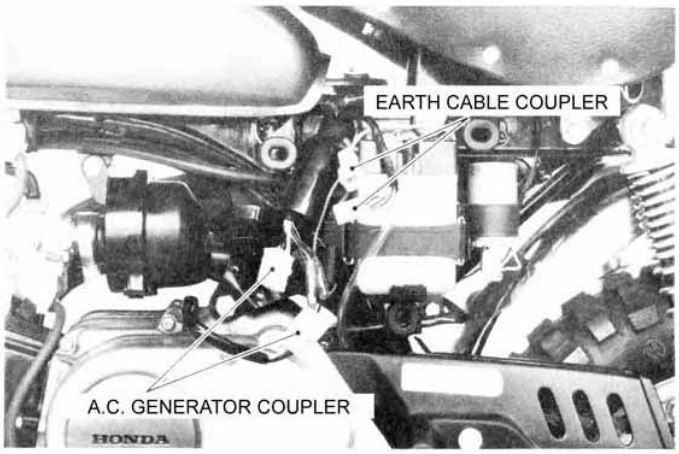
The engine should be removed when carrying out maintenance on the following items:

- Conrod
- Transmission
- Crankshaft

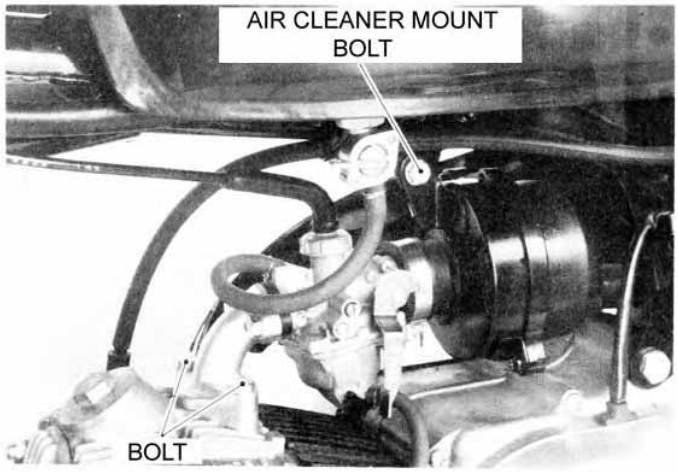
Engine weight: approximately 17kg

ENGINE REMOVAL

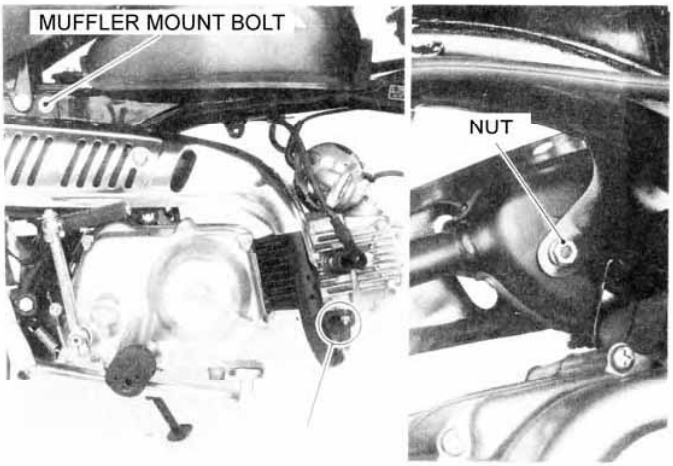
Remove the L. side cover, and detach the battery couplers.
Remove the A.C. generator couplers.
Drain the engine oil.



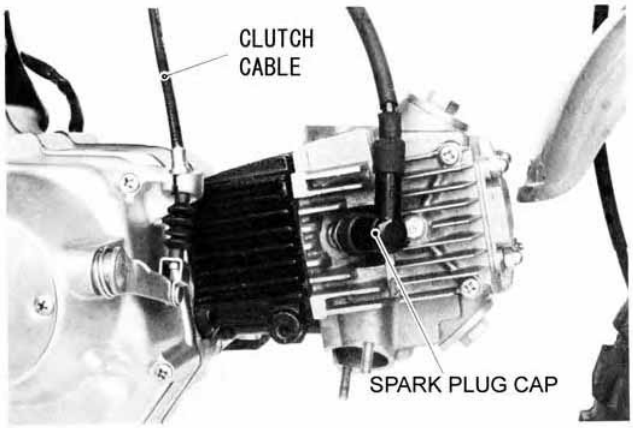
Remove the inlet manifold tightening bolts.
Remove the air cleaner mounting bolt, and detach the carburetor and air cleaner.



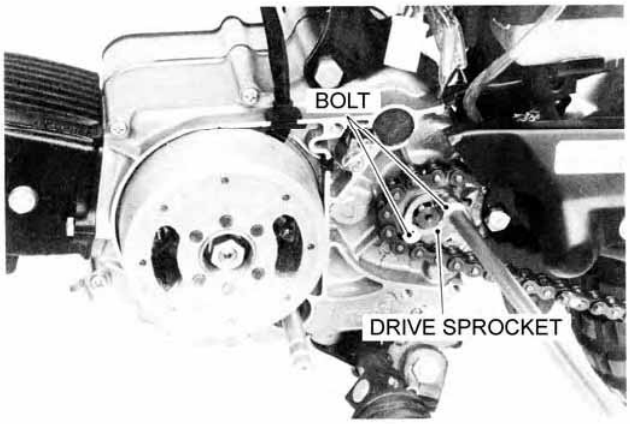
Loosen the exhaust pipe tightening nuts and muffler mounting bolt/nut, and detach the muffler.



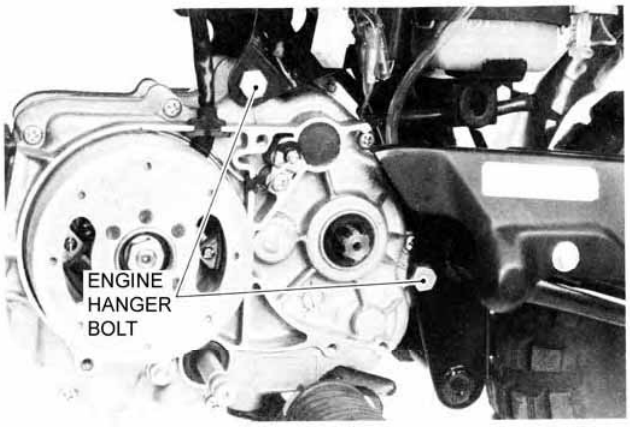
Remove the clutch cable (Gorilla).
Remove the spark plug cap.



Remove the gear change pedal and L. crankcase cover.
Remove the drive sprocket, and detach the chain.

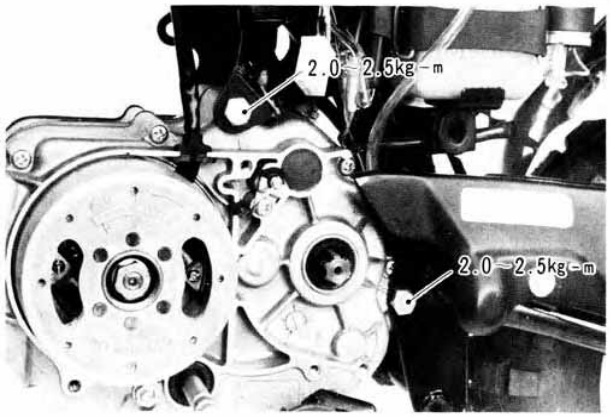


Support the frame, and remove the step.
Loosen the engine hanger nuts.
Place a suitable platform underneath the engine, remove the hanger bolts, and then detach the engine.



ENGINE INSTALLATION

Engine installation is carried out in the reverse order to removal.



Take care that parts are not damaged during installation.

- Run the wires and cables through the right positions (⇒2-6).
- Fill with engine oil (⇒3-3).
- Carry out the following checks/adjustments:

Clutch play (3-8)

Tension in the drive chain (⇒3-12)

6. CYLINDER HEAD, VALVE

Fault diagnosis	6-1
Maintenance information	6-1
Cylinder head removal	6-4
Cylinder head disassembly	6-5
Valve guide replacement	6-10
Valve seat check/ repair	6-11
Cylinder head assembly	6-14
Cylinder head attachment	6-15

Fault diagnosis

Faults around the cylinder head can be generally assessed by measuring the compression pressure or by listening to the operating sounds of the upper part of the engine.

Compression pressure is either too low or unstable

1. Valve

Tappet maladjustment
Burning or bending of the valve
Damage in the valve spring
Valve timing fault
Valve seat sealing fault

2. Cylinder head

Head gasket leakage
Deformation or cracking of the head

3. Cylinder, piston fault (Chapter 7)

Compression pressure is too high

1. Carbon build-up within the piston or combustion chamber

Noise

1. Tappet maladjustment
2. Burnt valve or damage/ wear of the valve spring
3. Damage/ wear and tear of the rocker arm/ rocker arm shaft

Maintenance information

Cautionary points during operation

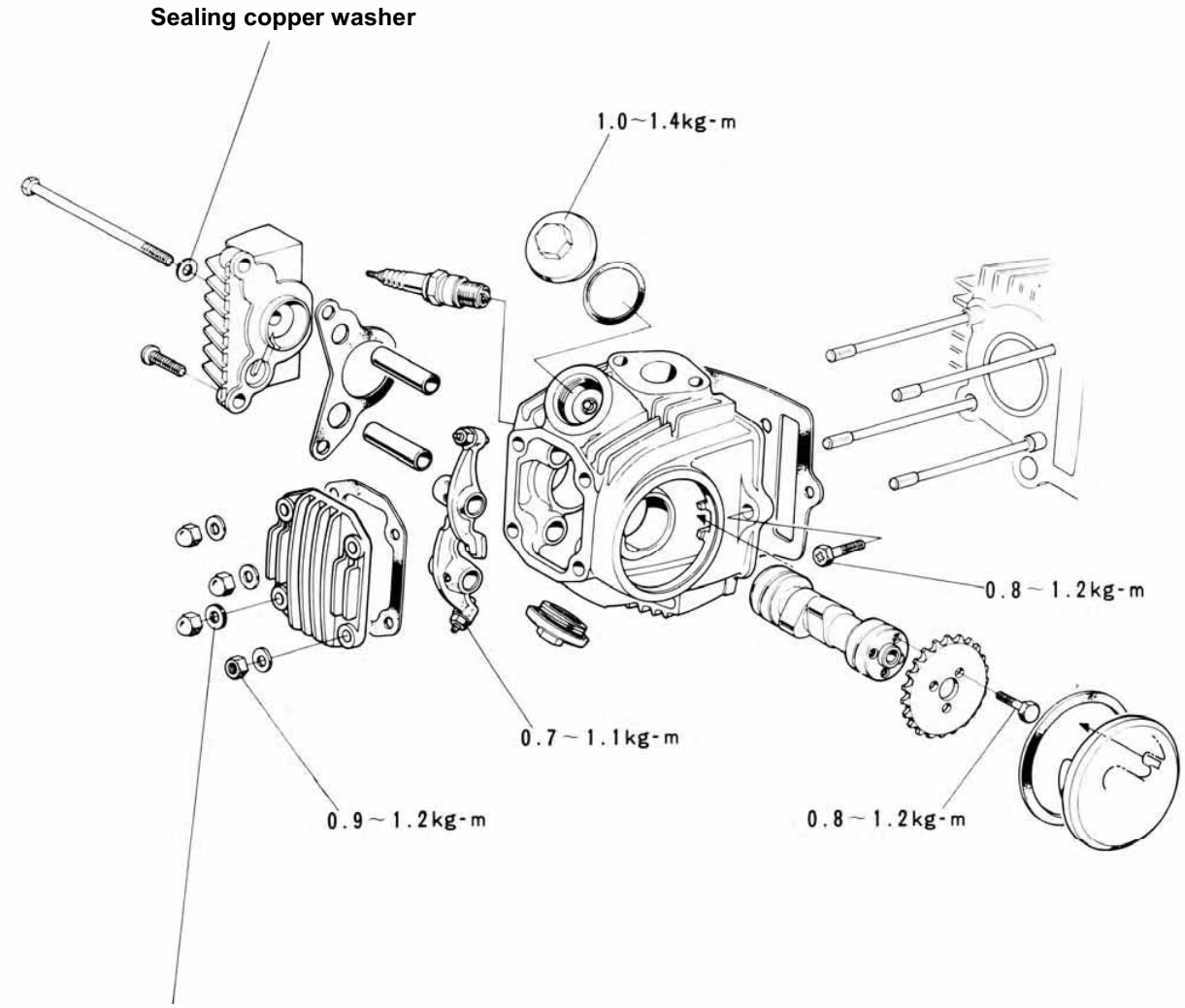
Make sure that there is no clogging in the oil hole and that O-rings and knock pins are correctly fitted when installing the cylinder head.
When assembling the cylinder head, apply molybdenum disulfide onto the cam shaft bearing as an initial lubrication until oil comes up to the bearing.
Pour plenty of engine oil into the cylinder head oil reserve as well.

Specialized tools

Valve guide reamer 07984-MA60001
Valve guide driver 07942-MA60000
Valve spring compressor 07757-0010000

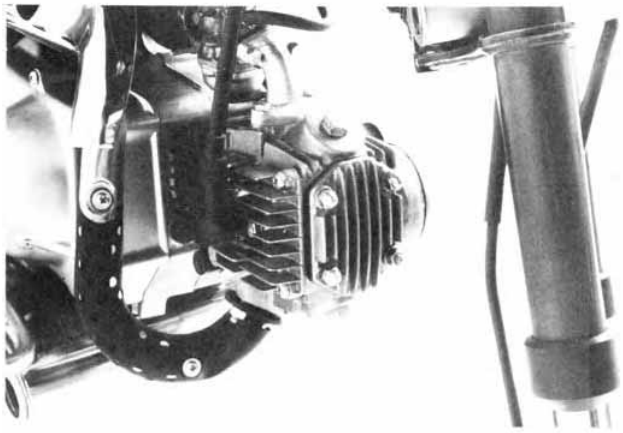
MAINTENANCE CRITERIA

		Standard value	Usage limit
Deformation of the cylinder head		-	Repair or replace if 0.05mm or more.
Valve seat contact width		1.0- 1.3mm	Repair if 2.0mm or more.
Valve stem outer diameter	IN	5.455- 5.465mm	Replace if 5.40mm or less.
	EX	5.430- 5.445mm	Replace if 5.40mm or less.
Valve guide inner diameter	IN	5.475- 5.485mm	Replace if 5.50mm or more.
	EX	5.475- 5.485mm	Replace if 5.50mm or more.
Valve- guide clearance	IN	0.02mm	Replace if 0.10mm or more.
	EX	0.04mm	Replace if 0.10mm or more.
Valve spring Free length	IN Inner	25.1mm	Replace if 23.9mm or less.
	IN Outer	28.1mm	Replace if 26.9mm or less.
	EX Inner	25.1mm	Replace if 23.9mm or less.
	EX Outer	28.1mm	Replace if 26.9mm or less.
Cam height	IN, EX	26.07mm	Replace if 25.69mm or less.
Rocker arm hole diameter		10.000- 10.015mm	Replace if 10.10mm or more.
Rocker arm shaft outer diameter		9.978- 9.987mm	Replace if 9.91mm or less.

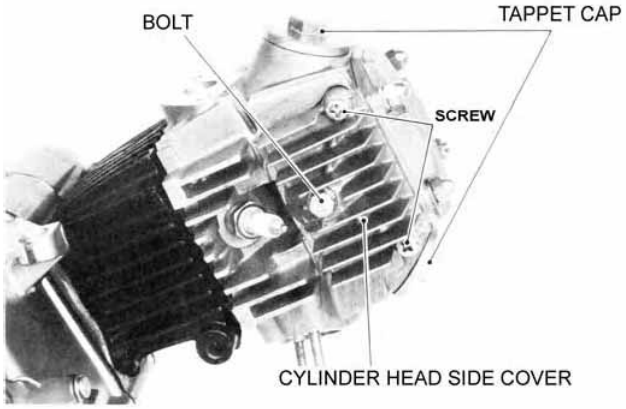

Sealing copper washer
1.0~1.4kg-m
0.8~1.2kg-m
0.7~1.1kg-m
0.9~1.2kg-m
0.8~1.2kg-m
Sealing copper washer

CYLINDER HEAD REMOVAL

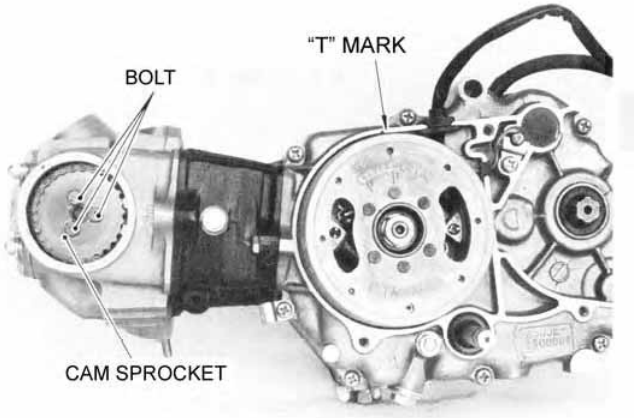
When disassembling the cylinder head when it is still mounted within the frame, place a supporting platform under the engine, and detach the front fender and front wheel before removing the cylinder head.



Remove the engine (Chapter 5).
Remove the 2 tightening screws and the bolt on the cylinder head R. side cover to detach the R. and L. side cover.
Remove the tappet cap.

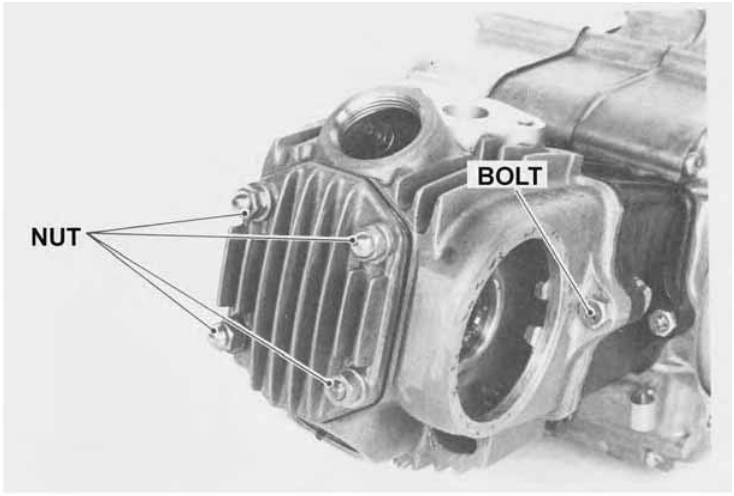


Turn the flywheel, and align it to compression TDC (align the "T" with the alignment mark).
Remove the cam sprocket tightening bolts, and detach the cam sprocket.



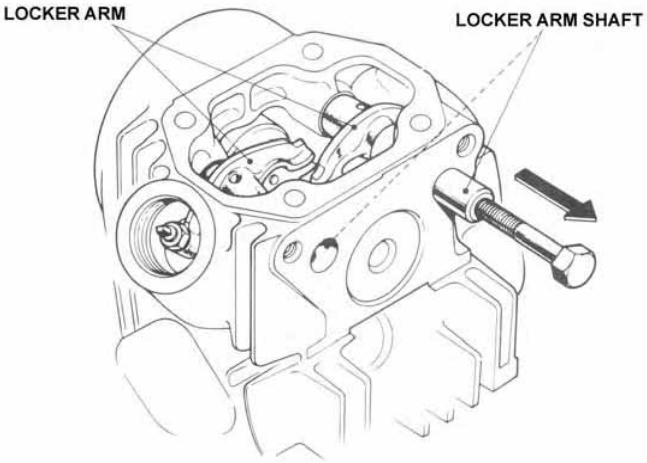
Remove the 4 cylinder head tightening nuts and 6mm bolt, and detach the cylinder head.

✻ Pay attention to where the sealing washers and nuts are located.

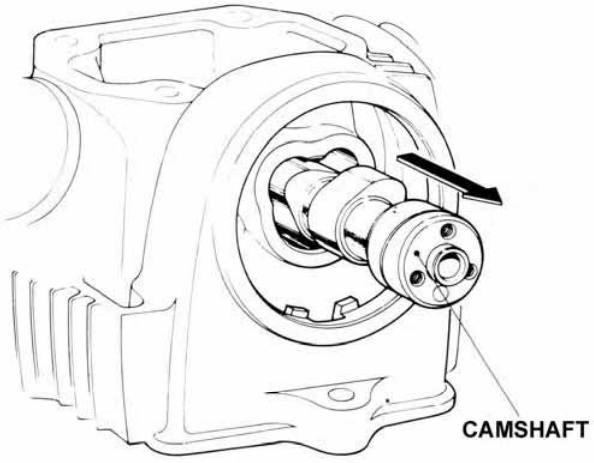


DISASSEMBLING THE CYLINDER HEAD

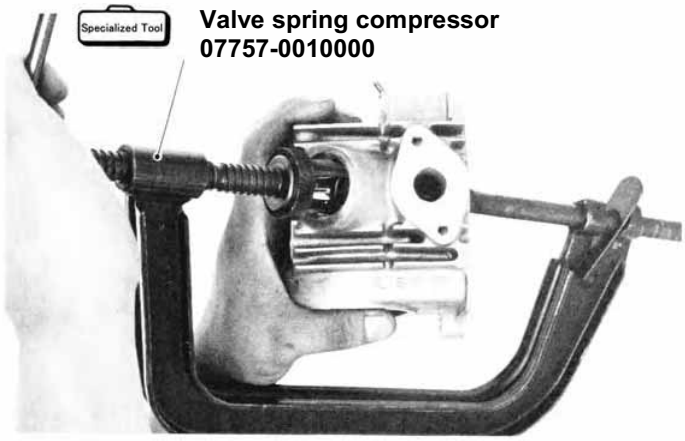
Insert the 8mm bolt into the rocker arm shaft to remove the rocker arm pin, and then detach the rocker arm.



Remove the cam shaft.



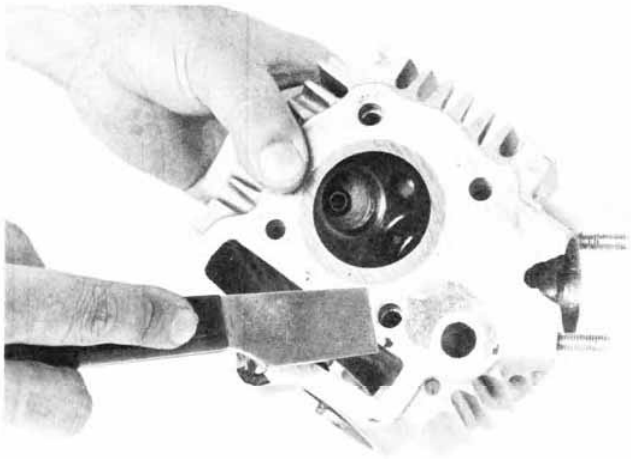
Use the valve spring compressor to detach the valve cotter, retainer, valve spring, and valve.



Valve spring compressor
07757-0010000

- Do not tighten the compressor more than necessary.
- Keep IN and EX parts separate after disassembling.

Remove carbon build-up within the combustion chamber.
Remove the gasket material attached to the head gasket surface.

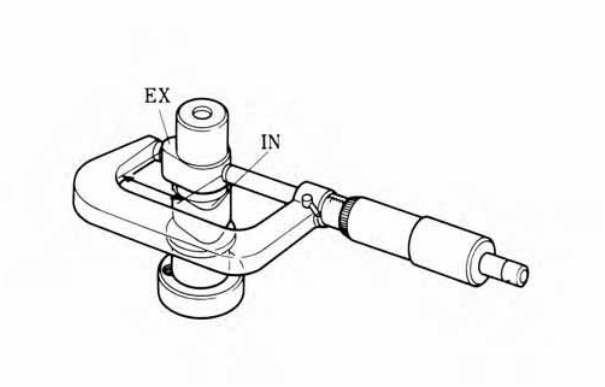


- Take care not to damage the gasket surface.
- Soaking the gasket in fuel will aid in the removal process.

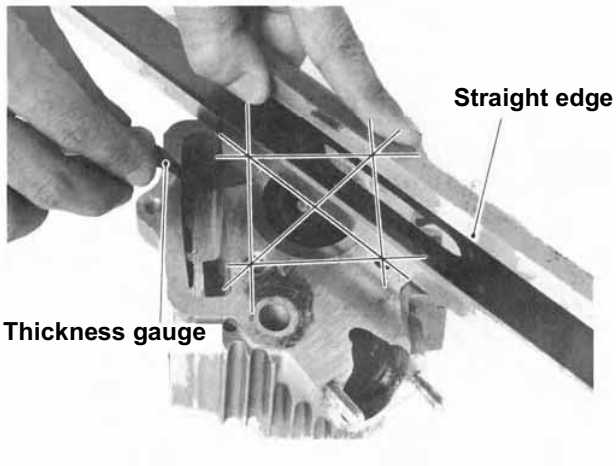
Checking the cam shaft

Check for any damage on the cam face, and measure the cam height.

Usage limit:
Replace if IN 25.69mm or less.
Replace if EX 25.69mm or less.

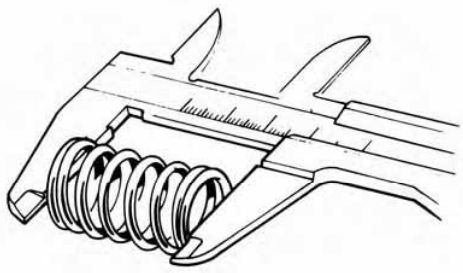


Checking the cylinder head
Check for any cracking around the spark plug hole and valve hole.
Check for any deflection of the cylinder head using a straightedge and thickness gauge.
Usage limit: Repair or replace if 0.05mm or more.



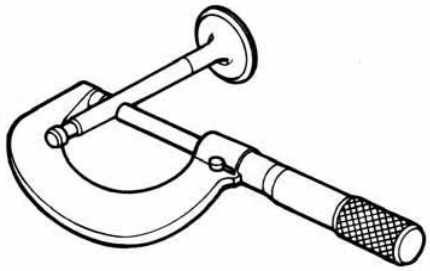
Checking the free length of the valve spring
Measure the free lengths of the inner and outer springs.
Usage limit:
IN
Inner: Replace if 23.9mm or less.
Outer: Replace if 26.9mm or less.

EX
Inner: Replace if 23.9mm or less.
Outer: Replace if 26.9mm or less.



Checking the valve and valve guide

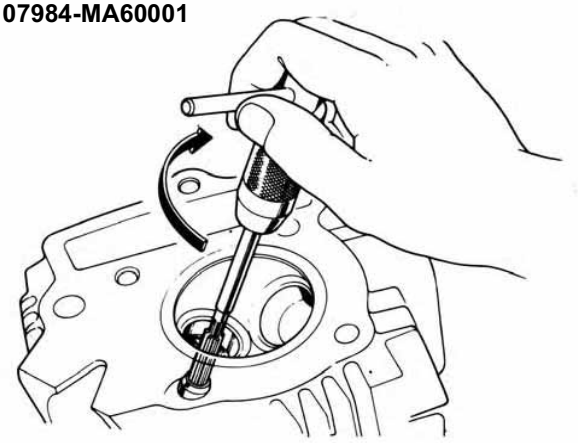
Check for any bends, burning, or damage to the valves, and also for uneven wear and tear on the stem end.
Insert the valve in the guide, and make sure that the valve moves smoothly.
Measure the stem diameter of each valve.
Usage limit:
Replace if IN 5.40mm or less.
Replace if EX 5.40mm or less.



Specialized Tool

Valve guide reamer
07984-MA60001

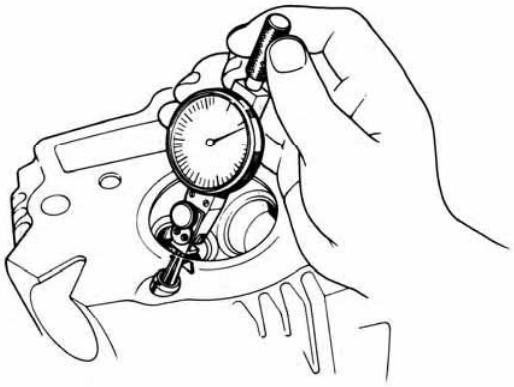
Insert the reamer in the guide before measuring the valve guide, and remove any carbon build-up inside.



✻ The reamer should be only turned to the right. Do not attempt to insert or pull out the reamer when it is stationary.

Measure the inner diameter of each guide.
Usage limit:
Replace if IN 5.50mm or more.
Replace if EX 5.50mm or more.

The clearance between the stem and guide can be gained by subtracting the outer diameter of the valve stem from the inner diameter of each guide.



✻ If the clearance exceeds the usage limit, figure out if the clearance will be within the usage limit when replaced with a new guide. If it will be within the limit replace only the guide.

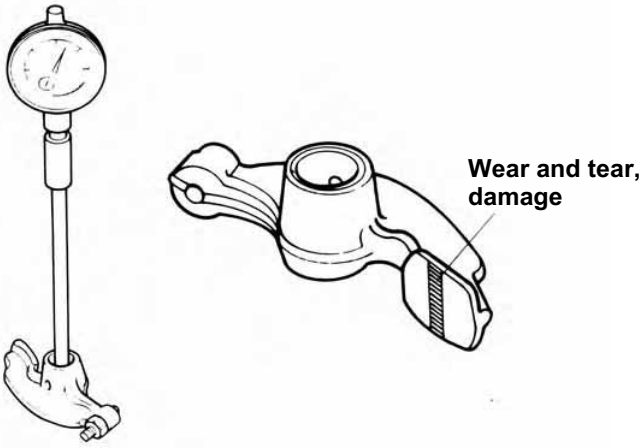
✻ Make adjustment to the seat if the guide has been replaced.

Checking the rocker arm

Check for any damage or wear and tear to the rocker arm. Check also for any clogging of the oil hole, and measure the hole diameter.

Usage limit: Replace if 10.10mm or more.

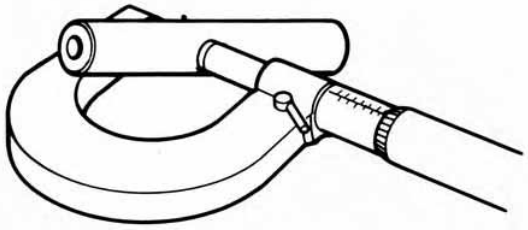
✻ If there is any damage or wear and tear to the rocker arm, check also for any damage or wear and tear on the cam face of the cam shaft.



Checking the rocker arm shaft

Check for any damage in the rocker arm shaft, and measure its outer diameter.

Usage limit: Replace if 9.91mm or less.



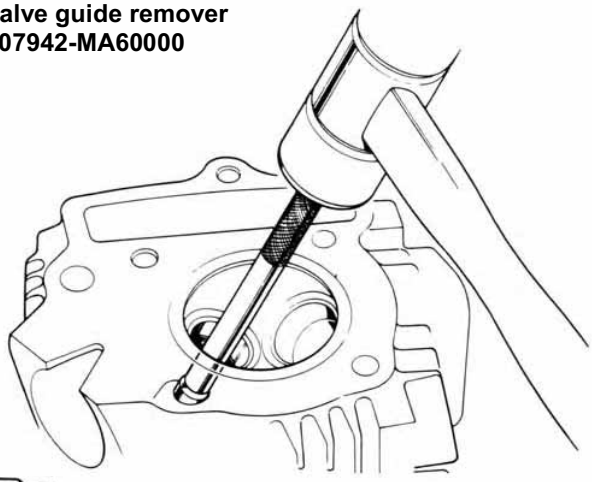
VALVE GUIDE REPLACEMENT

Tap in the valve guide.

✻ Take care that the cylinder head is not damaged.

Specialized Tool

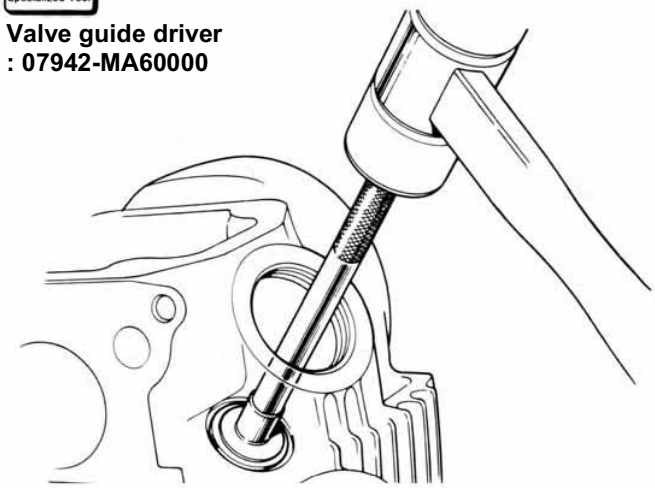
Valve guide remover
: 07942-MA60000



Fit the attachment to the valve guide remover, and tap in the valve guide.

Specialized Tool

Valve guide driver
: 07942-MA60000

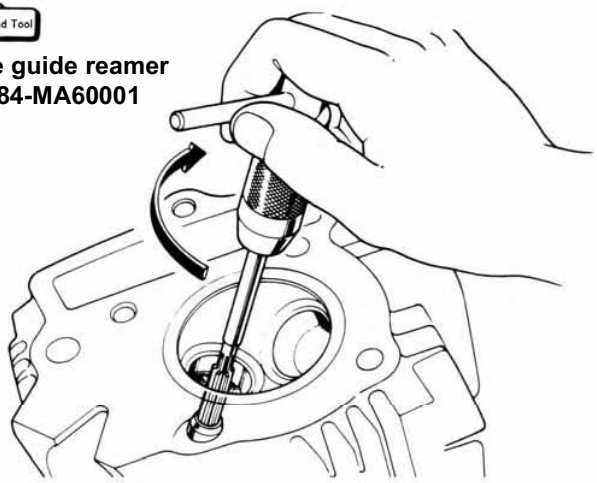


Finish the valve guide with a reamer after tapping in the valve guide.

✻
- Use cutting oil for reaming.
- The reamer should only be turned to the right.
- Do not insert or pull out the reamer when it is stationary.

Specialized Tool

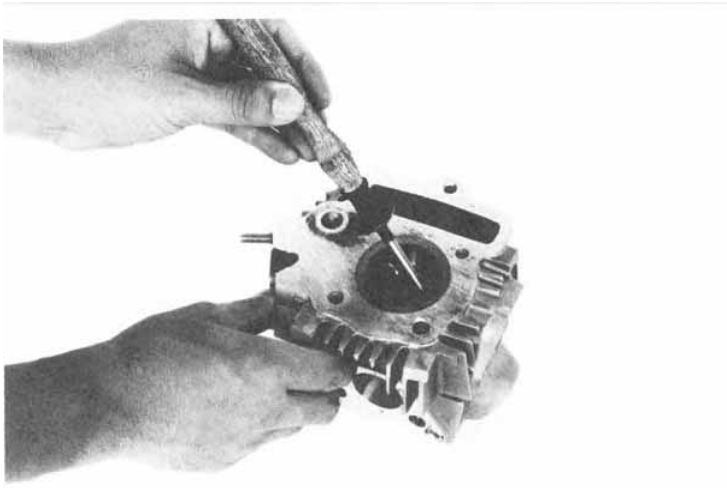
Valve guide reamer
: 07984-MA60001



Clean the cylinder head, and remove chipped material.

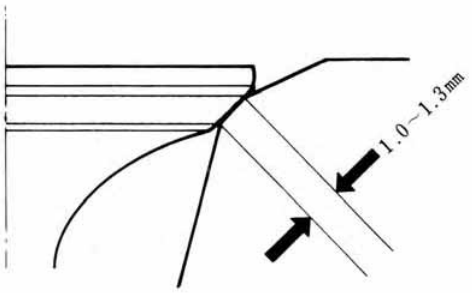
CHECKING AND REPAIRING THE VALVE SEAT

Remove carbon build-up within the head combustion chamber and valve.
Apply red lead primer or bearing blue evenly and lightly to the contact surface of the valve.
Align the valve using a valve grinder.
Remove the valve, and check the contact surface of the valve.



✻ Replace valve if there is any roughness or uneven wear and tear on the valve face or if the valve is touching the top or bottom of the valve seat.

Check the contact width of the valve seat.
Standard: 1.0- 1.3mm
Usage limit: Repair if 2.0mm or more.

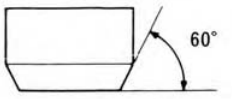


If the contact width is uneven, too wide, or too narrow, adjust the valve seat with a valve seat grinder.

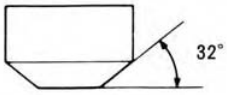
Repairing with a valve seat grinder
Refer to the valve seat cutter manual for details.

Specialized Tool
Valve seat grinder

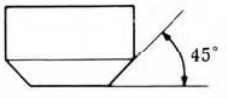
IN : 07780－0014202
EX : 07780－0014600



IN : 07780－0013200
EX : 07780－0013100



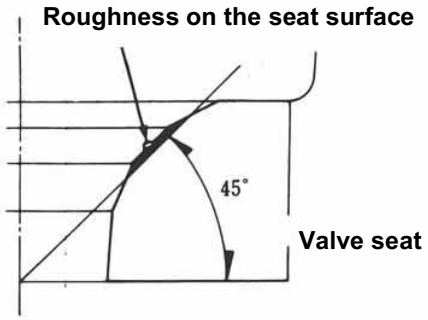
IN : 07780－0011000
EX : 07780－0011100



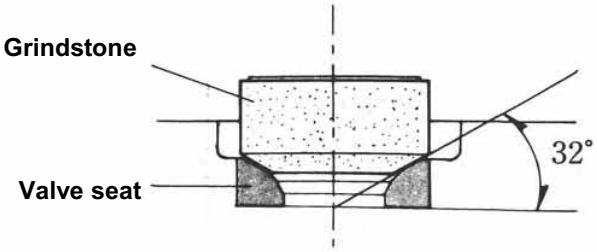
Carry out dressing (alteration of the work surface) using a grindstone. Operate the valve seat cutter lightly, and make sure not to grind the seat too deeply.

Grind the seat surface with a 45° valve seat grinder until there is no roughness or pin holes on the surface.

✻ Take care not to grind too deep.



Adjust the flat surface with a 32 grinder.



Adjust the inner surface with a 60° grinder.

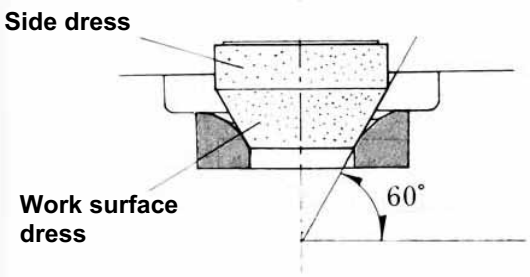
Adjust the seat surface with a 45° cutter until the rated valve seat width has been obtained.

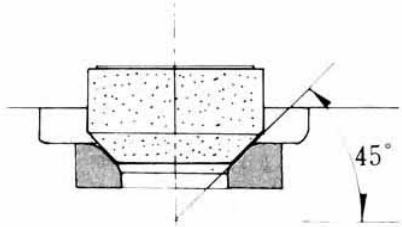
Valve seat width Standard value	1.1- 1.3mm (IN, EX)

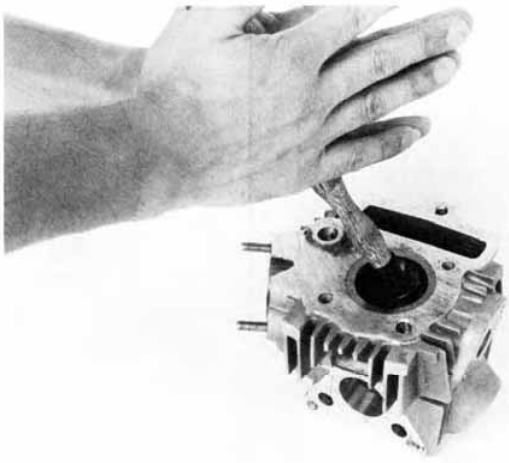
After adjusting apply compound evenly to the contact surface of the valve and smooth the surface with a valve lapper. Upon completion, clean the cylinder head and valve.

- Pushing the valve down hard on the seat while lapping will damage the parts. Push the lapper as lightly as possible.
- Take care that the grinding compound does not enter into the clearance between the stem and guide when lapping.

When all the adjustment has been made, make sure that the 45 seat surface is touching the contact surface of the valve evenly by using red lead primer or bearing blue.







ASSEMBLING THE CYLINDER HEAD

Attach the spring seat and stem seal.
Apply a small amount of oil to the valve stem, and insert it into the guide.

- Replace the valve stem seal if the seal has been removed.
- Attach the valve stem seal to the IN side.

Attach the valve cotter with a spring compressor.

- Do not tighten the valve cotter excessively.

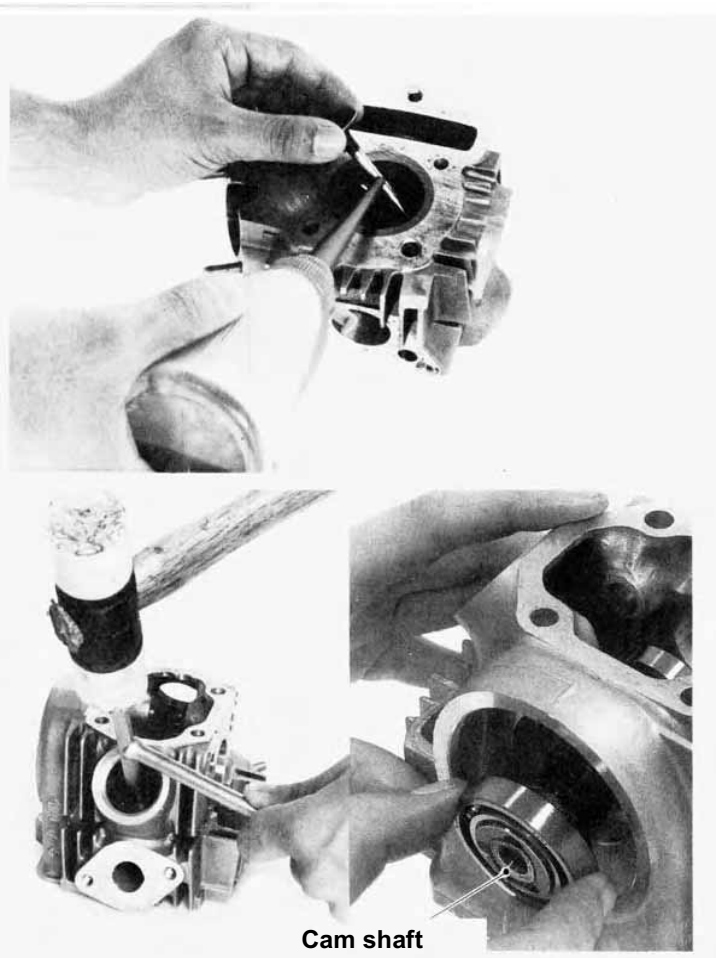
Tap the valve stem end with a plastic hammer a few times using a suitable tool to fit the valve and cotter into place.

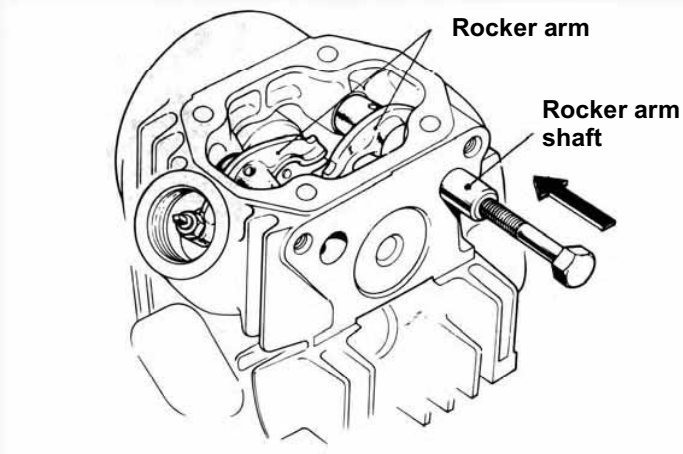
- Take care that the valve is not damaged.

Attach the cam shaft.

Attach the rocker arm and rocker arm shaft to the cylinder head.

- Apply oil to the rocker arm shaft before attaching.
- Attach the rocker arm shaft with its grooved side facing the outside.

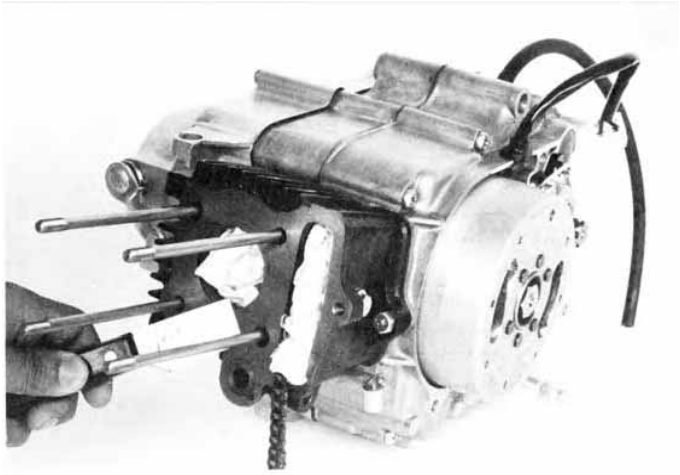




CYLINDER HEAD ATTACHMENT

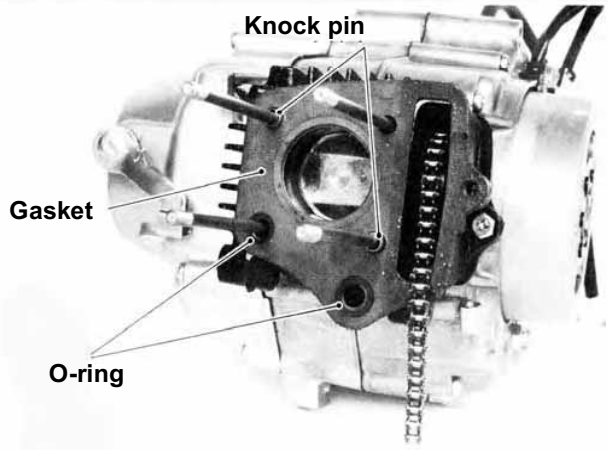
Remove the gasket material from the cylinder upper face.

- Take care that the gasket face is not damaged.
- Take care that the discarded gasket material does not go inside the engine.



Attach the O-rings, knock pins, and a new head gasket.

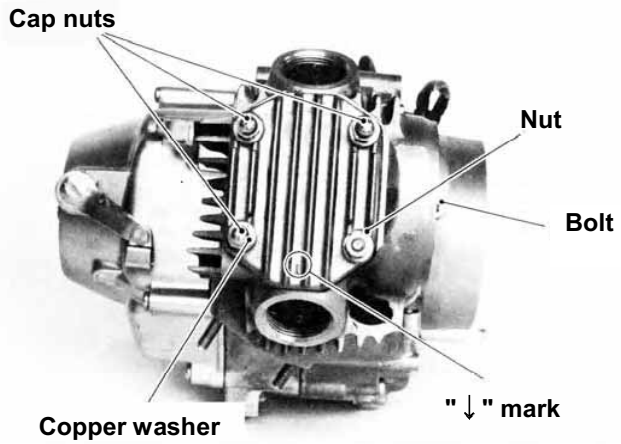
- Make sure that the oil passage is not clogged.



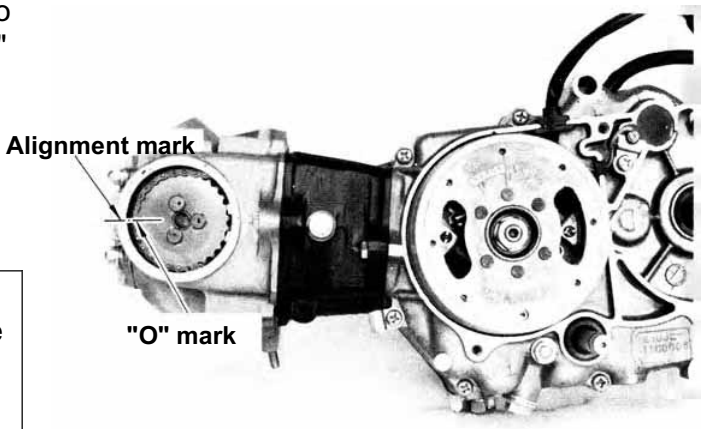
Attach the cylinder head and then the head cover gasket and head cover, and tighten them to the specified torque.

Specified torque:
8mm bolt: 0.9- 1.2kg-m
6mm bolt: 0.8- 1.2kg-m

- Attach the head cover so that " " faces the EX side.



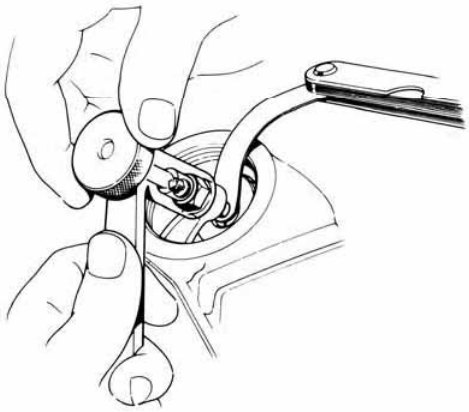
Turn the flywheel, and align it to compression TDC (align the "T" on the flywheel with the alignment mark on the crankcase). Set the cam sprocket and cam chain, and attach the cam chain.



* Apply molybdenum disulfide on the cam shaft bearing.
- Align "O" on the cam sprocket with the alignment mark on the head.

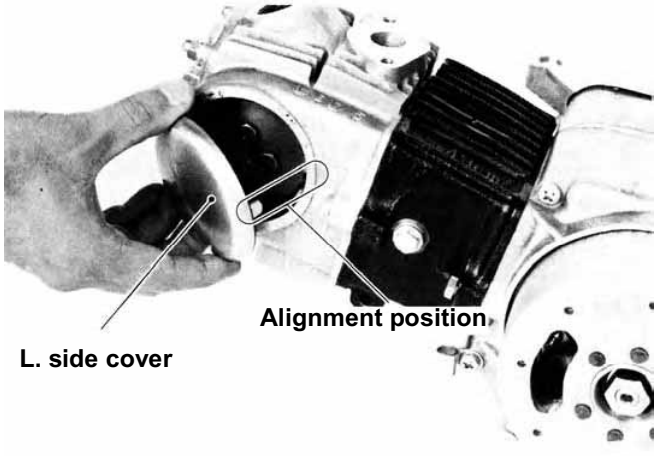
Torque: 0.8- 1.2kg-m

Check and make adjustment to the tappet clearance (3-6).



Attach the cylinder head L. and R. side cover.

* Align the L. side cover with the alignment mark on the cylinder head to attach.



7. CYLINDER, PISTON

Fault diagnosis	7-1
Maintenance information	7-1
Cylinder removal	7-4
Piston removal	7-5
Piston installation	7-7
Cylinder installation	7-8

Fault diagnosis

Compression pressure is either too low or unstable

1. Wear and tear of the cylinder, piston ring

Smoke is coming out of the muffler (oil has run out)

1. Wear and tear of the cylinder, piston
2. Poor installation of the piston ring
3. Damaged piston, cylinder

Overheating

1. Carbon build-up within the combustion chamber and piston

Knocking, abnormal operating noise

1. Wear and tear of the piston and cylinder
2. Carbon build-up

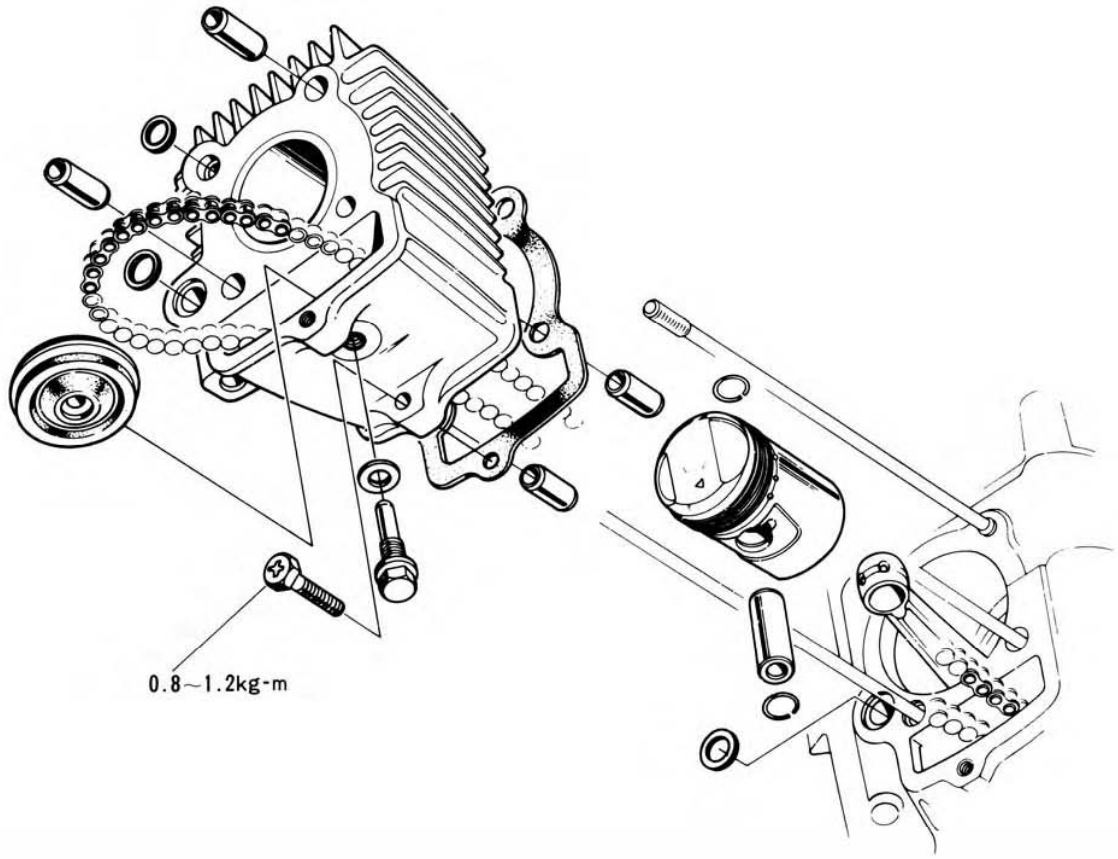
Maintenance information

Cautionary points during operation

Maintenance of the cylinder and piston can be carried out on the vehicle body.
Lubrication around the cylinder head is carried out with the oil from the oil control orifice of the R. crankcase that flows via the cylinder stud hole.
Make sure there is no clogging in the orifice and that the knock pins are fitted properly before attaching the cylinder.

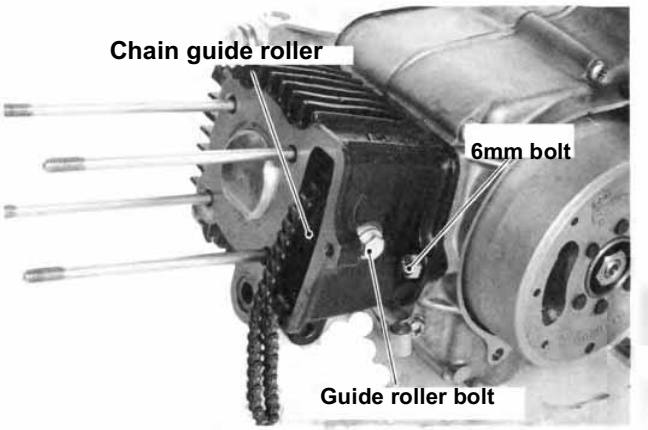
MAINTENANCE CRITERIA

			Standard value	Usage limit
Cylinder	Inner diameter		39.005- 39.015mm	39.05mm
	Upper face defection		-	0.05mm
Piston, piston ring, piston pin	Ring groove/ ring clearance	Top	0.01- 0.045mm	0.12mm
		Second	0.01- 0.045mm	0.12mm
		Oil	0.01- 0.045mm	0.12mm
	Ring end gap clearance	Top	0.1- 0.3mm	0.5mm
		Second	0.1- 0.3mm	0.5mm
		Oil	0.1- 0.3mm	0.5mm
	Piston outer diameter (STD)		38.98- 39.00mm	38.90mm
	Piston pin hole inner diameter		13.002- 13.008mm	13.055mm
	Conrod small end inner diameter		13.013- 13.043mm	13.100mm
	Piston pin outer diameter		12.994- 13.000mm	12.98mm
	Cylinder/ piston clearance		-	0.15mm
	Piston/ pin clearance		-	0.075mm

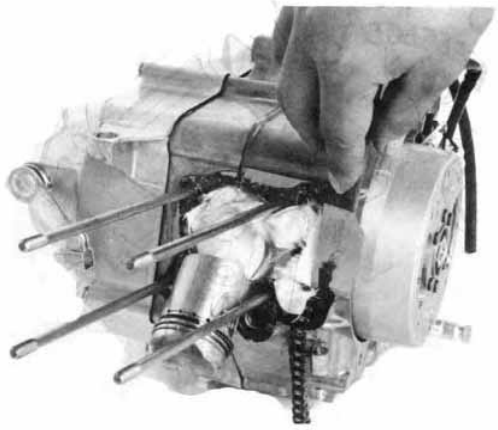

0.8~1.2kg-m

CYLINDER REMOVAL

Remove the cylinder head (Chapter 6).
Remove the guide roller bolt, and detach the chain guide roller.
Remove the O-ring and knock pin.
Remove the 6mm bolt, and detach the cylinder.



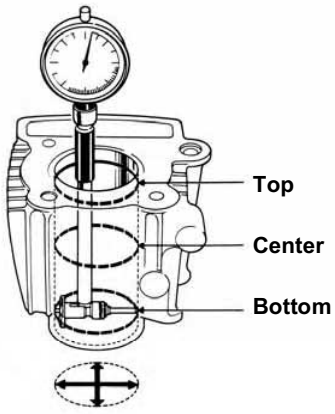
Remove the gasket material attached to the cylinder upper face.
Also remove the gasket material on the abutting surface of the crankcase and cylinder.



✻ Make sure that the discarded gasket material does not go inside the crankcase.

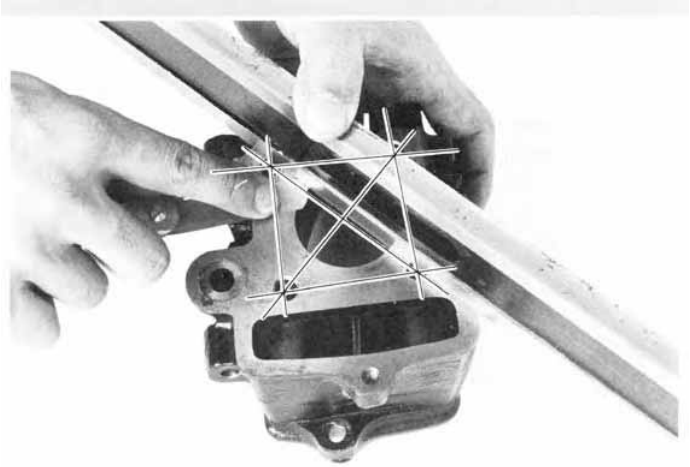
Checking the cylinder

Check for any wear and tear to the cylinder inner diameter.
Usage limit: Replace if 39.05mm or more.



Check for any distortion on the cylinder upper face.

Usage limit: Repair or replace if 0.05mm or more.

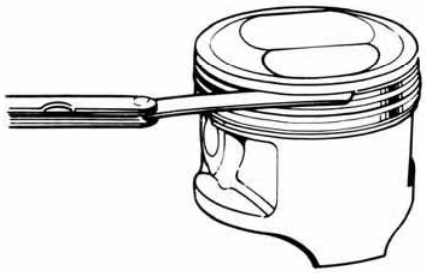


PISTON REMOVAL

Remove the piston pin clip.

✻ Take care not to drop the clip in the case.
Remove the piston pin, and detach the piston.

Checking the piston, piston ring
Measure the clearance between the ring and groove.



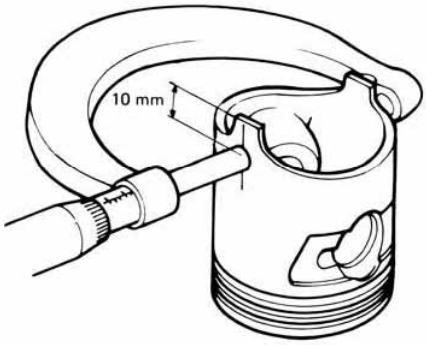
Usage limit:
Top: Replace if 0.12mm or more.
Second: Replace if 0.12mm or more.
Oil: Replace if 0.12mm or more.

Check for any damage in the piston, uneven wear and tear in the ring groove, or cracking on the side.

Remove the piston ring, and attach each ring to the lower part of the cylinder to measure the ring end gap clearance.

Usage limit:
Top: Replace if 0.5mm or more.
Second: Replace if 0.5mm or more.
Oil: Replace if 0.5mm or more.

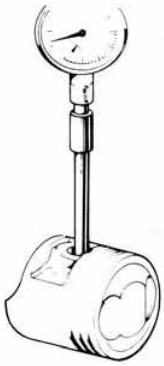
Measure the outer diameter of the piston skirt.
Usage limit: Replace if 38.90mm (STD) or less.



✻ Measure the outer diameter 10mm from the bottom.

Calculate the clearance between the cylinder and piston.
Usage limit: Replace if 0.15mm or more.

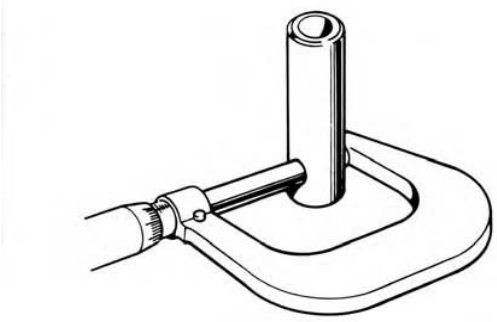
Measure the pin hole inner diameter of the piston.
Usage limit: Replace if 13.055mm or more.



Measure the small end inner diameter of the conrod.
Usage limit: Replace if 13.100mm or more.

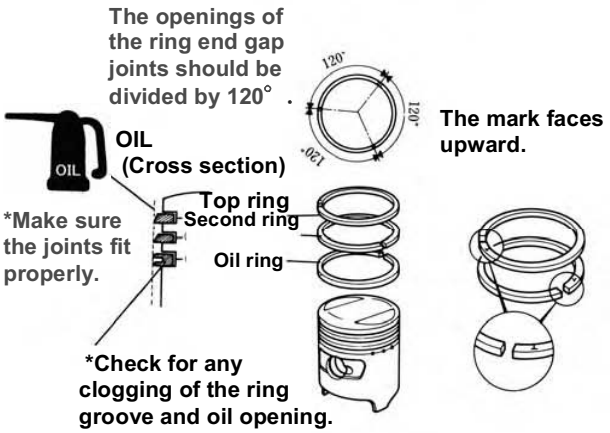
Measure the outer diameter of the piston pin.
Usage limit: Replace if 12.98mm or less.

Calculate the clearance between the piston and pin.
Usage limit: Replace if 0.075mm or more.



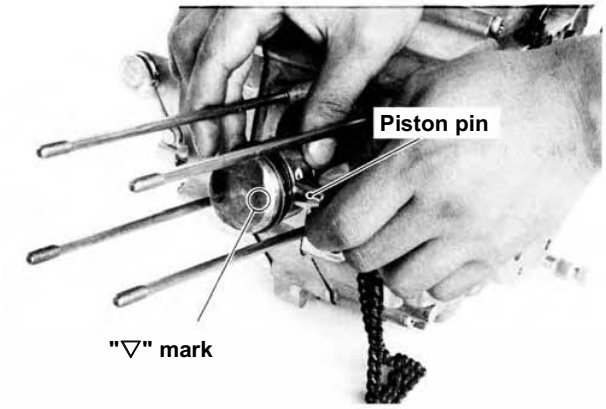
INSTALLING THE PISTON
Install the piston rings to the piston.

- Take care to ensure that the piston is not damaged or the rings broken.
- Make sure that the mark on the ring is facing upward. Make sure that the rings rotate freely after attaching them.
- The ring end gap joint should be separated by 120° avoiding the piston pin direction and its vertical direction.



Apply oil to each piston ring.

Fit the piston, piston pin, and clip.

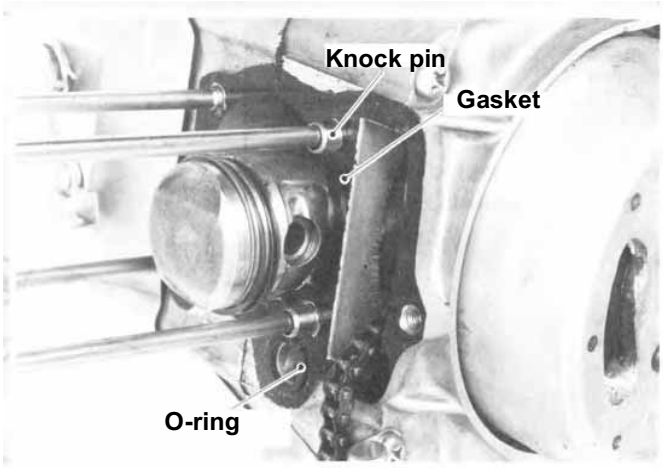


Turn the on the piston to the exhaust side.

CYLINDER INSTALLATION

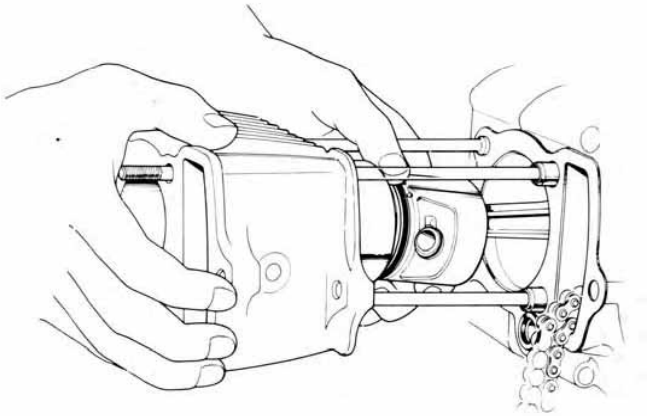
Fit the knock pin, cylinder gasket, and O-ring.

✻ Make sure that the oil orifice is not clogged.



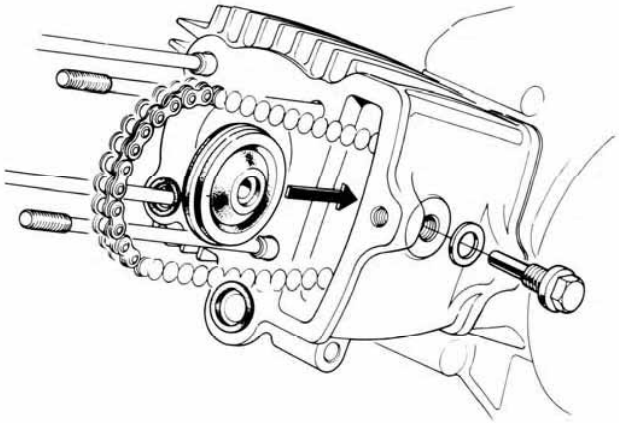
Apply oil on the inner surface of the cylinder, and fit the cylinder.

✻ Take care that the piston and piston ring is not damaged.



Fit the cam chain guide roller and roller bolt.
Fit the knock pin, head gasket, O-ring, and cylinder head.
Tighten the cylinder head tightening bolt.

Torque: 0.8- 1.2kg-m



8. Clutch

Fault diagnosis	8-1
Maintenance information	8-2
Removing the clutch filter	8-3
Removing the clutch	8-4
Disassembling the clutch	8-5
Assembling/ fitting the clutch	8-7

Fault diagnosis

Clutch
Most operating failures concerning the clutch are caused by play in the clutch lever. Check for any play and make the required adjustments before disassembling the clutch.

The clutch slips when accelerating
1. Not enough play
2. Wear and tear of the clutch disk
3. Wear of the clutch spring

The clutch will not disengaged
1. There is too much play
2. Distortion of the clutch plate

The vehicle runs even when the clutch is disengaged
1. There is too much play
2. Deformation of the clutch plate

Lever operation is heavy
1. Twisting of the clutch cable, damage or clogged with dirt, etc.
2. Damage to the lifter mechanism

Clutch operation is unstable
1. Clutch outer grooves are rough

Maintenance information

Cautionary points during operating
This chapter explains how to disassemble the clutch. This operation can be carried out whilst mounted on the vehicle, but be sure to remove the oil first.

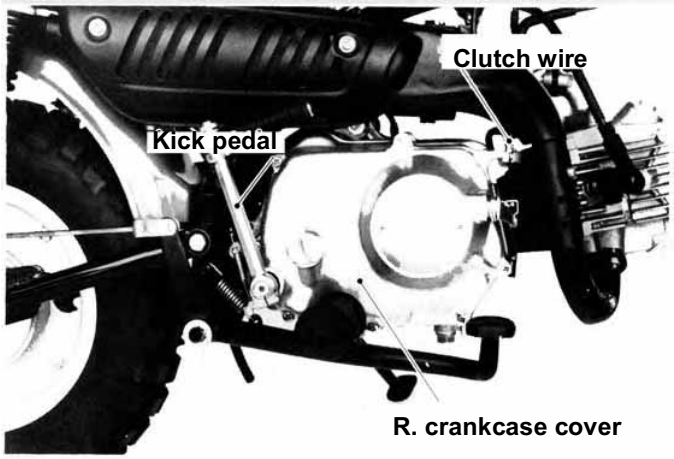
Specialized tools
Clutch holder 07923-0400000
Lock nut wrench 07716-0020100

Maintenance criteria

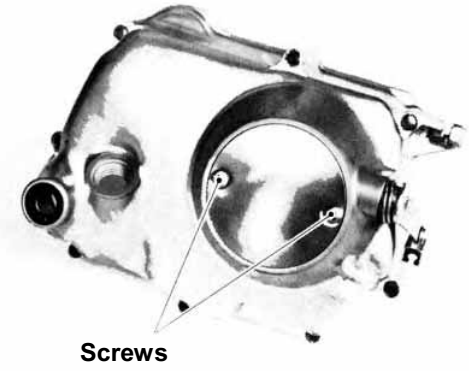
		Standard value	Usage limit
Lever play (lever end)		10- 20mm	-
Spring free length	Centrifugal clutch	21.1mm	Replace if 19.4mm or less
	Manual clutch	18.9mm	Replace if 17.4mm or less
Deformation of the plate	Centrifugal clutch	-	Replace if 0.2mm or more
	Manual clutch	-	Replace if 0.2mm or more
Disk thickness	Centrifugal clutch	3.45- 3.55mm	Replace if 3.15mm or less
	Manual clutch	3.45- 3.55mm	Replace if 3.15mm or less
Outer diameter of the primary drive gear bush	Centrifugal clutch	20.93- 20.95mm	Replace if 20.90mm or less
	Manual clutch	20.93- 20.95mm	Replace if 20.90mm or less
Inner diameter of the primary drive gear	Centrifugal clutch	21.000- 21.021mm	Replace if 21.05 mm or more
	Manual clutch	21.000- 21.021mm	Replace if 21.05 mm or more

REMOVING THE CLUTCH LIFTER

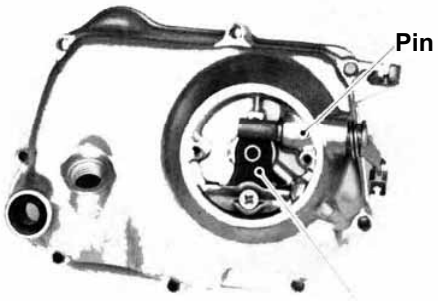
Remove the engine oil.
Remove the clutch cable (manual clutch vehicle).
Remove the kick pedal.
Remove the step or loosen the step installation bolt so that the R. crankcase cover can be detached.
Remove the R. crankcase cover.



