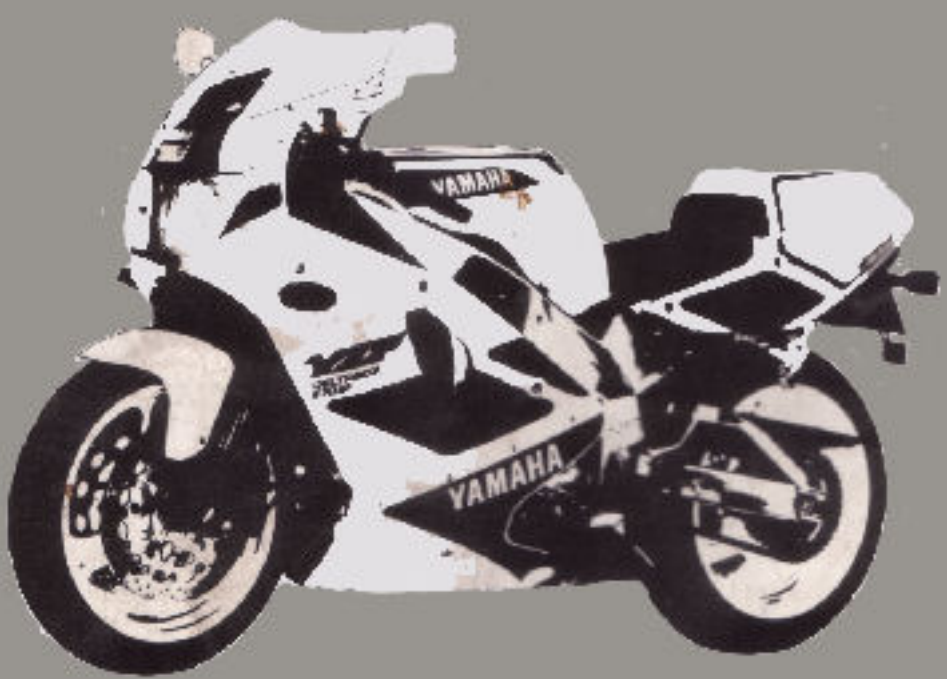
YAMAHA

YZF750R(E)
YZF750SP(E)
Stig

SERVICE MANUAL



4HD-28197-20

NOTICE

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

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

PARTICULARY IMPORTANT INFORMATION

This material is distinguished by the following notation.

⚠ — The Safety Alert Symbol means ATTENTION! BECOME ALERT! YOUR SAFETY IS INVOLVED!

⚠ WARNING — Failure to follow WARNING instructions could result in severe injury or death to the motorcycle operator, a bystander, or a person inspecting or repairing the motorcycle.

CAUTION: — A CAUTION indicates special precautions that must be taken to avoid damage to the motorcycle.

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

HOW TO USE THIS MANUAL

CONSTRUCTION OF THIS MANUAL

This manual consists of chapters for the main categories of subjects. (See "Illustrated symbols")

1st title ①: This is a chapter with its symbol on the upper right of each page.

2nd title ②: This title appears on the upper of each page on the left of the chapter symbol. (For the chapter "Periodic inspection and adjustment" the 3rd title appears.)

3rd title ③: **This is a final title.**

MANUAL FORMAT

All of the procedures in this manual are organized in a sequential, step-by-step format. The information has been compiled to provide the mechanic with an easy to read, handy reference that contains comprehensive explanations of all disassembly, repair, assembly, and inspections.

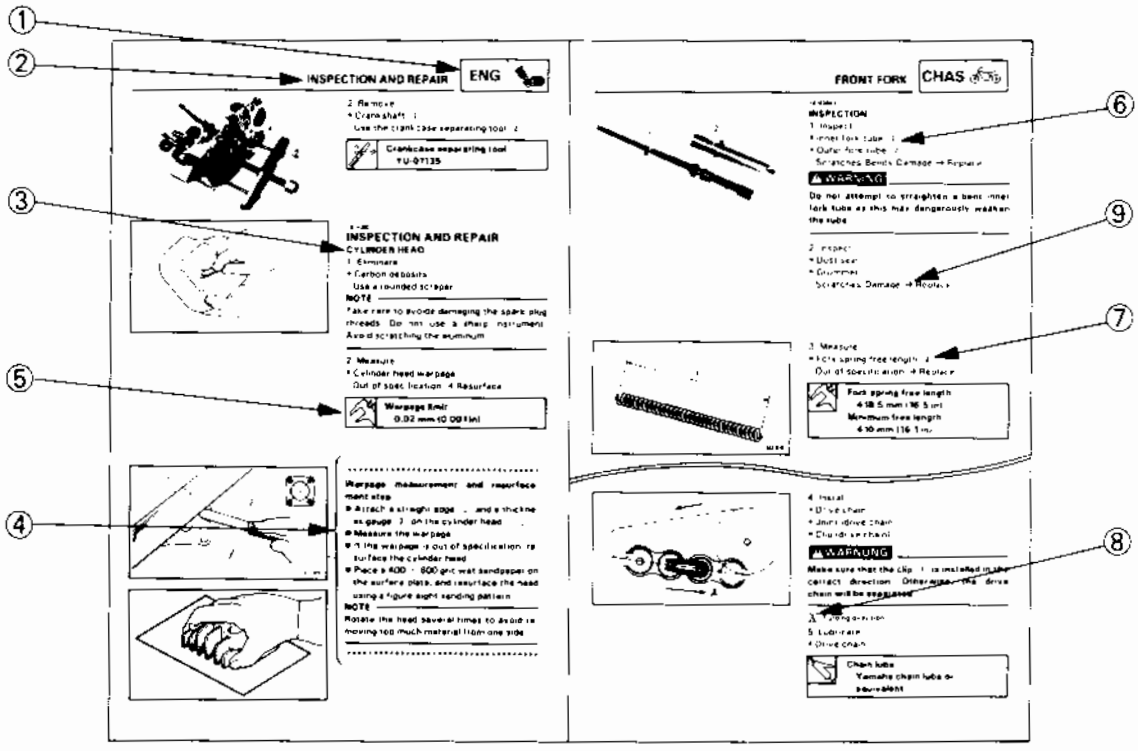
A set of particularly important procedure ④ is placed between a line of asterisks "✱"with each procedure preceded by "●".

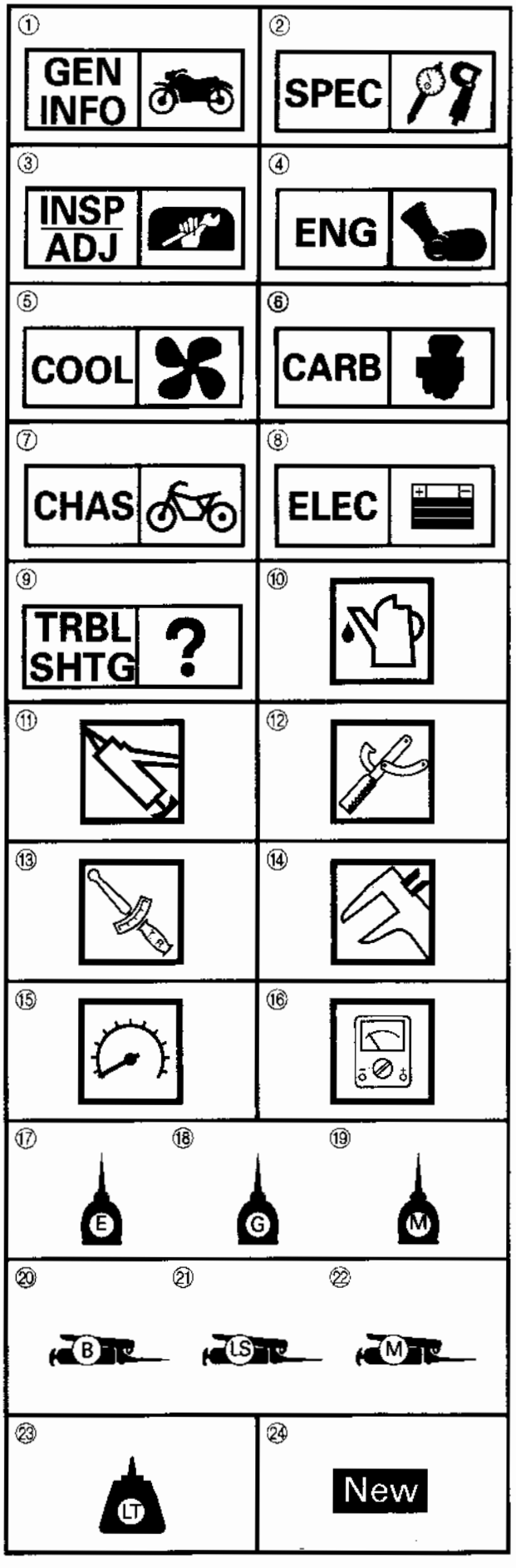
IMPORTANT FEATURES

- Data and a special tool are framed in a box preceded by a relevant symbol ⑤.
- An encircled numeral ⑥ indicates a part name, and an encircled alphabetical letter data or an alignment mark ⑦, the others being indicated by an alphabetical letter in a box ⑧.
- A condition of a faulty component will precede an arrow symbol and the course of action required the symbol ⑨.

EXPLODED DIAGRAM

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





ILLUSTRATED SYMBOLS

(Refer to the illustration)

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

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

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

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

Illustrated symbols ⑰ to ㉔ in the exploded diagram indicate grade of lubricant and location of lubrication point.

⑰ Apply engine oil
⑱ Apply gear oil
⑲ Apply molybdenum disulfide oil
⑳ Apply wheel bearing grease
㉑ Apply lightweight lithium-soap base grease
㉒ Apply molybdenum disulfide grease
㉓ Apply locking agent (LOCTITE®)
㉔ Use new one

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YZF750SP '93 (FOR EUROPE) WIRING DIAGRAM

YZF750SP '93 (EXCEPT FOR EUROPE) WIRING DIAGRAM



GENERAL INFORMATION

MOTORCYCLE IDENTIFICATION

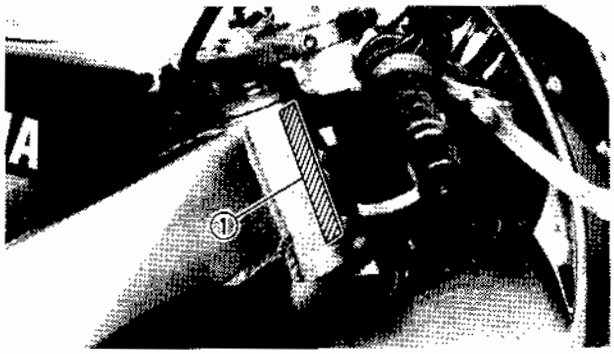
VEHICLE IDENTIFICATION NUMBER

(For E, AUS and CDN)

The vehicle identification number ① is stamped into the right side of the steering head.

Starting serial number:
YZF750R(E):
JYA4HDS0 * PA010101 (for E)
JYA4HAT0 * PA000101 (for AUS)
JYA4HYN0 * PA000101 (for CDN)
YZF750SP(E):
JYA4HSS0 * PA001101 (for E)
JYA4HBT0 * PA000101 (for AUS)
JYA4JAN0 * PA000101 (for CDN)

NOTE:
The vehicle identification number is used to identify your motorcycle and may be used to register your motorcycle with the licensing authority in your state.



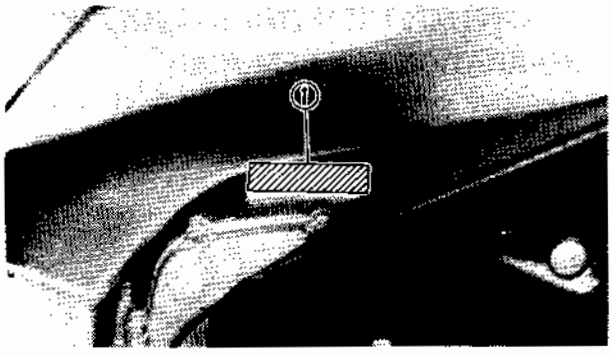
FRAME SERIAL NUMBER

(Except for E, AUS and CDN)

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

Starting serial number:
YZF750R(E):
4HD-000101 (for I, B, DK, NL, N, GB, PRT, GR and IRL)
4HN-000101 (for D, S and SF)
4HR-000101 (for CH and A)
4FM-000101 (for F)
YZF750SP(E):
4HS-000101 (for I, B, NL, IRL and GB)
4HT-000101 (for D)
4FN-000101 (for F)

NOTE:
The first three digits of these numbers are for model identifications; the remaining digits are the unit production number.



ENGINE SERIAL NUMBER

The engine serial number ① is stamped into crankcase.

Starting serial number:

YZF750R(E):

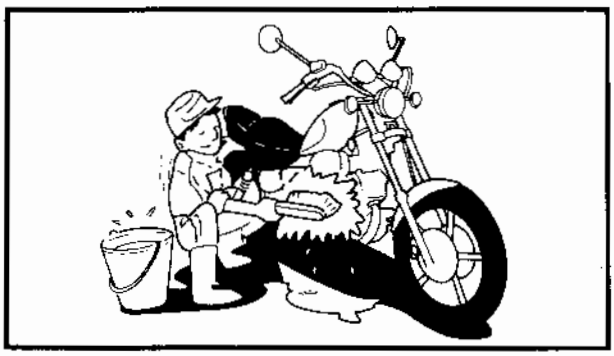
4HD-000101 (for I, B, DK, NL, N, GB, PRT, GR and IRL)
4HN-000101 (for D, S and SF)
4HD-010101 (for E)
4HA-000101 (for AUS)
4HY-000101 (for CDN)
4HR-000101 (for CH and A)
4FM-000101 (for F)

YZF750SP(E):

4HS-000101 (for I, B, NL, IRL and GB)
4HT-000101 (for D)
4HS-001101 (for E)
4HB-000101 (for AUS)
4JA-000101 (for CDN)
4FN-000101 (for F)

NOTE:

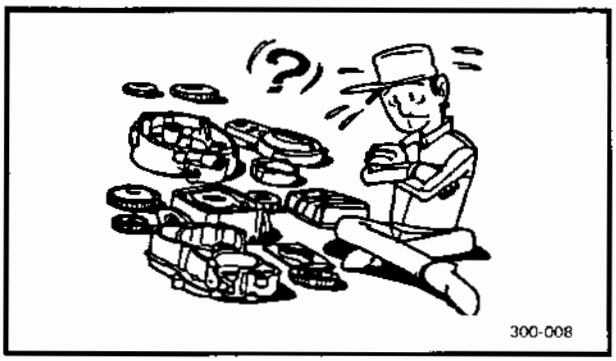
- The first three digits of these numbers are for model identification; the remaining digits are the unit production number.
- Designs and specifications are subject to change without notice.



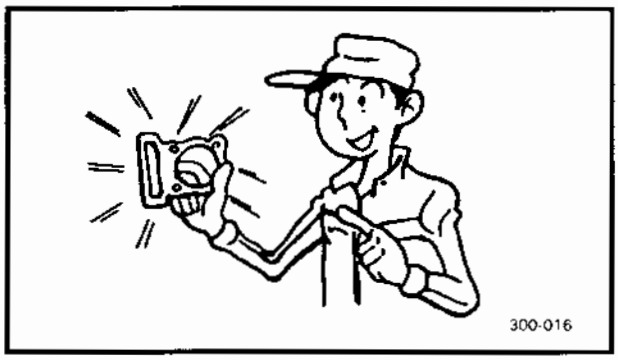
IMPORTANT INFORMATAION

PREPARATION FOR REMOVAL

1. Remove all dirt, mud dust, and foreign material before removal and disassembly.



2. Use proper tools and cleaning equipment. Refer to "SPECIAL TOOL".
3. When disassembling the machine keep mated parts together. This includes gears, cylinders, pistons, and other mated parts that have been "mated" through normal wear. Mated parts must be reused as an assembly or replaced.
4. During the machine disassembly, clean all parts and place them in trays in the order of disassembly. This will speed up assembly time and help assure that all parts are correctly reinstalled.
5. Keep away from fire.

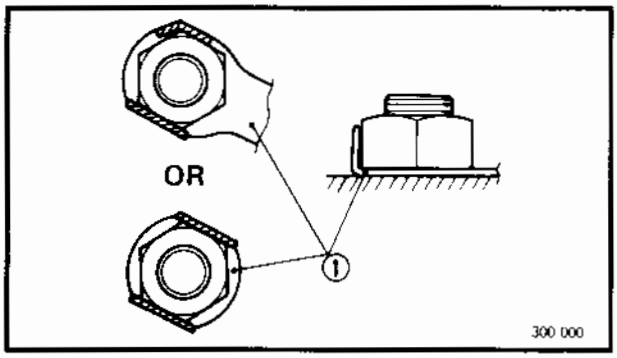


ALL REPLACEMENT PARTS

1. Use only genuine Yamaha parts for all replacements. Use oil and/or grease recommended by Yamaha for assembly and adjustment. Other brands may be similar in function and appearance, but inferior in quality.

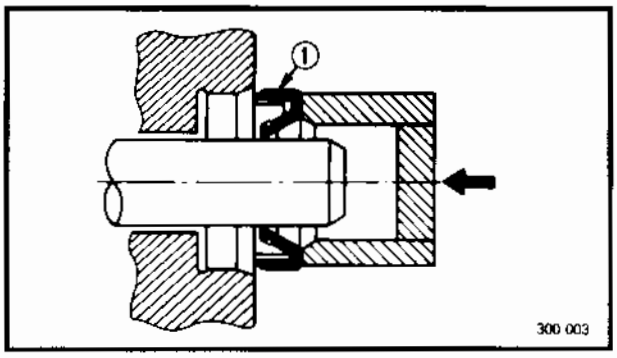
GASKETS, OIL SEALS, AND O-RINGS

1. All gaskets, seals and O-rings should be replaced when an engine is overhauled. All gaskets surfaces, oil seal lips and O-rings must be cleaned.
2. Properly oil all mating parts and bearing during reassembly. Apply grease to the oil seal lips.



LOCK WASHERS/PLATES AND COTTER PINS

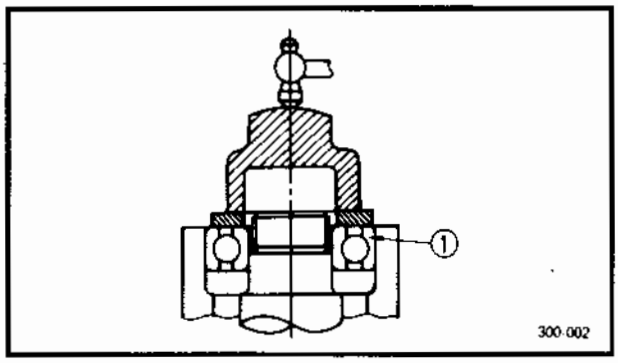
1. All lock washers/plates ① and cotter pins must be replaced when they are removed. Lock tab(s) should be bent along the bolt or nut flat(s) after the bolt or nut has been properly tightened.



BEARINGS AND OIL SEALS

1. Install the bearing(s) and oil seal(s) with their manufacturer's marks or numbers facing outward. (In other words, the stamped letters must be on the side exposed to view.) When installing oil seal(s), apply a light coating of light-weight lithium base grease to the seal lip(s). Oil the bearings liberally when installing.

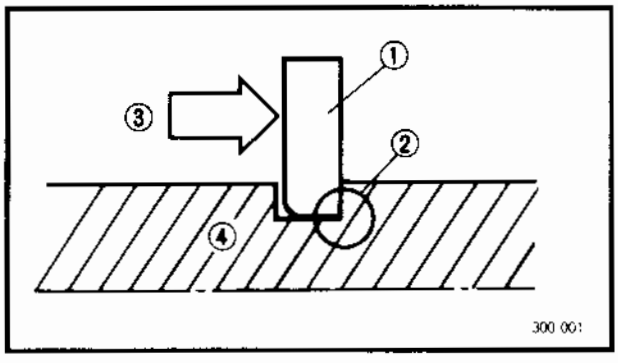
①Oil seal



CAUTION:

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

①Bearing



CIRCLIPS

1. All circlips should be inspected carefully before reassembly. Always replace piston pin clips after one use. Replace distorted circlips. When installing a circlips ①, make sure that the sharp edged corner ② is positioned opposite to the thrust ③ it receives. See the sectional view.

④Shaft

SPECIAL TOOLS

The proper special tools are necessary for complete and accurate tune-up and assembly. Using the correct special tool will help prevent damage caused by the use of improper tools or improvised techniques. The shape and part number used for the special tool differ by country, so two types are provided.

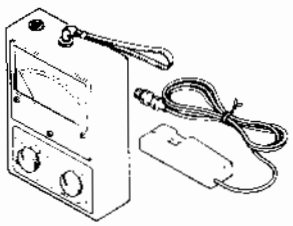
Refer to the list provided to avoid errors when placing an order.

P/N. YM- □□□□□ , YU-□□□□□
YS- □□□□□ , YK-□□□□□
ACC-□□□□□
For US, CDN

P/N. 90890-□□□□□
Except for US, CDN

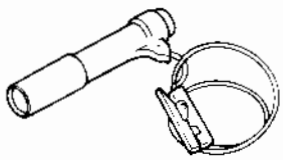
FOR TUNE UP

1
Inductive tachometer
P/N. YU-08036-A
90890-03113



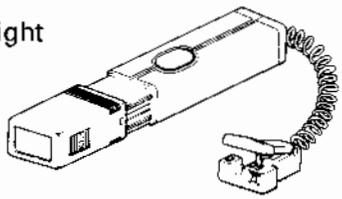
This tool is needed for detecting engine rpm.

2-A
Inductive timing light
P/N. YM-33277-A



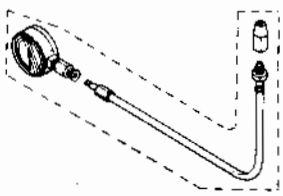
This tool is necessary for checking ignition timing.

2-B
Inductive timing light
P/N. 90890-03141



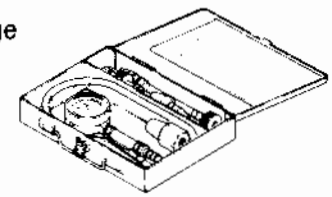
This tool is necessary for checking ignition timing.

3-A
Compression gauge
P/N. YU-33223



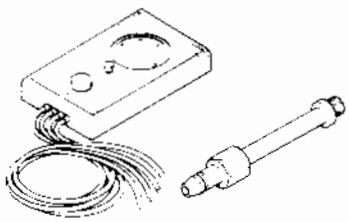
These gauge are used to measure the engine compression.

3-B
Compression gauge
P/N. 90890-03081
Adapter
P/N. 90890-04082



This gauge is used to measure the engine compression.

4
Vacuum gauge
P/N. YU-08030-A
90890-03094
Adapter
P/N. YM-03060
90890-03060



This gauge is needed for carburetor synchronization.

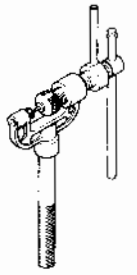
5
Fuel level gauge
P/N. YM-01312-A
90890-01312



This gauge is used to measure the fuel level in the float chamber.

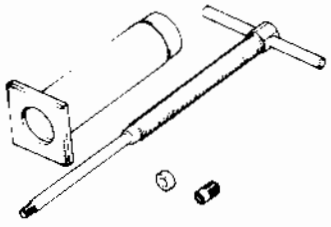
FOR ENGINE SERVICE

1
Cam chain cutter
P/N. YM-01112
90890-01112



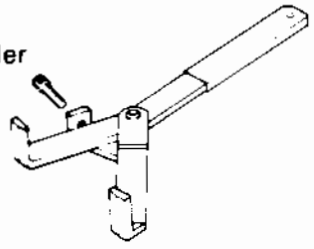
This tool is used when cutting the cam chain.

2
Piston pin puller
P/N. YU-01304
90890-01304



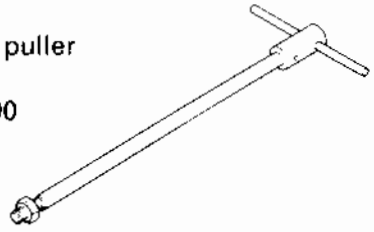
This tool is used to remove the piston pin.

3
Universal clutch holder
P/N. YM-91042
90890-04086



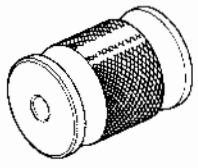
This tool is used to hold the clutch when removing or installing the clutch boss locknut.

4-A
Armature shock puller
P/N. YU-01047-3
90890-01290



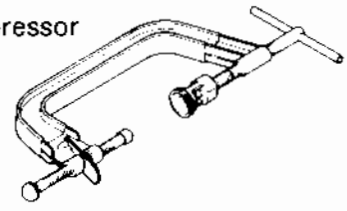
These tools are used to remove the generator armature.

4-B
Weight
P/N. YU-01047-2
90890-01291



These tools are used to remove the generator armature.

5-A
Valve spring compressor
P/N. YM-04019
90890-04019



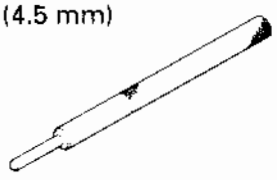
These tools are needed to remove and install the valve assemblies.

5-B
Attachment
(For exhaust valve)
P/N. YM-04108
90890-04108
(For intake valve)
P/N. YM-04114
90890-04114



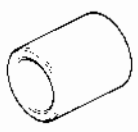
These tools are needed to remove and install the valve assemblies.

6
Valve guide remover (4.5 mm)
P/N. YM-04116
90890-04116



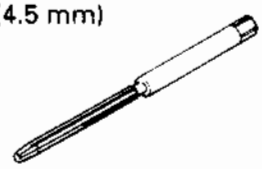
This tool is used to remove the valve guides.

7
Valve guide installer
P/N. YM-04117
90890-04117



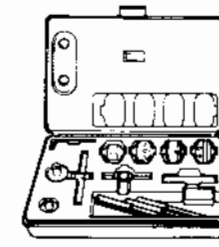
This tool is needed to install the valve guides properly.

8
Valve guide reamer (4.5 mm)
P/N. YM-04118
90890-04118



This tool is used to rebore the new valve guide.

9
Valve seat cutter
P/N. YM-91043-C



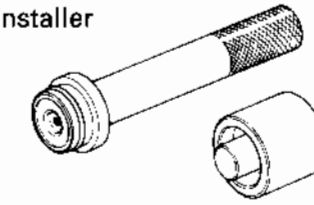
This tool is used to adjust the valve clearance.

10
Quick gasket®
P/N. ACC-11001-15-01
YAMAHA Bond No. 1215
P/N. 90890-85505



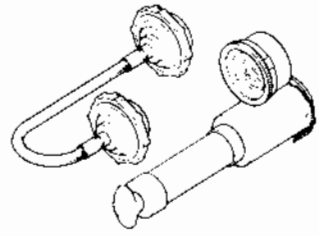
This sealant (Bond) is used for crankcase mating surfaces, etc.

11
Water pump seal installer
P/N. YU-04051-1
90890-04058
Adapter
P/N. YM-33221
90890-04078



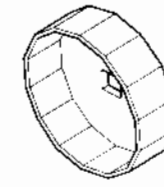
These tools are used for installing the seal of the water pump housing.

12
Radiator cap tester
P/N. YU-24460-01
90890-01325
Adaptor
P/N. YU-33984
90890-01352



This tester is needed for checking the cooling system.

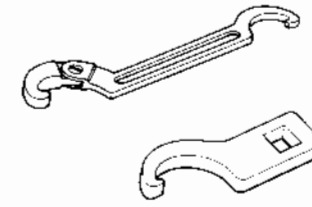
13
Oil filter wrench
P/N. YU-38411
90890-01426



This tool is used to remove and install the oil filter.

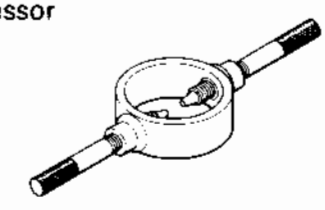
FOR CHASSIS SERVICE

1
Ring nut wrench
P/N. YU-01268
90890-01268
P/N. YU-33975
90890-01403



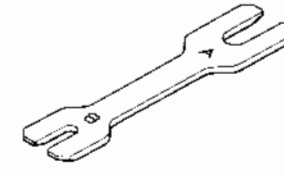
This tool is used to loosen and tighten the steering ring nut.

2
Fork spring compressor
P/N. YM-01441
90890-01441



This tool is needed to disassemble and assemble the front fork.

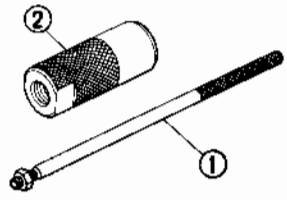
3
Rod holder
P/N. YM-01434
90890-01434



This tool is used to hold the fork spring.

4

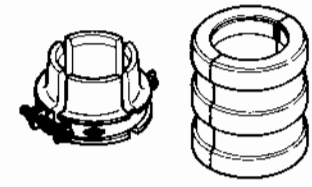
Rod puller ①
P/N. YM-01437
90890-01437
Adapter ②
P/N. 90890-01436



These tools are used to pull up the fork damper rod.

5

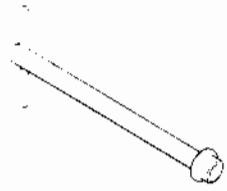
Fork seal driver
P/N. YM-01442
90890-01442



This tool is used when installing the fork seal.

6

Damper rod holder
P/N. YM-01445
90890-01445

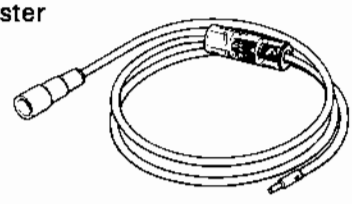


This tool is used to loosen and tighten the front fork damper rod holding bolt.

FOR ELECTRICAL COMPONENTS

1-A

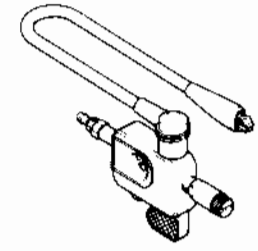
Dynamic spark tester
P/N. YM-34487



This instrument is necessary for checking the ignition system components.

1-B

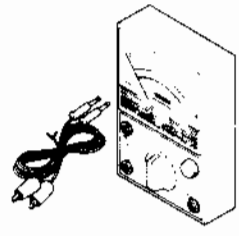
Ignition checker
P/N. 90890-06754



This instrument is necessary for checking the ignition system components.

2

Pocket tester
P/N. YU-03112
90890-03112

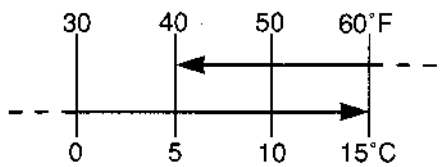


This instrument is invaluable for checking the electrical system.

SPECIFICATIONS

YZF750R GENERAL SPECIFICATIONS

For (B) (DK) (NL) (N) (PRT)

Model	YZF750R
Model code:	4HD1
Engine starting number:	4HD-000101
Frame starting number:	4HD-000101
Dimensions:	
Overall length	2,160 mm (85.0 in)
Overall width	730 mm (28.7 in)
Overall height	1,165 mm (45.9 in)
Seat height	785 mm (30.9 in)
Wheelbase	1,420 mm (55.9 in)
Minimum ground clearance	140 mm (5.51 in)
Minimum turning radius	3,200 mm (126.0 in)
Basic weight:	
With oil and full fuel tank	218 kg (481 lb)
Engine:	
Engine type	Liquid-cooled 4-stroke, DOHC
Cylinder arrangement	Forward-inclined parallel 4-cylinder
Displacement	749 cm^3
Bore × stroke	72 × 46 mm (2.83 × 1.81 in)
Compression ratio	11.5:1
Compression pressure (STD)	1,320 kPa (13.2 kg/cm^2, 188 psi) at 400 r/min
Starting system	Electric starter
Lubrication system:	Wet sump
Oil type or grade:	
Engine oil	 Yamalube 4 (20W40) or SAE20W40 type SE motor oil Yamalube 4 (10W30) or SAE10W30 type SE motor oil
Oil capacity:	
Engine oil	
Periodic oil change	3 L (2.6 Imp qt, 3.2 US qt)
With oil filter replacement	3.7 L (3.3 Imp qt, 3.9 US qt)
Total amount	4 L (3.5 Imp qt, 4.2 US qt)
Radiator capacity (including all routes):	2.4 L (2.11 Imp qt, 2.54 US qt)
Air filter:	Dry type element
Fuel:	
Type	Regular unleaded gasoline
Fuel tank capacity	19 L (4.18 Imp gal, 5.02 US gal)
Fuel reserve amount	3.5 L (0.77 Imp gal, 0.92 US gal)

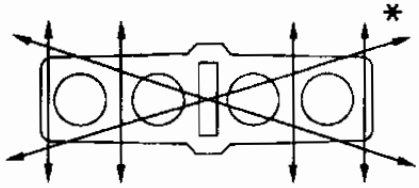
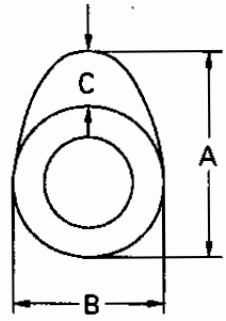
Model		YZF750R
Carburetor:		
Type / quantity		BDST38/4
Manufacturer		MIKUNI
Spark plug:		
Type		CR8E,CR9E/U24ESR-N,U27ESR-N
Manufacturer		NGK/NIPPONDENSO
Spark plug gap		0.7 ~ 0.8 mm (0.028 ~ 0.031 in)
Clutch type:		Wet, multiple-disc
Transmission:		
Primary reduction system		Spur gear
Primary reduction ratio		91/48(1.896)
Secondary reduction system		Chain drive
Secondary reduction ratio		43/16(2.688)
Transmission type		Constant mesh 6-speed
Operation		Left foot operation
Gear ratio	1st	36/14(2.571)
	2nd	33/17(1.941)
	3rd	28/18(1.556)
	4th	26/19(1.368)
	5th	28/23(1.217)
	6th	26/24(1.083)
Chassis:		
Frame type		Diamond
Caster angle		24°
Trail		108 mm (4.25 in)
Tire:		
Type		Tubeless
Size	front	120/70 ZR17
	rear	180/55 ZR17
Manufacturer	front	MICHELIN/BRIDGESTONE/DUNLOP
	rear	MICHELIN/BRIDGESTONE/DUNLOP
Type	front	A89X/BT50F/D202F
	rear	M89X/BT50R/D202
Tire pressure (cold tire):		
Maximum load-except motorcycle		172 kg (379 lb)
Loading condition A *		0 ~ 90 kg (0 ~ 198 lb)
	front	225 kPa (2.25 kg/cm^2, 32 psi)
	rear	250 kPa (2.5 kg/cm^2, 36 psi)
Loading condition B *		90 ~ 172 kg (198 ~ 379 lb)
	front	250 kPa (2.5 kg/cm^2, 36 psi)
	rear	290 kPa (2.9 kg/cm^2, 41 psi)
		* Load is the total weight of cargo, rider, passenger and accessories.

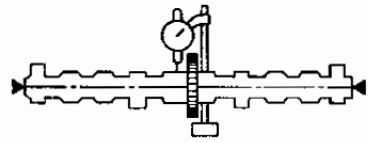
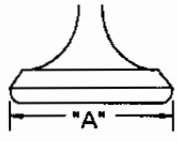
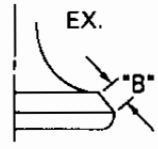
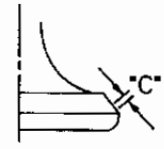
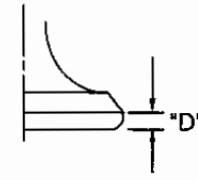
Model		YZF750R
High-speed riding		
	front	250 kPa (2.5 kg/cm², 36 psi)
	rear	290 kPa (2.9 kg/cm², 41 psi)
Brake:		
Front brake	type	Dual disc brake
	operation	Right hand operation
Rear brake	type	Single disc brake
	operation	Right foot operation
Suspension:		
Front suspension		Telescopic fork
Rear suspension		Swingarm (link suspension)
Shock absorber:		
Front shock absorber		Coil spring / Oil damper
Rear shock absorber		Coil-gas spring / Oil damper
Wheel travel:		
Front wheel travel		120 mm (4.7 in)
Rear wheel travel		130 mm (5.1 in)
Electrical:		
Ignition system		T.C.I. (Digital)
Generator system		A.C. generator
Battery type		YTX12-BS/GTX12-BS
Battery capacity		12 V 10 AH
Headlight type:		Quartz bulb (Halogen)
Bulb wattage × quantity:		
Headlight		12 V 60 W / 55 W + 60 W
Auxiliary light		12 V 5 W × 1
Tail / brake light		12 V 5 W / 21 W × 2
Flasher light		12 V 21 W × 4
License light		12 V 5 W × 2
Meter light		12 V 1.7 W × 4
Indicator light		
NEUTRAL		12 V 3.4 W × 1
TURN		12 V 3.4 W × 1
OIL LEVEL		12 V 3.4 W × 1
HIGH BEAM		12 V 3.4 W × 1
FUEL		12 V 3.4 W × 1

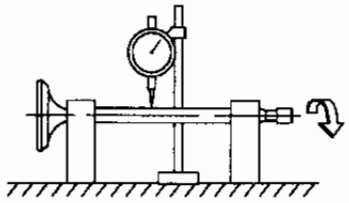
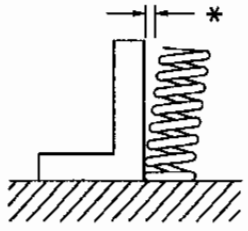
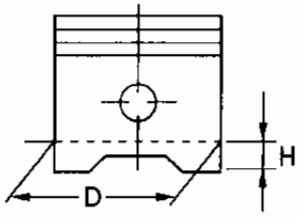
YZF750R MAINTENANCE SPECIFICATIONS

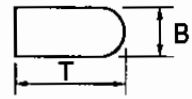
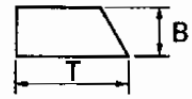
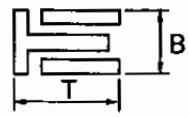
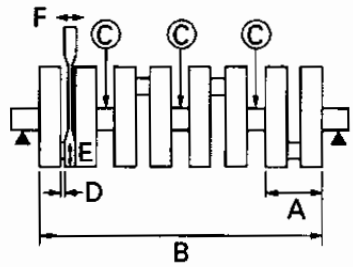
For (B) (DK) (NL) (N) (PRT)

ENGINE

Model		YZF750R
Cylinder head:		
Warp limit		0.03 mm (0.0012 in)
		
Cylinder:		
Bore size		71.98 ~ 72.02 mm (2.8339 ~ 2.8354 in)
Taper limit		0.05 mm (0.002 in)
Out of round limit		0.05 mm (0.002 in)
Camshaft:		
Drive method		Chain drive (Center)
Cam cap inside diameter (I1, I4, E1, E4)		24.470 ~ 24.491 mm (0.9634 ~ 0.9642 in)
Cam cap inside diameter (I2, I3, E2, E3)		24.500 ~ 24.521 mm (0.9646 ~ 0.9654 in)
Camshaft outside diameter		24.437 ~ 24.450 mm (0.9621 ~ 0.9626 in)
Shaft-to-cap clearance (I1, I4, E1, E4)		0.020 ~ 0.054 mm (0.0008 ~ 0.0021 in)
Shaft-to-cap clearance (I2, I3, E2, E3)		0.050 ~ 0.084 mm (0.0020 ~ 0.0033 in)
Cam dimensions		
		
Intake	"A"	32.6 ~ 32.7 mm (1.283 ~ 1.287 in)
	<limit>	<32.5mm (1.280 in)>
	"B"	24.95 ~ 25.05 mm (0.982 ~ 0.986 in)
	<limit>	<24.85 mm (0.978 in)>
	"C"	7.55 ~ 7.75 mm (0.297 ~ 0.305 in)
Exhaust	"A"	33.0 ~ 33.1 mm (1.299 ~ 1.303 in)
	<limit>	<32.9 mm (1.295 in)>
	"B"	24.95 ~ 25.05 mm (0.982 ~ 0.986 in)
	<limit>	<24.85 mm (0.978 in)>
	"C"	7.95 ~ 8.15 mm (0.313 ~ 0.321 in)

Model		YZF750R
Camshaft runout limit		0.03 mm (0.0012 in)
		
Cam chain:		
Cam chain type / No. of links		DID219FTSDHA/104
Cam chain adjustment method		Automatic
Valve, valve seat, valve guide:		
Valve clearance (cold)	IN	0.11 ~ 0.20 mm (0.004 ~ 0.008 in)
	EX	0.21 ~ 0.30 mm (0.008 ~ 0.012 in)
Valve dimensions:		
 Head Dia		
 Face Width		
 Seat Width		
 Margin Thickness		
"A" head diameter	IN	22.9 ~ 23.1 mm (0.902 ~ 0.909 in)
	EX	24.4 ~ 24.6 mm (0.961 ~ 0.969 in)
"B" face width	IN	1.49 ~ 2.48 mm (0.059 ~ 0.098 in)
	EX	1.76 ~ 2.76 mm (0.069 ~ 0.109 in)
"C" seat width	IN	0.9 ~ 1.1 mm (0.035 ~ 0.043 in)
	EX	0.9 ~ 1.1 mm (0.035 ~ 0.043 in)
"D" margin thickness	IN	0.6 ~ 0.8 mm (0.024 ~ 0.031 in)
	EX	0.85 ~ 1.15 mm (0.033 ~ 0.045 in)
Stem outside diameter	IN	4.475 ~ 4.490 mm (0.1762 ~ 0.1768 in)
	EX	4.460 ~ 4.475 mm (0.1756 ~ 0.1762 in)
<Limit>	IN	<4.445 mm (0.175 in)>
	EX	<4.43 mm (0.174 in)>
Guide inside diameter	IN	4.500 ~ 4.512 mm (0.1772 ~ 0.1776 in)
	EX	4.500 ~ 4.512 mm (0.1772 ~ 0.1776 in)
<Limit>	IN	<4.55 mm (0.179 in)>
	EX	<4.55 mm (0.179 in)>
Stem-to-guide clearance	IN	0.010 ~ 0.037 mm (0.0004 ~ 0.0015 in)
	EX	0.025 ~ 0.052 mm (0.0010 ~ 0.0020 in)
<Limit>	IN	<0.08 mm (0.003 in)>
	EX	<0.1 mm (0.004 in)>

Model		YZF750R
Stem runout limit		0.01 mm (0.0004 in)
		
Valve seat width	IN	0.9 ~ 1.1 mm (0.0354 ~ 0.0433in)
	EX	0.9 ~ 1.1 mm (0.0354 ~ 0.0433 in)
Valve spring:		
Inner spring		
Free length	IN	40.38 mm (1.59 in)
	EX	44.4 mm (1.75 in)
Set length (valve closed)	IN	36.5 mm (1.4 in)
	EX	40.5 mm (1.6 in)
Compressed pressure (installed)	IN	9.3 ~ 11.3 kg (20.50 ~ 24.91 lb)
	EX	12.6 ~ 15.4 kg (27.78 ~ 33.95 lb)
Tilt limit	IN	2.5°/1.7 mm (2.5°/0.067 in)
	EX	2.5°/1.9 mm (2.5°/0.075 in)
		
Direction of winding (top view)	IN	Clockwise
	EX	Clockwise
		
Piston:		
Piston to cylinder clearance		0.07 ~ 0.09 mm (0.0028 ~ 0.0035 in)
<Limit>		<0.11 mm (0.0043 in)>
Piston size "D"		71.90 ~ 71.94 mm (2.831 ~ 2.832 in)
		
Measuring point "H"		3.5 mm (0.138 in)

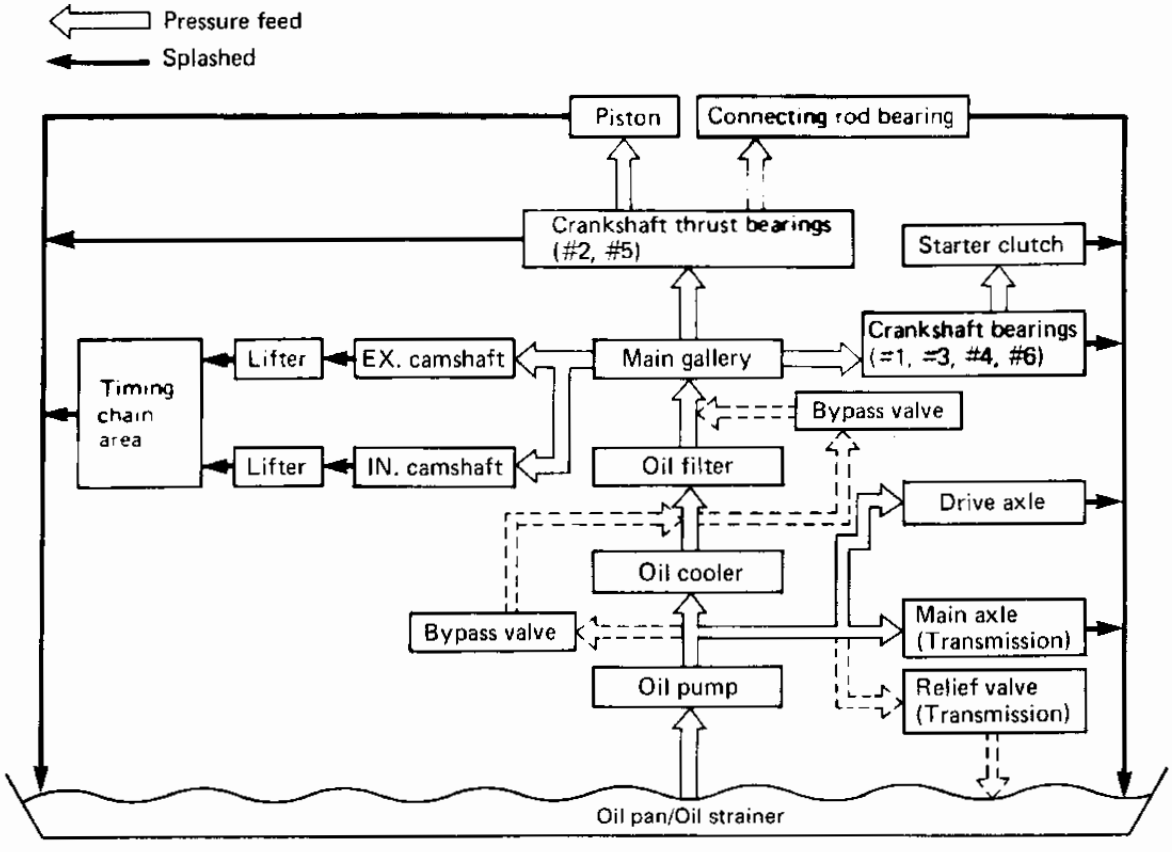
Model	YZF750R
Piston off-set	0.5 mm (0.02 in)
Piston off-set direction	IN side
Piston pin bore inside diameter	19.004 ~ 19.015 mm (0.7482 ~ 0.7486 in)
Piston pin outside diameter	18.991 ~ 19.000 mm (0.7477 ~ 0.7480 in)
Piston rings:	
Top ring:	
	
Type	Barrel
Dimensions (B × T)	0.8 × 2.8 mm (0.031 × 0.110 in)
End gap (installed)	0.2 ~ 0.4 mm (0.008 ~ 0.016 in)
Side clearance (installed)	0.03 ~ 0.07 mm (0.0012 ~ 0.0028 in)
2nd ring:	
	
Type	Taper
Dimensions (B × T)	0.8 × 2.8 mm (0.031 × 0.110 in)
End gap (installed)	0.2 ~ 0.4 mm (0.008 ~ 0.016 in)
Side clearance	0.02 ~ 0.06 mm (0.0008 ~ 0.0024 in)
Oil ring:	
	
Dimensions (B × T)	1.5 × 2.5 mm (0.059 × 0.098 in)
End gap (installed)	0.2 ~ 0.7 mm (0.008 ~ 0.028 in)
Connecting rod:	
Oil clearance	0.032 ~ 0.056 mm (0.001 ~ 0.002 in)
Color code (corresponding size)	① Blue ② Black ③ Brown ④ Green
Crankshaft:	
	
Crank width "A"	50.95 ~ 55.85 mm (2.006 ~ 2.199 in)
Assembly width "B"	340.1 ~ 340.9 mm (13.390 ~ 13.421 in)
Runout limit "C"	0.03 mm (0.0012 in)
Big end side clearance "D"	0.160 ~ 0.262 mm (0.006 ~ 0.010 in)

Model		YZF750R
Journal oil clearance		0.040 ~ 0.064 mm (0.0016 ~ 0.0025 in)
Color code (corresponding size)		① Blue ② Black ③ Brown ④ Green ⑤ Yellow
Clutch:		
Friction plate thickness		2.9 ~ 3.1 mm (0.114 ~ 0.122 in)
Quantity		9
Friction plate wear limit		2.8 mm (0.11 in)
Clutch plate thickness		1.9 ~ 2.1 mm (0.075 ~ 0.083 in)
Quantity		8
Warp limit		0.1 mm (0.004 in)
Clutch spring free length		55 mm (2.17 in)
Quantity		6
Minimum length		54 mm (2.13 in)
Clutch release method		Hydraulic inner push
Transmission:		
Main axle deflection limit		0.08 mm (0.003 in)
Drive axle deflection limit		0.08 mm (0.003 in)
Shifter:		
Shifter type		Guide bar
Guide bar bending limit		0.1 mm (0.004 in)
Carburetor:		
I. D. mark		4HD 00
Main jet	(M.J)	#1,4:#•125 #2,3:#122.5
Main air jet	(M.A.J)	#1,4:#45 #2,3:#60
Jet needle	(J.N)	#1,4:5CEX19 #2,3:5CEX24
Needle jet	(N.J)	•Y-2
Pilot air jet	(P.A.J.1)	#125
Pilot outlet	(P.O)	0.85
Pilot jet	(P.J)	#45
Bypass 1	(B.P.1)	0.8
Bypass 2	(B.P.2)	0.8
Bypass 3	(B.P.3)	0.8
Pilot screw	(P.S)	2
Valve seat size	(V.S)	1.0
Starter jet	(G.S.1)	#57.5
Starter jet	(G.S.2)	0.7
Throttle valve size	(TH.V)	#125
Fuel level	(F.L)	6.8 ~ 7.8 mm (0.27 ~ 0.31 in) Above the float chamber line
Engine idle speed		1,150 ~ 1,250 r/min
Intake vacuum		26.3 kPa (200 mmHg, 7.874 inHg)
Fuel pump:		
Type		Electrical type
Model / manufacturer		4FM/NIPPONDENSO
Consumption amperage	<max>	1 A
Output pressure		20 kPa (0.2 kg/cm², 3 psi)

Model	YZF750R
Lubrication system:	
Oil filter type	Paper type
Oil pump type	Trochoid type
Tip clearance "A" or "B"	0.09 ~ 0.15 mm (0.004 ~ 0.006 in)
Side clearance	0.03 ~ 0.08 mm (0.001 ~ 0.003 in)
Relief valve operating pressure	490 ~ 570 kPa (4.9 ~ 5.7 kg/cm^2, 69.69 ~ 81.07 psi)
Oil pressure (hot)	70 kPa (0.7 kg/cm^2, 9.96 psi) at 1,000 r/min
Cooling system:	
Radiator core size	
Width	380 mm (15.0 in)
Height	217.8 mm (8.57 in)
Thickness	32 mm (1.26 in)
Radiator cap opening pressure	95 ~ 125 kPa (0.95 ~ 1.25 kg/cm^2, 13.51 ~ 17.78 psi)
Reservoir tank capacity	0.55 L (0.48 Imp qt, 0.58 US qt)
<From low to full level>	<0.25 L (0.22 Imp qt, 0.26 US qt)>
Water pump	
Type	Single suction centrifugal pump
Reduction ratio	91/48X41/43(1.808)

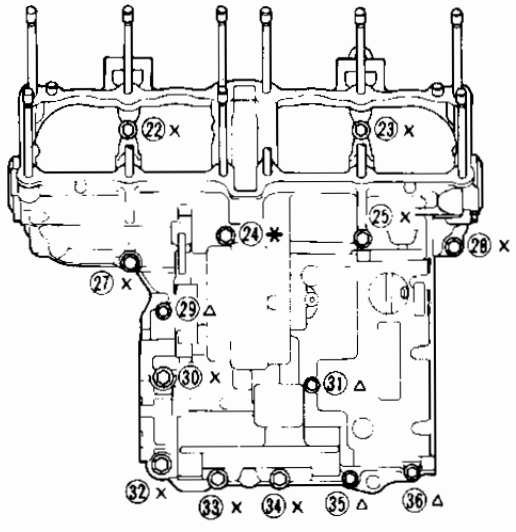
Model	YZF750R

Lubrication chart:

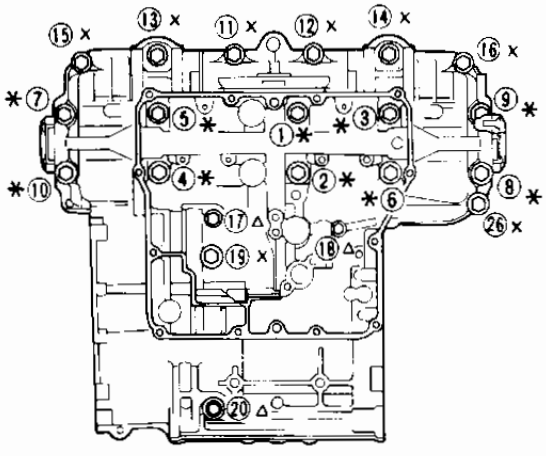


Crankcase tightening sequence:

Crancase (upper)



Crankcase (lower)



✻: M9 Bolt: 32 Nm (3.2 m • kg, 23 ft • lb)
×: M8 Bolt: 24 Nm (2.4 m • kg, 17 ft • lb)
△: M6 Bolt: 12 Nm (1.2 m • kg, 8.7 ft • lb)

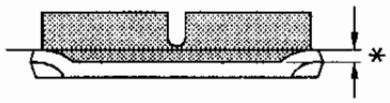
Tightening torques

Part to be tightened	Part name	Thread size	Q'ty	Tightening torque			Remarks
				Nm	m·kg	ft·lb	
Camshaft cap	Bolt	M6	36	10	1.0	7.2	
	Bolt	M6	4	8	0.8	5.8	
Cylinder head (exhaust pipe)	Stud bolt	M8	8	15	1.5	11	E
Cylinder head	Nut	M10	8	41	4.1	30	E
Cylinder head	Cap nut	M10	4	41	4.1	30	E
Spark plug	–	M10	4	12.5	1.25	9.0	
Cylinder head cover	Bolt	M6	8	10	1.0	7.2	
Connecting rod	Nut	M8	8	36	3.6	25	M
Timing chain sporocket	Flange bolt	M7	4	24	2.4	17	
Timing chain tensioner	Bolt	M6	2	10	1.0	7.2	
Timing chain tensioner end	Cap bolt	M11	1	20	2.0	14	
Chain guide (intake side)	Bolt	M6	2	10	1.0	7.2	LT
Oil filter	–	M20	–	17	1.7	12	E
Oil cooler	–	M20	–	63	6.3	45	E
Oil pan	Bolt	M6	12	10	1.0	7.2	
Drain bolt	–	M14	1	43	4.3	31	
Oil delivery pipe #1	Flange bolt	M6	3	10	1.0	7.2	LT
Oil spray nozzle	Flange bolt	M6	1	10	1.0	7.2	LT
Oil baffle plate (lower)	Flange bolt	M6	4	10	1.0	7.2	LT
Oil baffle plate (upper)	Flange bolt	M6	10	10	1.0	7.2	LT
Exhaust pipe	Nut	M8	8	20	2.0	14	
Exhaust pipe and muffler	Flange bolt	M8	1	20	2.0	14	
EXUP cover	Bolt	M6	3	10	1.0	7.2	
EXUP cable bracket	Bolt	M6	2	10	1.0	7.2	
Muffler and stay	Flange bolt	M8	1	20	2.0	14	
Exhaust pipe blind plug (CO test)	Bolt	M6	4	10	1.0	7.2	
Crankcase	Stud bolt	M10	12	10	1.0	7.2	E
Main axle bearing retainer	Torx	M6	3	10	1.0	7.2	LT
Crankshaft end cover	Screw	M6	6	7	0.7	5.1	
Crankcase	Flange bolt	M6	7	12	1.2	8.7	E
Crankcase	Flange bolt	M8	17	24	2.4	17	E
Crankcase	Flange bolt	M9	11	32	3.2	23	E
Oil delivery hose	Union bolt	M10	3	21	2.1	15	
Starter wheel	Bolt	M8	3	25	2.5	18	LT
HY-VO chain guide	Bolt	M6	2	10	1.0	7.2	LT
Clutch boss	Nut	M20	1	70	7.0	50	Use lock washer
Clutch spring	Bolt	M6	6	8	0.8	5.8	
Drive sprocket	Nut	M18	1	70	7.0	50	Use lock washer
Shift cam stopper lever	Bolt	M6	1	10	1.0	7.2	LT

Part to be tightened	Part name	Thread size	Q'ty	Tightening torque			Remarks
				Nm	m·kg	ft·lb	
Guide bar stopper (sift fork)	Bolt	M6	2	10	1.0	7.2	LT
Shift rod	Nut	M6	2	10	1.0	7.2	
Shift pedal	Bolt	M6	1	10	1.0	7.2	
Shift shaft spring stopper	Screw	M8	1	22	2.2	16	LT
Neutral switch	Screw	M6	2	4	0.4	2.9	LT
AC generator	Flange bolt	M8	3	25	2.5	18	
Ignitor unit	Bolt	M6	3	10	1.0	7.2	
Ignition coil	Flange bolt	M6	4	10	1.0	7.2	
Thermo unit	–	–	1	15	1.5	11	
Termo switch	–	M16	1	23	2.3	17	
Sarvo motor	Bolt	M6	2	10	1.0	7.2	

CHASSIS

Model		YZF750R
Steering system:		
Steering bearing type		Ball bearing
Front suspension:		
Front fork travel		120 mm (4.72 in)
Fork spring free length		269 mm (10.6 in)
<Limit>		<264 mm (10.4 in)>
Collar length		106 mm (4.2 in)
Spring rate	(K1)	7.5 N/mm (0.75 kg/mm 42.0 lb/in)
	(K2)	9.5 N/mm (0.95 kg/mm 53.2 lb/in)
Stroke	(K1)	0 ~ 70 mm (0.00 ~ 2.76 in)
	(K2)	70 ~ 120 mm (2.76 ~ 4.72 in)
Optional spring		No
Oil capacity		469 cm^3 (16.5 Imp oz, 15.9 US oz)
Oil level		93 mm (3.66 in)
Oil grade		Suspension oil "01" or equivalent
Rear suspension:		
Shock absorber travel		70 mm (2.76 in)
Spring free length		216 mm (8.50 in)
<Limit>		<211.5 mm (8.33 in)>
Fitting length		200 mm (7.87 in)
Spring rate	(K1)	80.0 N/mm (8 kg/mm 448.0 lb/in)
Stroke	(K1)	0 ~ 70 mm (0.00 ~ 2.76 in)
Optional spring		No
Enclosed gas / air pressure (STD)		1,200 kPa (12 kg/cm^2, 171 psi)
Swingarm:		
Free play limit	end	1 mm (0.04 in)
	side	1 mm (0.04 in)
Front wheel:		
Type		Cast wheel
Rim size		MT3.50 X J17
Rim material		Aluminum
Rim runout limit	radial	1 mm (0.04 in)
	lateral	0.5 mm (0.02 in)
Rear wheel:		
Type		Cast wheel
Rim size		MT5.50 X J17
Rim material		Aluminum
Rim runout limit	radial	1 mm (0.04 in)
	lateral	0.5 mm (0.02 in)
Drive chain:		
Type / manufacturer		532ZLV KAI/DAIDO
No. of links		106
Chain free play		15 ~ 25 mm (0.6 ~ 1.0 in)

Model	YZF750R
Front disc brake:	
Type	Dual
Disc outside diameter × thickness	320 × 5 mm (12.6 × 0.20 in)
Pad thickness inner	5 mm (0.20 in)
<Limit>	<0.5 mm (0.02 in)>
Pad thickness outer	5 mm (0.20 in)
<Limit>	<0.5 mm (0.02 in)>
	
Master cylinder inside diameter	15.875 mm (0.62 in)
Caliper cylinder inside diameter	27 mm (1.06 in) + 27 mm (1.06 in) + 25.48 mm (1.00 in)
Brake fluid type	DOT #4
Rear disc brake:	
Type	Single
Disc outside diameter × thickness	245 × 6 mm (9.6 × 0.24 in)
Pad thickness inner	5.5 mm (0.22 in)
<Limit>	<0.5 mm (0.02 in)>
Pad thickness outer	5.5 mm (0.22 in)
<Limit>	<0.5 mm (0.02 in)>
	
Master cylinder inside diameter	14 mm (0.55 in)
Caliper cylinder inside diameter	42.8 mm (1.69 in)
Brake fluid type	DOT #4
Clutch:	
Master cylinder inside diameter	15.875 mm (0.62 in)
Release cylinder inside diameter	38.1 mm (1.50 in)
Brake fluid type	DOT #4
Brake lever & brake pedal:	
Brake pedal position	57 mm (2.2 in)

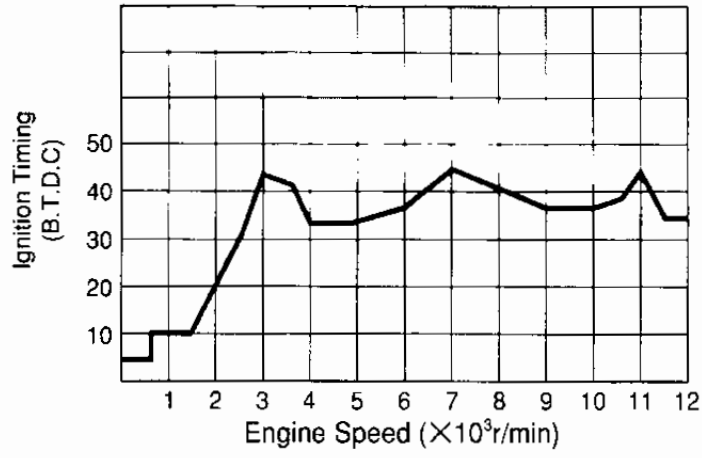
Tightening torques

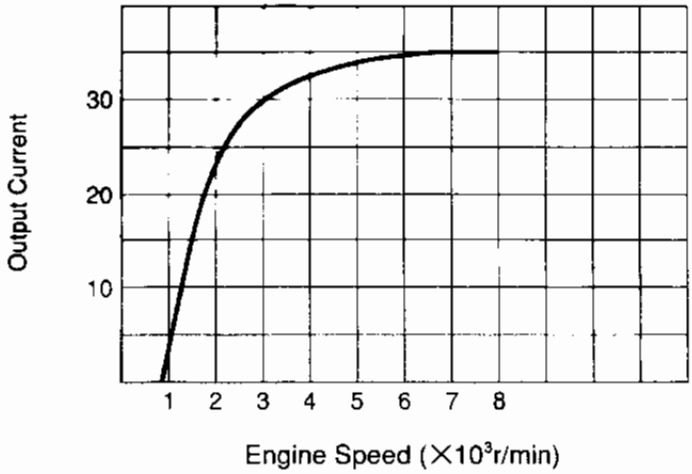
Part to be tightened	Thread size	Tightening torque			Remarks
		Nm	m·kg	ft·lb	
Uppr bracket and outer tube	M8	25	2.5	18	
Upper bracket and steering shaft	M22	110	11.0	80	
Handlebar and outer tube	M6	13	1.3	9.4	
Handlebar and upper bracket	M6	13	1.3	9.4	
Ring nut (steering shaft)	M25	16	1.6	12	See NOTE
Outer tube and lower bracket	M8	23	2.3	17	
Union bolt (brake hose)	M10	26	2.6	19	
Master cylinder (front brake)	M6	10	1.0	7.2	
Union bolt (clutch hose)	M10	26	2.6	19	
Engine mounting:					
Mounting bolt (front)	M10	40	4.0	29	
Mounting bolt (rear upper)	M10	55	5.5	40	
Mounting bolt (rear lower)	M10	55	5.5	40	
Pinch bolt (front right)	M8	22	2.2	16	
Pinch bolt (rear upper)	M8	15	1.5	11	
Exhaust pipe bracket	M10	36	3.6	26	
Frame and rear fender stay	M8	28	2.8	20	
Swingarm pivot shaft	M18	125	12.5	90	
Relay arm and frame	M10	48	4.8	35	
Relay arm and connecting rod	M10	48	4.8	35	
Connecting rod and swingarm	M10	48	4.8	35	
Rear shock absorber and relay arm	M10	40	4.0	29	
Rear shock absorber and bracket	M10	40	4.0	29	
Frame and rear shock absorber bracket	M16	51	5.1	37	
Fuel pump and fuel tank	M5	3	0.3	2.2	
Fuel pump and fuel cock	M6	7	0.7	5.1	
Footrest bracket and frame	M8	28	2.8	20	
Rear footrest and frame	M8	28	2.8	20	
Rear master cylinder and footrest bracket	M8	23	2.3	17	
Rear brake reservoir tank	M6	5	0.5	3.6	
Union bolt (rear brake hose)	M10	26	2.6	19	
Sidestand bracket and frame	M8	28	2.8	20	
Front wheel axle	M18	72	7.2	52	
Rear wheel axle	M25	203	20.3	146	
Front brake caliper	M10	35	3.5	25	
Rear brake caliper	M10	35	3.5	25	
Brake disc and wheel	M8	20	2.0	14	
Driven sprocket and clutch hub	M10	60	6.0	43	
Tension bar	M8	30	3.0	22	
Caliper breed screw	M8	6	0.6	4.3	
Pinch bolt (front axle)	M8	23	2.3	17	

NOTE:
1. First, tighten the ring nut approximately **48 Nm (4.8 m • kg**, 35 ft • lb) by using the torque wrench, then loosen the ring nut **completely**.
2. Retighten the ring nut to **specification**.

ELECTRICAL

Model	YZF750R
Voltage:	12 V
Ignition system:	
Ignition timing (B.T.D.C.)	10° at 1,200 r/min
Advanced timing (B.T.D.C.)	45° at 7,000 r/min
Advancer type	Electrical type
T.C.I.:	
Pickup coil resistance / color	135 ~ 165 Ω at 20°C (68°F) / Black – Gray
T.C.I. unit model / manufacturer	BB7266/KOKUSAN DENKI
Ignition coil:	
Model / manufacturer	CM12-33,CM12-35/HITACHI
Minimum spark gap	6 mm (0.24 in)
Primary winding resistance/color	1.8 ~ 2.2 Ω at 20°C (68°F)/Red/White-Gray
Secondary winding resistance	9.6 ~ 14.4 kΩ at 20°C (68°F)
Spark plug cap:	
Type	Resin type
Resistance	10 kΩ
Charging system:	
Type	A.C. generator
Model / manufacturer	B3G/NIPPONDENSO
Nominal output	12 V 34 A at 3,000 r/min



Model	YZF750R
	
Voltage regulator:	
Type	Semi-conductor, field control type
Model / manufacturer	B3G/NIPPONDENSO
No load regulated voltage	14.2 ~ 14.8 V
Rectifier:	
Model / manufacturer	B3G/NIPPONDENSO
Battery:	
Specific gravity	1.320
Electric starter system:	
Type	Constant mesh type
Starter motor:	
Model / manufacturer	3XF/MITSUBA
I.D. number	SM-13
Output	0.7 kW
Armature coil resistance	0.015 ~ 0.025 Ω at 20°C (68°F)
Brush overall length	12.5 mm (0.49 in)
<Limit>	<4 mm (0.16 in)>
Spring force	570 ~ 920 g (20.1 ~ 32.5 oz)
Commutator diameter	28 mm (1.10 in)
<Wear limit>	<27 mm (1.06 in)>
Mica undercut	0.7 mm (0.03 in)
Starter relay:	
Model / manufacturer	MS5F-421/JIDECO
Amperage rating	100 A
Coil winding resistance	4.2 ~ 4.6 Ω at 20°C (68°F)
Horn:	
Type	Plane type
Quantity	1
Model / manufacturer	YF-12/NIKKO
Maximum amperage	2.5 A

Model	YZF750R
Flasher relay:	
Type	Semi-transistor type
Model / manufacturer	FB249M/NIPPONDENSO
Self cancelling device	No
Flasher frequency	60 ~ 120 cycle/min
Wattage	21 W × 2 + 3.4 W
Oil level switch:	
Model / manufacturer	3GM/NIPPONDENSO
Starting circuit cut off relay:	
Model / manufacturer	3EN/OMRON
Coil winding resistance / color	203 ~ 247 Ω at 20°C (68°F) Red/Black – Black/Yellow
Diode	Yes
Fuel pump relay:	
Model / manufacturer	3EN/OMRON
Coil winding resistance / color	203 ~ 247 Ω at 20°C (68°F) Red/Black – Black/Red
Electric fan:	
Model / manufacturer	4FM/NIPPONDENSO
Running r/min	3,450 r/min
Thermostatic switch:	
Model / manufacturer	2EL/NIHON THERMOSTAT
Thermo unit:	
Model / manufacturer	11H/NIPPON SEIKI
Circuit breaker:	
Type	Fuse
Amperage for individual circuit	
MAIN	30 A × 1
HEAD	20 A × 1
SIGNAL	15 A × 1
IGNITION	7.5 A × 1
FAN	7.5 A × 1
Reserve	20 A × 1
Reserve	7.5 A × 1

YZF750R EXCLUSIVE SPECIFICATION

The following specifications are exclusive for the below listed countries.

For specifications other than below, please refer to the General and maintenence specifications.

