YBR125(JYM125/125-2)

Chongqing Jianshe·YAMAHA Motor Co.,Ltd
First edition Jan.2003

Notice

This service manual compiled by ChongqingYAMAHA Motor co.,Ltd, is specially used for dealer and maintenance station of Chongqing JianśheYAMAHA Motor co.,Ltd. It is not possible to include all the knowledge of a mechanic in one manual,it is only used for repairing and maintaining JianśheYAMAHA motorcycle and understand the principle of vehicle, procedure of maintenance as well as technology of maintenance.If without the knowledge on this field,the improper assembly and dangerous condition occurred assembly would be happened when repairing the motorcycle.

Chongqing JianśheYAMAHA Motor co.,Ltd is continually striving to improve all its models.Modifications and significant changes in specifications of procedures will be forwarded to all authorized dealers and will appear in future editions of this manual where applicable.

Note:

Design and specification are subject to changes without notice.

Important Information

Particularly important information is distinguished in this manual by the following notations:

The safety Alert Symbol means ATTENTION!BECOME ALERT!YOUR SAFETY IS INVOLED!

Warning Failure to follow WARNING instructions could result in severe injury of death to the vehicle operator, a bystander or a person inspecting or repairing the vehicle.

CAOTION A CAUTION indicates special precautions that must be taken to avoid damage to the machine.

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

How to use this manual

Manual Organization

This manual includes many chapters which explain the main contents of each title individually.

First title□:An abbreviation and symbol in the upper right corner of each page indecates the current chapt

Second title□:This title is shown in the left of section symbol of upper right corner of each page.

Third title□:It is a title of the smallest unit,which is compiled step by step and matched with relevent pictur

Exploded Diagram

In order to understand the parts and treatment procedure,the exploded diagram is provided at the beginn of each exploded chapter:

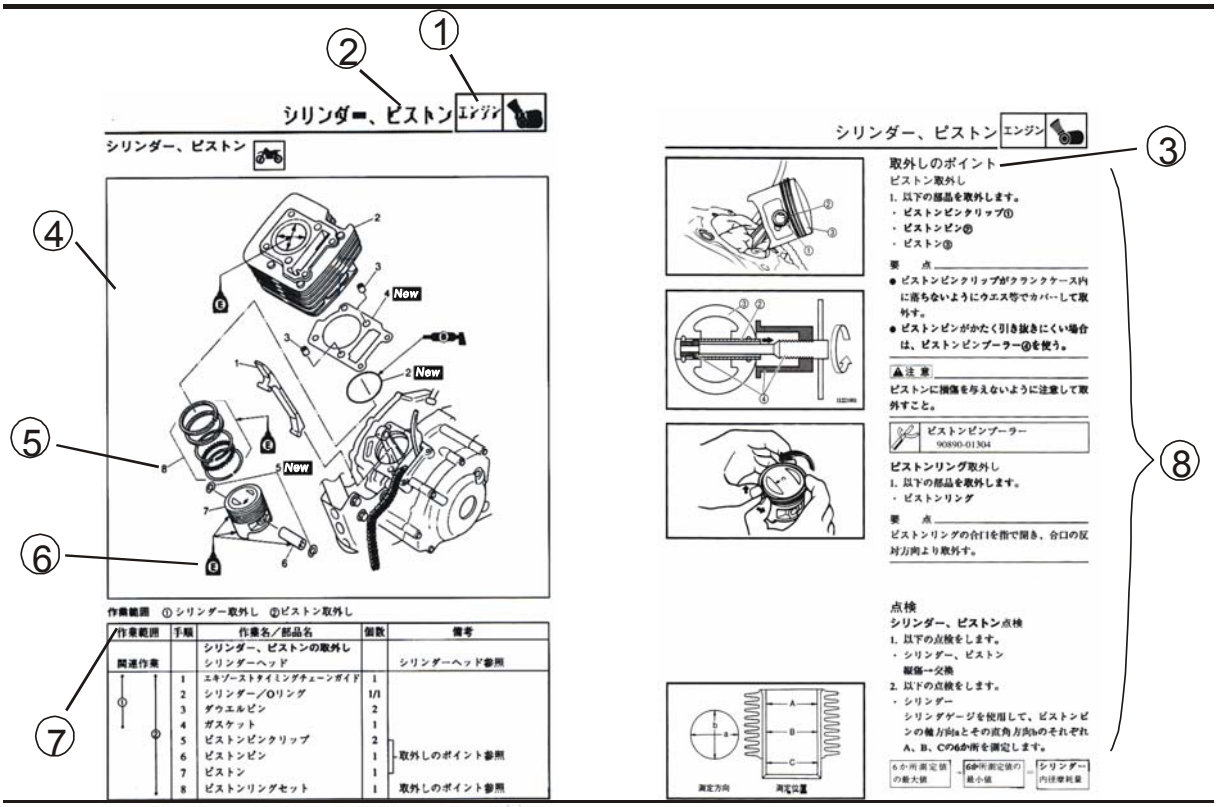
1.A clear exploded diagram□is used for disassembly and reassembly of the motorcycle.

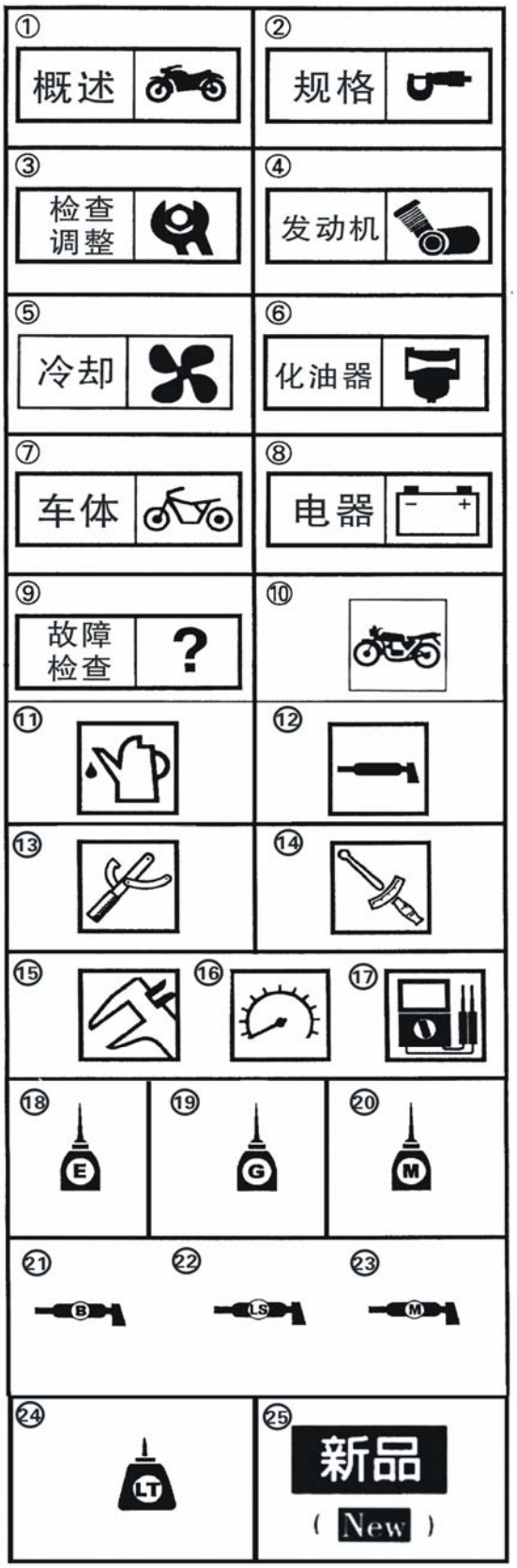
2.In the exploded diagram,the numbers as symbols□is used for explaining the removing procedure.If there around the numbers,it is the explanation of disassembly procedure.

3.Symbol□in the exploded diagram is the explanation of work and key points.For the meaning of each symbo page.

4.There is work indication table□under each exploded diagram,which provides such informations as work proce name of parts key pionts of work etc.

5.For other informations concerning work,there is detailed explanation on progressive steps□besides explode and work indication table.





①General information

②Specification

③Periodic inspections and adjustment

④Engine

⑤Cooling system

⑥Carburetor

⑦Chassis

⑧Electrical system

⑨Troubleshooting

⑩Maintenance with engine installed

⑪Filling fluid

⑫Grease

⑬Special tools

⑭Tighten torque

⑮Wear limit,clearance

⑯Engine speed

⑰Stipulation for resistance,voltage and current

⑱YAMAHA engine oil

⑲YAMAHA gear oil

⑳YAMAHA molybdenum disuflide oil

㉑Wheel bearing grease B

㉒Lithium–soap base grease

㉓Grease with molybdenum

㉔Thread sealing agent

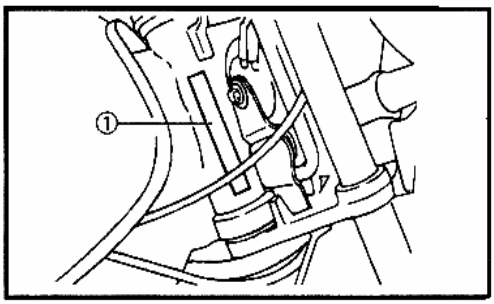
㉕Replace new parts when reassembly

Index

Chapter 1 General information

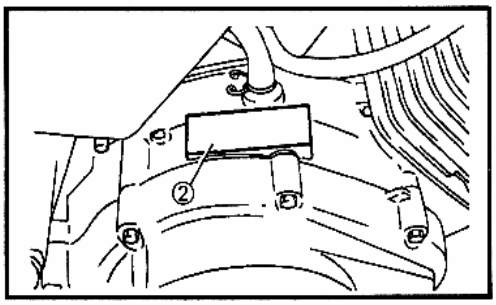
General information

Motorcycle identification



Motorcycle identification code

Motorcycle identification code is stamped on the right side of steering bar.It consists of three portions.First portion (the first 3 digits) is the identification code of world manufacturer identification(WMI); Second portion(6 digits)is vehicle definition section(VDS); Third portion (8 digits)is vehicle indication section(VIS)



Engine series No

Engine series Nos is stamped on the crankcase

Engine stamping code
JYM154FMI 00000001

Note:

Design and specification are subject to changes without notice.

1

[1]Points for attention in maintenance

1. Key points for efficient and safety performance

(1) Washing motorcycle

- Clean the mud and dust on the chassis and engine to prevent from entering into the motorcycle in performance.

(2) No smoking

- Don't smoke close to maintenance worksite.

(3) Use proper tools

- Use special tools on necessary portion to prevent parts from damaging.
- Use suitable tools and measuring instr–ament to conduct maintenance propeyly.
- Avoid to use fixed spanner etc. as much as possible,philips spanner and socket spanner should be used.

(4) Use genuine parts

- Use YAMAHA genuine products or recommended ones for parts and oil,never use the part of other brand.

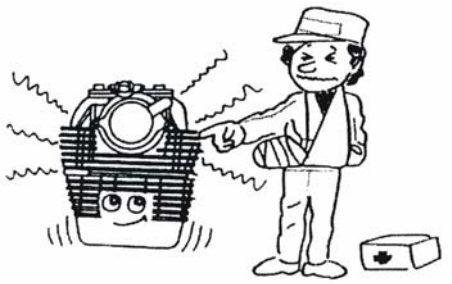
(5) Replace the easily worn out parts

(the parts with NEW mark)

- Replace the sealing shim(gasket),O–ring. Split pin,circlip and locking washer etc.

(6) Pay attention to safety operation

- Pay attention to safety operation in maintenance, so as to avoid a burn by the heat of engine,exhaust pipe and muffler etc.
- In maintenance,always use proper tools,consider proper operation,proper fixing position and the operation position to facilitate using force and keeping body stability.

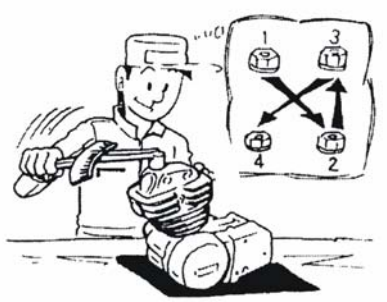


(7) Keep proper procedure in disassembly and Sort out removed parts immediately

- The procedure of loosening screw shall be: Loosen in twice or three times along diagonal direction from outside to inside.
- In disassembly,check and measure the important parts,keep the record for reference in reassembly.
- Put the disassembled parts according to each portion in proper order to prevent from mixing or lost.
- After disassembling the engine and transmission,clean each parts with oil and dry it with compressed air.

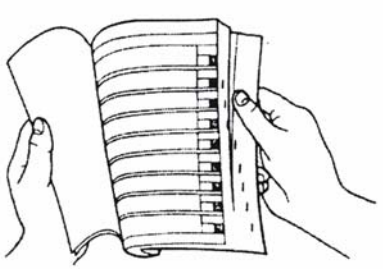
(8) In reassembly,confirm the operation according to manual,then conduct the performance.

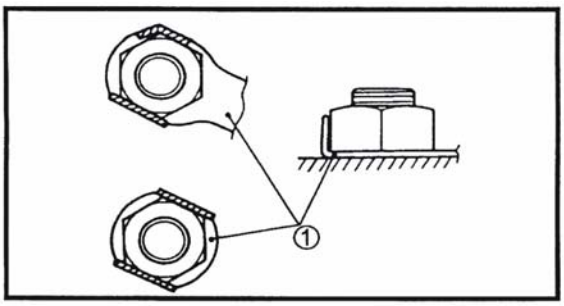
- The procedure of tightening screw shall be: Tighten in twice or three times along diagonal direction from outside to inside.
- In reassembly,conduct the performance as confirm the repaired result and the data before disassembly.
- Don't let such foreign matters as dirt stick on the parts.
  Conduct reassembly according each portion as confirm the operation.Apply machine oil on the place of rotation and slide(apply grease on the oil seal and O–ring).Obey the specified tighten torque.
- When two person conduct the performance, they shall closely cooperation.



(9) Service manual and parts catalogue shall be always at hand.

- In order to ensure the performance with efficiency, reliability and safety,it is necessary to bring with them.

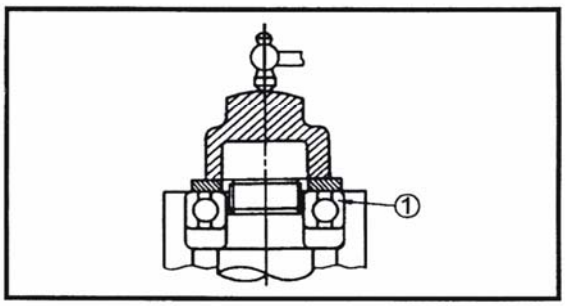




Gaskets,oil seal and O–ring

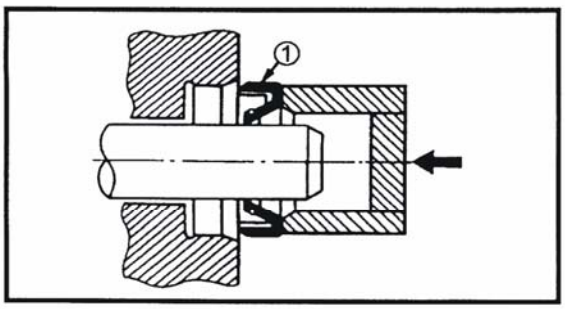
1.Replace all gaskets,oil seal and O–rings when over–hauling the engine.All gasket surfaces,oil seal lips and O–rings surface must be cleaned.

2.Properly oil all mating parts and bearings during reassembly.Apply grease to the oil seal lips.



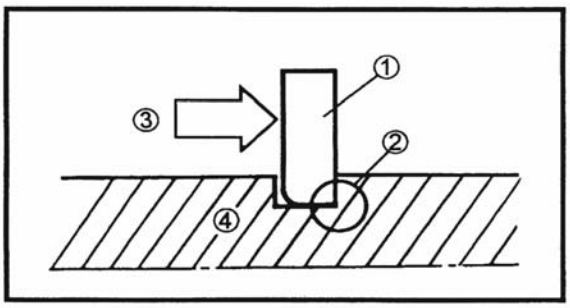
Lock washer,lock shim and split pin

1.Replace all lock washer/shim ① and split pins after removal.Bend lock tabs along the bolt or nut flats after the bolt or nut has been tightened to specification.



Bearing and oil seals

1.Install bearings ① and oil seals ② so that the manafac–turer's mark or numbers are visible.When installing oil seals, apply a light coating of lightweight lithium base grease to the seal lips.The bearings should be lubricated generously when installing.



Criclips

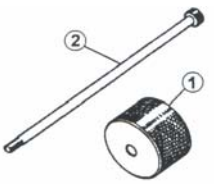
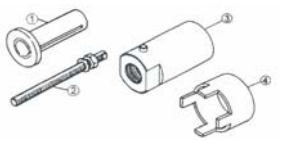
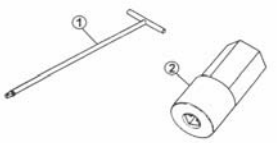
1.Check all circlips carefully before reassembly.Always replace piston pin clips after one use.Replace distorted circlips,when installing a circlip①,make sure that the sharp–edged corner②is positioned opposite the thrust ③it receives,see sectional view,④is shaft.

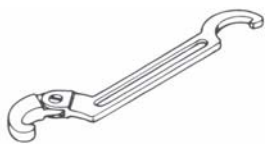
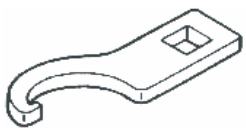
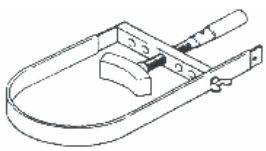
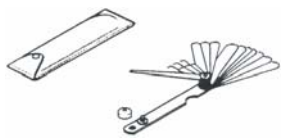
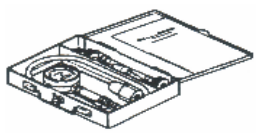
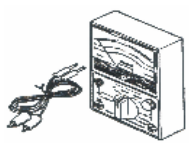
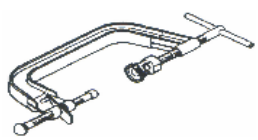
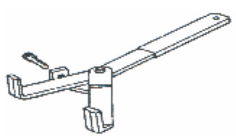
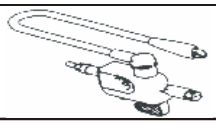
Note:

Do not use compressed air to spin the bearings dry. This will damage the bearing surfaces.

Special tools

Use proper special tools to check,adjust,disassemble and install so as to avoid machinery damage.

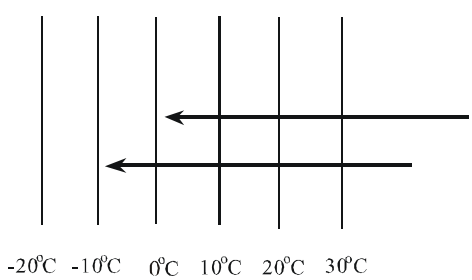
Part NO.	Name of tools/use	Picture
90890–01084	Removing tool for rocker arm Removing bolt② for rocker arm shaft Weight①	
90890–01135	Removing tool for crank Tools for separating crankcase and crank	
90890–01274 90890–01275 90890–01278 90890–04081	Combination sleeve①for crank Combination bolt②for crank Joint of different diameter tube③ Spacer of crank④ Tools for combining crank and crankcase	
90890–01294 90890–01326	Shock absorber bar fixtare T–shape holder Slide stopping tool in disassembling&reassembling cylinder of front fork	
90890–01311	Air valve adjuster Adjusting tool for air valve	
90890–01312	Fluid level meter Tools for measuing oil level of carburetor	
90890–01362	Removing tool for rotator Removing tool for rotator	
90890–01367 90890–01368	Installing tools for oil seal of front fork Installing tools for oil seal ① Installing tools for oil seal②	

Part NO.	Name of tools/use	Picture
90890–01268	Tools for reasembling,disassembling nut of steering shaft and exhaust pipe.	
90890–01403	Tools for reassembling and disassembling nut of steering shaft(Torque spanner can be used together)	
90890–01701	Stop rotation tools for slide wheel Stop slide tools for rotor	
90890–03079	Clearance measure Tool for meassuring air valve clearance	
90890–03081 90890–04082	Cylinder pressuer measuring tool Joint Tools for measuring compressed pressure of cylinder	
90890–03112	AVO meter Tool for measuring voltage,resistance and current of electric parts	
90890–03113	RPM meter of engine Tool for measuring RPM of engine	
90890–04019	Compresser of air valve spring Disassembly and reassembly tool for air valve and air valve spring	
90890–04086	Fixed tool for clutch	
90890–06754	Ignition checker	

Chapter 2 Specification

Specification

Main specifiation

Model	JYM125（JYM125-2）
Model code	5VL
Dimension	
Overall length	1,980mm
Overall width	745mm
Overall height	1050（1120）mm
Seat height	785mm
Wheelbase	1,290mm
Min ground clearance	160mm
Min turning radius	1,850mm
Weight(full fuel tank)	117kg
Engine:	
Engine type	Air-cooled four-stroke SOHC
Cylinder	Forward-inclined single cylinder
Displacement	123cm^2
Bore × stroke	54.0 × 54.0mm
Compression ratio	10:1
Compression pressure	1.200KPa(12Kg/cm^2,171psi)
Starting system	Electric and kick starter
Lubrication system	Wet sump
Machine oil type:	YAMALUBE,four-strokeSAE20W40SF"or "SAE10W30SF" machine oil
Engine oil	
Periodic oil change	1L(1000cm^3)
Total amount	1.2L(1200cm^3)
Air filter	Wet type filter core
Fuel:	
type	90#gasoline(unleaded gasoline)
Fuel tank capacity	12L
Fuel reserve amount	1.4L

2

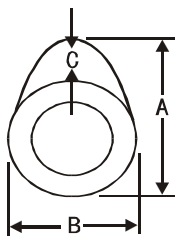
Main specification		JYM125（JYM125-2）
Model		
Carburetor:		
Type/quantity		VM22SH
Manufacturer		MIKUNI
Spark plug:		
Type		CR6HSA
Spark plug gap		0.6mm□0.7mm
Clutch type:		Wet,multi-piece
Transmission:		
Primary reduction system		Spur gear
Primary reduction ratio		68/20(3.400)
Secondary reduction system		Chain drive
Secondary reduction ratio		45/14(3.211)
Transmission type		Constant mesh 5-speed shift
Operation		Left foot operation
Reduction ratio		
	1st gear	37/14(2.643)
	2nd gear	32/18(1.778)
	3rd gear	25/19(1.316)
	4th gear	23/22(1.045)
	5th gear	21/24(0.875)
Chassis:		
Frame type		Diamond
King pin rear caster angle		26.4□
Tire:		
Type		With tube
Tire specification	(Front)	2.75-18(42P)
	(Rear)	90/90-18(51P)
Tire pressure		
Drive with one person		
Tire pressure of front wheel		175kPa(1.75kgf/cm^2)
Tire pressure of rear wheel		196kPa(2.0kgf/cm^2)
Drive with two person		
Tire pressure of front wheel		195kPa(2.0kgf/cm^2)
Tire pressure of rear wheel		245kPa(2.5kgf/cm^2)
Brake:		
Front wheel brake	Type	Drum or single-disc brake
	Operation	Right hand operation
Rear wheel brake	Type	Drum brake
	Operaiton	Right foot operation

Main spcification

Model	JYM125(JYM125-2)
Suspension: Front Rear	 Retractable sleeve type Rocker arm type
Shock absorber: Front Rear	 Coil spring/oil damper Coil spring/oil damper
Wheelbase	1290mm
Electrical system Ignition system Generator system Battery type Battery capacity	 CDI A · C · magneto Immediately use 12V5Ah
Headlinght type Headlight bulb type	Bulb type Incandescent bulb
Bulb(voltage/watt×quantity): Headlight Brake light/tail light Meter light Position Neutral light Highbeam indicator Steering indicator Steering light	 12V 35W/35×1 12V 21W/5W×1 12V 1.7W×4 14V 1.2W× 1 12V 4W× 1 14V 3W× 1 14V 3W× 1 14V 3W× 2 12V 10W×4

Inspection specification

Engine

Item	Standard value	Use limit
Cylinder cover: Twist limit	 0.03mm	 0.03mm
Cylinder: Bore size Twist limit	 54.060mm ~ 54.075mm	
Camshaft: Cam dimension: Intake cam "A" Intake cam "B" Intake cam "C" Exhaust cam "A" Exhaust cam "B" Exhaust cam "C" Camshaft runout limit	 25.881mm ~ 25.981mm 21.194mm ~ 21.294mm 5.081mm ~ 4.781mm 25.841mm ~ 25.941mm 21.097mm ~ 20.097mm 5.041mm ~ 4.741mm	 <25.851> <21.165> <25.817> <21.027> 0.03
Cam chain Cam chain type/NO.of links Cam chain adjustment method	 DID25/88 Automatic	
Rocker arm/Swaying arm shaft Rocker arm inside diameter Rocker arm shaft outside diameter Arm–to–shaft clearance	 10.000mm ~ 10.015mm 9.981mm ~ 9.991mm 0.009mm ~ 0.034mm	 <10.03mm> <9.95mm>
Valve: Valve clearance(cold) IN(Intake) EX(Exhaust)	 0.08~0.12mm 0.10~0.14mm	
Valve dimension 		
"A" valve head diameter IN EX "B" face width IN EX "C" seat width IN EX "D" margin thickness IN EX Valve stem outside diameter IN EX	 25.9 ~ 26.1mm 21.9 ~ 22.1mm 1.4 ~ 3.0mm 1.3 ~ 2.4mm 1.2 ~ 1.4mm 0.9 ~ 1.1mm 0.4 ~ 0.8mm 0.8 ~ 1.2mm 4.975 ~ 4.990mm 4.960 ~ 4.975mm	 <4.950> <4.935>

Item		Standard value	Use limit
Guide tube inside diameter:	IN	5.000 □ 5.012mm	5.042mm
	EX	5.000 □ 5.012mm	5.042mm
Valve stem–to–guide tube clearance	IN	0.010 □ 0.037mm	0.08mm
	EX	0.025 □ 0.052mm	0.10mm
Valve twist limit			0.01mm
Valve seat width	IN	1.2 ~ 1.4mm	1.6mm
	EX	0.56 ~ 1.64mm	1.6mm
Valve spring:			
Free length		39.62mm	
Set length(valve closed)		25.6mm	
Spring compressing force		132 ~ 236N	
Direction of winding		RH	
Piston:			
Piston clearance		0.02~0.034mm	
Piston outside diameter "D"		53.997 ~ 54.028mm	
Measuring place "H"		4.5mm	
Inside diameter of piston pin hole		15.002 ~ 15.013mm	
Outside diameter of piston pin hole		14.991 ~ 15.000mm	
Clearance between piston pin and hole		0.002 ~ 0.022mm	
Piston ring:			
First ring			
Shape		Drum type	
Size(B T)		1.0 × 2.1mm	
Split clearance(installed)		0.15 ~ 0.30mm	0.4mm
Side clearance(installed)		0.035 ~ 0.07mm	0.12mm
Second ring:			
Shape		Trapezoid	
Size(B T)		1.0 × 2.1mm	
Split clearance(installed)		0.30 ~ 0.45mm	0.55mm
Side clearance(installed)		0.02 ~ 0.06mm	0.12mm
Oil ring:			
Size(B T)		2.0 × 2.25	
Crankshaft:			
Crank width "A"		46.95 ~ 47mm	
Runout limit "C"		0.03mm	0.03mm
Big end side clearance "D"		0.15 ~ 0.45mm	0.8mm
Clearance of big end diameter		0.095 ~ 0.073mm	
Balance:			
Driving method of balance		Gear	
Transmission			
Main shaft deflection			0.08mm
Drive shaft deflection			0.08mm

Item	Standard value	Use limit
Clutch:		
Friction plate thickness	2.9 ~ 3.00mm	2.8mm
Quantity	4	
Clutch plate thickness	1.55 ~ 1.65mm	0.05mm
Quantity	3	
Free length of clutch spring	29.29mm	31mm
Quantity	4	
Clutch seperating method	Inside cam pushing	
Kick starter:		
Type	Kick starter and mesh type	
Carburetor:		
Model	VM22SH	
Main jet(MJ)	#97.5	
Main air jet(MAJ)	ϕ0.9	
Jet nozzle(JN)	5EJ49−2(L=50.0)	
Low speed air nozzle(PAJ)	ϕ1.4	
Low speed mixed air outlet(PO)	ϕ1.0	
Low speed nozzle(PJ)	#15	
Adjusting blot of low speed mixed air(PS)	21/2 ~ ±3/4fig	
Oil level	7.1±0.05mm	
Idle speed	1400±100rpm	
Intake negative pressure	31.9±2.7kPa	
Machine oil pump type	Trochoidal pump	
Clearance between inner rotator and outer rotator	Less than0.15mm	0.23mm
Clearance between outer rotator and rotator chamber	0.06 0.10mm	0.14mm
Clearance between rotator surface and rotator chamber surface	0.06 0.10mm	0.14mm
Steering system:		
Steering bearing type	Ball bearing with holder	
Front shock absorber:		
Front shock absorber travel	120mm	
Free length of front fork spring	337mm	330mm
Oil quantity	154.5cm^3	
Oil level	156mm	
Type of shock absorber oil	10W or equivalent	
Bending limit of inside tube		0.2mm
Rear shock absorber:		
Rear shock absorber travel	90mm	
Free length of spring	239.5mm	235mm
Front wheel:		
Type	Spoke/die casting	
Rim size	18×1.60(W)	
Rim material	Steel−belt alluminium alloy	
Rim runout limit (radial)		0.5mm
(lateral)		0.5mm

Item	Standard value	Use limit
Rear wheel Type Rim dimension Rim material Rim runout (radial) (lateral)	 Spoke/casting wheel 1.85×18(W) 	 0.5mm 0.5mm
Driving chain: Type/manufacturer No.of links Twist quantity	 DID1480H 118 20□30mm	
Front brake: Type Disc outside dia×thickness Use limit of disc thickness Thickness of brake pad (Inside) (Outside) Master cylinder inside dia. Long pincers cylinder inside dia. Appointed brake fluid Type Inside diameter of brake drum Thickness of brake shoe Free length of brake shoe spring	 Disc brake 245×4 Φ12.7mm φ 35mm DOT3 or DOT4 Drum type 130mm 4mm 36.5mm	 3.5mm 0.8mm 0.8mm 131mm 2.0mm
Rear brake Type Model of brake drum Inside diameter of brake drum Thickness of brake block Free length of brake shoe spring	 Drum type 130mm 4mm 36.5mm	 131mm 2.0mm
Brake lever and brake pedal: Free play of front brake Free play	 5.5□10.5mm/10□15mm() disc/drum 20□30mm	
Clutch lever Clutch lever free play	 10□15mm	

Item	Standard value	Use limit
Ignition system: Ignition timing(B.T.D.C) Advanced timing Advancer type	 7° 29° Electrical	
C.D.I: (CDI magneto) Pickup coil resistance/color Ignition charging coil resistance/color	 (290 ~ 330)Ω/20℃(Red–white) (810Ω ± 20%)/(Brown–green)	
Ignition coil: Primary winding resistance Secondary winding resistance	 (0.4Ω ± 20%)/20℃ (7.1kΩ ± 20%)/20℃	
Spark plug gap: Type Resistance	 Resin type 5 ± 20%kΩ/20℃	
Rctifier/regulator No load regulated voltage Capacity Withstand voltage	 Rated voltage14.2 ± 0.5 5A 240V/min	
Battery: Specific gravity of electrolyte	 1.280 ± 0.01(20℃)	
Electric starting system: Type Start motor Output Rotator coil resistance Carbon brush length Spring pressure of carbon brush	 Mesh type 0.4KW 0.171 ~ 0.209Ω 10mm 0.9 ± 20%N	
Starting relay: Rated current Coil resistance	 30A 4Ω ± 10%(20℃)	
Horn: Type Max. Current	 1.5A	
Fuel meter: Resistance of sensor (Full) (Empty)	 10Ω 20℃ 90Ω 20℃	
Relay of turning light: Type Flash frequency	 Capacitor type 60 ~ 120 times/min	
Circuit breaker: Type Main circuit Reserve circuit	 Fuse 15A × 1 15A × 1	

Tighten torque

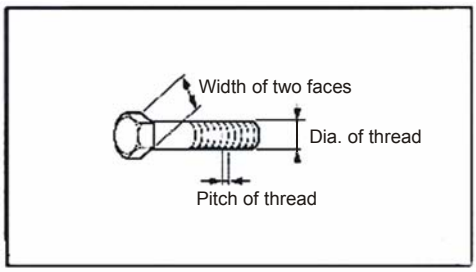
Engine

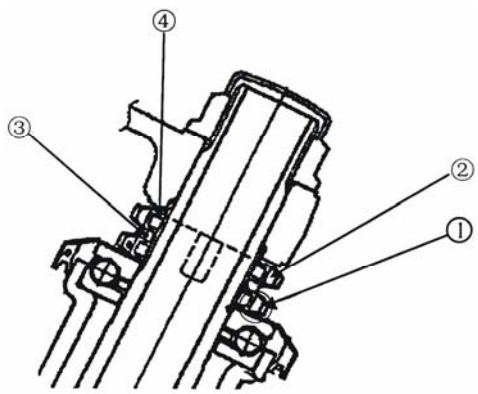
Ser.No.	Tighten parts	Part No.	Name	Dimension	Qty	Tighten torque	
						Kgf.m	N.m
1	Cylinder head	90105-08742	Hexagonal flange faced bolt	M8×1.25	4	2.2±0.2	22±2
2	Cylinder head(Side of timing chain)	9131N-06090	Internal hexagonal cylinder head bolt	M6×1.0	2	1.0±0.2	10±2
3	Bolt of oil drainage port	90153-06803	Cross recess hexagonal head holt	M6×1.0	1	0.7±0.2	7±2
4	Spark plug	94700-00372		M10×1.0	1	1.25±0.25	12.5±2.5
5	Side cover 3 of cylinder head	9502L-06020	Hexagonal flange faced bolt	M6×1.0	2	1.0±0.2	10±2
6	Side cover of cylinder head(Air valve)	5VL-E1186-00		M45×1.5	2		17.5±2.5
7	Rotator plate 2 of chain	9570N-12500	Hexagonal flange faced nut	M12×1.25	1	7.0±1.0	70±40
8	Guide plate 2 of chain	9580N-06020	Hexagonal flange faced bolt	M6×1.0	1	1.0±0.2	10±2
9	Locking nut of air valve	90170-05302	Hexagonal nut	M5×0.5	2	0.75±0.15	7.5±1.5
10	Timing sproket	90101-08590	Hexagonal bolt	M8×1.25	1	2±0.2	20±2
11	Hold-down of cylinder head	9131N-06012	Internal hexagonal cylinder head bolt	M6×1.0	1	1.0±0.2	10±2
12	Tensioner assy	9502L-06016	Hexagonal flange faced bolt	M6×1.0	2	1.0±0.2	10±2
13	Oil pump assy	90155-06800	Cross recess bolt	M6×1.0	2	0.7±0.2	7±2
14	Oil drainage bolt	90340-12097	Bolt	M12×1.5	1	2±0.5	20±5
15	Silencer assy(Side of cylinder head)	9131N-06020	Internal hexagonal cylinder head bolt	M6×1.0	2	1.0±0.2	10±2
16	Silencer assy(finished vehicle)	9581N-08020	Hexagonal flange faced bolt	M8×1.25	1	2.2±0.2	22±2
17	Left&right crankcase	9502L-06030	Hexagonal flange faced bolt(small head)	M6×1.0	2	1.0±0.2	10±2
		9502L-06045	Hexagonal flange faced bolt(small head)	M6×1.0	7	1.0±0.2	10±2
		9502L-06055	Hexagonal flange faced bolt(small head)	M6×1.0	1	1.0±0.2	10±2
18	Crankcase cover1	9502L-06035	Hexagonal flange faced bolt(small head)	M6×1.0	1	1.0±0.2	10±2
		9502L-06050	Hexagonal flange faced bolt(small head)	M6×1.0	6	1.0±0.2	10±2
19	Chain cover	9890L-06016	Cross recess pan head bolt	M6×1.0	2	0.7±0.2	7±2
20	Crankcase cover2	9502L-06035	Hexagonal flange faced bolt(small head)	M6×1.0	6	1.0±0.2	10±2
		9502L-06045	Hexagonal flange faced bolt(small head)	M6×1.0	6	1.0±0.2	10±2
21	Kick starter assy	90179-12813	Nut	M12×1.0	1	5.0±1.0	50±10
22	Hold-down of idler	9851L-06012	Cross recess pan head bolt	M6×1.0	2	0.7±0.2	7±2
23	Start generator assy	9502L-06025	Hexagonal flange faced bolt(small head)	M6×1.0	2	1.0±0.2	10±2
24	Start clutch assy	9131N-08016	Intenal hexagonal cylinder head bolt	M8×1.25	3	3.0±0.3	30±3
25	Main driving gear	90179-12813	Nut	M12×1.0	1	7.0±1.0	70±10
26	Hold-down 2	5VL-E6337-00	Elastic screw	M5×0.8	4	0.6±0.2	6±2
27	Clutch hub body	90170-12060	Hexagonal nut	M12×1.0	1	6.0±1.0	60±10

Ser.No.	Tiighten parts	Part No.	Name	Dimension	Qty	Tighten torque	
						kgf.m	N.m
□	Handle bar seat and inner tube	9502L-08040	Hexagonal flange faced bolt (small head)	M8×1.25	2	1.8-2.8	18-28
□	Handle bar seat and steering shaft	90176-22800	Cap-shape nut	N22×1.0	1	10-12	100-120
□	Lower bracket and inner tube	5VL-F3346-00	Hexagonal flange faced bolt	M10×1.25	2	2.3-3.5	23-35
□	Steering shaft and circular nut	90179-25615	Nut	M25×1.0	2	3.0-3.5	30-35
□	Handle bar and its seat	9502L-08035	Hexagonal flange faced bolt (small head)	M8×1.25	4	1.8-2.8	18-28
□	Caliper and front fork(pan)	90105-10852	Hexagonal flange faced bolt	M10×1.25	1	2.3-2.7	23-27
□	Front main cylinder and handle bar(pan)		Hexagonal flange faced bolt (small head)	M6×1.0	2	0.75-1.2	7.5-12
□	Front portion of engine and support 2 of engine	90150-088A6	Hexagonal flange faced bolt	M8×1.25	2	3.5-4.0	35-40
□	Support 2 of engine and frame	9531L-10080	Hexagonal flange faced bolt	M10×1.25	2	4.6-6.0	49-60
10	Rear portion of engine and frame	90105-08007	Hexagonal flange faced bolt	M8×1.25	1	3.5-4.0	35-40
11	Upper portion of engine and support3/4 of engine	90105-08802	Hexagonal flange faced bolt	M8×1.25	1	3.5-4.0	35-40
12	Support3/4 of engine and frame	90150-08803	Hexagonal flange faced bolt	M8×1.25	2	3.5-4.0	35-40
13	Rotation shaft and nut	9560N-12200	Hexagonal flange faced bolt	M12×1.25	1	4.5-7.2	45-72
14	Rear shock absorber and rear arm	90176-10810	Nut	M10×1.25	2	2.4-3.9	24-39
15	Rear shock absorber and frame	90176-10810	Nut	M10×1.25	2	3.1-4.9	31-49
16	Pulling rod and reararm	90109-08848	Hexagonal flange faced bolt	M8×1.25	1	1.5-2.3	15-23
17	Fuel tank and fuel cock	90149-06801	Hexagonal flange faced bolt (small head)	M6×1.0	4	0.5-0.8	5-8
18	Fuel signal sensor	90105-05832	Hexagonal flange faced bolt (small head)	M6×1.0	2	0.3-0.5	3-5
19	Front wheel shaft and nut(pan)	5VL-F5181-10	Hexagonal flange faced bolt	M14×1.25	1	7.1-11.2	71-112
20	Front wheel shaft and nut(drum)	5VL-F5181-00	Hexagonal flange faced bolt	M10×1.25	1	3.5-5.6	35-56
21	Rear wheel shaft and nut	5VL-F5381-00	Hexagonal flange faced bolt	M14×1.5	1	7.1-11.1	71-111
22	Sproket and clutch hub	90109-08864	Hexagonal flange faced bolt	M8×1.25	4	3.5-4.5	35-45
23	Pulling rod and brake shoe cover	90109-08847	Hexagonal flange faced bolt	M8×1.25	1	1.5-2.3	15-23
24	Cam shaft arm and cam shaft	90101-06848	Hexagonal flange faced bolt	M56×1.0	1	0.75-1.2	7.5-12
25	Brake pan and front wheel(pan)	90111-08805	Hexagonal flange faced bolt	M8×1.25	6	1.8-2.8	18-28

For noraml tighten torque,tighten screw and nut can decide tighten torque according to diameter of thread(width of two faces)and space of thread except appointed tighten torque.(see the table in the right side).

Dia of screw(width of two faces) × Space of thread	Tighten torque
M5(8mm)×0.8	34Nm(0.3□0.4kg.m)
M6(10mm)×1.0	5□8Nm(0.5□0.8kg.m)
M8(12mm)×1.25	12□19Nm(1.2□1.9kg.m)
M10(14mm)×1.25	24□39Nm(2.43.9kg.m)
M12(17mm)×1.5	45□72Nm(4.57.2kg.m)





Tighten sequence of steering system

□ 1. Tight the nut of□to30□35N.m

2.Then turn the steering bar 2-3 times by leftward and rightward.In turing,binding and loosening of bearing race is not allowed.

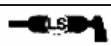
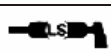
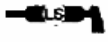
3.Loosen nut of □ by1/4turn and then tighten it with tighten toque of 20□24N.m □

4.Turn the nut of □ to close to flat washer of □.

5Put the special washer and stop pawl of□into groove of nut of □and□.If it is not aligned with groove, turn the nut of□to ensure the alignment.

Position to be applied lubricant

Engine

Ser.No.	Position to be applied lubricant	Symbol
1	Lip of oil seal(all)	
2	Bearing lock piece(all)	
3	Bolt(cylinder cover)	
4	Crank pin	
5	Piston pin	
6	Timing chain/cam sprocket	
7	Piston/piston ring	
8	Valve stem	
9	End of valve stem(intake&exhaust)	
10	Rocker arm shaft	
11	Cam and bearing(cam shaft)	
12	Inside of rocker arm	
13	Left and right closed face of crankcase	YAMAHA bond No.125
14	O-ring(all)	
15	Inside of foot pedal gear	
16	Inside of idle gear of foot pedal	
17	Crank sleeve of foot pedal	
18	Axial surface of starting idle gear	
19	Start clutch(outside/rotating portion)	
20	Gear inside of starting wheel	
21	Pushing rod	
22	Inside of main driving gera	
23	Shaft of pushing rod	
24	Spindle/inside of driving gear	
25	Shift fork/guide fork/shift shaft/shift cam	

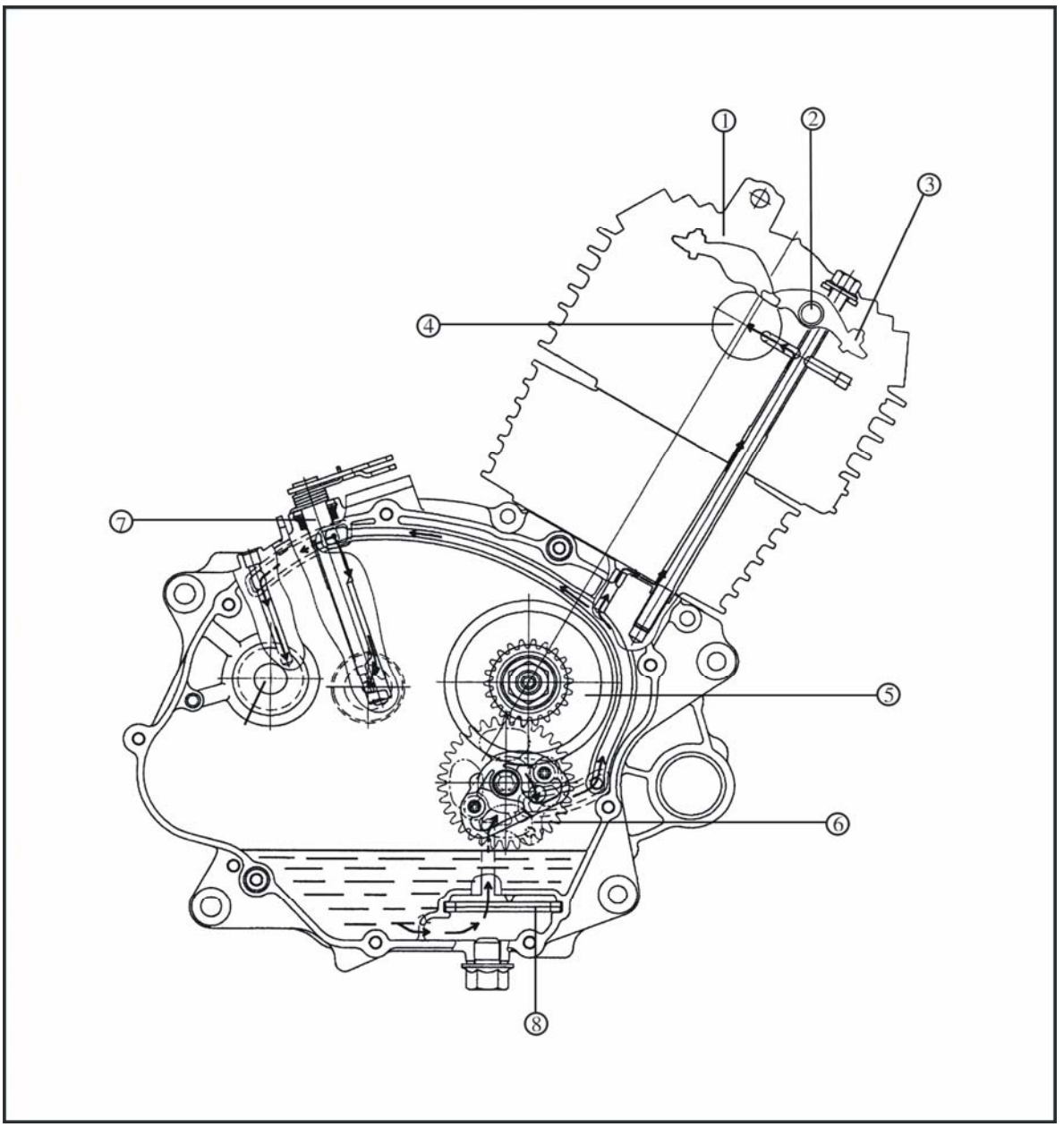
Ser.No.	Position to be applied lubricant	Symbol
1	Surroundings of rotation shaft of rear arm	
2	Upper&lower steel ball race of steering vertical tube	
3	Inside of guide tube and handle bar cover	
4	Contact face of clutch lever and cable	
5	Rotation face of clutch lever and holder	
6	Contact face of brake cable and holder lever	
7	Rotation face of brake lever and holder	
8	Inside of brake pedal	
9	Main support and its rotation shaft	
10	Rotation face of side support and its holder	
11	Rotation face of rear footrest	
12	Meter gear	
13	Cam and shaft of cam shaft	
14	Rotation portion of brake pad pin	
15	Lip portion of oil seal of hub assy,clutch assy and brake cover assy	

□  YAMAHA 4-stoke engine oil  Light-weight lithium-soap base grease

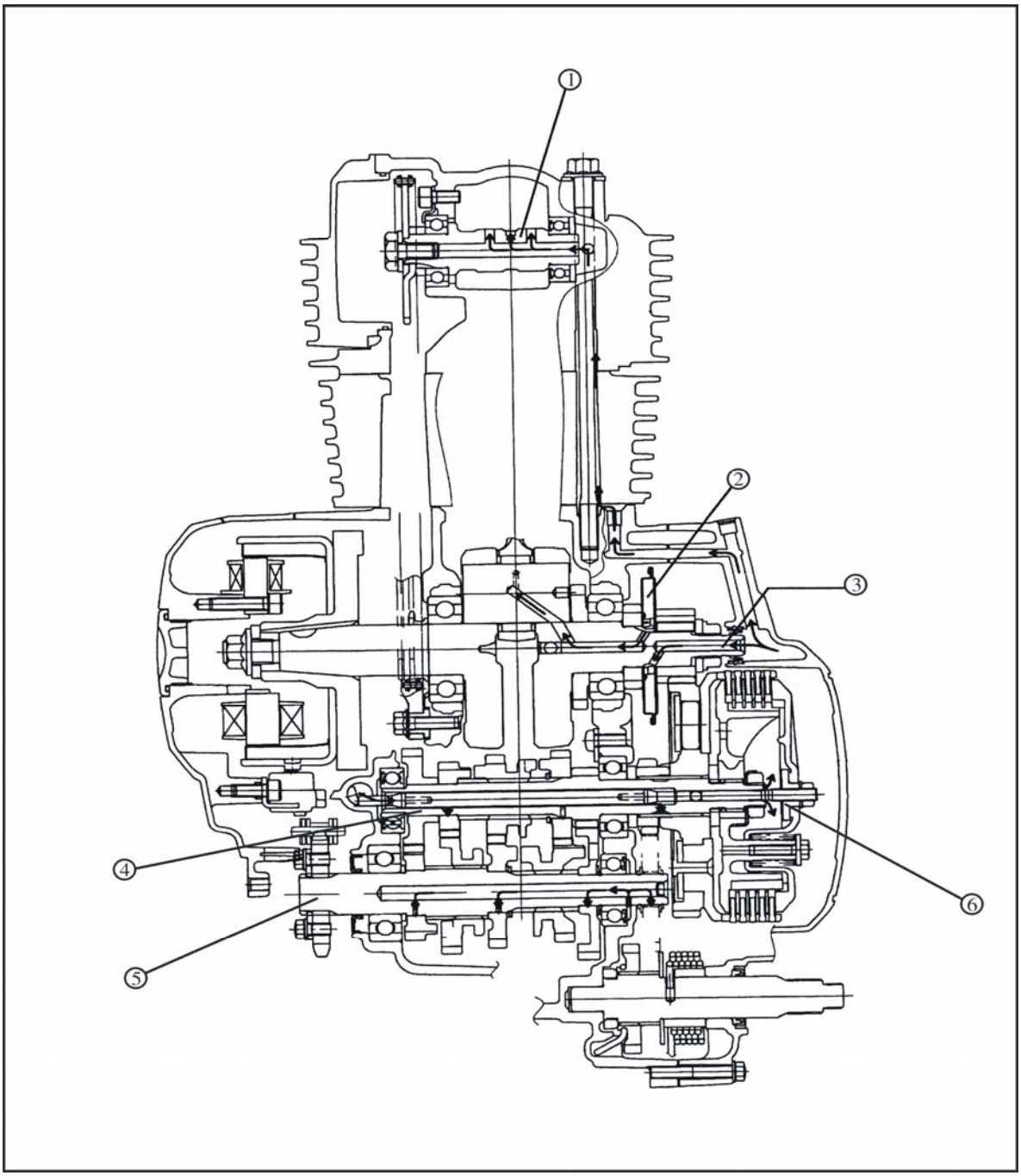
 Molybdenum disuflide grease

Lubrication diagram

- ① Rocker arm(intake)
- ② Rocker arm shaft
- ③ Rockerarm(exhaust)
- ④ Cam shaft
- ⑤ Centrifugal filter
- ⑥ Oil pump
- ⑦ Pushing rod
- ⑧ Filtering web



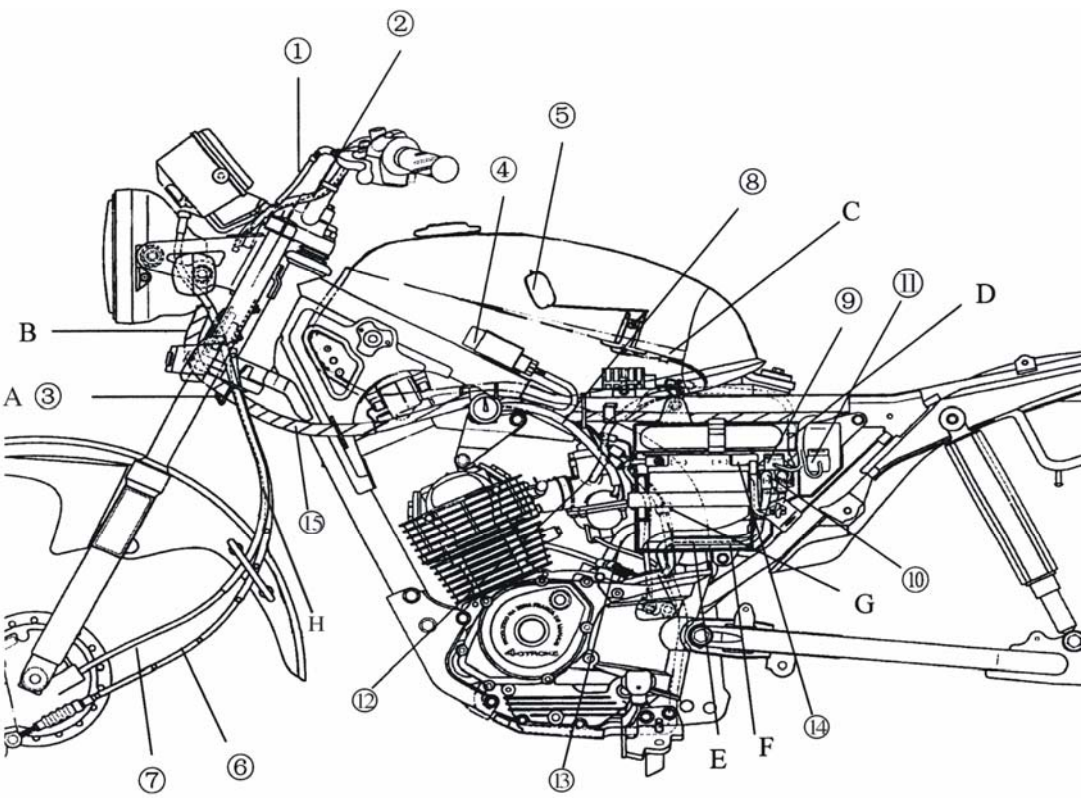
① Cam shaft
② Centrifugal filter
③ Crank
④ Spindle
⑤ Driving shaft
⑥ Clutch assy



① Clutch steel cable
②Switch cable of left handle bar
③Cable clip
④ CDI Foul
⑤Fuel sender
⑥Front brake cable
⑦Flexible shaft of speedometer
⑧Fuel tube
⑨Safety
⑩Start relay
⑪Flash relay
⑫Flowing tube of carburetor
⑬Overflow tube of carburetor
⑭Positive pole wire of battery
⑮Main cable

A Cable must pass cable clip(position③)
B Cable and all wires must pass through rear side of headlight and connect the wire at the interior of headlight.
C Fix the white mark of cable at the cable clip of frame
D Insert the flowing tube of carburetor from cable clip of battery box.
E Wire of starting generator shall pass through the interior ofbattery
F Flowing guide tube of battery shall pass through the interior of battery
G Fix the wire of magneto and brake switch at the wire clip
H Pass the brake cable and flexible shaft of meter though guide frame.

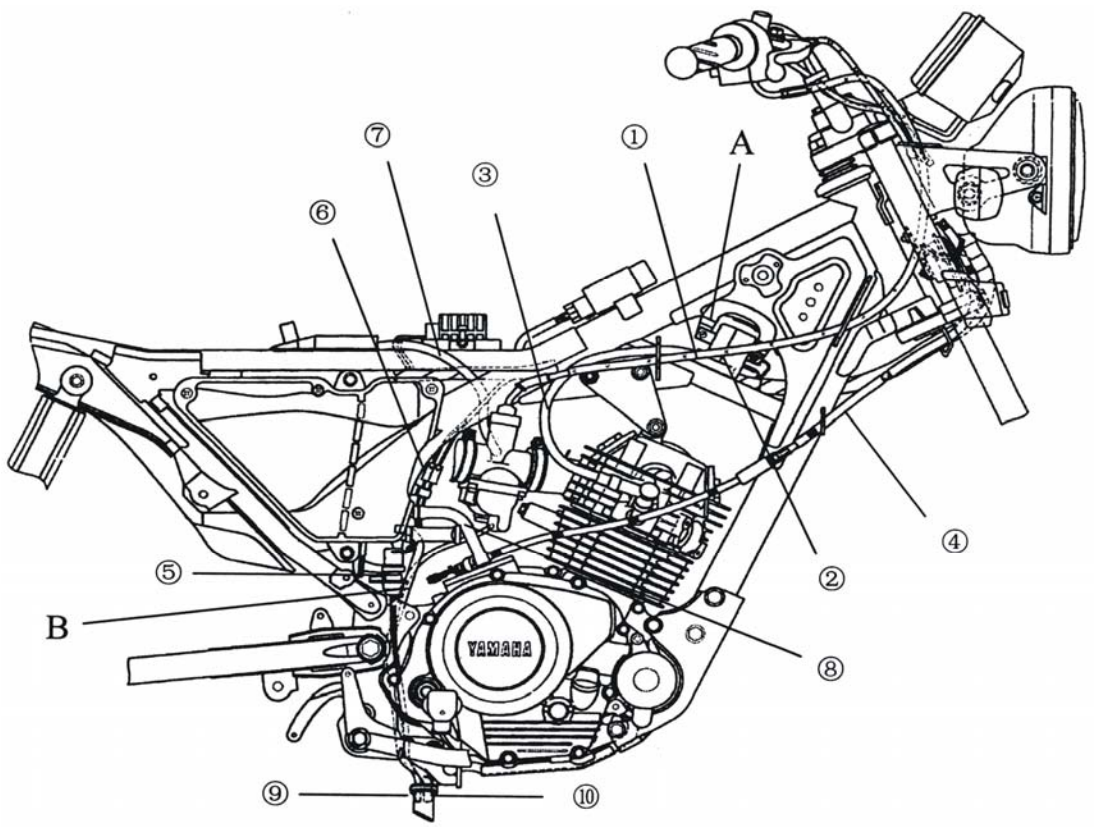
Drum type without fairing



① Throttle cable
②Ignition coil
③High pressure wire
④Clutch cable
⑤Rear brake switch
⑥Wire of rear brake switch
⑦Flowing tube of carburetor
⑧Flowing tube of crankcase
⑨ Overflowing tube of carburetor
⑩Flowing tube of battery

A Fix ground wire and ignition coil together
B Pass the overflowing tube of carburetor and flowing tube of battery through suspending upper portion of crankcase and engine support of frame.

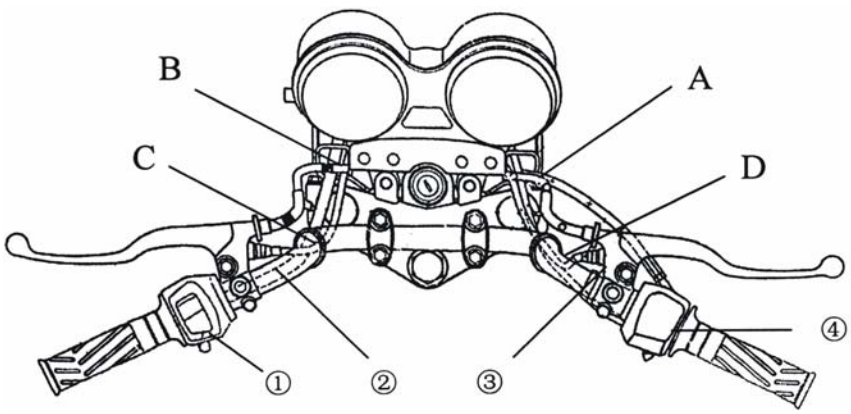
Drum type without fairing



① Left handlebar switch
② Clutch switch
③ Front brake switch
④ Right handle bar switch

A Pass the wire of the cable,brake cable,brake switch and handle bar switch through guide frame.
B Pass the wire of clutch cable,handle bar switch and clutch switch through guide frame.
C Fix the wire of left handle bar switch and clutch switch with bands.
D Fix the wire of right handle bar switch and brake switch with bands.

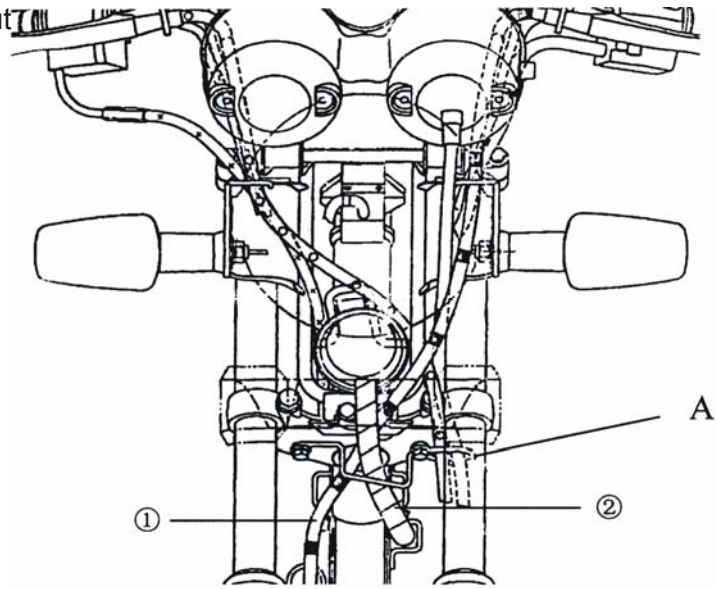
Drum type without fairing



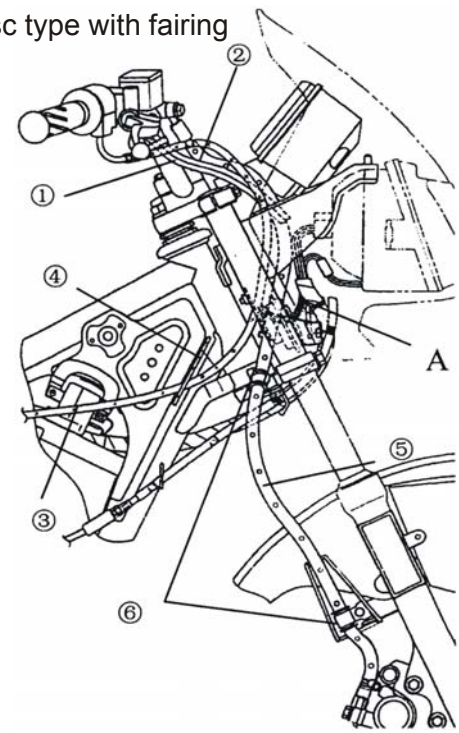
① Clutch cable
② Cable

A Pass the flexible shaft of speedometer and brake cable through guide frame.