Loosen the 2 imbedded screws, and detach the clutch cover (manual clutch vehicle).



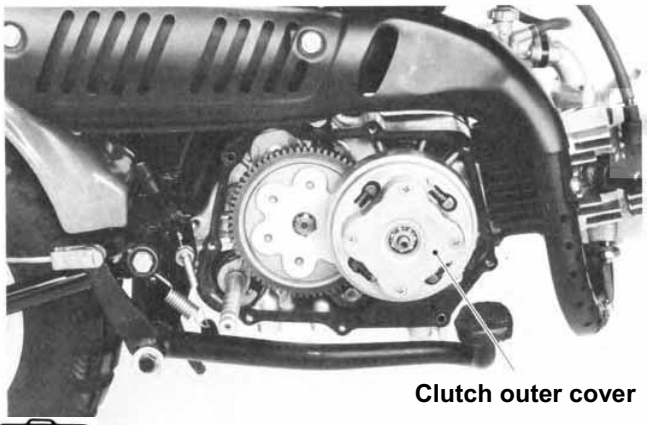
Remove the pin with pliers, and pull out the clutch lever (manual clutch vehicle).
Loosen the screws, and remove the lifter setting plate and clutch lifter plate (manual clutch vehicle).



Remove the R. crankcase cover, and detach the clutch lifter, clutch ball retainer, clutch cam complete (centrifugal clutch vehicle).

REMOVING THE CLUTCH

Remove the clutch outer cover.

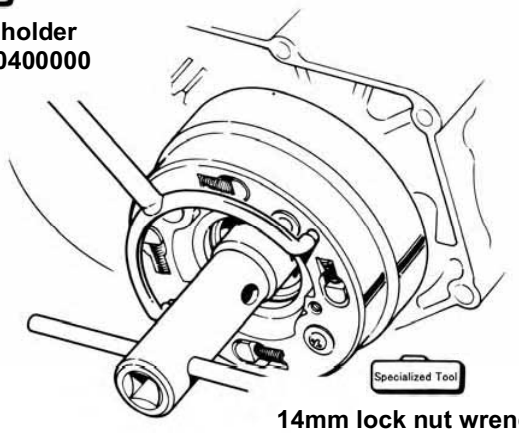


Clutch outer cover

Specialized Tool

Clutch holder
07923-0400000

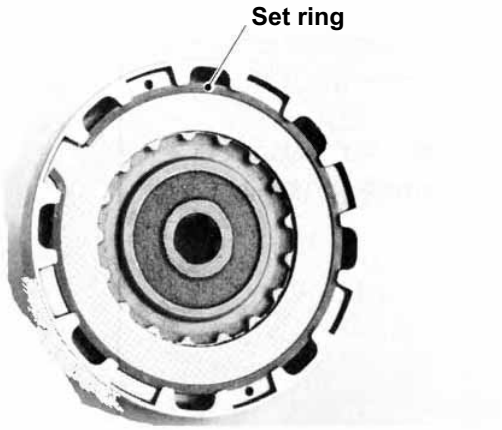
Lift up the claw on the lock washer, and remove the lock nut to detach the main body of the clutch. Remove the primary drive gear, clutch center guide, and collar.



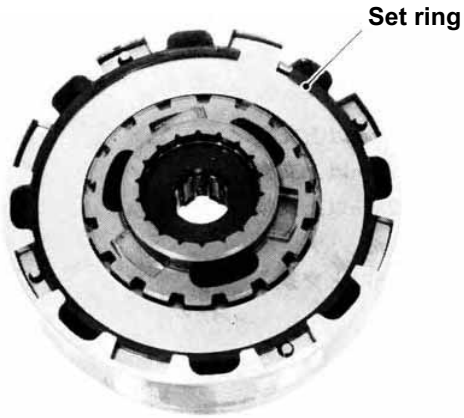
14mm lock nut wrench
07716-0020100

DISASSEMBLING THE CLUTCH

Remove the set ring, and detach the clutch outer, drive plate, clutch disk, clutch plate, and clutch spring (manual clutch vehicle).

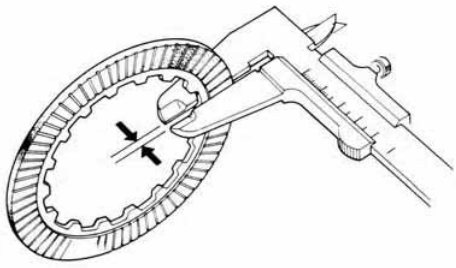


Remove the set ring, and detach the clutch center, drive gear outer, clutch disk, and clutch plate (centrifugal clutch vehicle).



Remove the 4 screws, and detach the drive plate and clutch spring from the clutch outer.

Checking the disk
Replace if the disk is damaged or if its color has changed. Check the thickness of the disk.



Usage limit
Centrifugal clutch vehicle: Replace if 3.15mm or less
Manual clutch vehicle: Replace if 3.15mm or less

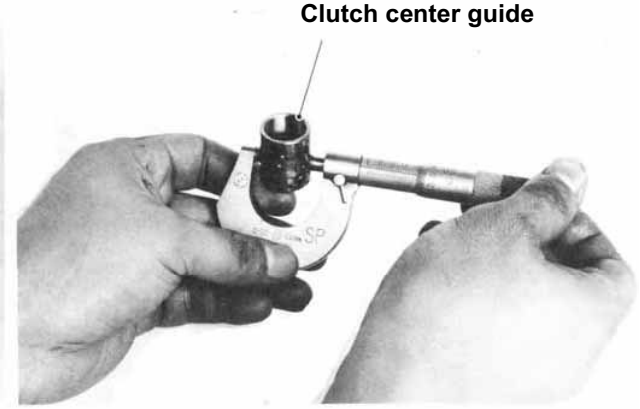
Checking the clutch plate
Check for any deformation of the plate on a surface table.

Usage limit
Centrifugal clutch vehicle
Plate A: Replace if 0.2mm or more.
Plate B: Replace if 0.2mm or more.
Plate C: Replace if 0.2mm or more.

Manual clutch vehicle: Replace if 0.2mm or more

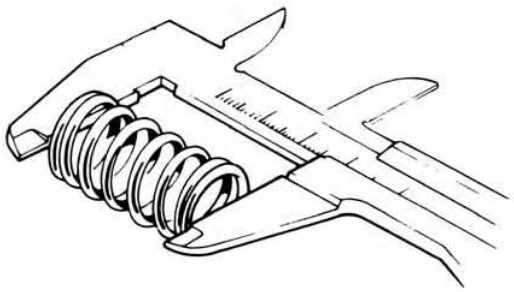
Clutch center guide

Checking the clutch center and clutch center guide
Check for any wear and tear or damage. Measure the inner diameter of the clutch center (primary drive gear if checking a manual clutch vehicle) and the outer diameter of the clutch center guide.



Usage limit
Outer inner diameter: Replace if 21.05mm or more
Guide outer diameter: Replace if 20.90mm or less

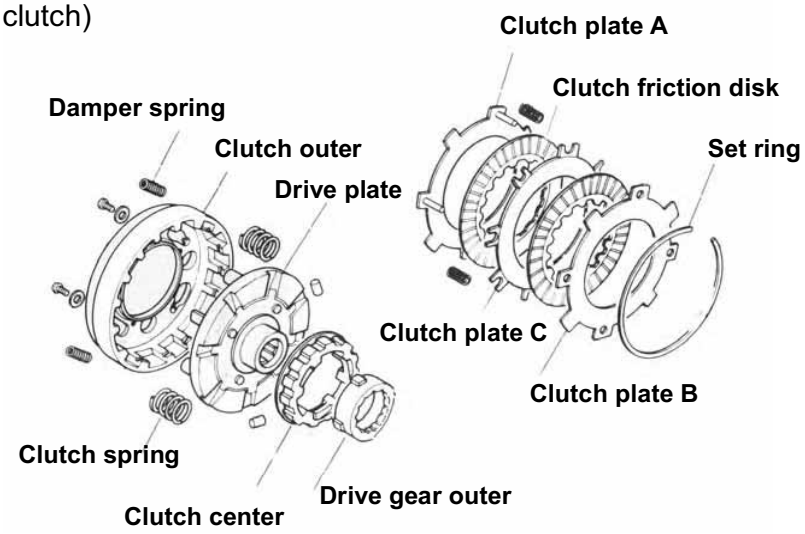
Checking the clutch spring
Check the free length of the spring.



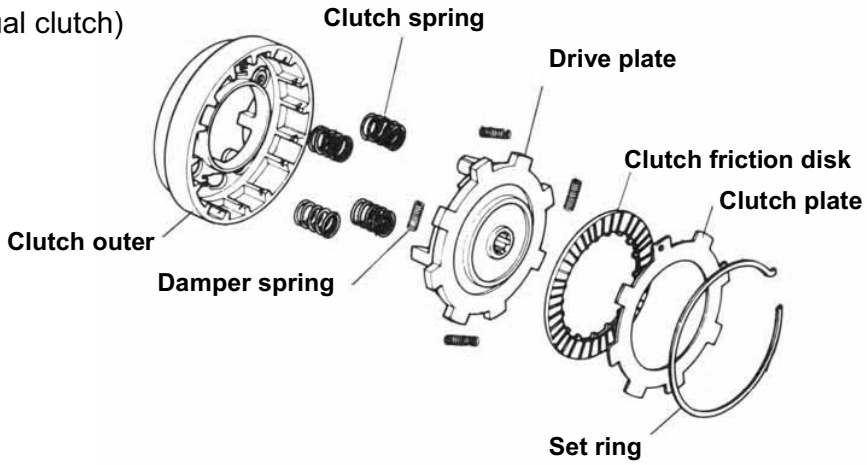
Usage limit
Centrifugal clutch vehicle:
Replace if 19.4mm or less.
Manual clutch vehicle:
Replace if 17.4mm or less.

Assembling and fitting the clutch
Fit the plate, disk, and clutch spring in the clutch outer in the order indicated in the diagram, and fit the set ring.

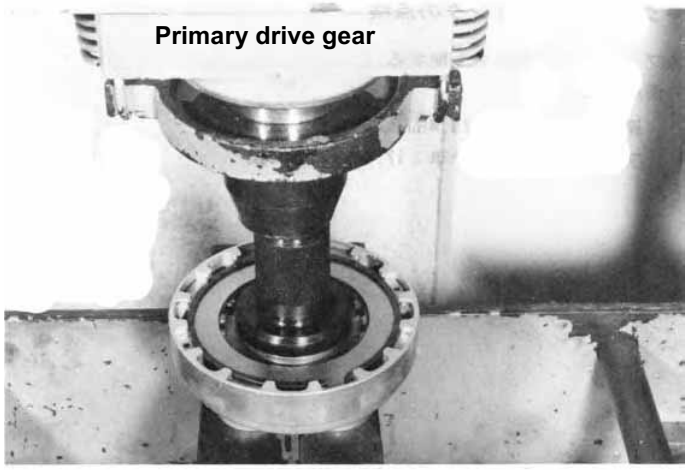
(Centrifugal clutch)



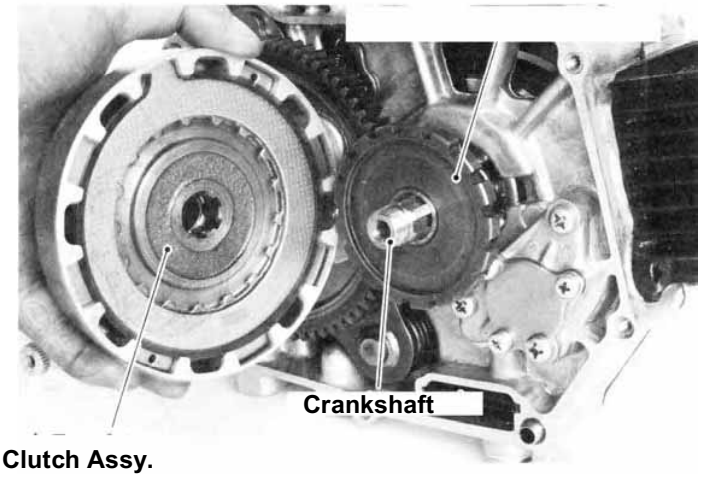
(Manual clutch)



When fitting the set ring, use a hydraulic press. Fit the damper spring after fitting the set ring (manual clutch vehicle).
In the centrifugal clutch, tighten the 4 screws to fix the drive plate and clutch outer.



Fit the collar, primary drive gear, clutch main body, and lock washers A and B to the crankshaft. Tighten with the lock nut, and fix the lock nut with the claw on the lock washer A.



Fit the R. crankcase cover, and adjust the clutch (3-8).
Start the engine after making any adjustments, and check for any oil leakage or malfunction of clutch operation.

9. Oil pump

Fault diagnosis	9-1
Maintenance information	9-1
Removing the oil pump	9-2
Disassembling the oil pump	9-2
Checking the oil pump	9-2
Assembling/ fitting the oil pump	9-3

Fault diagnosis
Refer to page 4-1 for oil pump fault diagnosis.

Maintenance information
Remove the clutch when carrying out maintenance on apparatus related to the oil pump. These operations can be carried out without the oil pump related apparatus being removed from the vehicle.

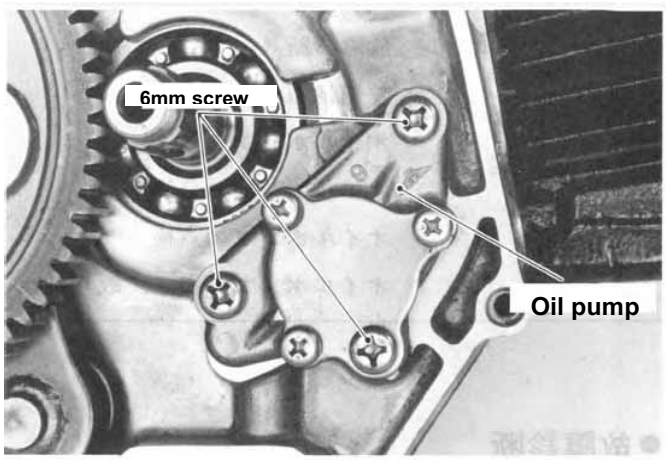
Maintenance criteria

	Standard value	Usage limit
Clearance between the inner rotor and outer rotor	0.15mm	Replace if 0.2mm or more
Clearance between the outer rotor and body	0.02- 0.07mm	Replace if 0.12mm or more
Clearance between the rotor end face and body	0.1- 0.15mm	Replace if 0.2mm or more

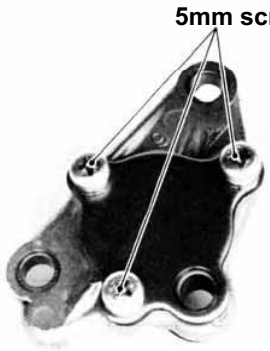
REMOVING THE OIL PUMP

Remove the engine oil.

Remove the R. crankcase cover (8-3).
Remove the clutch (⇒8-4).
Remove the three 6mm screws, and detach the oil pump.

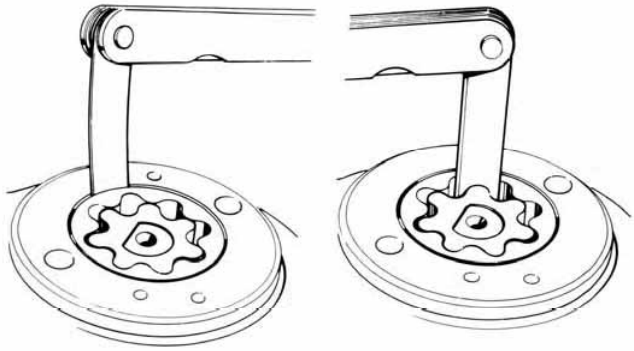


Disassembling the oil pump
Remove the three 5mm screws, and disassemble the oil pump.



Checking the oil pump
Check the clearance between the pump body and outer rotor.
Usage limit: Replace if 0.12mm or more.

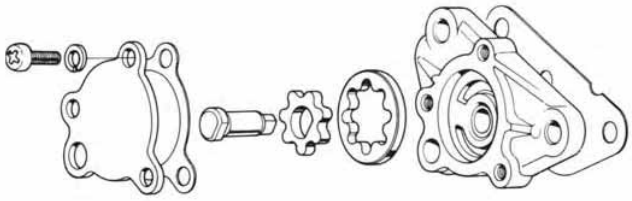
Check the clearance between the inner rotor and outer rotor.
Usage limit: Replace if 0.2mm or more.



Check the clearance between the rotor end face and body.
Usage limit: Replace if 0.2mm or more.

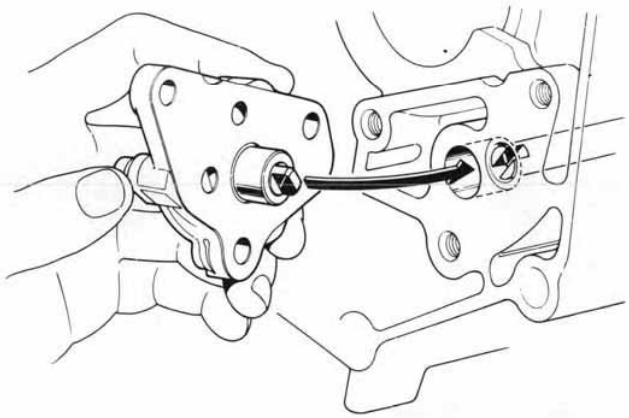
ASSEMBLING/ FITTING THE OIL PUMP

Fit the outer rotor, inner rotor, and pump shaft to the pump body, and tighten the gasket and cover with 5mm screws.



✻ Make sure that the pump rotates smoothly after assembling.

Match the concave part of the cam chain guide spindle with the protruding part of the pump shaft, and fix them together with 6mm screws.
Fit the clutch.
Fit the R. crankcase cover, and adjust the clutch.



Insert oil.
Start the engine and check for any oil leakage and that the clutch is functioning properly.
Remove the tappet cap on the “IN” side, and check how well the oil is being fed.

10. A.C. generator, cam chain tensioner

Maintenance information	10-1
A.C. generator	10-3
Cam tension device	10-4

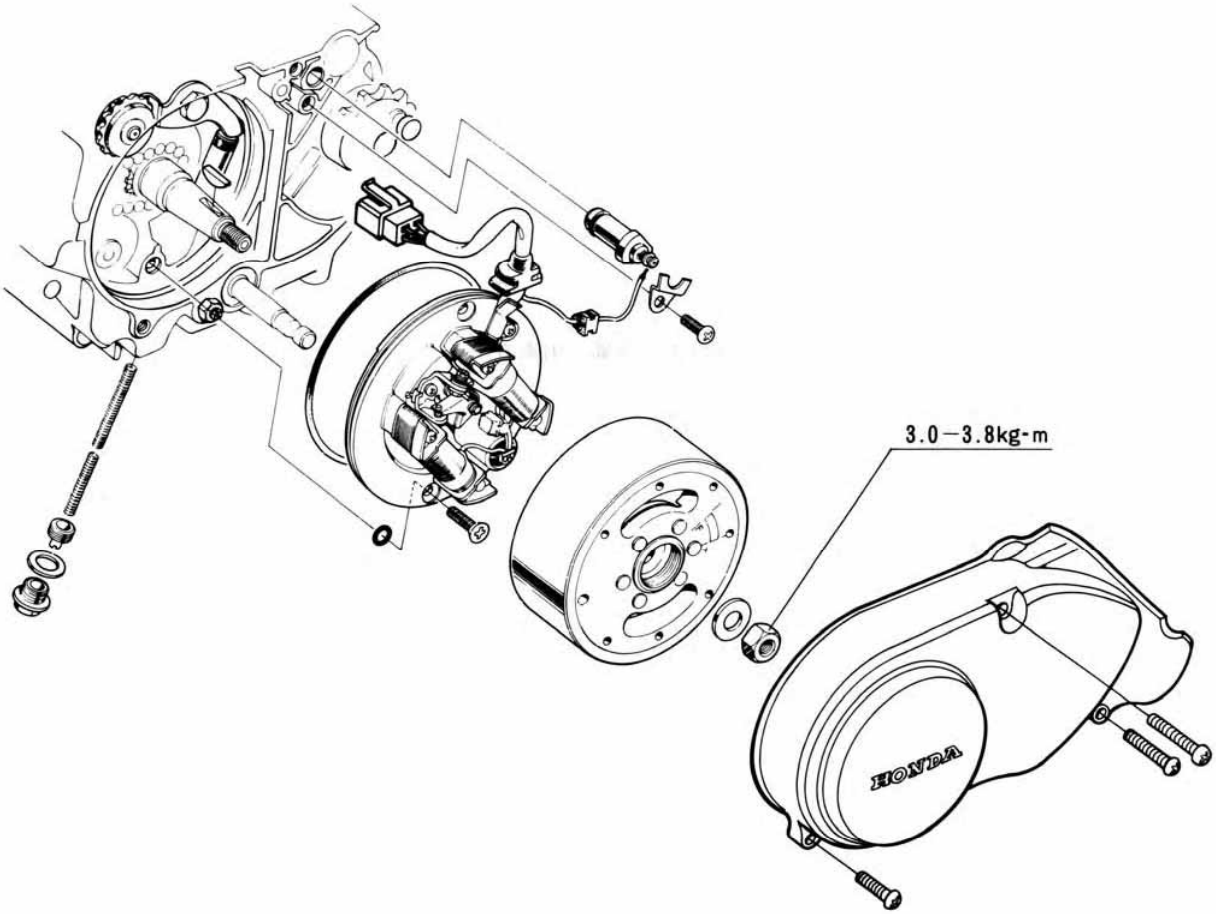
Maintenance information

Cautionary points during operation

Maintenance on the A.C. generator and cam tension device can be carried out without removing from the vehicle.
Refer to Chapter 15 for A.C. generator check.

Specialized tools

Flywheel holder 07925-0010000
Flywheel puller 07933-0010000

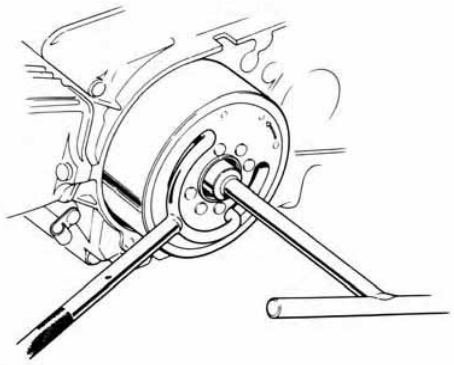

3.0－3.8kg-m
HONDA

A.C. generator

Remove the L. crankcase cover. Hold the flywheel with the holder, and remove the 10mm retainer nut.

Specialized Tool

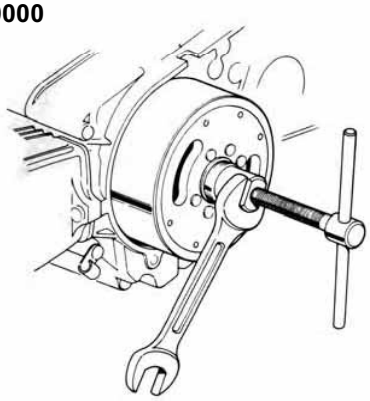
Flywheel holder
07925-0010000



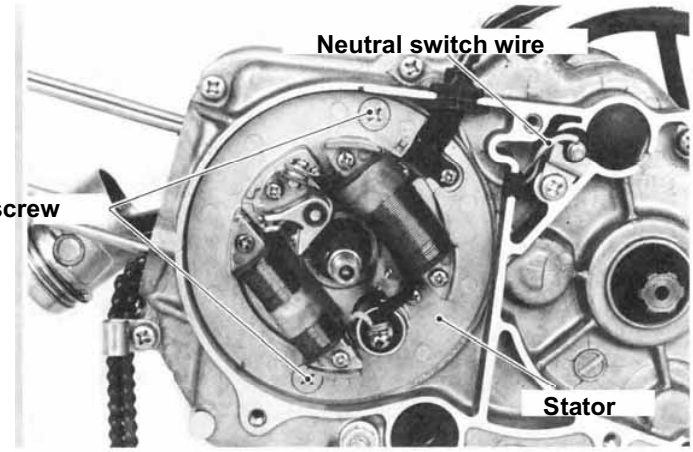
Specialized Tool

Flywheel puller
07933-0010000

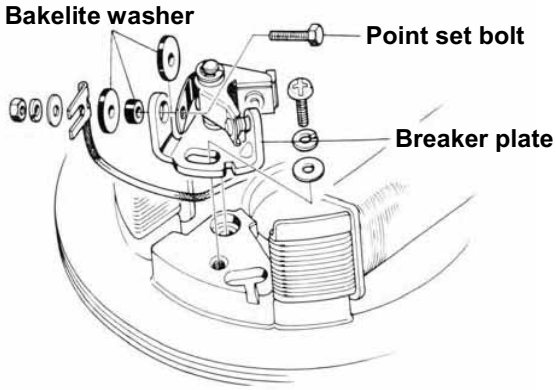
Remove the flywheel with the fly wheel puller.



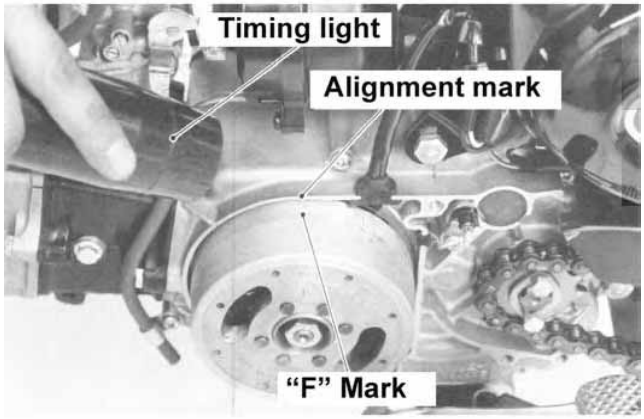
Remove the 2 imbedded screws that are fixing the stator. Remove the coupler on the A.C. generator and the neutral switch wire. Detach the stator from the crankcase.



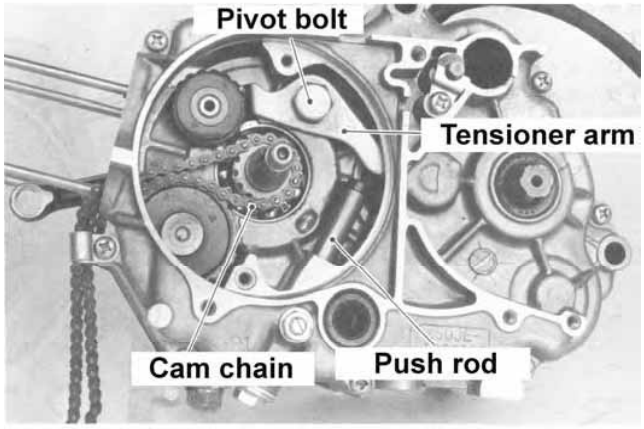
Check the contact breaker, and repair or replace if there is any damage on the point surface.



Fit the stator and flywheel.
Connect the neutral switch with the A.C. generator coupler.
Start the engine, and check the ignition timing. Make adjustment if there are any abnormalities (3-5).

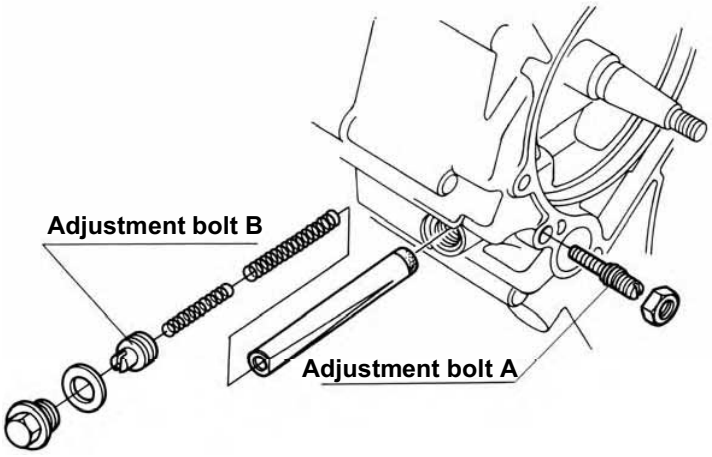


Cam tension device
Remove the flywheel and stator.
Remove the cam tension device pivot, and detach the cam tension device arm and roller.



Loosen the 8mm lock nut, and remove adjustment bolt A.
Remove the sealing bolt, and take off adjustment bolt B.
Remove the tension device springs A and B, and also the tension device push rod.

Assembly of these parts is carried out in the reverse order.



11. Crankshaft, transmission

Fault diagnosis	11-1
Maintenance information	11-1
Removing the drum stopper and shift spindle	11-4
Removing the transmission and crankshaft	11-5
Checking the transmission	11-9
Checking the crankshaft	11-11
Assembling the transmission	11-12
Fitting the transmission and crankshaft	11-14

Fault diagnosis

It is difficult to engage the gears.
1. Maladjustment of the clutch (play is too large)
2. Bending of the gear shift fork
3. Bending of the gear shift spindle claw
4. Damage to the shift drum cam groove
5. Damage to the guide pin

The gears become disengaged by themselves.
1. Wear and tear in the gear dog area
2. Damage to the shift drum stopper
3. Bending of the shift fork

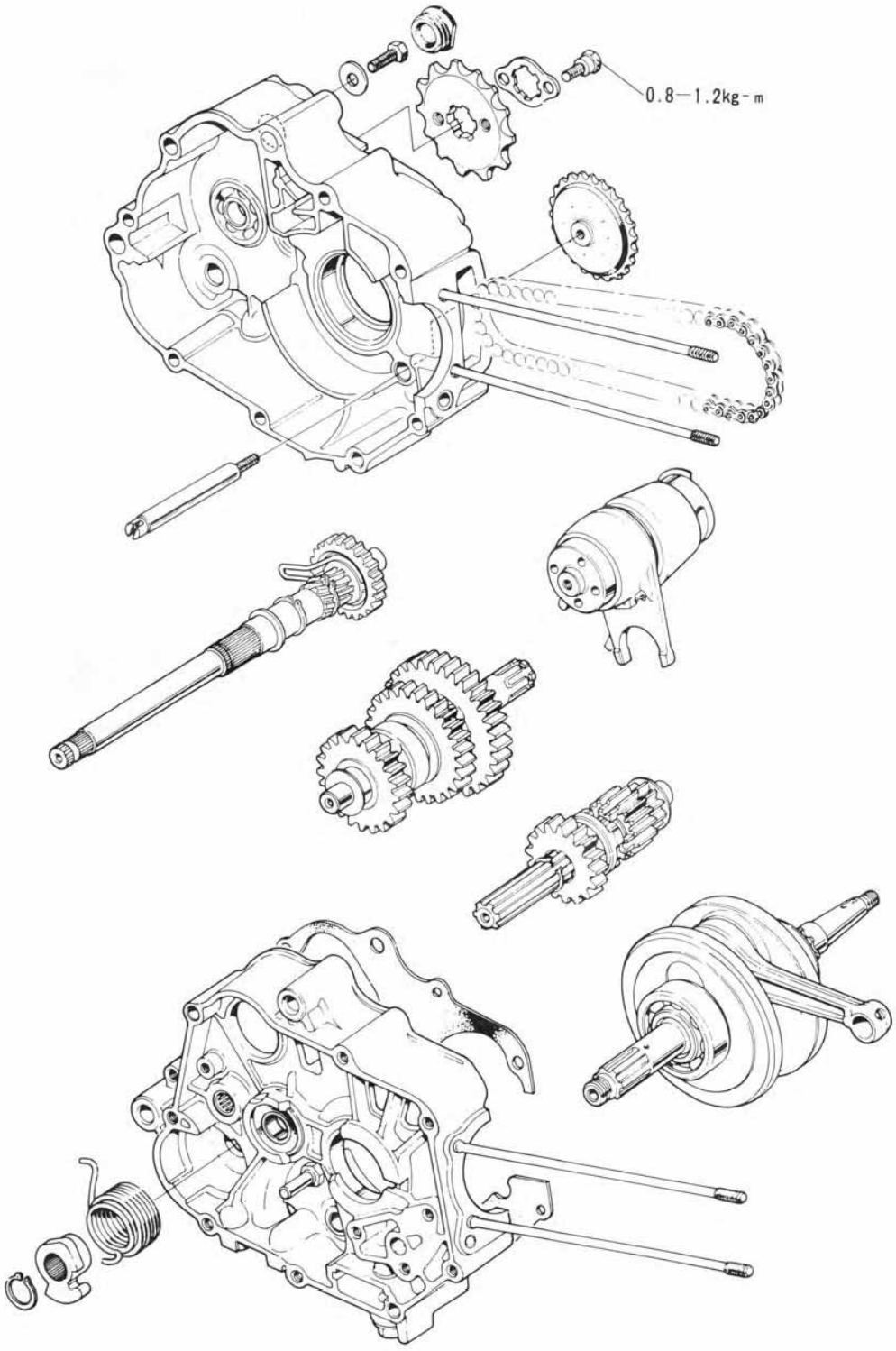
Engine noise
1. Looseness in the main journal bearing
2. Looseness in the crank pin bearing
3. Looseness in the piston pin and its pin hole

Maintenance information

Cautionary points during operation
Apply oil on to the gears when first assembling the parts.
Maintenance on the drum stopper and shift spindle can be carried out without being removed from the vehicle. The procedure when the engine is assembled, however, is explained in this chapter.

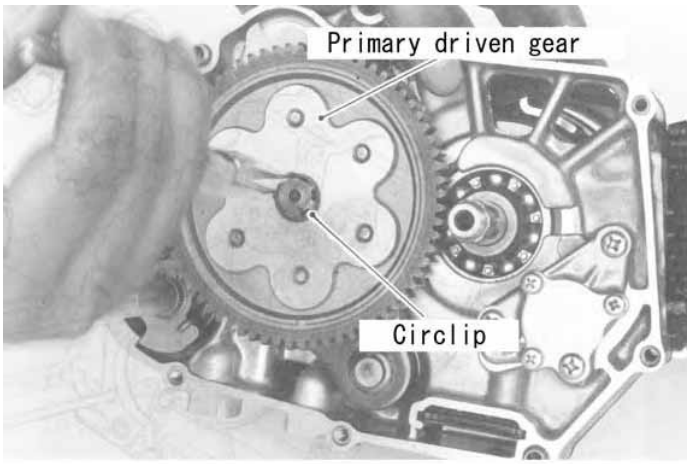
Maintenance criteria

				Standard value	Usage limit
Transmission	Gear inner diameter (for 3 speeds)	M2		17.016- 17.034mm	Replace if 17.1mm or more
		C1		17.016- 17.034mm	Replace if 17.1mm or more
		C3		17.016- 17.034mm	Replace if 17.1mm or more
	Gear inner diameter (for 4 speeds)	M2		17.016- 17.034mm	Replace if 17.1mm or more
		M4		17.016- 17.034mm	Replace if 17.1mm or more
		C1		17.016- 17.034mm	Replace if 17.1mm or more
		C3		17.016- 17.034mm	Replace if 17.1mm or more
		C4		17.016- 17.034mm	Replace if 17.1mm or more
	Main shaft outer diameter	For 3 speeds		16.983- 16.994mm	Replace if 16.95mm or less
		For 4 speeds		16.983- 16.994mm	Replace if 16.95mm or less
	Counter shaft outer diameter	For 3 speeds		16.983- 16.994mm	Replace if 16.95mm or less
		For 4 speeds		16.983- 16.994mm	Replace if 16.95mm or less
	Shift drum outer diameter			33.950- 33.975mm	Replace if 33.93mm or less
	Shift fork inner diameter			34.000- 34.025mm	Replace if 34.065 mm or more
	Shift fork claw thickness	For 3 speeds	L	4.86- 4.94mm	Replace if 4.6mm or less
			R	5.86- 5.94mm	Replace if 5.6mm or less
		For 4 speeds		4.45- 4.55mm	Replace if 4.2mm or less
Crankshaft	Conrod small end inner diameter			13.013- 13.043mm	Replace if 13.100mm or more
	Conrod large end shaft direction clearance			0.10- 0.35mm	Replace if 0.6mm or more
	Conrod large end bearing direction clearance			0- 0.012mm	Replace if 0.05mm or more
	Play in the journal bearing	To the shaft direction		-	Replace if 0.10mm or more
		To the bearing direction		-	Replace if 0.05mm or more
	Deflection of crankshaft			-	Replace if 0.10mm or more

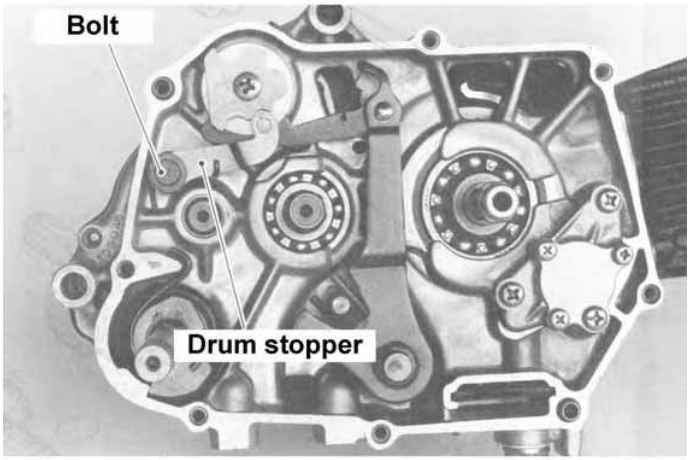

0.8—1.2kg-m

REMOVING THE DRUM STOPPER AND SHIFT SPINDLE

Remove oil, and disassemble the engine.
Remove the kick pedal, and detach the R. crankcase cover.
Remove the clutch (8-3).
Remove the circlip, and detach the primary driven gear.

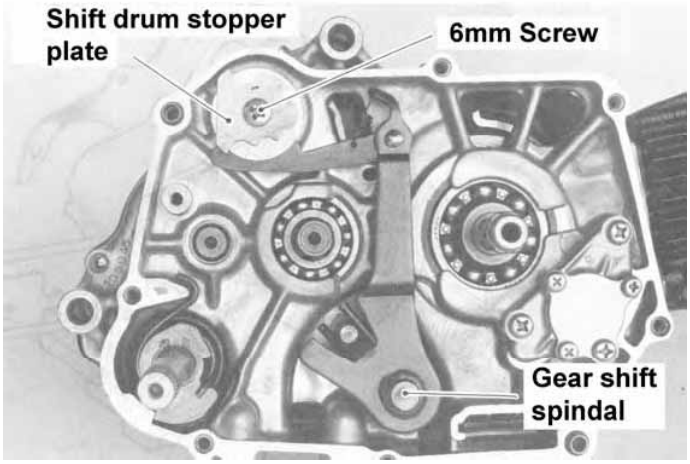


Remove the pivot bolt, and detach the drum stopper.



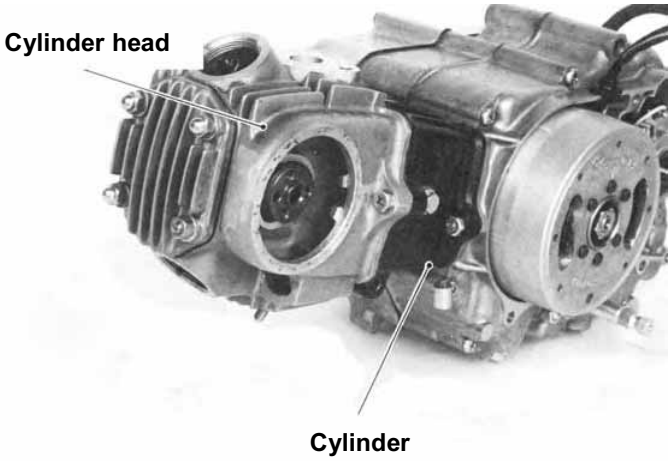
Remove the 6mm screw, and detach the drum stopper plate and pin.
Remove the change pedal, and take out the gear shift spindle.

✻ The 6mm screw is fixed by screw lock. Loosen with an impact driver.

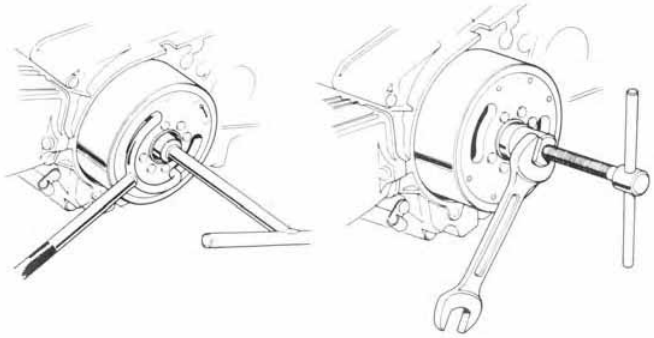


Removing the transmission and crankshaft

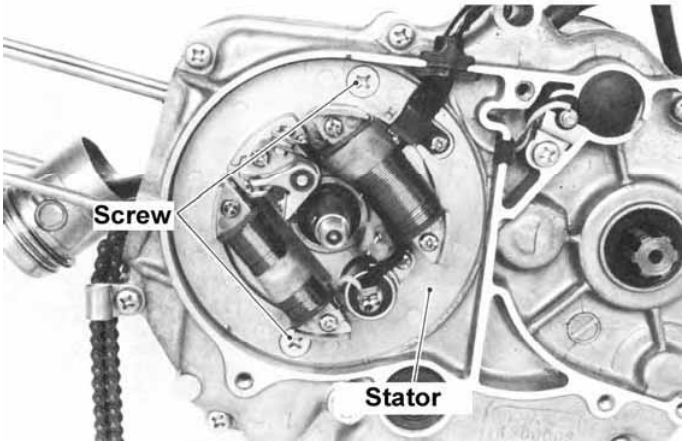
Remove the cylinder head and cylinder (Chapter 6,7).



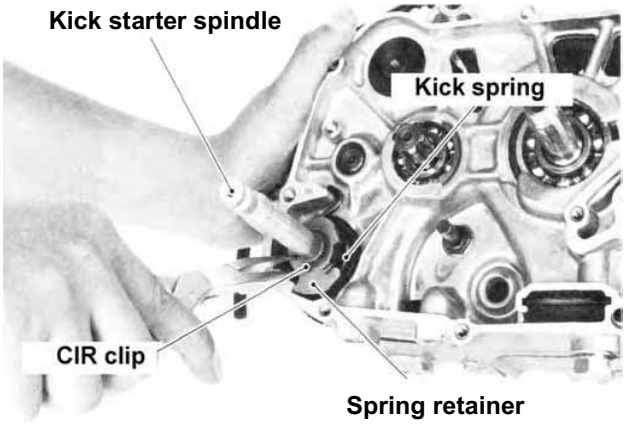
Remove the flywheel (⇒Chapter 10).



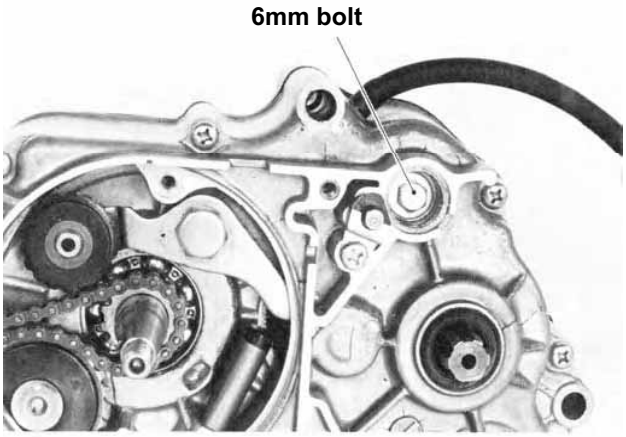
Remove the neutral switch wiring and 2 screws, and detach the stator ASSY.



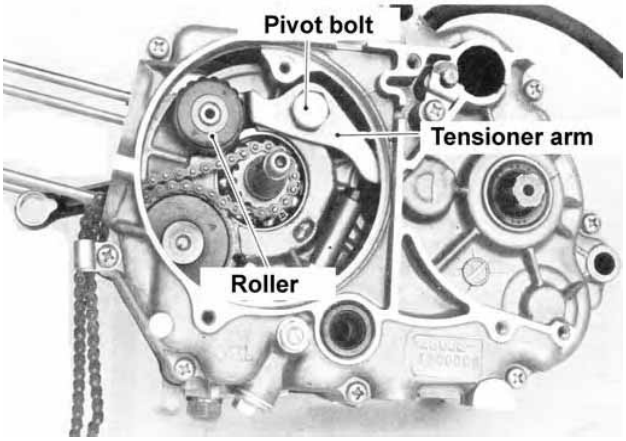
Remove the circlip of the kick starter spindle, and detach the kick spring retainer and kick spring.



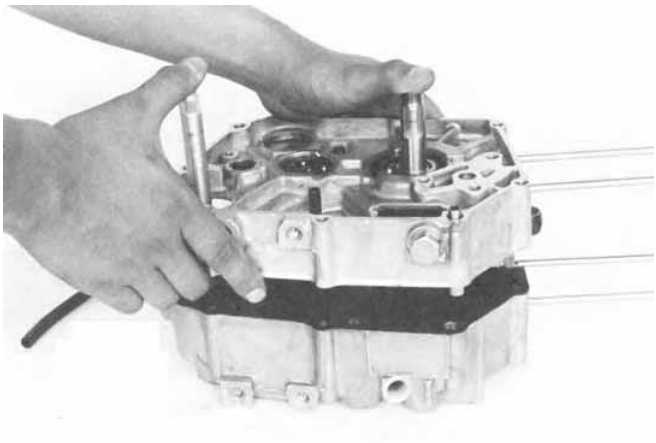
Remove the rubber cap, and detach the bolt that is fixing the shift drum.



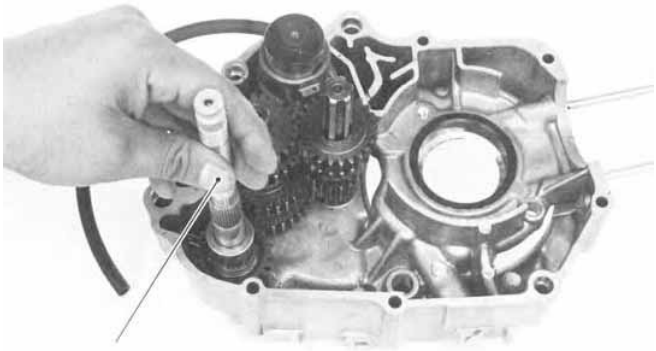
Remove the cam chain tensioner pivot bolt, and detach the cam chain tensioner. Remove the cam chain tensioner push rod and cam chain.



Place the R crankcase downwards, and remove the screws. Then, face the L crankcase downwards, and detach the R and L crankcases apart.

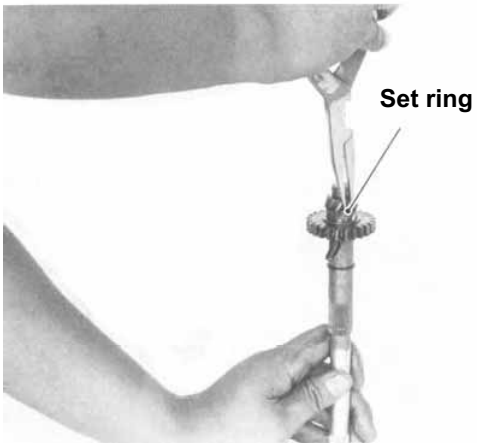


Remove the crankshaft and kick starter spindle.



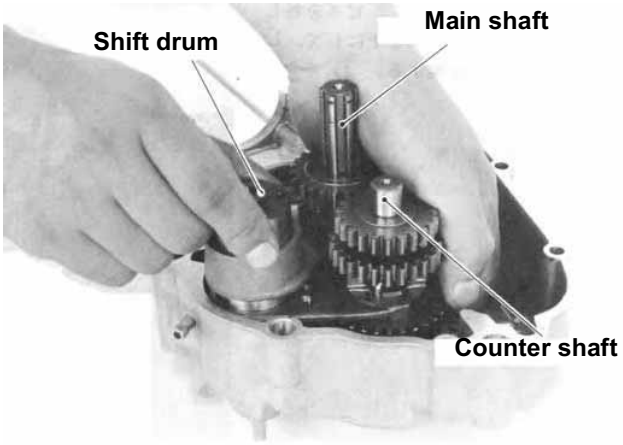
Kick starter spindle

Remove the set ring, and detach the kick starter spindle.



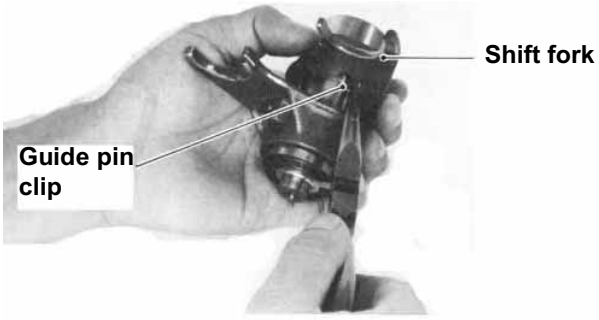
Set ring

Remove the transmission and shift drum simultaneously.

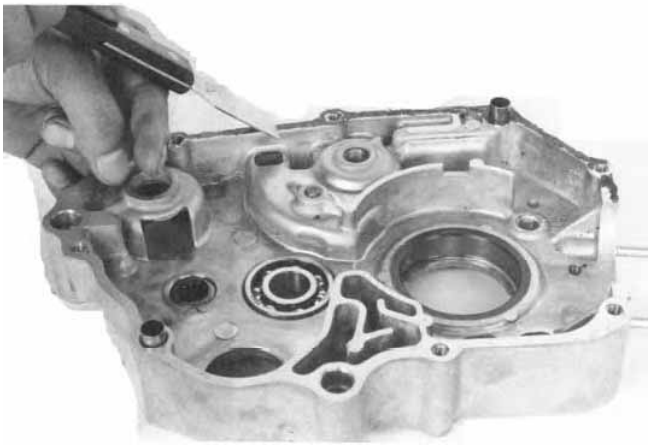


Remove the guide pin clip and shift fork guide pin, and detach the shift drum.

✻ As the shift fork has L and R setting directions. They should be kept in order for assembling ease when they are removed.

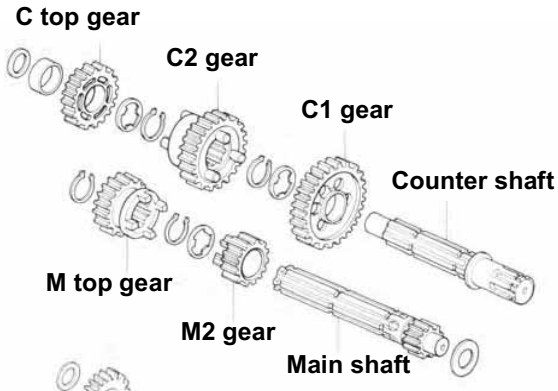


Pull off the crankcase gasket, and check for damage on the gasket surface and case.

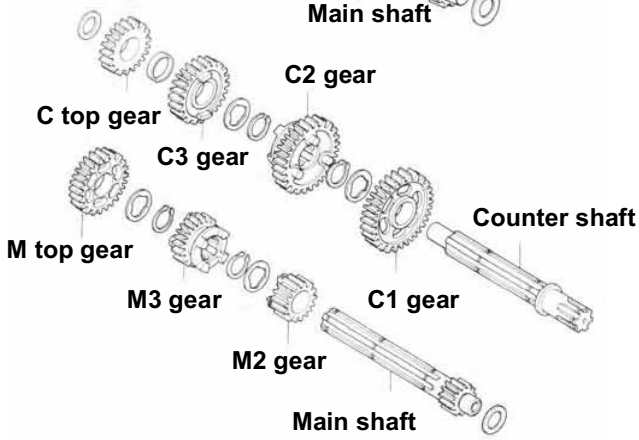


Detach the gears from the main shaft and counter shaft.

(3 speed transmission)



(4 speed transmission)



Checking the transmission

Checking the gear

Check for abnormal wear and tear of the gears.
Measure the inner diameters of the gears.

Usage limit

(for 3 speeds)
M2: Replace if 17.1mm or more.
C1: Replace if 17.1mm or more.
C3: Replace if 17.1mm or more.

(for 4 speeds)
M2: Replace if 17.1mm or more.
M4: Replace if 17.1mm or more.
C1: Replace if 17.1mm or more.
C3: Replace if 17.1mm or more.
C4: Replace if 17.1mm or more.

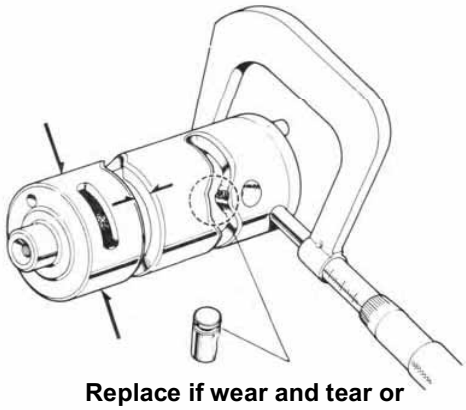
Measure the outer diameters of the main shaft and counter shaft.

Usage limit
(for 4 speeds)
M shaft: Replace if 16.95mm or less.
C shaft: Replace if 16.95mm or less.

(for 3 speeds)
M shaft: Replace if 16.95mm or less.
C shaft: Replace if 16.95mm or less.

Checking the shift drum
Check for wear and tear, and damage of the drum.
Measure the outer diameter of the drum.

Usage limit: Replace if 33.93mm or less.



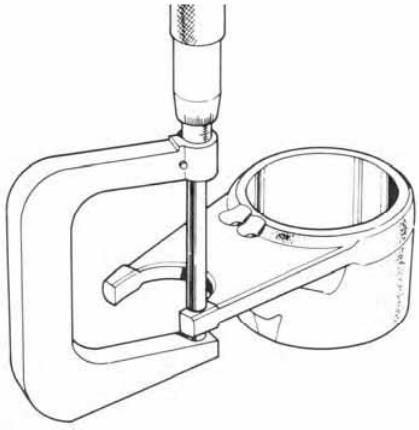
Replace if wear and tear or damage is significant.

Checking the shift fork
Measure the inner diameter of the shift fork.

Usage limit: Replace if 33.065mm or more.

Measure the thickness of the fittings (tips) of the shift fork.

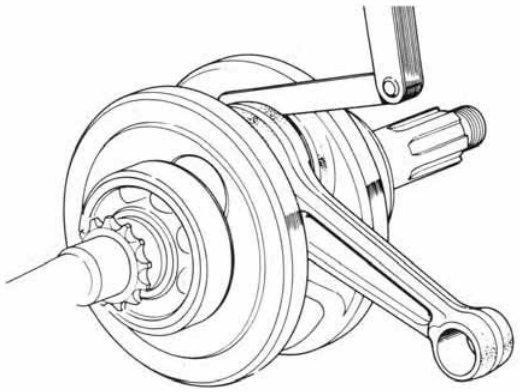
Usage limit
For 3 speeds:
L: Replace if 4.6mm or less.
R: Replace if 5.6mm or less.
For 4 speeds: Replace if 4.2mm or less.



CHECKING THE CRANKSHAFT

Measure the inner diameter of the conrod small end.

Usage limit: Replace if 13.100mm or more

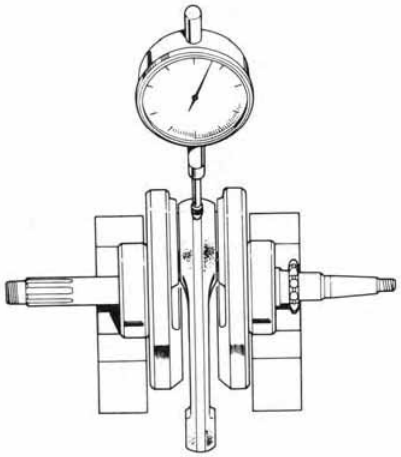


Measure the clearance of the large end of the conrod axle direction

Usage limit: Replace if 0.6mm or more.

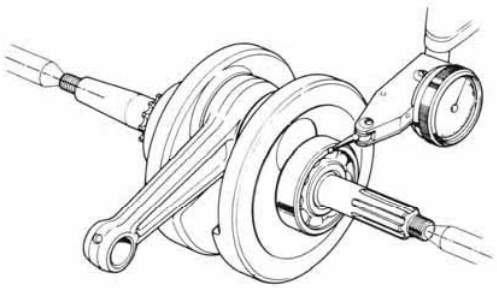
Measure the play in 2 directions vertical to the large end of the conrod shaft.

Usage limit: Replace if 0.05mm or more.

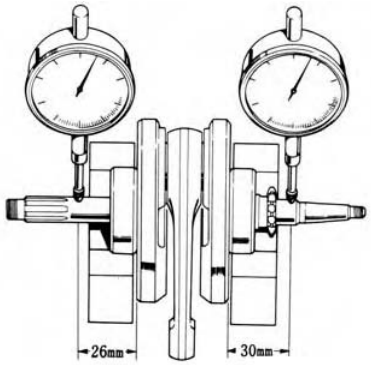


Measure the play of the journal bearing of the crankshaft.

Usage limit
Axle direction: Replace if 0.10mm or more.
Axle receiver direction: Replace if 0.05mm or more.



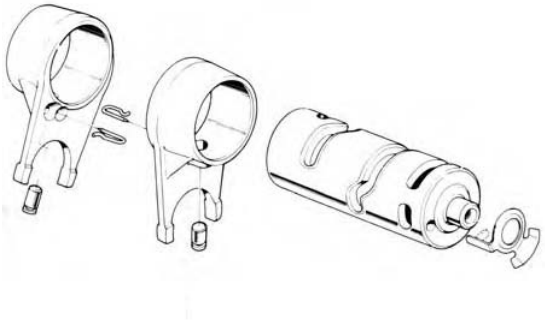
Measure the run out of the crankshaft.
Usage limit: Replace if 0.10mm or more



ASSEMBLING THE TRANSMISSION

Assembling the shift drum

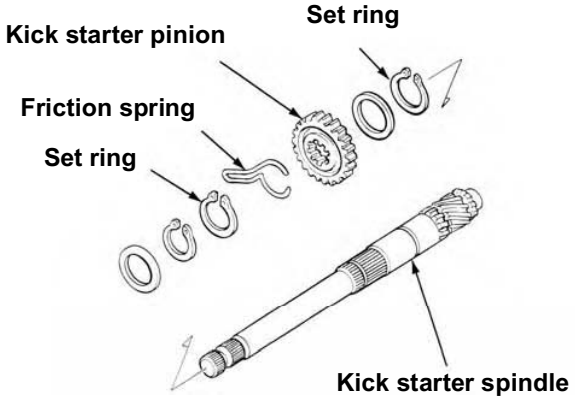
Fit the shift fork to the shift drum, and insert the shift fork guide pin and guide pin clip.



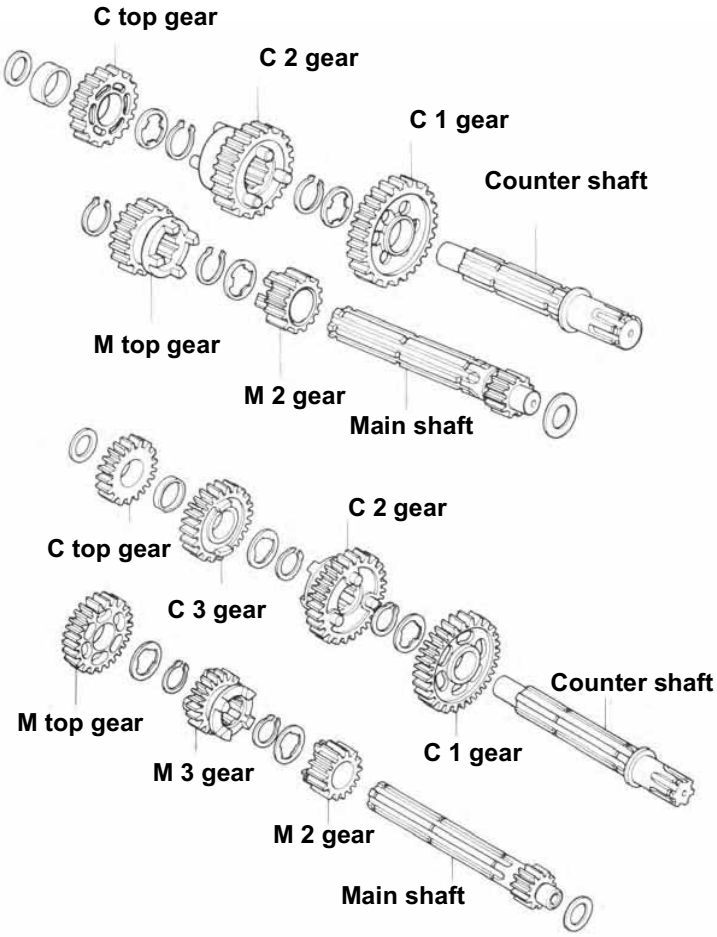
Assembling the kick starter

Assemble the kick starter spindle in the order indicated in the diagram.

✻ Place the friction spring in the groove of the kick starter pinion.

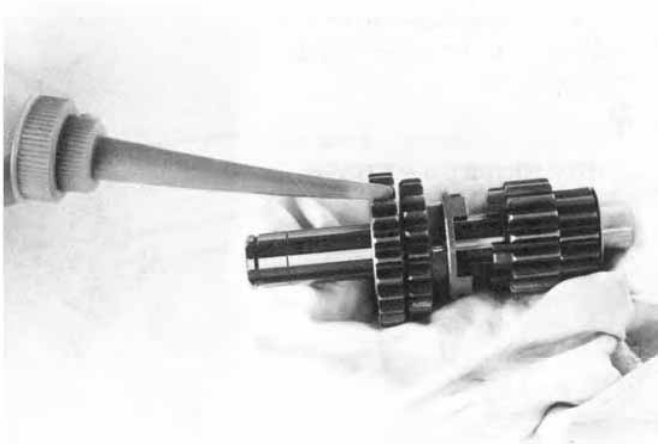


Assembling the transmission



Fit the gears on the main shaft and counter shaft, and fix with the set ring.

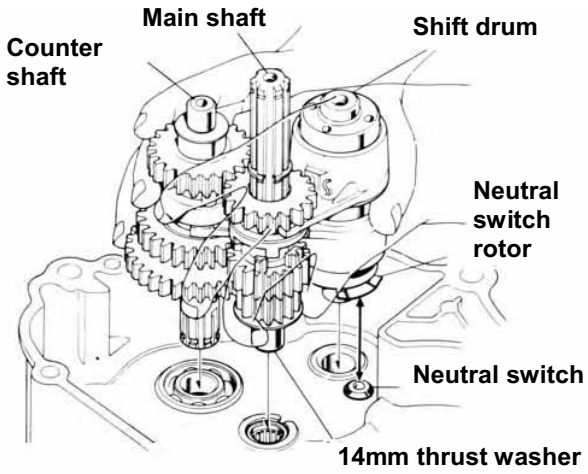
✻ Apply oil to the gears after assembling.



FITTING THE CRANKSHAFT AND TRANSMISSION

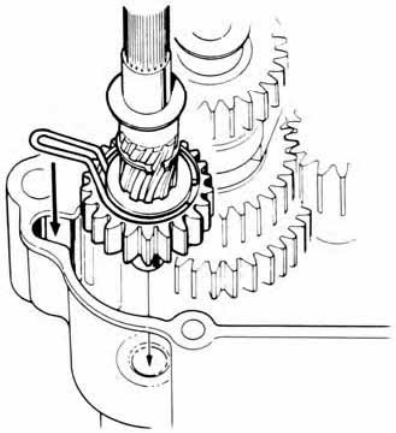
Fit the shift drum and transmission simultaneously to the L. crankcase.

✻ The neutral switch rotor and neutral switch are fitted easily if they are placed together.



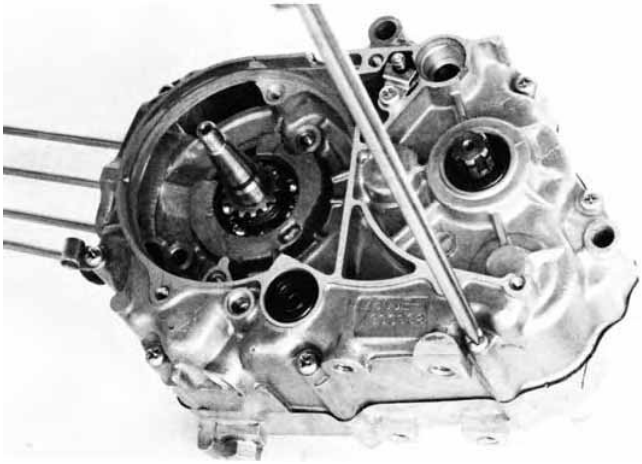
Fit the kick starter spindle.

✻ Fit the friction spring in the case.



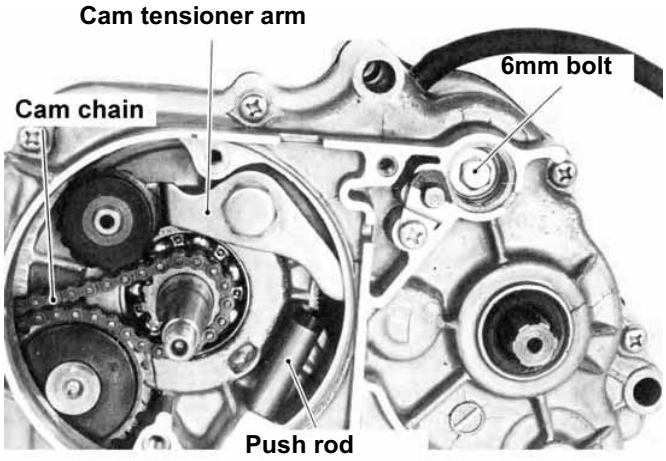
Insert the crankshaft, line up the R. crank case and have the L crank case facing up wards secured with a screw.

✻ Make sure that the knock pin and gasket are placed correctly while tightening the screws.

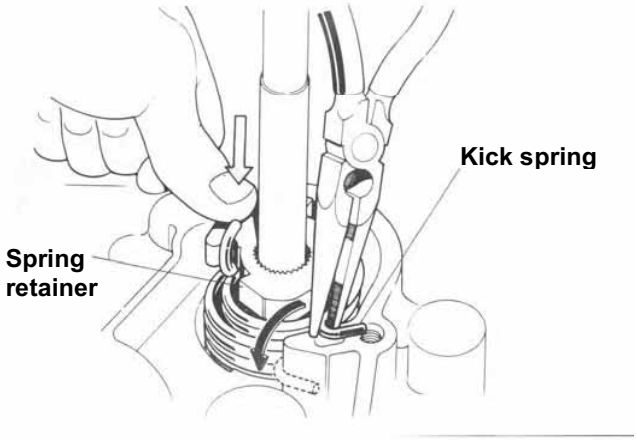


Fit the cam chain and the other parts needed for the cam chain tensioner.
Fix the shift drum with the 6mm bolt, and replace the rubber cap.

✻ Apply oil to the crank bearing and also its large end.

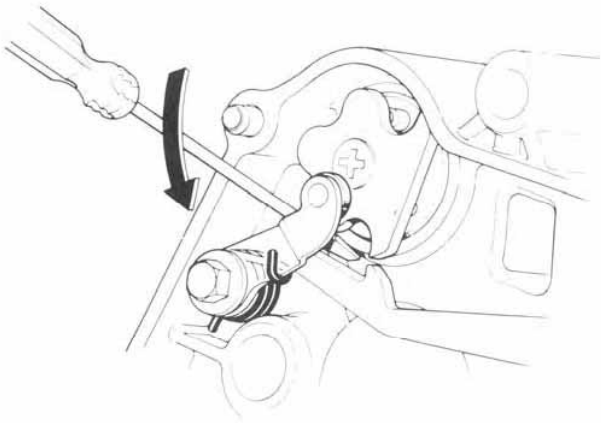


Set the kick spring and spring retainer after joining the cases.



Tighten the gear shift drum pin, shift drum side plate (4 speeds), and shift drum stopper plate on the gear shift drum with the 6mm screw.

✻ Apply screw lock to the 6mm countersunk screw.

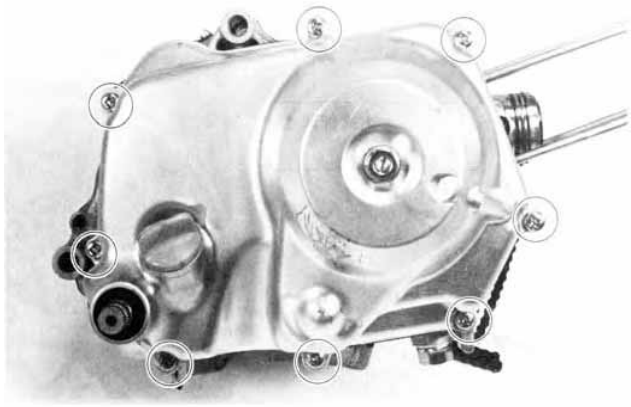


Insert the gear shift spindle, and fit the shift drum stopper.

Torque: 0.8- 1.2kg-m

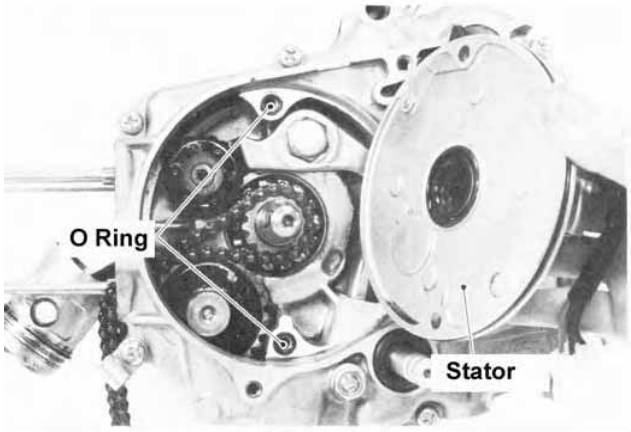
✻ Fit the change pedal temporarily, and make sure that the gears engage correctly.

Fit the primary driven gear and clutch, and fix the R. crankcase cover (→Chapter 8).

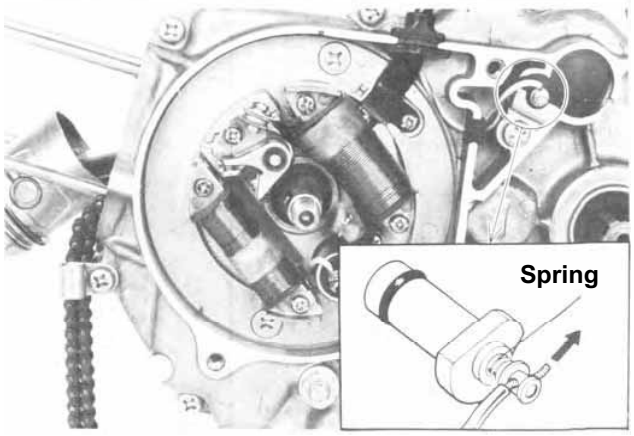


Fit the stator and flywheel to the L. crankcase.

✻ Make sure to fit a new O-ring on the other side of the stator installation screws.