For England, Ireland

Bulb wattage × quantity:	
Headlight	12V 35/35W × 2

For Spain

Model code:	4HD2
Engine starting number:	4HD-010101
Vehicle identification number:	JYA4HDSO*PA010101
Dimensions:	
Overall length	2,070 mm (81.5 in)

For Italy

Dimensions:	
Overall length	2,070 mm (81.5 in)
Bulb wattage × quantity:	
Headlight	12V 35/35W × 2

For Greece

Dimensions:	
Overall length	2,070 mm (81.5 in)

For Sweden, Finland, Germany

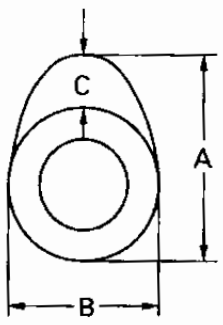
Model code:	4HN1
Engine starting number:	4HN-000101
Frame starting number:	4HN-000101
Dimensions:	
Seat height	770 mm (30.3 in)
Tire pressure (cold tire):	
Maximum load - except motorcycle	207 kg (456 lb)
Carburetor:	
I.D. mark	4HN 00
Main jet (M.J)	#1,4:#•127.5 #2,3:#•125
Jet needle (J.N)	#1,4:#•5CEX19, #2,3:#•5CEX24
T.C.I.:	
T.C.I. unit model/manufacturer	BR7268/Kokusan Denki

For Switzerland, Austria

Model code:		4HR1
Engine starting number:		4HR-000101
Frame starting number:		4HR-000101
Transmission:		
Secondary reduction ratio		43/17 (2.529)
Tire pressure (cold tire):		
Maximum load-except motorcycle		187kg (412 lb)
Carburetor:		
I.D. mark		4HR 00
Main jet	(M.J)	#1,4:125, #2,3:122.5
Jet needle	(J.N)	5CEX25
Needle jet	(N.J)	Y-0
Pilot jet	(P.J)	#35
Pilot air jet	(P.A.J)	#120
Ignition system:		
Ignition timing		5°/1200 r/min
T.C.I.:		
T.C.I. unit model/manufacturer		BB7267/Kokusan Denki

For France

Model code:	4FM1
Engine starting number:	4FM-000101
Frame starting number:	4FM-000101
Dimensions:	
Overall length	2,070 mm (81.5 in)
Seat height	795 mm (31.3 in)
Cam dimensions:	
Intake "A"	31.8 ~ 31.9 mm (1.252 ~ 1.256 in)
<limit>	<31.7 mm (1.248 in)>
"B"	24.95 ~ 25.05 mm (0.982 ~ 0.986 in)
<limit>	<24.85 mm (0.978 in)>
"C"	6.75 ~ 6.95 mm (0.266 ~ 0.274 in)
Exhaust "A"	31.75 ~ 31.85 mm (1.250 ~ 1.254 in)
<limit>	<31.65 mm (1.246 in)>
"B"	24.95 ~ 25.05 mm (0.982 ~ 0.986 in)
<limit>	<24.85 mm (0.978 in)>
"C"	6.7 ~ 6.9 mm (0.264 ~ 0.272 in)



Carburetor:		
I.D. mark		4FM 00
Main jet	(M.J)	#1,4:•125, #2,3:•122.5
Main air jet	(M.A.J)	#1,4:55, #2,3:60
Jet needle	(J.N)	#1,4:5CEU27 #2,3:5CET26
Needle jet	(N.J)	Y-0
Pilot jet	(P.J)	#42.5
Pilot air jet	(P.A.J)	#120
T.C.I.:		
T.C.I. unit mode/manufacurer		BB7265/Kokusan Denki

For Australia

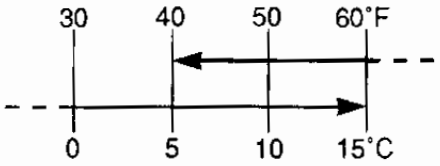
Model:	YZF750RE
Model code:	4HA1
Engine starting number:	4HA-000101
Vehicle identification number:	JYA4HATO ✱PA000101
Dimensions:	
Overall length	2,070 mm (81.5 in)
Bulb wattage × quantity:	
Headlight	12V 35/35W × 2

For Canada

Model:	YZF750RE
Model code:	4HY1
Engine starting number:	4HY-000101
Vehicle identification number:	JYA4HYNO ✱PA000101
Dimensions:	
Overall length	2,070 mm (81.5 in)
Bulb wattage × quantity:	
Headlight	12V 35/35W × 2
Licence light	12V 3.8W × 2

YZF750SP GENERAL SPECIFICATIONS

For (B) (NL)

Model	YZF750SP
Model code:	4HS1
Engine starting number:	4HS-000101
Frame starting number:	4HS-000101
Dimensions:	
Overall length	2,160 mm (85.0 in)
Overall width	730 mm (28.7 in)
Overall height	1,145 mm (45.1 in)
Seat height	785 mm (30.9 in)
Wheelbase	1,420 mm (55.9 in)
Minimum ground clearance	140 mm (5.51 in)
Minimum turning radius	3,200 mm (126.0 in)
Basic weight:	
With oil and full fuel tank	215 kg (474 lb)
Engine:	
Engine type	Liquid-cooled 4-stroke, DOHC
Cylinder arrangement	Forward-inclined parallel 4-cylinder
Displacement	749 cm^3
Bore × stroke	72 × 46 mm (2.83 × 1.81 in)
Compression ratio	11.5:1
Compression pressure (STD)	1,320 kPa (13.2 kg/cm^2, 188 psi) at 400 r/min
Starting system	Electric starter
Lubrication system:	Wet sump
Oil type or grade:	
Engine oil	 Yamalube 4 (20W40) or SAE20W40 type SE motor oil Yamalube 4 (10W30) or SAE10W30 type SE motor oil
Oil capacity:	
Engine oil	
Periodic oil change	3 L (2.6 Imp qt, 3.2 US qt)
With oil filter replacement	3.7 L (3.3 Imp qt, 3.9 US qt)
Total amount	4 L (3.5 Imp qt, 4.2 US qt)
Radiator capacity (including all routes):	2.4 L (2.11 Imp qt, 2.54 US qt)
Air filter:	Dry type element
Fuel:	
Type	Regular unleaded gasoline
Fuel tank capacity	19 L (4.18 Imp gal, 5.02 US gal)
Fuel reserve amount	3.5 L (0.77 Imp gal, 0.92 US gal)

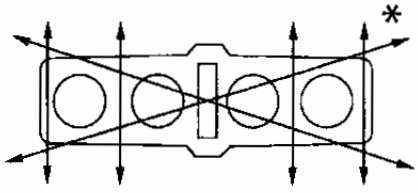
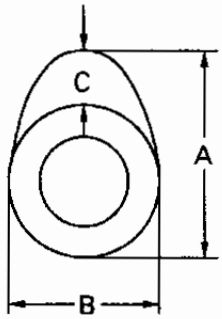
Model		YZF750SP
Carburetor:		
Type / quantity		FCRD39/4
Manufacturer		KEIHIN
Spark plug:		
Type		CR8E,CR9E/U24ESR-N,U27ESR-N
Manufacturer		NGK/NIPPONDENSO
Spark plug gap		0.7 ~ 0.8 mm (0.028 ~ 0.031 in)
Clutch type:		Wet, multiple-disc
Transmission:		
Primary reduction system		Spur gear
Primary reduction ratio		91/48(1.896)
Secondary reduction system		Chain drive
Secondary reduction ratio		39/16(2.438)
Transmission type		Constant mesh 6-speed
Operation		Left foot operation
Gear ratio	1st	32/13(2.462)
	2nd	33/17(1.941)
	3rd	31/19(1.632)
	4th	33/23(1.435)
	5th	26/20(1.300)
	6th	25/21(1.190)
Chassis:		
Frame type		Diamond
Caster angle		24°
Trail		108 mm (4.25 in)
Tire:		
Type		Tubeless
Size	front	120/70 ZR17
	rear	180/55 ZR17
Manufacturer	front	MICHELIN
	rear	MICHELIN
Type	front	TX11
	rear	TX23
Tire pressure (cold tire):		
Maximum load-except motorcycle		100 kg (220 lb)
Loading condition A *		0 ~ 100 kg (0 ~ 220 lb)
	front	225 kPa (2.25 kg/cm^2, 32 psi)
	rear	250 kPa (2.5 kg/cm^2, 36 psi)
		* Load is the total weight of cargo, rider, passenger and accessories.
High-speed riding		
	front	250 kPa (2.5 kg/cm^2, 36 psi)
	rear	290 kPa (2.9 kg/cm^2, 41 psi)

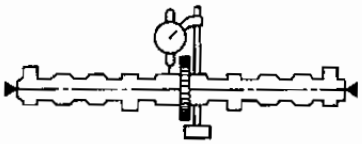
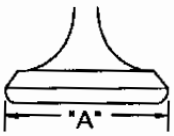
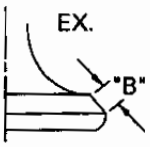
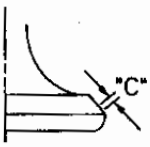
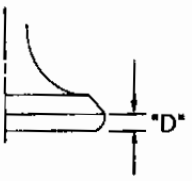
Model		YZF750SP
Brake:		
Front brake	type	Dual disc brake
	operation	Right hand operation
Rear brake	type	Single disc brake
	operation	Right foot operation
Suspension:		
Front suspension		Telescopic fork
Rear suspension		Swingarm (link suspension)
Shock absorber:		
Front shock absorber		Coil spring / Oil damper
Rear shock absorber		Coil-gas spring / Oil damper
Wheel travel:		
Front wheel travel		120 mm (4.7 in)
Rear wheel travel		130 mm (5.1 in)
Electrical:		
Ignition system		T.C.I. (Digital)
Generator system		A.C. generator
Battery type		YTX12-BS/GTX12-BS
Battery capacity		12 V 10 AH
Headlight type:		Quartz bulb (Halogen)
Bulb wattage × quantity:		
Headlight		12 V 60 W / 55 W + 60W
Auxiliary light		12 V 5 W × 1
Tail / brake light		12 V 5 W / 21 W × 2
Flasher light		12 V 21 W × 4
Licence light		12 V 5 W × 2
Meter light		12 V 1.7 W × 4
Indicator light		
NEUTRAL		12 V 3.4 W × 1
TURN		12 V 3.4 W × 1
OIL LEVEL		12 V 3.4 W × 1
HIGH BEAM		12 V 3.4 W × 1
FUEL		12 V 3.4 W × 1

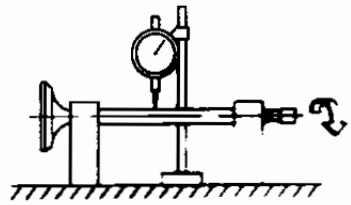
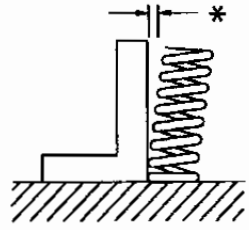
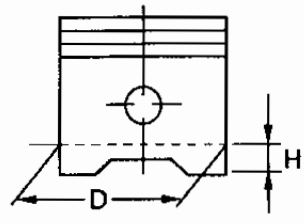
YZF750SP MAINTENANCE SPECIFICATIONS

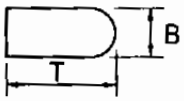
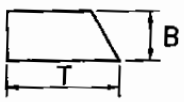
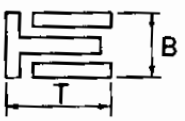
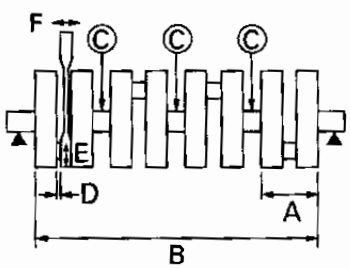
For (B) (NL)

ENGINE

Model		YZF750SP
Cylinder head:		
Warp limit		0.03 mm (0.0012 in)
		
Cylinder:		
Bore size		71.98 ~ 72.02 mm (2.8339 ~ 2.8354 in)
Taper limit		0.05 mm (0.002 in)
Out of round limit		0.05 mm (0.002 in)
Camshaft:		
Drive method		Chain drive (Center)
Cam cap inside diameter (I1, I4, E1, E4)		24.470 ~ 24.491 mm (0.9634 ~ 0.9642 in)
Cam cap inside diameter (I2, I3, E2, E3)		24.500 ~ 24.521 mm (0.9646 ~ 0.9654 in)
Camshaft outside diameter		24.437 ~ 24.450 mm (0.9621 ~ 0.9626 in)
Shaft-to-cap clearance (I1, I4, E1, E4)		0.020 ~ 0.054 mm (0.0008 ~ 0.0021 in)
Shaft-to-cap clearance (I2, I3, E2, E3)		0.050 ~ 0.084 mm (0.0020 ~ 0.0033 in)
Cam dimensions		
		
Intake	"A"	32.6 ~ 32.7 mm (1.283 ~ 1.287 in)
	<limit>	<32.5mm (1.280 in)>
	"B"	24.95 ~ 25.05 mm (0.982 ~ 0.986 in)
	<limit>	<24.85 mm (0.978 in)>
	"C"	7.55 ~ 7.75 mm (0.297 ~ 0.305 in)
Exhaust	"A"	33.0 ~ 33.1 mm (1.299 ~ 1.303 in)
	<limit>	<32.9 mm (1.295 in)>
	"B"	24.95 ~ 25.05 mm (0.982 ~ 0.986 in)
	<limit>	<24.85 mm (0.978 in)>
	"C"	7.95 ~ 8.15 mm (0.313 ~ 0.321 in)

Model		YZF750SP
Camshaft runout limit		0.03 mm (0.0012 in)
		
Cam chain:		
Cam chain type / No. of links		DID219FTSDHA/104
Cam chain adjustment method		Automatic
Valve, valve seat, valve guide:		
Valve clearance (cold)	IN	0.11 ~ 0.20 mm (0.004 ~ 0.008 in)
	EX	0.21 ~ 0.30 mm (0.008 ~ 0.012 in)
Valve dimensions:		
 Head Dia		
 Face Width		
 Seat Width		
 Margin Thickness		
"A" head diameter	IN	22.9 ~ 23.1 mm (0.902 ~ 0.909 in)
	EX	24.4 ~ 24.6 mm (0.961 ~ 0.969 in)
"B" face width	IN	1.49 ~ 2.48 mm (0.059 ~ 0.098 in)
	EX	1.76 ~ 2.76 mm (0.069 ~ 0.109 in)
"C" seat width	IN	0.9 ~ 1.1 mm (0.035 ~ 0.043 in)
	EX	0.9 ~ 1.1 mm (0.035 ~ 0.043 in)
"D" margin thickness	IN	0.6 ~ 0.8 mm (0.024 ~ 0.031 in)
	EX	0.85 ~ 1.15 mm (0.033 ~ 0.045 in)
Stem outside diameter	IN	4.475 ~ 4.490 mm (0.1762 ~ 0.1768 in)
	EX	4.460 ~ 4.475 mm (0.1756 ~ 0.1762 in)
<Limit>	IN	<4.445 mm (0.175 in)>
	EX	<4.43 mm (0.174 in)>
Guide inside diameter	IN	4.500 ~ 4.512 mm (0.1772 ~ 0.1776 in)
	EX	4.500 ~ 4.512 mm (0.1772 ~ 0.1776 in)
<Limit>	IN	<4.55 mm (0.179 in)>
	EX	<4.55 mm (0.179 in)>
Stem-to-guide clearance	IN	0.010 ~ 0.037 mm (0.0004 ~ 0.0015 in)
	EX	0.025 ~ 0.052 mm (0.0010 ~ 0.0020 in)
<Limit>	IN	<0.08 mm (0.003 in)>
	EX	<0.1 mm (0.004 in)>

Model		YZF750SP
Stem runout limit		**0.01 mm (0.0004 in)**
		
Valve seat width	IN	0.9 ~ 1.1 mm (0.0354 ~ 0.0433in)
	EX	0.9 ~ 1.1 mm (0.0354 ~ 0.0433 in)
Valve spring:		
Inner spring		
Free length	IN	40.38 mm (1.59 in)
	EX	44.4 mm (1.75 in)
Set length (valve closed)	IN	36.5 mm (1.4 in)
	EX	40.5 mm (1.6 in)
Compressed pressure (installed)	IN	9.3 ~ 11.3 kg (20.50 ~ 24.91 lb)
	EX	12.6 ~ 15.4 kg (27.78 ~ 33.95 lb)
Tilt limit	IN	2.5°/1.7 mm (2.5°/0.067 in)
	EX	2.5°/1.9 mm (2.5°/0.075 in)
		
Direction of winding (top view)	IN	Clockwise
	EX	Clockwise
		
Piston:		
Piston to cylinder clearance		0.07 ~ 0.09 mm (0.0028 ~ 0.0035 in)
<Limit>		<0.11 mm (0.0043 in)>
Piston size "D"		71.90 ~ 71.94 mm (2.831 ~ 2.832 in)
		
Measuring point "H"		3.5 mm (0.138 in)

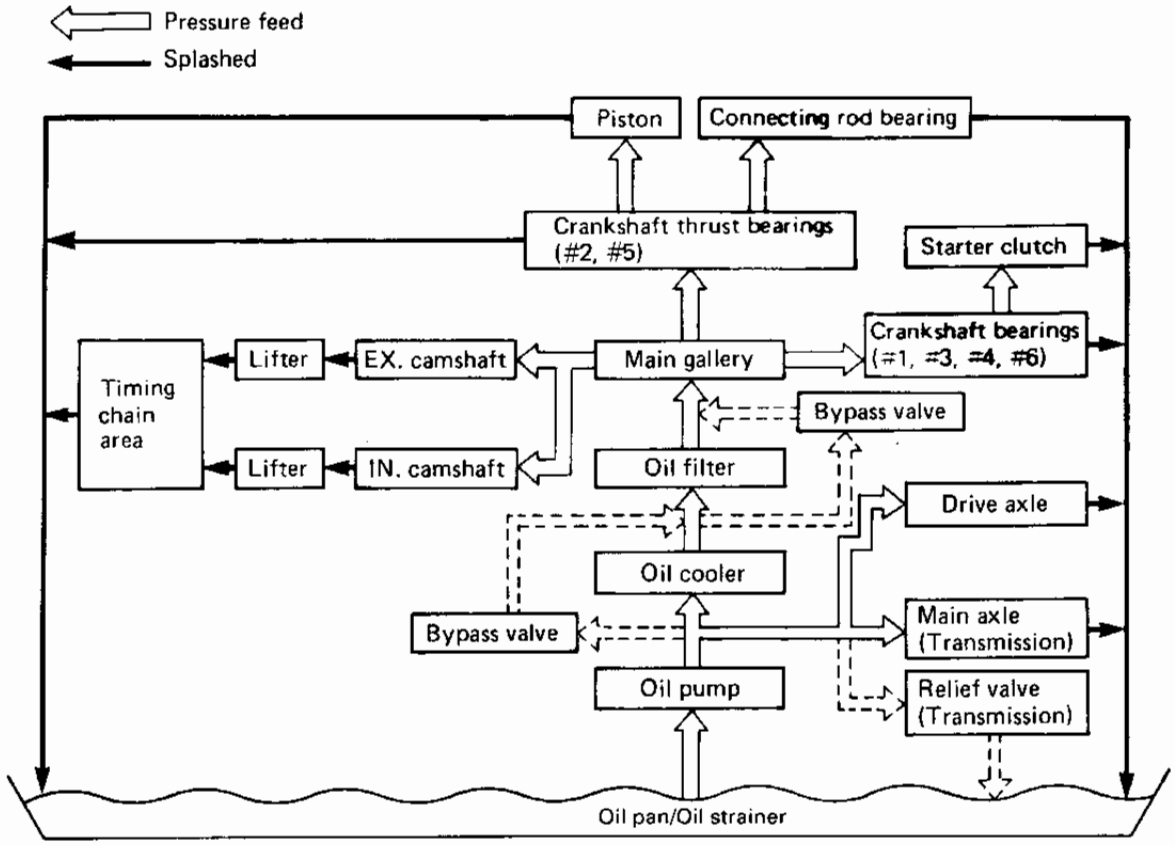
Model	YZF750SP
Piston off-set	0.5 mm (0.02 in)
Piston off-set direction	IN side
Piston pin bore inside diameter	19.004 ~ 19.015 mm (0.7482 ~ 0.7486 in)
Piston pin outside diameter	18.991 ~ 19.000 mm (0.7477 ~ 0.7480 in)
Piston rings:	
Top ring:	
	
Type	Barrel
Dimensions (B × T)	0.8 × 2.8 mm (0.031 × 0.110 in)
End gap (installed)	0.2 ~ 0.4 mm (0.008 ~ 0.016 in)
Side clearance (installed)	0.03 ~ 0.07 mm (0.0012 ~ 0.0028 in)
2nd ring:	
	
Type	Taper
Dimensions (B × T)	0.8 × 2.8 mm (0.031 × 0.110 in)
End gap (installed)	0.2 ~ 0.4 mm (0.008 ~ 0.016 in)
Side clearance	0.02 ~ 0.06 mm (0.0008 ~ 0.0024 in)
Oil ring:	
	
Dimensions (B × T)	1.5 × 2.5 mm (0.059 × 0.098 in)
End gap (installed)	0.2 ~ 0.7 mm (0.008 ~ 0.028 in)
Connecting rod:	
Oil clearance	0.032 ~ 0.056 mm (0.001 ~ 0.002 in)
Color code (corresponding size)	① Blue ② Black ③ Brown ④ Green
Crankshaft:	
	
Crank width "A"	50.95 ~ 55.85 mm (2.006 ~ 2.199 in)
Assembly width "B"	340.1 ~ 340.9 mm (13.390 ~ 13.421 in)
Runout limit "C"	0.03 mm (0.0012 in)
Big end side clearance "D"	0.160 ~ 0.262 mm (0.006 ~ 0.010 in)

Model		YZF750SP
Journal oil clearance		0.040 ~ 0.064 mm (0.0016 ~ 0.0025 in)
Color code (corresponding size)		① Blue ② Black ③ Brown ④ Green ⑤ Yellow
Clutch:		
Friction plate thickness		2.9 ~ 3.1 mm (0.114 ~ 0.122 in)
Quantity		9
Friction plate wear limit		2.8 mm (0.11 in)
Clutch plate thickness		1.9 ~ 2.1 mm (0.075 ~ 0.083 in)
Quantity		8
Warp limit		0.1 mm (0.004 in)
Clutch spring free length		55 mm (2.17 in)
Quantity		6
Minimum length		54 mm (2.13 in)
Clutch release method		Hydraulic inner push
Transmission:		
Main axle deflection limit		0.08 mm (0.003 in)
Drive axle deflection limit		0.08 mm (0.003 in)
Shifter:		
Shifter type		Guide bar
Guide bar bending limit		0.1 mm (0.004 in)
Carburetor:		
I. D. mark		4HS 00
Main jet	(M.J)	#125
Main air jet	(M.A.J)	#70
Jet needle	(J.N)	N1CB
Cutaway	(C.A)	2.5
Pilot air jet	(P.A.J.1)	#120
Pilot outlet	(P.O)	1.5
Pilot jet	(P.J)	#40
Bypass 1	(B.P.1)	1.0
Pilot screw	(P.S)	2 ~ 2-1/2
Valve seat size	(V.S)	1.2
Fuel level	(F.L)	6.3 ~ 7.3 mm (0.25 ~ 0.29 in) Above the dot mark
Engine idle speed		1,150 ~ 1,250 r/min
Intake vacuum		26.3 kPa (200 mmHg, 7.874 inHg)
Fuel pump:		
Type		Electrical type
Model / manufacturer		4FM/NIPPONDENSO
Consumption amperage	<max>	1 A
Output pressure		20 kPa (0.2 kg/cm^2, 3 psi)
Lubrication system:		
Oil filter type		Paper type
Oil pump type		Trochoid type
Tip clearance "A" or "B"		0.09 ~ 0.15 mm (0.004 ~ 0.006 in)
Side clearance		0.03 ~ 0.08 mm (0.001 ~ 0.003 in)

Model	YZF750SP
Relief valve operating pressure	490 ~ 570 kPa (4.9 ~ 5.7 kg/cm², 69.69 ~ 81.07 psi)
Oil pressure (hot)	70 kPa (0.7 kg/cm², 9.96 psi) at 1,000 r/min
Cooling system:	
Radiator core size	
Width	380 mm (15.0 in)
Height	217.8 mm (8.57 in)
Thickness	32 mm (1.26 in)
Radiator cap opening pressure	95 ~ 125 kPa (0.95 ~ 1.25 kg/cm², 13.51 ~ 17.78 psi)
Reservoir tank capacity	0.55 L (0.48 Imp qt, 0.58 US qt)
<From low to full level>	<0.25 L (0.22 Imp qt, 0.26 US qt)>
Water pump	
Type	Single suction centrifugal pump
Reduction ratio	91/48X41/43(1.808)

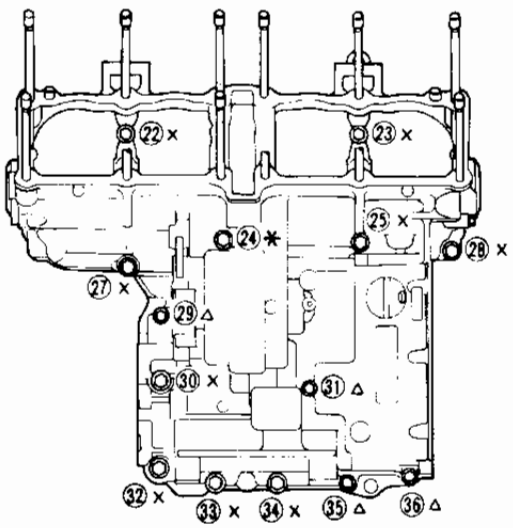
Model	YZF750SP

Lubrication chart:

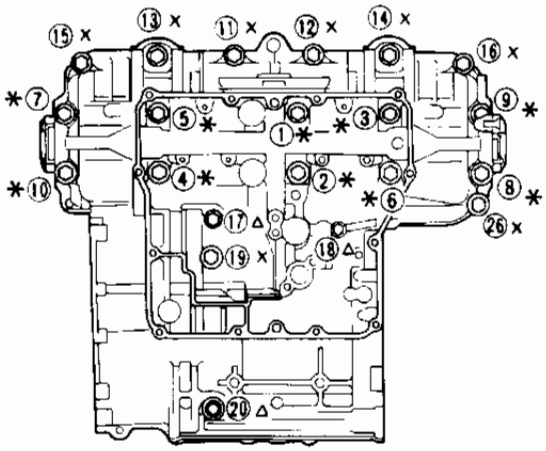


Crankcase tightening sequence:

Crancase (upper)



Crankcase (lower)



*: M9 Bolt: 32 Nm (3.2 m • kg, 23 ft • lb)
×: M8 Bolt: 24 Nm (2.4 m • kg, 17 ft • lb)
△: M6 Bolt: 12 Nm (1.2 m • kg, 8.7 ft • lb)

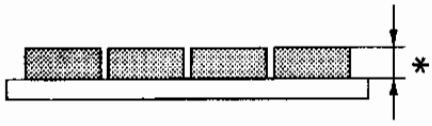
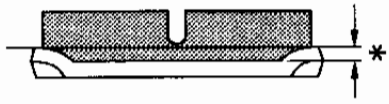
Tightening torques

Part to be tightened	Part name	Thread size	Q'ty	Tightening torque			Remarks
				Nm	m·kg	ft·lb	
Camshaft cap	Bolt	M6	36	10	1.0	7.2	
	Bolt	M6	4	8	0.8	5.8	
Cylinder head (exhaust pipe)	Stud bolt	M8	8	15	1.5	11	E
Cylinder head	Nut	M10	8	41	4.1	30	E
Cylinder head	Cap nut	M10	4	41	4.1	30	E
Spark plug	–	M10	4	12.5	1.25	9.0	
Cylinder head cover	Bolt	M6	8	10	1.0	7.2	
Connecting rod	Nut	M8	8	36	3.6	25	M
Timing chain sporocket	Flange bolt	M7	4	24	2.4	17	
Timing chain tensioner	Bolt	M6	2	10	1.0	7.2	
Timing chain tensioner end	Cap bolt	M11	1	20	2.0	14	
Chain guide (intake side)	Bolt	M6	2	10	1.0	7.2	LT
Oil filter	–	M20	–	17	1.7	12	E
Oil cooler	–	M20	–	63	6.3	45	E
Oil pan	Bolt	M6	12	10	1.0	7.2	
Drain bolt	–	M14	1	43	4.3	31	
Oil delivery pipe #1	Flange bolt	M6	3	10	1.0	7.2	LT
Oil spray nozzle	Flange bolt	M6	1	10	1.0	7.2	LT
Oil baffle plate (lower)	Flange bolt	M6	4	10	1.0	7.2	LT
Oil baffle plate (upper)	Flange bolt	M6	10	10	1.0	7.2	LT
Exhaust pipe	Nut	M8	8	20	2.0	14	
Exhaust pipe and muffler	Flange bolt	M8	1	20	2.0	14	
EXUP cover	Bolt	M6	3	10	1.0	7.2	
EXUP cable bracket	Bolt	M6	2	10	1.0	7.2	
Muffler and stay	Flange bolt	M8	1	20	2.0	14	
Exhaust pipe blind plug (CO test)	Bolt	M6	4	10	1.0	7.2	
Crankcase	Stud bolt	M10	12	10	1.0	7.2	E
Main axle bearing retainer	Torx	M6	3	10	1.0	7.2	LT
Crankshaft end cover	Screw	M6	6	7	0.7	5.1	
Crankcase	Flange bolt	M6	7	12	1.2	8.7	E
Crankcase	Flange bolt	M8	17	24	2.4	17	E
Crankcase	Flange bolt	M9	11	32	3.2	23	E
Oil delivery hose	Union bolt	M10	3	21	2.1	15	
Starter wheel	Bolt	M8	3	25	2.5	18	LT
HY-VO chain guide	Bolt	M6	2	10	1.0	7.2	LT
Clutch boss	Nut	M20	1	70	7.0	50	Use lock washer
Clutch spring	Bolt	M6	6	8	0.8	5.8	
Drive sprocket	Nut	M18	1	70	7.0	50	Use lock washer
Shift cam stopper lever	Bolt	M6	1	10	1.0	7.2	LT
Shift cam bearing stopper	Screw	M5	1	4	0.4	2.9	

Part to be tightened	Part name	Thread size	Q'ty	Tightening torque			Remarks
				Nm	m·kg	ft·lb	
Guide bar stopper (sift fork)	Bolt	M6	2	10	1.0	7.2	G
Shift rod	Nut	M6	2	10	1.0	7.2	
Shift pedal	Bolt	M6	1	10	1.0	7.2	
Shift shaft spring stopper	Screw	M8	1	22	2.2	16	G
Neutral switch	Screw	M6	2	4	0.4	2.9	G
AC generator	Flange bolt	M8	3	25	2.5	18	
Ignitor unit	Bolt	M6	3	10	1.0	7.2	
Ignition coil	Flange bolt	M6	4	10	1.0	7.2	
Thermo unit	–	–	1	15	1.5	11	
Termo switch	–	M16	1	23	2.3	17	
Sarvo motor	Bolt	M6	2	10	1.0	7.2	

CHASSIS

Model		YZF750SP
Steering system:		
Steering bearing type		Ball bearing
Front suspension:		
Front fork travel		120 mm (4.72 in)
Fork spring free length		269 mm (10.6 in)
<Limit>		<264 mm (10.4 in)>
Collar length		106 mm (4.2 in)
Spring rate	(K1)	8.0 N/mm (0.8 kg/mm 44.8 lb/in)
Stroke	(K1)	0 ~ 120 mm (0.00 ~ 4.72 in)
Optional spring		No
Oil capacity		464 cm^3 (16.3 Imp oz, 15.7 US oz)
Oil level		93 mm (3.66 in)
Oil grade		Suspension oil "01" or equivalent
Rear suspension:		
Shock absorber travel		70 mm (2.76 in)
Spring free length		220 mm (8.66 in)
<Limit>		<215.5 mm (8.48 in)>
Fitting length		200 mm (7.87 in)
Spring rate	(K1)	75.0 N/mm (7.5 kg/mm 420.0 lb/in)
Stroke	(K1)	0 ~ 70 mm (0.00 ~ 2.76 in)
Optional spring		No
Enclosed gas / air pressure (STD)		1,200 kPa (12 kg/cm^2, 171 psi)
Swingarm:		
Free play limit	end	1 mm (0.04 in)
	side	1 mm (0.04 in)
Front wheel:		
Type		Cast wheel
Rim size		MT3.50 X J17
Rim material		Aluminum
Rim runout limit	radial	1 mm (0.04 in)
	lateral	0.5 mm (0.02 in)
Rear wheel:		
Type		Cast wheel
Rim size		MT5.50 X J17
Rim material		Aluminum
Rim runout limit	radial	1 mm (0.04 in)
	lateral	0.5 mm (0.02 in)
Drive chain:		
Type / manufacturer		532ZLV KAI/DAIDO
No. of links		104
Chain free play		15 ~ 25 mm (0.6 ~ 1.0 in)

Model	YZF750SP
Front disc brake:	
Type	Dual
Disc outside diameter × thickness	320 × 5 mm (12.6 × 0.20 in)
Pad thickness inner	5 mm (0.20 in)
<Limit>	<0.5 mm (0.02 in)>
Pad thickness outer	5 mm (0.20 in)
<Limit>	<0.5 mm (0.02 in)>
	
Master cylinder inside diameter	15.875 mm (0.62 in)
Caliper cylinder inside diameter	27 mm (1.06 in) + 27 mm (1.06 in) + 25.48 mm (1.0 in)
Brake fluid type	DOT #4
Rear disc brake:	
Type	Single
Disc outside diameter × thickness	245 × 6 mm (9.6 × 0.24 in)
Pad thickness inner	5.5 mm (0.22 in)
<Limit>	<0.5 mm (0.02 in)>
Pad thickness outer	5.5 mm (0.22 in)
<Limit>	<0.5 mm (0.02 in)>
	
Master cylinder inside diameter	14 mm (0.55 in)
Caliper cylinder inside diameter	42.8 mm (1.69 in)
Brake fluid type	DOT #4
Clutch:	
Master cylinder inside diameter	15.875 mm (0.62 in)
Release cylinder inside diameter	38.1 mm (1.50 in)
Brake fluid type	DOT #4
Brake lever & brake pedal:	
Brake pedal position	57 mm (2.2 in)

Tightening torques

Part to be tightened	Thread size	Tightening torque			Remarks
		Nm	m·kg	ft·lb	
Uppr bracket and outer tube	M8	25	2.5	18	
Upper bracket and steering shaft	M22	110	11.0	80	
Handlebar and outer tube	M6	13	1.3	9.4	
Handlebar and upper bracket	M6	13	1.3	9.4	
Ring nut (steering shaft)	M25	16	1.6	12	See NOTE
Outer tube and lower bracket	M8	23	2.3	17	
Union bolt (brake hose)	M10	26	2.6	19	
Master cylinder (front brake)	M6	10	1.0	7.2	
Union bolt (clutch hose)	M10	26	2.6	19	
Engine mounting:					
Mounting bolt (front)	M10	40	4.0	29	
Mounting bolt (rear upper)	M10	55	5.5	40	
Mounting bolt (rear lower)	M10	55	5.5	40	
Pinch bolt (front right)	M8	22	2.2	16	
Pinch bolt (rear upper)	M8	15	1.5	11	
Exhaust pipe bracket	M10	36	3.6	26	
Frame and rear fender stay	M8	28	2.8	20	
Swingarm pivot shaft	M18	125	12.5	90	
Relay arm and frame	M10	48	4.8	35	
Relay arm and connecting rod	M10	48	4.8	35	
Connecting rod and swingarm	M10	48	4.8	35	
Rear shock absorber and relay arm	M10	40	4.0	29	
Rear shock absorber and bracket	M10	40	4.0	29	
Frame and rear shock absorber bracket	M16	51	5.1	37	
Fuel pump and fuel tank	M5	3	0.3	2.2	
Fuel pump and fuel cock	M6	7	0.7	5.1	
Footrest bracket and frame	M8	28	2.8	20	
Rear footrest and frame	M8	28	2.8	20	
Rear master cylinder and footrest bracket	M8	23	2.3	17	
Rear brake reservoir tank	M6	5	0.5	3.6	
Union bolt (rear brake hose)	M10	26	2.6	19	
Sidestand bracket and frame	M8	28	2.8	20	
Front wheel axle	M18	72	7.2	52	
Rear wheel axle	M25	203	20.3	146	
Front brake caliper	M10	35	3.5	25	
Rear brake caliper	M10	35	3.5	25	
Brake disk and wheel	M8	20	2.0	14	
Driven sprocket and clutch hub	M10	60	6.0	43	
Tension bar	M8	30	3.0	22	
Caliper breed screw	M8	6	0.6	4.3	
Pinch bolt (front axle)	M8	23	2.3	17	

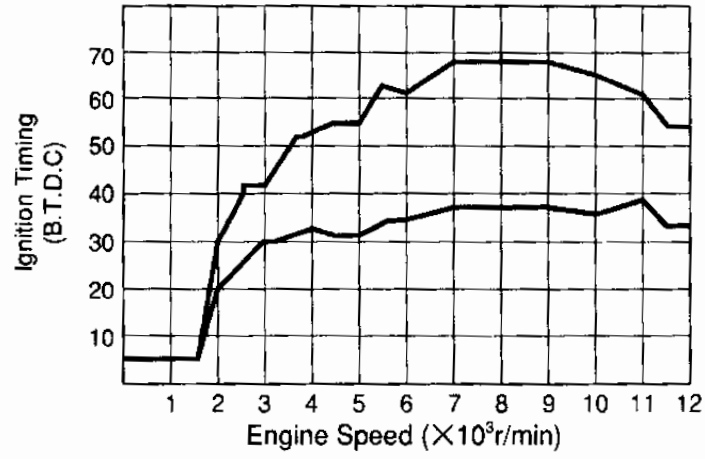
NOTE:

1.First, tighten the ring nut approximately 48 Nm (**4.8 m • kg**, 35 ft • lb) by using the torque wrench, then loosen the ring nut **completely.**

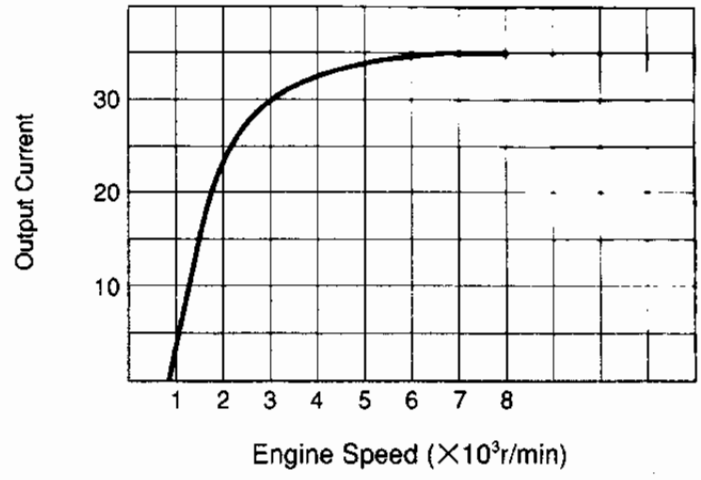
2.Retighten the ring nut to specification.

ELECTRICAL

Model	YZF750SP
Voltage:	12 V
Ignition system:	
Ignition timing (B.T.D.C.)	5° at 1,200 r/min
Advanced timing (B.T.D.C.)	69° at 7,000 r/min
Advancer type	Electrical type



T.C.I.:	
Pickup coil resistance / color	135 ~ 165 Ω at 20°C (68°F) / Black – Gray
T.C.I. unit model / manufacturer	BB7271/KOKUSAN DENKI
Ignition coil:	
Model / manufacturer	CM12-33,CM12-35/HITACHI
Minimum spark gap	6 mm (0.24 in)
Primary winding resistance / color	1.8 ~ 2.2 Ω at 20°C (68°F) / Red / White - Gray
Secondary winding resistance	9.6 ~ 14.4 kΩ at 20°C (68°F)
Spark plug cap:	
Type	Resin type
Resistance	10 kΩ
Charging system:	
Type	A.C. generator
Model / manufacturer	B3G/NIPPONDENSO
Nominal output	12 V 34 A at 3,000 r/min

Model	YZF750SP
	
Voltage regulator:	
Type	Semi-conductor, field control type
Model / manufacturer	B3G/NIPPONDENSO
No load regulated voltage	14.2 ~ 14.8 V
Rectifier:	
Model / manufacturer	B3G/NIPPONDENSO
Battery:	
Specific gravity	1.320
Electric starter system:	
Type	Constant mesh type
Starter motor:	
Model / manufacturer	3XF/MITSUBA
I.D. number	SM-13
Output	0.7 kW
Armature coil resistance	0.015 ~ 0.025 Ω at 20°C (68°F)
Brush overall length	12.5 mm (0.49 in)
<Limit>	<4 mm (0.16 in)>
Spring force	570 ~ 920 g (20.1 ~ 32.5 oz)
Commutator diameter	28 mm (1.10 in)
<Wear limit>	<27 mm (1.06 in)>
Mica undercut	0.7 mm (0.03 in)
Starter relay:	
Model / manufacturer	MS5F-421/JIDECO
Amperage rating	100 A
Coil winding resistance	4.2 ~ 4.6 Ω at 20°C (68°F)
Horn:	
Type	Plane type
Quantity	1
Model / manufacturer	YF-12/NIKKO
Maximum amperage	2.5 A

Model	YZF750SP
Flasher relay:	
Type	Semi-transistor type
Model / manufacturer	FB249M/NIPPONDENSO
Self cancelling device	No
Flasher frequency	60 ~ 120 cycle/min
Wattage	21 W × 2 + 3.4 W
Oil level switch:	
Model / manufacturer	3GM/NIPPONDENSO
Starting circuit cut off relay:	
Model / manufacturer	3EN/OMRON
Coil winding resistance / color	203 ~ 247 Ω at 20°C (68°F) / Red/Black – Black/Yellow
Diode	Yes
Fuel pump relay:	
Model / manufacturer	3EN/OMRON
Coil winding resistance / color	203 ~ 247 Ω at 20°C (68°F) / Red/Black – Blue/Red
Electric fan:	
Model / manufacturer	4FM/NIPPONDENSO
Running r/min	3,450 r/min
Thermostatic switch:	
Model / manufacturer	2EL/NIHON THERMOSTAT
Thermo unit:	
Model / manufacturer	11H/NIPPON SEIKI
Circuit breaker:	
Type	Fuse
Amperage for individual circuit	
MAIN	30 A × 1
HEAD	20 A × 1
SIGNAL	15 A × 1
IGNITION	7.5 A × 1
FAN	7.5 A × 1
Reserve	20 A × 1
Reserve	7.5 A × 1

YZF750SP EXCLUSIVE SPECIFICATION

The following specifications are exclusive for the **below listed** countries.

For specifications other than below, please refer to the General and maintenence specifications.

For England, Ireland

Bulb wattage × quantity:	
Headlight	12V 35/35W × 2

For Spain

Model code:	4HS2
Engine starting number:	4HS-001101
Vehicle identification number:	JYA4HSSO*PA001101
Dimensions:	
Overall length	2,070 mm (81.5 in)

For Italy

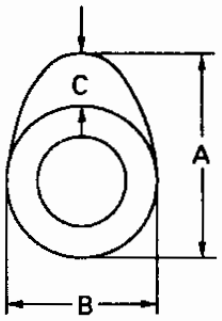
Dimensions:	
Overall length	2,070 mm (81.5 in)
Bulb wattage × quantity:	
Headlight	12V 35/35W × 2

For Germany

Model code:		4HT1
Engine starting number:		4HT-000101
Frame starting number:		4HT-000101
Dimensions:		
Seat height		770 mm (30.3 in)
Tire pressure (cold tire):		
Maximum load - except motorcycle		115 kg (254 lb)
Carburetor:		
I.D. mark		4HT 00
Main jet	(M.J)	#1,4:#128 #2,3:#125
Jet needle	(J.N)	NICA
Pilot jet	(P.J)	#38
T.C.I.:		
T.C.I. unit model/manufacturer		BB7270/Kokusan Denki

For France

Model code:	4FN1
Engine starting number:	4FN-000101
Frame starting number:	4FN-000101
Dimensions:	
Overall length	2,070 mm (81.5 in)
Seat height	795 mm (31.3 in)
Cam dimensions:	
Intake "A"	31.8 ~ 31.9 mm (1.252 ~ 1.256 in)
<limit>	<31.7 mm (1.248 in)>
"B"	24.95 ~ 25.05 mm (0.982 ~ 0.986 in)
<limit>	<24.85 mm (0.978 in)>
"C"	6.75 ~ 6.95 mm (0.266 ~ 0.274 in)
Exhaust "A"	31.75 ~ 31.85 mm (1.250 ~ 1.254 in)
<limit>	<31.65 mm (1.246 in)>
"B"	24.95 ~ 25.05 mm (0.982 ~ 0.986 in)
<limit>	<24.85 mm (0.978 in)>
"C"	6.7 ~ 6.9 mm (0.264 ~ 0.272 in)
Carburetor:	
I.D. mark	4FN 00
Jet needle (J.N)	NICA
Pilot screw (P.S)	1-3/4
T.C.I.:	
T.C.I. unit model/manufacturer	BB7269/Kokusan Denki



For Australia

Model:	YZF750SPE
Model code:	4HB1
Engine starting number:	4HB-000101
Vehicle identification number:	JYA4HBTO * PA000101
Dimensions:	
Overall length	2,070 mm (81.5 in)
Bulb wattage × quantity:	
Headlight	12V 35/35W × 2

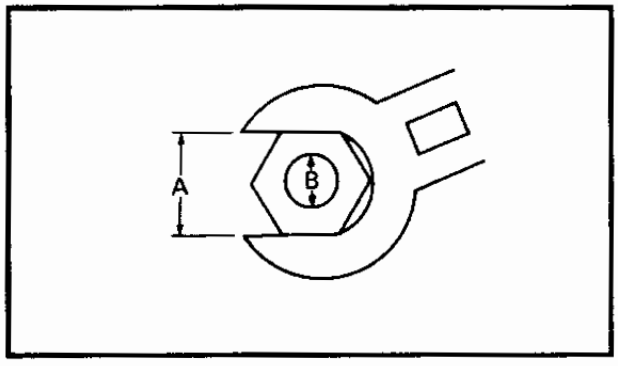
For Canada

Model:	YZF750SPE
Model code:	4JA1
Engine starting number:	4JA-000101
Vehicle identification number:	JYA4JANO * PA000101
Dimensions:	
Overall length	2,070 mm (81.5 in)
Bulb wattage × quantity:	
Headlight	12V 35/35W × 2
License light	12V 3.8W × 2

GENERAL TORQUE SPECIFICATIONS

This chart specifies torque for standard fasteners with standard I.S.O. pitch threads. Torque specifications for special components or assemblies are included in the applicable sections of this book. To avoid warpage, tighten multi-fastener assemblies in a crisscross fashion, in progressive stages, until full torque is reached. Unless otherwise specified, torque specifications call for clean, dry threads. Components should be at room temperature.

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



A:Distance across flats
B:Outside thread diameter

LUBRICATION POINT AND GRADE OF LUBRICANT

ENGINE

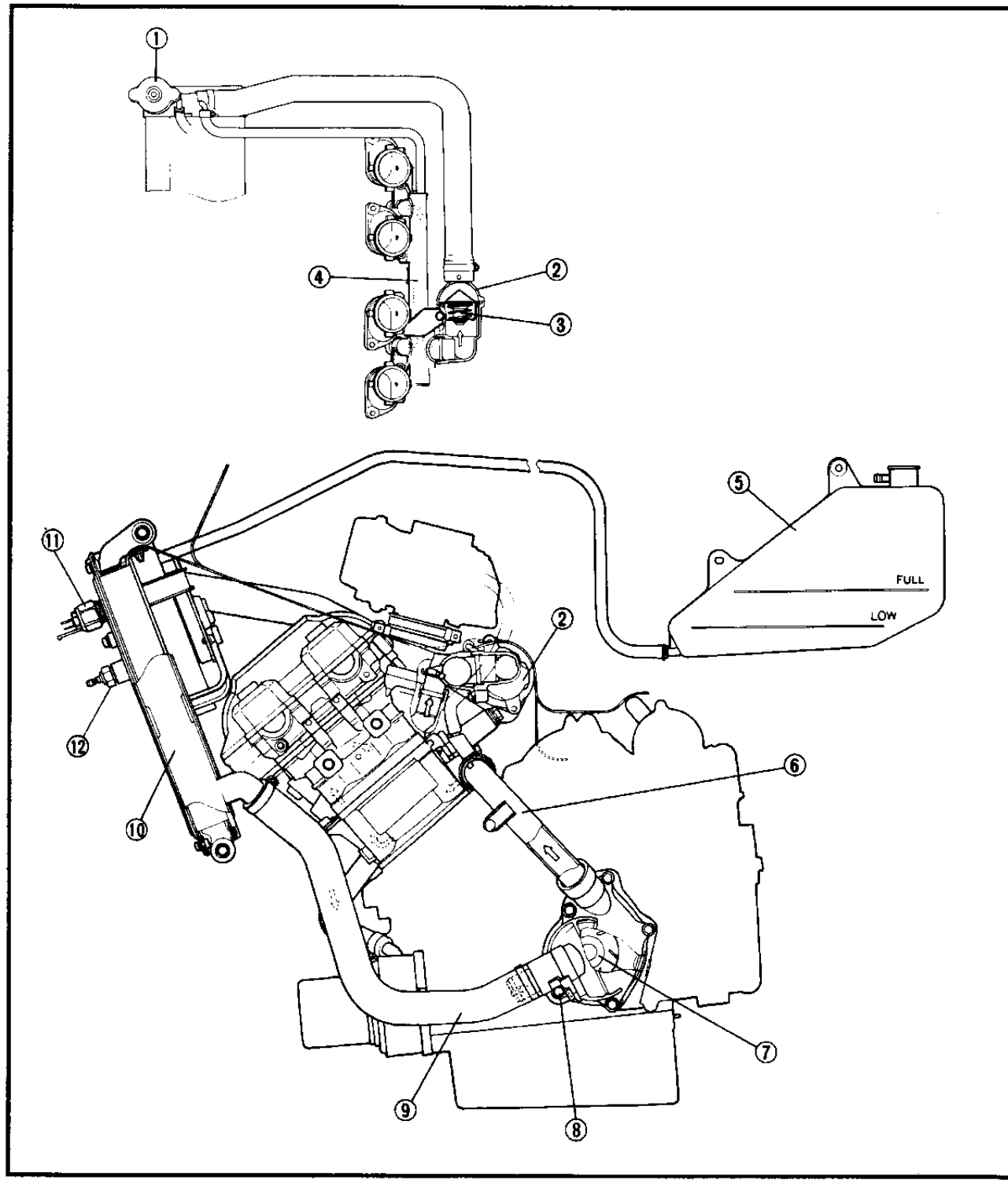
Lubrication Point	Symbol
Oil seal lips	LS
O-ring	LS
Bearing	E
Piston surface	E
Piston pin	E
Crankshaft pin	E
Crankshaft journal	E
Connecting rod bolt/nut	M
Camshaft cam lobe	V
Valve stem (IN, EX)	V
Valve stem end (IN, EX)	S
Water pump impeller shaft	E
Oil pump rotor (inner/outer), housing	E
Oil strainer assembly	E
Bypass valve assembly	E
Idle gear #1 and #2 surfaces	E
Starter clutch	E
Starter sprocket 2 and shaft 2	E
Clutch release mechanism	LS
Primary driven gear	E
Transmission gear(wheel/pinion)	M
Axle (main/drive)	M
Push rod (bearing/washer) and ball	M
Shift cam	E
Shift fork/guide bar	E
Shift shaft assembly	E
Shift pedal	LS

CHASSIS

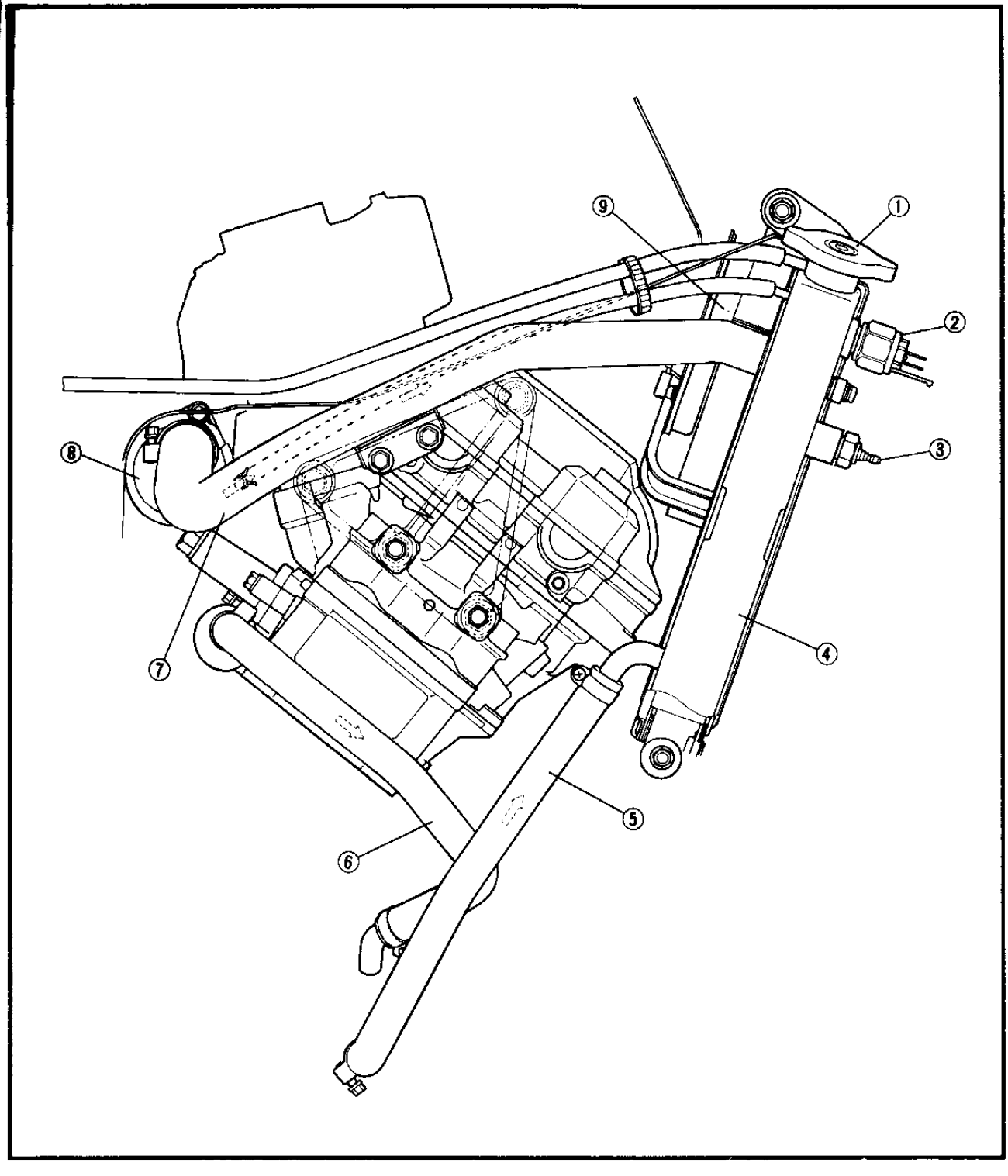
Lubrication Point	Symbol
Steering bearing and bearing race (upper/lower)	LS
Front wheel oil seal (right/left)	LS
Rear wheel oil seal	LS
Clutch hub oil seal	LS
Clutch hub fitting area	LS
Rear brake pedal shaft	LS
Change pedal	LS
Side stand sliding surface	LS
Tube guide (throttle grip) inner surface	LS
Brake lever bolt, sliding surface	LS
Clutch lever bolt, sliding surface	LS
Rear shock absorber (upper/lower)	M
Swingarm pivot collar	M
Pivot shaft	M
Compration arm bearing (on the swingarm)	M
Thrust cover (inner)	M
Relay arm bearing (inner)	M
Relay arm oil seal	M
Rear footrest pivot	LS

COOLANT DIAGRAMS

①Radiator cap
②Thermostatic valve housing
③Thermostatic valve
④Water jacket joint (outlet)
⑤Reservoir tank (coolant)
⑥Outlet pipe (water pump)
⑦Water pump
⑧Drain bolt (water pump)
⑨Inlet pipe (water pump)
⑩Radiator
⑪Thermo switch
⑫Thermo unit



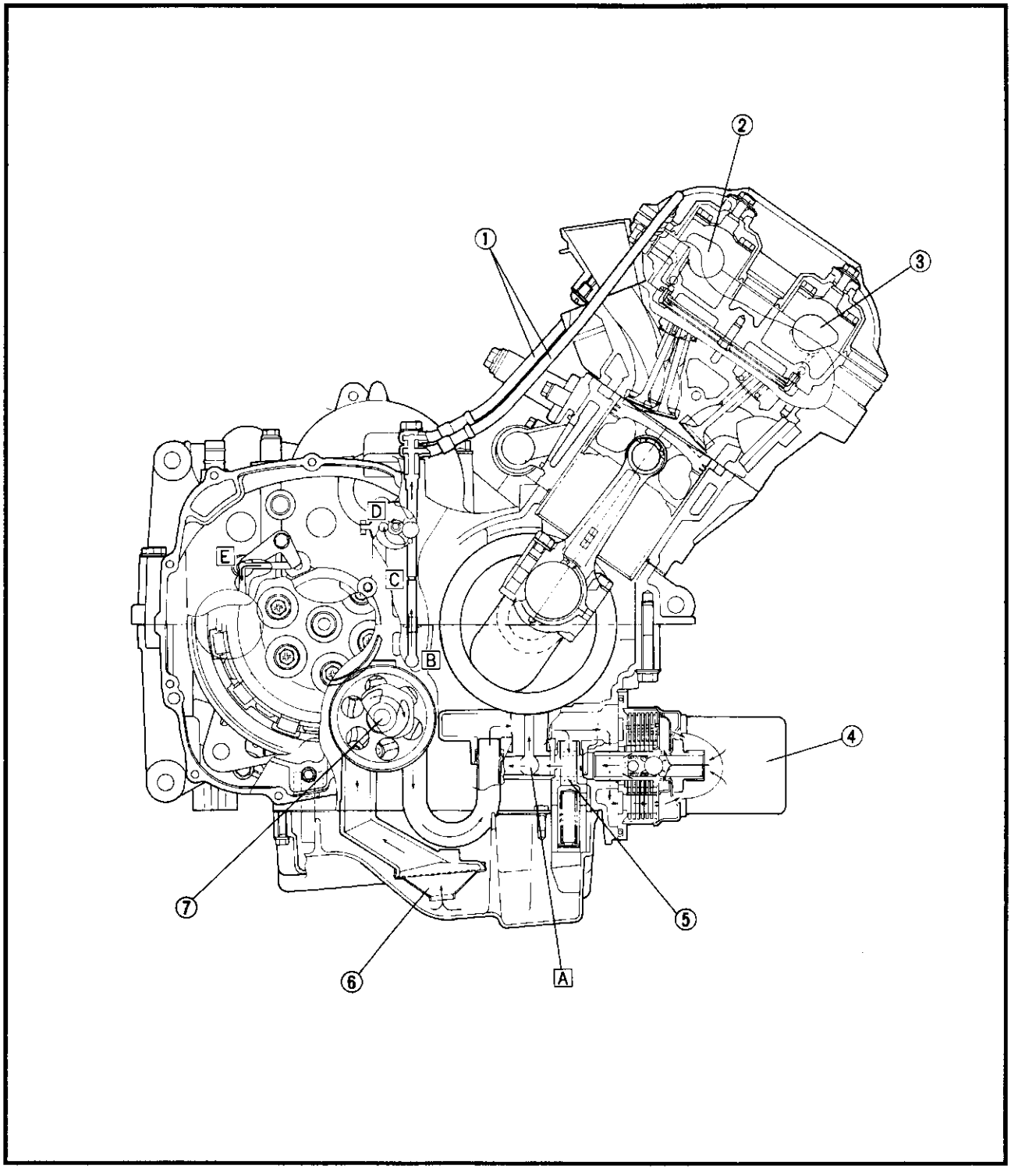
1. Radiator cap
2. Thermo switch
3. Thermo unit
4. Radiator
5. Outlet hose (oil cooler)
6. Inlet hose (oil cooler)
7. Inlet hose (radiator)
8. Thermostatic valve housing
9. Fan motor



LUBRICATION DIAGRAMS

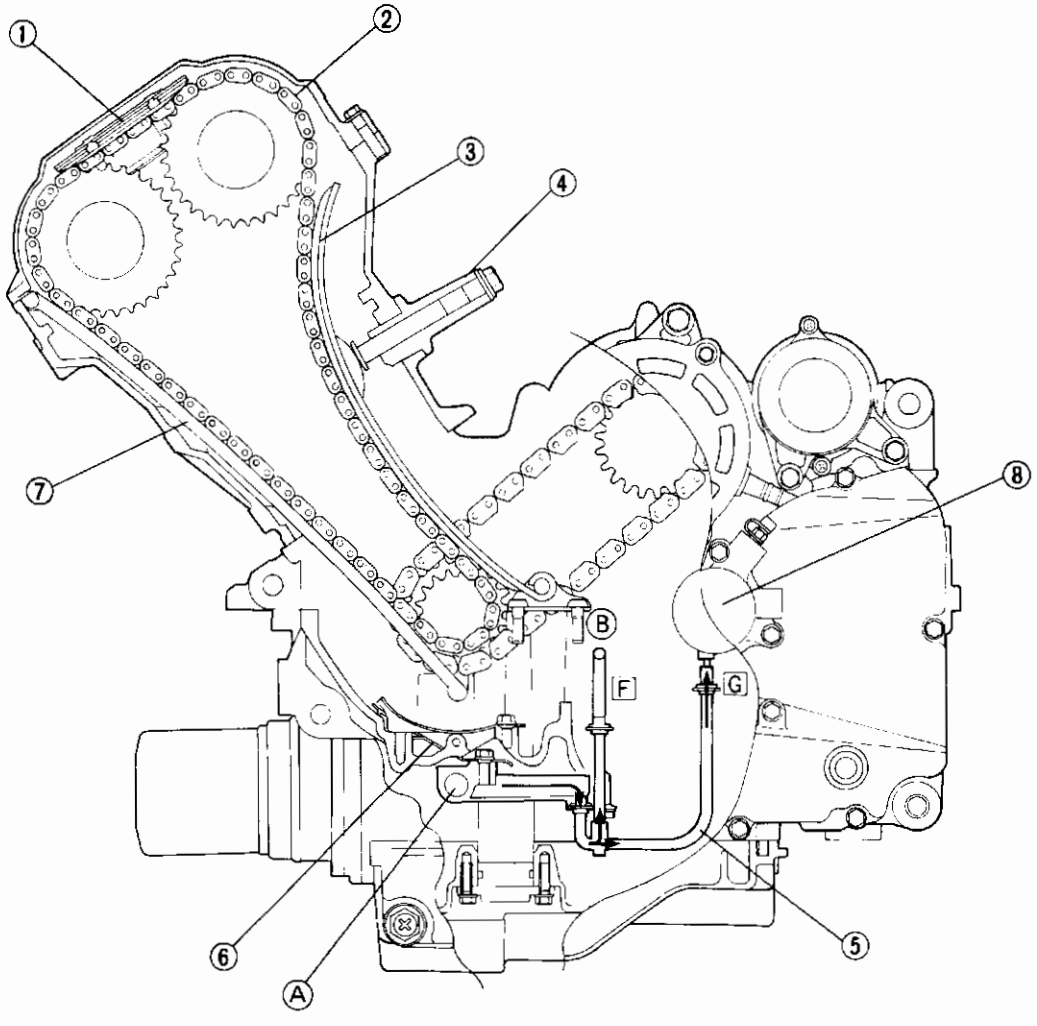
①Oil delivery hose
②Camshaft (intake)
③Camshaft (exhaust)
④Oil filter
⑤Relief valve
⑥Oil strainer
⑦Oil pump

[A] To Ⓐ (see p2-50)
[B] To Ⓑ (see p2-50)
[C] To Ⓒ (see p2-52)
[D] To Ⓓ (see p2-52)
[E] To Ⓔ (see p2-51)



1. Timing chain guide (upper)
2. Timing chain
3. Timing chain guide (intake side)
4. Timing chain tensioner
5. Oil pipe #1
6. Baffle plate
7. Timing chain guide (exhaust side)
8. Main axle

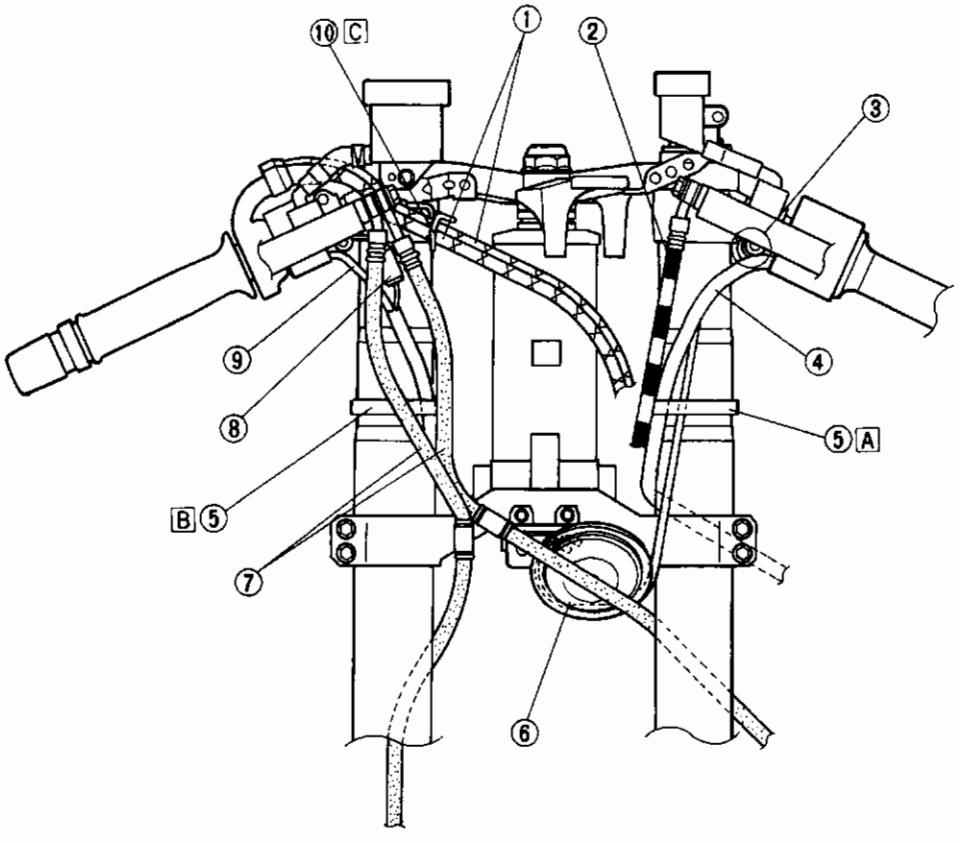
[F] To F (see p2-52)
[G] To G (see p2-52)

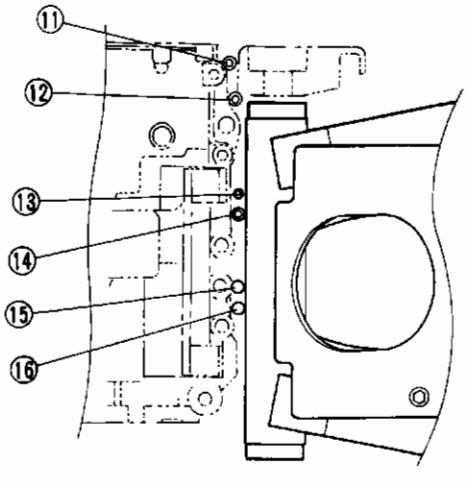


CABLE ROUTING

①Throttle cable
②Clutch hose
③Clutch switch coupler
④Handlebar switch lead (left)
⑤Band
⑥Horn
⑦Brake hose
⑧Brake switch coupler
⑨Handlebar switch lead (right)
⑩Wire guide
⑪Fuel tank overflow hose
⑫Rollover hose (for D)
⑬Reservoir tank breather hose
⑭Air filter case breather hose
⑮EXUP cable

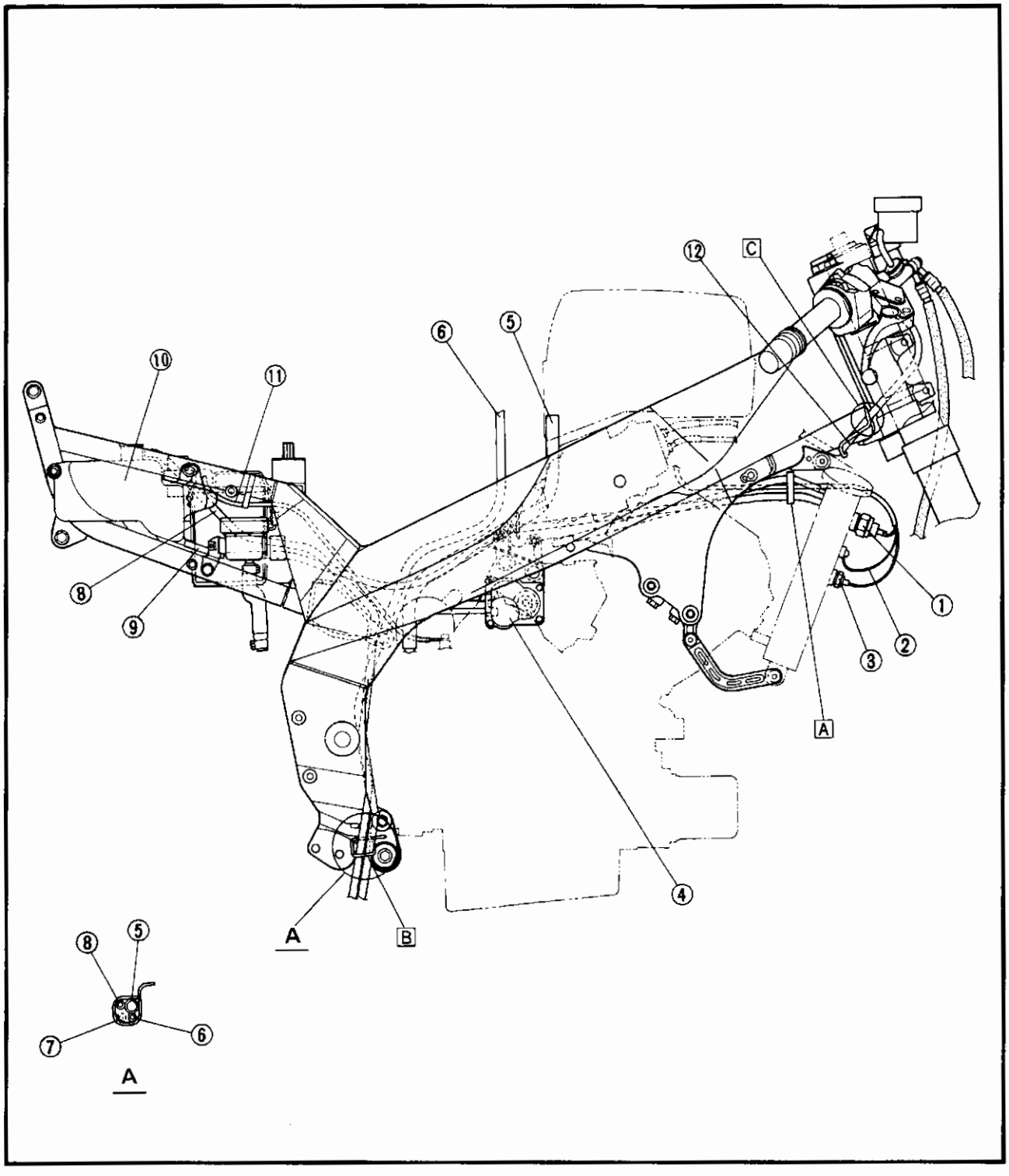
[A] Clamp the handlebar and horn lead at the front fork.
[B] Clamp the handlebar switch lead (right) at the front fork.
[C] Pass the throttle cables through the wire guide.





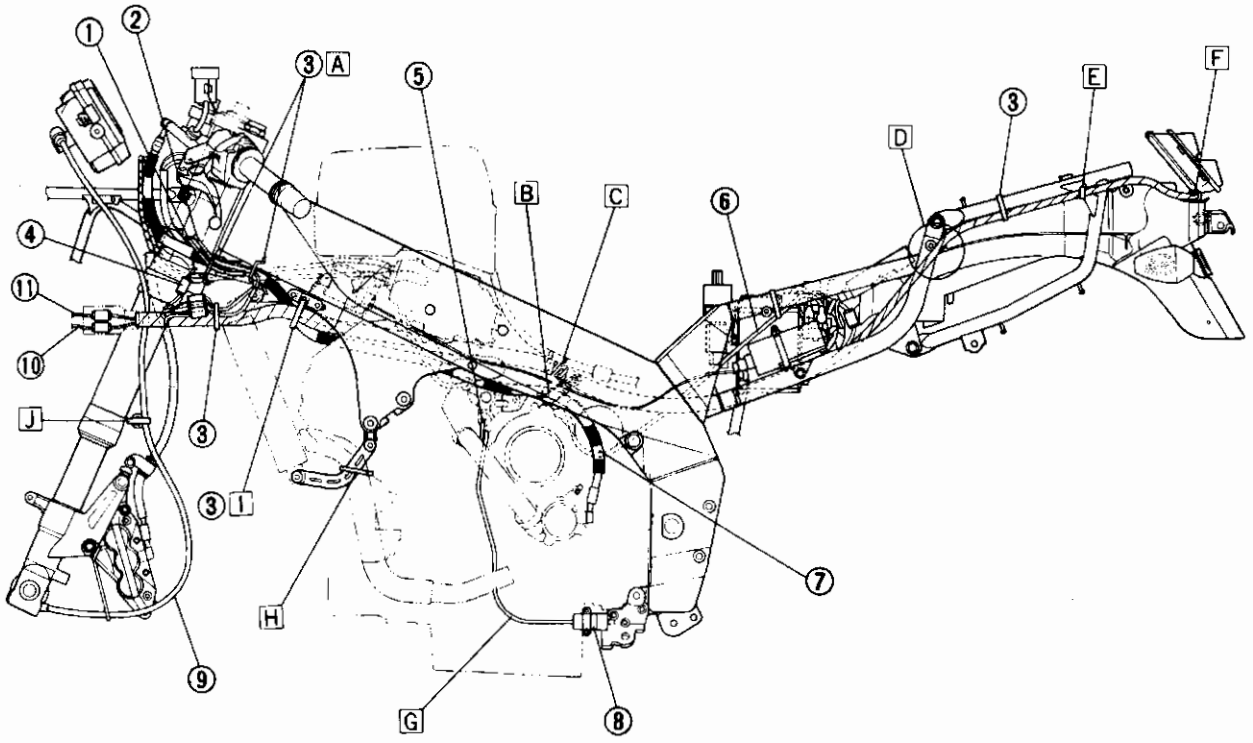
1. Thermo switch
2. Ground lead
3. Thermo unit
4. EXUP motor
5. Air filter case breather hose
6. Fuel tank overflow hose
7. Rollover hose (for D)
8. Reservoir tank breather hose
9. Reservoir tank hose
10. Coolant reservoir tank
11. Ground lead
12. Handlebar switch lead (right)

A. Clamp the radiator leads and breather hoses.
B. Pass the hoses through the guide.
C. Clamp the handlebar switch lead (right).



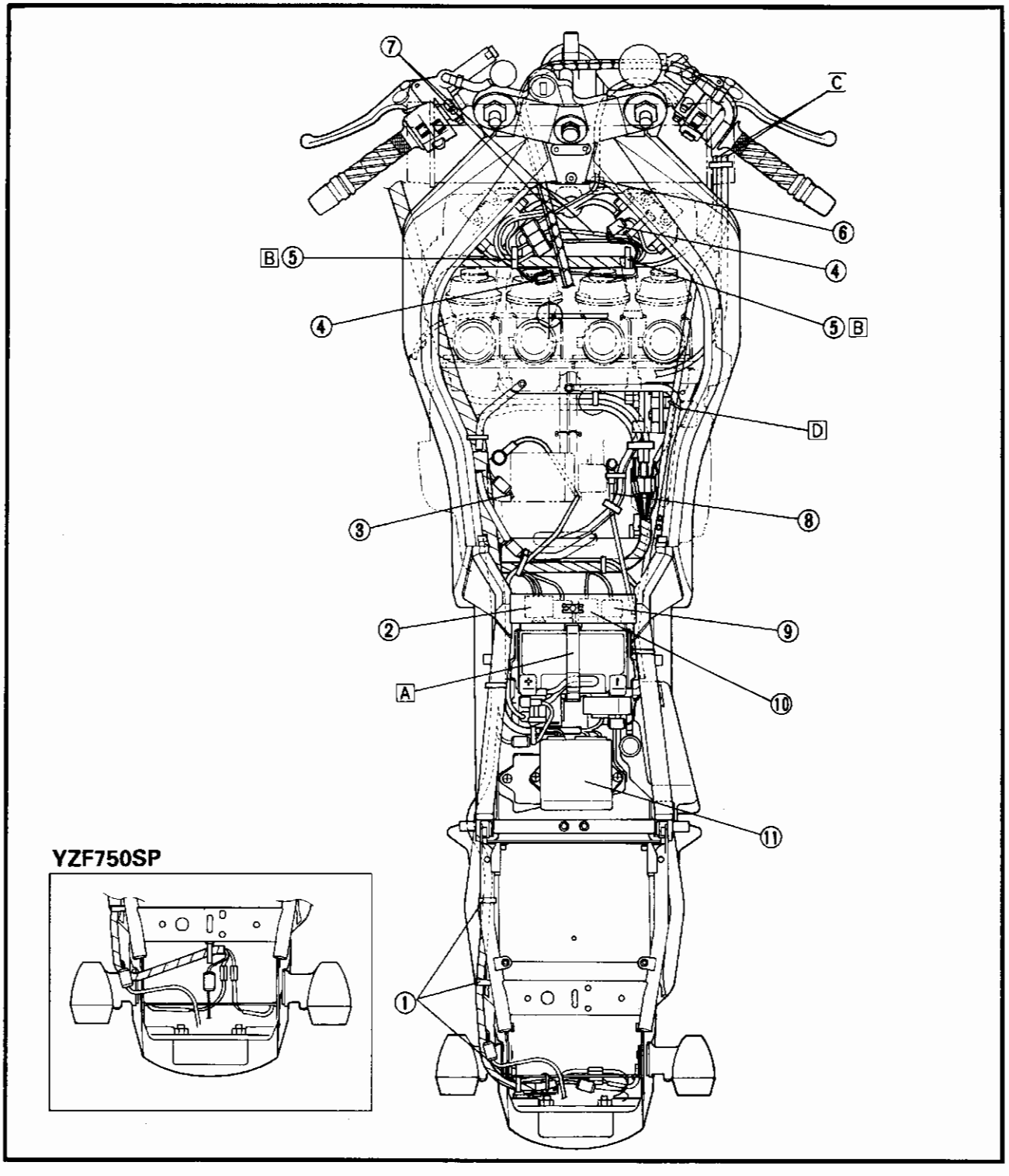
①Handlebar switch lead (left)
②Main switch lead
③Band
④Fuel reserve switch lead
⑤AC generator lead
⑥Starter motor lead
⑦Clutch hose
⑧Sidestand switch
⑨Speedometer cable
⑩Headlight lead
⑪Meter light lead

[A] Clamp the clutch hose, main switch lead and handlebar switch lead (left).
[B] Clamp the clutch hose.
[C] Clamp the wireharness at the color tape position.
[D] Pass the main harness to the inside of the rear fender from the outside of the frame.
[E] Insert the clamp into the hole in the rear frame.
[F] Insert the clamp into the seat lock cover.
[G] Locate the sidestand switch lead along the engine lead.
[H] Clamp the radiator hose and radiator stay.
[I] Clamp the main harness by passing the band through the hole in the stay.
[J] Install the clamp to the center cowling.



1. Band
2. Starting circuit cut-off relay
3. Fuel pump lead
4. Ignition coil lead
5. Clamp
6. Handlebar switch lead (right)
7. Fan motor lead
8. Ground lead
9. Oil level switch relay
10. Flasher relay
11. Ignitor unit

A Hold down the **positive lead** with the battery band.
B Insert the clamp to **the cover**.
C To radiator.
D Pass the crankcase **breather hose** and reservoir tank hose through the clamp **at the EXUP motor**.



YZF750SP

PERIODIC INSPECTION AND ADJUSTMENT

INTRODUCTION

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

PERIODIC MAINTENANCE/LUBRICATION INTERVALS

Unit: Km (mi)

ITEM	REMARKS	BREAK-IN 1,000 (600)	EVERY	
			6,000 (4,000) or 6 months	12,000 (8,000) or 12 months
Valve(s)*	Check valve clearance. Adjust if necessary.	EVERY 42,000 (26,000)		
Spark plug(s)	Check condition. Clean or replace if necessary.	○	○	○
Air filter	Clean. Replace if necessary.		○	○
Carburetor*	Check idle speed/synchronization/starter operation. Adjust if necessary.	○	○	○
Fuel line*	Check fuel hose and vacuum pipe for cracks or damage. Replace if necessary.		○	○
Engine oil	Replace (warm engine before draining).	○	○	○
Engine oil filter*	Replace.	○		○
Brake*	Check operation/fluid leakage (see NOTE). Correct if necessary.		○	○
Clutch*	Check operation/fluid leakage (see NOTE). Correct if necessary.		○	○
Rear arm pivot*	Check rear arm assembly for looseness. Correct if necessary. Moderately repack every 24,000 (16,000) or 24 months.***			○
Rear suspension link pivots*	Check operation. Apply grease lightly every 24,000 (16,000) or 24 months. ***			○
Wheels*	Check balance/damage/runout. Repair if necessary.		○	○
Wheel bearings*	Check bearings assembly for looseness/damage. Replace if damaged.		○	○
Steering bearings*	Check bearings assembly for looseness. Correct if necessary. Moderately repack every 24,000 (16,000) or 24 months.**	○		○
Front forks*	Check operation/oil leakage. Repair if necessary.		○	○
Rear shock absorber*	Check operation/oil leakage. Repair if necessary.		○	○
Cooling system	Check coolant leakage. Repair if necessary. Replace coolant every 24,000 (16,000) or 24 months.		○	○
Drive chain	Check chain slack/alignment. Adjust if necessary. Clean and lube.	EVERY 500 (300)		
Fittings/Fasteners*	Check all chassis fittings and fasteners. Correct if necessary.	○	○	○

INSP ADJ

Unit: Km (mi)

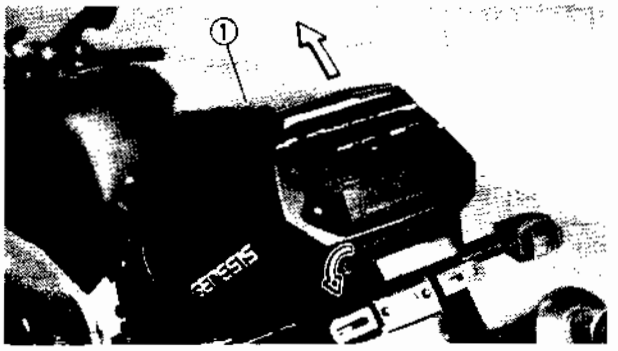
ITEM	REMARKS	BREAK-IN 1,000 (600)	EVERY	
			6,000 (4,000) or 6 months	12,000 (8,000) or 12 months
Sidestand*	Check operation. Repair if necessary.	○	○	○
Sidestand switch*	Check operation. Clean or replace if necessary.	○	○	○

*: It is recommended that these items be serviced by a Yamaha dealer.
**: Medium weight wheel bearing grease.
***:Molybdenum disulfide grease.

NOTE:

Brake fluid replacement:

1. When disassembling the master cylinder or caliper cylinder (clutch release cylinder), replace the brake fluid. Normally check the brake fluid level and add the fluid as required.
2. On the inner parts of the master cylinder and caliper cylinder (clutch release cylinder), replace the oil seals every two years.
3. Replace the brake (clutch) hoses every four years, or if cracked or damaged.

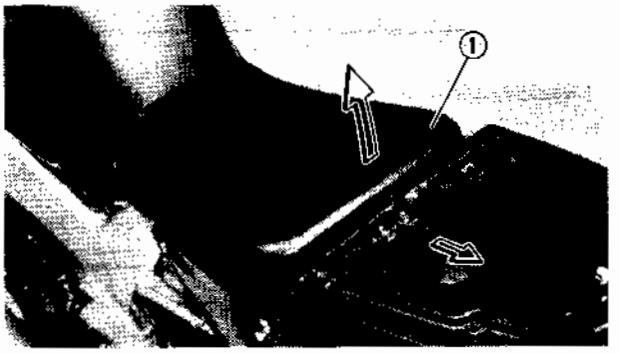


SEAT

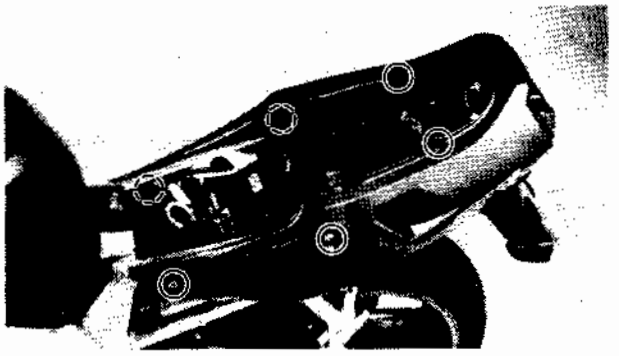
REMOVAL

YZF750R

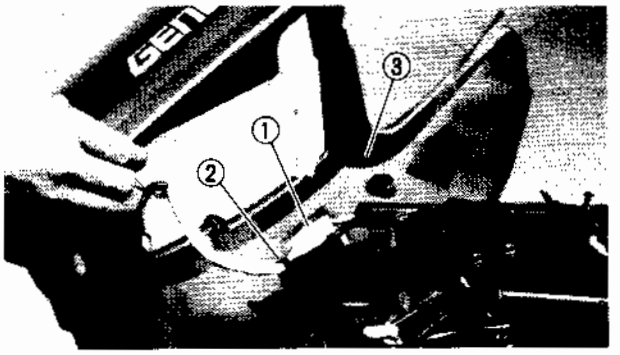
1.Remove:
- Passenger seat ①



2.Remove:
- Rider seat ①

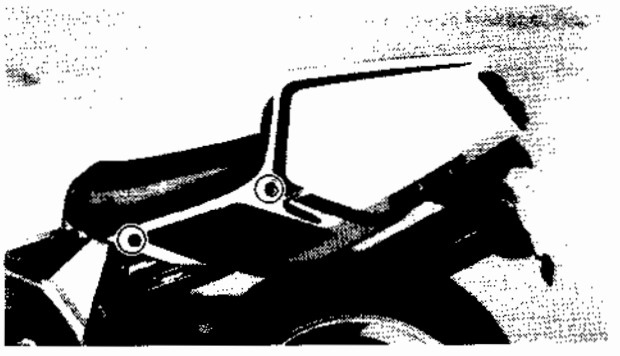


3.Remove:
- Screws



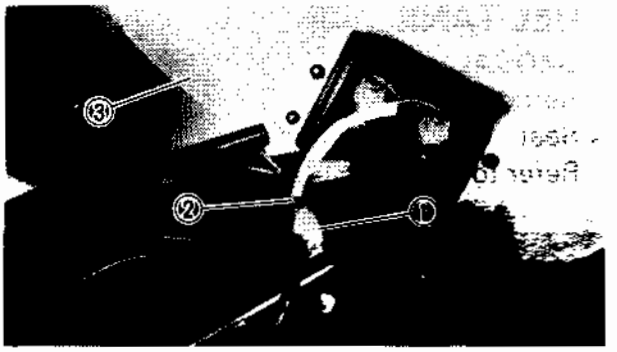
4.Disconnect:
- Tail/brake light coupler ①

5.Remove:
- Band ②
- Side cover assembly ③



YZF750SP

1.Remove:
- Screws

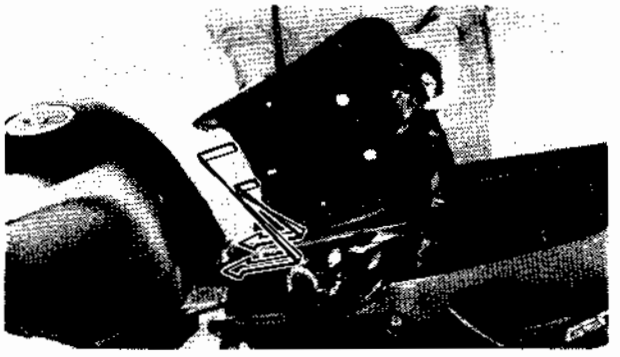


2.Disconnect:
- **Tail/brake** light coupler ①

3.Remove:
- **Band** ②
- **Seat** ③

INSTALLATION

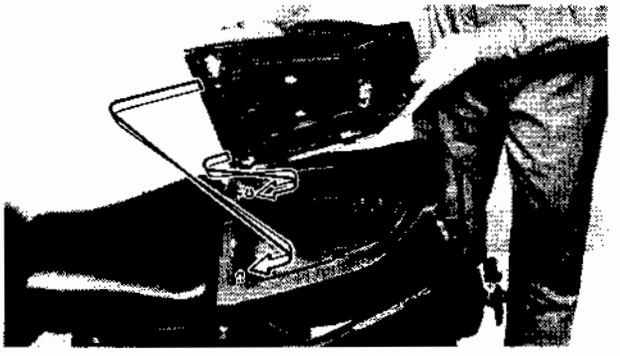
Reverse the "REMOVAL" procedure.
Note the following **points.**



YZF750R

1.Install:
- Rider seat

NOTE:
Insert the lobes on the front of the seat into the bracket on the frame, then push down the seat end.