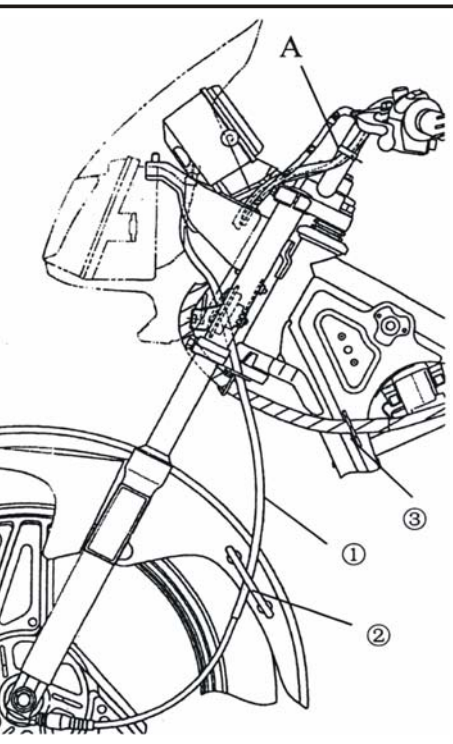
Drum type without fairing



Disc type with fairing



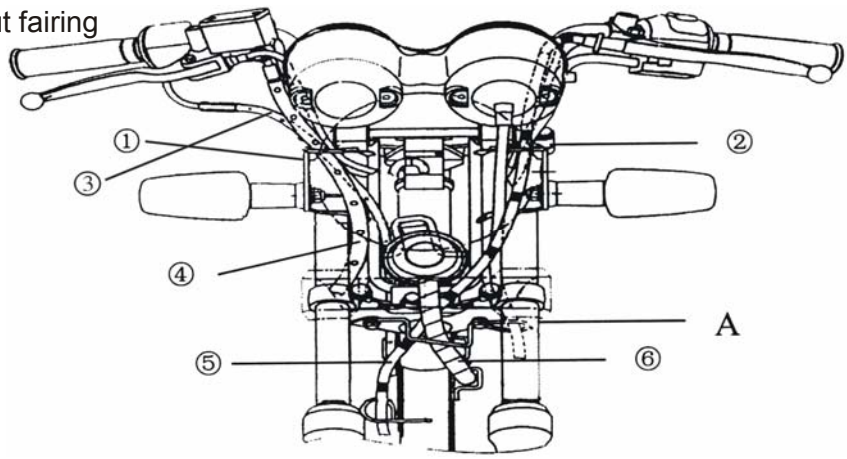
① Wire of handle bar switch
② Wire of front brake switch
③ Throttle cable
④ Guide frame of throttle cable
⑤ Front brake cable(brake oil tube)
⑥ Fixing clip of front brake cable
A Press down the horn



① Flexible shaft of speedometer
② Guide frame of cable
③ Guide frame of cable
A Fix the wire of handle bar switch and clutch switch

①Guide frame of cable at the right side of headlight support (for condition of cable,see next page in fig.A)
②Guide frame of cable at the left side of headlight support (for condition of cable,see next page in fig.A)
③Throttle cable
④Brake cable
⑤Clutch cable
⑥Cable
A Pass the flexible shaft of speedometer through guide frame

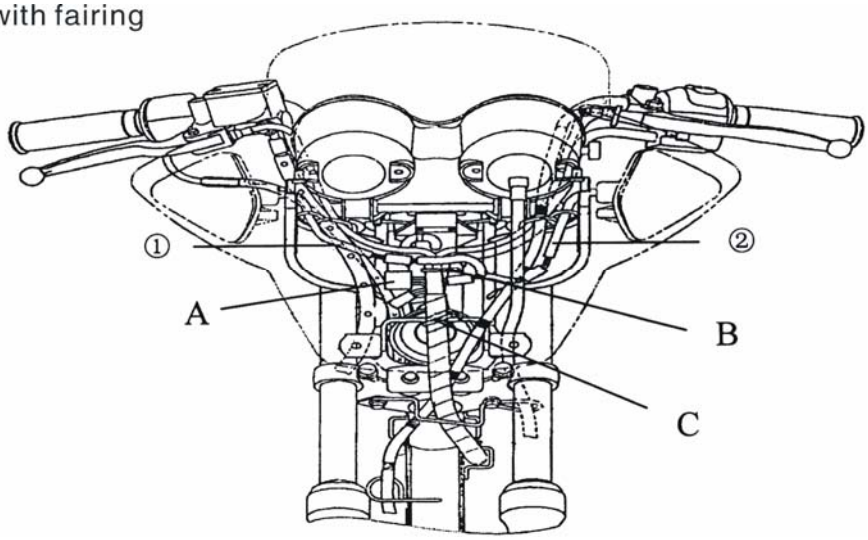
Disc type without fairing



Conditions with fairing

①Wire of right turning light
②Wire of left turning light
A To headlight
B After connecting the cable,band them at this position and cut the spare portion.
C Band the main cable and fairing support at this position and cut the spare portion.

Disc type with fairing



- ① Wire of front brake switch
- ② Brake cable
- ③ Wire of right turning light
- ④ Throttle cable
- ⑤ Wire of right handle bar switch
- ⑥ Wire of left turning light
- ⑦ Wire of clutch switch
- ⑧ Wire of left handle bar switch
- ⑨ Clutch cable

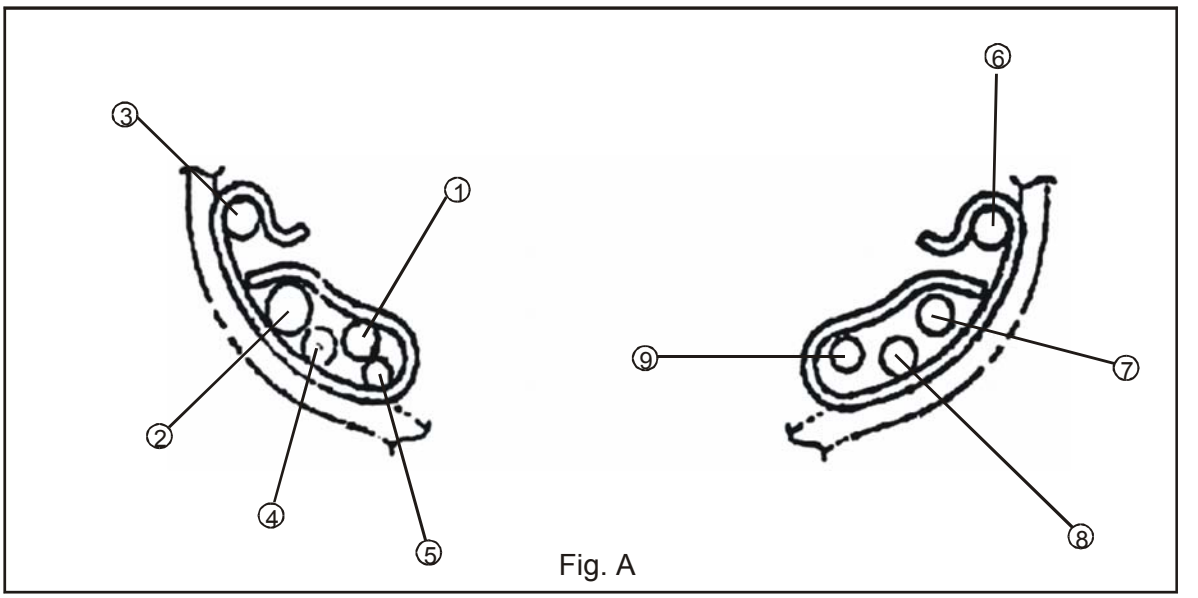


Fig. A

Chapter 3 Peridoc inspection and adjustment

Periodic inspection and adjustment

Brief introduction

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

Contents

Items	Routine	Run-in period 1,000 (600) or 1 month	Initial3000 (2,000) or 3 months	Every3, 000 (2,000) or 3 months
Air valves*	Check valve clearance,adjust if necessary.	○	○	○
Spark plug	Check condition,clean or replace if necessary.	○	○	○
Air filter	Clean,replace if necessary.	○	○	○
Carburetor*	Check idle speed/starter operation, adjust if necessary.	○	○	○
Fuel line*	Check fuel hose for cracks or damage, replace if necessary.		○	○
Engine oil	Replace(warm engine before draining)	○	○	○
Oil filter	Clean or replace		○	
Front brake*	Check operation/brake fluid leakage/refer to the remarks.Adjust if necessary.		○	○
Rear brake	Check operation.Adjust if necessary.		○	○
Clutch	Check operation,adjust if necessary.		○	○
Rocker arm fulcrum*	Check swing arm assy,for looseness,tighten if necessary. Repair if damaged.***	○	○	○
Rear suspending arm fuleram*	Check operation.Disassemble to repair if necessary.***	○	○	○
Wheel*	Check the bearing for looseness,repair if necessary.Disassemble to repair every 12,000 (8,000) or 12months if appropriate.		○	○
Wheel bearing*	Check bearingassembly for looseness/damage. Replace if damaged.		○	○
Steering bearing*	Check the balance/damage/runout/tighten spoke, repair if necessary.	○		○
Front fork*	Check operation/oil leakage.Repair if necessary.		○	○
Rear shock absorber*	Check operation/oil leakage.Repair if necessary.		○	○

Items	Routine	Run-in period 1,000 (600) or 1 month	Initial 3000 (2,000) or 3 months	Every 3000 (2,000) or 3 months
Drive chain	Check tension/alignment.Adjust if necessary. Chean and lubricate.	Check prior to driving		
Fittings/fasteners*	Check all chassis fittings and fasteners. Correct if necessary.	○	○	○
Main and side stand*	Check operation.Repair if necessary.	○	○	○
Battery*	Check specific gravity of electrolyte.Check breather for proper operation. Correct if necessary.		○	○

□□ It is recommended that these items be serviced by YAMAHA authorized service station or dealer.
□□□ Heavy-duty or medium truck wheel bearing grease.
□□□□ Lithium-soap base grease

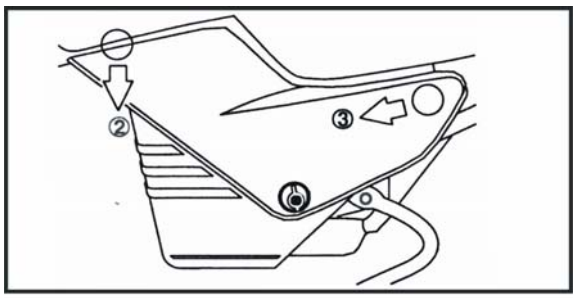
Remark:

Replace brake fluid

1.If disassembling brake master cylinder or long pincers cylinder,the brake fluid must be replaced.Check the
under normal conditionand refill if necessary.

2.The oil seal of brake master cylinder or long pincers cylinder must be replaced every two years.

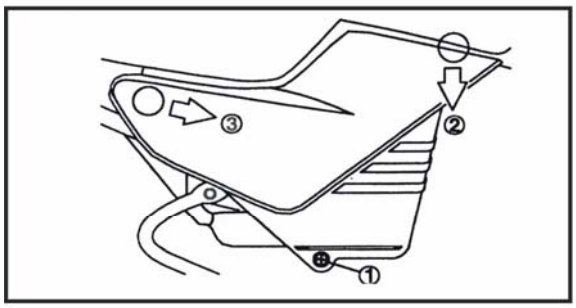
3.The brake hose must be replaced every 4 years or immediately if any crack or damage is found.



Removal and installation of cushion, fuel tank and cove alike

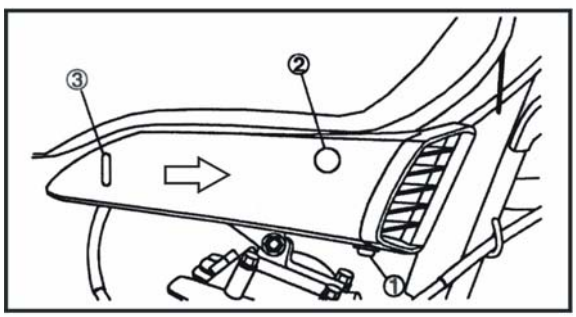
1.Side cover(left)

Open□with the key, then pull out set pin of side cover □, finally take out side cover along the direction pio-nted by arrow □.



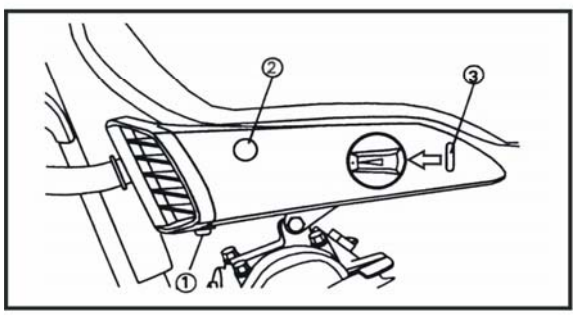
2.Side cover(right)

Take out bolt at position□with screwdriver,then pull out set pin of side cover□,finally take out side cover along the direction pointed by arrow □.



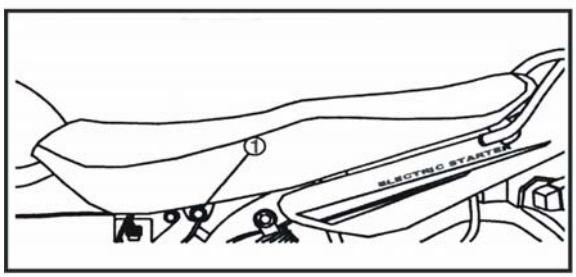
3.Side cover of guide flowing(right)

Take out the bolt of □ ,seperate the connecting block which connects side cover,then pull out the set pin of side cover □, finally take out the side cover along the direction pointed by arrow □.



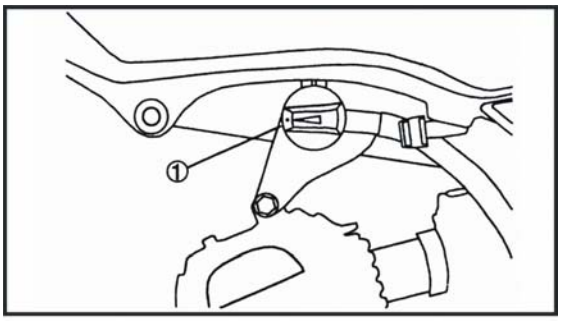
4.Side cover of guide flowing(left)

Take out the bolt of □ , separate the connecting block which connects side cover, then pull out the set pin of side cover □, finally take out the side cover along the direction pointed by arrow □.



5.Cushion

Take out bolt as per fig.indicated position(one each at left and right side),then take off the cushion forward.

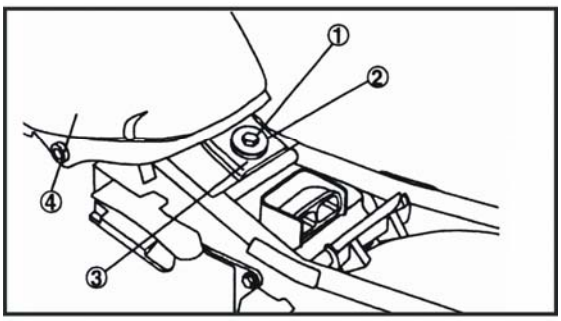


6. Fuel cock

- Switch the fuel cock off

Note:

First close the fuel cock on the fuel tank at the position "•",then take off the fuel pipe.



7. Fuel tank

□ Bolt
□ Shim
□ Rubber pad
□ Fuel tank

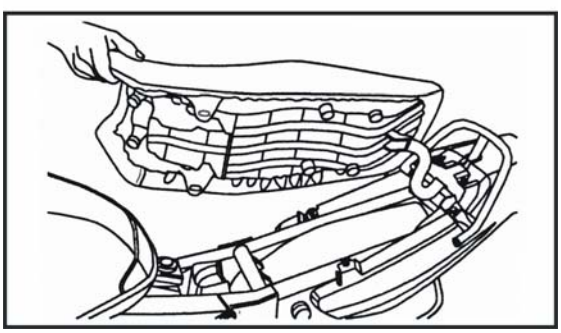
8.Installation

Conduct as per reverse procedure of removal operation pay attention to the following

1.Installation

- Fuel tank
- Torque

	Bolt torque(see upper fig) 2Kgf.m (20N.m)



2.Installation

- Cushion

Note:

First insert the convex tip position at the rear portion of cushion into insert hole on the frame, then install the bolt of cushion into every hole seperately, finally tighten the nut.

	Bolt torque(see fig.) 1Kgf.m (10N.m)

Engine

Inspection and adjustment of air valve clearance

Note:

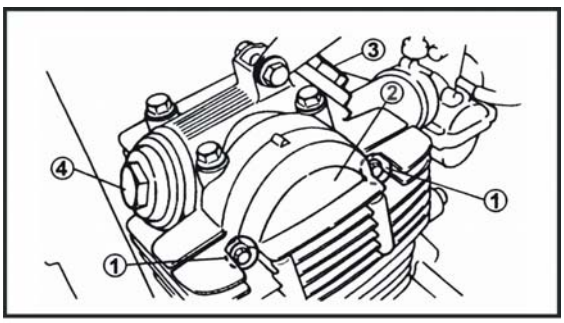
The valve clearance must be adjusted when the engine is cool.

Adjust the air valve clearance when the piston is at the Top Dead Center(T.D.C) on compression stroke.

1.Remove the following parts.

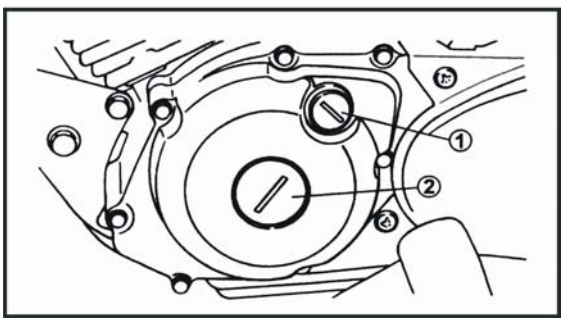
- Side cover(left,right)
- Cushion
- Fuel tank

(Refer to removal and installation of cushion,fuel tank and cover alike)



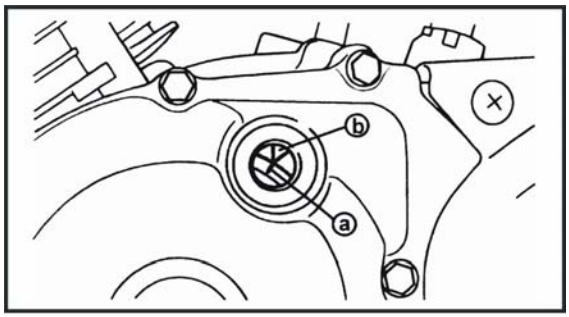
2.Remove the following parts.

- Side cover of cylinder head □,bolt□
- Spark plug
- Rocker arm cover □(Intake)
- Rocker arm cover □(Exhaust)



3.Remove the following parts

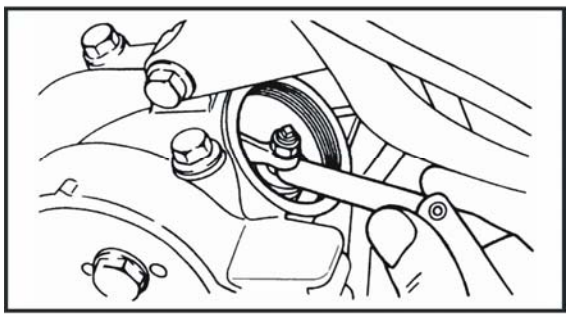
- Cock□ □with O-ring□
- Cock □ □with O-ring□



4.Turn the rotator counter-clockwise,align the T.D.C mark ⓐ of rotator with the T.D.C mark ⓑ on the crankcase cover.

5. Conduct the following inspection.

- Air valve clearance



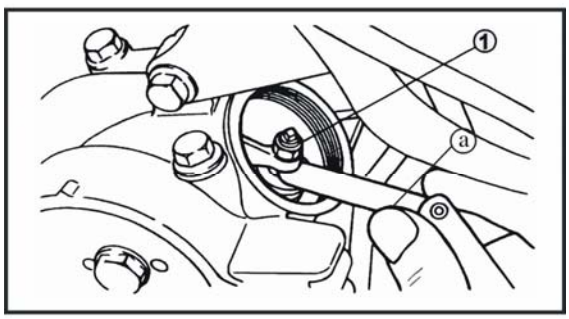
	Standard air valve clearance: IN:0.08□0.12 mm Ex:0.10□0.14 mm

Conduct adjustment for the valve under standard value

********** **********

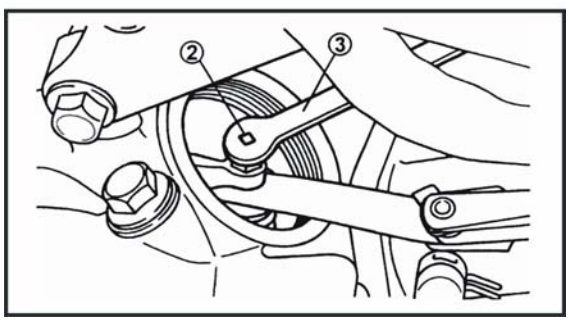
Adjusting sequence:

- Loosen fix nut □
- Insert feeler gauge ⓐ
- Install the air valve adjusting tool□on the adjuster□



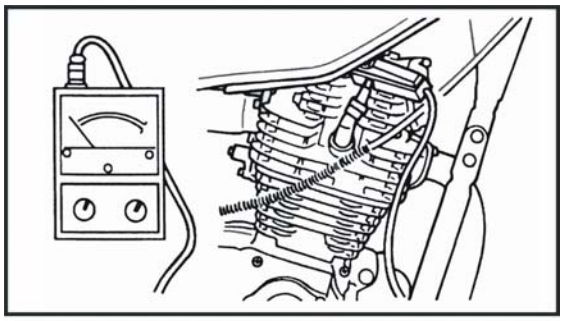
	Air valve adjusting tool: 90890–01311

Turn the adjuster until the standard value is obtained.To avoid the adjuster turn together,fix the adjusting tool before locking the set screw.



	Locking torque of set screw: 7.5Nm (0.75kg.m)

Confirm the air valve.If it is out of standard value, readjust it.



Idle speed adjustment

1.Start and warm the engine for several minutes.

2.Install the following parts

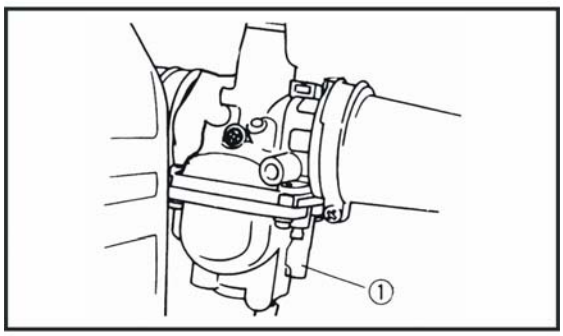
- Rpm meter of engine
- Install Rpm meter of engine on the wire of high pressure(spark plug wire).

	Rpm meter of engine: 90890-03113

3. Confirm the following items

- Standard idle speed rpm

	Standard idle speed rpm 1300-1500rpm



Adjust if out of standard value

4. Conduct the following adjustment

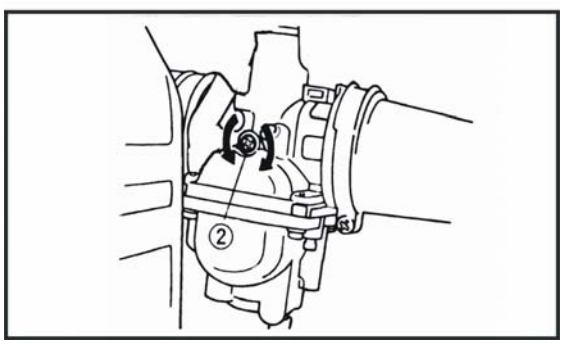
- Standard idle speed rmp

Adjusting sequence:

Turn the P.S adjusting screw to the end slightlg.

Note:

Do not lock it tightly.



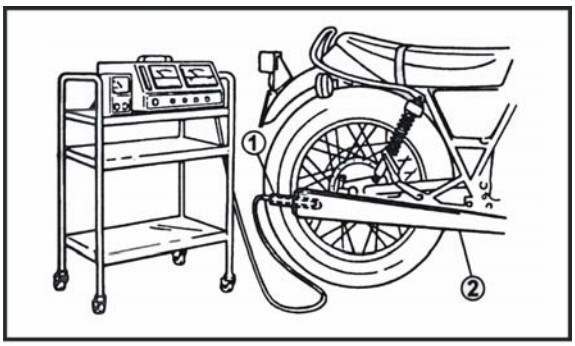
Ratate to standard rpm turns.

	Standard rpm turns of P.S adjusting screw: 2.0

Start the engine

Rotate idle speed adjusting screw leftward and rightward until the standard idle speed rpm turns are obtained.

Screw in→Increase the engine
Screw off→Decrease the engine speed



5.Remove the following parts

- Rpm meter of engine

Adjustment of co content at idle speed

1.Install the following measuring meter:measuring meter with detector for normal temperature and rpm meter of engine.

2.Warm the engine until the oil temperature reachs to specified value.

	Specified oil temperature: 55□6□□

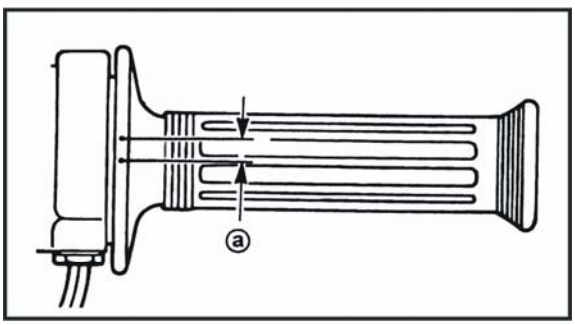
3.Confirm idle speed value: 1400 pm□

4.Install the measuring meter□for CO content

5.Check the CO density.

	Standard co density: 1.5□□4.5%

Out of standard value→adjust P.S adjusting screw(match with adjusting idle screw)



Inspection/adjust the free clearance of throttle cable

1.Conduct the following inspection

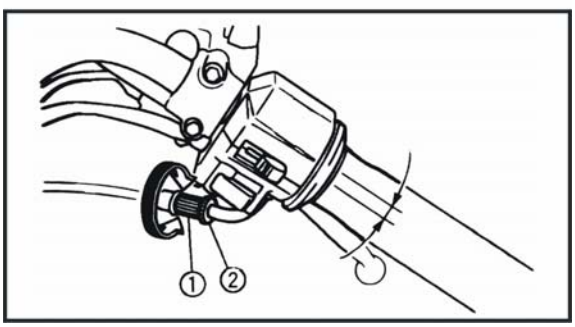
- Free clearance ⓐ a of surrounding of throttle cable

	Free clearance of surrounding of throttle cable: □□□mm

Out of specified value→adjst

1.Conduct the following adjustment

- Free clearance of surrounding of throttle cable



Adjust sequence

First step(Throttle steel cable)

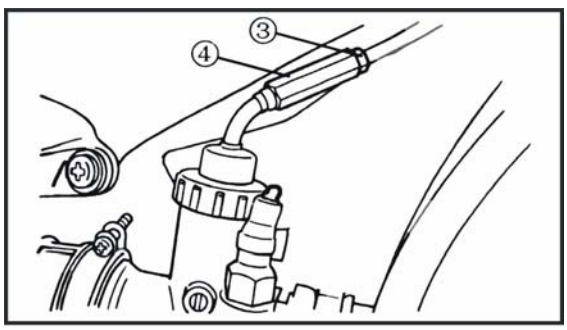
- Loosen the locking screw
- Adjust the adjuster

Screw in→increase the clearance Screw off→decrease the clearance

Tighten the locking screw

Note:

When the adjustment could not done by the steel cable at throttle handle bar,it could be done by the adjuster at the carburetor.



Second step(carburetor)

- Loosen the locking screw
- Adjust the adjuster

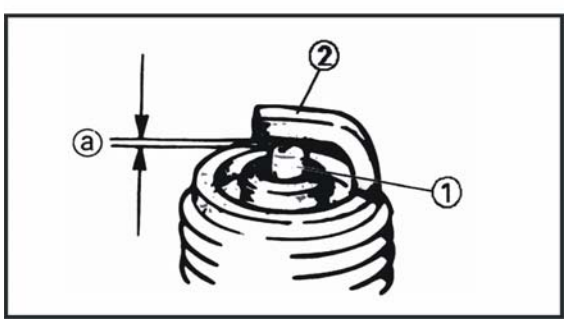
Screw in→Increase the dearance Screw off→Decrease the dearance

- Tighten the locking screws

⚠Warning

After adjustment,start the engine, turn the steering handle bar leftward and rightward,confirm that the idle speed of engine will not increase.

Check of spark plug



1.Conduct the following check

Check electrode,pollution of insulation, damage under burning, damage under burning for deposits→replace the pollutant and deposit→clean with spark plug detergent or steel wire brush.

2.Conduct the following check

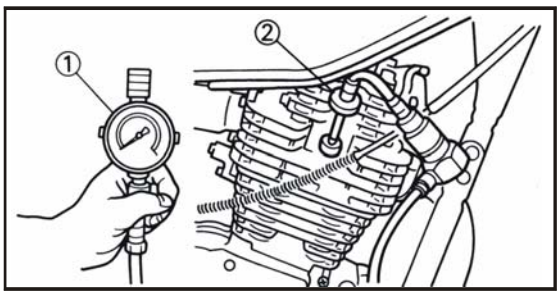
Check the clearance ⓐ between center electrode and side one

	Clearance between electrode: 0.6 0.7mm

Out of specified value→adjust side eclectrode

Standard spark plug

NGK CR6HSA



Note:

Insufficient compression pressure wil result in the performance loss.

1.Check:
- Air valve clearance→adjust
  Refter to "adjustment of air valve"

2.Start and warm the engine for several minutes.
3.Stop the engine
4.Remove:spark plug
5.Install:
- Pressure manometer
- Joint

Pressure manometer:90890-03081

Joint:90890-04082

6.Check
- Compression pressure

****

Measurement steps:
- Crank over the engine with the electric starter or kick starter with the throttle wide-open until the compression reading on the manoeter reach to the max.value,then read the max. one.
- Check readings with specified levels.

Standard compression pressure:
1200KPa(12kg/cm) ^{2}

- When compression pressure
  A Poor air valve contact will cause compression leakage.
  B Adjustment of air valve clearance is poor
  C Piston,cylinder and piston ring will be worn out
- When compression pressure is too high
  A The burning room of cylinder head will have carbon deposit
  B Piston head will have carbon deposit

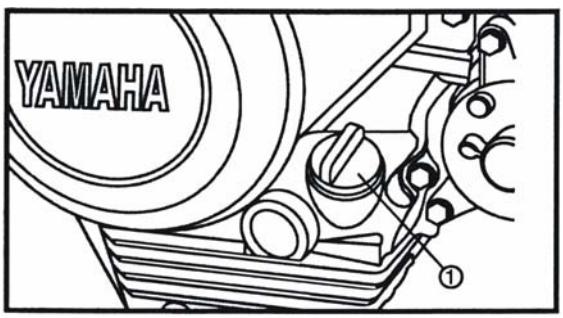
7.Install:
- Spark plug,spark plug cap

****

Check of lubricant quantity of engine

Note:

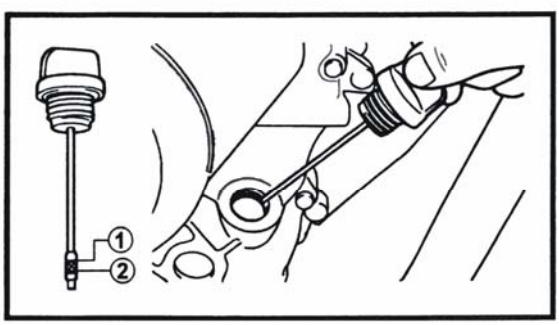
When inspecting,the motorcycle should be rested at flat position and in vertical condition.



1.Conduct the following check

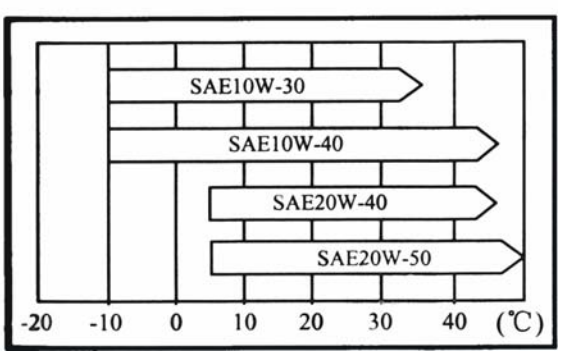
- Lubricant quantity of engine

Run the engine with idle speed for 2□3 minutes, then stop the engine for 2□3 minutes.keep the machine in vertical position and take out cock



- Check the oil level on the cock if it is between□and□.

Lubricant quantity of engine *Recommended lubricant oil



	When normally replacing: 1.0L□1000mL) When repairing the engine 1.2(1200mL)

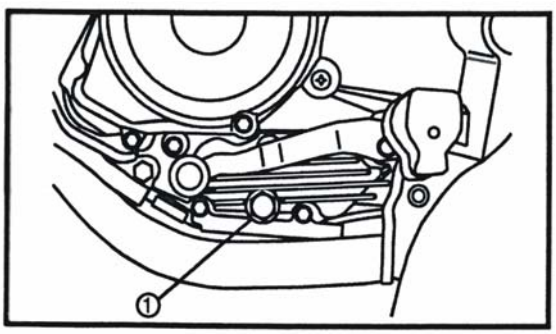
Refer to the indication in the fig,select the proper engine lubricating-oil which suits for viscosity code of local temperature.

Recommended engine oil: YAMAHA four-stroke lubricating-oil.

Replacement of engine oil

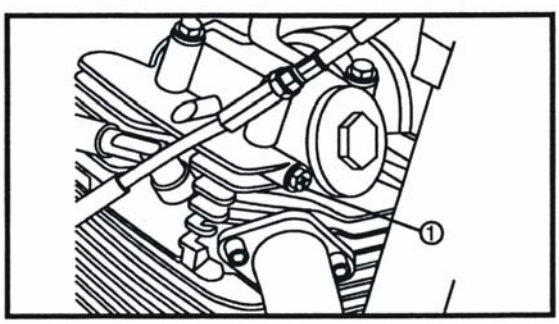
Note:

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



1.Rest the machine on a level place.
2.Warm up the engine for several minutes,and stop it.
Place an oil container under the oil drain plug.
3.Remove:
- Filling-in cock of engine oil.
- Drain cock
- Gasket(installed on drain cock)

4.Drain oil
5.Add the engine oil from filling-in cock.
6.Install
- Filling-oil cock of engine oil
- Gasket(installed on drain cock)
- Drain plug



	Torque of drain cock: 20N.m(2kgkm)

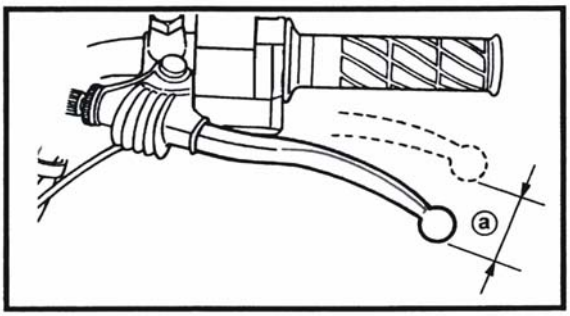
Check of oil pressure

1.Remove:oil pressure inspection bolt
2.Start and run the engine for several minutes in idle speed.
3.Check:
- Machine oil condition of overflowing hole
  Overflow of machine oil→oil pressure is normal
  Machine oil can't overflow→oil pressure is insufficient

Note:

If the oil still does not over-flow after one minute,stop the engine immediately to prevent it from being damaging.

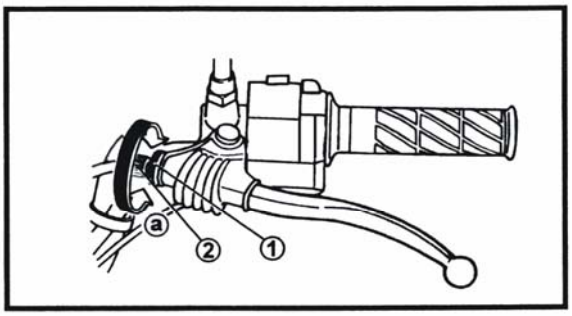
Adjustment of clutch



1.Check:

- Freeplay of clutch cable a out of specified range
  →adjust

Free play:
10□15mm
Measure at end portion of clutch lever



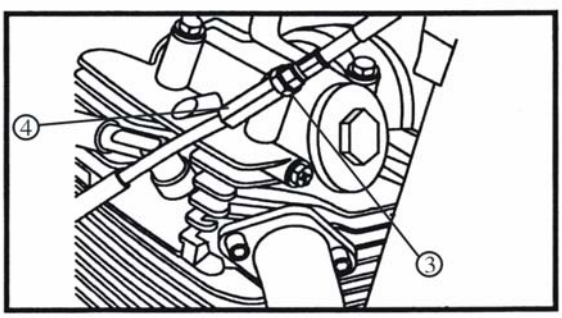
2.Adjust:

- Free play of clutch cable

Adjusting steps:

1.Confirm that adjusting device□and locking nut□have been fully tightened.
2.Loosen the lock nut□
3.Screw in or screw out adjusting nut□until the specified free play has been obtained.

Screw in→free play increased
Screw out→free play decreased



4.Tighten locknut □

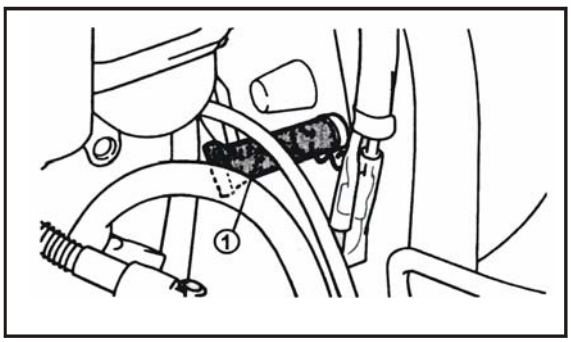
Note:

If the free play is improper,use adjusting device(a part of clutch lever)to adjust the free play of clutch cable.

5.Loosen locking nut □
6.Screw in or screw out the adjusting device□until the proper free play has been obtained.

Screw in→free play increased
Screw out →free play decreased

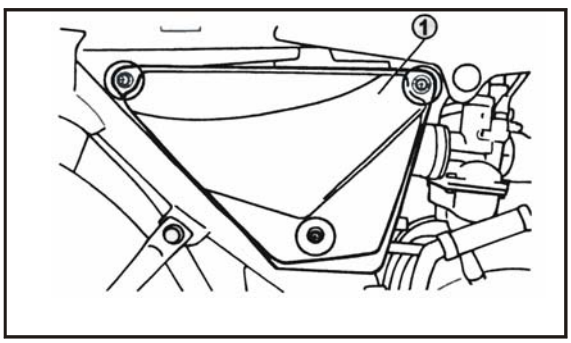
7.Tighten locking nut□



Clear of air filter

Note:

There is check hose at the bottom of the air filter.If dust or water collects in this hose,clean the air filter core and case.

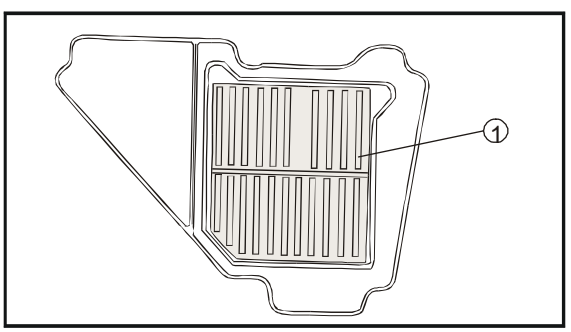


1.Remove

- Side cover(right)
- Cushion
- Case of air filter

2.Remove

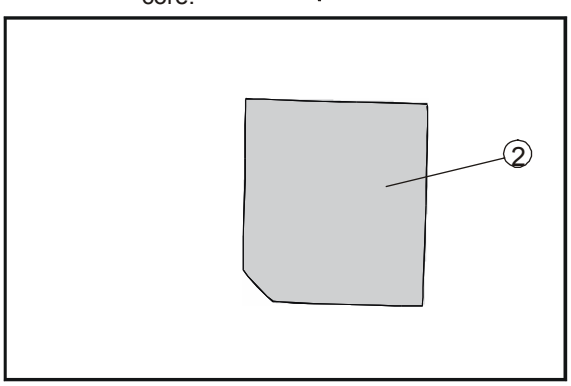
- Core of air filter



Note:

The engine should never be run without the air filter; otherwise, unfiltered air will get into the engine, thus excessive wron out or damaging the engine will be resulted.In addition,the operation of carburetor will be influenced and engine may be overheated if running without core of air filter.

Install filter core 2 on filter core.

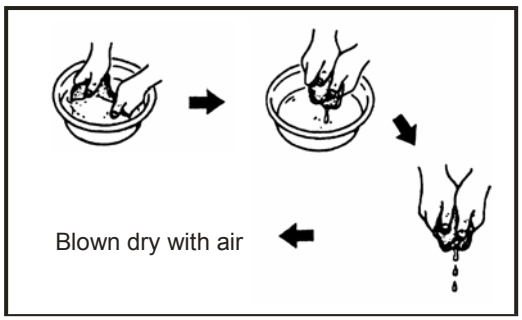


3.Check:

- Filter core of air filter

  Damage→ Replacement

  Dusty→ Blowing off dust on net with compressed air



□ Remove the filter cores1and 2 , and clean them by blowing with high-pressure air.

□ If the filter core 2 is too dirty, it may be washed with neutral solution.It must be blown dry after washing.

Coution:

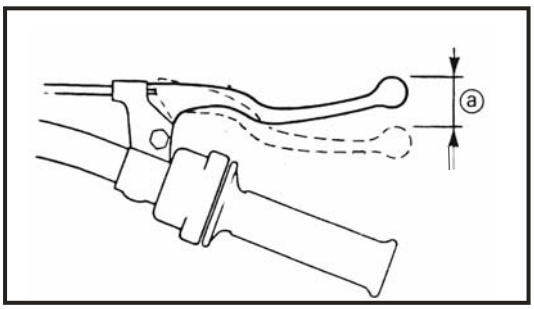
The filter core may not be painted engine oil.

Coution:

It should be confirmed that the filter core has been fixed correctly in filter case.

Coution:

It is strictly forbidden to run engine without fitting filter core of air filter. It will cause over wear of piston/cylinder.



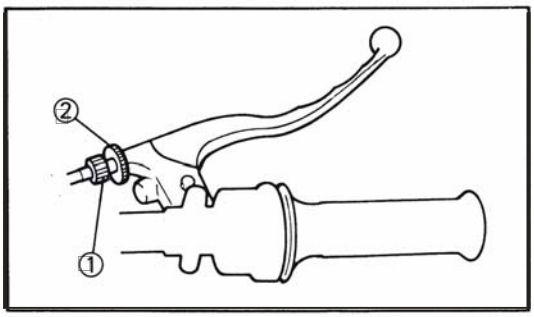
Adjust of front brake(drum type)

1.Check:

- Free travel (a) of brake cover
- Exceeding specified range → adjustment

2.Adjustment:

- Free travel of brake lever

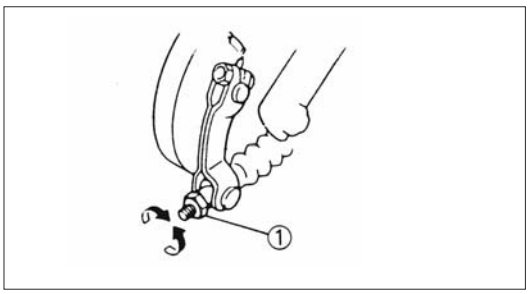


Adjusting procedure(lever side)

- Loosen the lock nut
- Screw in or screw out the adjusting nut until reaching specified free travel.

Screw in →Free travel increment
Screw out → Free travel reduction

- Toghten up the lock nut



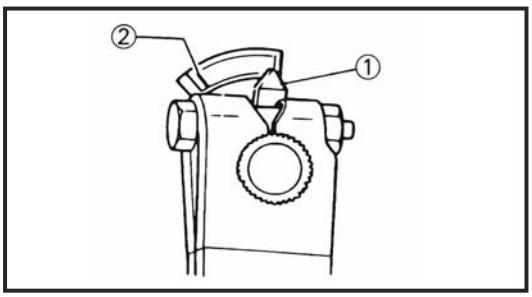
Note:

Should confirm no blocking of brake after adjusting.

Adjustment(brake drum side):

- Screw in or screw out the adjusting nut until reaching specified free travel.

Screw in →Free travel reduction
Screw out → Free travel increment



Check of front brake pad

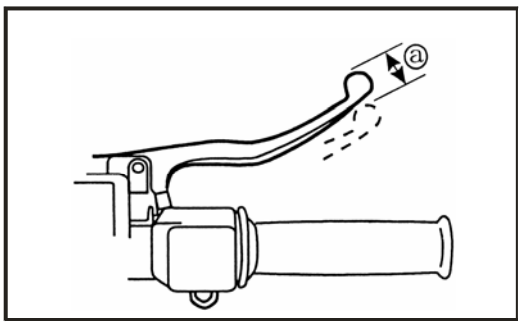
1.Check:

- Needle(wear indicating plate)
- Needle reaching the wear limit line of indicating plate
  → Replacing brake pad.

Check of front brake(disk-type)

⚠Wrning

If feeling loose and soft braking,the bad brake effect may be caused by oil leakage or mixing with air.You should check brake liquid capacity,and lock brake steel cable,or eliminate air.



1.Conducting following check:

- If there is vibration when turning leftward or rightward or driving, you should check if the brake nose contact other part.

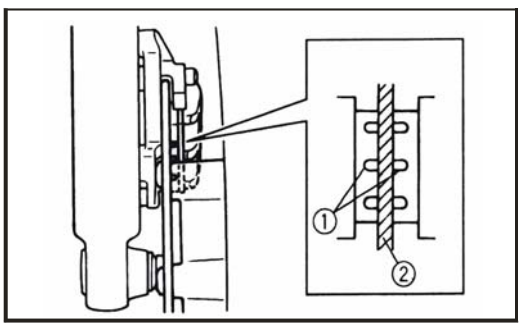
Contacting→ correcting.

2.Check the free play of the front end part of brake handle.

	Free play of front end part of brake handle: ⓐ 5.5~10.5mm

Note:

This play is ensured by manufacturing .No adjustment is needed.



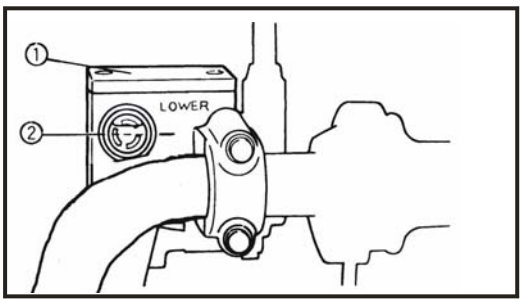
Checking brake pad

1.Conduct following checking

- Check the wear condition of brake pad

If the wear indicator hardly contactin brake round disk → replacing whole set of brake pad.

Check the brake liquid quantity



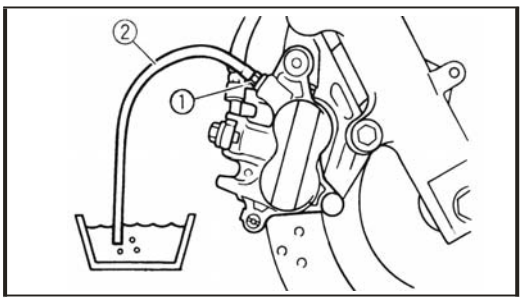
1.Conductfollowing checking
- Brake liquid level
- Check the liquid level when the brake liquid level cover □ is in horizonal state.The liquid level should be above □ in figure.
- If the liquid level is below the lower position,supply the brake liquid until above the lower limit position.

Appionted brake liquid:genuine YAMAHA brake liquid DOT4

Note:

Do not mix and use brake liquid of different brand DOT3 oil can be used if there is no No DOT4 oil.The brake liquid will corrupt the painting surface and plastic part.wipe off it inmedinately when splashing.

Exhausting air



△Warning

When disassembling related parts of braked liquid, you must confirm that other parts are locked and sealed. Then the air can be released.

Proceduresof releasing air

1.Remove the cover of brake liquid vat.

2.Remove the diaphragm of brake liquid vat

3.Mount plastic rubber pipe on front end of oil draining Screw□□ and place a oil container at the front end of plastic rubber pipe.

4.After braking several times ,loosen the oil draining screw about 1/2 turn when gripping brake handle,then tighten it up again quickly.

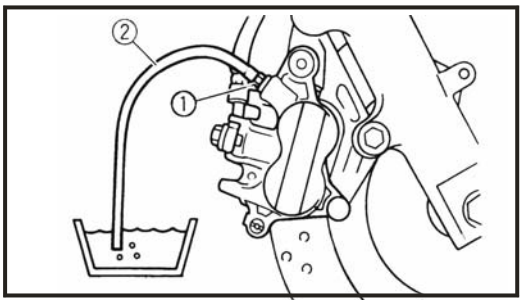
Note:

Do not release the brake handle before tightening up the oil draining screw again.

5.Repeat above procedures until the bubble is eliminated completely.

Note:

Supply the brake liquid at the same time.Do not let it below the lower limit.



⚠Warning

Grip the brake hadlebar to check brake liquid leakage, Wipe off the brake liquid sprayed on brake disk, tire and rim.

6.Refit the diaphragm of brake liquid vat.

7.Refit the cover of brake liquid vat.

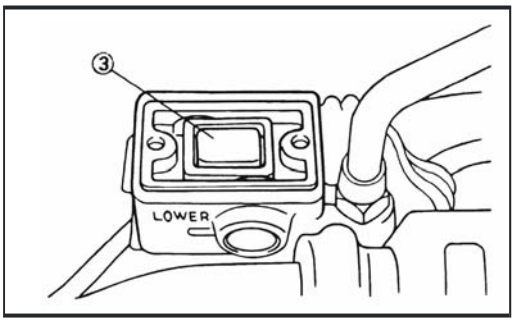
Replacing brake liquid:

1.Make the main liquid vat in horizontal state,and disassemble the cover of liquid vat.

2.Fit the plastic rubber hose on front end of oil draining screw ,and prepare oil continter at the front end of plastic rubber hose. Loosen the oil draining screw, and repeat that several times until no brake liquid is drained by oil draining screw.

⚠Warning

Wipe off the brake liquid sprayed on brake disk, tire and rim.



3Lock the oil draining screw

	Oil draining screw: 6 Nm (0.6 kg.m)

4.Remove the diaphragm of brake liquid vat.

5.Fill the brake liquid until above lower limit.

Appointed brake liquid:genuine YAMAHA brake liquid DOT4

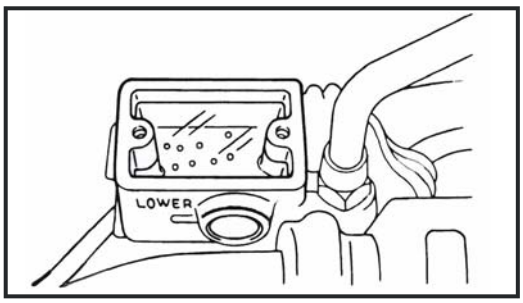
Note:

Do not mix and use brake liquid of different brand DOT3 oil can be used if there is no DOT4 oil.

6.Pull the brake handlebar to make the brake liquid pipe filled with brake liquid.

Note:

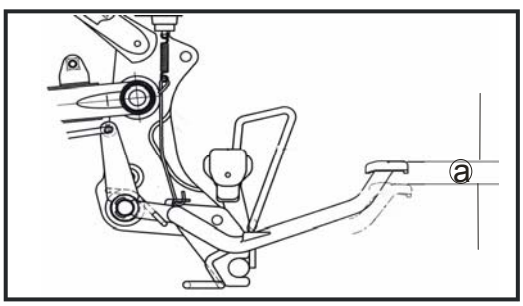
Supply the brake liquid at the same time.Do not let it below the lower limit.



7.Operate the brake handlebar until no bubble sends out from the small hole of brake liquid vat and the brake handlebar is felt powerful.

8.Release air.

9.Assemble according to reverse procedures after adjusting .



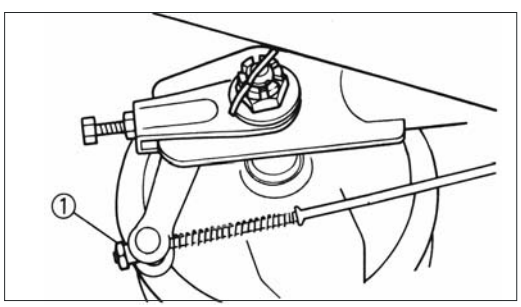
Check and adjust rear brake

1.Conduct following checking

2.Check brake and free play of front end part of pedal

	Free travel of frontend part of brake pedal: 20□30 mm

Unconformable to specified value→ Adjustment



3.Conduct following adjustment.

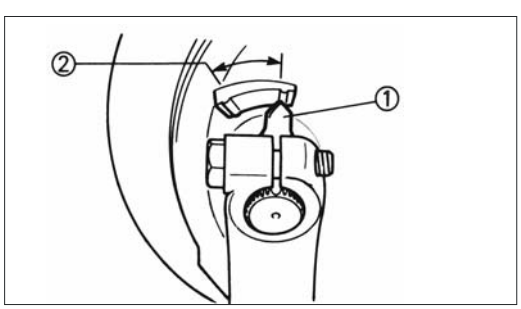
- Free play of brake pedal

Adjusting order:

- Adjust the free play to specified value with adjuster

Screw in→ Reduction Screw out→ Increment

Check of rear brake shoe



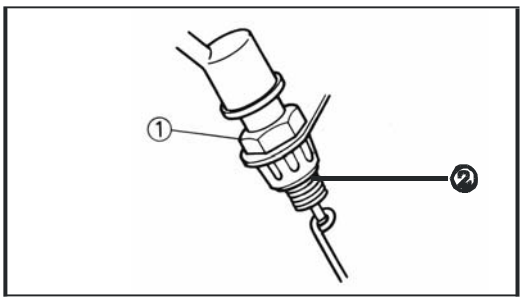
1.Check

- Needle (wear indicating plate)

The needle has reached wear limit line→ Replacing brake shoe

Note:

The tension spring must be replaced when replacing brake shoe.



Checking rear brake switch

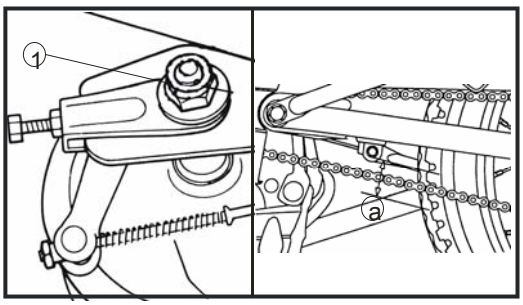
1.Conduct following checking

- Brake light
  Check if the brake light comes on when treading down the brake pedal 20□30mm.
  Brake light does not come on → adjustment
  (Rotate the adjusting nut for adjustment)
- Rear brake light switch
  Adjusting nut □

Checking,adjusting driving chain

1.Conduct following check.

- Support the motorcycle with main stand.
- Check the slackness a of driving chain.
  Exceeding specified value range → adjustment

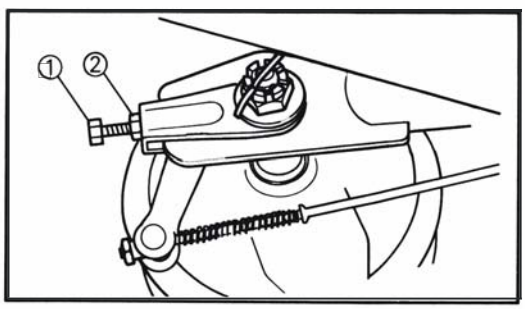


	Slackness of driving chain: 20□30 mm

2.Adjust driving chain

Adjusting procedures:

- Loosen the lock nut of axle
- Loosen the lock nut of adjuster
- Screw in or out the adjusting device until reaching the specified slackness.



Screw in → Slackness reduction Screw out → Slackness increment

Checking,adjust driving chain

Note:

There is graduation mark on chain adjuster.When adjusting,should ensure the identical graduation value on driving chain adjusters of two sides of rear arm. After the left and right adjuster is adjusted properly, tighten up the lock nut □ of adjuster and lock nut of axle.

	Lock nut of axle: 91 N.m (9.1kgfm)

Lubrication of driving chain

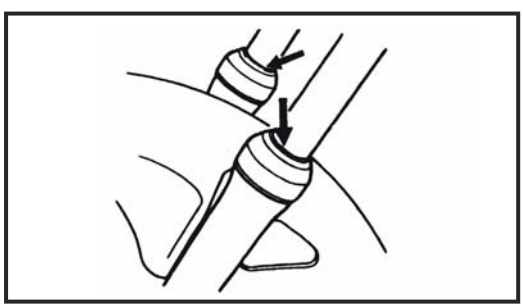
The driving chain includes many cooperating parts.They will be worn rapidly without proper maintenance.So periodical checking and repair should be conducted,which is especially important when driving under dusty condition.

1.Spraying-type lubrication oil may be used. Get rid of all dirts and mud on chain with brush or cloth. Spray the lubricating oil onto the position between two side plates of chain and middle roller.

2.When washing chain,remove the chain from the motorcycle, and immerse it into solvent to clean it as far as possible. Take out the chain from solvent and dry it. Lubricate it quickly to avoid rust.

Note:

Never use lubricating grease when lubricating chain.



Check of front fork

1.Place the motorcycle on flat place.

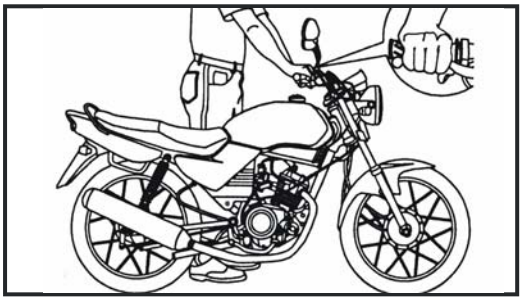
2.Check:

- Inner tube

  Scar or damage→ Replacement

- Oil seal

  Serious oil leakege→ Replacement



3.Keep the motorcycle in vertical parking state,and activate front brake.

4.Check:

• Activating state

Make the front fork sliding up and down certain times.

Blocking in activating→ Repair

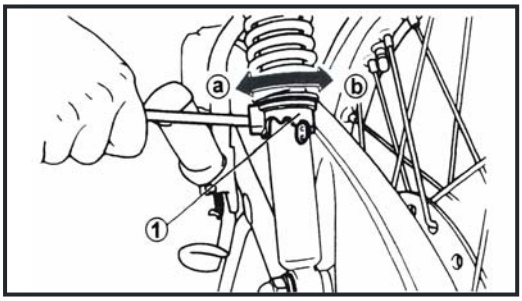
Refer to section of "Front fork" in Chapter 6

Adjustment of rear shock absorber

△Warning

Always adjust the preload value of each shock absorber identical to set constant value. Uneven adjustment will worsen the operation and reduce reliability.

Support the motorcycle firmly to avoid turning over.

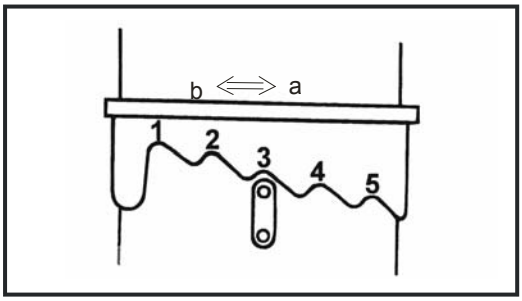


1 Adjust:

• Spring preload

Turn the adjusting device in direction ⓐ or ⓑ

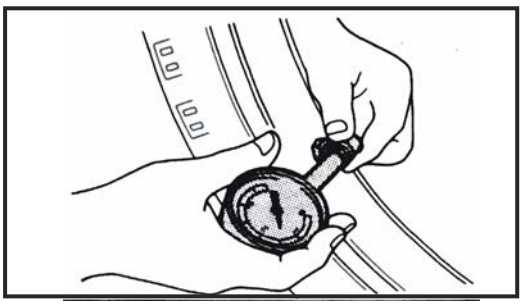
Turn in direct ⓐ → Spring preload value increases
Turn in direct ⓑ →Spring preload vlaue reduces



Adjusting device position:
Standard: 3
Min: 1
Max: 5

Note:

The adjusting device should not be trned exceeding Max. or Min. position.