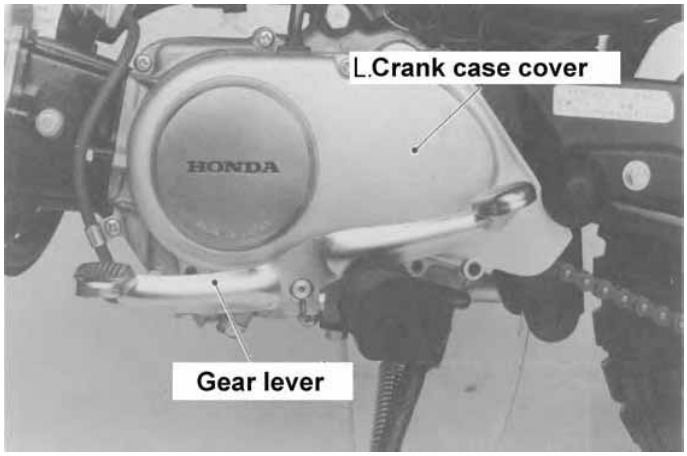


Connect the neutral switch wire.
Fit the cylinder (7-8).
Fit the cylinder head (→6-15).



Fit the drive sprocket, and mount the engine (Chapter 5).

Start the engine, and check if there is any oil leakage.



Fault Diagnosis 12-1
Maintenance Information 12-1
Removal of the Carburetor 12-3
Assembling and Disassembling of Carburetor 12-4
Installation of the Carburetor 12-5

Fault Diagnosis

When the engine doesn't start: 1. No fuel in the tank 2. Fuel isn't reaching the engine 3. Fuel is traversing past the inside of the cylinder. 4. Plugs are not sparking (ignition system) 5. Air filter blockage. Rough engine idle, poorly adjusted 1. Rough idling 2. Poor ignition 3. Low compression pressure 4. Fuel-air mixture is too rich 5. Fuel-air mixture is too lean 6. Air filter blockage 7. Air leak into the manifold system 8. Dirt in Fuel	Fuel-air mixture is too lean 1. Fuel jet blockages 2. Ventilation hole on fuel cap is blocked 3. Fuel filter blockage 4. Fracture, collapse or blockage of the fuel tube 5. Poor function of the float valve 6. Float level to low Fuel-air mixture is too rich 1. Choke is closed 2. Poor function of the float valve 3. Float level is too high 4. Air jet blockage

Maintenance Information

- Cautionary Points for Operation

When siphoning fuel be very careful of any fire hazards.

Take care to position the O-ring correctly and replace with a new O-ring.

Before disassembling, discharge the fuel inside the carburetor through the drain plug in the float chamber.

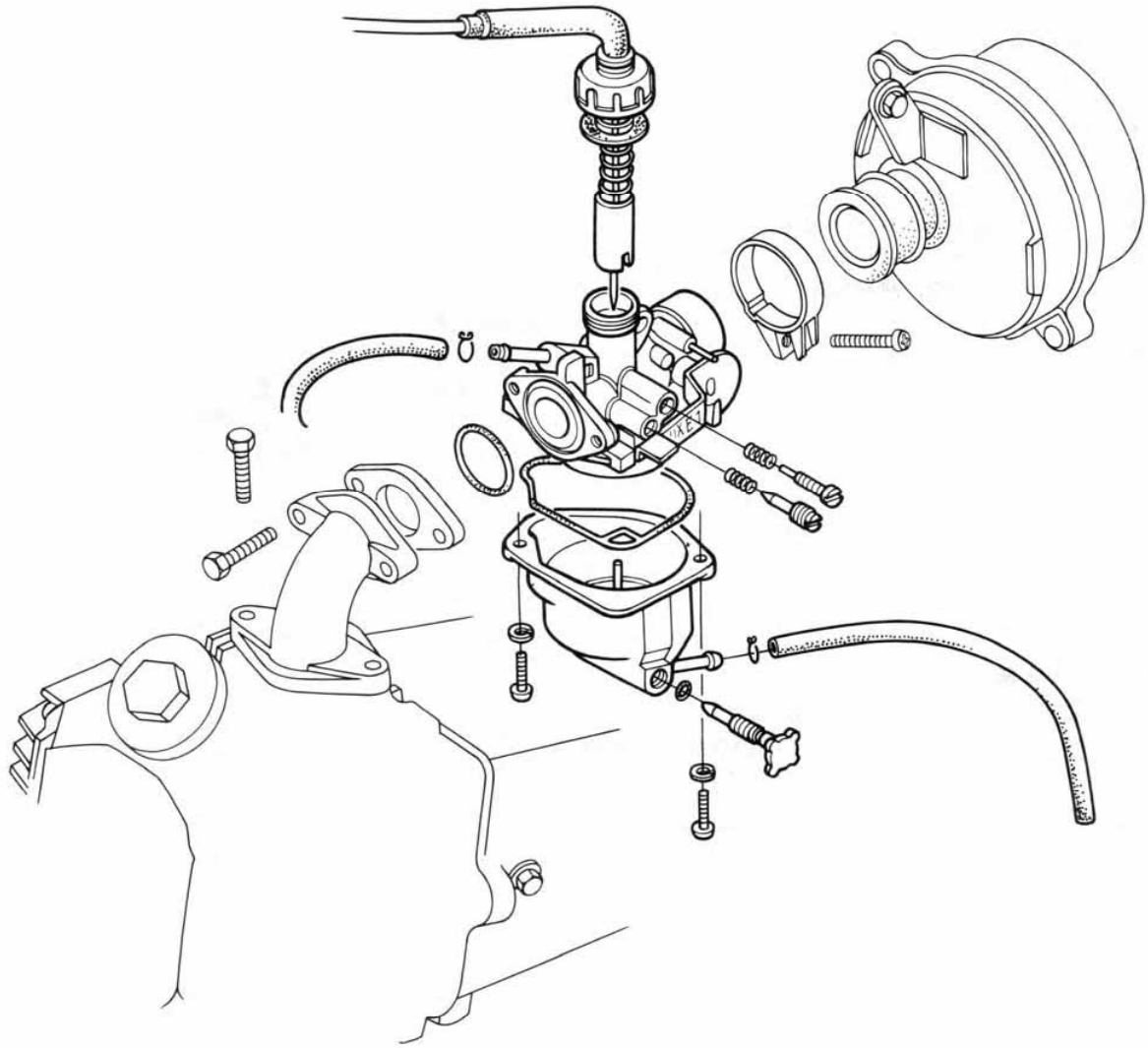
- Exclusive Tools

Float level gauge 07401 – 0010000

Maintenance Standards, Specifications

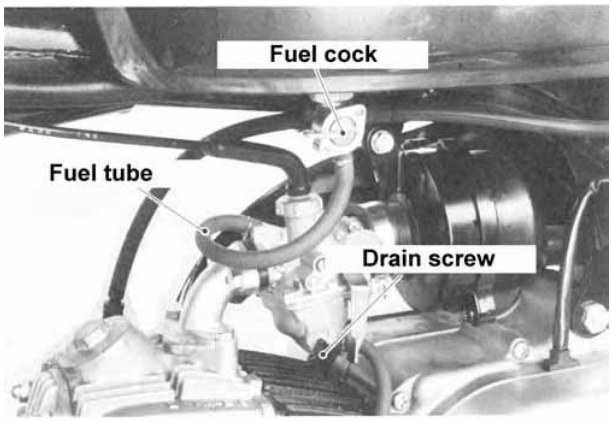
Venturi diameter	11mm
Setting mark	PA03B
Float level	12.7±1.3mm
Air screw slack (standard)	1½ turns
Idling RPM	1500±100rpm
Throttle grip play	2-6mm

CARBURETOR

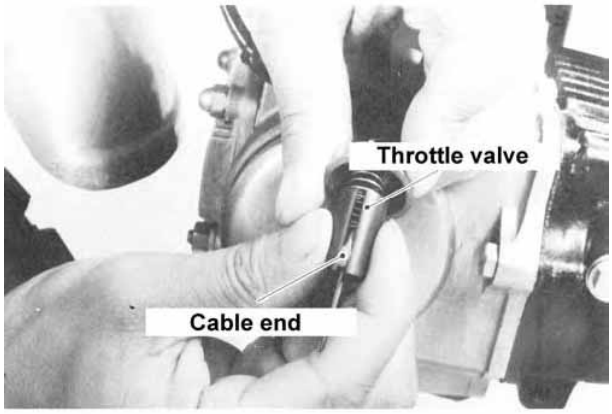


DISASSEMBLING THE CARBURETOR

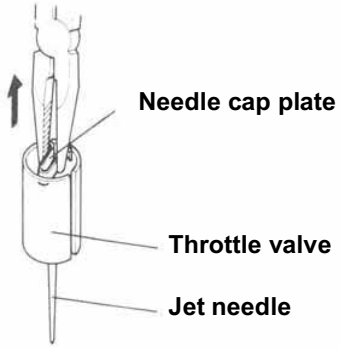
Turn the fuel cock to the off position and open the drain cock. Once the fuel has drained out remove the fuel tube.



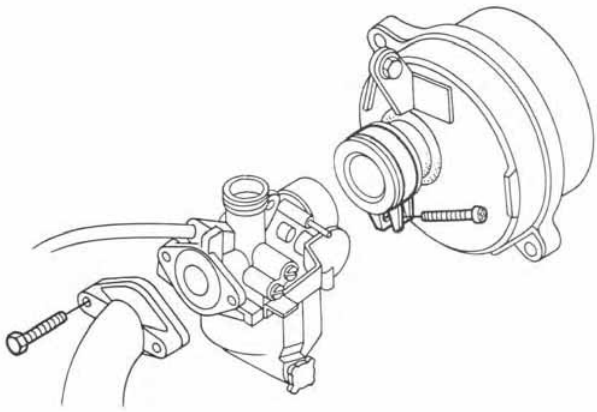
Remove the throttle valve from the carburetor.
Detach the throttle valve from the throttle cable.



Detach the throttle valve from the jet needle.

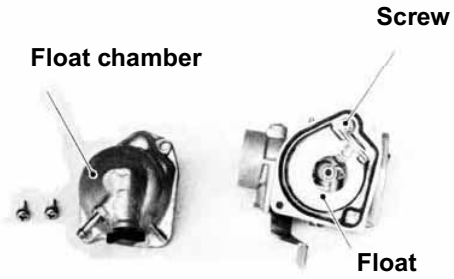


Detach the inlet manifold and the air filter from the Carburetor.



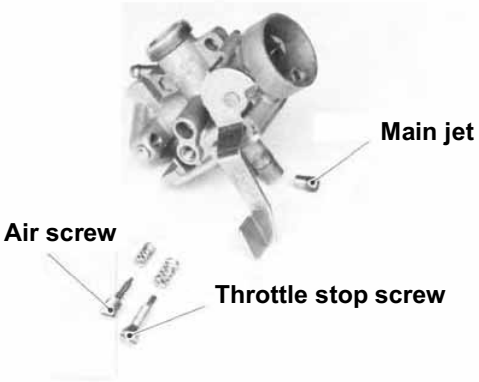
Disassembly and Assembly of the Carburetor

Remove the float chamber and loosen the screws that fasten the float pin. Remove the float and float valve.



Remove the throttle stop screw, the air screw and the main jet and clean with solvent.

✻ Use clean solvent.



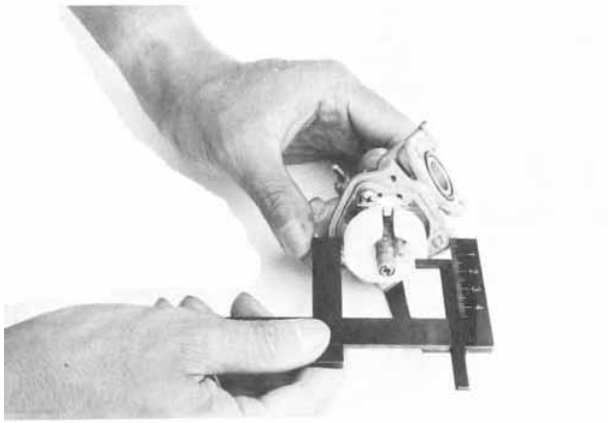
Using an air nozzle, clean the body and ports of solvent and foreign particles.

Check for any blockages.

Assemble all of the parts.

Float level Check

Remove the float chamber.
Check that the float is at the specified height when the tip of the float is in contact with the float valve.
Float height: 12.7±1.3mm



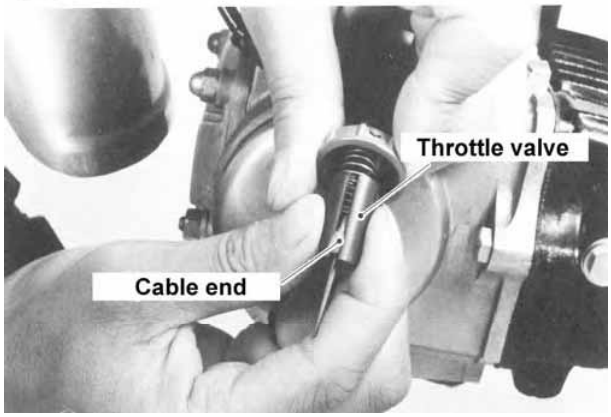
Replace the float if it is outside of specifications.

Specialized Tool

Float level gauge 07401-0010000

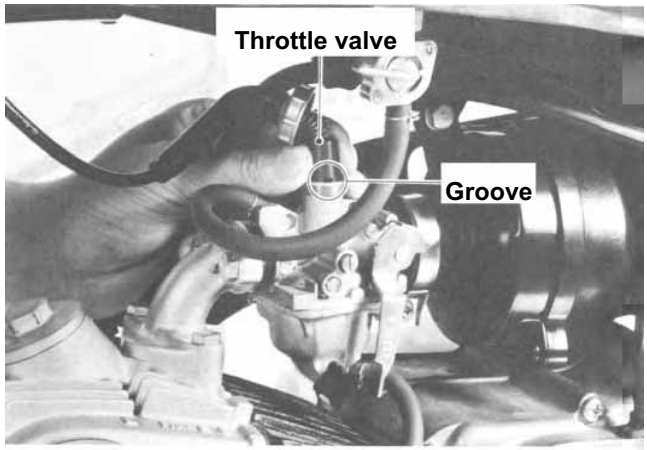
Attaching the Carburetor

Assemble the throttle valve and the jet needle and then secure with the throttle cable.

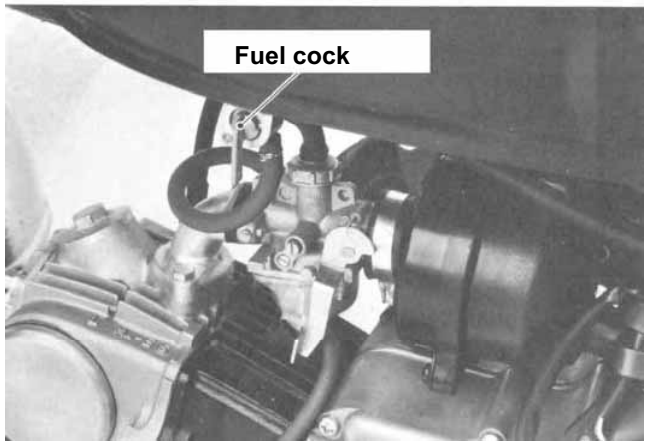


Install the inlet manifold and the air filter to the carburetor.
Assemble the throttle valve into the carburetor.

✻ Align the groove of the throttle valve with that of the throttle stop screw and insert.



Connect the fuel tube to the carburetor and turn the fuel cock to the ‘on’ position.
Start the engine and then make adjustment to the carburetor as required (3-8).



13. Steering, Front Wheel, Front Suspension

	Fault Diagnosis	13-1
	Maintenance Information	13-1
	Headlight, Speedometer	13-2
	Steering Handlebars	13-4
	Front Wheel	13-6
	Front Fork, Steering System	13-7

Fault Diagnosis

Heavy Steering 1. Head top thread over tightened 2. Damage to the bearings of the steering stem 3. Damage to the bearing race or cone race 4. Low air pressure in tyres Loss of Steering Control 1. Unbalanced left and right cushions 2. Warped front fork 3. Warped front axle, flat tyre Front Wheel Run Out 1. Rim deformed 2. Loose front wheel bearings 3. Tyres in poor condition 4. Axle related parts	Front Cushion too soft 1. Spring fatigue Front Cushion too flexible 1. Bent front fork Abnormal Noise from Front Cushion 1. Cushion casing uneven wear 2. Cushion parts loose

Maintenance Information

Maintenance Standards

	Standard Values	Usage Restrictions
Bent Axle Shaft		Replace where exceeds 0.2mm
Front Wheel Run Out		Replace where exceeds 2.0mm
Internal Diameter of Brake Drum	110.0mm—110.3mm	Replace where exceeds 111mm
Thickness of Brake Lining	4 mm	Replace where less than 2mm

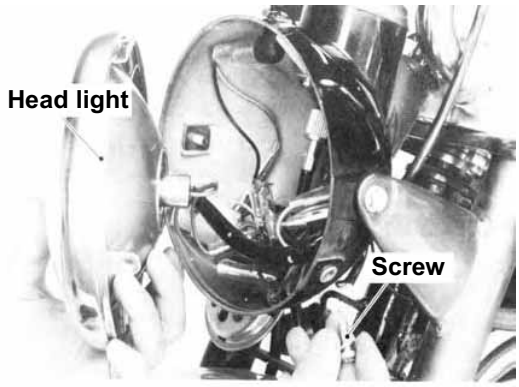
Specialist tools

36mm pin spanner	07902-0010000
Ball race driver	07746-0010200
Bearing driver	07947-0450000
Bearing driver handle	07749-0010000

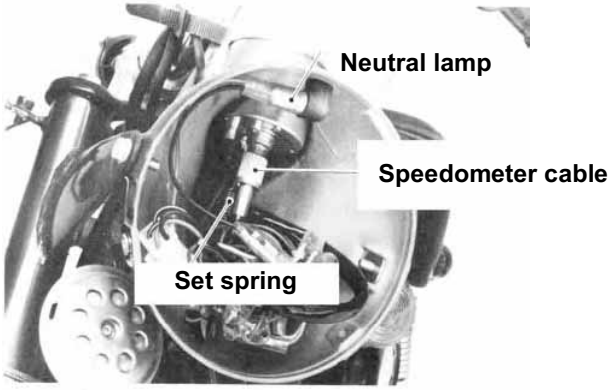
HEADLIGHT, SPEEDOMETER

Removing the headlight casing

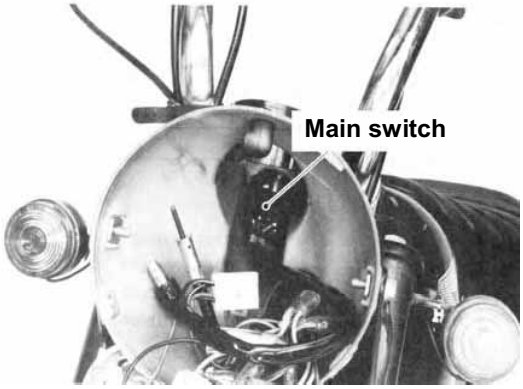
Loosen the screws and remove the headlight.



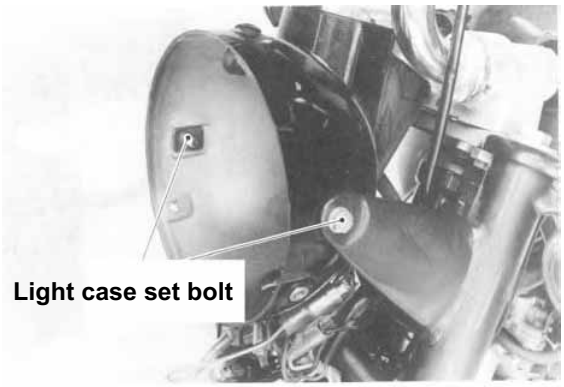
Remove the neutral and speedometer lamps. (Monkey only) Remove the speedometer cable and set spring, and then remove the headlight. (Monkey Only)



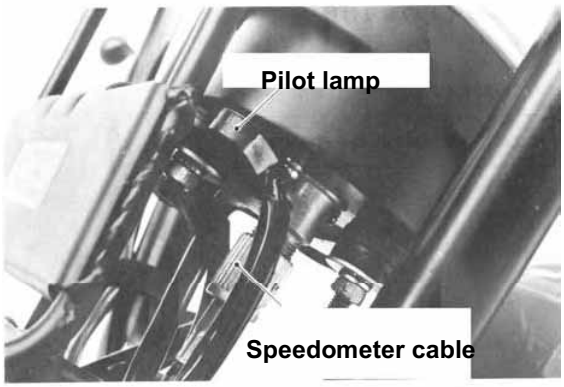
Disconnect the main switch wiring. Push the clip that supports the main switch body in toward the centre and remove.



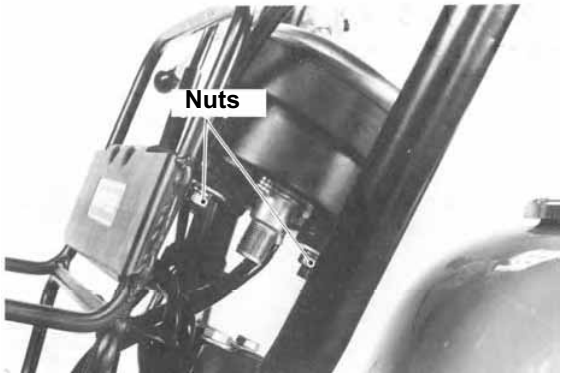
Push the wire harness out from the light casing, remove the light casing set bolt and then the light casing itself.



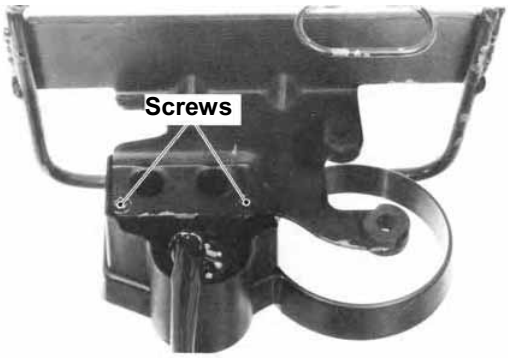
Removing the Speedometer
(Gorilla Only)
Remove the electric bulbs from the pilot and speedometer lamps and then remove the speedometer cable.



Remove the speedometer set nut and then the speedometer.



Remove the front carrier.
Remove the two screws pictured and disconnect the main switch.
Remove the indicator panel.

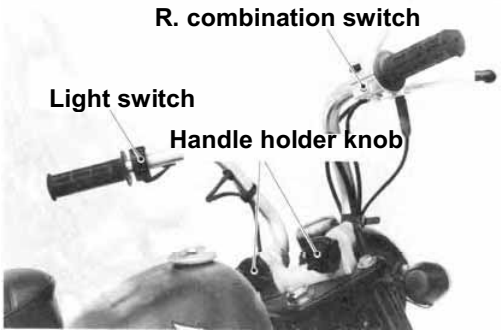


Attaching the headlight
To attach the headlight, reverse the procedure for detachment.
Hang the hook from the upper part of the headlight and fix in place with screws.

✻ After assembly, perform a check of electrical component functionality.

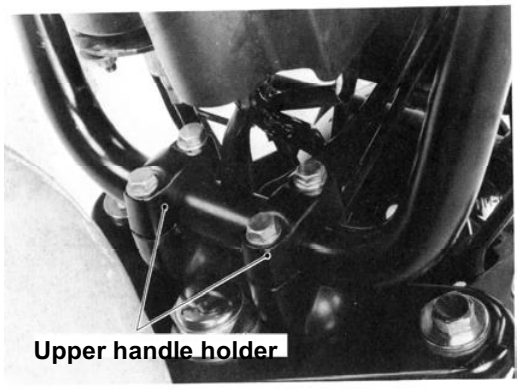
STEERING HANDLE BARS

Removing the Steering Handle
(Monkey)
Remove the cable.
Remove the handle holder knob followed by the handle pipe.
Remove the R. combination switch and the throttle grip simultaneously.
Remove the light switch.



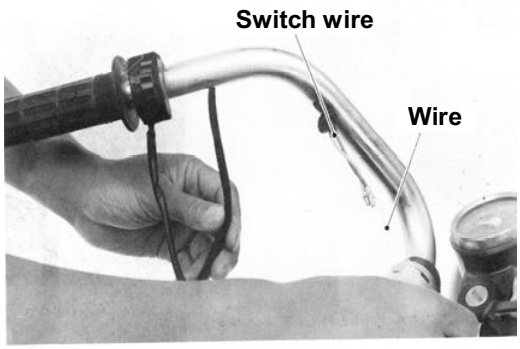
Removal of the Steering Handle Bar (Gorilla)

Remove the brake and clutch cables.
Remove the light switch.
Remove the upper handle holder and then the handle pipe.
Pull out the R. combination switch and the throttle grip at the same time.



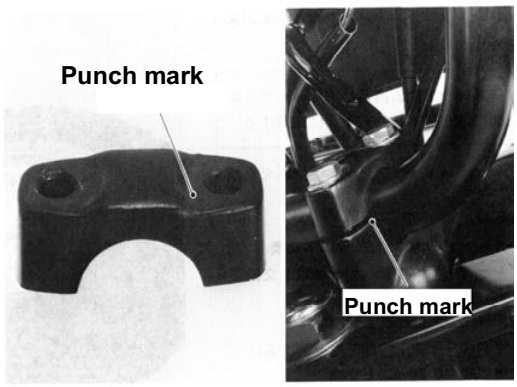
Installation of the Handle Bar

Reverse the above procedure for removal.
Install the light switch wire using a passing wire to draw the cord through the handle pipe.
Install the R. combination switch and the throttle grip.



✻ Apply grease to contact areas on the throttle grip.

Affix the handle pipe to the upper handle holder (Gorilla only)

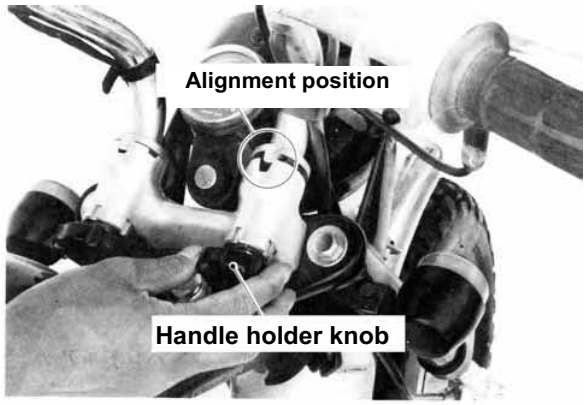


✻

- Align the punch marks of the handle pipe with those of the upper surface of the lower holder.
  Place the punch marks of the upper holder at the rear and screw down the front side first.

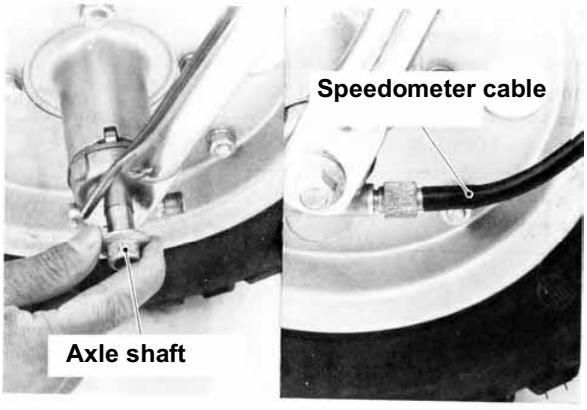
Torque: 0.8-1.2kg-m

Connect the brake and clutch cables and adjust as required.
Check that the switches function normally.
Align the handle holder knob with the handle taking care to position correctly, and then fix in place.



Front Wheel
Remove the speedometer and the front brake cables.

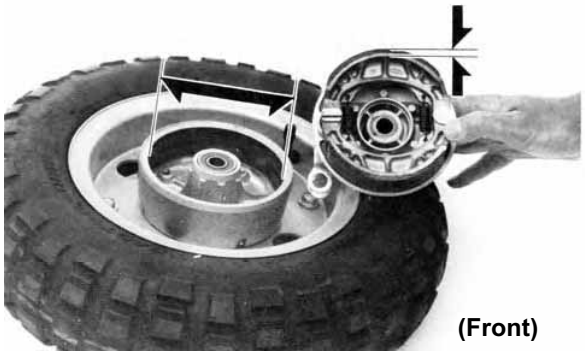
Remove the front axle nut and then draw out the axle shaft.
Remove the speedometer gear and brake panel.



Take care not to get oil on the interior of the brake drum or on the brake lining.

Inspection of the brake shoe and drum.

Usage Limits
Lining thickness: Replace if less than 2mm.
Brake drum diameter: Replace if more than 111mm.

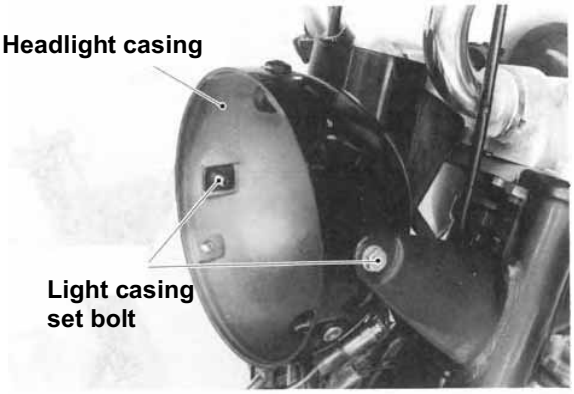


Check for any distortion of the rim.
Usage Limit: Replace if more than 2.0mm.

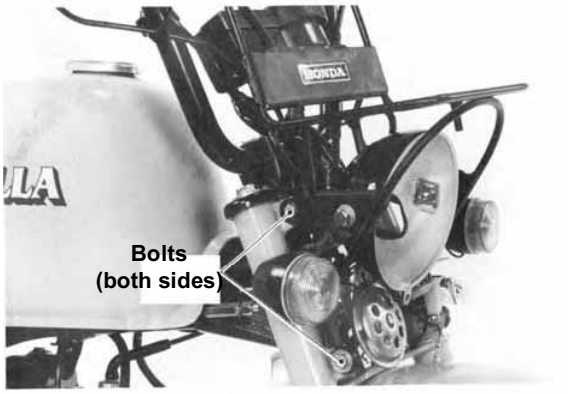
Check for any bending of the axle shaft.
Usage Limit: Replace if more than 0.2mm.

FRONT FORK, STEERING SYSTEM

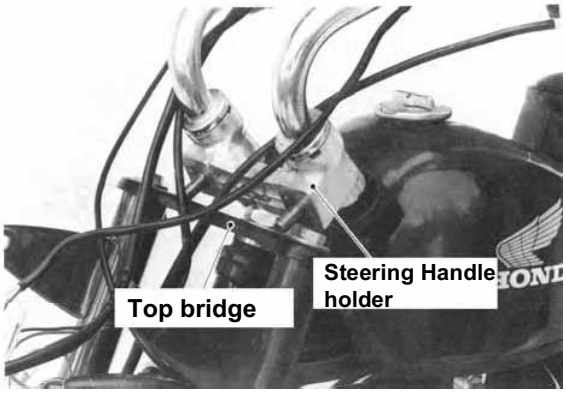
Remove the headlight and disconnect the wire harness and then force the headlight out of the casing.
Remove the pilot lamp and the speedometer cable. (13-2)
Remove the indicator panel. (13-4)
Remove the speedometer and the main switch, followed by the light casing. (13-3)



Remove the front carrier and the light casing simultaneously. (Gorilla)

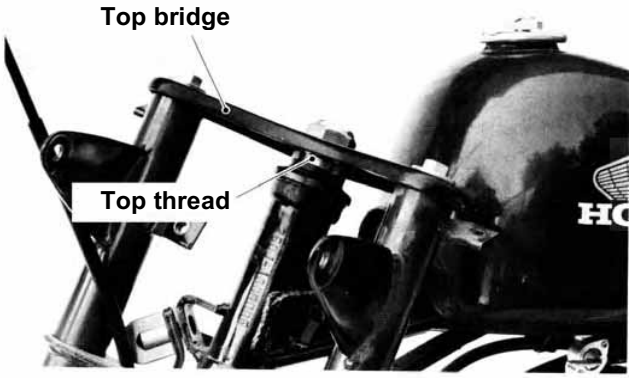


Remove the front wheel and the steering handle bars.

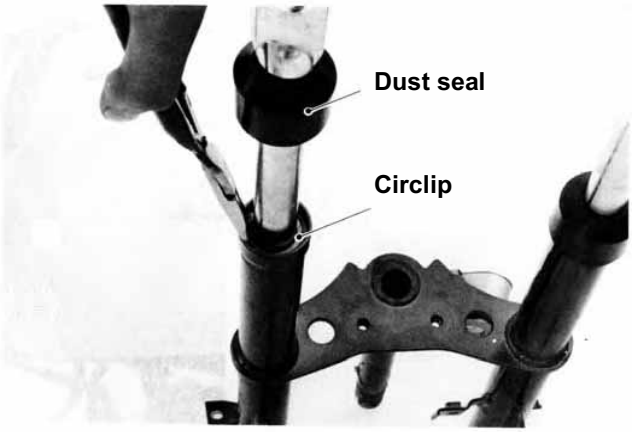


Remove the top bridge of the front fork and the top thread of the steering head followed by the front fork itself.

✻ Put the steel balls from the ball race in a safe place so as not to lose them.

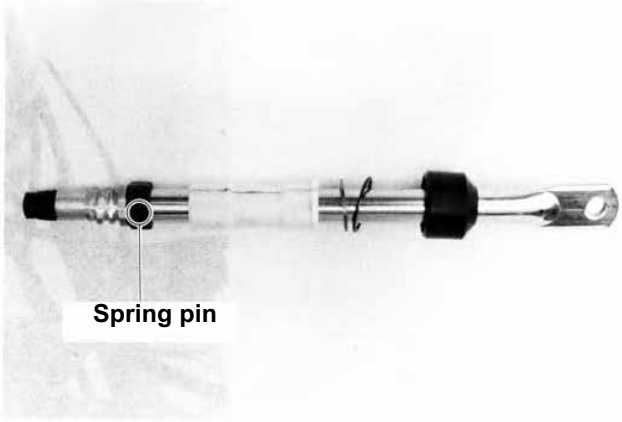


Remove the dust shield and the circlip and then draw out the front cushion.



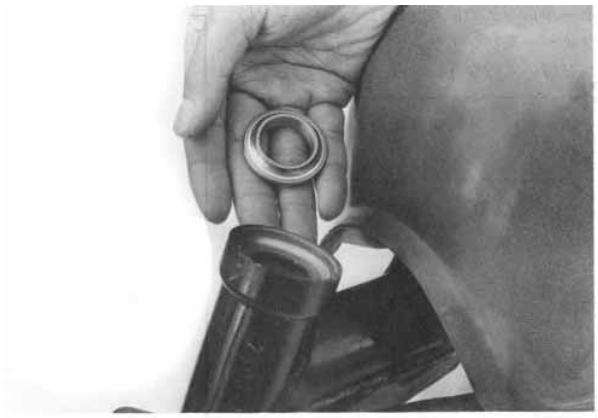
Pull out the spring pin and disassemble into component parts. Check parts for presence of abnormal wear and tear or damage. Check for warping of the steering stem and front forks.

✻ If warped replace or repair.

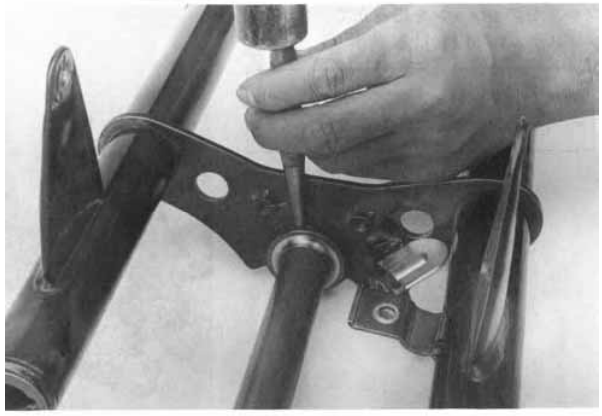


Rub any grease off the ball race using solvent, and then check the surface for damage or wear and tear.

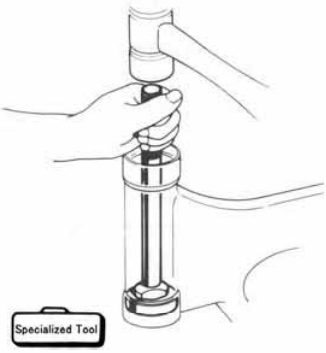
✻ Replace if signs of damage or wear and tear are present.



Use a punch driver when removing the bottom cone race. Drive in with a steering stem driver when assembling.



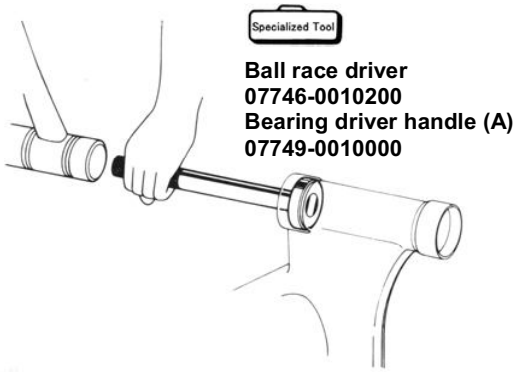
Use a ball race remover when removing the ball cone race.



Ball race remover 07944-1150001

Attach the ball race with a ball race driver and bearing driver handle.

✻ Make sure that it is tapped inward in a straight fashion.

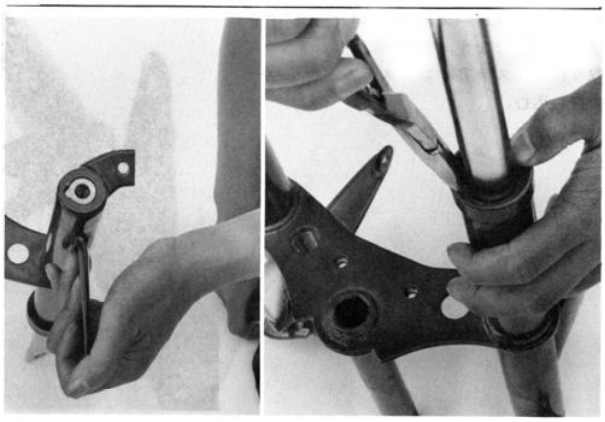


Specialized Tool

Ball race driver
07746-0010200
Bearing driver handle (A)
07749-0010000

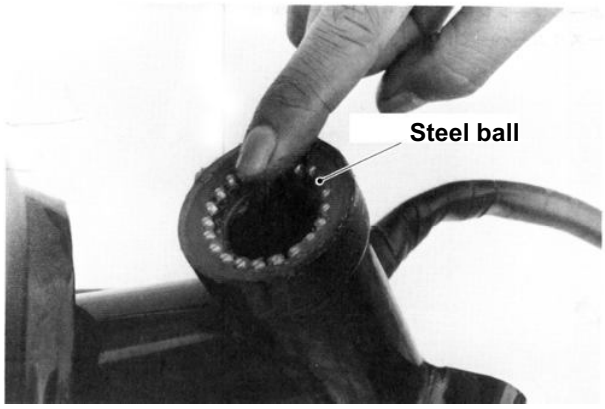
Assemble the front cushion, and attach it to the steering stem.

✻ Apply grease thoroughly to the front cushion spring.



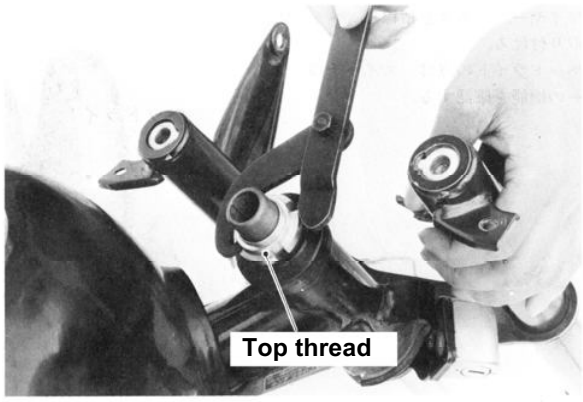
Apply grease to the ball race thoroughly, and then attach the steel balls.

✻ Clean the steel balls with washing fluid before attaching. Care must be taken so that dust does not stick to its surface.



Attach the front fork to the steering head, and fit with the top ball race and top thread.

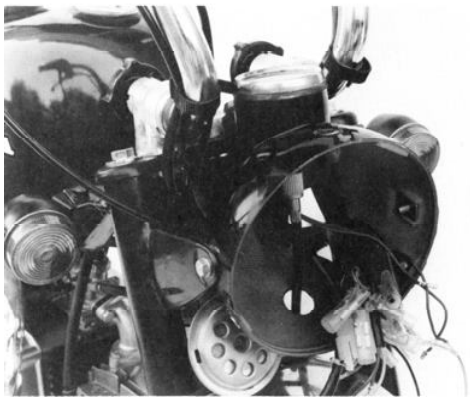
- Attach the front fork taking care the steel balls do not fall out. Tighten the top thread lightly and reverse approximately 1/8 turn, and make sure that there is no looseness but moves smoothly.



Attach the steering top bridge and front wheel.

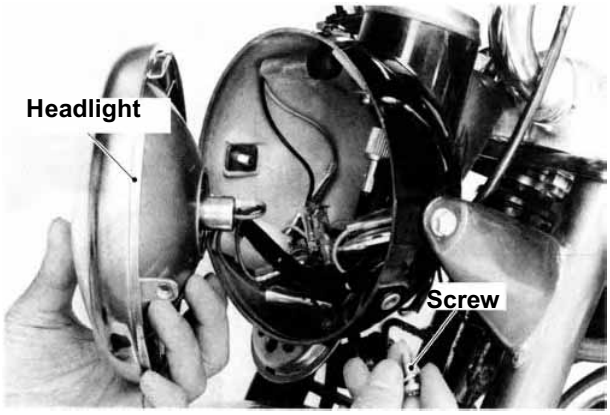
Attach the steering handle, light case, and speedometer.

Attach the clutch cable and brake cable.



Reconnect the wire harness and assemble the headlight.

Check that the headlight, switches and cables are all functional.



14 Rear wheel, rear suspension

Fault diagnosis 14-1
Maintenance information 14-1
Rear wheel 14-2
Rear cushion, rear fork 14-3
Taillight, rear carrier 14-5

Fault diagnosis

Looseness of the rear wheel
1. Deformity of the rim
2. Looseness of the rear wheel bearing
3. Tyre defect
4. Axle related parts not tightened properly

Soft rear cushion
1. Settling of the spring
2. Settling of the rear damper

Ineffective brake
1. Brake maladjustment
2. Unclean brake shoe surface
3. Wear and tear of the brake shoe
4. Wear and tear of the brake shoe cam
5. Wear and tear of the brake cam
6. Wear and tear of the brake drum
7. Poor brake arm serration connection

Abnormal operating sound of the drive chain
1. Lack of oil or grease
2. Wear and tear of the chain, sprocket

Maintenance information

Specialized tools

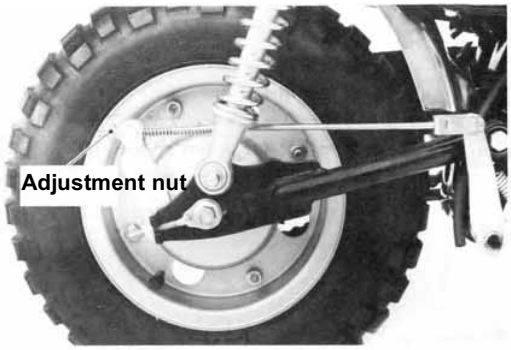
Rear cushion compressor 07959-3290001
Bearing driver 07947-0450000
Bearing driver handle 07949-2860000

Maintenance criteria

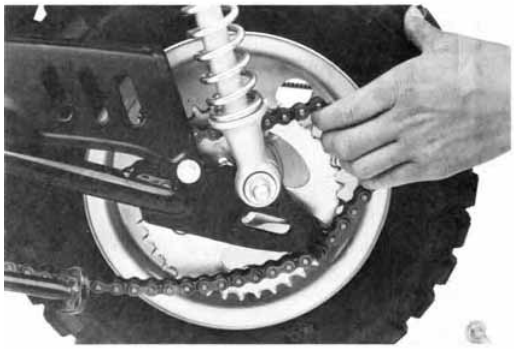
	Standard value	Usage limit
Bending of the axle shaft	-	Replace if 0.2mm or more
Looseness of the rear wheel	-	Replace if 2.0mm or more
Inner diameter of the brake drum	110.0- 110.3mm	Replace if 111mm or more
Thickness of the brake lining	4mm	Replace if 2mm or less
Free length of the rear cushion spring	192mm	Replace if 182mm or less

REAR WHEEL

Remove the rear brake adjustment nut.



Remove the axle nut, and detach the axle shaft. Remove the chain from the driven sprocket, and detach the wheel.



Remove the brake panel, and check the brake shoe and brake drum.

Usage limit
Lining thickness: replace if 2mm or less
Brake drum inner diameter: replace if 111m or more

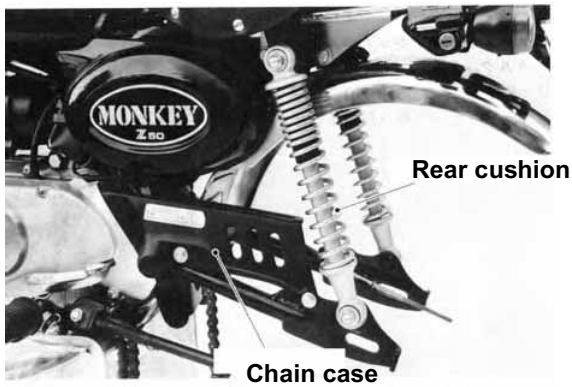
Make sure that oil does not get on the brake drum interior or the brake lining.

Check for any bending of the axle shaft.
Usage limit: replace if 0.2mm or more

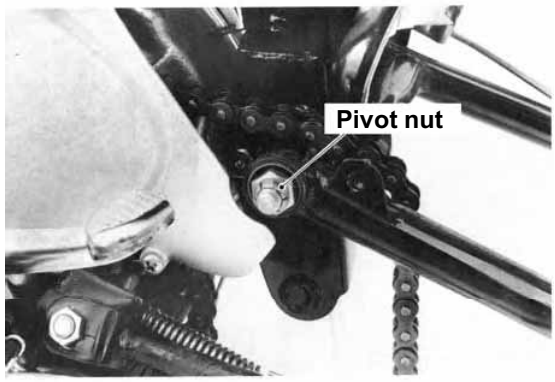
Check for any looseness (wear) of the rear wheel rim.
Usage limit: replace if 2.0mm or more

REAR CUSHION, REAR FORK

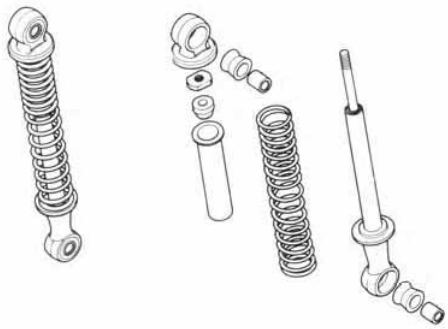
Remove the rear wheel and rear cushion. Detach the chain case.



Remove the pivot nut of the rear fork and the pivot shaft, and detach the rear fork.



Compress the rear cushion spring with the rear cushion compressor, and loosen the upper lock nut to disassemble the rear cushion.



Specialized Tool

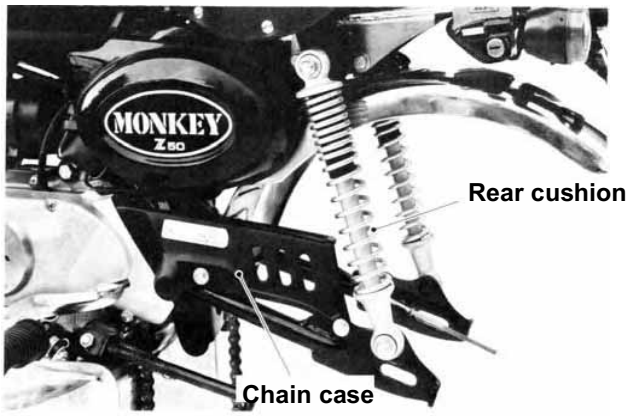
Rear cushion compressor
07959-3290001

Check for any leakage from the damper, and measure the free length of the spring.

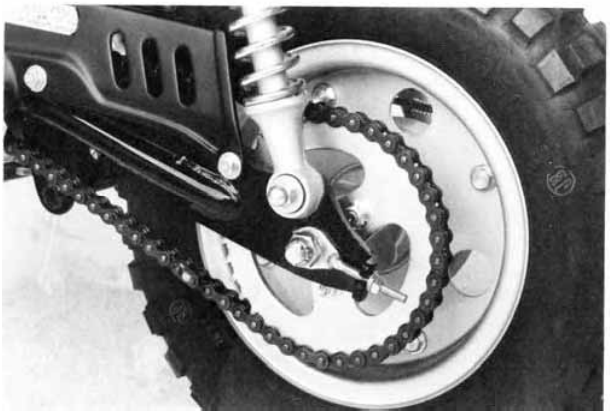
Usage limit: replace if 182mm or less

Fit the rear fork to the frame.
Rear fork pivot bolt
Torque: 2.5- 3.5kg-m

Reassemble the rear cushion, and fit it to the frame and rear fork.



Fit the rear wheel, and make adjustment to the drive chain and brake (3-12, 3-11)



TAIL LIGHT, REAR CARRIER

Remove the stop switch and tail light wiring, and then detach the 2 tail light mounting bolts to take off the tail light case.

Removing the indicator stay
Detach the tail light case after removing the wiring, and then loosen the 2 bolts located at the back of the case to take off the stay.

Removing the rear carrier
Remove the tail light case and indicator stay, and then detach the 4 carrier mounting bolts to take off the carrier.

ELECTRICAL DEVICES

Fault diagnosis	15-1
Maintenance information	15-2
Battery	15-3
Charging system	15-4
Ignition system	15-5
Switch inspection	15-6

Fault diagnosis

No electricity (main switch is "ON")
1. The battery is not charged
- There is no battery fluid
- The battery is totally discharged
- Charging system fault
2. Disconnected battery cable connection
3. Main fuse blown
4. Faulty ignition switch

Power voltage is low (main switch is "ON")
1. Inadequate battery charging
- There is very little battery fluid
- Battery is discharged
- Charging fault
2. Faulty connection

Power voltage is low (when engine is turning over)
1. Faulty battery charging
- There is very little battery fluid
2. Charging fault

Intermittent electrical current
1. Faulty battery cable connection
2. Faulty charging system connection
3. Faulty ignition system connection or short
4. Faulty lighting system connection or short

Faulty charging system
1. Fault, disconnection or short to wiring or connector contact
2. Faulty commutator
3. A.C. generator fault

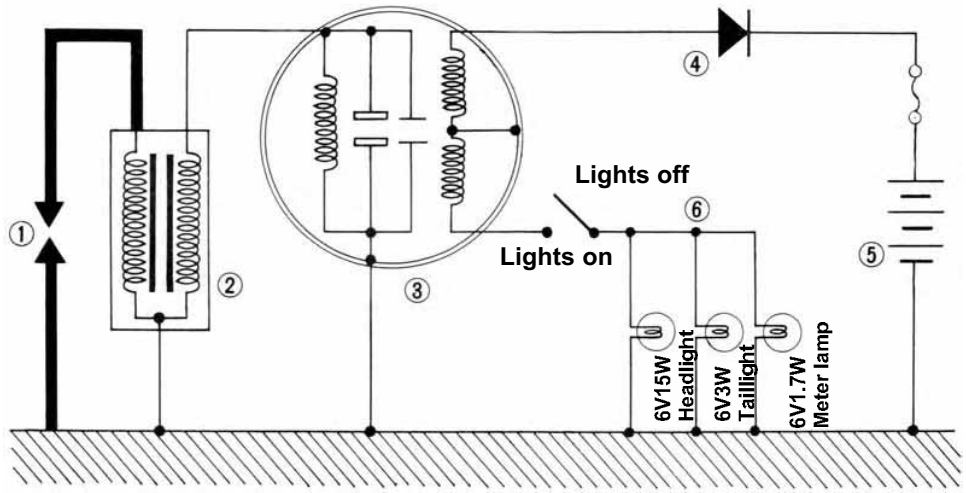
Maintenance information

Cautionary points for operation

Regularly inspect the battery fluid level, fill with distilled water if necessary.
Do not carry out rapid charging except in an emergency.
Wherever possible, carry out battery charging with battery removed. Always remove the battery cable connection first when undertaking battery charging on the vehicle.
Hydrogen gas is produced during charging. Do not allow open flames around the vehicle.
Inspection of the charging system can be carried out with the battery on the vehicle.

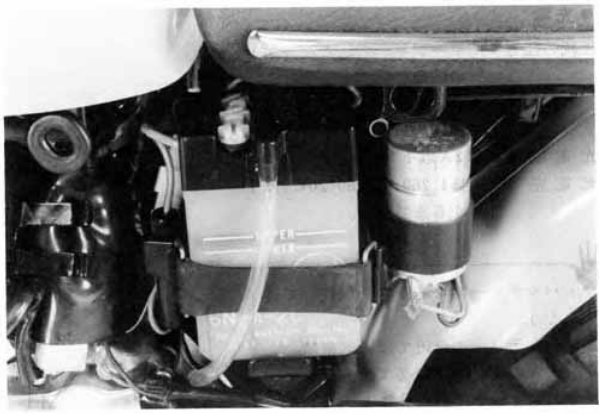
Specifications

Battery	Capacity	6V – 2 AH
	Fluid density	1.280 / at 20° C
	Charging current	Less than 0.2 A
A.C. generator	Charge efficiency	Lights off 1.5±0.3A/ 4,000rpm (at 6.5V) Lights on 0.4±0.3A/ 4,000rpm (at 6.5V)
		Lights off 2.4±0.3A/ 8,000rpm (at 6.5V) Lights on 0.7±0.3A/ 8,000rpm (at 6.5V)



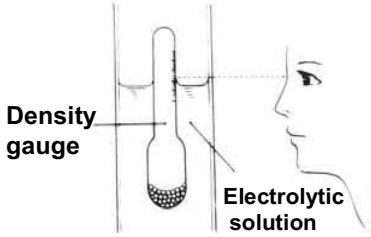
① Spark plug **④ Rectifier**
② Ignition coil **⑤ Battery (6V2AH)**
③ A.C. generator **⑥ Load**

Battery



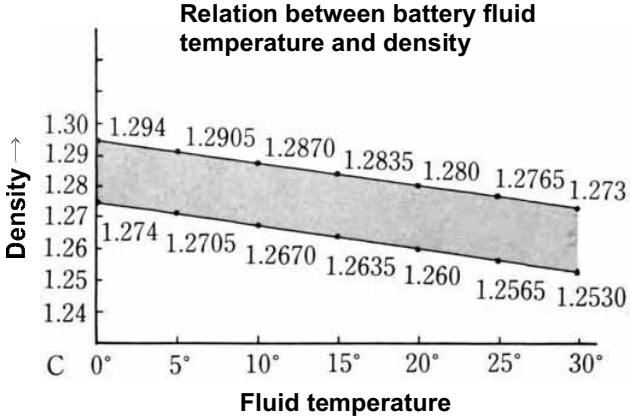
Removal
Remove the earth cable from the frame.
Remove the rubber band.
Remove the + positive cable.
Pull out the battery.

Relative density check
Measure the density of the battery fluid.
Density (at 20°C)
1.260~1.280: Fully charged
Less than 1.220: Insufficient charge



- Charging is necessary if less than 1.220.
- The density will vary depending on the liquid temperature as shown in the diagram.
- Replace with a new battery if a white coating (sulfation) has appeared on the inside of the battery.
- Replace with a new battery if any deposits appear on the lower area of the battery (paste).

Relation between battery fluid temperature and density

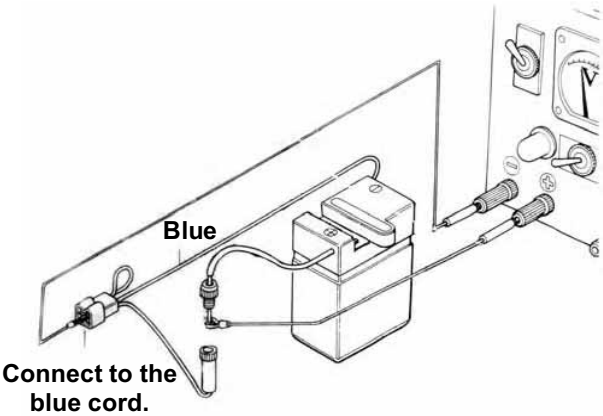


The density will change by 0.007 for every 10°C difference in fluid.

- Battery fluid is a deadly poison. Handle and store with utmost care.
- If battery fluid should come into contact with skin, eyes or clothing wash off immediately with large quantities of water and consult a doctor.

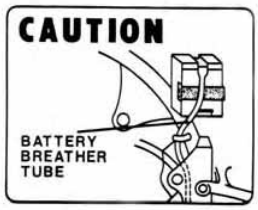
Charging

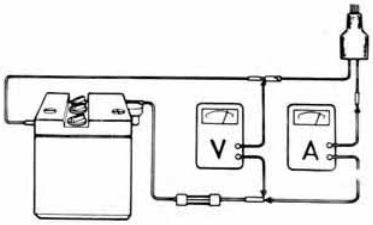
How to connect:
Charger + and battery positive terminal
Charger – and battery negative terminal



Charging current: Less than 0.2A
Charging completion:
Charge until the density has risen to between 1.260~1.280 (20°C).

- Remove the battery caps.
- Strictly no flames in the battery vicinity.
- Always turn the charger ON/ OFF using the charger switch. Turning ON/ OFF at the connection point will cause sparks possibly causing an explosion.
- Do not allow the fluid temperature to rise above 45°C.





✻ Avoid rapid charging as this may damage the battery.

✻ The battery breather tube passes through the part as indicated on the caution label.

Charging system

Charging efficiency test
Warm up the engine.
Connect the voltmeter and ammeter.

✻ Carry out this test when the battery is fully charged.

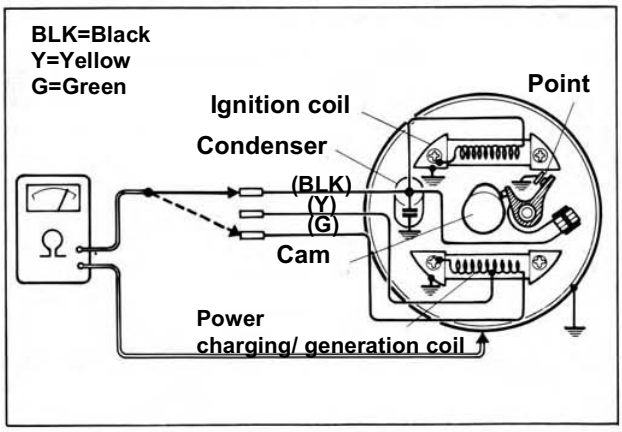
Charging efficiency

Main switch	Lighting switch	RPM at start of charging	4,000 rpm
ON	OFF	1,000 rpm	1.5±0.3A/ 6.5V
	ON	1,000 rpm	0.4 0.3A/ 6.5V

Stator coil conductivity test

Conductivity is normal if there is conduction between the green wire (charging, power generation, coil) and vehicle body earth.

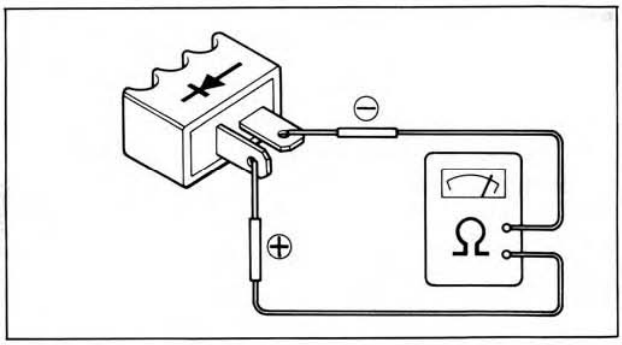
Conductivity is normal if there is conduction between the black wire (ignition coil) and the vehicle body earth.



✻ Carry out the black wire test when the ignition points are open.

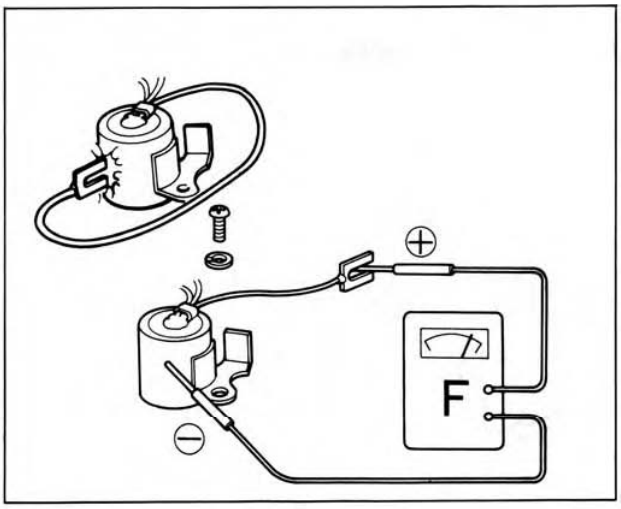
Rectifier conductivity test

Conductivity is good only under the condition shown in the diagram. Replace if there is conduction when the (+) and (–) connections have been interchanged.



IGNITION SYSTEM

Condenser capacity inspection
Measure the capacity once the system has been shorted.

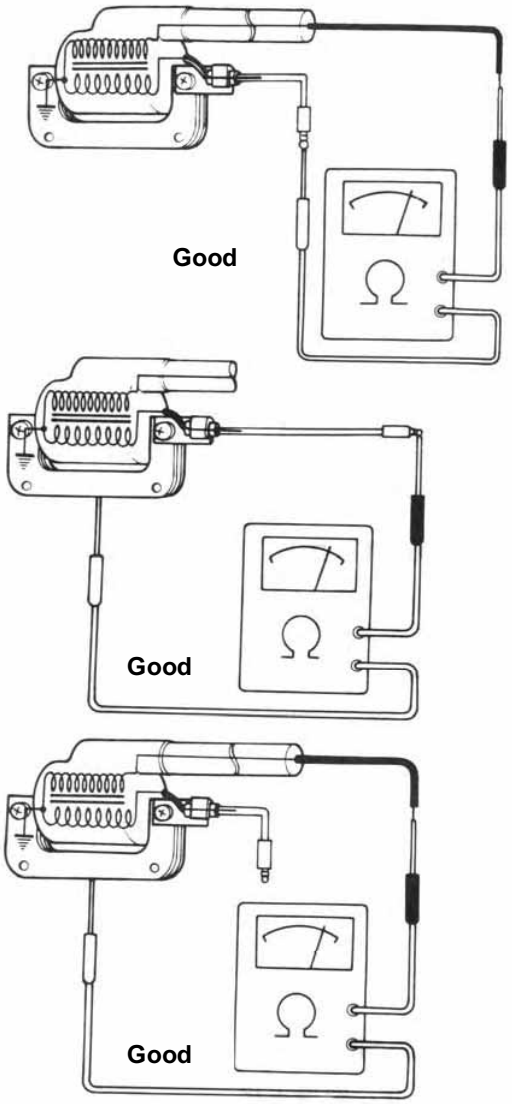


✻ Measure when disconnected from the stator without earthing the condenser.

Capacity:	0.27- 0.33 F

Ignition coil conductivity test
Conductivity is good when under the condition shown in the diagram.

The ignition coil is located on the underside of the frame. To remove, pull out the cover and remove the 2 nuts securing the coil.



Efficiency test
Carry out a 3 wire spark test using a service tester.

Usage limit: Replace when less than 6mm.

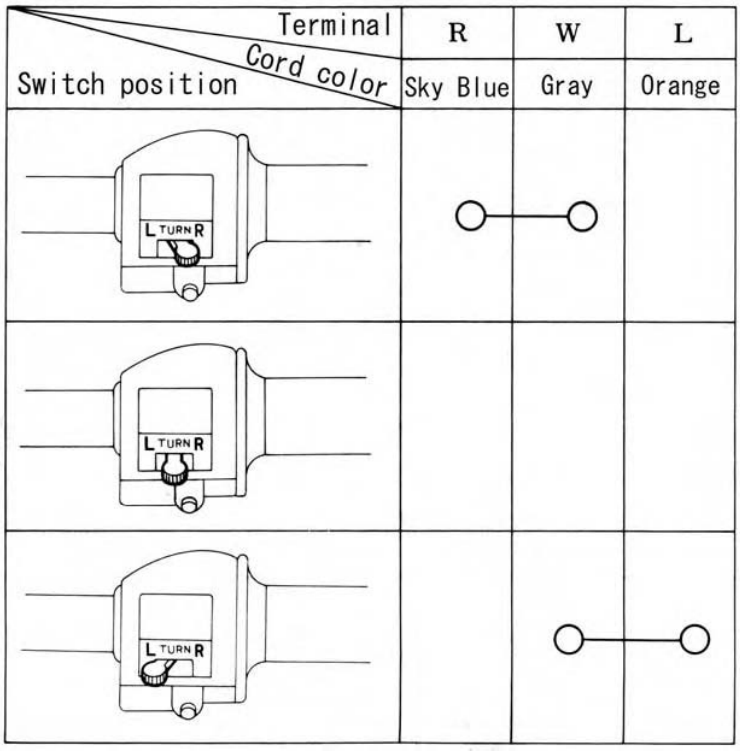
Each wire connection should be done in accordance with the service tester instruction manual.

Switch inspection
Conductivity is good if at ○———○.

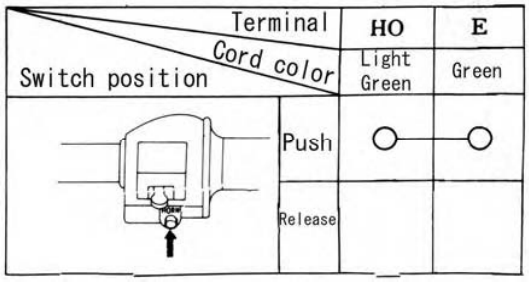
Main switch

Terminal / Switch Position / Cord Color	IG Black/White	E Green	BAT Red	HT Black
 OFF	○——○			
 ON			○——○	

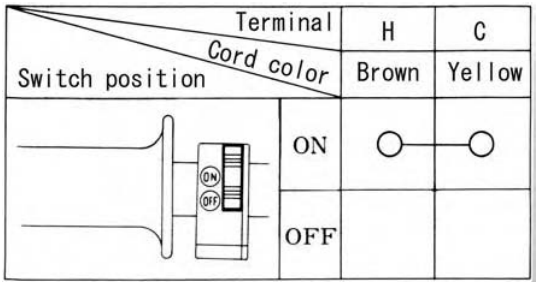
Indicator switch



Horn switch

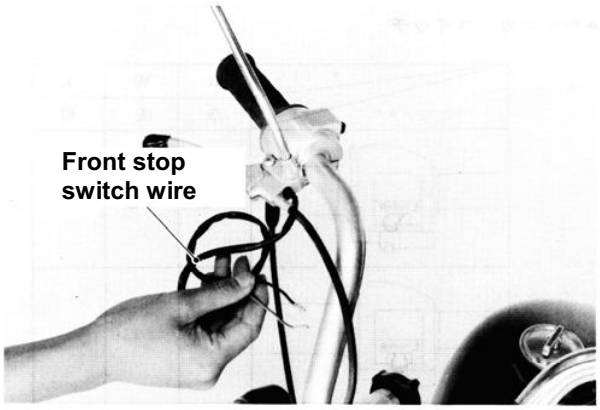


Lighting switch

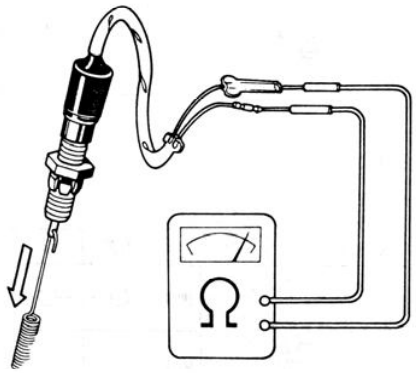


Stop switch

Front stop switch is good if there is conduction between green/ yellow and black when brake lever is held on.

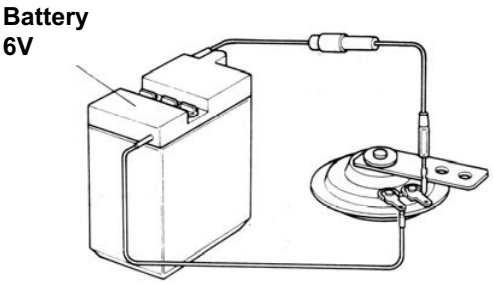


Rear stop switch is good if there is conduction between green/ yellow and black when brake pedal is engaged.



Horn inspection

Check that the 6V battery activates the horn.