2.Install:
- Passenger seat

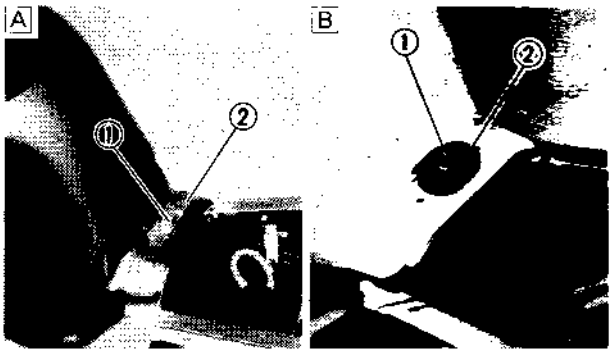
NOTE:
Insert the hooks on the front of the seat into the peg on the frame, then push down the seat end.

FUEL TANK

REMOVAL

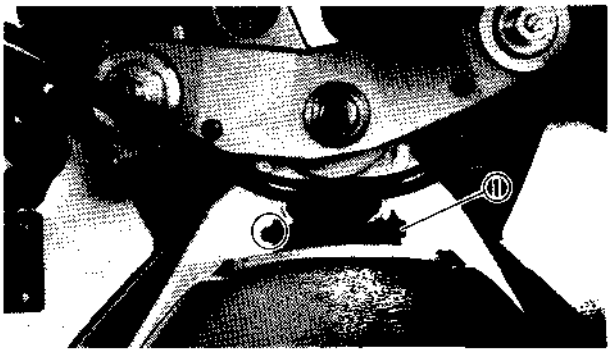
1.Remove:
- Seat

  Refer to the "SEAT" section.

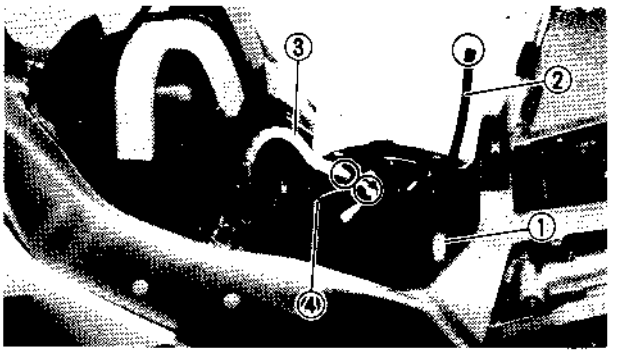


2.Remove:
- Bolt ①
- Plate ②
- Damper rubber

A YZF750R
B YZF750SP



3.Remove:
- Bolt ①



4.Disconnect:
- Fuel pump coupler ①
- Drain hose ② (fuel tank)
- Fuel hose ③
- Vacuum hose ④

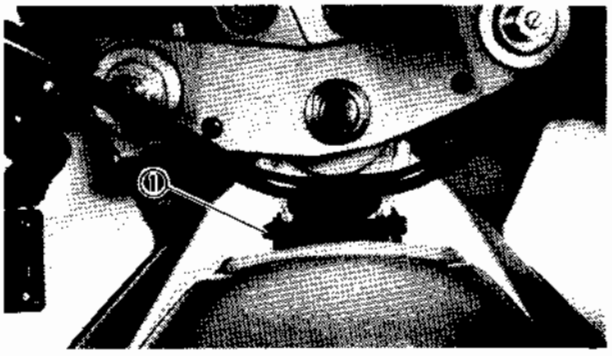
⚠ WARNING

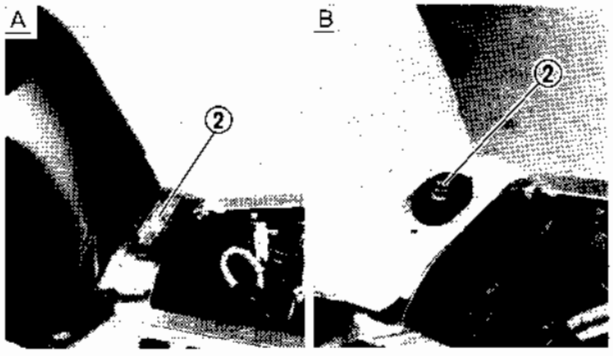
Gasoline is highly flammable.
Avoid spilling fuel on the hot engine.

NOTE:

Place a rag under the fuel hose to avoid spilling fuel.

5.Remove:
• Fuel tank





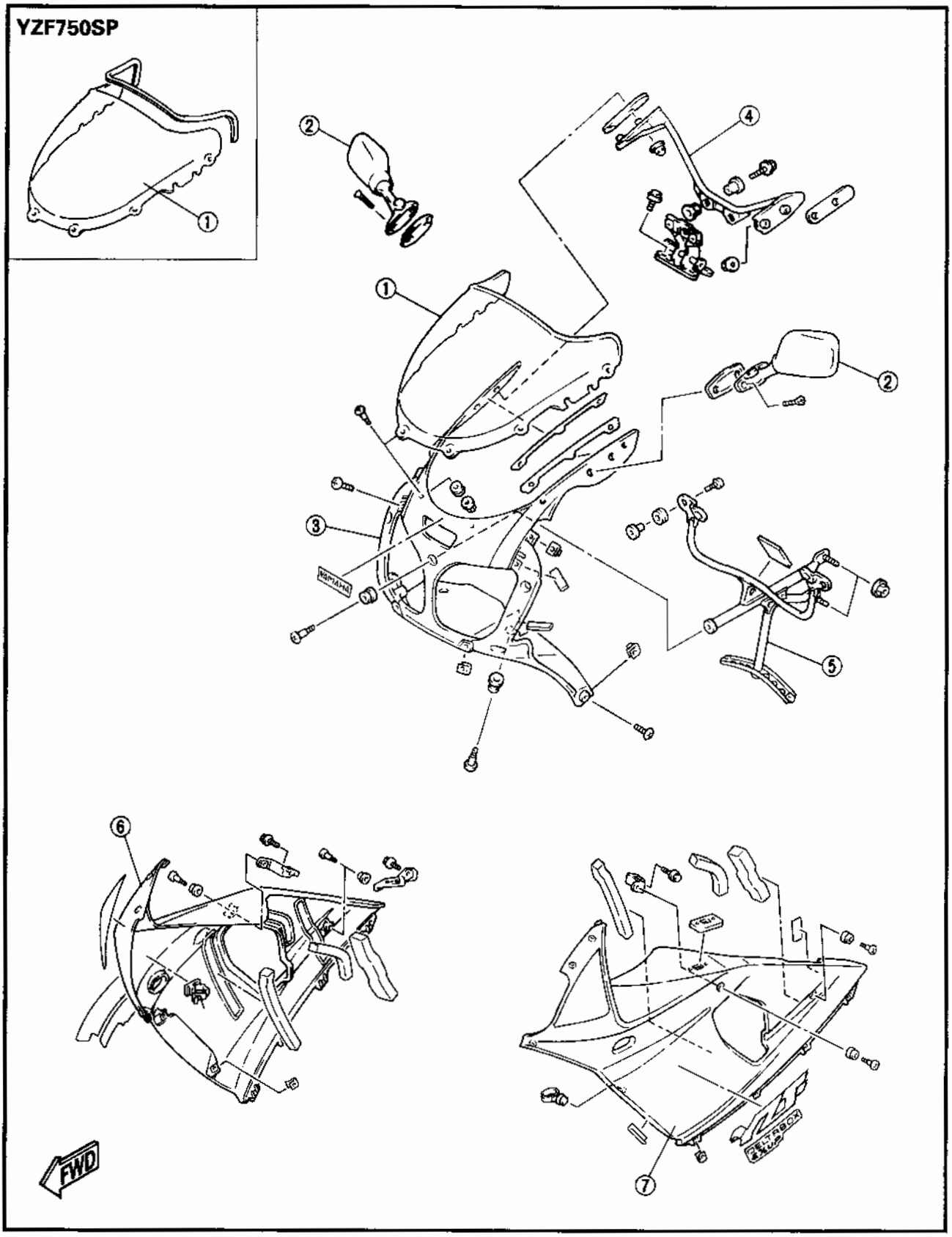
INSTALLATION
Reverse the "REMOVAL" procedure.
Note the following points.
1.Install:
• Fuel tank

	Nut ①: **7 Nm (0.7 m • kg, 5.1 ft • lb)** **Bolt ②:** **16 Nm (1.6 m • kg, 11 ft • lb)**

[A] YZF750R
[B] YZF750SP

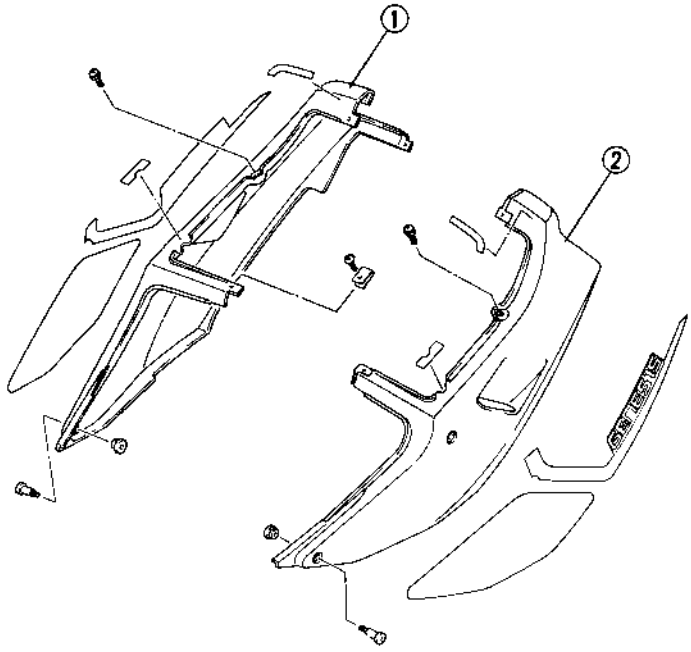
COWLINGS

①Wind shield
②Rear view mirror
③Upper cowling
④Cowling stay (upper)
⑤Cowling stay (lower)
⑥Center cowling (right)
⑦Center cowling (left)

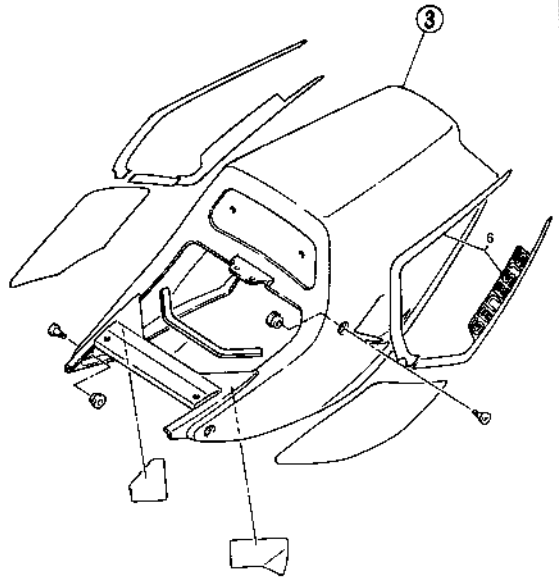


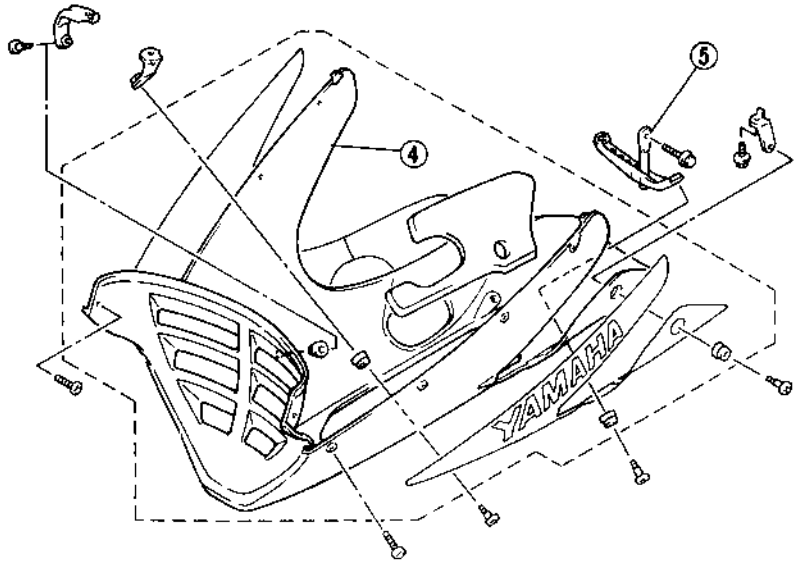
①Side cover (right)
②Slde cover (left)
③Side cover assembly
④Lower cowling
⑤Cowling stay

YZF750R

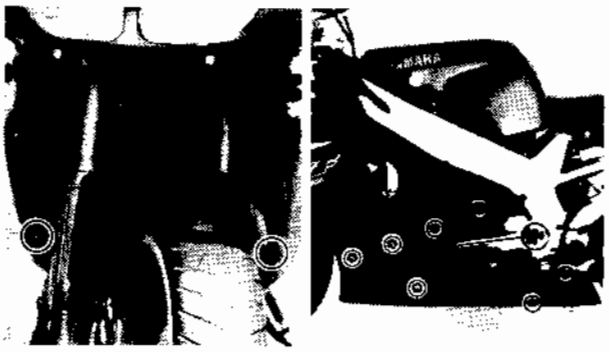


YZF750SP



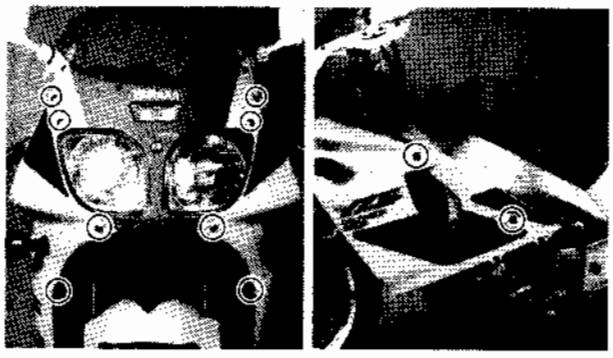


FWD

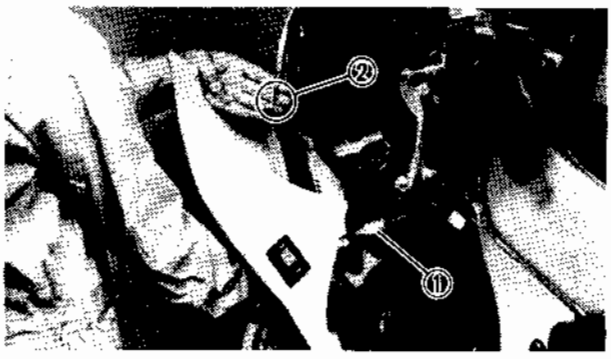


REMOVAL

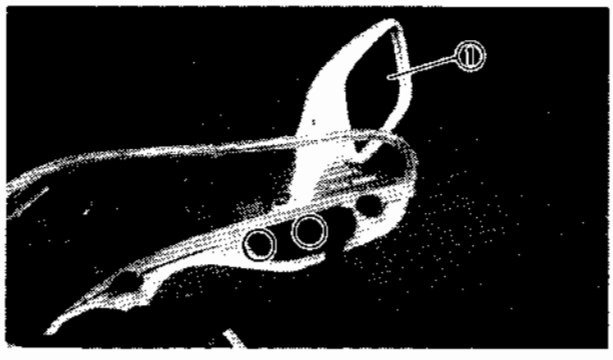
1.Remove:
- Screws
- Lower cowling ①



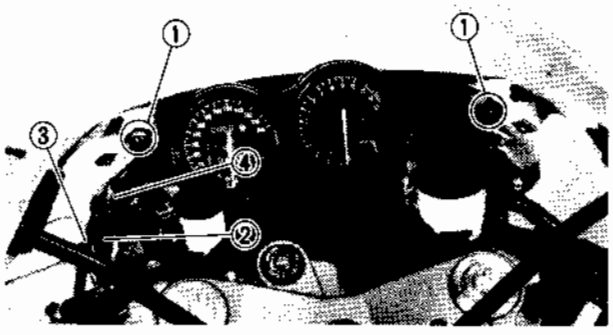
2.Remove:
- Screws



3.Disconnect:
- Speedometer cable (from front wheel)
- Fuel reserve switch coupler ①
- Front flasher light leads ②
- Center cowlings (left and right)

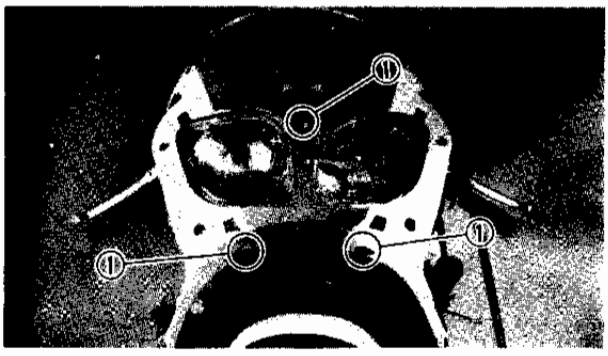


4.Remove:
- Rear view mirrors ① (left and right)

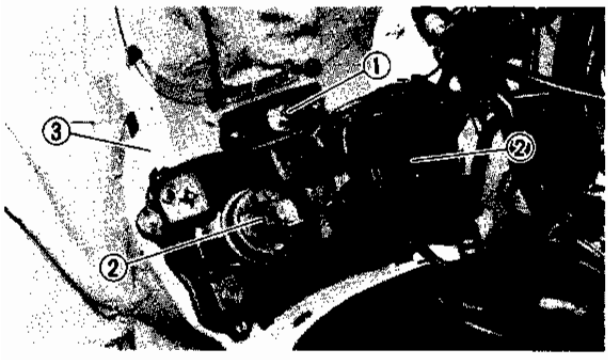


5.Remove:
- Screws ①

6.Unhook:
- Wire harness ②
- Speedometer cable ③ (from the clamp ④)



7.Remove:
- Screws ①



8.Disconnect:
- Auxilialy light coupler ①
- Headlight couplers ②

9.Remove:
- Upper cowling ③

INSTALLATION

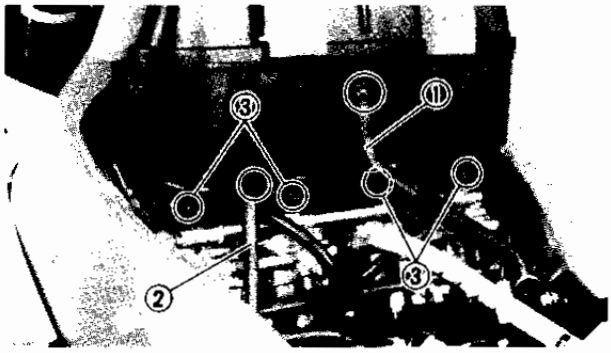
Reverse the "REMOVAL" procedure.

ENGINE

VALVE CLEARANCE ADJUSTMENT

NOTE:
- The valve clearance should be adjusted when the engine is cool to the touch.
- The piston must be at Top Dead Center (T.D.C.) on compression stroke to check or adjust the valve clearance.

1. Remove:
- Seat
  Refer to the "SEAT" section.
- Fuel tank
  Refer to the "FUEL TANK" section.
- Lower cowling
- Center cowling
  Refer to the "COWLINGS" section.



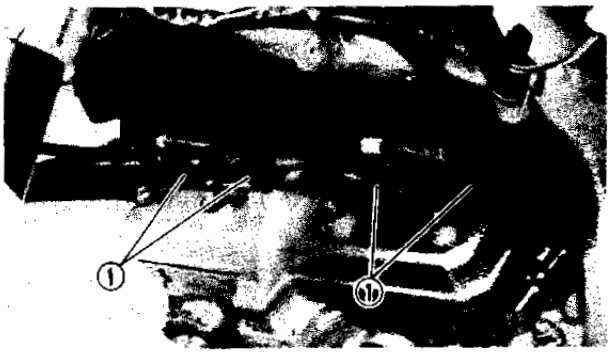
2. Disconnect:
- Breather hose ① (crankcase)
- Breather hose ② (air filter case)

3. Loosen:
- Screw ③

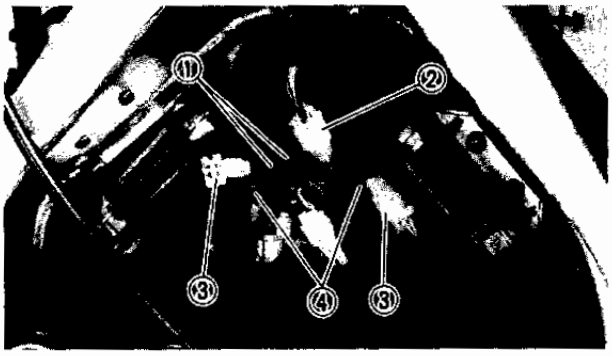


4. Remove:
- Air filter case 1

5. Remove:
- Radiator assembly
  Refer to the "RADIATOR" section in CHAPTER 5.

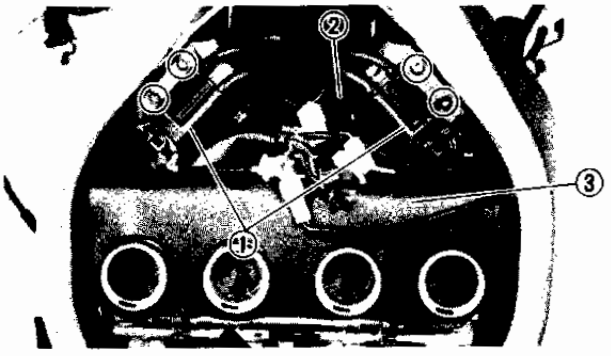


6.Disconnect:
- Spark plug caps ①

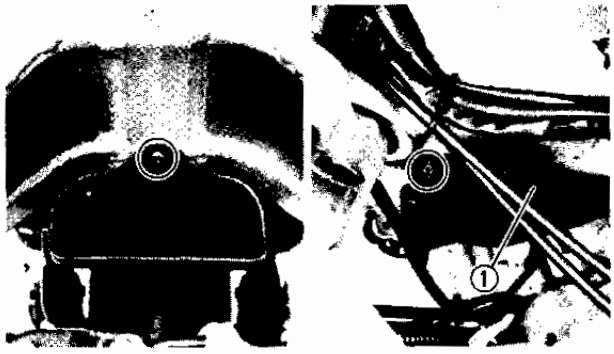


7.Disconnect:
- Throttle cables ①
- Handlebar switch coupler ② (right)
- Ignition coil couplers ③

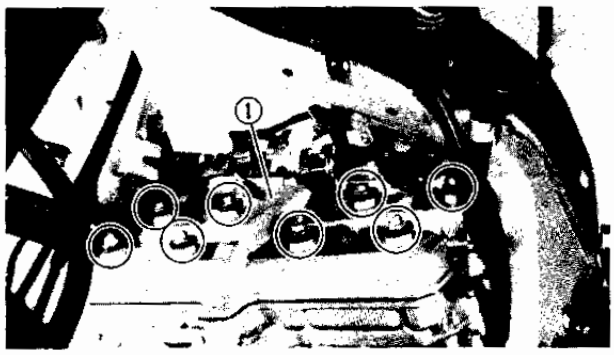
8.Remove:
- Bands ④



9.Remove:
- Ignition coils ①
- Ignition coil plate ②
- Carburetor cover ③ (YZF750SP)
- Baffle cover

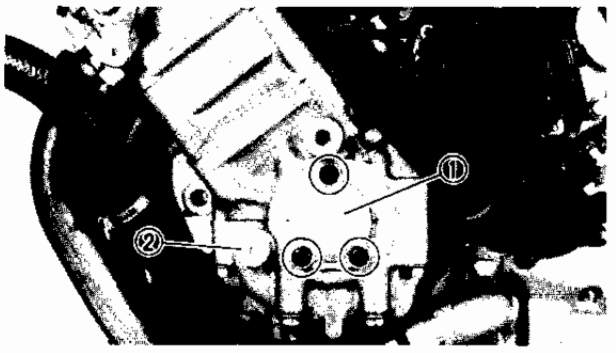


10.Remove:
- Fresh air intake ① (YZF750SP)



11.Loosen:
- Spark plugs

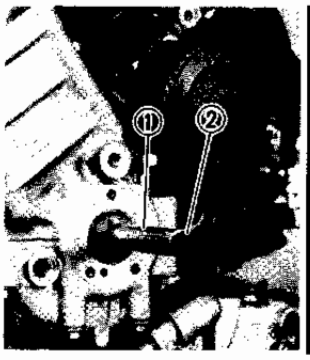
12.Remove:
- Cylinder head cover ①
- Gasket (cylinder head cover)

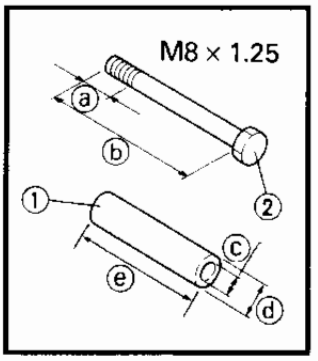


13. Remove:
- Crankshaft end cover ① (left) (with O-ring)
- Timing plug ② (with O-ring)

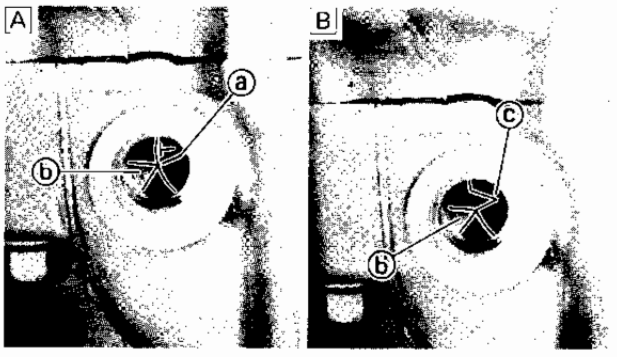
14. Check:
- Valve clearance
  Out of specification → Adjust.

Valve clearance (cold):
Intake valve:
0.11 ~ 0.20 mm (0.004 ~ 0.008 in)
Exhaust valve:
0.21 ~ 0.30 mm (0.008 ~ 0.012 in)



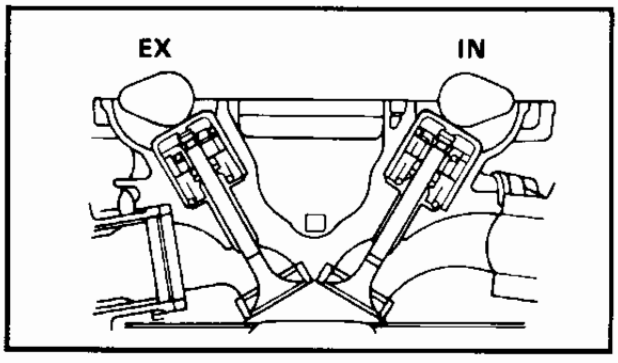


Checking steps:
- Install a suitable collar ① and a bolt ② as shown and tighten the bolt.
  ⓐ 15 mm (0.6 in) ⓓ 12 mm (0.5 in)
  ⓑ 75 mm (3.0 in) ⓔ 60 mm (2.4 in)
  ⓒ 8 mm (0.3 in)
- Turn the crankshaft counterclockwise.



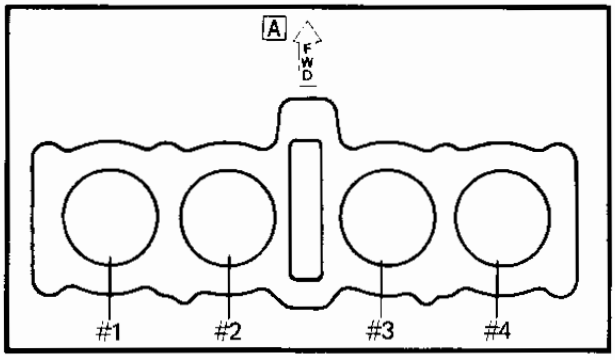
A For #1 and #4 cylinders.
- Align the TDC mark ⓐ with the stationary pointer ⓑ.

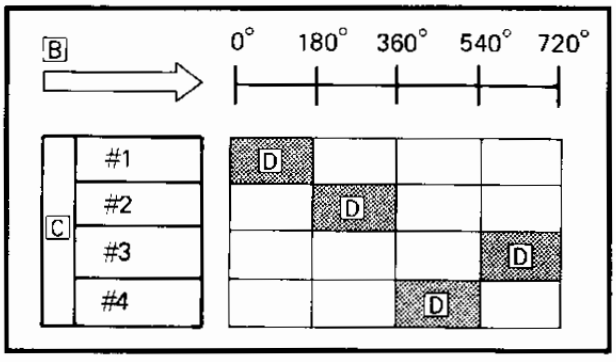
B For #2 and #3 cylinders.
- Align the TDC mark ⓒ with the stationary pointer ⓑ.

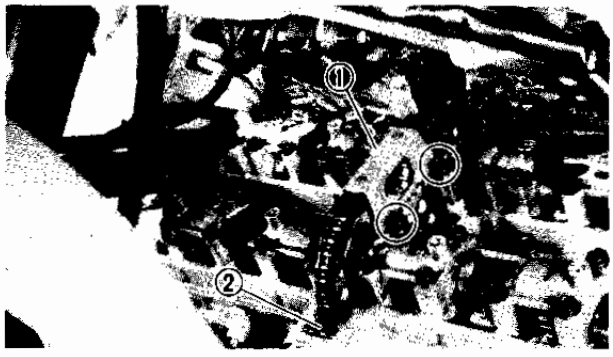


NOTE:
TDC on compression stroke can be found when the cam lobes are opposite each other as shown.









● Measure the valve clearance using a feeler gauge ③.

NOTE:
- Record the measured reading if the clearance is incorrect.
- Measure the valve clearance in the following sequence.

Measuring sequence:
#1 → #2 → #4 → #3

A Front

● Turn the crankshaft by the number of degrees indicated below counterclockwise from #1 cylinder TDC.

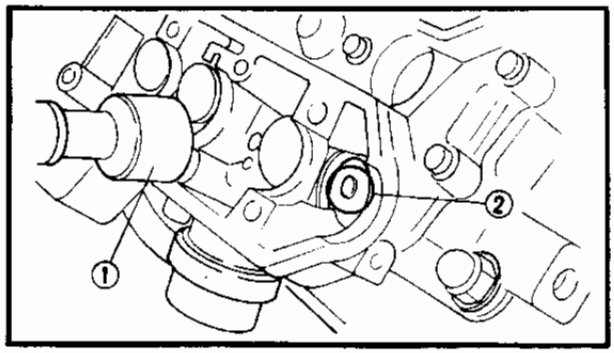
B Crankshaft counterclockwise turning angle
C Cylinder number
D Combustion

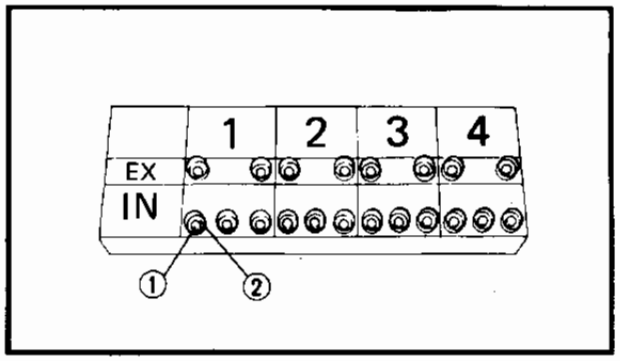
#2 Cylinder	**180 degrees**
#4 Cylinder	**360 degrees**
#3 Cylinder	**540 degrees**

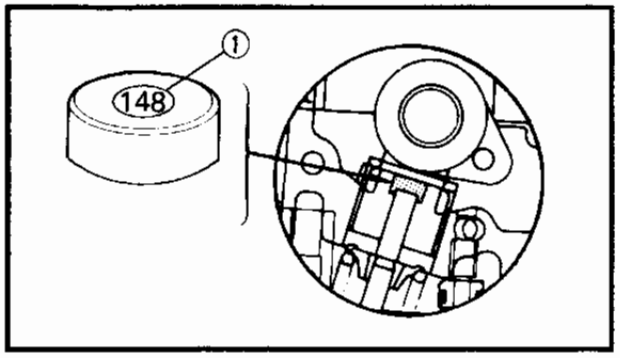
****

15. Remove:
- Timing chain tensioner
- Chain guide ① (upper)
- Chain guide ② (exhaust side)
- Camshaft caps (exhaust and intake)
- Timing chain
- Camshaft (intake and exhaust)

NOTE:
- Refer to the "ENGINE DISASSEMBLY – CAMSHAFT AND CYLINDER HEAD" section in CHAPTER 4.
- When removing the timing chain or camshafts, fasten a wire to the timing chain to prevent it from falling into the crankcase.







16.Adjust:
- Valve clearance

****

Adjustment steps:

●Remove the valve lifters ① and the pads ②.

NOTE:
- Place a rag in the timing chain space to prevent pads from falling into the crankcase
- Identify each valve lifter ① and pad ② position very carefully so that they can be reinstalled in their original place.

●**Select the proper pad using the pad selecting table:**

Pad range		Pad Availability: 25 increments
No. 120 ~ No. 240	1.20 mm (0.047 in) ~ 2.40 mm (0.094 in)	Pads are available in 0.05 mm (0.002 in) increments

NOTE:
The thickness ⓐ of each pad is indicated in hundreths of millimeters on the pad upper surface.

●Round off the last digit of the installed pad number to the nearest increment.

Last digit of pad number	Rounded value
0 or 2	0
5	(NOT ROUNDED OFF)
8	10

EXAMPLE:
Installed pad number = 148 (1.48 mm)
Rounded off value = 150

NOTE:
Pads can only be selected in 0.05 mm (0.002 in) increments.



INTAKE

B MEASURED CLEARANCE	A INSTALLED PAD NUMBER																								
	120	125	130	135	140	145	150	155	160	165	170	175	180	185	190	195	200	205	210	215	220	225	230	235	240
0.00 ~ 0.02				120	125	130	135	140	145	150	155	160	165	170	175	180	185	190	195	200	205	210	215	220	225
0.03 ~ 0.07			120	125	130	135	140	145	150	155	160	165	170	175	180	185	190	195	200	205	210	215	220	225	230
0.08 ~ 0.10		120	125	130	135	140	145	150	155	160	165	170	175	180	185	190	195	200	205	210	215	220	225	230	235
0.11 ~ 0.20	C RECOMMENDED CLEARANCE																								
0.21 ~ 0.22	125	130	135	140	145	150	155	160	165	170	175	180	185	190	195	200	205	210	215	220	225	230	235	240	
0.23 ~ 0.27							160	165	170	175	180	185	190	195	200	205	210	215	220	225	230	235	240		
0.28 ~ 0.32	135	140	145	150	155	160	165	170	175	180	185	190	195	200	205	210	215	220	225	230	235	240			
0.33 ~ 0.37	140	145	150	155	160	165	170	175	180	185	190	195	200	205	210	215	220	225	230	235	240				
0.38 ~ 0.42	145	150	155	160	165	170	175	180	185	190	195	200	205	210	215	220	225	230	235	240					
0.43 ~ 0.47	150	155	160	165	170	175	180	185	190	195	200	205	210	215	220	225	230	235	240						
0.48 ~ 0.52	155	160	165	170	175	180	185	190	195	200	205	210	215	220	225	230	235	240							
0.53 ~ 0.57	160	165	170	175	180	185	190	195	200	205	210	215	220	225	230	235	240								
0.58 ~ 0.62	165	170	175	180	185	190	195	200	205	210	215	220	225	230	235	240									
0.63 ~ 0.67	170	175	180	185	190	195	200	205	210	215	220	225	230	235	240										
0.68 ~ 0.72	175	180	185	190	195	200	205	210	215	220	225	230	235	240											
0.73 ~ 0.77	180	185	190	195	200	205	210	215	220	225	230	235	240												
0.78 ~ 0.82	185	190	195	200	205	210	215	220	225	230	235	240													
0.83 ~ 0.87	190	195	200	205	210	215	220	225	230	235	240														
0.88 ~ 0.92	195	200	205	210	215	220	225	230	235	240															
0.93 ~ 0.97	200	205	210	215	220	225	230	235	240																
0.98 ~ 1.02	205	210	215	220	225	230	235	240																	
1.03 ~ 1.07	210	215	220	225	230	235	240																		
1.08 ~ 1.12	215	220	225	230	235	240																			
1.13 ~ 1.17	220	225	230	235	240																				
1.18 ~ 1.22	225	230	235	240																					
1.23 ~ 1.27	230	235	240																						
1.28 ~ 1.32	235	240																							
1.33 ~ 1.37	240																								

EXAMPLE:

VALVE CLEARANCE (cold):

0.11 ~ 0.20 mm (0.004 ~ 0.008 in)

Installed is 148 (Rounded off number is 150)

Measured clearance is 0.24 mm (0.009 in)

Replace 148 pad with 160 pad

EXHAUST

B MEASURED CLEARANCE	A INSTALLED PAD NUMBER																								
	120	125	130	135	140	145	150	155	160	165	170	175	180	185	190	195	200	205	210	215	220	225	230	235	240
0.00 ~ 0.02						120	125	130	135	140	145	150	155	160	165	170	175	180	185	190	195	200	205	210	215
0.03 ~ 0.07					120	125	130	135	140	145	150	155	160	165	170	175	180	185	190	195	200	205	210	215	220
0.08 ~ 0.12				120	125	130	135	140	145	150	155	160	165	170	175	180	185	190	195	200	205	210	215	220	225
0.13 ~ 0.17			120	125	130	135	140	145	150	155	160	165	170	175	180	185	190	195	200	205	210	215	220	225	230
0.18 ~ 0.20		120	125	130	135	140	145	150	155	160	165	170	175	180	185	190	195	200	205	210	215	220	225	230	235
0.21 ~ 0.30	C RECOMMENDED CLEARANCE																								
0.31 ~ 0.32	125	130	135	140	145	150	155	160	165	170	175	180	185	190	195	200	205	210	215	220	225	230	235	240	
0.33 ~ 0.37	130	135	140	145	150	155	160	165	170	175	180	185	190	195	200	205	210	215	220	225	230	235	240		
0.38 ~ 0.42	135	140	145	150	155	160	165	170	175	180	185	190	195	200	205	210	215	220	225	230	235	240			
0.43 ~ 0.47	140	145	150	155	160	165	170	175	180	185	190	195	200	205	210	215	220	225	230	235	240				
0.48 ~ 0.52	145	150	155	160	165	170	175	180	185	190	195	200	205	210	215	220	225	230	235	240					
0.53 ~ 0.57	150	155	160	165	170	175	180	185	190	195	200	205	210	215	220	225	230	235	240						
0.58 ~ 0.62	155	160	165	170	175	180	185	190	195	200	205	210	215	220	225	230	235	240							
0.63 ~ 0.67	160	165	170	175	180	185	190	195	200	205	210	215	220	225	230	235	240								
0.68 ~ 0.72	165	170	175	180	185	190	195	200	205	210	215	220	225	230	235	240									
0.73 ~ 0.77	170	175	180	185	190	195	200	205	210	215	220	225	230	235	240										
0.78 ~ 0.82	175	180	185	190	195	200	205	210	215	220	225	230	235	240											
0.83 ~ 0.87	180	185	190	195	200	205	210	215	220	225	230	235	240												
0.88 ~ 0.92	185	190	195	200	205	210	215	220	225	230	235	240													
0.93 ~ 0.97	190	195	200	205	210	215	220	225	230	235	240														
0.98 ~ 1.02	195	200	205	210	215	220	225	230	235	240															
1.03 ~ 1.07	200	205	210	215	220	225	230	235	240																
1.08 ~ 1.12	205	210	215	220	225	230	235	240																	
1.13 ~ 1.17	210	215	220	225	230	235	240																		
1.18 ~ 1.22	215	220	225	230	235	240																			
1.23 ~ 1.27	220	225	230	235	240																				
1.28 ~ 1.32	225	230	235	240																					
1.33 ~ 1.37	230	235	240																						
1.38 ~ 1.42	235	240																							
1.43 ~ 1.47	240																								

EXAMPLE:

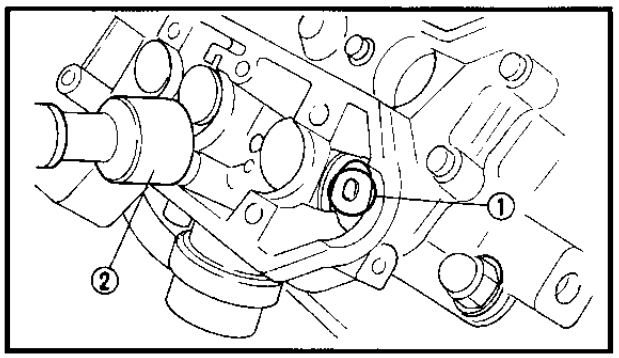
VALVE CLEARANCE (cold):

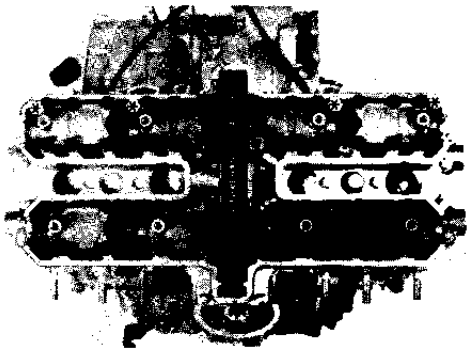
0.21 ~ 0.30 mm (0.008 ~ 0.012 in)

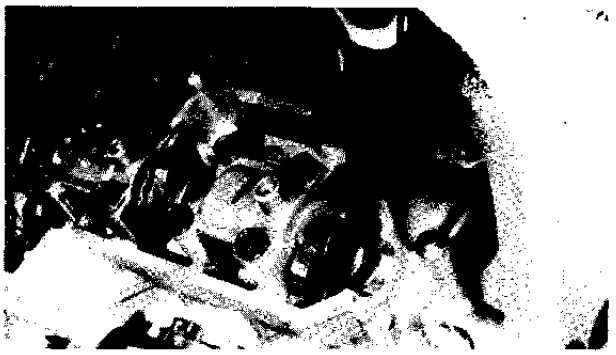
Installed is 175

Measured clearance is 0.35 mm (0.014 in)

Replace 175 pad with 185 pad







- Locate the rounded-off value and the measured valve clearance in the chart "PAD SELECTION TABLE". The field where these two coordinates intersect shows the new pad number to use.

NOTE:
Use the new pad number only as a guide when verifying the valve clearance adjustment.

- Install the new pads ① and the valve lifters ②.

NOTE:
- Apply molybdenum disulfide grease to the pad.
- Lubricate the valve lifter with molybdenum disulfide oil.
- Valve lifter must turn smoothly when rotated with a finger.
- Be careful to reinstall valve lifters and old pads in their original place.

- Install the camshafts (exhaust and intake), the timing chain and the camshaft caps.

Bolt (camshaft cap):
10 Nm (1.0 m • kg, 7.2 ft • lb)
*** : 8 Nm (0.8 m • kg, 5.8 ft • lb)**

NOTE:
- Refer to the "ENGINE ASSEMBLY AND ADJUSTMENT – CYLINDER HEAD AND CAMSHAFT" section in CHAPTER 4.
- Lubricate the camshaft bearings, cam lobes and camshaft journals.
- Install the exhaust camshaft first.
- Align the matching marks.
- Turn the crankshaft counterclockwise several turns so that the installed parts settle into the right position.

- Recheck the valve clearance.
- If the clearance is still incorrect, repeat all the clearance adjustment steps until the specified clearance is obtained.

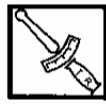
****

17.Install:
- All removed parts

NOTE:
Install all removed parts in reversed order of their removal. Note the following points.

18.Install:
- Chain guide (exhaust side)
- Chain guide (upper)
- Timing chain tensioner
  Refer to the "ENGINE ASSEMBLY AND ADJUSTMENT" section in CHAPTER 4.

19.Install:
- Timing plug
- Crankshaft end cover (left)



Screw (crankshaft end cover):
7 Nm (0.7 m • kg, 5.1 ft • lb)

20.Install:
- Cylinder head cover
- Spark plugs



Bolt (cylinder head cover):
10 Nm (1.0 m • kg, 7.2 ft • lb)
Spark plug:
12.5 Nm (1.25 m • kg, 9.0 ft • lb)

21.Install:
- Baffle plate
- Ignition coil plate
- Ignition coil



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

CARBURETOR SYNCHRONIZATION

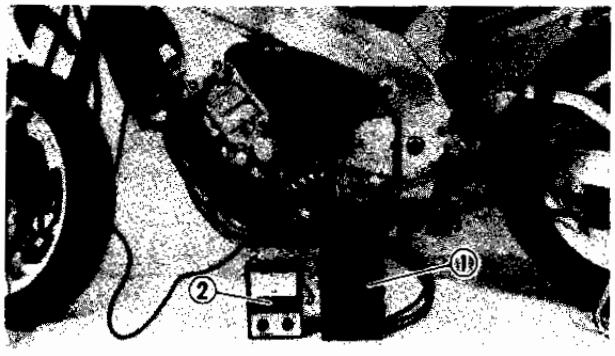
NOTE:
Valve clearance and idling speed should be adjusted properly before synchronizing the carburetors.

1.Place the motorcycle on a level surface.

NOTE:
Place the motorcycle on its centerstand if a centerstand is equipped. If not, place a suitable stand under the motorcycle.

2.Remove:
- Seat
  Refer to the "SEAT" section.
- Fuel tank
  Refer to the "FUEL TANK" section.

3.Remove:
- Air filter case
- Carburetor
  Refer to the "CHABRETOR – REMOVAL" section in CHAPTER 6.



4.Remove:
- Bolts (vacuum plug)
  (with gasket)

5.Attach:
- Adapters
- Vacuum gauge ①
- Inductive tachometer ② (to #1 spark plug lead)

Adapter:
YM-03060, 90890-03060
Vacuum gauge:
YU-08030-A, 90890-03094
Inductive tachometer:
YU-08036-A, 90890-03113

6.Install:
- Carburetor

7.Start the engine and let it warm up for several minutes.

8.Check:
- Engine idling speed
  Out of specification → Adjust.
  Refer to the "ENGINE IDLING SPEED ADJUSTMENT" section.

	Engine idling speed: **1,150 ~ 1,250 r/min**

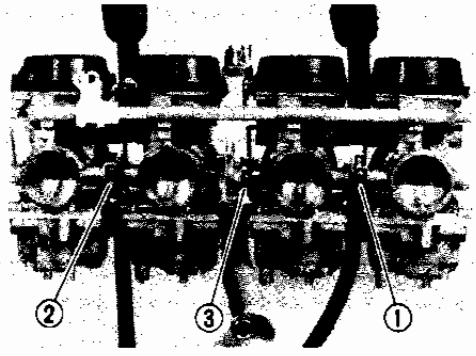
9.Adjust:
- Carburetor synchronization

****

YZF750R

Adjustment steps:

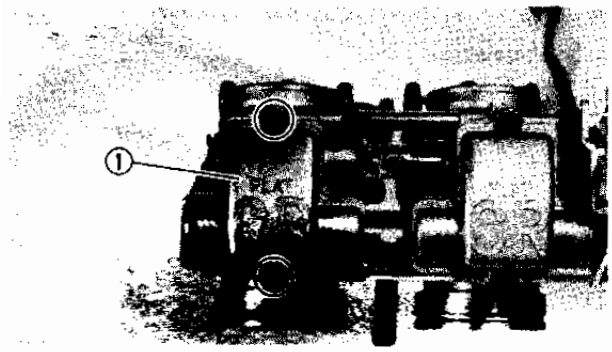
- Synchronize carburetor #1 to carburetor #2 by turning synchronizing screw ① until both gauges read the same.
- Race the engine for less than a second, two or three times and check the synchronization again.
- Repeat the above steps to synchronize carburetor #4 to carburetor #3 by turning synchronizing screw ② until both gauges read the same.
- Repeat the same steps to synchronize carburetor #2 to carburetor #3 by turning synchronizing screw ③ until both gauges read the same.



Vacuum pressure at idle speed:
26.3 kPa (200 mm Hg, 7.874 in Hg)

NOTE:
The difference between both carburetors should be 1.33 kPa (10 mm Hg, 0.4 in Hg) or less.

****



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YZF750SP

Adjustment steps:

- Remove the valve lever housing cover ①. (#1, #3 and #4 carburetor)

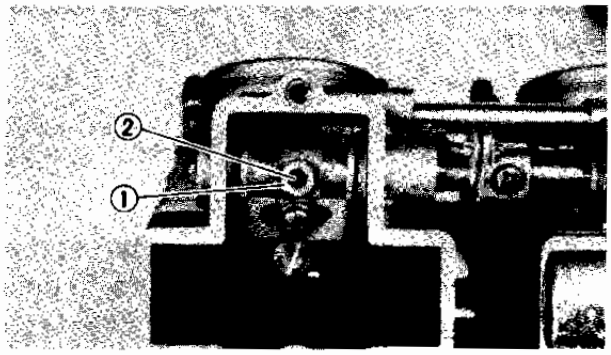
NOTE:

Carburetor #2 is the reference carburetor and its settings should not be changed.

- Measure the vacuum pressure on #2 carburetor.

Vacuum pressure at idle speed:
26.3 kPa (200 mm Hg, 7.874 in Hg)

- Adjust the #2 carburetor by throttle stop screw.



- Synchronize carburetor #1 to carburetor #2 by turning locknut ① and adjusting screw ② until both gauges read the same.
- Race the engine for less than a second, two or three times and check the synchronization again. (Perform measurement three times.)

- Repeat the above steps to synchronize carburetor #3 with carburetor #2, then carburetor #4 with carburetor #2.

NOTE:

The difference between both carburetors should be 2.66 kPa (20 mm Hg, 0.8 in Hg) or less.

****

10. Check:
- Engine idling speed
  Out of specification → Adjust.

11. Stop the engine and detach the measuring equipment.

12.Install:
- Carburetor
  Refer to the "CARBURETOR-INSTALLATION" section in CHAPTER 6.

13.Adjust:
- Throttle cable free play.
  Refer to the "THROTTLE CABLE FREE PLAY ADJUSTMENT" section.



Free play:
3 ~ 7 mm (0.12 ~ 0.28 in)

14.Install:
- Fuel tank
  Refer to the "FUEL TANK" section.
- Seat
  Refer to the "SEAT" section.

IDLING SPEED ADJUSTMENT

NOTE:
The carburetor synchronization should be adjusted properly before adjusting the idling speed.

1.Start the engine and let it warm up for several minutes.

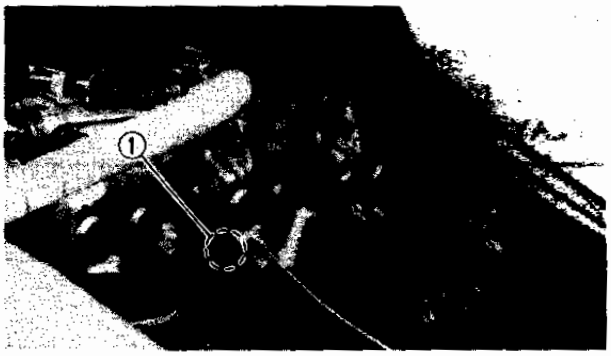
2.Attach:
- Inductive tachometer (to the #1 spark plug lead).

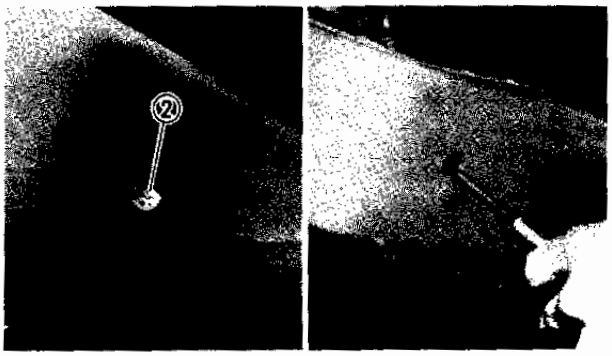


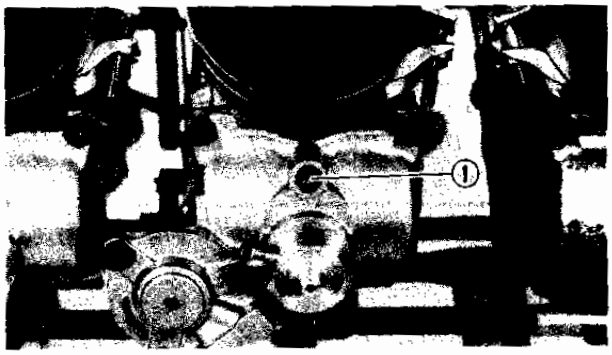
Inductive tachometer:
P/N. YU-08036-A, 90890-03113

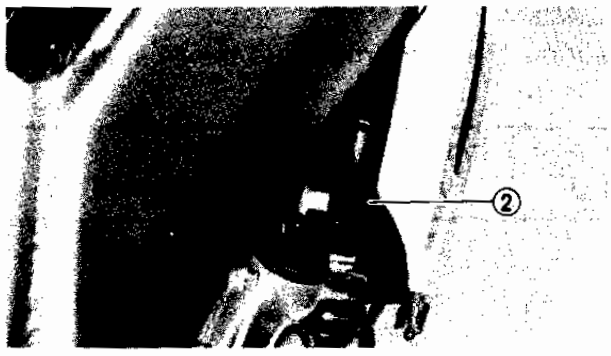
3.Check:
- Engine idling speed
  Out of specification → Adjust.

	Engine idling speed: **1,150 ~ 1,250 r/min**









4.Adjust:
- Engine idling speed

****

YZF750R
- Turn the pilot screw ① until it is lightly seated.
- Turn out the pilot screw for the specified number of turns.

Pilot screw: 2 turns out

- Turn the throttle stop screw ② in or out until specified idling speed is obtained.

Turning in → Idling speed increased.
Turning out → Idling speed decreased.

****

****

YZF750SP
- Turn the pilot screw ① until it is lightly seated.
- Turn the pilot screw counterclockwise with in the allowed range to find the highest idling speed.

Pilot screw: 2 ~ 2-1/2 turns out

- Turn the throttle stop screw ② in or out until specified idling speed is obtained.

Turning in → Idling speed increased.
Turning out → Idling speed decreased.

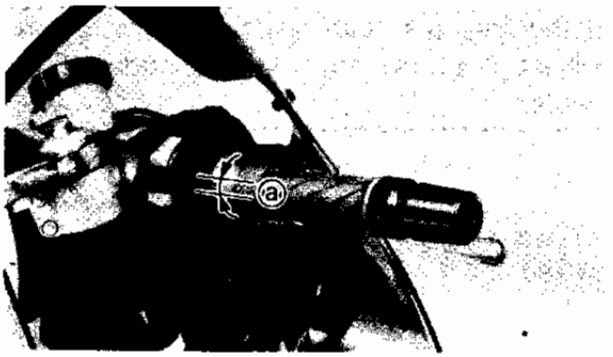
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5.Adjust:
- Throttle cable free play
  Refer to the "THROTTLE CABLE FREE PLAY ADJUSTMENT" section.

Free play:
3 ~ 7 mm (0.12 ~ 0.28 in)

THROTTLE CABLE ADJUSTMENT

NOTE:
Engine idling speed and carburetor synchronization should be adjusted properly before adjusting the throttle cable free play.

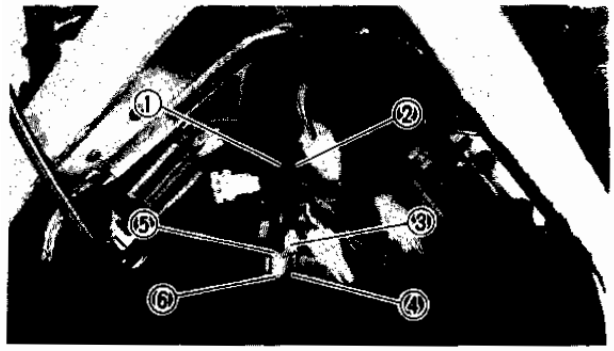


1.Check:
- Throttle cable free play ⓐ
  Out of specification → Adjust.

Free play:
3 ~ 7 mm (0.12 ~ 0.28 in)
At throttle grip end

2.Remove:
- Seat
- Fuel tank
  Refer to the "SEAT" and "FUEL TANK" section.
- Air filter case
  Refer to the "VALVE CLEARANCE ADJUSTMENT" section.

3.Adjust:
- Throttle cable free play



****

Adjustment steps:

NOTE:
When accelerating, throttle cable #1 ① is pulled and throttle cable #2 ② is pushed.

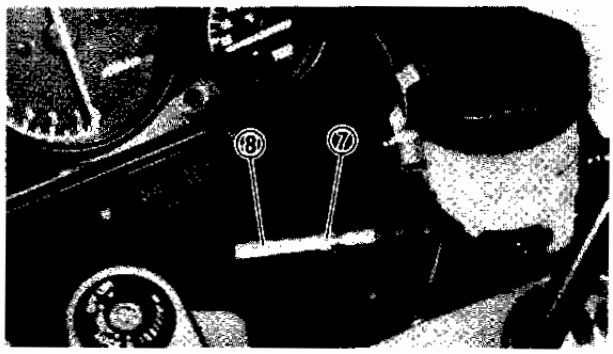
First step (YZF750SP):
- Loosen the locknut ③ on throttle cable #2.
- Turn the adjuster ④ in or out until all slack is removed from throttle cable #2.

Second step:
- Loosen the locknut ⑤ on throttle cable #1.
- Turn the adjuster ⑥ in or out until the specified free play is obtained.

Turning in → Free play is increased.
Turning out → Free play is decreased.

- Tighten the locknuts.

NOTE:
If the free play can not be adjusted here, adjust it at the throttle grip side of the cable.



Final step:
- Loosen the locknut ⑦.
- Turn the adjuster ⑧ in or out until the specified free play is obtained.

Turning in → Free play is increased.
Turning out → Free play is decreased.

- Tighten the locknut.

⚠ WARNING

After adjusting, turn the handlebar to the right and left, making sure that the engine idling speed does not change.

****

4.Install:
- Air filter case
- Fuel tank
- Seat

Refer to the "FUEL TANK " and "SEAT" section.

SPARK PLUG INSPECTION

1.Remove:
- Spark plug caps
- Spark plugs

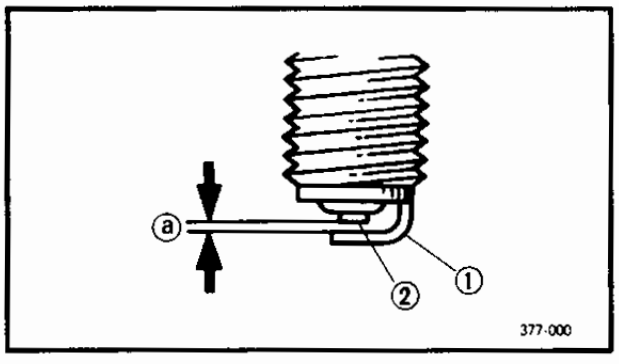
CAUTION:

Before completely removing the spark plug caps, use compressed air to clean the cylinder head cover areas to prevent dirt from falling into the engine.

2.Inspect:
- Spark plug type

Incorrect → Replace.

Standard sparkplug:
CR8E or CR9E (NGK)
U24ESR-N or U27ESR-N (N.D.)



3.Inspect:
- Electrode ①

Wear/Damage → Replace.
- Insulator ②

Abnormal color → Replace.
Normal color is a medium-to-light tan color.

4.Clean:
- Spark plug

(with spark plug cleaner or wire brush)

5.Measure:
- Spark plug gap ⓐ

Use a wire gauge.
Out of specification → Re-gap.

Spark plug gap:
0.7 ~ 0.8 mm (0.028 ~ 0.031 in)

6.Install:
- Spark plug

Spark plug:
12.5 Nm (1.25 m • kg, 9.0 ft • lb)

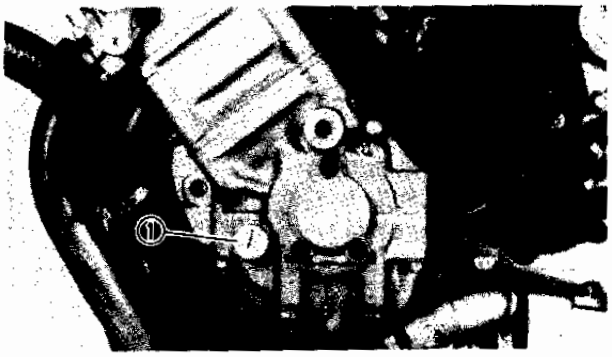
NOTE:
Before installing a spark plug, clean the gasket surface and plug surface.

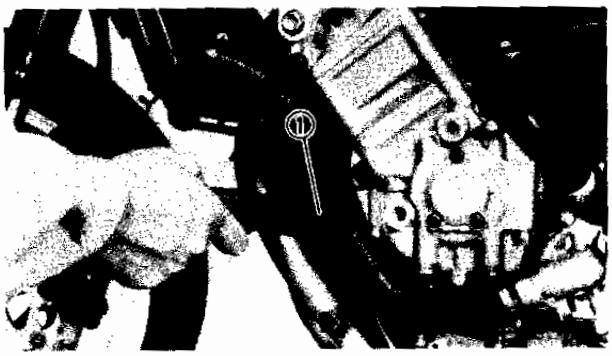
IGNITION TIMING CHECK

NOTE:
Carburetor synchronization, engine idle speed and throttle cable free play should be adjusted properly before checking the ignition timing.

1.Remove:
- Lower cowling
  Refer to the "COWLINGS" section.

2.Remove:
- Timing plug ①
  (with O-ring)





3.Attach:
- Timing light ①
- Inductive tachometer
  (to the #1 spark plug lead)

Timing light:
YM-33277-A, 90890-03141
Inductive tachometer:
YU-08036-A, 90890-03113

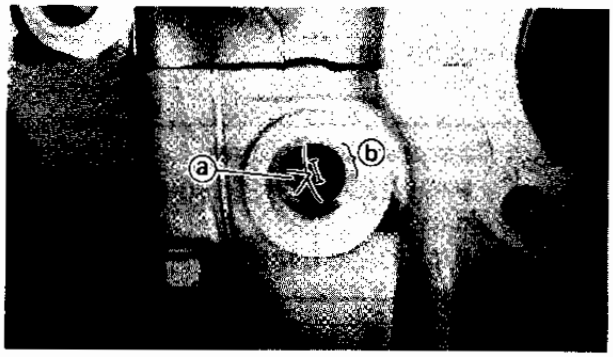
4.Check:
- Ignition timing

****

Checking steps:

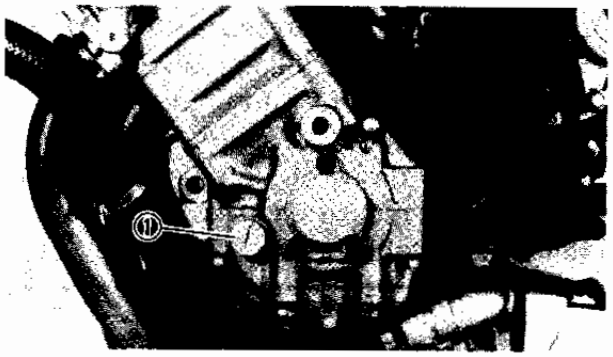
- Start the engine and let it warm up until the fast idle system cuts out. Let the engine run at the specified speed.

Engine speed:
1,150 ~ 1,250 r/min



- Visually check the stationary pointer ⓐ is within the firing range ⓑ on the crankshaft web.
  Incorrect firing range → Check rotor and pickup assembly.

****



NOTE:
The ignition timing is not adjustable.

5.Install:
- Timing plug ①
  (with O-ring)
- Lower cowling (left)
  Refer to the "COWLINGS" section.

COMPRESSION PRESSURE MEASUREMENT

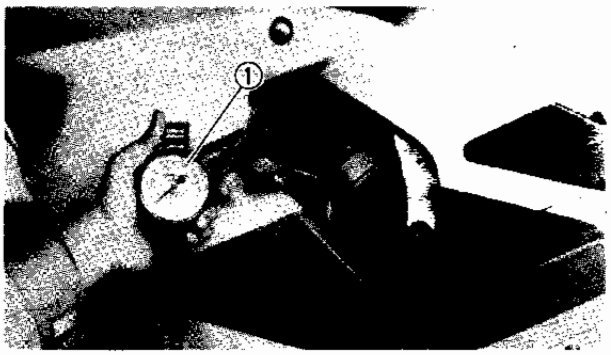
NOTE:
Insufficient compression pressure will result in performance loss.

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

2.Start the engine and let it warm up for several minutes
3.Stop the engine.

4.Remove:
- Spark plug caps
- Spark plugs

CAUTION:
Before completely removing the spark plug caps, use compressed air to clean the cylinder head cover areas to prevent dirt from falling into the engine.



5.Attach:
- Compression gauge ①
- Adapter

Compression gauge:
P/N YU-33223, 90890-03081
Adapter:
P/N 90890-04082

6.Measure:
- Compression pressure

Above the maximum pressure:
Inspect the cylinder head, valve surfaces, and piston crown for carbon deposits.

Below the minimum pressure:
Squirt a few drops of oil into the affected cylinder and measure again.
- Refer to the table below

Compression pressure (With oil applied into cylinder)	
Reading	**Diagnosis**
Higher than without oil	**Worn or damaged pistons → Repair**
Same as without oil	**Defective ring(s), valves, cylinder head gasket or piston is possible → Repair**

Compression pressure (at sea level):
Standard:
1,320 kPa (13.2 kg/cm², 192 psi)
Minimum:
1,260 kPa (12.6 kg/cm², 179 psi)
Maximum:
1,380 kPa (13.8 kg/cm², 196 psi)

****

Measurement steps:

- Crank over the engine with the throttle wide-open until the reading on the compression gauge stabilizes.

⚠ WARNING

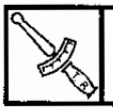
Before cranking the engine, ground all spark plug leads to prevent sparking.

- Repeat the previous steps for the other cylinders.

NOTE:
The difference of compression pressure between the highest and lowest cylinder compression readings should be 100 kPa (1 kg/cm², 14 psi) or less.

****

7. Install:
- Spark plugs
- Spark plug caps



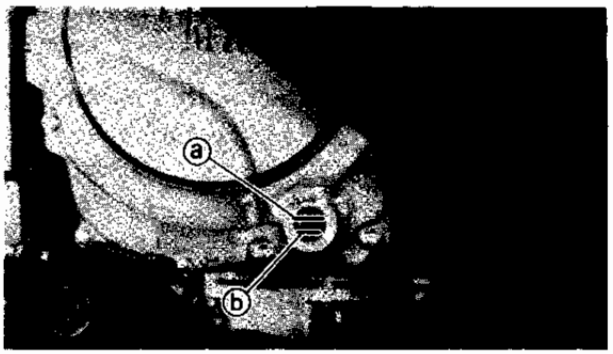
Spark plug:
12.5 Nm (1.25 m • kg, 9.0 ft • lb)

ENGINE OIL LEVEL INSPECTION

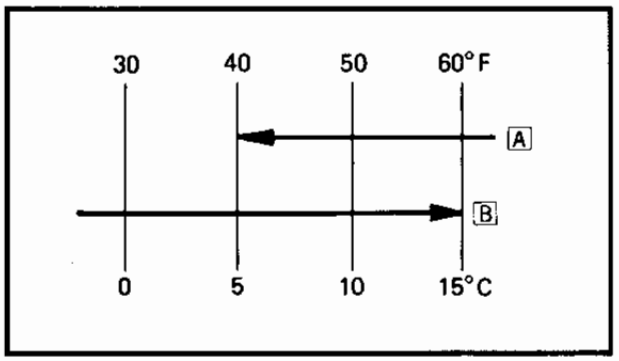
NOTE:
Position the motorcycle straight up when inspecting the oil level.

1.Place the motorcycle on a level surface.

NOTE:
Place the motorcycle on its centerstand if a centerstand is equipped. If not, place a suitable stand under the motorcycle.



2.Inspect:
- Oil level
  Oil level should be between maximum ⓐ and minimum ⓑ marks.
  Oil level low → Add oil to proper level.



Recommended oil:
At 5°C (40°F) or higher A :
Yamalube 4 (20W40) or
SAE 20W40 type SE motor oil
At 15°C (60°F) or lower B :
Yamalube 4 (10W30) or
SAW 10W30 type SE motor oil

NOTE:
Recommended oil classification: API Service "SE", "SF" and "SG" type or equivalent (e.g. "SF-SE", "SF-SE-CC", "SF-SE-SD" etc.).

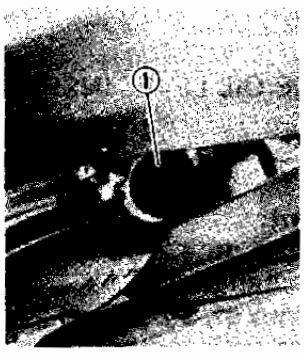
CAUTION:
- **Do not add any chemical additives. Engine oil also lubricates the clutch and additives could cause clutch slippage.**
- **Do no allow foreign material to enter the crankcase.**

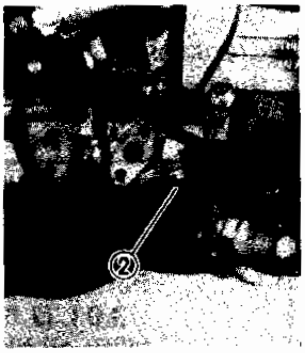
3.Start the engine and let it warm up for several minutes.
4.Stop the engine and inspect the oil level once again.

NOTE:
Wait a few minutes until the oil settles before inspecting the oil level.

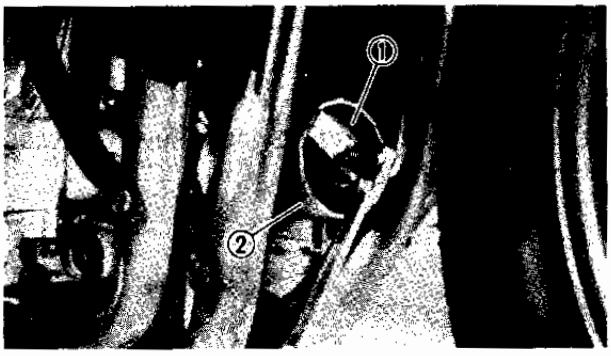
ENGINE OIL REPLACEMENT

1. Remove:
- Lower cowlings
  Refer to the "COWLINGS" section.
2. Start the engine and let it warm up for several minutes.
3. Stop the engine and place an oil pan under the drain bolt.





4. Remove:
- Oil filler plug ①
- Drain bolt ②
  (with gasket)
  Drain the crankcase of its oil.



5. If the oil filter is to be replaced during this oil change, remove the following parts and reinstall them.

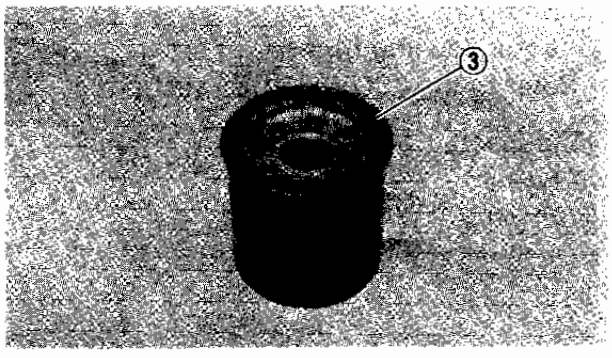
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Replacement steps:

- Remove the oil filter ① using the oil filter wrench ②.



Oil filter wrench:
P/N YU-38411, 90890-01426



- Apply engine oil to the O-ring ③ of the new oil filter.

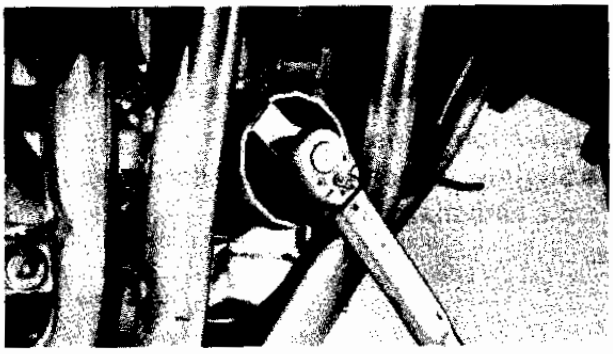
NOTE:
Make sure the O-ring ③ is positioned correctly.

- Tighten the oil filter using the oil filter wrench.



Oil filter:
17 Nm (1.7 m • kg, 12 ft • lb)

****



6.Install:
- Drain bolt

Drain bolt:
43 Nm (4.3 m • kg, 31 ft • lb)

NOTE:
Check the gasket (drain plug). If damaged, replace it with a new one.

7.Fill:
- Crankcase

Refer to the "ENGINE OIL LEVEL INSPECTION" section.

Oil quantity:
Total amount:
4.0 L (3.5 Imp qt, 4.2 US qt)
Periodic oil change:
3.0 L (2.6 Imp qt, 3.2 US qt)
With oil filter replacement:
3.7 L (3.3 imp qt, 3.9 US qt)

8.Install:
- Oil filler plug

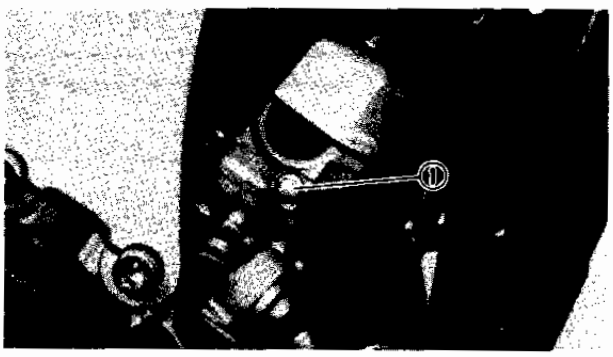
9.Warm up the engine for a few minutes, then stop the engine.

10.Remove:
- Center cowling (right)

Refer to the "COWLINGS" section.

11.Inspect:
- Engine

(for oil leaks)
- Oil level



12.Inspect:
- Oil flow

****

Inspection steps:
- Slightly loosen the oil gallery bolt ① in the camshaft case.

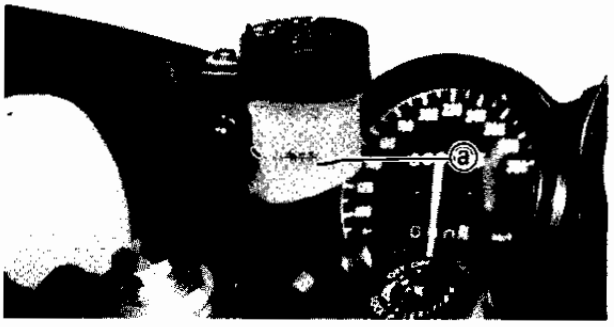
- Start the engine and keep it idling until oil begins to seep from the oil gallery hole. If no oil comes out after one minute, stop the engine immediately so the it will not seize.
- Check oil passages, oil filter, and oil pump for damage or leakage. Refer to "INSPECTION AND REPAIR" in CHAPTER 4.
- Restart the engine after solving the problem(s), and recheck the oil pressure.
- Stop the engine and tighten the oil gallery bolt (with gasket) to specification.

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

****

13.Install:
- Center cowling (right)
- Lower cowling

Refer to the "COWLINGS" section.



CLUTCH FLUID LEVEL INSPECTION

1.Place the motorcycle on a level surface.
2.Inspect:
- Fluid level

Fluid level is below the "LOWER" level line ⓐ → Fill to proper level.

	Recommended fluid: **DOT #4**

NOTE:
When inspecting the fluid level in the reservoir on the handlebar, make sure that the master cylinder top is horizontal.

CAUTION:

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

⚠ WARNING

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

AIR BLEEDING (HYDRAULIC CLUTCH SYSTEM)

⚠ WARNING

Bleed the clutch system every time:

- **The system has been disassembled.**
- **A clutch hose has been loosened or removed.**
- **The clutch fluid has been very low.**
- **The clutch operation is faulty.**

1. Bleed:
   - Clutch system

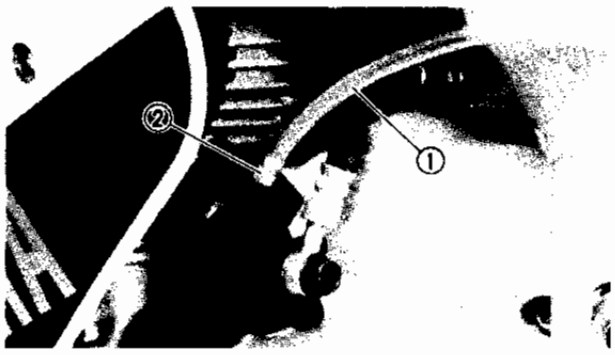
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Air bleeding steps:

a. Add proper fluid to the reservoir.

CAUTION:

Be careful not to spill any fluid or allow the reservoir to overflow.



b. Install the diaphragm and diaphragm holder.
c. Connect a clear plastic hose ① to the bleed screw.
d. Place the other end of the hose into a container.
e. Slowly apply the clutch lever several times.

f. Pull in the lever and hold it in position.
g. Loosen the bleed screw ② and allow the lever to travel slowly towards the handlebar.
h. Tighten the bleed screw when the lever has touched the handlebar grip, then release the lever.
i. Repeat steps (e) to (h) until all air bubbles have been removed from the system.
j. Tighten the bleed screw.

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

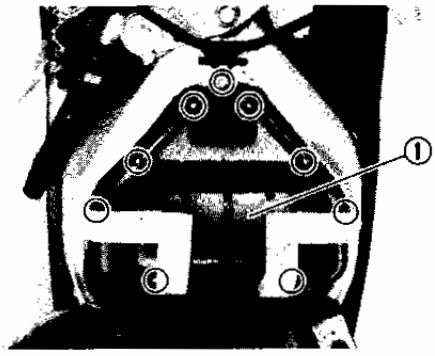
NOTE:
If bleeding is difficult, it may be necessary to let the clutch fluid system stabilize for a few hours. Repeat the bleeding procedure when the tiny bubbles in the fluid have disappeared.

k. Add fluid to the proper level.
Refer to the "CLUTCH FLUID LEVEL INSPECTION" section.

⚠ WARNING

Check the operation of the clutch after bleeding the clutch system.