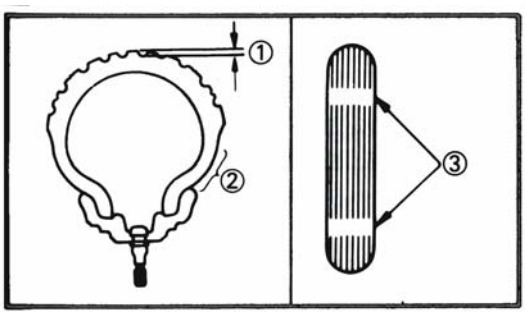
1.Measure

•Tire pressure

Exceeding specified value→adjustment

Pressure of cold tire	Front wheel	Rear wheel
Load* below 0~90 kg	175kPa (1.75kgf/cm²)	196kPa (2.0Kgf/cm²)
Max,load 100kg	196kPa (2.0Kgf/cm²)	245kPa (2.5Kgf/cm²)

* Load means total weight of cargo,driver and accessaries



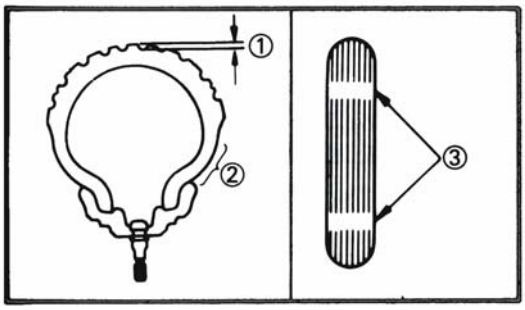
Specification of front wheel	2.75-18(42P)
Specification of rear wheel	90/90-18(51P)

2.Check

•Tire surface

Wear/damage→ Replacement

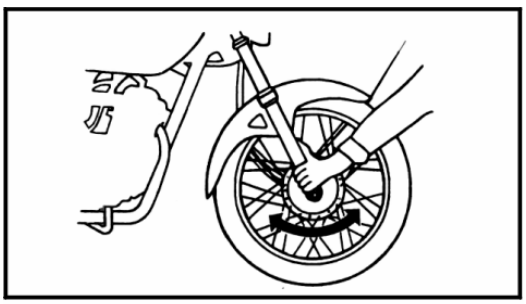
Min depth of tire thread (front &rear wheel): 1.0 mm



□ Repth of thread
□ Side wall
□ Wear indication layer

⚠Warning

- Driving the motorcycle with worn tire is dangerous. Replace the tire immediately when the tire is worn to line.You would better not to mend the broken tire tube with rubber. Mend the tire tube especially carefully if you have to do so. And replace it with high quality substitute as soon as possible.
- When using tiretube type tire,be sure to mount correct tire tube.



Check of steering device

1.Conduct following device

Support the front wheel,and sway the lower part of front fork to check if the steering axle is loose.Check if the steering bar can be turned to left and right smoothly.

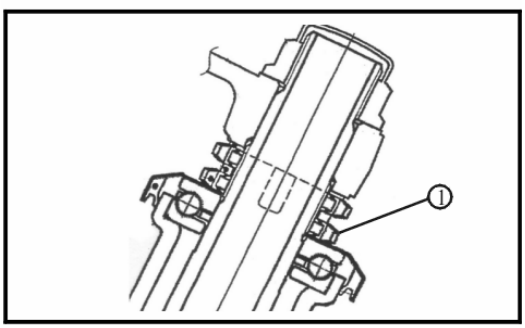
Loose steering axle,unsmoothed turning adjusting nut of steering axle

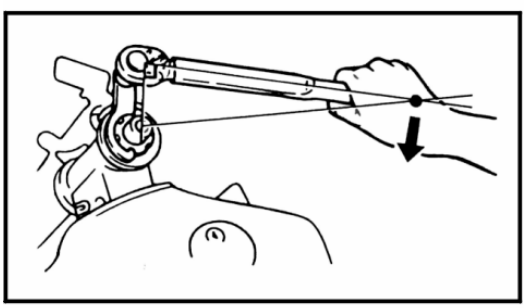
2.Conduct following adjustment

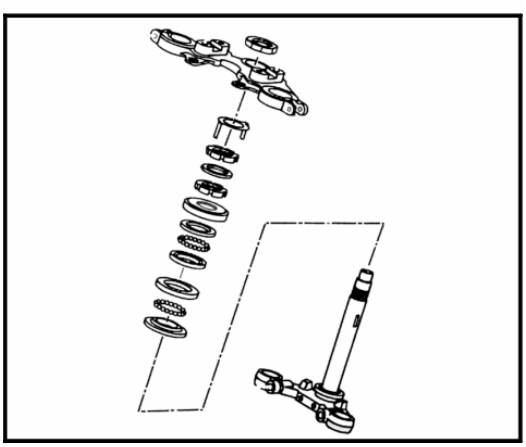
- Steering nut

Adjusting procedures:

- Disassemble steering handlebar
  (Refer to Chapter 6 “Steering handlebar”)
- Disassembling steering handlebar seat
  Lock the nut with steering nut wrench
  (The locking procedures and method refer 2-11)







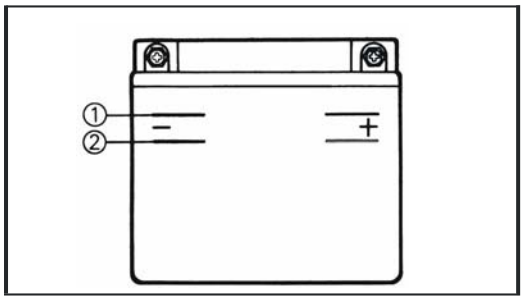
- Mount steering bar seat
- Mount steering handlebar

Check of battery

1.Disassemble:
- Side cover(left)
- Reter to section “Disassembly of side cover”

2.Check:
- Electrolyte level
- The electrolyte level must be between upper mark line □and lower mark line □.
- If the electrolyte level is too low, supply the electrolyte properly.

Note:
Only distilled water can be supplied.The tap water contains mineral which is harmful to battery.

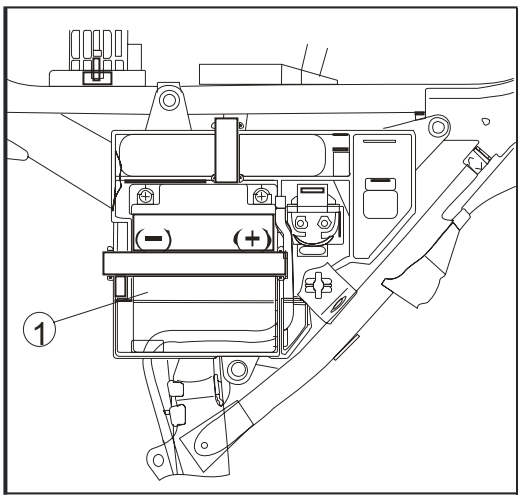


3.Check:
- Terminal of battery
  Dirty terminal→ cleaning with steel wire brush
  Bad connecting→ correction

Note:
Paint a layer of little lubricating grease after cleaning terminal.

4.Check:
- Airflow hose
  Jamming→ Eliminating
  Damage→ Replacement

Note:
Be sure to arrange the way of airflow hose correctly when checking battery.Be careful not to let electrolyte of bubble contacting frame or other part to avoid corrosion.



5.Connet:

- Airflow hose
  Must confirm firm connection and correct way of air flow hose.

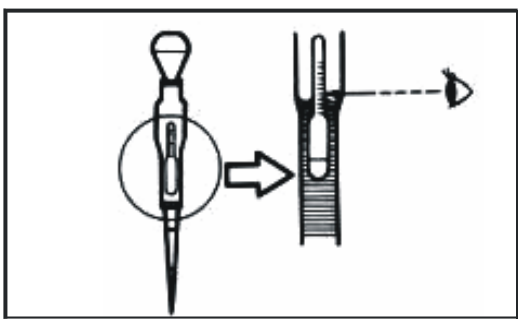
6.Check:

- Specific gravity
  Smaller than1.08→ Recharge

Charging current:0. 5 A / 10 h Specific gravity:1.28 at 20 □□68o F□

Replace the battery when finding following condition.

- During charging,the votage can not reach the specified value or no bubble rises.
- One or several battery unit elements are suphidized. (The electrod plate becomes white or substance gathers on bottom of battery unit element)
- Recharging becomes slow after a period of time. The specific gravity reading of one battery element is lower than others.
- Obvious buckle or bending of electrode plate of insulator



Note:

To new battery,the primary charging must be conducted before using to assure its best performance and service life.

⚠Warning

The battery electrolyte is damgerous.It contains sulpharic acid which is poisonous and corrosive. Must obey following preventing measures:

- Avoid to contact electrolyte because it will cause serious burn and permanent damage of eye.
- Protect your eyes when operating or working near battery.

⚠Warning

Method for detoxication(external)

Skin-----Wash with water.

Eyes-----Wash with water for 15 minutes,and see a doctor immediately.

Method for detoxication(internal)

Drink plenty of water of milk.Then take oxidized milk with egg or rapseed oil,and see a doctor immediately.

The battery will produces explosive gas.

Following protecting measures must be taken:

- Conduct chatging at ventilated place(far away from welding equipment,lighting cigaret etc).
- Do not smoke when charging or work at battery.
- The battery or electrolyte should be placed far away from children.

Chapter 4 Disassembly of engine

Assembly and adjustment of engine

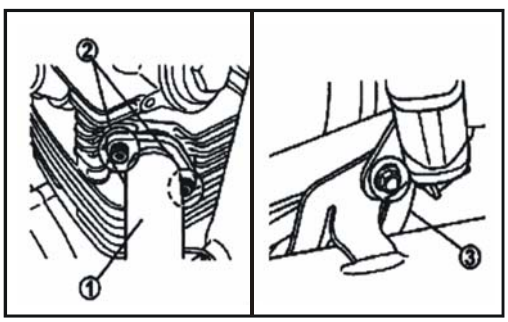
Thorough repair of engine

Disassembly of engine

1.Disassemble:

- Side cover
- Cushion
- Fuel tank

Refer to section of “Disassembly of cushion, fuel tank and side cover”.



Engine oil

1.Oil draining:

- Engine oil

Refer to section of “Replacement of engine oil” in Chapter3.

Exhaust pipe

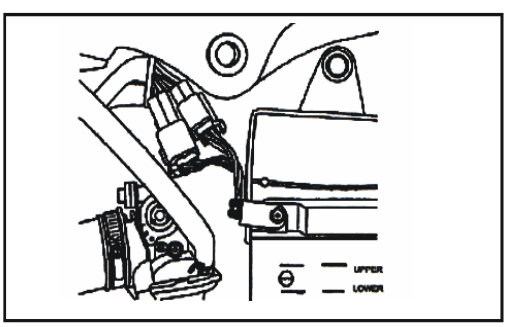
1.Disassemble:

- Exhaust pipe□
- Fixing bolt□□

Carbauretor

1.Disassemble

- Carburetor



Cable and guide wire

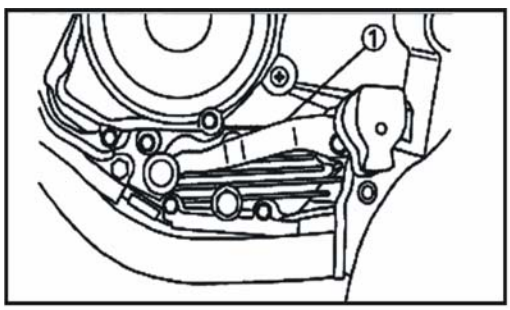
1.Disconnect

- Guidewire of neutral switch
- Guidewire of stator coil
- Guidewire of charging coil
- Guidewire of pulser coil

3.Disconnect
- Guid wire of positive and negative electrode of batt
- Guid wire of starting motor

4.Dsconnect
- Cable of clutch

Shift pedal and driving chain

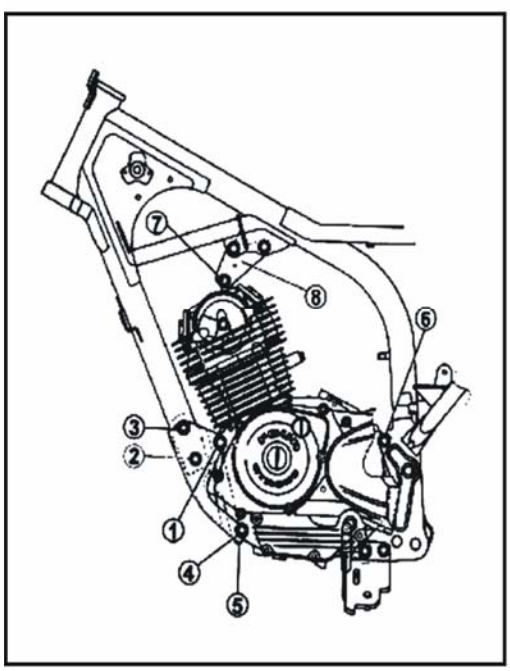


1.Loosen
- Nut of rear wheel shaft

Note:
Loosen the nut of chain adjusting device and increase the slackness of chain.

2.Disassemble
- Shift pedal

3.Disassemble
- Small chain gear
- Driving chain



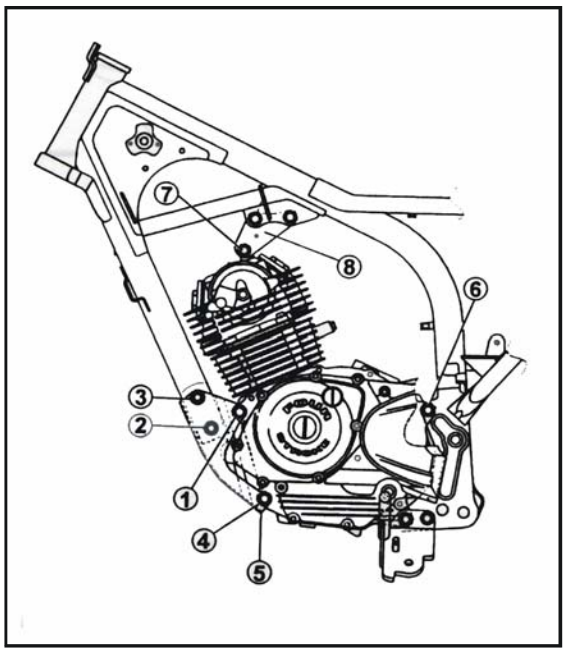
Kick starter

1.Disassemble
- Nut
- Kick starter

Disassembly of engine

1.Place a proper support under frame and engine (or support the main stand and make it stable)

2.Disassemble
- Mounting bolt (support of lower part of front side and engine)
- Mounting bolt , (support of lower part of front side and frame)



3.Disassemble:

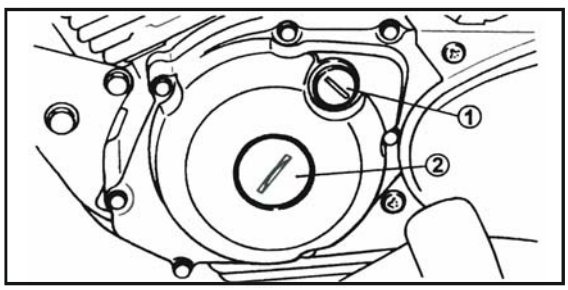
- Mounting bolt , nut (lower side)□□□

4.Disassemble:

- Mounting bolt(rear part of engine and frame)

5.Disassemble:

- Mounting bolt (upper part of engine and support) □ mounting bolt (upper support and frame)□



Disassembly of engine

Cylinder cover, cylinder and piston

1.Disassemble:

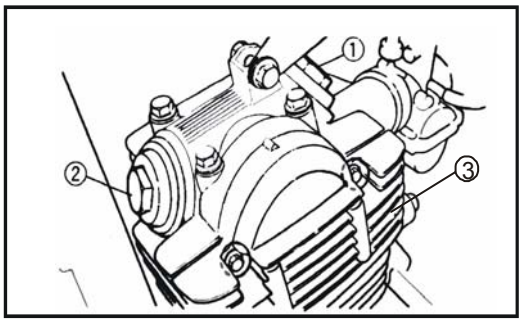
- Spark plug

2.Disassemble:

- Intake divided manifold (connecting pipe of cylinder andcarburetor)

3.Disassemble:

- Timing rotating plug□ ,□



4.Disassemble:

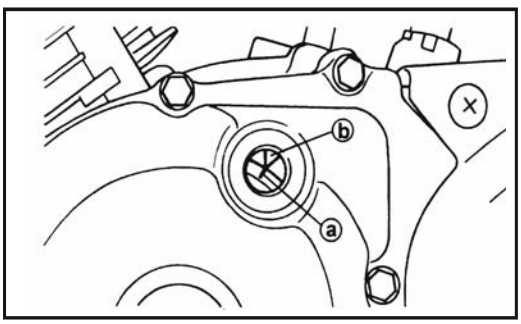
- Air valve cover(intake)□
- Air valve cover (exhaust)□

5.Disassemble

- Side cover of cylinder cover□

6.Timing adjustment

- Make the mark "|" on rotator aiming at the fixing needle on crankcase cover.

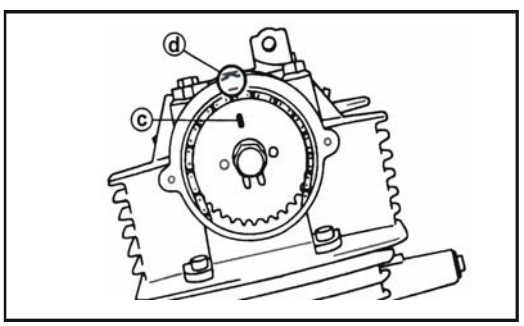


********** **********

Timing adjusting procedure

Rotate the crank counterclockwise with wrench.

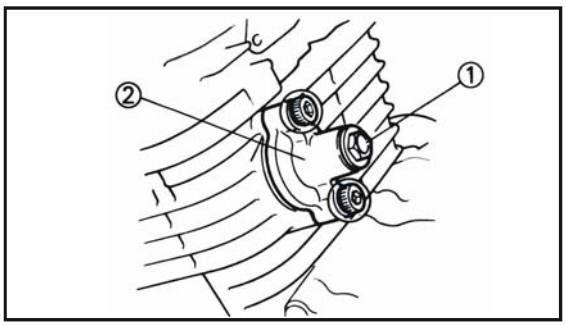
Make mark"|" ⓐ on rotator aiming at fixing needle ⓑ b on crankcase cover. When mark"|" aiming at fixing needle , the piston is on upper dead center (T , D , C).



At the same time the calibration mark ⓒ c of cam chain gear should aim at calibration mark ⓓ d on cylinder cover. The swaying arms on both sides must form valve gap.

If there is no gap, rotate the crank counterclockwise to meet above requirement.

********** **********

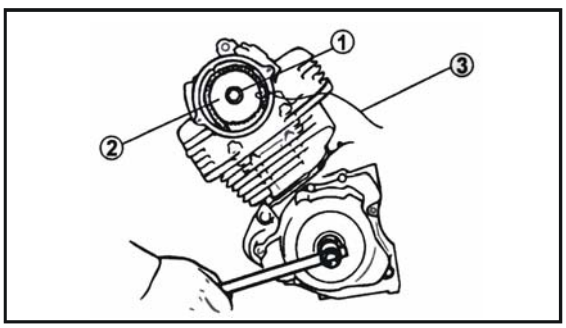


7.Loosen

- Cover bolt(chain tensioner device)

8.Disassemble

- Chain tensioner device

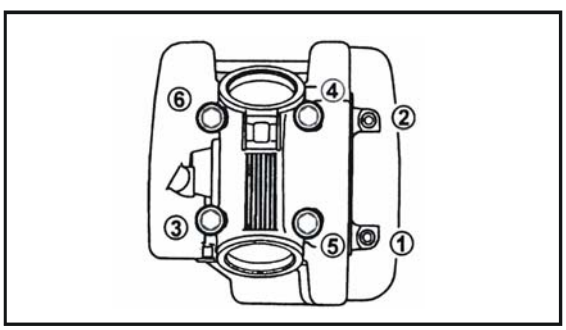


9.Disassemble:

- Bolt
- Cam chain gear

Note:

Fix the timing chain with protective steel wire to prevent the chain dropping into crankcase.

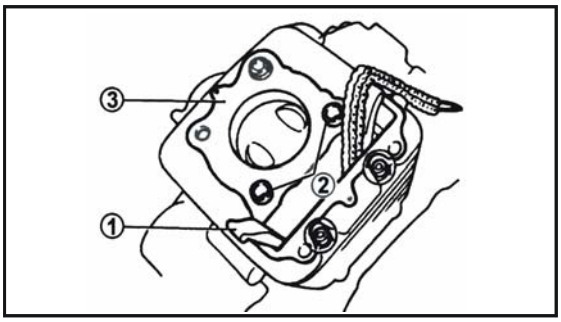


10.Disassemble:

- Bolt
- Cylinder head

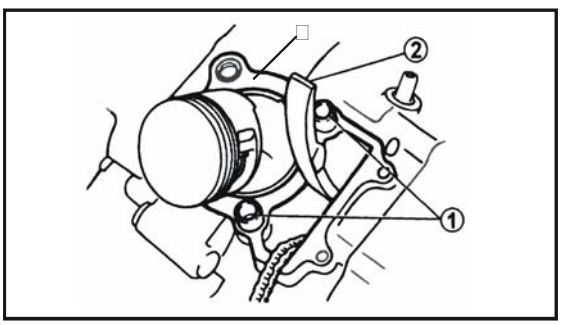
Note:

Firstly loosen each bolt 1 / 4 turn. After loosening all bolts, remove them.Loosen them successively from Min.number . The reverse order of the number stamped on cylinder means the order of tightening the bolts.



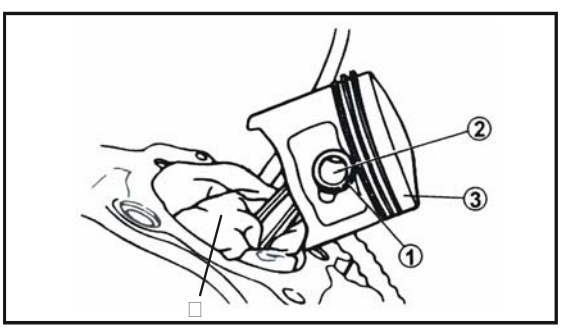
11.Disassemble

- Guide board of chain□
- Locating pin□
- Cylinder pad□
- Cylinder



12.Disassemble:

- Locating pin□
- Papper pad□



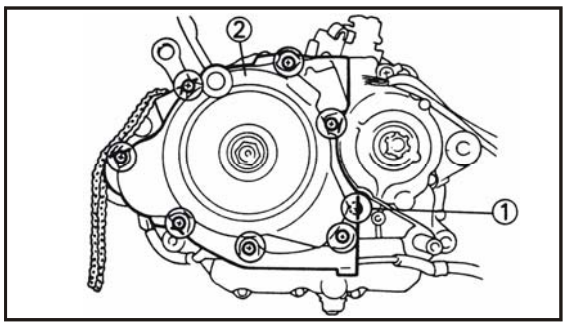
13.Disassemble:

- Elasric circlip□ of piston pin
- Piston pin□
- Piston□

Note :

- Before disassembling the cirlip of piston pin,cover a piece of clean cloth on crankcase to prevent the elastic circlip dropping into crankcase.
- Before disassembling the piston, clean the groove and pin hole of circlip. If it is difficult yet to disassemble the piston after doing that, use disassembing tool of piston pin.

	Disassembling tool of piston pin: 90890-01304



Left crankcase cover,starting motor

1.Disconncct

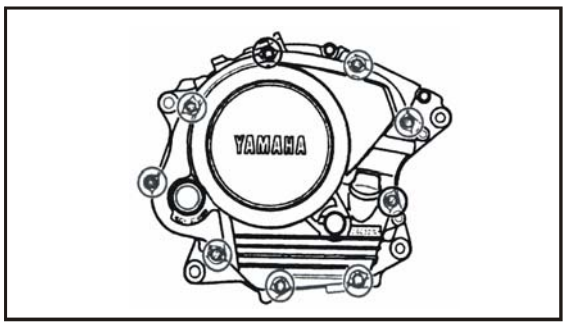
- Neutral light switch

2.Disassemble:

- Left crankcase cover
- Locating pin
- Seal papper pad

3.Disassemble

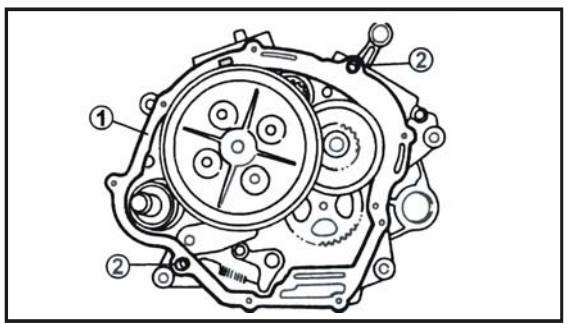
- Starting motor



Clutch, oil pump

1.Disassemble:

- Kick starter device

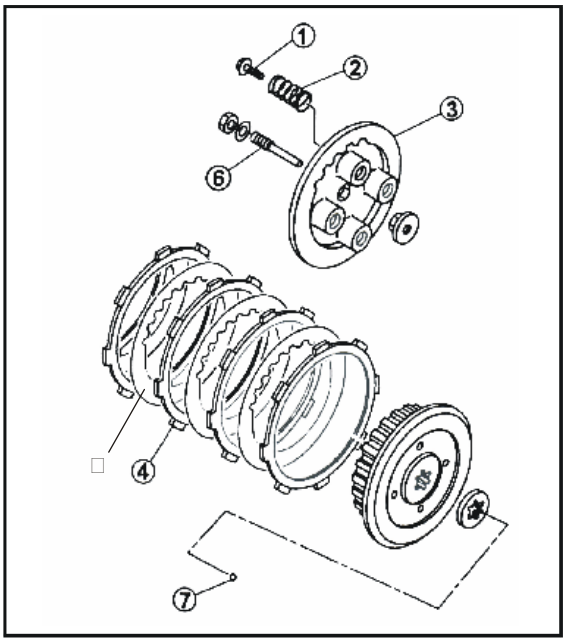


2.Disassemble:

- Crankcase cover (right)
- Seal papper pad
- Locating pin

Note:

Firstly loosen each bolt 1 /4 turn according to cross curve order, then remove all bolts.

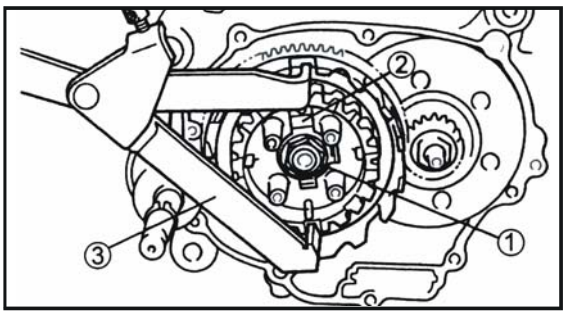


3.Disassemble

- Bolt □
- Clutch spring□
- Pressing pan□
- Friction wafer□
- Clutch wafer□
- Pushing rod1□
- Steel ball□

Note:

Firstly loosen each bolt 1 /4 turn according to order of opposite angle, then remove all bolts.



4.Flatten:

- Smoothen the tongue of lock washer□

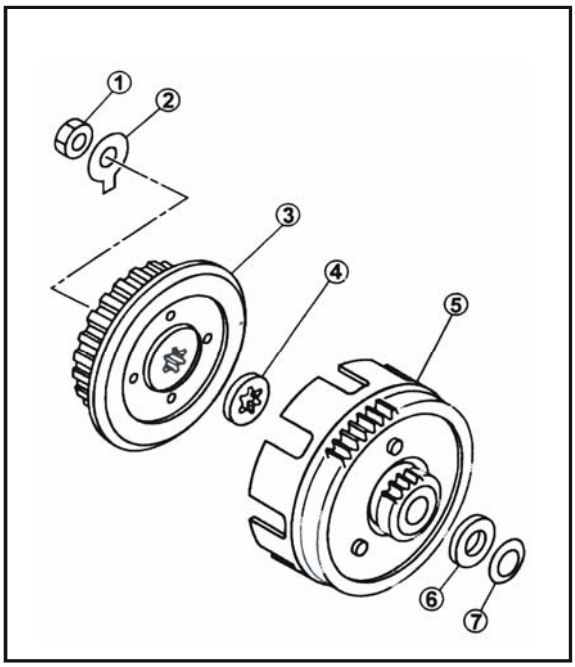
5.Loosen:

- Nut□

Note:

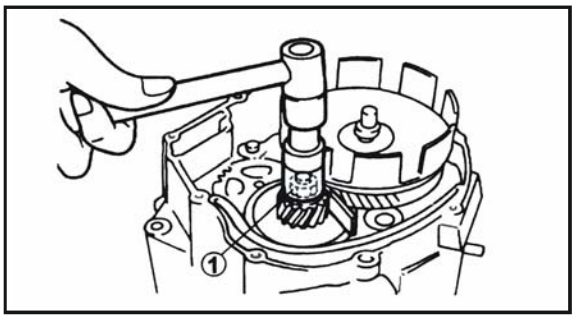
When loosening nut (convex seat of clutch), fix the clutch hub with clutch jig□.

	Universal clutch jig: 90890-04086



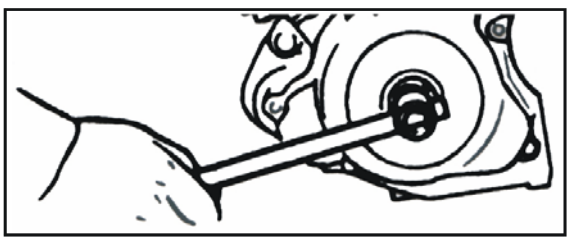
5.Disassemble:

- Nut□
- Lock wacher□
- Clutch hub□
- Spline washer□
- Main driven gear□
- Washer□
- Elastic washer□



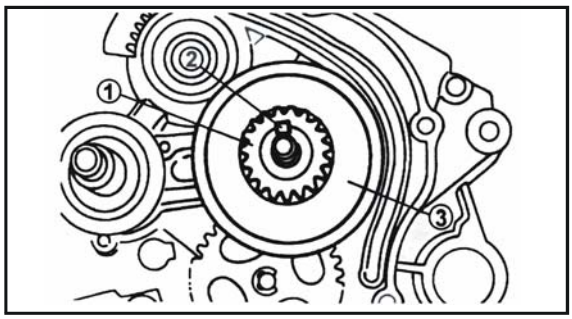
6.Disassemble:

- Primary driving gear nut □



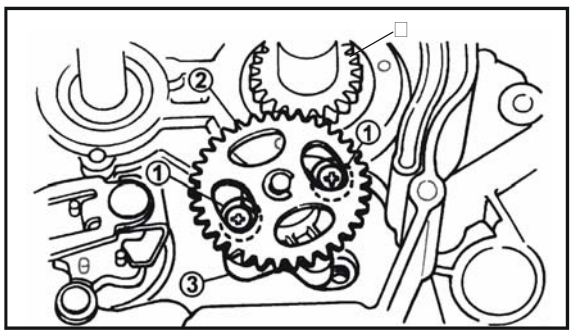
Note:

- Do not place cloth strip, aluminium plate and copper bar etc . between main driven gear and primary driving gear (see ⓐ).
- Fix with sleeve at position of rotator fixing nut , then disassemble primary driving gear nut □.



7.Disassemble:

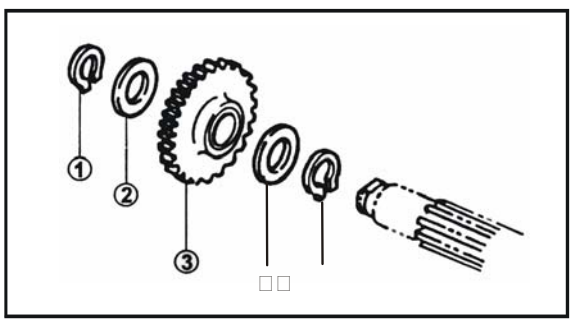
- Primary driving gear□
- Key□
- Engine oil filter□



Engine oil pump

1.Disassemble

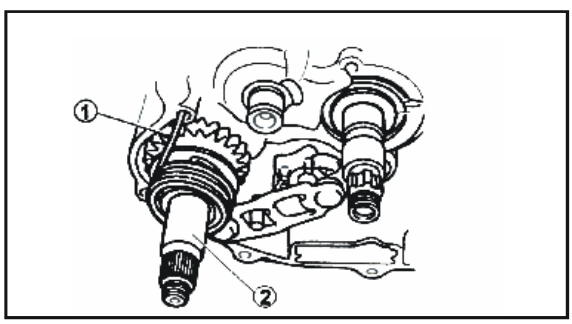
- Bolt□
- Engine oil pump□
- Gasket□
- Driving gear of engine oil pump□



Starting axle and idle gear

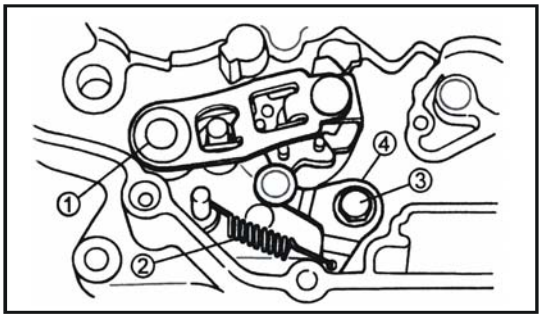
1.Disassemble:

- Elastic circlip□
- Flat washer□
- Idle gear□
- Flat washer□
- Elastic circlip□



2.Disassemble:

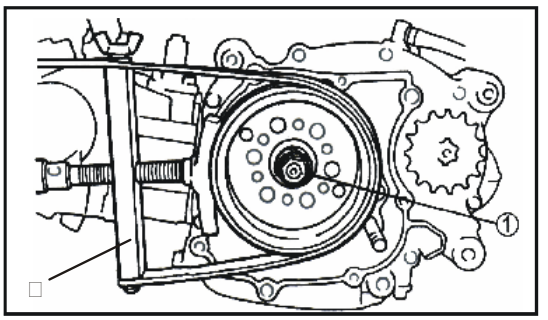
- Resetting spring□
- Starting axle assy□



Shift axle

1.Disassemble

- Shift rod□
- Resetting spring□
- Bolt □
- Stop device□



Rotator

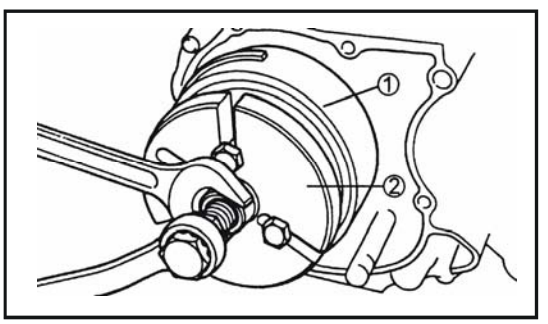
1.Disassemble

- Nut □

Note:

Fix the rotator with rotator jig□, then loose nut.

	Rotator jig: 90890-01701



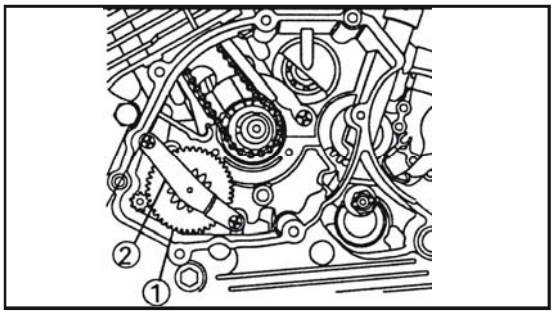
2.Disassemble:

- Rotator□
- Half-round key

Note:

Push the fly wheel backward with disassembling tool of fly wheel, then may disassemble the fly wheel .

	Disassembling tool of fly wheel: 90890-01362

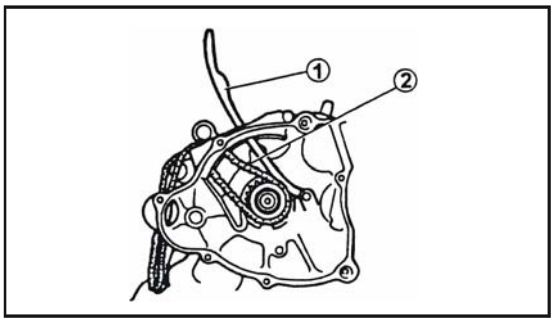


3.Disassemble:

- Starting idle gear 1
- Washer

4.Disassemble

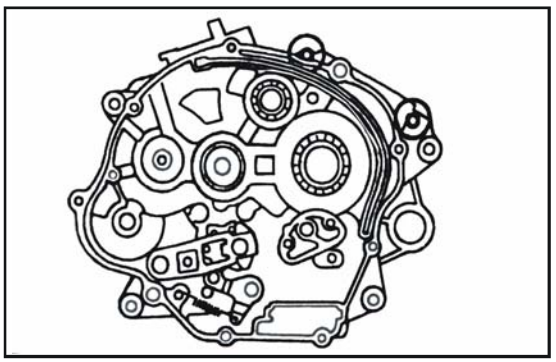
- Pressing plate of gear
- Starthing idle gear2



5.Disassemble:

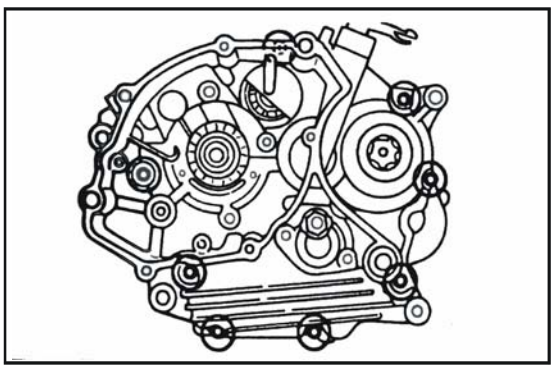
- Chain guide board
- Timing chain

Crankcase (right)



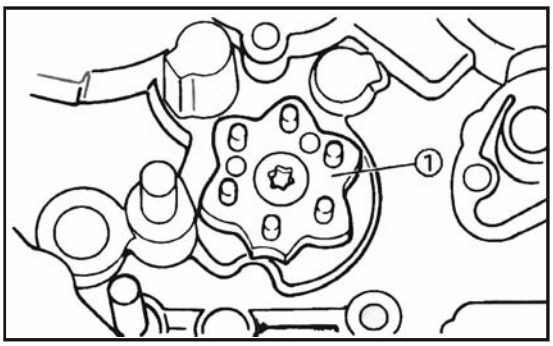
1.Disassemble:

- Screw (crankcase)



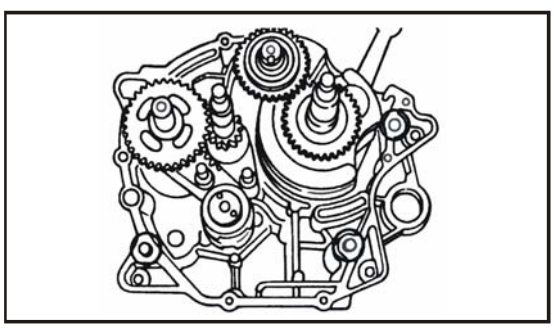
Note:

- Loosen the screw at position as shown in Fig (position in circle).
- Firstly loosen each screw 1 /4 turn , then remove all screw.
- If there is several bolts and nuts , generally loosen them according to opposite angle order. Loosening order : from outside to inside .



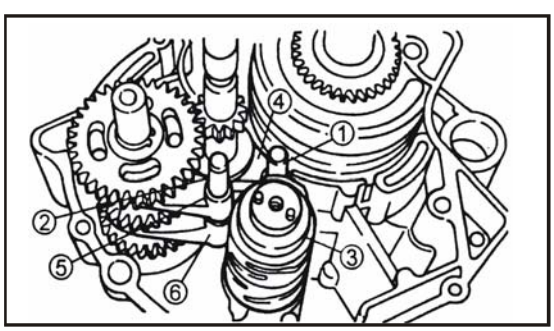
2.Disassemble:

- Star-shape gear
- Locating pin



Note:

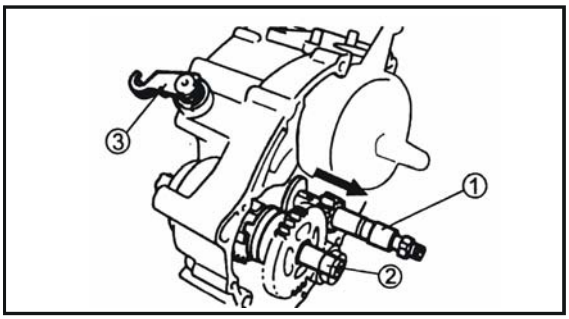
- Disassemble the crankcase from right side.
- Disassemble the shift cam (star-shape gear) .
- Be careful not to damage the matching surface of crankcase .



Balance device , transmission and shift rod

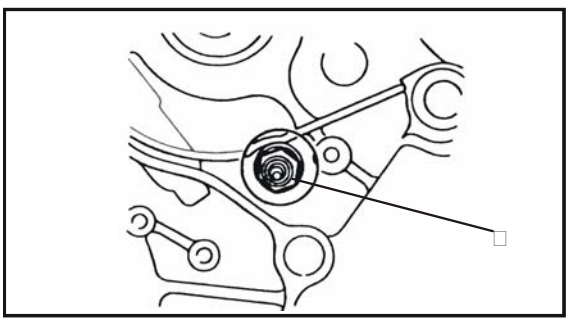
1.Disassemble:

- Guide rod □of shifting yoke (short)
- Guide rod □of shifting yoke (long)
- Shifting yoke C□
- Shifting yoke R□
- Shifting yoke L□
- Shift cam□



1.Disassemble

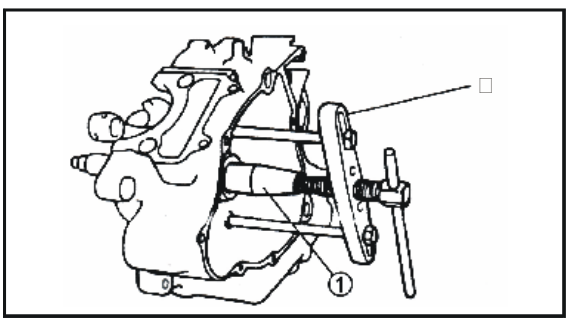
- Main axle
- Inner pushing rod of clutch 2
- Driving axle
- Washer
- Pushing rod of clutch



3.Disassemble

- Idle switch

Disassembly of crank and balance



1.Disassemble

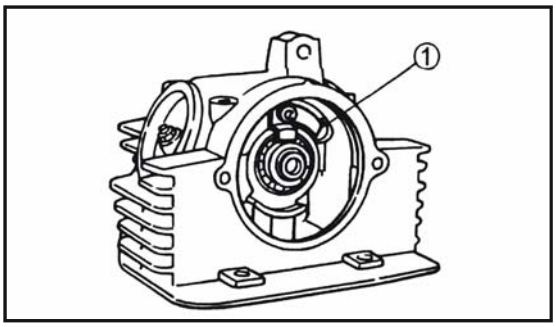
- Balance block
- Crank

Disassemble with disassembling tool of crank .

	Disassembling tool of crank: 90890-01135

Note:

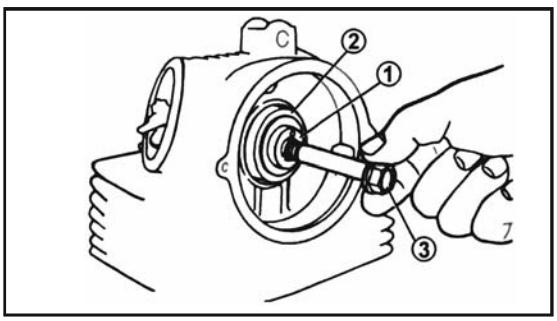
- Tighten up the supporting bolt of disassembling tool, but ensure the tool body vertical to crank. When necessary, screw a screw back ward a little to calibrate the tool body state.
- Never beat the crank directly with hammer etc .



Rocker arm and camshaft

1. Disassemble:

- Lock pressure plate

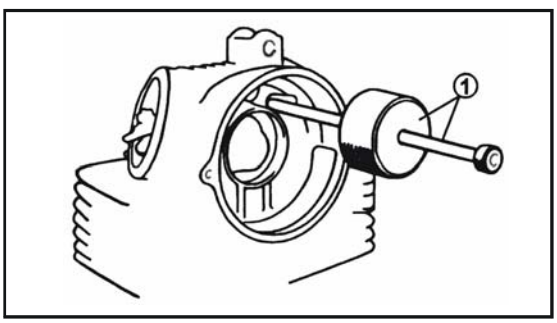


2.Disassemble :

- Camshaft(with bearing □□□

Note :

Disassemble the camshaft with 8 mm bolt□.



3.Disassemble:

- Rocker shaft
- Rocker arm

Note :

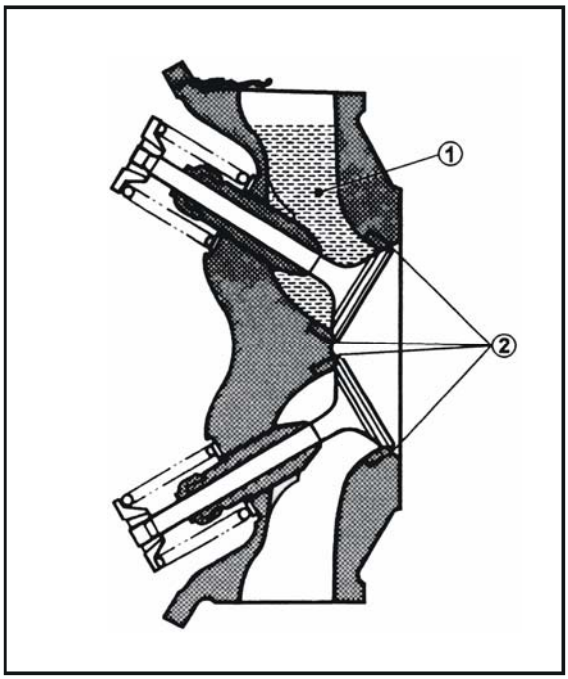
Disassemble the rocker arm with sliding hammer bolt and weight block .

Sliding hammer bolt:
90890-01083
Weight block:
90890-01084

Valve

Note :

Before disassembling the inner parts of cylinder head (such as valve , valve spring and valve seat) , check the seal of valve firstly .



1. Check:

- Seal part of valve

  Leakage of valve seat→Checing working face of valv

- Valve seat and width of valve

  Refer to section of “Check and repair of valve seat”.

****

Checking procedures:

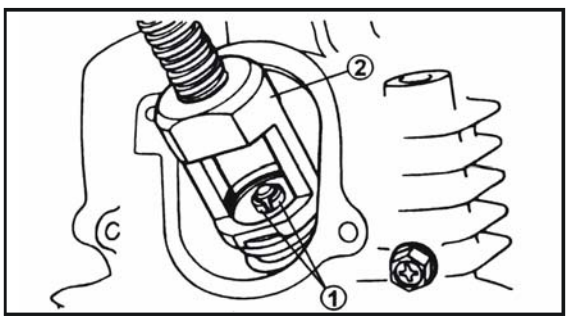
- Inject the clean solvent into intake orifice

  and exhaust orifice.

- Check the seal of air valve.

- There should be no leakage at valve seat

****



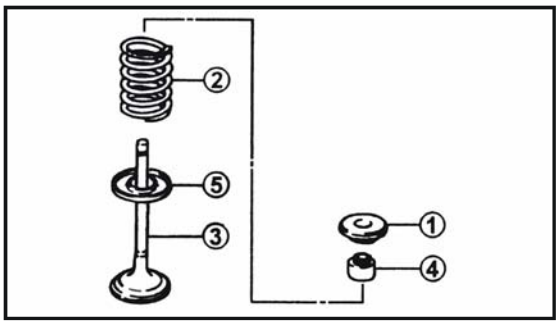
2. Disassemble:

- Lock piece of valve

Note:

When disassembling valve lock piece, compress the valve spring with tool.

	Compressing tool of valve spring 90890-04019



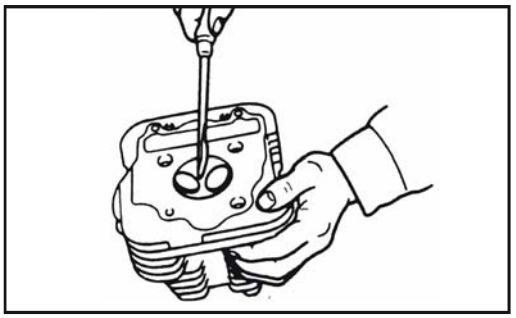
3.Disassemble

- Upper seat of air valve spring
- Air valve spring
- Air valve
- Oil seal of air valve
- Spring

Note:

Mark postions of each part in order to refiting them to oringinal position.

Cylinder head



1.Clean

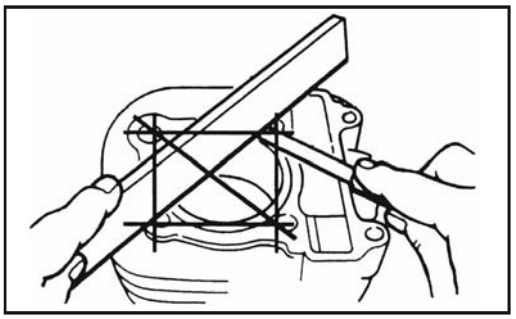
- Carbon deposit

  (Clean from burning chamber)

  Use round-head scraper

Note:

Do not use sharp tool for avoiding the damagement of the spark plug thread and air valve seat.



2. Check:

- Cylinder head

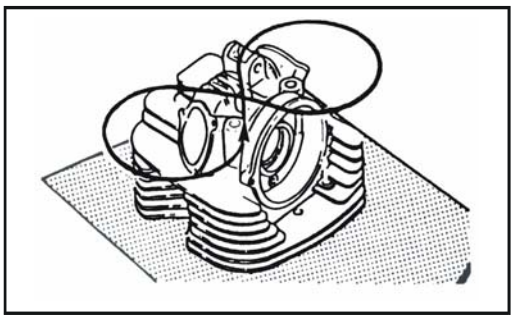
  Scratched marks damage→Replacement

3. Measure:

- The tilt of cylinder

  Check if there is skew at 6 directions of combinating faces with cylinder.

	Gradient□ Less than 0.03mm



4.Repair the surface

- Cylinder head

********** **********

Repairing procedure:

Place a wet sand paper about 400-600 on flatform, and grind the surface according “8”toshape.

Note:

Move the cylinder head several times to avoid too much wearing on one side.

********** **********

Air valve seat

1.Clean:

- Carbon deposit

  (Clean from working face of air valve and air valve seat)

2.Check:

- Air valve seat

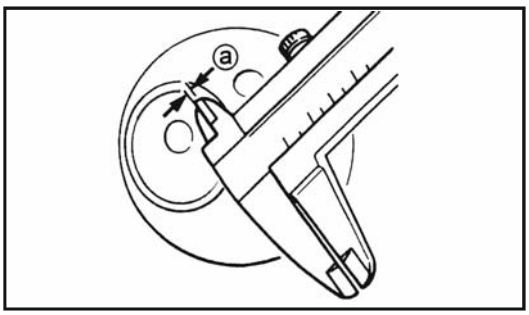
  Corrosive pitting or wear→Repair the air valve surface

3.Measure:

- Width of air valve seat ⓣ a

  Exceeding specification both are usable value range

  →Repairing air valve seat



Width of air valve seat:

Intake:

0.9□1.1 mm

Exhaust:

0.9□1.1 mm

********** **********

Meauring procedures:

1.Paint blue dykem on working face ⓑ of air valve

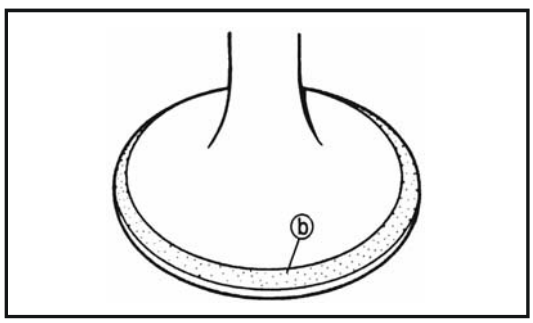
2. Fit the air valve into cylinder cover.

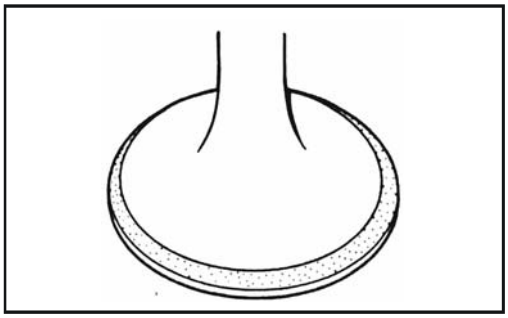
3.Push and press the air valve to air valve seat through guide pipe of air valve,thus to get clear trace.

4.Measure the width of this mark which is width of air valve seat.No matter wherever the air valve seat contacts working face of air valve,blue colour will never disappear.

5.If the air valve seat is too wide, too narrow or not in the middle,it must be repaired.

********** **********





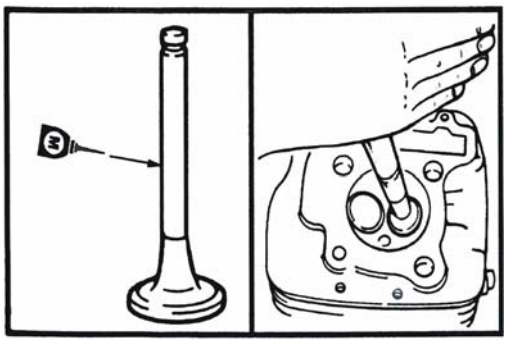
4. Grind:

- Working face of air valve
- Air valve seat

Note:

After replacing air valve and guide pipe of air valve, grind the air valve seat and working face of air valve.

****



Grinding procedure

Paint rough abrasive sand on working face of air valve.

Note:

Do not let the abrasive sand enter into slit between air valve rod and guide pipe of air valve.

- Paint disulfide containing moly on surface of air valve rod.
- Fit the air valve into cylinder cover.
- Rotate the air valve until the working face of air valve and air valve seat polish evenly.Then wipe off all sanding agent.

Note:

In order to get better grinding effect,when rotating the air valve forward and backward with hands,you may beat the air valve lightly.

Paint fine sand agent on working face of air valve.

Then repeat above procedures.

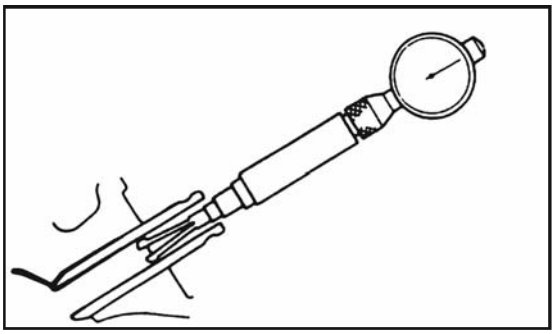
Note:

After each grinding,wipe off the sanding agent on working face of air valve and air valve seat.

- Measure the air valve seat width again.
- If the air valve width exceeds specified value, repair and grind air valve seat.

****

Air valve and guide pipe of air valve



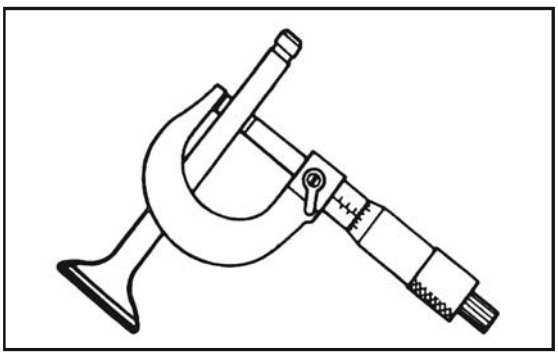
1.Measure:

- Clearance between air valve rod and guide pipe

Clearance between air valve and guide pipe= Inner diameter of air valve guide pipe − air valve rod diameter

Exceeding specified value range→Replacing guide pipe of air valve

Clearance between air valve rod and guide pipe: Intake: 0.01□0.037 mm Limit valve:0.08 mm Exhaust: 0.025□0.052 mm Limit valve:0.10 mm



		Standard inner diameter	Using limit
	Intake valve	5.000~5.012mm	5.042mm
	Exhaust valve	5.000~5.012mm	5.042mm

Note:

After replacing guide pipe of air valve,repair the surface of air valve seat.

2. Clean:

- Carbon deposit

(clean from working surface of air valve)

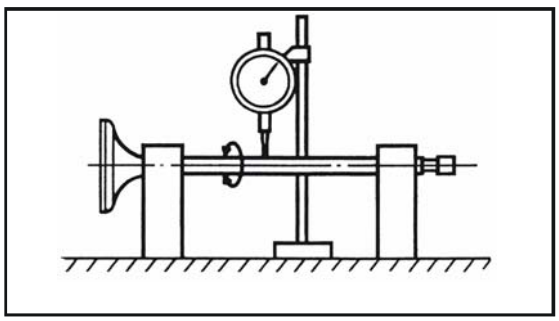
3.Check:

- Working face of air valve

  Corrosive pitting or wear→polishing the surface

- Air valve rod end

  Mushroom shape or diameter more than other part of air valve rod→replacing



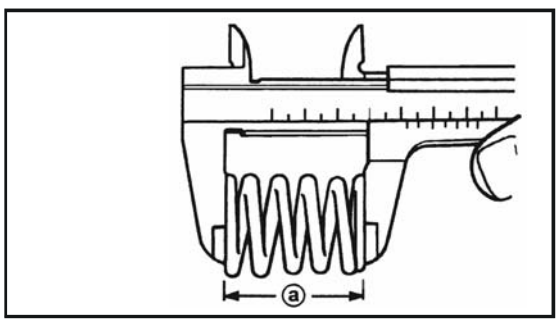
4. Measure:

- Run-out tolerance (air valve rod)

  Exceeding specified value range→Replacement

	Run-out tolerance Less than0.01 mm

Air valve spring



1.Measure:

- Free length a (air valve spring)

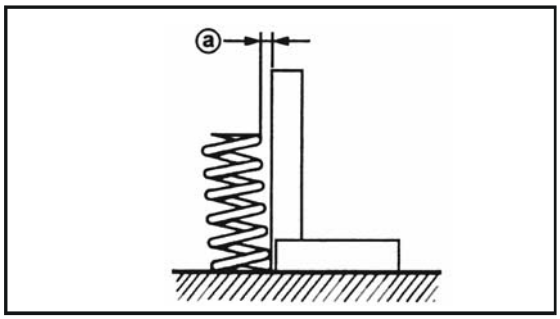
  Exceeding specified value range→Replacement

	Free length of air vlave spring: Standard: 32.28 mm Limitation: 31.90 mm

2. Check:

• Vertical angel degree of air valve spring

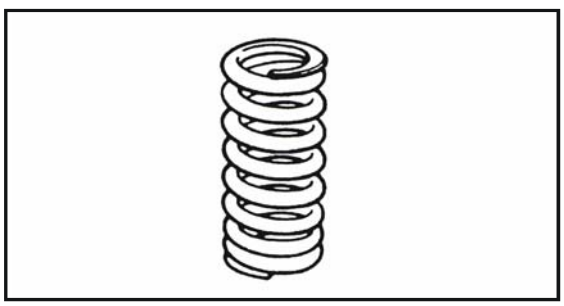
	Side angle limitation ⓐ: 1.2 mm



3. Check:

• Contacting face of air valve spring

Above2 / 3 of outer circle are not in horizontal contacting state→Replacement



Camshaft

1. Convex part of cam

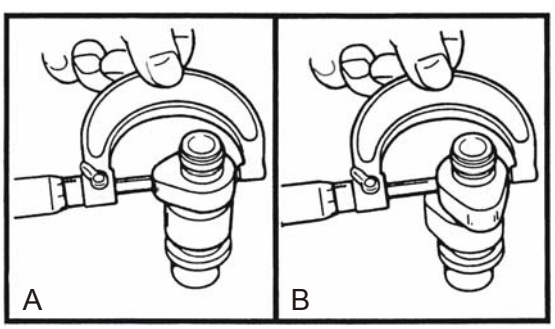
• Corrosive pitting,scratch, blueing

→Replacement

2. Measure:

• Convex part A and B of cam

Exceeding specified value range→Replacement

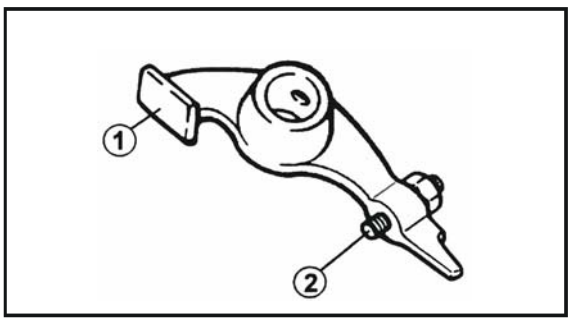


	Length of convex part of convex part of cam Intake□ A Standard: 25.881□25.981 mm Limitation: 25.851 mm B Standard: 21.195□21.295 mm Limitation: 21.165mm

Length of convex part of cam:
Exhaust:
A Standard: 25.841□25.941 mm
Limitation: 25.811 mm
B Standard: 21.050□21.150 mm
Limitation: 21.02 mm

3. Check:
- Bearing

Jamming,swaying→Replacing

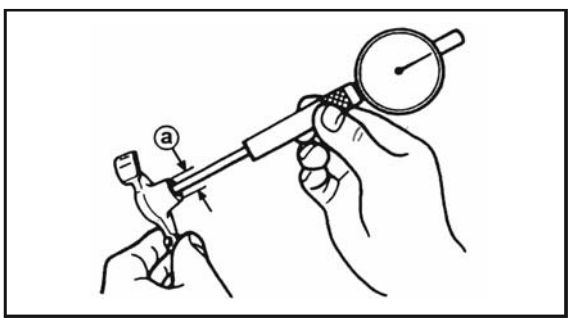


Rocker arm and rocker shaft

1. Check:
- Contacting face □ of rocker arm and convex part of cam
- Adjusting device surface
- Wearing, corrosive pitting, scratch, blueing

Replacement

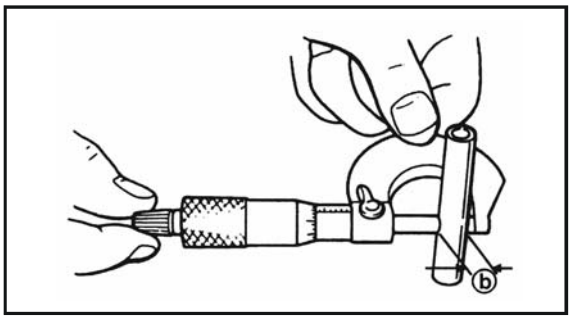
Then check lubrication system



2. Measure:
Inner diameter of rocker arm a

Standard value of inner diameter of rocker arm:
10.000□10.015 mm
Using limitation:
10.030 mm

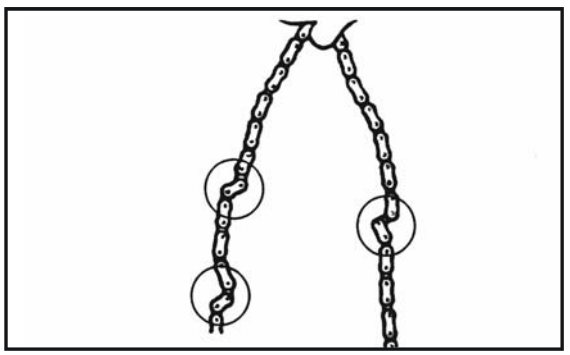
Exceeding specification→Replacement



3. Measure:

- Outer diameter ⓑ b of rocker shaft

Outer diameter of rocker shaft:
Standard value:9.981□9.991 mm
Limitation:9.95 mm

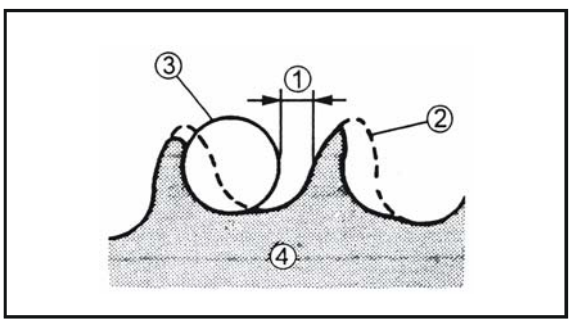


Timing chain,sprocket,guide plate of chain and chain tensioner

1. Check:

- Timing chain

Hardening or crack→Replace the whole set of timing chain and chain wheel

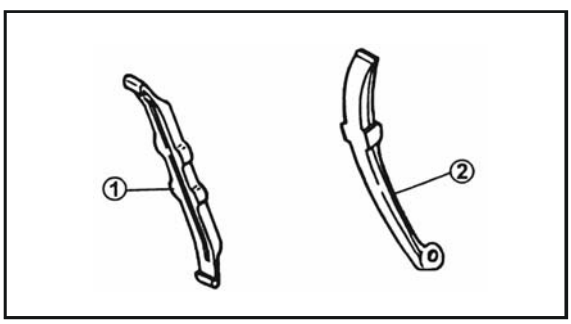


2.Check:

- Sprocket

Hardening or crack→Replacing the whole set of timing chain and sprocket

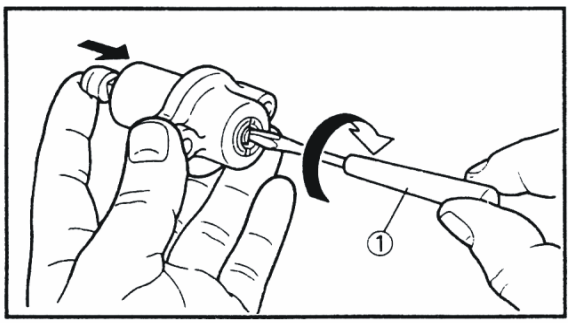
□ 1 / 4 tooth
□ Correct assembly
□ Roller
□ Sprocket

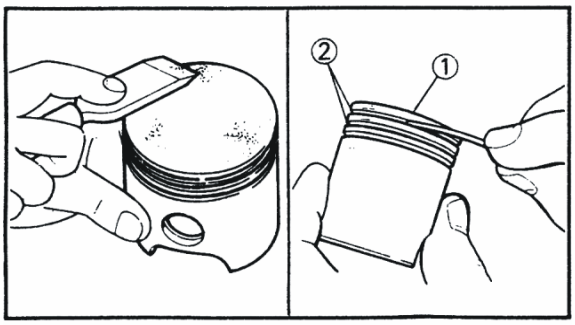


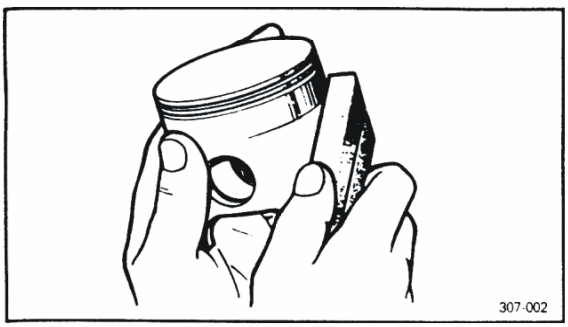
3.Check:

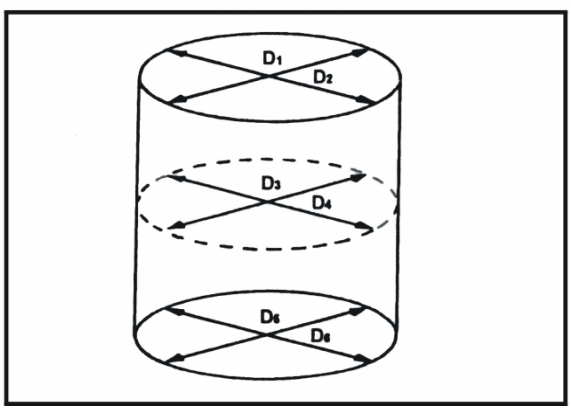
- Guide plate□of chain(exhaust side)
- Guide plate□of chain(intake side)

Wearing or damage→Replacement









4.Check:

- Free movement of timing chain tensiener

Checking procedure:

- Press the tensioning device lightly with finger,and screw the tensioning device rod to dead with small screwdriver
- When pressing screwdriver lightly with finger to loosen the screwdriver, confirm that the tensioning device come out smoothly.
- Otherwise, replace the tensioning device assy.