MONKEY Z50J$_F$ - 7 SUPPLEMENTARY VERSION

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(Frame)

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(Electric)

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- Specification Sheet

Make and Model			Honda AZ50J	Fuel System		Air filter device			Urethane foam type
Length			1.360m			Fuel tank capacity			5.0 ℓ
Breadth			0.600m		Carburetor	Type			PA03
Height			0.850m			Gas valve diameter			13mm
Wheelbase			0.895m			Venturi diameter			11mm
Engine Model			Z50J E			Air valve type			Piston valve type
Engine Capacity			0.049 ℓ	Electrical System	Ignition System	Type			Magnetic ignition
Fuel Type			Petrol			Ignition time			30°/1,500(BTDC/rpm)
Vehicle Weight		Front Axle Load	28kg			Ignition plug			(NGK) C5HA, C6HA, C7HA (ND) U16FS-L, U20FS-L, U22FS-L
		Rear Axle Load	35kg						
		Total	63kg			Ignition clearance			0.6~0.7mm
Passengers			Rider only		Battery	Capacity			2Ah(10Hr)
Gross Vehicle Body Weight		Front Axle Load	42kg						
		Rear Axle Load	76kg	Power Transmission System	Clutch	Type			Wet type single disk coil spring
		Total	118kg			Operating method			Mechanical
Tyres		Front Wheel	3.50 – 8 – 2 PR						
		Rear Wheel	3.50 – 8 – 2 PR			Engine to Transmission Ratio			4.312
Minimum ground clearance			0.150m		Transmission	Type			Constant mesh
						Gear ratio	1st Gear		2.692
Efficiency	Braking distance (Initial speed)		3.5m (20km/h)				2nd Gear		1.823
	Minimum turning radius		1.4m				3rd Gear		1.300
Engine	Starting Method		Kick start				4th Gear		0.958
	Type		Petrol/ 4 Stroke		Reduction	Primary	Gear type		Chain
	No. of Cylinders and location		1cylinder, transverse (side mounted)				Final reduction rate		2.583
	Combustion chamber type		Hemisphere	Running	Front Axle	Caster			25° 00'
	Valve train		OHC chain			Trail			42mm
	Bore x stroke		39.0 x 41.4mm		Tyre Pressure		Front		1.00kg/cm²
	Compression		10.0				Rear		1.25kg/cm²
	Compression pressure		14.0kg/cm²-1,000rpm	Steering Angle			Left side		42°
							Right side		42°
	Maximum output		3.1ps/7,500rpm	Brake			Front		Leading trailing type - mechanical
	Maximum torque		0.32kgm/6,000rpm				Rear		Leading trailing type - mechanical
	Valve	Intake	Opens	7°BTDC	Suspension		Front wheel		Telescopic
			Closes	12°ABDC			Rear wheel		Swing arm
		Exhaust	Opens	10°BBDC	Frame				Back bone
			Closes	0°TDC	Certification no:				I - 1320
		Valve clearance	Intake	0.05mm (cold)					
			Exhaust	0.05mm (cold)					
	Revolution speed (when idling)		1,500rpm						
	Lubrication System	Lubrication system		Combination of forced pressure and splash lubrication					
		Oil pump		Trochoid					
		Oil filter type		Combination of full-flow and centrifugal sieve filtration					
		Lubrication oil capacity		0.8					

MAINTENANCE STANDARDS

ENGINE

Item			Standard Value	Usage Limit
OIL PUMP	Inner-outer rotor clearance		0.15mm	>0.2mmRPL
	Body-outer rotor clearance		0.03-0.08mm	>0.12mmRPL
	Outer rotor edge face-body clearance		0.1-0.21mm	>0.3mmRPL
CYLINDER HEAD	Cylinder head distortion		————————	>0.05mmRPL or RPR
	Valve seat contact width		1.0mm	>1.6mmRPL or RPR
	Valve guide ID	IN/EX	5.000-5.012mm	>5.03mmRPL
VALVE	Valve stem OD	IN	4.970-4.985mm	<4.92mmRPL
		EX	4.955-4.970mm	<4.92mmRPL
	Valve-guide clearance	IN	0.015-0.042mm	>0.08mmRPL
		EX	0.030-0.057mm	>0.10mmRPL
VALVE SPRING	Free length Inner	IN/EX	32.78mm	<31.1mmRPL
	Free length Outer	IN/EX	35.55mm	<33.8mmRPL
CAMSHAFT	Cam Height	IN	24.982mm	<24.584mmRPL
		EX	24.015mm	<23.714mmRPL
ROCKER ARM	Rocker arm ID		10.000 - 10.015mm	>10.10mmRPL
	Rocker arm shaft OD		9.978 - 9.987mm	<9.91mmRPL
CYLINDER	Inner diameter		39.005 – 39.015mm	>39.05mmRPL
	(Upper) Warpage		----------	>0.05mmRPL
PISTON	Piston ring-ring groove clearance	Top	0.015 – 0.050mm	>0.12mmRPL
		Second	0.015 – 0.050mm	>0.12mmRPL
PISTON RING	Piston ring end gap clearance	Top	0.05 – 0.20mm	>0.5mmRPL
		Second	0.05 – 0.02mm	>0.5mmRPL
		Oil (Side Rail)	0.20 – 0.90mm	>1.1mmRPL
PISTON PIN	Piston outer diameter (STD)		38.975 – 38.995mm	<38.90mmRPL
	Piston pin hole inner diameter		13.002 – 13.008mm	>13.055mmRPL
	Piston pin outer diameter		12.994 – 13.00mm	<12.980mmRPL
	Cylinder- piston clearance		0.010 – 0.040mm	>0.15mmRPL
	Piston- piston pin clearance		0.002 – 0.0014mm	>0.075mmRPL
CLUTCH	Clutch spring free length		18.9mm	<17.4mmRPL
	Clutch plate warpage		----------	>0.2mmRPL
	Clutch disc thickness		3.45 – 3.55mm	<3.15mmRPL
	OD of primary drive gear bush		20.93 – 20.95mm	<20.90mmRPL
	ID of primary drive gear		21.000 – 21.021mm	<21.05mmRPL

> - Greater than
< - Less than
RPL - Replace
RPR - Repair

- ENGINE > <

ITEMS		STANDARD	USAGE LIMITS
CRANK SHAFT	Small end inner radius of Conrod	13.016 – 13.034mm	>13.10mm RPL
	Conrod large end clearance in axle direction	0.10 – 0.35mm	>0.6mm RPL
	Conrod large end clearance in axle receiver	0 - 0.012mm	>0.05mm RPL
	Crank shaft deflection	----------	>0.10mm RPL
TRANSMISSION	M 2	17.016 – 17.034mm	>17.1mm RPL
	M 4	17.016 – 17.034mm	>17.1mm RPL
	C 1	17.016 – 17.034mm	>17.1mm RPL
	C 3	17.016 – 17.034mm	>17.1mm RPL
	C 4	17.016 – 17.034mm	>17.1mm RPL
	Main shaft outer diameter	16.983 – 16.994mm	<16.95mm RPL
	Counter shaft outer diameter	16.983 – 16.994mm	<16.95mm RPL
	Shift drum outer diameter	33.950 – 33.975mm	<33.93mm RPL
	Shift fork inner diameter	34.000 – 34.025mm	>34.065mm RPL
	Shift fork tip thickness	4.86 – 4.94mm	<4.6mm RPL

FRAME

ITEMS	STANDARD	USAGE LIMIT
Warped front axle shaft		>0.2mm RPL
Front wheel rim play		>2.0mm RPL
Front brake drum internal diameter	110.0 – 110.3mm	>111mm RPL
Thickness of front brake lining	4mm	<2mm RPL
Warping of rear axle shaft		>0.2mm RPL
Rear wheel rim deflection		>2.0mm RPL
Rear brake drum internal diameter	110.0 – 110.3mm	>111mm RPL
Thickness of rear brake lining	4mm	<2 mm RPL
Rear cushion spring-free length	192mm	<182mm RPL

- TIGHTENING TORQUE
  ENGINE

TIGHTENING PART		NUMBER	SCREW DIAMETER (mm)	TIGHTENING TORQUE (kg-m)
Tappet cap		2	30	1.0 – 1.4
Valve adjust nut		2	5	0.7 – 1.1
Cylinder head	Nut	4	6	0.9 – 1.2
	Bolt	1	6	0.8 – 1.2
Cam sprocket bolt		3	5	0.8 – 1.2
Cylinder bolt		1	6	0.8 – 1.2
L. crank case cover screw		3	6	0.7 – 1.1
R. crank case cover bolt		8	6	0.7 – 1.1
Clutch lock nut		1	14	3.5 – 4.5
Shift drum stopper bolt		1	6	0.9 – 1.4
Drain bolt		1	12	2.0 – 2.5
Drive sprocket bolt		2	6	1.1 – 1.5
Flywheel nut		1	10	3.0 – 3.8

- FRAME

TIGHTENING PART	NUMBER	SCREW DIAMETER (mm)	TIGHTENING TORQUE (kg-m)
Steering stem nut	1	24	6.0 – 8.0
Front fork top bridge bolt	2	10	2.5 – 3.5
Front axle nut	1	12	3.5 – 5.0
Rear axle nut	1	12	3.5 – 5.0
Rear cushion nut	4	10	2.5 – 3.5
Rear fork pivot nut	1	10	2.5 – 3.5
Engine hanger bolt	2	8	2.0 – 2.5
Driven sprocket nut	3	8	3.0 – 3.6

STANDARD TIGHTENING TORQUE

TYPE	TIGHTENING TORQUE (kg-m)	TYPE	TIGHTENING TORQUE (kg-m)
5mm Bolt, Nut	0.45 – 0.6	5mm Screw	0.35 – 0.5
6mm Bolt, Nut	0.8 – 1.2	6mm Screw	0.7 – 1.1
8mm Bolt, Nut	1.8 – 2.5	6mm Flange bolt, Nut	1.0 – 1.4
10mm Bolt, Nut	3.0 – 4.0	8mm Flange bolt, Nut	2.4 – 3.0
12mm Bolt, Nut	5.0 - 6.0	10mm Flange bolt, Nut	3.0 - 4.0

COMMON AND SPECIALIST TOOLS

Specialist tools

Tool Name	Tool Number	Remarks
Valve guide driver	07942-MA60000	For punching and hammering in the valve guide
Valve spring compressor attachment	07959-KM30100	Attachment for disassembling/ assembling the valve spring
Universal bearing puller	07631-0010000	For removing the counter shaft bearing
Sliding weight Remover handle Bearing remover	07741-0010201 07936-3710100 07936-3710300	For removing the main shaft, counter shaft bearing
Snap ring pliers	07914-3230001	For disassembling/ assembling the front cushion
Spring holder attachment Rear cushion attachment (A)	07967-1180100 07967-GA70101	For disassembling/ assembling the rear cushion
Ball race remover	07944-1150001	For removing ball race

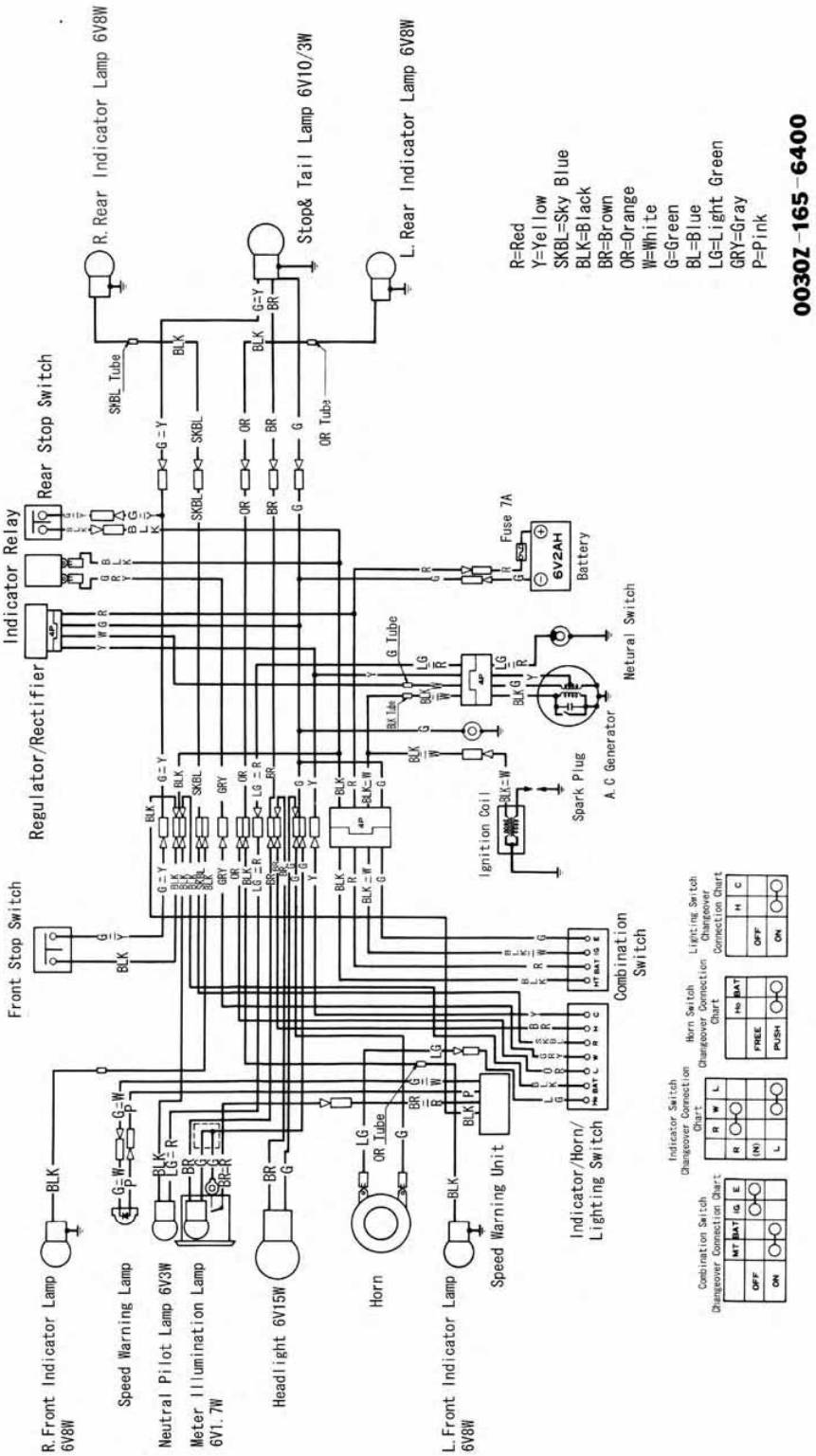
Common tools

Tool Name	Tool Number	Remarks
Float level gauge	07401-0010000	For carburetor oil level measurement
Tappet wrench 8X9mm Adjusting wrench (B)	07708-0030100 07708-0030400	For tappet adjustment
Valve spring compressor	07757-0010000	For disassembling/ assembling the valve spring
Valve guide reamer	07984-MA60000	For valve guide adjustment
Lock nut wrench 20X24mm	07716-0020100	For attaching/ removing the clutch lock nut
Extension bar	07716-0020500	Supplementary tool for the lock nut wrench
Universal holder	07725-0030000	Whirl stop for the clutch and flywheel
Flywheel puller	07733-0010000	For removing the flywheel
Bearing driver outer 37X40mm Bearing driver pilot 17mm Bearing driver attachment 24X26mm Bearing driver handle (A)	07746-0010200 07746-0040400 07746-0010700 07749-0010000	For hammering in the main shaft, counter shaft bearing
Pin spanner	07702-0020000	For attaching/ removing the top thread
Bearing remover shaft Bearing remover head 12mm	07746-0050100 07746-0050300	For removing the front/ rear wheel bearing
Bearing driver outer 32X35mm Bearing driver pilot 12mm	07746-0010100 07746-0040200	For hammering in the front/ rear wheel bearing
Rear cushion spring compressor	07959-3290001	For disassembling/ assembling the rear cushion

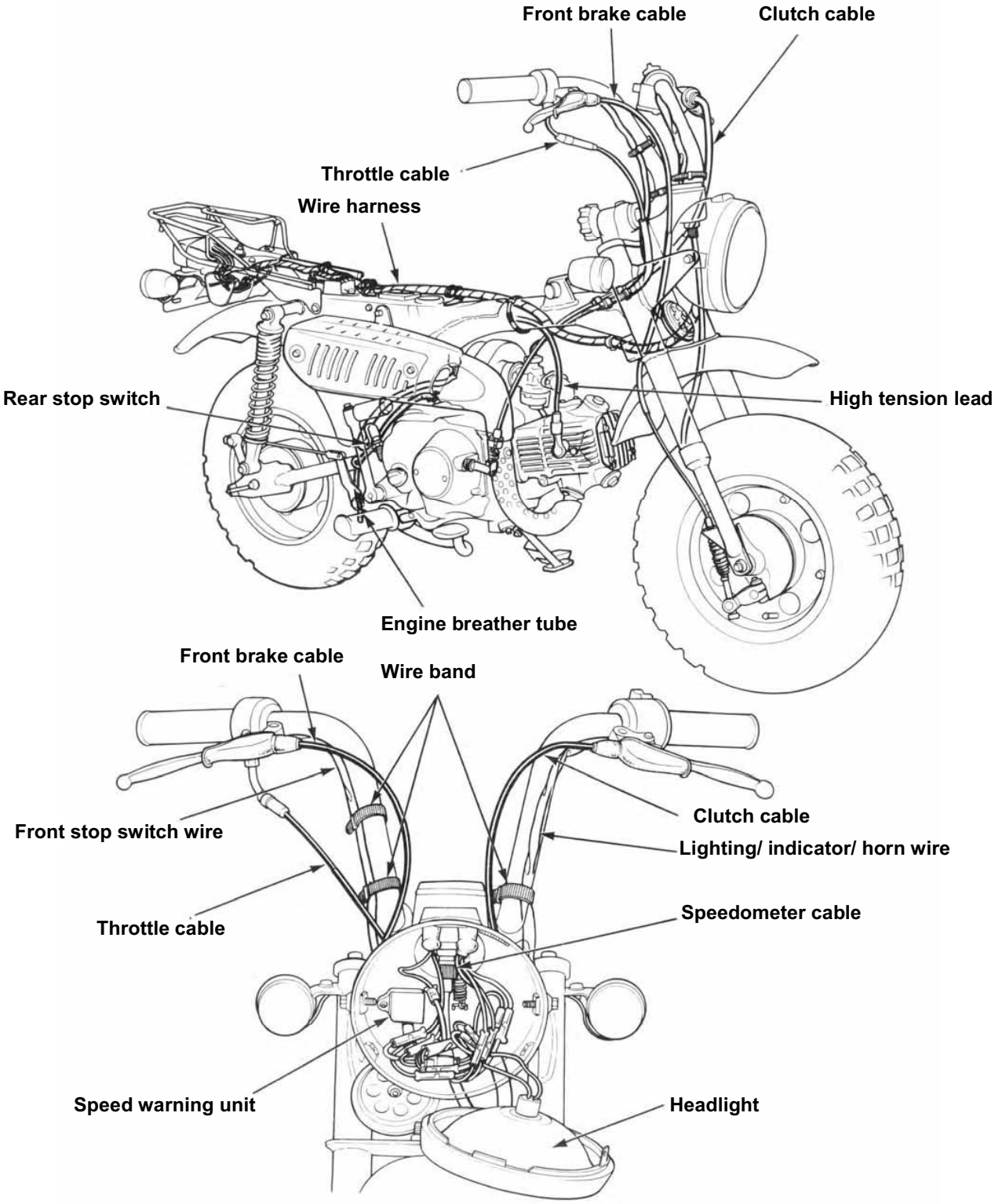
Valve cutter

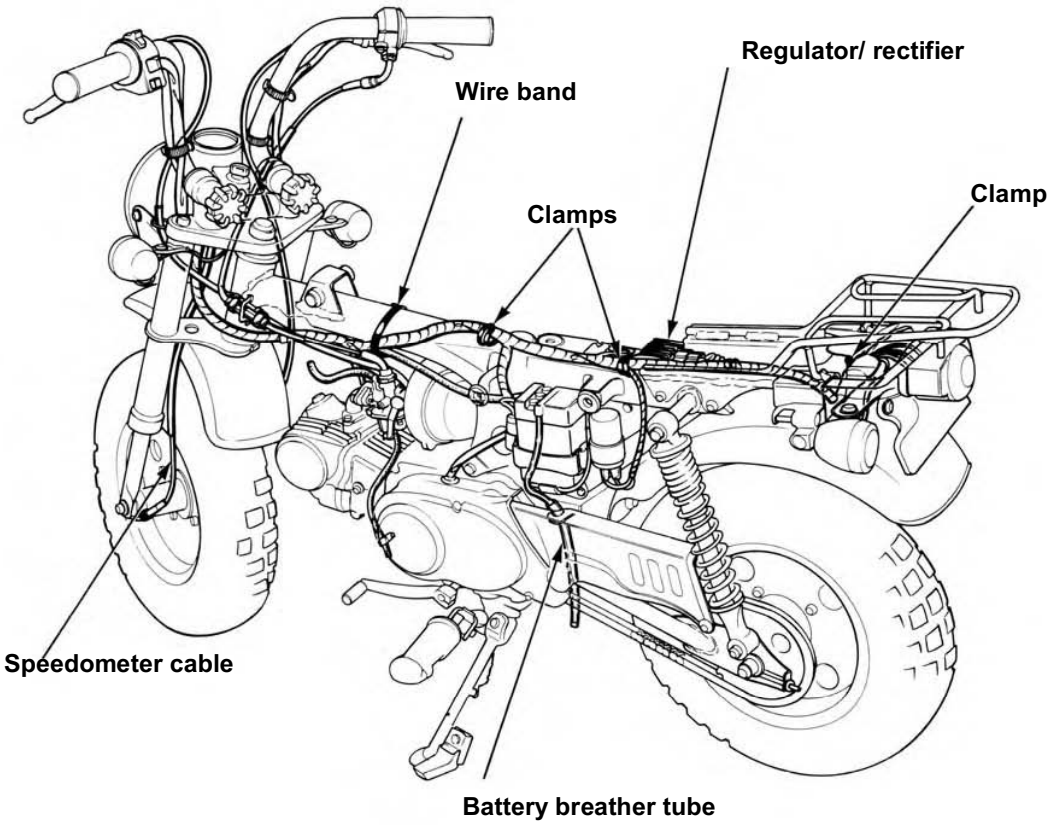
Tool Name	Tool Number	Remarks
Seat cutter 22mm	07780-0010701	For adjusting the IN, EX valve seat surface
Flat cutter 22mm	07780-0012601	For adjusting the EX valve seat surface
Flat cutter 19mm	07780-0012700	For adjusting the IN valve seat surface
Interior cutter 22mm	07780-0014202	For adjusting the IN, EX valve seat surface
Cutter holder 5mm	07781-0010400	Valve seat cutter holder

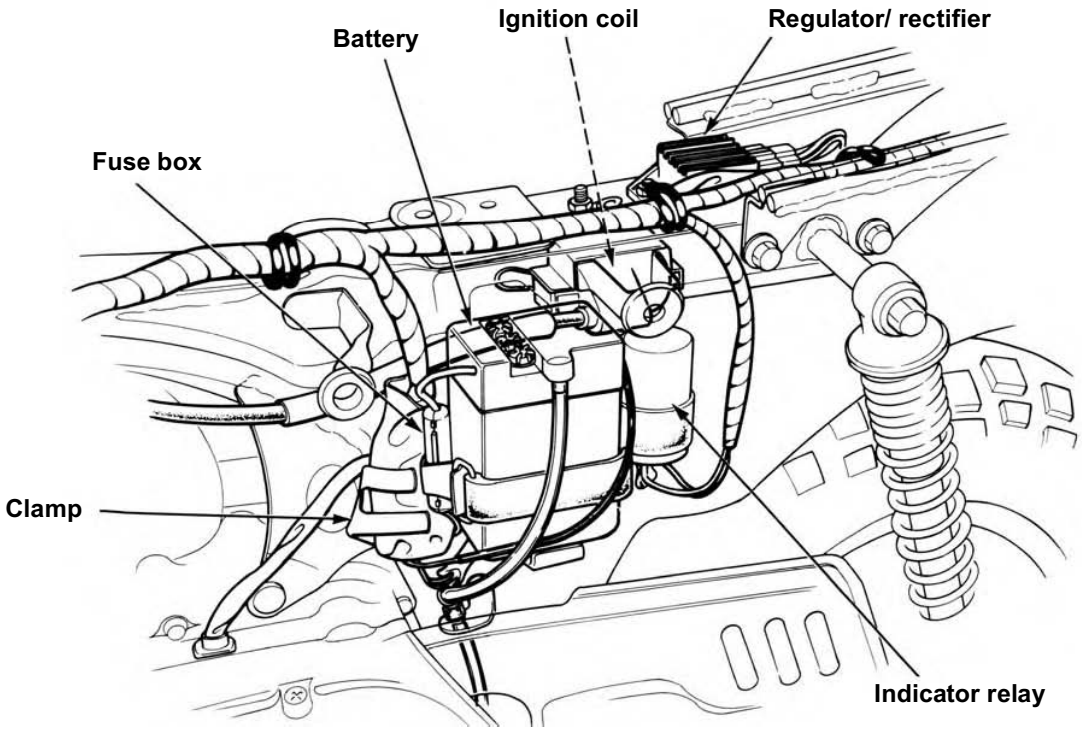
Wiring diagram



Wiring schematic




Regulator/ rectifier
Wire band
Clamp
Clamps
Speedometer cable
Battery breather tube

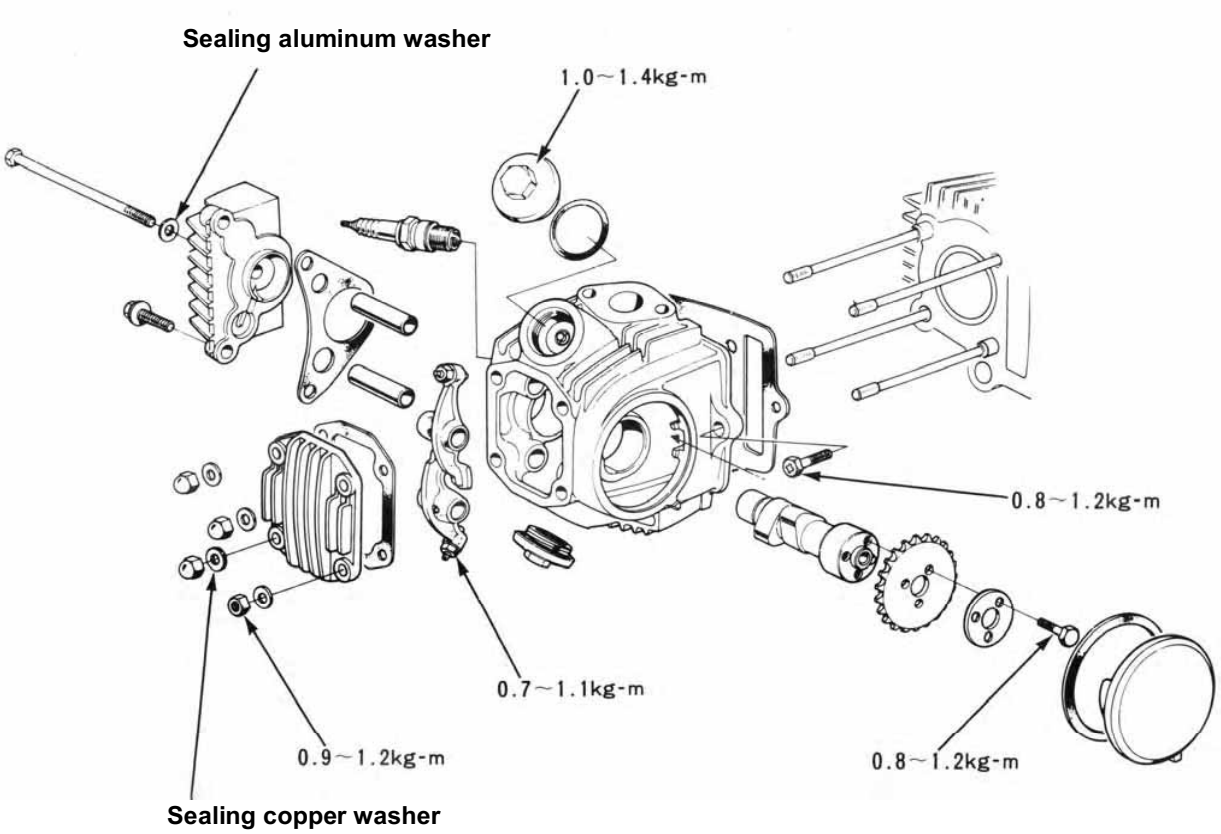

Ignition coil
Regulator/ rectifier
Battery
Fuse box
Clamp
Indicator relay

CHECK, ADJUSTMENT

Check and maintenance method

Check and maintenance item			Check and maintenance timing				Criteria
			Before operation	1 month	For personal use		
					Every 6 months	Every 12 months	
Power transmission	Clutch	Lever play					Play at the tip of the clutch lever 10- 20mm

Cylinder head, valve



Maintenance criteria

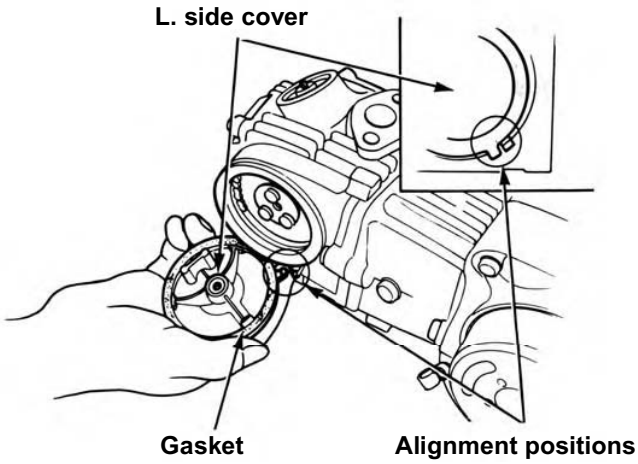
Item			Standard Value	Usage Limit
Cylinder head	Distortion of the cylinder head		-	Repair or replace if 0.05mm or more.
	Contact width of the valve seat		1.0mm	Repair or replace if 1.6mm or more.
	Valve guide inner diameter	IN	5.000- 5.012mm	Replace if 5.03mm or more.
		EX	5.000- 5.012mm	Replace if 5.03mm or more.
Valve	Valve stem outer diameter	IN	4.970- 4.985mm	Replace if 4.92mm or less.
		EX	4.955- 4.970mm	Replace if 4.92mm or less.
	Clearance between the valve and guide	IN	0.015- 0.042mm	Replace if 0.08mm or more.
		EX	0.030- 0.057mm	Replace if 0.10mm or more.
Valve spring	Valve spring free length	IN Inner	32.78mm	Replace if 31.1mm or less.
		IN Outer	35.55mm	Replace if 33.8mm or less.
		EX Inner	32.78mm	Replace if 31.1mm or less.
		EX Outer	35.55mm	Replace if 33.8mm or less.
Cam shaft	Cam height	IN	24.982mm	Replace if 24.584mm or less.
		EX	24.015mm	Replace if 23.714mm or less.
Rocker	Rocker arm hole diameter		10.000- 10.015mm	Replace if 10.10mm or more.
	Rocker arm shaft outer diameter		9.978- 9.987mm	Replace if 9.91mm or less.

Attaching the L. Side Cover

Attach the L. side cover to the cylinder head.

✻ Match up the alignment points when attaching the L. side cover to the cylinder head.

Tighten the 6X112mm bolt.



CYLINDER, PISTON

Maintenance criteria

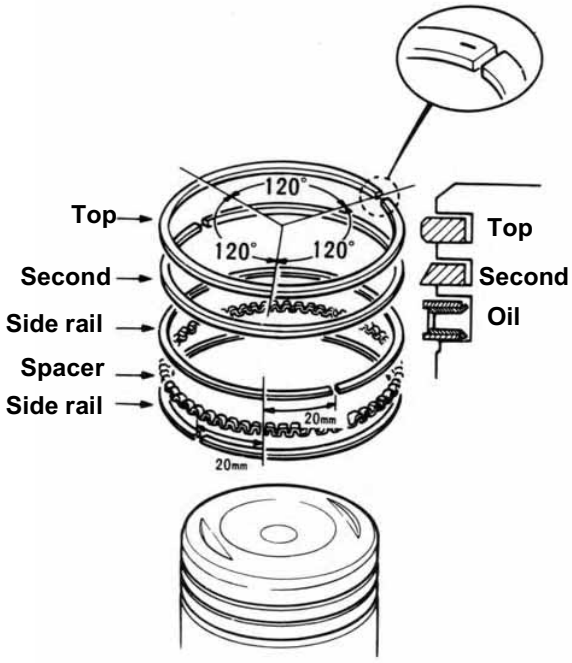
Item			Standard value	Usage limit
Cylinder	Inner diameter		39.005- 39.015mm	> 39.05mm RPL
	Upper face distortion		-	> 0.05mm RPL
Piston	Clearance between the ring groove and ring	Top	0.015- 0.050mm	> 0.12mm RPL
		Second	0.015- 0.050mm	> 0.12mm RPL
Piston ring	Ring end gap clearance	Top	0.05- 0.20mm	> 0.5mm RPL
		Second	0.05- 0.02mm	> 0.5mm RPL
		Oil (side rail)	0.20- 0.90mm	> 1.1mm RPL
Piston pin	Piston outer diameter (STD)		38.975- 38.995mm	<38.90mm RPL
	Piston pin hole inner diameter		13.002- 13.008mm	>13.055mm RPL
	Piston pin outer diameter		12.994- 13.000mm	<12.980mm RPL
	Clearance between the cylinder and piston		0.010- 0.040mm	>0.15mm RPL
	Clearance between the piston and pin		0.002- 0.0014mm	>0.075mm RPL

> - Greater than
< - Less than
RPL - Replace

Attaching the piston

Attach piston rings to the piston.

- Take care to avoid damaging the piston or breaking the ring.
  The side of the ring with the marking faces upward.
- Make sure that the rings rotate smoothly after attachment.
  Make sure the ring end gaps are offset by 120 degrees and not facing any thrust surfaces as per diagram.



Apply oil to each piston ring.

CRANKSHAFT

Maintenance criteria

> - Greater than < - Less than RPL - Replace

Item	Standard value	Usage limit
Connecting rod small end inner diameter	13.016- 13.034mm	>13.10mm RPL
Connecting rod large end axle direction clearance	0.10- 0.35mm	>0.6mm RPL
Connecting rod large end axle bearing direction clearance	0- 0.012mm	>0.05mm RPL
Deflection of the crankshaft	-	>0.10mm RPL

CARBURETOR

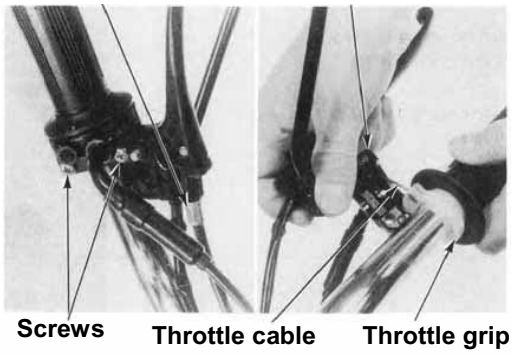
Maintenance criteria

Venturi diameter	11mm
Setting mark	PA03
Float level	12.7mm
Standard number of turns for air screw	1 3/8
Main jet	#58
Slow jet	#35X35
Idling rev	1,500rpm
Throttle grip play	2- 6mm

STEERING

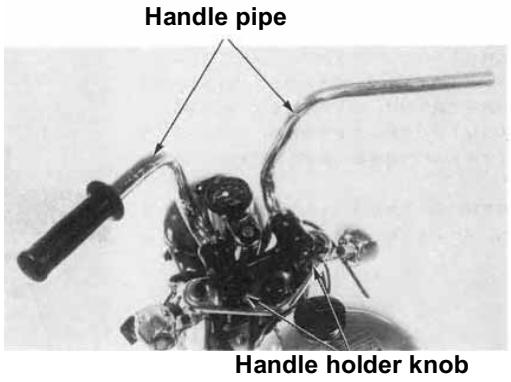
Removing the handle bars

Remove the brake cable.
Remove the screws, and detach the throttle housing.
Disconnect the throttle cable from the throttle grip, and detach the grip.



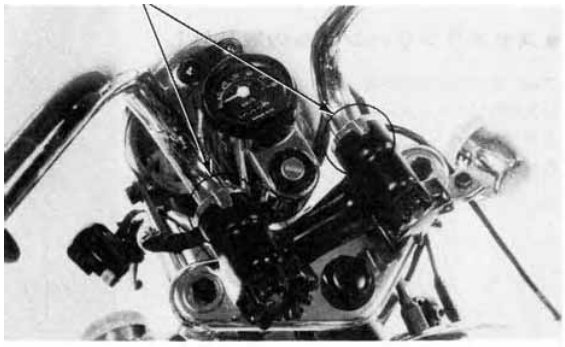
Remove the clutch cable.
Remove the screws, and detach the switch housing.

Remove the handle holder knobs, and detach the handle pipes.



Attaching the handle bars

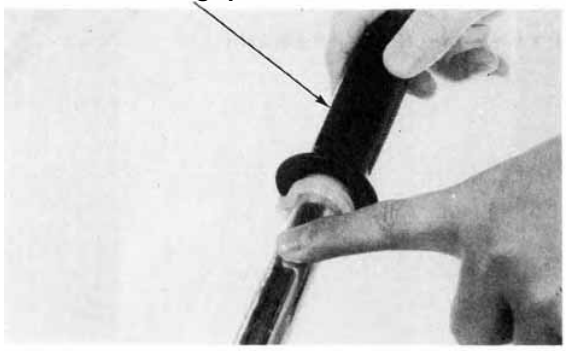
Alignment positions



Fitting of the handle bars is carried out in the reverse order of its removal procedure. Take note of the following items.

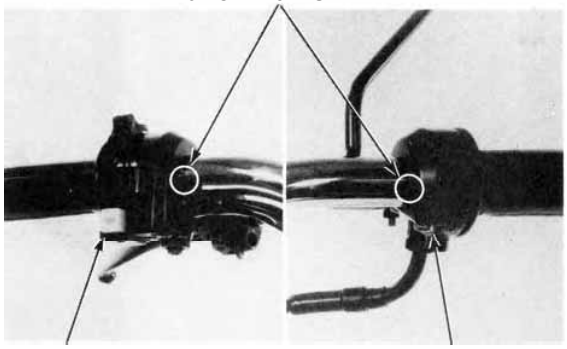
Make sure that the alignment positions are matched when attaching the handles.

Throttle grip



Apply grease to the sliding face of the throttle grip.

Punch marks



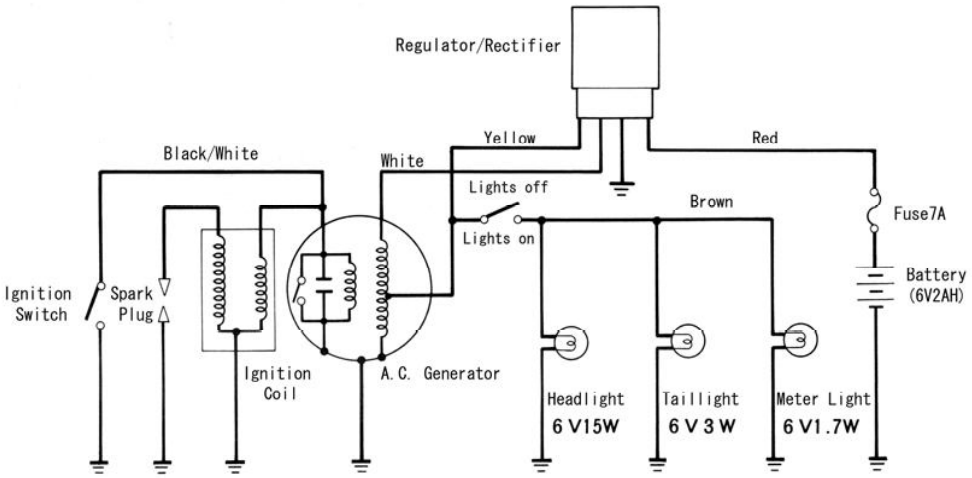
Switch housing

Throttle housing

Align the punch mark on the handle bar and the matching surface of the housing when attaching the throttle housing/ switch housing. Tighten the front screw first. Make sure that the throttle grip moves smoothly after attaching the throttle housing.

Make adjustment to the throttle cable, clutch cable and front brake cable after attaching.

ELECTRICAL SYSTEM

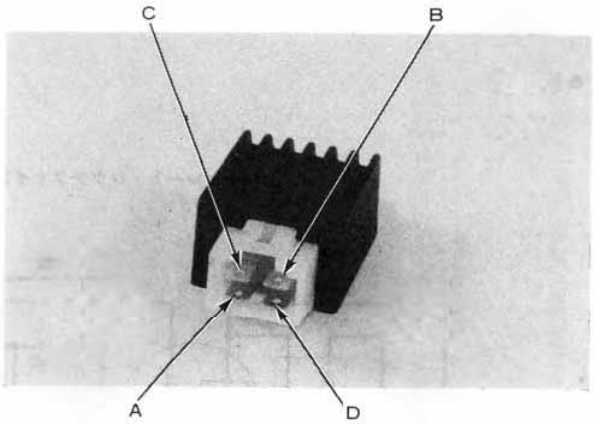


Specifications

Battery	Capacity	6V- 2AH
	Fluid density	1.26- 1.28/20
	Charging electric current	0.2A or less
A.C. generator	Charging capacity	Lights off: 1.0A or more/ 4,000rpm (8.6V) Lights on: 0.6A or more/ 4,000rpm (8.5V)
		Lights off: 2.5A or less/ 8,000rpm (8.8V) Lights on: 1.8A or less/ 8,000rpm (8.7V)

Regulator/ rectifier

Remove the seat, and detach the regulator/ rectifier.
-
Measure the resistance value between terminals referring to the table below.



Tester ⊕ / Tester ⊖	A	B	C	D
A		∞	0.5KΩ ~ 10KΩ	∞
B	∞		∞	10KΩ ~ 500KΩ
C	∞	∞		∞
D	∞	10KΩ ~ 500KΩ	∞	

Sanwa: (xKΩ) analogue
Kouwa: (x100Ω) digital

- Correct checks cannot be carried out if the tester is not suitable or if the measurement range is different as a semiconductor is built in within the circuit.
  Use Sanwa (07308-0020000) or Kouwa (TH-5H) tester.

17. MONKEY Z50J$_M$ (MONKEY BAHA) ADDENDUM

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(Engine)

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(Electrics)

Electrical system ---------- 17-55

17.2

Specifications

Make and Model			Honda A-Z50J	Fuel System		Air filter system		Urethane foam type
Chassis make and model			Honda Z50J			Fuel tank capacity		4.0 ℓ
Length			1.330m		Carburetor	Type		PA03
Width			0.735m			Gas valve diameter		13mm
Height			0.875m			Venturi diameter		Approximately 11mm
Wheelbase			0.895m			Air valve type		Manually operated piston valve type
Engine Model			Z50J E					
Engine Capacity			0.049 ℓ	Electrical System	Ignition System	Type		CDI type magnetic ignition
Fuel Type			Petrol			Ignition time		27˚BTDC/ 2,000 rpm
Vehicle Weight		Front Axle Load	28kg			Ignition plug		(NGK) CR5HSA, CR6HSA, CR7HSA
		Rear Axle Load	31kg					(ND) U16FSR-U, U20FSR-U, U22FSR-U
		Total	59kg			Ignition clearance		0.6~0.7mm
Gross Vehicle Body Weight		Front Axle Load	39kg		Battery	Capacity		0.48 (10) or 0.50 (10) Ah
		Rear Axle Load	75kg	Power Transmission System	Clutch	Type		Wet type single disk coil spring
		Total	114kg			Operating method		Mechanical
Tyres		Front Wheel	3.50 – 8 35 J			Engine to Transmission Ratio		4.312
		Rear Wheel			Transmission	Type		Constant mesh
Minimum ground clearance			0.150m			Operation		Left-foot
						Deceleration rate	1st Gear	3.272
Efficiency	Braking distance		3.5m (initial speed 20km/h)				2nd Gear	1.937
	Minimum turning radius		1.4m				3rd Gear	1.350
Engine	Starting Method		Kick start				4th Gear	1.043
	Type		Petrol/ 4 Stroke		Deceleration	Gear type		Chain
	No. of Cylinders and location		1cylinder, transverse (side mounted)			Deceleration rate		2.384
	Combustion chamber type		Hemisphere	Running	Front Axle	Caster		25˚ 00'
	Valve train		OHC chain			Trail		42mm
	Bore x stroke		39.0 x 41.4mm		Tyre Pressure		Front	1.00kg/cm²
	Compression		10.0				Rear	1.25kg/cm²
	Compression pressure		14.0kg/cm²-1,000rpm		Steering Angle		Left side	45˚
							Right side	45˚
	Maximum output		3.1PS/7,500rpm	Brake			Front	Leading trailing type - mechanical
	Maximum torque		0.32kg/6,000rpm				Rear	Leading trailing type - mechanical
	Valve	Intake (1mm lift)	Opens 7˚BTDC	Suspension			Front wheel	Telescopic
			Closes 12˚ABDC				Rear wheel	Swing arm
		Exhaust (1mm lift)	Opens 10˚BBDC	Frame				Back bone
			Closes 0˚TDC					
		Valve clearance (when cold)	Intake 0.05mm					
			Exhaust 0.05mm					
	Revolution speed (when idling)		2,000rpm					
		Lubrication device	Combination of forced pressure and splash lubrication					
		Oil pump	Trochoid					
		Oil filter type	Combination of full-flow and centrifugal sieve filtration					
		Lubrication oil capacity	0.8 ℓ					
		Cooling method	Air cooling					

MAINTENANCE STANDARDS

ENGINE

Item			Standard Value	Usage Limit
OIL PUMP	Inner-outer rotor clearance		0.15mm	>0.2mmRPL
	Body-outer rotor clearance		0.03-0.08mm	>0.12mmRPL
	Outer rotor edge face-body clearance		0.1-0.21mm	>0.3mmRPL
CYLINDER HEAD	Cylinder head distortion		————————	>0.05mmRPL or RPR
	Valve seat contact width		1.0mm	>1.6mm RPL or RPR
	Valve guide ID	IN	5.000-5.012mm	>5.03mmRPL
		EX	5.000-5.012mm	>5.03mmRPL
VALVE	Valve stem OD	IN	4.970-4.985mm	<4.92mmRPL
		EX	4.970-4.985mm	<4.92mmRPL
	Valve-guide clearance	IN	0.015-0.042mm	>0.08mmRPL
		EX	0.030-0.057mm	>0.10mmRPL
VALVE SPRING	Free length	IN	33.34mm	<31.8mmRPL
		EX	33.34mm	<31.8mmRPL
CAMSHAFT	Cam Height	IN	20.005mm	<19.67mmRPL
		EX	20.063mm	<19.66mmRPL
ROCKER ARM	Rocker arm hole diameter		10.000 - 10.015mm	>10.10mmRPL
	Rocker arm shaft OD		9.978 - 9.987mm	<9.91mmRPL
CYLINDER	Inner diameter		39.005 – 39.015mm	>39.05mmRPL
	Upper face distortion		----------	>0.05mmRPL or RPR
PISTON	Piston OD (STD)		38.975- 38.995mm	<38.90mmRPL
	Piston pin hole ID		13.002- 13.008mm	>13.055mm
	Ring groove- ring clearance	Top	0.015 – 0.050mm	>0.12mmRPL
		Second	0.015 – 0.050mm	>0.12mmRPL
	Cylinder- piston clearance		0.010- 0.040mm	>0.15mm RPL
PISTON RING	Piston ring end gap clearance	Top	0.05 – 0.20mm	>0.5mmRPL
		Second	0.05 – 0.20mm	>0.5mmRPL
		Oil (Side Rail)	0.20 – 0.80mm	>1.0mmRPL
PISTON PIN	Piston pin outer diameter (STD)		12.994- 13.000mm	<12.980mmRPL
	Piston- piston pin clearance		0.002- 0.014mm	>0.075mmRPL
CLUTCH	Spring free length		18.9mm	<17.4mmRPL
	Plate distortion		----------	>0.2mmRPL
	Disk thickness		3.42- 3.58mm	<3.1mmRPL
	Primary drive gear bush OD		20.93- 20.95mm	<20.90mmRPL
	Primary drive gear ID		21.000- 21.021mm	>21.05mm RPL

> - Greater than RPL – Replace OD- Outer diameter

< - Less than RPR – Repair ID- Inner diameter

ENGINE

ITEMS			STANDARD	USAGE LIMITS
CRANK SHAFT	Small end inner radius of Conrod		13.016 – 13.034mm	>13.10mm RPL
	Conrod large end clearance in axle direction		0.10 – 0.35mm	>0.6mm RPL
	Conrod large end clearance in axle receiver		0 - 0.012mm	>0.05mm RPL
	Crank shaft deflection		----------	>0.10mm RPL
TRANSMISSION	Gear inner diameter	M 2	17.032 – 17.059mm	>17.1mm RPL
		M 4	17.016 – 17.043mm	>17.1mm RPL
		C 1	23.020 – 23.053mm	>23.1mm RPL
		C 3	20.020 – 20.053mm	>20.1mm RPL
	C1 bush	ID	20.000- 20.021mm	>20.08mm RPL
		OD	22.970- 23.000mm	<22.93mm RPL
	Main shaft outer diameter (M2)		16.989 – 16.994mm	<16.95mm RPL
	Counter shaft outer diameter (C1)		19.952 – 19.980mm	<19.94mm RPL
	Shift drum outer diameter		33.955 – 33.975mm	<33.93mm RPL
	Shift fork inner diameter		34.075 – 34.100mm	>34.14mm RPL
	Shift fork tip thickness		4.86 – 4.94mm	<4.6mm RPL

FRAME

ITEMS	STANDARD	USAGE LIMIT
Bending of the front axle shaft	----------	>0.2mm RPL
Deflection of the front wheel rim	----------	>2.0mm RPL
Front brake drum inner diameter	110.0 – 110.3mm	>111mm RPL
Thickness of the front brake lining	4mm	<2mm RPL
Bending of the rear axle shaft	----------	>0.2mm RPL
Deflection of the rear wheel rim	----------	>2.0mm RPL
Rear brake drum inner diameter	110.0 – 110.3mm	>111mm RPL
Thickness of the rear brake lining	4mm	<2 mm RPL

TIGHTENING TORQUE

ENGINE RELATED

TIGHTENING PART		NUMBER	SCREW DIAMETER (mm)	TIGHTENING TORQUE (kg-m)
Tappet hole cap		2	30	1.0- 1.4
Valve adjustment nut		2	5	0.7- 1.1
Cylinder head	Nut	4	6	0.9- 1.2
	Bolt	1	6	0.8- 1.2
Cam sprocket bolt		2	5	0.7- 1.1
Cylinder bolt		1	6	0.8- 1.2
Guide roller pin bolt		1	6	0.8- 1.2
Intake manifold bolt		2	6	0.7- 1.1
Clutch lock nut		1	14	4.0- 4.5
Drum stopper arm pivot bolt		1	6	0.8- 1.2
Shift drum stopper bolt		1	6	1.4- 2.0
Clutch lock nut		1	14	3.5- 4.5
Shift drum stopper bolt		1	6	0.9- 1.4
Drain bolt		1	12	2.0- 2.5
Push rod sealing bolt		1	14	2.0- 3.0
Tensioner pivot bolt		1	8	1.3- 1.8
Drive sprocket bolt		2	6	1.1- 1.5
Flywheel nut		1	10	3.8- 4.5
Kick starter pedal bolt		1	6	0.8- 1.2

FRAME RELATED

TIGHTENING PART		NUMBER	SCREW DIAMETER (mm)	TIGHTENING TORQUE (kg-m)
Handle bar lower holder nut		2	10	3.5- 4.5
Steering stem nut		1	26	6.0- 10.0
Fork bolt		2	10	2.5- 4.0
Headlight stay bolt		4	6	0.8- 1.2
Front axle nut		1	12	4.0- 5.0
Rear axle nut		1	12	4.0- 5.0
Wheel hub bolt		8	8	2.4- 3.0
Driven sprocket nut		4	8	3.0- 3.6
Brake arm nut		2	6	0.8- 1.2
Rear fork pivot nut		1	10	4.0- 5.0
Rear cushion		4	10	2.5- 4.0
Step bar bolt		4	8	2.4- 3.0
Muffler	Bolt	1	8	2.4- 3.0
	Nut	3	6	0.8- 1.2
Side stand pivot	Bolt	1	10	0.5- 1.5
	Nut	1	10	2.5- 3.0

STANDARD TIGHTENING TORQUE

TYPE	TIGHTENING TORQUE (kg-m)	TYPE	TIGHTENING TORQUE (kg-m)
5mm Bolt, Nut	0.45 – 0.6	5mm Screw	0.35 – 0.5
6mm Bolt, Nut	0.8 – 1.2	6mm Screw	0.7 – 1.1
8mm Bolt, Nut	1.8 – 2.5	6mm flange bolt, nut	1.0 – 1.4
10mm Bolt, Nut	3.0 – 4.0	8mm flange bolt, nut	2.4 – 3.0
12mm Bolt, Nut	5.0 - 6.0	10mm flange bolt, nut	3.0 - 4.5

SPECIALIST, COMMON TOOLS

Specialist tools

Tool name	Tool No.	Remarks
Clutch spring compressor	07960- 0110000	For disassembling/ assembling the clutch
Universal bearing puller	07631- 0010000	For crankshaft removal
Clutch outer holder	07923- 0350001	For clutch outer removal/ attachment
Stem bearing driver	07946- GC40000	For stem race attachment
Valve guide driver	07942- MA60000	For valve guide attachment
Valve guide reamer 5.010mm	07984- MA60001	For valve guide removal

Common tools

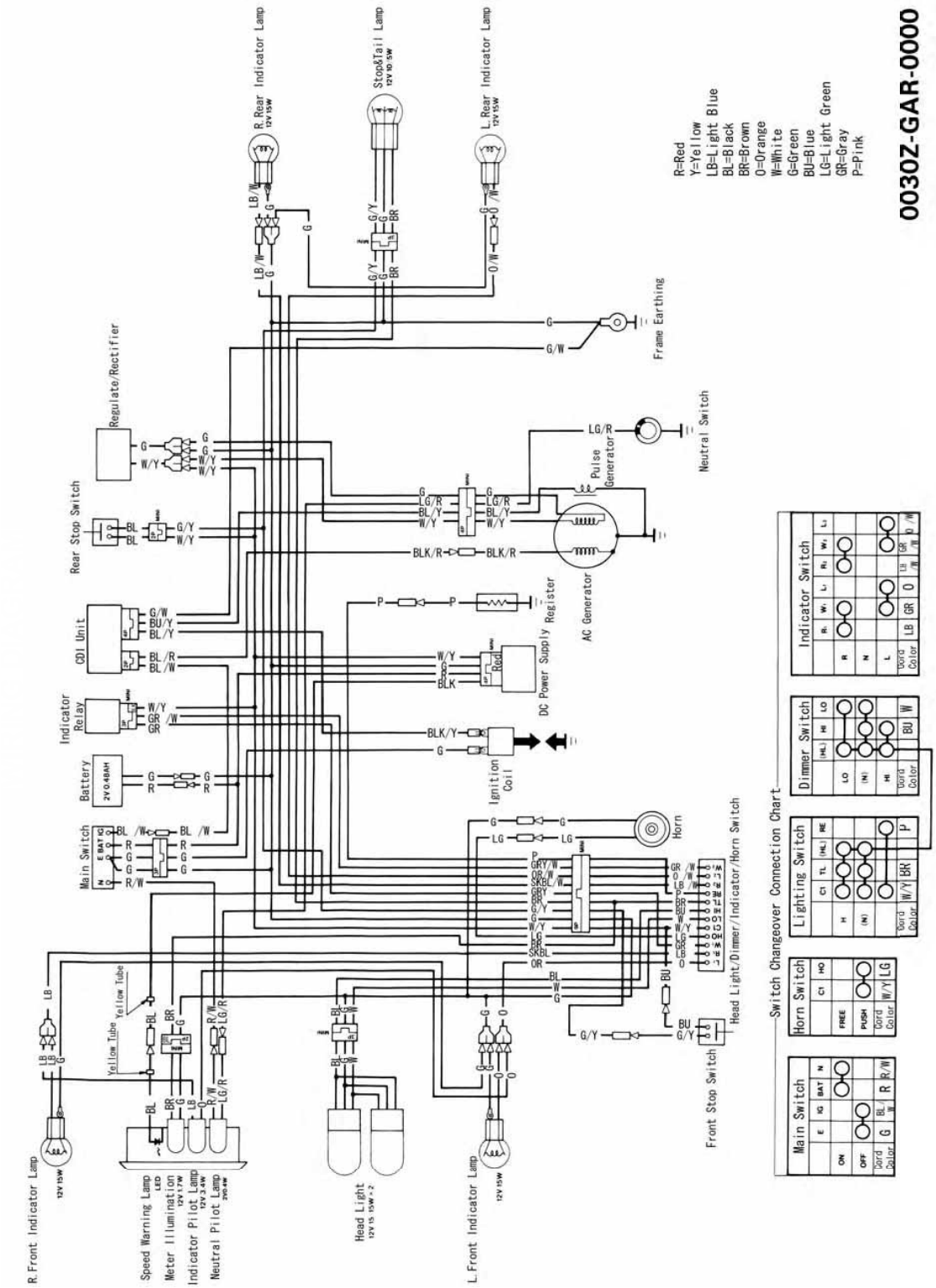
Tool name	Tool No.	Remarks
Float level gauge	07401- 0010000	For checking the carburetor float level
Pin spanner	07702- 0020001	For top thread removal/ attachment
Socket wrench 20X24mm	07716- 0020100	For clutch outer removal/ attachment
Bearing driver outer 32X 35mm	07746- 0010100	For rear wheel dust seal attachment
Bearing driver inner 17mm	07746- 0020300	For R. crankshaft bearing attachment
Bearing driver inner 20mm	07746- 0020400	For L. crankshaft bearing attachment
Inner driver B	07746- 0020100	For crankshaft bearing attachment

Valve seat cutter

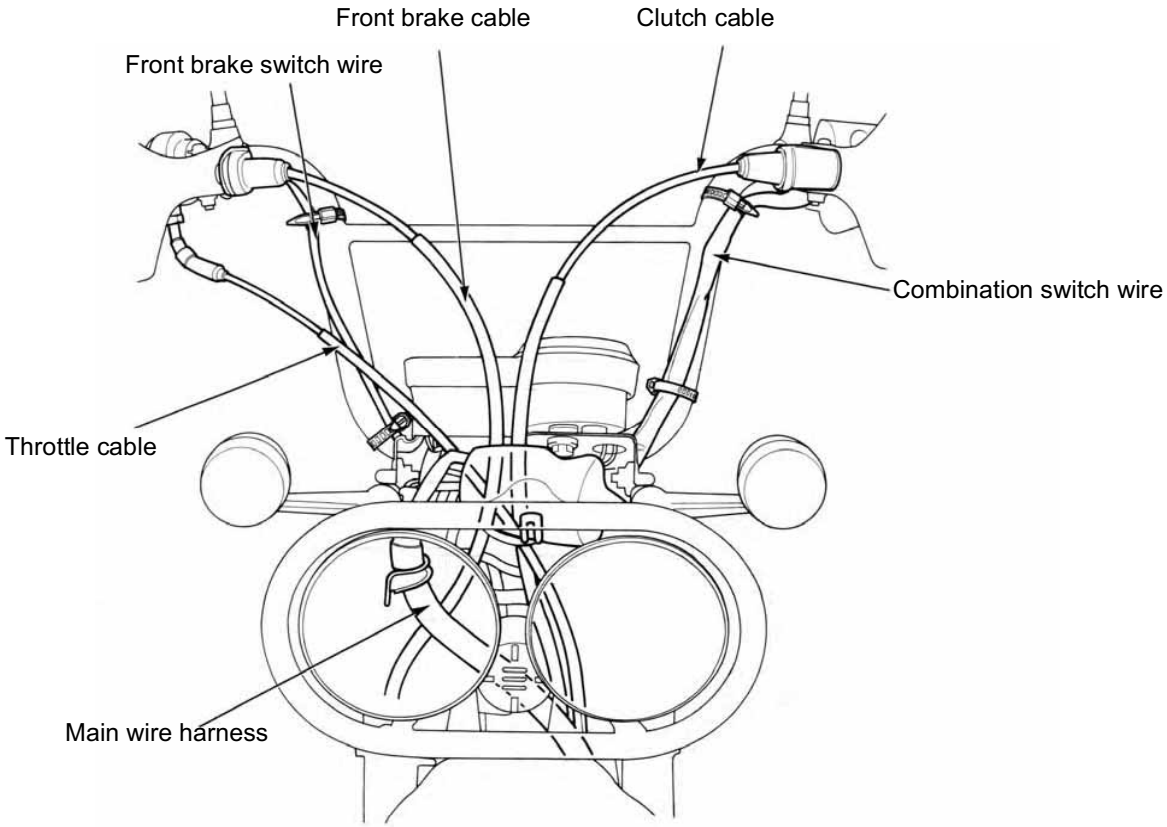
Tool name	Tool No.	Remarks
Seat cutter 24mm	07780- 0010600	For IN/ EX valve seat surface adjustment
Flat cutter 21.5mm	07780- 0012800	For IX valve seat surface adjustment

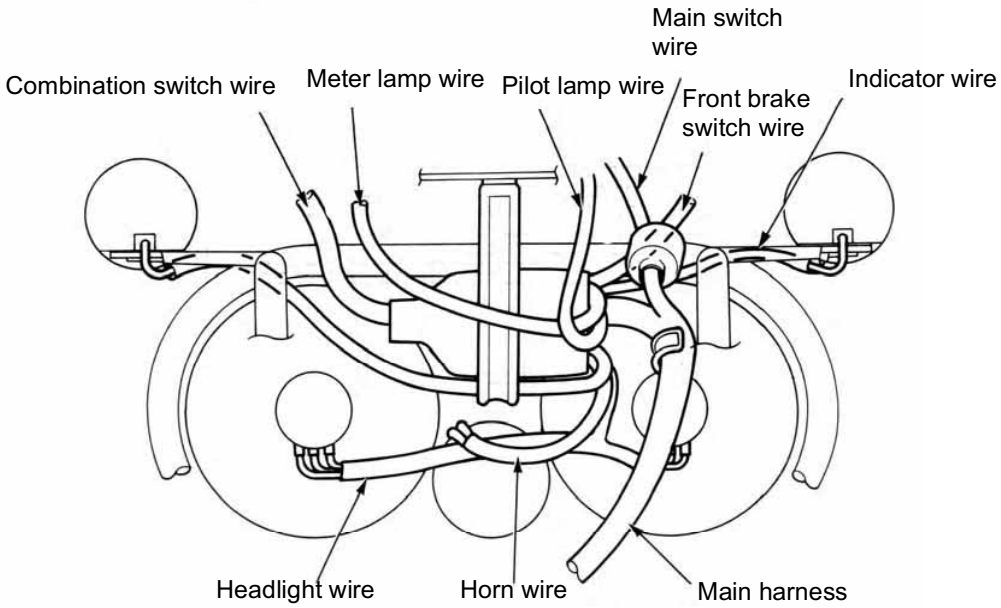
Measurement tools

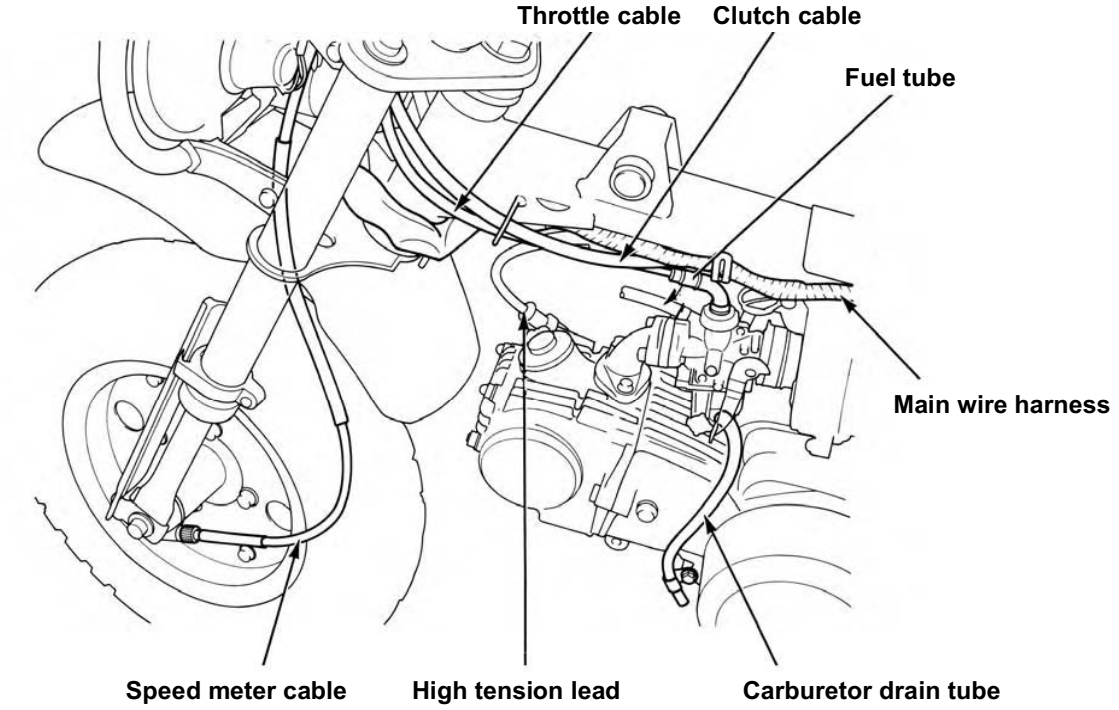
Tool name	Tool No.	Remarks
Digital circuit tester (Kouwa) Circuit tester (Sanwa) Circuit tester (Kouwa)	07411- 0020000 07308- 0020001 TH- 5H	For electric component checks
Peak voltage adaptor	07HGJ- 0020100	For peak voltage measurement

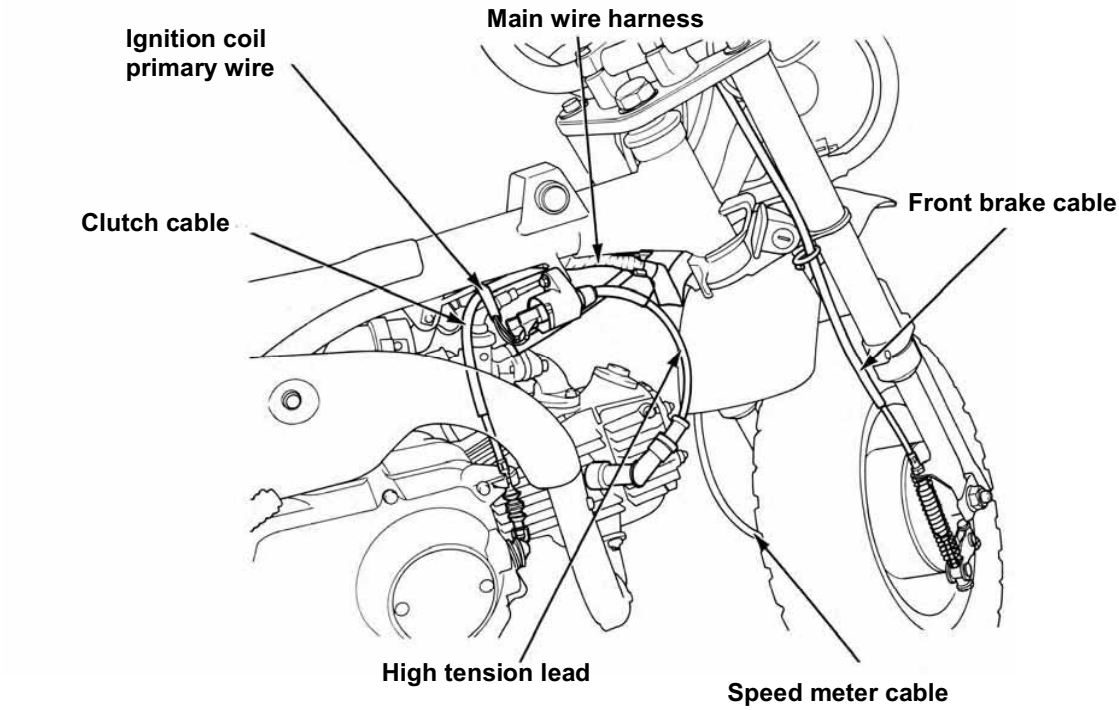

00302-GAR-0000
R=Red
Y=Yellow
LB=Light Blue
BL=Black
BR=Brown
O=Orange
W=White
G=Green
BU=Blue
LG=Light Green
GR=Gray
P=Pink
R.Rear Indicator Lamp
Stop&Tail Lamp
L.Rear Indicator Lamp
Frame Earthing
Regulate/Rectifier
Neutral Switch
Pulse Generator
Rear Stop Switch
AC Generator
CDI Unit
DC Power Supply
Register
Indicator Relay
Battery
Ignition Coil
Main Switch
Horn
Head Light/Dimmer/Indicator/Horn Switch
Front Stop Switch
R.Front Indicator Lamp
Speed Warning Lamp
Meter Illumination
Indicator Pilot Lamp
Neutral Pilot Lamp
Head Light
L.Front Indicator Lamp
Switch Changeover Connection Chart
Indicator Switch
Dimmer Switch
Lighting Switch
Horn Switch
Main Switch

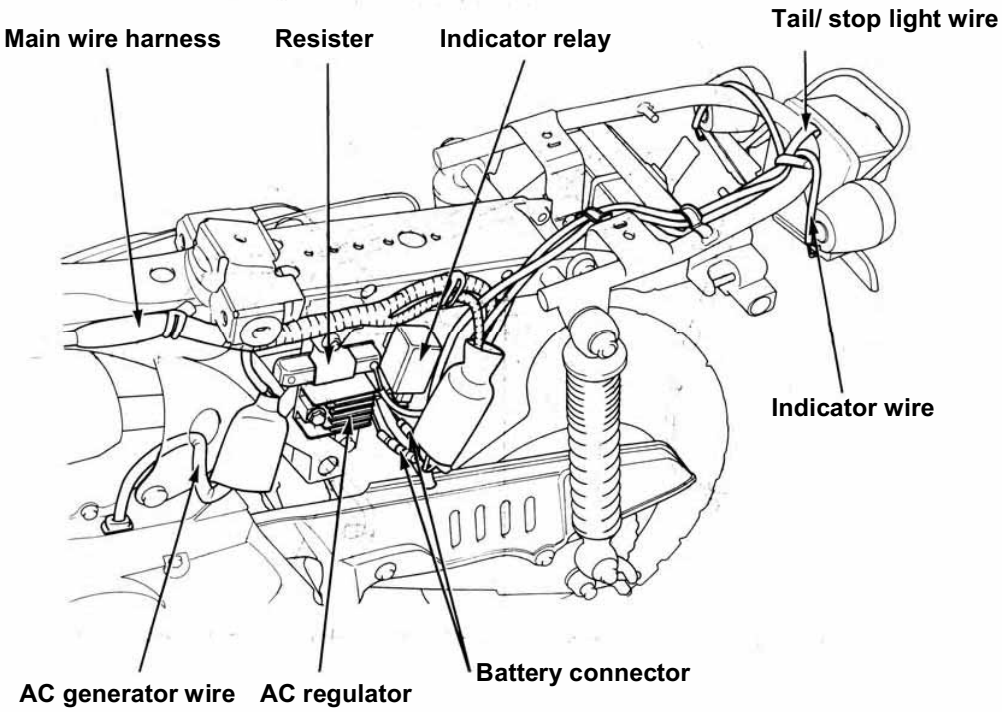
Wiring schematic

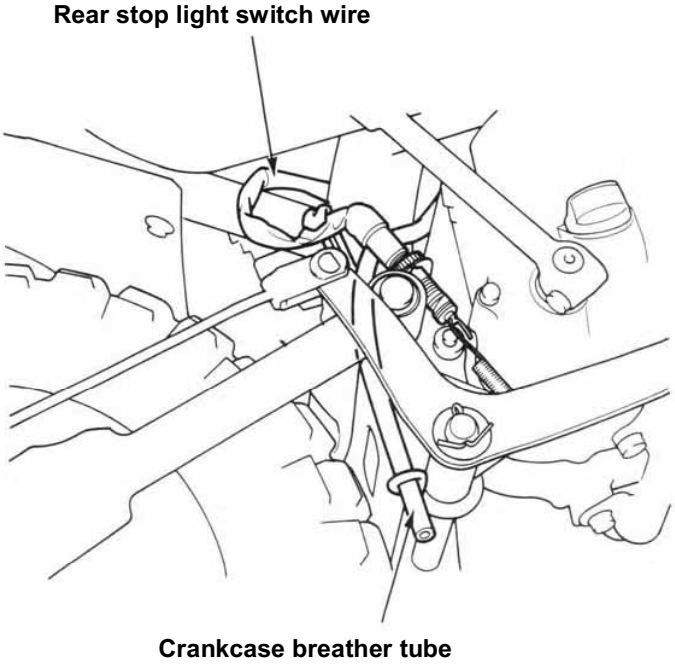





Throttle cable
Clutch cable
Fuel tube
Main wire harness
Speed meter cable
High tension lead
Carburetor drain tube


Main wire harness
Ignition coil primary wire
Clutch cable
Front brake cable
High tension lead
Speed meter cable


Main wire harness
Resister
Indicator relay
Tail/ stop light wire
Indicator wire
AC generator wire
AC regulator
Battery connector


Rear stop light switch wire
Crankcase breather tube

INSPECTION, MAINTENANCE

Inspection, maintenance method

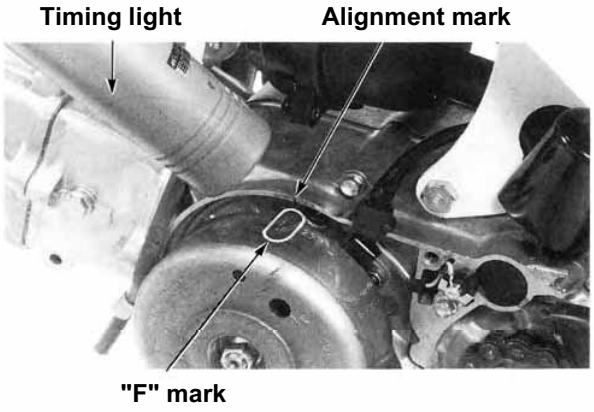
(Note)
1. "○" indicates a check period.
2. "☆" indicates safe replacement periods
3. The replacement timings as shown below are set for when the vehicle is used in normal circumstances. If the vehicle is used in a harsh environment, the replacement timing will be shorter than what is stated here.