****



AIR FILTER CLEANING

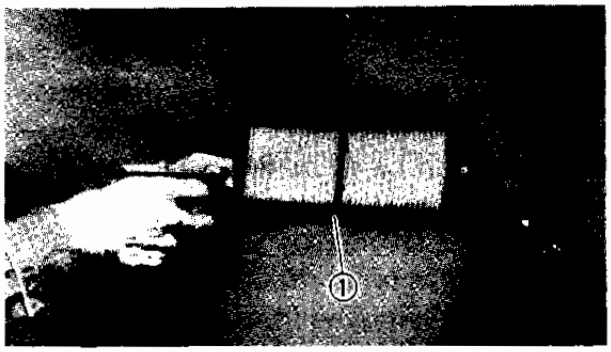
1. Remove:
- Seat
- Fuel tank
Refer to the "SEAT" and "FUEL TANK" sections.
- Air filter case cover ①



2. Remove:
- Air filter element ①

CAUTION:

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



3.Inspect:
- Air filter element
  Damage → Replace.

4.Clean:
- Air filter element ①
  Blow off dust from the outer surface of the element with compressed air.

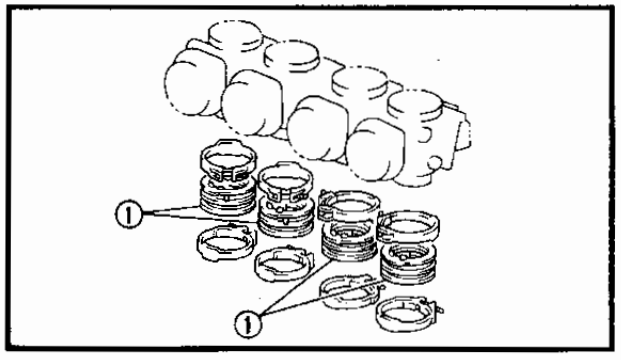
5.Install:
- Air filter element
- Air filter case cover
  (with gasket)

NOTE:
- Make sure the element is properly seated in the filter case.
- Be sure the air filter is installed with the mesh side facing backward.

6.Install:
- Fuel tank
- Seat
  Refer to the "FUEL TANK" and "SEAT" sections.

CARBURETOR JOINT INSPECTION

1.Remove:
- Seat
- Fuel tank
  Refer to the "SEAT" and "FUEL TANK" sections.



2.Inspect:
- Carburetor joints ①
  Cracks/Damage → Replace.
  Refer to the "CARBURETION" section in CHAPTER 6.

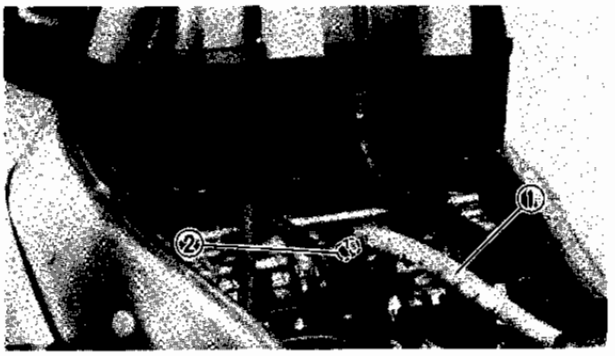
3.Install:
- Fuel tank
- Seat

Refer to the "FUEL TANK" and "SEAT" sections.

FUEL LINE INSPECTION

1.Remove:
- Seat
- Fuel tank

Refer to the "SEAT" and "FUEL TANK" sections.



2.Inspect:
- Fuel hoses ①
  Cracks/Damage → Replace.
  Loose connection → Connect properly.
- Fuel strainer ②
  Contamination/Damage → Replace.

NOTE:
Drain and flush the fuel tank if abrasive damage to any components is evident.

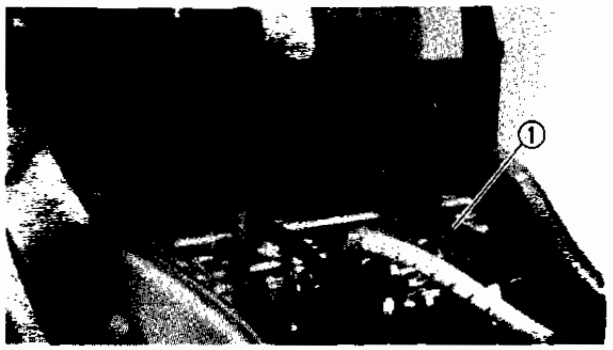
3.Install:
- Fuel tank
- Seat

Refer to the "FUEL TANK" and "SEAT" sections.

CRANKCASE BREATHER HOSE INSPECTION

1.Remove:
- Seat
- Fuel tank

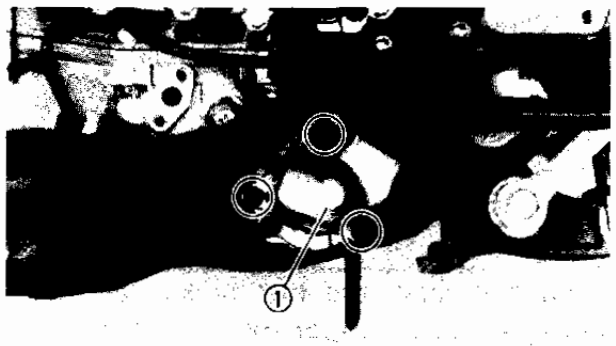
Refer to the "SEAT" and "FUEL TANK" sections.



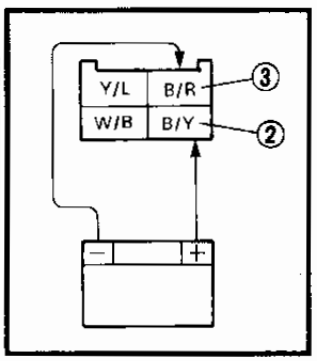
2.Inspection:
- Crankcase breather hose :
  Cracks/Damage → Replace.
  Loose connection → Connect properly.

CAUTION:
Make sure that the crankcase ventilation hose is routed correctly.

3.Install:
- Fuel tank
- Seat
  Refer to the "FUEL TANK" and "SEAT" sections.







EXUP CABLE

1.Remove:
- Lower cowling
  Refer to the "COWLINGS" section.
- Seat
- Fuel tank
  Refer to the "SEAT" and "FUEL TANK" section.

2.Remove:
- Valve cover ①

3.Check:
- EXUP operation

****

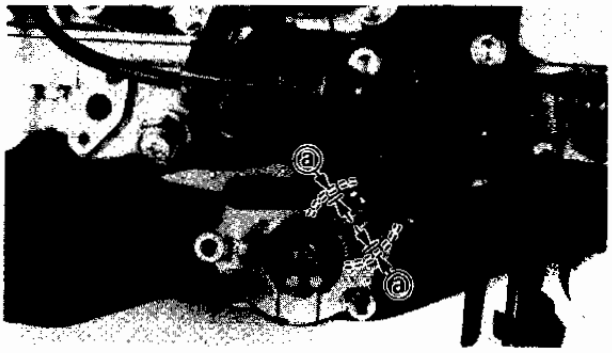
Checking steps:
- Disconnect the servo motor coupler ①.
- Connect the battery to the servo motor coupler.

Battery (+) lead → Black/Yellow terminal ②
Battery (–) lead → Black/Red terminal ③

CAUTION:
This test should be performed within a few seconds to prevent further damage.

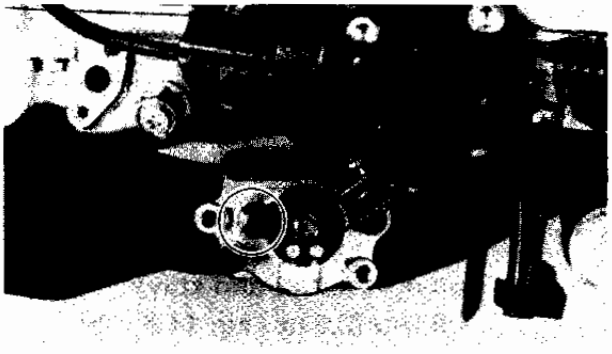
- Check the EXUP valve operated.
- Connect the servo motor coupler.

****



4.Check:
- EXUP cable free play ⓐ
  Out of specification → Adjust.

	EXUP cable free play: **1.5 mm (0.06 in) or less**

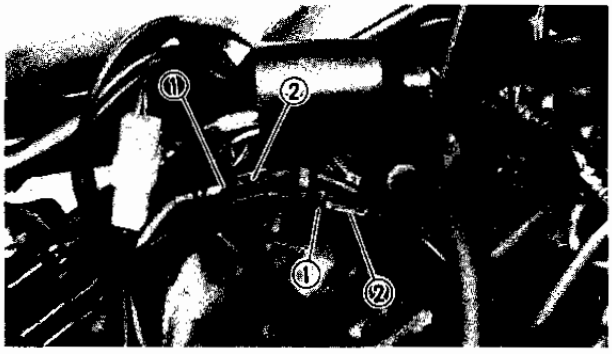


5.Adjust:
- EXUP cable free play

****

Adjusting steps:
- Insert the pin (ø4) in the pulley and housing hole.
- Loosen the locknut ①.
- Turn the adjuster ② clockwise.
- Turn the adjuster counterclockwise until become it harder.
- Turn the adjuster 1/4 clockwise.
- Tighten the locknut.
- Remove the pin (ø4).

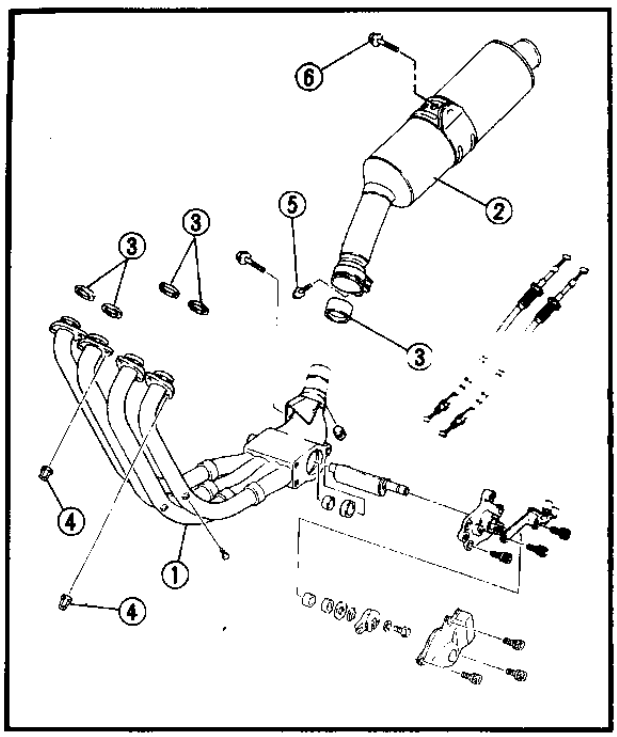
****



6.Install:
- Valve cover

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

7.Install:
- Lower cowling
  Refer to the "COWLINGS" section.
- Fuel tank
- Seat
  Refer to the "FUEL TANK" and "SEAT" section.



EXHAUST SYSTEM INSPECTION

1.Remove:
- Lower cowling
  Refer to the "COWLINGS" section.

2.Inspect:
- Exhaust pipes ①
- Muffler ②
  Cracks/Damage → Replace.
- Gaskets ③
  Exhaust gas leaks → Replace.

3.Inspect:
- Tightening torque

Nut ④ (exhaust pipe):
20 Nm (2.0 m • kg, 14 ft • lb)
Bolt ⑤
(exhaust pipe and muffler):
20 Nm (2.0 m • kg, 14 ft • lb)
Bolt ⑥ (muffler and stay):
20 Nm (2.0 m • kg, 14 ft • lb)

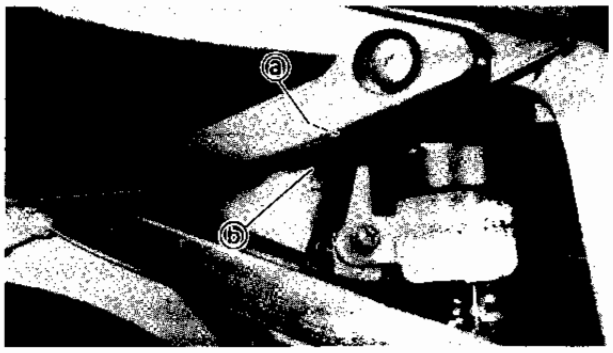
4.Install:
- Lower cowling
  Refer to the "COWLINGS" section.

COOLANT LEVEL INSPECTION

NOTE:
Position the motorcycle straight up when inspecting the coolant level.

1.Place the motorcycle on a level surface.

NOTE:
Place the motorcycle on its centerstand if a centerstand is equipped. If not, place a suitable stand under the motorcycle.

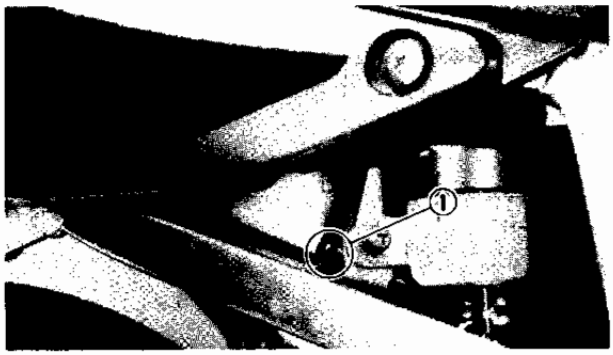


2.Inspect:
- Coolant level
  Coolant level should be between maximum ⓐ and minimum ⓑ marks.
  Coolant level low → Add soft water (tap water) to proper level.

CAUTION:
Hard water or salt water is harmful to the engine parts; use boiled or distilled water if you can't get soft water.

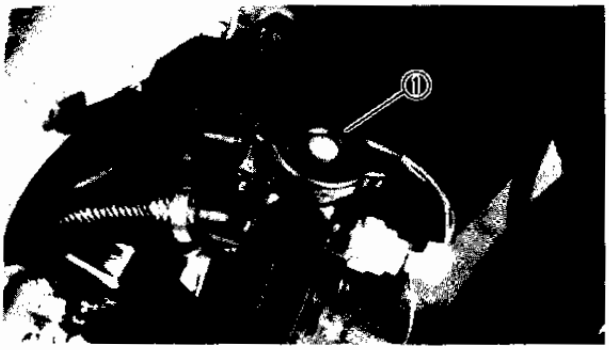
3.Start the engine and let it warm up for several minutes.
4.Stop the engine and inspect the coolant level once again.

NOTE:
Wait a few minutes until the coolant settles before inspecting the coolant level.



COOLANT REPLACEMENT
1.Disconnect:
- Hose ① (reservoir tank)
  Drain the reservoir tank of its coolant.

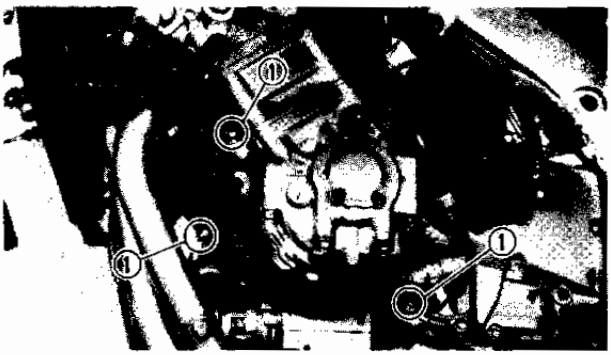
2.Remove:
- Seat
- Lower cowling
- Center cowlings
  Refer to the "SEAT" and "COWLINGS" sections.



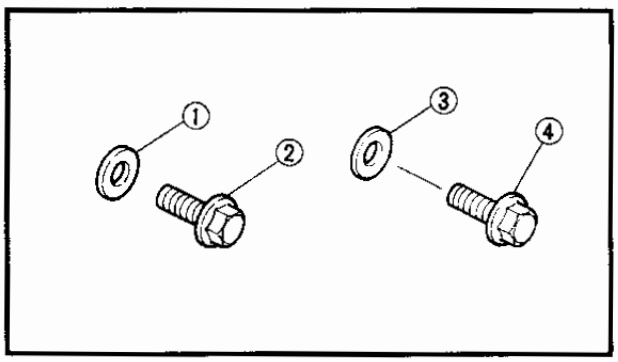
3.Remove:
- Radiator cap ①

⚠ WARNING

Do not remove the radiator cap when the engine and radiator are hot. Scalding hot fluid and steam may be blown out under pressure, which could cause serious injury. When the engine has cooled, open the radiator cap by following this procedure:
Place a thick rag or a towel over the radiator cap. Slowly rotate the cap counterclockwise to the detent. This allows any residual pressure to escape. When the hissing sound has stopped, press down on the cap while turning counterclockwise and remove it.



4.Remove:
- Drain bolt ① (with gasket)
  Drain the radiator and engine of its coolant.

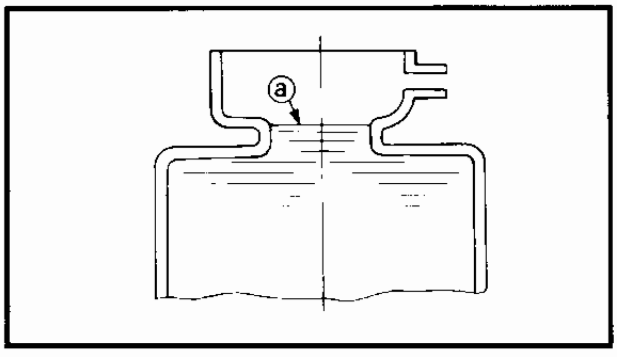


5.Inspect:
- Gaskets ① (cylinder drain bolt ②)
- Gasket ③ (water pump drain bolt ④)
  Damage → Replace.

6.Install:
- Drain bolts

	Drain bolt: **10 Nm (1.0 m • kg, 7.2 ft • lb)**

7.Connect:
- Coolant reservoir tank hose



8.Fill:
- Cooling system (radiator and engine) (to specified level ⓐ)

Recommended coolant:
High quality ethylene glycol anti-freeze containing corrosion inhibitors for aluminum engines
Coolant and water mix ratio:
50% - 50%
Total amount:
2.4 L (2.11 Imp qt, 2.54 US qt)
Reservoir tank capacity:
0.55 L (0.48 Imp qt, 0.58 US qt)
From lower to upper level:
0.25 L (0.22 Imp qt, 0.26 US qt)

****

Handling notes for coolant:
Coolant is harmful and should be handled with special care.

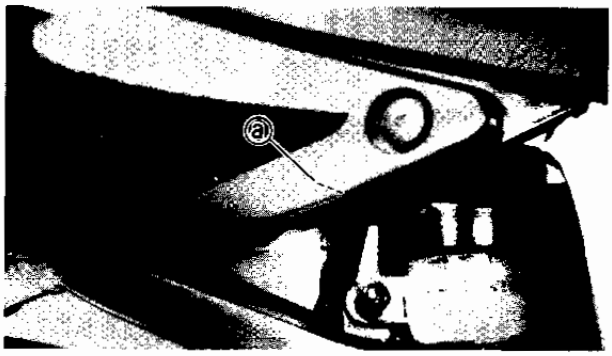
⚠ WARNING

- **If coolant splashes in your eyes:**
  Thoroughly wash your eyes with water and see a doctor.
- **If coolant splashes on your clothes.**
  Quickly wash it away with water and then with soap.
- **If coolant is swallowed.**
  Quickly make the patient vomit and take him to a doctor.

****

CAUTION:
- **Hard water or salt water is harmful to the engine parts. Use boiled or distilled water if you can't get soft water.**
- **Do no use water containing impurities or oil.**
- **Take care that no coolant splashes onto painted surfaces. If it does, wash it away with water immediately.**
- **Do not mix different types of ethylene glycol antifreeze containing corrosion inhibitors for aluminium engines.**

9. Install:
- Radiator cap



10. Fill:
- Reservoir tank
  (to upper level mark ⓐ)

11. Install:
- Reservoir tank cap

12. Start the engine and let it warm up for several minutes.
13. Stop the engine and inspect the level.
    Refer to the "COOLANT LEVEL INSPECTION" section.

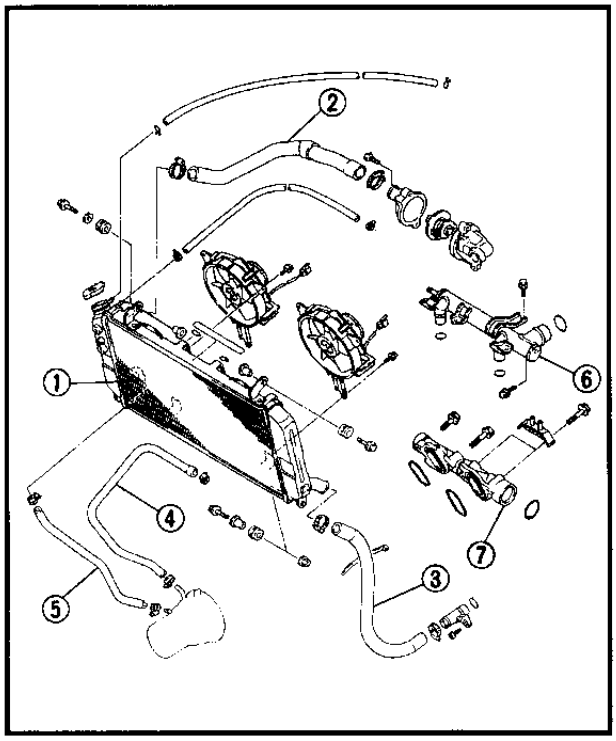
NOTE:
Wait a few minutes until the coolant settles before inspecting the coolant level.

14. Install:
- Center cowlings
- Lower cowling
- Seat
  Refer to the "COWLINGS" and "SEAT" sections.

COOLING SYSTEM INSPECTION

1.Remove:
- Seat
- Fuel tank
- Lower cowling
- Center cowlings

Refer to the "SEAT", "FUEL TANK" and "COWLINGS" sections.

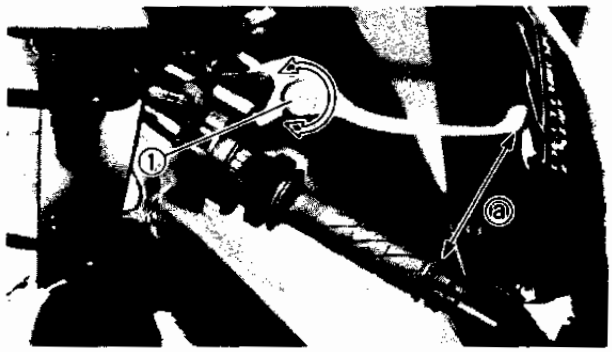


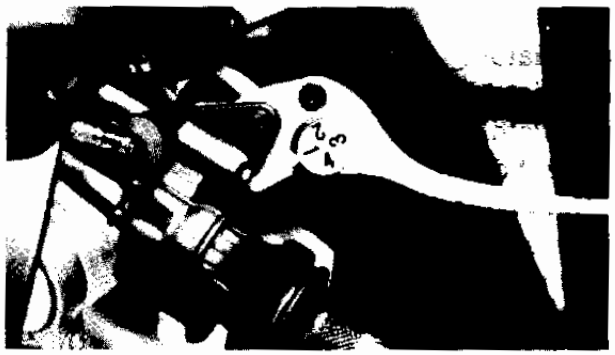
2.Inspect:
- Radiator ①
- Radiator hose ② (inlet)
- Radiator hose ③ (outlet)
- Inlet hose ④ (oil cooler)
- Outlet hose ⑤ (oil cooler)
- Water jacket joint ⑥ (outlet)
- Water jacket joint ⑦ (inlet)

Cracks/Damage → Replace.
Refer to the "COOLING SYSTEM" section in CHAPTER 5.

3.Install:
- Center cowlings
- Lower cowling
- Fuel tank
- Seat

Refer to the "COWLINGS", "FUEL TANK" and "SEAT" sections.





CHASSIS

FRONT BRAKE ADJUSTMENT

1.Adjust:
- Brake lever position
  (distance ⓐ from handle grip to front brake lever)

****

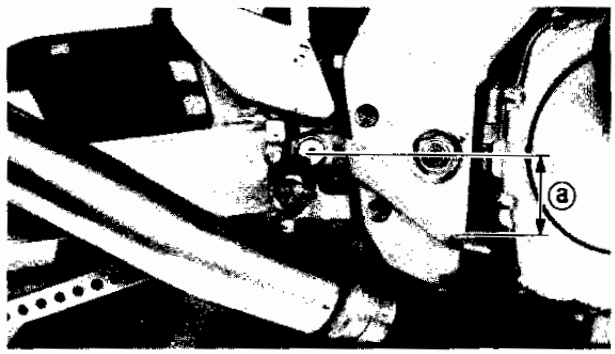
Adjustment steps:
- Turn the adjuster ① while pushing the front brake lever forward until the desired lever position is obtained.

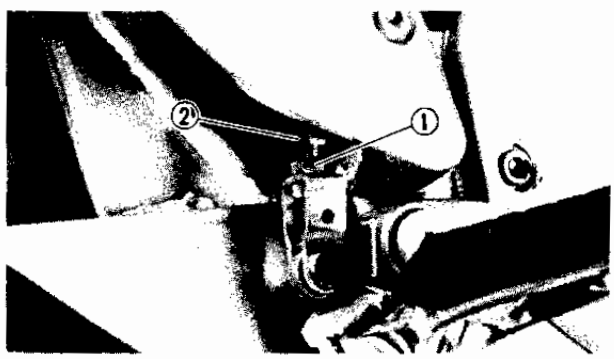
Adjuster position #1	Distance ⓐ is the largest
Adjuster position #4	Distance ⓐ is the smallest

⚠ WARNING

After adjusting the front brake lever position (distance), make sure the pin on the brake lever holder is firmly inserted in the hole in the adjuster.

****





REAR BRAKE ADJUSTMENT

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

Brake pedal height:
57 mm (2.2 in)
Below top of footrest.

2.Adjust:
- Brake pedal height

****

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

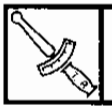
Turning in	**Height decreased.**
Turning out	**Height increased.**



⚠ WARNING

After adjusting brake pedal height, visually check the adjuster end through the hole ⓐ. The adjuster end ⓑ must be visible within this hole.

● Tighten the locknut ①.

	**Locknut:** **26 Nm (2.6 m • kg, 19 ft • lb)**

CAUTION:

Make sure that the brake does not drag after adjusting it.

⚠ WARNING

A soft or spongy feeling in the brake lever can indicate the presence of air in the brake system. This air must be removed by bleeding the brake system before the motorcycle is operated. Air in the system will cause greatly diminished braking capability and can result in loss of control and an accident. Inspect and bleed the system if necessary.

****

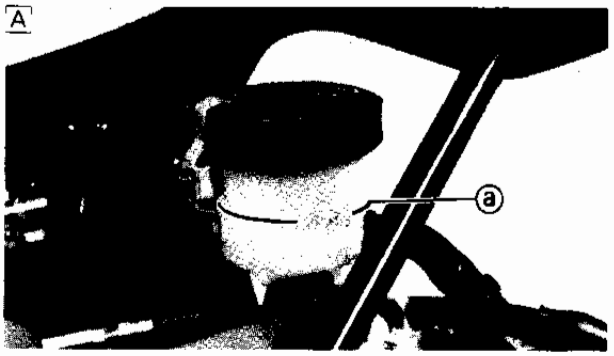
3. Adjust:
- Brake light switch
  Refer to the "BRAKE LIGHT SWITCH ADJUSTMENT" section.

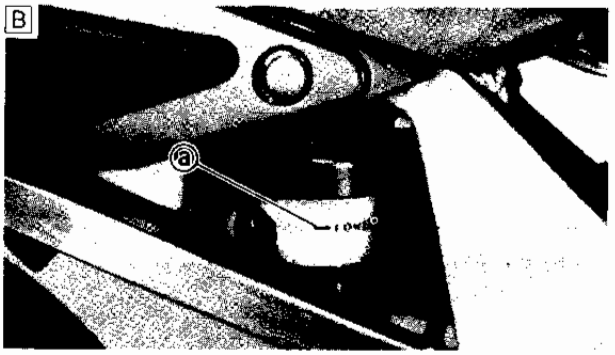
BRAKE FLUID LEVEL INSPECTION

NOTE:
Position the motorcycle straight up when inspecting the fluid level.

1. Place the motorcycle on a level surface.

NOTE:
Place the motorcycle on its centerstand if a centerstand is equipped. If not, place a suitable stand under the motorcycle.





2. Inspect:
- Fluid level
  Fluid level is under "LOWER" level line ⓐ
  → Fill to proper level.

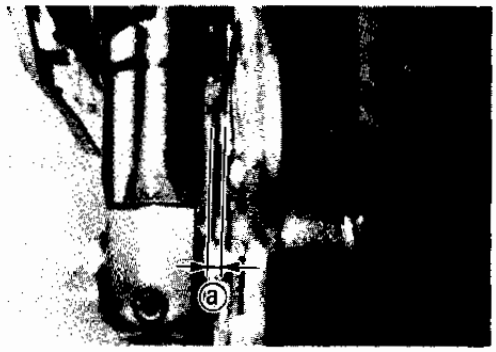
	Recommended fluid: **DOT #4**

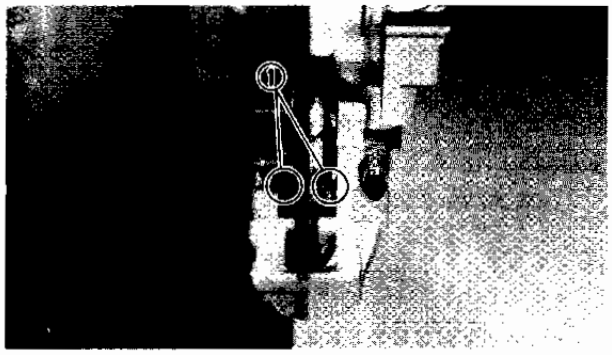
A Front brake
B Rear brake

NOTE:
When inspecting the fluid level in the reservoir on the handlebar, make sure the master cylinder top is horizontal.

CAUTION:
Brake fluid may corrode painted surfaces or plastic parts. Always clean up spilled fluid immediately.

⚠ WARNING
- **Use only the designated quality fluid. Otherwise, the rubber seals may deteriorate causing leakage and poor brake performance.**
- **Refill with the same type of fluid. Mixing fluids may result in a harmful chemical reaction leading to poor brake performance.**
- **Be careful that water does no enter the master cylinder when refilling. Water will significantly lower the boiling point of the fluid and could cause vapor lock.**





BRAKE PAD INSPECTION

1. Activate the brake lever or brake pedal.
2. Inspect:
- Brake pad thickness ⓐ (front)

Wear limit:
0.5 mm (0.02 in)

Wear/Damage → Replace brake pad as a set.
Refer to the "BRAKE PAD REPLACEMENT" section in CHAPTER 7.

3. Inspect:
- Brake pad (rear)
Wear indicator ① almost contacting the brake disc → Replace brake pad as a set.
Refer to the "BRAKE PAD REPLACEMENT" section in CHAPTER 7.

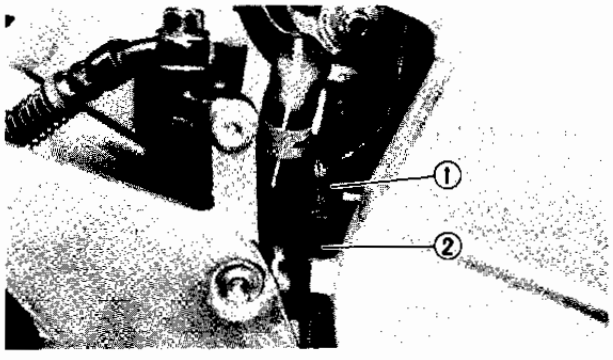
BRAKE LIGHT SWITCH ADJUSTMENT

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

1. Check:
- Brake light operation
Incorrect → Adjust.
2. Adjust:
- Brake light operating timing

****

Adjustment steps:
- Hold the main body ① of the switch with your hand so that it does not rotate, and turn the adjuster ② in or out until the operating timing is correct.



Turning in	**Brake light on later.**
Turning out	**Brake light on sooner.**

****

BRAKE HOSE INSPECTION

1. Remove:
- Lower cowling
- Center cowlings
  Refer to the "COWLINGS" section.



2. Inspect:
- **Brake hoses ①**
  Cracks/Wear/Damage → Replace.

3. **Check:**
- **Brake hose clamp**
  Loosen → Tighten.

4. Hold the motorcycle on upright position and apply the front or rear brake.
5. Check:
- Brake hoses
  Activate the brake lever or pedal several times.
  Fluid leakage → Replace the hose.
  Refer to the "FRONT AND REAR BRAKE" section in CHAPTER 7.

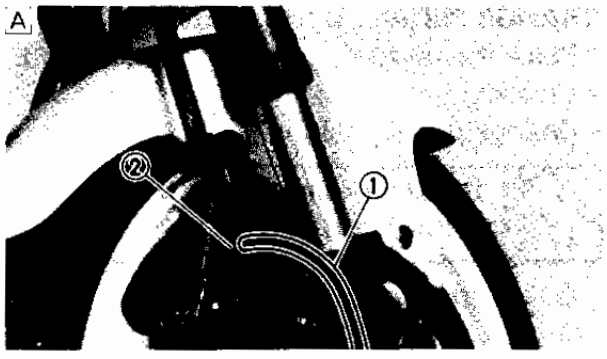
6. Install:
- Center cowlings
- Lower cowling
  Refer to the "COWLINGS" section.

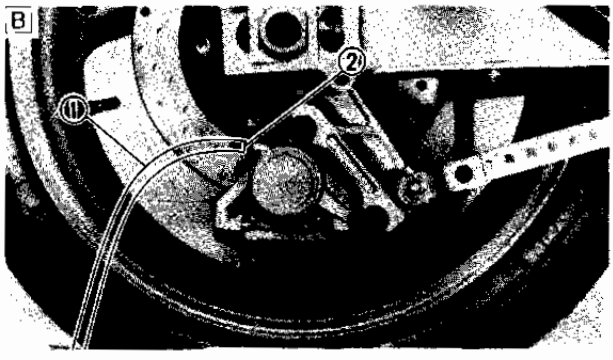
AIR BLEEDING (HYDRAULIC BRAKE SYSTEM)

⚠ WARNING

Bleed the brake system if:
- **The system has been disassembled.**
- **A brake hose has been loosened or removed.**

• The brake fluid has been very low.
• The brake operation has been faulty.
A loss of braking performance may occur if the brake system is not properly bled.





1. Bleed:
• Brake system

****

Air bleeding steps:
a. Add proper brake fluid to the reservoir.
b. Install the diaphragm. Be careful not to spill any fluid or allow the reservoir to overflow.
c. Connect a clear plastic hose ① tightly to the caliper bleed screw ②.

[A] Front [B] Rear

d. Place the other end of the hose into a container.
e. Slowly apply the brake lever or pedal several times.
f. Pull the lever in or push down on the pedal. Hold the lever or pedal in position.
g. Loosen the bleed screw and allow the lever or pedal to travel towards its limit.
h. Tighten the bleed screw when the lever or pedal limit has been reached, then release the lever or pedal.
i. Repeat steps (e) to (h) until all air bubbles have disappeared from the fluid.
j. Tighten the bleed screw.

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

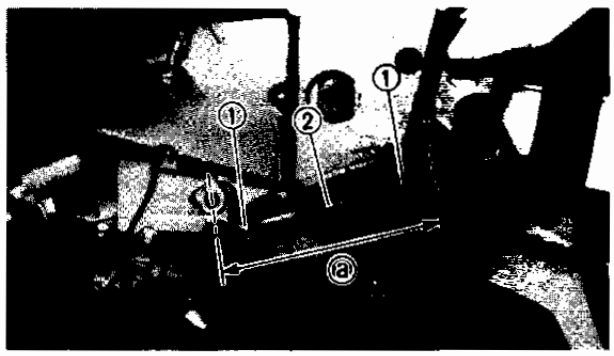
NOTE:
If bleeding is difficult, it may be necessary to let the brake fluid settle for a few hours. Repeat the bleeding procedure when the tiny bubbles in the system have disappeared.

k. Add brake fluid to proper level.
Refer to the "BRAKE FLUID INSPECTION section".

⚠ WARNING

Check the operation of the brake after bleeding the brake system.

****



CHANGE PEDAL ADJUSTMENT

1. Place the motorcycle on the centerstand.
2. Check:
- Change pedal position

Pedal link length ⓐ:
165.7 mm (6.52 in)

Out of specification → Adjust.

3. Adjust:
- Change pedal position

****

Adjustment steps:
- Loosen both locknuts ①.
- Turn the change pedal rod ② in or out to set the correct pedal height.

Turning in	**Pedal raised.**
Turning out	**Pedal lowered.**

- Tighten both locknuts.

****

DRIVE CHAIN SLACK ADJUSTMENT

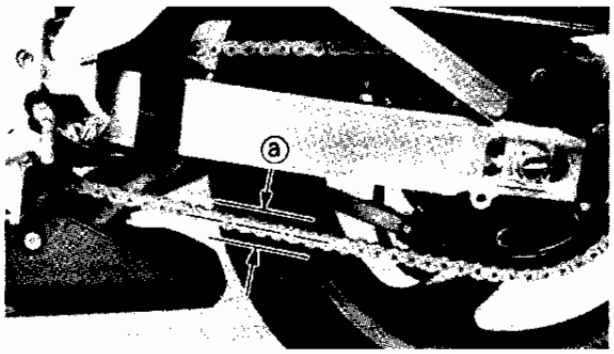
NOTE:
Before checking and/or adjusting, rotate the rear wheel several revolutions and check slack at several points to find the tightest point. Check and/or adjust the chain slack with the rear wheel is in this "tightest" position.

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

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

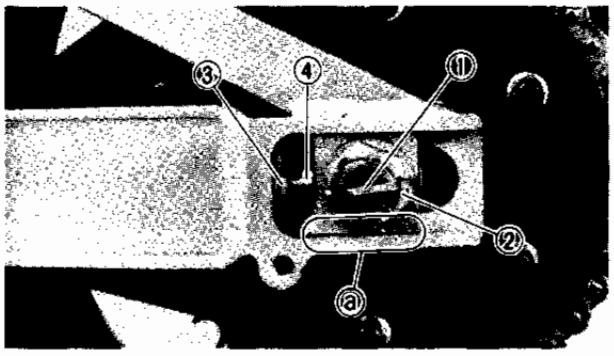
1.Place the motorcycle on a level place, and hold it in an upright position.

NOTE:
Both wheels should be on the ground without a rider on the motorcycle.



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

Drive Chain slack:
15 ~ 25 mm (0.6 ~ 1.0 in)



3.Remove:
- Cotter pun ①

4.Loosen:
- Axle nut ②

5.Adjust:
- Drive chain slack

****

Adjustment steps:
- Loosen both locknuts ③.
- Turn the adjuster ④ in or out until the specified slack is obtained.

Turn in	**Slack increases.**
Turn out	**Slack decreases.**

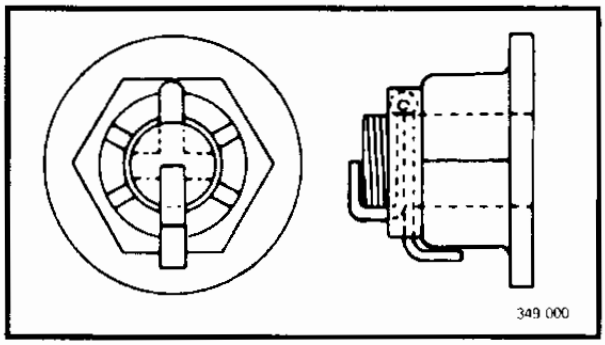
NOTE:
Turn each adjuster exactly the same amount to maintain correct axle alignment. (There are marks ⓐ on each side of the swingarm. Use them to check for proper alignment.)

- Tighten the axle nut to specification, while pushing the chain tight.

	Axle nut: **203 Nm (20.3 m • kg, 146 ft • lb)**

- Tighten the locknuts.

****



6. Install:
- Cotter pin ①

⚠ WARNING

Always use a new cotter pin.

CAUTION:

Do not loosen the axle nut after torque tightening. If the axle nut groove is not aligned with the cotter pin hole, align the groove with the hole by tightening the axle nut a little further.

DRIVE CHAIN LUBRICATION

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

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

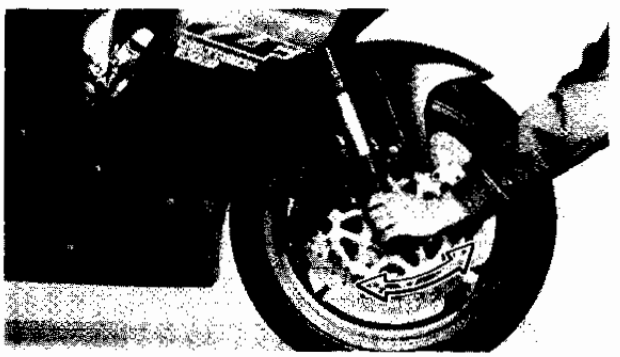
Recommended lubricant:
SAE 30 ~ 50W motor oil
or chain lubricant suitable for O-ring chains.

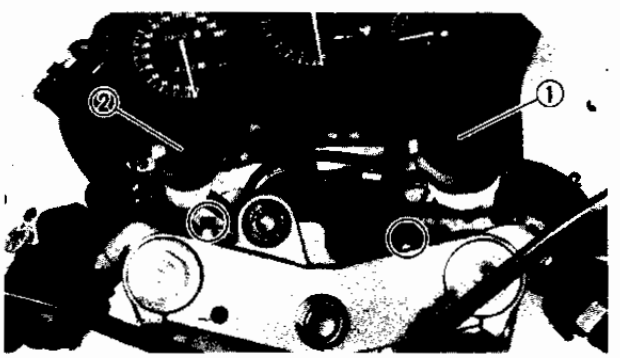
STEERING HEAD INSPECTION

⚠ WARNING

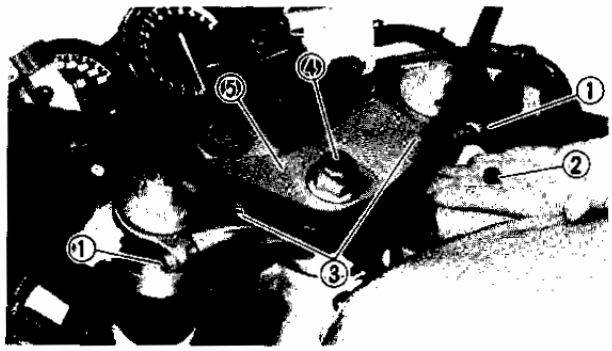
Securely support the motorcycle so there is no danger of it falling over.

1. Place the motorcycle on a level place.
2. Remove:
   - Lower cowling
     Refer to the "COWLINGS" section.
3. Elevate the front wheel by placing a suitable stand under the engine.
4. Check:
   - Steering assembly bearings
     Grasp the bottom of the front forks and gently rock the fork assembly back and forth.
     Looseness → Adjust the steering head.



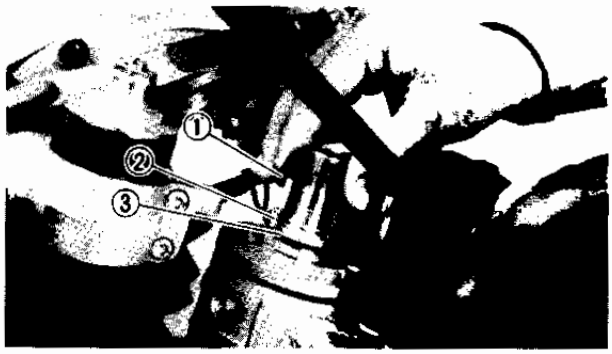


5. Remove:
   - Reservoir tank ① (brake)
   - Reservoir tank ② (clutch)



6.Loosen:
- Pinch bolts ① (upper bracket)

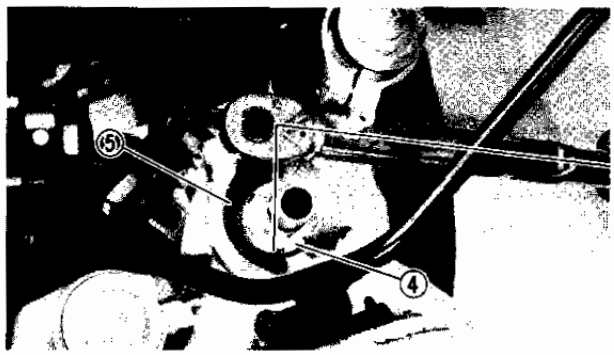
7.Remove:
- Blind plugs ②
- Bolts ③ (handlebar)
- Nut ④ (upper bracket)
- Upper bracket ⑤



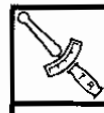
8.Adjust:
- Steering head

****

Adjustment steps:
- Remove the special washer ①, ring nut ② (upper) and rubber washer ③.
- Loosen the ring nut ④ (lower).
- Tighten the ring nut (lower) using the ring nut wrench ⑤.



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

	**Ring nut wrench:** **YU-33975, 90890-01403**
	**Ring nut (lower):** **(initial tightening):** **48 Nm (4.8 m • kg, 35 ft • lb)**

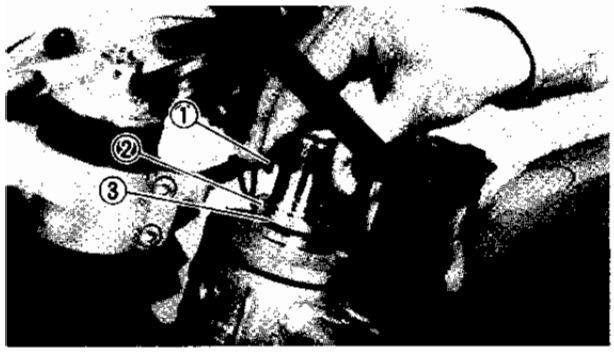
- Loosen the ring nut ④ (lower) completely, then retighten it to specification.

⚠ WARNING

Do not overtighten.

	**Ring nut (lower):** **(final tightening):** **16 Nm (1.6 m • kg, 12 ft • lb)**

- Check the steering head by turning it lock to lock. If it binds, remove the steering stem assembly and inspect the steering bearings.
  Refer to the "STEERING HEAD AND HANDLEBAR" section in CHAPTER 7.



- Install the rubber washer ③.
- Install the ring nut ② (upper).
- Finger tighten the ring nut ② (upper), then align the slots of both ring nuts. If necessary, hold the ring nut (lower) and tighten the ring nut (upper) until their slots are aligned.
- Install the lock washer ①.

NOTE:
Make sure the lock washer tabs sit correctly in the slots.

****

9.Install:
- Upper bracket

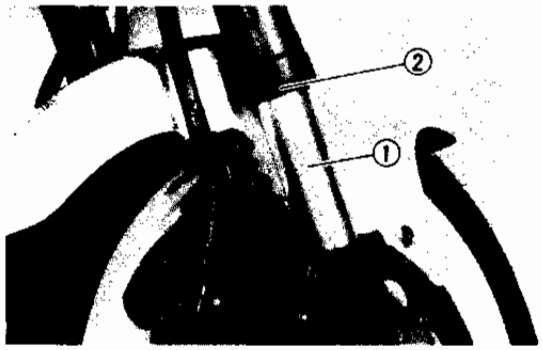
Nut (upper bracket):
110 Nm (11.0 m • kg, 80 ft • lb)
Bolt (handlebar):
13 Nm (1.3 m • kg, 9.4 ft • lb)
Pinch bolt (upper bracket):
25 Nm (2.5 m • kg, 18 ft • lb)

10.Install:
- Reservoir tank (brake)
- Reservoir tank (clutch)
- Lower cowling
  Refer to the "COWLINGS" section.

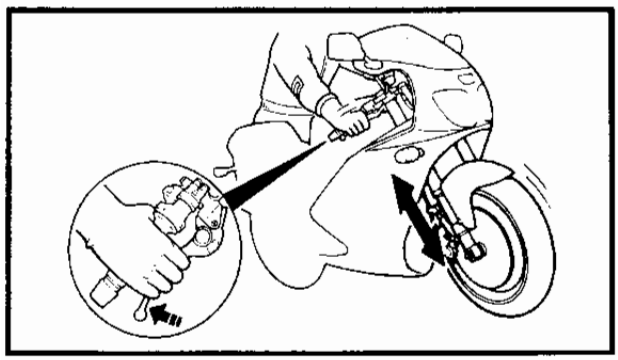
FRONT FORK INSPECTION

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

1.Place the motorcycle on a level place.



2.Check:
- Inner tube ①
  Scratches/Bent/Damage → Replace.
- Oil seal ②
  Excessive oil leakage → Replace.



3.Hold the motorcycle in an upright position and apply the front brake.
4.Check:
- Operation
  Pump the front fork up and down for several times.
  Unsmooth operation → Repair.
  Refer to the "FRONT FORK" section in CHAPTER 7.

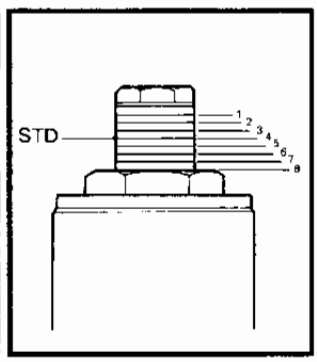
FRONT FORK ADJUSTMENT

⚠ WARNING

- **Always adjust each fork to the same setting. Uneven adjustment can cause poor handling and loss of stability.**
- **Securely support the motorcycle so there is no danger of it falling over.**

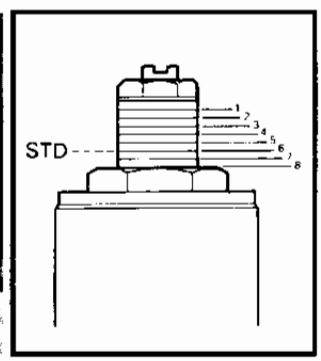
A





B





Spring preload
1.Adjust:
- Spring preload
  Turn the adjuster ① in or out.

Turn in → Spring preload is harder.
Turn out → Spring preload is softer.

Adjuster position:

Standard:	**4** A
	6 B
Minimum:	**8** A B
Maximum:	**1** A B

A YZF750R
B YZF750SP

CAUTION:
- **Grooves are provided to show the adjusting level.**
- **Always keep the adjustment level equal on both forks.**
- **Never turn the adjuster beyond the maximum or minimum setting.**



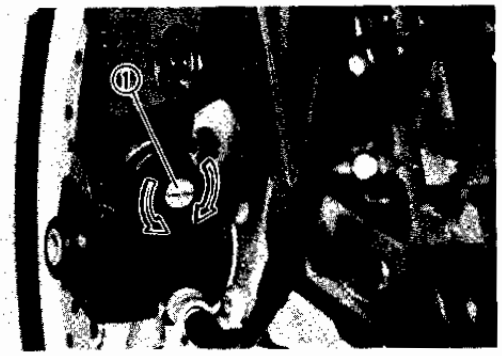
Rebound damping (YZF750SP)

1.Adjust:
- Rebound damping
  Turn the adjuster ① in or out.

Turning in → Rebound damping is harder.
Turning out → Rebound damping is softer.

Adjuster position:
Standard: 5 clicks out
Minimum: 12 clicks out
Maximum: 1 click out from full turn in

CAUTION:
- **Always keep the adjustment level equal on both forks.**
- **Never attempt to turn the adjuster beyond the maximum or minimum setting.**



Compression damping (YZF750SP)

1.Adjust:
- Compression damping
  Turn the adjuster ① in or out.

Tuning in → **Compression damping is harder.**
Turning out → **Compression damping is softer.**

Adjuster position:
Standard: 6 clicks out
Minimum: 10 clicks out
Maximum: 1 click out from full turn in

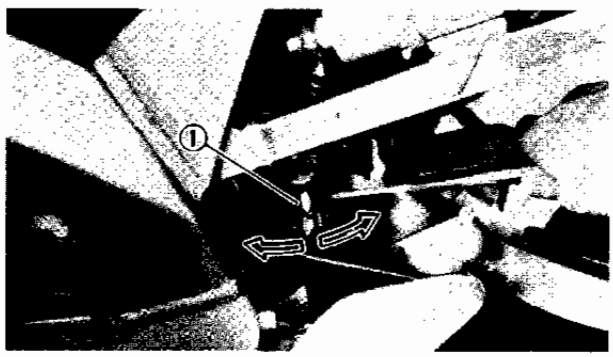
CAUTION:
- **Always keep the adjustment level equal on both forks.**
- **Never attempt to turn the adjuster beyond the maximum or minimum setting.**

REAR SHOCK ABSORBER ADJUSTMENT

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

Spring preload
1. Adjust:
- Spring preload

NOTE:
Use the special wrench and extension bar included in the owner's tool kit to adjust.



****

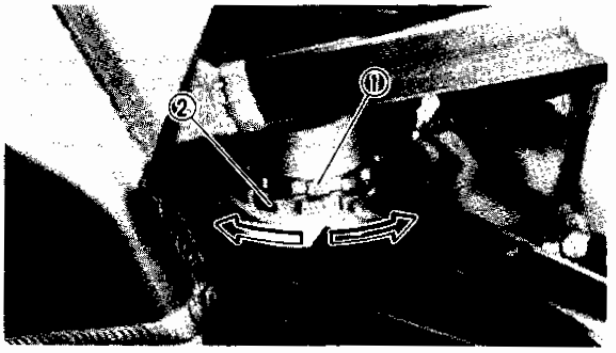
YZR750R
Adjustment steps:
- Turn the adjuster ① in or out.

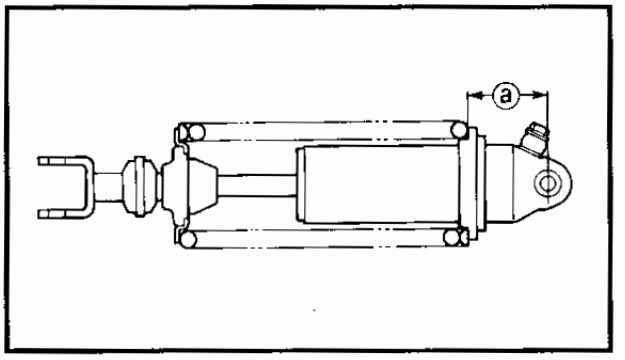
Turning lower number → Spring preload is softer.
Turning higher number → Spring preload is harder.

Adjuster position:
Standard: 3
Minimum: 1
Maximum: 7

CAUTION:
Never turn the adjuster beyond the maximum or minimum setting.

****





****

YZF750SP

Adjustment steps:

- Loosen the locknut ①.
- Turn the adjuster ② in or out.

Turning in → Spring preload is harder.
Turning out → Spring preload is softer.

NOTE:

The length of the spring (installed) changes 1 mm (0.04 in) per turn of the adjuster.

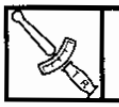


Measurement length ⓐ
Standard: 55.5 mm (2.19 in)
Minimum: 35.5 mm (1.40 in)
Maximum: 65.5 mm (2.58in)

CAUTION:

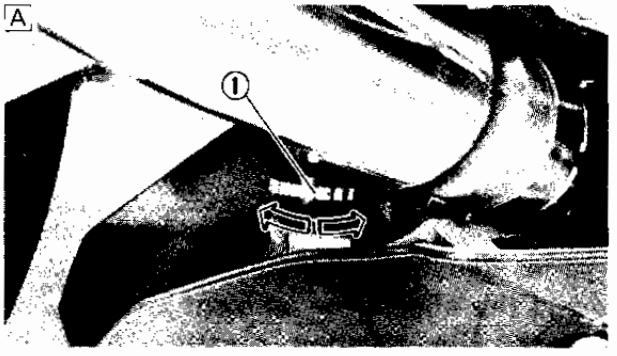
Never turn the adjuster beyond the maximum or minimum setting.

- Tighten the locknut.



Locknut:
25Nm (2.5 m • kg, 18 ft • lb)

****





Rebound damping

1. Adjust:

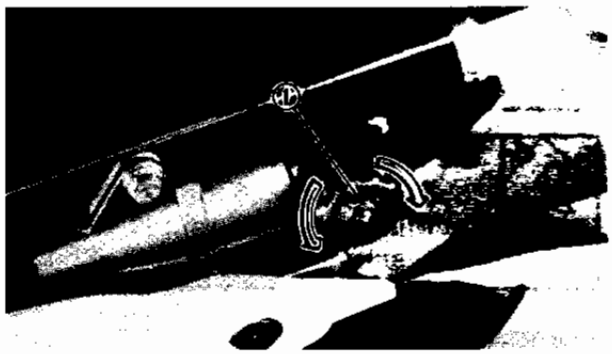
- Rebound damping
  Turn the adjuster ① in or out.

Turning in → Rebound damping is harder.
Turning out → Rebound damping is softer.

Adjuster position:
Standard: 9 clicks out [A], [B]
Minimum: 11 clicks out [A]
13 clicks out [B]
Maximum: 3 clicks out [A]
1 click out from full turn in [B]

[A] YZF750R
[B] YZF750SP

CAUTION:
Never turn the adjuster beyond the maximum or minimum setting.

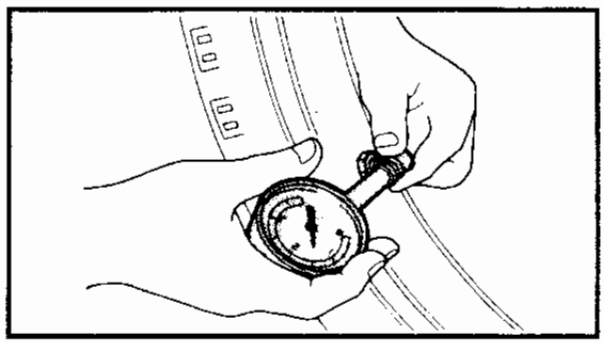


Compression damping (YZF750SP)
1.Adjust:
- Compression damping
  Tuning the adjuster ① to in or out.

Turning in → **Compression damping is harder**
Turning out → **Compression damping is softer.**

Adjuster position:
Standard: 10 clicks out
Minimum: 20 clicks out
Maximum: 1 click out from full turn in

CAUTION:
Never turn the adjuster beyond the maximum or minimum setting.



TIRE INSPECTION
1.Measure:
- Tire pressure
  Out of specification → Adjust.

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

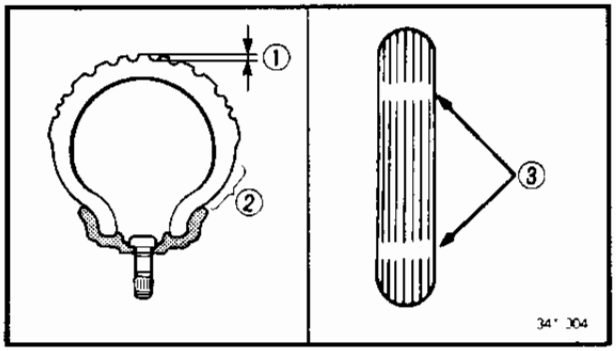
- Proper loading of your motorcycle is important for the handling, braking, and other performance and safety characteristics of your motorcycle. Do not carry loosely packed items that can shift.Securely pack your heaviest items close to the center of the motorcycle, and distribute the weight evenly from side to side. Properly adjust the suspension for your load, and check the condition and pressure of your tires.

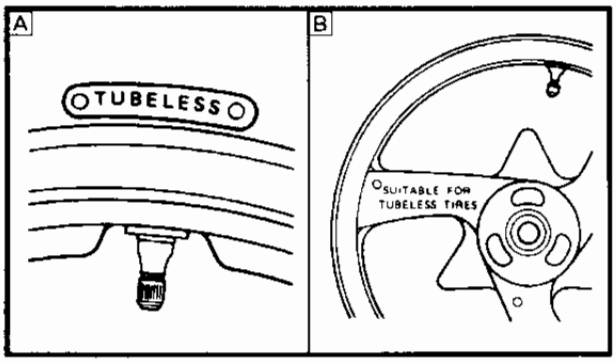
NEVER OVERLOAD YOUR MOTORCYCLE. Make sure the total weight of the cargo, rider, passenger, and accessories (fairing, saddlebags, etc. if approved for this model) does not exceed the maximum load of the motorcycle.

Operation of an overloaded motorcycle could cause tire damage, an accident, or even injury.

Basic weight: With oil and full fuel tank	YZF750R: 218kg (481 lb) YZF750SP: 215kg (474 lb)	
Maximum load*:	YZF750R: 172kg (379 lb) Except for D, SF, S, CH, A 207kg (456 lb) For D, SF, S YZF750SP: 100kg (220 lb) Except for D 115kg (254 lb) For D	
Cold tire pressure:	Front	Rear
Up to 90 kg (198 lbs) load*	225 kPa (2.25 kgf/cm², 32 psi)	250 kPa (2.5 kgf/cm², 36 psi)
90 Kg (198 lbs) ~ Maximum load*	250 kPa (2.5 kgf/cm², 36 psi)	290 kPa (2.9 kgf/cm², 42 psi)
High speed riding	250 kPa (2.5 kgf/cm², 36 psi)	290 kPa (2.9 kgf/cm², 42 psi)

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





2.Inspect:
- Tire surfaces
  Wear/Damage → Replace.

Minimum tire tread depth:
(front and rear):
1.0 mm (0.04 in)

①Tread depth
②Side wall
③Wear indicator

⚠ WARNING

- **It is dangerous to ride with a worn-out tire. When a tire tread begins to show lines, replace the tire immediately.**
- **Do not use tubeless tires on a wheel designed for tube type tires only. Tire failure and personal injury may result from sudden deflation.**

[A] Tire [B] Wheel

Tube type wheel → Tube type tire only.

Tubeless type wheel →
Tube type or tubeless tire.

- **Be sure to install the correct tube when using tube type tires.**

⚠ WARNING

After extensive tests, the tires mentioned below have been approved by Yamaha Motor Co., Ltd. for this model. No guarantee for handling characteristics can be given if a tire combinations other than the approved is used on this motorcycle. The front and rear tires should always be of the same manufacture and design.

FRONT:
YZF750R

Manufacture	Size	Type
MICHELIN	120/70 ZR17	A89X
BRIDGESTONE	120/70 ZR17	BT50F
DUNLOP	120/70 ZR17	D202F

YZF750SP

Manufacture	Size	Type
MICHELIN	120/70 ZR17	TX11

REAR:
YZF750R

Manufacture	Size	Type
MICHELIN	180/55 ZR17	M89X
BRIDGESTONE	180/55 ZR17	BT50R
DUNLOP	180/55 ZR17	D202

YZF750SP

Manufacture	Size	Type
MICHELIN	180/55 ZR17	TX23

⚠ WARNING

After mounting a tire, ride conservatively for a while to give the tire time to seat itself properly in the rim. Failure to do so could lead to an accident with possible injury to the rider or damage to the motorcycle.

WHEEL INSPECTION

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

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

⚠ WARNING

Never attempt to make any repairs to the wheel.

CABLE INSPECTION AND LUBRICATION

⚠ WARNING

Damaged cable sheaths may cause corrosion and interfere with the cable movement. Replace damaged cables as soon as possible.

1. Inspect:
- Cable sheath
  Damage → Replace.
2. Check:
- Cable operation
  Unsmooth operation → Lubricate.

Recommended lubricant:
SAE 10W30 motor oil

NOTE:
Hold cable end up and pour a few drops of lubricant into the cable sheath.

LEVER AND PEDAL LUBRICATION

Lubricate levers and pedals at their pivoting points.

Recommended lubricant:
SAE 10W30 motor oil

SIDESTAND LUBRICATION

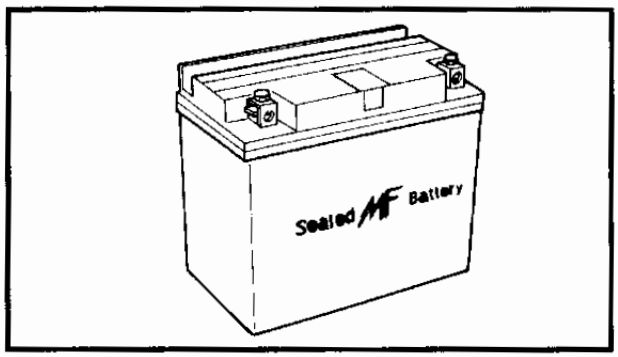
Lubricate the sidestand at pivoting points.

Recommended lubricant:
SAE 10W30 motor oil

REAR SUSPENSION LUBRICATION

Lubricate the rear suspension at pivoting points.

Recommended lubricant:
Molybdenum disulfide grease



ELECTRICAL

BATTERY INSPECTION

NOTE:

Since the MF battery is a sealed type battery, it is not possible to measure the specific gravity of the electrolyte in order to check the state of charge of the battery. Therefore the charge of the battery has to be checked by measuring the voltage at the battery terminals.

CAUTION:

CHARGING METHOD

- **This is a sealed type battery. Never remove the sealing caps. If the sealing caps have been removed, the balancing will not be maintained, and battery performance will deteriorate.**
- **Never add water, as this will affect the chemical reaction in the battery and cause loss of performance.**
- **Charging time, charging current and charging voltage for the MF battery are different from general type batteries.**
  The MF battery should be charged as explained in "CHARGING METHOD". If the battery is overcharged, the electrolyte level will drop considerably. Therefore, take special care when charging the battery.
- **Never use an electrolyte other than specified. The specific gravity of the MF battery electrolyte is 1.32 at 20°C (68°F), whereas the specific gravity of a general type battery electrolyte is 1.28. If electrolyte with a specific gravity lower than 1.32 is used, the concentration of sulfuric acid will decrease, resulting in poor battery performance. If an electrolyte with a specific gravity higher than 1.32 is used, the battery plates will corrode and battery life will be shortened.**

⚠ WARNING

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

Always follow these preventive measures:

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

Antidote (EXTERNAL):

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

Antidote (INTERNAL):

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

Batteries generate explosive hydrogen gas. Always follow the following preventive measures:

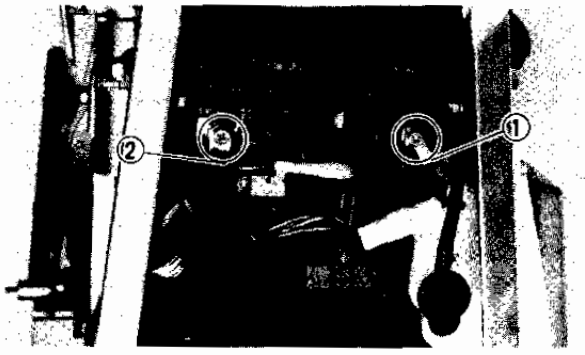
- **Charge batteries in a well-ventilated area.**
- **Keep batteries away from fire, sparks, or open flames (e.g., welding equipment, lighted cigarettes, etc.)**
- **DO NOT SMOKE when charging or handling batteries.**

KEEP BATTERIES AND ELECTROLYTE OUT OF REACH OF CHILDREN.

1.Remove:

- Seat

  Refer to the "SEAT" section.



2.Disconnect:

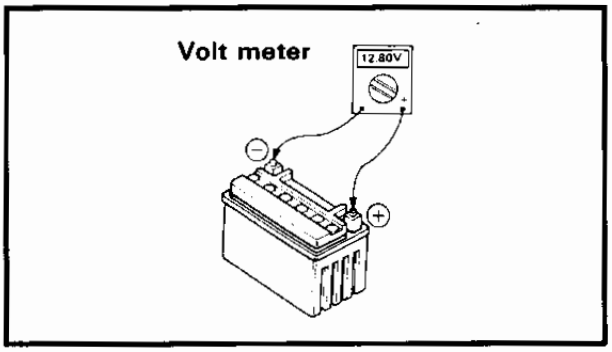
- Battery leads

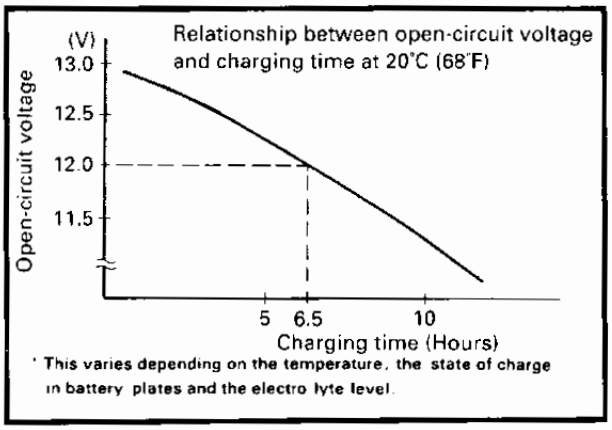
CAUTION:

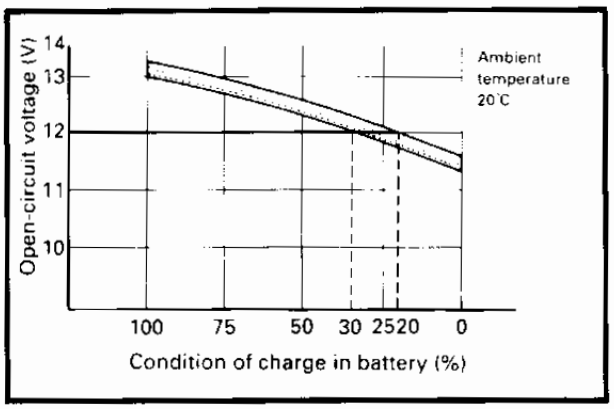
Disconnect the negative lead ① first, then the positive lead ②.

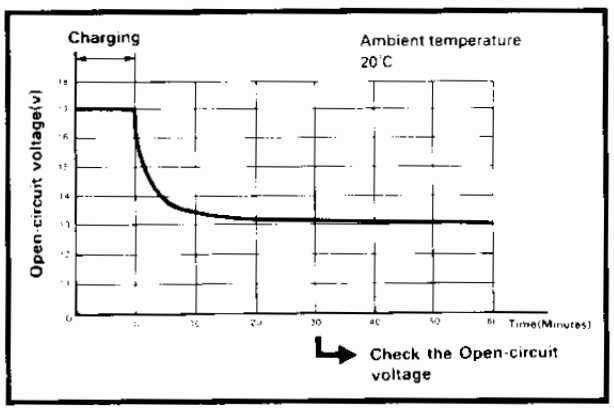
3.Remove:

- Battery









4.Check:
- Battery condition

****

Battery condition checking steps:

- Connect a digital voltmeter to the battery terminals.

Tester (+) lead	Battery (+) terminal
Tester (–) lead	Battery (–) terminal

NOTE:

The charge state of an MF battery can be checked by measuring the open circuit voltage (i.e. when the positive terminal is disconnected).

Open-circuit voltage	Charging time
12.8 v or higher	No charging is necessary.

- Check the condition of the battery using the charts.

Example:

- Open circuit voltage = 12.0V
- Charging time = 6.5 hours
- Charge condition of the battery = 20~30%

5.Charging method of MF batteries

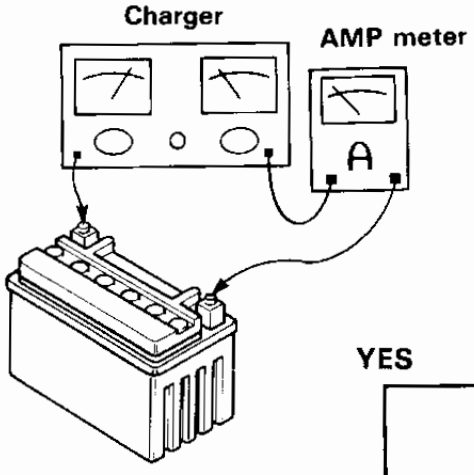
CAUTION:

- **If it is impossible to set the standard charging current, be careful not to overcharge.**
- **When charging the battery, be sure to remove it from the motorcycle. (If charging has to be done with the battery mounted on the motorcycle for some reason, be sure to disconnect the wire at the negative terminal.)**
- **Never remove the sealing caps of an MF battery.**
- **Take care that the charging clips are in a full contact with the terminal and that they are not shorted. (A corroded clip of the charger may cause the battery to generate heat at the contact area. A weak clip spring may cause sparks.)**
- **Before removing the clips from the battery terminals, be sure to turn off the power switch of the charger.**

- The open-circuit voltage variation of the MF battery after charging is shown below. As shown in the figure, the open-circuit voltage stabilizes about 30 minutes after charging has been completed. Therefore, to check the condition of the battery after charging, wait 30 minutes before measuring the open-circuit voltage.

****

Charging method using a variable-current (voltage) type charger



Measure the open-circuit voltage prior to charging.

NOTE:
Voltage should be measured 30 minutes after the machine is stopped.

Connect a charger and AMP meter to the battery and start charging.

NOTE:
Set the changing voltage at 16-17v. (If the setting is lower, charging will be insufficient. If too high, the battery will be over-charged.)

Make sure the current is higher than the standard charging current written on the battery.

YES

NO

By turning the charging voltage adjust dial, set the charging voltage at 20 - 25 v.

Monitor the amperage for 3-5 minutes to check if the standard charging current is reached.

YES

Adjust the voltage so that current is at standard charging level.

NO

Set the timer according to the charging time suitable for the open-circuit voltae.
Refer to "Battery condition checking steps".

If current does not exceed standard charging current after 5 minutes, replace the battery.

In case that charging requires more than 5 hours, it is advisable to check the charging current after a lapse of 5 hours. If there is any change in the amperage, readjust the voltage to obtain the standard charging current.

Measure the battery open-circuit voltage after having left the battery unused for more than 30 minutes.
12.8 v or more --- Charging is complete.
12.7 v or less --- Recharging is required.
Under 12.0 v --- Replace the battery.

Charging method using a constant-voltage type charger

Measure the open-circuit voltage prior to charging.

NOTE:
Voltage should be measured 30 minutes after the machine is stopped.

Connect a charger and AMP meter to the battery, and start charging.

Make sure the current is higher than the standard charging current written on the battery.

YES

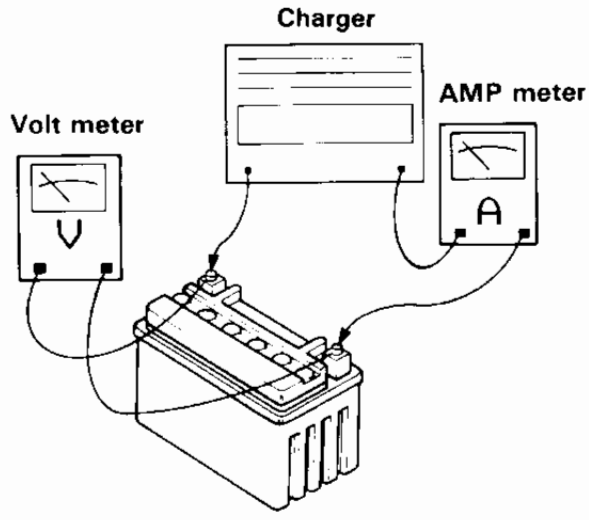
Charge the battery until the battery's charging voltage is 15 volts.

NOTE:
Set the charging time at 20 hours (maximum).

Check the open-circuit voltage after having left the battery for 30 minutes after charging.
12.8 v or more---Charging is complete.
12.7 v or less---Recharging is necessary.
Under 12 v---Replace the battery.

NO

This type of battery charger cannot charge the MF battery. A variable voltage charger is recommended.

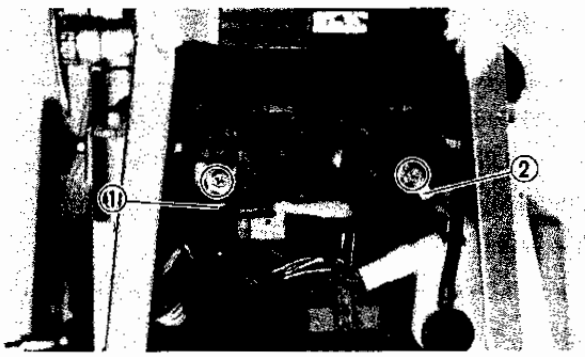


Charging method using a constant current type charger

This type of battery charger cannot charge the MF battery.

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

NOTE:
After cleaning the terminals, grease them lightly.



7.Install:
- Battery

8.Connect:
- Battery leads

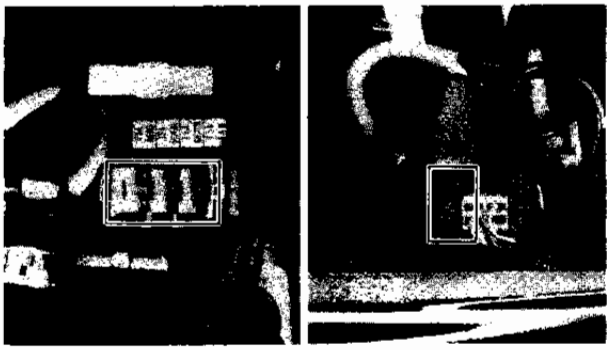
CAUTION:
Connect the positive lead ① first, then the negative lead ②.

9.Install:
- Seat
  Refer to the "SEAT" section.

FUSE INSPECTION

CAUTION:
Always turn off the main switch when checking or replacing the fuse. Otherwise, a short circuit may occur.

1.Remove:
- Seat
- Side cover
  Refer to the "SEAT" section.



2.Inspect:
• Fuses

****

Inspection steps:

● Connect the pocket tester to the fuse and check it for continuity.

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

Pocket tester:
YU-03112/90890-03112

● If the tester indicates ∞, replace the fuse.

****

3.Replace:
• Blown fuse

****

Replacement steps:

● Turn off the ignition.
● Install a new fuse of proper amperage.
● Turn on the switches to verify operation of related electrical devices.
● If the fuse immediately blows again, check the electrical circuit.

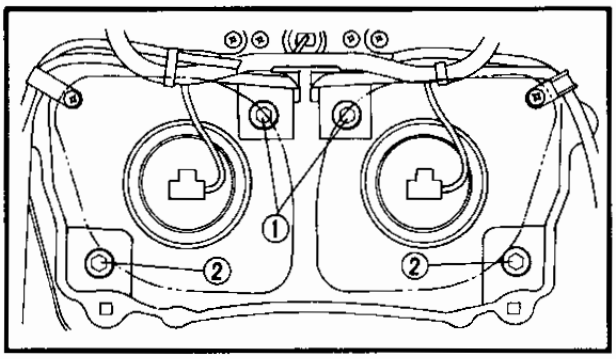
****

Description	Amperage	Quantity
Main	30A	1
Head	20A	1
Signal	15A	1
Ignition	7.5A	1
Fan	7.5A	1

⚠ WARNING

Never use a fuse with a rating other than specified. Never use other materials in place of a fuse. An improper fuse may cause extensive damage to the electrical system, malfunction of lighting and ignition and possibly cause a fire.

4.Install:
• Side cover
• Seat
Refer to the "SEAT" section.



HEADLIGHT BEAM ADJUSTMENT

1.Adjust:
- Headlight beam (vertically)
  Turn the adjuster ① in or out.

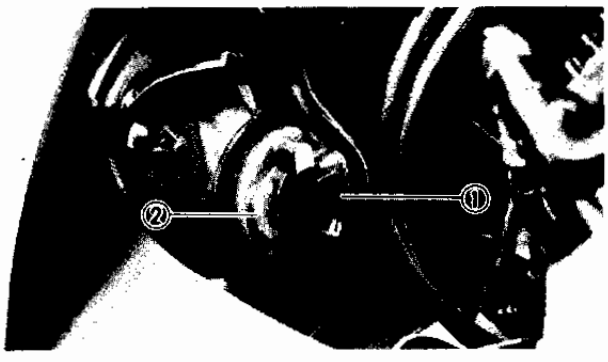
Turning in → Headlight beam higher.
Turning out → Headlight beam lower.

2.Adjust:
- Headlight beam (horizontally)
  Turn the adjuster ② in or out.
  Left-hand light

Turning in → Headlight beam to the left.
Turning out → Headlight beam to the right.