Cylinder and piston

1. Clean:
- Carbon deposit
  (from top of piston and ring groove)
2. Check:
- Side wall of piston
  Wearing,scratch,damage→Replacement
3. Check:
- Cylinder wall
  Waring or scratch→Reboring cylinder or replacing

4.Measure:
- Clearance between piston and cylinder

Measuring procedure:

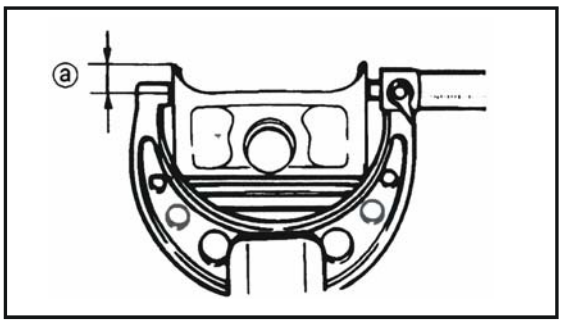
Measure cylinder diameter and “C ”with cylinder gauge at D3D4position (40 mm to cylinder top)

Note:

Measure cylinder diameter "C" from parallel and vertical direction to crank.Then caculate the average value.

	Standard valve of cylinder inner diameter: 54.024 □54.056 mm

Exceeding standard range→Replacement



Piston measurement

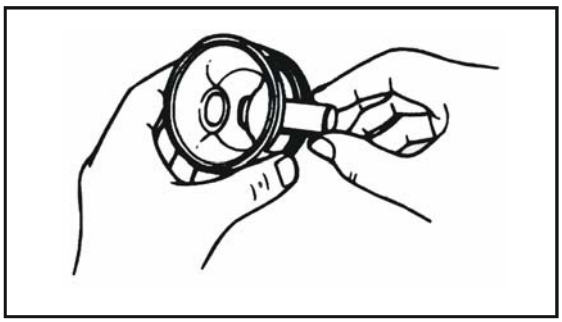
1. Measure:

- Measure diameter of skirt section of piston with micrometer at the point 5mm to bottom edge of piston.

	Outer diameter standard of piston: 53.997 □54.029 mm

Clearance between piston and cylinder

Inner diameter of cylinder	—	Outer diameter of piston	=	Clearance



	Standard clearance of piston and cylinder :0.020 ~ 0.034 mm

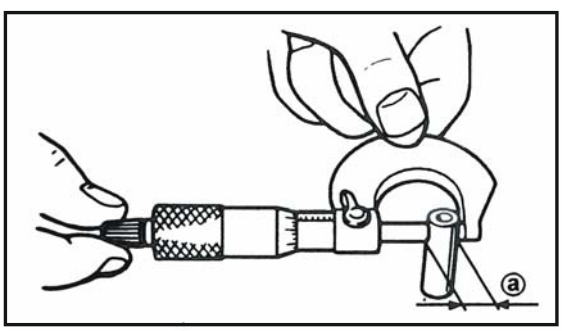
Exceeding specified value→Replacement

Piston pin

1.Check:

- Piston pin

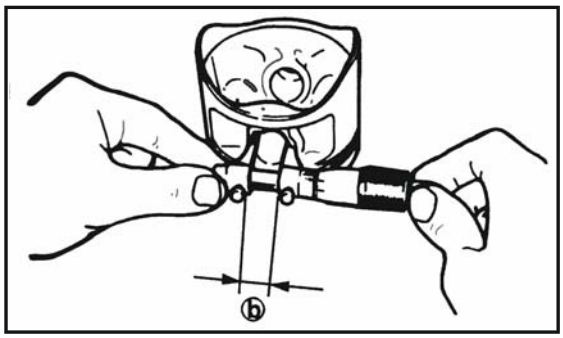
Blueing or becoming groove→Replacing, then checking lubrication system.



2.Measure:

- Outer diameter ⓐ of piston pin
- Exceeding specified value range→Replacing

	Outer diameter of piston pin: 14.991 □15.000 mm Limitation:14.969 mm



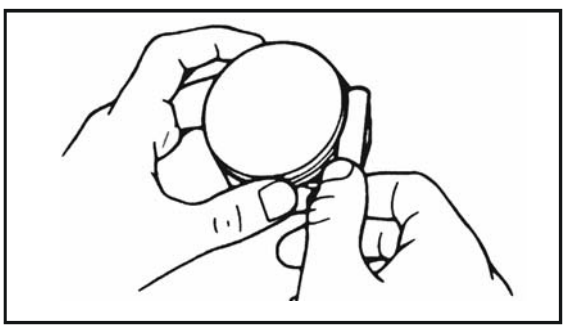
3.Measure:

• Inner diameter of piston pin hole b

Inner diameter of piston pin hole:
15.002 □15.013 mm
Using limitation:
15.043 mm

Exceeding limitation→Replacement

Piston ring



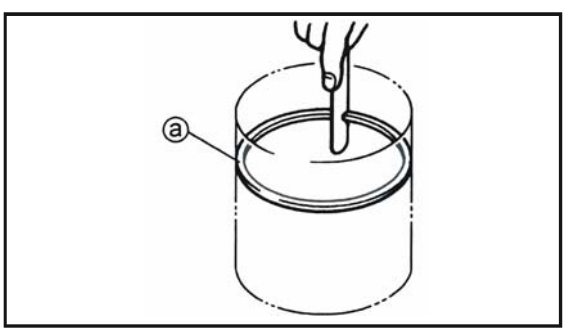
1. Measure:

• Side clearance

Exceeding specified value range→Replacing the whole set of piston and piston ring.

Note:
Before measuring side clearance,get rid of carbon deposit in piston ring groove and each ring.

Side clearance:
1 ring:0.03□0.07 mm
Using limitation:0.12 mm
2 ring:0.02 □0.06 mm
Using limitation:0.12 mm



2.Measure:

• Push the piston ring a into cylinder(at point 5mm to to

Note:
Eject and push piston ring with piston to make the ring vertical to cylinder surrounding.

3.Measure:

- End clearance

Note:

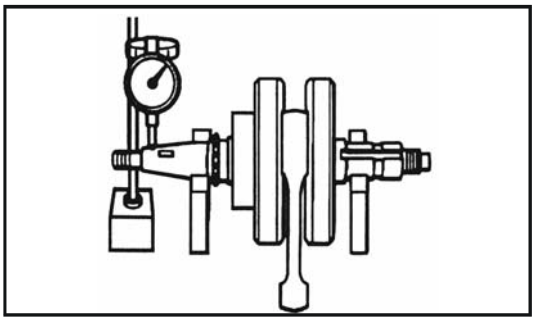
When measuring the oil ring end clearance,do not measure at parting slip of cup ring of oil ring.Only can measure the end clearance of upper and lower guard rails. If the clearance is too large, replace all the three rings.

End clearance:
1st ring:0.15 □0.30 mm
Using limitation:0.4 mm
2nd ring:0.30 □0.45 mm
Using limitation:0.55 mm
Oil ring:0.2~0.7mm

Crankshaft

1.Check:

- Runout tolerance of crank



Runout tolerance limitation of crank:
0.03 mm

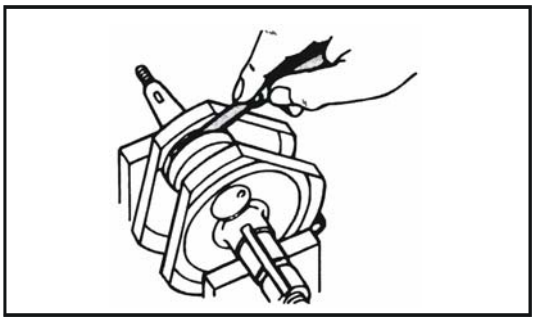
Exceeding limitation→Replacement

Note:

Rotate the crankshaft gradually to measure

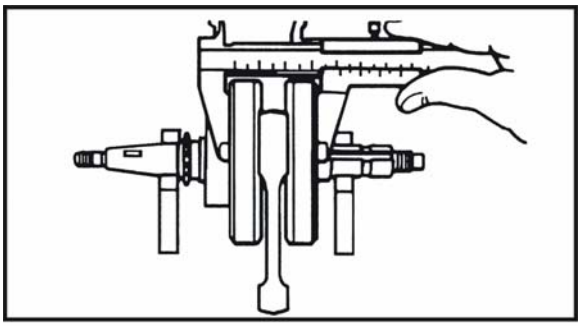
2.Check:

- Side clearance of big end



Standard side clearance:
0.15 □0.45 mm
Using limitation:
0.8 mm

Exceeding limitation→Replacement

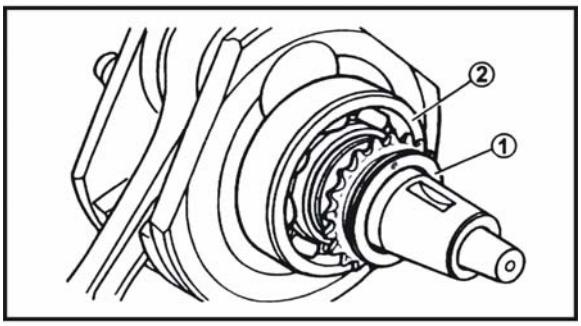


3.Measure:

- Crankshaft width(measure with square calliper)

	Standard width: 46.95 □47.00 mm

Exceeding standard→Replacement



4.Check:

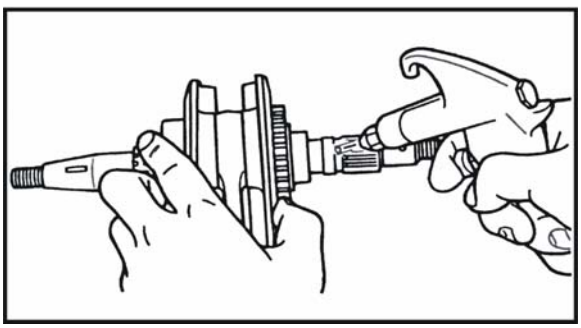
- Sprocket □of crankshaft

  Damage,wearing →Replacing crankshaft

- Bearing□

  Abnormal noise,unstable rotation,loosening→

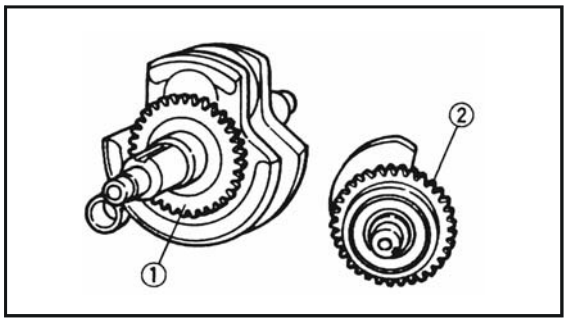
  Replacing



5.Check:

- Oil way of crankshaft

  Jamming→Clean by compressing air

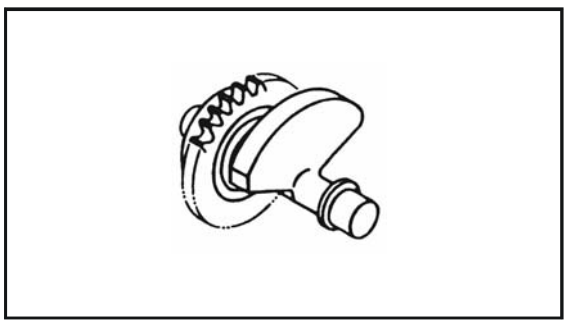


Balance device

1.Check:

- Driving gear □of crankshaft
- Driven gear □of balancer

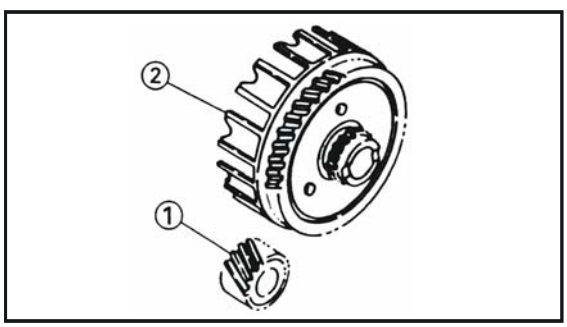
Wearing,damage →Replacement



2. Check:

- Balancer

Wearing,damage→Replacement



Clutch

1.Check:

- Driving gear □of spindle
- Driven gear □of spindle

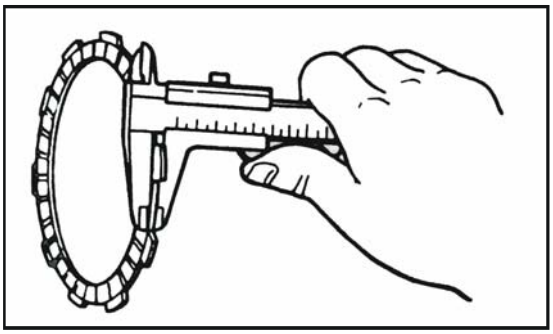
Wear or damage→Replacing two gears

Loud noise while running→Replacing two gears

2.Check:

- Friction wafer

Damage or wear→Replacing the whole set of friction wafer



3. Measure:

- Thickness of friction wafer

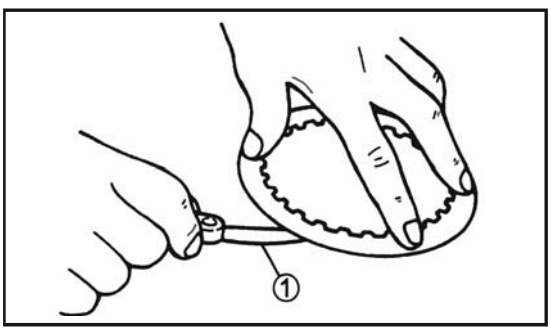
  Exceeding specified value range→Replacing the whole set of friction wafer.Measuring at four points of upside, lowside,leftside,and rightside.

Thickness of friction wafer: 3.0 mm Using limitation: 2.8 mm

4.Check:

- Clutch wafer

  Damage→Replacing the whole set of clutch wafer



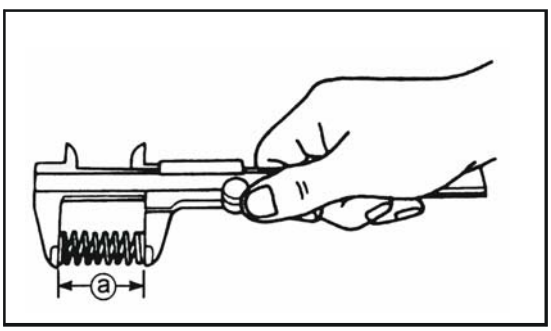
5.Measure:

- Buckling of clutch wafer

  Exceeding specified value range→Replacing the whole set of clutch wafer

- Should use flat plate and thickness gauge

Friction limitation value Less than 0.05 mm

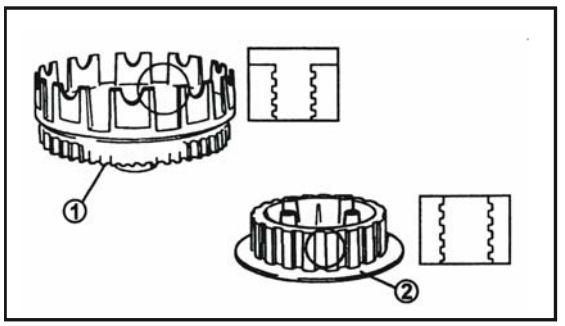


6.Check:

- The length of clutch spring ⓐ a

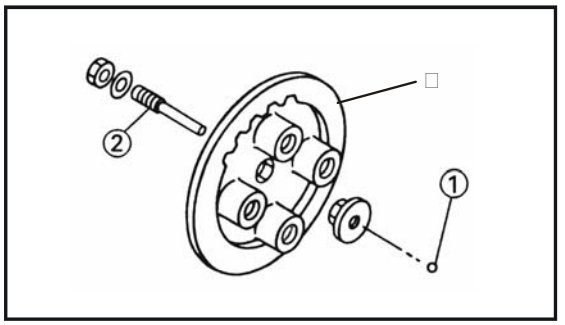
  Damage→Replacing the whole set of spring

Spring length of clutch 33.0 mm Limitation: 31.0 mm



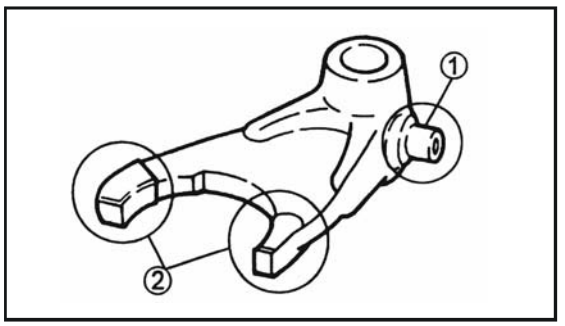
7.Check:

- Retainer of main&driven gear
  Scratch,wear,damage→Deburring of replacing
- Clutch hub
  Scratch,wear,damage→Replacing clutch hub



8. Check:

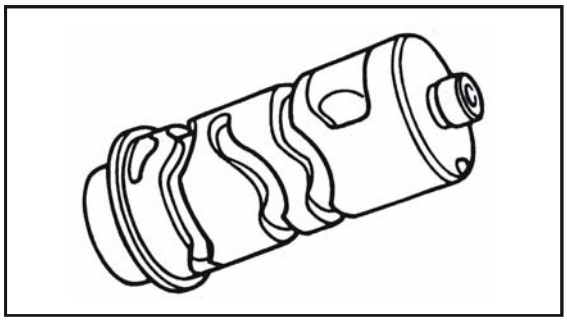
- Steel ball
- Plushing rod
- Pressing plate
  Wear,damage→Replacement



Transmission and shift rod

1.Check:

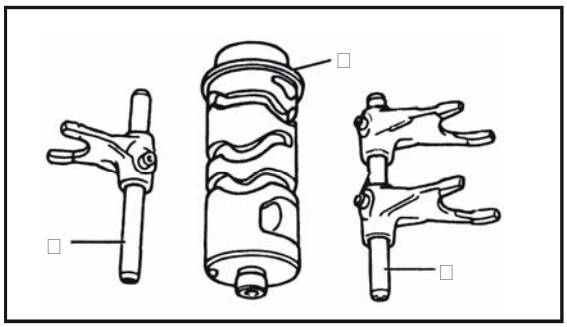
- Driven part of shifting yoke cam
- Shifting yoke jaw
  Scratch,bending,damage→Replacement



2.Check:

- Shift cam groove

  Wear or damage→Replacement



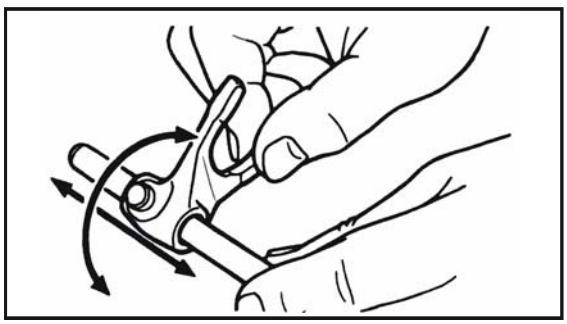
3.Check:

- Guide rod of shifting yoke(short on left, long on right

  □

- Shift cam□

  Deformation, scratch, wear, damage→Replacement



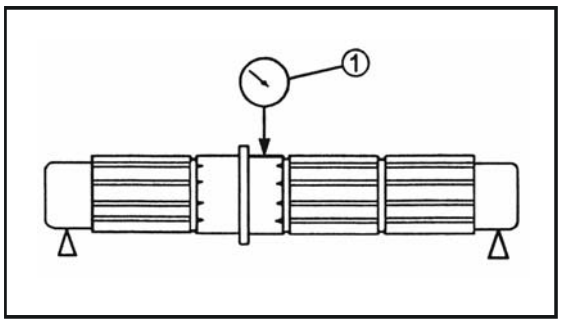
4.Check:

- Action of shifting yoke

  Uneasy action→Replacing shifing yoke or guide rod

⚠Warning

Do not try to align the bending guide rod.



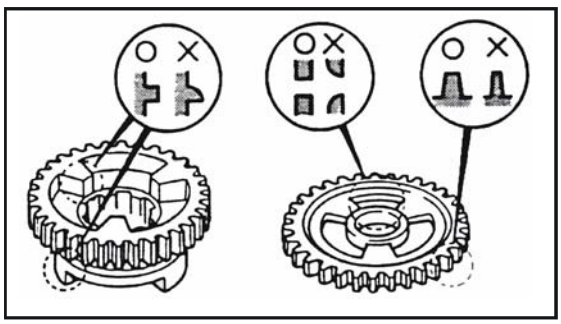
5.Measure:

- Run-out tolerance (driving axle and main axle)

  Exceeding specified value range→Replacement

⚠Warning

Do not try to align bending axle

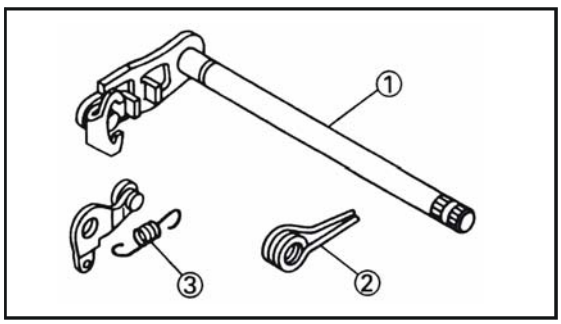


6.Check:

- Gear teeth of gear

  Blueing,corrosive pitting, wear→Replacing matching gear

  Rounding of edge, fracture, dislocation→Replacement



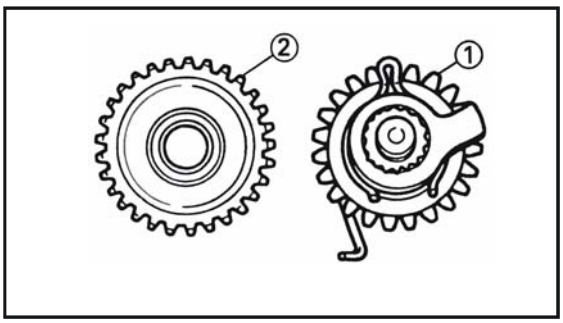
7.Check:

- Shift axle

  Damage, bending, wear→Replacement

- Torsion spring(retainer lever)
- Reset spring(reset axle)

  Damage→Replacement

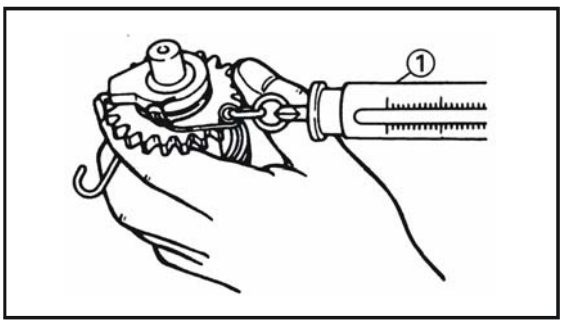


Kick starter

1.Check:

- Teeth of kick starter gear
- Teeth of kick starter over-gear

Damage or wear→Replacing two gear by pair



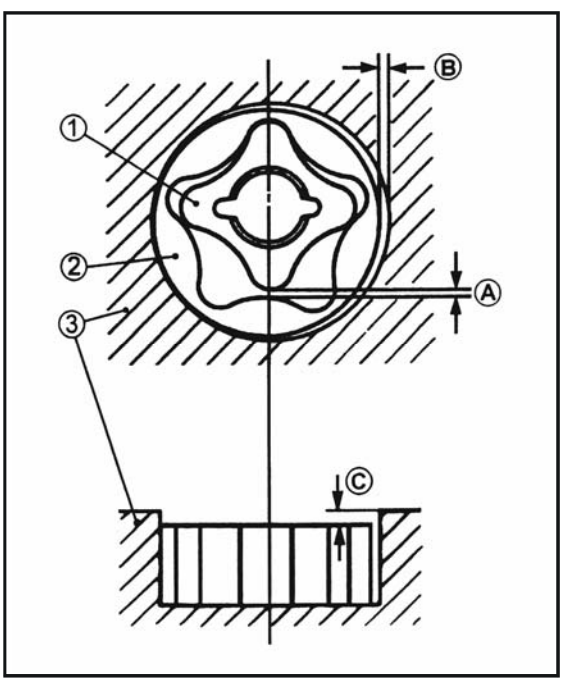
2.Measure:

- Tension of work carrier of kick starter

Exceeding specified value range→replace to

Use spring balance

	Tension of work carrier of kick starter 0.8□1.2 kg



Engine oil pump and oil filter

1.Measure

- Gear tip clearanceA

(Between inner rotator□and outer rotator□)

- Side clearance B

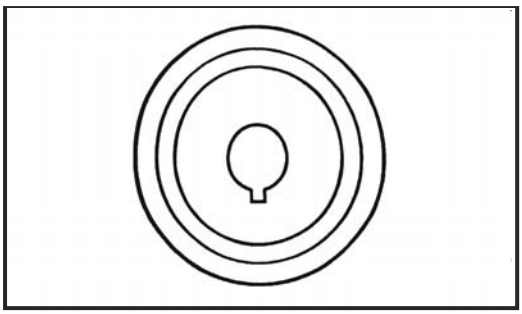
(Between outer rotator□and pump case□)

Exceeding specified value range→Replacing oil pump

- Clearance C of outer & inner rotator and pump case

(Thickness difference of inner & outer rotator □,□ and pump case□)

	Gear tip clearanceA: 0.15 mm Side B: 0.06 □0.10 mm Thickness difference C:0.06 □0.10 mm

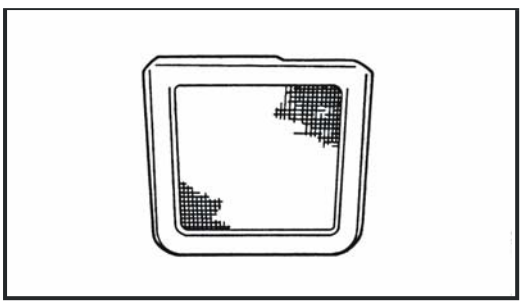


2.Check:

- Centrifugal eigine oil filter

  Crazine, damage→ Replacement

  Dirty → Washing



3.Check

- Engine oil filter net

  Crazine, damage→ Replacement

  Dirty → Washing

Crankcase

1.Rinse the combinating face of the crankcase thoroughly with a little warm solvent.

2.Wash all matching surface of gasket and crankcase thoroughly.

3.Check:

- Crankcase

  Crack or damage→ Replacement

- Oil hole

  Jamming→ Blowing with compressed air

Bearing and oil seal

1. Check:

• Bearing

Wash and lubricate it, then rotate the inner ring with finger.

Uneven→ Replacement

Note:

Do not dry it by making the bearing rotating by itself through blowing in compressed air.Otherwise will cause damage of bearing surface.

2. Check:

• Oil seal

Damage or wear→ Replacement

Elastic circlip and washer

1. Check:

• Elastic circlip

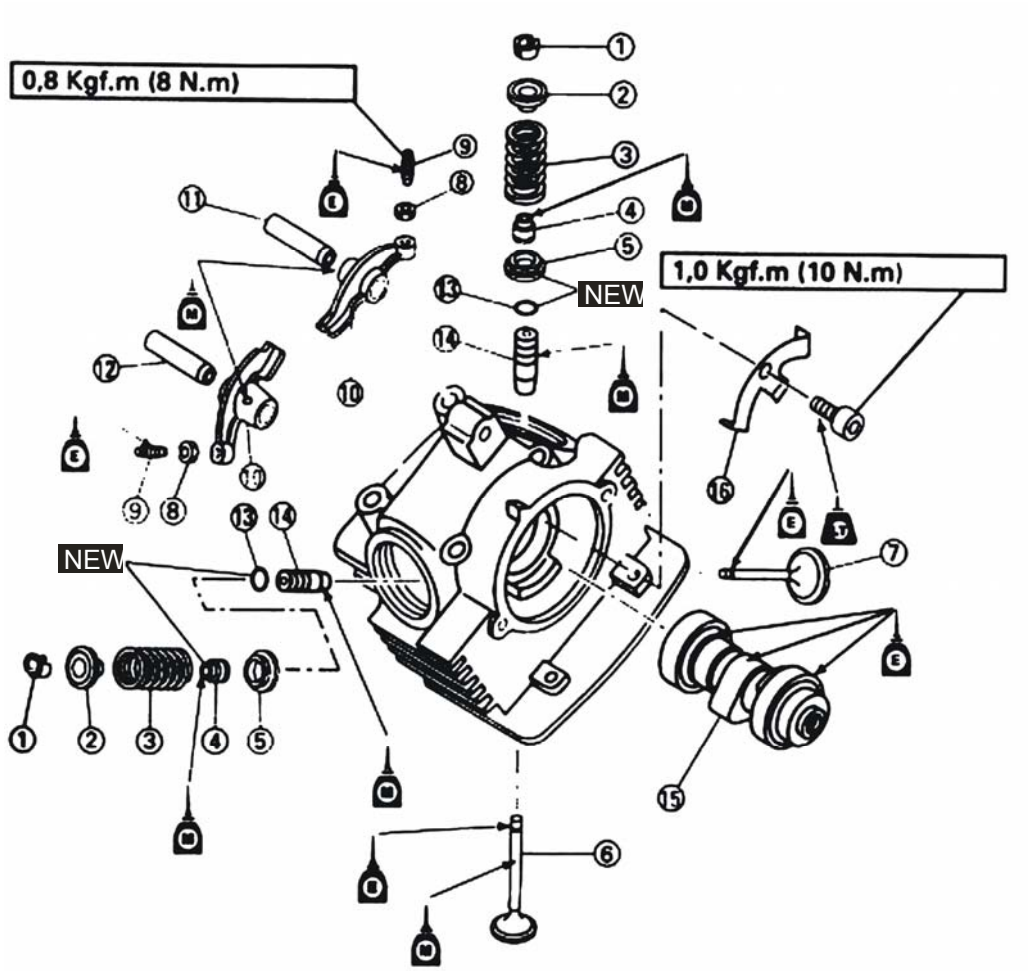
• Washer

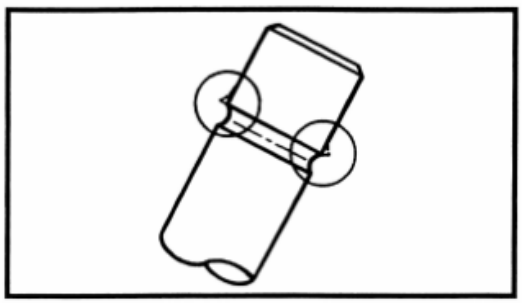
Damage, loosening, bending→ Replacement

Assembly and adjustrment of engine

Air valve,swaying arm and cam axle

- □ Lock piece of air valve
- □ Upper seat of air valve spring
- □ Oil seal of air valve rod
- □ Air valve spring
- □ Air valve spring seat
- □ Air valve spring rod(exhaust)
- □ Air valve rod(intake)
- □ Lock nut
- □ Adujsting bolt
- □ Swaying arm
- ⑪ Swaying arm pin(intake)
- ⑫ Swaying arm pin(exhaust)
- ⑬ O-ring
- ⑭ Guide pipe of air valve
- ⑮ Cam axle
- ⑯ Pressing plate

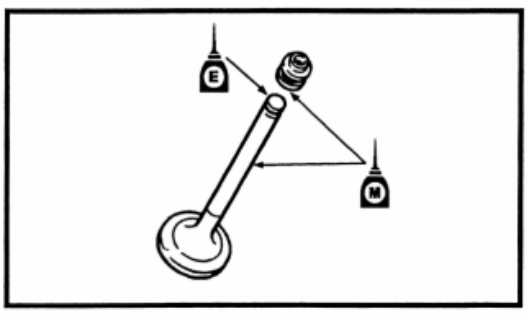




Assembly of engine and adjustment of air valve

1.Deburr

- End of air valve rod
- Polish the end of air valve rod with oil stone

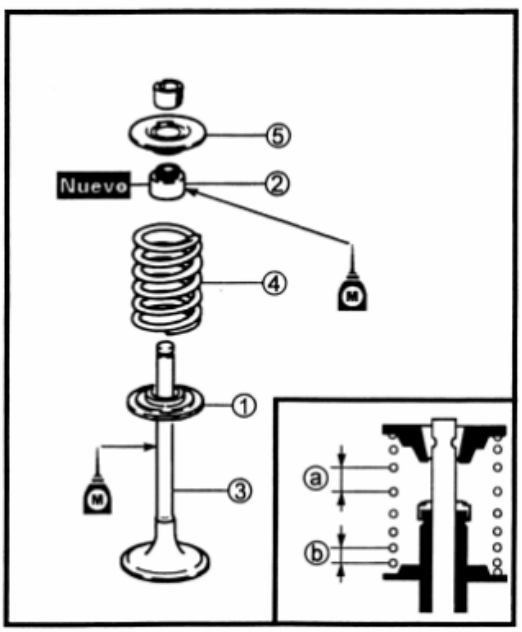


2.Paint:

- Molybdenum disulfide lubrication oil

  (Painting on air valve rod and oil seal of air valve)
- 4-stroke engine oil

  (Painting on air valve rod top)

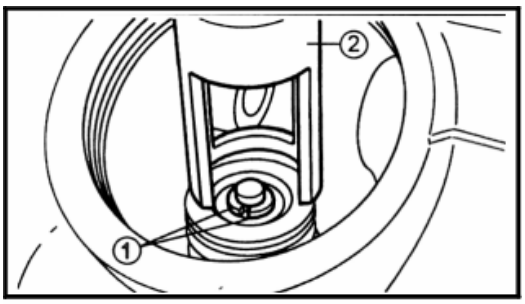


3. Assembly:

- Spring seat of air valve
- Oil seal of air valve
- Air valve
- Air valve spring
- Upper seat of air valve

Note:

Make the side of large pitch ⓐ upward,and mount the air valve spring ⓑ small pitch.



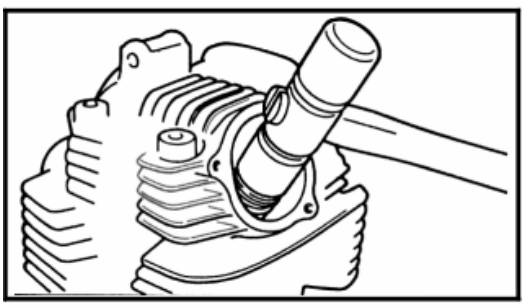
4.Mount:

- Lock piece of air valve

Note:

When mounting the air valve lock piece,compress the spring with compressing tool of air valve spring.

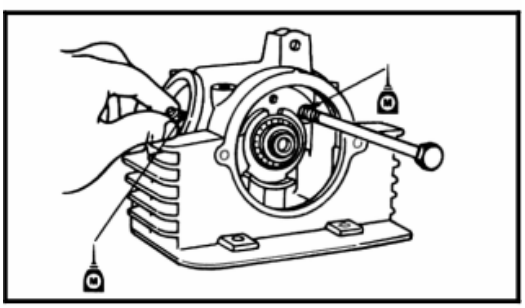
	Compressing tool of air valve spring: 90890-04019



5.Beat lock piece of air valve lightly with soft hammer to fix it on air valve rod.

Note:

Do not boat it forcedly to advoid damaging the air valve.



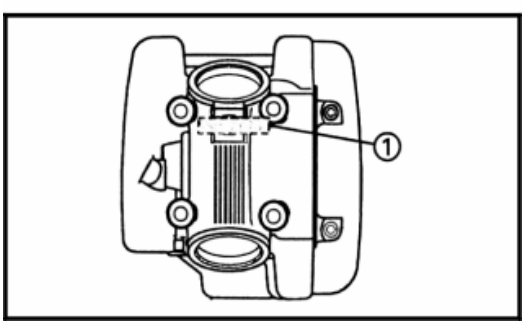
Rocker arm and camshaft

1.Lubricate:

- Molybdenum disulfide lubricating oil
  (Painting on the confacting face of rocker arm hole and camshaft)
- 4-Stroke engine oil
  (Painting to rocker shaft and O-ring)

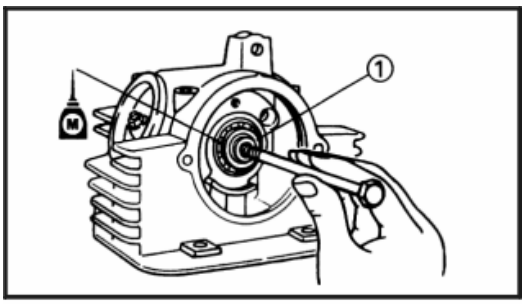
2.Mount:

- Rocker arm
- Rocker shaft
- Aim at screw hole of cylinder head to mount, until the rocker arm can not be seen.



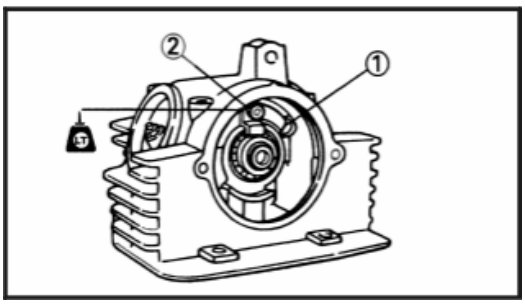
Note:

Be sure to make the mouth part of screw outward to mount.



3.Mount:

• Camshaft



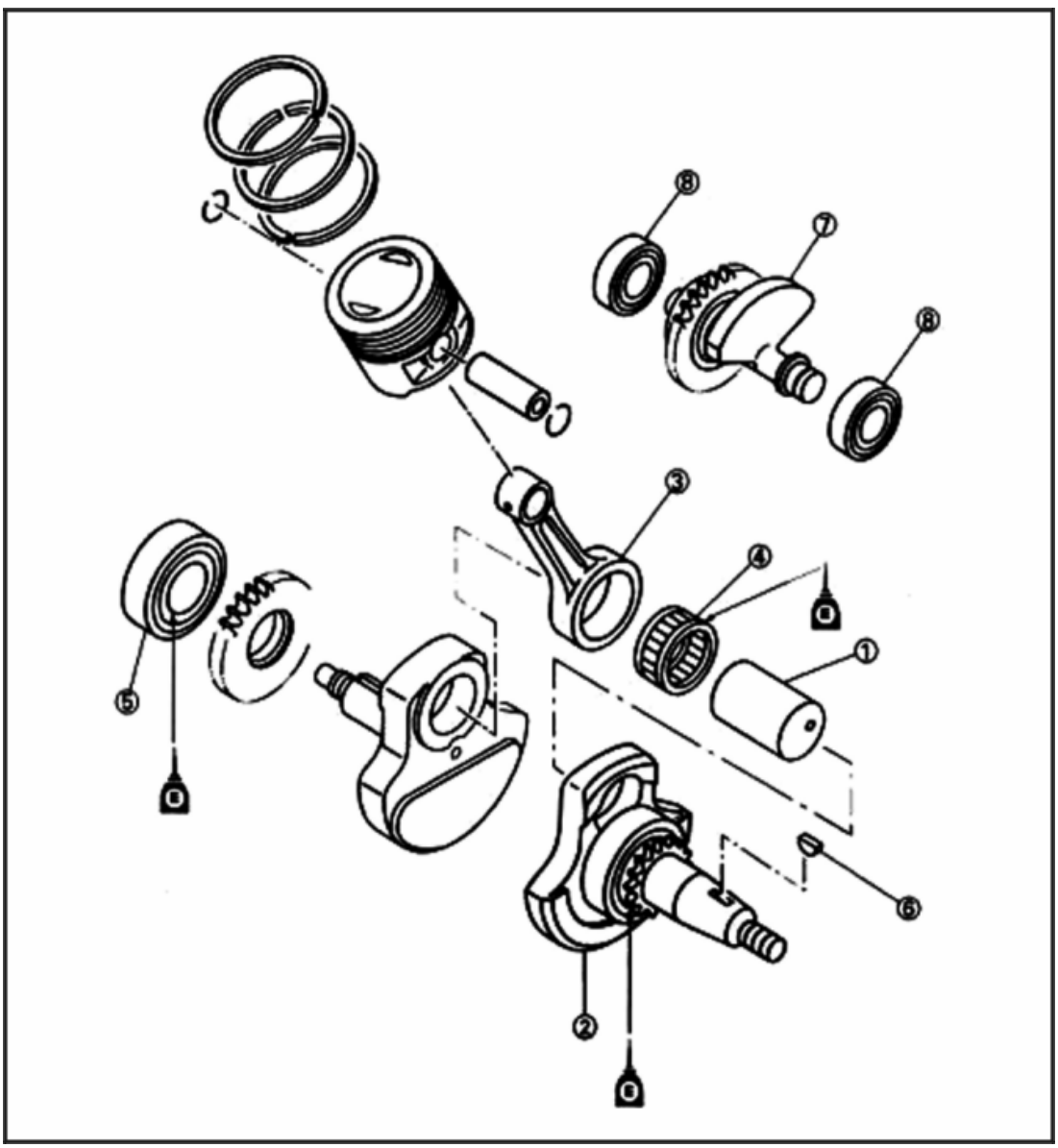
4.Mount:

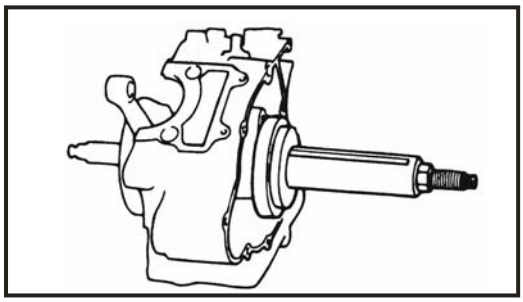
• Pressing plate

• Bolt

Crank and balance device

- □ Crank pin
- □ Crank(left)
- □ Connecting rod
- □ Roller bearing of end side
- □ Crank bearing
- □ Semi-round key
- □ Balancer
- □ Balancer bearing





Mount of crank and balance axle

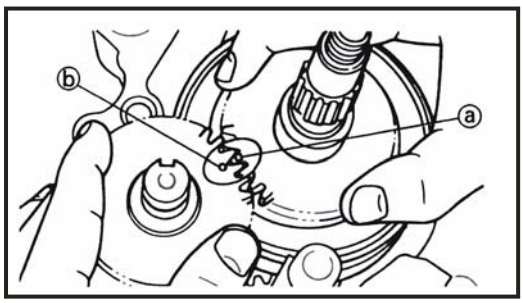
1.Mount:

- Crank

Shielding hood of crank assembly:
90890-04081
Sleeve of crank assembly
90890-01274
Bolt of crank assembly
90890-01275
Template pipe joint
90890-01378

Note:

- Keep the connecting rod on dead piont. When mounting, never contact crankcase.
- Never use hammer to beat crank.

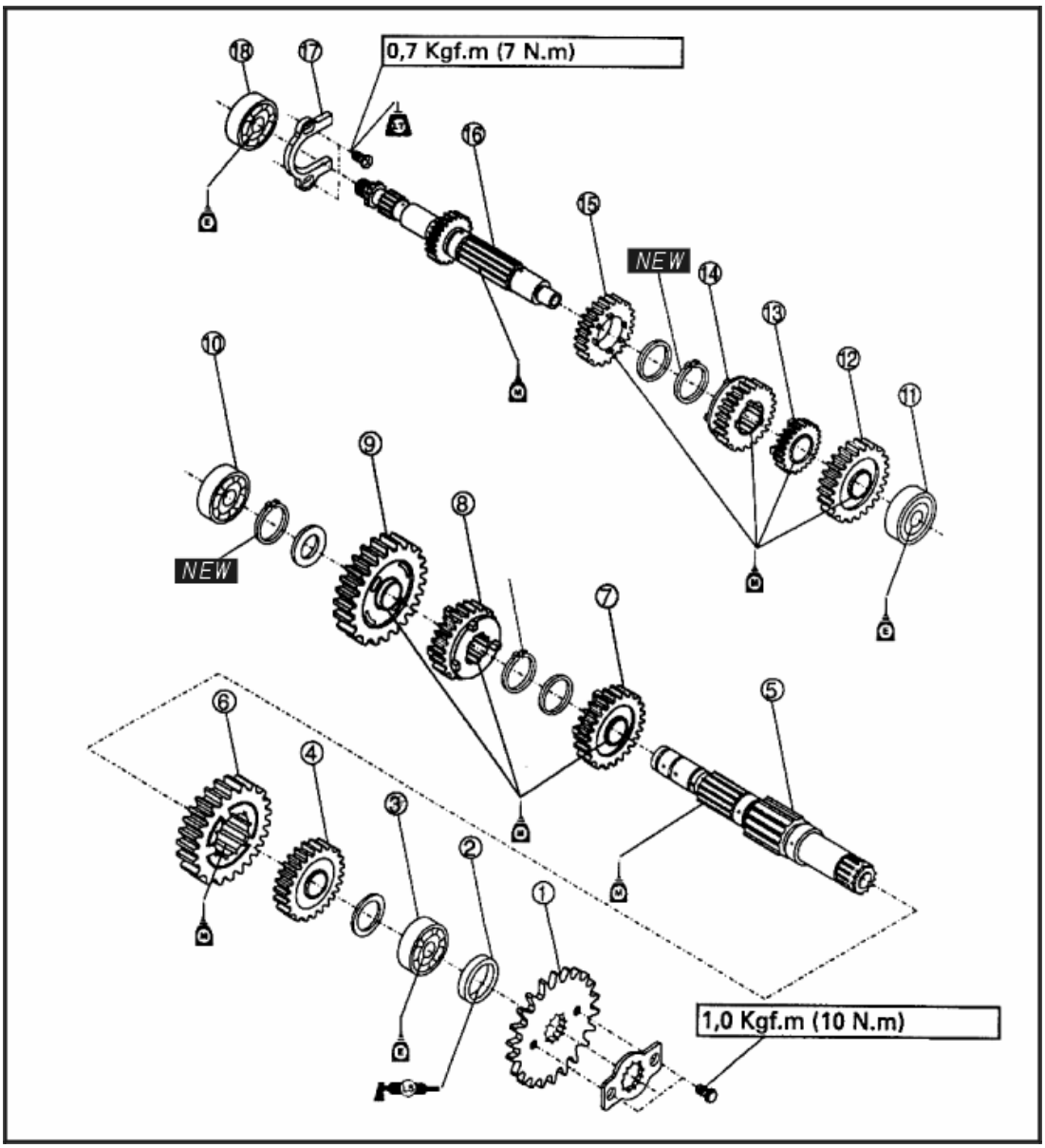


2.Mount:

- Balance axle
- aim the engraving mark ⓚ a of driving gear of crank at engraving mark ◯b balance axle gear, then mount them.

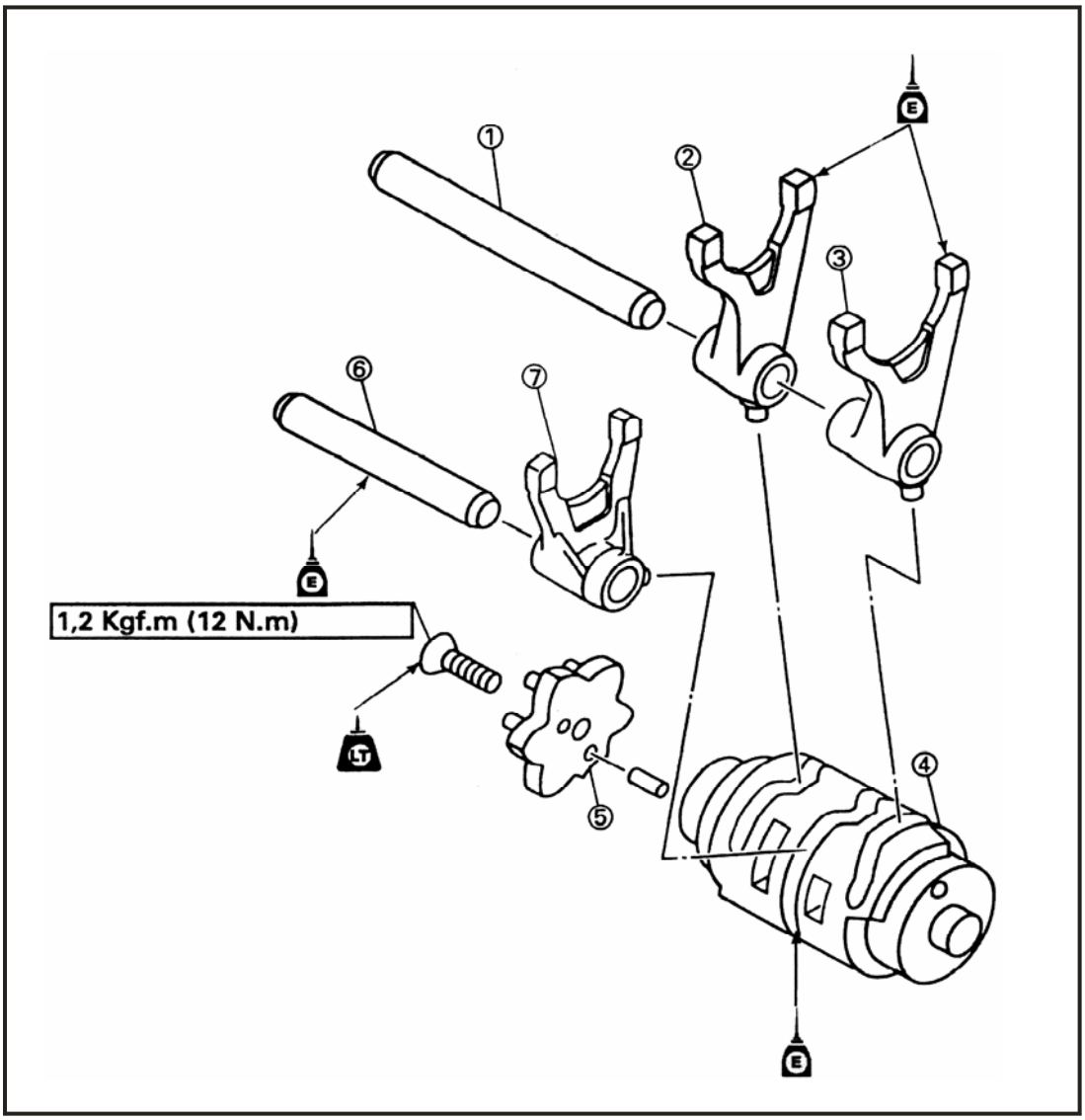
Transmission assembly

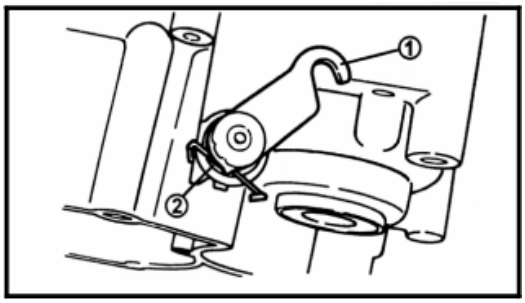
- Driving chain wheel
- Oil seal
- Bearing
- Driving gear- 5gear
- Driving axle
- Driving gear- 2
- Driving gear- 3
- Driving gear- 4
- Driving gear- 1
- Bearing
- ⑪Bearing
- ⑫Drive gear-5gear
- ⑬Drive gear-2gear
- ⑭Drive gear-3gear
- ⑮Drive gear-4gear
- ⑯Main axle
- ⑰Circlip
- ⑱Bearing



Shiftcam,shifting yoke

- Guide rod of shifoing yoke(long)
- Shifting yoke 3
- Shifting yoke 1
- Cam
- Star-shape gear
- Guide,rod 2 of shifing yoke(short)

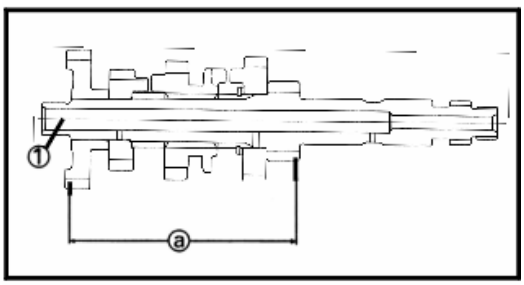




Installation of thransmission,change cam and change fork

1. Installation:

- Clutch push rod 2□



2.Installation:

- Main shaft

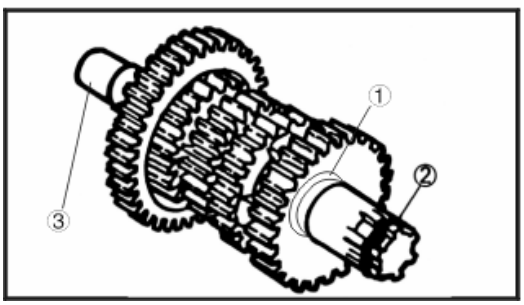
Note:

Before installing the main shaft, first installing the push rod in the clutch into the inner hole of main shaft,then installing it.

3. Inspection:

- Installing width of main shaft gear ⓐ a

	Standard installing width of main width 82.25~83.45 mm

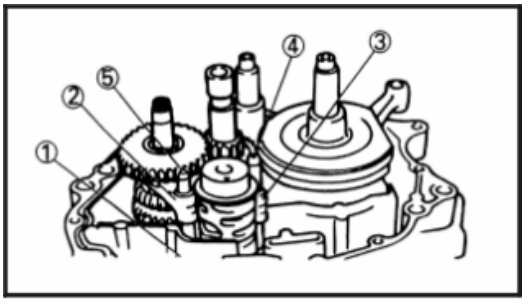


4. Installation:

- Garket□
- O-ring □

  Install the O-ring into the installing groove of firm bracket of sprocket of drive shaft,(avoid damage of oil sealing lip)after installing the drive shaft,take out the O-ring.