Inspection, maintenance items			Inspection, maintenance period				Criteria
			Before operation	1 month or 1,000km	Personal vehicle		
					Every 6 months	Every 12 months	
Running system	Wheel	Loose rear wheel bearing				○	
Suspension system	Chassis spring	Damage				○	Indicates cushion spring
	Suspension arm	Loose joint and arm damage				○	
Power transmission system	Clutch	Lever play			○	○	Play: Lever type: 10-20mm at the lever end
		Operation		○	○	○	
	Transmission	Oil leakage and oil amount			○	○	Oil amount: Bar gauge type: Between the upper and lower limits
		Loose operation mechanism				○	
	Chain and sprocket	Loose chain		○	○	○	MAX fluctuation 10- 20mm at the center of the front/ rear sprocket when using the side stand
		Installation and wear and tear of the sprocket					

Inspection, maintenance items			Inspection, maintenance period				Criteria
			Before operation	1 month or 1,000km	Personal vehicle		
					Every 6 months	Every 12 months	
Electrical system	Ignition system	Ignition plug condition			○	○	Plug gap: 0.6- 0.7mm
	Electrical wiring	Looseness and damage of the joint				○	
Engine	Main body	Engine start-up condition, abnormal operating noise			○	○	
		Low speed, accelerating condition		○	○	○	Idling rev: 2,000±100 rpm
		Exhaust condition			○	○	
		Air cleaner element condition			○	○	
		Cam chain adjustment		○	○	○	
	Lubrication system	Engine oil replacement		○			1 month or 1,000km for the first replacement, every 3,000km after this
	Fuel system	Fuel hose replacement					Every 2 years

Checking ignition timing

- Check the ignition timing after warming up the engine.
  The ignition timing cannot be adjusted as an electric spark advancer is used.
- If the ignition timing is out, check the installation conditions of the pulse generator and exciter coil, and measure their peak voltages. If the peak voltages are normal, replace the CDI unit.
  Read the operators manuals for the timing light and engine rev counter to operate these devices properly.



Remove the L crankcase cover (→5-3).
Warm up the engine.
Connect the timing light to the high tension lead.
Connect the engine rev counter.

Start the engine. If the “F” on the flywheel is aligned with the matching mark on the L crankcase, the ignition timing is normal.

Ignition timing: 27° BTDC/ 2,000rpm

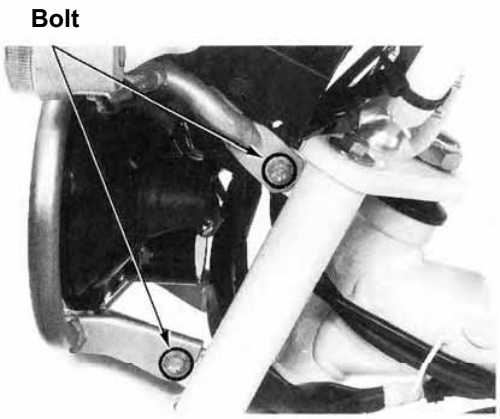
Lighting device

Headlight (head lamp)

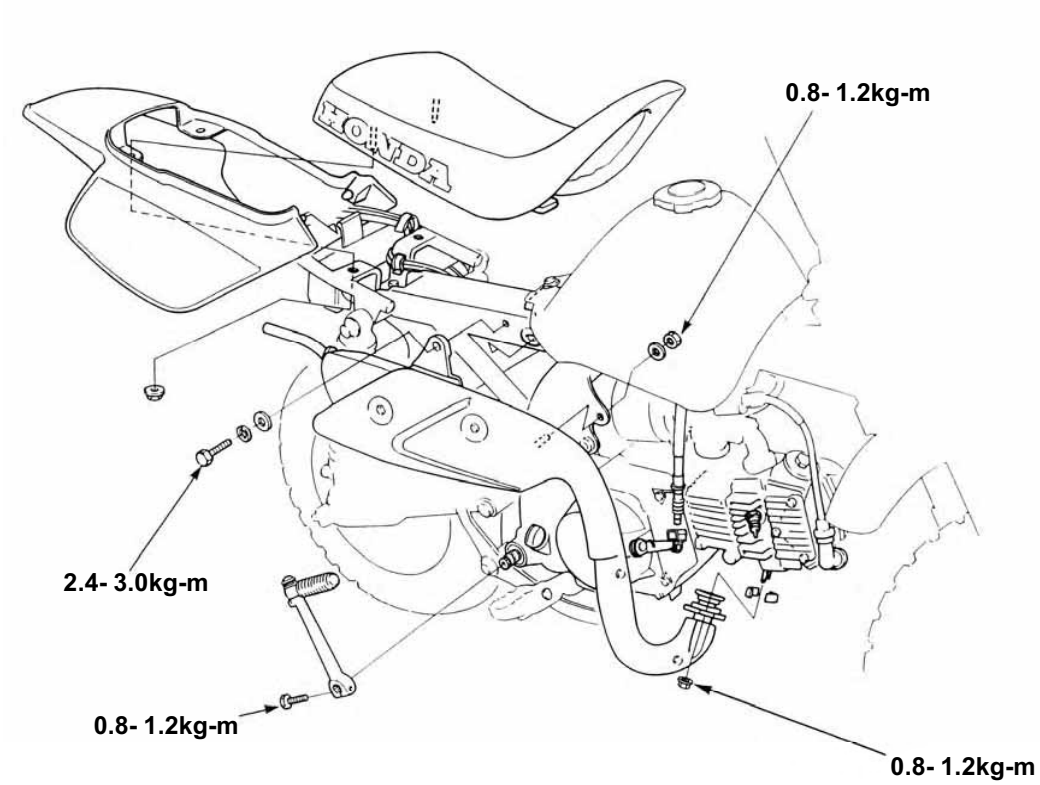
Loosen the headlight guard bolts, and make adjustment to the light axis for the vertical direction of the headlight.

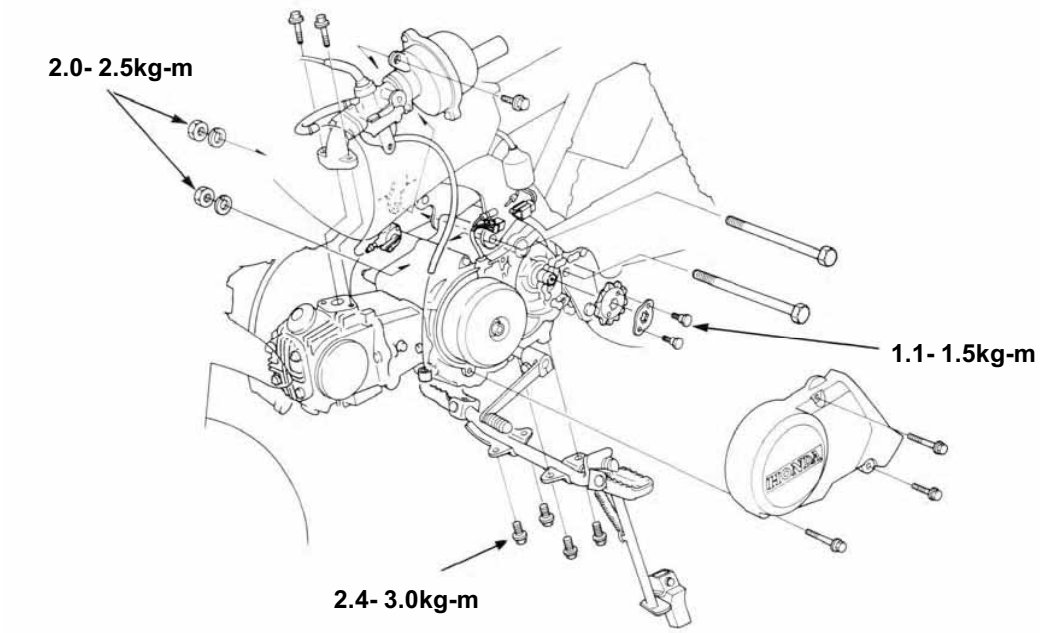
Tighten the bolts after making adjustment.

Torque: 0.8- 1.2kg/ m



Detaching/ attaching the engine

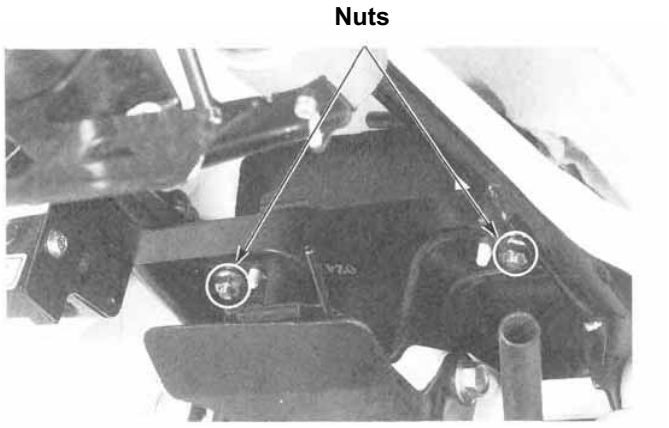




Seat

Removal
Remove the rubber retaining band, and remove the tool kit.
Remove the nuts, and detach the seat.

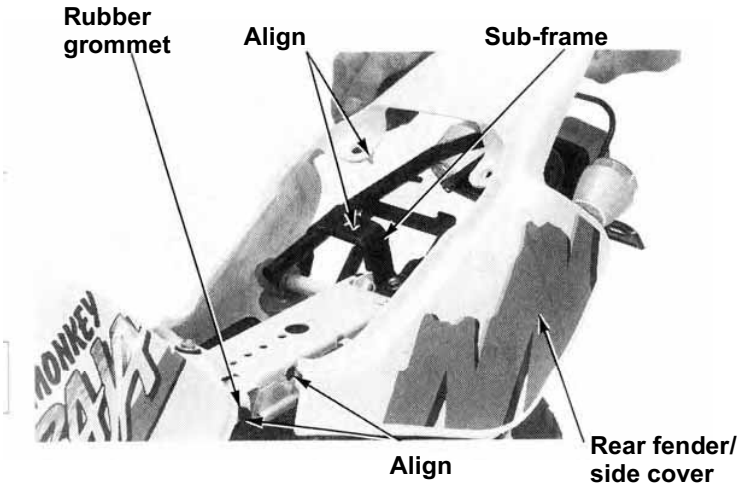
Fitting
Fitting of the seat is carried out in the reverse order of its removal procedure.



Rear fender/ side cover

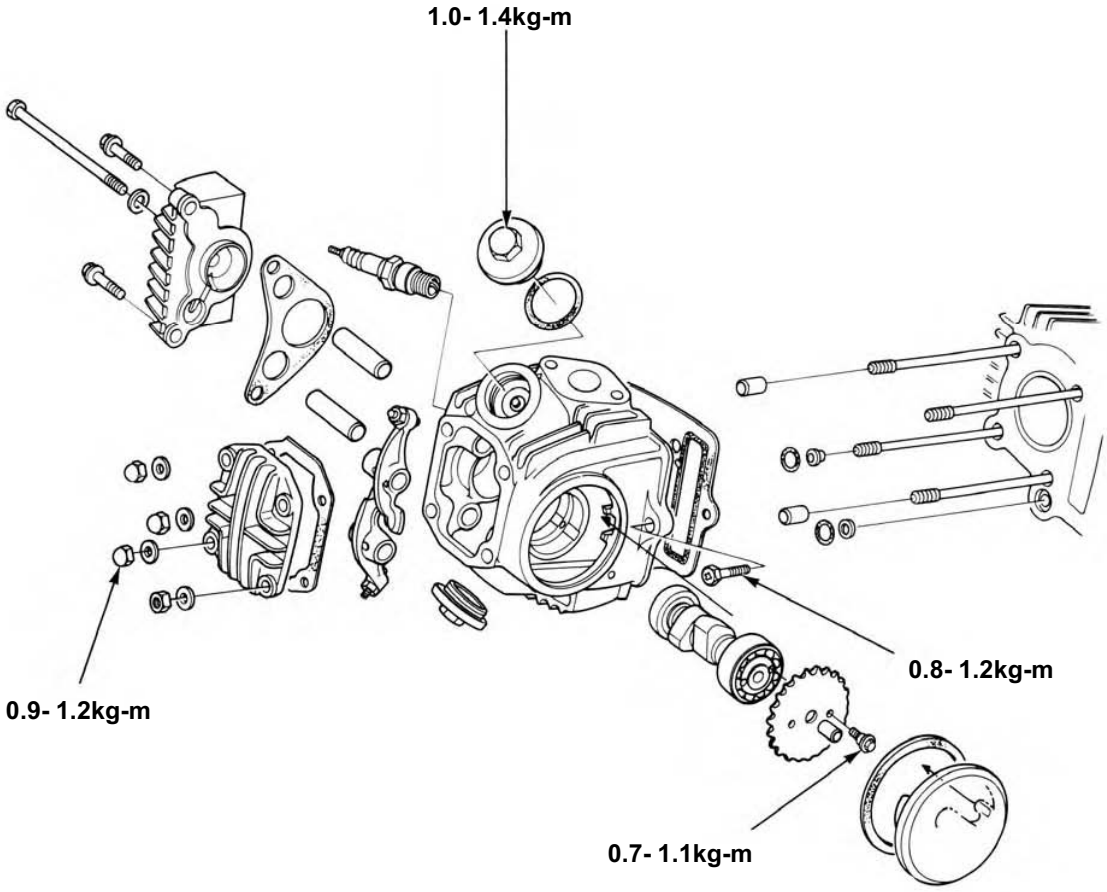
Removal
Remove the seat.
Remove the protruding part from the rubber grommet.
Remove the protruding part from the sub-frame, and detach the rear fender/ side cover.

Fitting
Fitting of the rear fender/ side cover is carried out in the reverse order of its removal procedure.



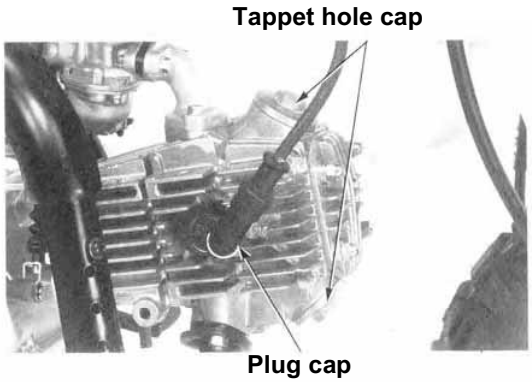
✻ Align the protruding part of the cover with the holes on the rubber grommet and sub-frame.

Cylinder head, valve

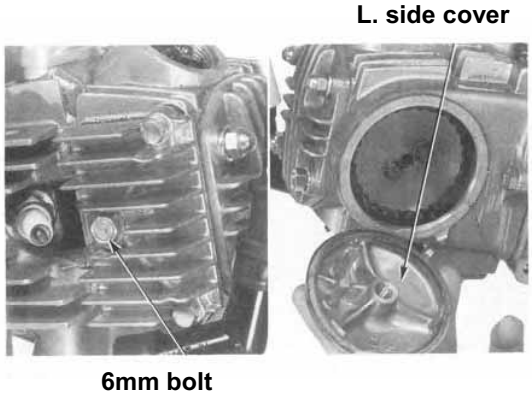


Removing the cam shaft

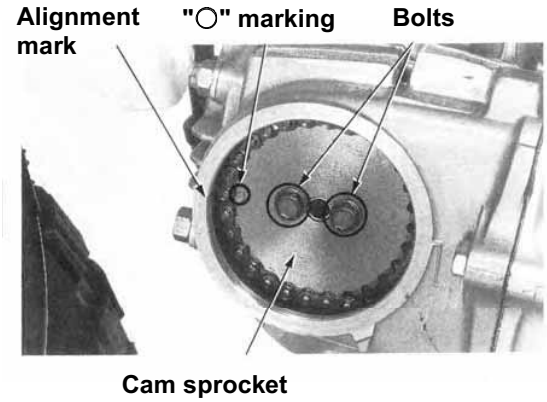
Remove the plug cap.
Remove the tappet hole cap to allow some play in the rocker arm by turning the adjustment screw.



Loosen the 6mm bolt, and tap its head to lift up the L side cover slightly.
Remove the bolts, and detach the L side cover.

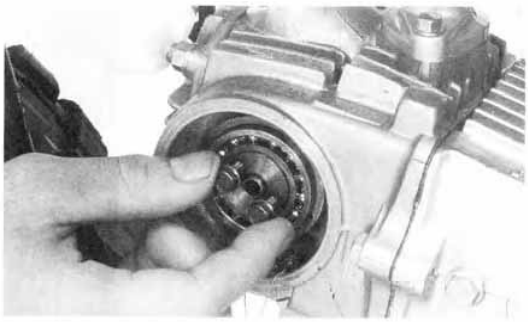


Remove the L crankcase cover (→5-3).
Turn the crankshaft, and align “ ” on the cam sprocket with the matching mark on the cylinder head.
Remove the cam sprocket bolts, and detach the knock pin and cam sprocket.



✻ It is recommended to fit a wire on the chain so that it will not fall inside the engine after removal of the sprocket.

Screw in the cam sprocket screws lightly into the cam shaft, and pull out the shaft.

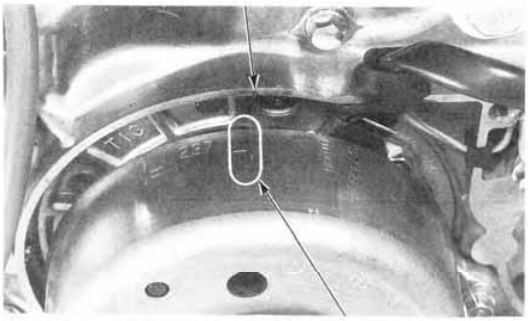


Checking the cam shaft bearing
Turn the bearing outer race manually, and replace if there is any abnormal operating noise or looseness. Check if the bearing inner race has been press-fitted securely onto the cam. If there is any looseness, replace the cam shaft Assy.

Bearing

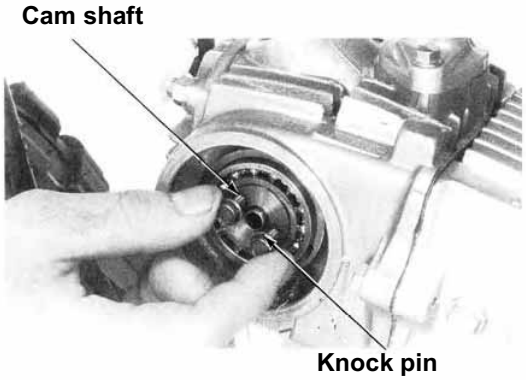
Alignment mark

Fitting the cam shaft
Align "T" on the flywheel with the matching mark on the crankcase.



"T" marking

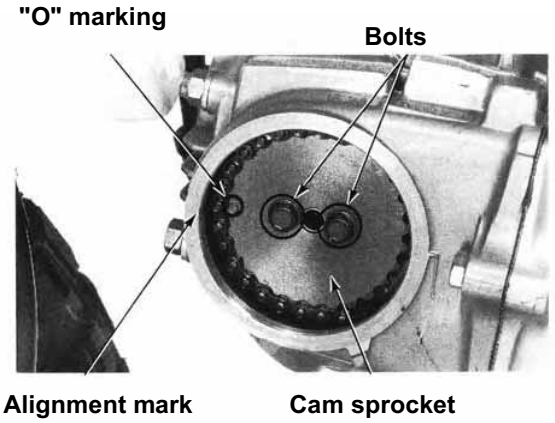
Fit the cam shaft while pushing the rocker arm onto the valve.
Fit the knock pin.



Set the cam sprocket and cam chain, and then fit them to the cam shaft.

✻ Align "○" on the cam sprocket with the matching mark on the head.

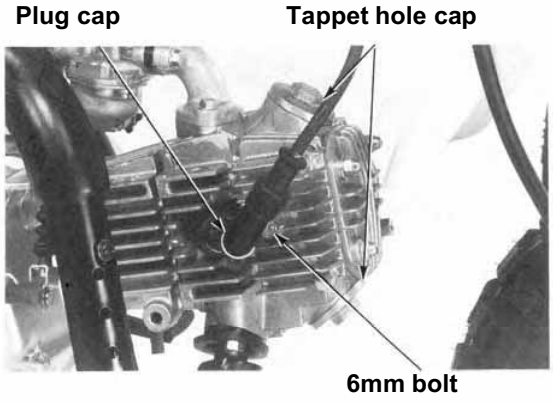
Tighten the cam sprocket bolts.
Torque: 0.7- 1.1kg-m



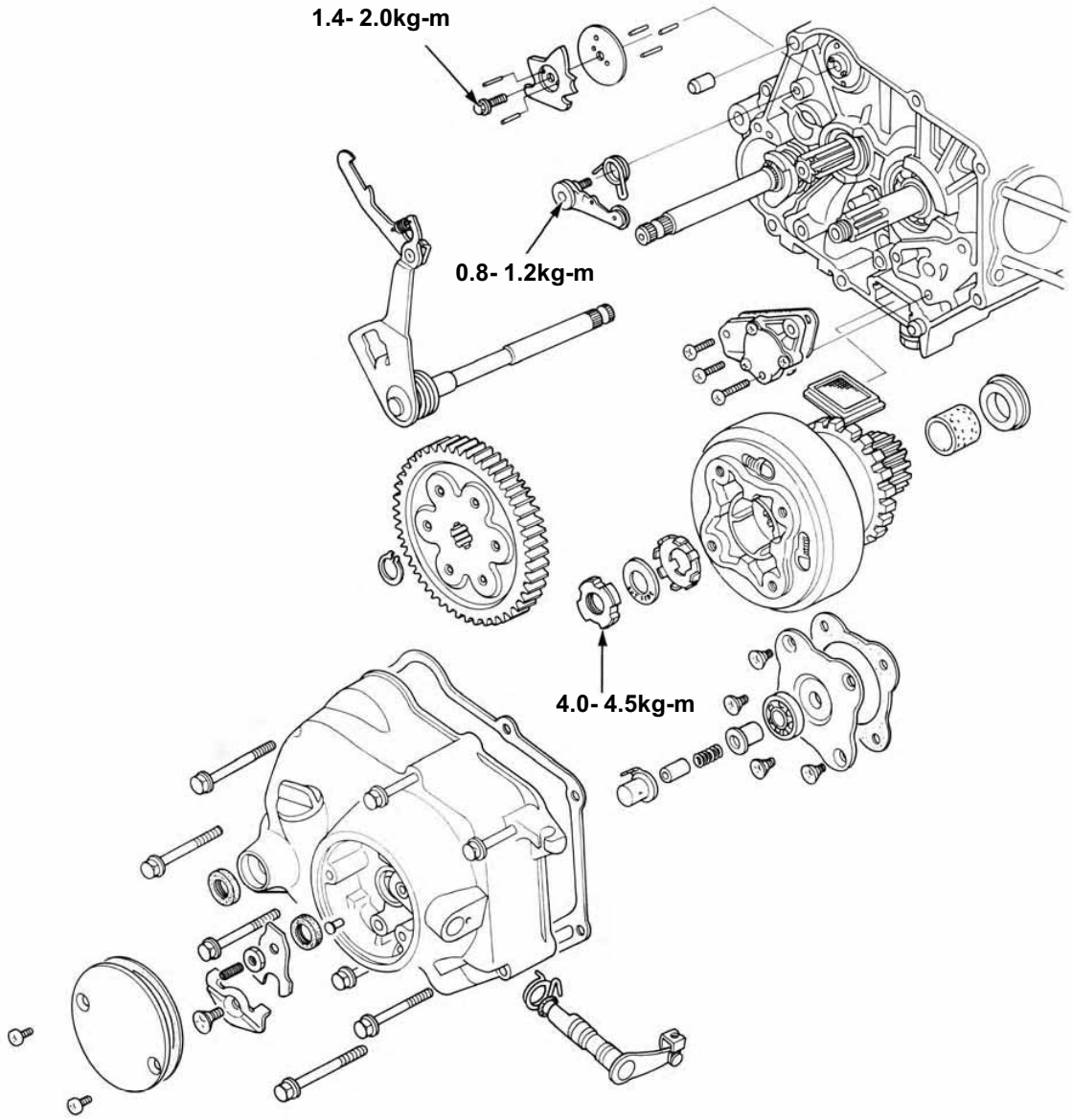
Fit the L side cover.
Tighten the 6mm bolt.

Fit the plug cap.
Fit the L crankcase cover (→5-4).

Make adjustment to the tappet (3-6), and fit the tappet hole cap.

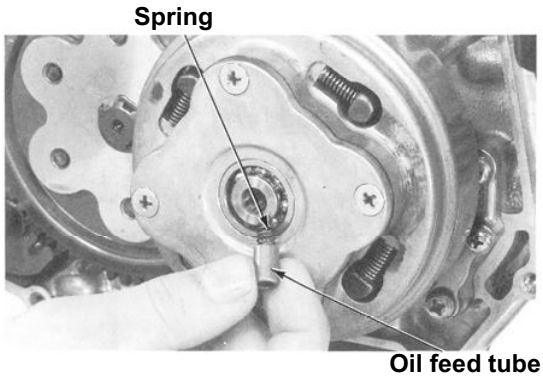


Clutch, gear shift linkage

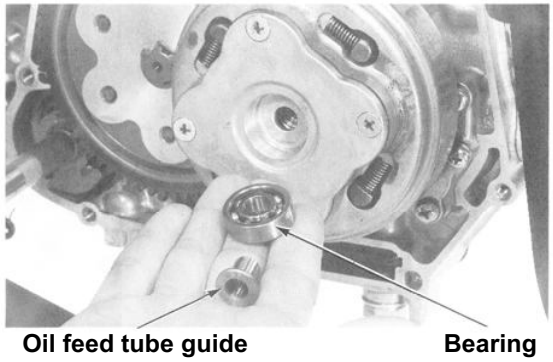


Removing the clutch

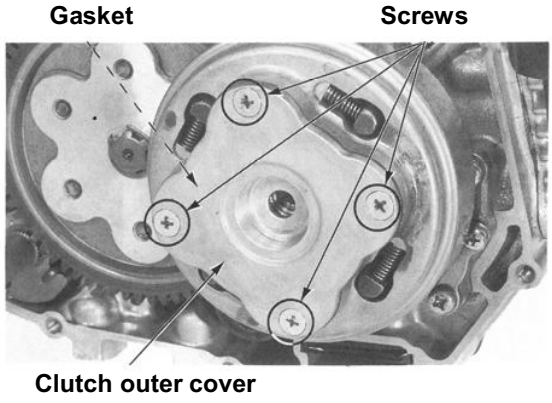
Remove the R crankcase cover (8-3).
Remove the oil feed tube and spring.



Remove the oil feed tube guide and bearing.

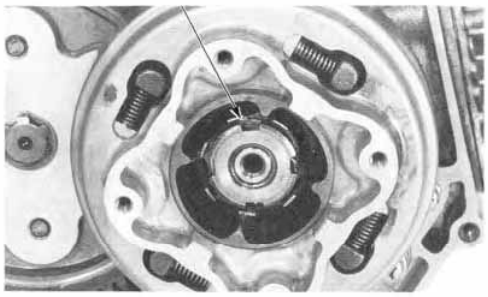


Remove the clutch outer cover screws, and detach the outer cover and gasket.



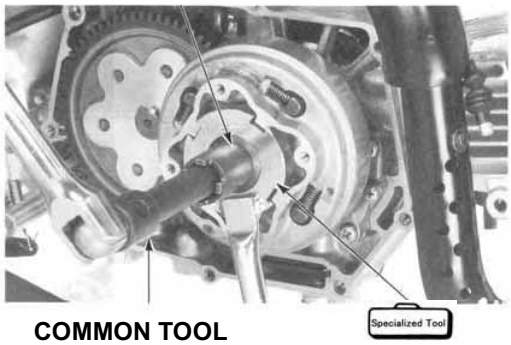
Pull up the claw on the lock washer.

Lock washer



Remove the L crankcase cover.
Fix the clutch Assy with the clutch outer holder, and remove the lock nut.

COMMON TOOL
Socket wrench 20X24mm
07716- 0020100

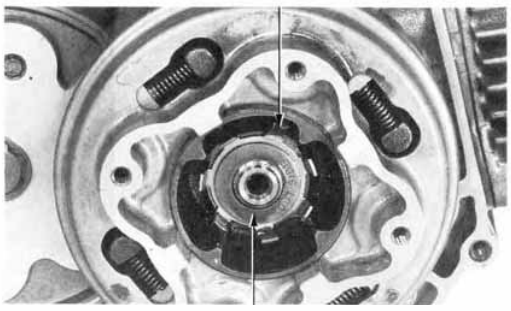


COMMON TOOL
Extension bar
07716- 0020500

Clutch outer holder
07923- 0350001

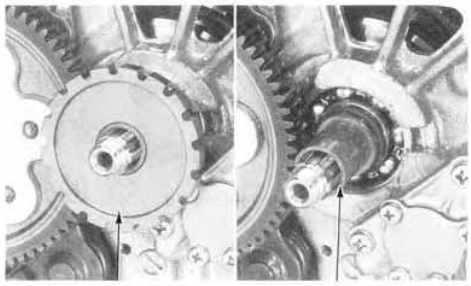
Remove the washer and lock washer.
Remove the clutch Assy.

Lock washer



Washer

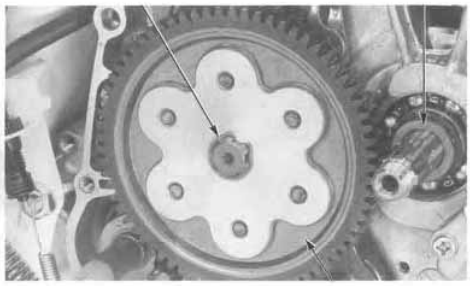
Remove the primary drive gear and clutch center guide.



Primary drive gear **Clutch center guide**

Remove the collar.
Remove the circlip, and detach the primary driven gear.

Circlip **Collar**

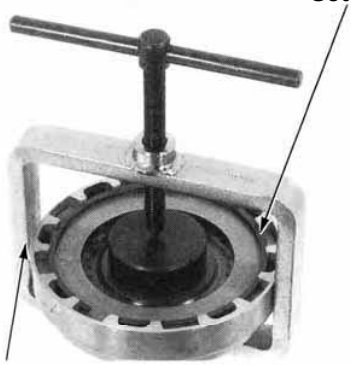


Primary driven gear

Disassembling the clutch

Set and tighten the clutch spring compressor, and remove the set ring.

Set ring

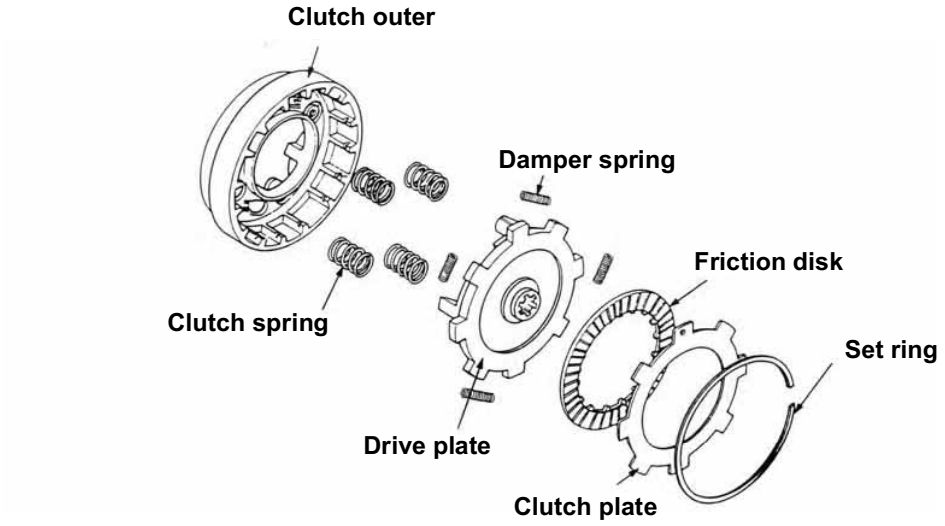


Remove the clutch spring compressor.
Remove the clutch plate, friction disk, and drive plate, and detach the damper spring.

✻ Take care not to lose the damper springs as they will come off when the drive plate is removed.

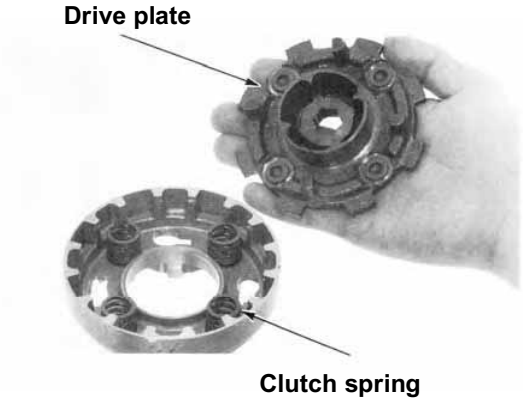
Specialized Tool

Clutch spring compressor
07960-0110000



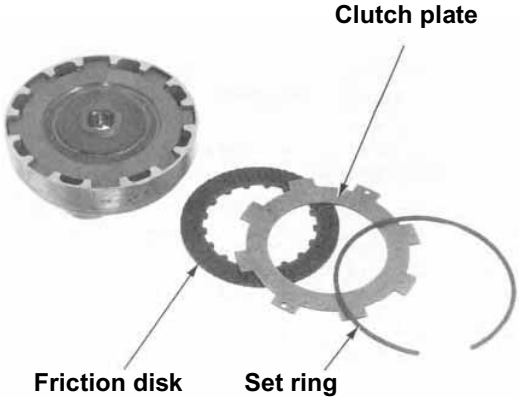
Assembling the clutch

Place the springs on the clutch outer, and align them with the spring supports on the drive plate. Then, fit the drive plate.



Fit the friction disk and clutch plate.

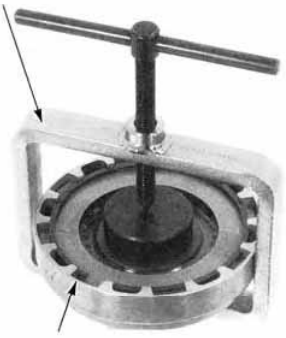
✻ Apply engine oil to the new friction disk before fitting.



Compress the spring with the clutch spring compressor, and fit the set ring.

Specialized Tool

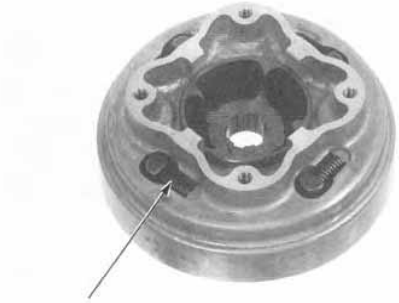
Clutch spring compressor
07960-0110000



Set ring

Fit the clutch damper spring.

✻ Take care that the springs do not fall inside the clutch when fitting.



Damper spring

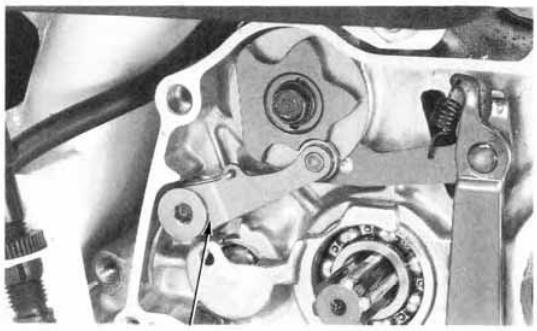
Removing the gear shift linkage
Remove the change pedal installation bolt, and detach the change pedal.

✻ Clean the splined part in advance so that dirt on the tip of the change pedal does not enter inside the engine when removing the spindle.

Bolt

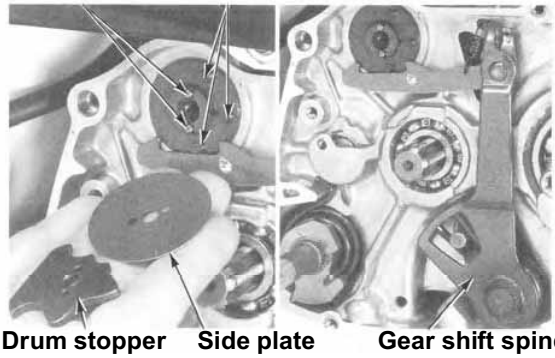
Change pedal

Remove the drum stopper arm.



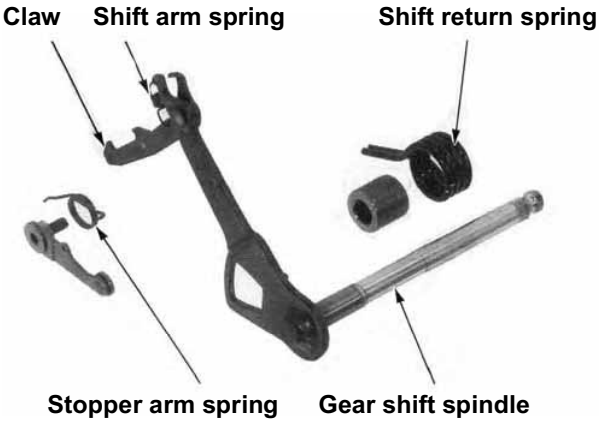
Drum stopper arm

Remove the drum stopper plate and shift drum side plate.
Remove the shift drum pin.
Remove the two 3X 8.5mm knock pins.
Remove the gear shift spindle.



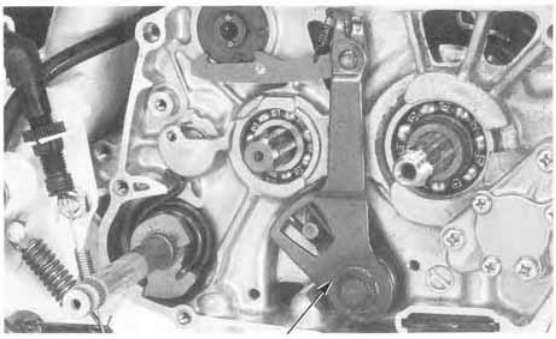
Checking the gear shift linkage
Carry out the checks indicated below:

- Settling of the shift arm spring
- Settling of the shift return spring
- Settling of the stopper arm spring
- Bending of the shift spindle
- Wear and tear, damage of the shift spindle claw



Fitting the gear shift linkage

Insert and fit the gear shift spindle.



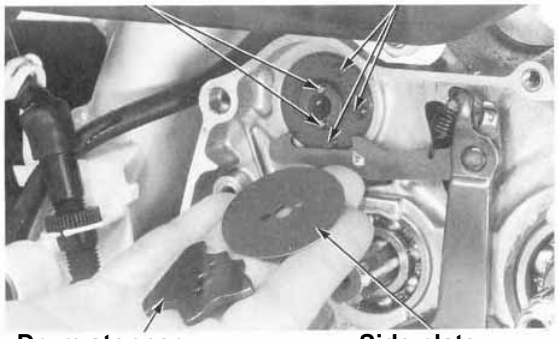
Gear shift spindle

Knock pin 3X 8.5mm **Shift drum pin**

Fit the two 3X 8.5mm knock pins to the shift drum.

Fit the 3 pins to the shift drum, and fit the shift drum side plate. Fit the drum stopper plate.

✻ Align the pins with the holes to fit.

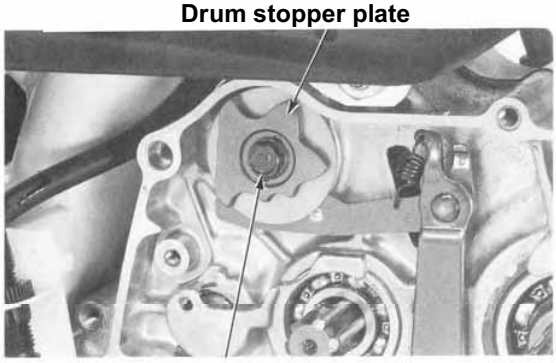


Drum stopper **Side plate**

Drum stopper plate

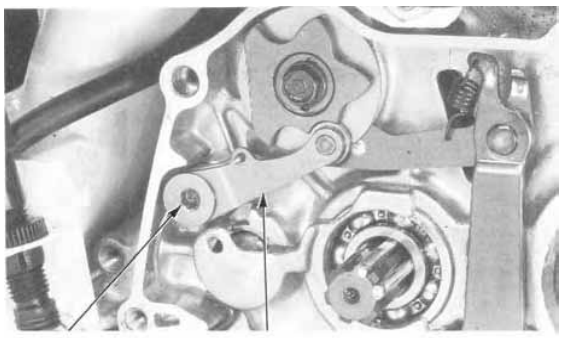
Apply screw lock agent to the screw part of the bolt, and tighten.

Torque: 1.4- 2.0kg-m



Bolt

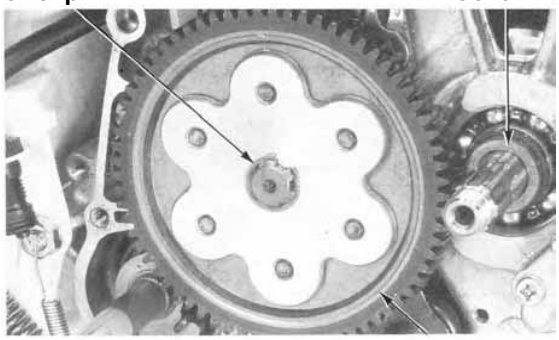
Fit the stopper arm, and tighten the socket bolt.
Torque: 0.8- 1.2kg/m
Fit the change pedal.
Check whether gears can be changed properly by operating the change pedal.



Socket bolt **Stopper arm**

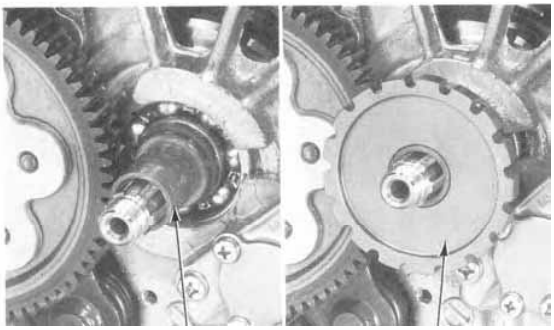
Fitting the clutch
Fit the primary driven gear and circlip.
Fit the collar to the crankshaft.

Circlip **Collar**



Primary driven gear

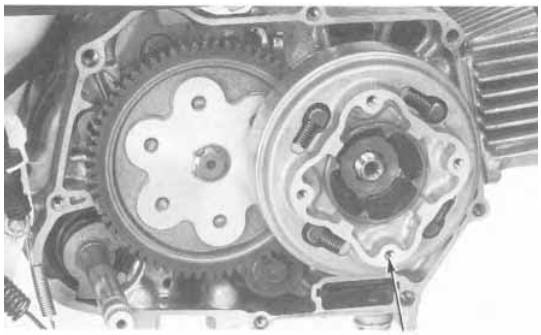
Fit the clutch center guide and primary drive gear.



Clutch center guide **Primary drive gear**

Fit the clutch Assy.

✻ Make sure that the groove on the primary gear and the claw on the friction disk are engaged.

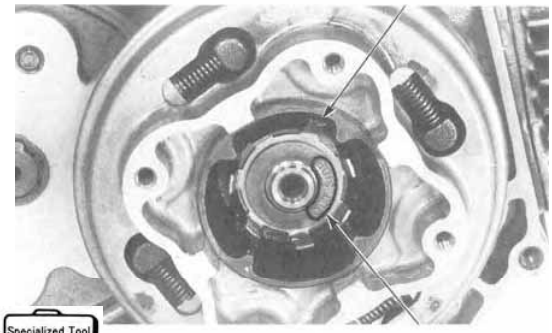


Clutch Assy

Fit the lock washer and the washer.

✻
• Replace the lock washer with a new one when fitting.
Fit the washer so that “OUTSIDE” mark faces towards the outside.

Lock washer



Specialized Tool

Clutch outer holder
07923-0350001

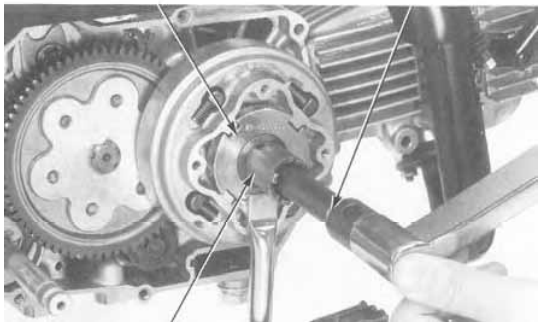
"OUTSIDE" mark

COMMON TOOL
Extension bar 07716-0020500

Tighten the lock nut.
Torque: 4.0- 4.5kg-m

Bend the lock washer claw, and fix the lock nut.

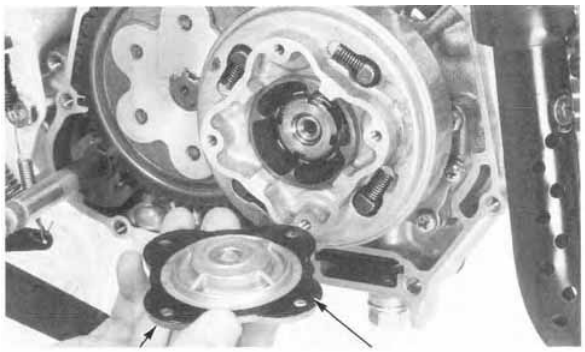
✻ If the lock washer claw does not fit in the groove, turn the lock nut in its tightening direction to align.



COMMON TOOL
Socket wrench 20X 24mm
07716- 0020100

Fit the gasket to the clutch outer cover.

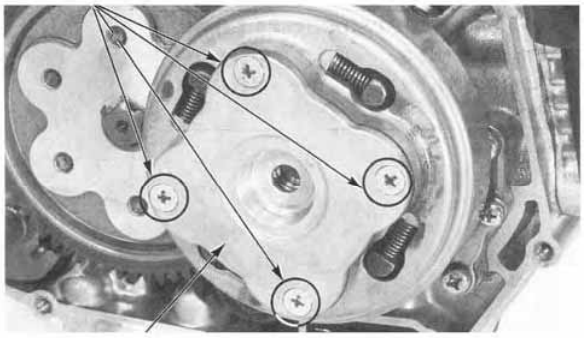
- Replace the gasket with a new one when fitting.
- Make sure that no foreign object or dust is found in the oil filter unit.



Clutch outer cover **Gasket**

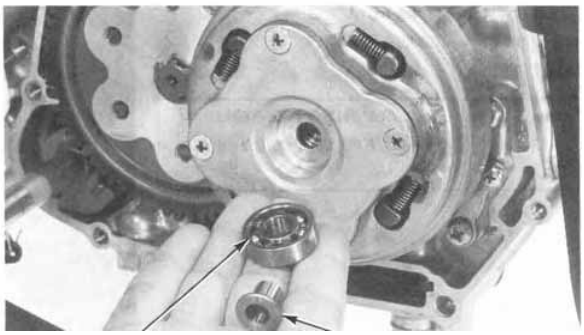
Screws

Fit the clutch outer cover, and tighten the screws.



Clutch outer cover

Fit the bearing and oil feed tube guide.

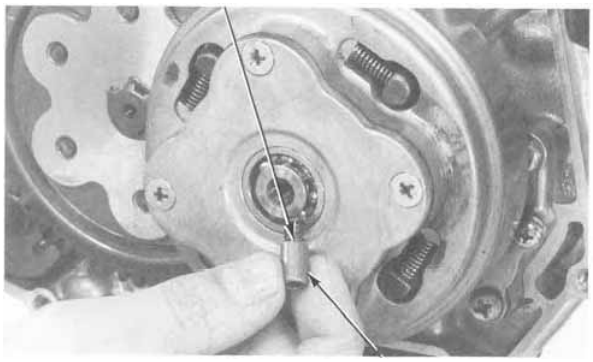


Bearing **Oil feed tube guide**

17-31

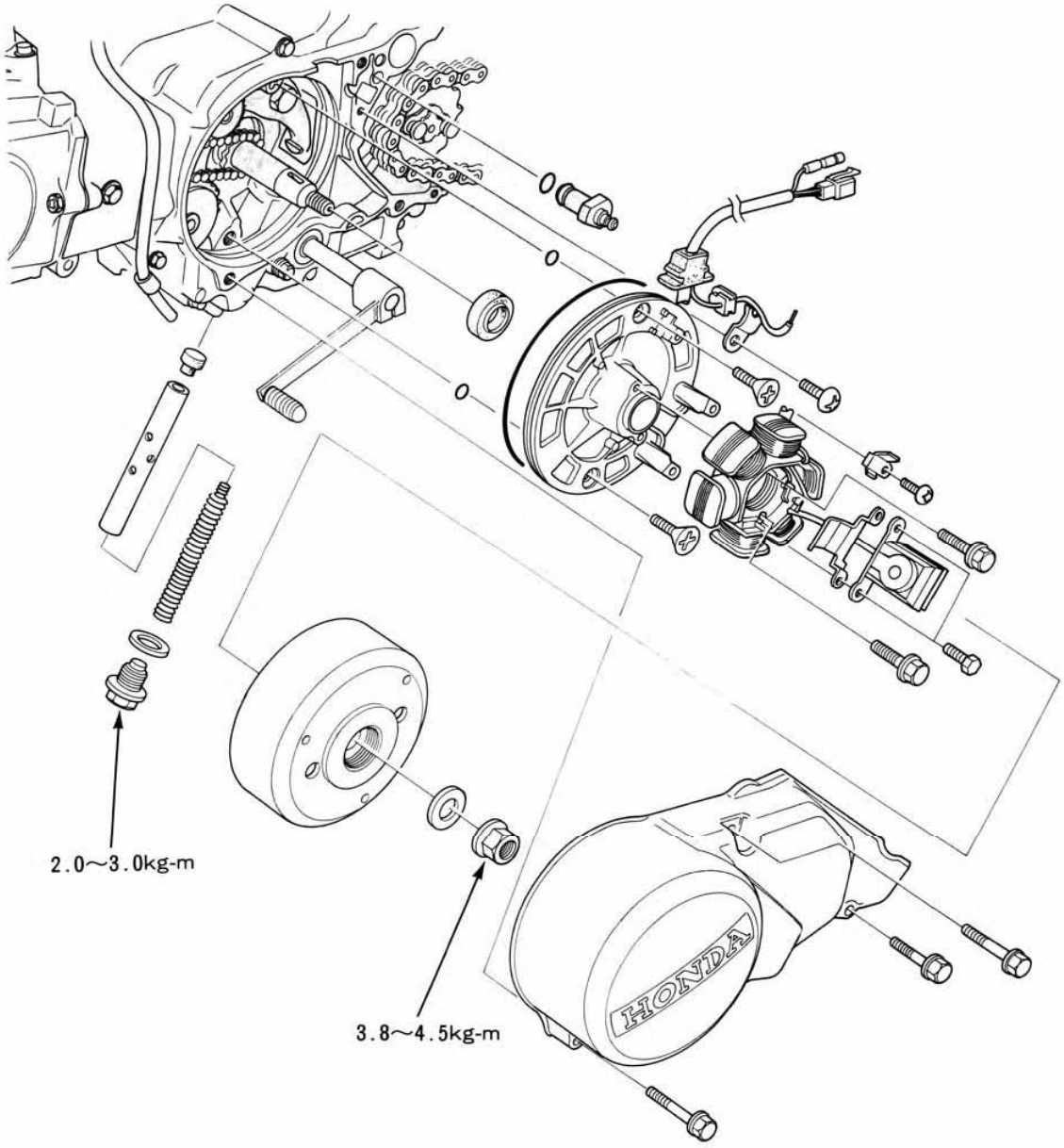
Fit the spring and oil feed tube.

Spring

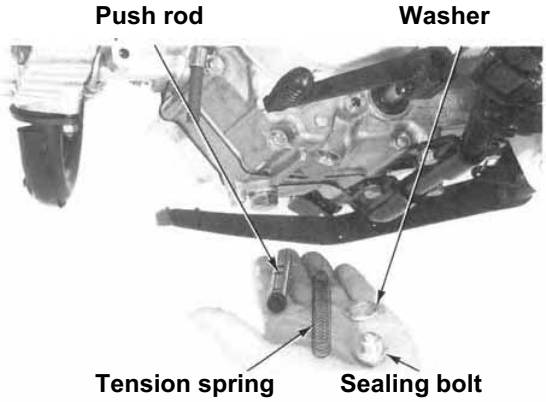


Oil feed tube

AC generator, cam chain tensioner



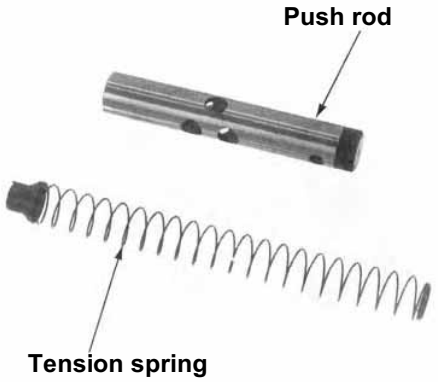
Removing the cam chain tensioner push rod
Remove the sealing bolt and washer, and detach the tension spring and push rod.



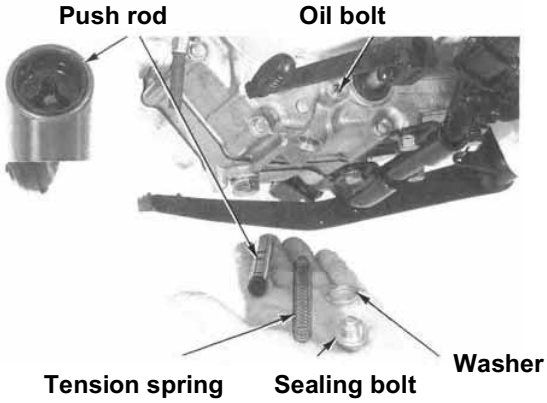
Checking the cam chain tensioner push rod
Measure the free length of the tension spring.

Usage limit: replace if 77.0mm or less

Check the outer diameter of the push rod, and repair with an oil stone or other device if there is damage or any signs of scratching.
Measure the outer diameter of the rod.
Usage limit: replace if 11.94mm or less



Fitting the cam chain tensioner push rod
Fit the push rod, tension spring, and washer, and tighten with the sealing bolt.
Torque: 2.0- 3.0kg-m

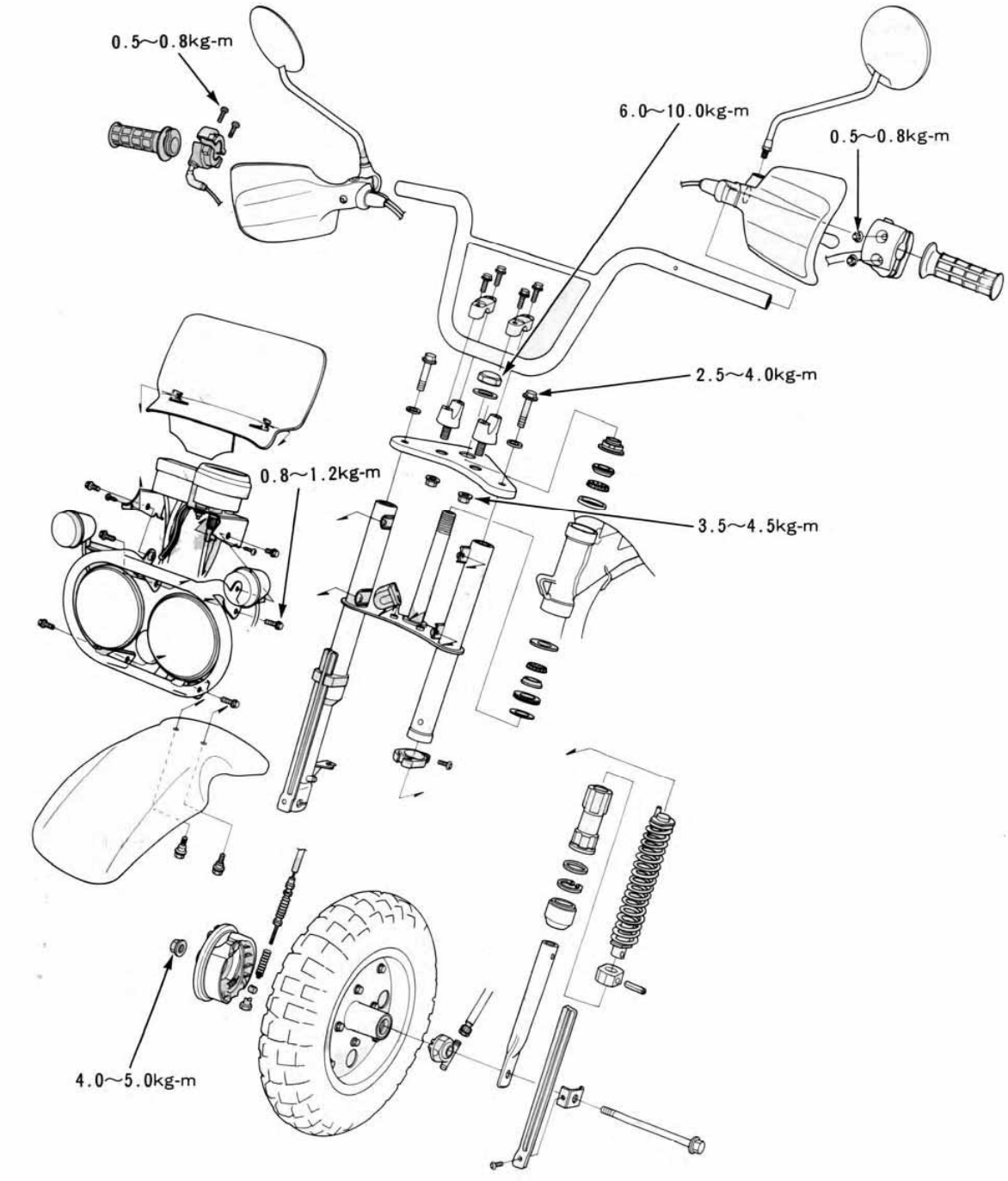


✻
Make sure that there is no clogging in the valve part of the push rod.
Make sure that the smaller side of the spring is facing upward.

Pour engine oil through the oil bolt hole.

✻ Pour more than 1cc.

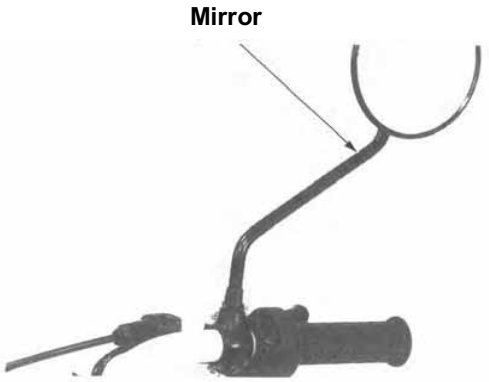
Steering, front wheel



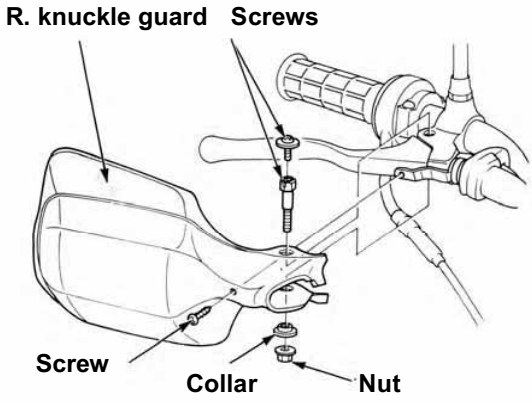
Handle

Removal

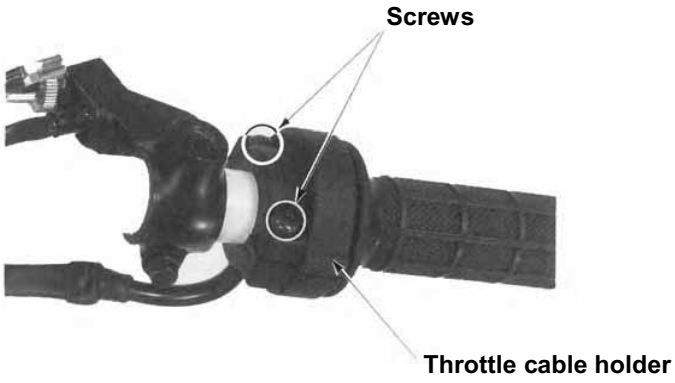
Remove the L. and R. rearview mirror.



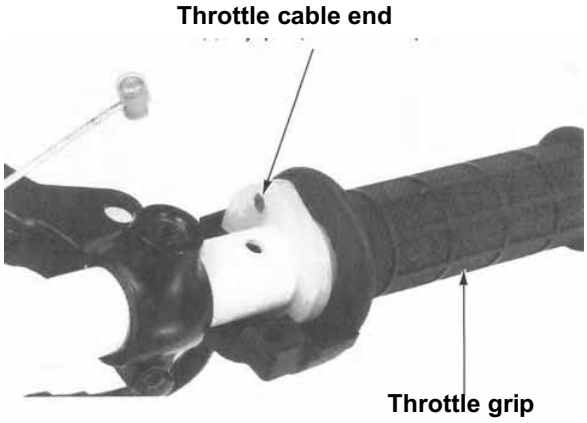
Remove the screws.
Remove the nut, screw, and collar to detach the R. knuckle guard.
Remove the brake cable from the lever.
Remove the brake lever.



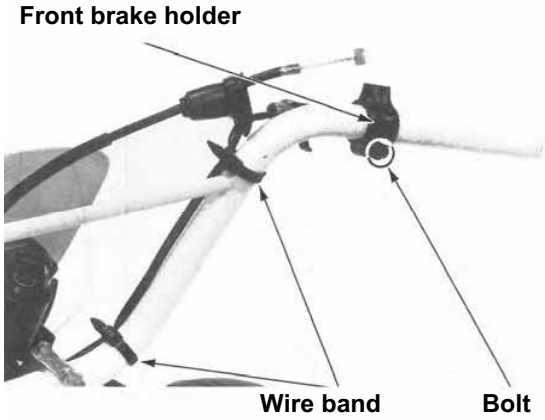
Remove the screws, and detach the throttle cable holder.



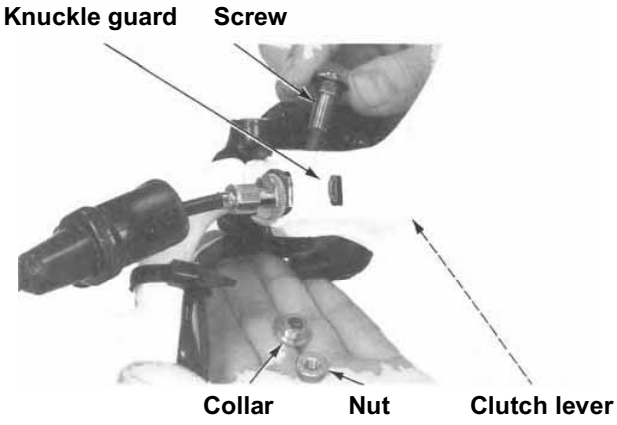
Remove the throttle cable end from the housing unit.
Remove the throttle grip from the handle.



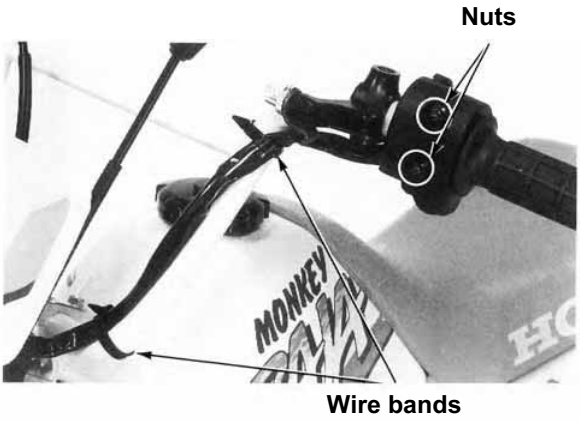
Remove the bolt and wire bands.
Remove the front brake holder.



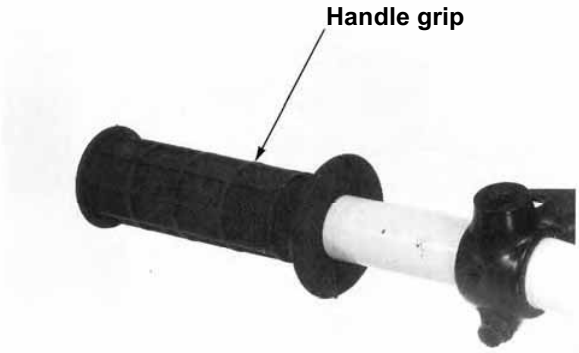
Remove the nut, screw, and collar to detach the L. knuckle guard.
Remove the clutch cable from the clutch lever.
Remove the clutch lever.



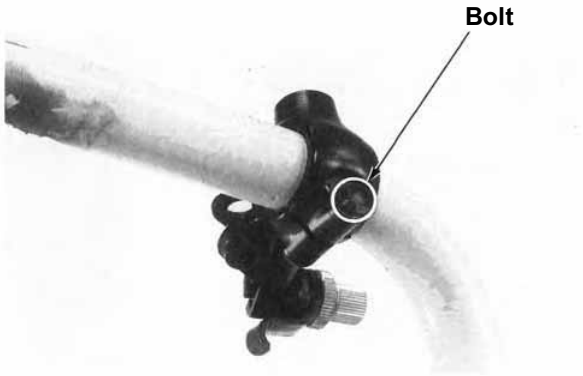
Remove the nut, and detach the combination switch.
Remove the wire band.



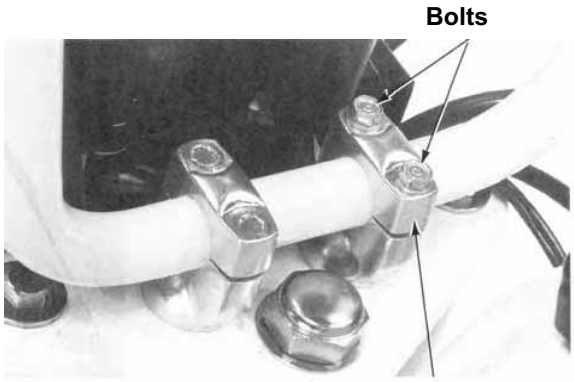
Remove the handle grip.



Remove the bolt, and detach the clutch lever holder.

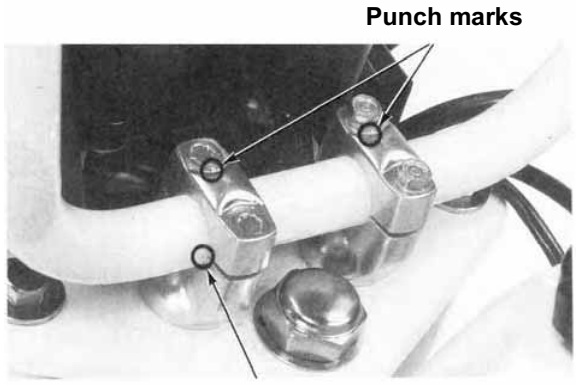


Remove the 4 bolts, and detach the handle upper holder.



Fitting

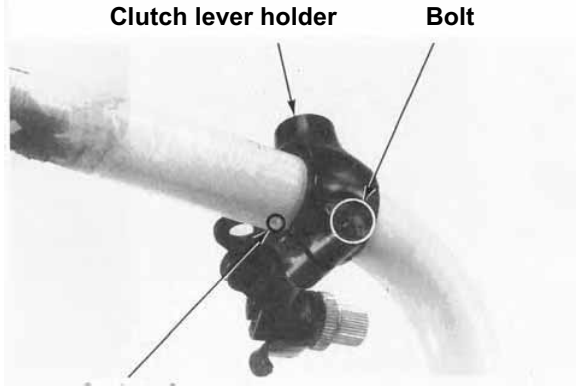
Align the punch mark on the handle bar with the matching surface of the lower holder, and then fit. Turn the punch mark on the upper holder to the front, and then fit.
Tighten the front holder bolt and then the rear holder bolt.



Fit the clutch lever holder to the handle bar.

✻ Align the punch mark on the handle bar with the matching surface of the holder.

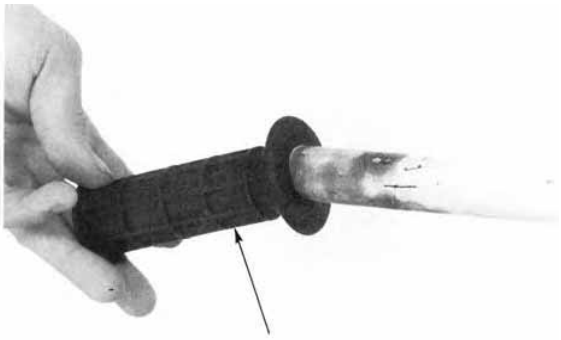
Tighten the bolt.



Handle grip rubber replacement

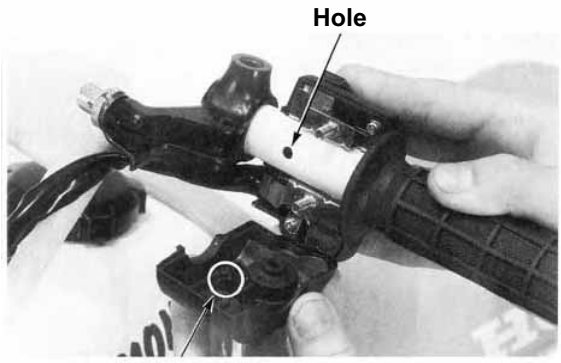
Remove dust or oil on the bonding surface of the handle grip, and make sure that the surface is completely dry. Apply a small amount of Honda Genuine “Honda Bond A” or “Cemedine #540”, and fit the grip while rotating it before glue is dried.

✻ After fitting the grip leave it for several hours until glue has hardened.



Fit the combination switch to the handle bar.

✻ Join the protruding part of the holder and the handle bar hole securely when fitting.

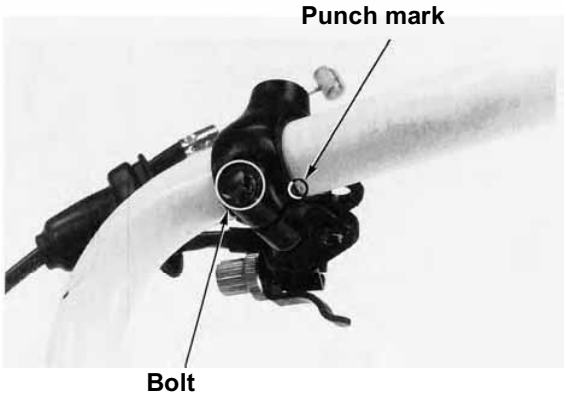


Tighten the cap nut.
Torque: 0.5- 0.8km-m

Fit the wire band.

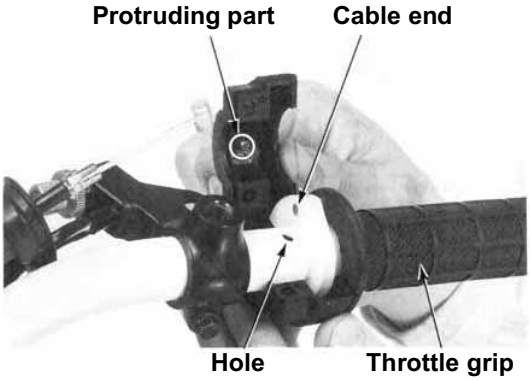
Fit the front brake holder to the handle bar.

✻ Align the matching surface of the holder with the punch mark on the handle bar.



Tighten the bolt.
Fit the wire band.