Right-hand light

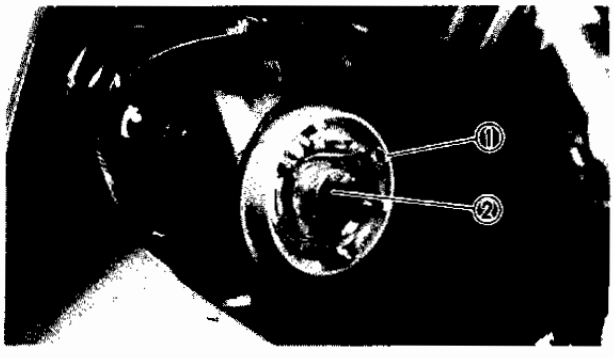
Turning in → Headlight beam to the right.
Turning out → Headlight beam to the left.



HEADLIGHT BULB REPLACEMENT

1.Disconnect:
- Headlight lead ①

2.Remove:
- Cover ②



3.Unhook:
- Bulb holder ①

4.Remove:
- Bulb ②

⚠ WARNING

Keep flammable products and your hands away from the bulb while it is on, as it will be hot. Do not touch the bulb until it has cooled down.

5.Install:
- Bulb (new)

  Secure the new bulb with the bulb holder.

CAUTION:

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

6.Hook:
- Bulb holder

7.Install:
- Cover

8.Connect:
- Headlight lead

ENGINE OVERHAUL

ENGINE REMOVAL

⚠ WARNING

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

NOTE:

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

- Camshaft case
- Cylinder head
- Cylinder
- Piston
- Clutch
- Water pump
- Oil cooler
- Starter motor
- AC generator
- Oil pan

FUEL TANK AND COWLINGS

1.Remove:

- Seat
- Fuel tank
- Lower cowling
- Center cowlings

Refer to the "SEAT", "FUEL TANK" and "COWLINGS" sections in CHAPTER 3.

ENGINE OIL AND COOLANT

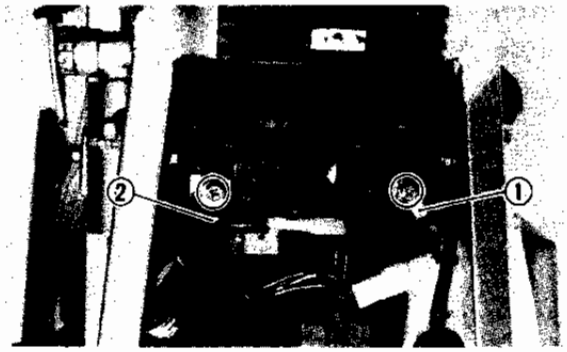
1.Drain:

- Engine oil

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

- Coolant

Refer to the "COOLANT REPLACEMENT" section in CHAPTER 3.



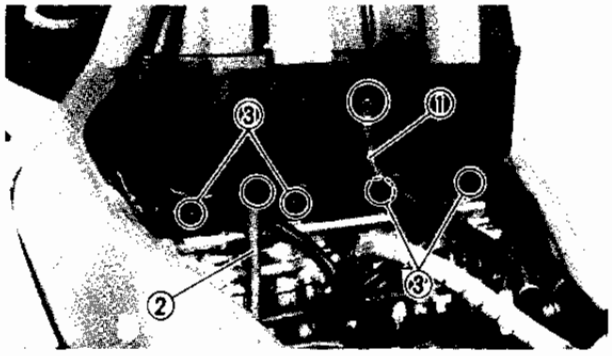
BATTERY LEADS

1.Disconnect:

- Battery leads

CAUTION:

Disconnect the negative lead ① first and then disconnect the positive lead ②.



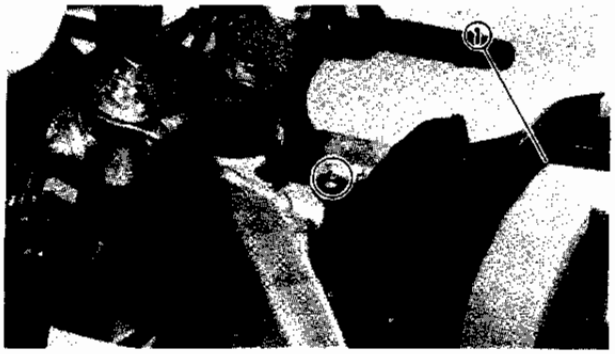
AIR FILTER CASE

1.Disconnect:

- Breather hose ① (crankcase)
- Breather hose ② (air filter case)

2.Loosen:

- Screws ③



3.Remove:

- Air filter case ①

CARBURETOR

1.Remove:

- Carburetor

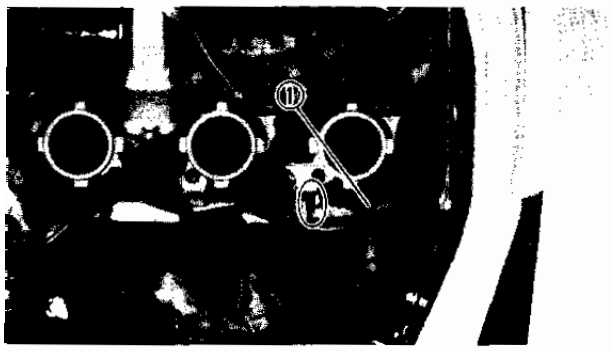
  Refer to the "CARBURETOR – REMOVAL" section in CHAPTER 6.

RADIATOR

1.Remove:

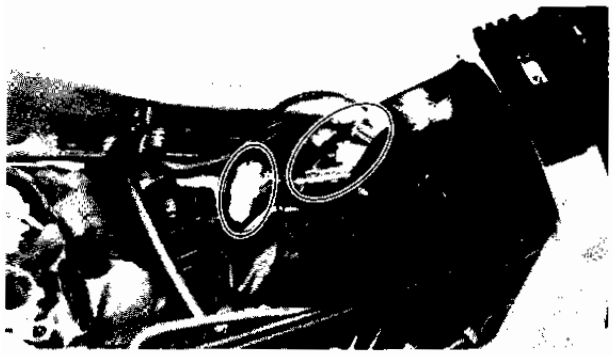
- Radiator

  Refer to the "RADIATOR – REMOVAL" section in CHAPTER 5.

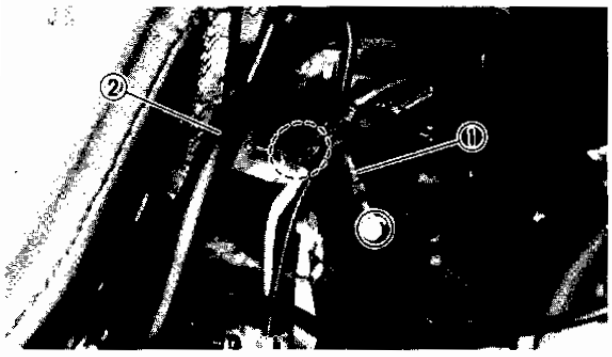


HOSES AND LEADS

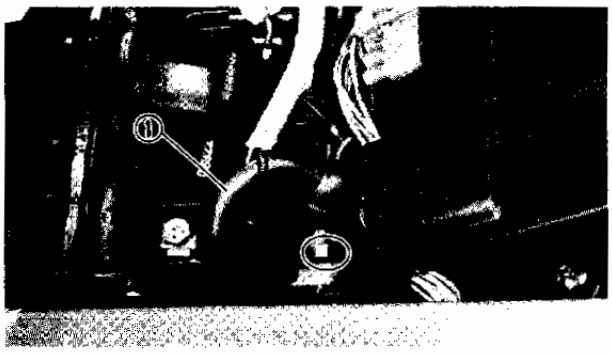
1.Disconnect:
- Breather hose ① (thermostatic valve)



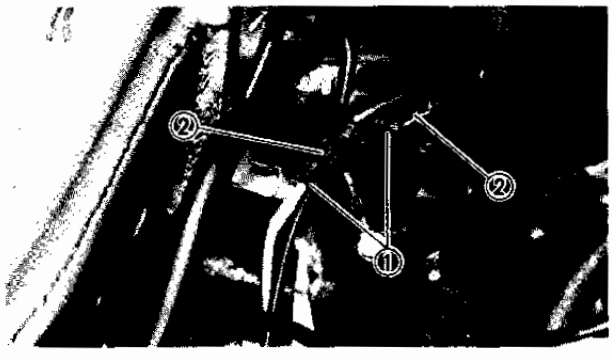
2.Disconnect:
- AC generator coupler
- Pickup coil coupler
- Oil level switch coupler
- Sidestand switch leads



3.Disconnect:
- Ground lead ①
- Breather hose ② (crankcase)

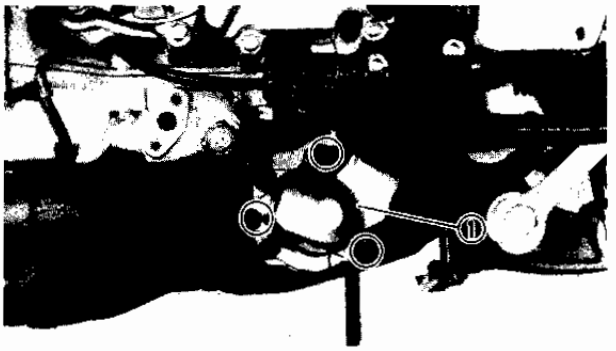


4.Disconnect:
- Starter motor lead ①

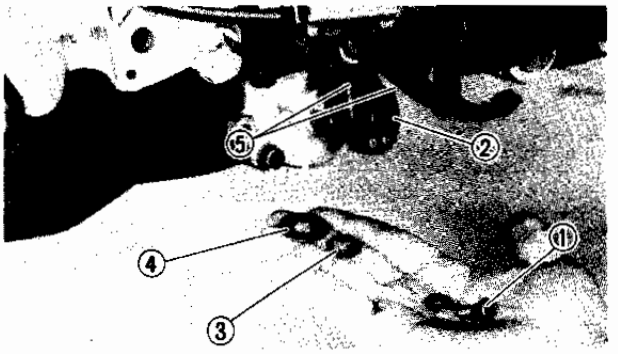


MUFFLER ASSEMBLY

1.Fully loosen the locknuts ① and turn in the adjusters ② completely.

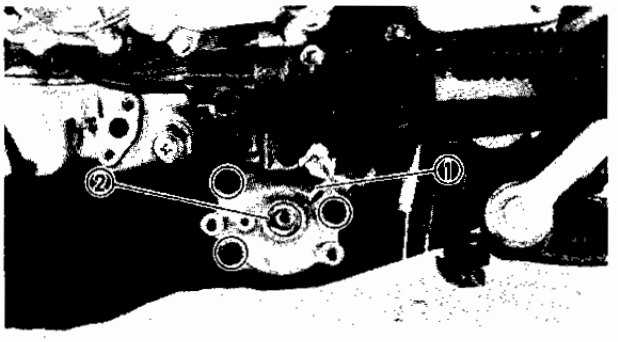


2.Remove:
- Valve cover ①

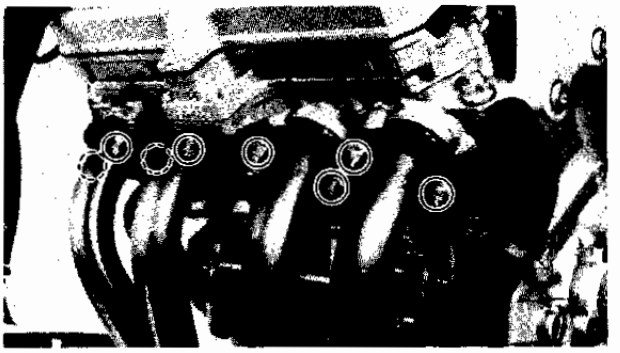


3.Remove:
- Bolt ① (pulley)
- Pulley ②
- Spring ③
- Washer ④

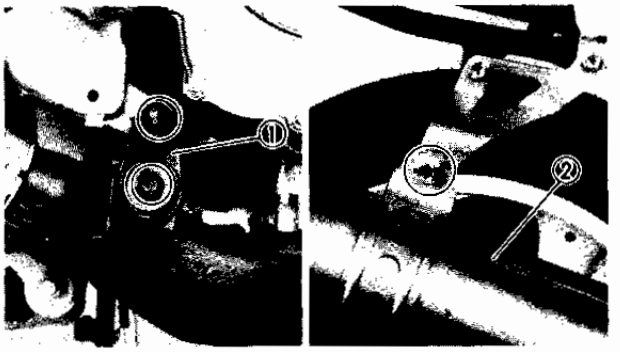
4.Disconnect:
- EXUP cables ⑤

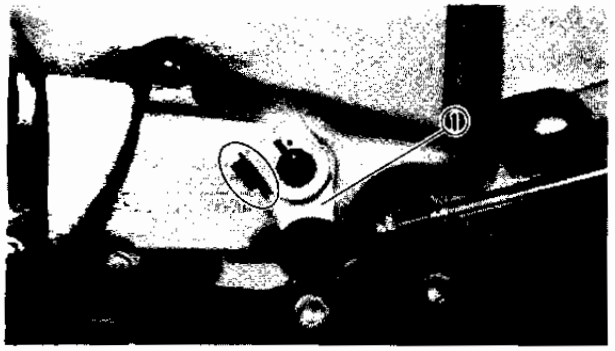


5.Remove:
- Holder ① (EXUP cables)
- EXUP valve assembly ②



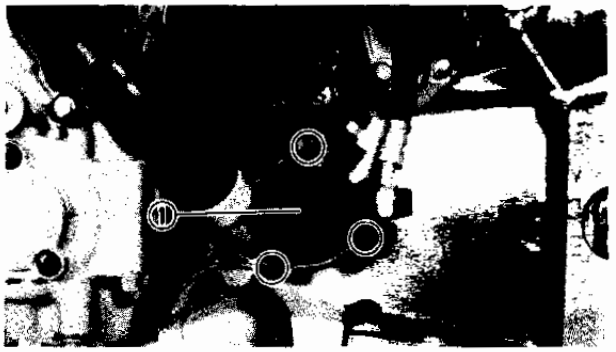
6.Remove:
- Nuts (exhaust pipe)
- Stay ① (exhaust pipe)
- Muffler assembly ②
- Gaskets (exhaust pipe)



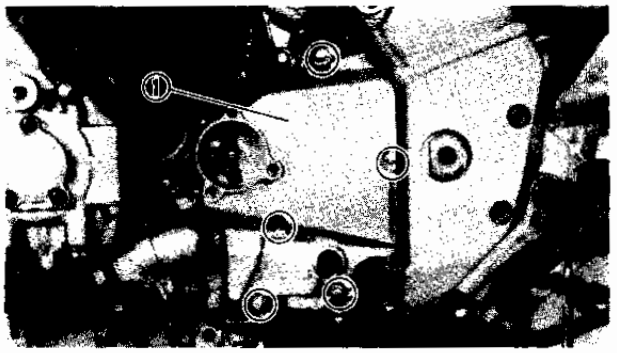


DRIVE SPROCKET

1.Remove:
- Shift pedal link ①



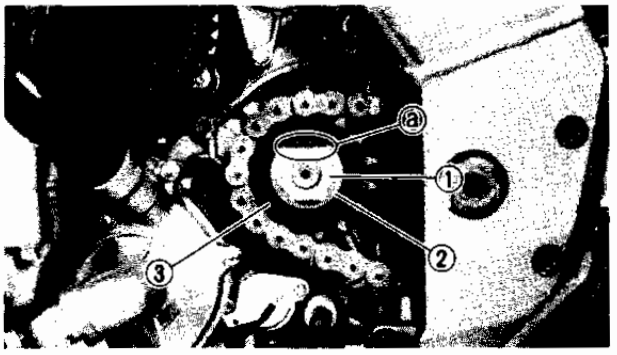
2.Remove:
- Clutch release cylinder ①
- Dowel pins



3.Remove:
- Crankcase cover ① (left)
- Dowel pins
- Gasket

4.Loosen:
- Drive chain

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



5.Straighten:
- Lockwasher tab ⓐ

6.Remove:
- Nut ① (drive sprocket)
- Lock washer ②
- Drive sprocket ③

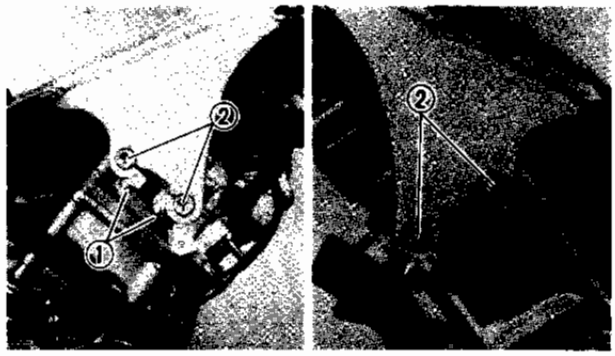
NOTE:
Loosen the nut (drive sprocket) while applying the rear brake.

ENGINE REMOVAL

1.Place suitable stand under the frame and engine.

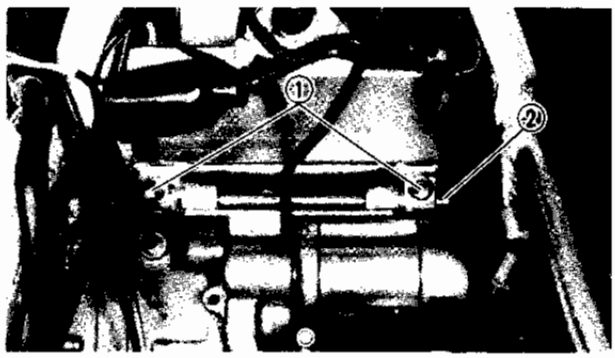
⚠ WARNING

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



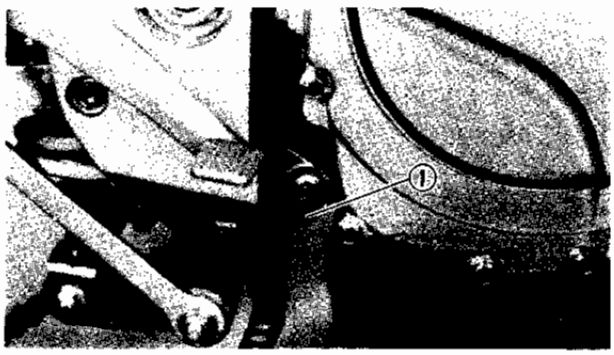
2.Loosen:
- Pinch bolts ①

3.Remove:
- Mounting bolts ② **(front)**

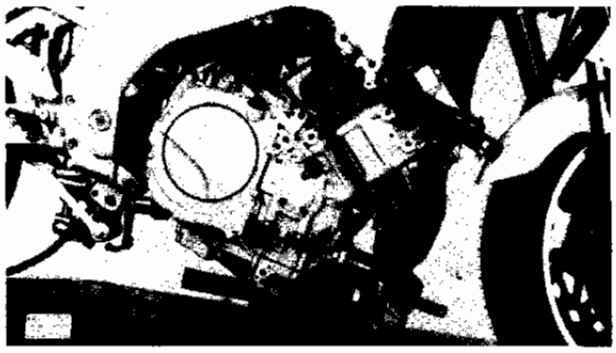


4.Loosen:
- Pinch bolts ①

5.Remove:
- Mounting bolt ② (rear-upper)



6.Remove:
- Mounting bolt ① (rear-lower)



7.Remove:
- Engine assembly
  (front the right side of the motorcycle)

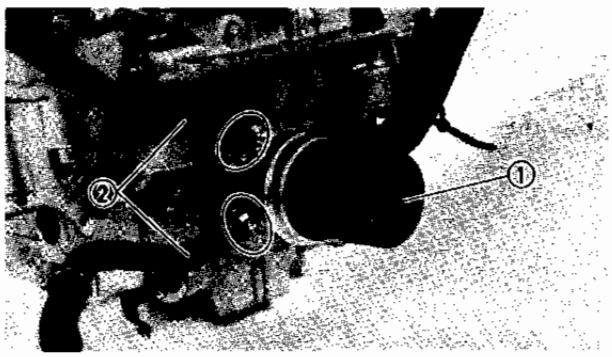
CAUTION:

Cover the front fender with a rug to prevent a scratching.

ENGINE DISASSEMBLY

OIL FILTER AND OIL COOLER

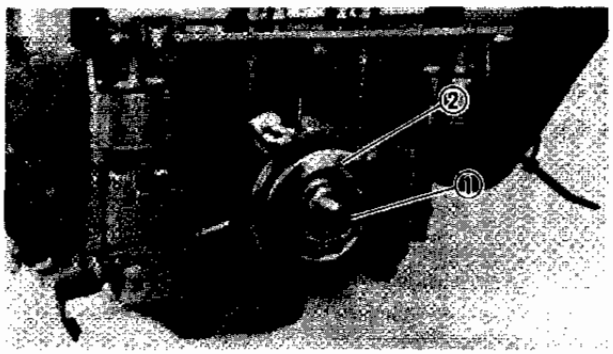
NOTE:
With the engine mounted, the oil filter and oil cooler can be maintained by removing the following part.
- Lower cowling



1. Remove:
- Oil filter ①

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

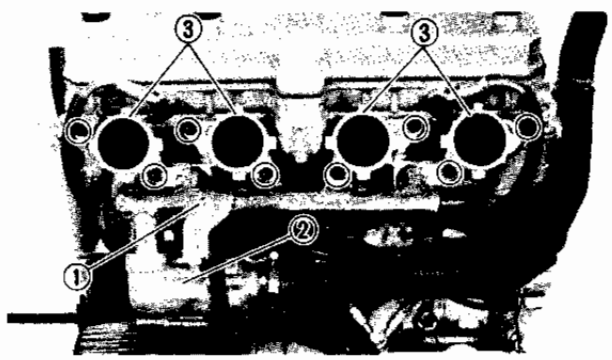
2. Disconnect:
- Oil cooler hoses ②



3. Remove:
- Bolt ①
- Oil cooler ②
- O-ring

INTAKE MANIFOLD

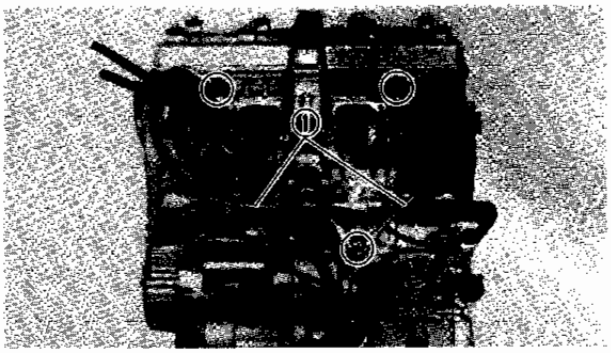
NOTE:
With the engine mounted, the intake manifold can be maintained by removing the following parts.
- Fuel tank
- Air filter case
- Carburetor



1. Remove:
- Water jacket joint ① (outlet) (with thermostatic housing ②)
- O-rings
- Intake manifolds ③
- Gaskets

OIL DELIVERY HOSE

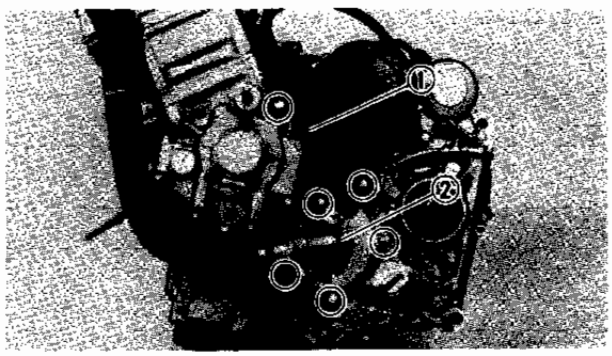
NOTE:
With the engine mounted, the oil delivery hose can be maintained by removing the following parts.
- Fuel tank
- Air filter case
- Carburetor



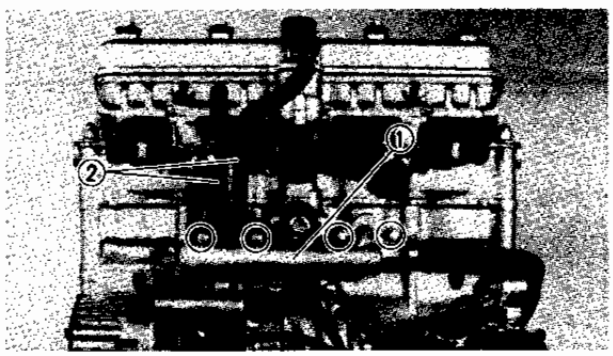
1.Remove:
- Oil delivery hoses ①
- Copper washers

WATER PUMP

NOTE:
With the engine mounted, the water pump can be maintained by removing the following parts.
- Lower cowling
- Center cowling (left)



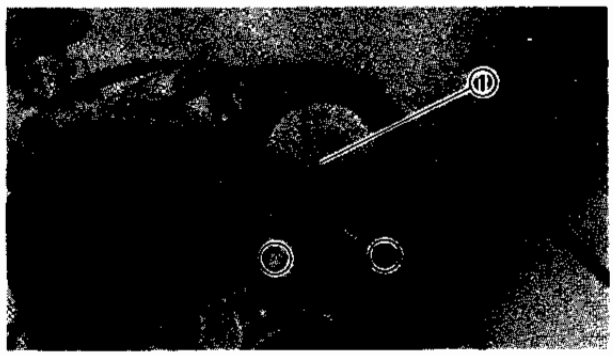
1.Remove:
- Pipe ①
- Water pump cover ②
- Impeller
  Refer to the "WATER PUMP – REMOVAL" section in CHAPTER 5.



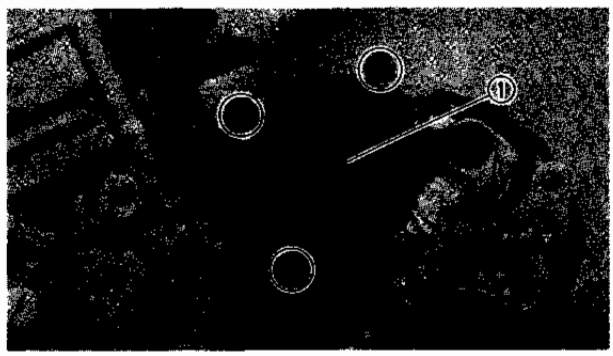
2.Remove:
- Water jacket joint ① (inlet)
- Carburetor breather hoses ② (YZF750SP)

STARTER MOTOR AND AC GENERATOR

NOTE:
With the engine mounted, the starter motor and AC generator can be maintained by removing the following parts.
- Fuel tank
- Lower cowling
- Center cowling (left)



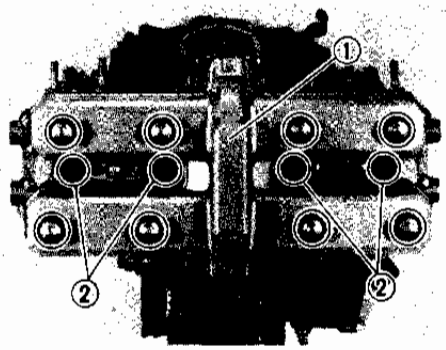
1. Remove:
- Starter motor ①



2. Remove:
- AC generator ①

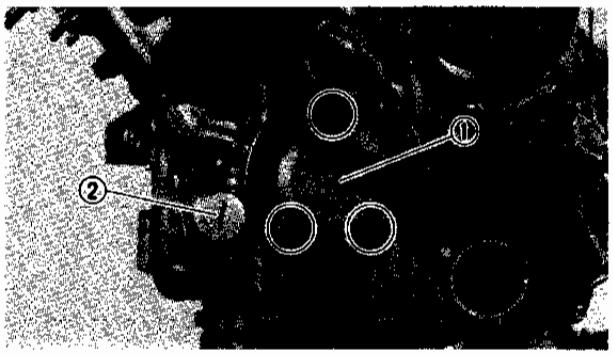
CYLINDER HEAD COVER, CAMSHAFT, CAMSHAFT CASE AND CYLINDER HEAD

NOTE:
With the engine mounted, the cylinder head cover, camshafts, camshaft case and cylinder head can be maintained by removing the following parts.
- Lower cowling
- Center cowlings
- Fuel tank
- Air filter case
- Radiator assembly

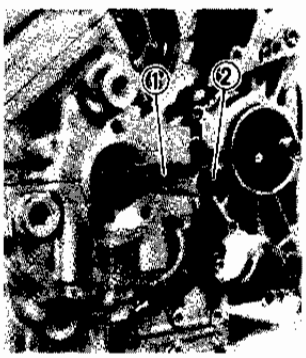


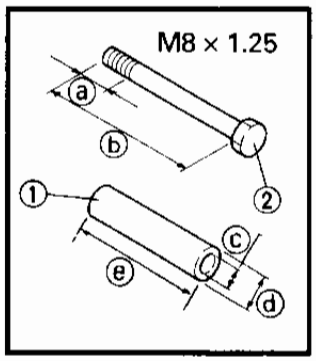
1.Remove:
- Cylinder head cover ①
- Gasket (cylinder head cover)
- Spark plugs ②

NOTE:
Loosen the bolts in a crisscross pattern 1/4 turn each. Remove them after all are loosened.



2.Remove:
- Crankshaft end cover ① (left) (with O-ring)
- Timing plug ② (with O-ring)

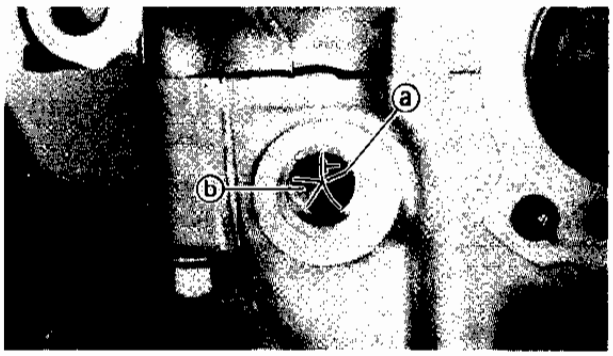




3.Install:
- Suitable collar ①
- Bolt ②

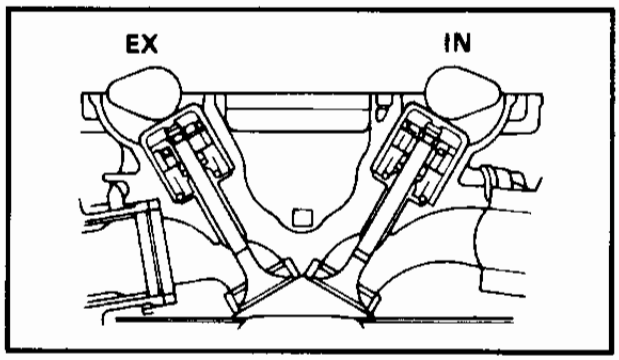
as shown in the illustration.

ⓐ 15 mm (0.6 in) ⓓ 12 mm (0.5 in)
ⓑ 75 mm (3.0 in) ⓔ 60 mm (2.4 in)
ⓒ 8 mm (0.3 in)

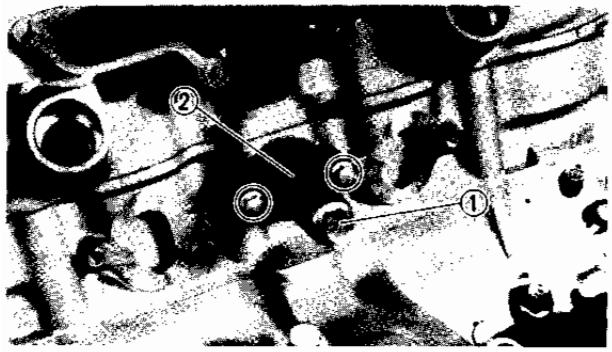


4.Align:
- "T" mark (with stationary pointer)

NOTE:
- Turn the crankshaft counterclockwise and align the "T" mark ⓐ with the stationary pointer ⓑ when #1 piston is at TDC on compression stroke.

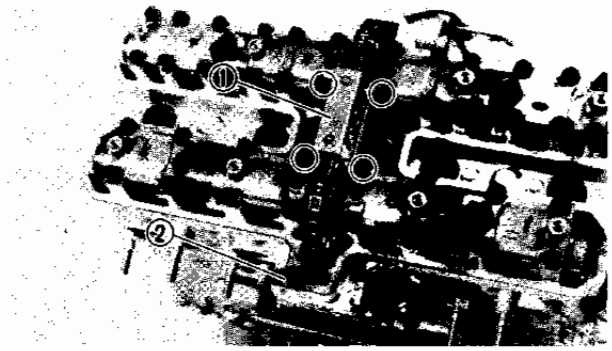


- The #1 piston is in compression stroke TDC when the cam lobes are turned away from each other, as shown.



5.Loosen:
- Cap bolt ① (tensioner)

6.Remove:
- Timing chain tensioner ②
- Gasket

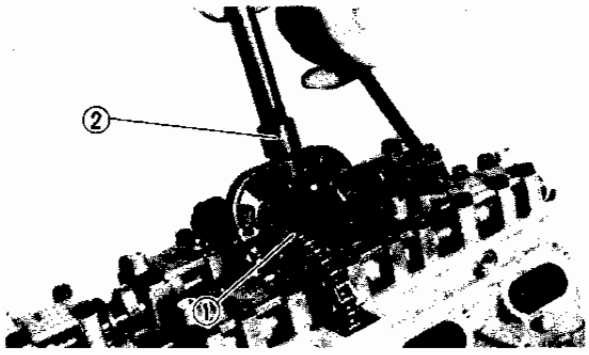


7.Remove:
- Timing chain guide ① (upper)
- Timing chain guide ② (exhaust side)

NOTE:
Select one of the following procedures explained hereafter:

Procedure 1.
For engine service without cylinder head disassembly.
→ Disconnect the timing chain.
The pistons and cylinders can be removed without removing the camshafts.

Procedure 2.
For engine service including cylinder head disassembly.
→ Remove the camshaft caps and camshafts.
The camshafts can be removed without disconnecting the timing chain.

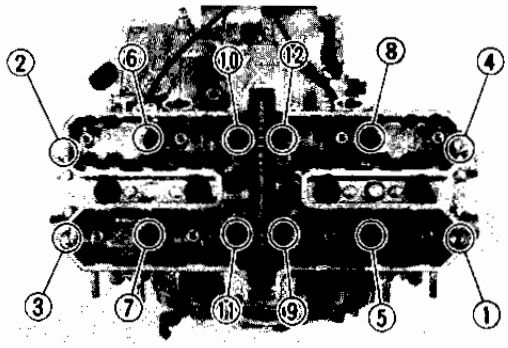


Procedure 1.

1.Disconnect:
- Timing chain ①

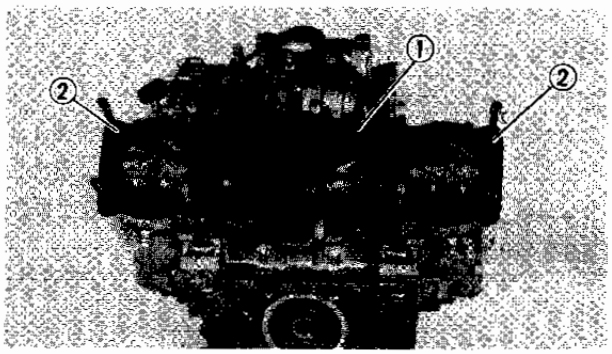
Use the timing chain cutter ②.

	Timing chain cutter: **YM-01112/90890-01112**



2.Remove:
- Nuts (cylinder head)

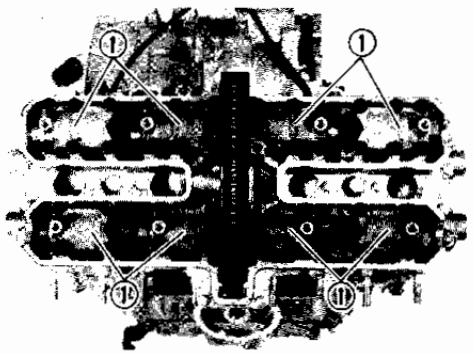
NOTE:
- Loosen the nuts in the proper sequence.
- Follow the numerical order shown in the photo. Start with loosening each nut 1/2 turn until all are loose.



3.Remove:
- Cylinder head (with camshaft case)
- Gasket ① (cylinder head)
- Dowel pins ②

NOTE:
Remove the cylinder head (with camshaft case) as a whole to prevent the valve lifters and adjusting pads from falling into the crankcase.

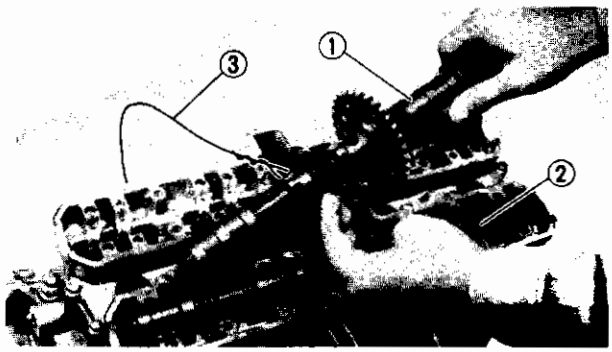
4.Next step, see "CYLINDER AND PISTON".



Procedure 2.
1.Remove:
- Camshaft caps ①
- Dowel pins

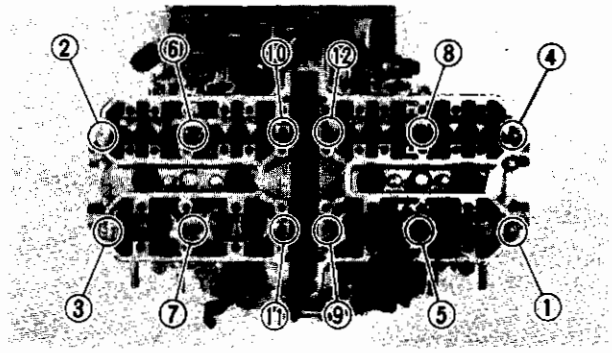
NOTE:
Remove the camshaft cap bolts in a criss-cross pattern from the outside to inside.

CAUTION:
The bolts (camshaft caps) must be removed evenly to prevent damage to the cylinder head, camshaft or camshaft caps.



2.Remove:
- Camshaft (intake ① and exhaust ②)

NOTE:
Attach a wire ③ to the timing chain to prevent it from falling into the crankcase.

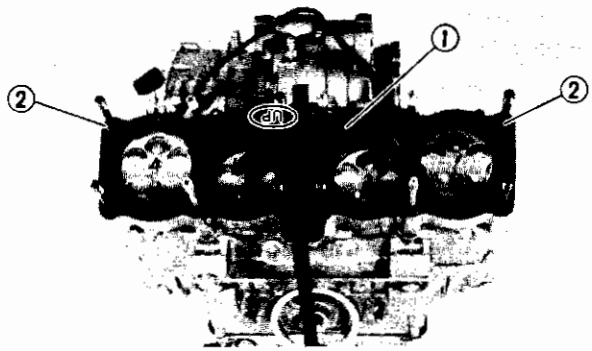


3.Remove:
- Nuts (cylinder head)

NOTE:
- Loosen the nuts in the proper sequence.
- Follow the numerical order shown in the photo. Start with loosening each nut 1/2 turn until all are loose.

4.Remove:
- Cylinder head (with camshaft case)

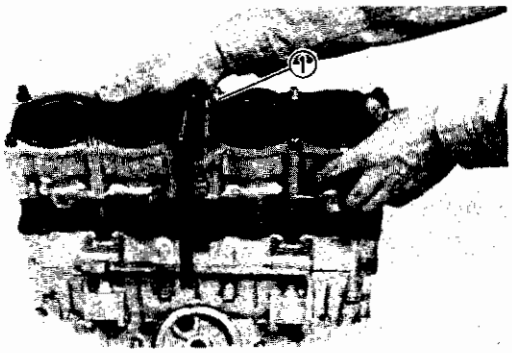
NOTE:
Remove the cylinder head (with camshaft case) as a whole to prevent the valve lifters and adjusting pads from falling into the crankcase.



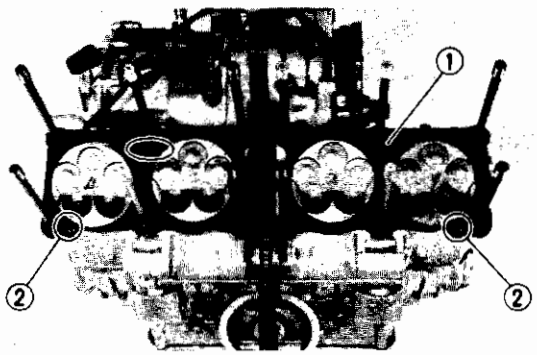
5.Remove:
- Gasket ① (cylinder head)
- Dowel pins ②

CYLINDER AND PISTON

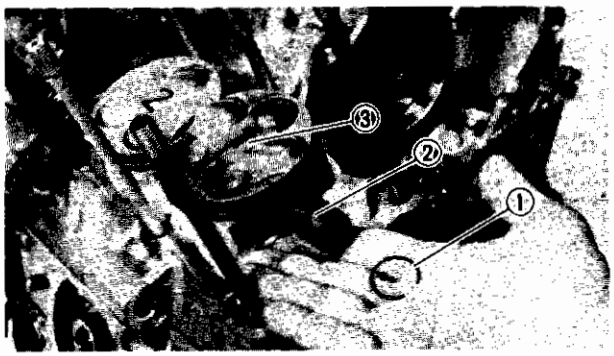
NOTE:
With the engine mounted, the cylinder and piston can be maintained by removing the following parts.
- Lower cowling
- Center cowlings
- Fuel tank
- Air filter case
- Radiator assembly
- Cylinder head assembly



1.Remove:
- Cylinder ①

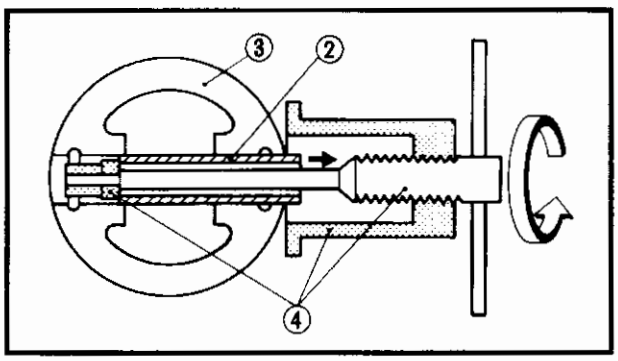


2.Remove:
- Gasket ① (cylinder)
- Dowel pins ②



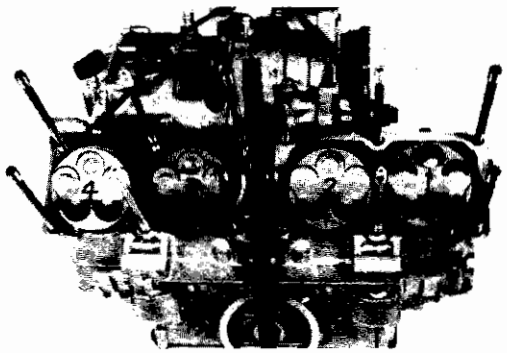
3.Remove:
- Circlips ① (piston pin)
- Piston pins ②
- Pistons ③

NOTE:
- Before removing the piston pin circlip, cover the crankcase with a clean rag to prevent the circlip from falling into the crankcase cavity.
- Put identification marks on the each piston head for reference during reinstallation.
- Before removing the piston pin, deburr the clip groove and pin hole area. If the piston pin groove is deburred and piston pin is still difficult to remove, use the piston pin puller ④.

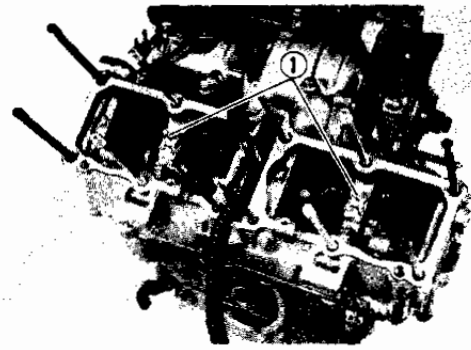




Piston pin puller:
YU-01304/90890-01304



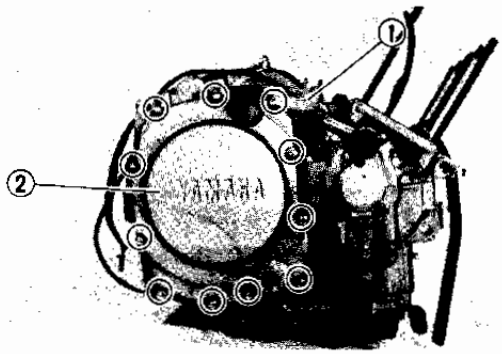
CAUTION:
Do not use a hammer to drive the piston pin out.



4.Remove:
- Oil-Jet nozzles ①
  (with O-ring)

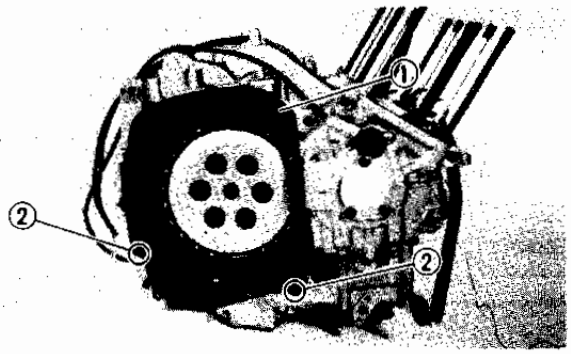
CLUTCH

NOTE:
With the engine mounted, the clutch assembly can be maintained by removing the following parts.
- Lower cowling
- Center cowling (right)

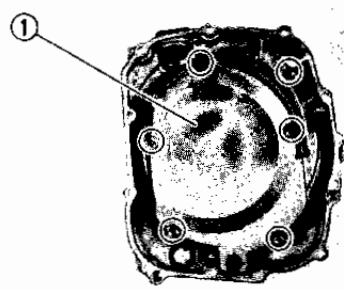


1.Remove:
- Stay ① (throttle stop screw) (YZF750SP)
- Crankcase cover ② (right)

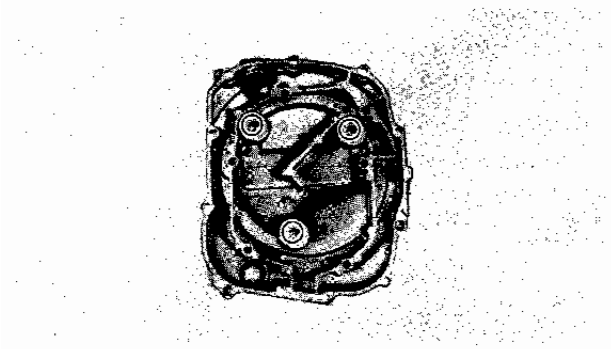
NOTE:
Loosen the bolts in a crisscross pattern.



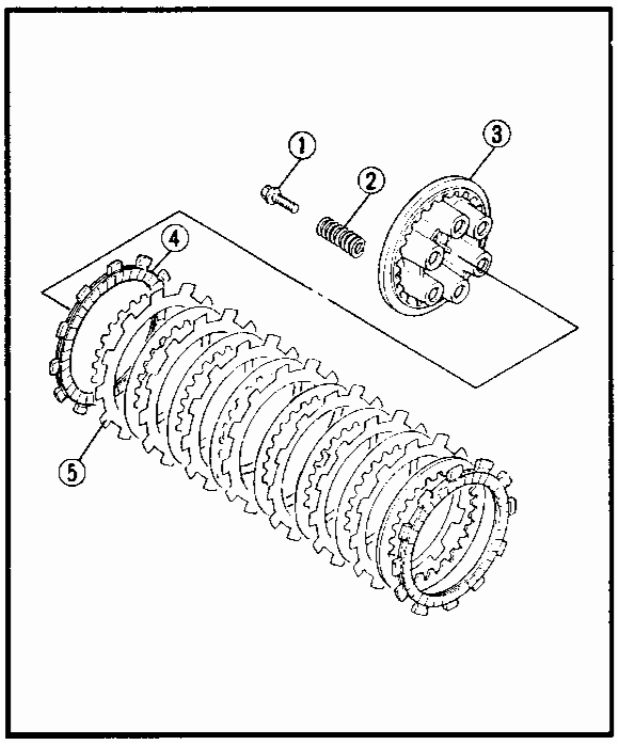
2.Remove:
- Gasket ①
- Dowel pins ②



3.Remove:
- Cover ① (breather)
- Gasket

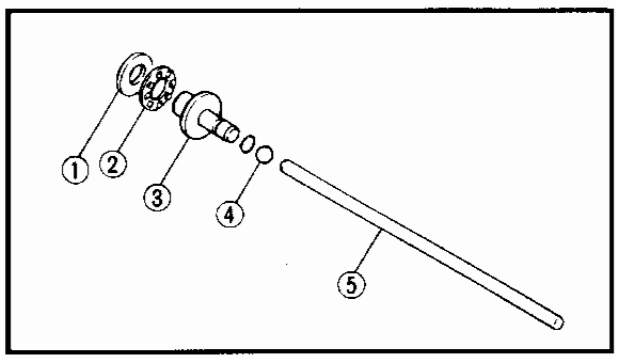


4.Remove:
- Washer
- Rubber ring
- Cover (outer)

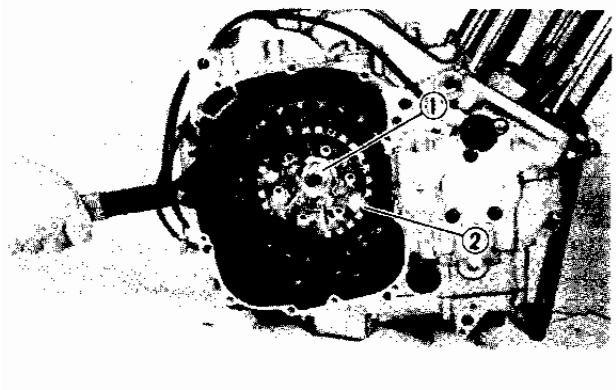


5.Remove:
- Bolts ① (pressure plate)
- Clutch springs ②
- Pressure plate ③
- Friction plates ④
- Clutch plates ⑤

NOTE:
Loosen the bolts (pressure plate) in a criss-cross pattern.



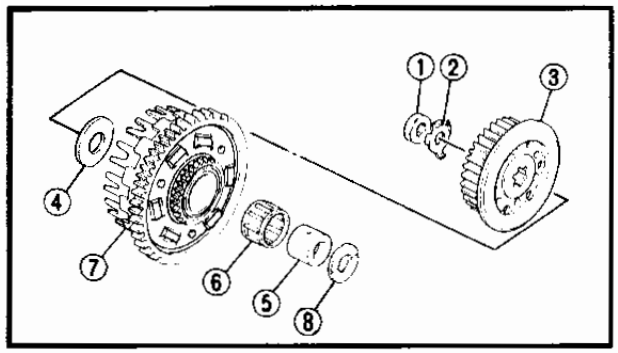
6.Remove:
- Washer ①
- Bearing ②
- Push rod #1 ③ (with O-ring)
- Ball ④
- Push rod #2 ⑤



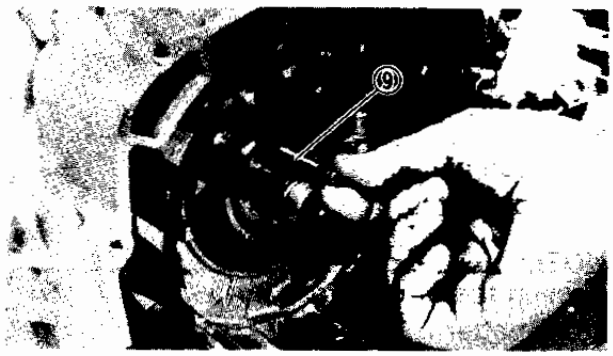
7.Straighten the lock washer tabs.
8.Loosen:
- Nut ① (clutch boss)

NOTE:
Loosen the nut ① (clutch boss) while holding the clutch boss ② with the universal clutch holder.

	Universal clutch holder: YM-91042/90890-04086



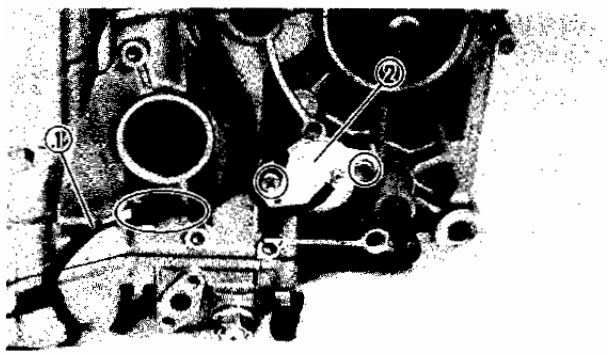
9.Remove:
- Nut ① (clutch boss)
- Lock washer ②
- Clutch boss ③
- Thrust washer ④
- Spacer ⑤
- Bearing ⑥
- Clutch housing ⑦
- Thrust washer ⑧



NOTE:
Install a 5 mm (0.2 in) screw ⑨ onto the spacer. Then remove the spacer by pulling on the screw.

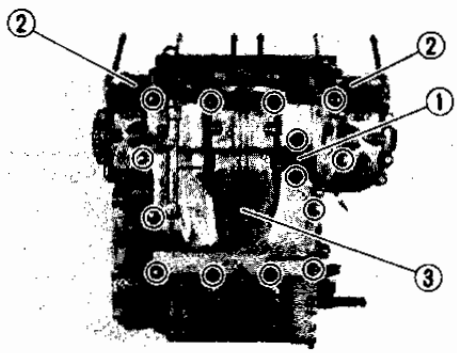
OIL PAN AND OIL STRAINER

NOTE:
With the engine mounted, the oil pan and oil strainer can be maintained by removing the following parts.
- Lower cowling
- Exhaust pipe



1.Remove:
- Oil level switch lead ①

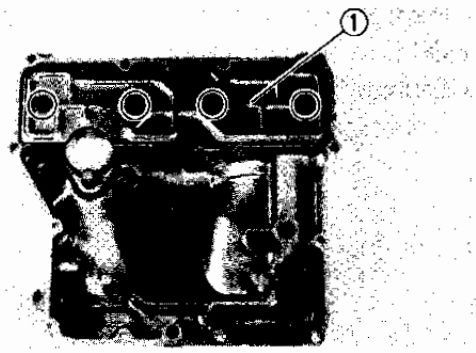
2.Remove:
- Neutral switch ②



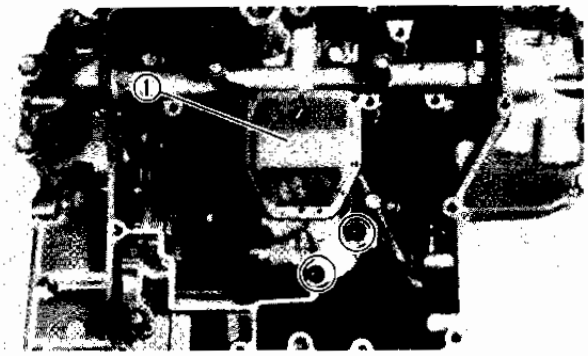
3.Remove:
- Oil level switch ①
- Stays ② (lower cowling)
- Oil pan ③

NOTE:
Loosen the bolts in a crisscross pattern 1/4 turn each. Remove them after all are loosened.

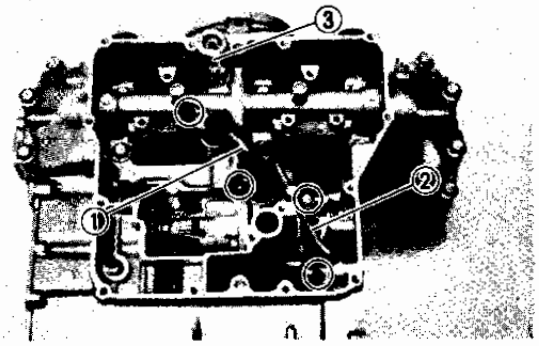
- Gasket (oil pan)
- Dowel pins



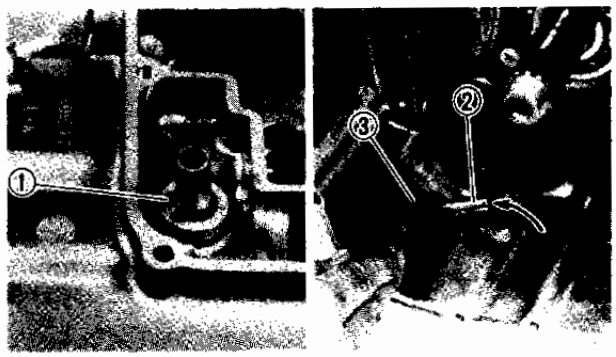
4.Remove:
- Baffle plate ① (oil pan)



5.Remove:
- Oil strainer assembly ①



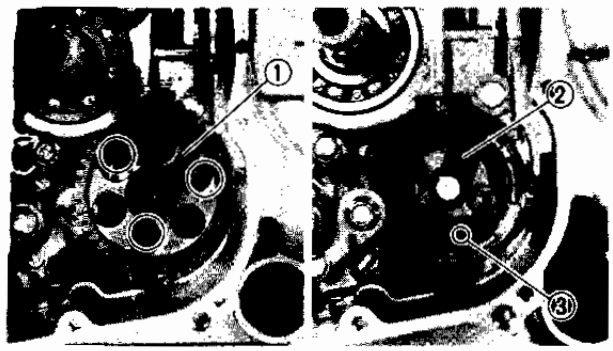
6.Remove:
- Oil delivery pipe #2 ①
  (with O-rings)
- Oil delivery pipe #1 ②
  (with O-rings)
- Relief valve ③
  (with O-ring)



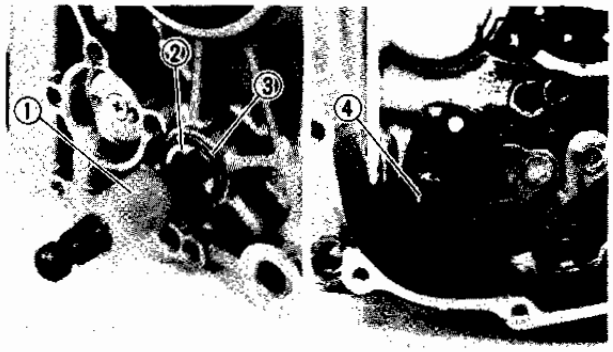
7.Remove:
- Circlip ①
- Oil pipe ②
- Mounting rubber ③

OIL PUMP AND SHIFT SHAFT

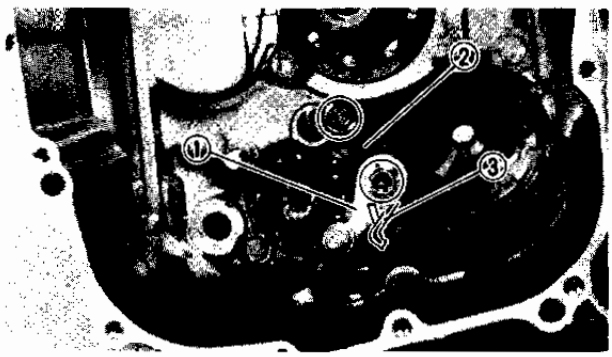
NOTE:
With the engine mounted, the oil pump and shift shaft can be maintained when the following parts are removed:
- Center cowlings
- Crankcase cover (left and right)
- Clutch housing



1.Remove:
- Oil pump assembly ①
- Gasket ②
- Dowel pin ③

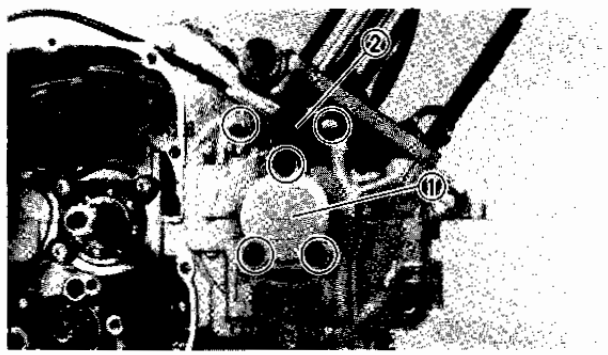


2.Remove:
- Collar ①
- Circlip ②
- Washer ③
- Shift shaft assembly ④

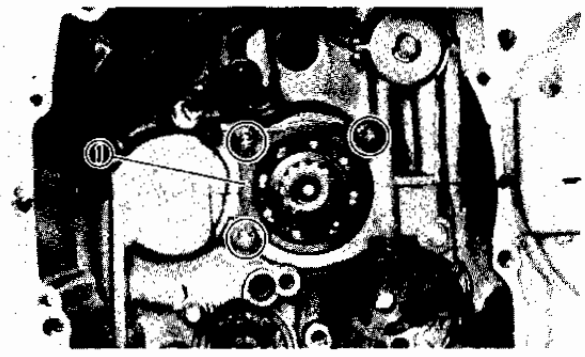


3.Remove:
- Stopper lever ①
- Stopper plate ②
  (shift fork guide bar and bearing)
- Return spring ③

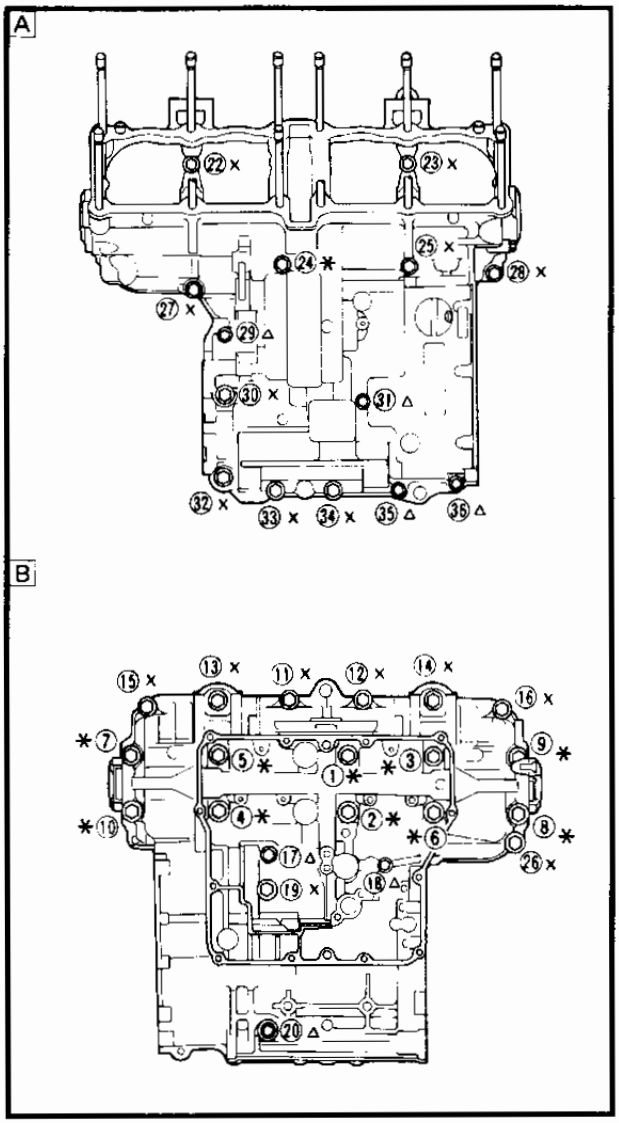
CRANKCASE DISASSEMBLY



1.Remove:
- Crankshaft end cover ① (right)
  (with O-ring)
- Pickup coil ②
  (with O-ring)



2.Remove:
- Bearing retainer ① (main axle)
  Use the torx wrench (T30).



3.Remove:
- Bolts (crankcase)

NOTE:
- Loosen the bolts 1/4 turn each and remove them after all are loosened.
- Remove the bolts starting with the highest numbered one.
- The embossed numbers in the crankcase designate the crankcase tightening sequence.

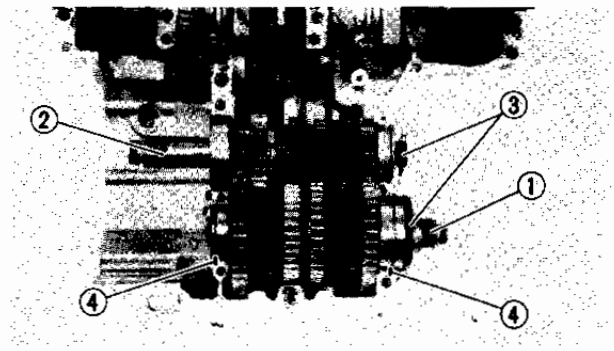
4.Place the engine upside down.
5.Remove:
- Crankcase (lower)

CAUTION:
Use a soft hammer to tap on the case half. Tap only on reinforced portions of the case. Do not tap on the gasket mating surface. Work slowly and carefully. Make sure that the case halves separate evenly.

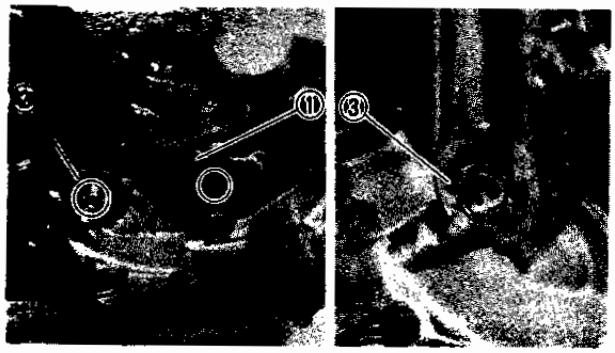
A Upper case
B Lower case
△: M6 bolts
×: M8 bolts
✱: M9 bolts

6.Remove:
- Main journal bearing (from lower crankcase)

NOTE:
Identify each plain bearing position very carefully so that it can be reinstalled in its original place.

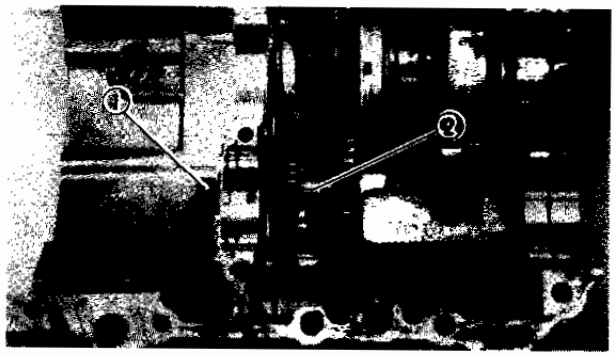


TRANSMISSION
1.Remove:
- Drive axle assembly ①
- Main axle assembly ②
- Oil seals ③
- Circlips ④

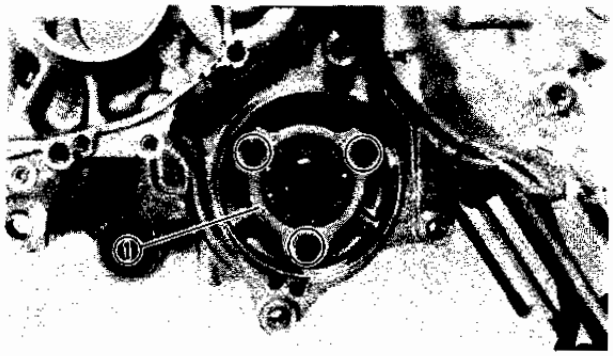


STARTER CLUTCH AND CRANKSHAFT

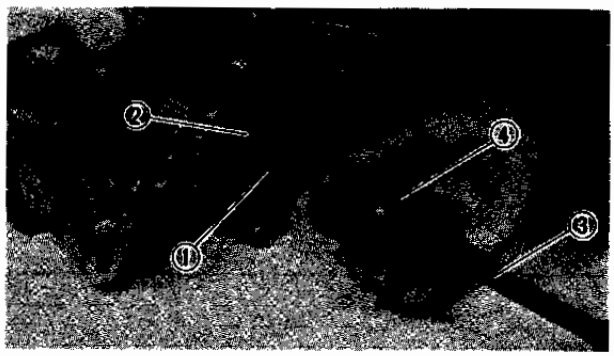
1.Remove:
- Oil delivery pipe #5 ①
  (with O-rings)
- Oil plug plate ②
- Gasket
- Oil spray nozzle ③



2.Remove:
- Shaft ①
- Starter idle gear ②



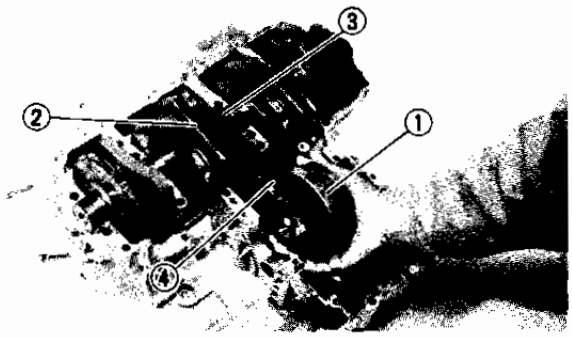
3.Remove:
- Bearing retainer ①



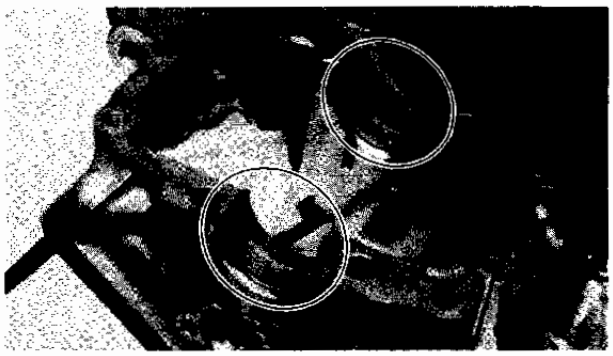
4.Remove:
- Shaft ① (AC generator)
  (with bearing ②)
  Use the armature shock puller ③ and weight ④.



Armature shock puller:
YU-01047 – 3/90890-01290
Weight:
YU-01047 – 2/90890-01291

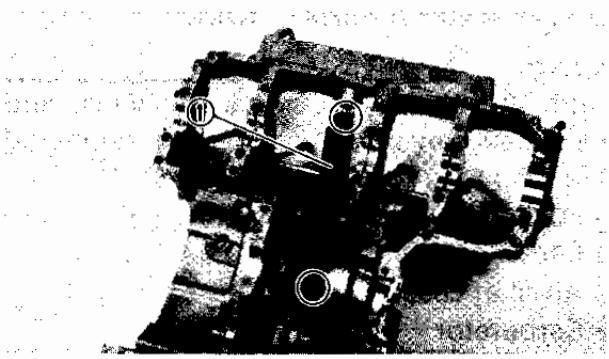


5.Remove:
- Starter clutch assembly ①
- Crankshaft assembly ②
- Timing chain ③
- HY-VO chain ④

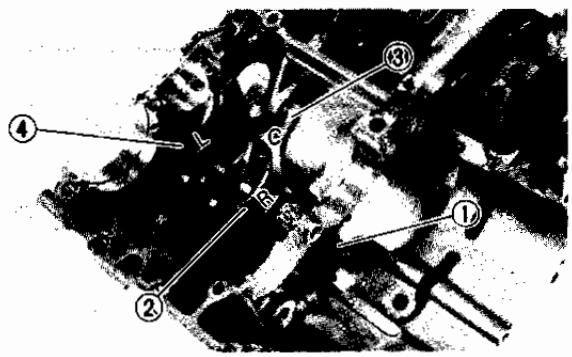


6.Remove:
- Main journal bearings (from upper crankcase)

NOTE:
Identify each bearing position very carefully so that it can be reinstalled in its original place.

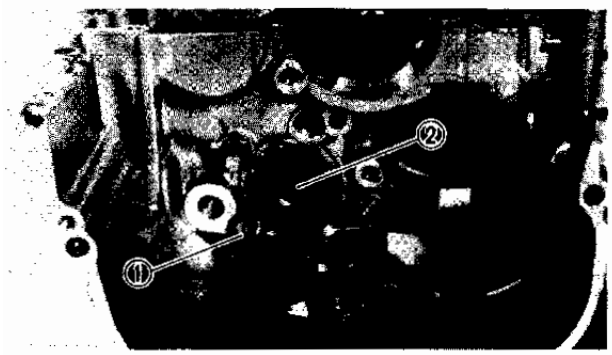


7.Remove:
- HY-VO chain guide ①

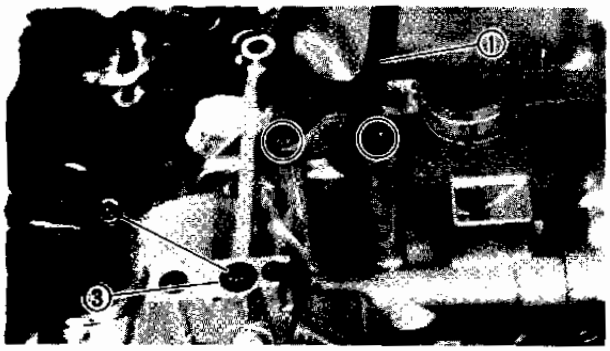


SHIFT FORK AND SHIFT CAM

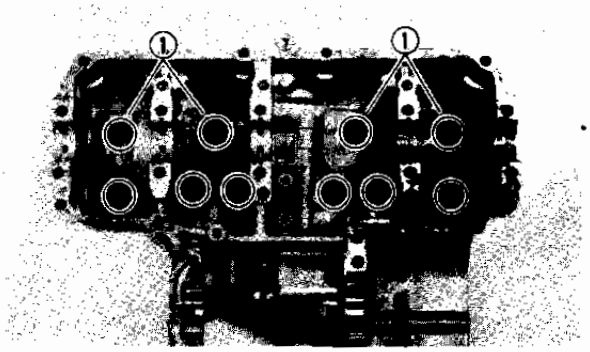
1.Remove:
- Guide bar ① (shift fork)
- Shift fork "R" ②
- Shift fork "C" ③
- Shift fork "L" ④



2.Remove:
- Bolt ① (bearing stopper)
- Shift cam assembly ②



3.Remove:
- Timing chain guide ① (intake side)
- Dowel pin ②
- O-ring ③

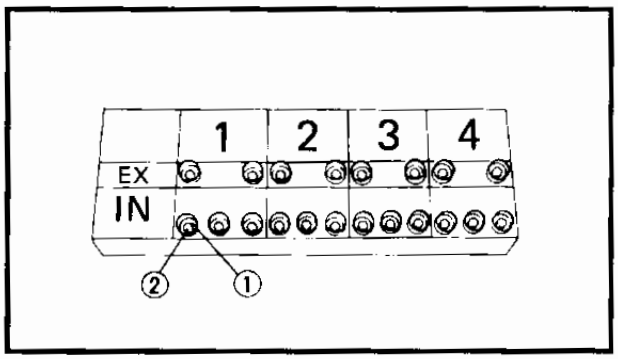


4.Remove:
- Baffle plates ①

VALVE AND CAMSHAFT CASE

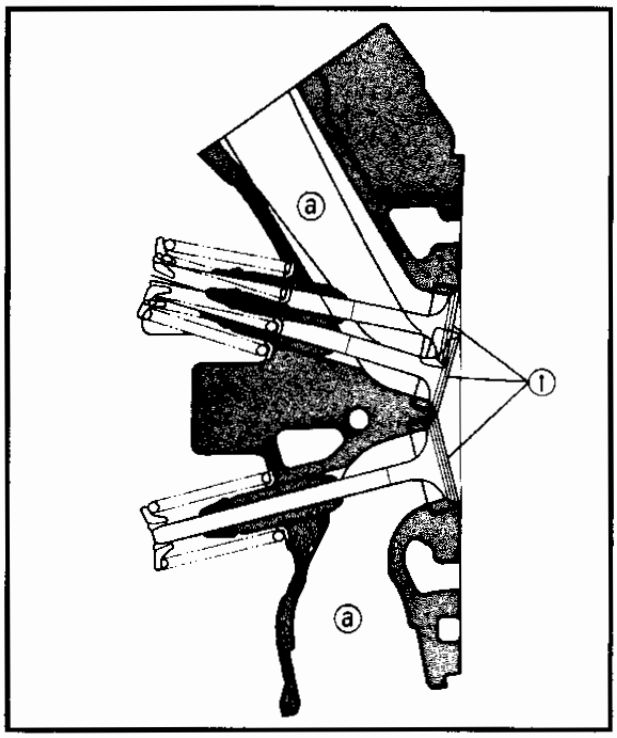
NOTE:
With the engine mounted, the valve and camshaft can be maintained by removing the following parts.
- Fuel tank
- Center cowlings
- Air filter case
- Carburetor
- Radiator
- Cylinder head

NOTE:
The valve sealing should be checked before removing the internal parts (valve, valve spring, valve seat etc.) of the cylinder head.



1.Remove:
- Lifters ①
- Pads ②

NOTE:
Identify each lifter ① and pad ② position very carefully so that they can be reinstalled in their original place.

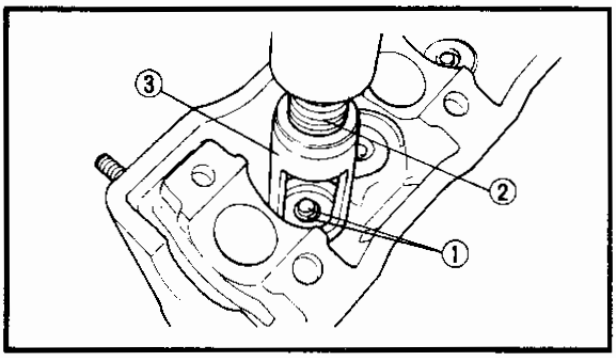


2.Check:
- Valve sealing
  Leakage at valve seat → Inspect the valve face, valve seat and the valve seat width. Refer to "INSPECTION AND REPAIR – VALVE SEAT".

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Checking steps:
- Pour a clean solvent ⓐ into the intake and exhaust ports.
- Check the valve seating.
  There should be no leakage at the valve seat ①.

****

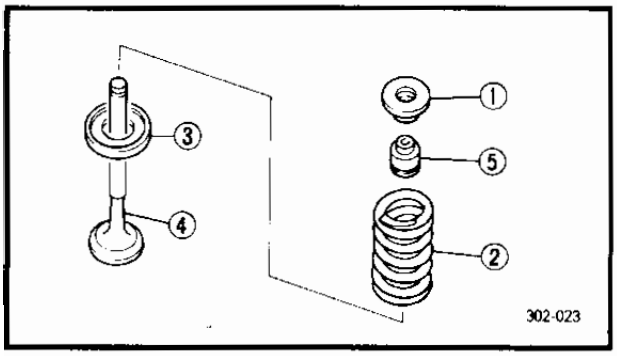


3.Remove:
- Valve cotters ①

NOTE:
Attach the valve spring compressor ② and attachment ③ between the valve spring retainer and cylinder head to remove the valve cotters.

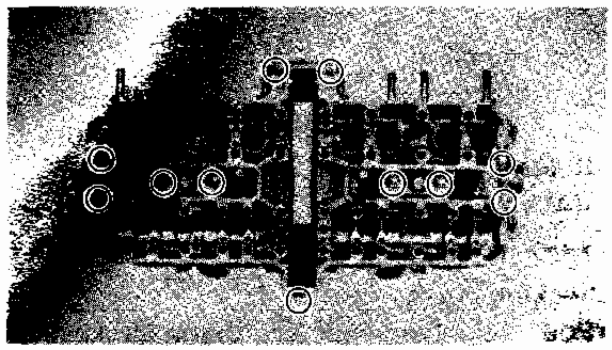


Valve spring compressor:
YM-04019/90890-04019
Attachment:
(For exhaust valve)
YM-04108/90890-04108
(For intake valve)
YM-04114/90890-04114



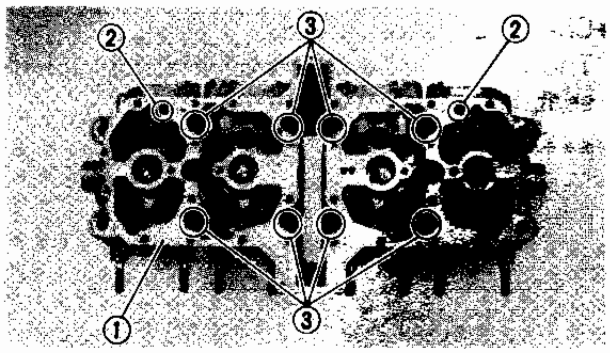
4.Remove:
- Valve spring retainer ①
- Valve spring ②
- Spring seat ③
- Valve ④
- Oil seal ⑤

NOTE:
Identify each part position very carefully so that it can be reinstalled in its original place.