- Drive shaft□



5. Installation

- Change cam

  (The convex point on the change cam should align the contact point in the neutral switch of crankcase)

- Change cam"L"

  (The surface signed "L" is toward clutch)

- Change fork"R"

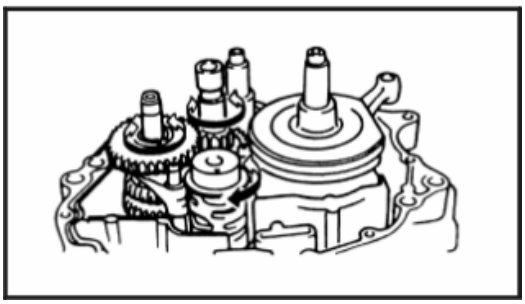
  (The surface signed with "R" is toward clutch)

- Change fork"C"

  (The surface signed with "C " is toward clutch)

- Change fork guide rod

- Change fork guide rod



6.Inspection:

- Operation of change cam

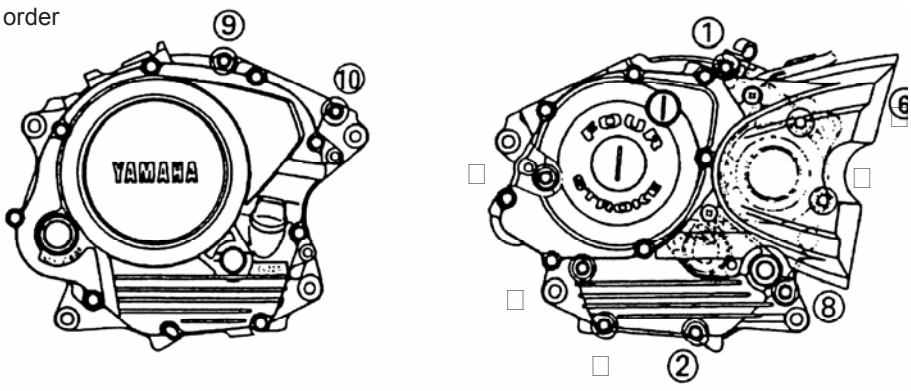
  The operation of change cam

  The operation is unsmooth reinstall

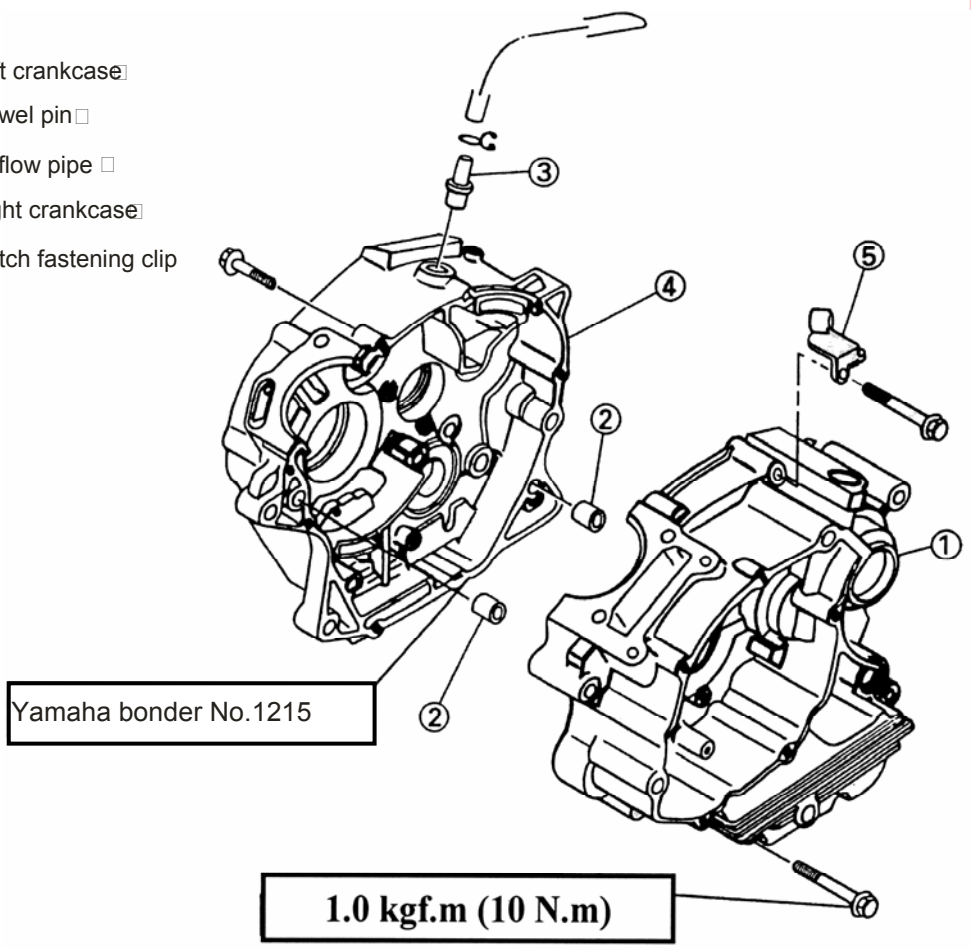
Note:

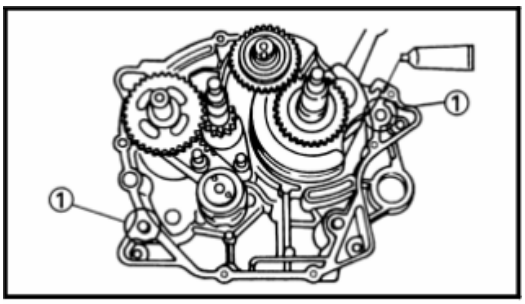
Turn the change cam cam with hand to make sure that the driving and fork is smooth in operation.

Fastening order



1. Left crankcase
2. Dowel pin
3. Airflow pipe
4. Right crankcase
5. Clutch fastening clip





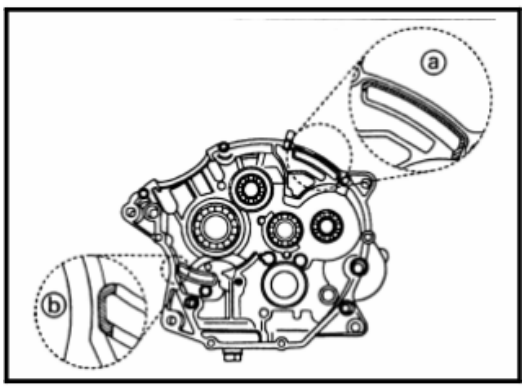
Crankcase(Right)

1. Application

- Seal gum

(Apply to the linking surface of left and right crankcase)

	Seal gum(Yamaha bonder No.1215) 90890-85505



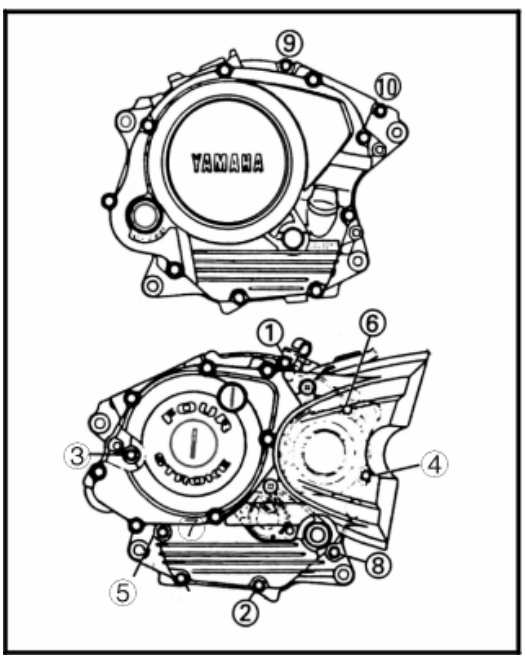
Note:
Never allow any seal gum to enter into the lubrication oil hole

2.Installation:

- Dowel pin

3. Installation

- Install the right crankcase to the left crankcase



Note:
Before installing and fastening the fastening screws of cranrcase, be sure to turn the shift cam with hand to check if the transmission functions normally.

5.Fastening:

- Screw(crank case)

Note:
From the screw marked with the Minnumber, tighten up the screws orderly.

6. Application

- Engine oil of 4 stroke engine

(Apply to the crankshaft pin,bearing and crankshaft hole

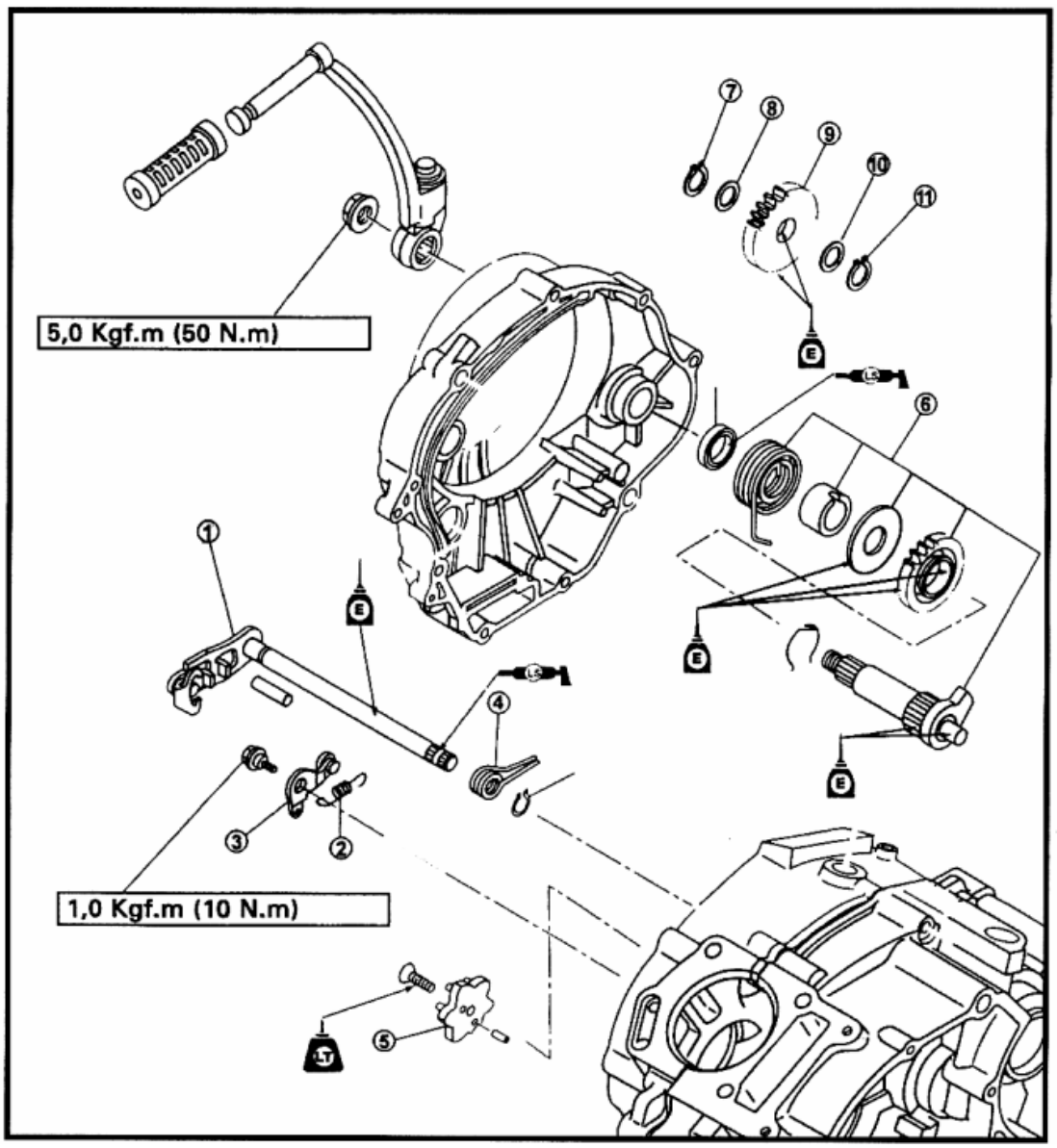
7. Inspection:

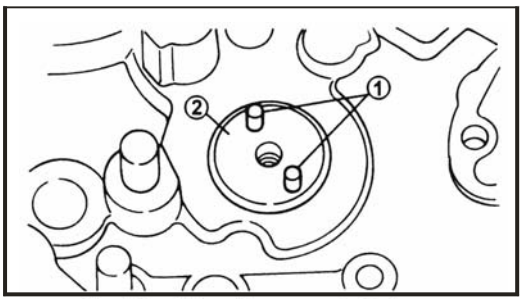
- Action of crankshaft and transmission.

The action is not smooth repair

Shift shafl,pedal spindle and pedal idle speed gear

① Shift shaft
② Reset spring
③ Retainer
④ Tortion spring
⑤ Star wheel
⑥ Start shaft assy
⑦ Circlip
⑧ Washer
⑨ Idler pulley
⑩ Washer
⑪ Circlip

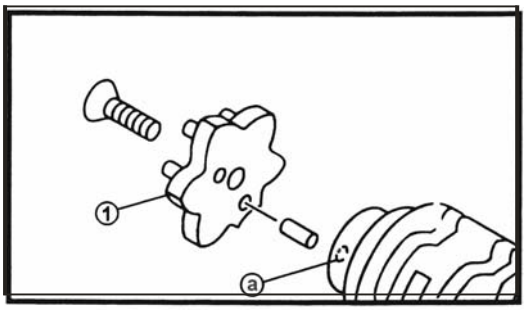




Shiftcam

1.Installation:

•Dowel pin□

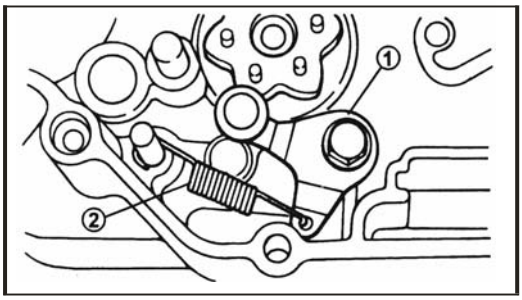


2. Installation

•Star wheel□

Note:

When installing the star wheel ,pay attention to install the pin hole on the star wheel and the pin hole ⓐ on the cam correctly.



3.Installation:

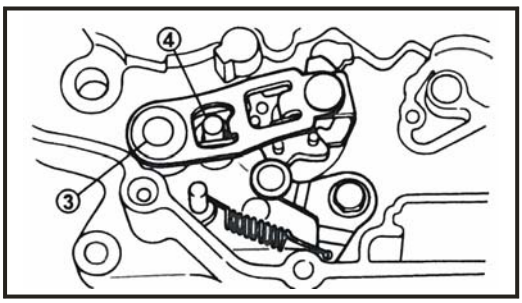
•Retainer□

•Spring□

	Bolt (Retainer) 1.0kgf.m (10Nm)

Note:

The retainer and the shift start wheel should be engaged each other.

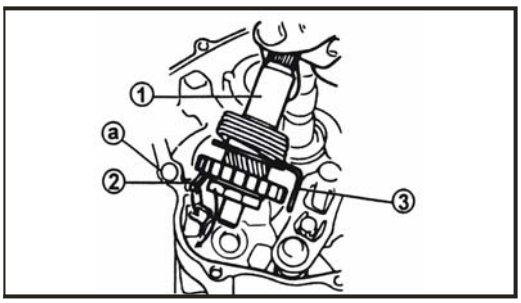


4.Installation

•Shift shaft□

Note:

When installing the shift shaft,be sure to jam the tortion spring on the dowel pin□ .



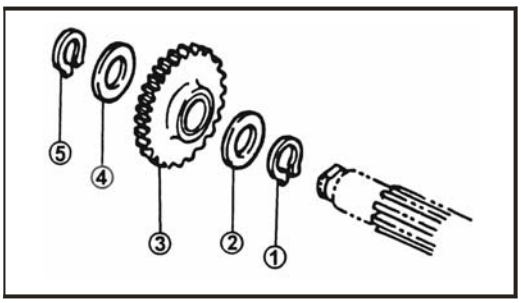
Pedal shaft and pedal idle speed gear

1.Installation :

- Drive shaft□
- Hoop□
- Spring□

Note

The projecting part should be installed on the ⓐ position of crankcase,and the fastening of spring should be down only after it turns 1turn.

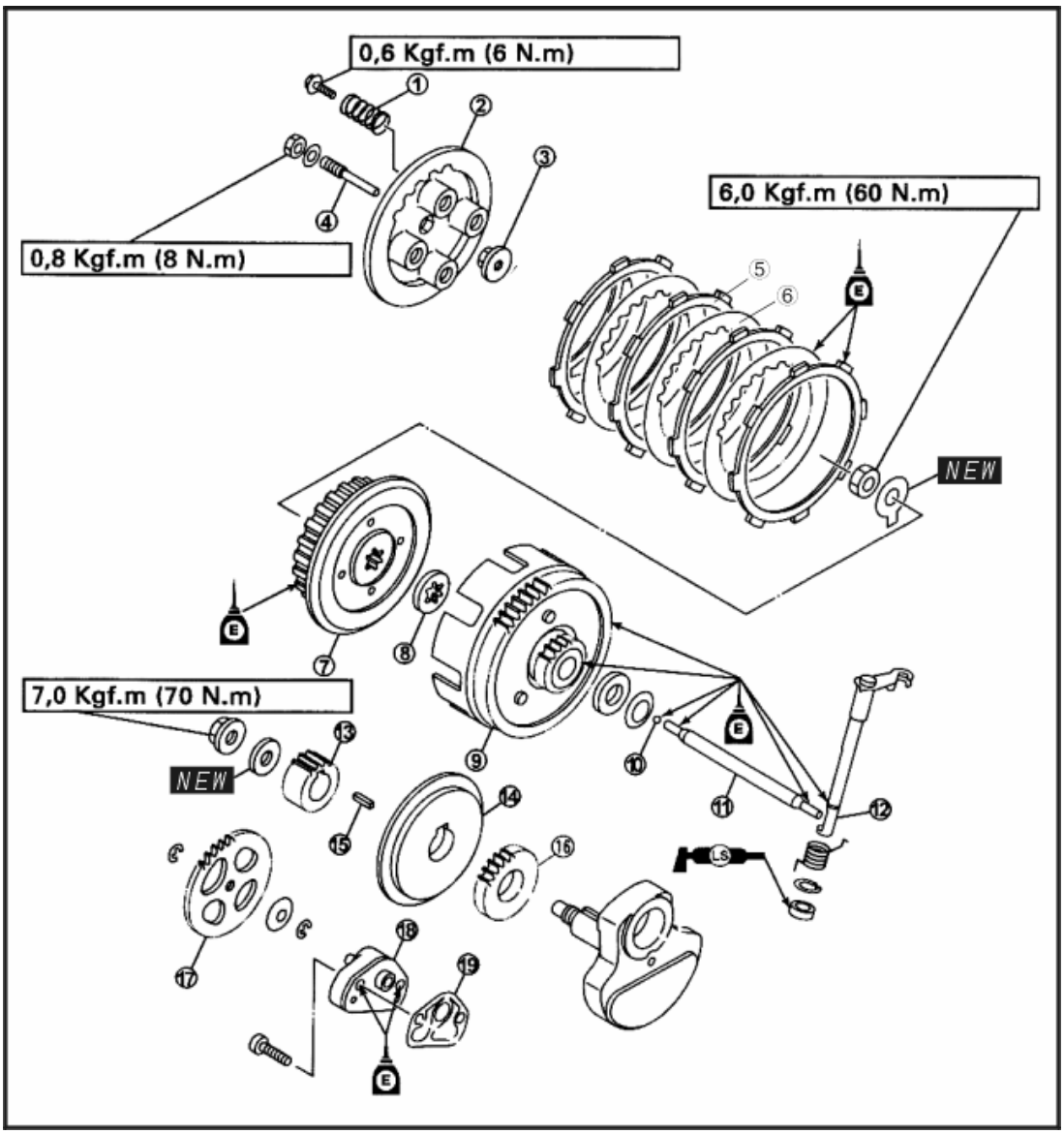


2.Installation:

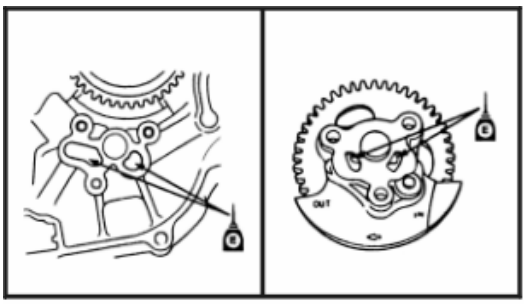
- Circlip □
- Washer□
- Idler pulley□
- Washer□
- Circlip □

Clutch,oil pump

1 Spring
2 Press plate
3 Push plate
4 Push rod1
5 Friction liner
6 Clutch plate
7 Clutch hub
8 Retaining washer
9 Main driven gear
10 Steel ball
11 Push rod
12 Push rod assy
13 Drive gear
14 Oil filter
15 Dowel pin
16 Drive gear of oil pump
17 Drive gear of oil pump
18 Oil pump case
19 Paper pad of oil



Oil pump



1.supplement of oil

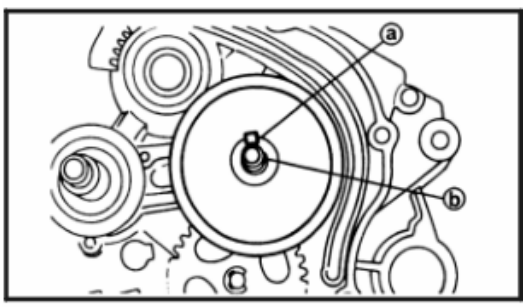
- 4-stroke engine oil

(supply to the oil hole in the crankcase and oil hole in the oil pump)

2.Installation:

- Oil pump

Oil filter



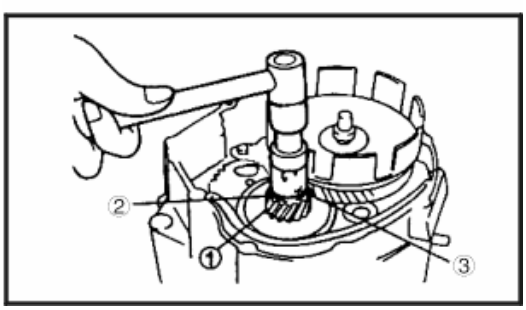
1. Installation:

- Drive gear of oil pump
- Centrifugal filter

Note:

Install the dowel pin ⓐ of centrifugal filter into the retainning groove of crankshaft ⓑ .

Main drive gear



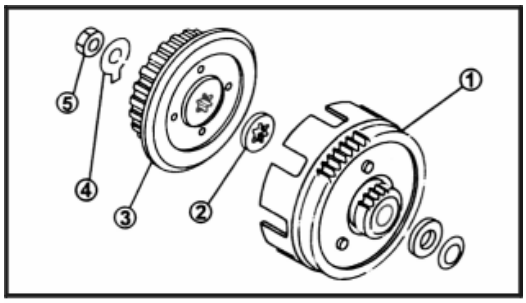
1Installation

- Main drive gear
- Dowel pin
- Washer
- Nut

Note:

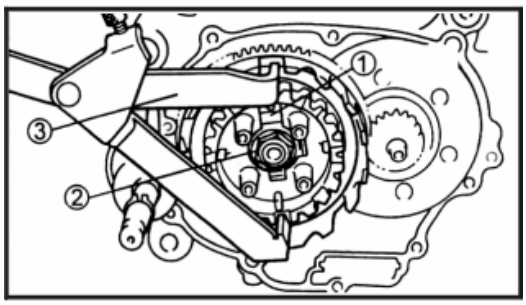
When locking the nut, in order to avoid the rotation of crankcase, the rotor must be fixed. No articles such as alumium sheet, cloth strip of copper sheet between gears.They prevents the crankshaft from rotating.

Clutch



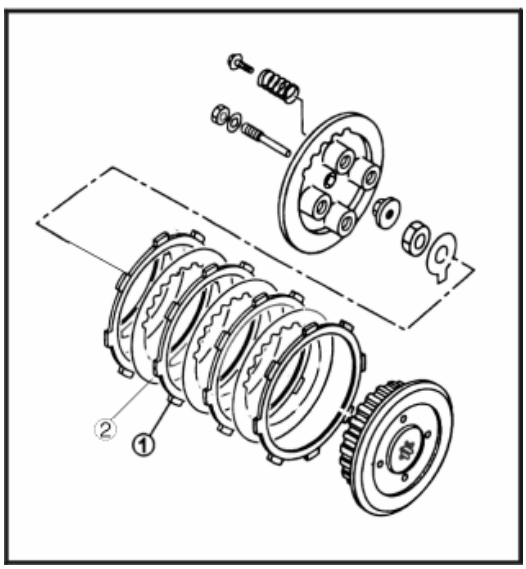
1. Installation:
- Main driven gear
- Retaining washer
- Clutch hub
- Retaining gasket
- Nut

2. Installation:
- Nut



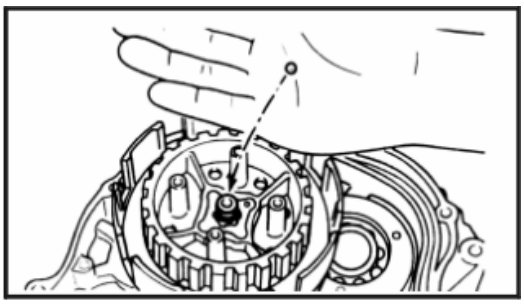
Note:
Fasten the clutch hub with clutch fixture , lock the nut and bend the retaining gasket .

	Clutch fixtrue 90890-04086
	Nut torque (60N.m)6.0kgf



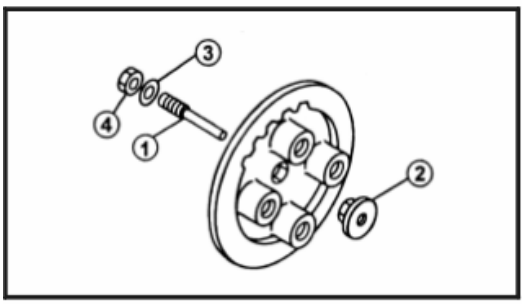
3. Installation:
- Friction linertotal of 4 pieces
- Clutch plate total of 3 pieces

Note:
- Apply the engine oil of 4 stroke engine on each plate of clutch,then install it.
- Install the clutch plate and friction liner alternatively to the clutch hub, starting from friction liner and ending with friction liner.



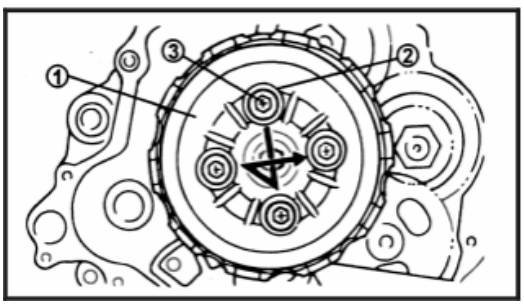
4. Installation

- Steel ball



5.Installation

- Push rod 1
- Push plate
- Washer
- Nut



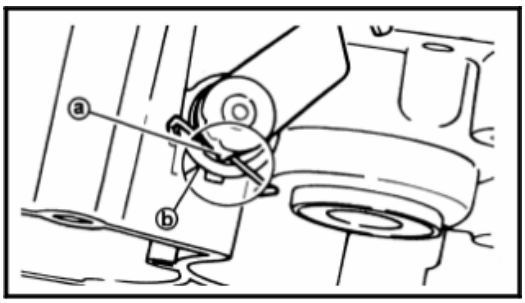
6.Installation:

- Press plate
- Spring
- Screw

	Screw installing torque 0.6 kgf.m (6 N.m)

Note:

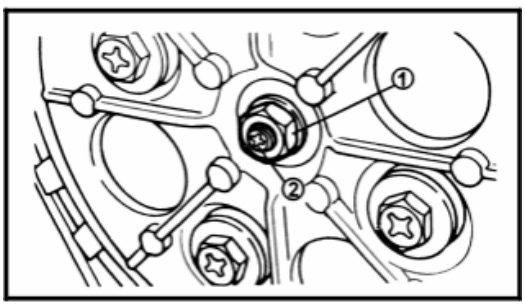
Tighten up the bolts orderly according to the diagonal order.



7. Confirmation

- The aligning identification of push rod assy and crank-case
- Turn the push rod assy counterclockwise to the end, make sure the projecting part of push rod a is identified with the aligning identification (convex part) b

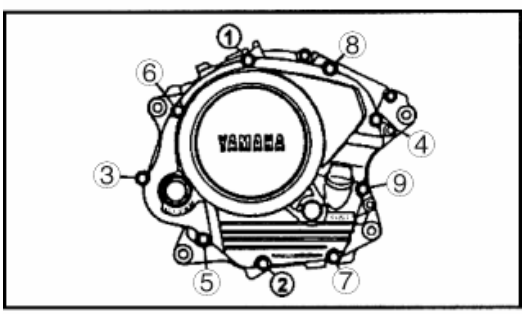
If not identified→ adjust



8Adjustment

- Aligning identification of push rod 3 and crankcase
- Unlock the nut , turn the push rod counter clockwise to the end.
- Turn the push rod 1 left and right,until a aligns with b
- After adjusting lock the nut

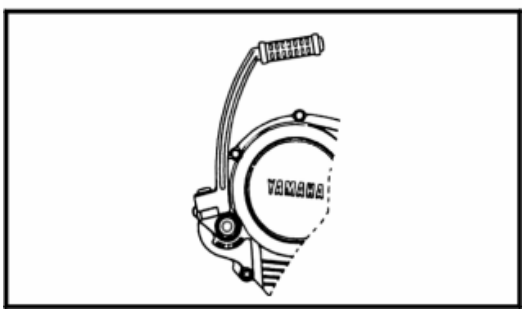
	Nut fastening torque 0.8kgf.m (8 N.m)



9.Installation

- Paper gasket (new product)
- Left crankcase cover

	Crankcase cover installing torque 1.0kgf.m (10N.m)

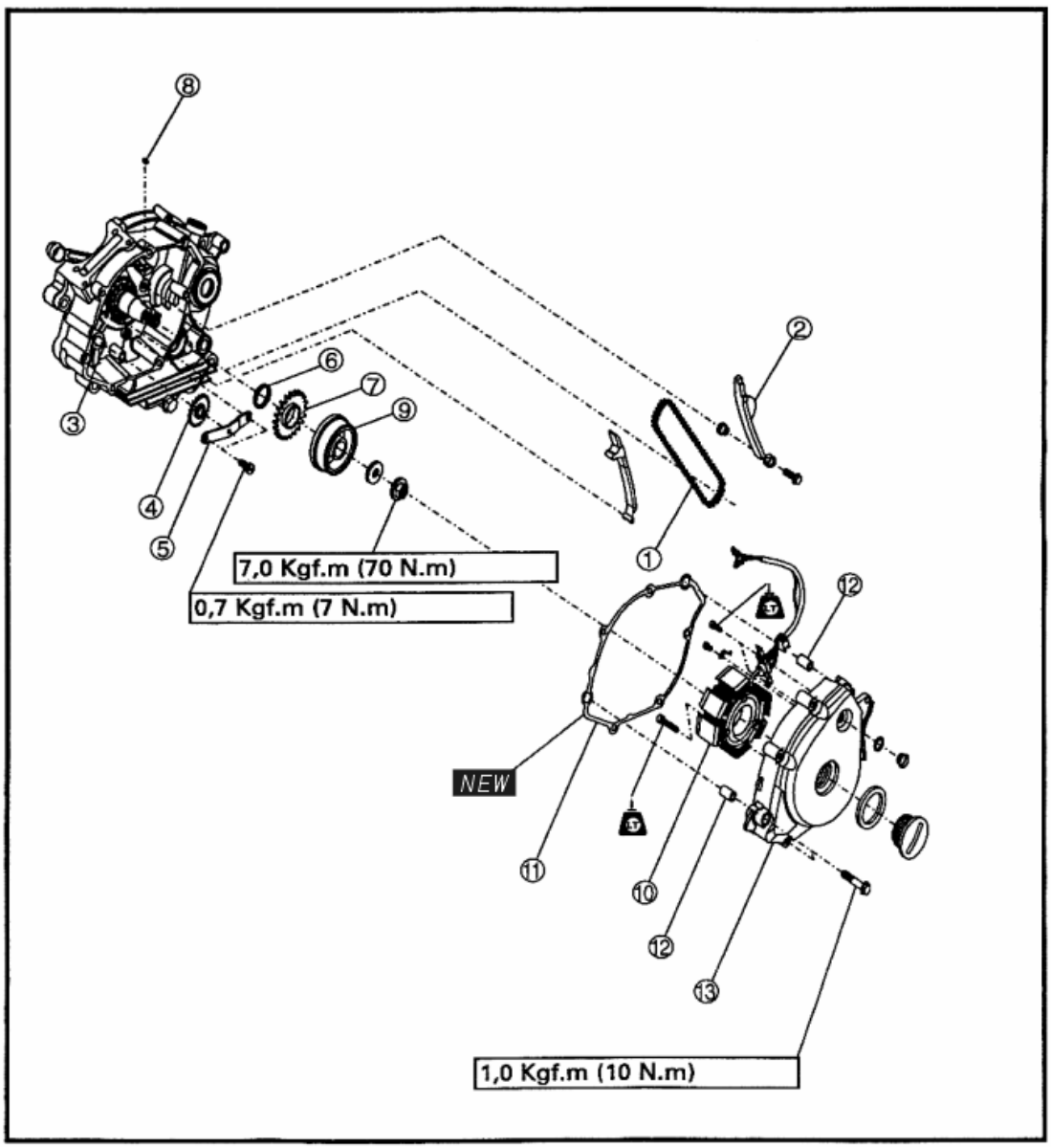


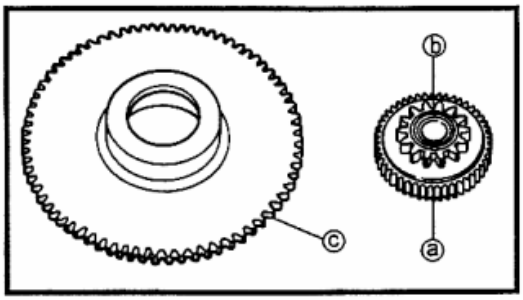
10Installation:

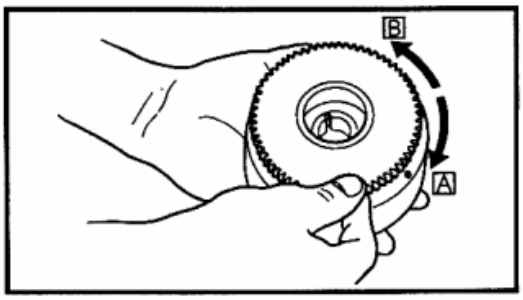
- Kick start rod

	Installing torque of kick start rod 5.0kgf.m (50 N.m)

- ① Timing chain
- ② Guide plate of chain
- ③ Locating shaft
- ④ Idle start gear
- ⑤ Press plate
- ⑥ Washer
- ⑦ Starting gear
- ⑧ Woodruff key
- ⑨ Rotor
- ⑩ Stator
- ⑪ Paper gasket
- ⑫ Dowel pin
- ⑬ Left crankcase cover







Rotor and starter mechanism

1. Inspection
- Check the gear conditions of start gear 1 and 2 (ⓐ ⓑ ⓒ)
  Rag, scrap, unsmoothness, abrasion→replace

2. Inspection
- Start gear 2(linking surface)
  Corrosive pitting, abrasion, damage replace

****

Inspection procedures:

- Install the starter gear to the clutch of starterand grip the clutch.
- When turn the starter gear clockwise A ,the starter clutch should be engaged with its gear. Otherwise, it indicates that there is some trouble with thestarter clutch and it should be replaced.
- When turn the starter gear counter clockwise B ,the clutch gear of starter should turn freely. Othewise it indicatesthat there is some throuble with starter clutch and it should be replaced.

****

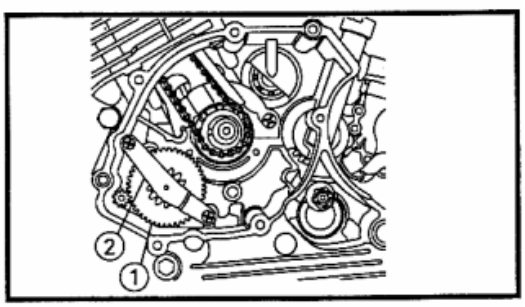
Chain guide plate and idler pulley

1. Installation:
- Timing chain
- Chain guide plate

	Installing torque: 1.0Kgf.m (10N.m)

Note:

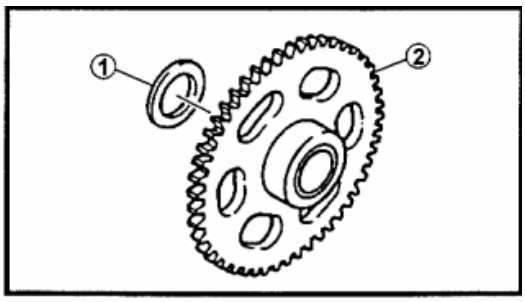
The guide plate can be installed only after the timing chain has been installed.

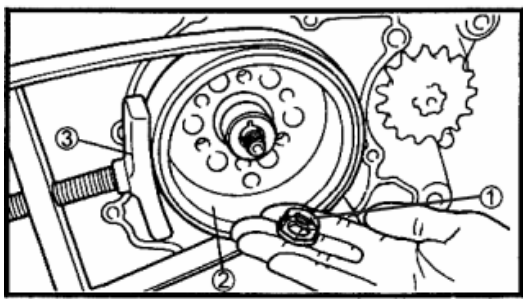


2. Installation:
- Starting the idler pulley
- Pressure plate

	Installing torque 0.7Kgf.m (7N.m)

3. Apply:
- Engine oil of 4 stroke
  (Apply the shaft neck and starter drive mechanism)





4.Installation:
- Washer
- Starting gear

5.Installation:
- Woodruff
- Rotor

Note:

Before installing clean off the foreign matter and dirt on the rotor.

6.Locking:
Nut

	Fastening torque 7.0Kgf.m(70N.m)

Note:

Fasten the rotor with slide retaining tool, lock the rotor with a nut with washer.

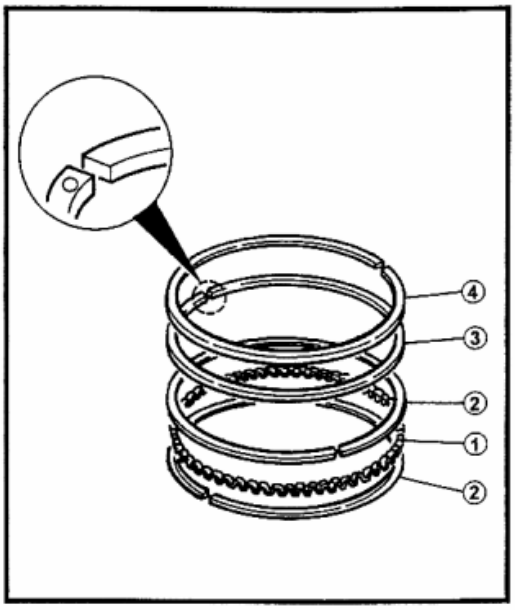
	Slide retaining tool: 90890-01701

7.Installation:
- Dowel pin
- Paper gasket(new product)
- Left crankcase cover

	Fastening torque of crankcase cover: 1.0Kgf.m(10N.m)

Note:

The left crankcase can be installed only after the locking nut of main drive gear of right crankcase has been installed.



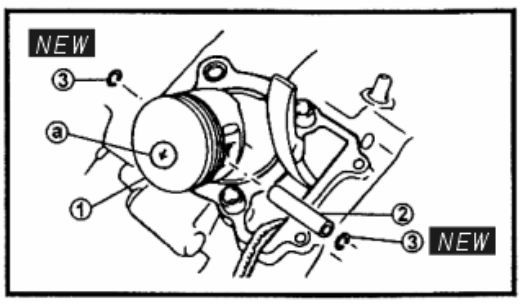
Piston and piston ring

1.Installation of piston ring

- Oily plate□
- Oil scraping plate□
- 2nd ring □
- 1st ring □

Note:

- When installing the 1st ring and 2nd ring,pay attention to the upper and lower directions.The surface with sign should be assemblied upward.
- When installing the ring ,first installing the lower oil scraping plate□,then install the oily plate □,finally install scraping plate□ .
- After assembling, make sure that the piston rings can turn smoothly between each other.
- There should be a 120□ angle difference for the interfaces between the rings,the splits of upper and lower oil scraping plate of oil ring should stragger about 20mm on the left and right sides of oily plate split.

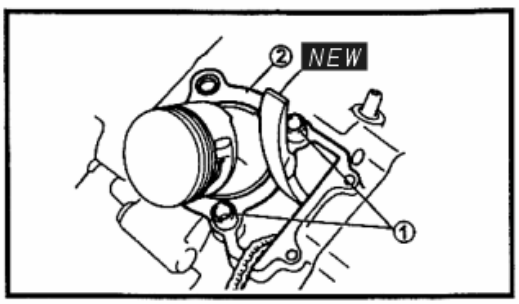


2.Installation:

- Piston□
- Piston pin□
- Piston pin hoop□ NEW

Note:

- The arrow mark ⓐ on the piston should be toward the front side of engine.
- Before installing the piston pin hoop,cover the crankcase with clean towel or cloth so as to prevent the piston pin hoop or other articles falling into the crankcase.

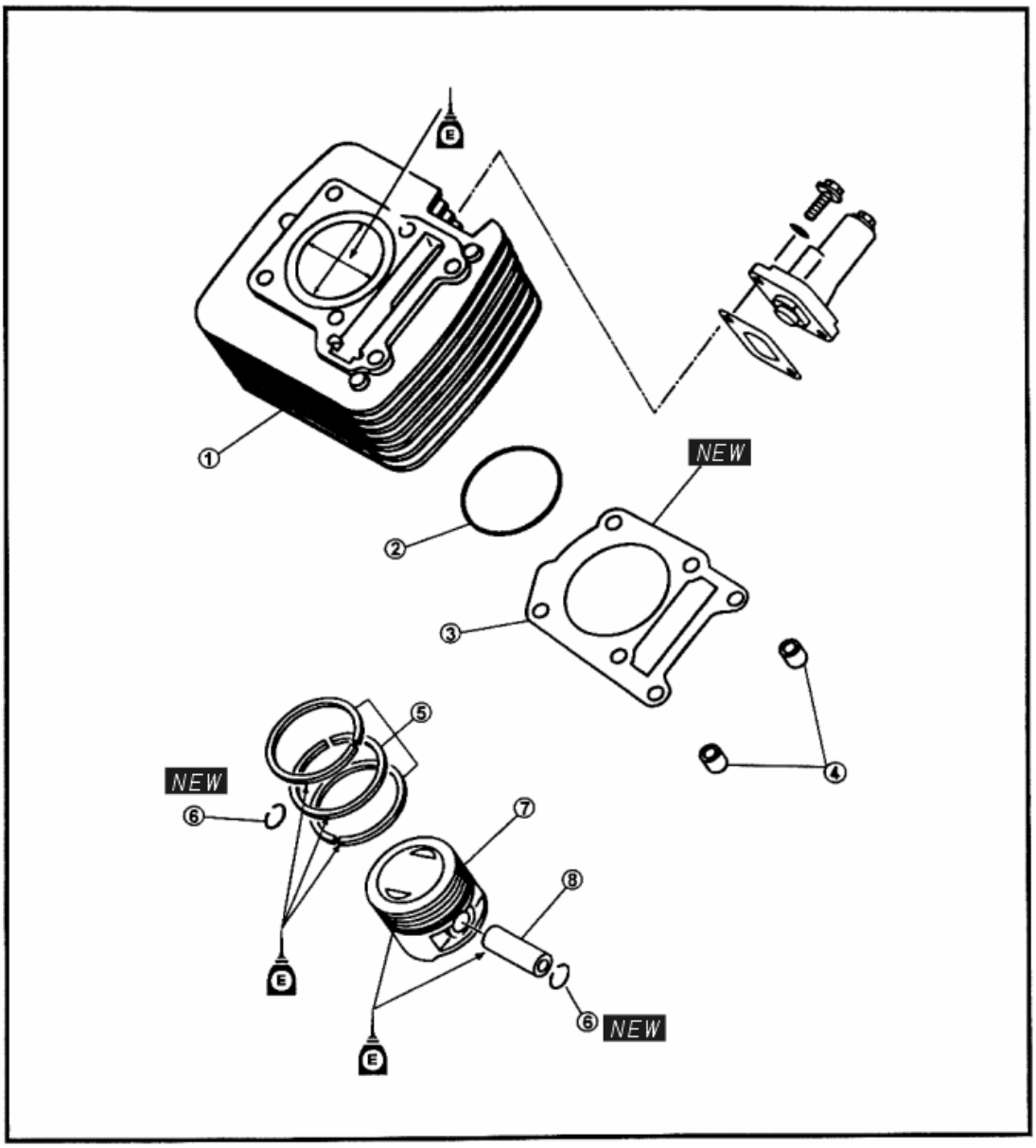


3.Installation:

- Dowel pin□
- Paper pad□ NEW

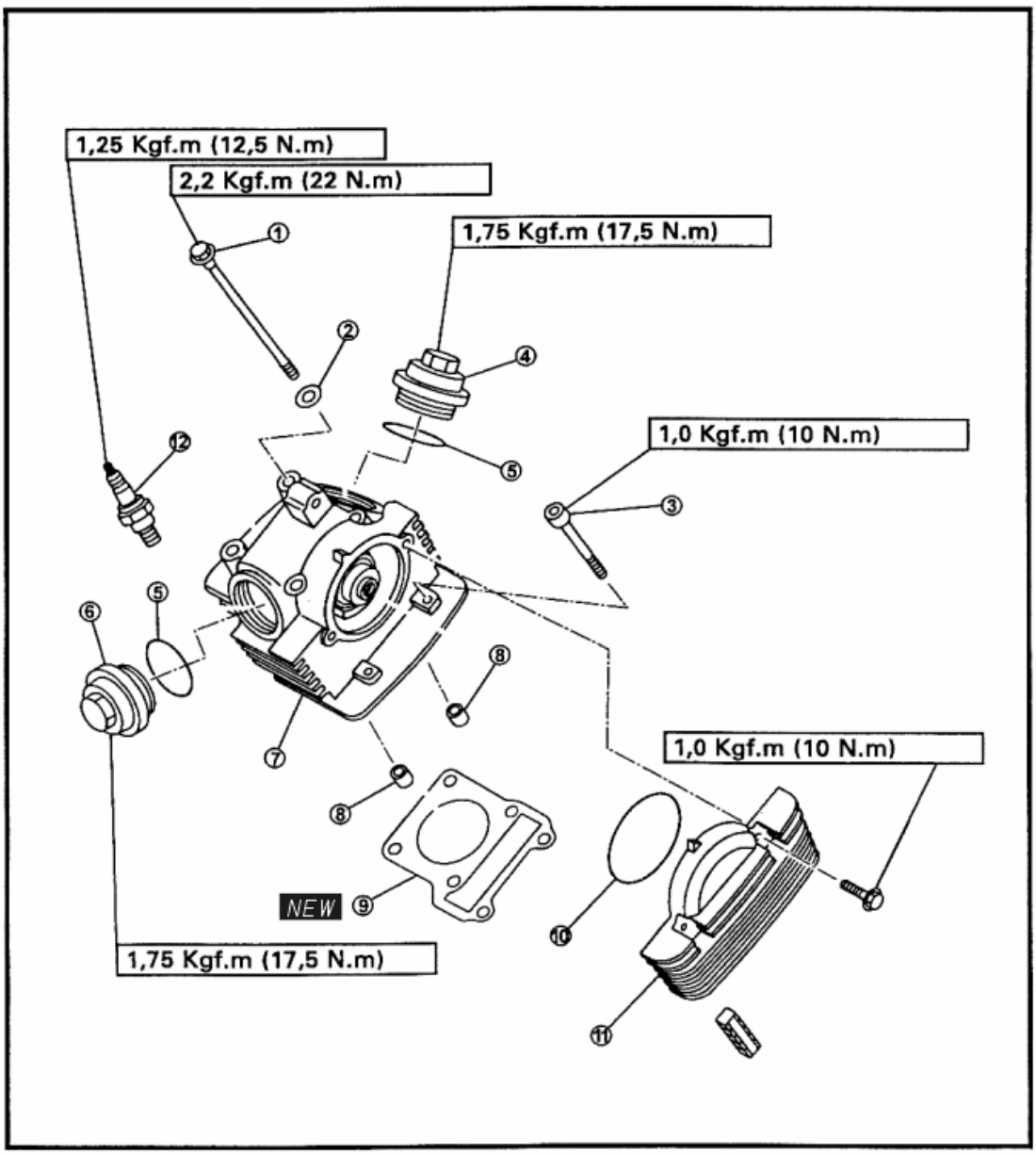
Cylinder and piston

- Cylinder
- O-ring
- Paper pad
- Dowel pin
- Piston ring
- Piston pin hoop
- Piston
- Piston pin



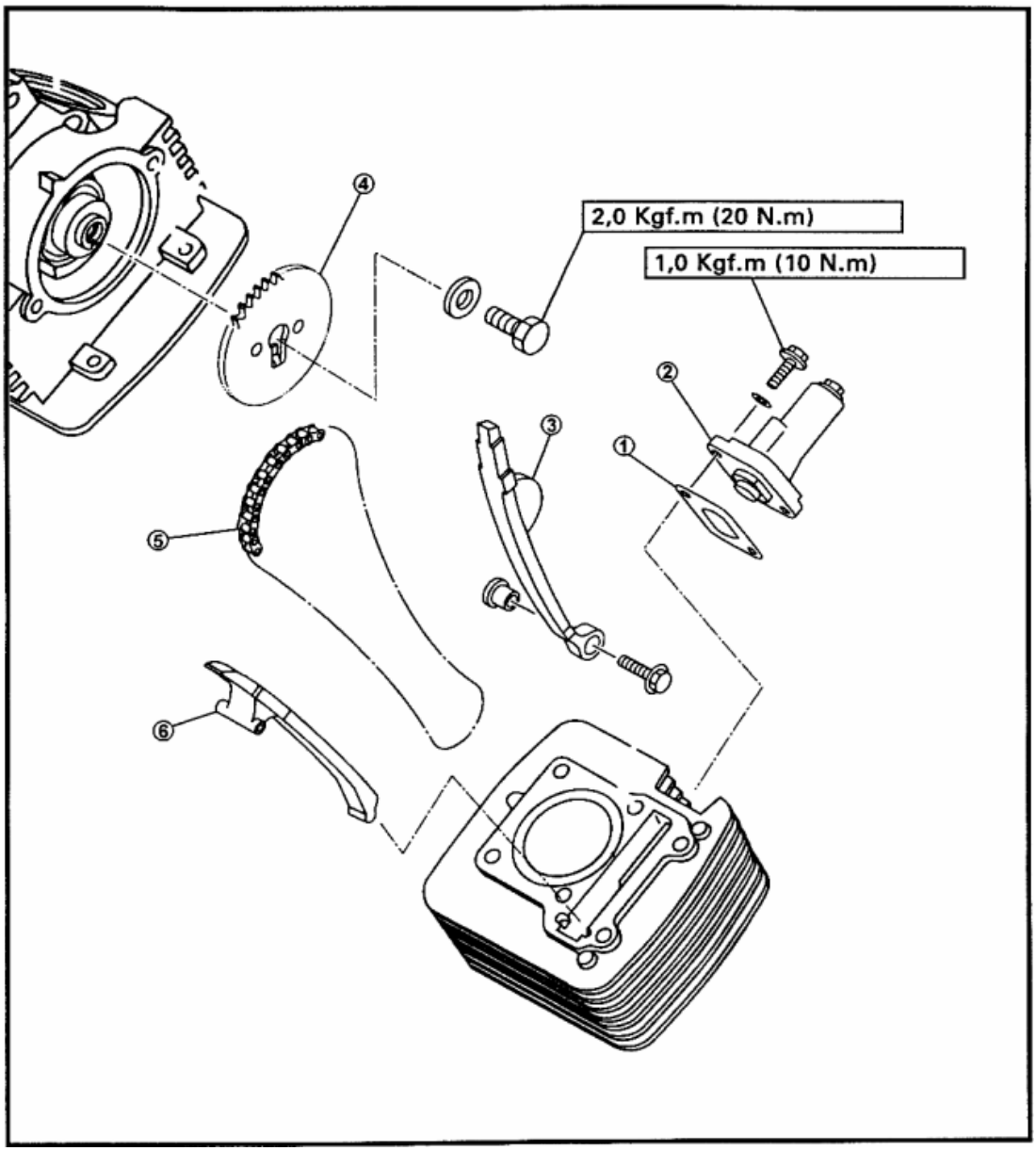
Cylinder head

- □ Bolt
- □ Copper washer
- □ Inner hexagonal bolt
- □ Valve cover(Intake)
- □ O-ring
- □ Valve cover(Exhaust)
- □ Cylinder head
- □ Dowel pin
- □ Steel pad
- □ O-ring
- ⑪ Side cover of cylinder head
- ⑫ Spark plug



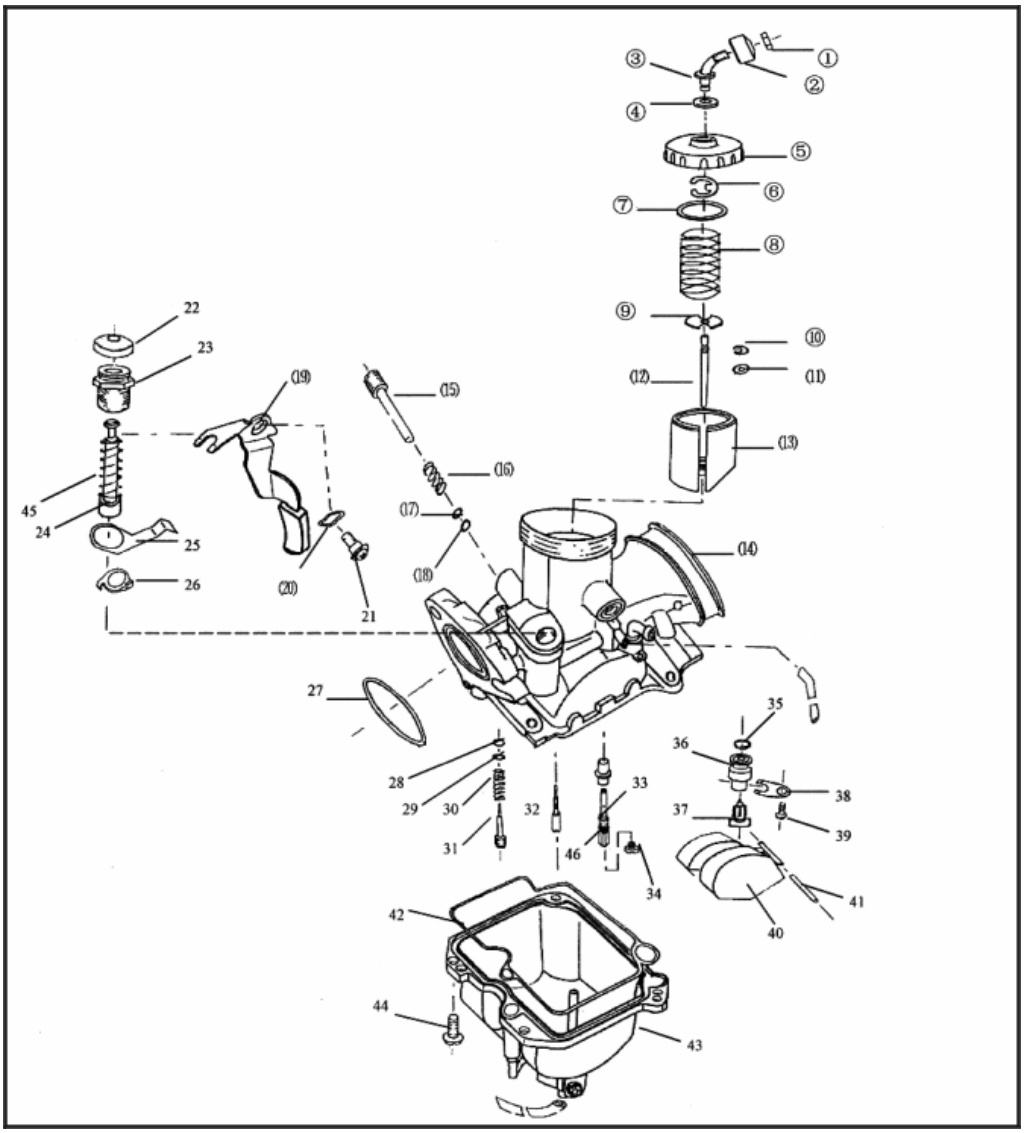
Cam shaft and locating key

- Paper pad
- Tensioner
- Chain guide plate(intake)
- Timing sprocket
- Timing chain
- Chain guide plate(exhaust)



Chapter 5 Disassembling of carburetor

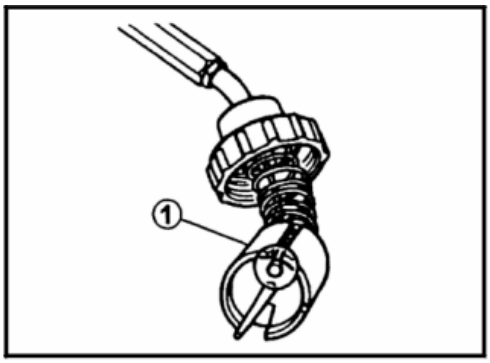
□ Adjusting screw of throttle cable
□ Rubber sleeve
□ Throttle cable guide pipe
□ Rubber washer
□ Top cover cap
□ Circlip
□ Rubber washer
□ Plunger spring
□ Needle pressure plate
□ Circlip
⑪ Needle washer
⑫ Needle
⑬ Plunger
⑭ Carburetor
⑮ Idle speed adjusting screw
⑯ Spring
⑰ Washer
⑱ Rubber pad
⑲ Start spanner
⑳ Wave washer
㉑ Screw
㉒ Rubber cap
㉓ Guide seat
㉔ Starting pluger
㉕ Spring plate
㉖ Firm plate
㉗ O-ring
㉘ Rubber pad
㉙ Washer
㉚ Spring
㉛ Ps adjusting screw
㉜ Idling fuel
㉝ Needle valve jet
㉞ Main jet
㉟ O-ring
㊱ Needle valve seat
㊲ Needle valve
㊳ Firm clip
㊴ Bolt
㊵ Float
㊶ Float pin
㊷ Gasket
㊸ Float cover
㊹ Bolt
㊺ Spring
㊻ O-ring



5

1.Removal

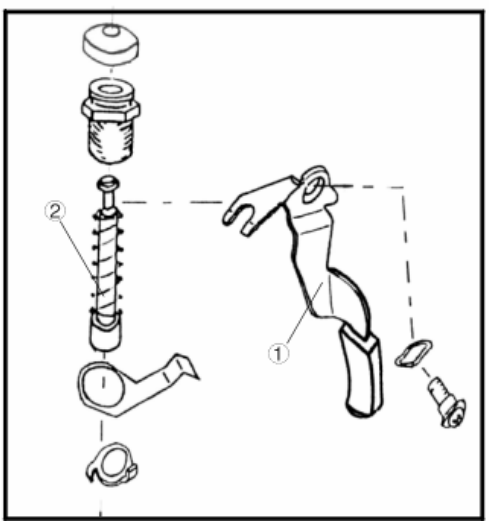
- Throttle cable
- Caburetor



Disassembly

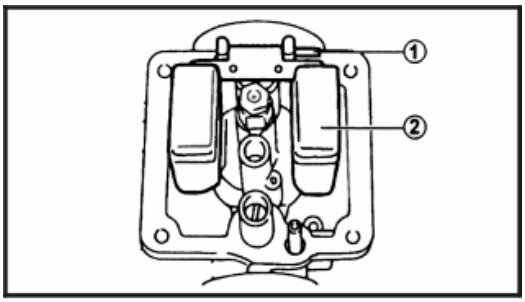
1. Loosen
- Oil drain screw

2. Removal
- Plunger



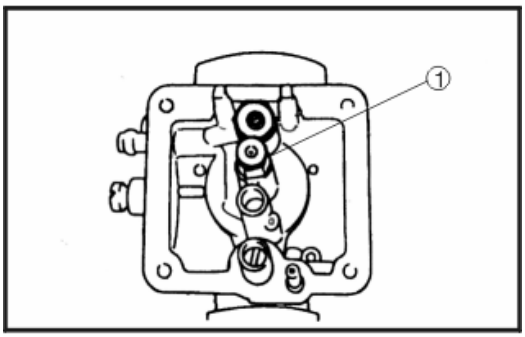
3. Removal:
- Starting wrench
- Starting plunger

4. Removal
- Float chamer



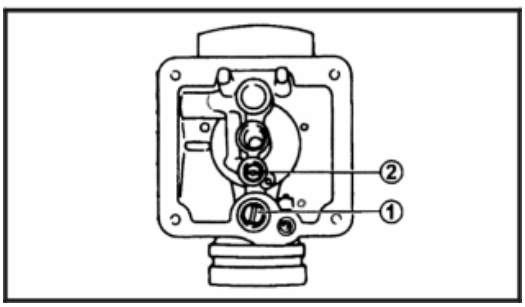
5.Rmoval:

- Float pin
- Float
- Needle valve
- Needle valve seat



6. Removal:

- Main jet
- Needle valve jet
- O-ring



7.Removal:

- Idling fuel jet

8. Removal:

- P.S adjusting screw

Inspection

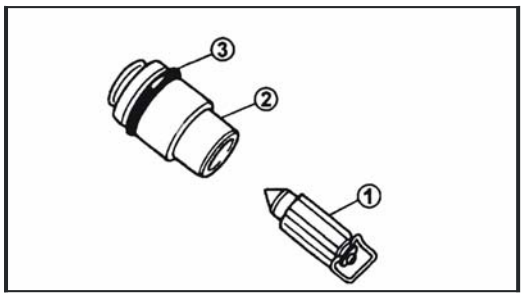
1. Inspection

- Mixing chamber case of carburetor

  If polluted→ clean

3.Inspection:

- Float
- If damaged→ replace

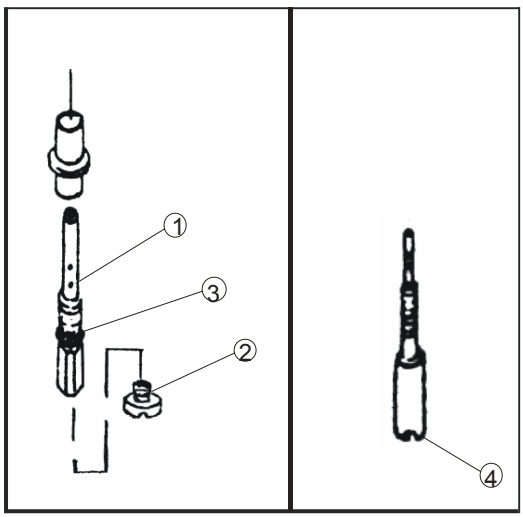


4. Inspection:

- Needle valve
- Needle valve seat O-ring

  If worn or damaged→ replace

Note:
The needle valve and its needle valve seat should be replaced as a complete set.



5. Inspection:

- Main nozzle
- Main jet
- O-ring
- Idling fuel jet

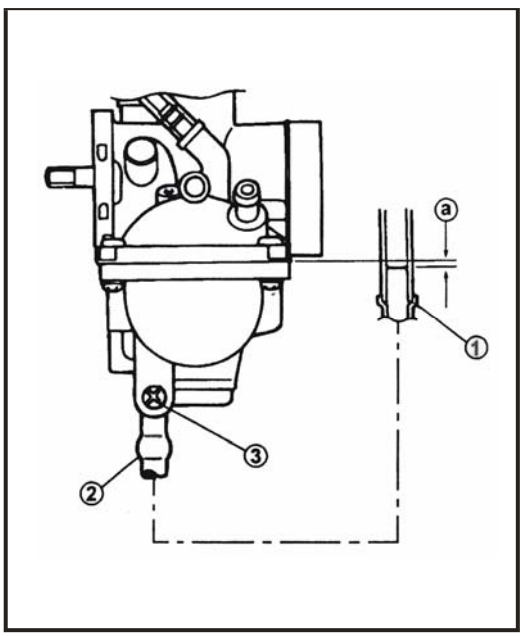
  If polluted→ clean

Note:
Blow the jets with compressed air.

Assembly

Conduct according to the reverse procedures of removal.