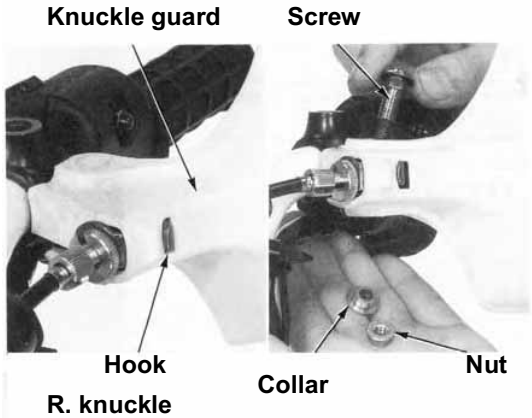
Fit the throttle grip to the handle bar.
Apply grease to the sliding surface of the throttle grip when fitting.
Fit the throttle cable end to the throttle grip.
Fit the cable housing to the handle bar.



✻
- Join the protruding part of the holder and the handle bar hole securely when fitting. Tighten the front screw first and then the rear screw.

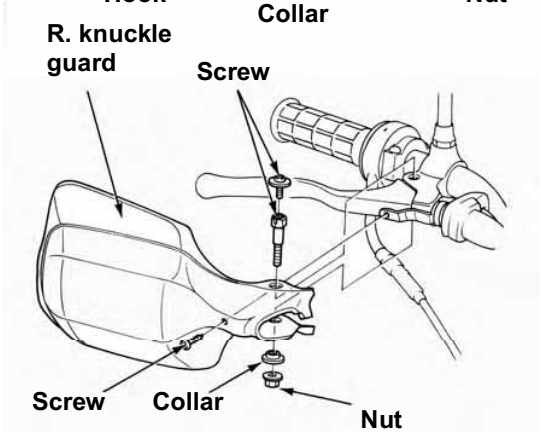
Tighten the screw.
Torque: 0.5- 0.8kg-m

Align the L. knuckle guard and clutch lever hole with the hook when fitting.
Fit the collar.



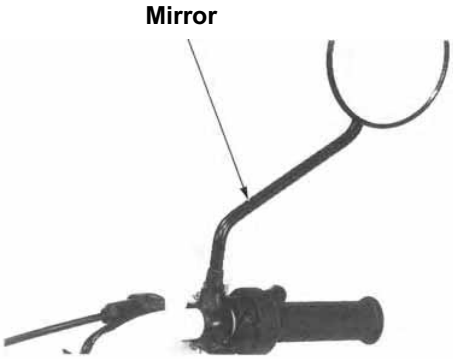
Tighten the screw and nut.

Connect the brake cable to the brake lever.
Align the R. knuckle guard with the brake lever hole when fitting. Fit the collar, and tighten the screw and nut.
Fit the screw.



Fit the L. and R. rearview mirror.
After fitting, turn the steering handle to the left and right to make sure that the cable harness is not pulled and moves smoothly.
Carry out the following check and adjustment.

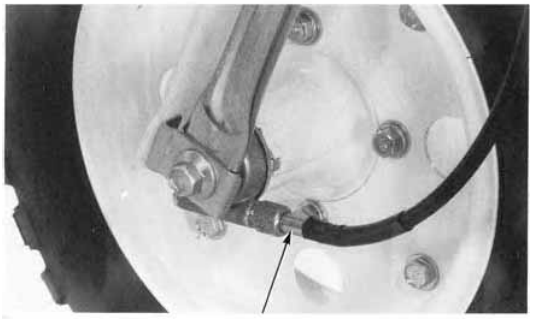
- Throttle cable (→ 3-7)
- Clutch cable (3-8)



Front wheel

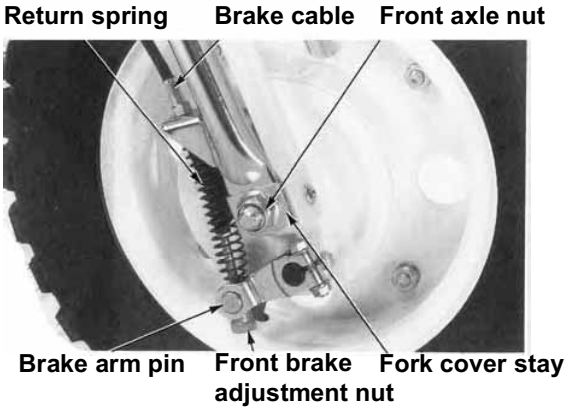
Removal

Remove the speedometer cable.



Remove the front brake adjustment nut.
Remove the brake cable from the brake arm pin.
Remove the return spring.

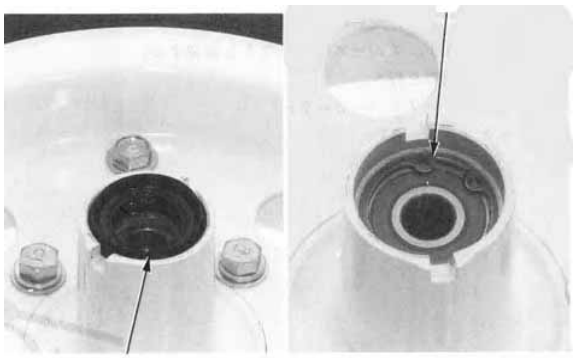
Remove the front axle nut, and detach the fork cover stay.
Remove the front axle shaft.
Remove the front wheel along with the brake panel and speedometer gear.

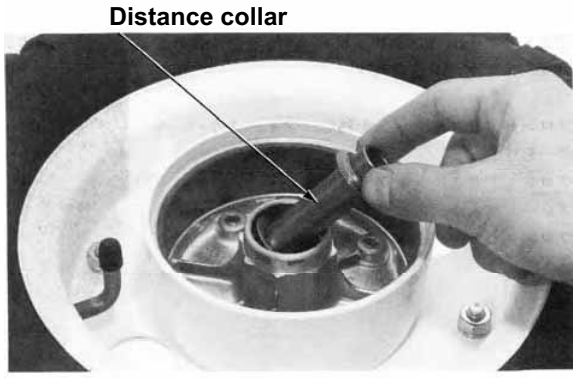


Disassembly
Remove the dust seal.
Remove the snap ring.

Remove the L. and R. wheel bearing.

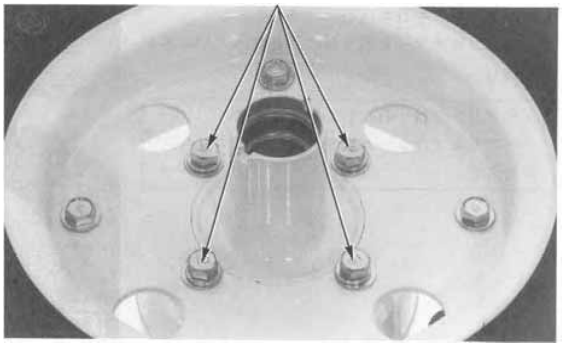
Remove the distance collar.



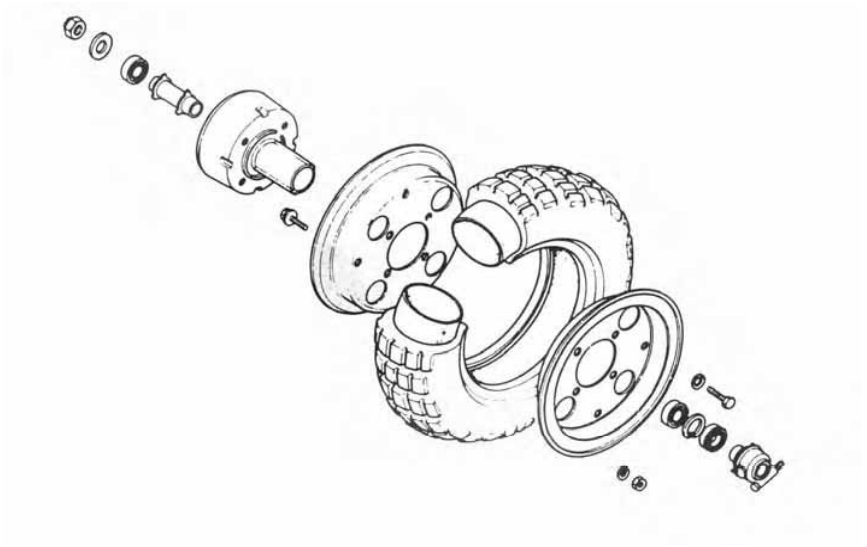


Deflate tyre before disassembly of wheel bolts and nuts. Remove the hub bolts, and detach the front wheel hub.

Hub bolts



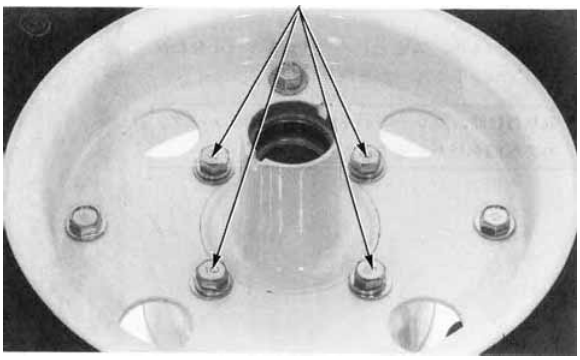
Assembly



Fit the hub to the wheel. Tighten the hub bolts.

Torque: 2.4- 3.0kg-m

Hub bolts

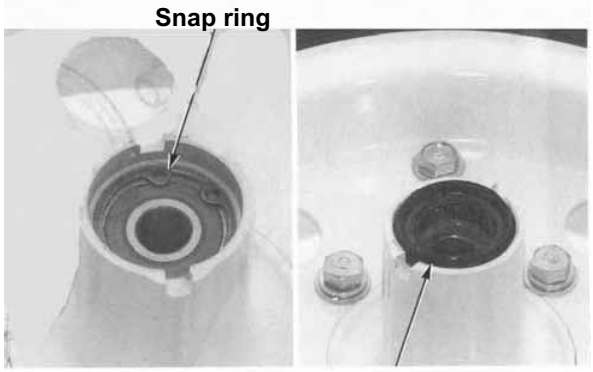


Apply enough grease to the bearing.
Tap in the L side bearing.
Fit the distance collar, and tap in the R side bearing.

✻ Make sure that the bearing is tapped in on a straight line.
◦ Make sure that the sealing surface of the bearing is facing outside when tapping in.

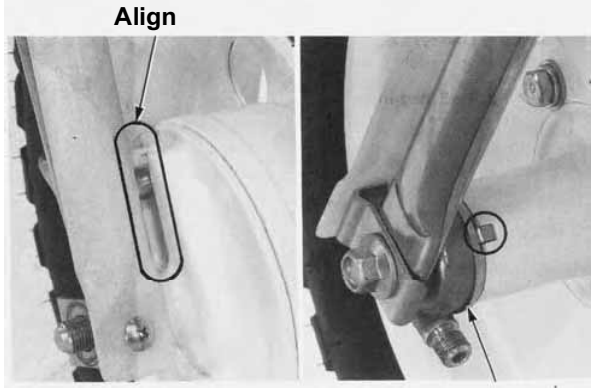
Fit the snap ring.
Tap in the dust seal.

Make sure that any oil or lubricant does not touch the brake drum as this will degrade the brake performance. If any oil or lubricant touches the brake drum accidentally remove it completely.



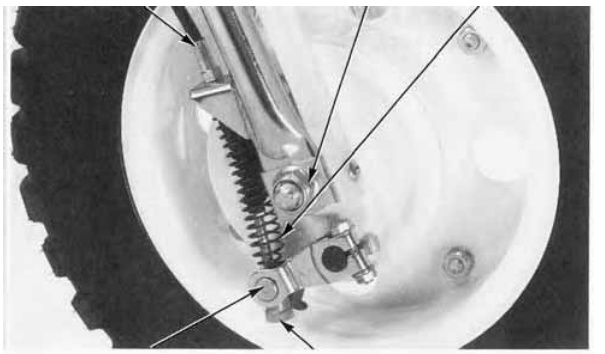
Fitting
Align the front wheel with the brake panel and speedometer gear when fitting.

✻ Align the brake panel groove with the protruding part of the R. fork when fitting.



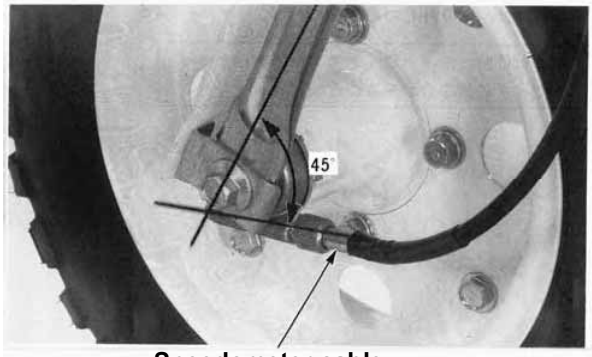
Put the L. fork cover stay through the axle shaft. Then install the axle shaft and then the R. fork cover stay.
Tighten the axle nut.

Torque: 4.0- 5.0kg-m
Fit the return spring, brake cable, brake arm pin, and adjustment nut.



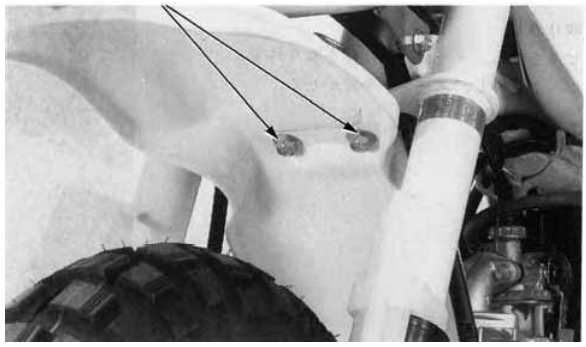
Fit the speedometer cable.
Check for any play in the brake lever when all the parts are fitted (→3-10).

✻ Fit the speedometer gear so that the angle between its cable and the fork pipe is 45.



Headlight

Removal
Remove the bolts, and detach the front fender.



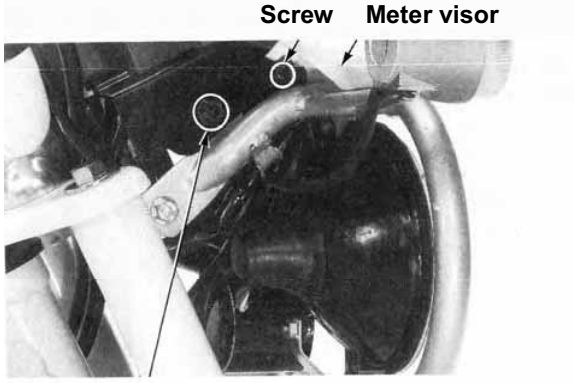
Remove the headlight globe
(17-67).
Remove the screw and collar
located under the headlight to
detach the headlight.

Fitting
Fitting of the headlight is carried out in the reverse order of its removal procedures.

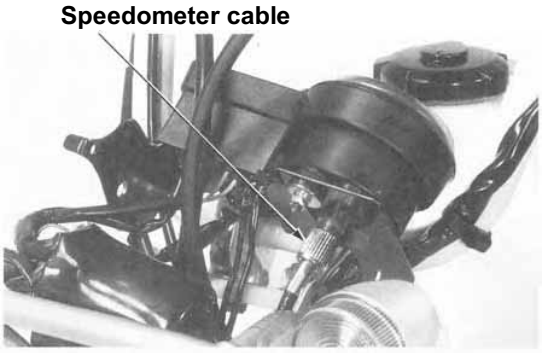
✻ Align the protruding part of the headlight stay with the headlight groove when fitting.

Meter

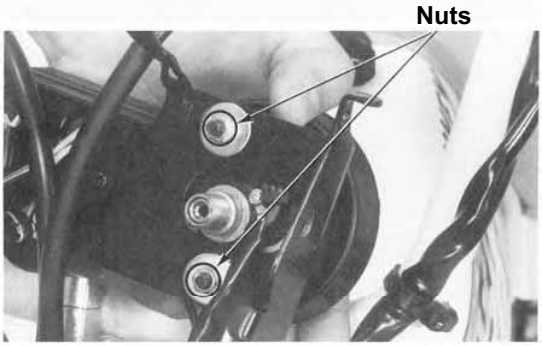
Removal
Remove the screw, and detach the meter visor.
Remove the bolt, and lift up the meter.



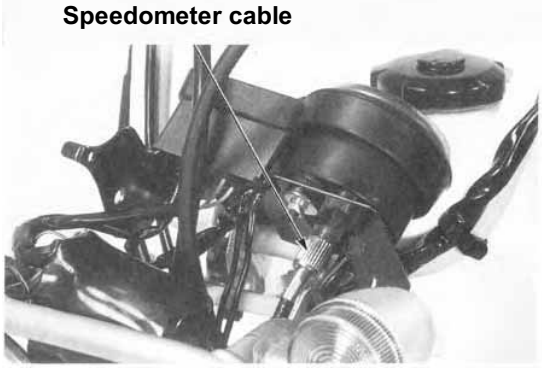
Disconnect the speedometer cable.



Disconnect the coupler connection of the speed indicator and meter pilot lamp.
Remove the nuts, and detach the meter from the meter stay.



Fitting
Fitting of the meter is carried out in the reverse order of its removal procedures.

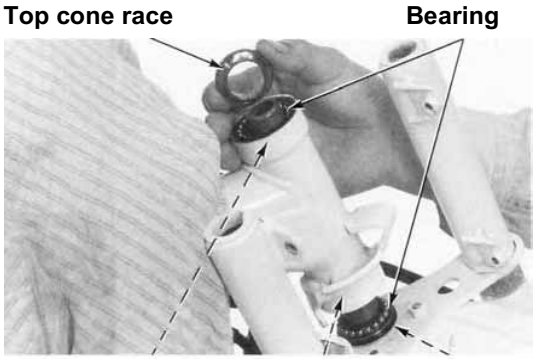


✻ Refer to the wiring diagram (17-8), and put the speedometer cable through the right position.

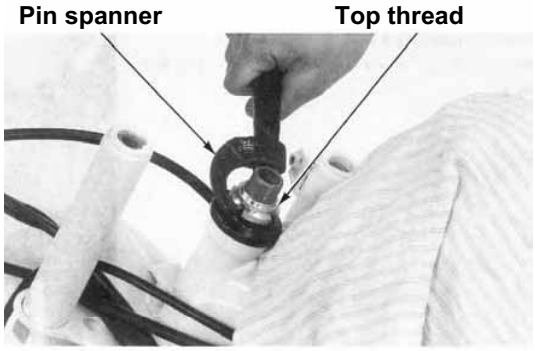
Steering stem

Fitting

Apply plenty of grease to the bearing, and attach the steering stem to the head pipe.



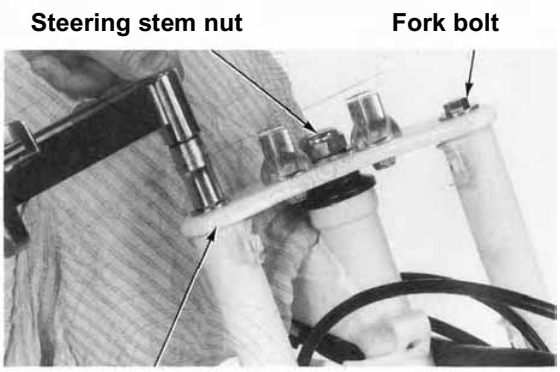
Attach the top thread, and tighten lightly as when fastening manually.



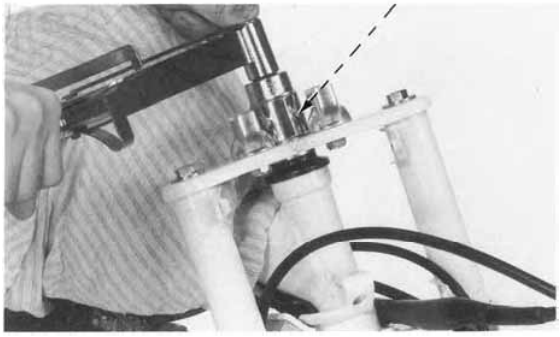
Turn the steering stem to the left and right 5 times until the bearing is in place.

Manually tighten the top thread all the way, and reverse 1/8 of a turn. Make sure that the stem is not loose but moves smoothly.

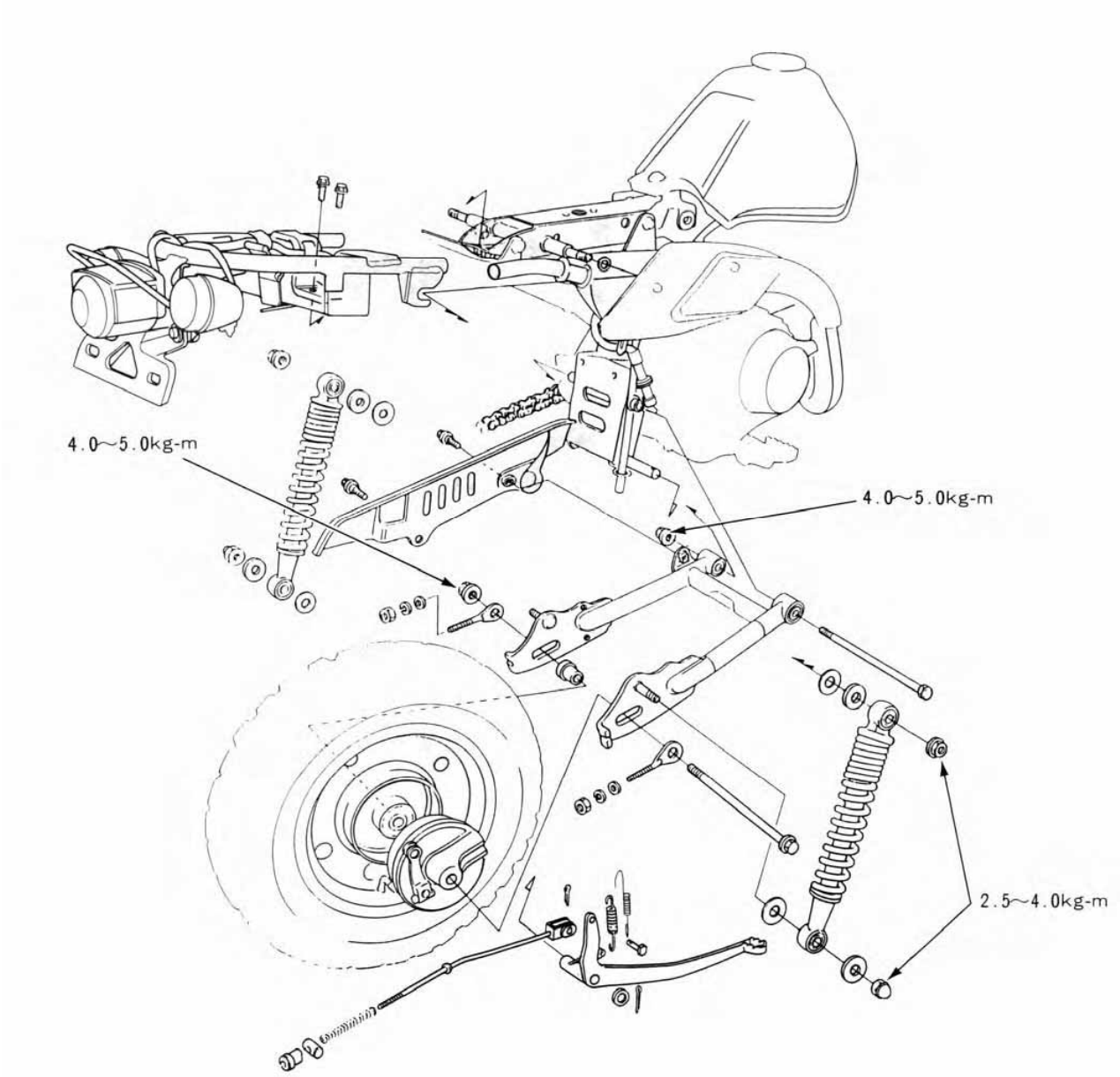
Attach the top bridge, and temporally attach the steering stem nut and fork bolt.
Tighten the fork bolt.
Torque: 2.5- 4.0kg-m



Tighten the steering stem nut.
Torque: 6.0- 10.0kg-m



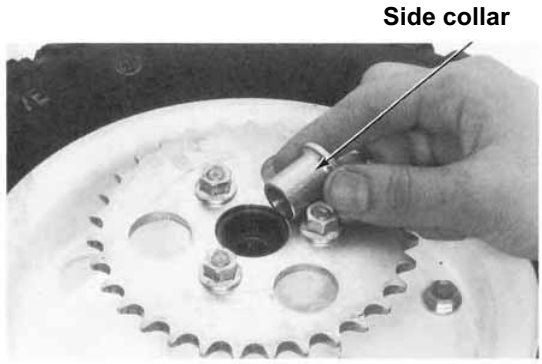
REAR WHEEL, REAR SUSPENSION



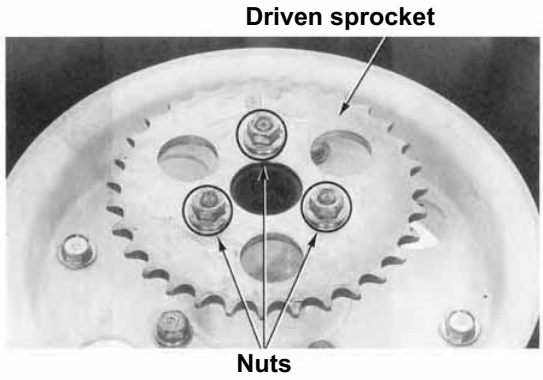
Rear wheel

Disassembly

Remove the rear wheel (14-2).
Remove the side collar.



Remove the nuts, and detach the driven sprocket.



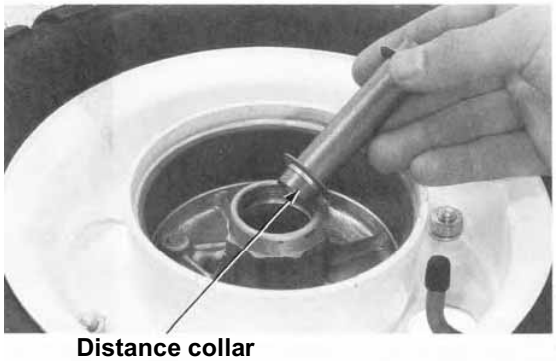
Remove the dust seal.

Remove the L. and R. wheel bearing.

COMMON TOOL
Bearing remover shaft
07746-0050100

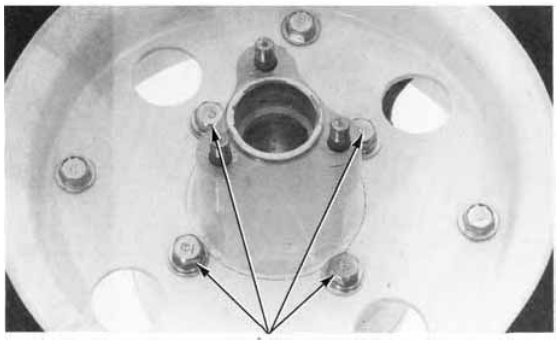
COMMON TOOL
Bearing remover head 12mm
07746-0050300

Remove the distance collar.



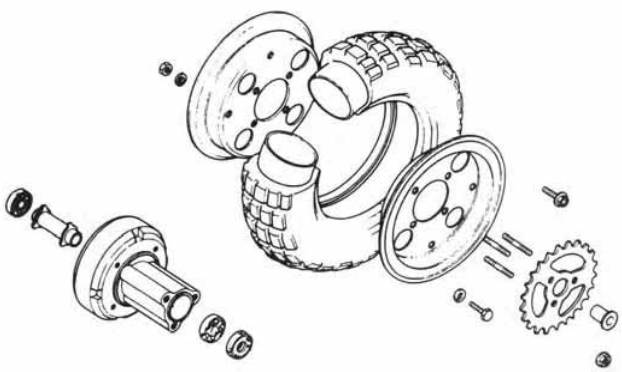
Distance collar

Deflate tire before disassembly of wheel bolts and nuts. Remove the hub bolts, and detach the rear wheel hub.



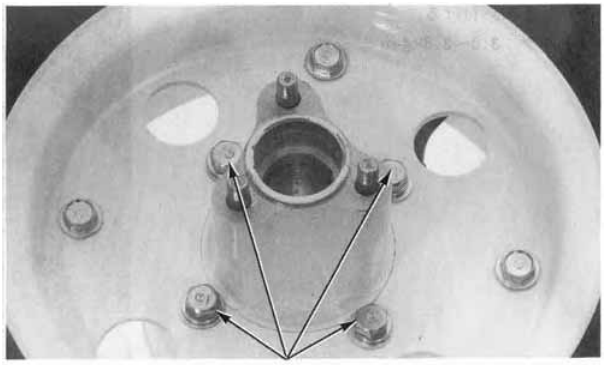
Hub bolts

Assembly



Fit the hub to the wheel.
Tighten the hub bolts.

Torque: 2.4- 3.0kg-m

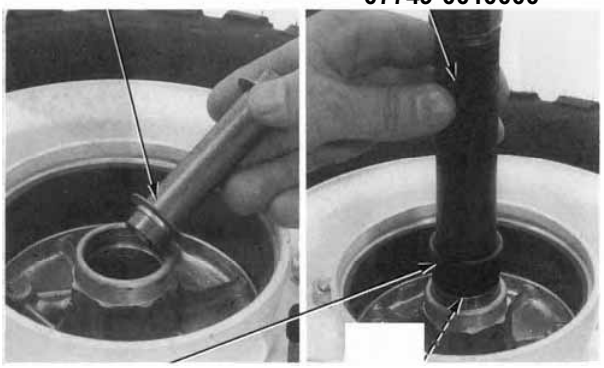


Hub bolts

COMMON TOOL
Driver handle A
07749-0010000

Distance collar

Apply plenty of grease to the bearing.
Tap in the L. bearing.
Fit the distance collar.
Tap in the R. bearing.



COMMON TOOL
Driver outer 32X35mm
07746-0010100

COMMON TOOL
Driver pilot 12mm
07746-0040200

- Make sure that the bearing is tapped inwards in a straight fashion.
- Make sure that the sealing surface of the bearing is facing outside when tapping in.

Make sure that any oil or lubricant does not touch the brake drum as this will degrade the brake performance. If any oil or lubricant touches the brake drum accidentally, remove it completely.

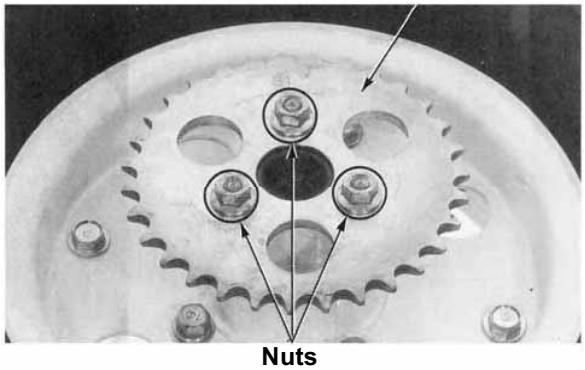
Fit the dust seal.

Dust seal

Driven sprocket

Fit the driven sprocket.
Tighten the nuts.

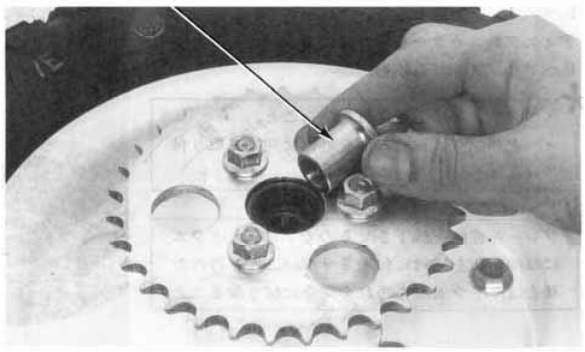
Torque: 3.0- 3.6kg-m



Nuts

Side collar

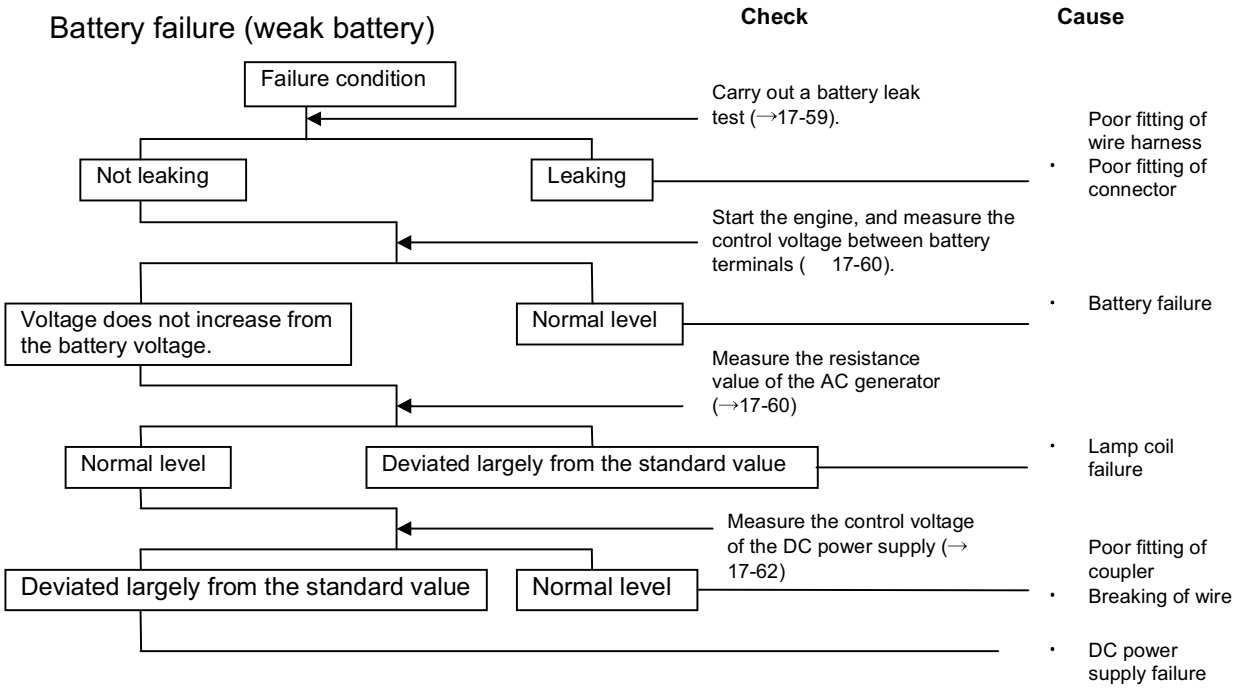
Fit the side collar.



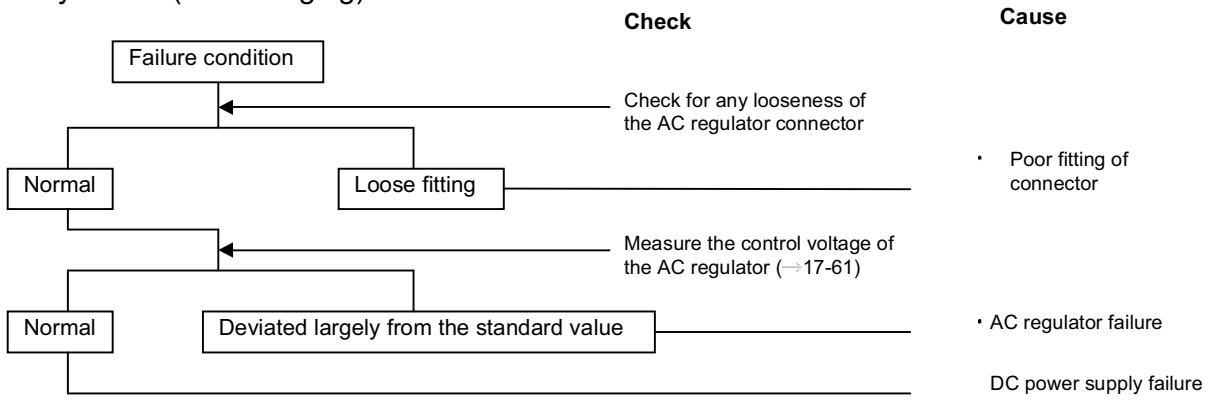
Electrical system

Fault diagnosis

Battery failure (weak battery)



Battery failure (overcharging)



Spark plug does not spark

Abnormality status		Possible causes (check from ① in order)
Ignition coil primary side voltage	Peak voltage is low.	① Tester with low internal resistance is used. ② Cranking speed is slow. ・Kick-start power is weak. Effect of the sampling time of the tester (normal if voltage is more than the standard after measuring several times). ④ Disconnected wiring or poor fitting of the ignition Ignition coil failure ⑥ Exciter coil failure (measure the peak voltage) CDI unit failure (when there is no abnormality in items ①- but spark does not reach the spark plug)
	There is no peak voltage/ there are few peak voltages.	① Misconnection of the adapter Main switch failure ③ Poor fitting of the CDI unit coupler Broken or poor fitting of the CDI unit earth cable ⑤ Exciter coil failure (measure the peak voltage) Pulse generator failure (measure the peak voltage) ⑦ Peak voltage adapter failure CDI unit failure (when there is no abnormality in items ①- ⑥ but spark does not reach the spark plug)
	Peak voltage is normal, but spark does not reach the spark plug	Spark plug failure or leaking of ignition coil secondary current ② Ignition coil failure
Exciter coil	Peak voltage is low.	① Tester with low internal resistance is used. ② Cranking speed is slow. ・Kick-start power is weak. Effect of the sampling time of the tester (normal if voltage is more than the standard after measuring several times). ④Exciter coil failure (if there is no abnormality in items ①-③)
	There is no peak voltage/ there are few peak voltages.	Peak voltage adapter failure ② Exciter coil failure
Pulse generator	Peak voltage is low	Tester with low internal resistance is used. ② Cranking speed is slow. ・Kick-start power is weak. Effect of the sampling time of the tester (normal if voltage is more than the standard after measuring several times). ④ Pulse generator failure (if there is no abnormality in items ①-③)
	There is no peak voltage/ there are few peak voltages.	Peak voltage adapter failure ② Pulse generator failure

Maintenance information

Cautionary points on operation

Do not run the engine for a long periods in a confined area with bad ventilation as exhaust gas contains toxic components.

◦ Over-voltage supply is generated if the terminal or coupler is connected or disconnected when the electric device is electrified, and this may damage electric parts such as the AC regulator. Turn OFF the main switch before operating these parts.

A Maintenance Free (MF) battery is installed in this vehicle. Beware that MF batteries and open type batteries are not compatible with each other as their charging devices have different properties.

◦ Replace the MF battery when it has reached its lifetime.

Turn “OFF” the main switch when removing electric parts.

◦ Disconnect the negative connector of the battery when storing the battery on-board.

Rapid charging is for emergency use only as this will shorten the life time of the battery.

◦ Repeating full charging/ discharging or leaving the battery discharging continually may adversely effect the battery, shorten its life time, or lower its performance. Batteries with lowered performance (lowered capacity) will regain voltage when recharged, but the voltage will drop significantly when a load is applied causing the battery to run out immediately.

・Check the ignition device according to the fault diagnosis table in the order specified (→17-56).

Electric spark advance is fitted within the CDI ignition device unit, and its ignition timing is not able to be adjusted.

◦ Many ignition device failures are caused by poor fitting of the coupler or connector. Make sure that all connecting parts are fitted properly before carrying out maintenance procedures.

Use a spark plug with the correct thermal value. Using an unsuitable spark plug will cause engine malfunction or breakdown. Refer to 3-4 for information on checking the spark plug.

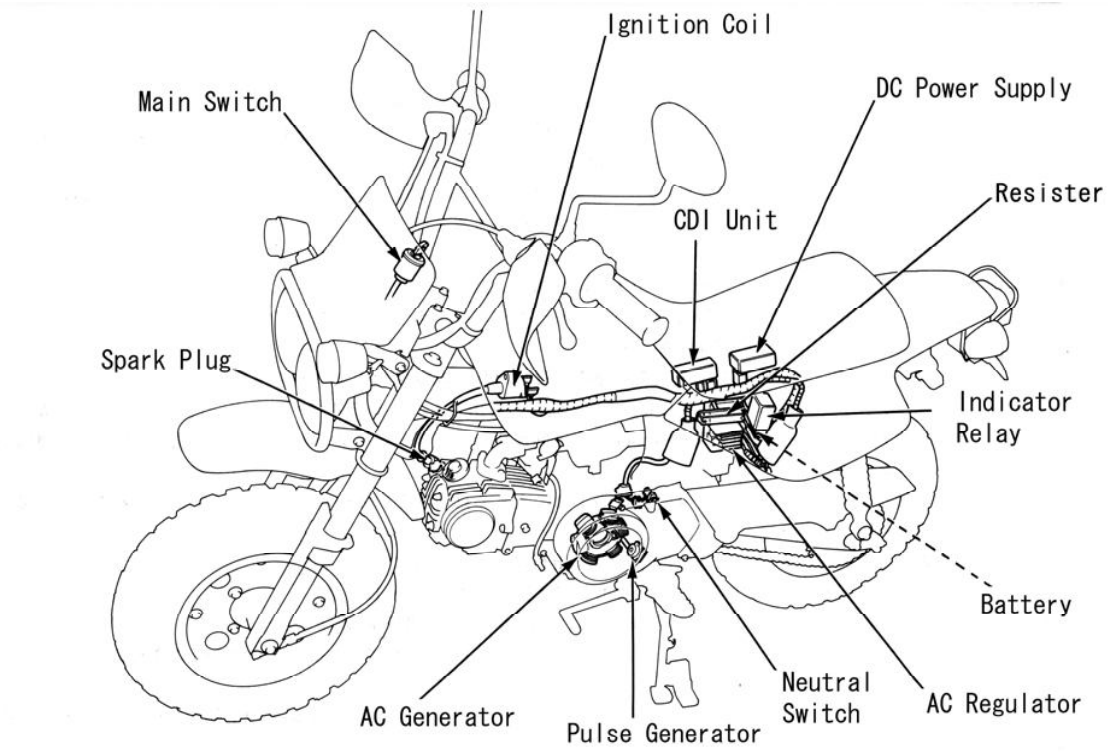
◦ Refer to Chapter 10 for information on fitting/ removing the A.C. generator.

・Refer to the illustration on 17-58 for information on the arrangement of electrical parts.

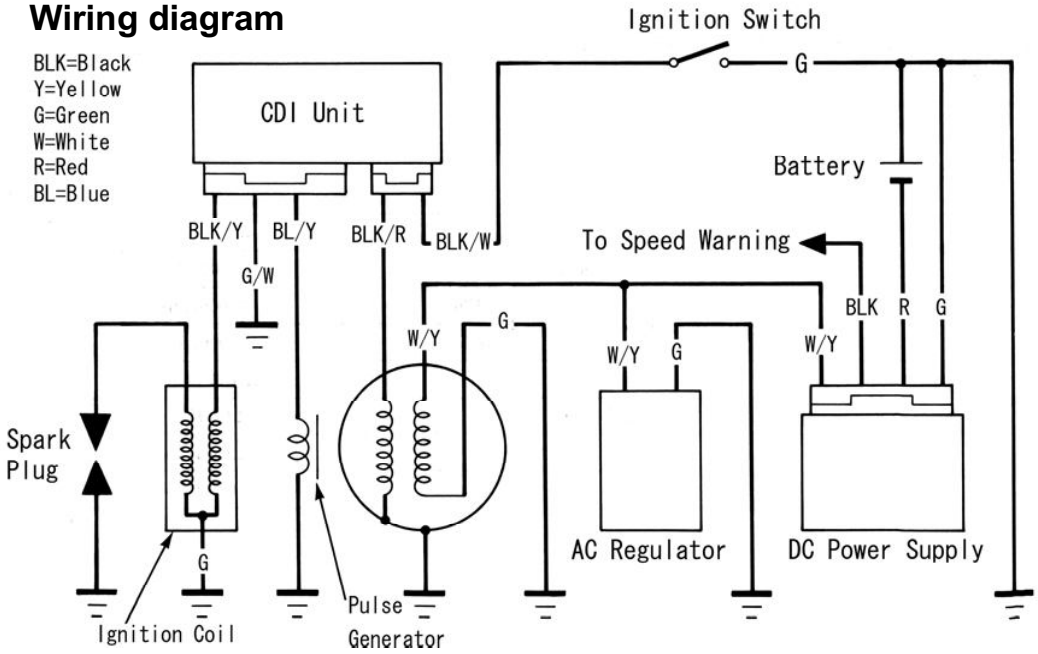
Specifications (20)

Battery	Capacity			0.48A, 0.50A
	Charging current			0.005A
AC generator performance	Charging start rev		Lights off	2,000rpm
			Lights on	2,000rpm
AC regulator	Type			SCR half wave short-circuit system
	Control voltage			13-15V
DC power unit	Output voltage	Speed warning lamp		2.5- 3.5V
		Battery		2.0-2.5V

Electrical system layout



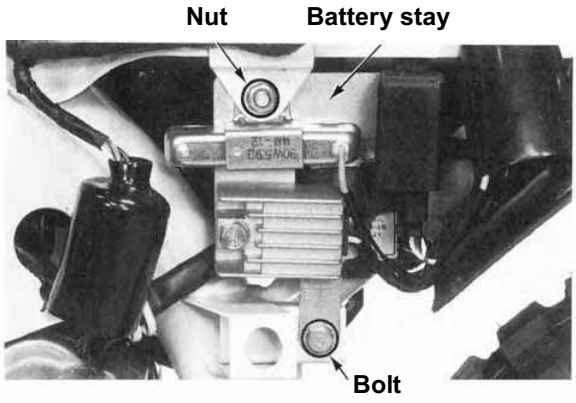
Wiring diagram



Battery

Removal

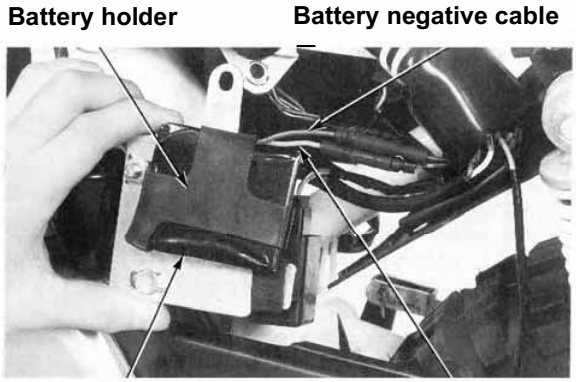
Remove the rear fender/ side cover (17 15).
Remove the bolt and nut, and detach the battery stay.



Remove the battery and battery holder together.

Disconnect each of the battery wire connectors.

> ✻ Remove the negative side of the connector first, and then disconnect the positive side.



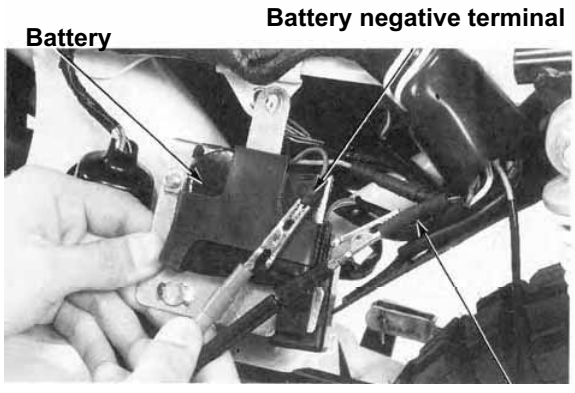
Fitting

Fitting of the battery is carried out in the reverse order of its removal procedures.

Checking the charging device

Battery leak test

Turn OFF the main switch, and disconnect the negative connector of the battery. Connect an ammeter between the negative connector and the negative terminal of the battery, and measure the leak current of the battery.



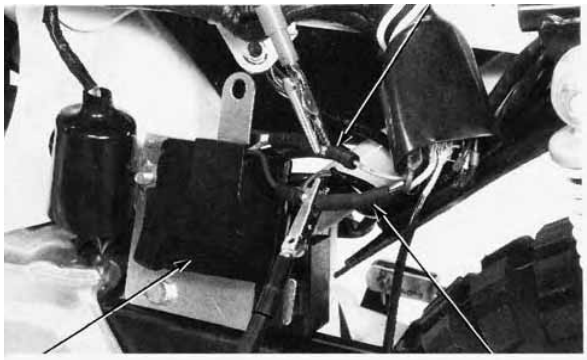
> ✻ If the measured electric current exceeds the upper limit of the range, the tester fuse may be blown out. Measure electric current by gradually switching from the largest range to smaller ranges of the ammeter.

If there is any leak current, there could be short-circuiting within the circuit. Disconnect each coupler/ connector while measuring the electric current, to locate the part which is short-circuiting.

Checking the charging status of the battery

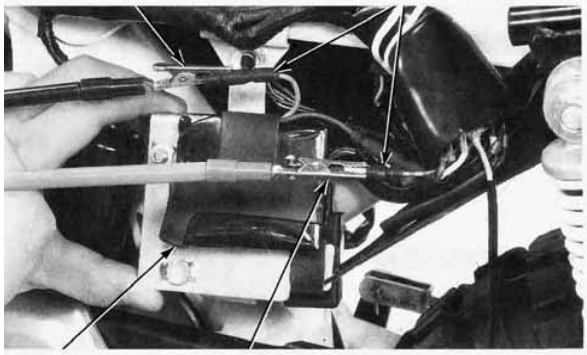
✻ The amount of electric current fluctuates depending on the charging status of the battery in this check. Use a good fully charged battery.

Warm up the engine.
Fit the fully charged battery.
Connect the digital circuit tester between the battery terminals.



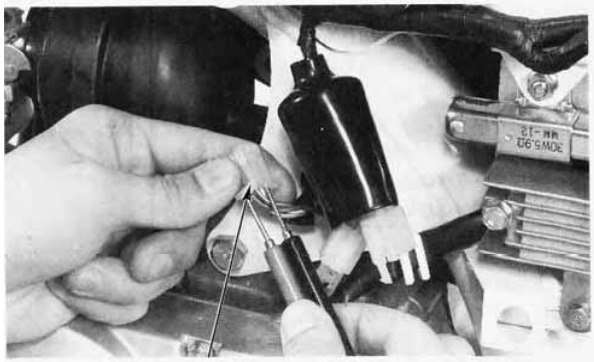
✻ Do not run the engine for a long period of time in a confined area with bad ventilation as exhaust gas contains toxic components.

Fit the ampmeter as indicated in the diagram.



✻
Take care so that the wiring does not short-circuit during measurement.
◦ Excess voltage can be generated if the tester is either connected or disconnected when the wiring is electrified, causing the tester or electric parts to fail. Make sure to turn “OFF” the main switch before operating.

Start the engine and gradually increase the engine rev, and measure the charging voltage and electric current at the specified rev.



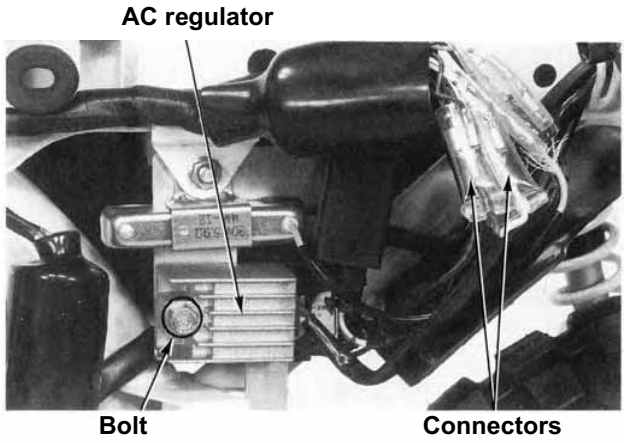
Control voltage/ electric current: 2.0- 2.5V/ 0.005A and below (5,000rpm)

AC generator (charging coil)
Disconnect the AC generator 4P coupler.
Measure the resistance between the white/ yellow and green terminals.

Standard value: 0.9- 1.5Ω (20°)
Replace the AC generator if there is any abnormality.

AC regulator

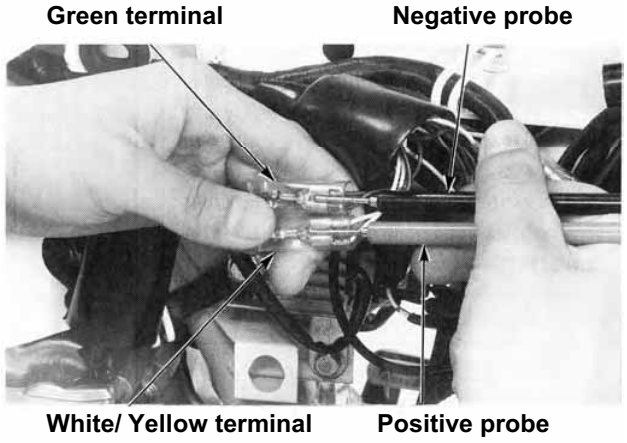
Removal
Remove the rear fender/ side cover (17-15).
Remove the connector.
Remove the bolt, and detach the AC regulator.



Fitting
Fitting of the AC regulator is carried out in the reverse order of its removal procedures.

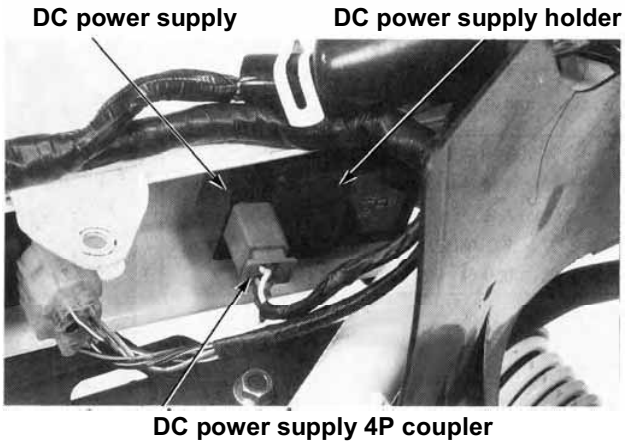
Check
Warm up and then stop the engine.
Set the AC voltmeter to the AC regulator connector (positive probe to the white/ yellow terminal, negative probe to the green terminal), and start the engine.

✻ Take care so that short-circuiting will not occur.



Control voltage: 13- 15V/ 5,000rpm

If the voltage is not controlled at the specified value, check for any looseness in the connectors. If the voltage control has not been improved when re-checking, replace the AC regulator.



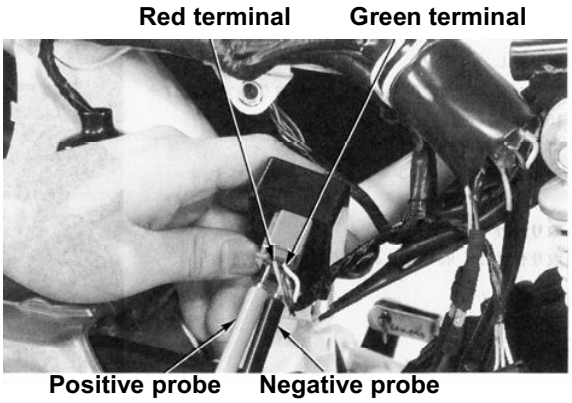
DC power supply

Removal
Remove the battery stay (⇒ 15-59).
Disconnect the DC power supply 4 P coupler.
Remove the DC power supply from the DC power supply holder.

Fitting
Fitting of the DC power supply is carried out in the reverse order of its removal procedures.

Check

Remove the rear fender/ side cover (→ 17-15).
Remove the battery stay (→ 17-59).
Set the DC voltmeter to the DC power supply 4P coupler (positive probe to the red terminal, negative probe to the green terminal), and start the engine.

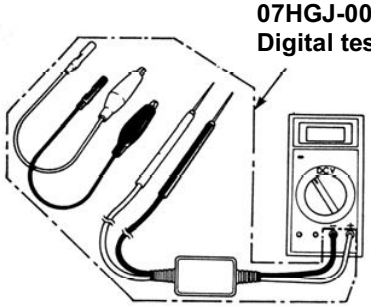


✻ Take care so that short-circuiting will not occur.

Control voltage: 2.0- 2.5V/ 2,000rpm

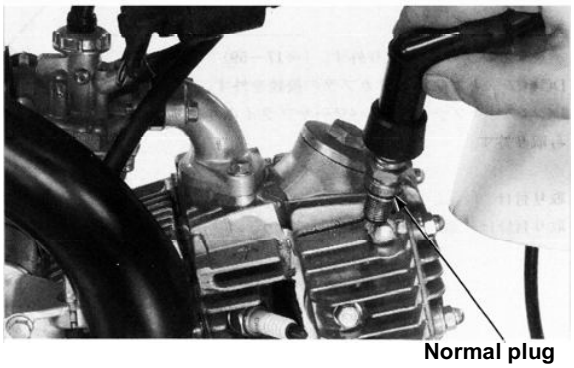
If the voltage is not controlled at the specified value, check for any looseness in the connectors. If the voltage control has not improved at the re-check, replace the DC power supply.

Peak voltage adaptor
07HGJ-0020100
Digital tester



Checking the ignition device

✻
If the spark plug does not spark, check for any abnormalities such as disconnection, looseness or poor fitting of wiring, and then measure the peak voltages.
◦ Some testers have different input resistances and indicated values, and correct values can not be measured. Carry out measurement with a genuine digital tester or a digital tester with the input resistance (impedance) of over 10MΩ/ DCV.



Connect the peak voltage adapter to the digital tester.

Ignition coil primary voltage

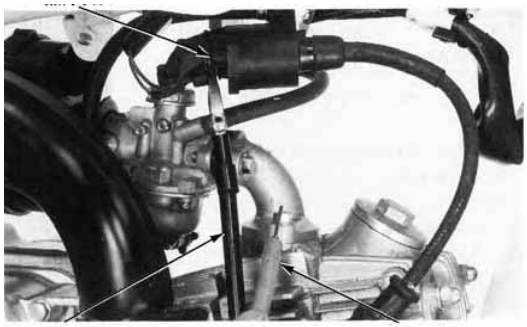
Leave the spark plug on the cylinder head, and fit a good plug to the plug cap. Then, earth the spark plug to the engine.

✻
Connect electric wiring correctly to carry out measurement. Correct measurement may not be able to be carried out if any wiring is disconnected.
◦ Make sure there is cylinder compression pressure and that the plug cap is fitted properly.

Leave the primary wire lead of the ignition coil connected, and connect the negative probe of the peak voltage adaptor to the black/ yellow wire terminal. Then, connect the positive probe to the body earthing.
Turn ON the main switch, and crank the engine by the kick starter. Then, measure the peak voltage on the primary side of the ignition coil.
Connection method: Black/ yellow terminal- negative probe, body earthing- positive probe
Peak voltage: 140V and above

✻ Do no touch the metallic part of the probe while measuring the voltage as this may give an electric shock.

Black/ Yellow terminal



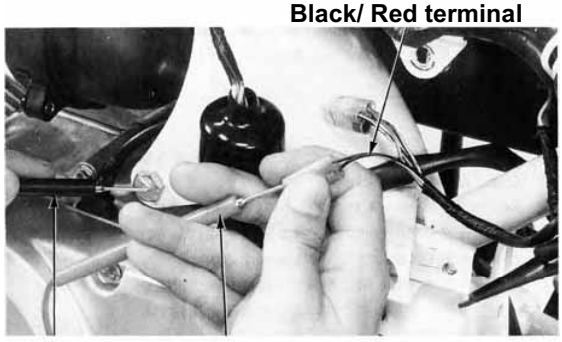
Negative probe **Positive probe**

Exciter coil

✻ Fit the spark plug to the cylinder head, and carry out check with compression pressure.

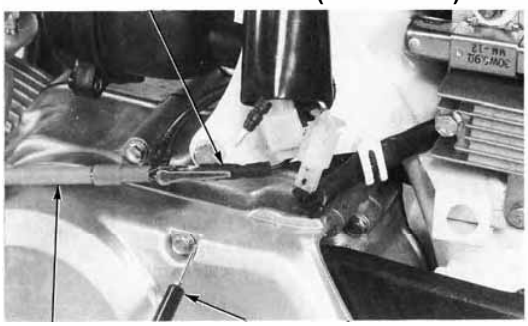
Remove the rear fender/ side cover (→17-15).
Disconnect the CDI unit 4P, 2P couplers.
Connect the peak voltage adapter between the 2P coupler exciter coil wire (black/ red terminal) and the body earthing. Crank the engine by the kick starter, and measure the peak voltage of the exciter coil.

Black/ Red terminal



Negative probe **Positive probe**

Exciter coil connector (Black/ Red)



Positive probe **Negative probe**

Connection method:
black/ red terminal- positive probe, body earthing- negative probe
Peak voltage: 140V or above

✻ Do no touch the metallic part of the probe while measuring the voltage as this may give an electric shock.

If the measured peak voltage of the unit coupler part is abnormal, carry out the following checks:
Disconnect the exciter coil connector (black/ red terminal) of the AC generator, and connect the adapter between the AC generator-side connector and body earthing. Carry out the measurement again using the same procedure used for the unit coupler, and compare the result with the peak voltage on the unit coupler.

If the measured value on the unit side is abnormal but the measured voltage on the exciter coil connector side is normal, poor fitting of the connector or a broken wire harness is suspected.

◦ If both values are abnormal, refer to the fault diagnosis table and check each item to decide whether this is caused by an exciter coil failure.

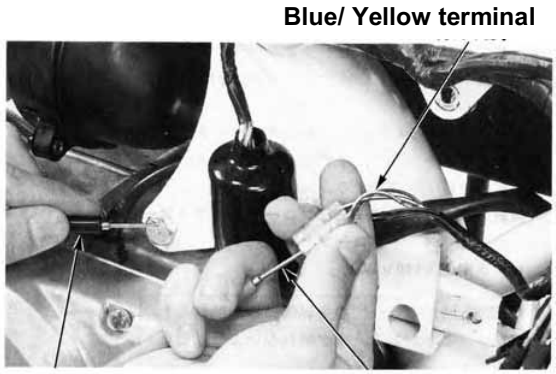
Pulse generator

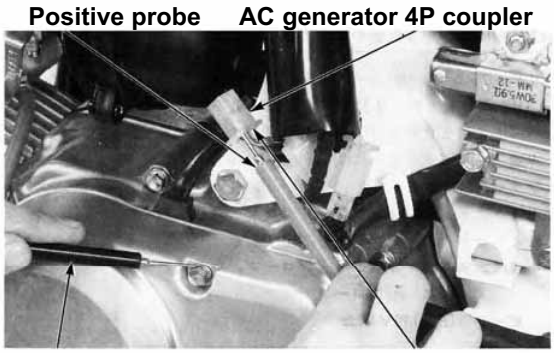
✻ Fit the spark plug to the cylinder head, and carry out check with compression pressure.

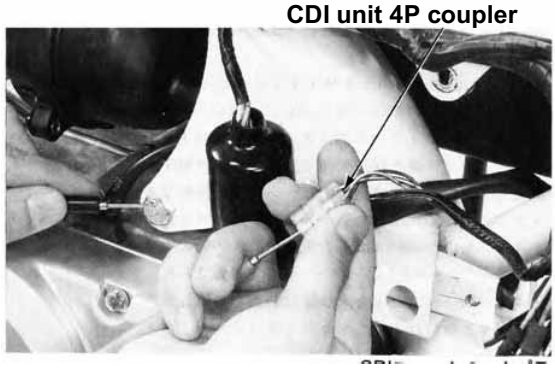
Remove the rear fender/ side cover (→17-15).
Disconnect the CDI unit 2P, 4P couplers.
Connect the peak voltage adapter between the pulse generator wire (blue/ yellow) of the harness-side 4P coupler and the body earthing.
Crank the engine by the kick starter, and measure the peak voltage of the pulse generator.

Connection method: blue/ yellow terminal- positive probe, body earthing- negative probe
Peak voltage: 10V or above

✻ Do no touch the metallic part of the probe while measuring the voltage as this may give an electric shock.







If the measured peak voltage of the unit coupler part is abnormal, carry out the following checks:

Disconnect the AC generator 4P coupler, and connect the adapter between the AC generator-side pulse generator wire (blue/ yellow) and the body earthing. Carry out the measurement again in the same procedure used for the unit coupler, and compare the result with the peak voltage on the unit coupler.

If the measured value on the unit side is abnormal but the measured voltage on the AC generator coupler side is normal, poor fitting of the coupler or a broken wire harness is suspected.

◦ If both values are abnormal, refer to the fault diagnosis table and check each item to decide whether this is caused by a pulse generator failure.

System circuit check

Remove the rear fender/ side cover (→17-15).
Remove the battery stay (17-59).
Disconnect the CDI unit 2P, 4P couplers, and check if there is any abnormality such as poor fitting. Use a circuit tester, and carry out conduction test between the terminals on the harness side.

Item	Measured points	Standard (20℃)
Main switch	Black/ white- Green/ white	No conduction when the main switch is ON
Ignition coil (primary coil)	Black/ yellow- Green/ white	0.1- 0.4
Pulse generator	Blue/ yellow- Green/ white	50- 200Ω
AC generator (exciter coil)	Black/ red- Green/ white	400- 800Ω
Earth circuit	Green/ white- Body earthing	Conducted

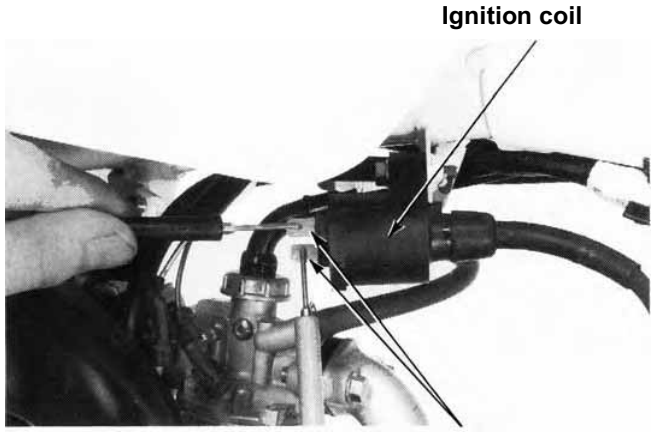
If there is any abnormality, carry out check individually according to the conduction table on the wiring diagram (→17-7).

Ignition coil

Check

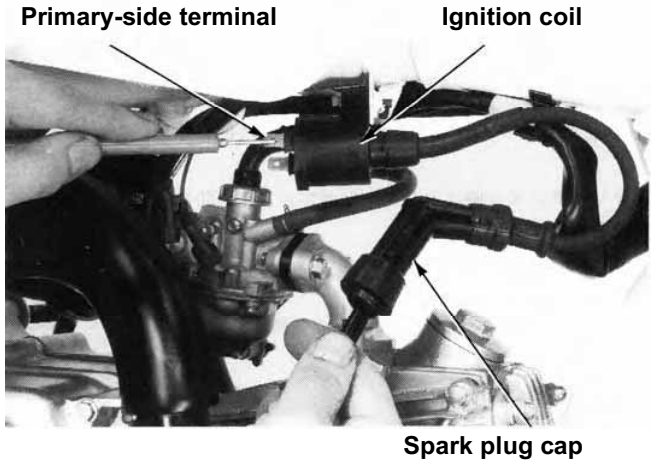
Primary side
Disconnect the ignition coil primary-side terminals.
Measure the resistance between the primary terminals of the ignition coil.

Standard value: 0.1- 0.4Ω
(20)



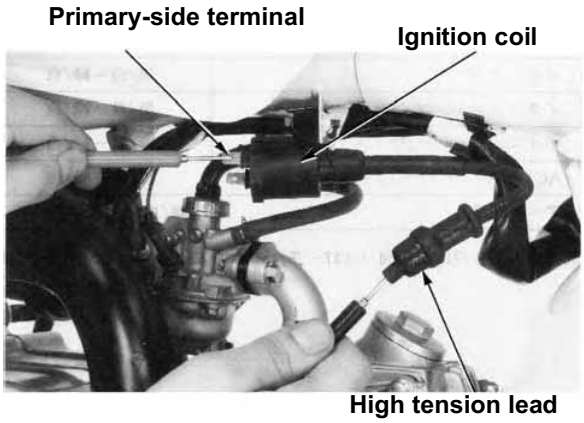
Secondary side
Remove the spark plug cap from the plug.
Measure the secondary-side resistance value of the ignition coil between the spark plug cap and the primary terminal.

Standard value: with the plug cap: 6.5- 9.7kΩ (20)



If the measured value in the check above is abnormal, remove the plug cap from the high tension lead, and measure the resistance value on the secondary side.

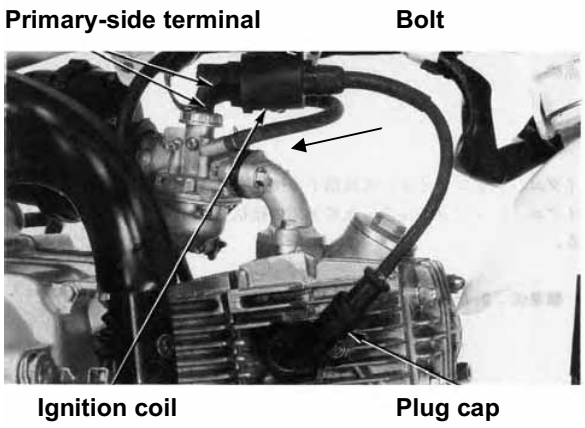
Standard value: without the plug cap: 2.7- 3.5kΩ (20℃)



Removal/ fitting

Remove the plug cap from the spark plug.
Disconnect the ignition coil primary-side terminals.
Remove the bolt, and detach the ignition coil.

Fitting of the ignition coil is carried out in the reverse order of its removal procedures.

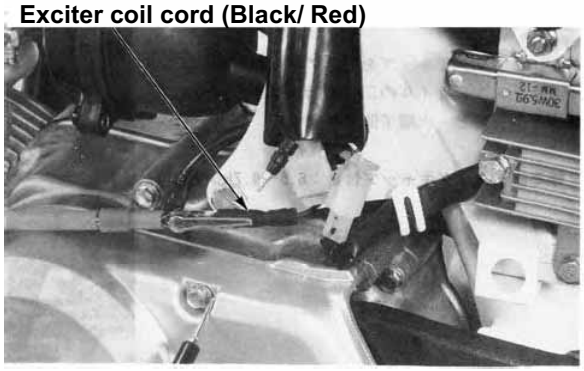


Exciter coil

Check

Disconnect the AC generator connector (black/ red).
Measure the resistance between the exciter coil-side connecter and the body earthing.

Standard value: 400- 800Ω (20℃)



Replace the AC generator as an assembly (10-3, 17-32).

Pulse generator

Check

Disconnect the AC generator 4P coupler.
Measure the resistance between the AC generator-side pulse generator wire (blue/ yellow) and the body earthing.

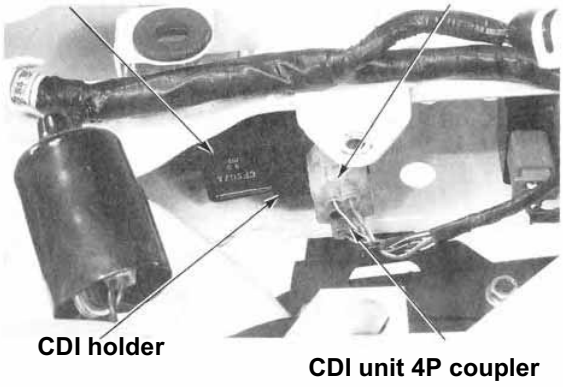
Standard value: 50- 200Ω (20℃)

Refer to 10-3 and 17-32 for information on replacement.

Removal/ fitting of the CDI unit

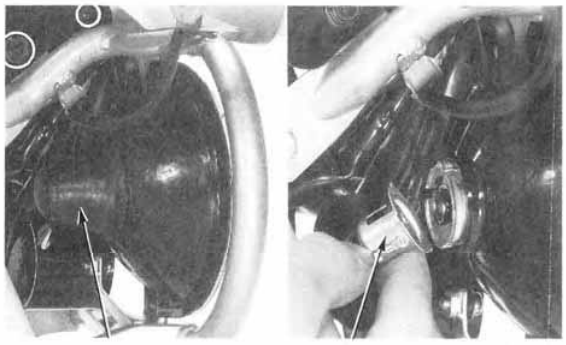
Remove the rear fender/ side cover (→17-15).
Remove the battery stay (17-59).
Disconnect the CDI unit 2P, 4P couplers.
Remove the CDI unit from the CDI unit holder.