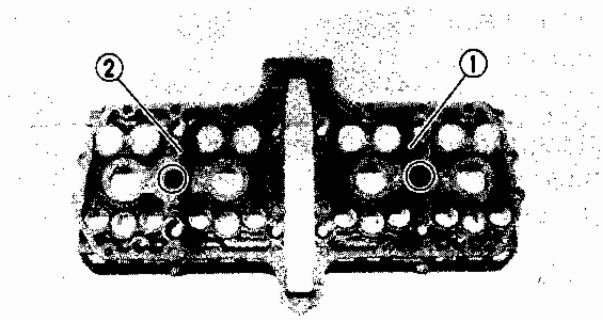


5.Remove:
- Camshaft case

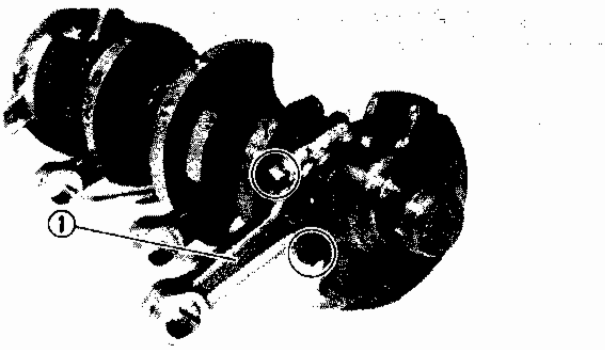
NOTE:
Remove the bolts from the outside to inside.



6.Remove:
- Gasket ① (camshaft case)
- Dowel pins ②
- Nuts ③ (cylinder head)
- Washers



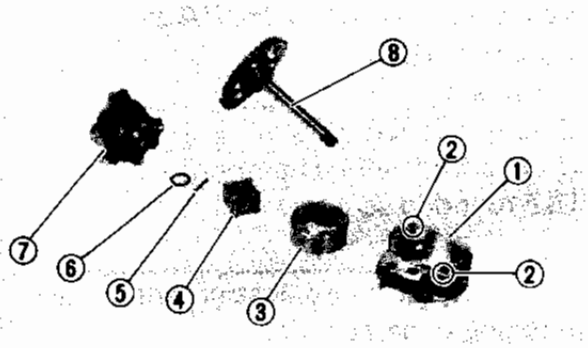
7.Remove:
- Oil delivery pipe #3 ① (with O-rings)
- Oil deliver pipe #4 ② (with O-rings)



CONNECTING ROD

1.Remove:
- Connecting rod ①
- Bearings (connecting rod)

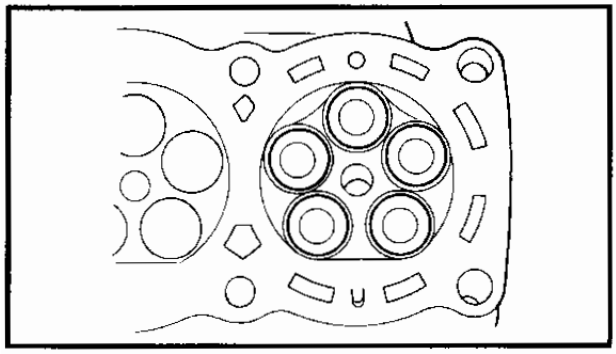
NOTE:
Identify each bearing position very careful so that it can be reinstalled in its original place.



OIL PUMP

1.Remove:

- Screw
- Pump housing ①
- Dowel pins ②
- Outer rotor ③
- Inner rotor ④
- Pin ⑤
- Washer ⑥
- Pump cover ⑦
- Pump shaft ⑧



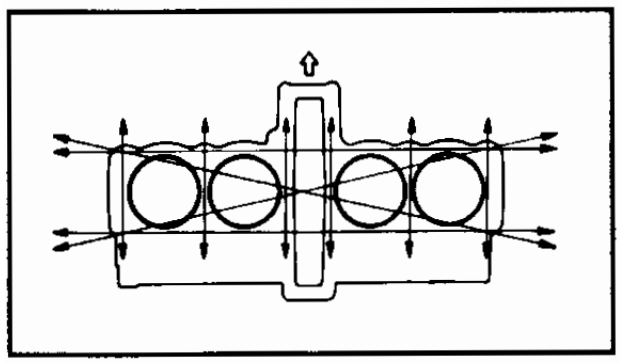
INSPECTION AND REPAIR

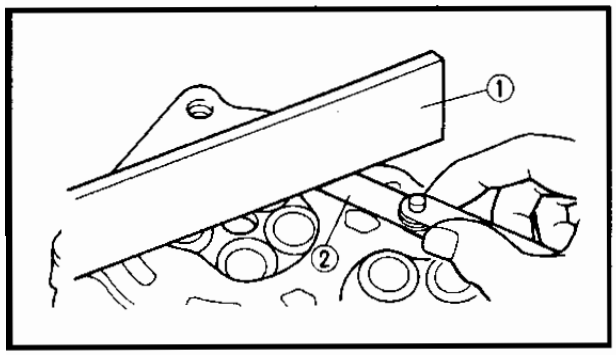
CYLINDER HEAD

1.Eliminate:
- Carbon deposit
  (from combustion chamber)
  Use rounded scraper.

NOTE:
Do not use a sharp instrument to avoid damaging or scratching:
- Spark plug threads
- Valve seat

2.Inspect:
- Cylinder head
  Scratches/Damage → Replace.
- Water jacket
  Crust of minerals/Rust → Eliminate.





3.Measure:
- Cylinder head warpage
  Out of specification →Resurface.



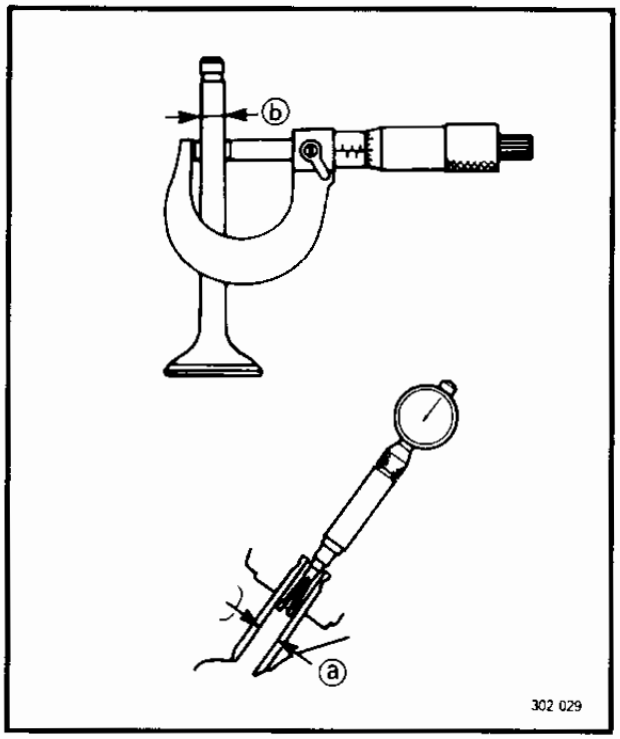
Cylinder head warpage:
Less than 0.03 mm (0.0012 in)

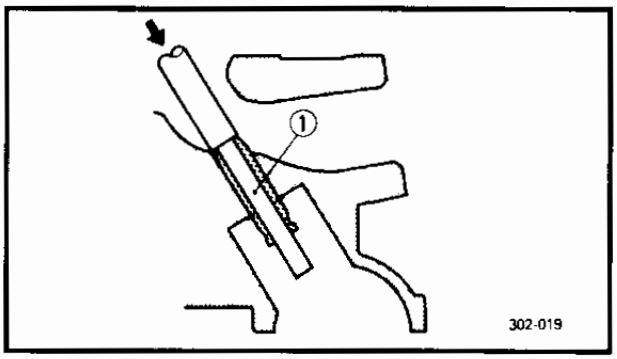
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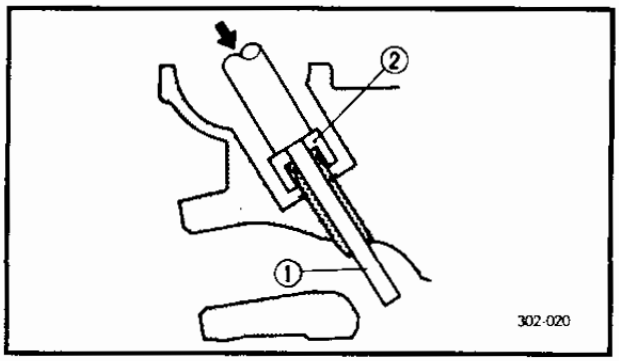
Warpage measurement and resurfacement steps:
- Hold a straight edge ① and a thickness gauge ② to the cylinder head.
- Measure the warpage.
- If the warpage is out of specification, resurface the cylinder head.
- Place a 400 ~ 600 grit wet sandpaper on the surface plate, and resurface the head using a figure-eight sanding pattern.

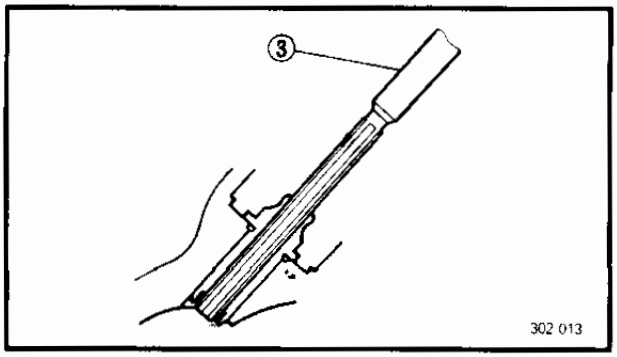
NOTE:
Rotate the head several times to avoid removing too much material from one side.

****









VALVE AND VALVE GUIDE

1.Measure:

- Stem-to-guide clearance

Stem-to-guide clearance =
Valve guide inside diameter ⓐ –
Valve stem diameter ⓑ

Out of specification → Replace valve guide.

Stem-to-guide clearance:
Intake:
0.010 ~ 0.037 mm
(0.0004 ~ 0.0015 in)
< Limit >: 0.08 mm (0.003 in)
Exhaust:
0.025 ~ 0.052 mm
(0.0010 ~ 0.0020 in)
< Limit >: 0.10 mm (0.004 in)

2.Replace:

- Valve guide

****

Replacement steps:

NOTE:
Heat the cylinder head in an oven to 100°C (212°F) to ease guide removal and installation and to maintain correct interference fit.

- Remove the valve guide using the valve guide remover ①.
- Install the valve guide (new) using the valve guide installer ② and valve guide remover ①.
- After installing the valve guide, bore the valve guide using the valve guide reamer ③ to obtain proper stem-to-guide clearance.

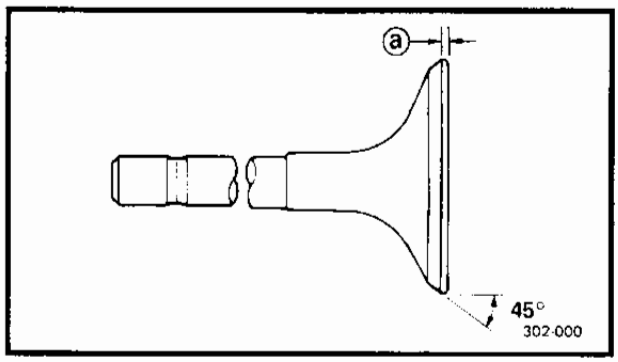
Valve guide remover (4.5 mm):
YM-04116/90890-04116
Valve guide installer (4.5 mm):
YM-04117/90890-04117
Valve guide reamer (4.5 mm):
YM-04118/90890-04118

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NOTE:
Reface the valve seat after replacing the valve guide.

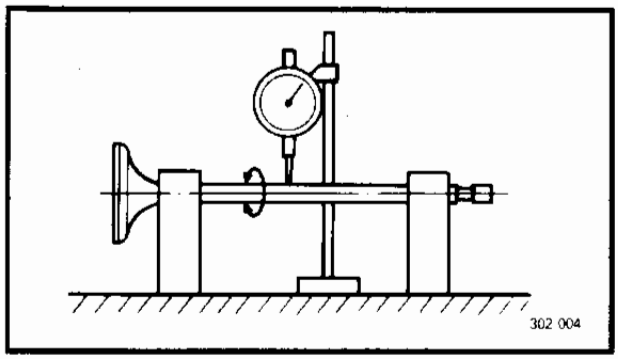
3.Eliminate:
- Carbon deposit
  (from valve face)

4.Inspect:
- Valve face
  Pitting/Wear → Grind the face.
- Valve stem end
  Mushroom shape or diameter larger than rest of stem → Replace.



5.Measure:
- Margin thickness ⓐ
  Out of specification → Replace.

Margin thickness:
IN: 0.60 ~ 0.80 mm
(0.024 ~ 0.031 in)
EX: 0.85 ~ 1.15 mm
(0.033 ~ 0.045 in)



6.Measure:
- Runout (valve stem)
  Out of specification → Replace.

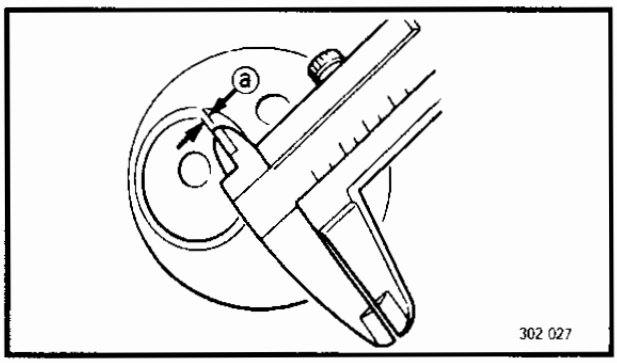
Runout limit:
0.01 mm (0.0004 in)

NOTE:
- Always replace the guide if the valve is replaced.
- Always replace the oil seal if the valve is removed.

VALVE SEAT

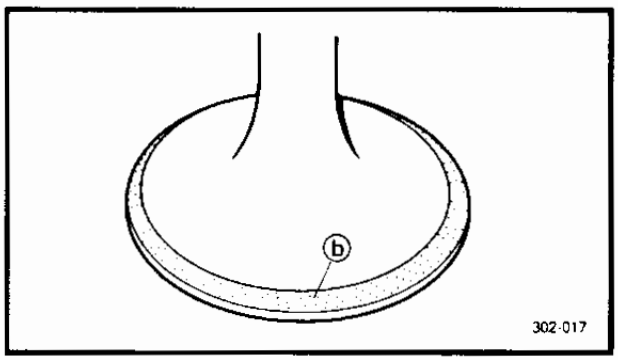
1.Eliminate:
- Carbon deposit
  (from valve face and valve seat)

2.Inspect:
- Valve seat
  Pitting/Wear → Reface valve seat.



3.Measure:
- Valve seat width ⓐ
  Out of specification → Reface valve seat.

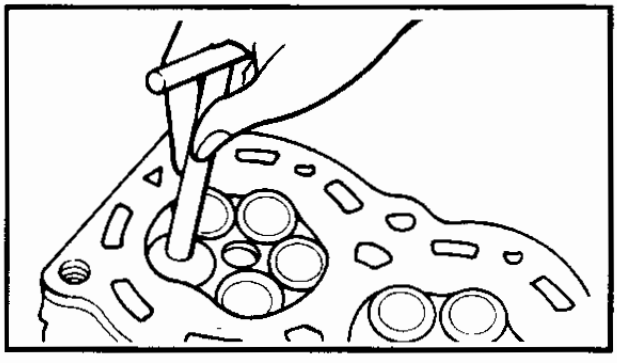
Valve seat width:
Intake 0.9 ~ 1.1 mm
(0.0354 ~ 0.0433 in)
Exhaust 0.9 ~ 1.1 mm
(0.0354 ~ 0.0433 in)



****

Measurement steps:
- Apply the Mechanic's bluing dye (Dykem) ⓑ to the valve face.
- Install the valve into the cylinder head.
- Press the valve through the valve guide and onto the valve seat to make a clear pattern.
- Measure the valve seat width. Where the valve seat and valve face made contact, bluing will have been removed.
- If the valve seat is too wide, too narrow, or the seat is not centered, the valve seat must be refaced.

****

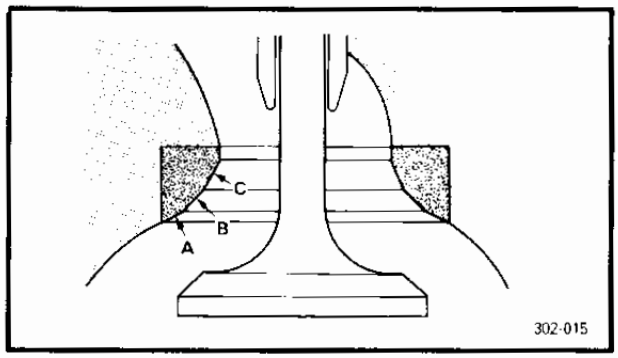


4.Reface:
- Valve seat
  Use 20°, 45° and 60° valve seat cutter.

Valve seat cutter:
YM-91043-C

CAUTION:

When twisting the cutter, keep an even downward pressure (4 ~ 5 kg) to prevent chatter marks.

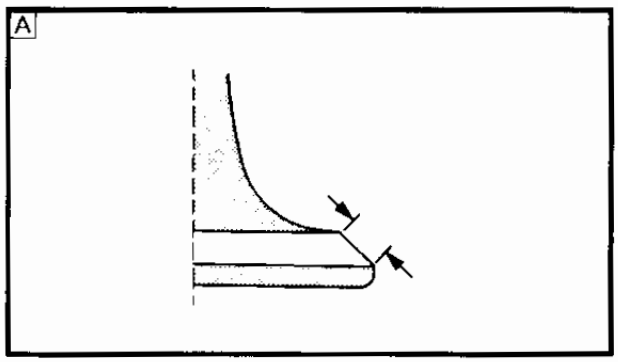


Cut sections as follows:	
Section	**Cutter**
A	20°
B	45°
C	60°

****

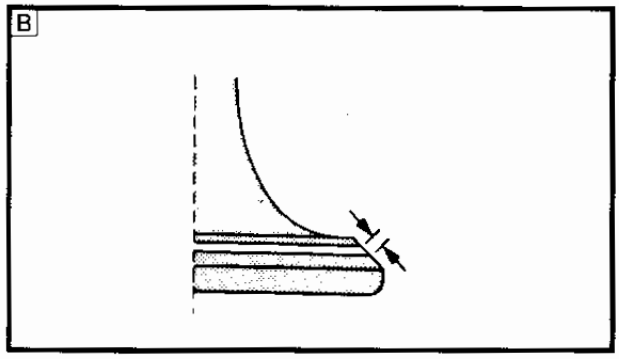
Refacing steps:

A Valve seat is centered on valve face but it is too wide.



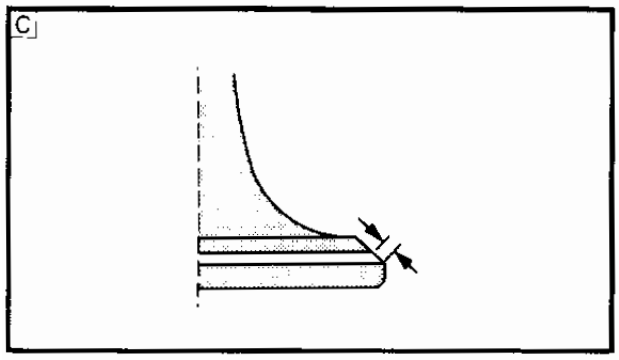
Valve seat cutter set		Desired result
Use lightly	First: 20° cutter Second: 60° cutter	To reduce valve seat width to 1.0 mm (0.039 in)

B Valve seat is in the middle of the valve face but it is too narrow.

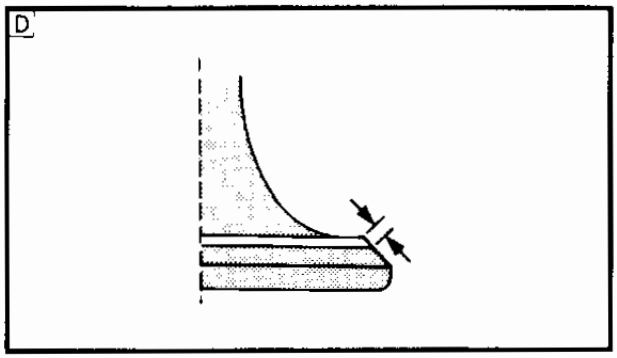


Valve seat cutter set		Desired result
Use	45° cutter	To achieve a uniform valve seat width of 1.0 mm (0.039 in)

C Valve seat is too narrow and it is near valve margin.



Valve seat cutter set		Desired result
Use	First: 20° cutter Second: 45° cutter	To center the seat and to achieve its width of 1.0 mm (0.04 in)



D Valve seat is too narrow and it is located near the bottom edge of the valve face.

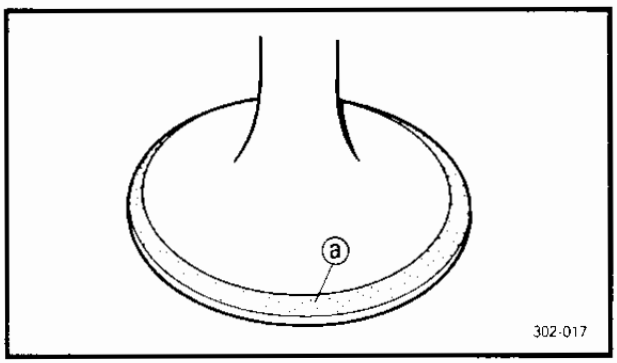
Valve seat cutter set		Desired result
Use	First: 60° cutter Second: 45° cutter	To center the seat and increase its width.

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5.Lap:
- Valve face
- Valve seat

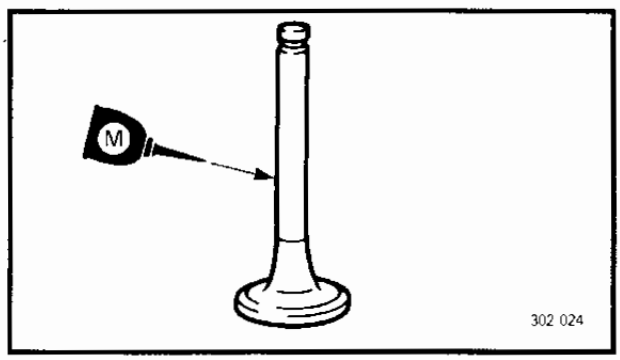
NOTE:
After refacing the valve seat or replacing the valve and valve guide, the valve seat and valve face should be lapped.

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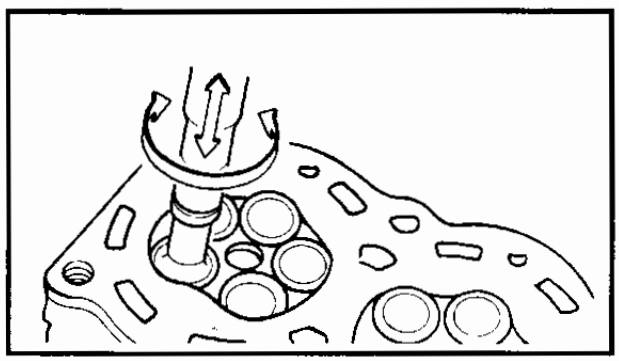


Lapping steps:
- Apply a coarse lapping compound ⓐ to the valve face.

CAUTION:
Be sure no compound enters the gap between the valve stem and guide.

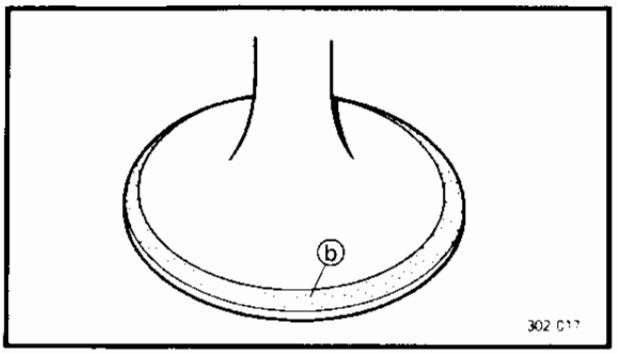


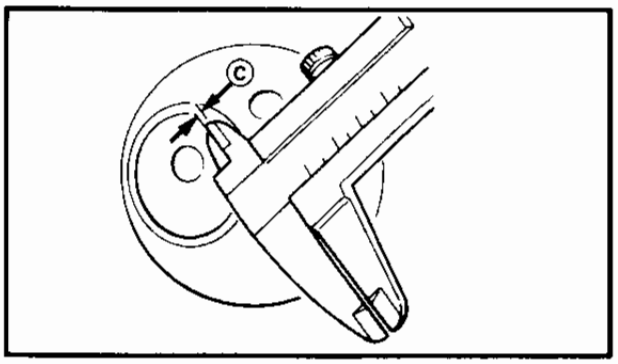
- Apply molybdenum disulfide oil to the valve stem.
- Install the valve into the cylinder head.
- Turn the valve until the valve face and valve seat are evenly polished, then clean off all compound.



NOTE:
To obtain the best lapping result, lightly tap the valve seat while rotating the valve back and forth between your hand.

- Apply a fine lapping compound to the valve face and repeat the above steps.

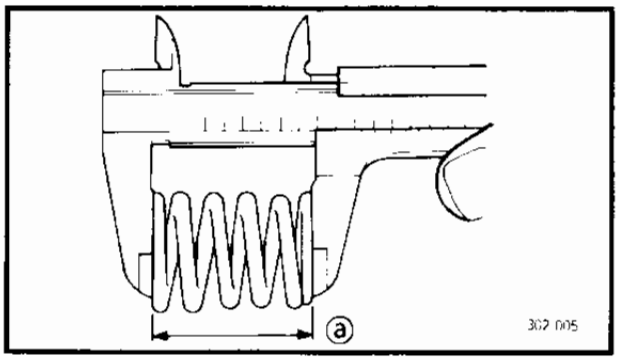




NOTE:
Be sure to clean off all compound from the valve face and valve seat after every lapping operation.

- Apply the Mechanic's bluing dye (Dykem) ⓑ to the valve face.
- Install the valve into the cylinder head.
- Press the valve through the valve guide and onto the valve seat to make a clear pattern.
- Measure the valve seat width ⓒ again. If the valve seat width is out of specification, reface and lap the valve seat.

****

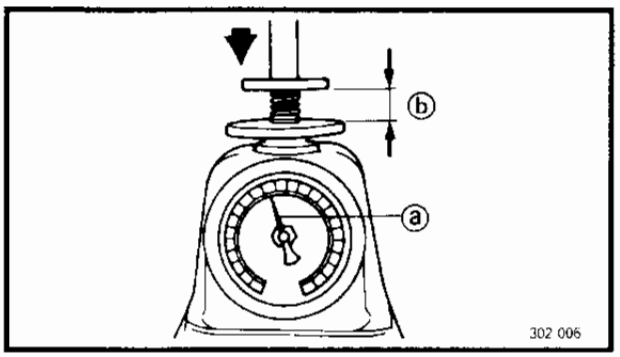


VALVE SPRING

1.Measure:

- Free length ⓐ (valve spring)
  Out of specification → Replace.

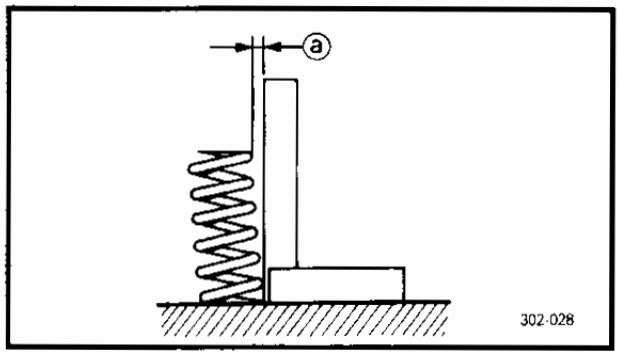
Free length (valve spring):
Intake spring:
40.38 mm (1.59 in)
Exhaust spring:
44.40 mm (1.75 in)



2.Measure:

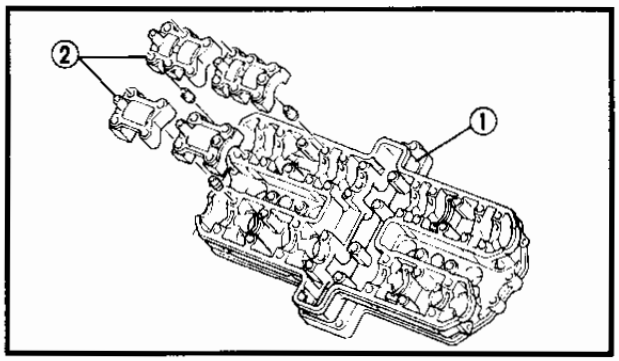
- Compressed force ⓐ (valve spring)
  Out of specification → Replace.
  ⓑ Installed length

Compressed force:
Intake spring:
9.3 ~ 11.3 kg (20.50 ~ 24.91 lb)
at 36.5 mm (1.4 in)
Exhaust spring:
12.6 ~ 15.4 kg (27.78 ~ 33.95 lb)
at 40.5 mm (1.6 in)



3.Measure:
- Spring tilt ⓐ
  Out of specification → Replace.

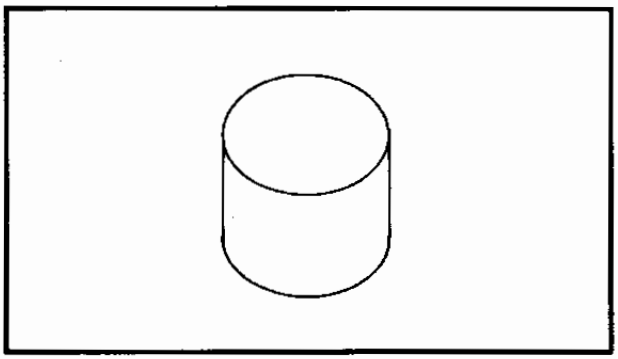
Spring tilt limit:
Intake:
1.7 mm (0.067 in)
Exhaust:
1.9 mm (0.075 in)



CAMSHAFT CASE

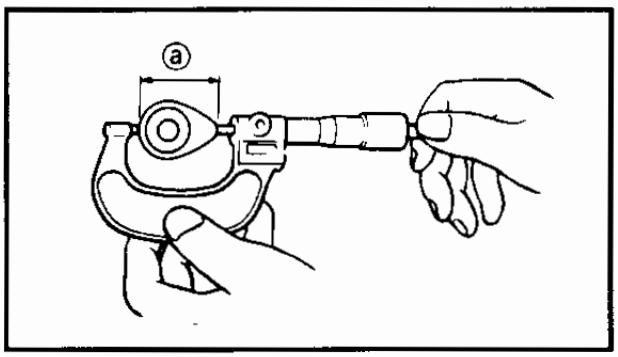
1.Inspect:
- Camshaft case ①
- Camshaft caps ②
  Cracks/Damage → Replace the camshaft case and camshaft caps as a set, and inspect the camshaft.
- Camshaft bearing surfaces
  Pitting/Scratches/Damage → Replace the camshaft case and camshaft caps as a set, and inspect the camshaft.

2.Inspect:
- O-rings ①
- Oil delivery pipe #3 ②
- Oil delivery pipe #4 ③
  Damage → Replace.
  Contamination → Wash and blow out the passage.



VALVE LIFTER

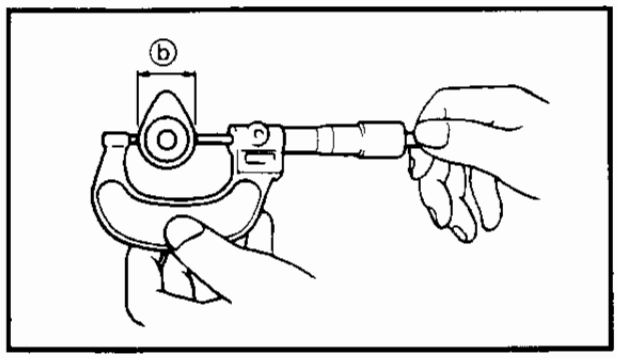
1.Inspect:
- Valve lifters
  Scratches/Damage → Replace both lifters and camshaft case.



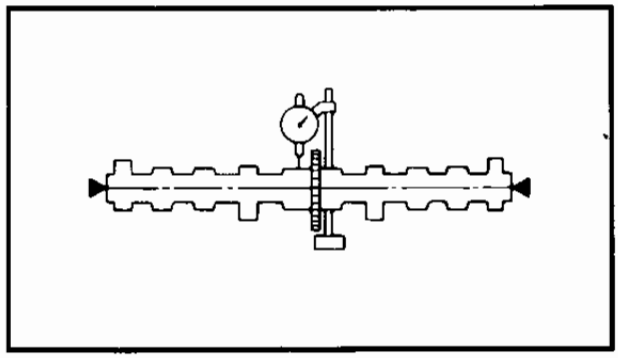
CAMSHAFT

1.Inspect:
- Cam lobes
  Pitting/Scratches/Blue discoloration → Replace.

2.Measure:
- Cam lobes length ⓐ and ⓑ
  Out of specification → Replace.



Cam lobes length limit:
Intake:
ⓐ 32.5 mm (1.280 in)
ⓑ 24.85 mm (0.978 in)
Exhaust:
ⓐ 32.9 mm (1.295 in)
ⓑ 24.85 mm (0.978 in)

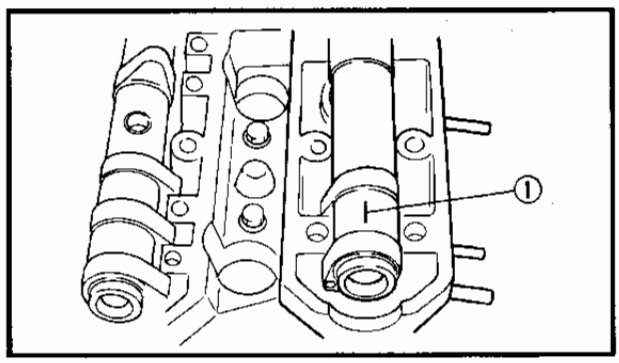


3.Measure:
- Runout (camshaft)
  Out of specification → Replace.

Runout (camshaft):
Less than 0.03 mm (0.0012 in)

4.Measure:
- Camshaft-to-cap clearance
  Out of specification → Measure bearing diameter (camshaft)

Camshaft-to-cap clearance:
I-1, I-4, E-1, E-4:
0.020 ~ 0.054 mm
(0.0008 ~ 0.0021 in)
I-2, I-3, E-2, E-3:
0.050 ~ 0.084 mm
(0.0020 ~ 0.0033 in)

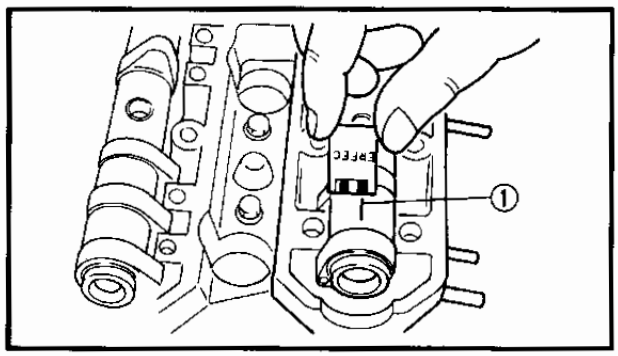


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Measurement steps:
- Install the camshaft onto the cylinder head.
- Position a strip of Plastigauge® ① onto the camshaft.
- Install the dowel pins and camshaft caps.

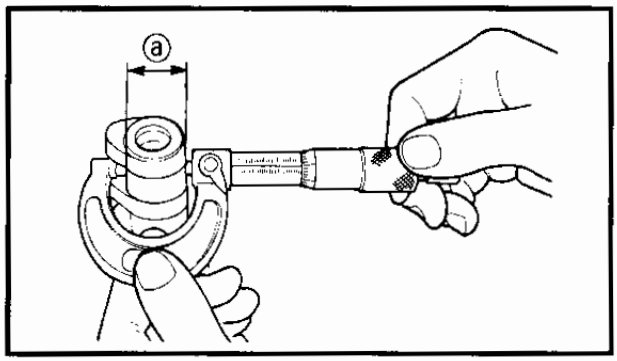
Bolts (camshaft cap)
10 Nm (1.0 m • kg, 7.2 ft • lb)

NOTE:
- Tighten the bolts (camshaft cap) in a criss-cross pattern from innermost to outer caps.
- Do not turn the camshaft when measuring clearance with the Plastigauge®.



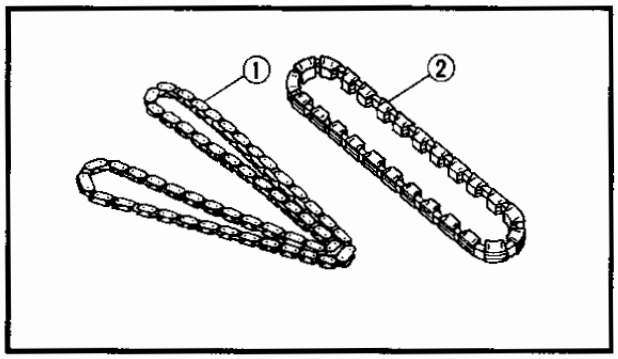
● Remove the camshaft caps and measure the width of the Plastigauge® ①.

****



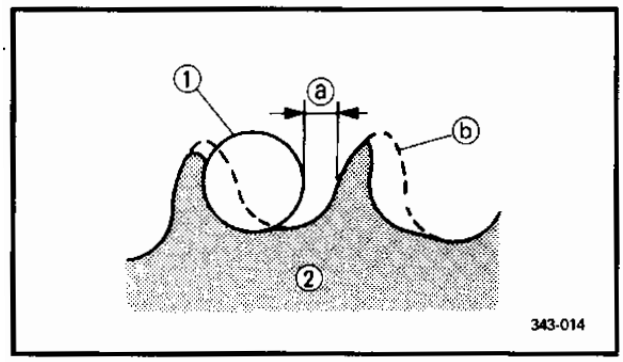
5. Measure:
- Bearing diameter ⓐ (camshaft)
  Out of specification → Replace the camshaft.
  Within specification → Replace camshaft case and camshaft caps as a set.

Bearing diameter (camshaft):
24.437 ~ 24.450 mm
(0.9621 ~ 0.9626 in)



TIMING CHAIN, HY-VO CHAIN, SPROCKET AND CHAIN GUIDE

1. Inspect:
- Timing chain ①
- HY-VO chain ②
  Stiff/Cracks → Replace chain and sprocket as a set.



2. Inspect:
- Cam sprockets
  Wear/Damage → Replace cam sprocket and timing chain as a set.

ⓐ 1/4 tooth
ⓑ Correct
①Roller
②Sprocket

3. Inspect:
- Timing chain guide (exhaust)
- Timing chain guide (intake)
- Timing chain guide (upper)
- HY-VO chain guides
  Wear/Damage → Replace.

TIMING CHAIN TENSIONER

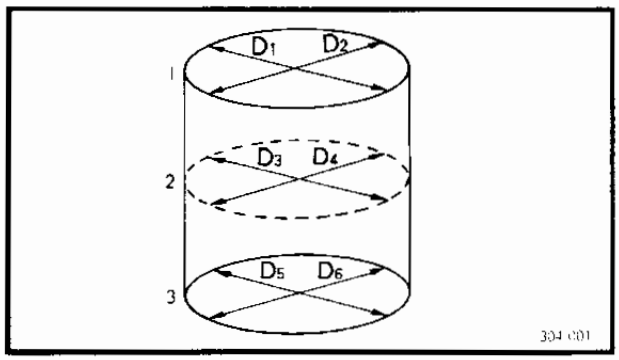
1.Check:
- One-way cam operation
  Unsmooth operation → Replace.

2.Inspect:
- All parts
  Damage/Wear → Replace.

CYLINDER AND PISTON

1.Inspect:
- Cylinder and Piston walls
  Vertical scratches → Rebore or replace cylinder and piston.

2.Measure:
- Piston-to-cylinder clearance



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Measurement steps:

First step:

- Measure the cylinder bore "C" with a cylinder bore gauge.

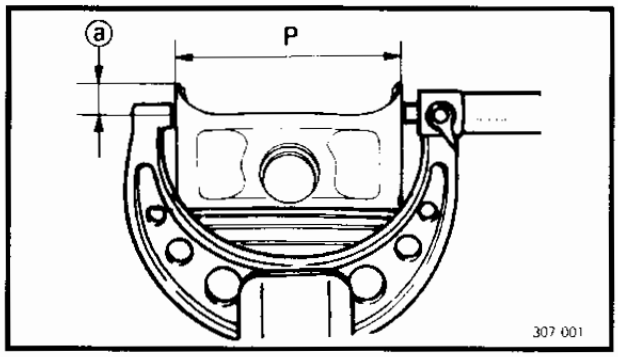
NOTE:

Measure the cylinder bore "C" in parallel to and at right angles to the crankshaft. Then, find the average of the measurements.

Cylinder bore "C"	**71.98 ~ 72.02 mm (2.8339 ~ 2.8354 in)**
Taper limit "T"	**0.05 mm (0.002 in)**
Out of round "R"	**0.05 mm (0.002 in)**

"C" = Maximum D
"T" = (Maximum D_1, or D_2) – (Maximum D_5 or D_6)
"R" = (Maximum D_1, D_3 or D_5) – (Minimum D_2, D_4 or D_6)

- If out of specification, rebore or replace the cylinder, and replace the piston and piston rings as set.



2nd step:

- Measure the piston skirt diameter "P" with a micrometer.

ⓐ3.5 mm (0.138 in) from the piston bottom edge.

	Piston size P
Standard	71.90 ~ 71.94 mm (2.831 ~ 2.832 in)

- If out of specification, replace the piston and piston rings as a set.

3rd step:

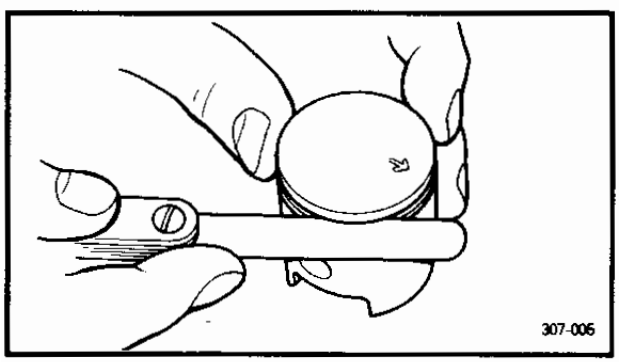
- Calculate the piston-to-cylinder clearance with following formula:

Piston-to-cylinder clearance =
Cylinder bore "C" –
Piston skirt diameter "P"

Piston-to-cylinder clearance:
0.07 ~ 0.09 mm
(0.0028 ~ 0.0035 in)
Limit: 0.11 mm (0.0043 in)

- If out of specification, rebore or replace the cylinder, and replace the piston and piston rings as set.

****

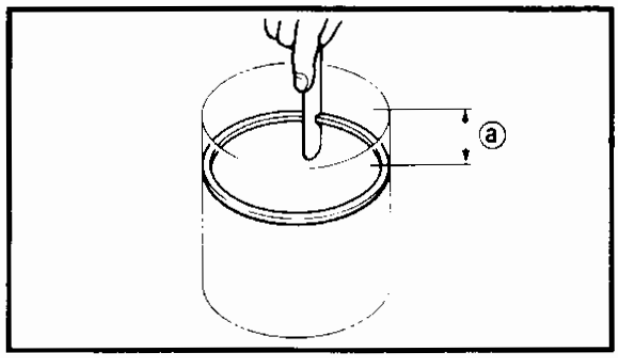


PISTON RING

1. Measure:
- Side clearance
  Out of specification → Replace piston and rings as a set.

NOTE:
Eliminate the carbon deposits from the piston ring grooves and rings before measuring the side clearance.

Side clearance:
Top ring:
0.03 ~ 0.07 mm (0.001 ~ 0.003 in)
Limit <0.15 mm (0.0059 in)>
2nd ring:
0.02 ~ 0.06 mm (0.001 ~ 0.002 in)
Limit <0.15 mm (0.0059 in)>



2.Position:
• Piston ring
(into cylinder)

NOTE:
Push the ring with the piston crown so that the ring will be at a right angle to the cylinder bore.

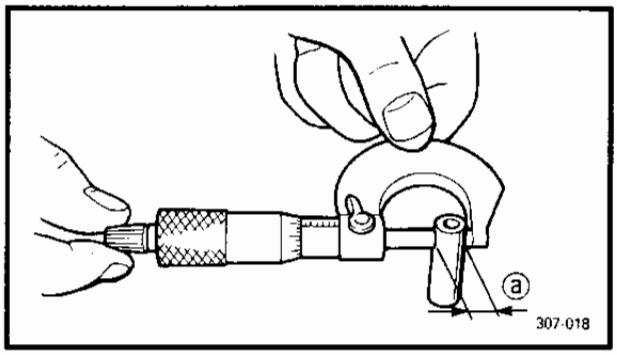
ⓐ20 mm (0.8 in)

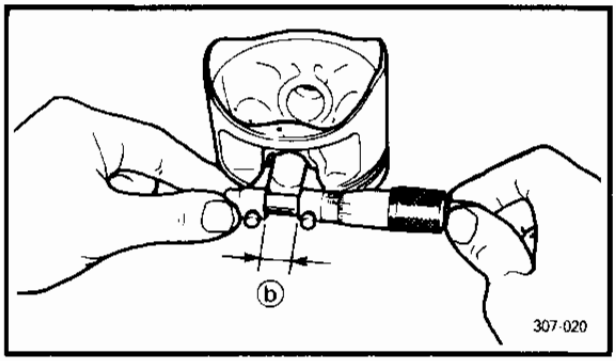
3.Measure:
• End gap
Out of specification → Replace.

NOTE:
You cannot measure the end gap on the expander spacer of the oil control ring. If the oil control ring rails show excessive gap, replace all three rings.

End gap:
Top ring:
0.2 ~ 0.4 mm (0.008 ~ 0.016 in)
Limit <0.7 mm (0.0276 in)>
2nd ring:
0.2 ~ 0.4 mm (0.008 ~ 0.016 in)
Limit <0.7 mm (0.0276 in)>
Oil ring:
0.2 ~ 0.7 mm (0.008 ~ 0.028 in)

PISTON PIN
1.Inspect:
• Piston pin
Blue discoloration/Grooves → Replace, then inspect lubrication system.
2.Measure:
• Piston pin-to-piston clearance





****

Measurement steps:

- Measure the piston pin outside diameter ⓐ.
  If out of specification, replace the piston pin.

Outside diameter (piston pin):
18.991 ~ 19.000 mm
(0.7477 ~ 0.7480 in)

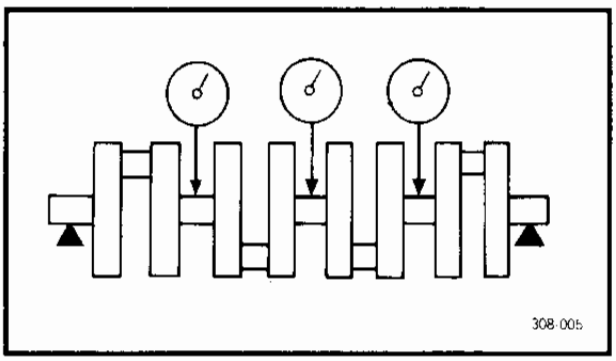
- Measure the piston inside diameter ⓑ.
- Calculate the piston pin-to-piston clearance with following formula:

Piston pin-to-piston clearance =
Bore size (piston pin) ⓑ –
Outside diameter (piston pin) ⓐ

- If out of specification, replace the piston.

Piston pin-to-piston clearance =
0.004 ~ 0.024 mm
(0.00016 ~ 0.00094 in)
< Limit: 0.07 mm (0.003 in) >

****



CRANKSHAFT AND CONNECTING ROD

1.Measure:

- Runout (crankshaft)
  Out of specification → Replace.

Runout:
Less than 0.03 mm (0.0012 in)

2.Inspect:

- Main journal surfaces
- Crank pin surfaces
- Bearing surfaces
  Wear/Scratches → Replace.

3.Measure:
- Oil clearance (main journal)
  Out of specification → Replace bearing.

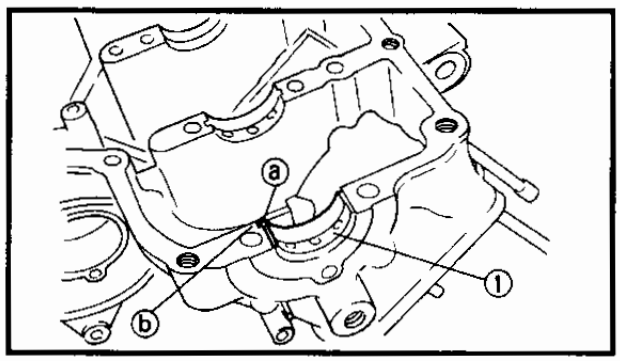
Oil clearance:
0.040 ~ 0.064 mm
(0.0016 ~ 0.0025 in)

****

Measurement steps:

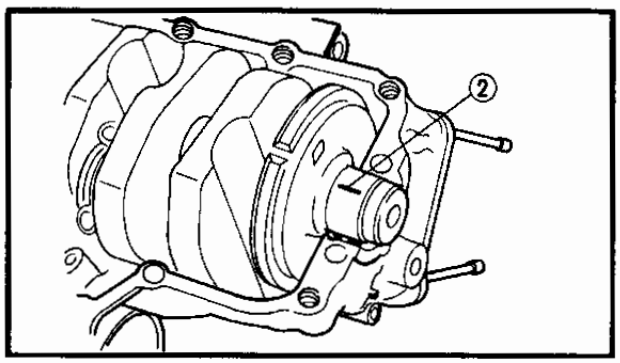
CAUTION:

Do not interchange the bearings and connecting rod. They must be installed in their original positions, or the correct oil clearance may not be obtained causing engine damage.



- Clean the bearings, main journals and bearing portions of the crankcase.
- Place the crankcase (upper) on a bench in an upside down position.
- Install the upper half of the bearings ① and the crankshaft into the crankcase (upper).

NOTE:
Align the projection ⓐ of the bearing with the notch ⓑ in the crankcase.

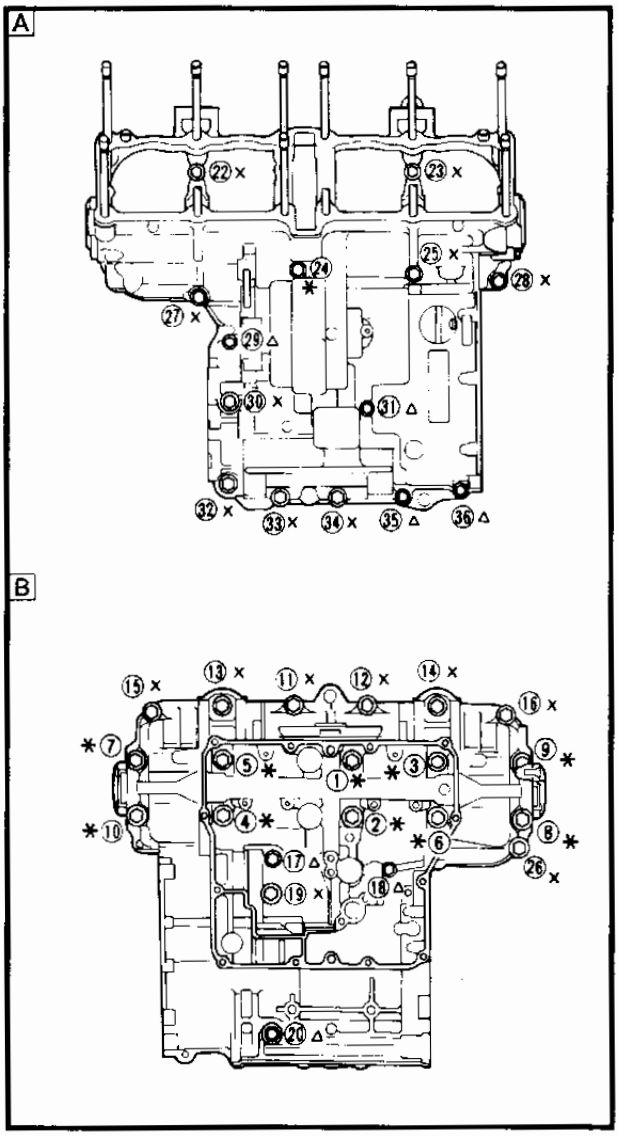


- Put a piece of Plastigauge® ② on each main journal.

NOTE:
Do not put the Plastigauge® over the oil hole in the main journal of the crankshaft.

- Install the lower half of the bearings into the crankcase (lower) and assemble the crankcase halves.

NOTE:
- Align the projection of the bearing with the notch in the crankcase.
- Do not move the crankshaft until the oil clearance has been completed.



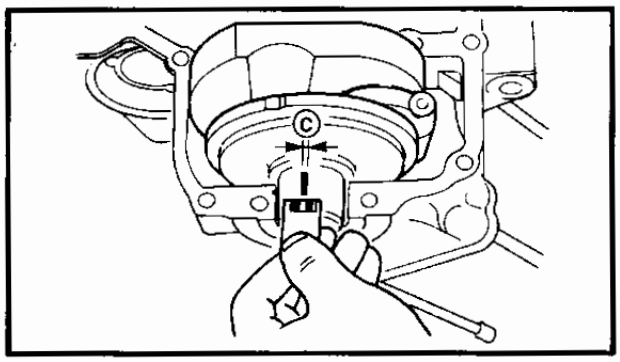
- Tighten the bolt to specification in the tightening sequence cast on the crankcase.

Bolt (crankcase):
***M9 (① ~ ⑩, ㉔):**
32 Nm (3.2 m • kg, 23 ft • lb)
×M8 (⑪ ~ ⑯, ⑲, ㉒, ㉓ ㉕ ~ ㉘, ㉚ and ㉜ ~ ㉞):
24 Nm (2.4 m • kg, 17 ft • lb)
△M6 (⑰, ⑱, ⑳, ㉙, ㉛, ㉟, ㊱):
12 Nm (1.2 m • kg, 8.7 ft • lb)

[A] Upper case
[B] Lower case

NOTE:
- Lubricate the threads of bolts (M9) with molybdenum disulfide motor oil.
- Lubricate the threads of bolts (M8 and M6) with engine oil.

- Remove the crankcase (lower) and lower half of the bearing.



- Measure the compressed Plastigauge® width ⓒ on each main journal.
  If oil clearance is out of specification, select a replacement bearing.

****

4. Measure:
- Oil clearance (crank pin)
  Out of specification → Replace bearing.

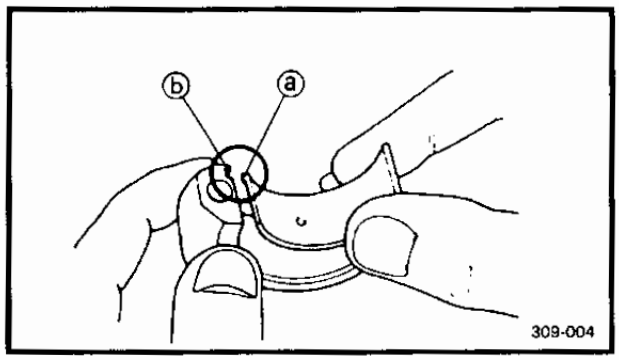
Oil clearance:
0.032 ~ 0.056 mm
(0.001 ~ 0.002 in)

****

Measurement steps:

CAUTION:

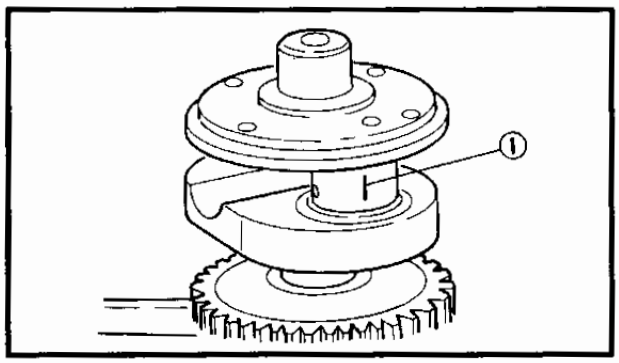
Do not interchange the bearings and connecting rod. They must be installed in their original positions, or the correct oil clearance may not be obtained causing engine damage.



- Clean the bearings, crank pins and bearing portions of the connecting rods.
- Install the upper half of the bearing into the connecting rod and lower half of the bearing into the connecting rod cap.

NOTE:

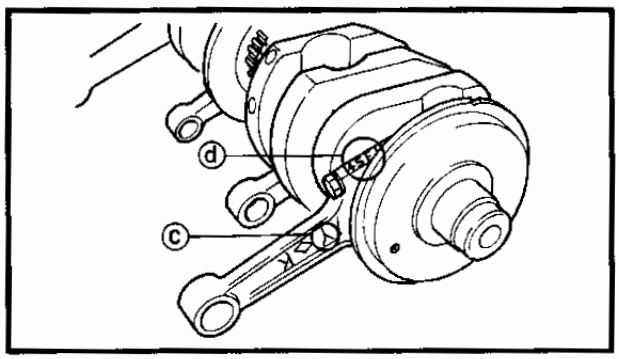
Align the projection ⓐ of the bearing with the notch ⓑ of the cap and connecting rod.



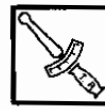
- Put a piece of Plastigauge® ① on the crank pin.
- Assemble the connecting rod halves.

NOTE:

- Do not move the connecting rod or crankshaft until the oil clearance measurement has been completed.
- Apply molybdenum disulfide grease to the bolts, threads and nut seats.
- Make sure the "Y" marks ⓒ on the connecting rods face the left side of the crankshaft.
- Make sure that the letters ⓓ on both components align to from a perfect character.

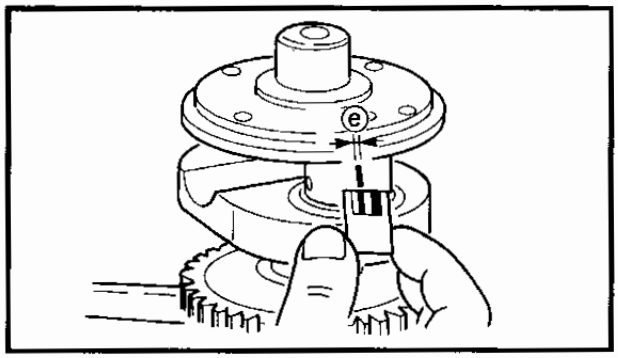


- Tighten the nuts in 2 ~ 3 steps.

	**Nut:** **36 Nm (3.6 m • kg, 25 ft • lb)**

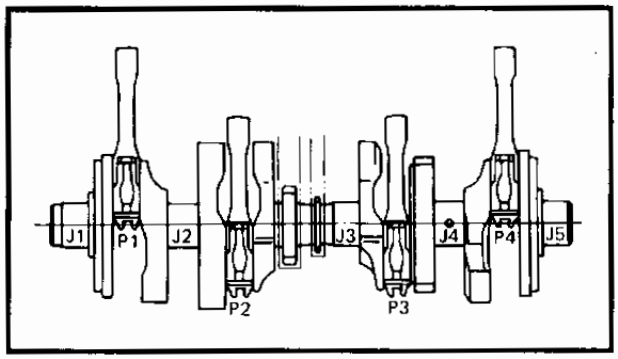
CAUTION:

Tighten to full torque specification without pausing. Apply continuous torque between and 2.0 and 3.6 m • kg. Once you reach 2.0 m • kg DO NOT STOP TIGHTENING until final torque is reached. If the tightening is interrupted between 2.0 and 3.6 m • kg, loosen the nut to less than 2.0 m • kg and start again.



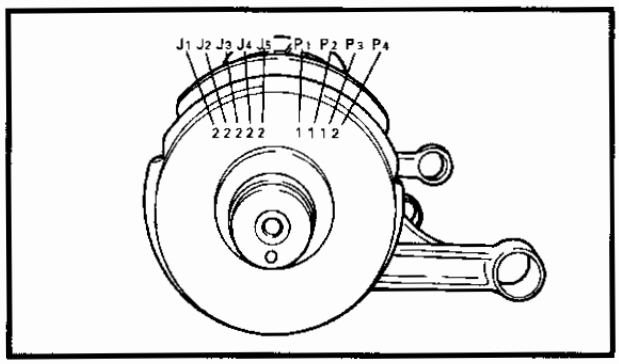
- Remove the connecting rods and bearings.
- Measure the compressed Plastigauge® width ⓔ on each crank pin.
  If oil clearance is out of specification, select a replacement bearing.

****



5.Select:
- Main journal bearing (J_1 ~ J_5)
- Crank pin bearing (P_1 ~ P_4)

****

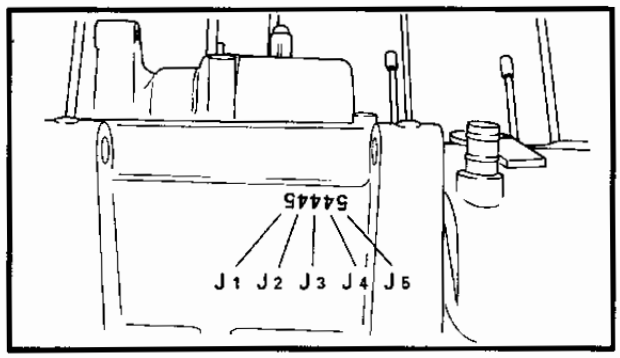


Selection of bearings:

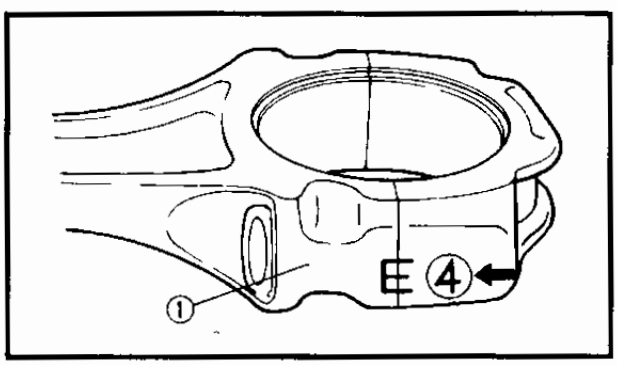
Example 1: Main journal bearing

- If "J_1" on the crankcase is "5" and "2" on the crankweb, then the bearing size for "J_1" is:

Bearing size of J_1:
Crankcase J_1 – Crankweb J_1 =
5 – 2 = 3 (Brown)



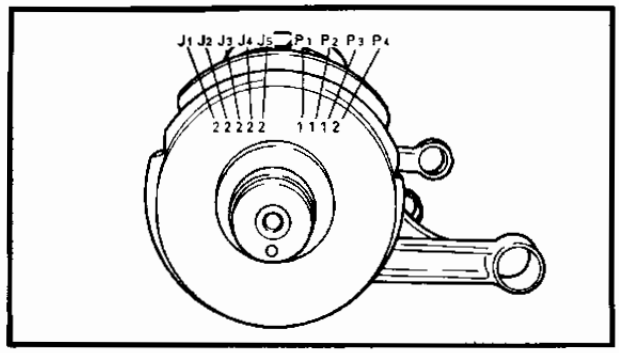
BEARING COLOR CODE	
1	Blue
2	Black
3	Brown
4	Green
5	Yellow



Example 2: Crank pin bearing

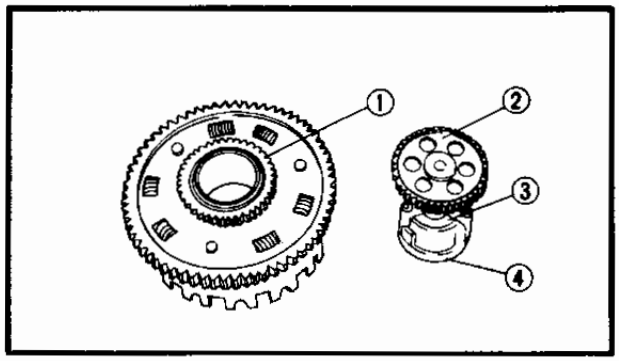
- If "P_1" on the connecting rod is "4" and "1" on the crankweb, then the bearing size for "P_1" is:

Bearing size of P_1:
Connecting rod P_1 – Crankweb P_1 =
4 – 1 = 3 (Brown)



BEARING COLOR CODE	
1	Blue
2	Black
3	Brown
4	Green

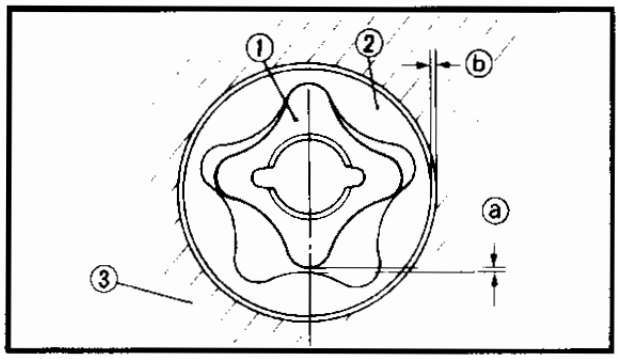
****



OIL PUMP

1.Inspect:
- Drive gear (oil pump ①)
- Driven gear (oil pump ②)
- Pump housing ③
- Pump housing cover ④

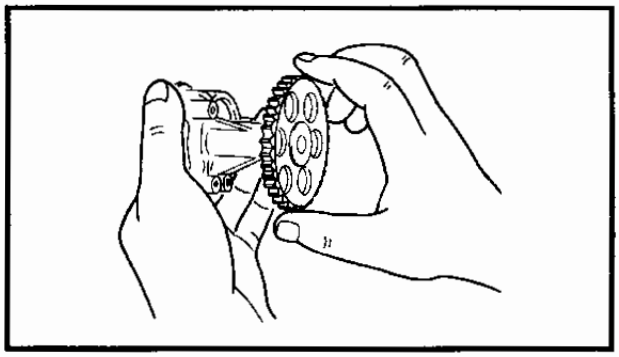
Wear/Cracks/Damage → Replace.



2.Measure:
- Tip clearance ⓐ (between the inner rotor ① and the outer rotor ②)
- Side clearance ⓑ (between the outer rotor ② and the pump housing ③)

Out of specification → Replace the oil pump assembly.

Tip clearance:
0.09 ~ 0.15 mm
(0.004 ~ 0.006 in)
Side clearance:
0.03 ~ 0.08 mm
(0.001 ~ 0.003 in)



3.Check:
- Oil pump operation

Unsmooth → Repeat steps 1 and 2 or replace defective parts.

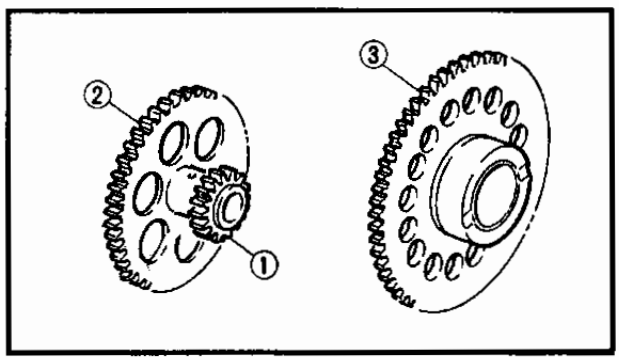
PRIMARY DRIVE

1.Inspect:

- Gear teeth (primary drive)
- Gear teeth (primary driven)

Wear/Damage → Replace both gears.
Excessive noises during operation → Replace both gears.

Primary reduction ratio:		
No. of teeth		Ratio
Drive	Driven	
48	91	1.896

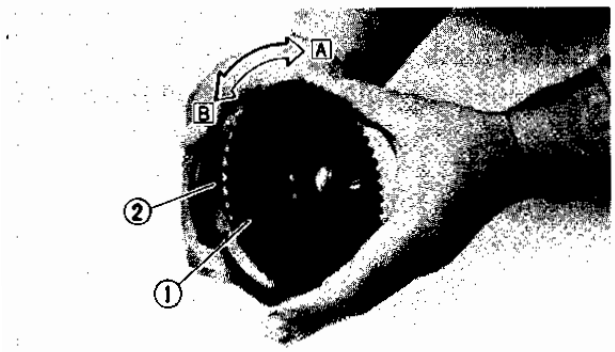


STARTER DRIVES

1.Inspect:

- Gear teeth (starter idle ①)
- Gear teeth (starter drive ②)
- Gear teeth (starter wheel ③)

Burrs/Chips/Roughness/Wear → Replace.



2.Check:

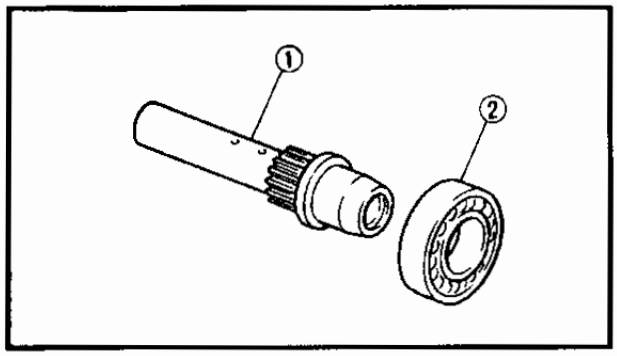
- Starter clutch operation

****

Clutch operation checking steps:

- Install the starter wheel gear ① to the starter clutch ②, and hold the starter clutch.
- When turning the starter wheel gear clockwise [A], the starter clutch and the wheel gear should be engaged.
  If not, the starter clutch is faulty. Replace it.
- When turning the starter wheel gear counterclockwise [B], the starter wheel gear should turn freely.
  If not, the starter clutch is faulty. Replace it.

****



AC GENERATOR SHAFT

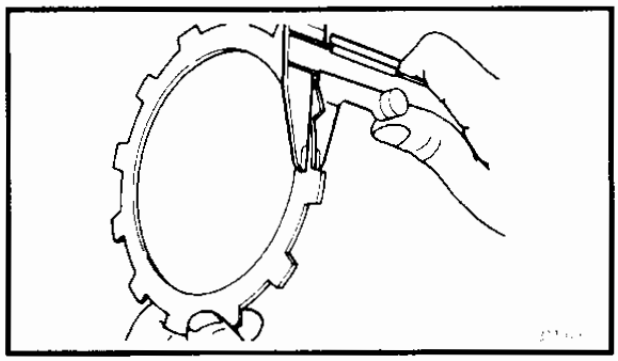
1.Check:

- Shaft and spline ①
  Wear/Damage → Replace.
- Oil passages
  Contamination → Wash and blow out oil passages
- Bearing ②
  Unsmooth operation → Replace.

CLUTCH

1.Inspect:

- Friction plate
  Damage/Wear → Replace friction plates as a set.



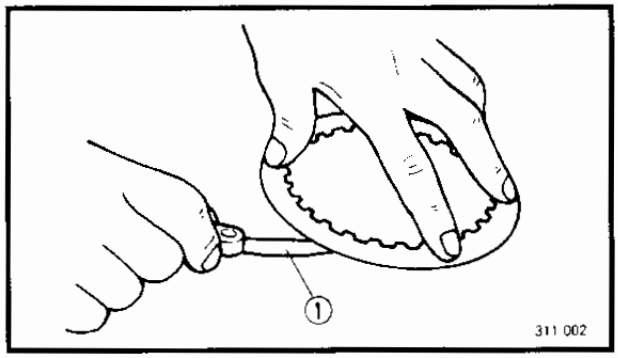
2.Measure:

- Friction plate thickness
  Out of specification → Replace friction plates as a set.
  Measure at four points.

Thickness:
2.9 ~ 3.1 mm (0.114 ~ 0.122 in)
<Limit: 2.8 mm (0.11 in)>

3.Inspect:

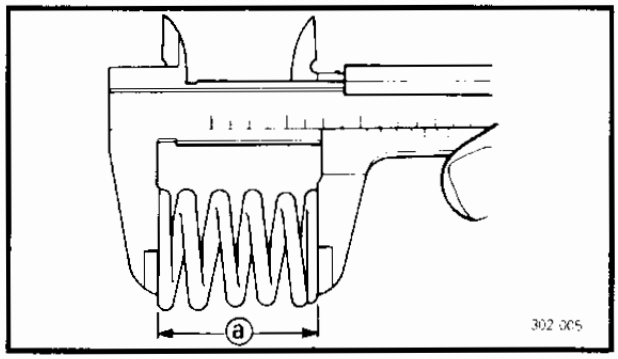
- Clutch plate
  Damage → Replace clutch plates as a set.



4.Measure:

- Clutch plate warpage
  Out of specification → Replace clutch plate as a set.
  Use a surface plate and feeler gauge ①.

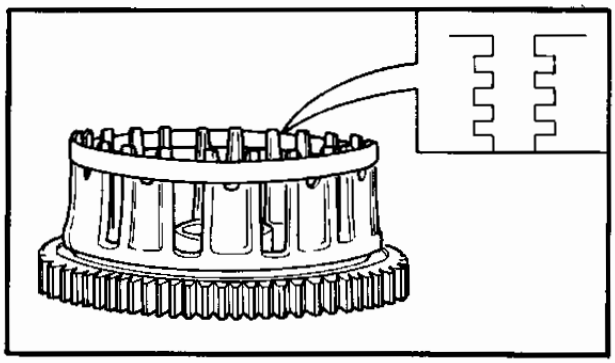
Warp limit:
Less than 0.1 mm (0.004 in)



5.Inspect:
- Clutch spring
  Damage → Replace springs as a set.

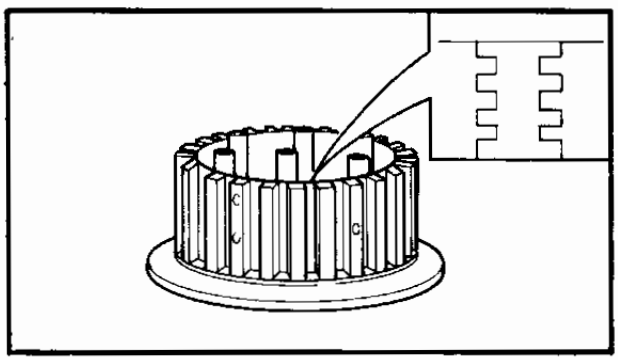
6.Measure:
- Free length ⓐ (clutch spring)
  Out of specification → Replace spring as a set.

Free length (clutch spring):
55 mm (2.17 in)
<Limit: 54 mm (2.13 in)>



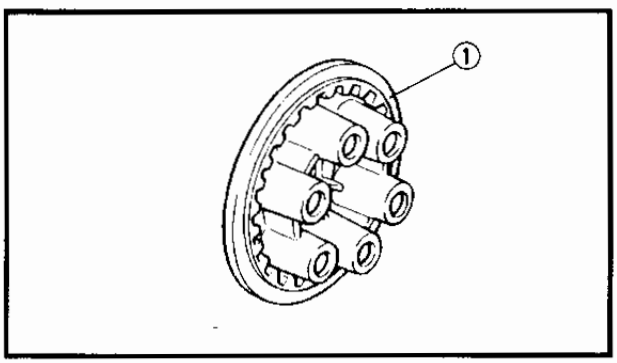
7.Inspect:
- Dogs
  (on the clutch housing)
  Pitting/Wear/Damage → Deburr or replace.
- Clutch housing bearing
  Wear/Damage → Replace clutch housing.

NOTE:
Pitting on the clutch housing dogs will cause erratic operation.

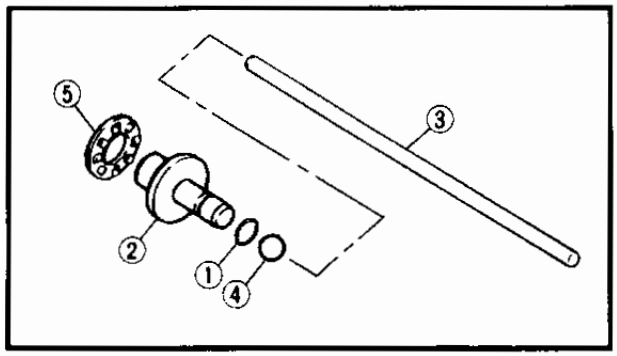


8.Inspect:
- Clutch boss splines
  Pitting/Wear/Damage → Replace clutch boss.

NOTE:
Pitting on the clutch boss splines will cause erratic operation.

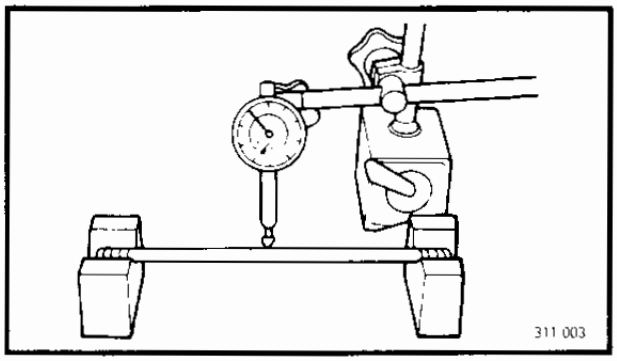


9.Inspect:
- Pressure plate ①
  Cracks/Damage → Replace.



10.Inspect:
- O-ring ①
- Push rod #1 ②
- Push rod #2 ③
- Ball ④
- Bearing ⑤

  Wear/Crack/Damage → Replace.

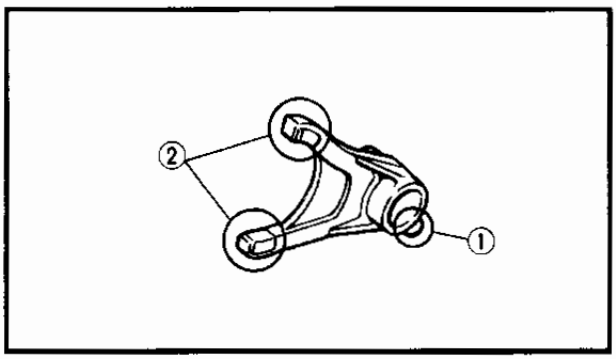


11.Measure:
- Push rod #2

  Out of specification → Replace.

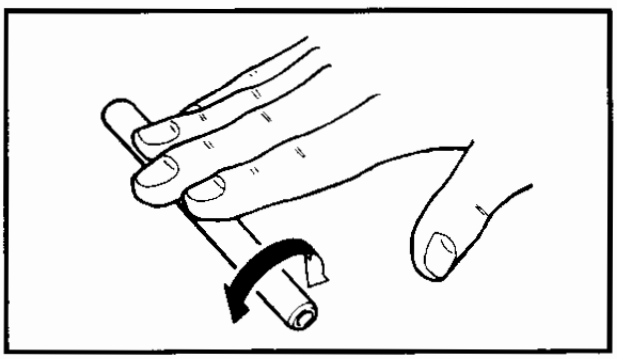
	Bending limit: **0.5 mm (0.02 in)**

TRANSMISSION AND SHIFTER



1.Inspect:
- Shift fork cam follower ①
- Shift fork pawl ②

  Scoring/Bends/Wear/Damage → Replace.