Note:
Before reassembly, clean all parts with clean gasoline.



Adjustement of fuel level

1. Measurement:

- Fuel level a

  Over the specification value adjust

	Fuel level ⓐ : 6.6 7.6 mm The fuel level should be at the middle postion of the float chamber on the lower side of the carburetor case edge.

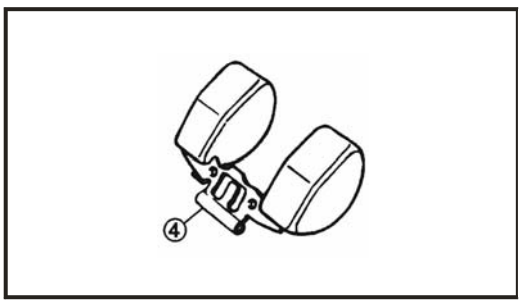
Measurement and adjustment procedures of fuel level

- Rest the motorcycle on the flat ground and make sure that the carburetor is in vertical condition.
- Connect the fuel level dipstick with oil drain pipe .

	Fule level dipstick 90890-01312

- Loosen the oil drain screw , run the engine for several minutes to raise the temperature.
- Keep the fuel level dipstick in vertical condition and make it approach to the engrave line of float chamber.
- Measure the fuel level with fuel level dipstick.

Note:
The records of the fuel level dipsiticks of the pipes on two sides of the carburetor should be equal.



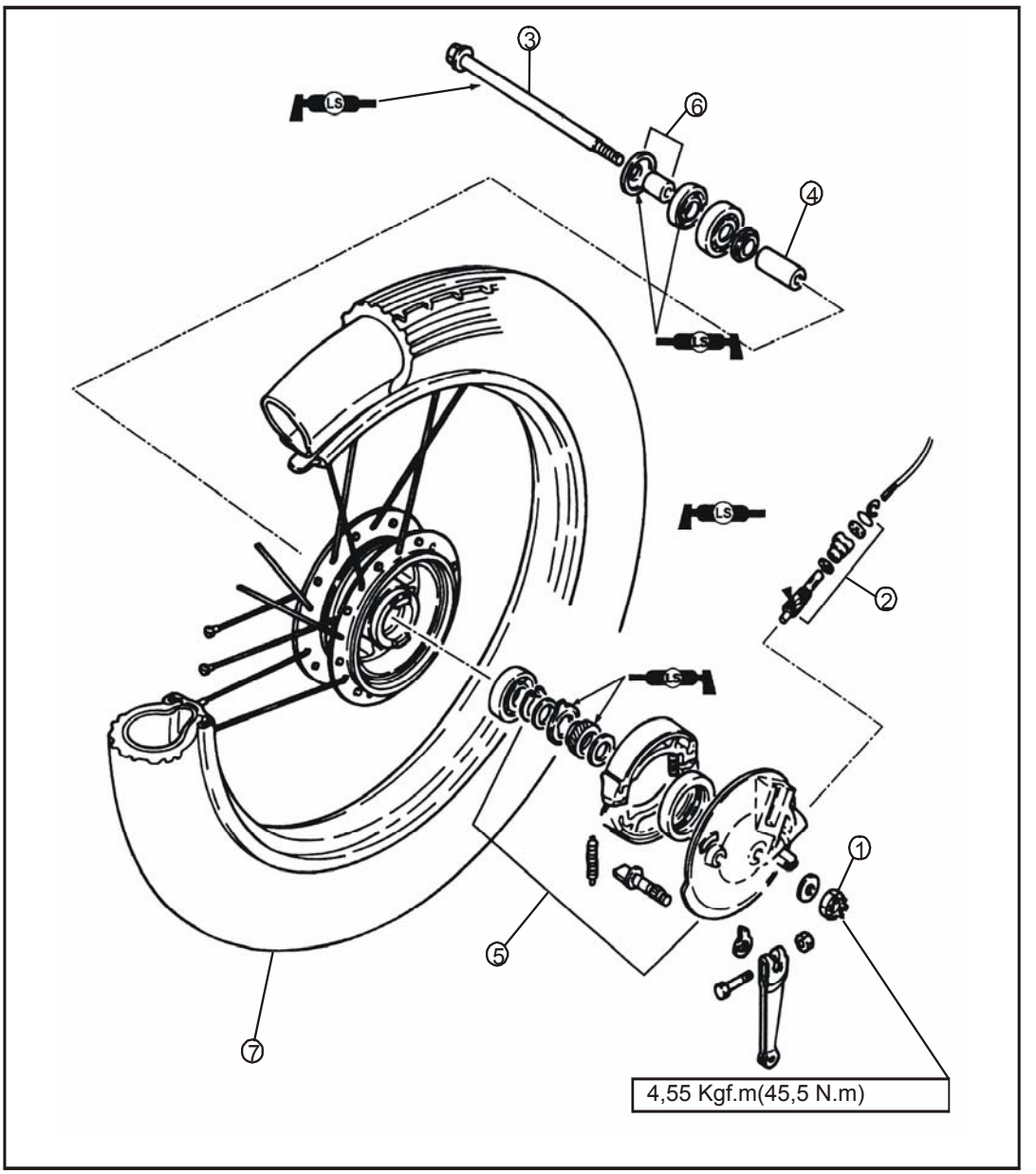
If the fuel level is not correct,adjust it:

- Remove the carburetor
- Check the valve seat and needle valve
- If they are all in good condition,adjust the fuel level by bending the rear part of the float slightly.
- Install the carburetor.
- Check fuel level again.

Chapter 6 Chassis

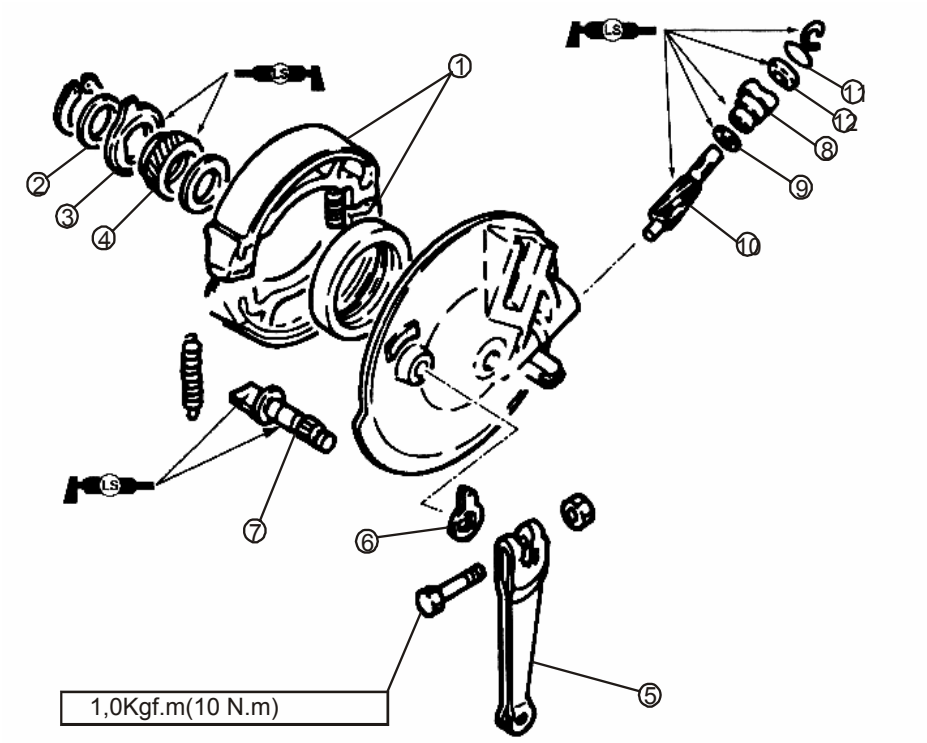
Front wheel

- Self-locking nut
- Meter gear assy
- Front wheel axle
- Bushing
- Front brake assy
- Bushing
- Front wheel



Front wheel

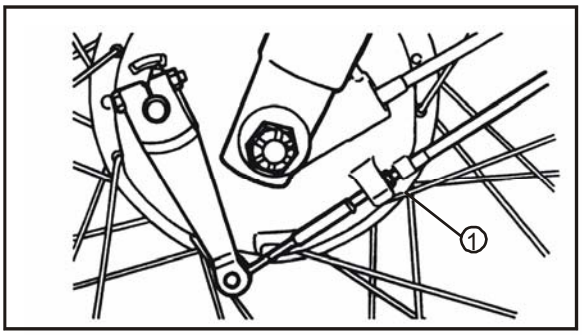
□Brake pad
□Washer
□Meter clutch
□Meter drive gear
□Brake arm
□Indicator
□Cam axle
□Bushing
□Washer
□Meter driven gear
⑪O-ring
⑫Oil seal



Removal

⚠Warning

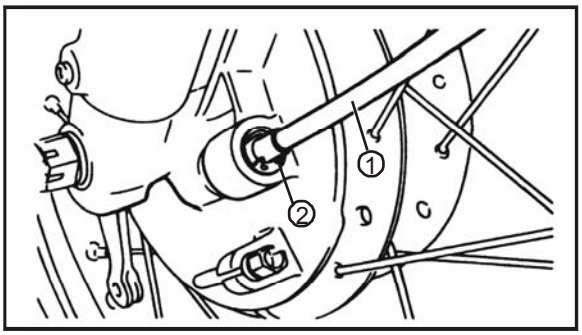
1.Rest the motorcycle on the flat ground.
2.Place the motorcycle on its central stand.
3.Place the proper articles under the frame or eng - ine to lift the front wheel.



Front brake

1 Removal:

- Front brake cable□



Note:

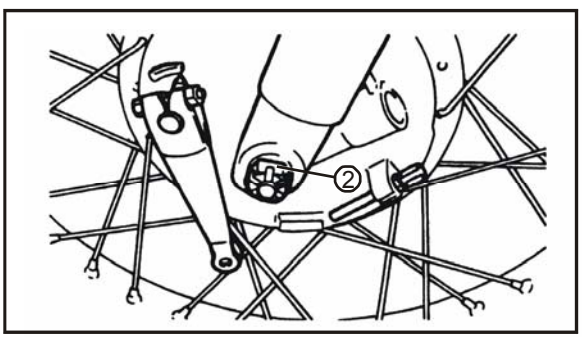
Before taking out the cable, release the brake.

2.Removal:

- Speedometer cable ①

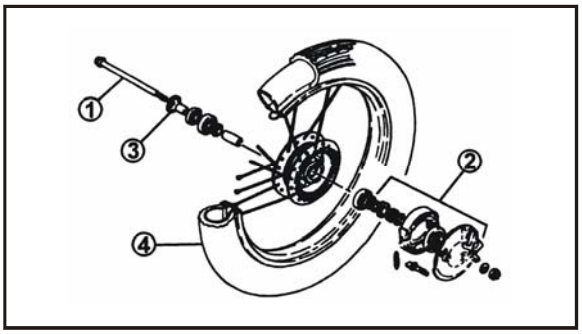
Note:

The clip □ should be taken out first.



3.Removal

- Self-Locking nut □



4.Removal

- Front wheel axle
- Front brake assy
- Bushing
- Front wheel

Inspection of front wheel

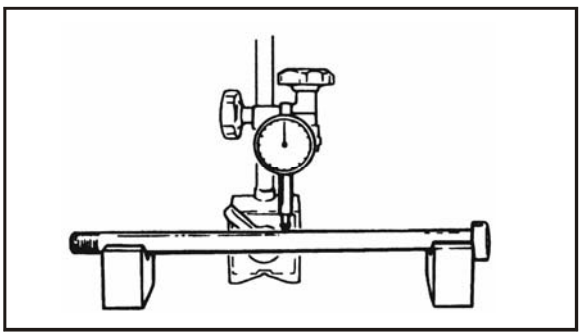
1.Inspection

- Front wheel axle(inspect with pencertage meter)

  If bent→replace

Warning

Never attempt to straighten the bent front wheel axle.



The twist limit of front axle:0.25mm

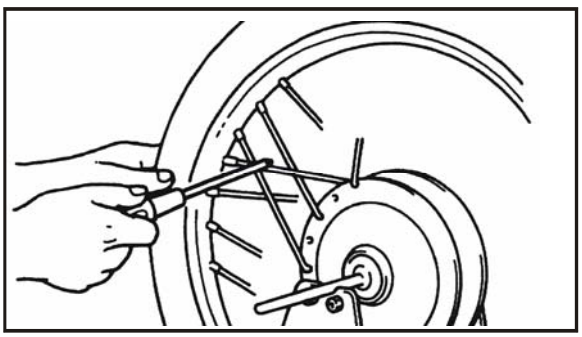
2.Inspection

- Wheel

  If deformed,damaged of bent→replace

Warning

Never attempt to repair the wheel by yourself even the small repair.



3. Inspection and fastening of spoke

1. Inspection

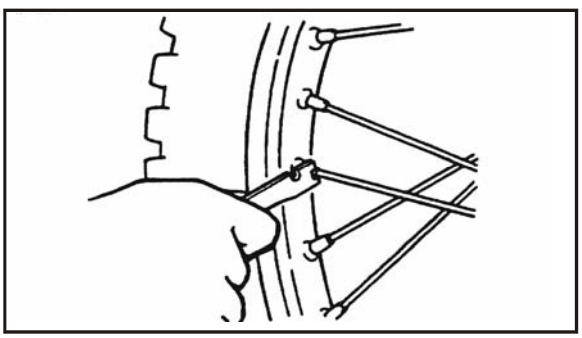
- Spoke

  If bent and damaged→change

  If the spoke is slack→tighten up

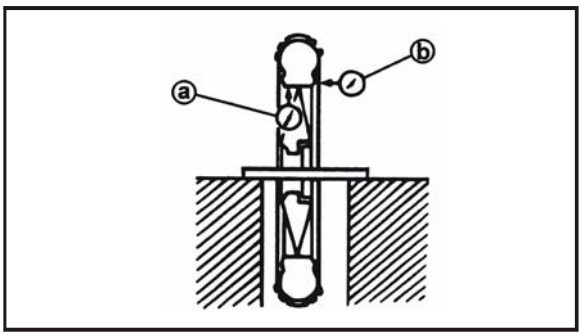
2. Fastening

- Spoke



Note:

After repairing ,be sure to adjust the slackness of the spoke evenly.

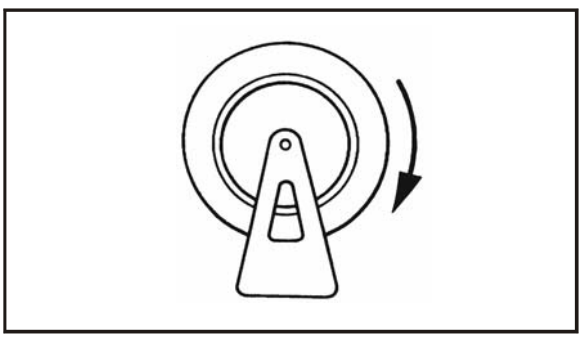


4. Inspection

- Turn the wheel rim slowly to inspect the radial and axial runout.

  Over of limit →replace

Rim runout limit
Radial: 1mm
Axial: 0.5mm



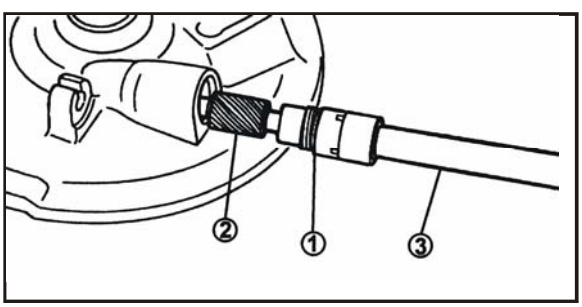
5.Inspection

- Wheel bearing

  If the bearing inside the hub has windage unsmooth rotation, slackness, abnormal sound→replace

- Oil seal

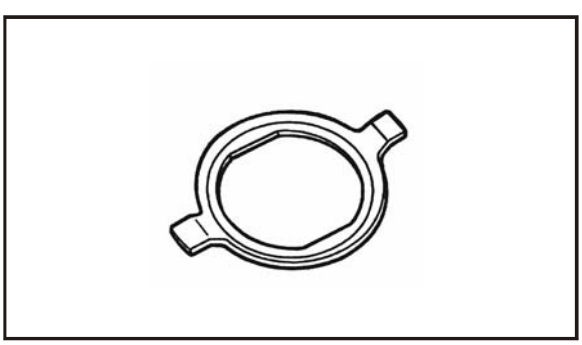
  If worn or damaged→replace



Speedometer gear assy

1.Removal

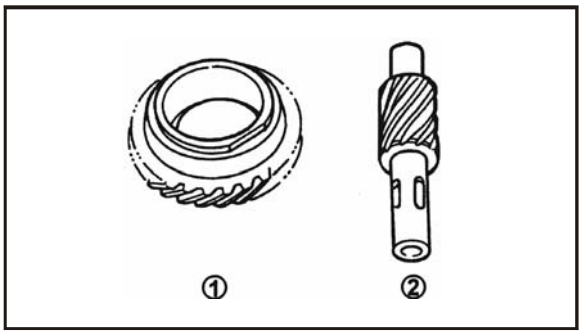
- Cable head of speedometer
- Driven chain of meter
- The speedometer cable should be free from bending



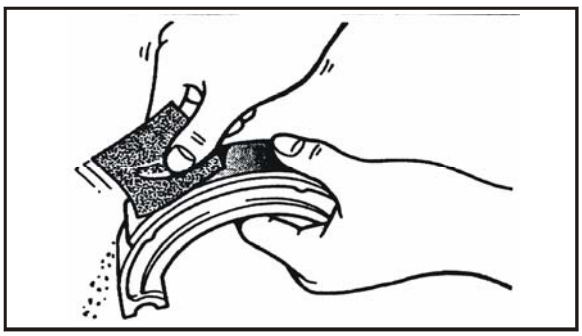
Meter clutch

1.Inspection

- Meter clutch
- If deformed/ damaged→ replace



- Drive chain of meter□
- Driven chain of meter□



Front brake

1.Inspection

- Friction liner surface of brake pad
  Smooth area→polish
- Polish with rough sand

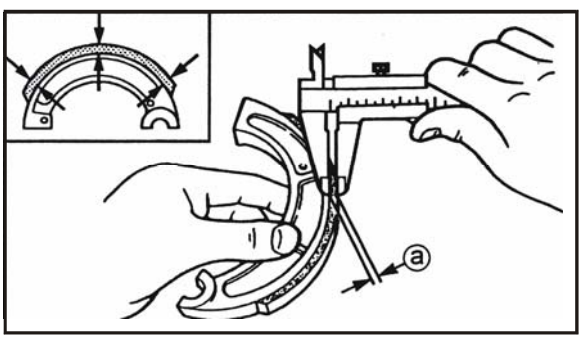
Note:

After polish with sand,clean off the grainsof polishing material.

2.Measurement

Friction liner thickness of brake pad

Out of specification→replace



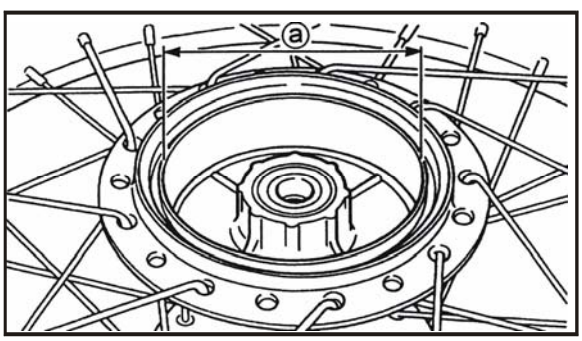
The friction liner thickness of brake a◯

Thickness ⓐ 4mm

Limit: 2mm

Note:

If any brake pad is found to be worn to the wear limit ,replace the complete sets of brake shoes.



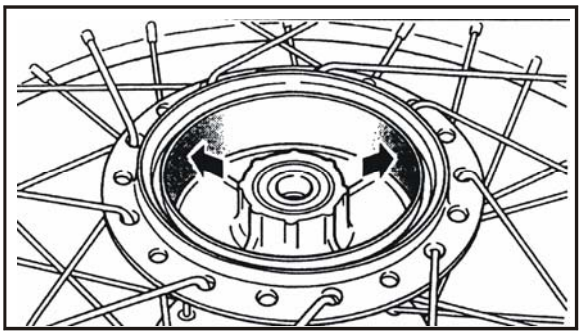
3.Measurement

- Inner diameter of brake drum◯a
  Out of specification→replace

Inner diameter of brake drum

Stardard value: 130mm

limit valve: 131mm

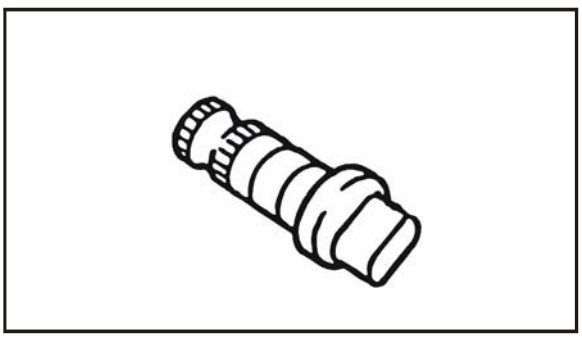


4. Inspection

- There is oil stain or scraping mark on the inner surface of brake drum→changeand repair
- Oil stain

  Wipe with a cloth dipped in the paint diluent or solvent.
- Scrape

  Polish slightly and evenly with a emery cloth



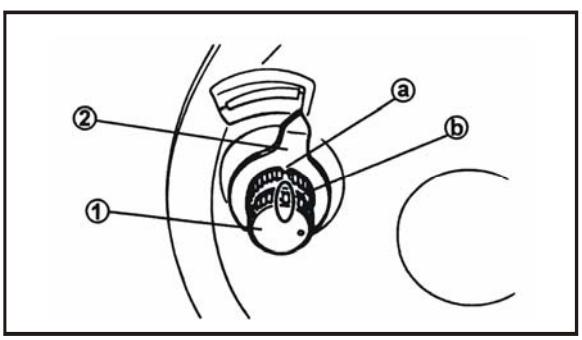
5. Inspection

- Cam axle

  Damaged→replace

⚠Warning

When installing the cam axle and the central shaft, apply a small amount of lubrication grease and clean off the surplus lubrication grease.



Assembly

1. Installation

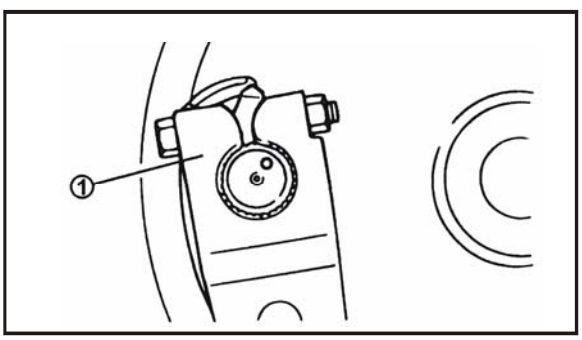
- Cam axle□
- Indicator □

********** **********

Procedures of installation □

- Let the convex part on the indicator ⓒa pass throughthe concave groove on the cam axle ⓔb and install it well.
- Align the indicating needle with wear indicator

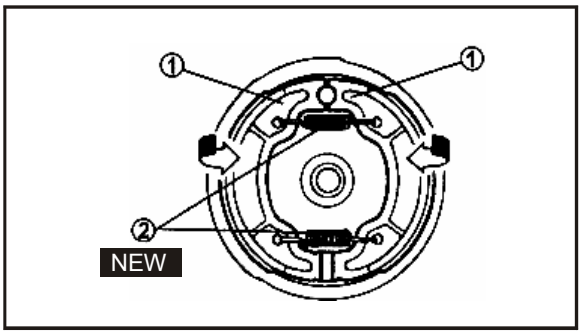
********** **********



2.Installtion

- Brake arm□

	Installing bolt : 1,0Kgf.m(10 N .m)

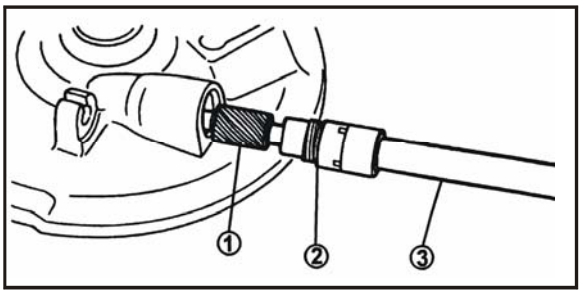


3. Installation

- Brake Pad□
- Spring□

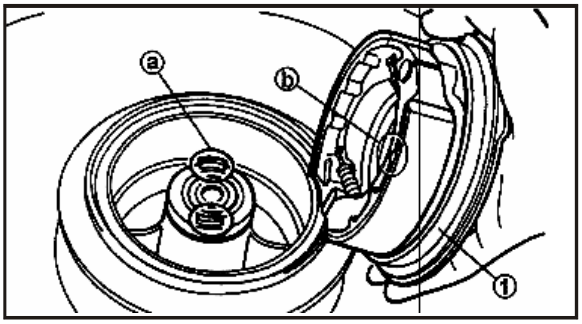
Note :

- When installing , never use the pliers to deform or damage the hook of spring.
- Never apply the ludrication grease onthe friction liner of brake pad.



4. Installation

- Driven gear of meer □
- Installing meter cable□
- Speedometer cable head □



5. Installation

- Brake assy□

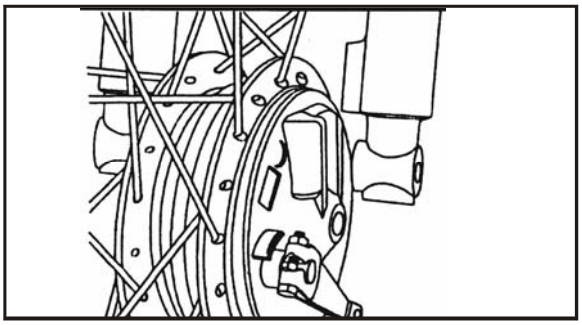
Note:

The convex part on the inner side of the gear assy should be engaged with various surfaces each other, the concex part of hub a should be jammed into the clutch b .

Installation of front wheel

1. Installation

- Front brake cable
- Meter cable
- Nut (front wheel axle)



2. Installation

- Front wheel

Note :

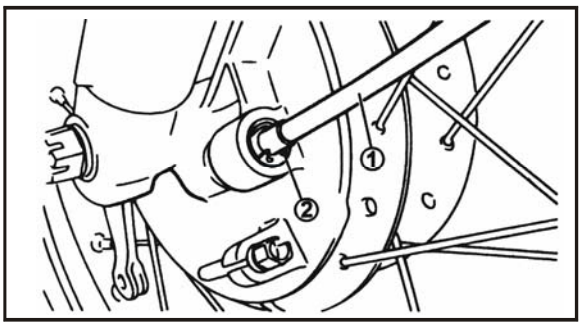
The convex seat on the front fork should be engaged with the locating slot of the brake padplate correctly.

3. Cable

- The action of brakepad

  If the action is not smooth→repair

	Nut torsgue: 3.5~5.6kgfm(35-56N.m)



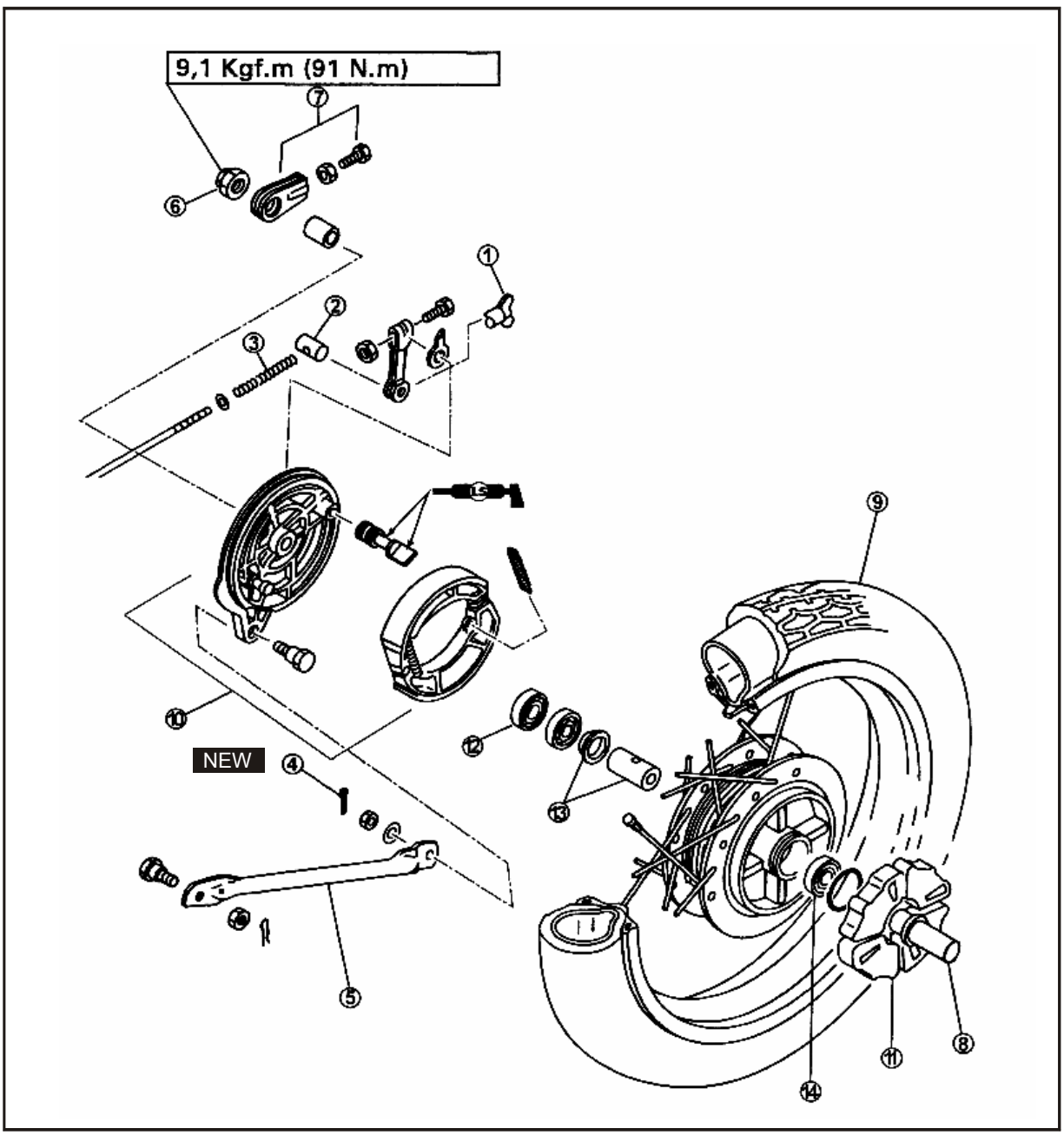
4.Installation

- Meter cable
- Clip

  When installing the meter cable, don t bend it

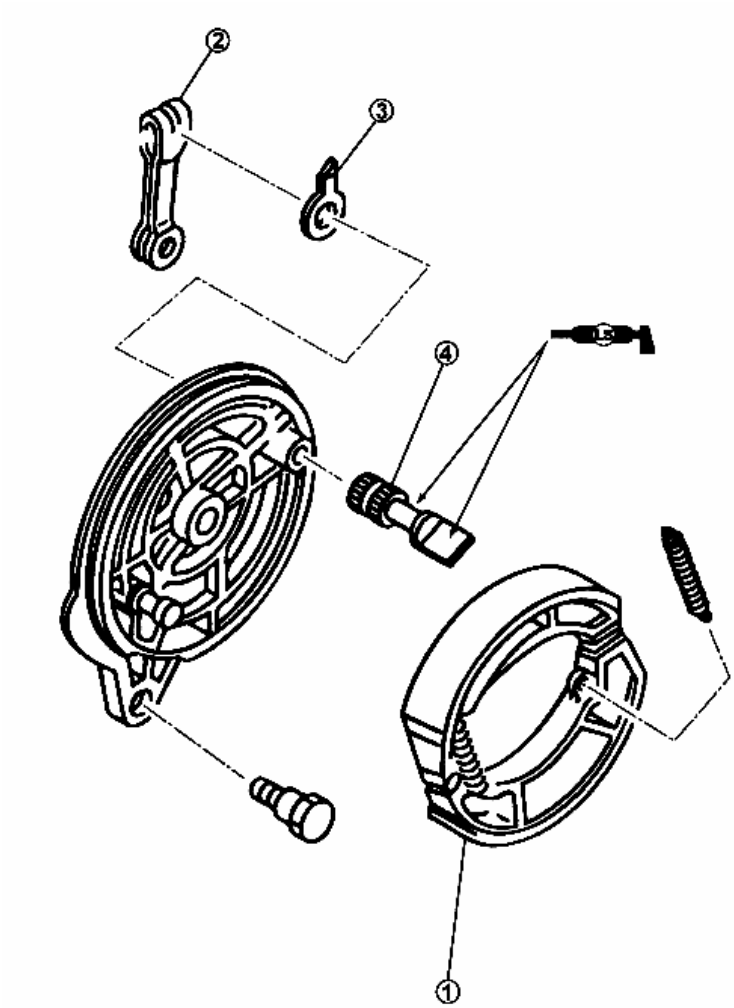
Rear wheel

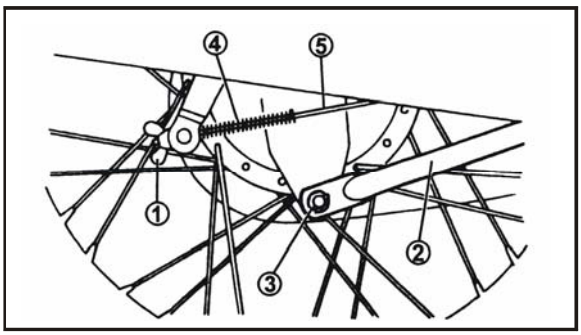
- ① Adjusting nut
- ② Pin
- ③ Spring
- ④ Split pin
- ⑤ Tension rod
- ⑥ Self-locking nut
- ⑦ Chain adjuster assy
- ⑧ Driven chain gear
- ⑨ Rear wheel
- ⑩ Rear brake assy
- ⑪ Shock absorber
- ⑫ Oil seal
- ⑬ Bushing
- ⑭ Bearing



Rear wheel

- Brake shoe
- Brake arm
- Indicator
- Cam axle

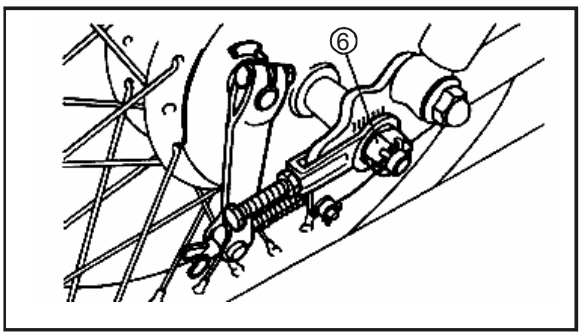




Rear wheel

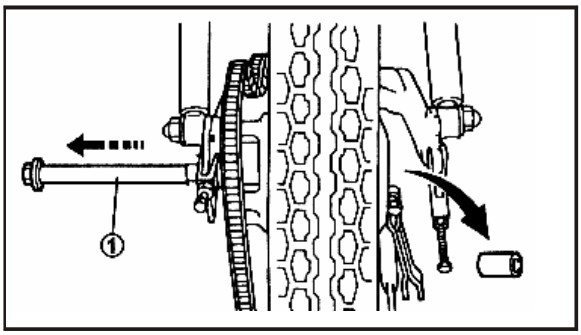
⚠Warning

Rest the motorcycle firmly so as to avoid it turn over.



2.Removal

- Adjusting nut□
- Tension rod□
- Nut□
- Spring□
- Brake pull rod□
- Rear wheel nut□

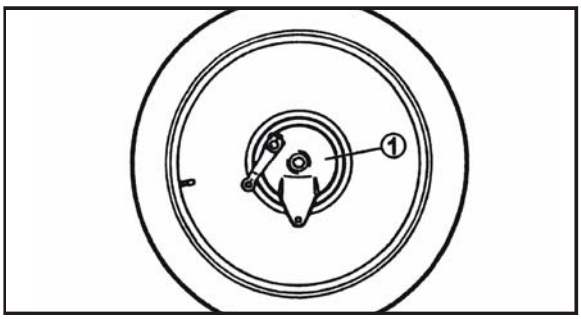


3.Removal

- Rear wheel axle
- bushing

Note:

When removing the rear wheel axle,the bushing will fall down. Be careful not to lose it.

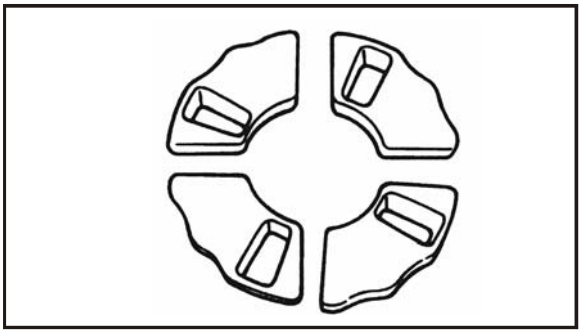


4.Removal

- Rear wheel
- Rear brake

Note:

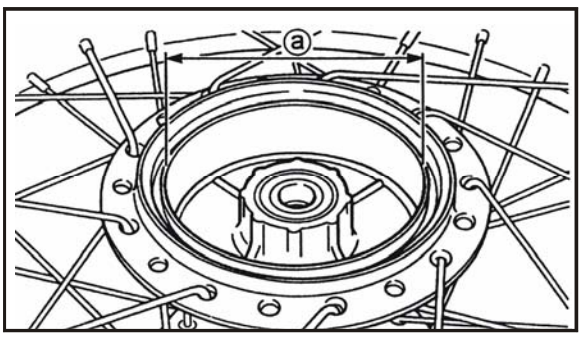
When removing the rear wheel axle,the clutch hub will fall down. Be careful of safety.



5. Removal

- Shock block

  If damaged,deformed→replace



Rear brake hub

1. Inspection

- Inner surface of brake drum

  Oil stain or scrape→repair

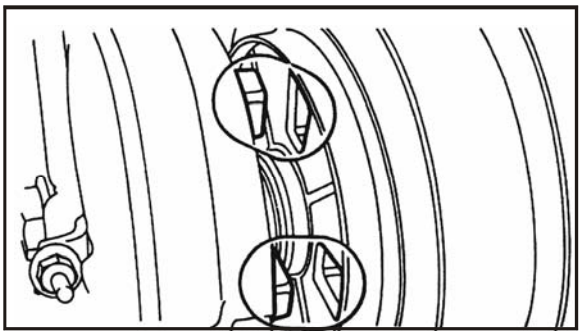
- Oil stain: Wipe a cloth dipped in the paint diluent or solvent.
- Scrape:Poslish slightly and evenly with a emery cloth.

Brake hub inner diameter
Standard value:130mm
Limit value:131mm

2. Measurement

- Brake hub inner diameter (a)

  Out of specification→ replace

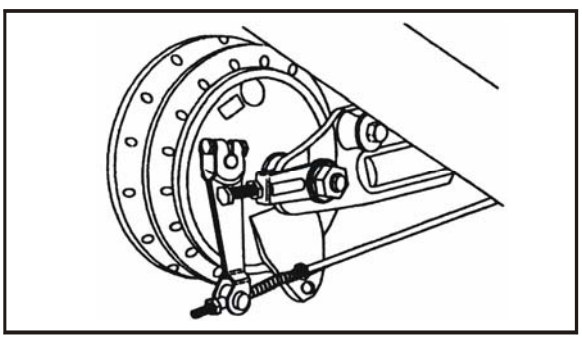


3.Installation

- Rear wheel

Note:

The convex part of clutch hub should be inserted into the groove of the shock block.



4. Installation

- Rear wheel axle

	Fastening rorque of rear wheel axle 9,1 Kgf.m(91 N.m)

Rear drive chain

□ Sprocket cover1

□Small sprocket(drive)

□Chain press plate

□Connector of chain

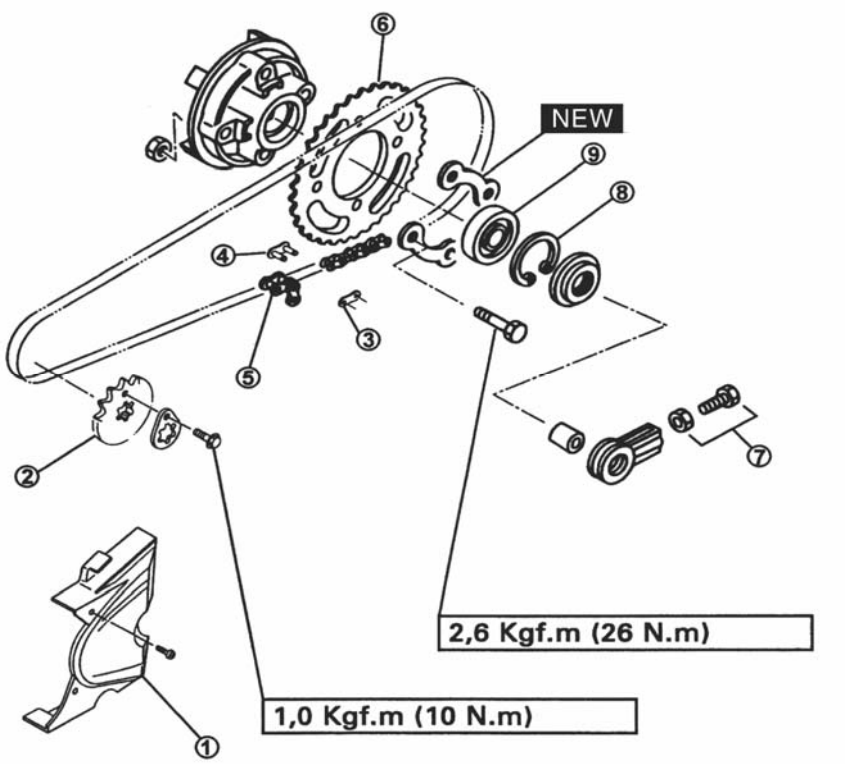
□Chain (drive chain)

□Big sprocket(driven)

□Adjuster assy

□Circlip

□Retaining press plate



Removal

1.Rest the motorcycle on the central stand.

Warning

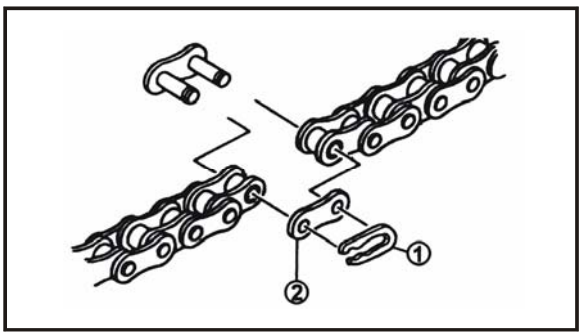
Rest the motorcycle firmly to avoid turnover.

2.Removal

- Sprocket cover

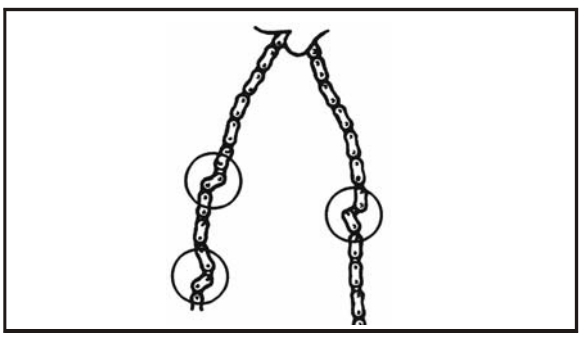
3.Removal

- Drive sprocket



4.Removal

- Chain joint clip
- Press plate of chain
- Chain
- Driven chain

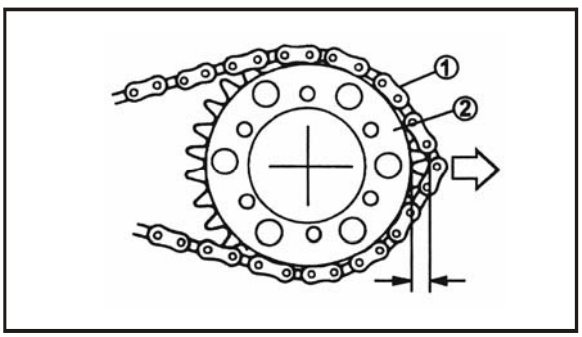


Inspection of drive chain

1.Inspection

- Drive chain jam

  If jammed→Lubricate after cleaning or replace

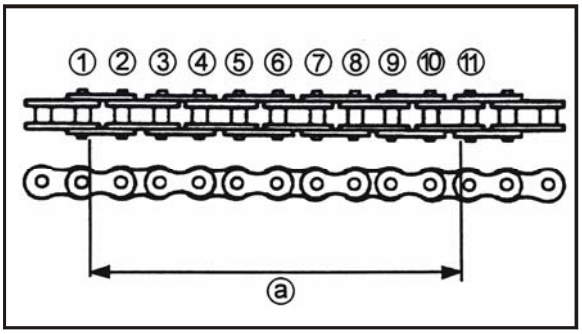


2.Inspection

- Drive chain
- Drive chain

  As shown on the fig,the clearance after extruding right cannot exceed1/2 gear,

  If out →replace.



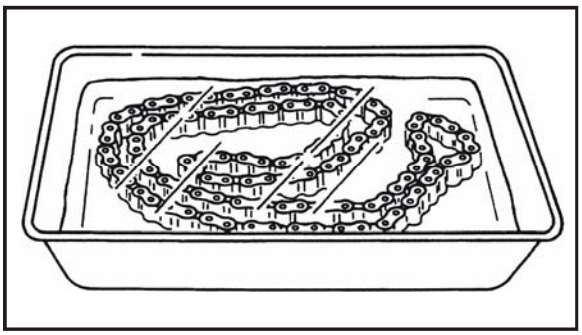
3.Measurement

- The length of 10 links ⓐ (drive chain)
  Out of specification→replace

	Length limit of 10 links 119.5mm

Note:

- Measure after pulling the chain with fingers
- As shown on the fig,measure the length of 10 links within the range from link roller□ to the inner side of the roller ⑪
- Measure the length of 10 links at diffrient parts for 2~3 times.

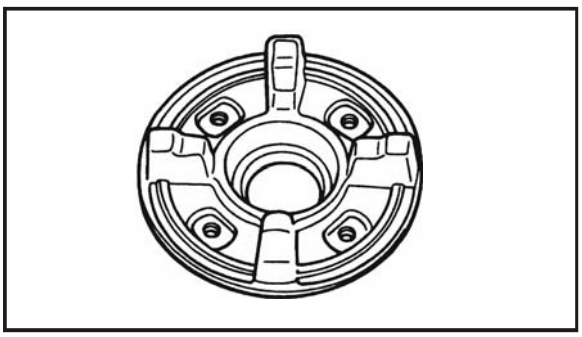


5.Cleaning

- Clean with neutral detergent.
- After cleaning apply a plenty of chain lubrication oil of SAE10 w-30w YAMAHA 4-stroke engine oil.

⚠Warning

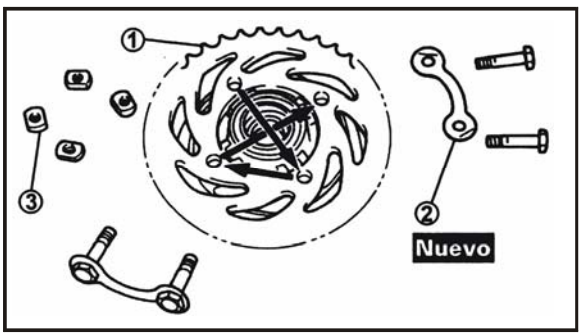
Never clean with the volatile matters such as steam, gasoline,solvent,etc.



Inspection of clutch hub

1.Inspection

- Clutch hub
  If worn,damaged,cracked→replace

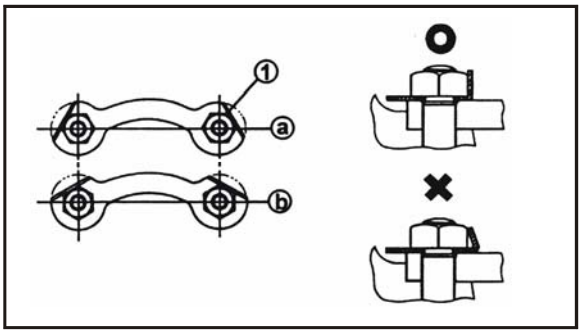


1.Installation

- Driven gear□
- Retaining press plate New □
- Nut□

	Nut torque 2.6K gf.m(26 N.m)

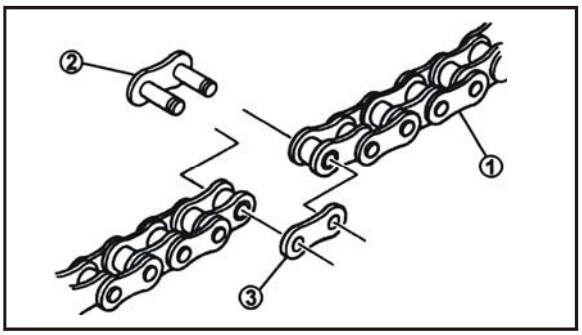
Note:
Lock orderly.



□1

2.Installation

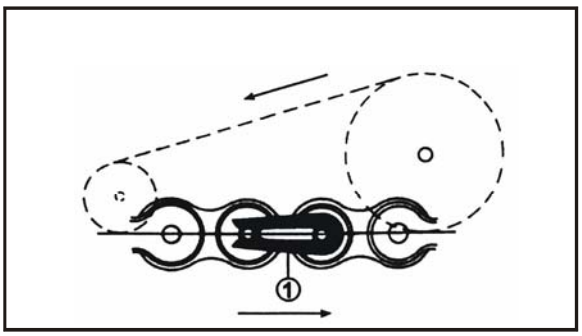
- Install as shown on the fig□
- Bend the jaw part of limit prers plate□ in a or b as shown on the left fig,after bend deformattion,stick the side of the nut firmly.



Installation of drive chain

1.Installation

- Drive chain□
- Chain tensioner□
- Chain press plate□



2.Installation

- Chain joint clip

Note:

As shown on the fig,pay attention to the installing direction of chain joint clip.

3.Adjustement

- The slackness of drive chain
  Refer to the section"Adjustment of drive chain,slackness"of chapter3.

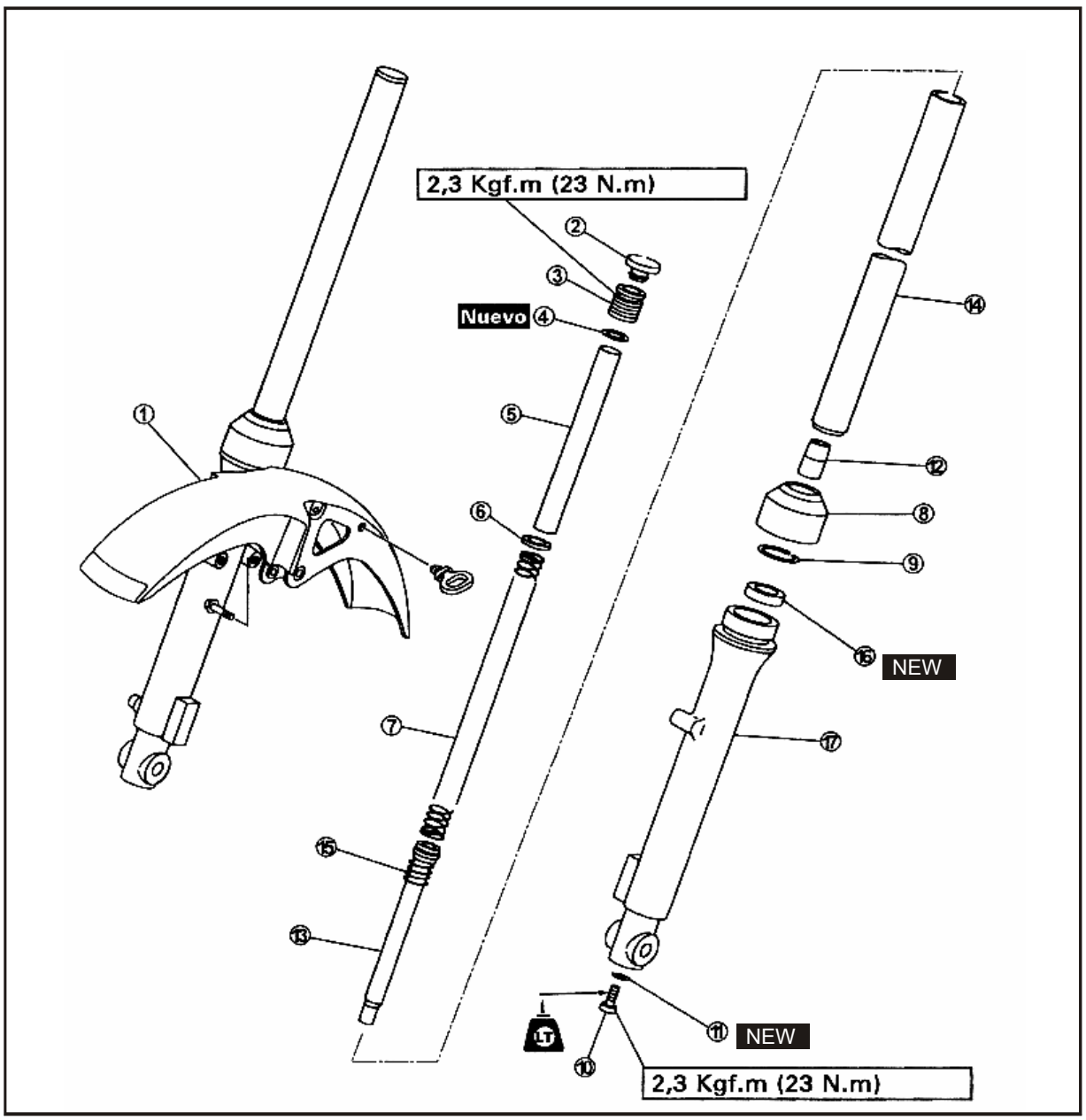
Note:

If the slackness of drive chain is too small,it will cause the engine and other main components to overload. The chain slackness should be kept within the specified limit.

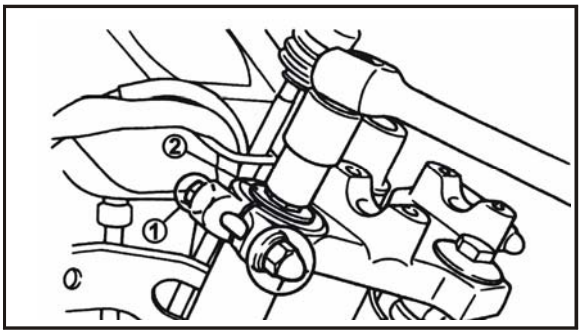
4.Installation

- Axle nut
- Bolt

□ Front fender
□ Plug
□ Bolt
□ O-ring
□ Spacer
□ Spring seat
□ Spring
□ Dust cover
□ Clip
□ Bolt
⑪ Washer
⑫ Plug rod of oil stocking
⑬ Damper rod
⑭ Inner pipe
⑮ Spring
⑯ Oil seal
⑰ Outer pipe



Take out the front fork



Warning

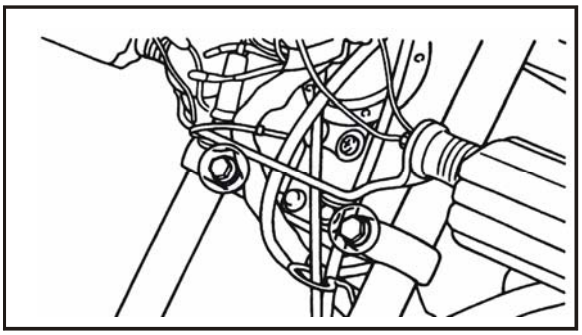
Rest the motorcycle firmly to avoid turnover.

1.Rest the motorcycle on the flat ground.

2.Place a proper bracket under the frame and the engine to surpport the front wheel.

3.Removal

- Front wheel
- Front fender

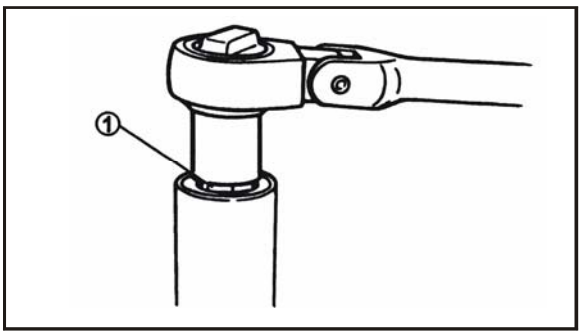


4.Loosen

- Loosen the bolt
- Cover bolt

Note:

When removing the front fork,remove the 2 bolts for fastening the front fork.

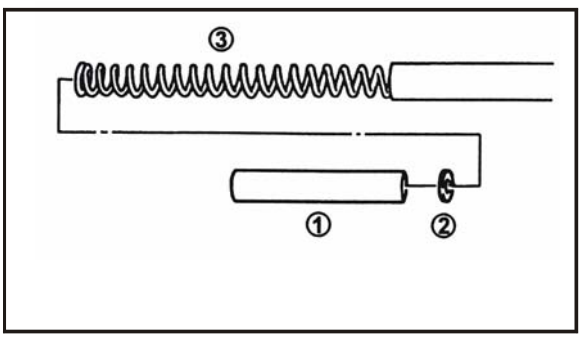


Removal of front fork

1.Removal

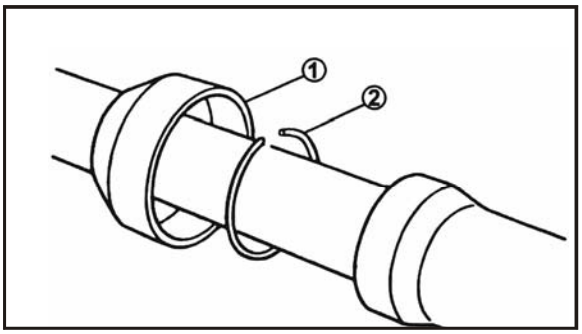
- Cover bolt(and O-ring)

2.Oil drain



3.Removal

- Spacer
- Spring seat
- Spring

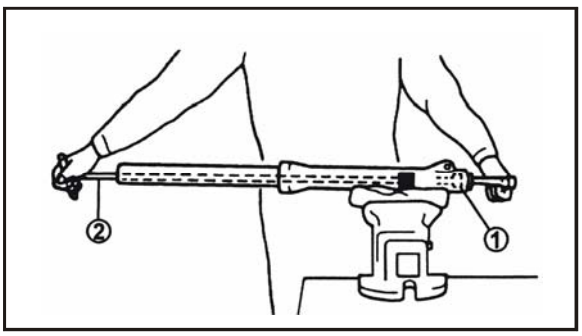


4.Removal

- Dust cover□
- Clip□

Note:

Be careful not to damage the surface of inner pipe.

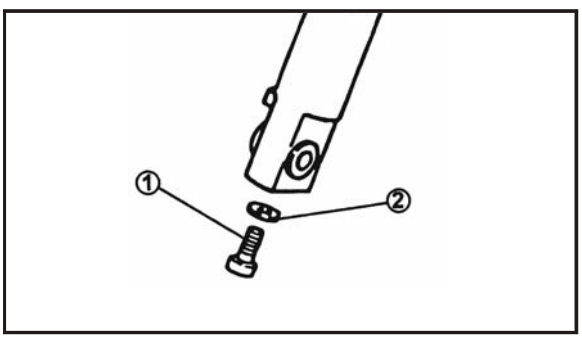


5.Removal

- Nut□

Grip the shock absorber rod loosen the bolt with T lever □ and shock absorber fixture.

	T flat handle 90890-01294



6.Removal

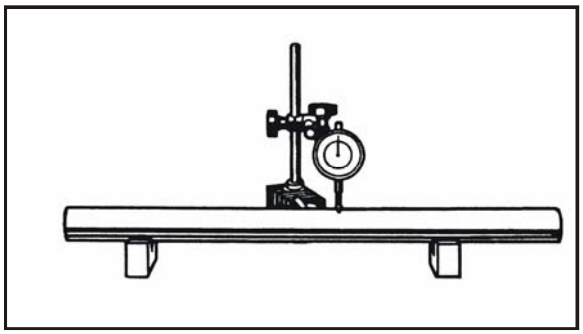
- Bolt□
- Washer□

7.Removal

- Oil seal

Note:

When removing the oil seal,be careful not to scrape the pipe wall of outer fork.



Inspection of front fork

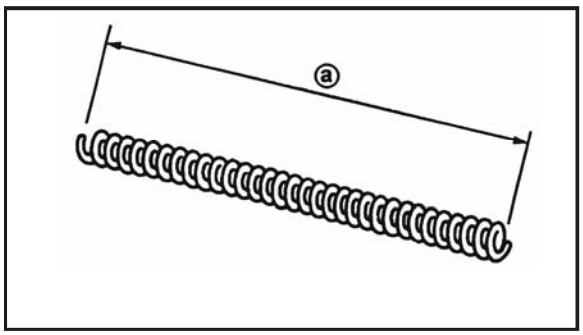
1.Inspection

- Bending of inner pipe

	Bending limit 0.2mm

Warning

Never attempt to straighten the bending inner piper, otherwise,the pipe will be damaged seriously.