Fitting of the CDI unit is carried out in the reverse order of its removal procedures.



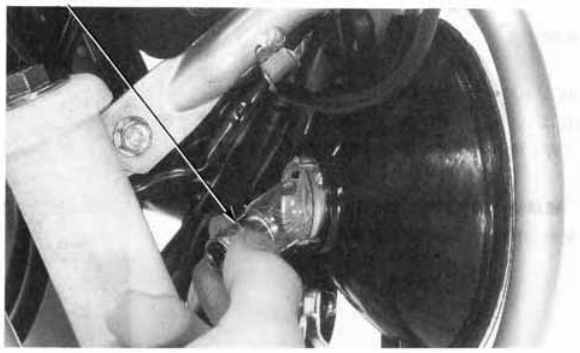
Headlight globe replacement

Remove the socket cover.
Turn the light globe socket to the left to remove.



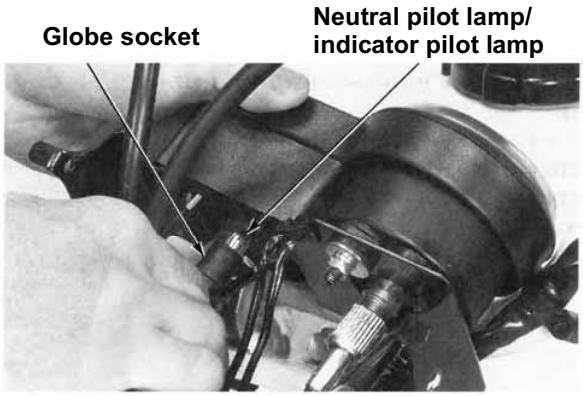
Replace the globe.

Fitting of the globe is carried out in the reverse order of its removal procedures.



Neutral pilot lamp/ indicator pilot lamp

Remove the bolt, and lift up the meter (→ 17-46).
Pull out the globe socket, and replace the neutral pilot lamp and the indicator pilot lamp.

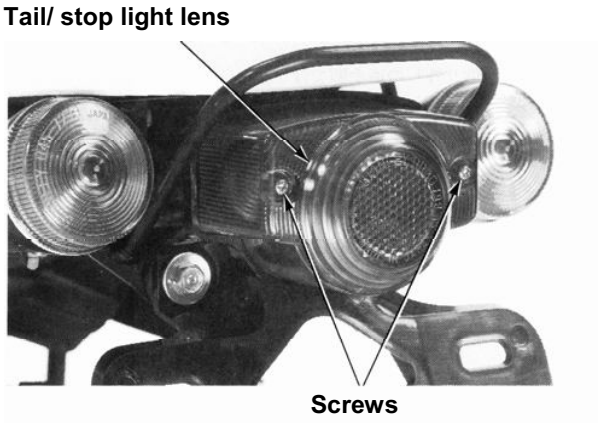


Meter illumination lamp

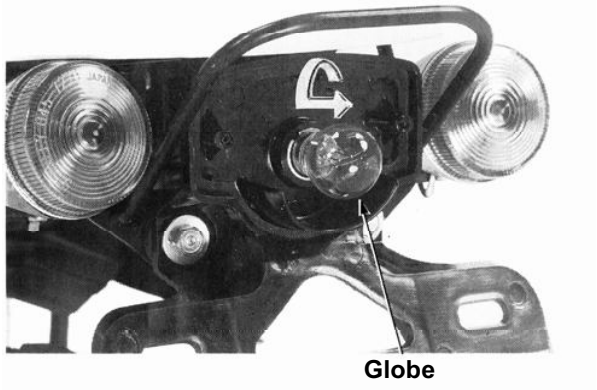
Remove the meter from the meter stay (17-46).

Pull out the globe socket, and replace the globe.

Tail/ stop light
Remove the screws, and detach the tail/ stop light lens.

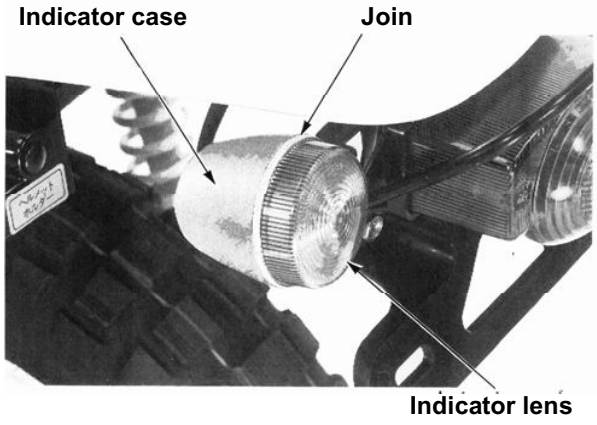


Turn the globe to the left to detach.
Fitting of the tail/ stop light is carried out in the reverse order of its removal procedures.



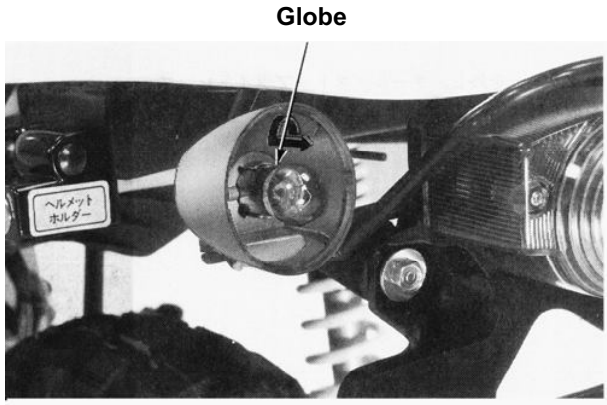
Indicator globe
Detach the indicator lens by inserting a thin wiring screw driver in the gap and lifting up.

✻ Take care so that the case or lens is not damaged when removing.



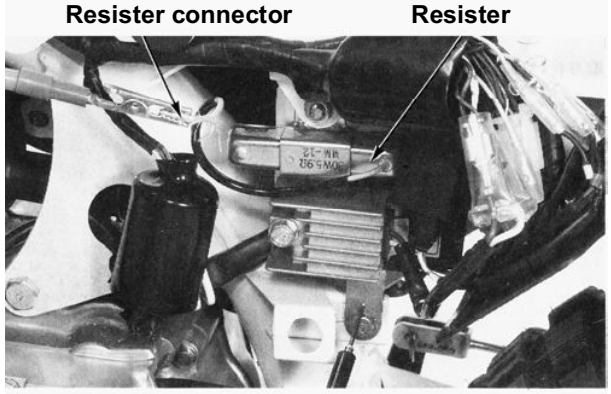
Turn the globe to the left to detach.

Fitting of the indicator globe is carried out in the reverse order of its removal procedures.

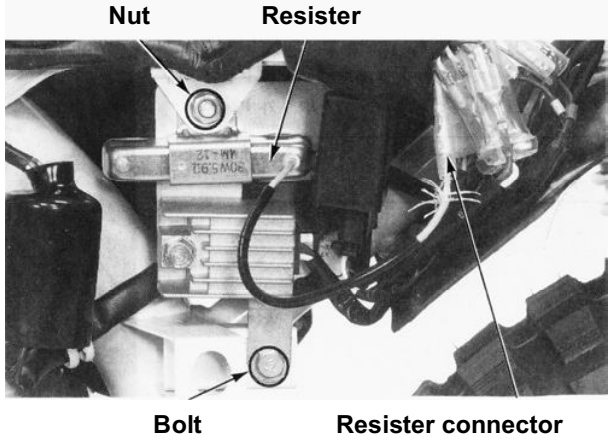


Resister

Check
Remove the rear fender/ side cover (→17-15).
Remove the resister connector.
Measure the resistance between the resister-side connector and the body earthing.
Standard value: 5.6- 6.2Ω
(20℃)



Removal/ fitting
Remove the rear fender/ side cover (17-15).
Disconnect the resister connector.
Loosen the bolt to remove the nut, and then detach the resister.



18. MONKEY Z50J$_N$ ADDENDUM

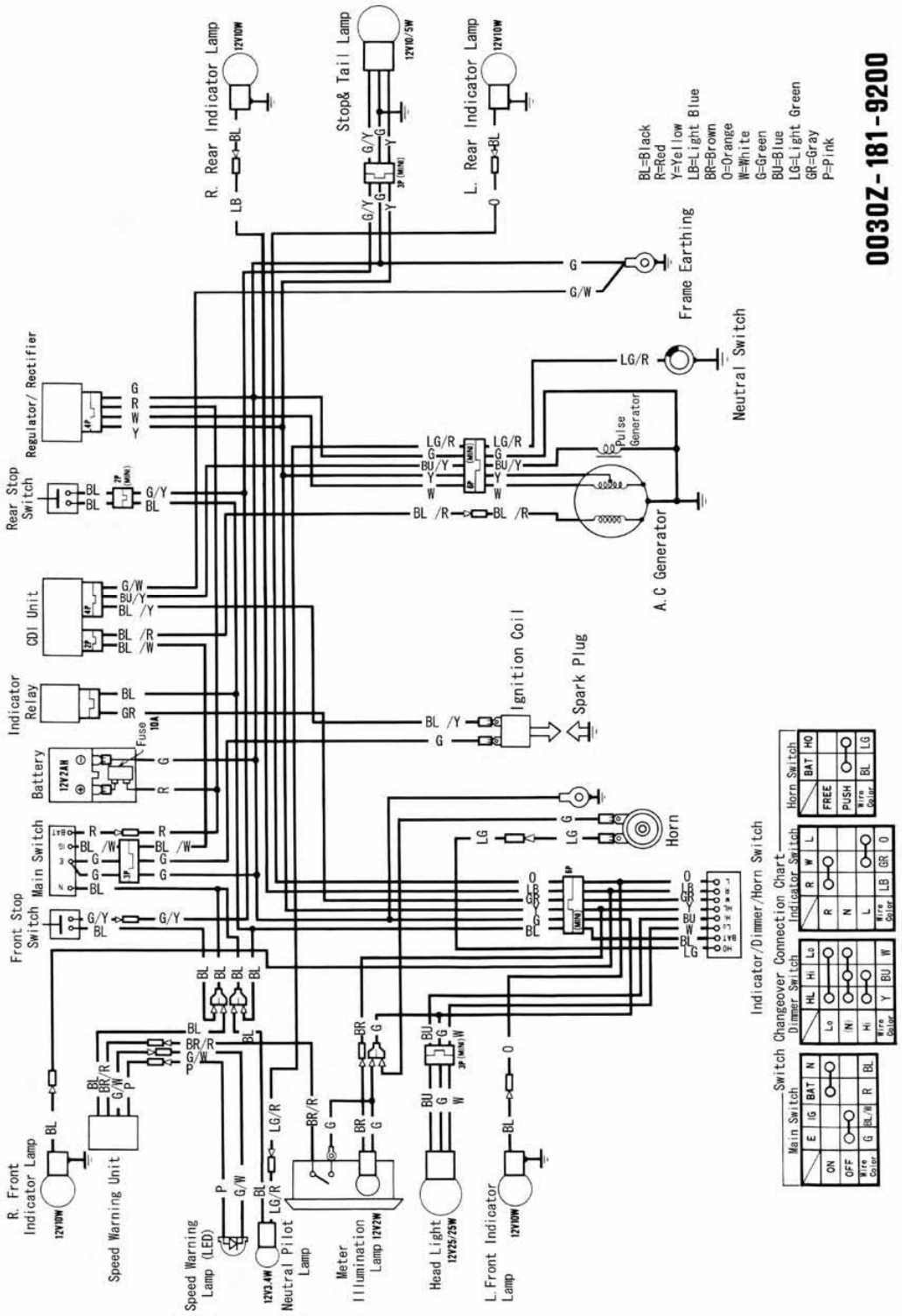
CONTENTS

Specifications ---------- 18-1
Wiring diagram ---------- 18-2
Wiring schematic ---------- 18-3
Check and maintenance methods ---------- 18-6
Carburetor ---------- 18-11

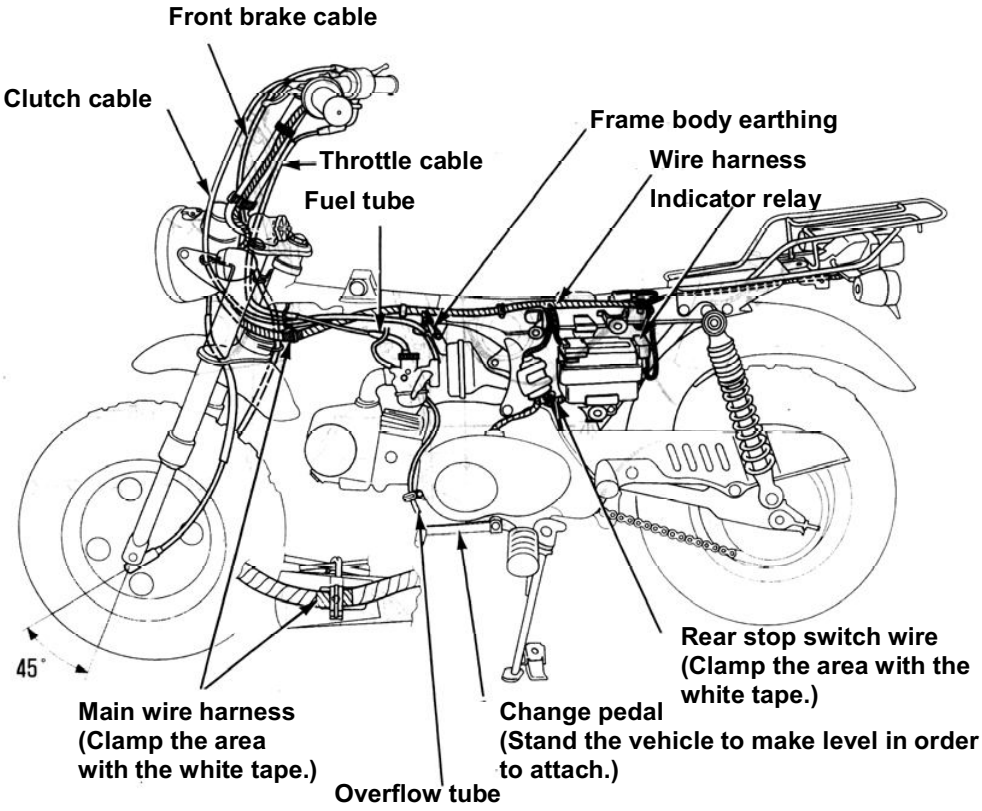
Specifications

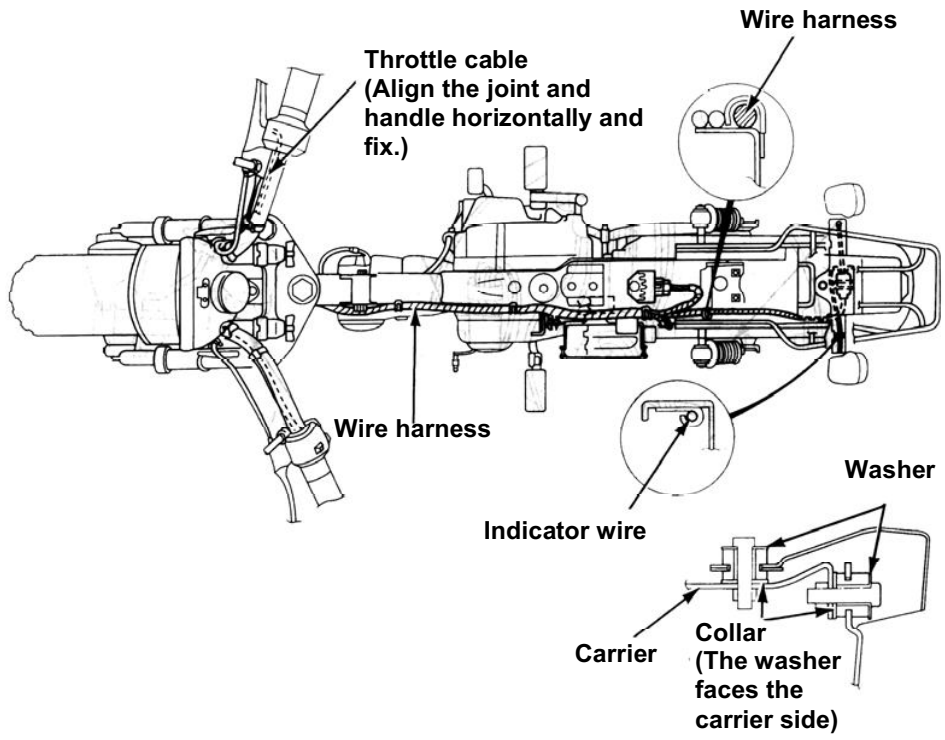
Model			HONDA A-Z50J	Fuel system	Air filter type		Urethane foam type
Chassis model			HONDA Z50J		Fuel tank capacity		4.5 ℓ
Length			1.360m		Carburetor	Model	PA03
Width			0.600m			Gas valve diameter	13mm
Height			0.850m			Venturi diameter	11mm (equivalent)
Wheelbase			0.895m			Air valve type	Manually operated piston valve type
Engine model			Z50J E				
Engine capacity			0.049ℓ	Electric system	Ignition System	Type	CDI type magnetic ignition
Fuel type			Unleaded fuel			Ignition timing	27˚ BTCD/ 2,000 rpm
Vehicle weight		Front axle Load	28kg			Breaker type	No contact type
		Rear axle Load	35kg			Spark plug	(NGK) C5HSA, C6HSA, C7HSA
							(ND) U16FSR-U, U20FSR-U, U22FSR-U
		Total	63kg			Ignition clearance	0.6~0.7mm
Gross vehicle body weight		Front axle load	42kg		Battery	Capacity	2.3 Ah
		Rear axle load	76kg	Power transmission system	Clutch	Type	Wet type single plate coil spring
		Total	118kg			Operating method	Mechanical
Tires		Front wheel	3.50- 8.35J				
		Rear wheel			Engine-to-transmission speed reduction ratio		4.312
Minimum ground clearance			0.150m		Transmission	Type	Constant mesh
						Operation method	Left-foot operated
Performance	Braking distance		3.5m (Initial speed 20km/h)		Gear ratio	1st Gear	3.272
	Minimum turning radius		1.4m			2nd Gear	1.937
						3rd Gear	1.350
	Starting Method		Kick start			4th Gear	1.043
	Type		Petrol/ 4 Stroke		Speed reduction device	Gear type	Chain
	No. and location of cylinders		1 cylinder, (tranversal)			Speed reduction rate	2.384
	Combustion chamber type		Hemisphere	Running system	Front Axle	Caster angle	25˚ 00'
	Valve train		OHC chain driven			Trail	42mm
	Bore x stroke		39.0 x 41.4mm		Tire Pressure	Front	1.00 kg/cm²
	Compression ratio		10.0			Rear	1.25 kg/cm²
	Compression pressure		14.0-1,000kg/cm² • rpm		Steering Angle	Left side	42˚
						Right side	42˚
	Maximum output		3.1PS/7,500rpm		Brake	Front	Mechanical leading trailing
	Maximum torque		0.32kg/6,000rpm			Rear	Mechanical leading trailing
	Valve open/ close timing	Intake (1mm lift) Open	7˚ (BTDC)	Suspension system	Suspension type	Front wheel	Telescopic
		Intake (1mm lift) Close	12˚ (ABDC)			Rear wheel	Swing arm
		Exhaust (1mm lift) Open	10˚ (BBDC)		Frame		Back bone
		Exhaust (1mm lift) Close	0˚ (TDC)				
	Valve clearance (when cold)	Intake	0.05mm				
		Exhaust	0.05mm				
	Engine under no load: Idling		2,000rpm				
	Lubrication System	Lubrication system	Combination of pumping and splash lubrication				
		Oil pump	Trochoid				
		Oil filter type	Full flow filtration, combination of centrifugal and sieve filtration				
		Oil capacity	0.8 ℓ				
	Cooling method		Air cooling				

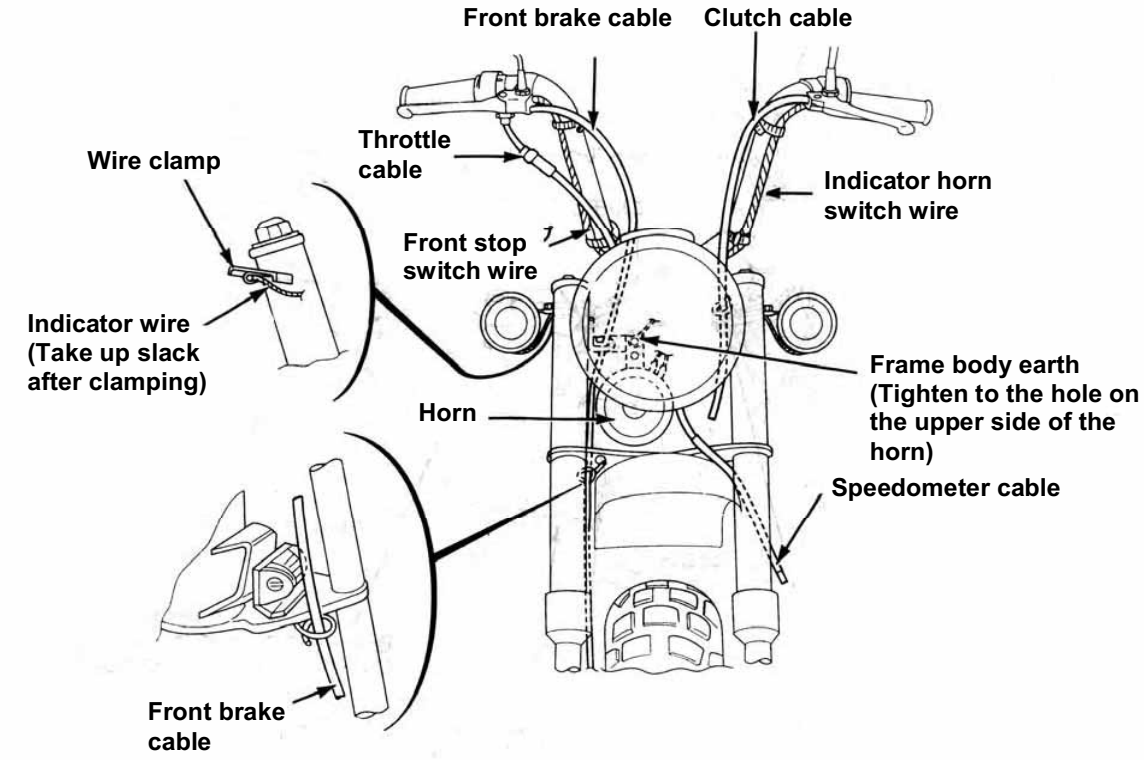
WIRING DIAGRAM

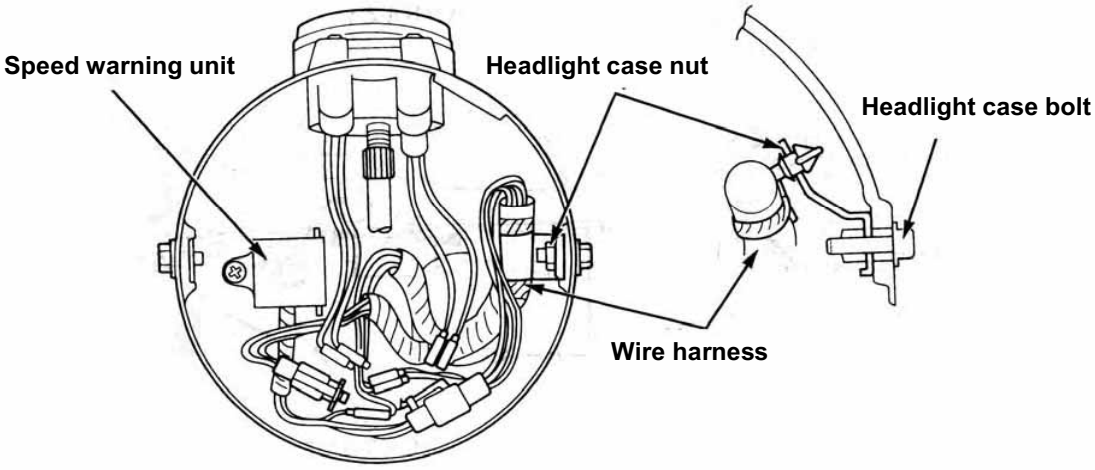


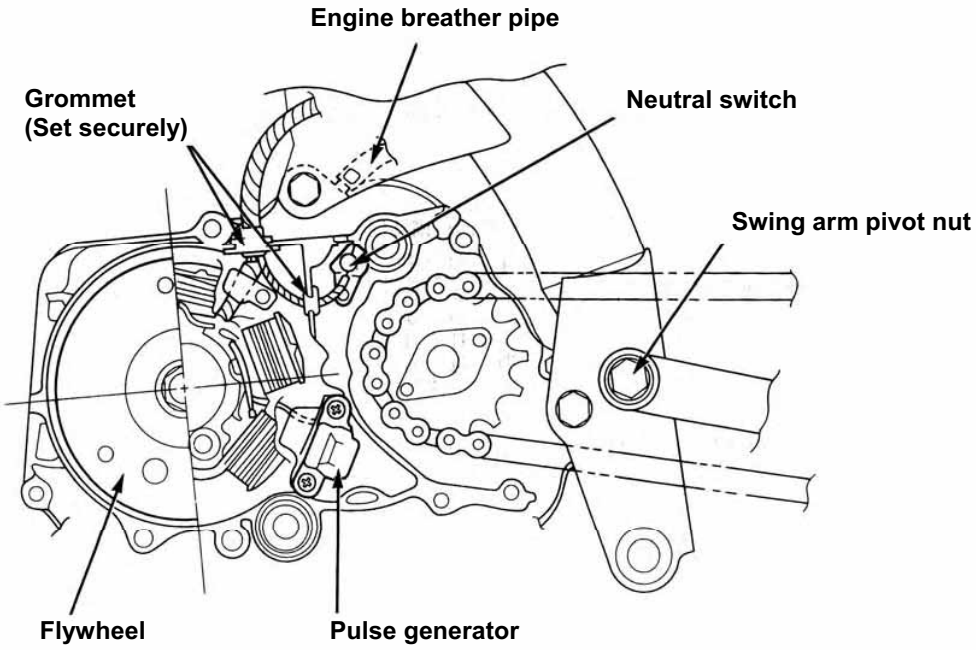
WIRING SCHEMATIC

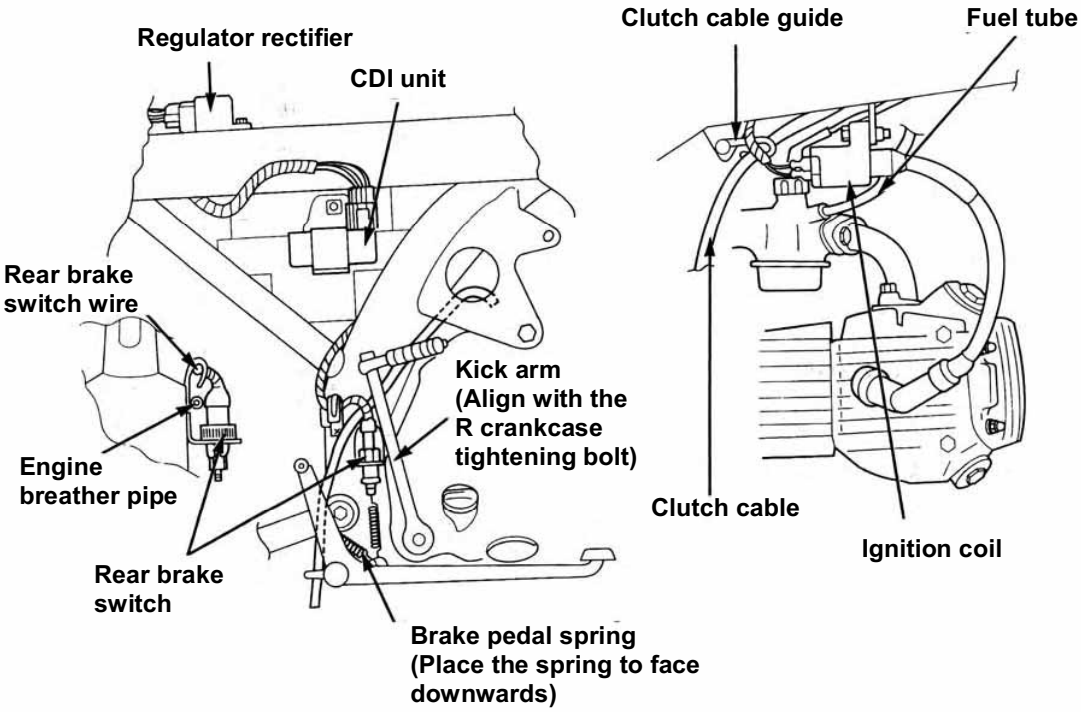





Front brake cable
Clutch cable
Throttle cable
Wire clamp
Indicator horn switch wire
Front stop switch wire
Indicator wire (Take up slack after clamping)
Frame body earth (Tighten to the hole on the upper side of the horn)
Horn
Speedometer cable
Front brake cable


Speed warning unit
Headlight case nut
Headlight case bolt
Wire harness


Engine breather pipe
Grommet
(Set securely)
Neutral switch
Swing arm pivot nut
Flywheel
Pulse generator


Regulator rectifier
CDI unit
Clutch cable guide
Fuel tube
Rear brake
switch wire
Kick arm
(Align with the
R crankcase
tightening bolt)
Engine
breather pipe
Clutch cable
Ignition coil
Rear brake
switch
Brake pedal spring
(Place the spring to face
downwards)

Check and maintenance method

(Caution)
1. "○" indicates the check period.
2. "×" indicates that the item does not apply.
3. "☆" indicates that regular replacement of safety parts is required.
Replacement periods are based on the performance of vehicles used under normal conditions. If the vehicle is used under significantly different running conditions, replacement needs to be carried out accordingly.

<table>
<tr><th colspan="3" rowspan="2">Check and maintenance item</th><th colspan="3">Check and maintenance period</th><th rowspan="2">Criteria</th><th rowspan="2">Note</th></tr>
<tr><th>Before operation</th><th>For personal use
Every 6 months</th><th>Every 12 months</th><th>Unit (1,000 km)</th></tr>
<tr><td rowspan="3">Braking system</td><td rowspan="3">Brake disk and pad</td><td>Clearance between the disk and pad</td><td></td><td></td><td>○</td><td></td><td></td><td>×</td></tr>
<tr><td>Wear and tear of the pad</td><td></td><td></td><td>○</td><td>◇</td><td></td><td>×</td></tr>
<tr><td>Wear and tear and damage of the disk</td><td></td><td></td><td>○</td><td>◇</td><td></td><td>×</td></tr>
<tr><td rowspan="3">Running system</td><td rowspan="3">Wheel</td><td>Tire air pressure</td><td>○</td><td>○</td><td>○</td><td></td><td># ◇ (Unit kg/ cm²)<table><tr><td colspan="2"></td><td>Front wheel</td><td>Rear wheel</td></tr><tr><td>1 person on board</td><td>General road</td><td>1.00</td><td>1.25</td></tr><tr><td colspan="2">Tire use</td><td colspan="2">3.50- 8.35J</td></tr></table></td><td></td></tr>
<tr><td>Cracking and damage of the tire</td><td>○</td><td>○</td><td>○</td><td></td><td>Residual groove
Front wheel: up to 0.8mm
Rear wheel: up to 0.8mm</td><td></td></tr>
<tr><td>Depth of tire groove and abnormal wear and tear</td><td></td><td></td><td></td><td></td><td></td><td></td></tr>
</table>

Check and maintenance item			Check and maintenance period				Criteria	Note
			Before operation	For personal use		Unit (1,000 km)		
				Every 6 months	Every 12 months			
Running system	Wheel	Metal fragments/ stone in the tire	○	○	○			
		Looseness of wheel nut/ bolt		○	○		◇ Tightening torque of the front axle nut 3.5- 5.0kg m Tightening torque of the rear axle nut 3.5- 5.0kg m	Axle nut and axle holder are shown
		Damage of side ring and wheel disk			○	※1	Wheel rim deflection on the rim end: Horizontal deflection of the front: 2.0mm or less Vertical deflection of the front: 2.0mm or less Horizontal deflection of the rear: 2.0mm or less Vertical deflection of the rear: 2.0mm or less	
		Backlash of the front wheel bearing			○			
		Backlash of the rear wheel bearing						
Suspension system	Chassis spring	Damage			○			Cushion spring is shown
	Suspension arm	Backlash of the joint and damage of the arm						

Check and maintenance item			Check and maintenance period				Criteria	Note
			Before operation	For personal use		Unit (1,000 km)		
				Every 6 months	Every 12 months			
Suspension system	Shock absorber	Oil leakage or damage			○		◇	×
		Backlash of the attachment part			○			×
Power transmission system	Clutch	Play of lever		○	○		◇ Play Lever type 10- 20mm at the lever tip	#
		Operation		○	○	※1		
	Transmission	Oil leakage or oil level		○	○		◇ Oil level Stick gauge type: the oil level should be between the upper and lower limit lines.	
		Backlash of the operation mechanism			○			Cushion spring is shown
	Propeller shaft and drive shaft	Looseness of the joining part		○	○			×
		Backlash of the spline			○			×
		Backlash of the universal joint			○			×
	Chain and sprocket	Looseness of chain		○	○	※1	◇ MAX fluctuation 10- 20mm at the center of the front and rear sprockets when using the side stand.	
		Installation condition and wear and tear of the sprocket			○			
Electrical system	Ignition system	Condition of the spark plug		○	○		◇ Plug gap 0.6- 0.7mm	
		Ignition timing		○	○		#◇	# No adjustment type

Check and maintenance item			Check and maintenance period				Criteria	Note
			Before operation	For personal use		Unit (1,000 km)		
				Every 6 months	Every 12 months			
Electrical system	Ignition system	Condition of the contact breaker					#◇	# × No adjustment type
		Spark advance			○			×
	Battery	Fluid amount					#◇	# × Direct vent type
		Fluid relative density			○		#	# × Direct vent type
		Connection condition of the terminal			○			
	Electrical wiring	Looseness or damage of the joint part			○			
Engine	Main body	Start-up condition and abnormal operation noise		○	○			
		Low speed and accelerating condition		○	○	※1	#◇ Idling rev: 2,000±100rpm	#
		Exhaust condition						
		Air cleaner element condition						

Check and maintenance item			Check and maintenance timing					Check method and criteria	Note
			Before operation	For personal use		Unit (1,000km)	Replacement timing (every year)		
				Every 6 months	Every 12 months				
Engine system	Lubrication system	1. Engine oil replacement				※1 3			
	Fueling system	1. Fueling hose replacement					4		

Carburetor

Maintenance information

Watch out for fire when handling fuel.

◦ Make sure the installation positions of the O-rings and other parts are correct and that they are replaced when assembling.

Discharge fuel within the carburetor via the drain bolt of the float chamber before disassembling.

◦ Do not twist or bend the cables forcefully. Deformed or damaged cables may cause operating malfunctions.

Venturi diameter	11mm
Setting mark	PA03P
Float level	12.7mm
Air screw standard turnout	1 turnout
Main jet	#58
Slow jet	#35X35
Idling rev	2,000rpm
Play of the throttle grip	2-6mm

Tool

Float level gauge 07401- 00100000

Fault diagnosis

<u>The engine does not start.</u>

There is no fuel in the tank.

◦ Fuel has not reached the engine.

There is too much fuel within the cylinder.

◦ The air cleaner is clogged.

<u>Engine idling unstable, rev malfunction</u>

Idling adjustment malfunction

◦ Air-fuel mixture is too rich.

Air-fuel mixture is too lean.

◦ Air cleaner is clogged.

Air has entered within the inlet system.

◦ Fuel is unclean.

<u>Air-fuel mixture is too lean.</u>

The fuel jet is clogged.

◦ The ventilation hole of the fuel tank cap is clogged.

The fuel strainer is clogged.

◦ The fuel tube is bent, crimped, or clogged.

Operating malfunction of the float valve

◦ Oil level is too low.

<u>Air-fuel mixture is too rich.</u>

The choke is closed.

◦ Operating malfunction of the float valve

Float level is too high.

◦ Clogging of the air jet

Maintenance standard

	Resistance value	Check terminal
Exciter coil resistance value	400- 800Ω	Black/ Red- Green
Pulse generator resistance value	50－200	Blue/ Yellow- Green
Lighting coil resistance value	0.1- 0.8Ω	Yellow- Green
Charging coil resistance value	0.2- 1.0	White- Green

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19-2

Specifications

Model			Honda AB02	Fueling system	Air cleaner type			Urethane foam type
Chassis model			Honda Z50R		Fuel tank capacity			4.0 ℓ
Length			1.285m		Carburetor	Type		PA03
Width			0.605m			Fuel valve diameter		13mm
Height			0.810m			Venturi diameter		Approximately 11mm
Wheelbase			0.895m			Air valve type		Manually operated piston valve type
Engine Model			Z50J E					
Engine Capacity			0.049 ℓ	Electrical system	Ignition System	Type		CDI Magnetic ignition
Fuel Type			Unleaded fuel			Ignition timing		27˚BTCD/1,700rpm
Vehicle Weight		Front Axle	22.0kg			Contact breaker type		Non-contact type
		Rear Axle	22.7kg			Spark plug		(NGK) CR5HSA, C6HSA, CR7HSA
		Total	49.5kg					(Nihon Denso) U16FSR-U, U20FSR-U, U22FSR-U
Gross Vehicle Weight		Front Axle	42.4kg			Ignition clearance		0.60- 0.7mm
		Rear Axle	52.1kg	Power transmission system	Clutch	Type		Automatic centrifugal type
		Total	94.5kg		Engine-to-Transmission Speed Reduction Ratio			4.058
Tires		Front Wheel	3.50- 8 35 J		Transmission	Type		Constant mesh
		Rear Wheel				Operation method		3 speed return left-foot operated
Minimum height from ground			0.155m			Gear ratio	1st Gear	3.272
Performance	Braking distance		3.5m (20km/h)				2nd Gear	1.823
	Minimum turning radius		1.4m				3rd Gear	1.190
	Starting method		Kick start		Speed reduction device	Gear type		Chain
	Type		Petrol/ 4 Stroke			Speed reduction rate		2.642
	No. and location of cylinders		1 transverse, cylinder					
	Combustion chamber type		Hemisphere	Running system	Front Axle	Caster angle		25˚ 00'
	Valve train		OHC chain driven			Trail		42mm
	Bore x stroke		39.0 x 41.4mm		Tire Pressure		Front	1.00kg/cm²
	Compression ratio		10.0				Rear	1.25kg/cm²
	Compression pressure (kg/ c ㎡・rpm)		14.0-1,000		Steering Angle		Left	45˚
							Right	45˚
	Maximum output (PS/ rpm)		3.1/8,500rpm		Braking device type		Front	Mechanical leading trailing
	Maximum torque (kg/ rpm)		0.34/4,000rpm				Rear	Mechanical leading trailing
	Valve open/ close timing	Intake (1mm lift) Open	7.5˚(BTDC)	Suspension system	Suspension type		Front	Telescopic
		Intake (1mm lift) Close	12.5˚(ABDC)				Rear	Swing arm
		Exhaust (1mm lift) Open	22.5˚(BBDC)	Frame				Back bone
		Exhaust (1mm lift) Close	2.5˚(TDC)					
	Valve clearance (when cooled down)	Intake	0.05mm					
		Exhaust	0.05mm					
	Under no load: Idling rpm		1,700rpm					
	Lubrication device	Lubrication system	Combination of pressure and splash lubrication					
		Oil pump type	Trochoid					
		Oil filter type	Centrifugal filtration					
		Lubricant capacity ℓ	0.8					
	Cooling system		Air cooling					

TIGHTENING TORQUE

Engine related

Location		Number	Screw diameter (mm)	Tightening torque (kg-m)
Tappet hole cap		2	30	1.0- 1.4
Valve adjustment nut		2	5	0.7- 1.1
Cylinder head	Nut	4	6	0.9- 1.2
	Bolt	1	6	0.8- 1.2
Cam sprocket bolt		2	5	0.7- 1.1
Cylinder bolt		1	6	0.8- 1.2
Guide roller bolt		1	6	0.8- 1.2
Intake manifold installation bolt		2	6	0.7- 1.1
Clutch lock nut		1	14	4.0- 4.5
Drum stopper arm pivot bolt		1	6	0.8- 1.2
Shift drum stopper bolt		1	6	1.4- 2.0
Drain bolt		1	12	2.0- 2.5
Push rod sealing bolt		1	14	2.0- 3.0
Tensioner pivot bolt		1	8	1.3- 1.8
Drive sprocket bolt		2	6	1.1- 1.5
Flywheel nut		1	10	3.8- 4.5
Kick starter pedal split bolt		1	6	0.8- 1.2
Shift pedal split bolt		1	6	0.8- 1.2

Frame related

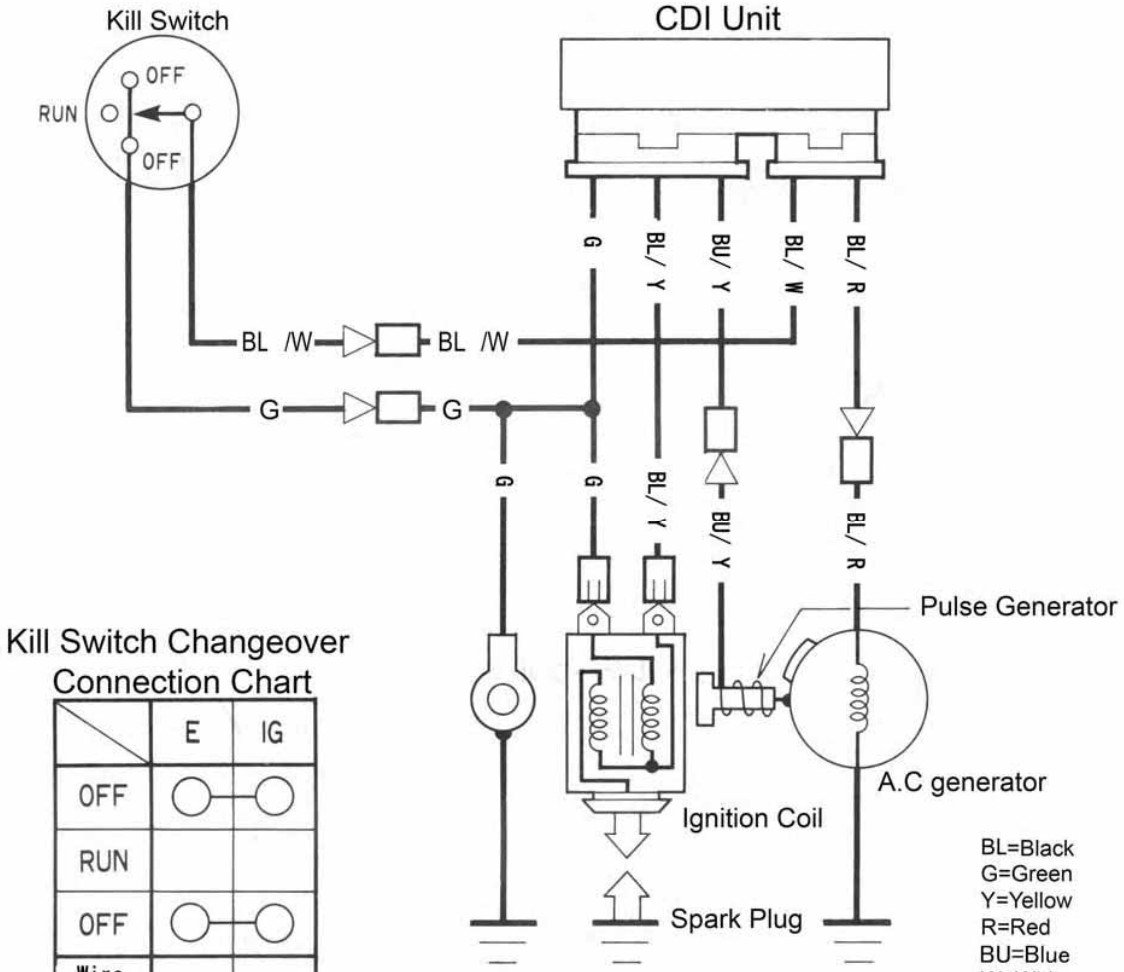
Location	Number	Screw diameter (mm)	Tightening torque (kg-m)
Engine hanger bolt	2	8	2.9- 3.5
Handle lower holder nut	2	10	3.5- 4.5
Handle bar lever bolt	1	5	0.2- 0.4
Handle bar lever nut	1	5	0.2- 0.4
Kill switch screw	2	5	0.2- 0.4
Steering stem nut	1	26	6.0- 10.0
Fork bolt	2	10	2.5- 4.0
Front axle nut	1	12	4.0- 6.0
Rear axle nut	1	12	4.0- 6.0
Wheel hub stud bolt	8	8	1.5- 2.5
Wheel hub nut	8	8	1.8- 2.2
Wheel rim nut	8	8	1.8- 2.2
Driven sprocket nut	4	8	3.0- 3.6
Brake arm bolt	2	5	0.4- 0.7
Rear fork pivot nut	1	10	4.0- 5.0
Rear cushion	4	10	2.5- 4.0
Step bar bolt	4	8	1.8- 2.5
Chain case bolt	2	6	0.8- 1.2
Air cleaner case bolt	1	6	0.8- 1.2
Connecting band screw	1	4	0.05- 0.15
Ignition coil bolt	1	5	0.5- 0.7

Location		Number	Screw diameter (mm)	Tightening torque (kg-m)
Muffler	Bolt	1	8	2.4- 3.0
	Nut	1	6	1.0- 1.4
Exhaust pipe joint nut		2	6	0.8- 1.2
Muffler drain bolt		1	10	2.0- 3.0
Muffler protector bolt		1	6	1.3- 1.7
Exhaust pipe cover screw		4	5	0.5- 0.7
Side stand pivot	Bolt	1	10	0.5- 1.5
	Nut	1	10	3.0- 4.0
Front fender bolt		2	6	0.8- 1.2
Sheet nut		2	6	0.8- 1.2
Rear pipe stay bolt		2	6	0.8- 1.2
Fuel tank bolt		1	6	0.8- 1.2
Fuel cock nut		1	14	1.5- 2.0

Standard tightening torque

Part name	Tightening torque (kg-m)	Part name	Tightening torque (kg-m)
5mm bolt, nut	0.45- 0.6	5mm screw	0.35- 0.5
6mm bolt, nut	0.8- 1.2	6mm screw	0.7- 1.1
8mm bolt, nut	1.8- 2.5	6mm flange bolt, nut	1.0- 1.4
10mm bolt, nut	3.0- 4.0	8mm flange bolt, nut	2.4- 3.0
12mm bolt, nut	5.0- 6.0	10mm flange bolt, nut	3.5- 4.5

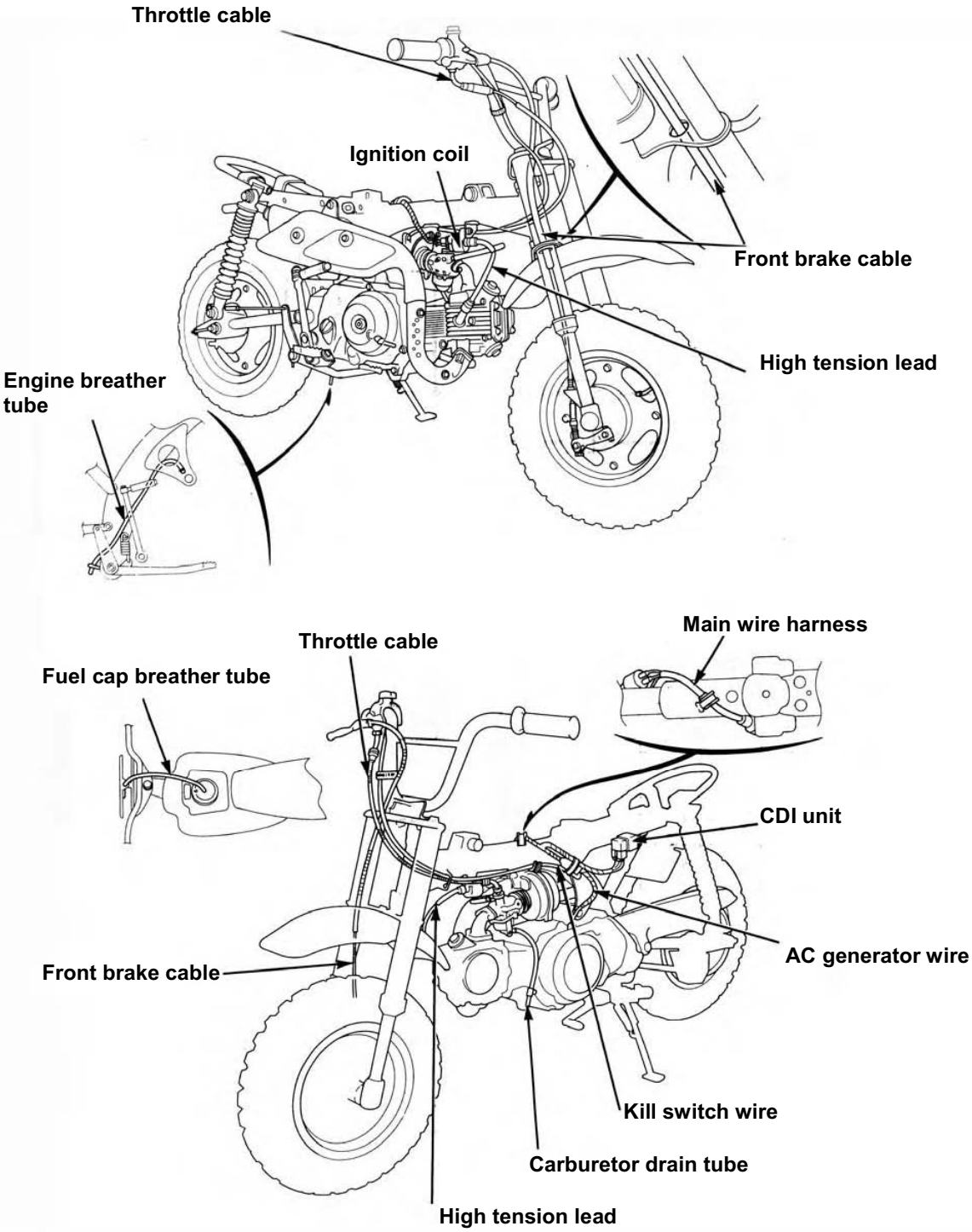
WIRING DIAGRAM



Kill Switch Changeover Connection Chart

	E	IG
OFF	○	○
RUN		
OFF	○	○
Wire Color	G	BL/W

WIRING SCHEMATIC



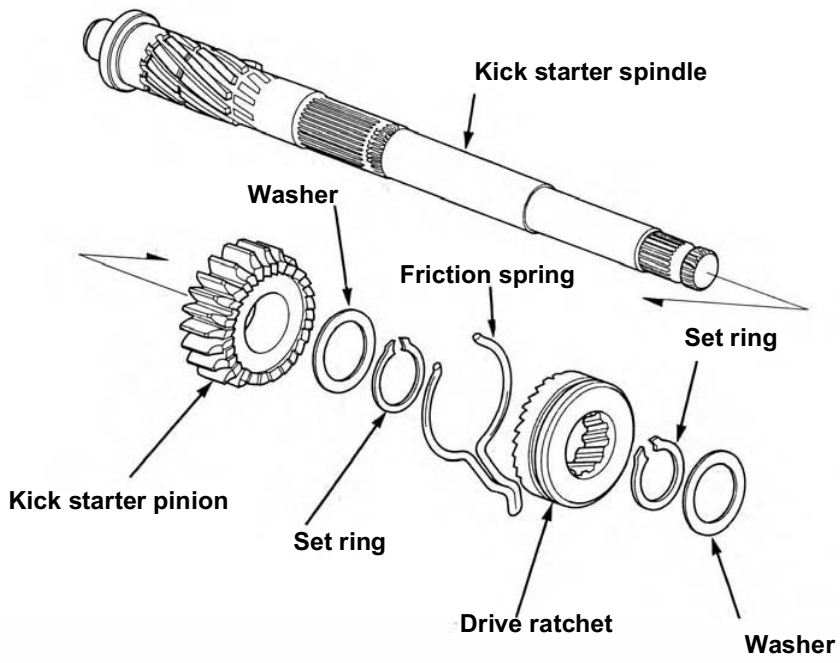
Check and maintenance

Carry out regular check and maintenance on parts according to the table below in order to make the most of Z50R performance. Life time of part differs greatly depending on the condition of use such as when used under dusty or rainy condition. Refer to the table below and carry out check and maintenance earlier if necessary.

I: Replace if check, cleaning, adjustment, or lubrication is required.
R: Replacement C: Cleaning L: Lubrication

Item / Timing	First check (After 1 month)	Regular check (Every 6 months)	Note
Fuel tube		I	
Fuel strainer screen		C	
Throttle operation		I	
Air cleaner		C	Note 1
Spark plug		I	
Tappet clearance	I	I	
Engine oil	R	R	
Engine oil strainer screen		C	
Carburetor idling speed	I	I	
Drive chain	I L	I L	Note 1
Wear and tear of brake shoe		I	
Braking system	I	I	
Clutch system	I	I	
Side stand		I	
Suspension		I	
Spark arrester		C	
Tightening of parts	I	I	
Wheel/ tyre		I	
Steering head bearing	I	I	

Note 1: Carry out check earlier than time indicated above if the vehicle is used under a condition with much dust or rain.



Assembling the kick starter

Assemble the kick starter spindle in the order indicated in the diagram.

✻ Fit the friction spring in the kick starter drive ratchet groove.

20. Z50J$_N$ (MONKEY BAHA) ADDENDUM

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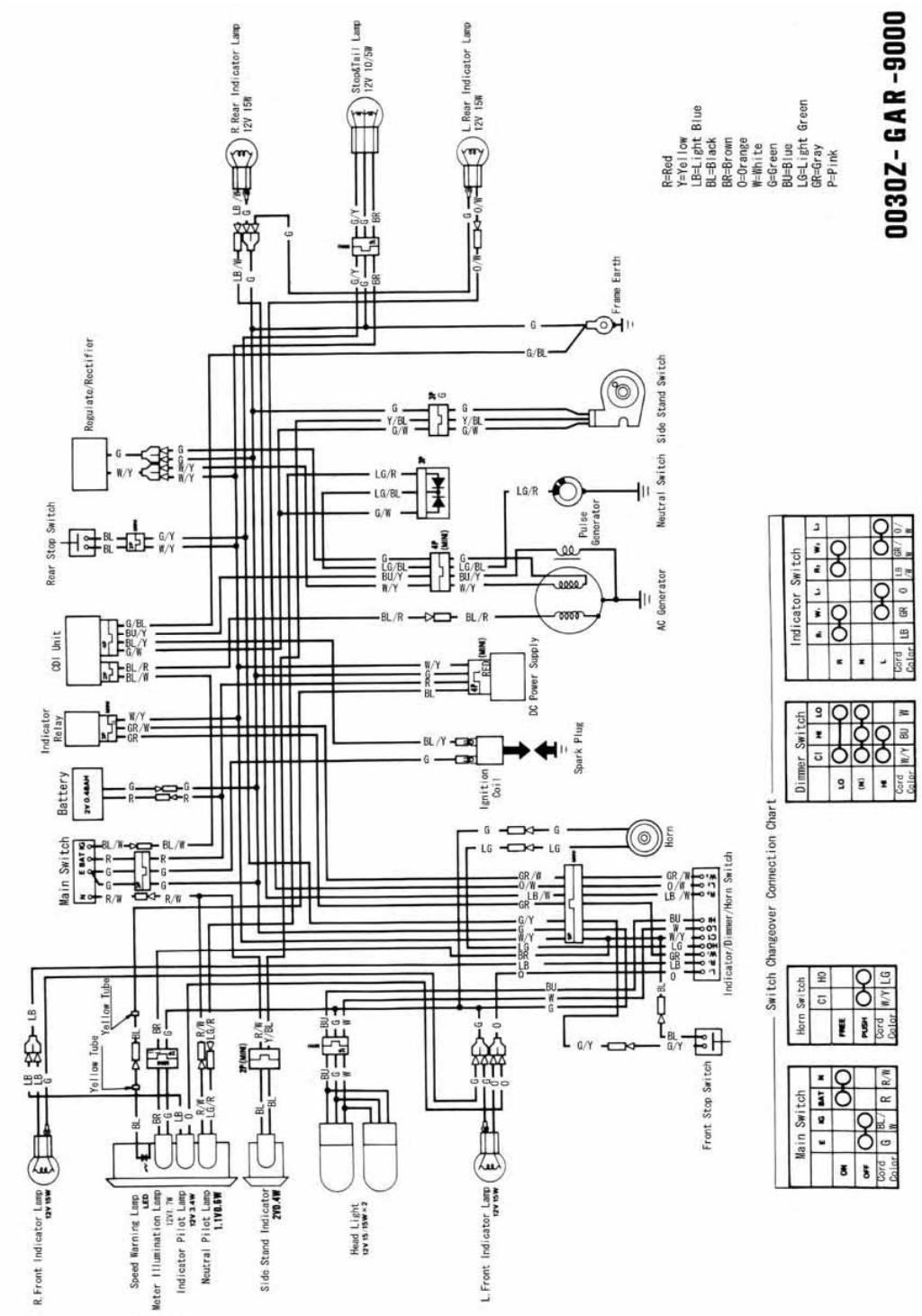
Wiring diagram ----------20-2

WIRING DIAGRAM

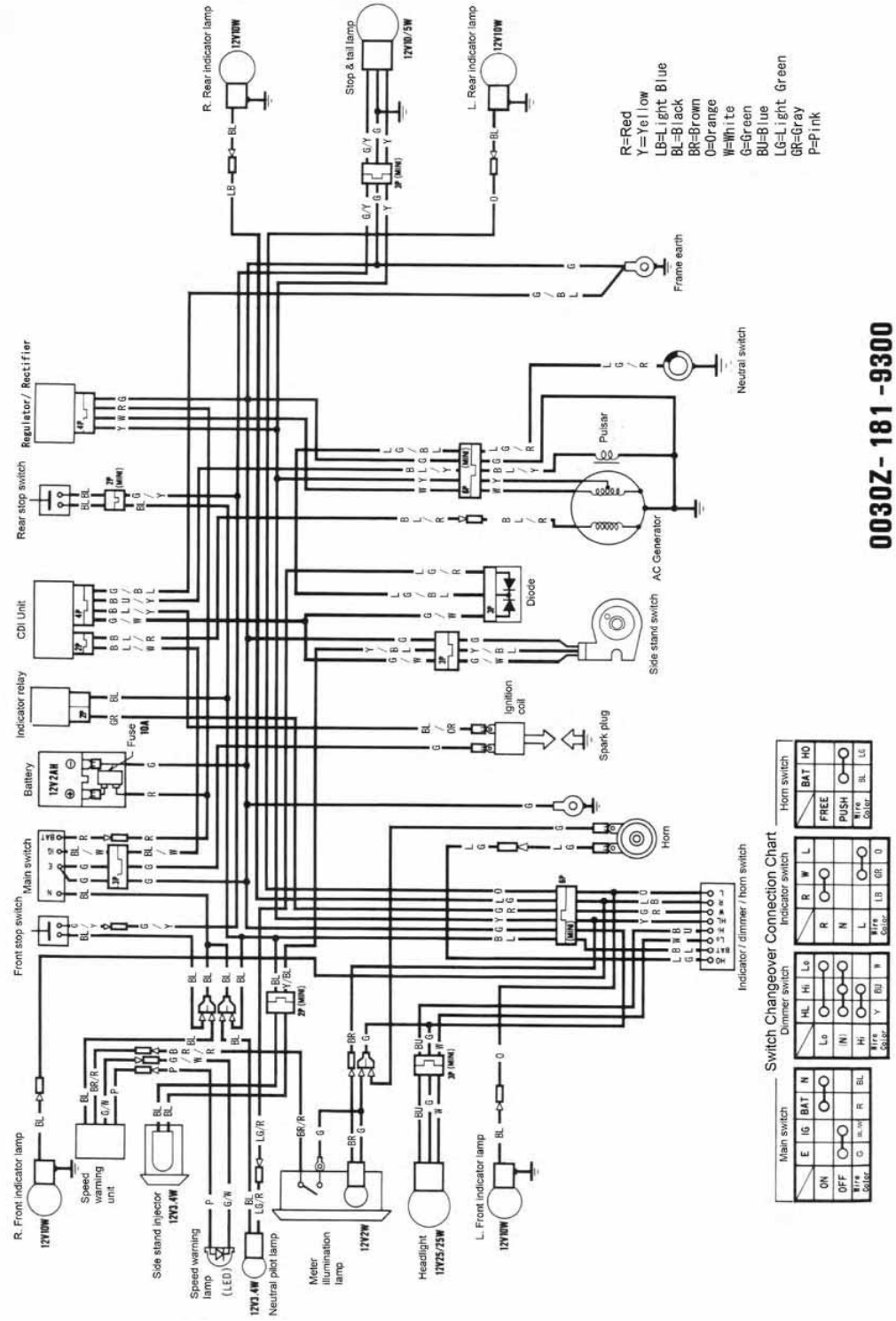


21. Z50J$_P$ ADDENDUM

Contents

Wiring diagram ----------21-2

WIRING DIAGRAM

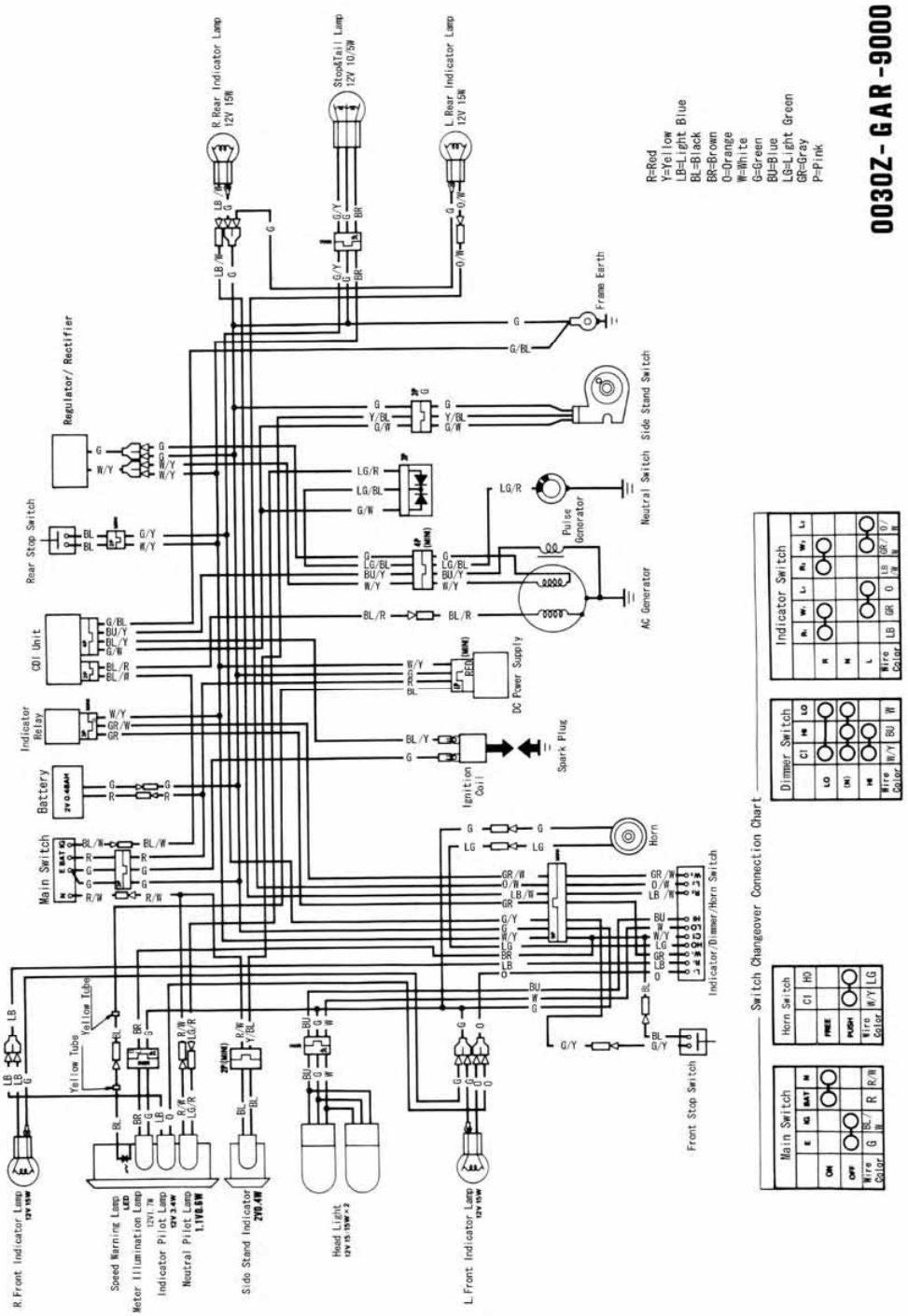


22. Z50J$_P$ (MONKEY BAHA) ADDENDUM

Contents

Wiring diagram ----------22-2

WIRING DIAGRAM



23. Z50Rw Addendum

Contents

Check and maintenance ----------23-2

Z50R (W) Frame No. AB02-1500001 or later

I: Replace if check, cleaning, adjustment, or lubrication is required.
C: Cleaning R: Replacement A: Adjustment L: Lubrication

Timing / Item	First check	Regular check		Note
	After 1 month or 150km	Every 6 months or 1,000km	Every 12 months or 2,000km	
Fuel tube	-	-	I	-
Fuel strainer screen	-	-	C	-
Throttle operation	-	-	I	-
Air cleaner	-	C	C	Refer to the note below
Spark plug	-	I	I	-
Tappet clearance	I	I	I	-
Engine oil	R	R	R	-
Engine oil strainer screen	-	-	C	-
Carburetor idling speed	I	I	I	-
Drive chain	I L	I L (Every 3 months or 500km)		Refer to the note blow
Wear and tear of brake shoe	-	I	I	-
Braking system	I	I	I	-
Clutch system	I	I	I	-
Side stand	-	-	I	-
Suspension	-	-	I	-
Spark arrester	-	C	C	-
Tightening of parts	I	-	I	-
Wheel/ tyre		I	I	-
Steering head bearing	I	-	I	-

Note: Carry out check earlier than time indicated above if the vehicle is used under a condition with much dust or rain.