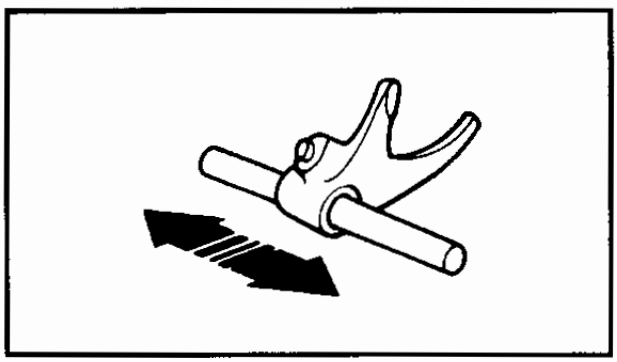
2.Inspect:
- Guide bar

  Roll the guide bar on a flat surface.

  Bends → Replace.

⚠ WARNING

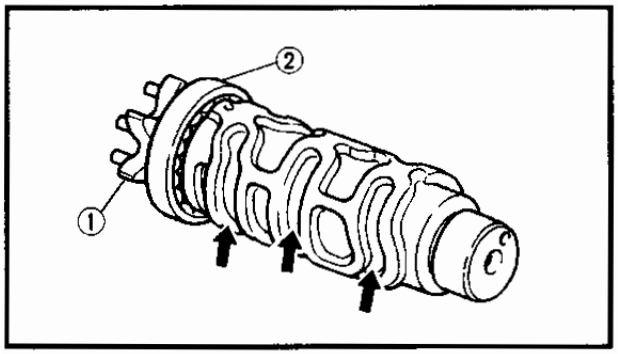
Do not attempt to straighten a bent guide bar.



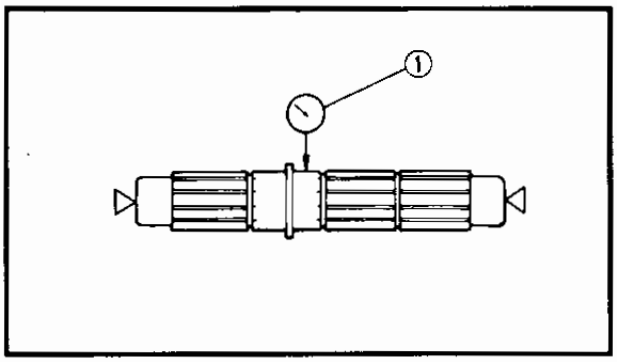
3.Check:
- Shift fork movement

  (on its guide bar)

  Unsmooth operation → Replace the fork and guide bar.

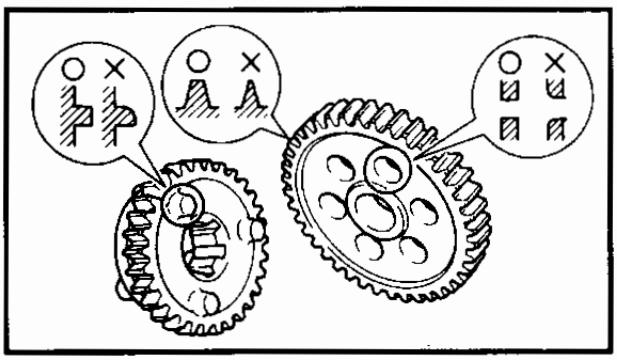


4.Inspect:
- Shift cam grooves
  Wear/Damage/Scratches → Replace.
- Shift cam segment ①
  Damage/Wear → Replace.
- Shift cam bearing ②
  Pitting/Damage → Replace.

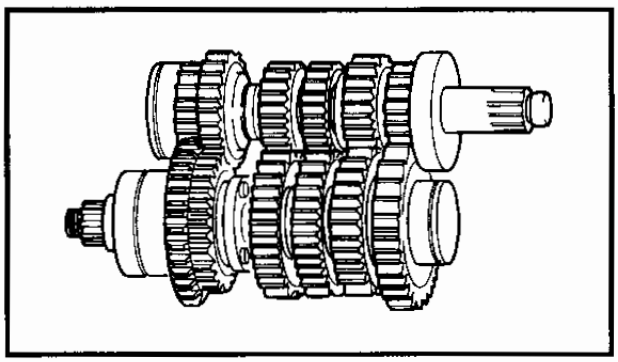


5.Measure:
- Axle runout (main and drive)
  Use a centering device and dial gauge ①.
  Out of specification → Replace.

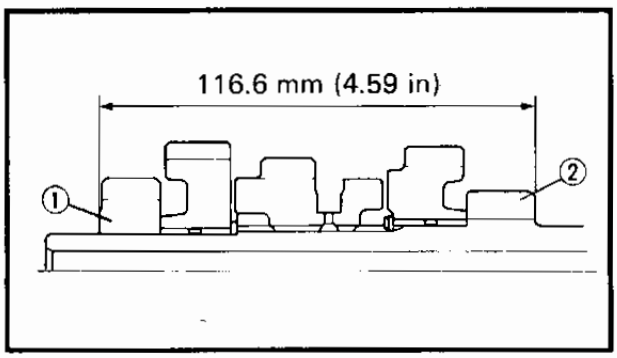
Runout limit:
0.08 mm (0.003 in)



6.Inspect:
- Gear teeth
  Blue discoloration/Pitting/Wear → Replace.
- Mated dogs
  Rounded edges/Cracks/Missing portions → Replace.



7.Check:
- Proper gear engagement (each gear) (to its counter part)
  Incorrect → Reassemble.
- Gear movement
  Roughness → Replace.

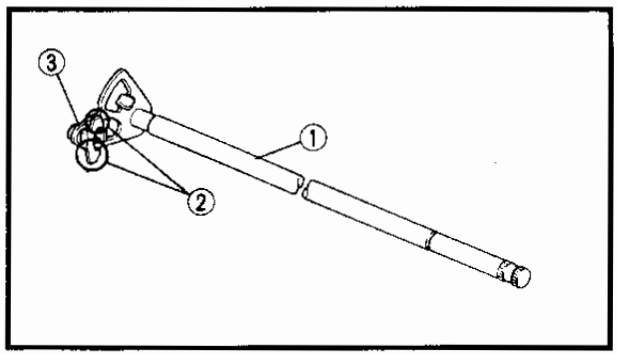


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Transmission gear reassembling point:
Press the 2nd pinion gear ① in the main axle ② as shown.

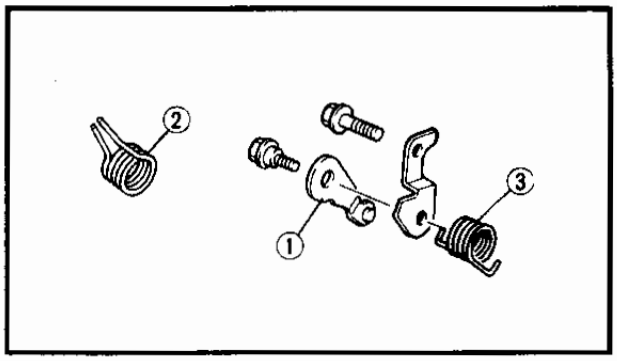
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8.Inspect:
- Circlips
  Damage/Looseness/Bends → Replace.



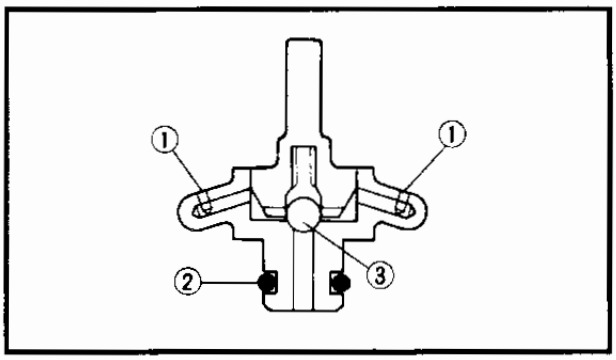
SHIFT SHAFT AND STOPPER LEVER

1.Inspect:
- Shift shaft ①
- Shift pawls ②
- Return spring ③ (shift pawls)
  Bends/Wear/Damage → Replace.



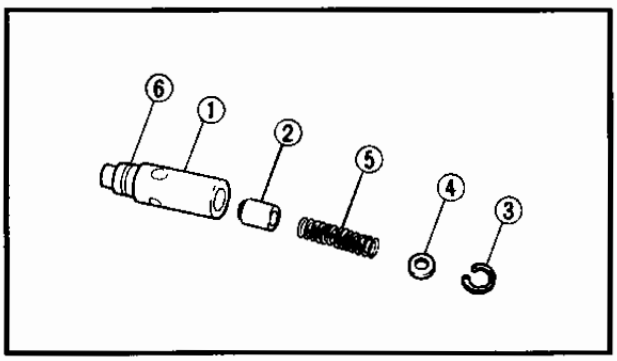
2.Inspect:
- Stopper lever ①
  Roller turns roughly → Replace.
  Bends/Damage → Replace.

3.Inspect:
- Return spring ② (shift shaft)
- Return spring ③ (stopper lever)
  Wear/Damage → Replace.



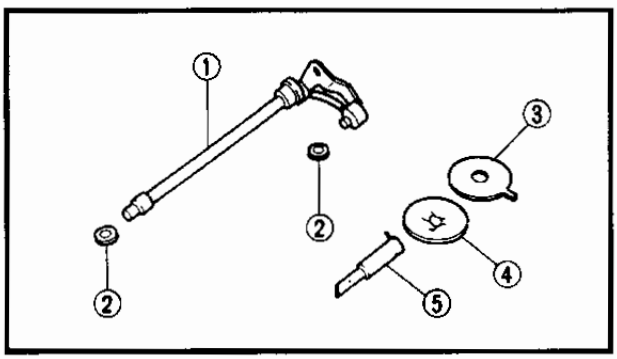
OIL-JET NOZZLE

1.Check:
- Oil-jet nozzles ①
- O-ring ②
- Check ball ③
  Damage/Wear → Replace.
- Oil jet passage
  Clogged → Blow out with compressed air.

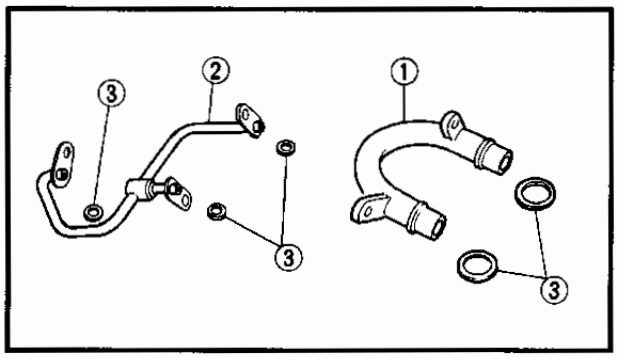


RELIEF VALVE, OIL PIPE AND STRAINER

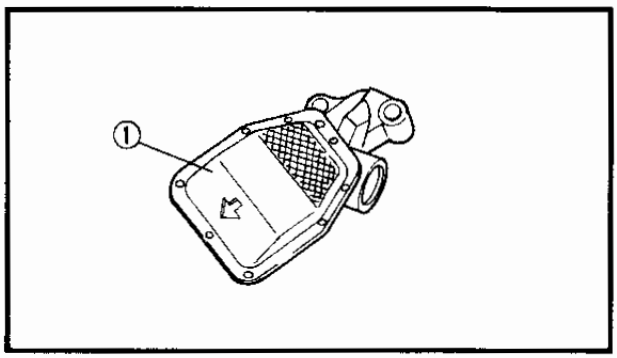
1.Check:
- Relief valve body ①
- Valve ②
- Circlip ③
- Spring seat ④
- Spring ⑤
- O-ring ⑥
  Damage/Wear → Replace.



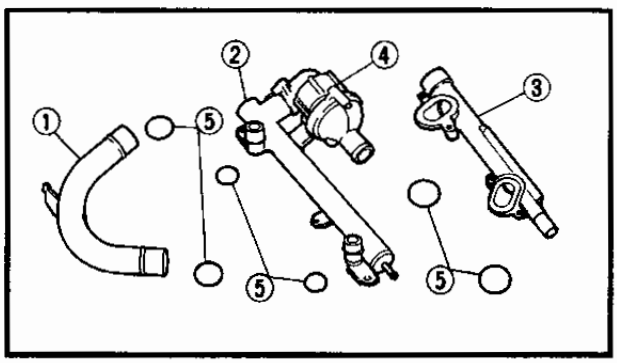
2.Check:
- Oil delivery pipe #5 ①
- O-rings ②
- Oil plug plate ③
- Gasket ④
- Oil spray nozzle ⑤
  Damage → Replace.
  Contamination → Wash and blow out the passage.



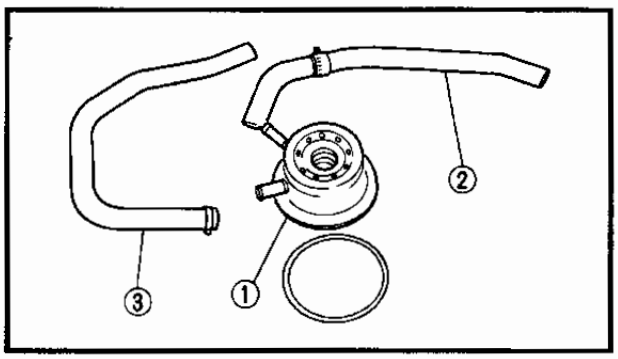
3.Check:
- Oil pipe #2 ①
- Oil delivery pipe #1 ②
- O-rings ③
  Damage → Replace.
  Contamination → Wash and blow out the passage.



4.Inspect:
- Oil strainer ①
  Damage → Replace.



5.Check:
- Coolant pipe ①
- Water jacket joint (outlet ② and inlet ③)
- Thermostatic housing ④
- O-rings ⑤
  Damage → Replace.
  Refer to the "COOLING SYSTEM" section in CHAPTER 5.

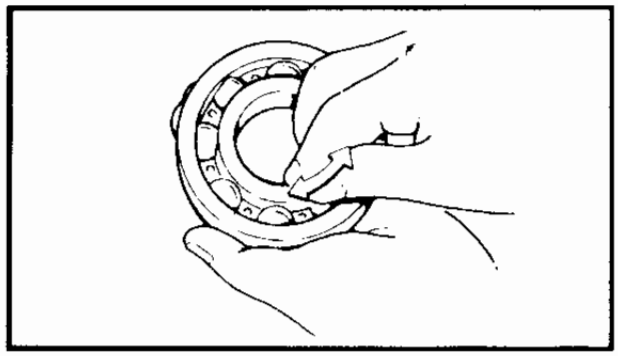


OIL COOLER

1.Check:
- Oil cooler ①
- Inlet hose ② (oil cooler)
- Outlet hose ③ (oil cooler)
  Cracks/Wear/Damage → Replace.

CRANKCASE

1.Thoroughly wash the case halves in mild solvent.
2.Clean all the gasket mating surfaces and crankcase mating surfaces thoroughly.
3.Inspect:
- Crankcase
  Cracks/Damage → Replace.
- Oil delivery passages
  Clogged → Blow out with compressed air.



BEARING AND OIL SEAL

1.Inspect:
- Bearings
  Clean and lubricate, then rotate inner race with finger.
  Roughness → Replace.

2.Inspect:
- Oil seals
  Damage/Wear → Replace.

CIRCLIP AND WASHER

1.Inspect:
- Circlips
- Washers
  Damage/Looseness/Bends → Replace.

ENGINE ASSEMBLY AND ADJUSTMENT

⚠ WARNING

For engine reassembly, replace the following parts with new ones.

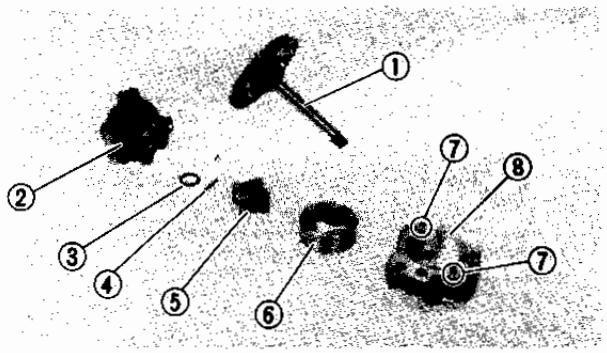
- **O-ring**
- **Gasket**
- **Oil seal**
- **Copper washer**
- **Lock washer**
- **Circlip**

OIL PUMP

1.Lubricate:

- Inner rotor
- Outer rotor
- Pump shaft

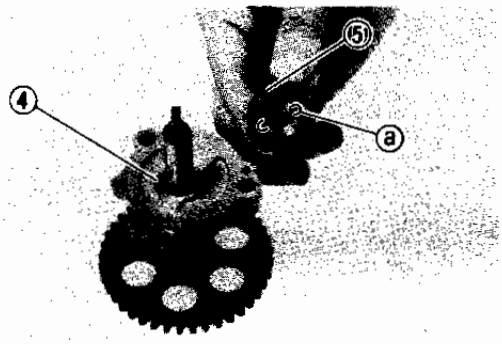
	Recommended lubricant: SAE 10W30 motor oil



2.Install:

- Pump shaft ①
  (to pump cover ②)
- Washer ③
- Pin ④
- Inner rotor ⑤
- Outer rotor ⑥
- Dowel pins ⑦
- Pump housing ⑧
- Screw

	Screw (pump housing): 7 Nm (0.7 m • kg, 5.1 ft • lb)

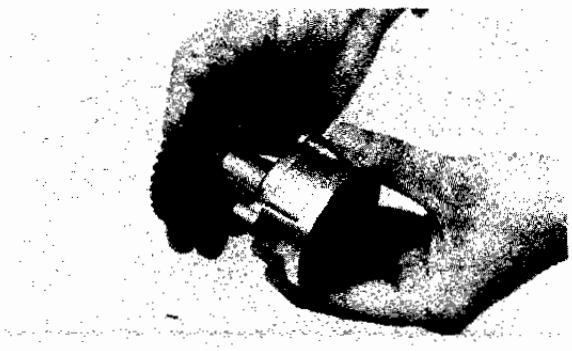


NOTE:

When installing the inner rotor, align the pin ④ in the pump shaft with the groove ⓐ on the inner rotor ⑤.

3.Check:

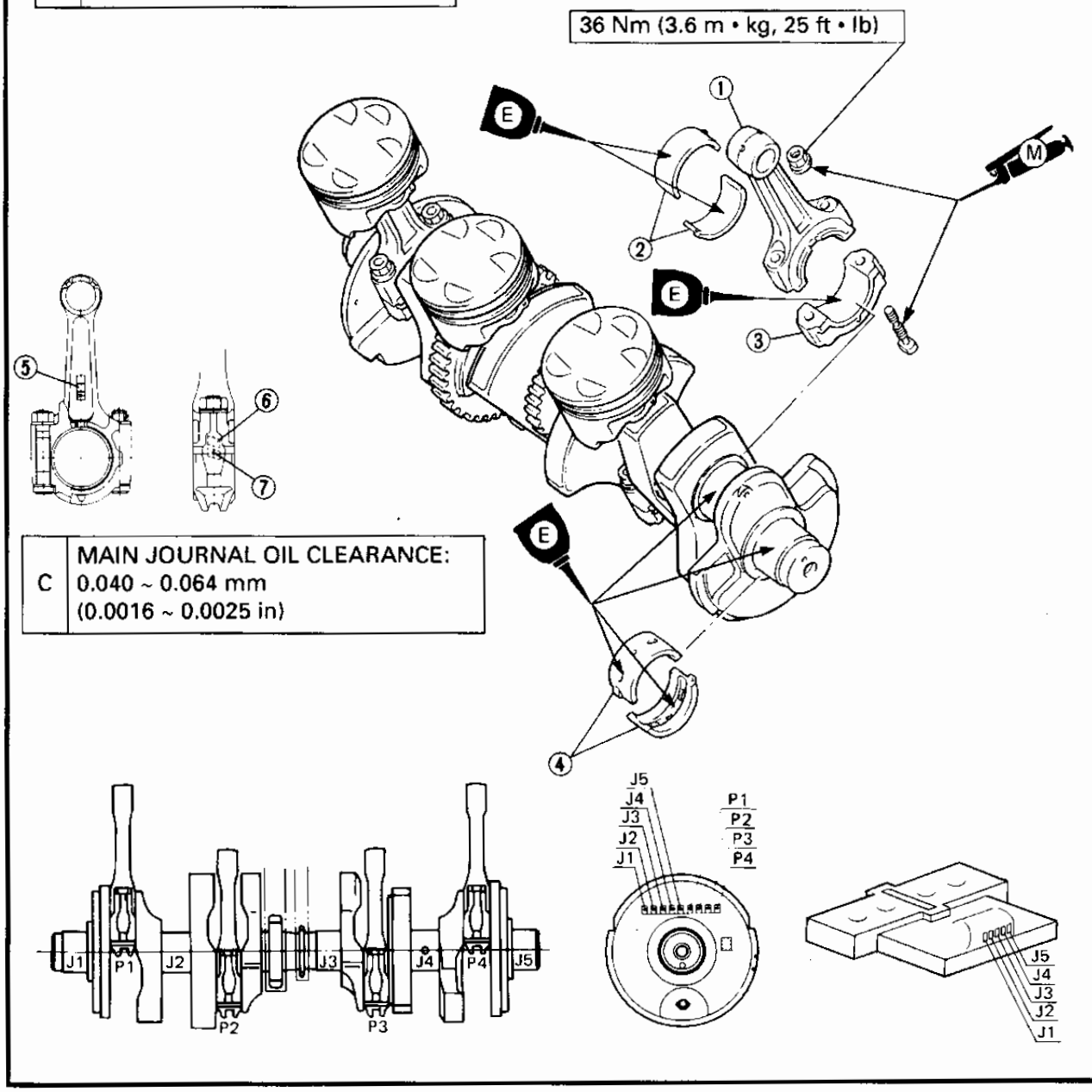
- Oil pump operation
  Refer to the "INSPECTION AND REPAIR - OIL PUMP" section.



CONNECTING ROD AND CRANKSHAFT

①Connecting rod
②Plane bearing (connecting rod)
③Connecting rod cap
④Plain bearing (crankshaft-main journal)
⑤Projection mark
⑥Crank pin bearing size
⑦Connecting rod weight number

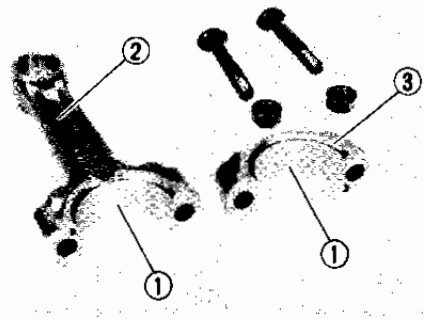
A	CRANKSHAFT RUNOUT LIMIT: 0.03 mm (0.0012 in)
B	CRANK PIN OIL CLEARANCE: 0.032 ~ 0.056 mm (0.001 ~ 0.002 in)



C	MAIN JOURNAL OIL CLEARANCE: 0.040 ~ 0.064 mm (0.0016 ~ 0.0025 in)

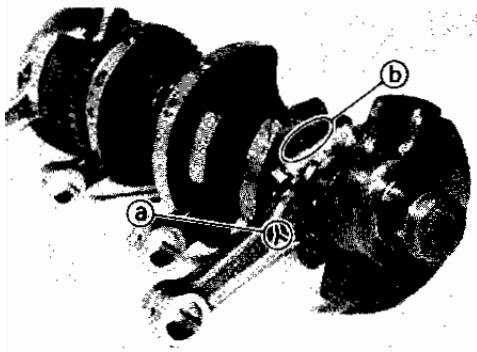
CONNECTING ROD

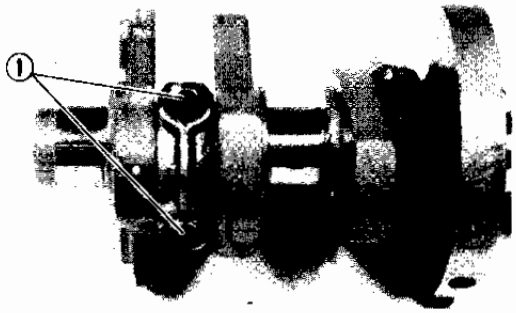
1.Apply:
- Molybdenum disulfide grease (onto threads of bolts and nut seats)
- Engine oil (onto crank pins, crank pin bearings and inner surfaces of connecting rods)



2.Install:
- Bearings ① (crank pin)
- Connecting rods ②
- Connecting rod caps ③ (onto crank pins)

NOTE:
- Align the projection of bearing with the groove of the caps and connecting rod.
- Make sure to reinstalle each connecting rod bearing in its original place.
- The stamped "Y" mark ⓐ on the connecting rods should face towards the left of the crankshaft.
- Be sure that the letter ⓑ on both components align to from a perfect character.





3.Align:
- Bolt head ① (with connecting rod cap)

4.Tighten:
- Nuts (connecting rods)

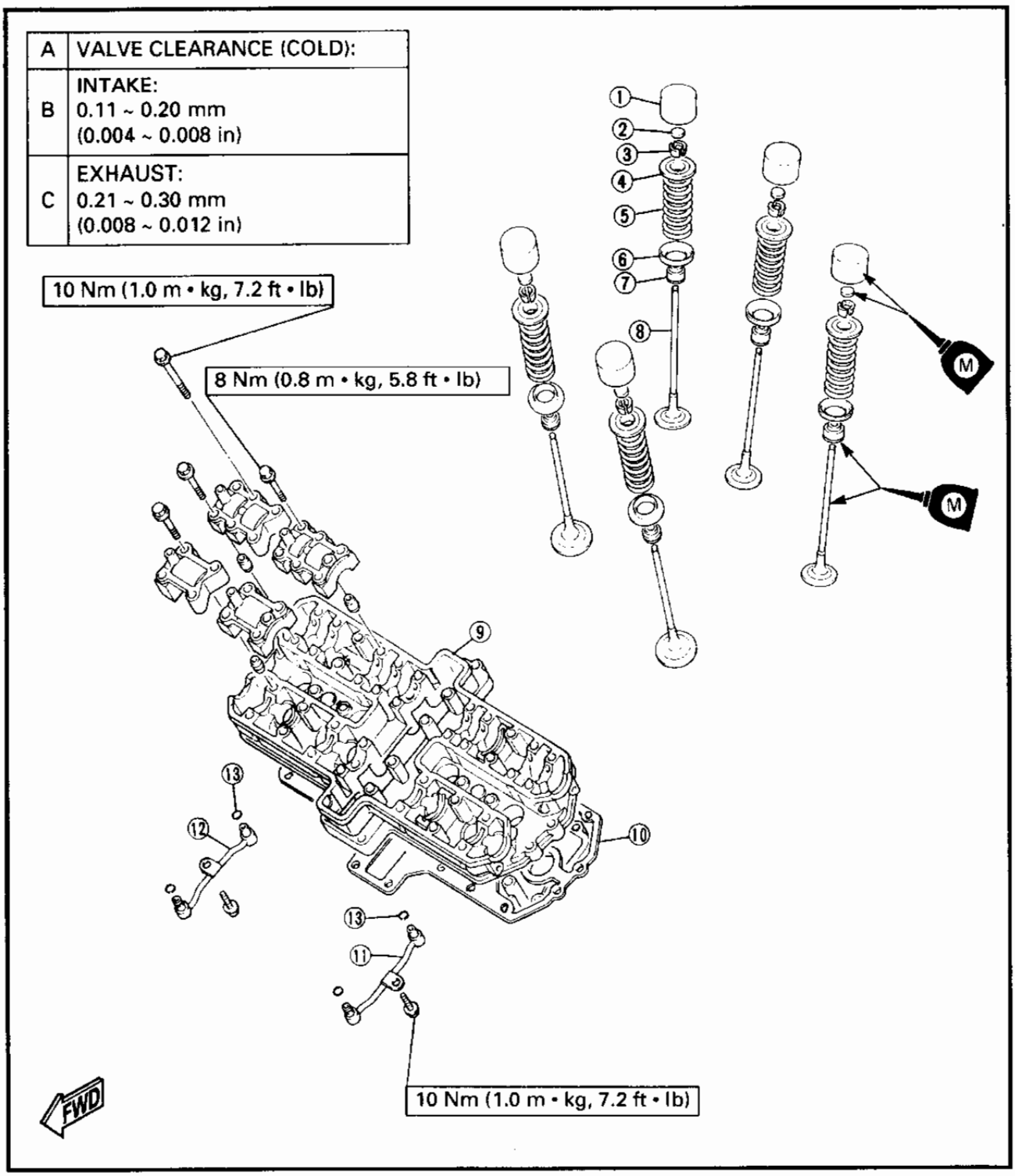
CAUTION:

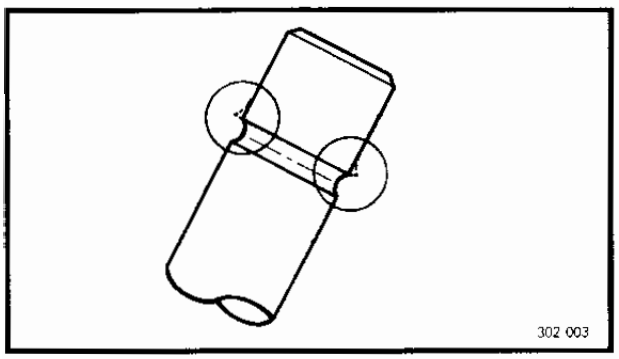
Tighten to full torque specification without pausing. Apply continuous torque between 2.0 and 3.6 m • kg. Once you reach 2.0 m • kg DO NOT STOP TIGHTENING until final torque is reached. If the tightening is interrupted between 2.0 and 3.6 m • kg, loosen the nut to less than 2.0 m • kg and start again.

	Nut (connecting rod): **36 Nm (3.6 m • kg, 25 ft • lb)**

VALVE AND CAMSHAFT CASE

①Valve lifter
②Pad
③Valve cotter
④Valve spring retainer
⑤Valve spring
⑥Spring seat
⑦Oil seal
⑧Valve
⑨Camshaft case
⑩Gasket (camshaft case)
⑪Oil delivery pipe #3
⑫Oil delivery pipe #4
⑬O-ring

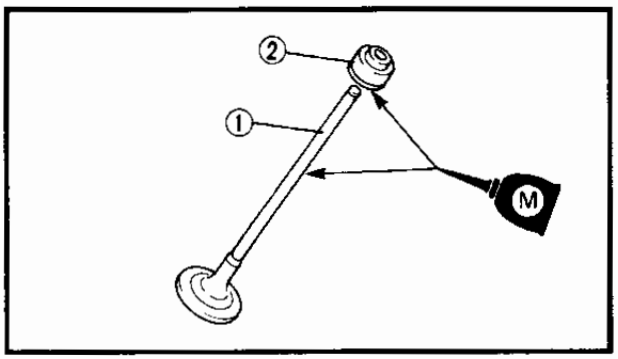




VALVE AND CAMSHAFT CASE

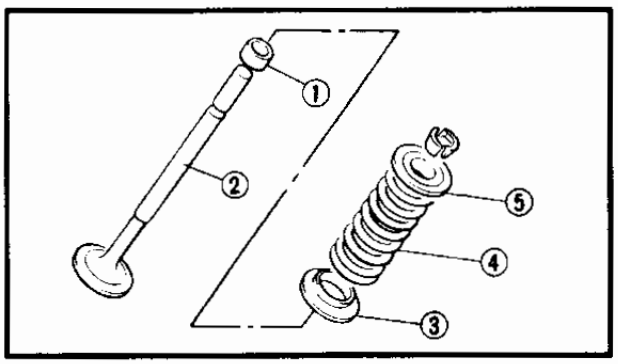
1.Deburr:

- Valve stem end
  Use an oil stone to smooth the stem end.



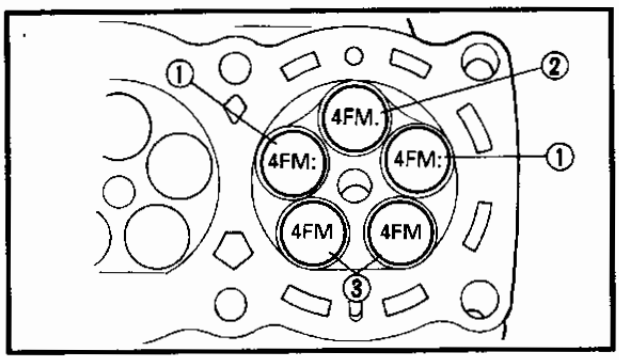
2.Apply:

- Molybdenum disulfide oil
  (onto valve stem ① and oil seal ②)



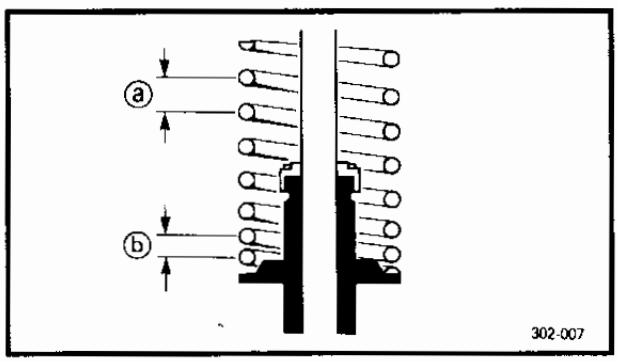
3.Install:

- Oil seal ①
- Valve ②
- Spring seat ③
- Valve spring ④
- Valve retainer ⑤
  (into cylinder head)



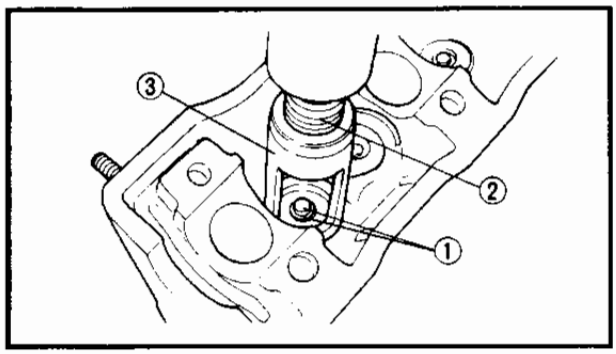
NOTE:

- Make sure that each valve is installed in its original place, also referring to the embossed mark as follows:
  Intake (right/left): "4FM:" ①
  Intake (middle): "4FM." ②
  Exhaust "4FM" ③



- Install the valve spring with the larger pitch ⓐ facing upwards.

ⓑ Smaller pitch



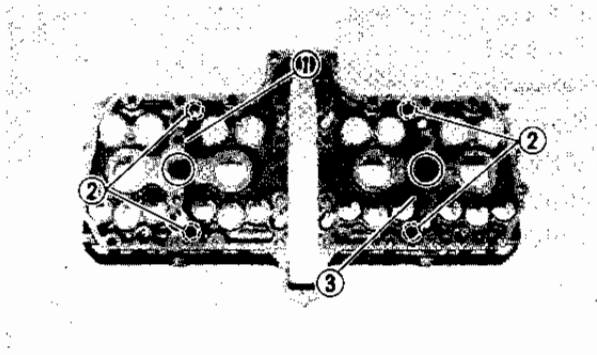
4.Install:
- Valve cotters ①

NOTE:
Install the valve cotters while compressing the valve spring with the valve spring compressor.

Valve spring compressor ②:
YM-04019, 90890-04019
Attachment ③:
(For exhaust valve)
YM-04108, 90890-04108
(For intake valve)
YM-04114, 90890-04114

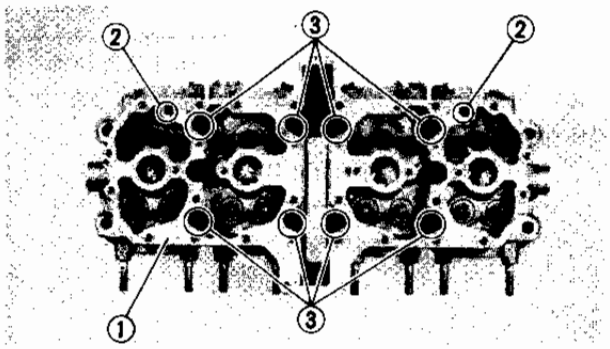
5.Secure the valve cotters ① onto the valve stem by tapping lightly with a piece of wood.

NOTE:
Do not hit so much as to damage the valve.



6.Install:
- Oil delivery pipe #4 ①
  (with O-rings ②)
- Oil delivery pipe #3 ③
  (with O-rings ②)
  (onto camshaft case)

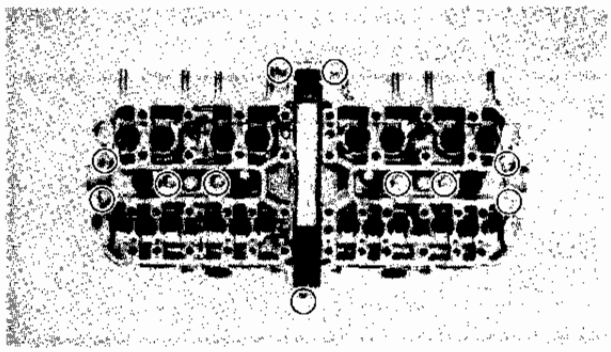
Bolt (oil delivery pipe #3/#4):
10 Nm (1.0 m • kg, 7.2 ft • lb)



7.Install:
- Gasket ① (camshaft case)
- Dowel pins ②
- Nut ③

NOTE:
Be sure the "UP" mark is correctly readable.

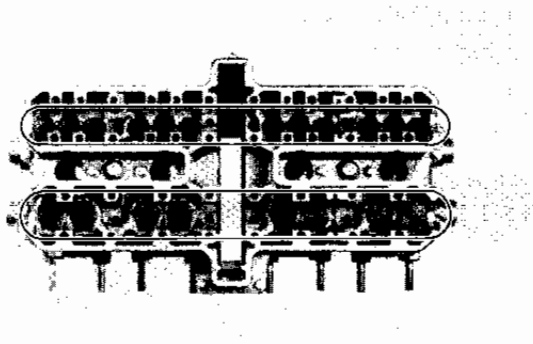
⚠ WARNING
Always use a new gasket (camshaft case).



8.Install:
- Camshaft case

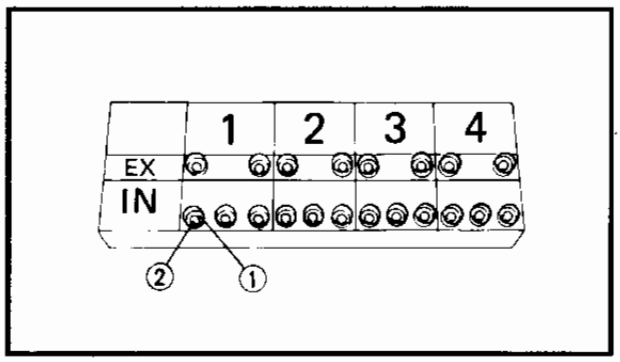
Bolt (camshaft case):
10 Nm (1.0 m • kg, 7.2 ft • lb)

NOTE:
- Apply molybdenum disulfide oil to the bolt threads.
- Tighten the bolts in a crisscross pattern starting from the center.



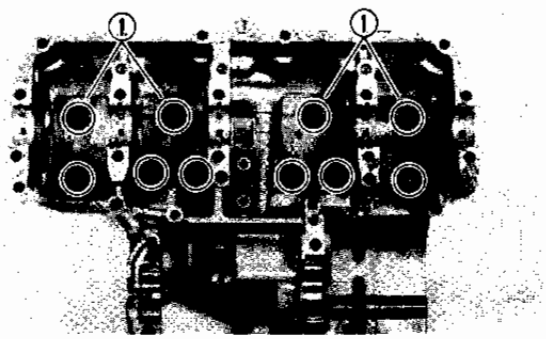
9.Install:
- Pads ①
- Valve lifters ②

NOTE:
- Apply molybdenums disulfide oil to the valve lifters and pads.
- The valve lifters must move smoothly when rotated with the finger.
- Each valve lifter and pad must be reinstalled in its original position.



SHIFT FORK AND SHIFT CAM

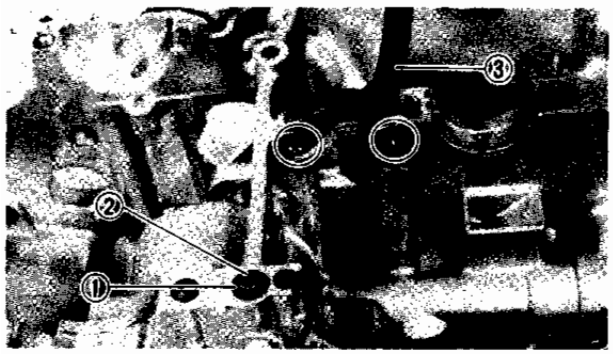
1.Install:
- Baffle plates ①





Bolts (baffle plate):
10 Nm (1.0 m • kg, 7.2 ft • lb)
LOCTITE®

2.Install:
- O-ring ①
- Dowel pin ②
- Timing chain guide ③ (intake side)





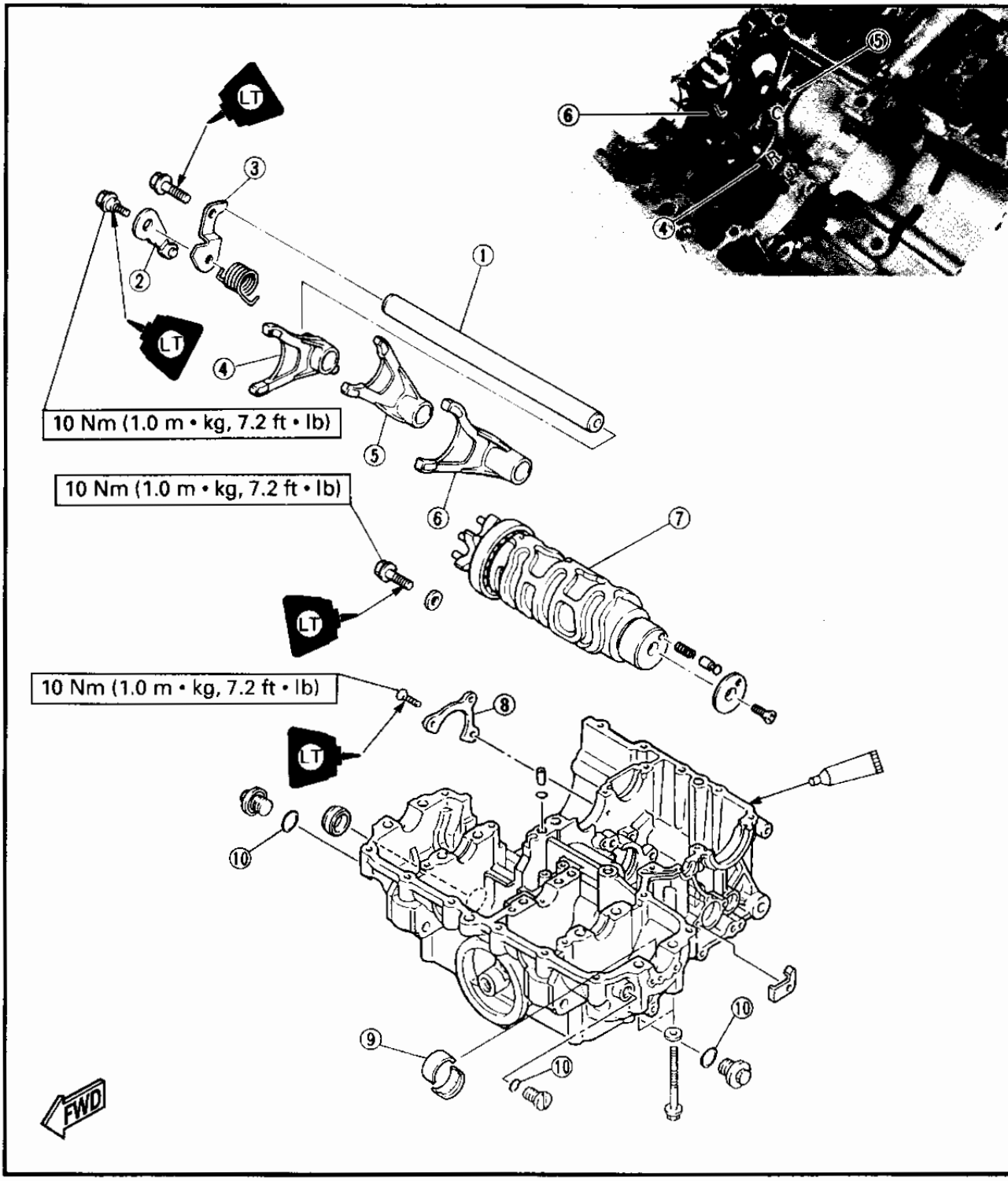
Bolt (chain guide):
10 Nm (1.0 m • kg, 7.2 ft • lb)

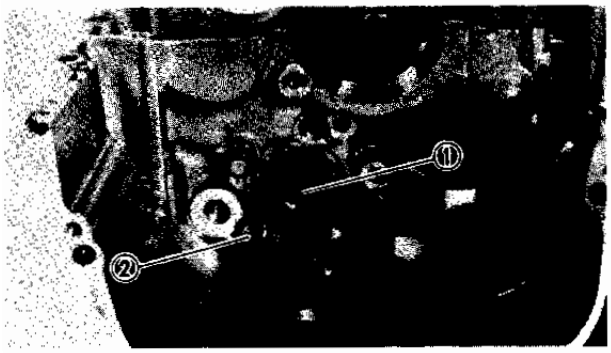
⚠ WARNING

Always use a new O-ring.

LOWER CRANKCASE

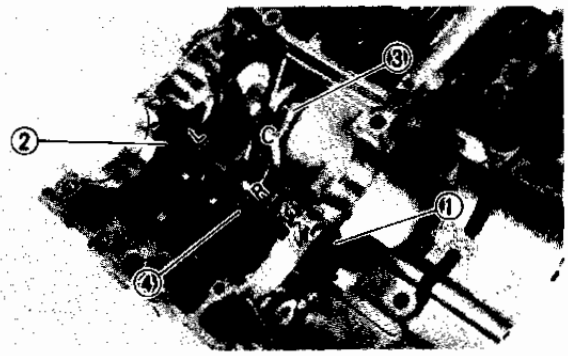
①Guide bar
②Stopper lever
③Guide bar stopper
④Shift fork (R)
⑤Shift fork (C)
⑥Shift fork (L)
⑦Shift cam
⑧Bearing retainer (main axle)
⑨Bearing (main journal)
⑩O-ring





3.Install:
- Shift cam assembly ①
- Bolt ② (bearing stopper) (with washer)

Bolt (bearing stopper):
10 Nm (1.0 m • kg, 7.2 ft • lb)
LOCTITE®



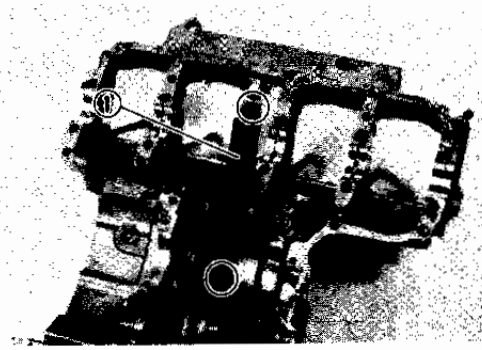
4.Install:
- Guide bar ① (shift fork)
- Shift fork "L" ②
- Shift fork "C" ③
- Shift fork "R" ④

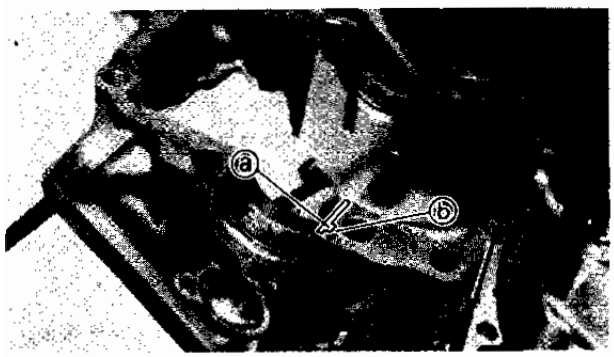
NOTE:
Install the shift forks with the embossed mark to the right and in sequence (R, C, L) beginning from the right.

STARTER CLUTCH AND CRANKSHAFT

1.Install:
- HY-VO chain guide ①

Bolt (HY-VO chain guide):
10 Nm (1.0 m • kg, 7.2 ft • lb)
LOCTITE®





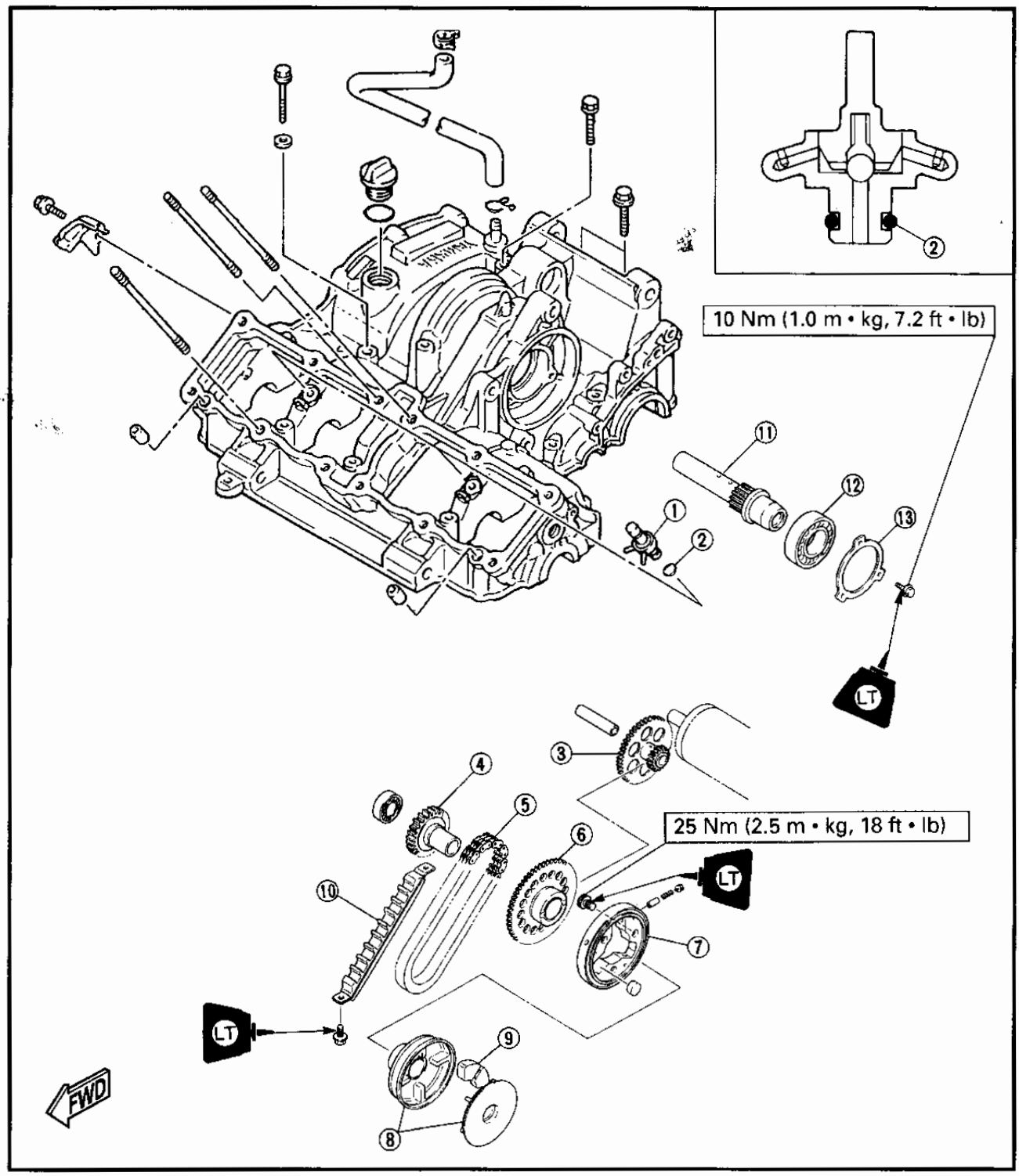
2.Install:
- Main journal bearings (onto upper crankcase)

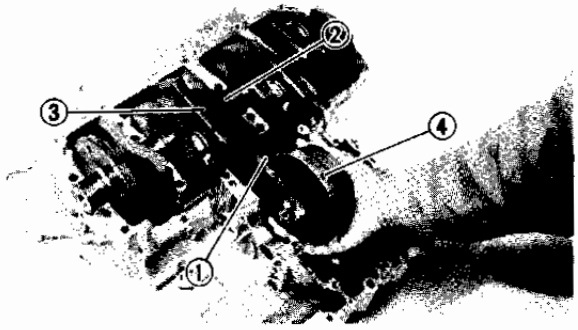
NOTE:
- Align the projection ⓐ of the bearing with the notch ⓑ in the case.
- Be sure to install each bearing (crankshaft) in its original place.

3.Apply engine oil to the bearing (main journal) surfaces.

UPPER CRANKCASE

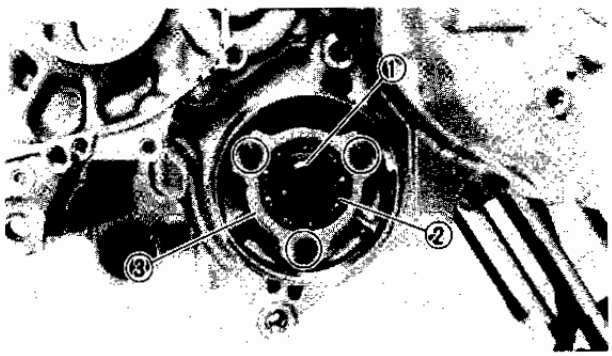
①Oil-Jet nozzle
②O-ring
③Starter idle gear
④Drive gear (AC generator)
⑤HY-VO chain
⑥Starter wheel gear
⑦Starter clutch
⑧Clutch hub
⑨Damper rubber
⑩HY-VO chain guide
⑪AC generator shaft
⑫Bearing
⑬Bearing retainer





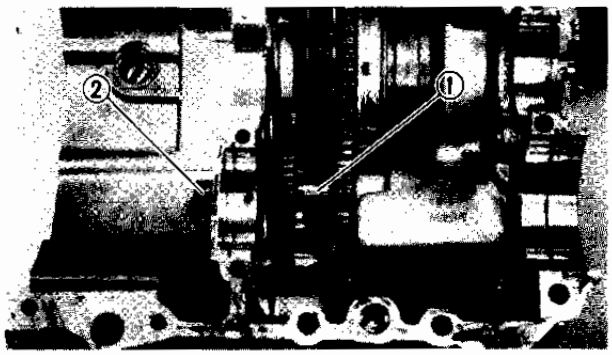
4.Install:
- HY-VO chain ①
- Timing chain ②
  (onto crankshaft)
- Crankshaft assembly ③
- Starter clutch assembly ④

NOTE:
- The stepped crankshaft end should point to the left.
- Pass the timing chain through the timing chain cavity and attach a retaining wire to it.

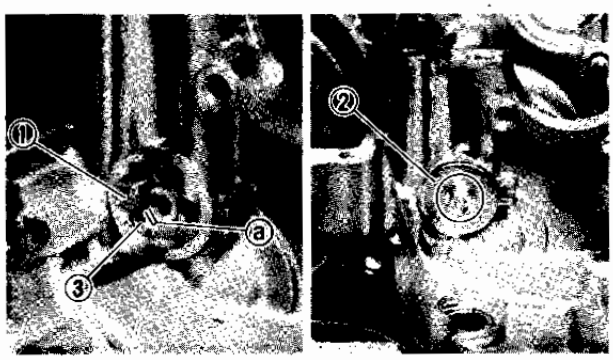


5.Install:
- AC generator shaft ①
- Bearing ②
- Bearing retainer ③
- Bolts

Bolt (bearing retainer):
10 Nm (1.0 m • kg, 7.2 ft • lb)
LOCTITE®



6.Install:
- Starter idle gear ①
- Shaft ②



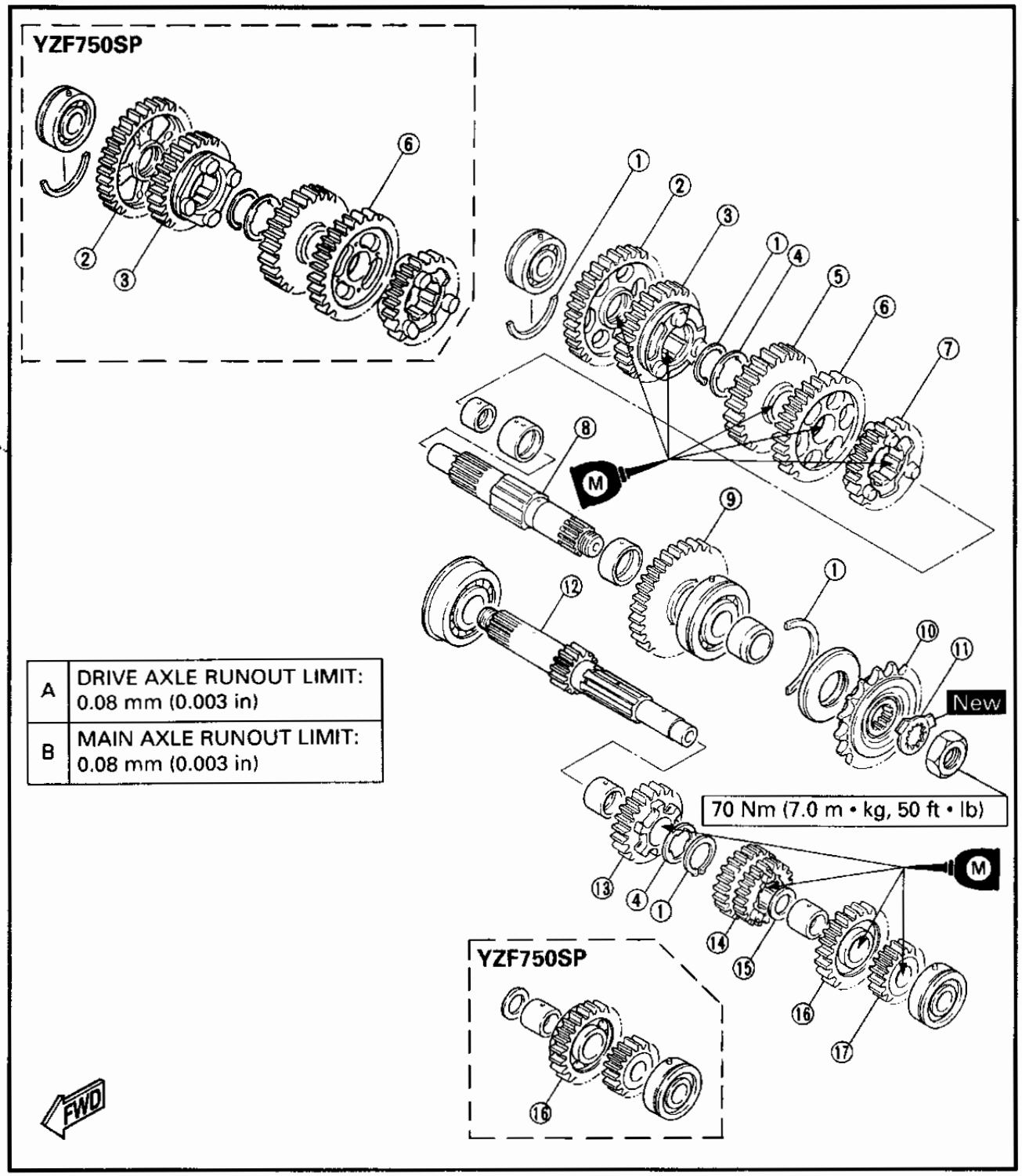
7.Install:
- Oil spray nozzle ①
- Gasket
- Oil plug plate ②

NOTE:
When installing the oil spray nozzles, align the pin ③ with the slot ⓐ in the crankcase.

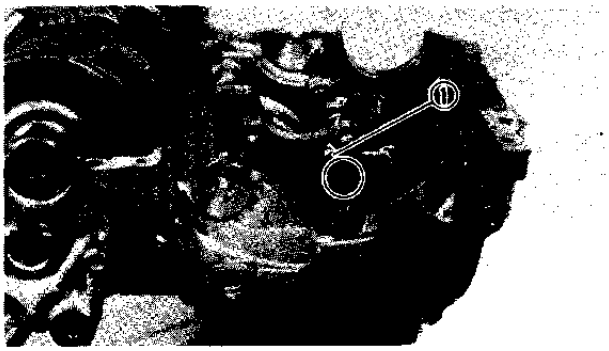
Bolt (oil plug plate):
10 Nm (1.0 m • kg, 7.2 ft • lb)
LOCTITE®

TRANSMISSION

①Circlip
②1st wheel gear
③5th wheel gear
④Thrust washer
⑤4th wheel gear
⑥3rd wheel gear
⑦6th wheel gear
⑧Drive axle
⑨2nd wheel gear
⑩Drive sprocket
⑪Lock washer
⑫Main axle
⑬5th pinion gear
⑭3rd pinion gear
⑮Plain washer
⑯6th pinion gear
⑰2nd pinion gear



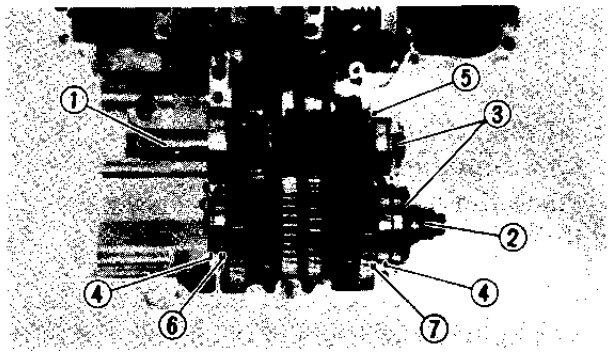
A	DRIVE AXLE RUNOUT LIMIT: 0.08 mm (0.003 in)
B	MAIN AXLE RUNOUT LIMIT: 0.08 mm (0.003 in)



8.Install:
- Oil delivery pipe #5 ①
  (with O-rings)

	Bolt (oil plug plate): **10 Nm (1.0 m • kg, 7.2 ft • lb)**

NOTE:
Lubricate the O-rings with lithium soap base grease.



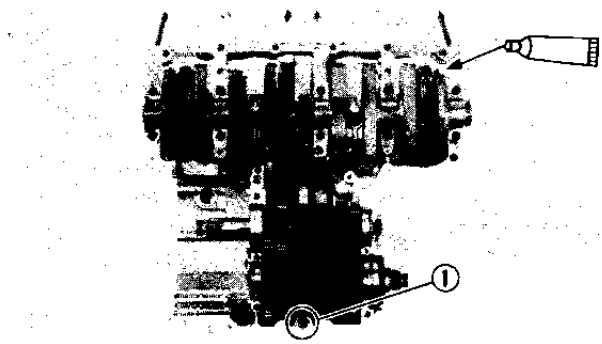
TRANSMISSION

1.Install:
- Main axle assembly ①
- Drive axle assembly ②
- Oil seals ③
- Circlips ④

NOTE:
- Be sure that the drive axle bearing circlips ④ are inserted into the upper crankcase positioning grooves.
- The main axle bearing pin ⑤ must point to the front of the crankcase, the drive axle bearing pin ⑥ and ⑦ to the rear side.

2.Check:
- Transmission
  Unsmooth rotation → Repair.

NOTE:
Oil each gear and bearing thoroughly.



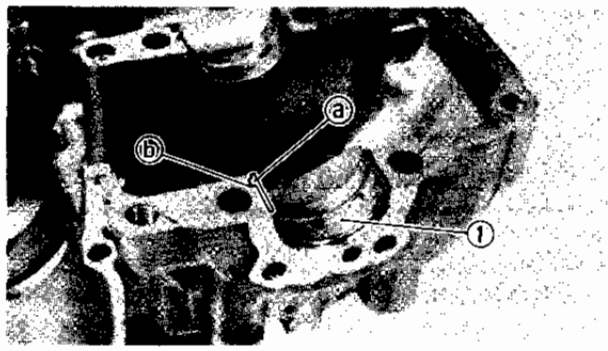
CRANKCASE ASSEMBLY

1.Apply:
- Engine oil
  (onto main journal bearings)
- Sealant
  (onto crankcase mating surfaces)

	Yamaha bond No. 1215: **90890-85505** **Quick gasket®:** **ACC-11001-15-01**

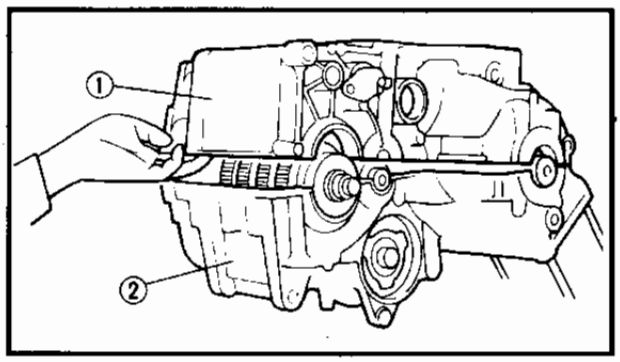
NOTE:
DO NOT ALLOW any sealant to come in contact with the oil gallery or crankshaft bearings. Do not apply sealant to within 2 ~ 3 mm (0.08 ~ 0.12 in) of the bearings.

2.Install:
- Dowel pin ①



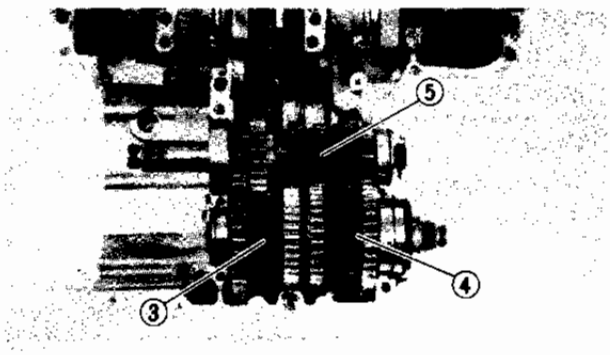
3.Install:
- Main journal bearings ①
  (onto lower crankcase)

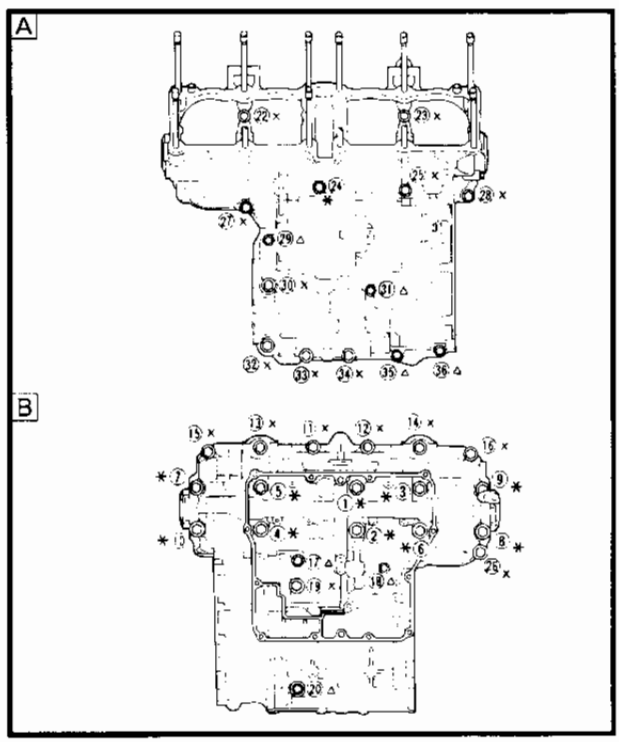
NOTE:
- Align the projection ⓐ of the bearing with the notch ⓑ in the crankcase.
- Install each bearing in its original place.



4.Set shift cam and transmission gears in "NEUTRAL" position.
5.Install:
- Lower crankcase ①
  (onto upper crankcase ②)
  Place the lower crankcase assembly onto the upper crankcase assembly.

NOTE:
- Carefully guide the shift forks so that they mesh smoothly with the transmission gears.
- Mesh the shift fork "L" with the 4th wheel gear ③ and "R" with the 5th wheel gear ④ on the drive axle.
- Mesh the shift fork "C" with the 3rd pinion gear ⑤ on the main axle.



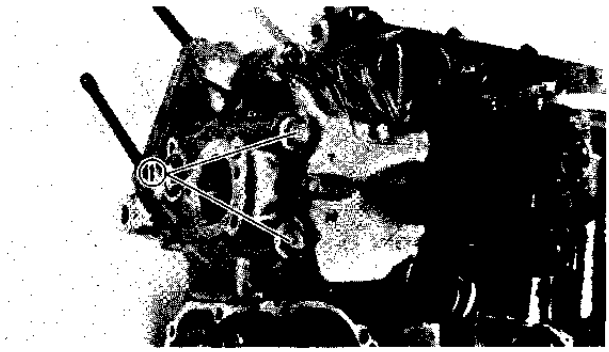


CAUTION:
Before tightening the crankcase bolts, check the following points:
- **Be sure the gears shift correctly when the shift cam is turned by hand.**

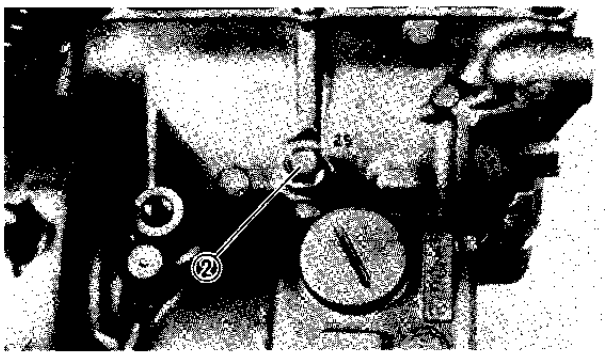
6.Tighten:
- Upper crankcase bolt
- Lower crankcase bolt
  (follow the proper tightening sequence)

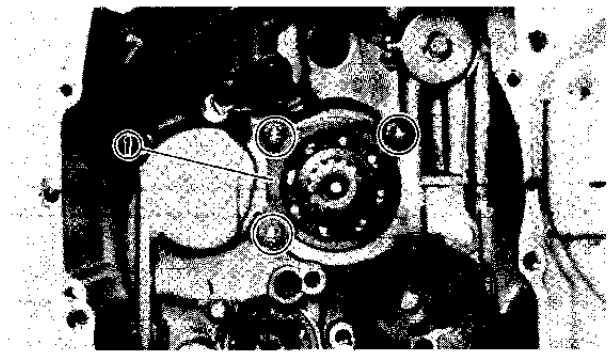
△ M6 bolt:
12 Nm (1.2 m • kg, 8.7 ft • lb)
× M8 bolt:
24 Nm (2.4 m • kg, 17 ft • lb)
✳ M9 bolt:
32 Nm (3.2 m • kg, 23 ft • lb)

A Upper crankcase
B Lower crankcase



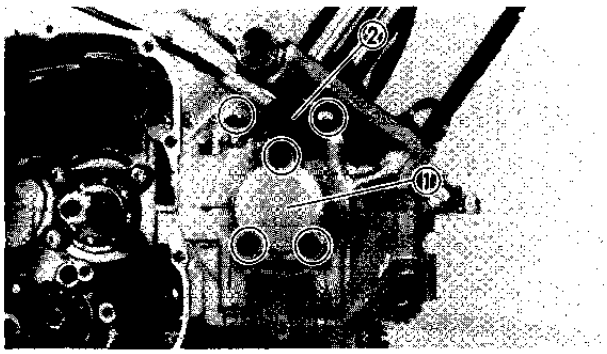
NOTE:
- Lubricate the threads of bolts with engine oil.
- Tighten the bolts in the tightening sequence cast on the crankcase.
- Install a washer ① on bolt No. 7, 8, 9 and 10.
- Install a copper washer ② on bolt No. 25.





7.Install:
- Bearing retainer ① (main axle)
  Use torx wrench (T30).

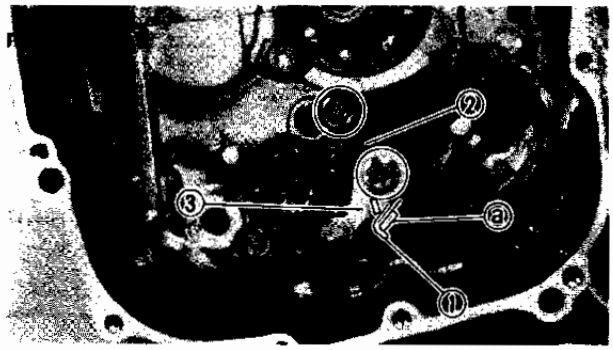
Screw (bearing retainer):
10 Nm (1.0 m • kg, 7.2 ft • lb)
LOCTITE®



8.Install:
- Crankshaft end cover ① (right)
  (with O-ring)
- Pickup coil ②
  (with O-ring)

Screw (crankshaft end cover):
7 Nm (0.7 m • kg, 5.1 ft • lb)
Bolt (pickup coil):
10 Nm (1.0 m • kg, 7.2 ft • lb)

NOTE:
Apply engine oil to the O-ring of the pickup coil.

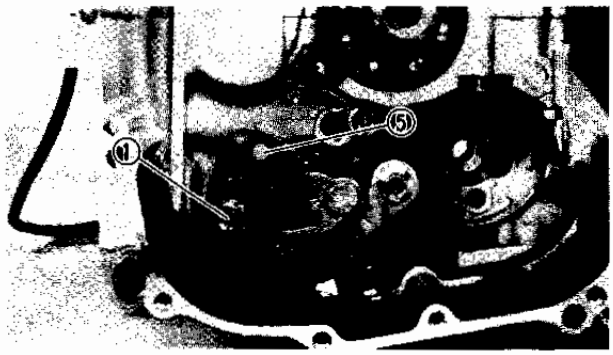


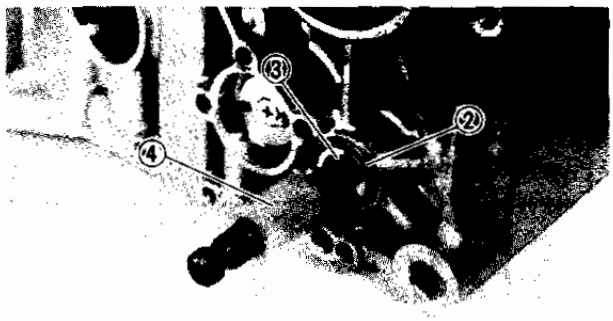
SHIFT SHAFT AND OIL PUMP

1.Install:
- Return spring ①
- Stopper plate ② (guide bar and bearing)
- Stopper lever ③

	Bolt (stopper plate/stopper lever): 10 Nm (1.0 m • kg, 7.2 ft • lb) LOCTITE®

NOTE:
- Hook the spring ends on the stopper lever ③ and crankcase boss ⓐ.
- Mesh the stopper lever ③ with the shift cam stopper.



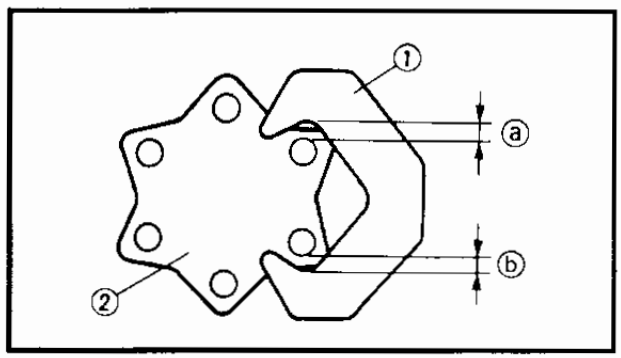


2.Install:
- Shift shaft ①
- Washer ②
- Circlip ③
- Collar ④

NOTE:
- Apply grease to the oil seal lips.
- Hook the spring ends onto the stopper ⑤.

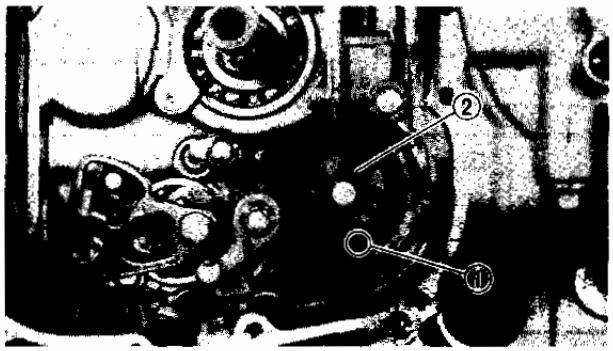
⚠ WARNING

Always use a new circlip.

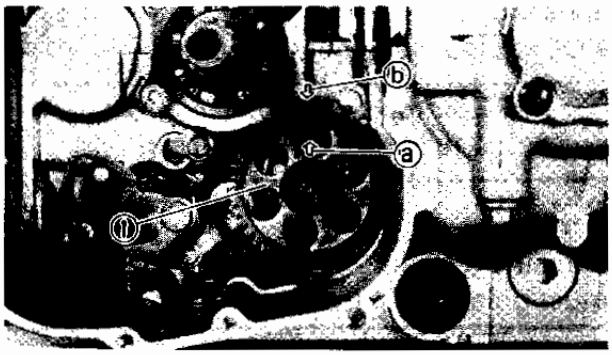


3.Check:
- Shift pawl ① position
  Gaps ⓐ and ⓑ are not equal → Replace defective parts.

②Shift cam



4.Install:
- Dowel pin ①
- Gasket ②

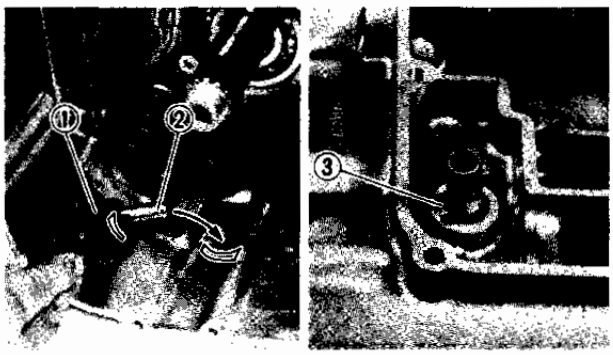


5.Install:
- Oil pump assembly ①

	Bolt (oil pump assembly): 10 Nm (1.0 m • kg, 7.2 ft • lb)

NOTE:
Align the arrow mark ⓐ on the oil pump with the arrow mark ⓑ on the crankcase.

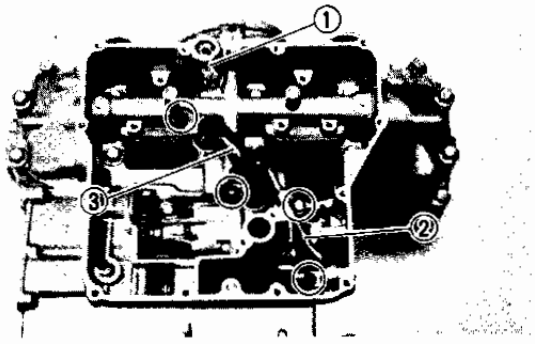
CAUTION:
Be sure that the oil pump turns smoothly after tightening the bolts.



OIL PAN AND OIL STRAINER

1.Install:
- Mounting rubber ①
- Oil pipe ②
- Circlip ③

NOTE:
Fit the mounting rubber correctly onto the crankcase.



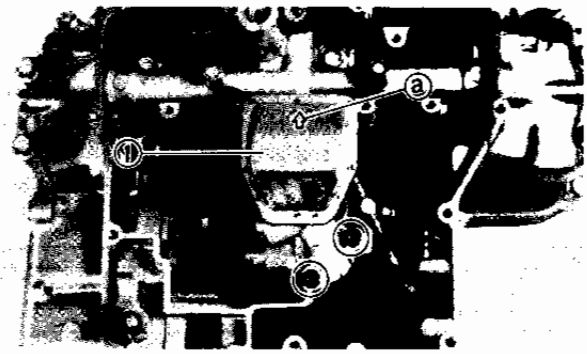
2.Install:
- O-rings
- Relief valve ①
- Oil delivery pipe #1 ②
- Oil pipe #2 ③

NOTE:
Apply engine oil to the O-rings.