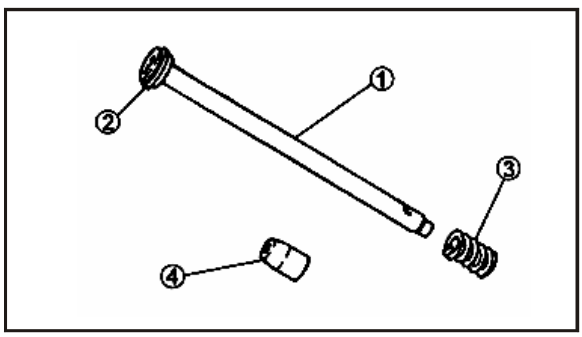


2.Measurement

- Free length of front fork spring a

	Free length of front fork spring 336.9mm Min. free play 330mm

Out of specification→ replace



3.Inspection

- Damper rod□
- Shock aborbor piston□
  Scraped,damaged,bent→replace
- Spring□
- Plug rod of oil stocking□
  Worn,damaegd→replace
  Pollutant→blow off all oil holes with compressed air.

Note:

Never attempt to straighten the bending damper rod, otherwise the damper rod will be damaged seriously.

Assembling of front fork

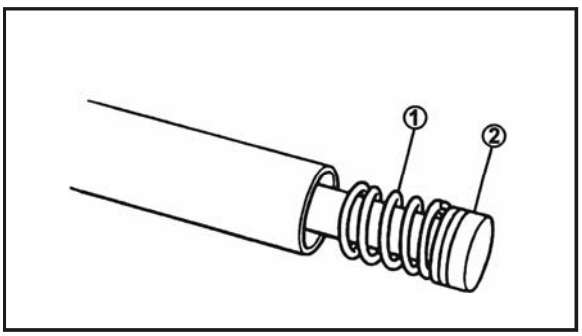
Conduct according to the reverse procedures of "disassembling",pay attention to the following items.

Note:

When reassembling the front fork ,use the following new components.

- Oil seal
- Dust cover

Before reassembling,make sure that all components are cleaning.



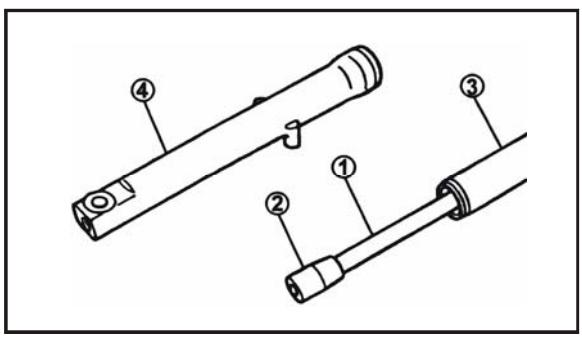
1.Installation

- Spring□
- Shock absorber piston□

2.Lubrication

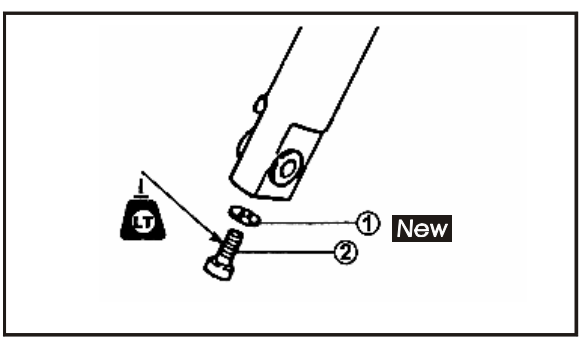
- Inner pipe(Outer surface)

	Shock absorbor oil 10W or equal.



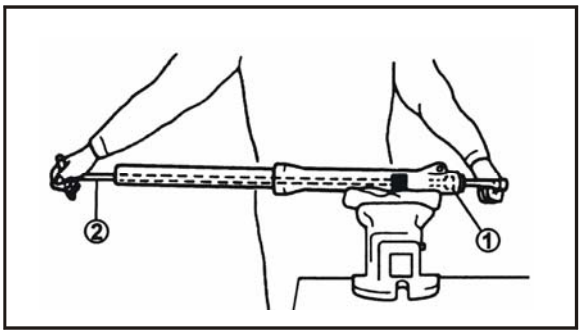
3.Installation

- Shock absorber rod□
- Plug rod of oil stocking□
- Inner pipe□
- Outer pipe□



4.Installation

- Washer□ New
- Bolt(shock absorber rod)□



5.Fastening

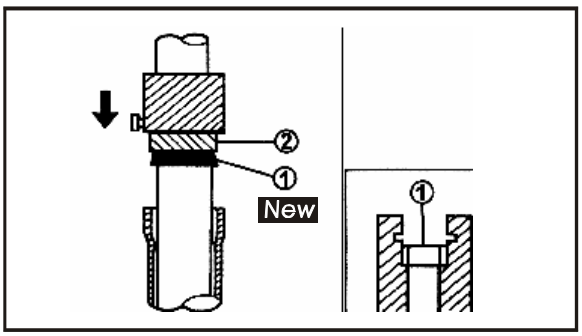
Bolt(damper rod)□

	Bolt□ 2.3Kgf.m(23N.m)

Note:

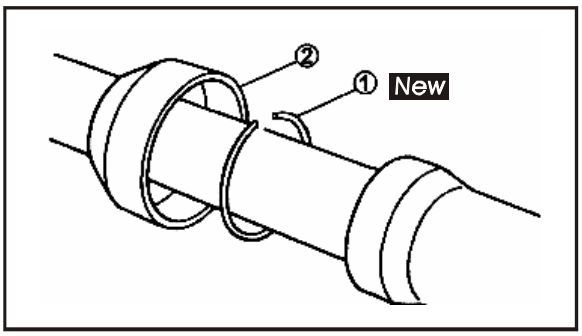
Fasten the bolt of damper rod □with T handle wrench□ and damper rod fixture.

	"T"tool□90890-01326 Shock absorber rod fixture:90890-01294



6.Installation

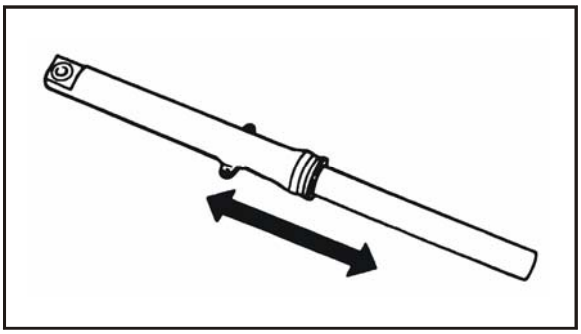
Oil seal□ New



7.Installation

Clip□ New

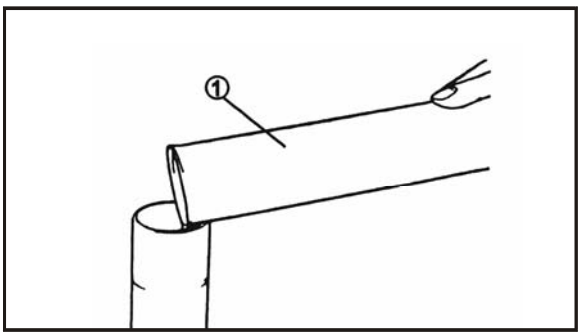
Outer pipe□



8.Inspection

- Stretch of inner pipe

  If the stretch is not smooth Inspect again after disasembling.

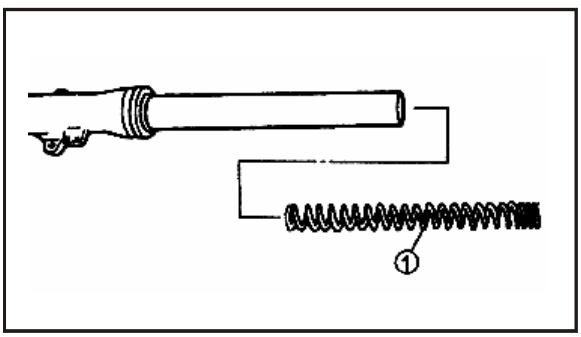


9.Oil filling

- Measuring glass

	Oil amount:156mm 10W shock absorber oil

10.After filling oil,move the front fork up and down slowly so as to let the oil spread into the pipe.

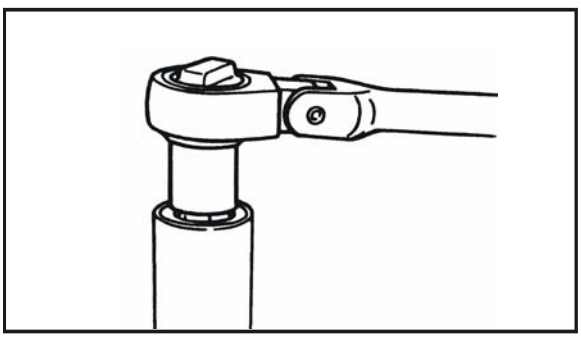


11.Installation

- Spring

Note:

When installing,let the end of front fork spring with small play to toward the cover bolt side.Install the O-ring on the cover bolt.

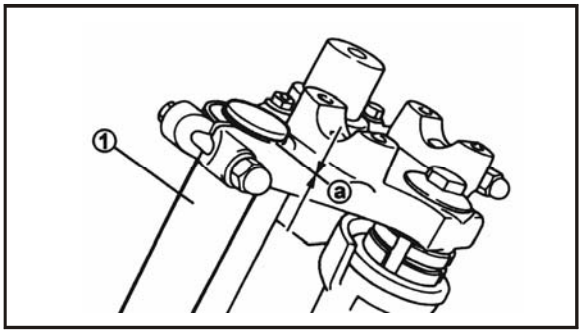


12.Installation

- Cover bolt
- O-ring

Note:

Be careful not to damage the surface of inner pipe.



Installation of front fork

Conduct according to the reverse procedures of "removal

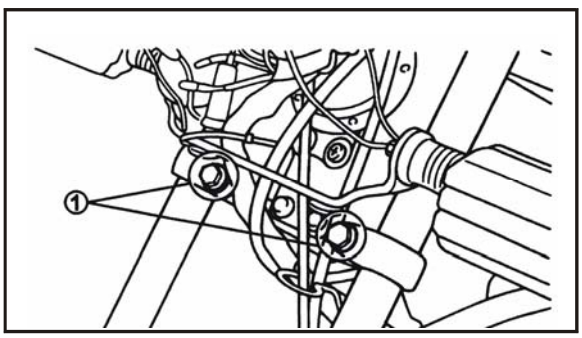
1.Installation

- Front fork□

  Tighten up the fixing bolt tempotarily.

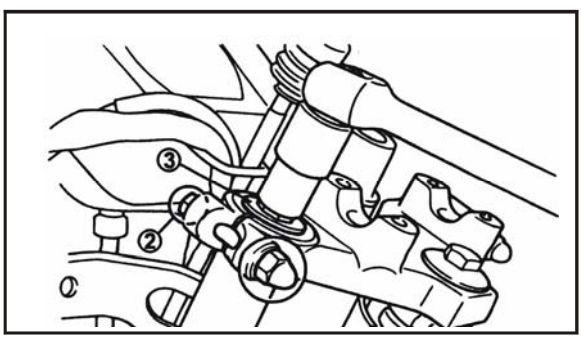
Note:

When installing , align the inner pipe end with bolt head end.



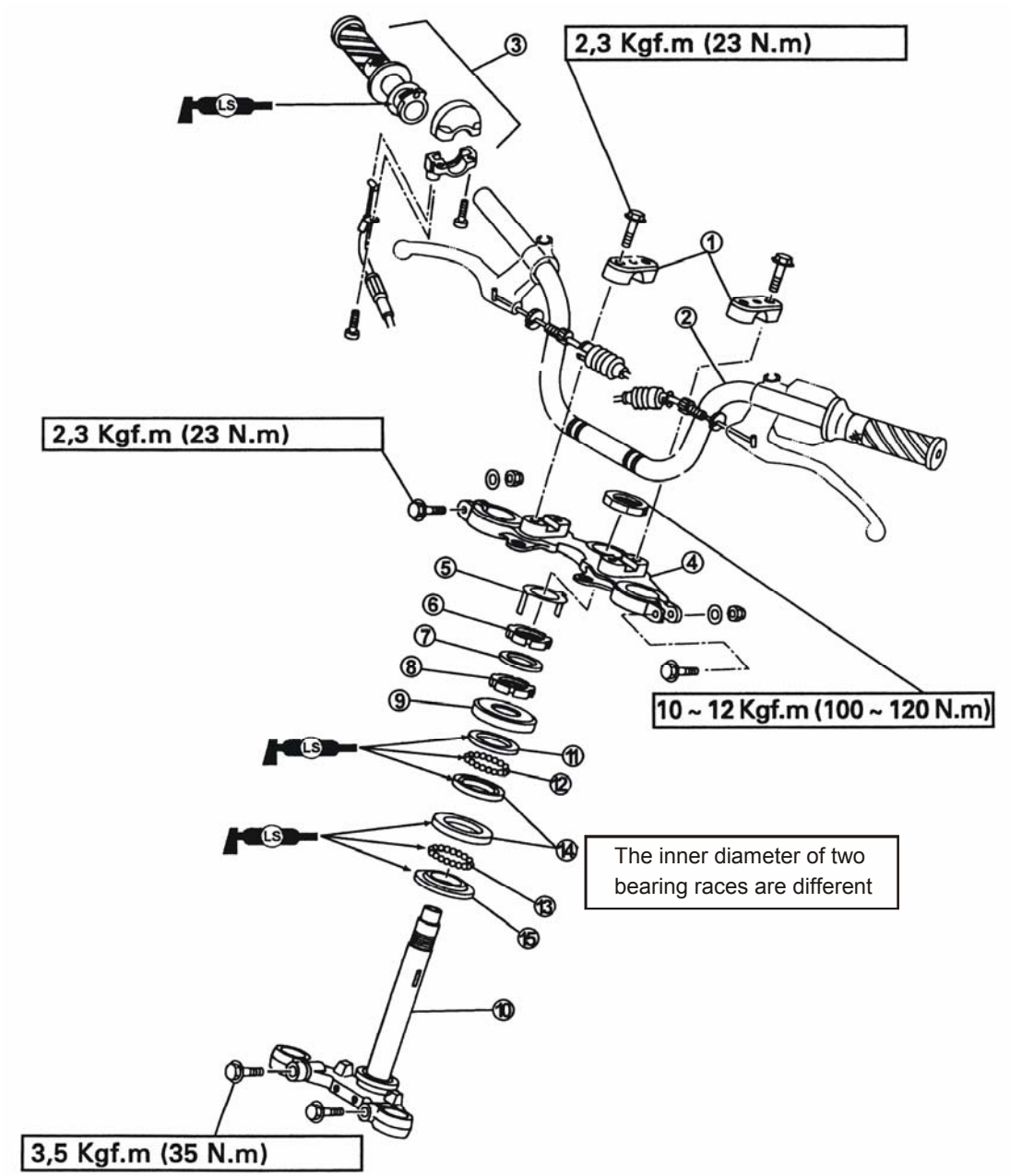
2.Fastening

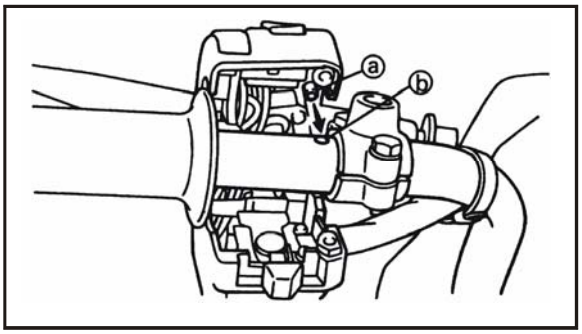
- Bolt□
- Bolt□
- Cover bolt□



Torque of position□:2.8Kgf.m(28N.m)
Torque of pisition□:Kgf.m(23N.m)
Cover bolt torque:2.3Kgf.m(23N.m)

□Handle bar holder
□Handle bar
□Right handle bar assy
□Handle bar seat
□Limit clip
□Ring nut
□Ring rubber pad
□Ring nut
□Dust cover
□Steering axle
⑪ Bearing race(upper)
⑫Roller holding bracket(upper)
⑬Roller holding bracket(lower)
⑭ Bearing race2(middle)
⑮ Bearing race(Lower)

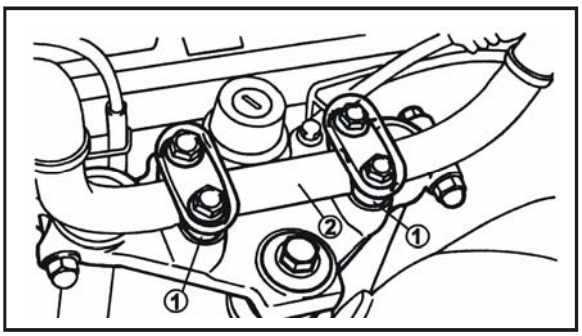




Handle bar

1.Removal

- Remove left and right lever switches

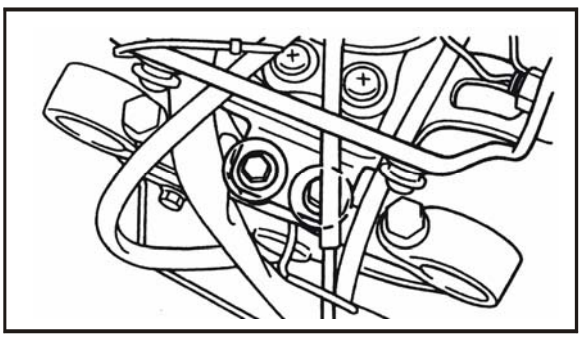


2.Removal

- Handle bar holder□
- Handle bar□
- Handle bar seat

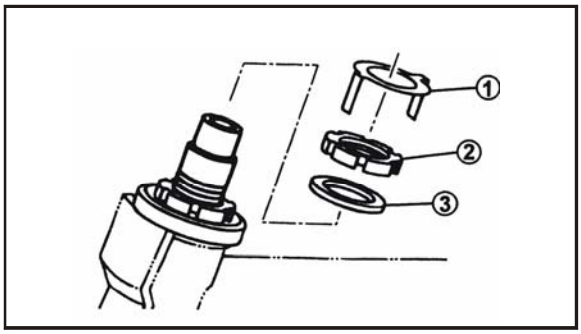
3.Removal

- Front wheel

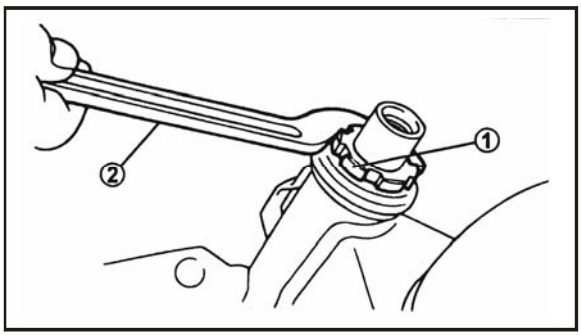


4.Removal

- Front fork



5.Removal
- Limit clip□
- Ring nut□
- Ring rubber pad□

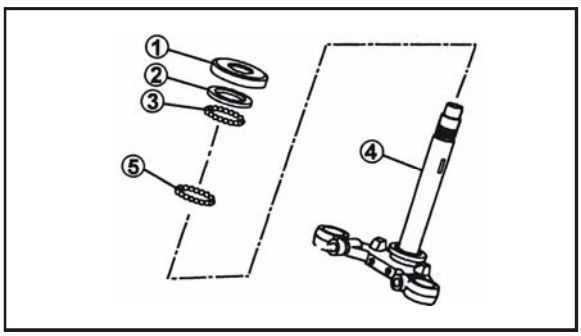


6.Removal
- Ring nut□
- Remove with steering nut wrench□

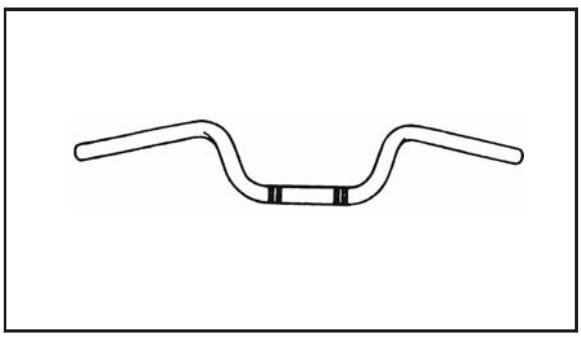
	Steering nut wrench□ 90890-01403

⚠Warning

Remove only with wrench.



7.Removal
- Bearing race 2□
- Roller race 2□
- Roller holding bracket(upper)□
- Steering axle□
- Roller holding bracket(Lower)□



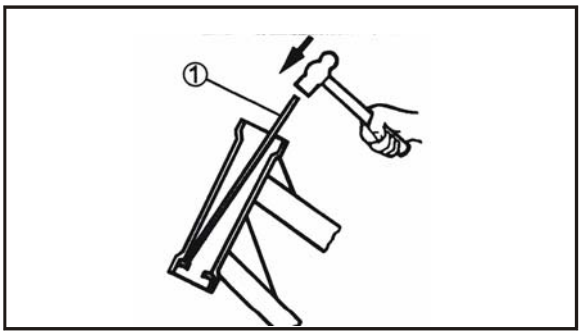
Inspection of handle bar

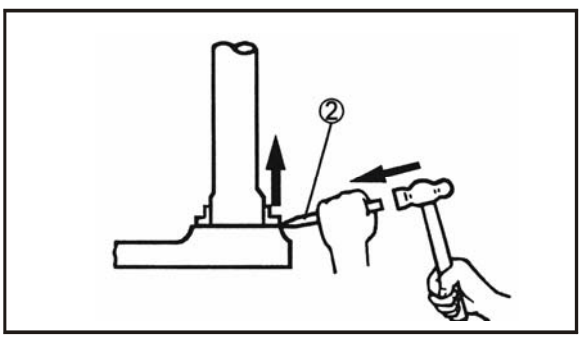
1.Inspection
- Handle bar

  If bent,cracked,damaged→replace

⚠Warning

Do not attempt to straighten the bending handle bar, otherwise,it will decrease the operation function of the handle bar,causing danger.





Inspection of front steering axle

1.Clean the roller holding bracket and bearing race.

2.Inspection

- Roller holding bracket
- Bearing race

  Worn,damaged→replace

********** **********

Procedres for replacement:

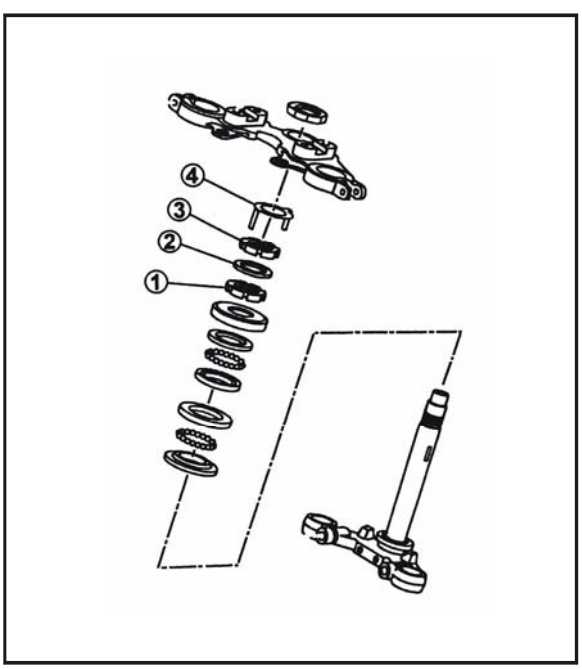
- As shown on the fig,remove the bearing race with a long rod□ and hammer,take it out from the cencave groove of fork pipe of steering joint.
- As shown on the fig,remove the bearing race of steering rod with plain chisel and hammer.
- Install the new dust seal parts, roller holding bracket and bearing race.

****

Note:

- The roller holding bracket,bearing race and dust seal parts are always replaced as a complete set.
- If the roller holding bracket and bearing race are installed at a slant,the frame will be worn, so install them in horizontal condition.

  Never beat the roller and rod surface.



Installation of steering axle

Conduct installation according to the reverse procedures of "Removal".

1.Oil filling

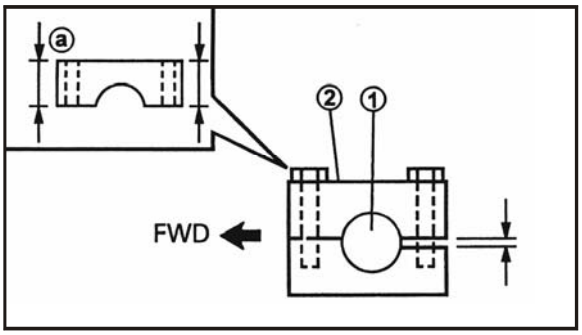
- Roller holding bracket(upper and lower)
- Bearing race

	Lithium base lubrication grease

2.Installation

- Ring nut (lower)
- Ring rubber pad
- Ring nut (upper)
- Limit clip

  Conduct adjustment after installing, the adjustment method is conducted as stated in chapter .



Installation of the handle bar

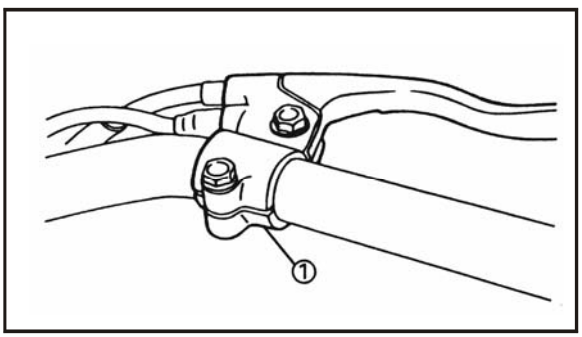
1.Install

- Handle bar
- Handle bar clamp

	Coupling torque 2.3Kgf.m(23N.m)

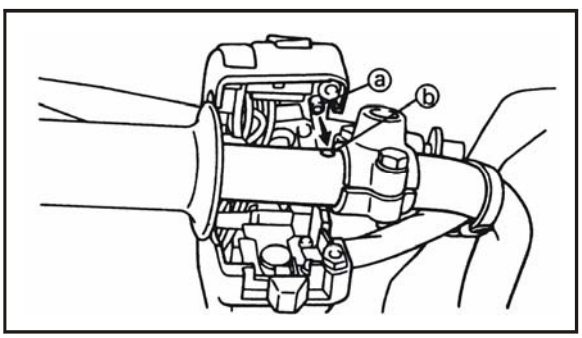
Note:

- The bolt ahead must be fastened first.
- When assembling the steering, the projection of handle bar clamp is in front of installation direction.



2.Install:

- Front brake lever
- Clutch lever

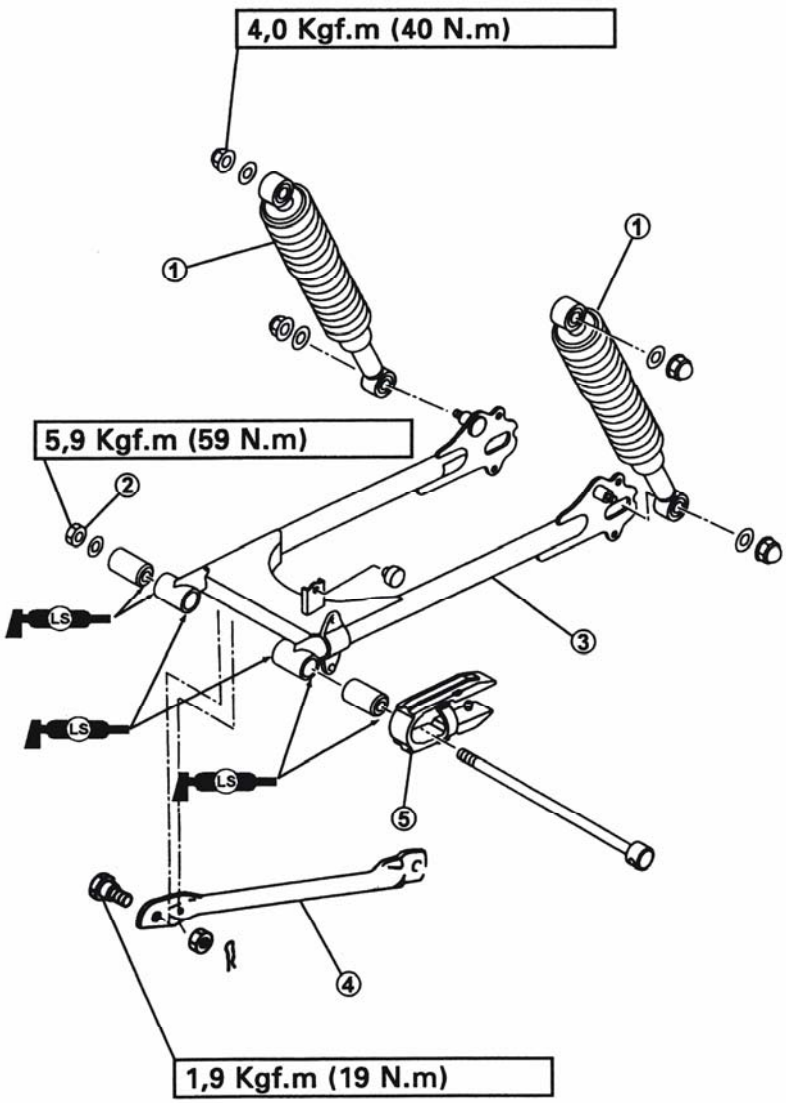


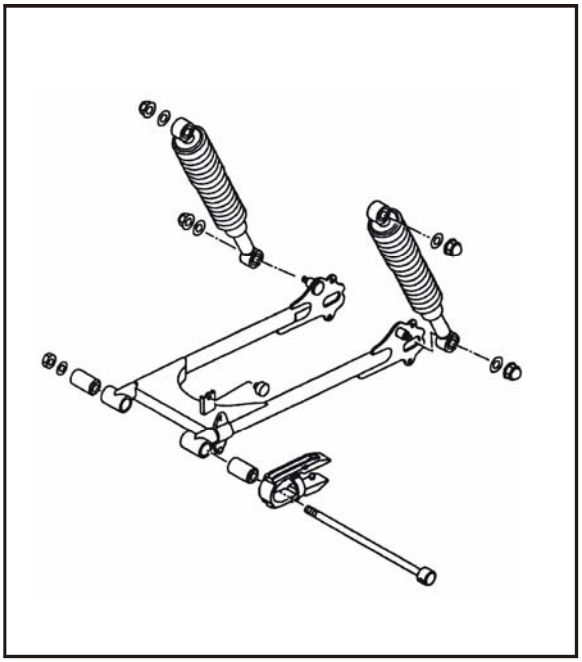
3.Install

- Lever switch

When installing,locating pin a of the lever switch should be inserted into the locating hole b of the handle bar.

- Rear shock absorber
- Nut
- Rear rocker arm
- Connecting rod
- Chain shield





Removal

1.Rear shock absorber

⚠Warning

The motorcycle should be supported firmly to avoid turning.

2.Remove

- Left-right rear shock absorber

3.Remove

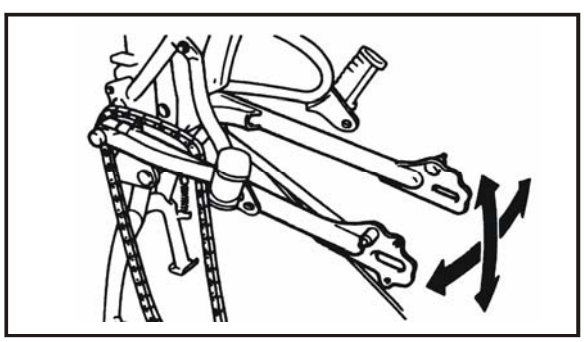
- Rear wheel

4.Remove

- Chain

5.Remove

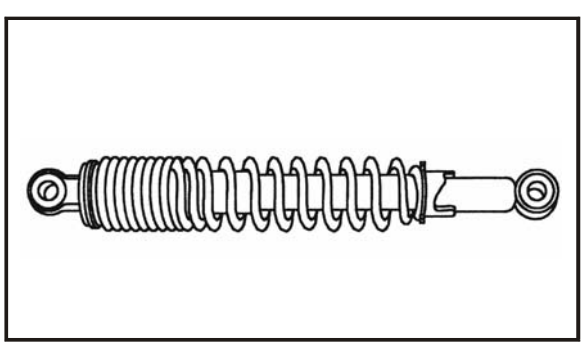
- Nut
- Connecting rod
- Chain shield
- Rear rocker arm



Inspection

1.Check

- Slackeness of rocker arm
  If it is loose→screw up the axle nut or replace bush
- Vertical movement of rocker arm
  If it is unflexible□bend and there is rough part→ replace the bush

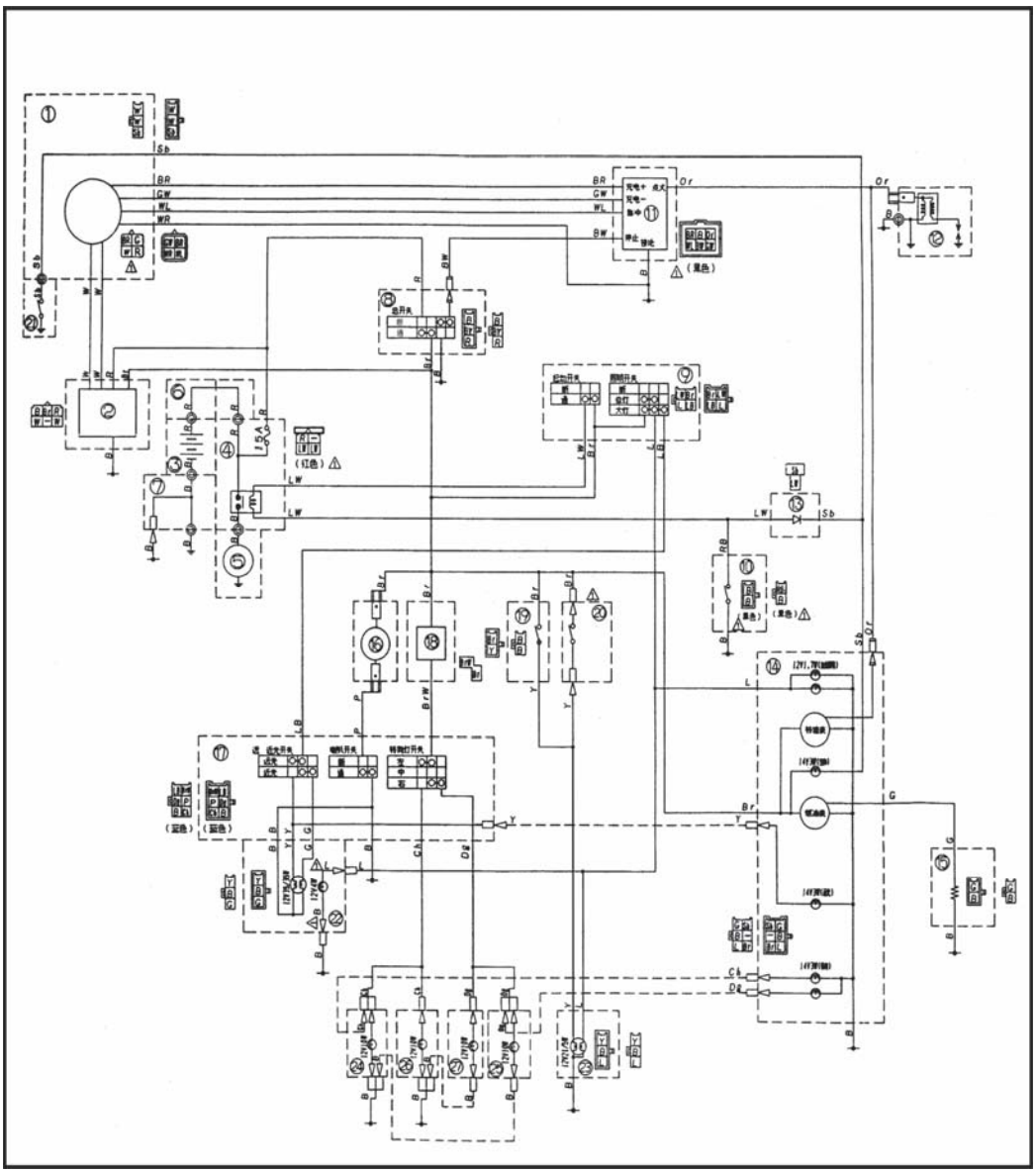


2.Check

- Rear shock absorber
  If it is leak,deformation→replace it

Chapter 7 Circuit

Circuit Drawing



- Magneto
- Rectified adjuster
- Battery
- Starting relay
- Starting motor
- Positive wire
- Negative wire
- Main switch
- Right lever switch
- Clutch switch

⑪ CDI unit assy
⑫ Ignition coil
⑬ Diode
⑭ Instrument
⑮ Fuel signal sender
⑯ Horn
⑰ Left lever switch
⑱ Flash relay
⑲ Front brake switch
⑳ Rear brake switch
㉑ Neutral switch
㉒ Headlamp
㉓ Tail lamp
㉔ Front left turning lamp
㉕ Front right turning lamp
㉖ Left-right turning lamp
㉗ Right-left turning lamp

B	Black	B/W	Black/White
Br	Brown	B/R	Black/Red
Ru	Russet	Br/W	Brown/White
Dg	Deep green	G/W	Green/White
G	Green	G/Y	Green/Yellow
L	Blue	W/L	White/Blue
Or	Orange	W/R	White/Red
Sb	Sky blue	B/Y	Black/Yellow
P	Pink	L/W	Blue/White
R	Red	L/B	Blue/Black
Y	Yellow	R/W	Red/White
W	White		

Electric components

1.Battery

2.Rear brake switch

3.Starting relay

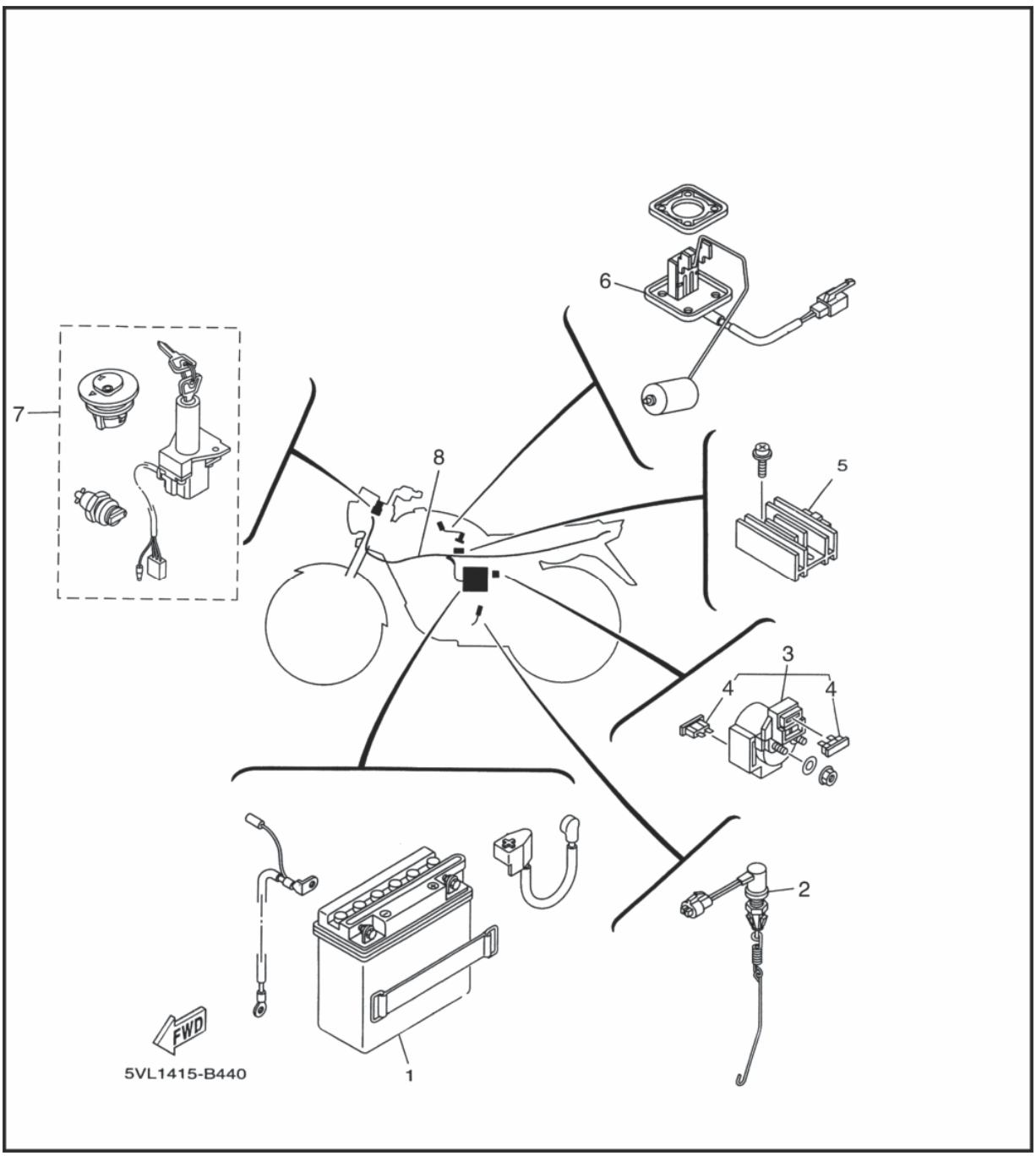
4.Fuse plate

5.Rectifying adjuster

6.Fuel sensor

7.Three keys assy

8.Main cable



Electric components

1.Ignition coil assy

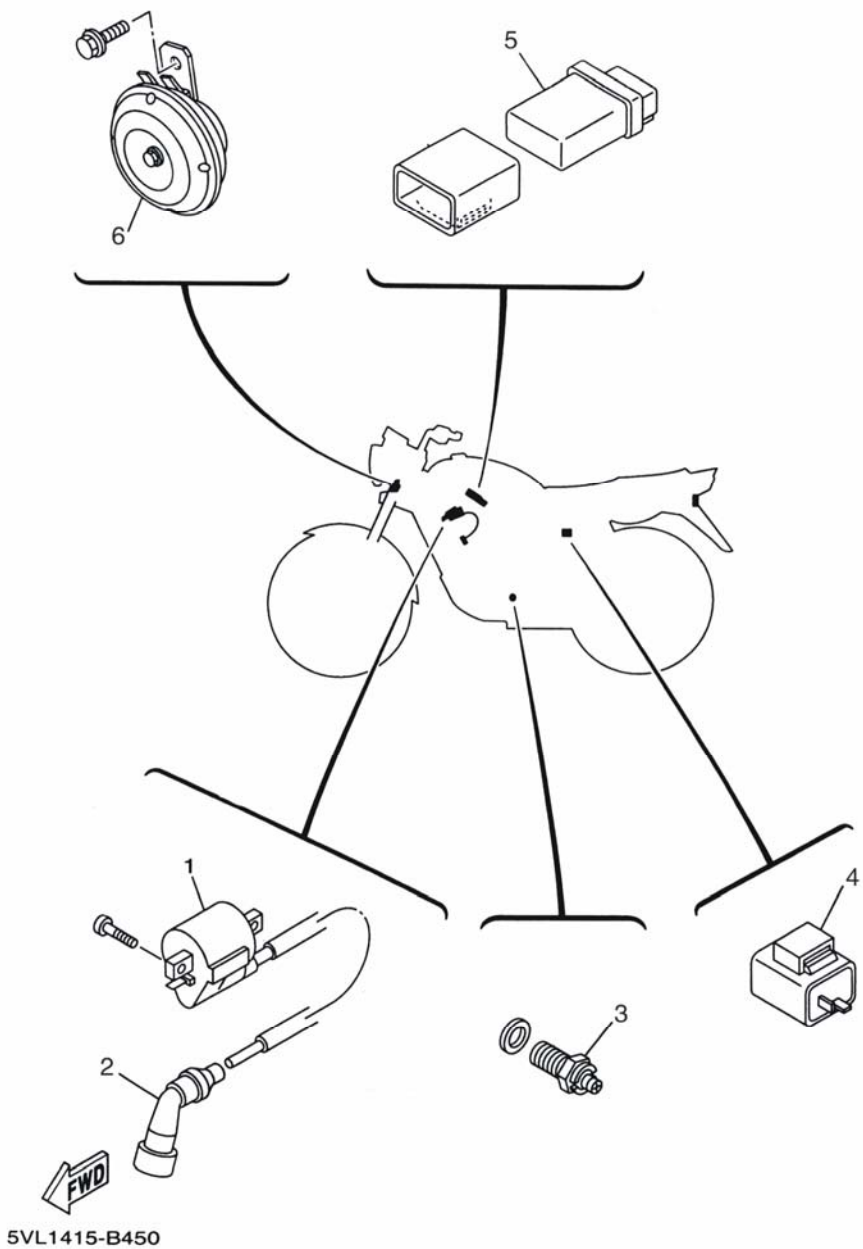
2.Spark plug cap assy

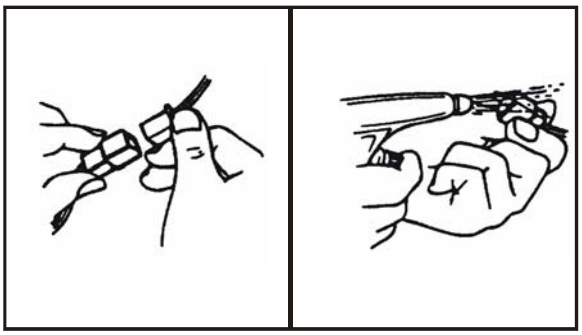
3.Neutral switch assy

4.Flash relay assy

5.CDI unit

6.Horn





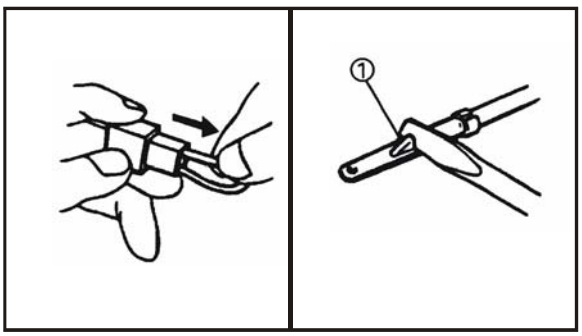
Inspection of socket connector

The dirt,rust and moisture on the socket connector should be removed.

1.Remove

- Socket connector

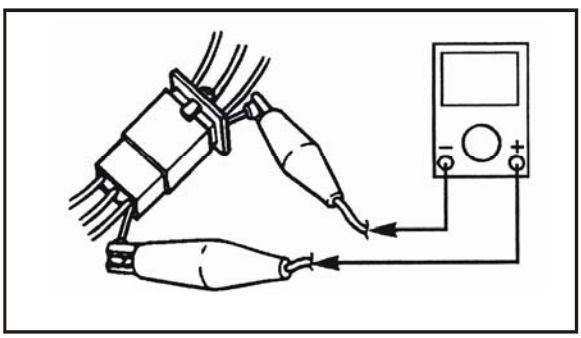
2.Dry every connector with air.



3.Evey socket connector should be connected and discharged for 2/3 times

4.Check if the wire is come off with hand

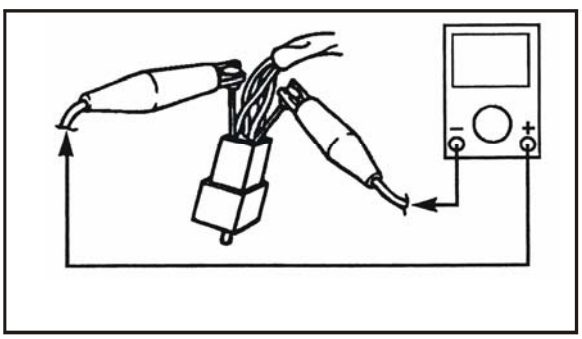
5.If the binding post is pulled out by hand,bend he pin and insert the binding post into the socket connector again.



6.Connect

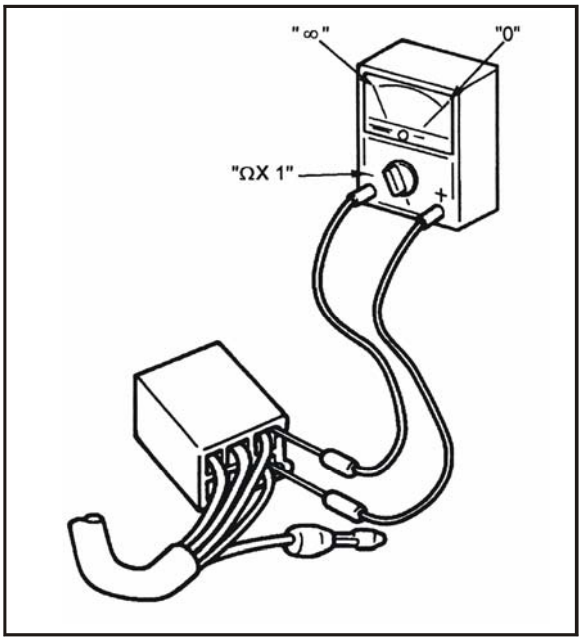
- Socket connector

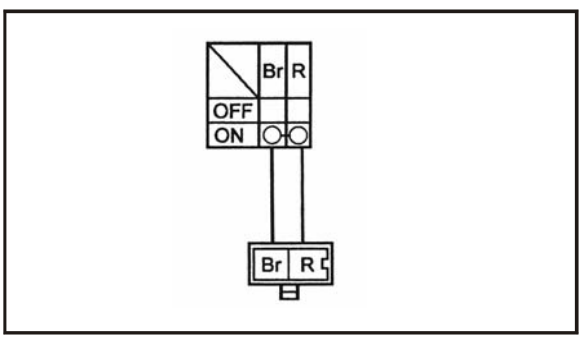
7.Check if the circuit is conducted with multitester



Note:

- If the non-conduction of circuit is found,clear every binding post.
- When checking the bale of wire,the procedure of inspection must be done according to above 1/7 steps .
- When replacing the CDI ,every socket connecter mustbe checked
- The inspection should be done by inserting the multitester to the socket connector seefigure.





Inspection of the switch

Inspection method of the switch

Check the conduction of terminals with multitester. If any poor condition is found, replace the switch immediately.

	Multitesler□ 90890-03112

Note:

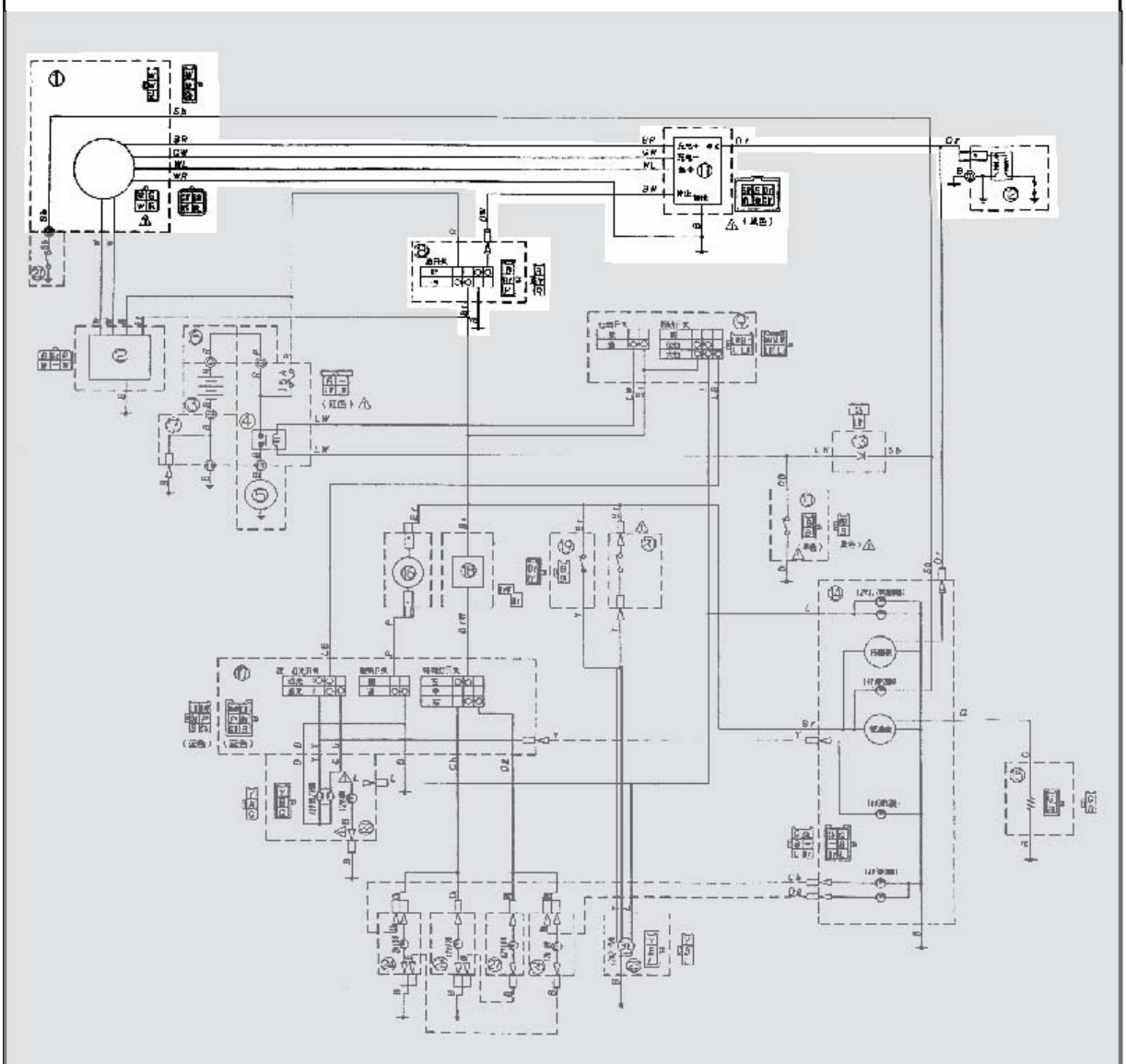
- Start the switch several times to cheak.
- Before checking,turn the multitester to “O” .
- When checking, the used voltage gauge should be set to proper position for check. The conduction inspection of every switch should be done by Ω×1.

Every switch terminal in the manual

Inner connecting terminal abbreviated drawing of switch (such as: main switch, handlebar switch, brake switch and lighting switch etc.), see left figure, often appear in this manual. The switch position is recorded in the left column of terminal connection table,which the wire color connecting terminal is written down at the upper column.

“O-O”means the conduction between the terminals is formed, that is the sealing conduction circuit of every switch is formed on it's position,conduction is formed at “ON”position which is between the“Brown” terminal and the“Red”one.

Circuit of ignition system



□Maganeto
⑪CDI unit
⑫Ignition coil/spark plug
⑧ Main switch

Exclusion of trouble shooting

Ignition system failure
(No spark or discontinuous spark)

Inspection procedure
1. Spark plug
2. Checking spark
3. Resistance of the spark plug cap
4. Ignition coil
5. Resistance of pulse coil
6. Resistance of spark charging coil
7. Main switch
8. Circuit terminal(loop of ignition system)

Remark

Before excluding the troubleshooling,the following parts □side cover □cushion □fuel tank should be removed

The following specific tool should be used before excluding.

	Ignition tester 90890-06754
	Min multitester 90890-03112

1.Spark plug

Check the spark plug condition.
Check the spark plug type.
Check the spark plug clearance.
Refer to the 3 chapter"Inspection of the spark plug".

Spark plug type□ CR6HSA

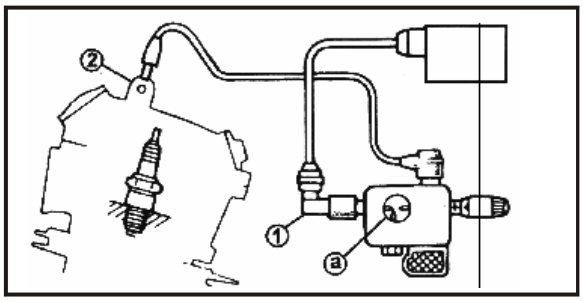
Spark plug clearance□0.6~0.7mm

Abnormal → Correct and replace

Normal ↓

2.Inspection of the spark

Spark plug cap□→
High-pressure coil voltage gauge
Voltage gauge wire of high-pressure coil→
Spark plug□



Turn the main switch to "ON"for checking if the spark gets to the normal value above.
When pressing the starting switch,check if the spark a gets to normal value above.

Min.spark clearance of spark plug: 6mm

The spark gets to normal value above → Ignition system normal

No spark ↓

3.Resistance of spark plug cap

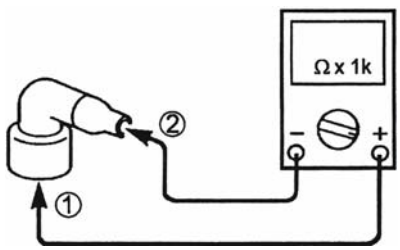
Remove the spark plug cap
Connect the multitester(test frequency×1K)
to spark plug cap

Remark

Don't pull down the spark plug from the high-pressure wire.
Turning in counter clockwise when removing.
Turning in clockwise when installing.
When assembling the spark plug cap,check the high-pressure wire first.
Cut off the front end of high-pressure wire about 5mm before installing.

	Resistance of spark plug cap 5KΩ ± 20%(20°C)

⊖ lead wire of voltage gauge→spark plug side
⊕ lead wire of voltage gauge→high-pressure wire side



out of specification

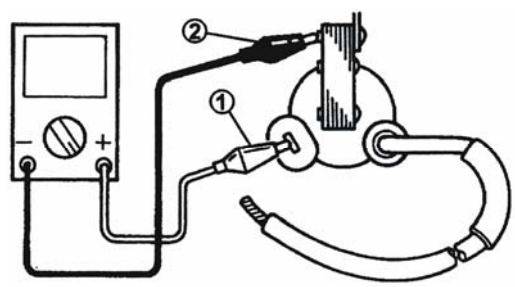
The spark plug is failure,replace it

4.Resistance of primary coil of ignition coil

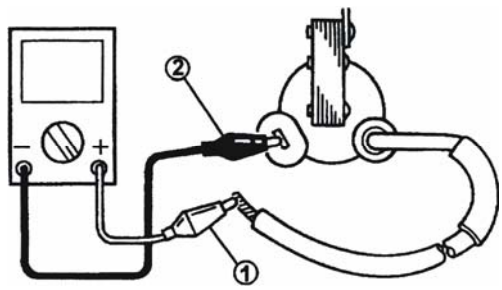
Remove the high-pressure coil (ignition coil)
Connect the multitester(test frequencyΩ×1)
to the terminal of ignition coil.

	Resistance value of ignition coil(primary) 0.3Ω±10%(20°C)

⊕ Lead wire of voltage gauge→orange terminal
⊖ lead wire of voltage gauge→ground wire



⊕ lead wire of voltage gauge→High-pressure wire
⊖ lead wire of voltage gauge→Orange terminal



5.Resistance of secondary coil of ignition coil

Connect multitester(test frequency×1k) to terminal of high-pressure coil.

Resistance value of ignition coil
3.16Ω ± 10%(20 C)

Abnormal

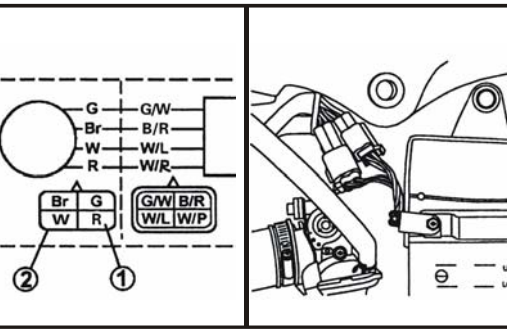
The resistance of two coils meets the normal value

The ignition coil is failure,replace it

6.Resistance of pulse coil

- Divide the adapter of the pulse coil with wire
- Connect the multitester(test Ω×1000)to the adapter of pulse coil for measure of coil resistance.