24. GORILLA Z50J (W)-6 ADDENDUM

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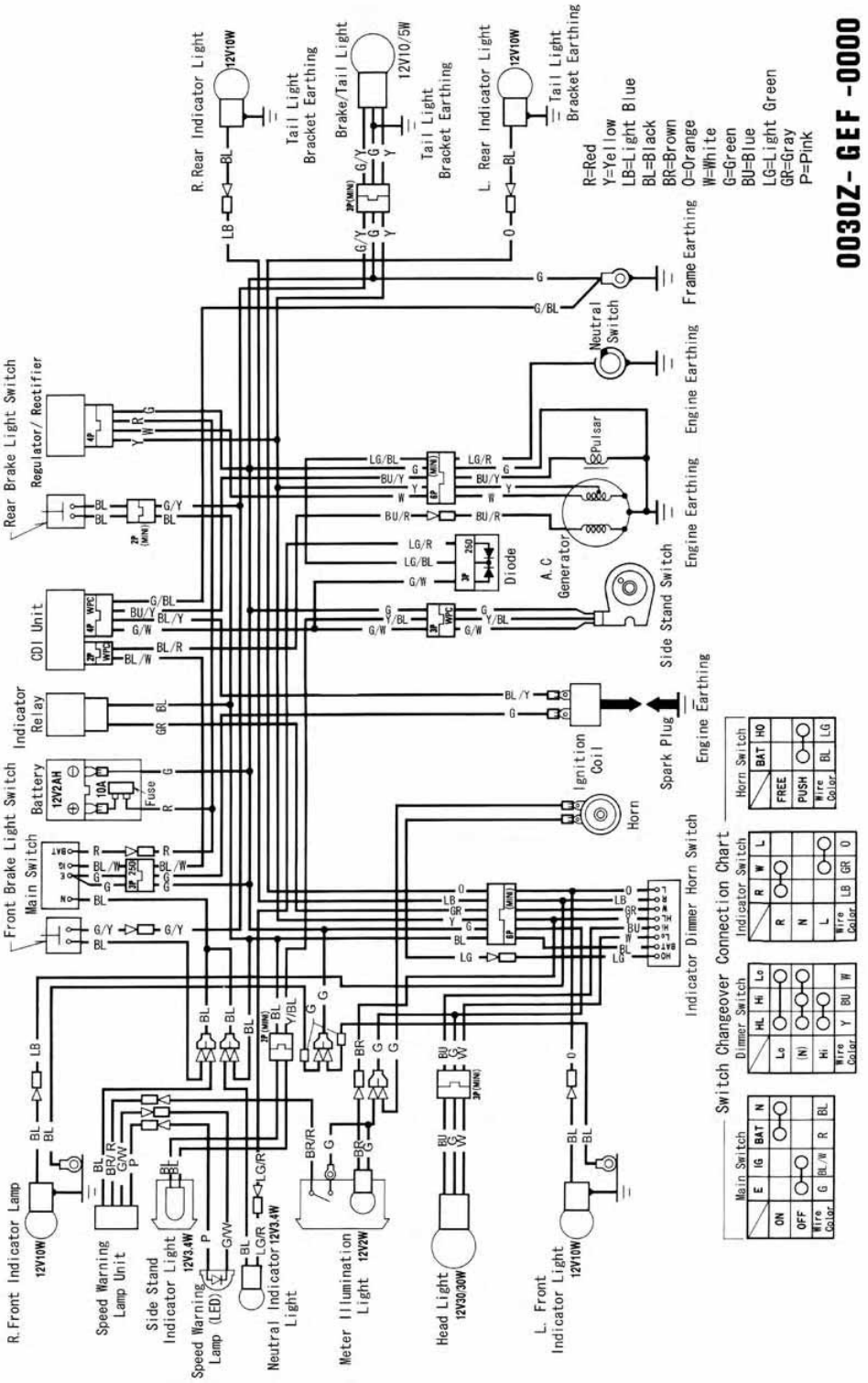
Wiring diagram ----------24-3
Wiring schematic----------24-4

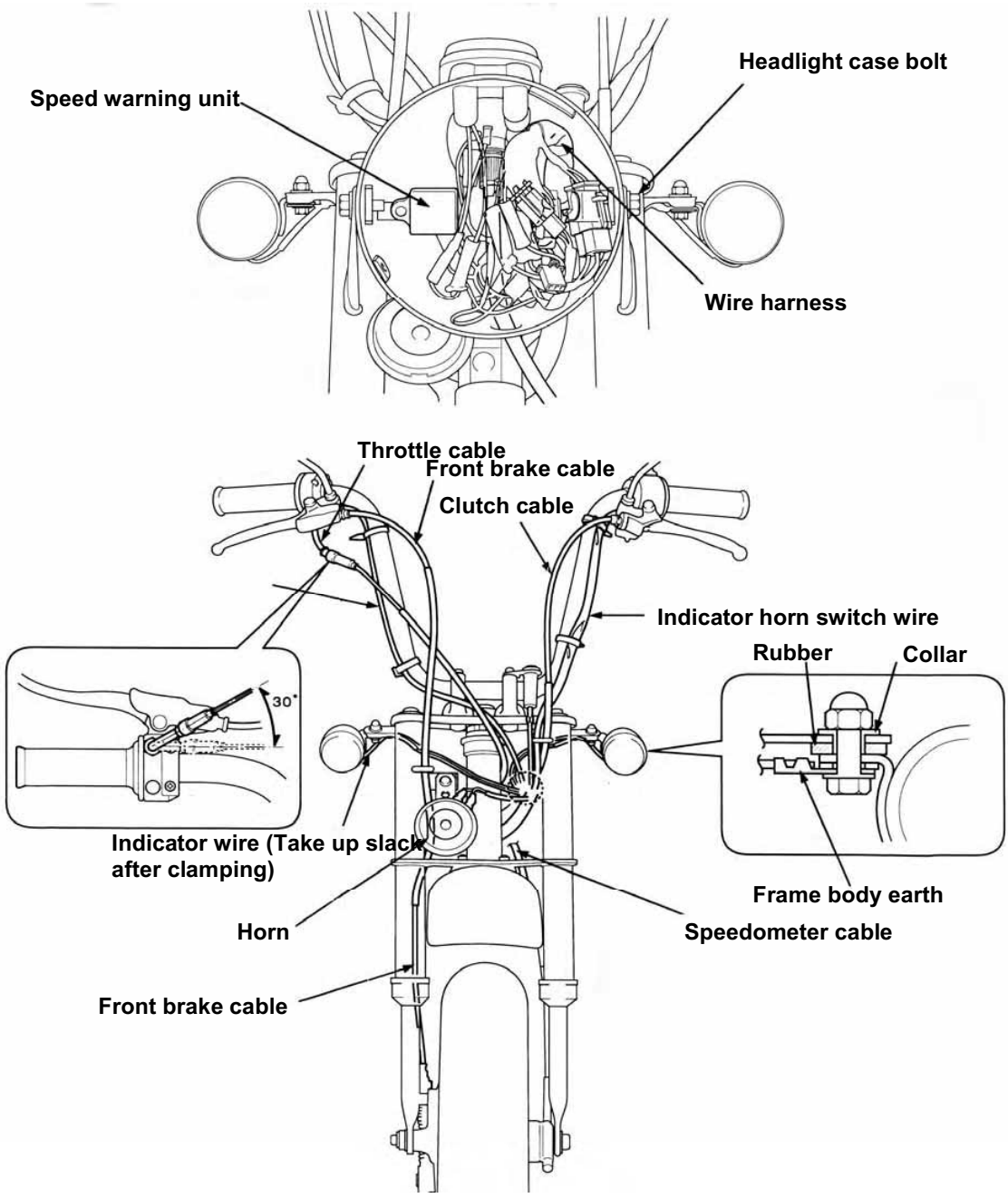
Specifications

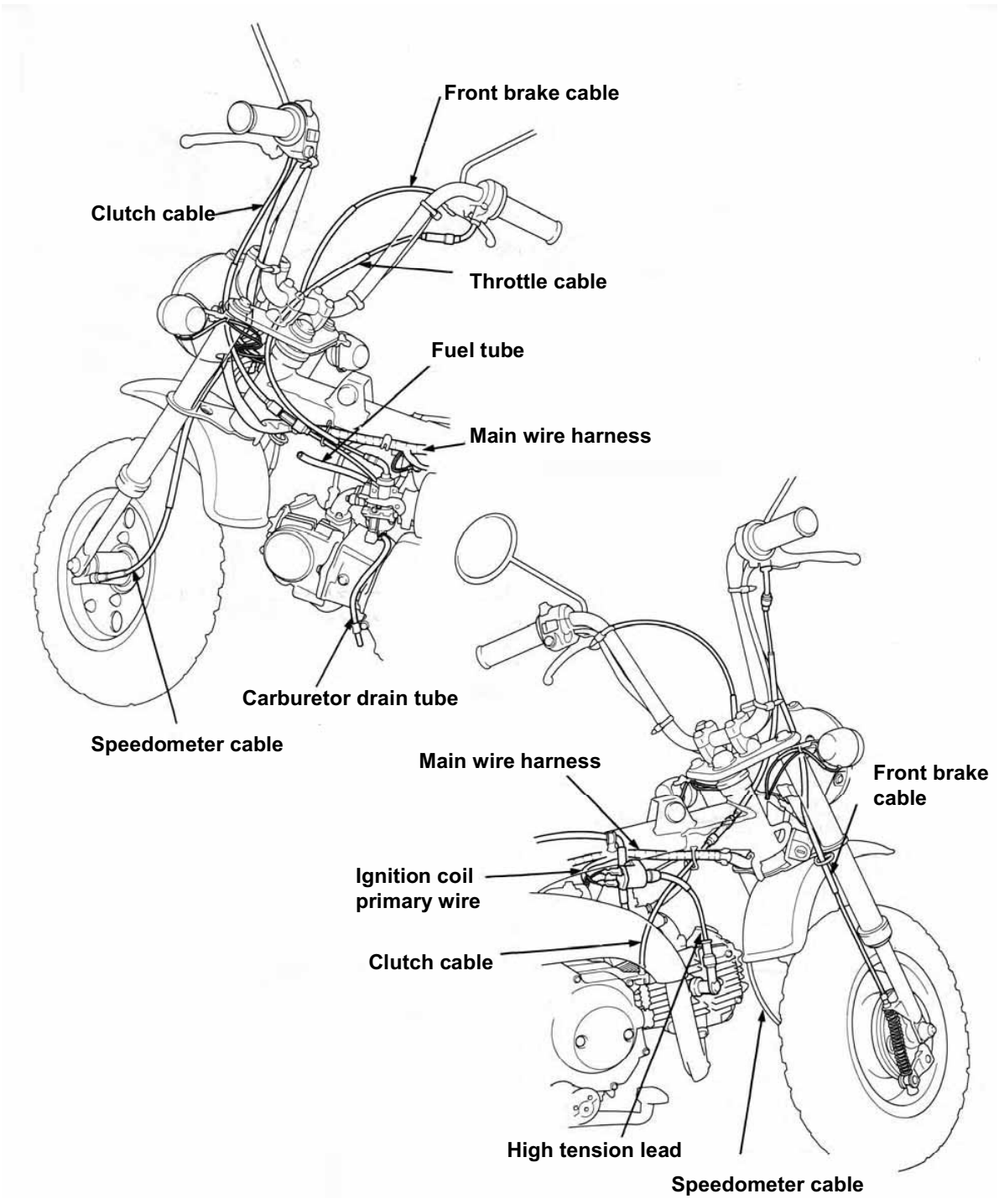
Model			Honda A-Z 50J	Fueling device	Air cleaner type			Urethane foam type
Chassis model			Honda Z50J		Fuel tank capacity			9.0 ℓ
Length			1.365m		Carburetor	Type		PA03
Width			0.625m			Fuel valve diameter		13mm
Height			0.880m			Venturi diameter		Approximately 11mm
Wheelbase			0.895m			Air valve type		Manually operated piston valve type
Engine Model			Z50J E					
Engine Capacity			0.049 ℓ	Electrical system	Ignition System	Type		CDI Magnetic ignition
Fuel Type			Unleaded fuel			Ignition timing		27˚BTDC/2,000rpm
Vehicle Weight		Front Axle	30kg			Contact breaker type		Non-contact type
		Rear Axle	37kg			Spark plug		(NGK) CR5HSA, C6HSA, CR7HSA (ND) U16FSR-U, U20FSR-U, U22FSR-U
		Total	67kg			Ignition clearance		0.60- 0.7mm
Gross Vehicle Weight		Front Axle	44kg		Battery	Capacity		2.3Ah
		Rear Axle	78kg	Power transmission system	Clutch	Type		Wet-type single plate coil spring
						Operation method		Mechanical
		Total	122kg		Engine-to-Transmission Speed Reduction Ratio			4.312
Tires		Front Wheel	3.50- 8 35 J		Transmission	Type		Constant mesh
		Rear Wheel				Operation method		Left-foot operated
Minimum height from ground			0.150m			Gear ratio	1st Gear	3.272
Performance	Braking distance		3.5m (20km/h)				2nd Gear	1.937
	Minimum turning radius		1.4m				3rd Gear	1.350
							4th Gear	1.043
	Starting method		Kick start		Speed reduction device	Gear type		Chain
	Type		Petrol/ 4 Cycle			Speed reduction rate		2.384
	No. and location of cylinders		1 transverse cylinder					
	Combustion chamber type		Hemisphere	Running system	Front Axle	Caster angle		25˚ 00'
	Valve train		OHC chain driven			Trail		42mm
	Bore x stroke		39.0 x 41.4mm		Tyre Pressure		Front	1.00kg/cm²
	Compression ratio		10.0				Rear	1.25kg/cm²
	Compression pressure (kg/ c ㎡・rpm)		14.0-1,000		Steering Angle		Left	42˚
							Right	42˚
	Maximum output (PS/ rpm)		3.1/7,500rpm	Braking system			Front	Mechanical leading trailing
	Maximum torque (kg/ rpm)		0.32/6,000rpm				Rear	Mechanical leading trailing
	Valve open/ close timing	Intake (1mm lift) Open	7˚(BTDC)	Suspension system	Suspension type		Front	Telescopic
		Intake (1mm lift) Close	12˚(ABDC)				Rear	Swing arm
		Exhaust (1mm lift) Open	10˚(BBDC)	Frame				Back bone
		Exhaust (1mm lift) Close	0˚(ATDC)					
	Valve clearance (when cooled down)	Intake	0.05mm					
		Exhaust	0.05mm					
	Under no load: Idling rpm)		2,000rpm					
	Lubrication system	Lubrication system	Combination of pressure and splash lubrication					
		Oil pump type	Trochoid					
		Oil filter type	Combination of total flow filtration and centrifugal mesh filtration					
		Lubricant capacity ℓ	0.8					
	Cooling system		Air cooling					

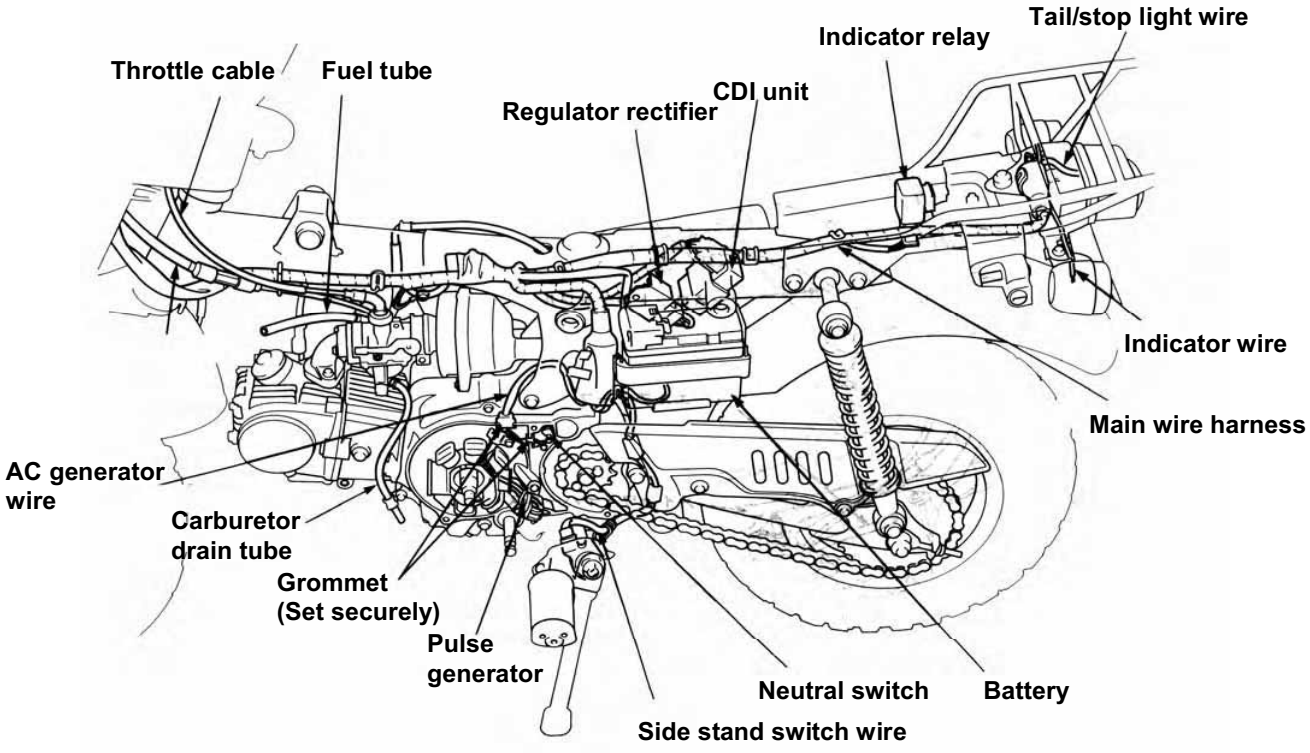
WIRING DIAGRAM

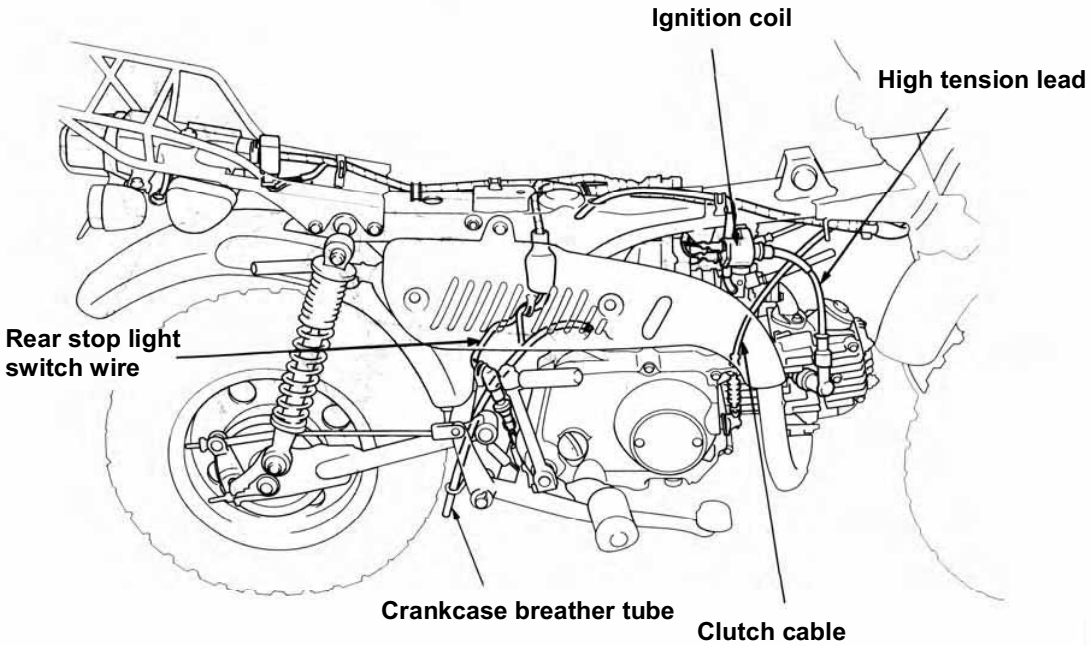


WIRING SCHEMATIC




Front brake cable
Clutch cable
Throttle cable
Fuel tube
Main wire harness
Carburetor drain tube
Speedometer cable
Main wire harness
Front brake cable
Ignition coil primary wire
Clutch cable
High tension lead
Speedometer cable


Tail/stop light wire
Indicator relay
Throttle cable
Fuel tube
CDI unit
Regulator rectifier
Indicator wire
Main wire harness
AC generator wire
Carburetor drain tube
Grommet (Set securely)
Pulse generator
Neutral switch
Battery
Side stand switch wire


Ignition coil
High tension lead
Rear stop light switch wire
Crankcase breather tube
Clutch cable

Z50J[Y] ADDENDUM

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Disassembling/ assembling the carburetor ---------- 25-15

Specifications

Model			Honda BA-AB27		Fuel system	Air cleaner type		Urethane foam type	
Chassis model			Honda AB27 (Monkey)	Honda AB27 (Gorilla)		Fuel tank capacity		4.5	9.0 ℓ
Length			1.360m	1.365m		Carburetor	Type	PB3JA	
Width			0.600m	0.625m			Fuel valve diameter	13mm	
Height			0.850m	0.880m			Venturi diameter	Approximately 11mm	
Wheelbase			0.895m				Air valve type	Manually operated piston valve type	
Engine Model			AB27E						
Engine Capacity			0.049 ℓ		Electrical system	Ignition System	Type	CDI Magnetic ignition	
Fuel Type			Unleaded fuel				Ignition timing	27°BTDC/2,000rpm	
Vehicle Weight		Front Axle	28kg	30kg			Contact breaker type	Non-contact type	
		Rear Axle	35kg	37kg			Spark plug	(NGK) CR5HSA, C6HSA, CR7HSA	
		Total	63kg	67kg				(ND) U16FSR-U, U20FSR-U, U22FSR-U	
Gross Vehicle Weight		Front Axle	42kg	44kg			Ignition clearance	0.60- 0.7mm	
		Rear Axle	76kg	78kg		Battery	Capacity	2.3Ah	
		Total	118kg	122kg	Power transmission system	Clutch	Type	Wet-type single plate coil spring	
Tyres		Front Wheel	3.50- 8 35 J				Operation method	Mechanical	
		Rear Wheel				Engine-to-Transmission Speed Reduction Ratio		4.312	
Minimum height from ground			0.150m			Transmission	Type	Constant mesh	
Performance	Braking distance		3.5m (20km/h)				Operation method	Left-foot operated	
	Minimum turning radius		1.4m				Gear ratio	1st Gear	3.272
								2nd Gear	1.937
								3rd Gear	1.350
								4th Gear	1.043
	Starting method		Kick start			Speed reduction device	Gear type	Chain	
	Type		Petrol/ 4 Cycle				Speed reduction rate	2.384	
	No. and location of cylinders		1 transverse cylinder						
	Combustion chamber type		Hemisphere		Running system	Front Axle	Caster angle	25° 00'	
	Valve train		OHC chain driven				Trail	42mm	
	Bore x stroke		39.0 x 41.4mm			Tyre Pressure		Front	1.00kg/cm²
	Compression ratio		10.0					Rear	1.25kg/cm²
	Compression pressure (kg/ cm² · rpm)		14.0-1,000			Steering Angle		Left	42°
								Right	42°
	Maximum output (PS/ rpm)		3.1/7,500rpm			Braking system type		Front	Mechanical leading trailing
	Maximum torque (kg/ rpm)		0.32/6,000rpm					Rear	Mechanical leading trailing
	Valve open/ close timing	Intake (1mm lift) Open	7°(BTDC)			Suspension device	Suspension type	Front	Telescopic
		Intake (1mm lift) Close	12°(ABDC)					Rear	Swing arm
		Exhaust (1mm lift) Open	10°(BBDC)			Frame			Back bone
		Exhaust (1mm lift) Close	0°(ATDC)						
	Valve clearance (when cooled down)	Intake	0.05mm						
		Exhaust	0.05mm						
	Under no load: Idling rpm		2,000rpm						
	Lubrication system	Lubrication system	Combination of pressure and splash lubrication						
		Oil pump type	Trochoid						
		Oil filter type	Combination of total flow filtration and centrifugal mesh filtration						
		Lubricant capacity ℓ	0.8						
	Cooling system		Air cooling						

Maintenance criteria

Engine

Measurement item			Standard	Usage limit
Oil pump	Inner rotor- outer rotor clearance		0.15mm	Replace if 0.2mm or more.
	Outer rotor- body clearance		0.03- 0.08mm	Replace if 0.12mm or more.
	Rotor end- body clearance		0.10- 0.21mm	Replace if 0.3mm or more.
Cylinder head	Deflection of cylinder head		-	Make adjustment or replace if 0.05mm or more.
	Contact width of valve seat		1.0mm	Make adjustment or replace if 1.6mm or more.
	Valve guide inner diameter	IN	5.000- 5.012mm	Replace if 5.03mm or more.
		EX	5.000- 5.012mm	Replace if 5.03mm or more.
Valve	Valve stem outer diameter	IN	4.970- 4.985mm	Replace if 4.92mm or less.
		EX	4.955- 4.970mm	Replace if 4.92mm or less.
	Valve- guide clearance	IN	0.015- 0.042mm	Replace if 0.08mm or more.
		EX	0.030- 0.057mm	Replace if 0.10mm or more.
Valve spring	Valve spring free length	IN Inner	32.78mm	Replace if 31.1mm or less.
		IN Outer	35.55mm	Replace if 33.8mm or less.
		EX Inner	32.78mm	Replace if 31.1mm or less.
		EX Outer	35.55mm	Replace if 33.8mm or less.
Cam shaft	Cam height	IN	24.982mm	Replace if 24.584mm or less.
		EX	24.015mm	Replace if 23.714mm or less.
Rocker arm	Rocker arm hole diameter		10.000- 10.015mm	Replace if 10.10mm or more.
	Rocker arm shaft outer diameter		9.978- 9.987mm	Replace if 9.91mm or less.
Cylinder	Inner diameter		39.005- 39.015mm	Replace if 39.05mm or more.
	Upper surface deflection		-	Replace if 0.05mm or more.
Piston	Ring groove- ring clearance	Top	0.015- 0.050mm	Replace if 0.12mm or more.
		Second	0.015- 0.050mm	Replace if 0.12mm or more.
Piston ring	Ring end gap joint clearance	Top	0.05- 0.15mm	Replace if 0.35mm or more.
		Second	0.05- 0.20mm	Replace if 0.5mm or more.
		Oil (side rail)	0.20- 0.90mm	Replace if 1.1mm or more.
Piston pin	Piston outer diameter (STD)		38.975- 38.995mm	Replace if 38.90mm or less.
	Piston pin hole inner diameter		13.002- 13.008mm	Replace if 13.055mm or more.
	Piston pin outer diameter		12.994- 13.000mm	Replace if 12.980mm or less.
	Cylinder- piston clearance		0.010- 0.040mm	Replace if 0.15mm or more.
	Piston- pin clearance		0.002- 0.014mm	Replace if 0.075mm or more.
Clutch	Spring free length		18.9mm	Replace if 17.4mm or less.
	Plate deflection		-	Replace if 0.2mm or more.
	Disk thickness		3.45- 3.55mm	Replace if 3.15mm or less.
	Primary drive gear bush outer diameter		20.93- 20.95mm	Replace if 20.90mm or less.
	Primary drive gear inner diameter		21.000- 21.021mm	Replace if 21.05mm or less.

Engine

Measurement item		Standard	Usage limit
Crankshaft	Connecting rod small end inner diameter	13.016- 13.034mm	Replace if 13.10mm or more.
	Conrod large end axle direction clearance	0.10- 0.35mm	Replace if 0.6mm or more.
	Conrod large end bearing direction clearance	0- 0.012mm	Replace if 0.05mm or more.
	Crankshaft looseness wear	-	Replace if 0.10mm or more.
Transmission	M2	17.016- 17.034mm	Replace if 17.1mm or more.
	M4	17.016- 17.034mm	Replace if 17.1mm or more.
	C1	17.016- 17.034mm	Replace if 17.1mm or more.
	C3	17.016- 17.034mm	Replace if 17.1mm or more.
	C4	17.016- 17.034mm	Replace if 17.1mm or more.
	Main shaft outer diameter	16.983- 16.994mm	Replace if 16.95mm or less.
	Counter-shaft outer diameter	16.983- 16.994mm	Replace if 16.95mm or less.
	Shift drum outer diameter	33.950- 39.975mm	Replace if 33.93mm or less.
	Shift fork inner diameter	34.000- 34.025mm	Replace if 34.065mm or more.
	Thickness of shift fork tip	4.86- 4.94mm	Replace if 4.6mm or less.

Carburetor

Venturi diameter	Approximately 11 ϕ
Setting mark	PB3JA
Float level	18 1mm
Air screw standard turns out	2 turns out
Main jet	#62
Slow jet	#35X #35
Jet needle clip	3 step

Frame

Measurement item	Standard	Usage limit
Bending of front axle shaft	-	Replace if 0.2mm or more.
Looseness of front wheel rim	-	Replace if 2.0mm or more.
Inner diameter of front brake drum	110.2- 110.4mm	Replace if 111mm or more.
Thickness of front brake lining	4mm	Replace if 2mm or less.
Bending of rear axle shaft	-	Replace if 0.2mm or more.
Looseness of rear wheel rim	-	Replace if 2.0mm or more.
Inner diameter of rear brake drum	110.2- 110.4mm	Replace if 111mm or more.
Thickness of rear brake lining	4mm	Replace if 2mm or less.
Free length of rear cushion spring	192mm	Replace if 182mm or less.

Specialized, common tools

Specialized tools

Tool name	Tool No.	Note
Valve guide driver	07942-MA60000	For punching and hammering in valve guide
Valve spring compressor attachment	07959-KM30100	Attachment for disassembling/ assembling valve spring
Universal bearing puller	07631-0010000	For removing counter shaft bearing
Sliding weight	07741-0010201	For removing main shaft, counter-shaft bearing
Remover handle	07936-3710100	
Bearing remover	07936-3710300	
Snap ring pliers	07914-3230001	For disassembling/ assembling front cushion
Spring holder attachment	07967-1180100	Attachment for disassembling/ assembling rear cushion
Rear cushion attachment (A)	07967-GA70101	
Ball race remover	07944-1150001	For removing ball race
Pilot screw wrench	07KMA-MS60101	For air screw adjustment

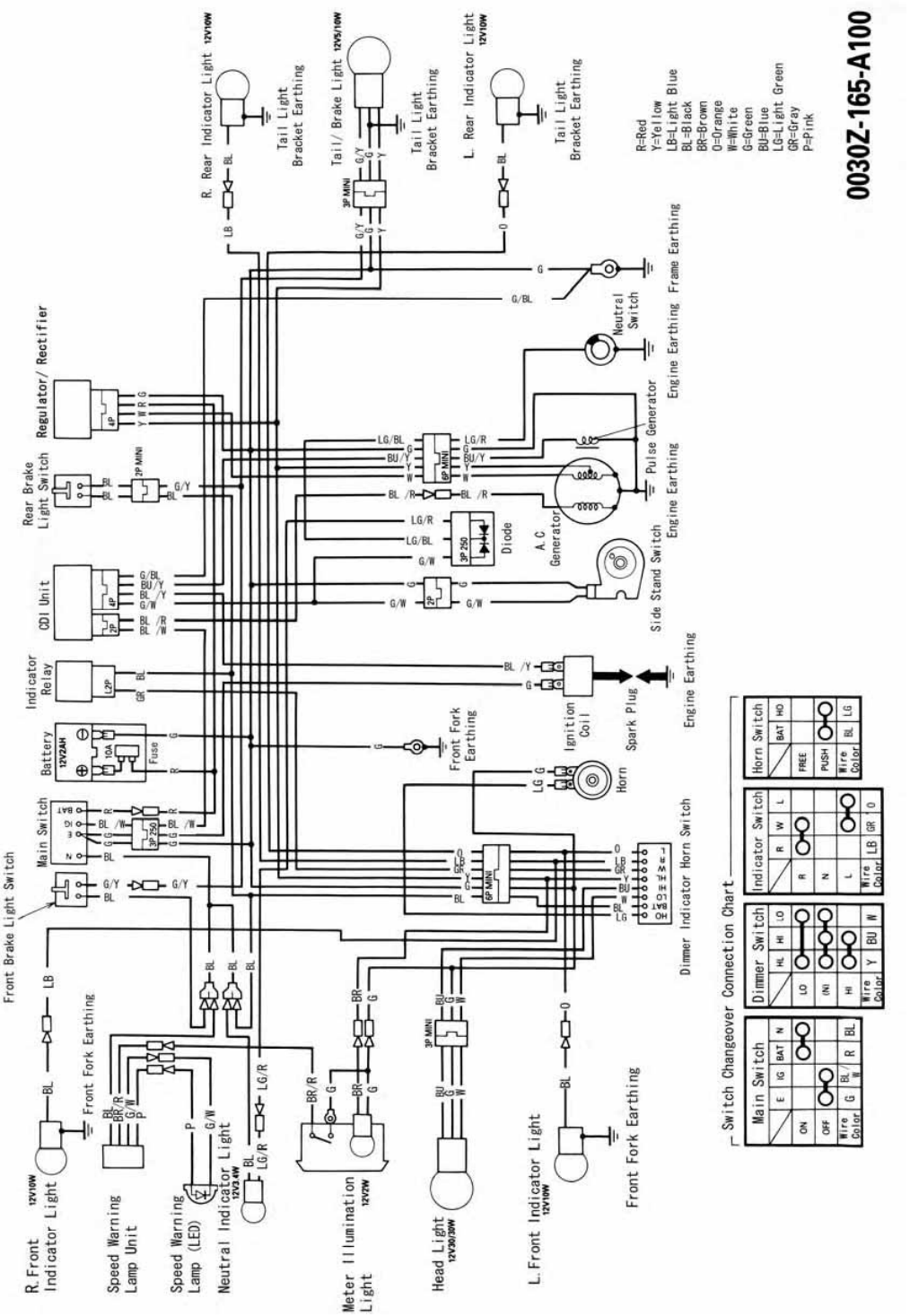
Common tools

Tool name	Tool No.	Note
Float level gauge	07401-0010000	For measuring the fuel level of the carburetor
Tappet wrench 8X9mm	07708-0030100	For tappet adjustment
Adjusting wrench (B)	07708-0030400	
Valve spring compressor	07757-0010000	For disassembling/ assembling valve spring
Valve guide reamer	07984-MA60000	For valve guide adjustment
Lock nut wrench 20X24mm	07716-0020100	For attaching/ detaching clutch lock nut
Extension bar	07716-0020500	Supplementary tool for lock nut wrench
Universal holder	07725-0030000	Wind to tighten clutch, flywheel
Flywheel puller	07733-0010000	For removing flywheel
Bearing driver outer 37X40mm	07746-0010200	For tapping in main shaft, counter-shaft bearing
Bearing driver pilot 17mm	07746-0040400	
Bearing driver attachment 24X26mm	07746-0010700	
Bearing driver handle (A)	07749-0010000	
Pin spanner	07702-0020000	For attaching/ detaching top thread
Bearing remover shaft	07746-0050100	For removing front, rear wheel bearings
Bearing remover head 12mm	07746-0050300	
Bearing driver outer 32X35mm	07746-0010100	For tapping in front, rear wheel bearings
Bearing driver pilot 12mm	07746-0040200	
Rear cushion spring compressor	07959-3290001	For disassembling/ assembling rear cushion

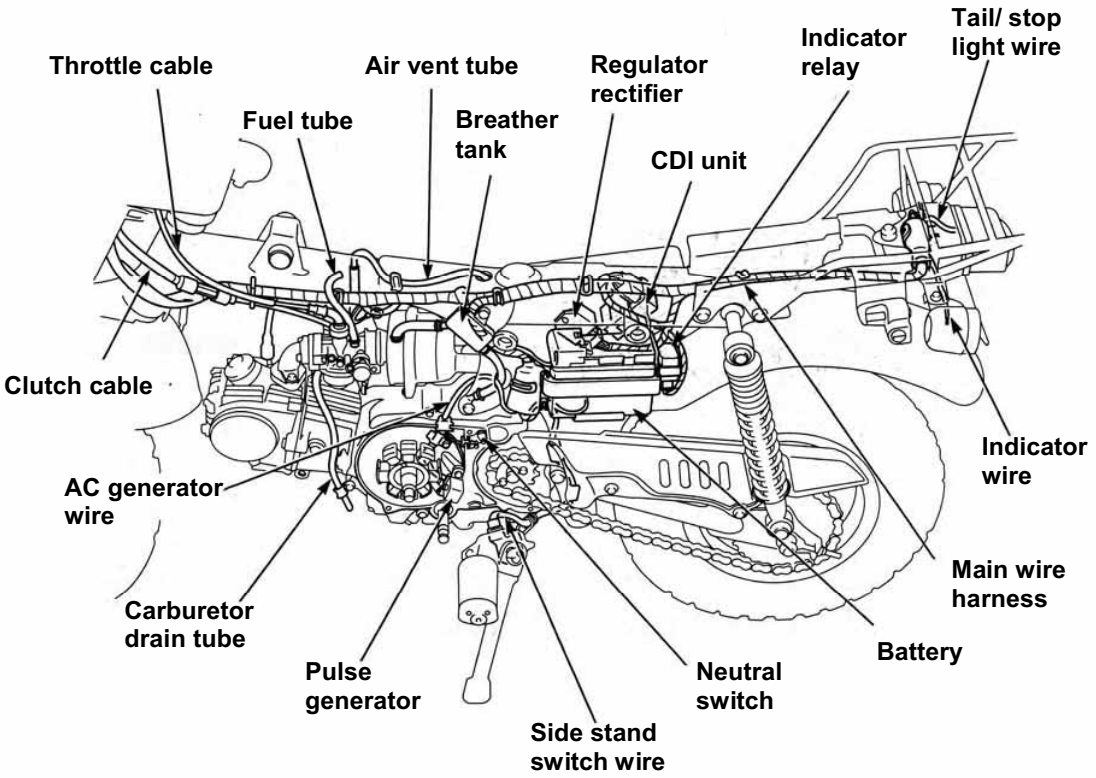
Valve cutter

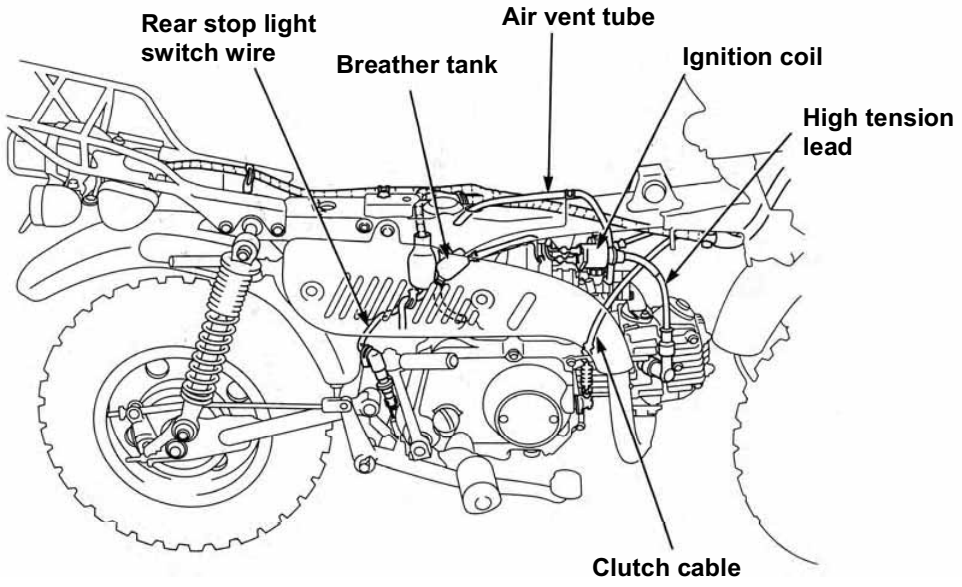
Tool name	Tool No.	Note
Seat cutter 22mm	07780-0010701	For making adjustment to IN, EX valve seat surfaces
Flat cutter 22mm	07780-0012601	For making adjustment to EX valve seat surface
Flat cutter 19mm	07780-0012700	For making adjustment to IN valve seat surface
Interior cutter 22mm	07780-0014202	For making adjustment to IN, EX valve seat surfaces
Cutter holder 5mm	07781-0010400	Valve seat cutter holder

WIRING DIAGRAM

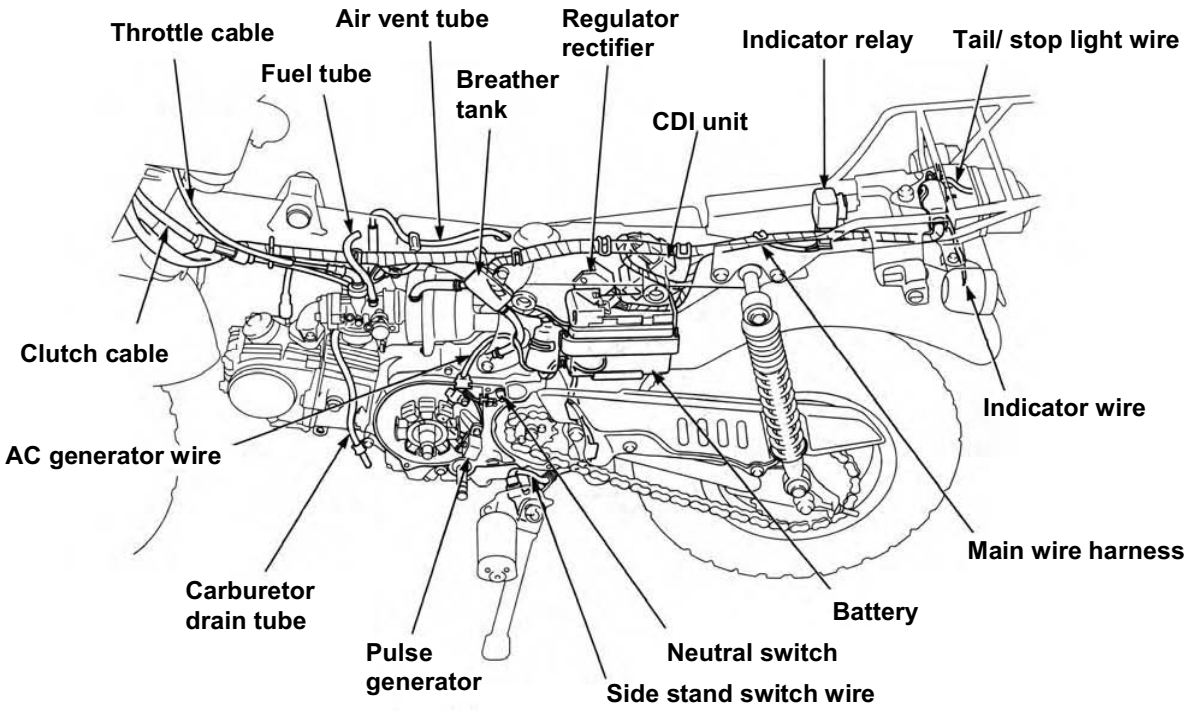


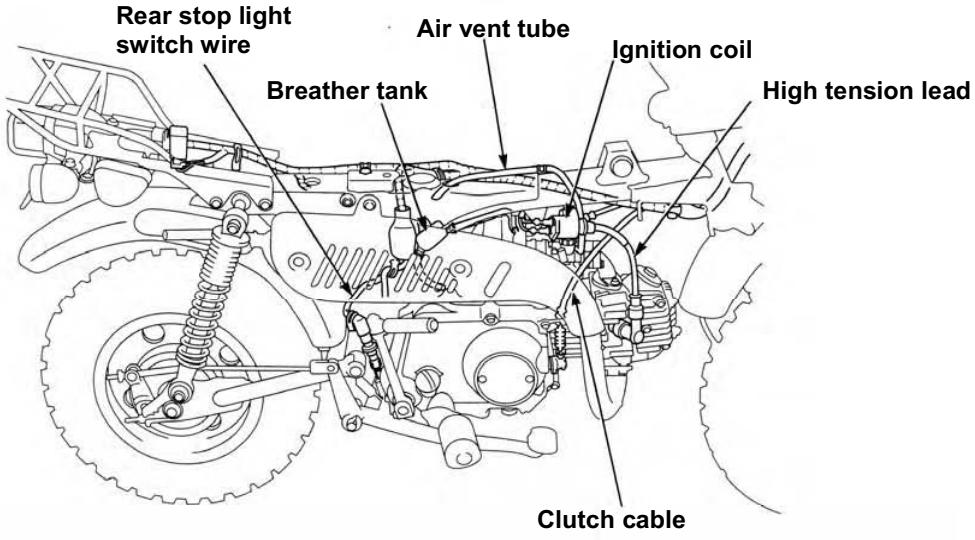
WIRING SCHEMATIC- MONKEY





GORILLA

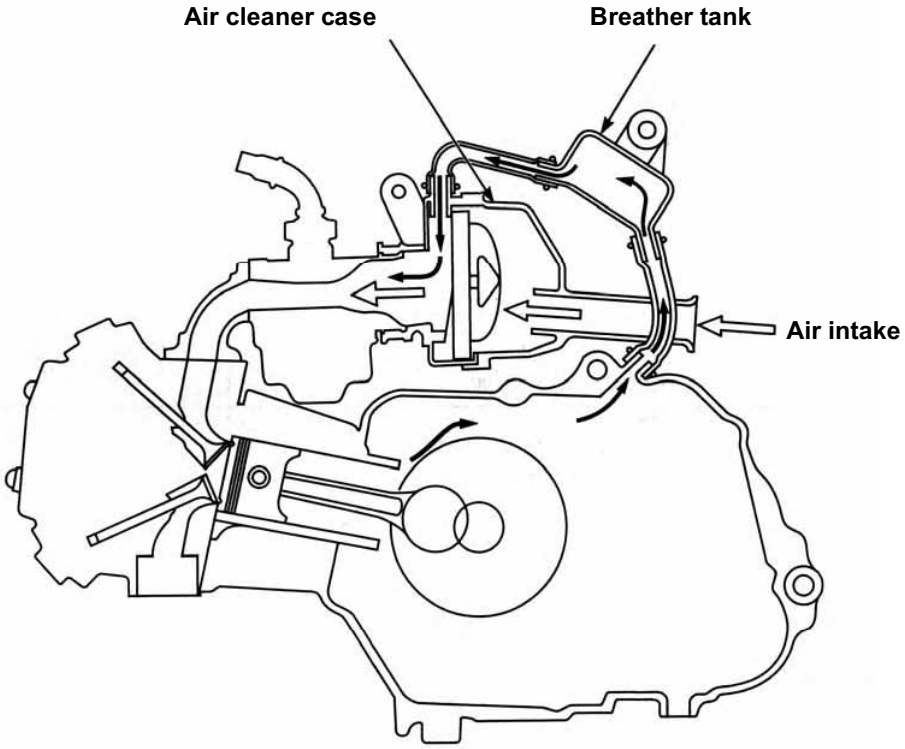

Throttle cable
Air vent tube
Regulator rectifier
Indicator relay
Tail/ stop light wire
Fuel tube
Breather tank
CDI unit
Clutch cable
Indicator wire
AC generator wire
Main wire harness
Carburetor drain tube
Battery
Pulse generator
Neutral switch
Side stand switch wire


Rear stop light switch wire
Air vent tube
Ignition coil
Breather tank
High tension lead
Clutch cable

Toxic gas emission prevention system

Blow-by gaseous reduction device

This machine has a structure that prevents emission of blow-by gas within the engine to the atmosphere by returning gas generated within the crankcase from the upper part of the crankcase via the breather tank to the air cleaner case and re-burning it.



Inspection and maintenance

INSPECTION, MAINTENANCE ITEMS			INSPECTION, MAINTENANCE PERIOD			CRITERIA
PARTS		ITEMS	DAILY CHECK	6 MONTHS	12 MONTHS	
Steering system	**Handle**	Operating condition				
	Front fork	Damage			○	
		Condition of the steering stem attachment			○	
		Looseness of the steering stem bearing			○	
Brakes	**Brake pedal and brake lever**	Play				Front/Rear: 10-20mm at the lever tip Rear wheels: 10-20mm at the pedal tip
		Brake effectiveness	○	○	○	
	Rods and cables	Looseness, backlash, and damage			○	
	Hose and pipe	Leakage, damage, and fitting condition		○	○	
	Reservoir tank	Fluid volume	○		○	
	Master cylinder and disc caliper	Function, abrasion and damage			○	
	Brake drum and brake shoe	Drum- lining clearance		○	○	
		Abrasion of shoe sliding part and lining			○	Indicator type
		Abrasion and drum damage			○	Standard diameter: 110mm Usage limit: 111mm
	Brake disc and pad	Disc- pad clearance			○	
		Abrasion of pad		○	○	
		Abrasion and disc damage			○	
Running system	**Wheel**	Tyre air pressure				Front wheel: 100 kPa (1.00 kgf/ cm²) Rear wheel: 125 kPa (1.25 kgf/ cm²)
		Cracking and damage of tyre	○		○	
		Depth of tyre groove and abnormal abrasion				Wear indicator is not shown on the tread (remaining groove: 0.8mm or more)

INSPECTION, MAINTENANCE ITEMS			INSPECTION, MAINTENANCE PERIOD			CRITERIA
PARTS		ITEMS	DAILY CHECK	6 MONTHS	12 MONTHS	
Running system	**Wheel**	Looseness of wheel nut and wheel bolt		○	○	
		Backlash of front wheel bearing			○	
		Backlash of rear wheel bearing			○	
Suspension system	**Suspension arm**	Looseness of connecting part and damage of arm			○	
	Shock absorber	Oil leakage and damage			○	
Power transmission	**Clutch**	Clutch lever play				10-20mm at the lever tip
		Operation		○	○	
	Transmission	Oil leakage and oil amount		○	○	
	Propeller shaft and drive shaft	Looseness of joint part		○	○	
		Backlash of spline part			○	
		Backlash of universal joint part			○	
	Chain and sprocket	Looseness of chain		○	○	MAX amplitude at the center of the chain between the front and the rear: 10-20mm (when using the side stand).
		Sprocket attachment condition and abrasion			○	
Electrical	**Ignition system**	Spark plug condition		○	○	Plug gap: 0.6- 0.7mm
		Ignition timing		○	○	
	Battery	Fluid volume	○	○	○	
		Fluid density			○	
		Terminal connection condition			○	
	Electrical wiring	Looseness of the connecting part and damage				

INSPECTION, MAINTENANCE ITEMS			INSPECTION, MAINTENANCE PERIOD			CRITERIA
PARTS		ITEMS	DAILY CHECK	6 MONTHS	12 MONTHS	
Engine	Main body	Start-up condition and abnormal sound	○		○	
		Cam chain adjustment		○	○	
		Condition at low speed and acceleration	○		○	
		Idling rev		○	○	2,000±100rpm
		Condition of exhaust				
		Condition of air cleaner element		○	○	
	Lubrication system	Oil leakage		○	○	
		Oil deterioration and amount	○	○	○	Stick gauge type: the oil amount should be between the upper and lower limit lines.
	Fuel system	Fuel leakage			○	
		Condition of carburetor link mechanism			○	
		Throttle valve and choke valve operation			○	Throttle grip play 2-6mm (Flange part)
	Cooling system	Water amount	○	○	○	
		Water leakage			○	
Devices to prevent the emission of soot, malodorous, and/or toxic gas	Blow-by gas reducing system	Damage of piping			○	
		Cleaning of breather drain		○	○	
	Carbon monoxide etc. emission prevention system	Secondary air supply device function			○	
		Damage and fitting of piping			○	
Lighting system and direction indicator		Operation	○	○	○	
Horn and locking system		Operation				
Gauges		Operation			○	
Exhaust pipe and muffler		Looseness in fitting and damage				
		Muffler function			○	

INSPECTION, MAINTENANCE ITEMS		INSPECTION, MAINTENANCE PERIOD			CRITERIA
PARTS	ITEMS	DAILY CHECK	6 MONTHS	12 MONTHS	
Frame	Looseness and damage				
Others	Lubrication condition of chassis parts			○	
Parts where abnormalities are found when driving	Make sure that there are no abnormalities in the relevant parts.				

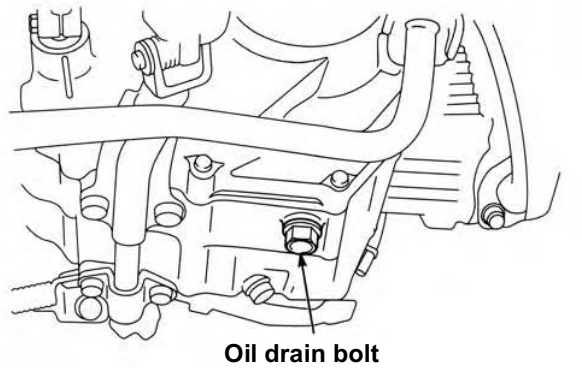
REGULAR REPLACEMENT ITEMS

Replace items when either the replacement time or the travel distance reaches the limit indicated below.

Regular replacement items	Replacement time	Note
Engine oil	First time: 1,000km or after 1 month After first replacement: every 3,000km of travel or 6 months	

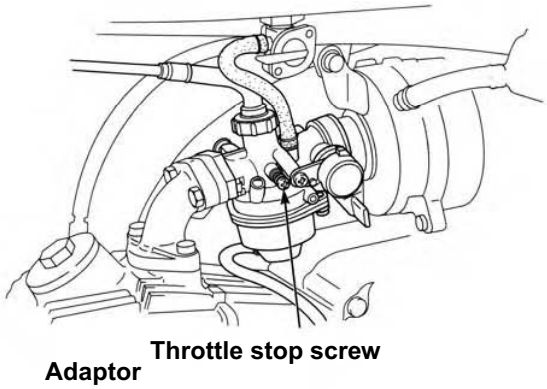
Fuel system

✻ The air screw is maintained and pre-adjusted at the factory. Take sufficient care when making adjustment to this screw as it will have a great effect on the concentration of CO and HC emission.
◦ Place the vehicle on level ground when carrying out operation.



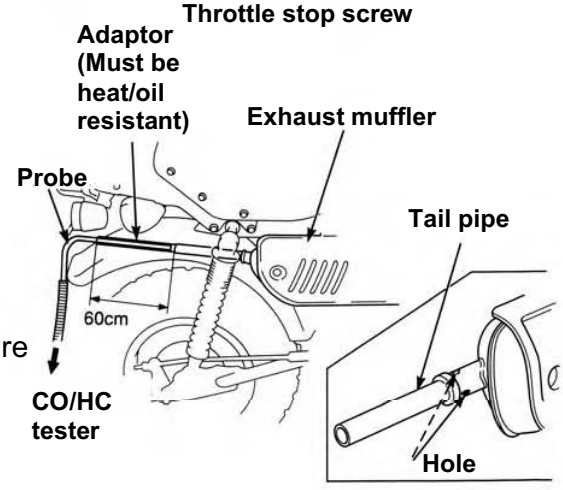
Idling check, exhaust gas check

✻ Carry out check and adjustment on the following items before performing measurement.
1. Condition of the air cleaner element (→3-10)
2. Condition of the spark plug



Fit a tachometer with a scale that can read down to 50rpm precision according to the instruction manual.
Start the engine.

Place the vehicle on level ground and maintain it vertically as the idling rev may change if the vehicle is inclined. Warm up the engine until the temperature of the engine oil drain bolt reaches the temperature indicated below.



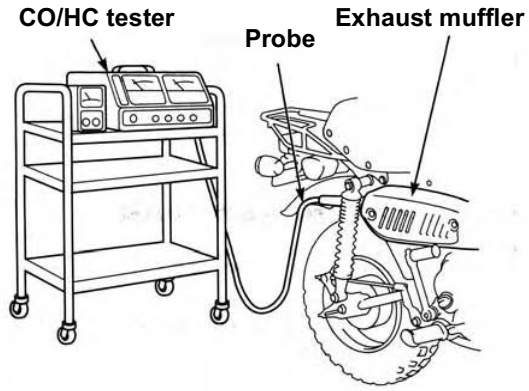
✻ The measurement result using a liquid temperature thermometer may be affected by the outside air temperature. Use a digital surface thermometer to measure the drain bolt temperature.

Drain bolt temperature: 60- 65℃ (equivalent of 60- 65℃ in oil temperature)
Check the idling rpm, and make adjustment by turning the throttle stop screw if necessary.
Idling rpm: 2,000± 100rpm

Close up the tail pipe hole. Connect an adapter (tube) to the muffler as in the diagram on the right in order to secure required depth for inserting the probe.

After making required adjustment to the idling rpm, measure the concentration of CO (%) and HC (HCppm).

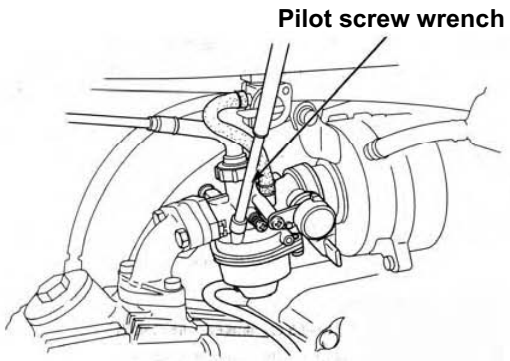
CO concentration during idling: 1.5- 4.5%
HC concentration during idling: 2,000ppm or less



If the CO/ HC concentration exceeds the rated value, make adjustment to the CO concentration during idling by turning the air screw, and check if the HC concentration is below the rated value.

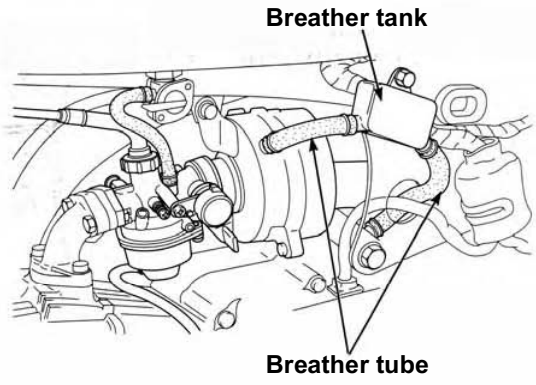
Specialized Tool

Pilot screw wrench 07KMA-MS60101
Target value for CO concentration adjustment during idling: 3±0.5%

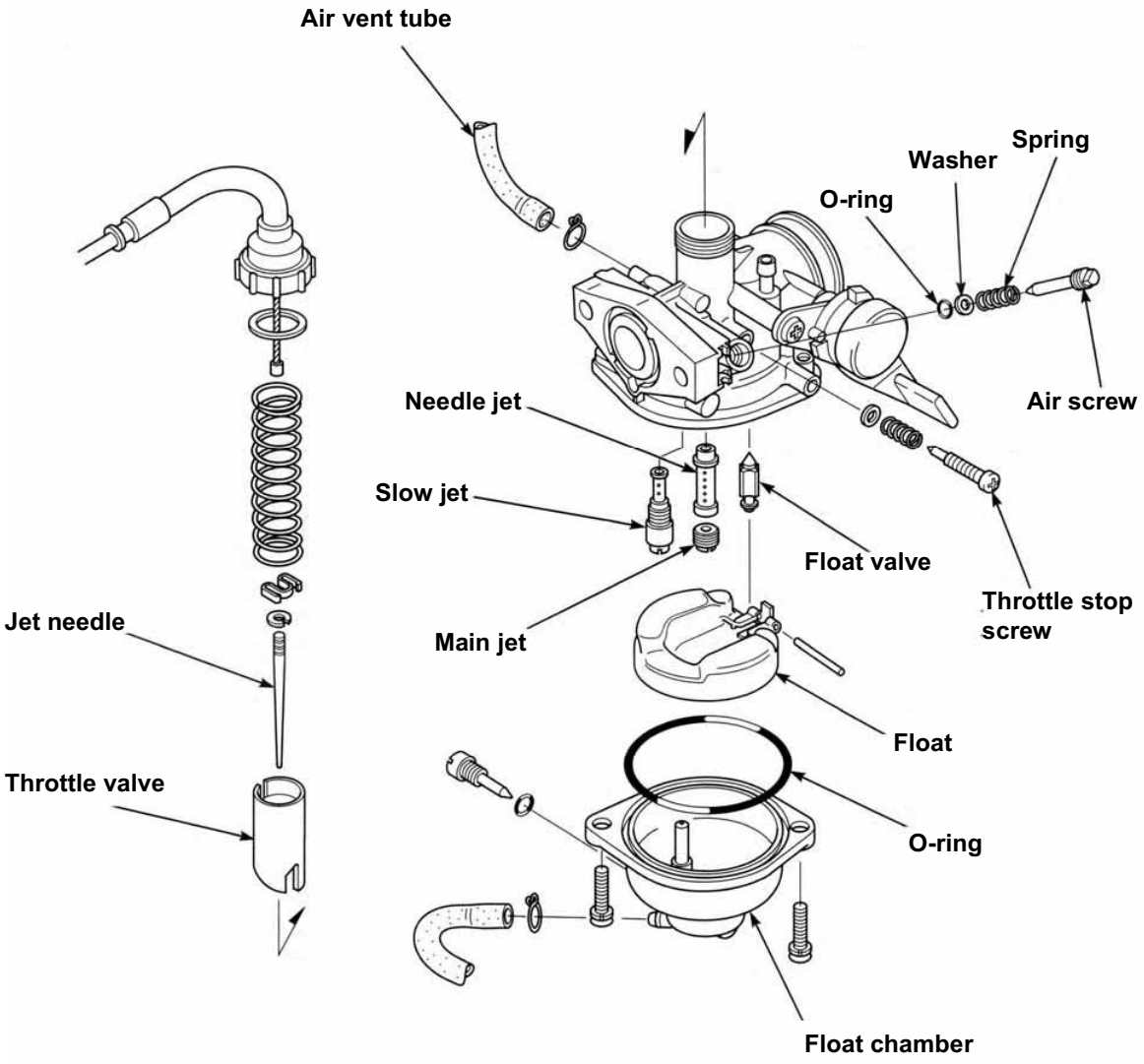


Re-check the idling rpm.
Check the CO/ HC concentration, and make re-adjustment if it exceeds the rated value.

Blow-by gas reducing device
Check the breather tube, and replace if it is damaged or deteriorated.
Check if the tube clips are fastened securely.



DISASSEMBLING/ ASSEMBLING THE CARBURETOR



Z50J$_2$ ADDENDUM

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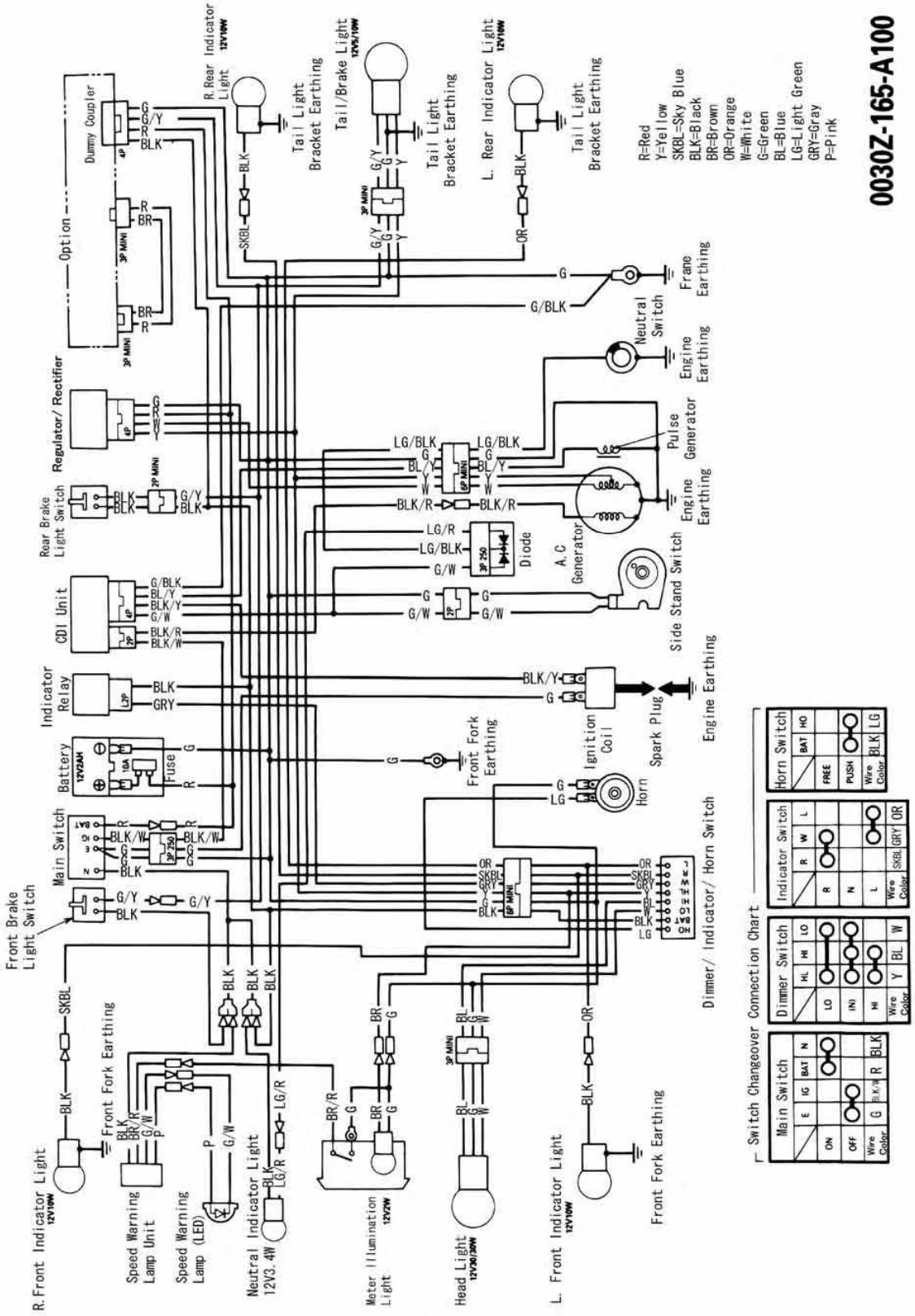
Wiring diagram (Z50J$_2$ AB27- 1200001) ----------26-2

WIRING DIAGRAM



Z50J$_4$ Addendum

Contents

Z50J$_4$ Frame No. AB27- 1400001～

Specifications ----------27-2
Tightening torque ----------27-3
Wiring diagram ----------27-5

27-2

Specifications

Model			Honda BA-AB27		Fuel system	Air cleaner type			Urethane foam type	
Chassis model			Honda AB27 (Monkey)	Honda AB27 (Gorilla)		Fuel tank capacity			4.5	9.0 ℓ
Length			1.365m	1.365m		Carburetor	Type		PB3JA	
Width			0.600m	0.625m			Fuel valve diameter		13mm	
Height			0.850m	0.880m			Venturi diameter		Approximately 11mm	
Wheelbase			0.895m				Air valve type		Manually operated piston valve type	
Engine Model			AB27E							
Engine Capacity			0.049 ℓ		Electrical system	Ignition system	Type		CDI Magnetic ignition	
Fuel Type			Unleaded fuel				Ignition timing		27˚BTDC/2,000rpm	
Vehicle Weight		Front Axle	28kg	30kg			Contact breaker type		Non-contact type	
		Rear Axle	35kg	37kg			Spark plug		(NGK) CR5HSA, C6HSA, CR7HSA	
		Total	63kg	67kg					(ND) U16FSR-U, U20FSR-U, U22FSR-U	
Gross Vehicle Weight		Front Axle	42kg	44kg			Ignition clearance		0.6- 0.7mm	
		Rear Axle	76kg	78kg		Battery	Capacity		2.3Ah	
		Total	118kg	122kg	Power transmission system	Clutch	Type		Wet-type single plate coil spring	
Tyres		Front Wheel	3.50- 8.35 J				Operation method		Mechanical	
		Rear Wheel				Engine-to-Transmission Speed Reduction Ratio			4.312	
Minimum height from ground			0.150m			Transmission	Type		Constant mesh	
							Operation method		Left-foot operated	
Minimum turning radius			1.4m				Gear ratio	1st Gear	3.272	
								2nd Gear	1.937	
								3rd Gear	1.350	
								4th Gear	1.043	
	Starting method		Kick start			Speed reduction device	Gear type		Chain	
	Type		Petrol/ 4 Cycle				Speed reduction rate		2.384	
	No. and location of cylinders		1 transverse cylinder							
	Combustion chamber type		Hemisphere		Running system	Front Axle	Caster angle		25˚ 00'	
	Valve train		OHC chain driven				Trail		42mm	
	Bore x stroke		39.0 x 41.4mm			Tyre Pressure		Front	1.00kg/cm²	
	Compression ratio		10.0					Rear	1.25kg/cm²	
	Compression pressure (kg/ c㎡・rpm)		14.0-1,000			Steering Angle		Left	42˚	
								Right	42˚	
	Maximum output (PS/ rpm)		3.1/7,500rpm			Braking system type		Front	Mechanical leading trailing	
	Maximum torque (kg/ rpm)		0.32/6,000rpm					Rear	Mechanical leading trailing	
	Valve open/ close timing	Intake (1mm lift) Open	7˚(BTDC)			Suspension system	Suspension type	Front	Telescopic	
		Intake (1mm lift) Close	12˚(ABDC)					Rear	Swing arm	
		Exhaust (1mm lift) Open	10˚(BBDC)			Frame			Back bone	
		Exhaust (1mm lift) Close	0˚(ATDC)							
	Valve clearance (when cooled down)	Intake	0.05mm							
		Exhaust	0.05mm							
	Under no load: Idling rpm		2,000rpm							
	Lubrication system	Lubrication system	Combination of pressure and splash lubrication							
		Oil pump type	Trochoid							
		Oil filter type	Combination of total flow filtration and centrifugal mesh filtration							
		Lubricant capacity ℓ	0.8							
	Cooling system		Air cooling							

Tightening torque

Engine related

Part to tighten		No. of places	Screw diameter (mm)	Tightening torque: N· m (kgf· m)
Tappet hole cap		2	30	12 (1.2)
Valve adjust nut		2	5	8.8 (0.9)
Cylinder head	Nut	4	6	11 (1.1)
	Bolt	1	6	9.8 (1.0)
Cam sprocket bolt		2	5	8.8 (0.9)
Cylinder bolt		1	6	9.8 (1.0)
Guide roller pin bolt		1	6	9.8 (1.0)
Intake manifold installation bolt		2	6	8.8 (0.9)
Clutch lock nut		1	14	42 (4.3)
Drum stopper arm pivot bolt		1	6	9.8 (1.0)
Shift drum stopper bolt		1	6	17 (1.7)
Drain bolt		1	12	23 (2.3)
Push load shearing bolt		1	14	25 (2.5)
Tensioning pivot bolt		1	8	16 (1.6)
Drive sprocket bolt		2	6	13 (1.3)
Flywheel nut		1	10	41 (4.2)
Kick starter pedal split bolt		1	6	9.8 (1.0)
Shift pedal split bolt		1	6	9.8 (1.0)

Frame related

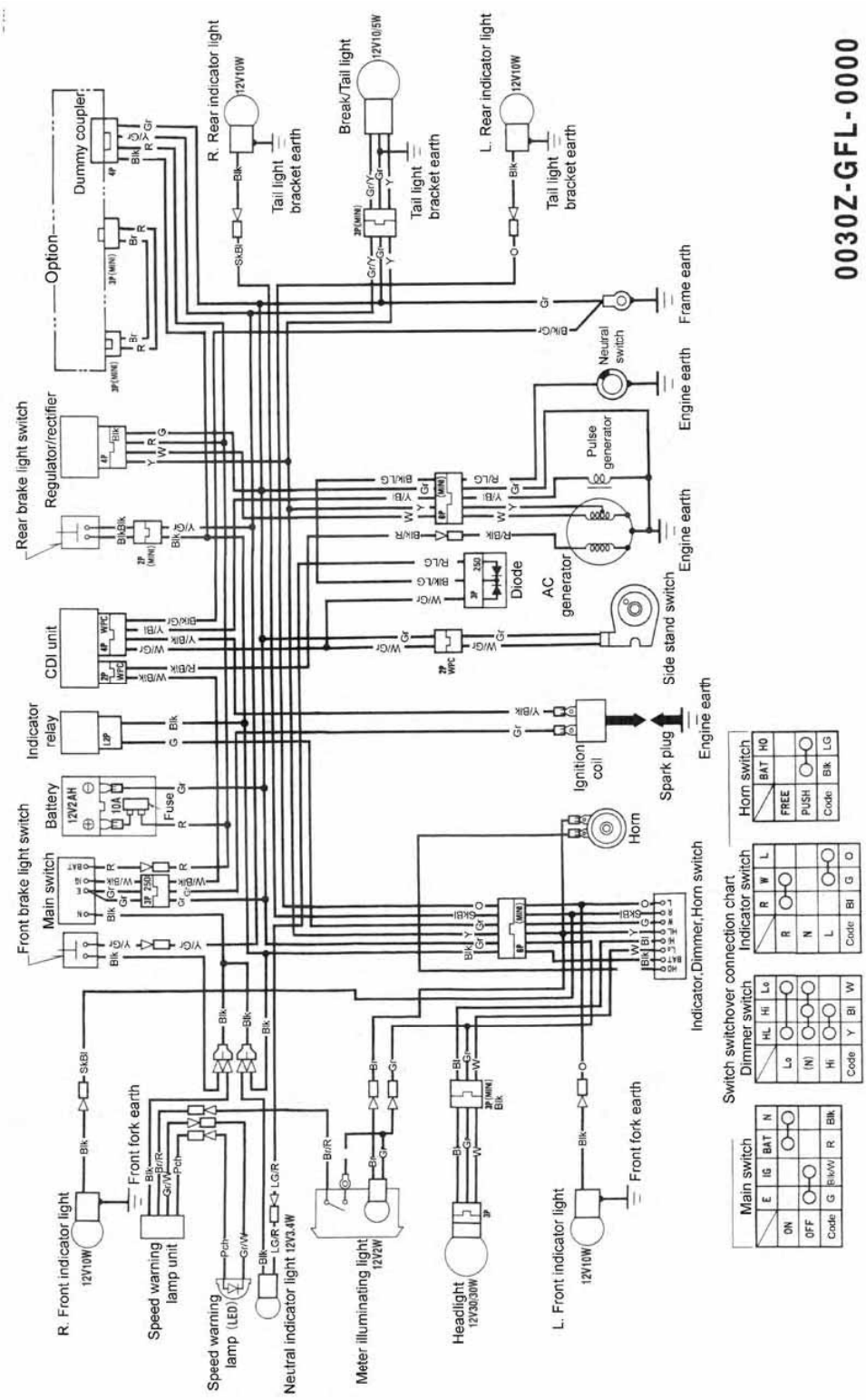
Part to tighten	No. of places	Screw diameter (mm)	Tightening torque: N m (kgf m)
Engine hanger bolt	2	8	29 (3.0)
Handle lower holder nut	2	10	39 (4.0)
Handle bar lever bolt	1	5	5.2 (0.53)
Handle bar lever nut	1	5	5.2 (0.53)
Steering stem nut	1	22	74 (7.5)
Fork bolt	2	10	29 (3.0)
Front axel nut	1	12	49 (5.0)
Rear axel nut	1	12	47 (4.8)
Wheel hub nut	8	8	26 (2.7)
Wheel rim nut	8	8	26 (2.7)
Driven sprocket nut	3	8	30 (3.1)
Brake arm nut	2	6	9.8 (1.0)
Rear fork pivot nut	1	10	44 (4.5)
Rear cushion	4	10	29 (3.0)
Step bar bolt	4	8	26 (2.7)

Part to tighten		No. of places	Screw diameter (mm)	Tightening torque: N m (kgf m)
Muffler	Bolt	1	8	29 (3.0)
	Nut	1	6	12 (1.2)
Exhaust pipe joint nut		2	6	14 (1.4)
Muffler protector bolt		2	6	8.8 (0.9)
Exhaust pipe cover screw		2	5	4.9 (0.5)
Side stand pivot	Bolt	1	10	9.8 (1.0)
	Nut	1	10	29 (3.0)
Front fender bolt		2	6	12 (1.2)

Standard tightening torque

Part name	Tightening torque: (kgf m)	Part name	Tightening torque: (kgf m)
5mm bolt, nut	4.9 (0.5)	5mm screw	3.9 (0.4)
6mm bolt, nut	9.8 (1.0)	6mm screw	8.8 (0.9)
8mm bolt, nut	22 (2.2)	6mm flange bolt, nut	12 (1.2)
10mm bolt, nut	34 (3..5)	8mm flange bolt, nut	26 (2.7)
12mm bolt, nut	54 (5.5)	10mm flange bolt, nut	39 (4.0)

WIRING DIAGRAM- MONKEY



WIRING DIAGRAM- GORILLA