⊕ lead wire of voltage gauge→Red terminal
⊖ lead wire of voltage gauge→White terminal



Normal resistance
310Ω ± 20%(20° C)

Out of normal value

Replace the pulse coil

7. Resistance of ignition charge coil

■ Remove the ignition charge coil

■ Connect the multitester (test Ω×1000) to the terminal of charge coil

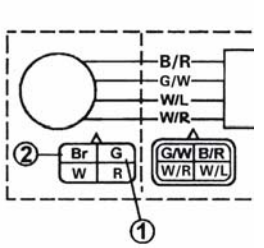
Connecting method

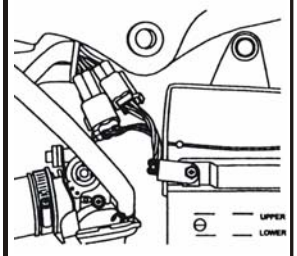
⊖ Lead wire of voltage gauge→Green terminal

⊕ lead wire of voltage gauge→Brown terminal

Resistance of charge coil

860Ω±20%(20 ° C)





Normal

Out of normal value

Replace the ignition charge coil

7. Wire joint

Refer to the loop connection of ignition system

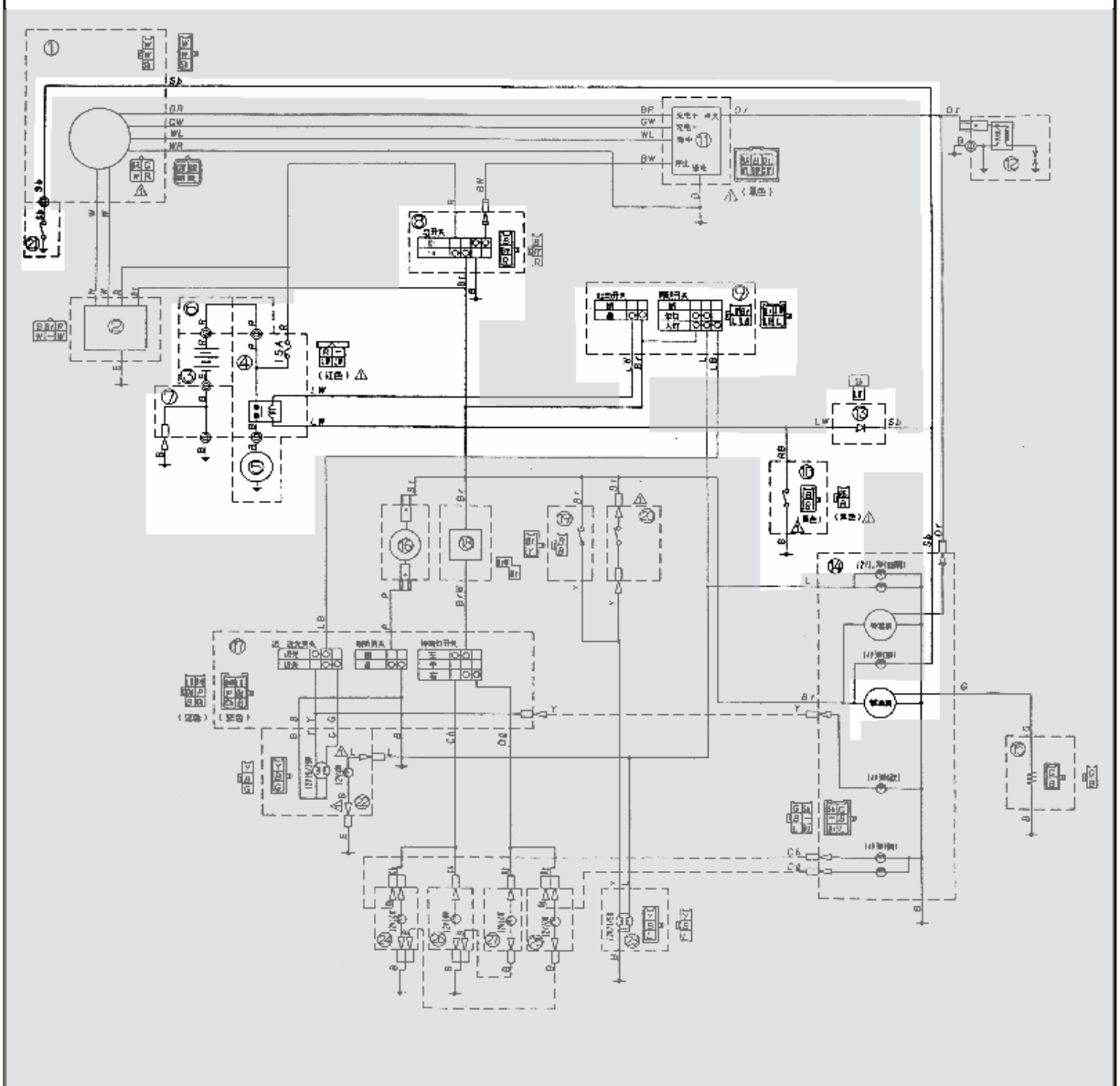
Normal

Change CDI unit assy

Poor connection

Correct or replace

Circuit of starting system



□Battery
□Starting relay
□ Starting motor
□Main switch
□Right lever switch
□Clutch switch
㉑Neutral switch

Exclusion of troubleshooting

No work of starting notor

Inspection procedure

1.Battery
2.Fuse
3.Starting motor
4.Main switch
5.Starting relay
6.Starting switch
7.Neutral switch
8.Clutch switch

Remark□

Before excluding ,the following components should be removed

□Side cover □Cushion

The following specific tool should be used when excluding.

	Min.multitester 90890-03112

1.Fuse

- Remove fuse
- Connect min.multitester(Ω×1)to the fuse
- Check if the fuse is conducted

No conduction → If the fuse is broken,replace it

Conduction ↓

2.Battery

- Check the battery condition
- Refer to the third chapter “Battery”

Voltage□ 12.5V

Electrolyte specific gravity□ 1.280, at 20°C(68°F)

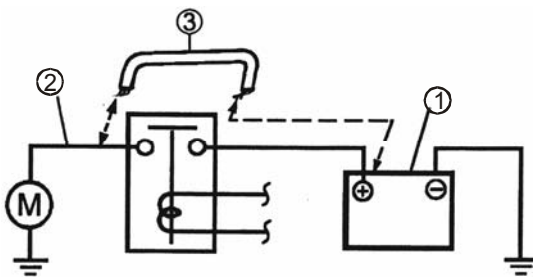
Abnormal →

- Supplement the electrolyte
- Clear the binding post of battery
- Charge or replace the battery

Normal ↓

3.Starting motor

Connect the positive binding post of battery to the cable of starting motor with cross-bond. See figare.



Check if the starting motor work.

Out of work

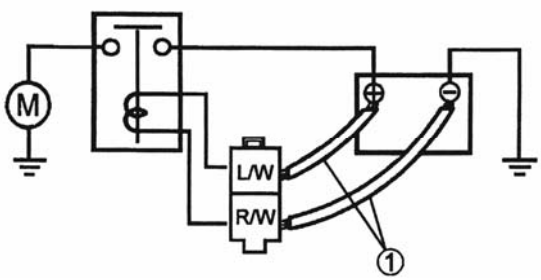
If the starting motor is failure,replace it

Work

4.Starting relay

Remove the adapter of starting relay from the bundle conductor.

Connect the battery to the wire of starting relay with cross-bond. See figure.



Check if the starting motor work.

Out of work

If the starting motor is failure,replace it.

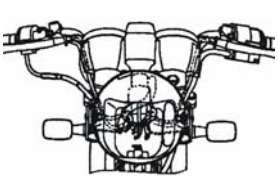
Work

Warning

The capacity of the cross-bond must be equal to or larger than that of the battery wire,otherwise, the cross-bond will be burnt.

5.Main switch

- Remove the branch-connetor of main switch from the bale of wire.
- Check if the switch is conducted between the red and the brown.



Abnormal

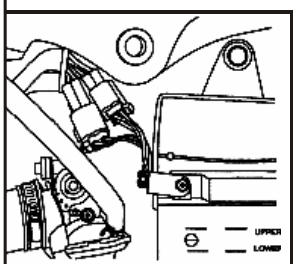
If the main switch is failure,replace it

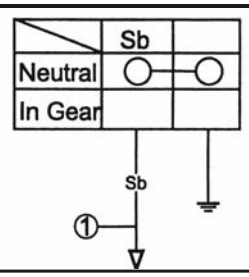
Normal

6.Neutral switch

Remove the wire of neutral switch from the bundle conductor.

Check if the switch is conducted between the“sky blue wire□and the ground wire” .





Abnormal

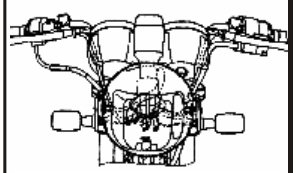
If the neutral switch is failure,replace it

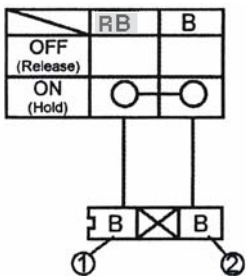
Normal

7.Clutch switch

Remove the branch-connector of clutch switch from the bale of wire.

Check if the clutch switch is conducted between "the black"□and "the black□"





Abnormal

If the clutch switch is failure,replace it

Normal

8.Wire joint

Refer to the loop wire of starting system

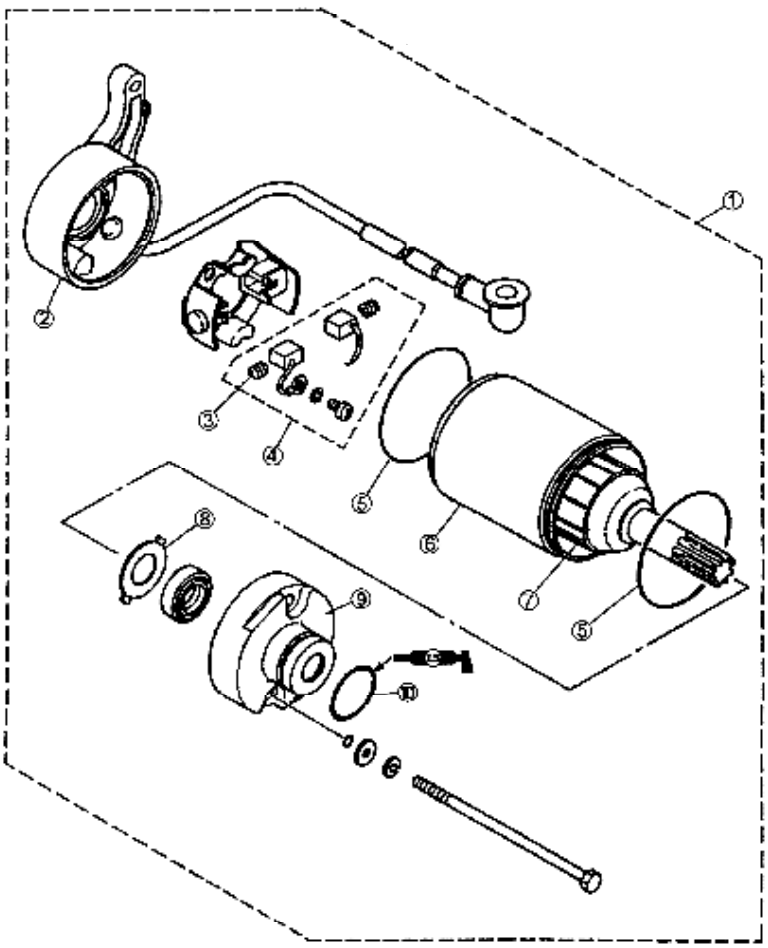
Poor connection,break

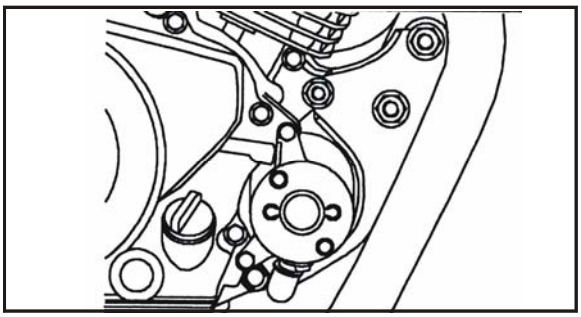
Correct or replace

Starting motor

□Starting motor assy
□Rear bracket
□Electric brush spring
□Electric brush assy
□O-ring
□Magnet-wheel
□Electric button
□Adjusting pad
□Front bracket
□O-ring

A	Length limit value of electric brush 3.5mm
B	Wear limit value of commutator 21.0mm
C	Hexagon slot 1.5mm
D	Resistance value of electric button coil 0.017~0.021Ω20°C





Removal

1.Remove

- Wire of starting motor
- Starting motor assy

Stripping

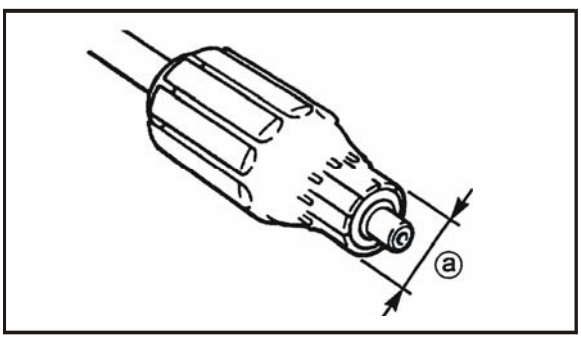
1.Before stripping, make the identifiable mark on the frond and rear bracket to be easy to check when assembling.

2.Remove

- The front bracket
- pad
- The rear bracket

3.Remove

- Electric button
- Magnet-wheel
- Electric brush



Inspection and repair

1.Check

- Commutator

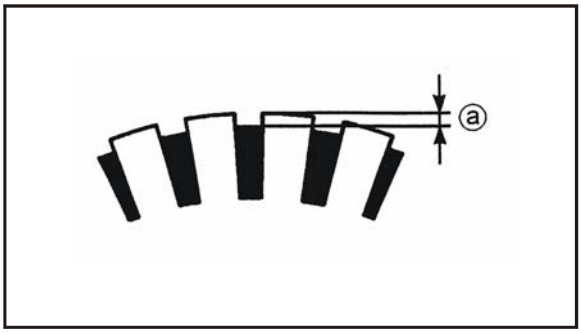
  Dirt on the comutator→polish it with□ 600 sand paper

2.Measure

- Diameter of the commutator ⓐ

  Out of normal value→Repace the starting motor

	Wear limit value of commutator 21mm



3.Measure

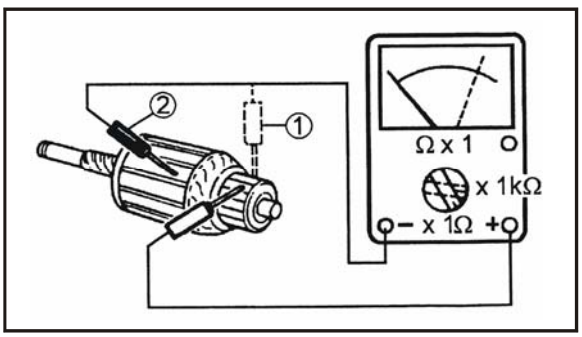
The depth of mica sheet slot ⓐ

Out of normal range→grind it with hand saw to make it fits to normal value.

	Depth of the mica slot 1.5mm

Note:

The insulated mica sheet of commutator must has slot ,which can sure the normal work of the commitator.



4.Check□

Electric coil(insulation,conduction)

If there is default→replace the starting motor

********** ********

Inspection procedure□

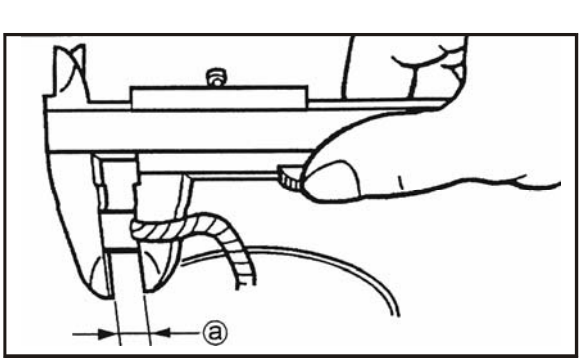
Connect min.multitester for the test of conduction□and insulatiom□□

Measure the resistance value of the electric button.

	Resistance value of electric button coil□ Conduction test□ 0.017~0.021Ω,at 20°C□68 F□ Insulation test □□ more than 1MΩ□at 20 °C□68 F□

If the resistance value is abnormal,replace the starting mot

********** ********



5.Measure□

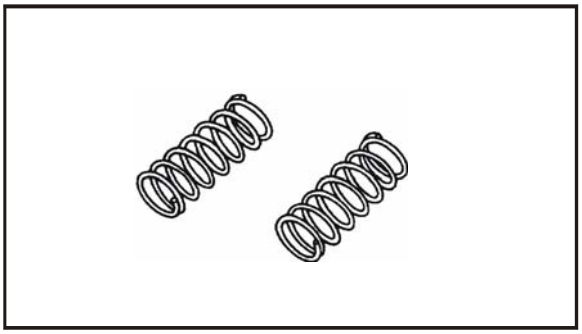
Electric brush length ⓐ

Out of normal value→Replace the electric brush as a s

	Length limit value of the electric brush□ 3.5mm(0.14in)

Note:

When replacing the electric brush, pay more attention to one side which is welding.



6.Measure

- Elastic force of the electric brush spring
  Fatigue or out of the normal value→replace it as a set.

	Elastic force of the electric brush spring 560~840g

Assemble□

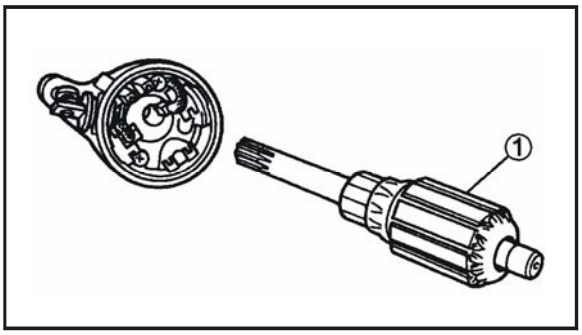
According to the contary procedure of "Remova

1.Install

- Electric brush spring
- Electric brush

Note:

- When assembling the electric brush, the electric brush wire should, wrap the outer side of projection of electric brush spring clamp.
- When assembling the eclectric brush, the binding post of electric brush wire should slightly touch the projection lying in the side of electric brush spring clamp.



2.Install□

- Electric button□

Note:

When installing the electric button, press down the electric brush with min. screw driver to avoid damaging the electric brush.

3.Install

- O-ring

Note

Replace new one

4.Install

- Magnet-wheel

Note:

The matching mark on the magnet-wheel shoeld be align with that on the rear bracket,then the installation is done.

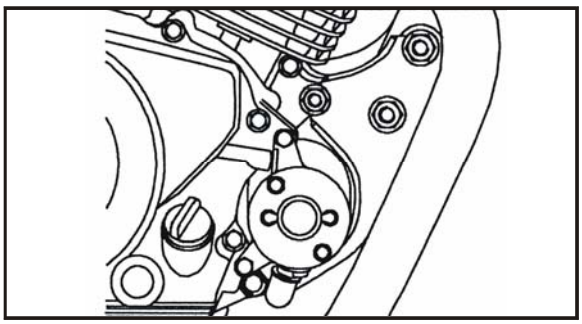
5.Install

- Pad
- Front bracket

Note:

- The installation is done after the project of washer is align with the groove of front bracket
- Make the matching mark on the magnetic yoke be align with that of front-rear bracket.

	Bolt 0.5Kgf.m(5N.m)



Installation

1.Install

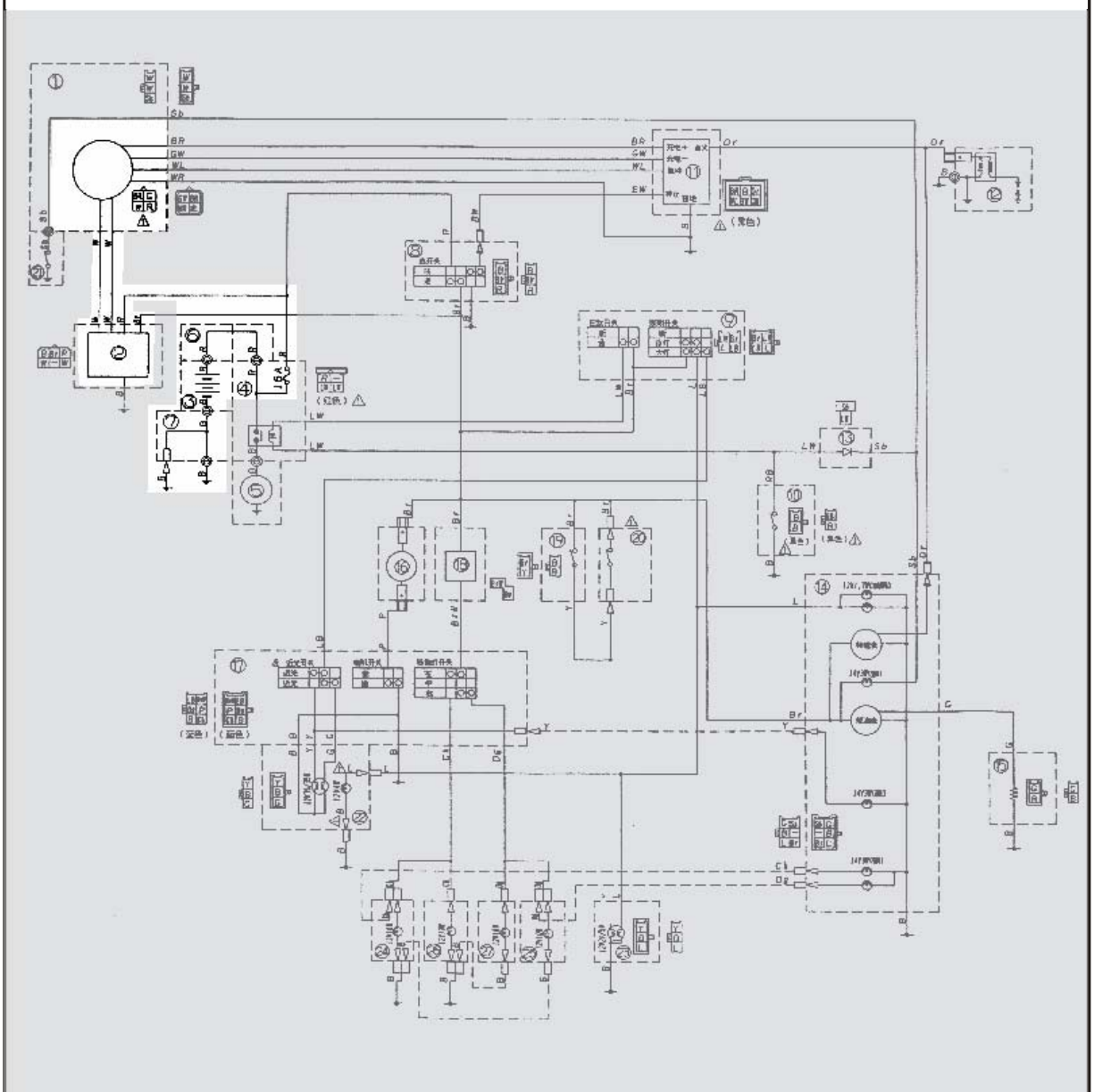
- The starting motor

2.Install

- The starting motor
- Wire of starting motor

	Botl 0.7Kgf.m(7N.m)

Charge system
Circuit Diagram



□CDI magneto
□Rectifing adjustor
□ Battery
□ Starting relay

Exclusion of trouble shooting

No charge on the battery

1.Fuse
2.Battery
3.Main switch
4.Lamp switch
5.Double-beam lamp switch

Remark□

Refore excluding,the following components should be removed.
□Side cover □Cushion

The following specific tool should be applied

Multitester
90890-03112

1.Fuse

Check if the fuse is conducted

No conduction → Replace the fuse

Conduction ↓

2.Battery

Check the battery condition

Voltage□ 12.5V
Specific gravity of electrolyte□
1.280at□20 °C(68 °F)

Abnormal → Supplement the electrolyte(distilled wate)
Clear the binding post of battery
Charge or replace the battery

Normal ↓

3.Charge voltage

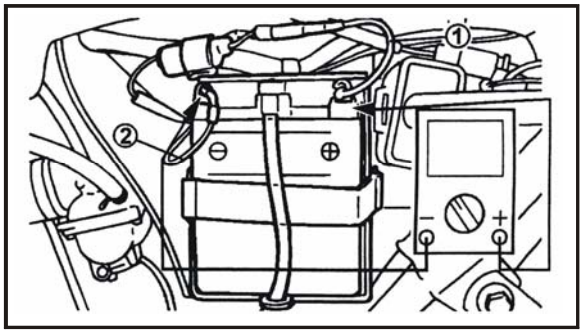
Connect the induction tachymeter to the wire of the spark plug.
Connect min.multitester (DC20V) to the battery

Positive wire of multitester→positive binding post of battery.
Negative wire of multitester→Negative binding post of battery.

Check the charge voltage after the engine is accelerated to 5000r/min.

Charge voltage□
14.0V,at 5000r/min

Remark□
Battery charged fully should be applied.



Normal value

The charge circuit is normal

Out of normal value

4.Resistance value of charge coil

Remove the branch-connector of charge coil from bundle conductor.
Connect the min. Multitester□Ω×1□to the charge coil.
Measure the resistance value of charge coil.

Positive wire of multitester→White wire□

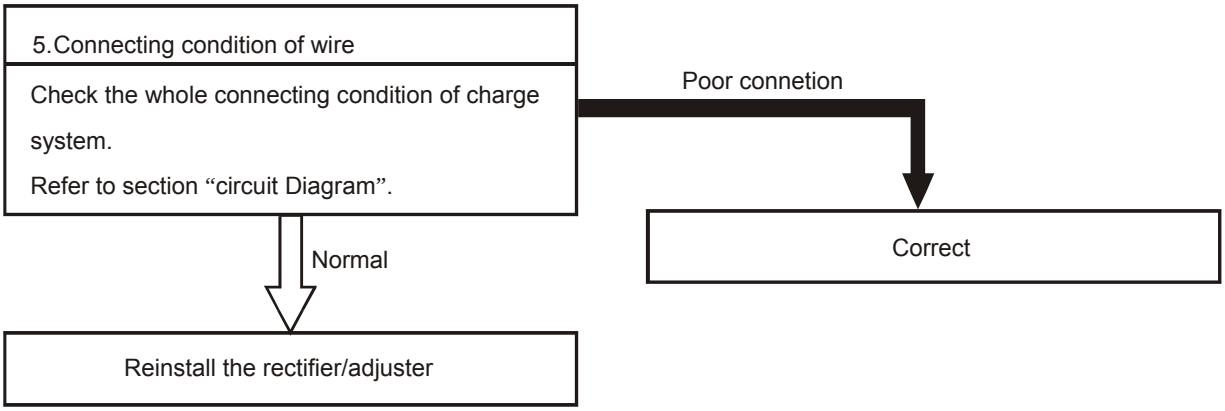
Negative wire of multitester→White wire□

Resistance value of charge coil
0.4Ω±20%(20 °C)

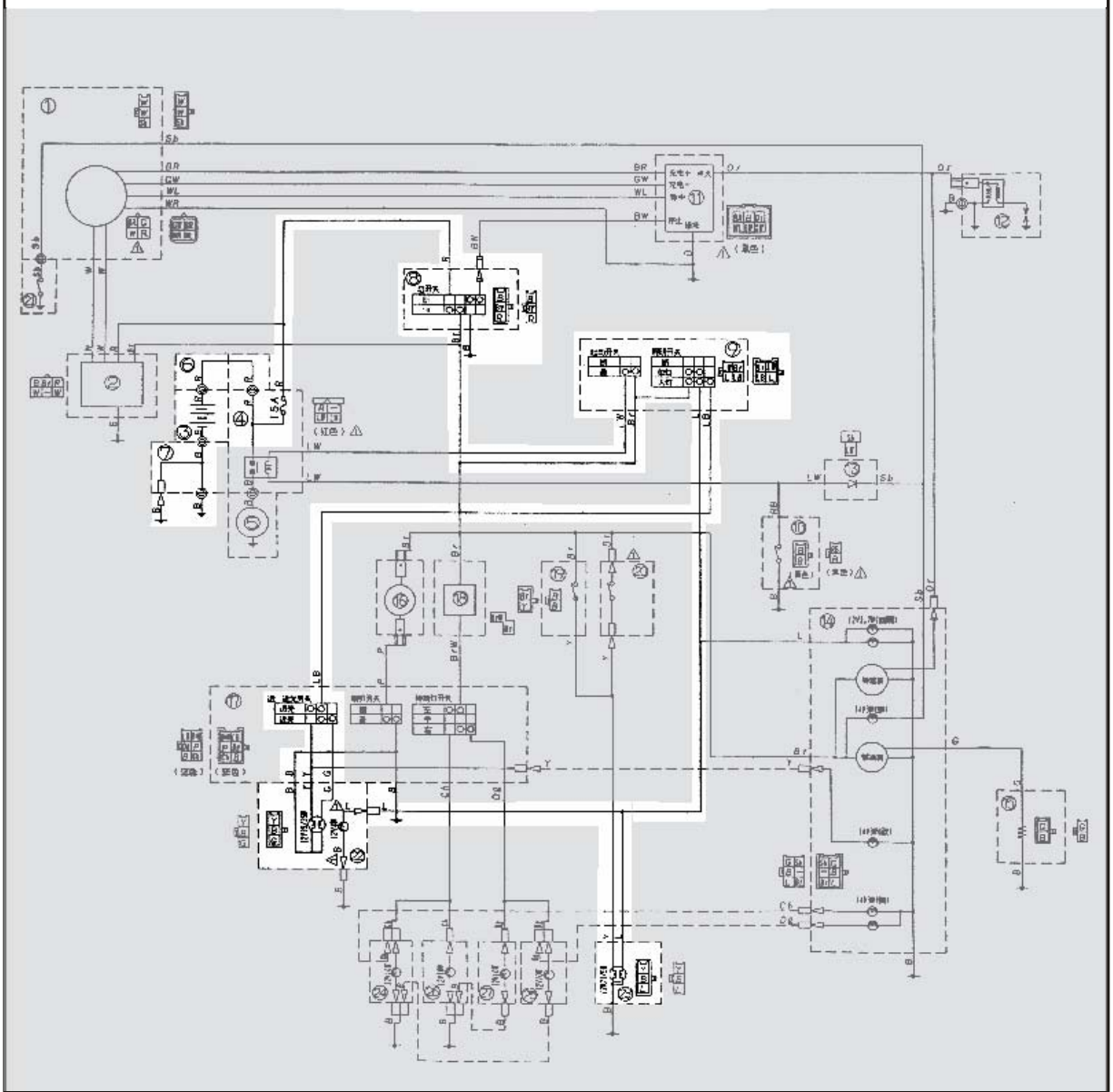
Out of normal value

If the charge coil is failure,replace it

Two test value meet the normal value


5.Connecting condition of wire
Check the whole connecting condition of charge system.
Refer to section “circuit Diagram”.
Poor connetion
Correct
Normal
Reinstall the rectifier/adjuster

Lighting system
Circuit diagram



□Battery
□Right lever switch
㉒ Head lamp
㉓ Tail lamp

Exclusion of troubleshooting

Headlamp, high-beam indicator of headlamp, tailamp and instrument garden light are not lit

Remark□

Before excluding ,the following components should be removed.

□Side cover

□Cushion

□Hood

The following specific tool should be applied when excluding.

Min.multitester□
Part number□90890-03112

1.Bulb and socket

Check if the bulb and socket are conducted.

No conduction → If the bulb or socket is failure,replace it

Conduction ↓

2.Fuse

Remove the fuse
Connect the min·multitester(Ω×1) to the fuse.
Check if the fuse is conducted.
Refer to"Inspection of fuse"section of the 3 chapter.

No conduction → If the fuse is broken,replace it

↓

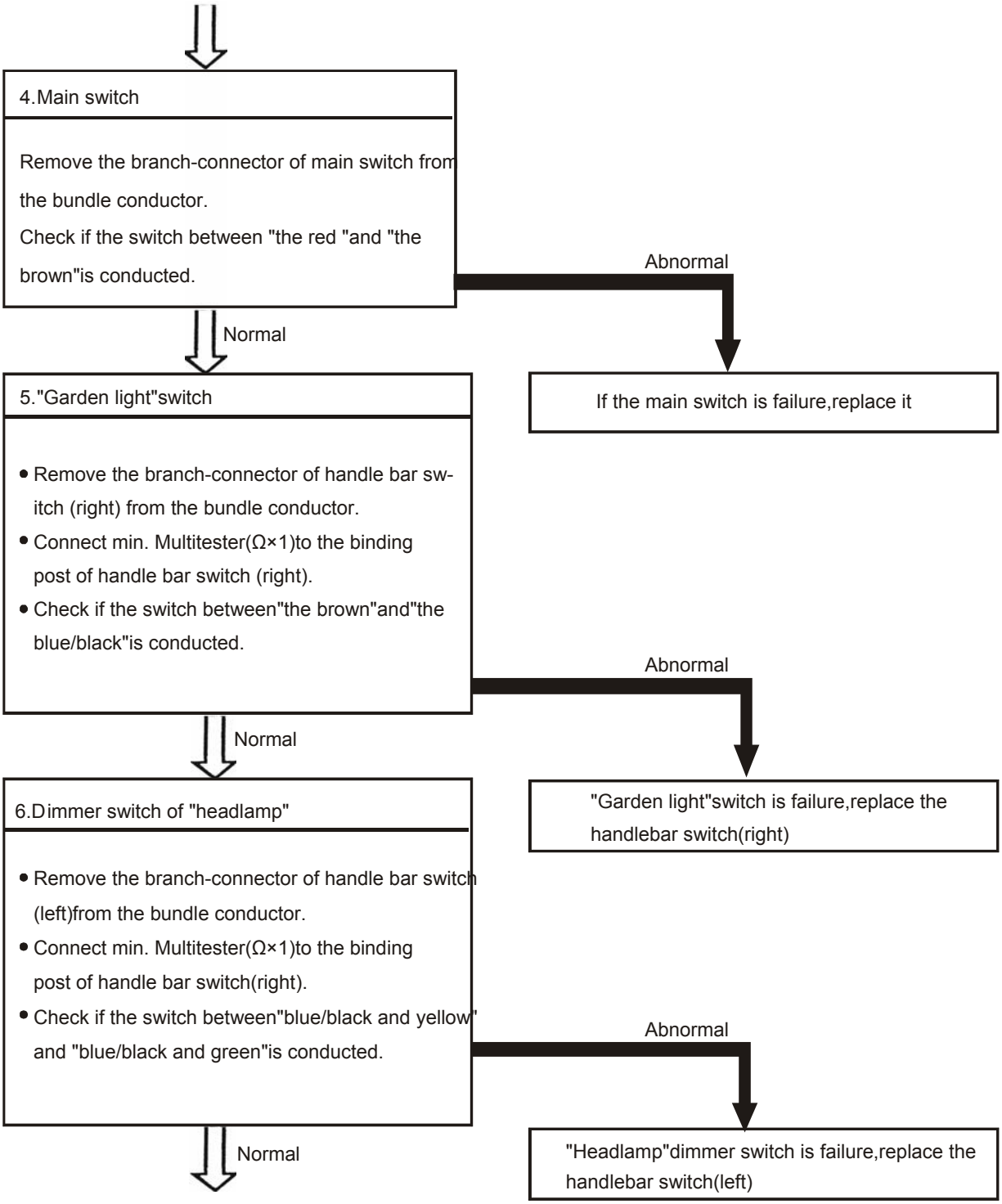
3.Battery

Check the battery condition.
Refer to"Inspection of battery"section of the3chapter.

Specific gravity of electrolyte□
1.280,at 20 °C □68 °F□

Abnormal → Supplement eletrolyte.(distilled water)
Clear the binding post of battery.
Charge or replace the battery.

↓


4.Main switch
Remove the branch-connector of main switch from the bundle conductor.
Check if the switch between "the red "and "the brown"is conducted.
Abnormal
Normal
If the main switch is failure,replace it
5."Garden light"switch
Remove the branch-connector of handle bar switch (right) from the bundle conductor.
Connect min. Multitester(Ω×1)to the binding post of handle bar switch (right).
Check if the switch between"the brown"and"the blue/black"is conducted.
Abnormal
Normal
"Garden light"switch is failure,replace the handlebar switch(right)
6.Dimmer switch of "headlamp"
Remove the branch-connector of handle bar switch (left)from the bundle conductor.
Connect min. Multitester(Ω×1)to the binding post of handle bar switch(right).
Check if the switch between"blue/black and yellow" and "blue/black and green"is conducted.
Abnormal
Normal
"Headlamp"dimmer switch is failure,replace the handlebar switch(left)

Inspection of lighting system

1.Headlamp and high-beam indicator of headlamp are not lit.

1.Bulb and socket

Check if the bulb and socket are conducted.

No conduction → Replace the bulb or socket

Conduction ↓

2.Voltage

Connect Min. multitester(DC20V)to branch -connector of headlamp and to that of indicator.

Headlamp:
Positive guide wire of multitester→Yellow or green guide wire.
Negative guide wire of multitester→Black guide wire
"High beam"Indicator of headlamp□
Positive guide wire of multitester→Yellow guide wire
Negative guide wire of multitester→Black guide wire

When the dimmer switch of headlamp lies in lower beam poisition
When the dimmer switch of headlamp lies in high beam position

Turn the switch to "ON".
Turn the "garden light"switch to"ON".
Turn the dimmer switch of "headlamp" to "HI" or "LO".
Check if the voltage of socket connector between the green and the yellow wire gets to 12V.

Out of normal value → Poor lagout from main switch to the socket, The repair is needed.

Meet normal valur (12V) ↓

This circuit is normal.

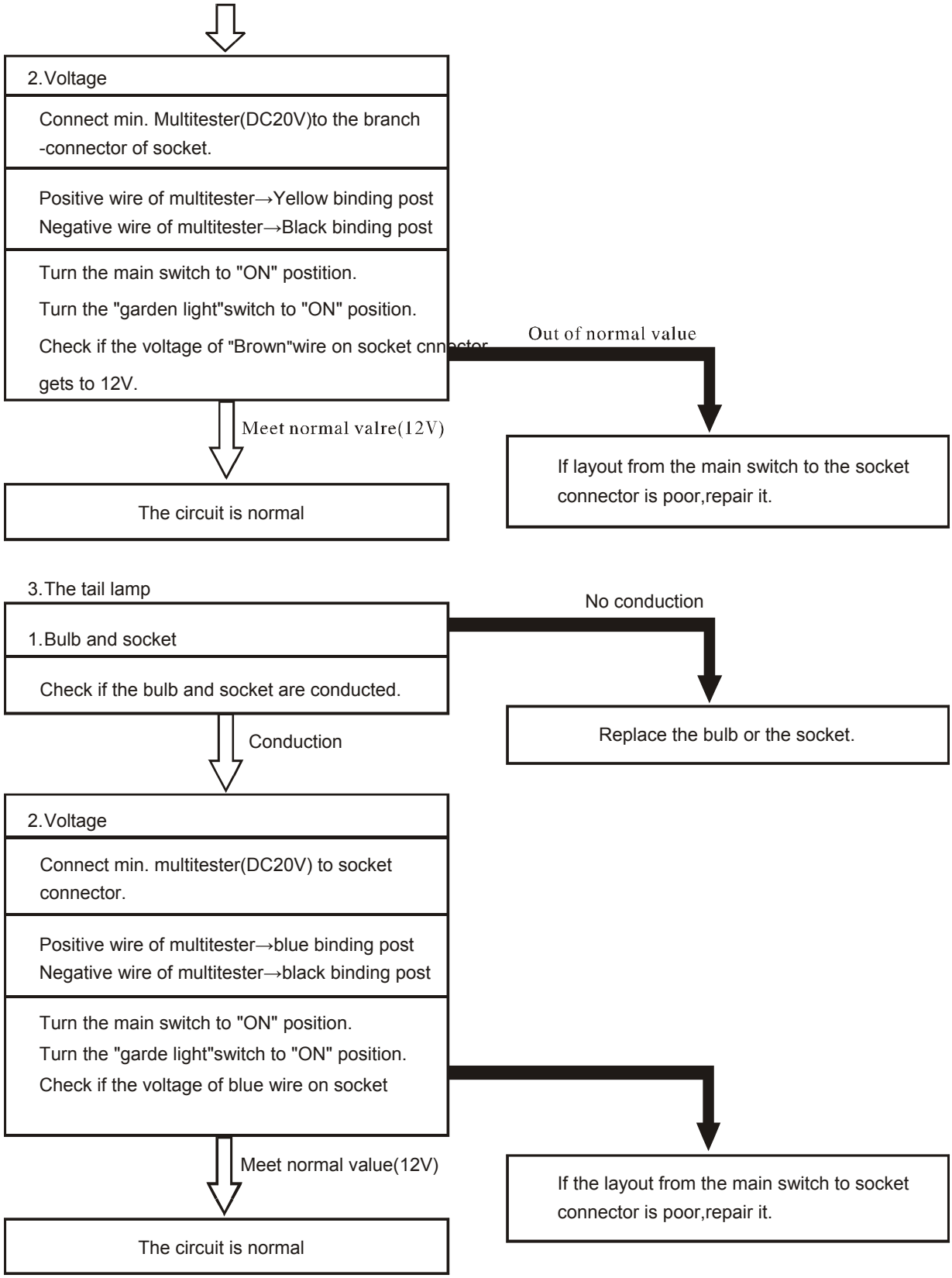
2.The instrument light is not lit

1.Bulb and socket

Check if the bulb and the socket are conducted.

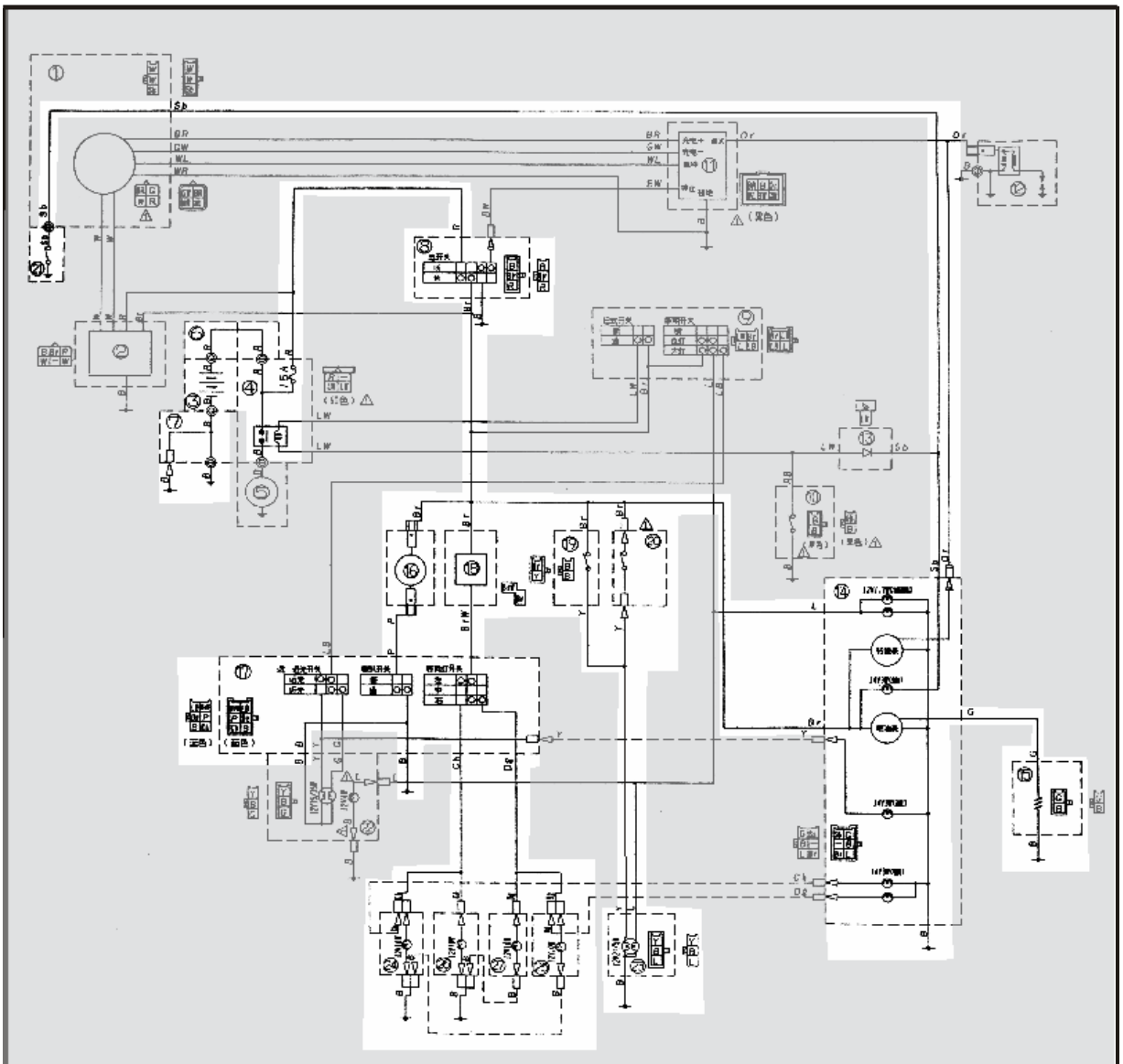
No conduction → Replace bulb or socket.

Conduction ↓


2.Voltage
Connect min. Multitester(DC20V)to the branch -connector of socket.
Positive wire of multitester→Yellow binding post
Negative wire of multitester→Black binding post
Turn the main switch to "ON" postition.
Turn the "garden light"switch to "ON" position.
Check if the voltage of "Brown"wire on socket cnnector
gets to 12V.
Out of normal value
If layout from the main switch to the socket connector is poor,repair it.
Meet normal valre(12V)
The circuit is normal
3.The tail lamp
1.Bulb and socket
No conduction
Check if the bulb and socket are conducted.
Replace the bulb or the socket.
Conduction
2.Voltage
Connect min. multitester(DC20V) to socket connector.
Positive wire of multitester→blue binding post
Negative wire of multitester→black binding post
Turn the main switch to "ON" position.
Turn the "garde light"switch to "ON" position.
Check if the voltage of blue wire on socket
Meet normal value(12V)
If the layout from the main switch to socket connector is poor,repair it.
The circuit is normal

Signal system

Circuit Diagram



□Main switch
□Starting relay
□Battery
⑲Front brake switch
⑳Rear brake switch
⑯Horn
⑱Flash relay
⑰Left handle lever switch assy
㉓Tai lamp/brake lamp
㉔㉖Front left-right turning lamp
㉕㉗ Rear left-right turning lamp
⑮Fuel signal sender
⑭Instrument assy
㉑Neutral switch

Exclusion of trouble shooting

Blinker, brake lamp or indicator are not lit and the horn does not work.

Inspecttion procedure□

1.Fuse
2.Battery
3.Main switch
4.Wire joint

Remark□

When excluding,the following components should be removed□

□ Side cover□Cushion

When excluding,the following specialtol should be used:

Multitester
90890-03112

1.Fuse

Check if the fuse is conducted.

Poor conduction → Replace the fuse

Conduction ↓

2.Battery

Check the battery condition

Voltage□ 12.5V

Special gravity of electrolyte□ 1.280,(20°C)

Abnormal → Supplement electrolyte(distilled water)
Clear the binding post of battery.
Charge of replace battery.

Normal ↓

3.Main switch

Remove the branch connector of main switch from bundle conductor
Check if the switch between the "Red and the Brown" is conducted.

Abnormal → The main switch is failre,replace it

Normal ↓

4.Reconnection condition of guide wire

Check the socket connector of whole signal system.
Refer to "circuit Diagram"section.

Abnormal → The correct should be done.

Normal ↓

Check every circuit condition signal system
Refer to "Inspection of signal system"section

Inspection of signal system

1.No function of the horn

1.Horn switch

Remove the branch-connector of handle bar switch(left)from the bundle conductor

Check if the switch between the Pink and the Black.

Abnoraml

The horn switch is failure,the lever switch (left) should be replaced.

2.Voltage

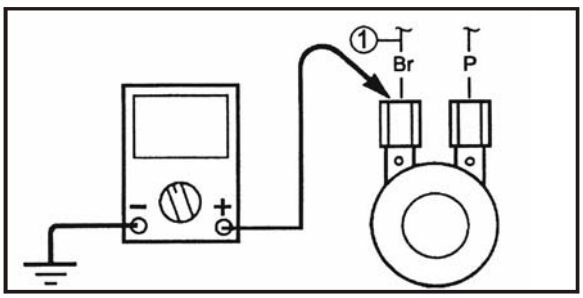
Connect min·multitester(DC20V) to guide wire of horn

Positive guide wire of multitester→Brown guide wire

Negative guide wire of multitester→Frame ground

Turn the main switch to "ON".

Check the voltage at the binding post of horn brwon guide wire gets to12V.



Out of normal value

If there is poor layout from the main switch to the horn binding post,repair is needed.

Meet normal value (12V)

3.Horn

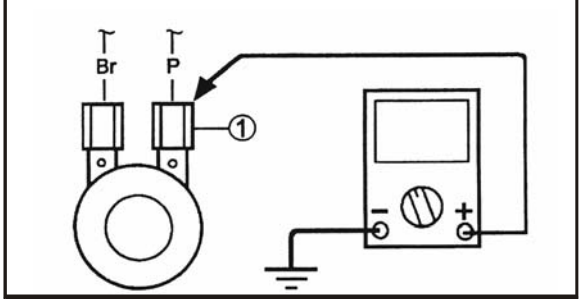
Connect the min·multitester(DC20V)to "Pink" binding post of horn.

Positive guide wire of multitester→Pink guide wire

Negative guide wire of multitester→Frame ground

Turn the main switch to "ON"

Check if the "Pink"guide wire voltage at the binding post of horn gets to 12V.



Out of normal value

If the horn is failure,replace it.

No function of the horn

Adjust or replace horn

2.The brake lamp is not lit

1.Bulb and socket

Check if the bulb and the socket are conducted.

No conduction

Replace bulb or socket

2.Brake switch

Remove brake switch guide wire from the bundle connector.

Check if the switch between the "Yellow &Brown" and "Black& Black" is conducted

Abnormal

If the brake switch is failure,replace it

3.Voltage

Connect min. Multitester(DC20V) to socket connector.

Positive guide wire of multitester→Yellow□guide wire
Negative guide wire of multitester→Black□guide wire

Turn the main switch to "ON".
Pull brake lever or step brake pedal.
Check if the voltage of "Yellow"guide wire at the socket connector gets to 12V.

Out of normal value

There is poor layout from the main switch to the socket connector,repair is needed.

Meet normal value

The circuit is normal

3.Blinker/turn signal lamp,indicator no work.

1.Bulb and socket

Check if the bulb and socket are conducted

No conduction → Replace the bulb or the socket

Conduction ↓

2.Turn signal switch

Remove the branch-connector of handlebar switch (left)from bundle conductor
Check if the switch between"Brown/white& Dark brown"and"Brown/white &Dark green"is conducted.

Abnormal → The turn signal switch is failure,replace the handlebar switch(left)

Condutction ↓

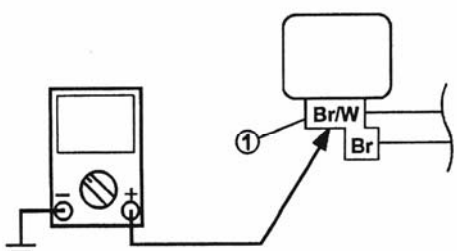
3.Voltage

Connect min. Multitester(DC20V) to the relay on the blinker device.

Postitive guide wire of multitester→Brown guied wire□
Negative guide wire of multitester→Frame ground□

Turn the switch to "ON".
Check if the voltage of "Brown"guide wire at the relay binding post of blinker device gets to 12V.

Out of normal value → There is poor layout from the main swotch to the relay binding post of blinker device,the repair is needed.



Meet mormal value ↓

4.Blinker relay

Connect multitester(test frequencyDC20V) to blinker relay

⊖ Guide wire→Brown/white terminal□
⊖ guide wire→Body ground

Turn the main switch to "ON".
Turn the blinker to left or right,
Measure the voltage of brown/white guide wire(12V).

Out of normal value → Replace the blinker relay

Meet normal value ↓

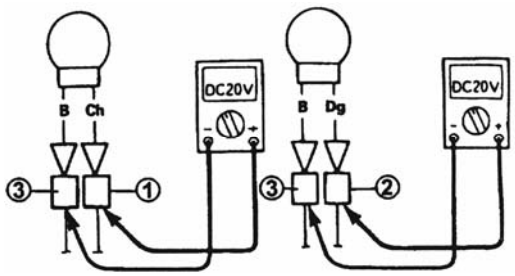
5.Turn indicator

Connect min. Multitester(DC20V) to socket connector

Connection at the left blinker□
Positive guide wire of multitester→Brown guide wire□
Negative guide wire of multitester→Frame groun□

Connection at the right blinker□
Positive guide wire of multitive→Dark green guide wire□
Negative guide wire→Frame ground wire□

Turn main switch to "ON".
Turn "turn signal" switch to left "⟵ "
or " ⟶ "right position
Check if the voltage of brown guide wire of dark geeen guide wire at socket connector gets 12V.



Out of normal value

6.Circuit joint

Check if there is break at connection part of loop of signal system.
Refer to connection diagram of loop of signal system.

Meet normal value

Layout of signal loop is normal

4.Neutral indicator no work

1.Bulb and socket

Check if the bulb and the socket are conducted.

No conduction

Replace the bulb or socket

Conduction

2.Neutral switch

Remove guide wire of neutral switch from bundle condctor.
Check if the switch between the sky blue and the ground wire is conducted.

Abnormal

The neutral switch is failure,replace it.

Normal

3.Vltage

Connect min. Multitester(DC20V) to socket connector.

Positive guide wire of multitester→Brown guide wire
Negative guide wire of multitester→Sky blue guide wire

Turn the main switch to "ON".

Check if the voltage of brown guide wire at socket connector gets to 12V.

Out of normal value → There is poor layout from the main switch to socket connector,the repair is needed.

Meet normal value → The neutral switch loop is normal

5.Needle of fuel gauge no work

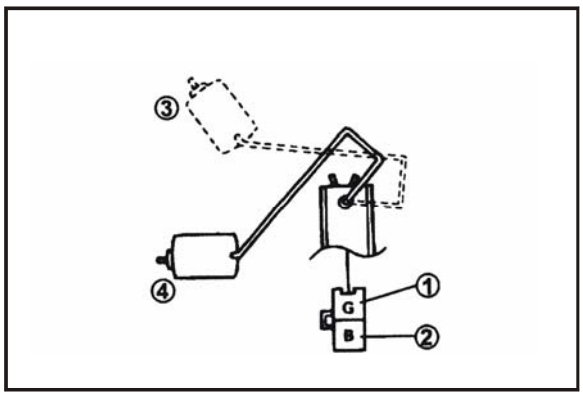
1.Fuel level sensor

- Remove the fuel level sensor from the fuel tank
- Connect min. Multitester(Ω × 10) to the branch-connector of fuel level sensor.

Positive guide wire of multitester→Green binding post①
Negative guide wire of multitester→Black binding post②

Check the resistance value of fuel level sensor,and compare it with normal value.

Resistance value of fuel level sensor (upper position③):
4~10 Ω, at 20° C (68° F)
Resistance value of fuel level sensor(lower position④):
90~100 Ω, at 20° C (68° F)



Out of normal value → Replace the fuel level sensor

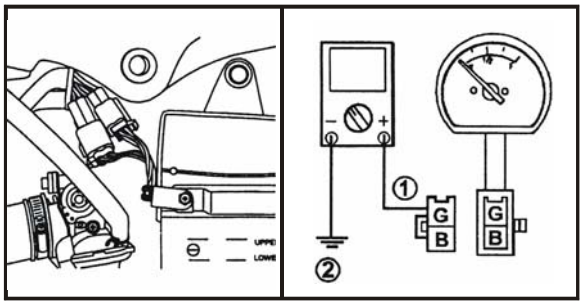
Meet normal value

2.Voltage

Connect min. Multitester(DC20V) to branchconn-nector of fuel gange.(at the side of bundle conductor)

Positive guide wire of multitester→Green guide wire ①
Negative guide wire of multitester→Body ground wire②.

Check if the brown wire voltage at the fuel gauge binding post (at the side of bundle conductor)gets to 12V.



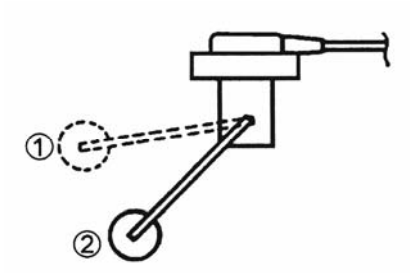
Out of normal value

Check all socket connectors of singal system

Meet normal value

3.Fuel gauge

- Connect fuel level sensor to circuit joint
- Move the float up□and down□.



- Turn the main switch to "ON".
- Move the float to Max. upper postion or max. Lower position to check the fuel gallge needle's action

Position of float bowl	Needle of fuel gauge
Upper float bowl□	Showing F
Lower float bowl□	Showing E

Poor function

Replace petrol gauge

Normal

The loop connection of signal system is normal

□ Remark□

Firm the float bowl on the 1 or 2 position respectively for over 3 minutes to confirm the needle of fuel gauge.

Chapter 8 Troubleshooting

Trouble shooting of engine

Troubleshooting of engine
Electric Appliance system

8

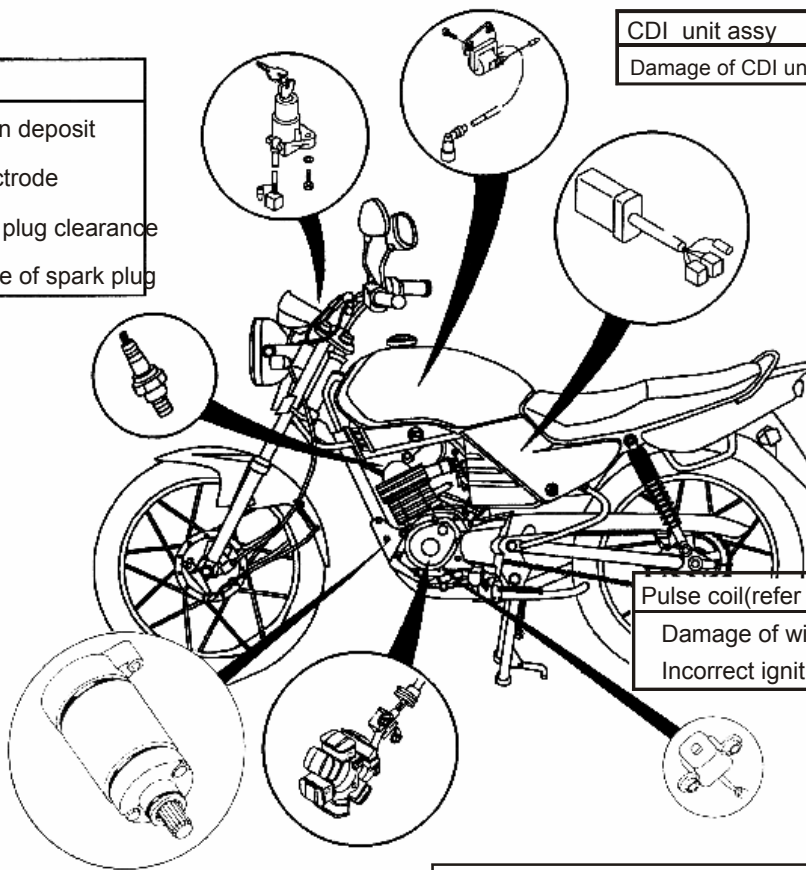
*Check all socket connector of guide wire

Main switch
Short-circuit of main switch
·Break or short-circuit of guide wire

Ignition coil(refer to page) 7-8
·Damage of short-circuit of main coil or secondary coil
·Failure of high-pressure guide wire
·Failure of spark plug cap

CDI unit assy
Damage of CDI unit assy

Spark plug
·Apparent carbon deposit
·Moisture of electrode
·Improper spark plug clearance leads to damage of spark plug

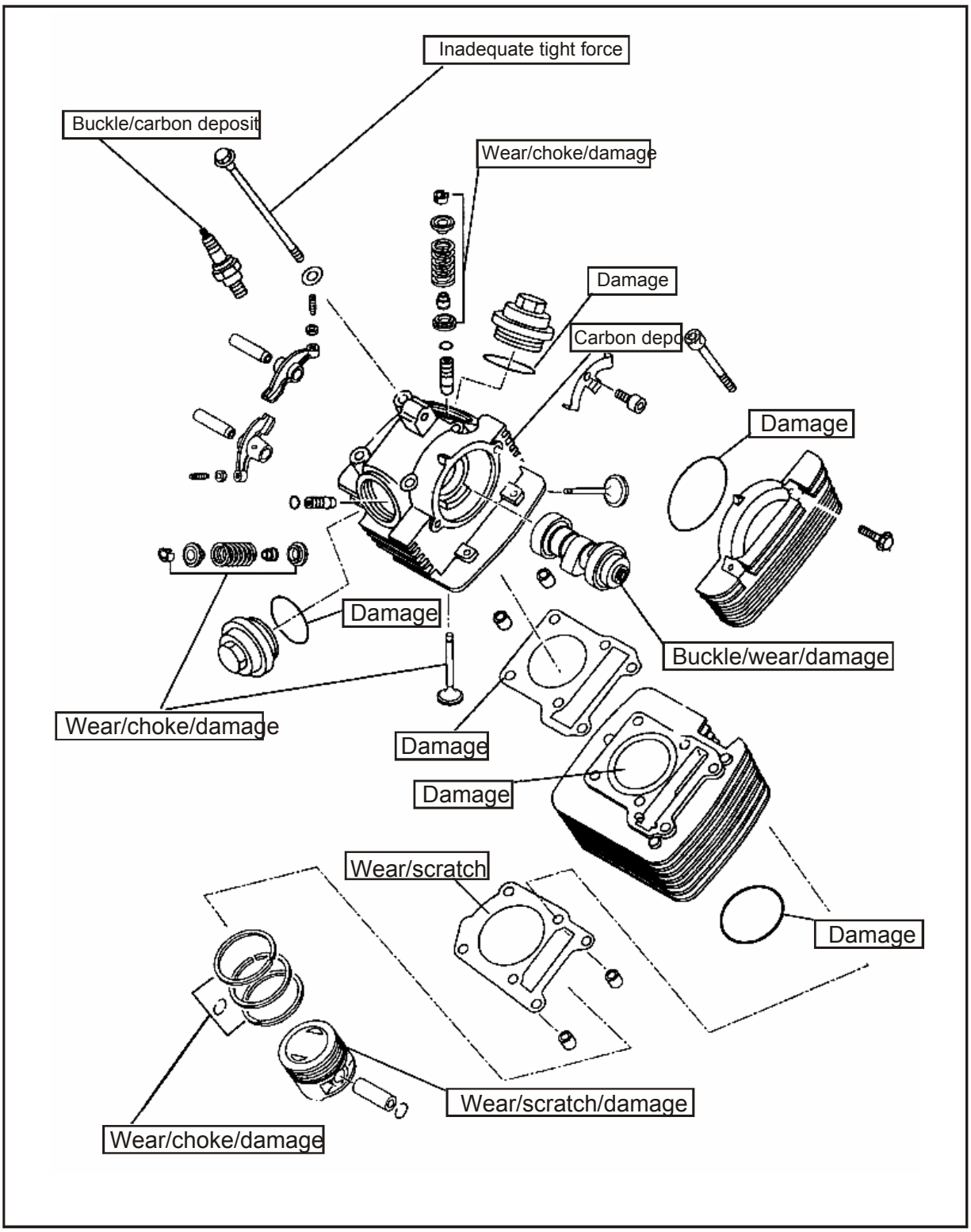


Pulse coil(refer to page7-8)
Damage of winding
Incorrect ignition timing

Starter motor(rdfer to page7)-14
·Damage or failure of starter motor
·Failure of starter relay
·Failure of starter cultch
·Failure breaking relay

Lighting coil/ignition charge coil(refer to page 7-7/7-22)-7/7-22)
Damage of winding

Compressure system



Intake and exhaust system