⚠ WARNING

Always use new O-rings.

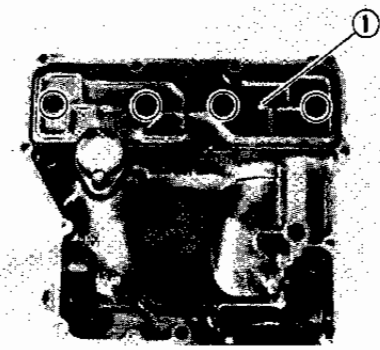
Bolt (oil delivery pipe #1):
10 Nm (1.0 m • kg, 7.2 ft • lb)
LOCTITE®
Bolt (oil delivery pipe #2):
10 Nm (1.0 m • kg, 7.2 ft • lb)



3.Install:
- Oil strainer assembly ①

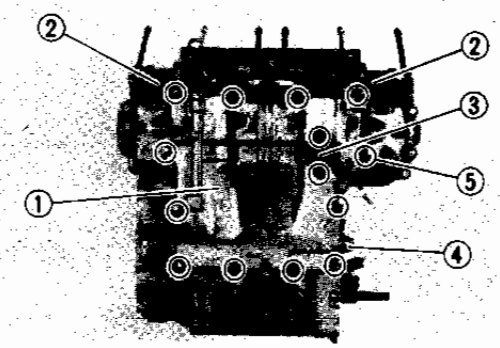
Bolt (oil strainer):
10 Nm (1.0 m • kg, 7.2 ft • lb)

NOTE:
The arrow mark ⓐ on the strainer cover must point to the front of the engine.



4.Install:
- Baffle plate ① (oil pan)

Bolt (baffle plate):
10 Nm (1.0 m • kg, 7.2 ft • lb)
LOCTITE®



5.Install:
- Dowel pins
- Gasket (oil pan)
- Oil pan ①
- Stays ②
  (lower cowling)
- Oil level switch ③
  (with O-ring)
- Drain bolt ④
  (with copper washer)

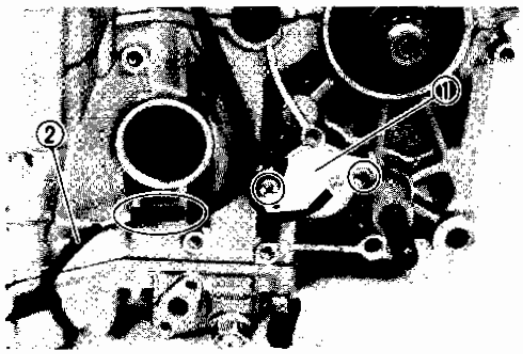
⑤Clamp (oil level switch lead)

⚠ WARNING

Always use new copper washer and gasket.

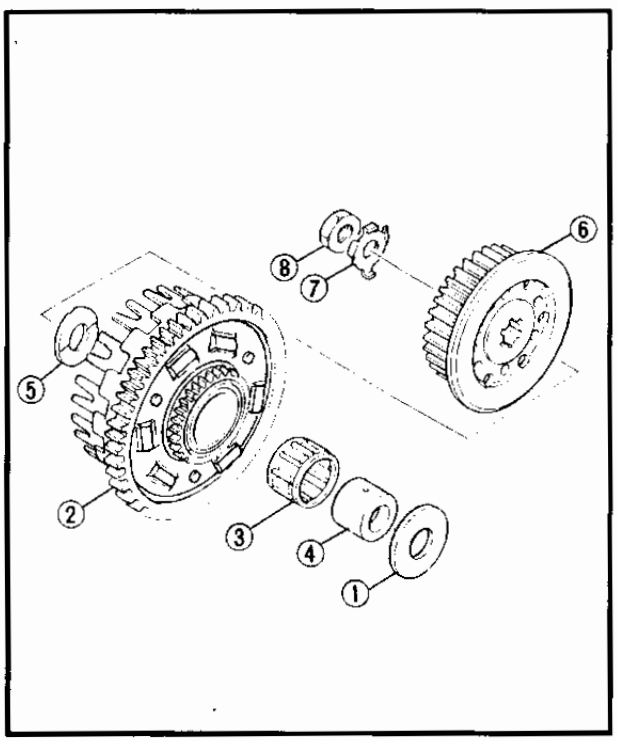
NOTE:
- Tighten the bolts (oil pan) in a crisscross pattern.
- Apply engine oil to the O-ring of the oil level switch.

Bolt (oil pan):
10 Nm (1.0 m • kg, 7.2 ft • lb)
Bolt (oil level switch):
10 Nm (1.0 m • kg, 7.2 ft • lb)
Drain bolt:
43 Nm (4.3 m • kg, 31 ft • lb)



6.Install:
- Neutral switch ①

7.Connect:
- Oil level switch lead ②



CLUTCH

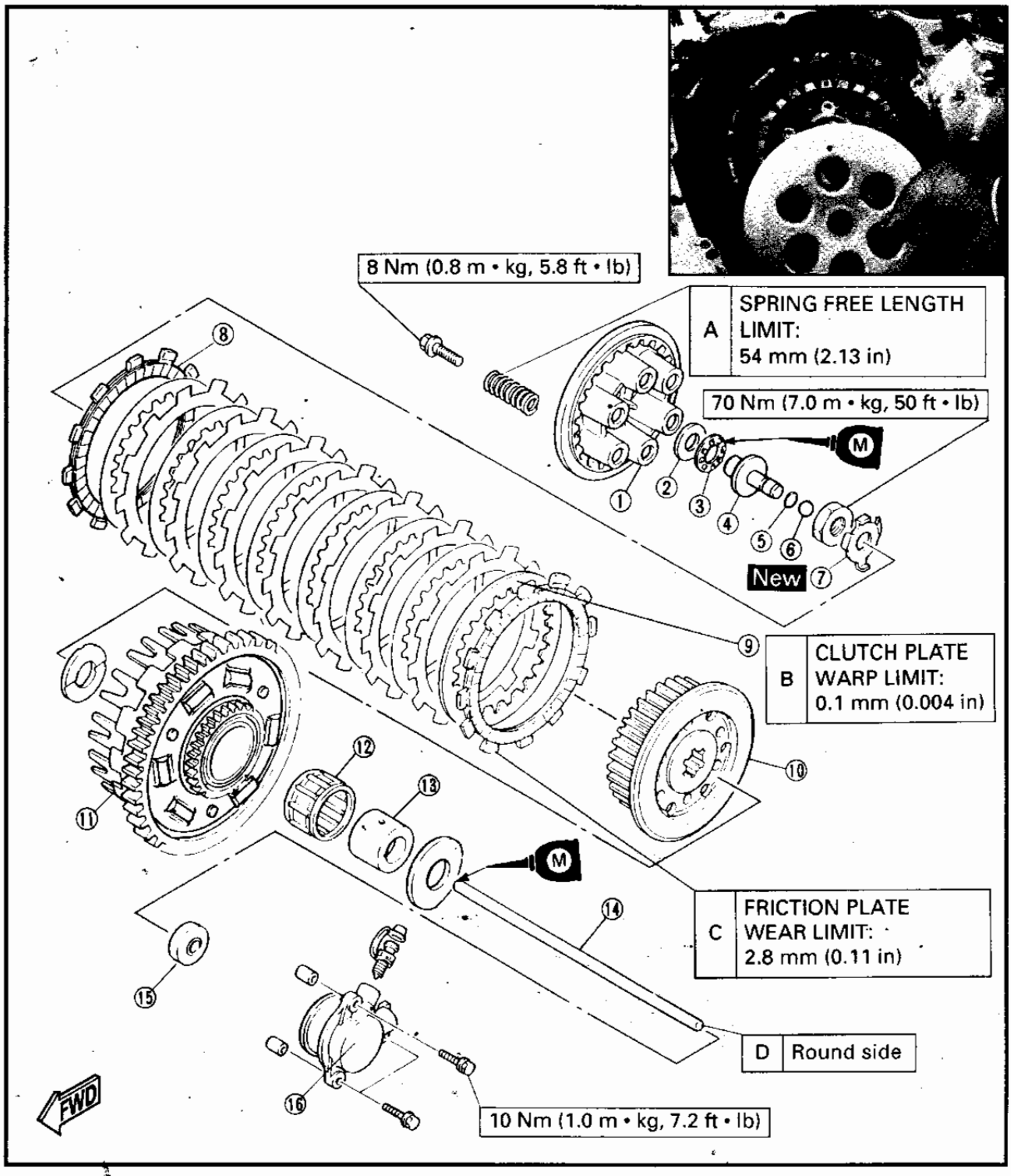
1.Install:
- Thrust washer ①
- Clutch housing ②
- Bearing ③
- Spacer ④
- Thrust washer ⑤
- Clutch boss ⑥
- Lock washer ⑦
- Nut ⑧ (clutch boss)

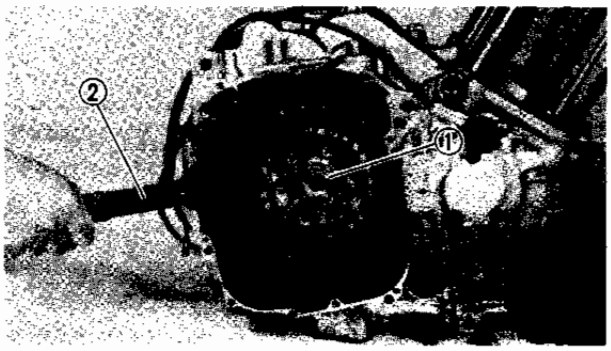
NOTE:
Install the spacer ④ with the two screw holes towards the clutch boss.

⚠ WARNING
Always use a new lock washer.

CLUTCH

①Pressure plate
②Washer
③Bearing
④Push rod #1
⑤O-ring
⑥Ball
⑦Lock washer
⑧Friction plate
⑨Clutch plate
⑩Clutch boss
⑪Clutch housing
⑫Bearing
⑬Spacer
⑭Push rod #2
⑮Oil seal
⑯Clutch release cylinder





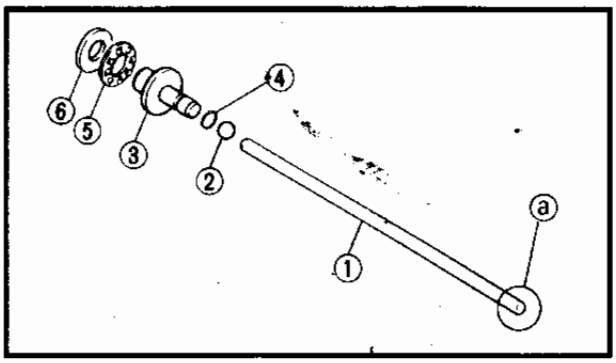
2. Tighten:
- Nut ① (clutch boss)

	Nut (clutch boss): **70 Nm (7.0 m • kg, 50 ft • lb)**

NOTE:
Tighten the nut ① (clutch boss) while holding the clutch boss with the universal clutch holder ②.

	Universal clutch holder: **YM-91042, 90890-04086**

3. Bend the lock washer tab along a flat side of the nut.

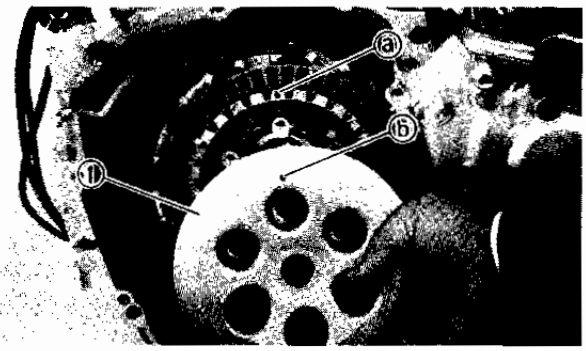


4. Install:
- Push rod #2 ①
- Ball ②
- Push rod #1 ③ (with O-ring ④)
- Bearing ⑤
- Washer ⑥

NOTE:
- Insert the push rod #2 with the rounded end ⓐ first into the clutch boss.
- Apply molybdenum disulfide oil to the ball and the push rods #1 and #2.

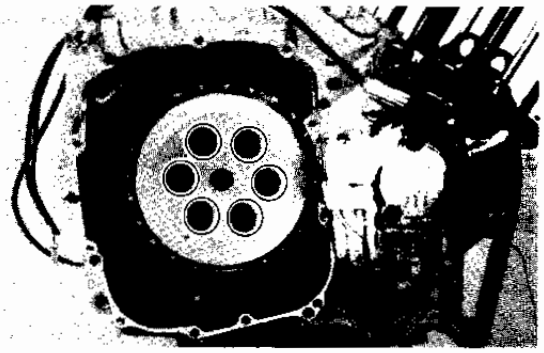
5. Install:
- Friction plates
- Clutch plates

NOTE:
Mount friction and clutch plate alternately.



6.Install:
- Pressure plate ①

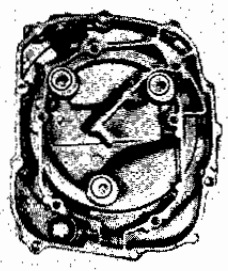
NOTE:
Align the punched mark ⓐ on the clutch boss with the punched mark ⓑ on the pressure plate.



7.Install:
- Clutch springs
- Bolts (clutch spring)

	Bolt (clutch spring): **8 Nm (0.8 m • kg, 5.8 ft • lb)**

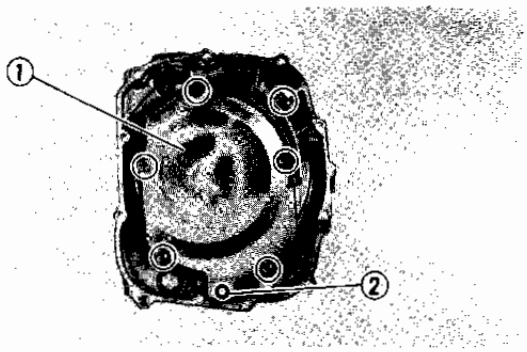
NOTE:
Tighten the bolts (clutch spring) in stage, using a crisscross pattern.

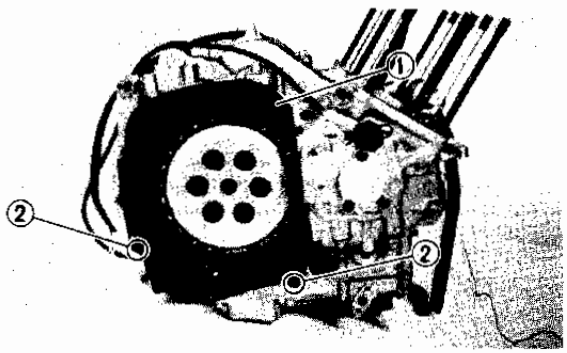


8.Install:
- Cover (outer)
- Rubber ring
- Washer
- Gasket
- Cover ① (breather)

NOTE:
Apply grease to the O-ring ②.

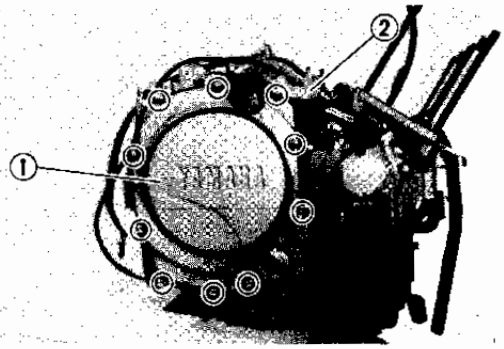
⚠ WARNING
Always use a new gasket.





9.Install:
- Gasket ①
- Dowel pins ②

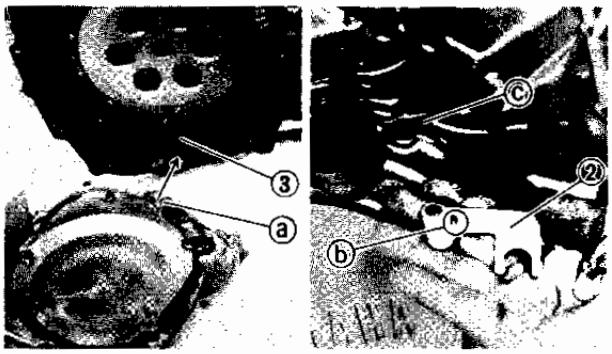
⚠ WARNING
Always use a new gasket.

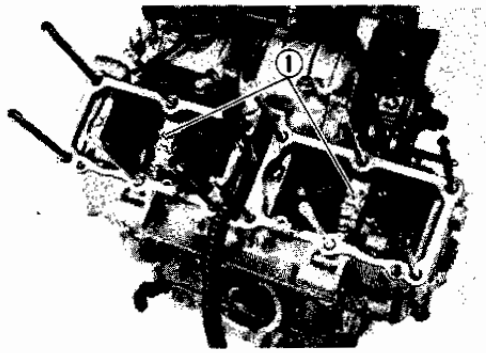


10.Install:
- Crankcase cover ① (right)
- Stay ② (throttle stop screw) (YZF750SP)

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

NOTE:
- When installing the crankcase cover, make sure that the oil pipe ③ under the clutch fits correctly into the hole ⓐ on the cover.
- When installing the stay ②, align the projection ⓑ with the hole ⓒ on the cover.
- Tighten the bolts (crankcase cover) in stage, using a crisscross pattern.

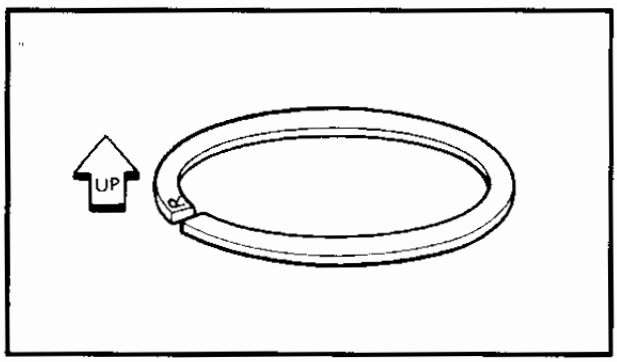




PISTON AND CYLINDER

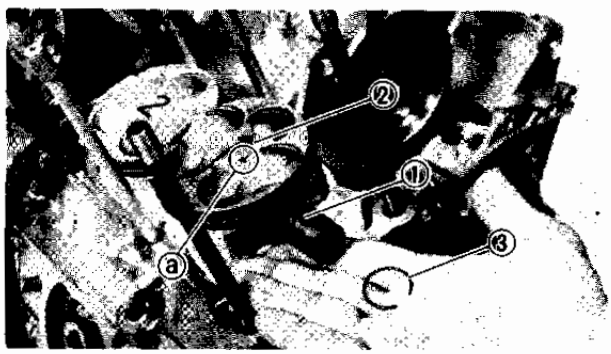
1.Install:
- Oil-jet nozzles ①
  (with O-ring)

NOTE:
Apply engine oil to the O-rings.



2.Install:
- Piston rings

NOTE:
Be sure to install rings so that the manufacturer's marks or numbers are located on the upper side of the rings. Oil the pistons and rings liberally.

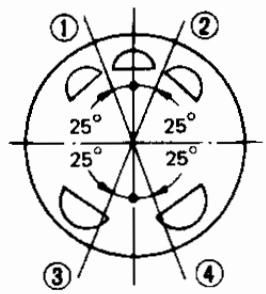


3.Install:
- Piston pins ①
- Pistons ②
- Circlips ③ (piston pin)

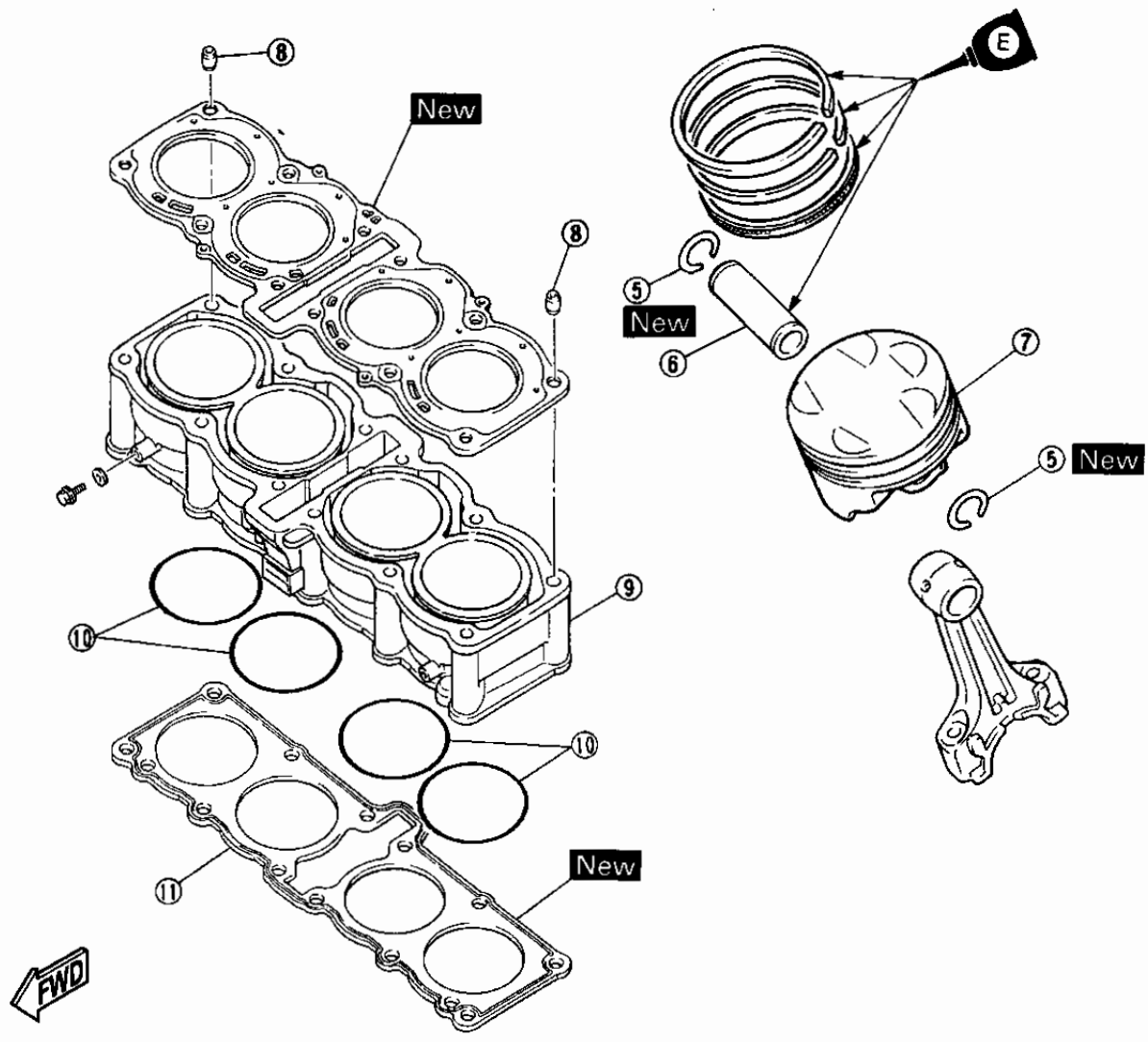
NOTE:
- Apply engine oil to the piston pins.
- Be sure that the arrow mark ⓐ on the piston points to the exhaust side of the engine.

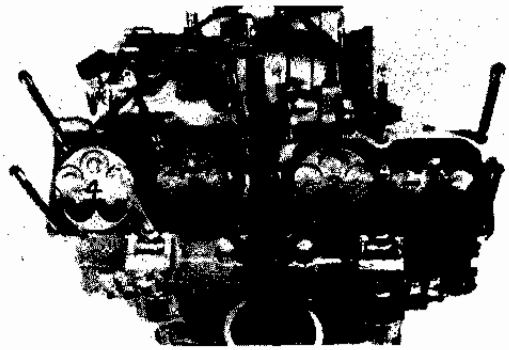
PISTON AND CYLINDER

①Top ring
②Oil ring (lower)
③Oil ring (upper)
④Second ring
⑤Circlip
⑥Piston pin
⑦Piston
⑧Dowel pin
⑨Cylinder
⑩O-ring
⑪Gasket



A	SIDE CLEARANCE LIMIT: Top: 0.15 mm (0.0059 in) 2nd: 0.15 mm (0.0059 in)
B	END GAP LIMIT: Top: 0.7 mm (0.0276 in) 2nd: 0.7 mm (0.0276 in)
C	PISTONTO CYLINDER CLEARANCE LIMIT: 0.11 mm (0.0043 in)

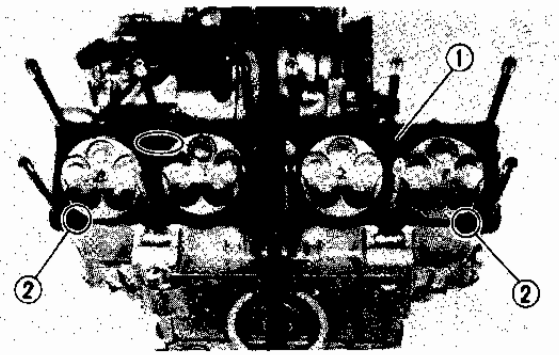




- Before installing the piston pin circlip, cover the crankcase with a clean rag to prevent the circlip from falling into the crankcase.
- Reinstall each piston into the cylinder it came from (numbering order 1 to 4 from the left).

⚠ WARNING

Always use new circlips (piston pin).



4.Install:
- Gasket ① (cylinder)
- Dowel pins ②

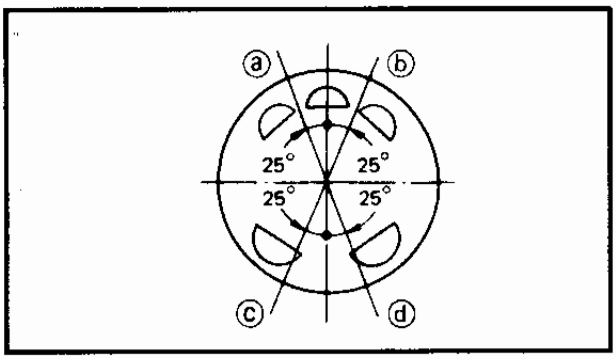
NOTE:
The gasket mark "UP" must be correctly readable from above.

⚠ WARNING

Always use a new gasket (cylinder).

5.Lubricate:
- Pistons
- Piston rings
- Cylinder

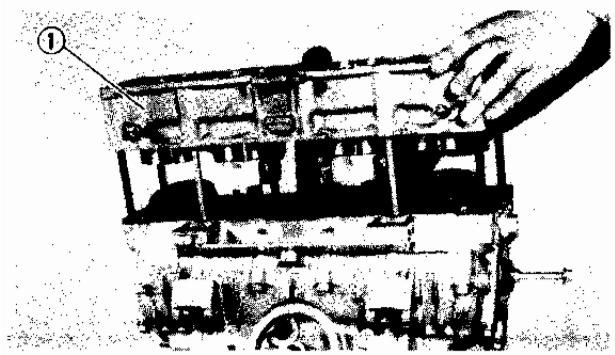
NOTE:
Apply a liberal coating of engine oil.



6.Position:
- Top ring
- 2nd ring
- Oil ring

Offset the piston ring end gaps as shown.

ⓐTop ring end
ⓑOil ring end (lower)
ⓒOil ring end (upper)
ⓓ2nd ring end

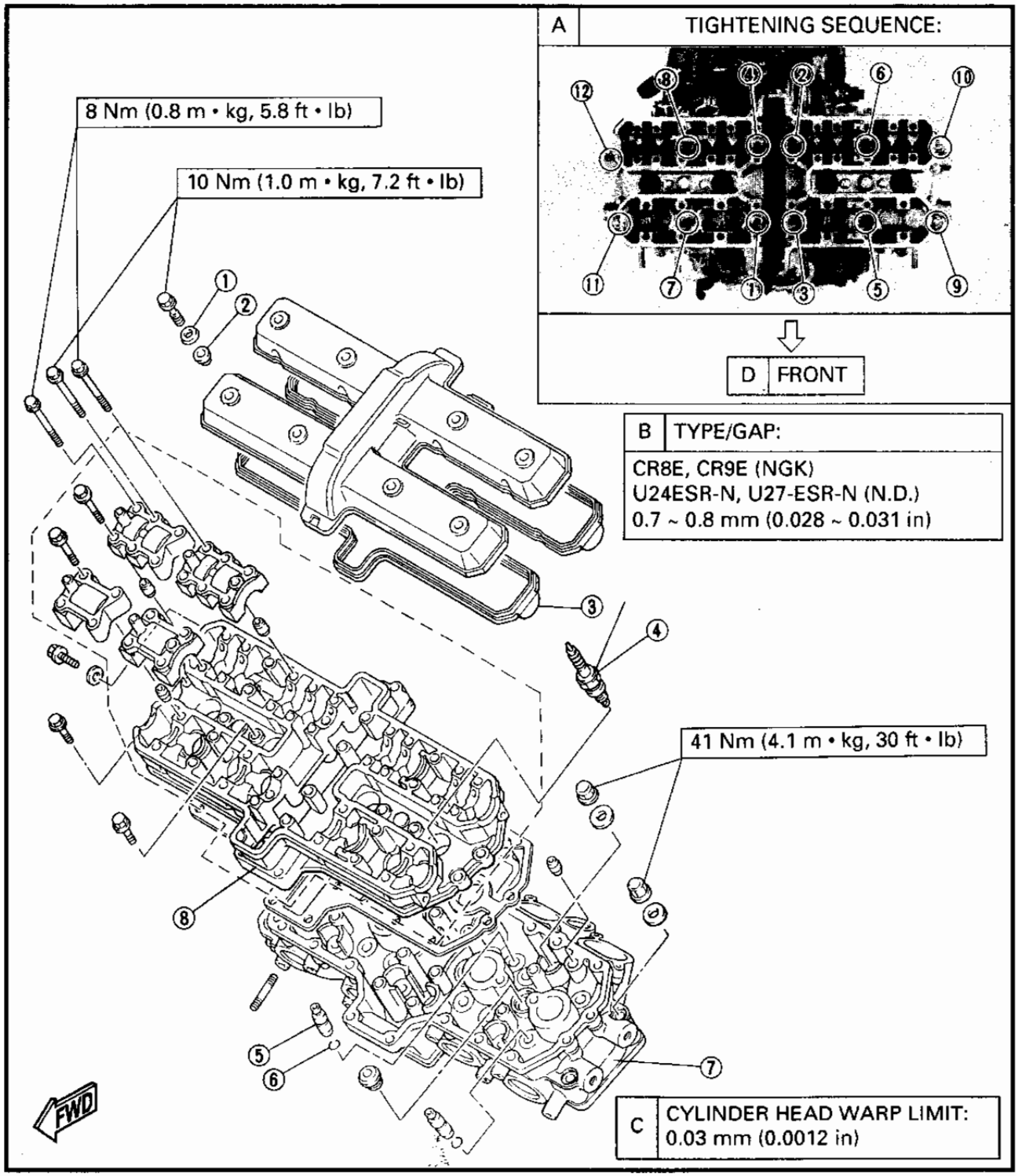


7.Install:
- Cylinder ①

NOTE:
- Install the #2 and #3 pistons first.
- Pass the timing chain and timing chain guide (exhaust side) through the timing chain cavity.

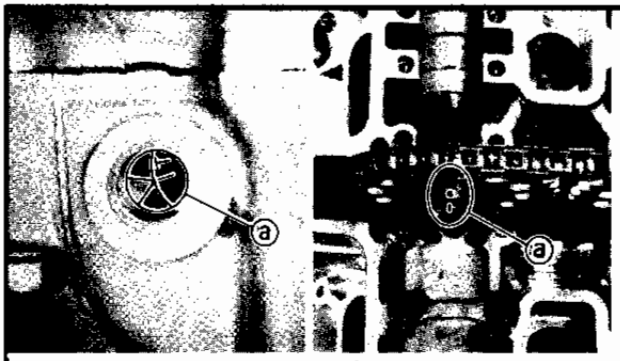
CYLINDER HEAD

①Washer
②Rubber washer
③Gasket
④Spark plug
⑤Valve guide
⑥Circlip
⑦Cylinder head
⑧Camshaft case

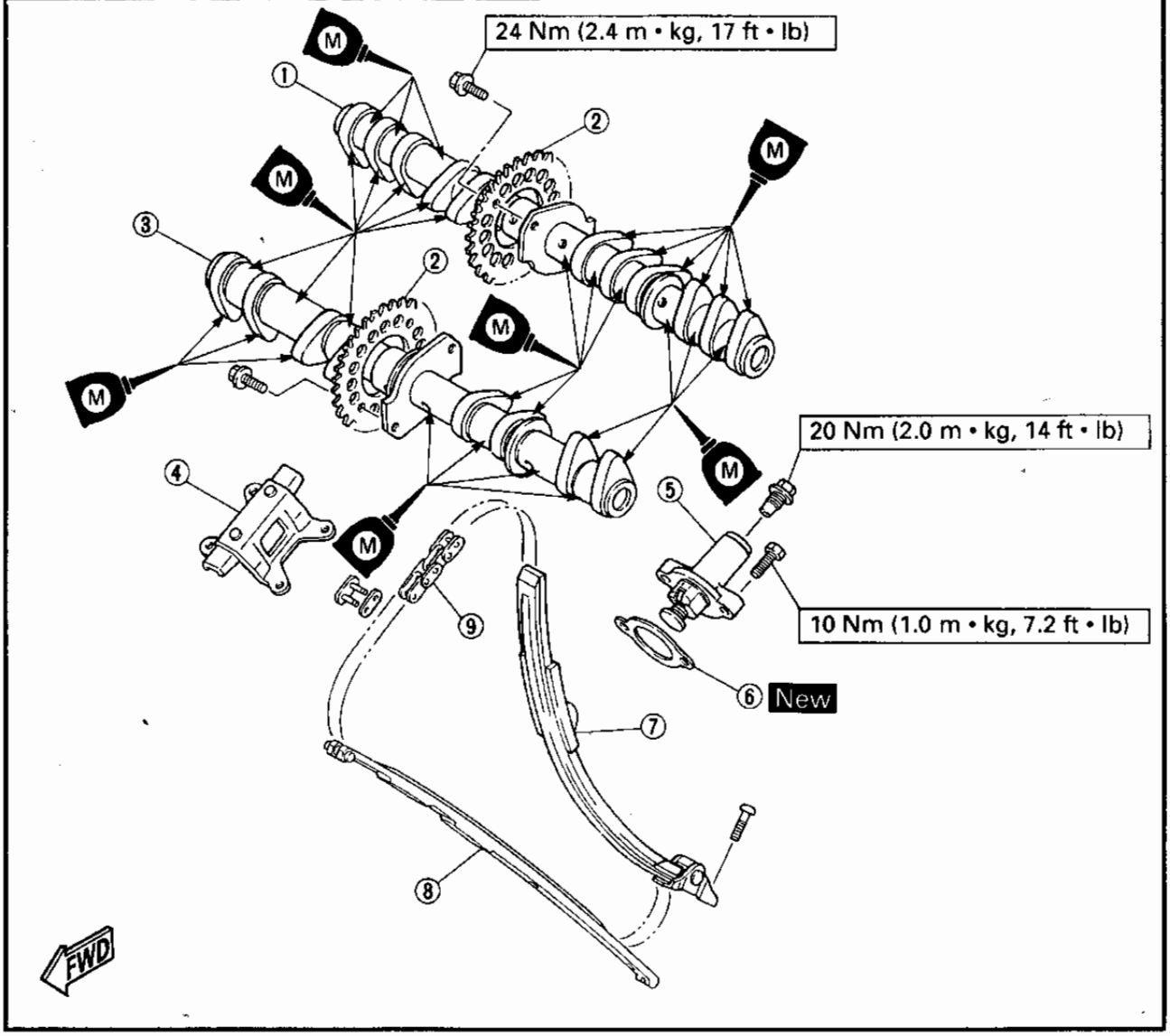


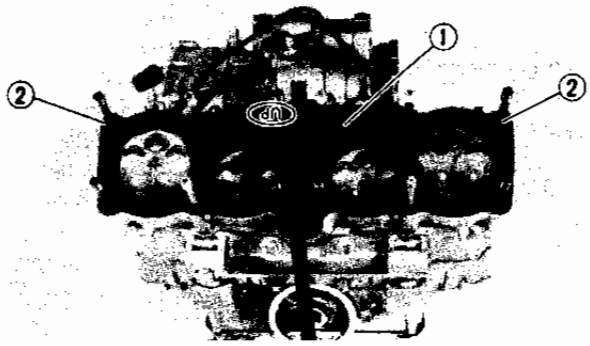
CAMSHAFT

①Camshaft (intake)
②Timing chain sprocket
③Camshaft (exhaust)
④Chain guide (upper)
⑤Timing chain tensioner
⑥Gasket
⑦Timing chain guide (intake side)
⑧Timing chain guide (exhaust side)
⑨Timing chain
ⓐMatch mark



A	VALVE CLEARANCE (COLD):
B	INTAKE: 0.11 ~ 0.20 mm (0.004 ~ 0.008 in)
C	EXHAUST: 0.21 ~ 0.30 mm (0.008 ~ 0.012 in)





CYLINDER HEAD AND CAMSHAFT

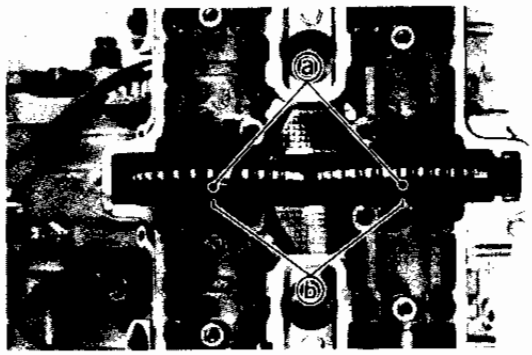
1.Install:
- Gasket ① (cylinder head)
- Dowel pins ②

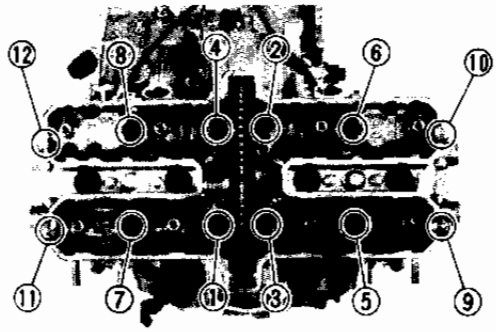
NOTE:
The mark "UP" on the gasket must be readable correctly from above.

⚠ WARNING

Always use a new gasket (cylinder head).

NOTE:
- Select either of the two procedures explained in this manual, as follows:
- Procedure 1:
  The timing chain is disconnected → Connect.
- Procedure 2:
  The camshafts are removed → Install.





Procedure 1

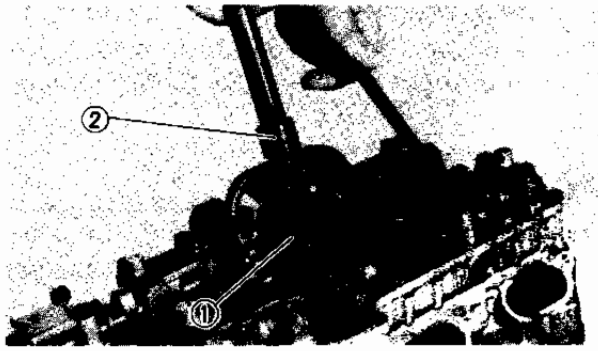
1.Install:
- Cylinder head assembly
  (with camshafts and camshaft case)

NOTE:
- Be sure that the camshaft timing marks ⓐ align with the camshaft cap marks ⓑ.
- Be sure that the "T" mark on the crankshaft web is aligned with the stationary pointer when #1 piston is at TDC.

2.Tighten:
- Nuts (cylinder head)

NOTE:
- Apply engine oil onto the nut threads.
- Tighten the nuts in the proper tightening sequence and torque them in two stages.

	Nut (cylinder head): **41 Nm (4.1 m • kg, 30 ft • lb)**



3.Connect:
- Timing chain ①
  (with the chain joint)
  Use the timing chain cutter ②.

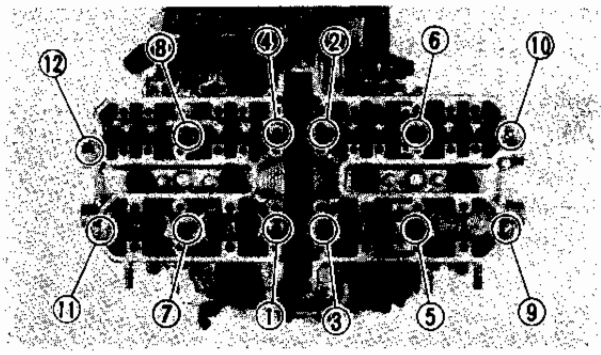
	Timing chain cutter: **YM-01112, 90890-01112**

NOTE:
Keep the timing chain as tense as possible on the exhaust side.

⚠ WARNING

Always use a new chain joint.

4.Next installation step, see "TIMING CHAIN TENSIONER".

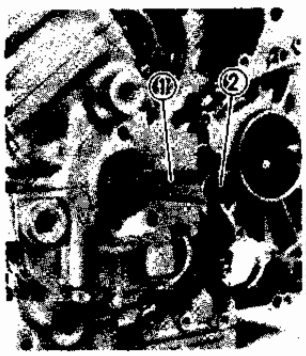


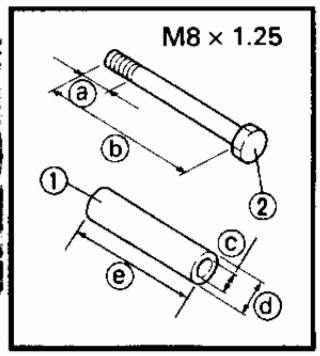
Procedure 2.
1.Install:
- Cylinder head assembly
  (with camshaft and camshaft case)

2.Tighten:
- Nuts (cylinder head)

NOTE:
- Apply engine oil onto the nut threads.
- Tighten the nuts in their proper tightening sequence and torque them in two stages.

	Nuts (cylinder head): **41 Nm (4.1 m • kg, 30 ft • lb)**



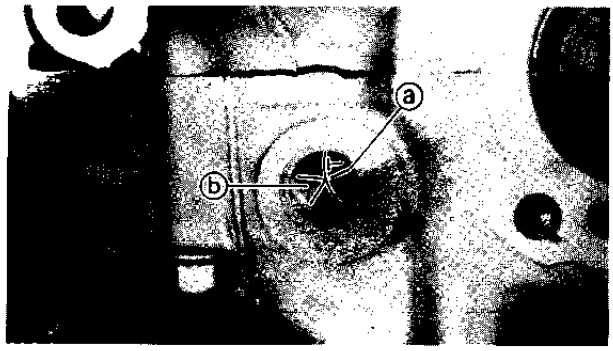


3.Install:
- Camshafts (intake and exhaust)

****

Installation steps;
- Install a suitable collar ① and a bolt ② as shown and tighten the bolt.

ⓐ 15 mm (0.6 in)
ⓑ 75 mm (3.0 in)
ⓒ 8 mm (0.3 in)
ⓓ 12 mm (0.5 in)
ⓔ 60 mm (2.4 in)



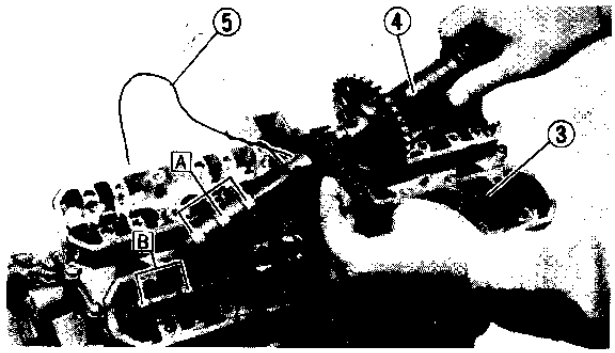
● Turning counterclockwise, align the "T" mark ⓐ on the crankshaft web with the stationary pointer ⓑ when #1 piston is at TDC.

CAUTION:

Do not turn the crankshaft during the camshafts installation. Damage or improper valve timing will result.

● Lubricate the camshaft bearing surfaces, cam lobes and cam journals.

Recommended lubricant:
Molybdenum disulfide oil



● Install the exhaust camshaft ③ first, then install the intake camshaft ④.

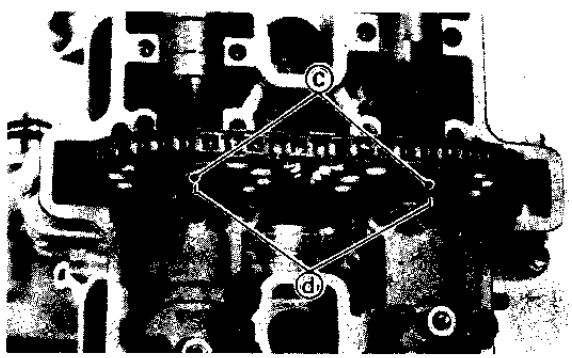
NOTE:

- Be sure to install the camshafts in the right place:
  3 lobes [A] = intake camshaft
  2 lobes [B] = exhaust camshaft
- Be sure the timing marks ⓒ on the camshaft face upward.
- Keep the timing chain as tense as possible on the exhaust side.
- Remove the retaining wire ⑤.

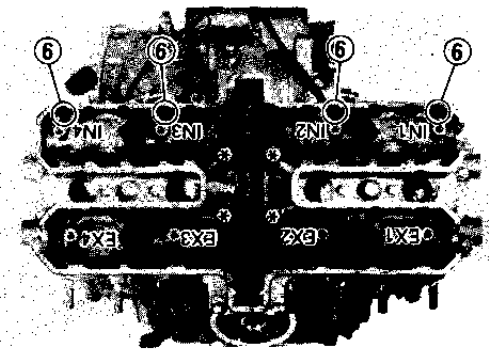
CAUTION:

Do not rotate the camshaft because damage could occur to the piston and valves.

● Install the dowel pins.
● Install the camshaft caps.
● Align the camshaft timing marks ⓒ with the camshaft cap marks ⓓ.
● Tighten the bolts (camshaft caps).



Bolt (camshaft cap):
10 Nm (1.0 m • kg, 7.2 ft • lb)
Bolt ⑥ (camshaft cap):
8 Nm (0.8 m • kg, 5.8 ft • lb)

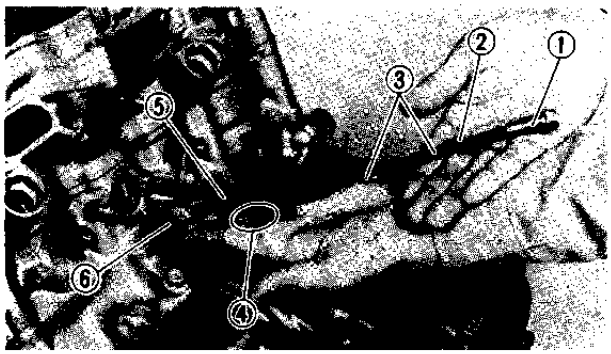


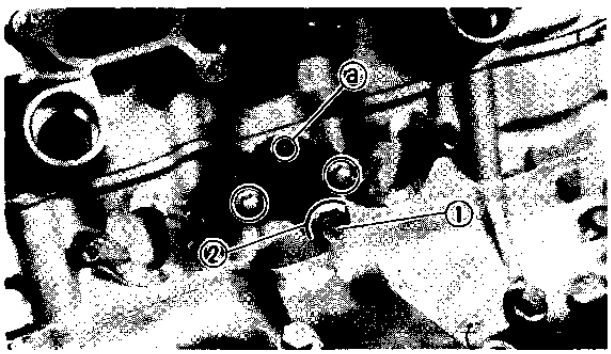
NOTE:
- The camshaft caps are numbered from left to right.
- Apply engine oil onto the bolt (camshaft cap) threads.
- Do not install the bolts at places marked "✻" in this stage.
- Tighten the camshaft caps in a crisscross pattern starting from the center.

CAUTION:
The camshaft caps must be tightened evenly or damage to the cylinder head, camshaft caps and cam will result.

- Install the timing chain guide of the exhaust side.

****





TIMING CHAIN TENSIONER

1. Install:
- Timing chain tensioner

****

Installation steps:
- Remove the tensioner cap bolt ①, washer ② and springs ③.
- Release the timing chain tensioner one-way cam ④ and push the tensioner rod ⑤ all the way in.
- Install the tensioner with a new gasket ⑥ onto the cylinder.

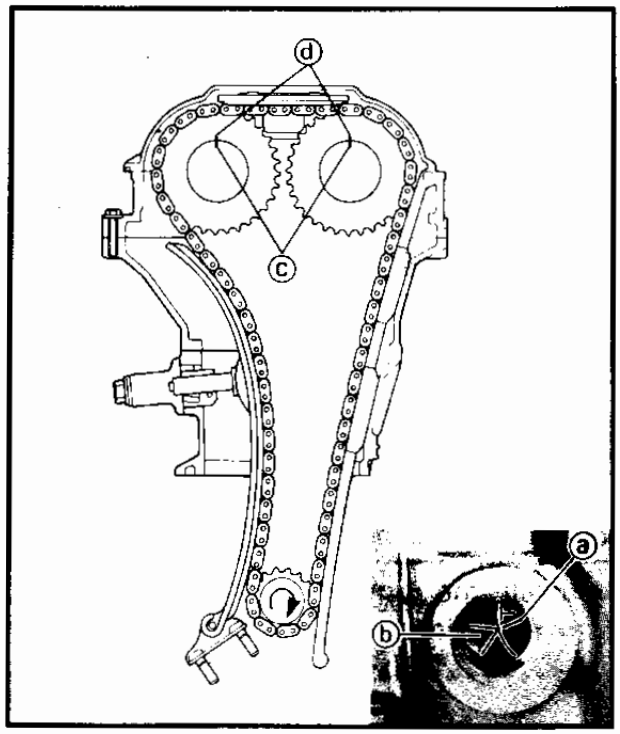
NOTE:
The "UP" mark ⓐ on the tensioner should face upward.

	Bolt (timing chain tensioner): 10 Nm (1.0 m • kg, 7.2 ft • lb)

- Install the springs ③, washer ② and cap bolt ①.

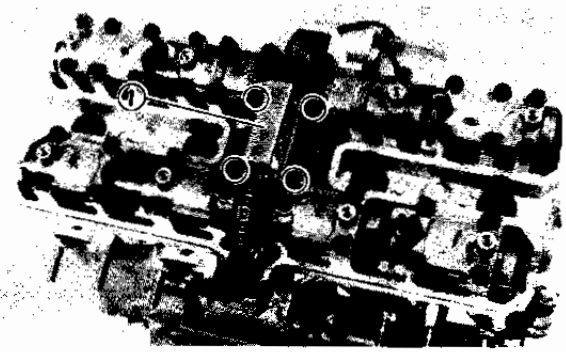
	Cap bolt (timing chain tensioner): 20 Nm (2.0 m • kg, 14 ft • lb)

****



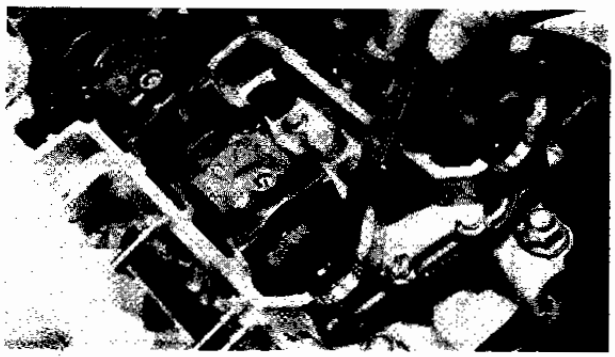
2.Turn:
- Crankshaft
  Counterclockwise several turns

3.Check:
- Crankshaft "T" mark ⓐ
  Align with the stationary pointer ⓑ.
- Camshaft timing marks ⓒ
  Align with the camshaft cap marks ⓓ.
  Out of alignment → Adjust.
  Refer to "Camshaft installation steps".



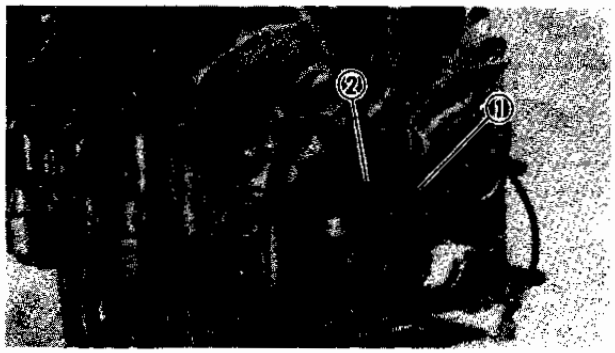
4.Install:
- Timing chain guide ① (upper)

	Bolt (chain guide – upper): **10 Nm (1.0 m • kg, 7.2 ft • lb)**

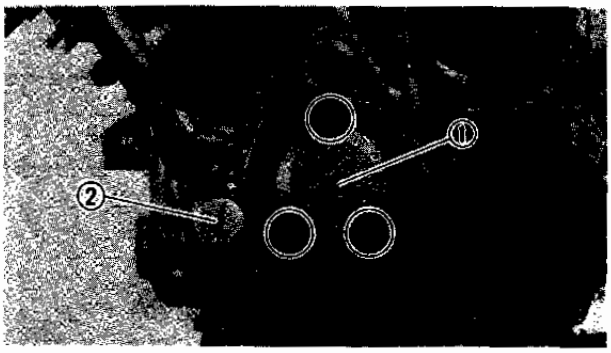


5.Measure:
- Valve clearance
  Out of specification → Adjust.
  Refer to "VALVE CLEARANCE ADJUSTMENT" in CHAPTER 3.

	Intake valve (cold): **0.11 ~ 0.20 mm** **(0.004 ~ 0.008 in)** **Exhaust valve (cold):** **0.21 ~ 0.30 mm** **(0.008 ~ 0.012 in)**



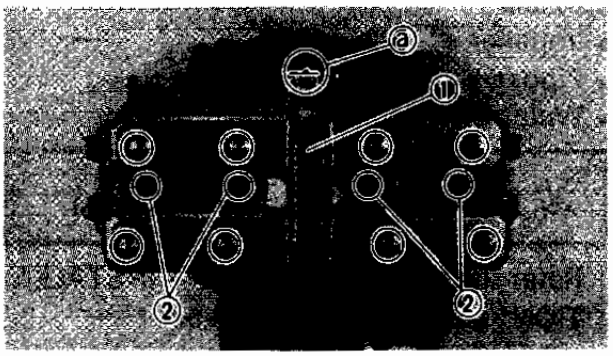
6.Remove:
- Bolt ①
- Collar ②



7.Install:
- Crankshaft end cover ① (left) (with O-ring)
- Timing plug ② (with O-ring)

NOTE:
Apply engine oil to the O-rings.

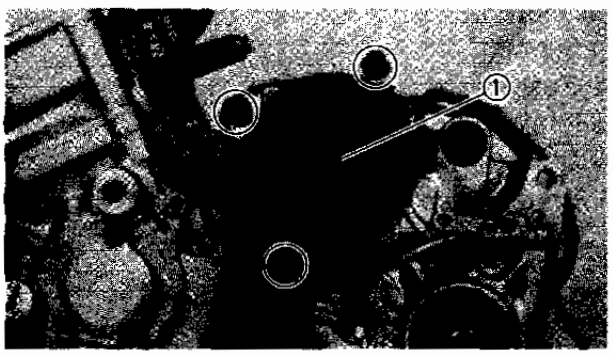
	Screws (crankshaft end cover): **7 Nm (0.7 m • kg, 5.1 ft • lb)**



8.Install:
- Gasket (cylinder head cover)
- Cylinder head cover ①
- Spark plugs ②

NOTE:
- Be sure the cylinder head gasket mark ⓐ points to the front.
- Tighten the cylinder head cover bolts in a crisscross pattern.

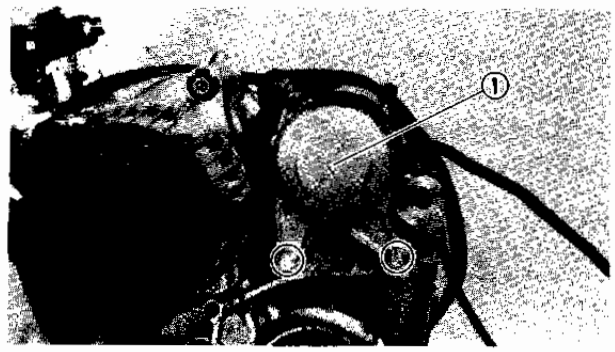
	Spark plug: **12.5 Nm (1.25 m • kg, 9.0 ft • lb)** **Bolt (cylinder head cover):** **10 Nm (1.0 m • kg, 7.2 ft • lb)**



AC GENERATOR AND STARTER MOTOR

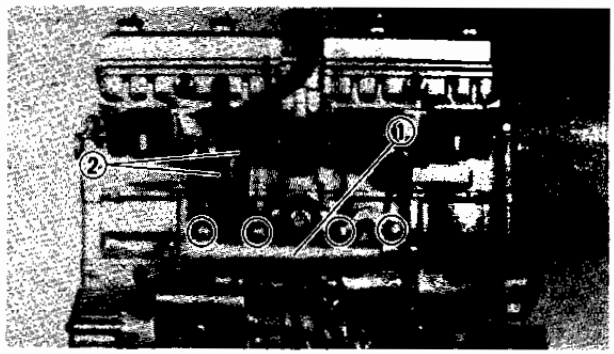
1.Install:
- AC generator ①

	Bolt (AC generator): **25 Nm (2.5 m • kg, 18 ft • lb)**



2.Install:
- Starter motor ①

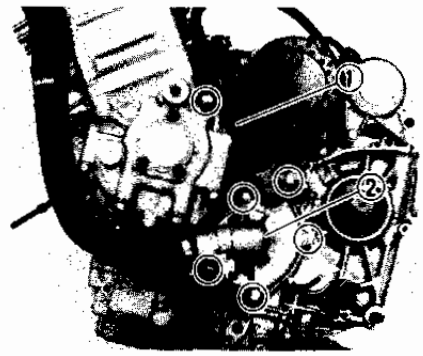
	Bolt (starter motor): 10 Nm (1.0 m • kg, 7.2 ft • lb)



WATER PUMP

1.Install:
- Water jacket joint ① (inlet)
- Carburetor breather hoses ② (YZF750SP)

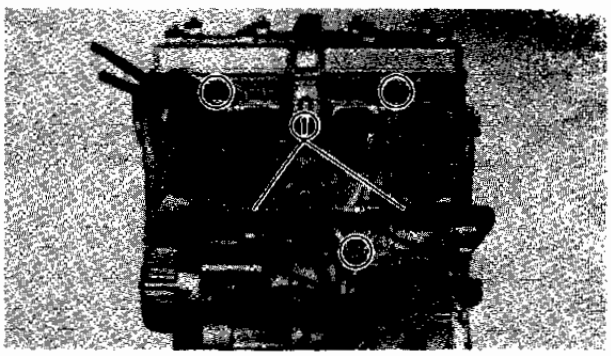
	Bolt (coolant collector): 10 Nm (1.0 m • kg, 7.2 ft • lb)



2.Install:
- Impeller
- Pipe ①
- Water pump cover ②

	Bolt (water pump cover): 10 Nm (1.0 m • kg, 7.2 ft • lb)

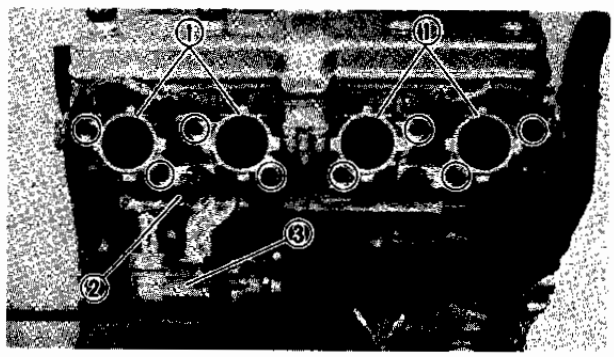
Refer to the "WATER PUMP – INSTALLATION" section in CHAPTER 5.



OIL DELIVERY HOSE

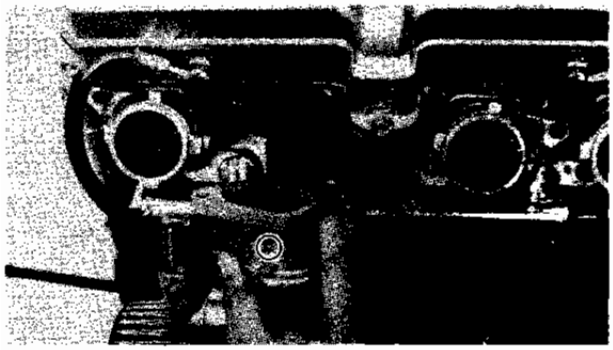
1.Install:
- Copper washers
- Oil delivery hoses ①

	Union bolt (oil delivery hose): 21 Nm (2.1 m • kg, 15 ft • lb)



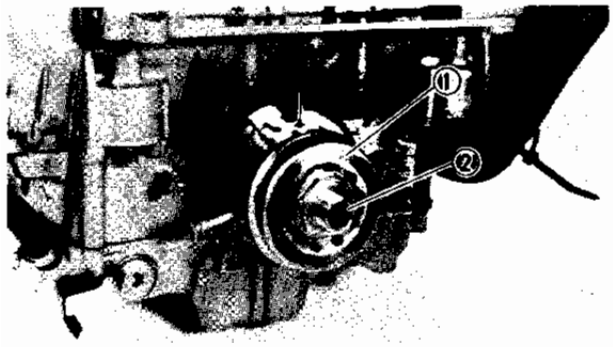
INTAKE MANIFOLD

1.Install:
- Gaskets
- Intake manifolds ①
- O-rings
- Water jacket joint ② (outlet) (with thermostatic housing ③)



NOTE:
Install the intake manifold with the "L" mark onto the #1 and #2 cylinders and the intake manifold with the "R" mark onto the #3 and #4 cylinders.

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



OIL COOLER AND OIL FILTER

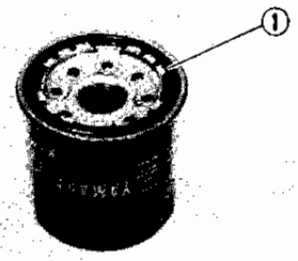
1.Install:
- O-ring
- Oil cooler ①
- Bolt ②

	Bolt (oil cooler): **63 Nm (6.3 m • kg, 45 ft • lb)**

NOTE:
- Apply engine oil to the O-ring of the oil cooler.
- Be sure that the O-ring is positioned properly.

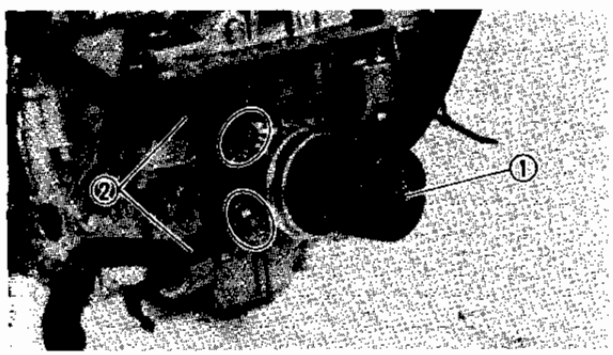
⚠ WARNING

Always use a new O-ring.



2.Apply:
- Engine oil (lightly)
  (to O-ring ① of new oil filter)

NOTE:
Make sure the O-ring ① is positioned properly.

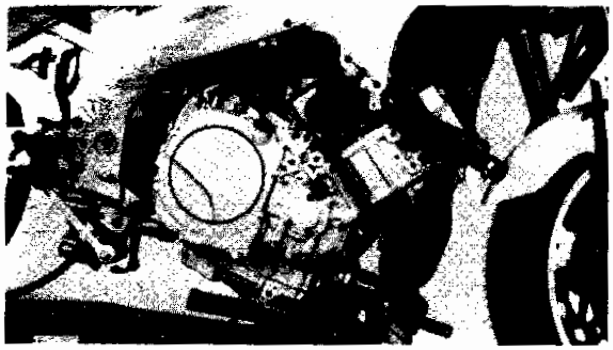


3.Install:
- Oil filter ① (new)

	Oil filter: **17 Nm (1.7 m • kg, 12 ft • lb)**

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

4.Connect:
- Oil cooler hoses ②

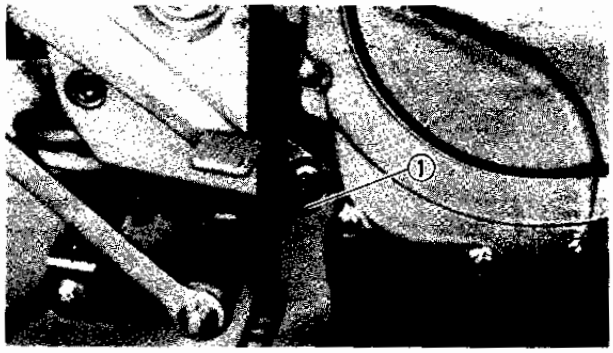


ENGINE REMOUNTING

When remounting the engine, reverse the removal procedure.
Note the following points.

1.Install:

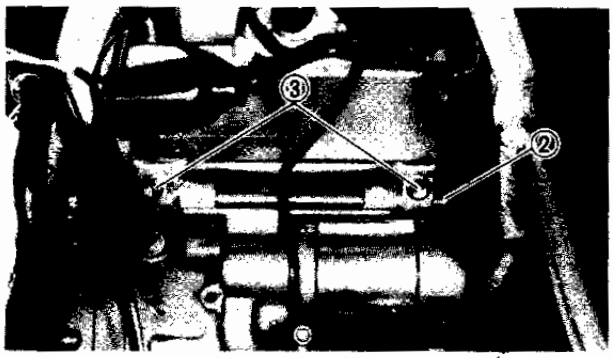
- Engine assembly
  (from the right side of the motorcycle)



2.Install:

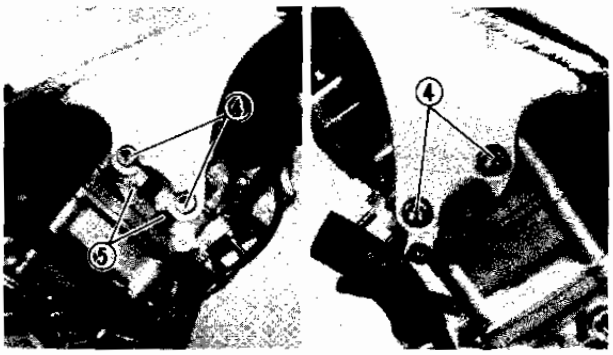
- Mounting bolt ① (rear-lower)
- Mounting bolt ② (rear-upper)
- Pinch bolts ③
- Mounting bolts ④ (front)
- Pinch bolts ⑤

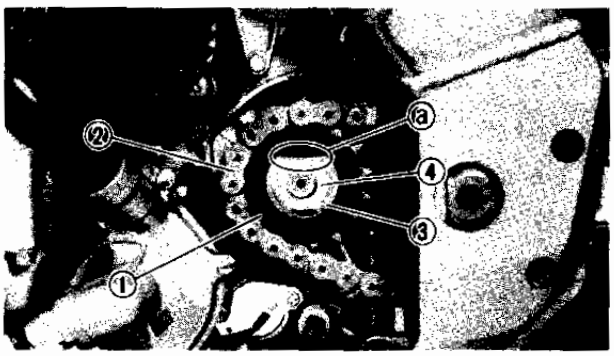
NOTE:
First install all the bolts and nuts, and then tighten them to specification.





Mounting bolt (rear – lower)
55 Nm (5.5 m • kg, 40 ft • lb)
Mounting bolt (rear – upper)
55 Nm (5.5 m • kg, 40 ft • lb)
Pinch bolt (rear-upper)
15 Nm (1.5 m • kg, 11 ft • lb)
Mounting bolt (front):
40 Nm (4.0 m • kg, 29 ft • lb)
Pinch bolt (front):
22 Nm (2.2 m • kg, 16 ft • lb)





3.Install:

- Drive sprocket ①
  (with drive chain ②)
- Lock washer ③
- Nut ④ (drive sprocket)



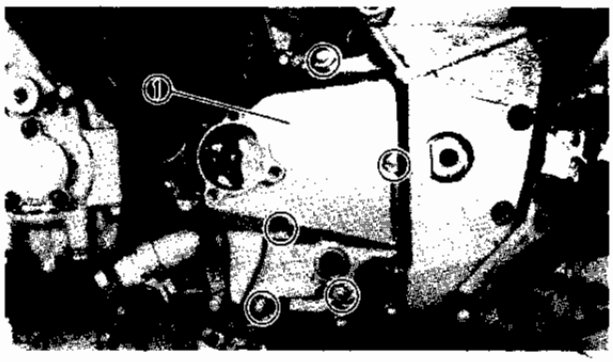
Nut (drive sprocket):
70 Nm (7.0 m • kg, 50 ft • lb)

⚠ WARNING

Always use a new lock washer.

NOTE:
Tighten the nut (drive sprocket), while applying the rear brake.

4. Bend the lock washer tab ⓐ along a flat side of the nut.



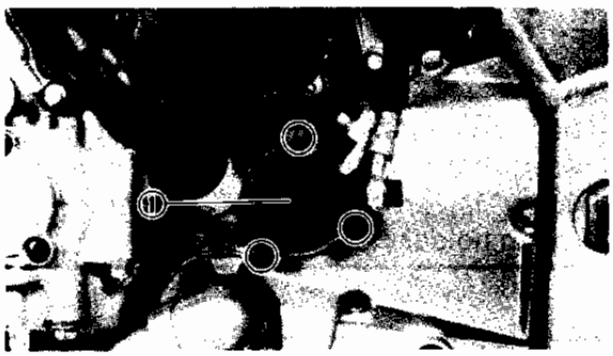
5. Install:
- Gasket
- Dowel pins
- Crankcase cover ① (left)

	Bolt (crankcase cover – left): 10 Nm (1.0 m • kg, 7.2 ft • lb)

NOTE:
Tighten the bolts (crankcase cover – left) in stage, using a crisscross pattern.

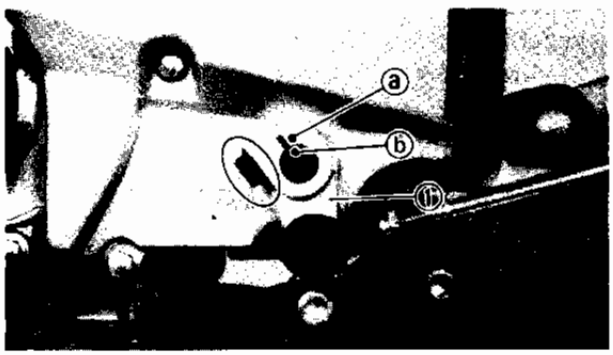
⚠ WARNING

Always use a new gasket.



6. Install:
- Dowel pins
- Clutch release cylinder ①

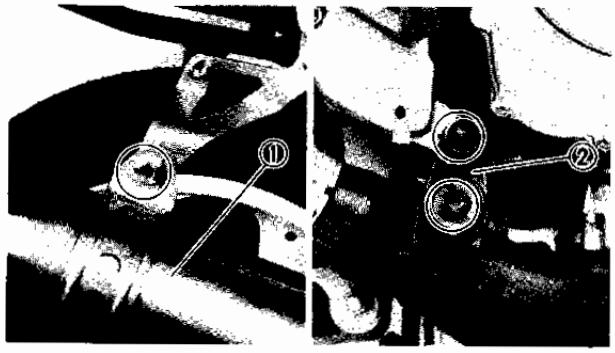
	Bolt (clutch release cylinder): 10 Nm (1.0 m • kg, 7.2 ft • lb)

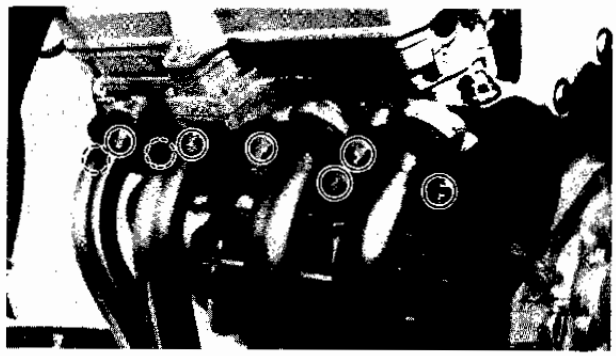


7. Install:
- Shift pedal link ①

	Bolt (shift pedal link): 10 Nm (1.0 m • kg, 7.2 ft • lb)

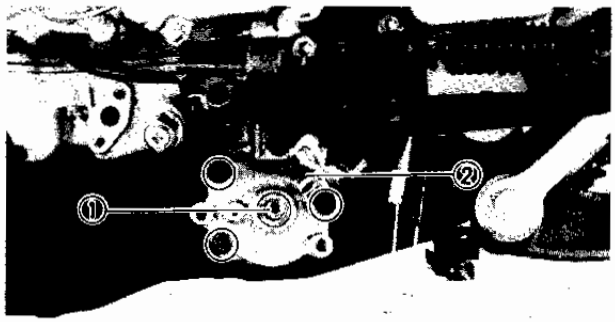
NOTE:
Align the punched mark ⓐ on the pedal link with the punched mark ⓑ on the shaft.





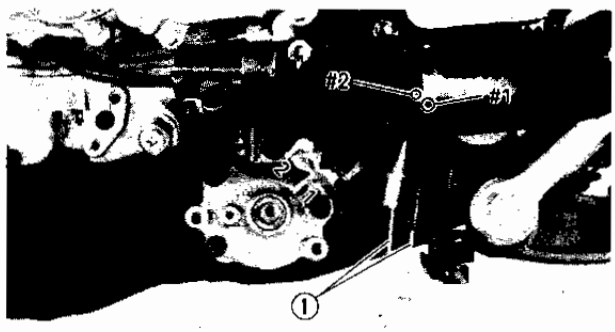
8.Install:
- Gaskets (exhaust pipe)
- Muffler assembly ①
- Stay ② (exhaust pipe)
- Nuts (exhaust pipe)

Bolt (muffler):
20 Nm (2.0 m • kg, 14 ft • lb)
Bolt (exhaust pipe stay):
20 Nm (2.0 m • kg, 14 ft • lb)
Nut (exhaust pipe):
20 Nm (2.0 m • kg, 14 ft • lb)



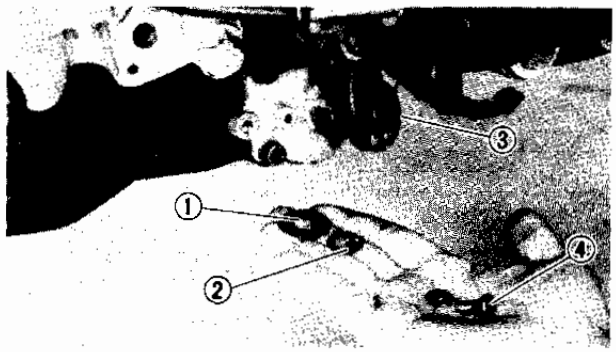
9.Install:
- EXUP valve assembly ①
- Holder ② (EXUP cables)

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

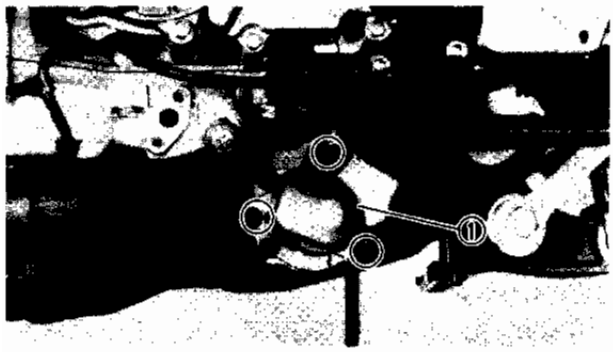


10.Connect:
- EXUP cables ①

NOTE:
When running the cables through the cable holder, fit the cable numbered "1" through holder "1", and the cable numbered "2" through holder "2".



11.Install:
- Washer ①
- Spring ②
- Pulley ③
- Bolt ④ (pulley)

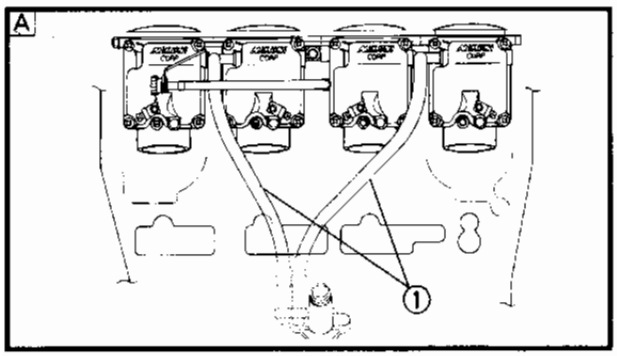


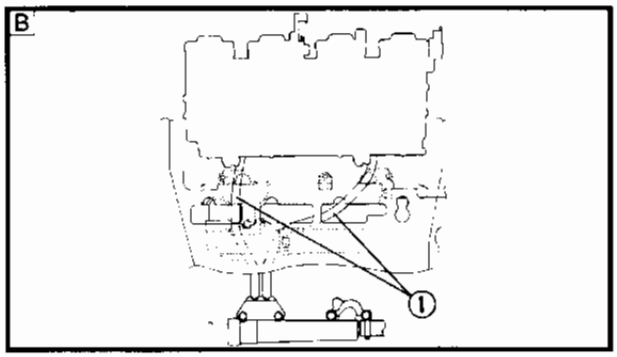
12.Install:
- Valve cover ①

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

13.Adjust:
- EXUP cable free play
  Refer to the "EXUP CABLE" section in CHAPTER 3.

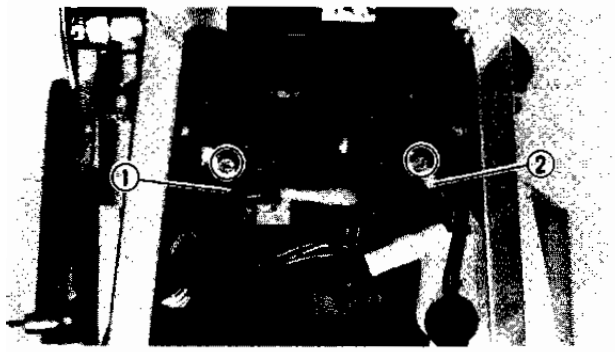
14.Install:
- Radiator
  Refer to the "RADIATOR – INSTALLATION" section in CHAPTER 5.





15.Install:
- Carburetor
- Air vent hoses ①
  Refer to the "CARBURETOR – INSTALLATION" section in CHAPTER 6.

A YZF750R
B YZF750SP



16.Connect:
- Battery leads

CAUTION:
Connect the positive lead ① first and then the negative lead ②.

17.Fill:
- Crankcase
  Refer to the "ENGINE OIL REPLACEMENT" section in CHAPTER 3.

Total amount:
4.0 L (3.5 Imp qt, 4.2 US qt)

18.Fill:
- Cooling system
  Refer to the "COOLANT LEVEL INSPECTION" section in CHAPTER 3.

Total amount:
2.4 L (2.1 Imp qt, 2.5 US qt)

19.Adjust:
- Idle speed
  Refer to the "IDLE SPEED ADJUSTMENT" section in CHAPTER 3.

Idle speed:
1,150 ~ 1,250 r/min

20.Adjust:
- Throttle cable free play
  Refer to the "THROTTLE CABLE FREE PLAY ADJUSTMENT" section in CHAPTER 3.

Throttle cable free play:
3 ~ 7 mm (0.12 ~ 0.28 in)

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

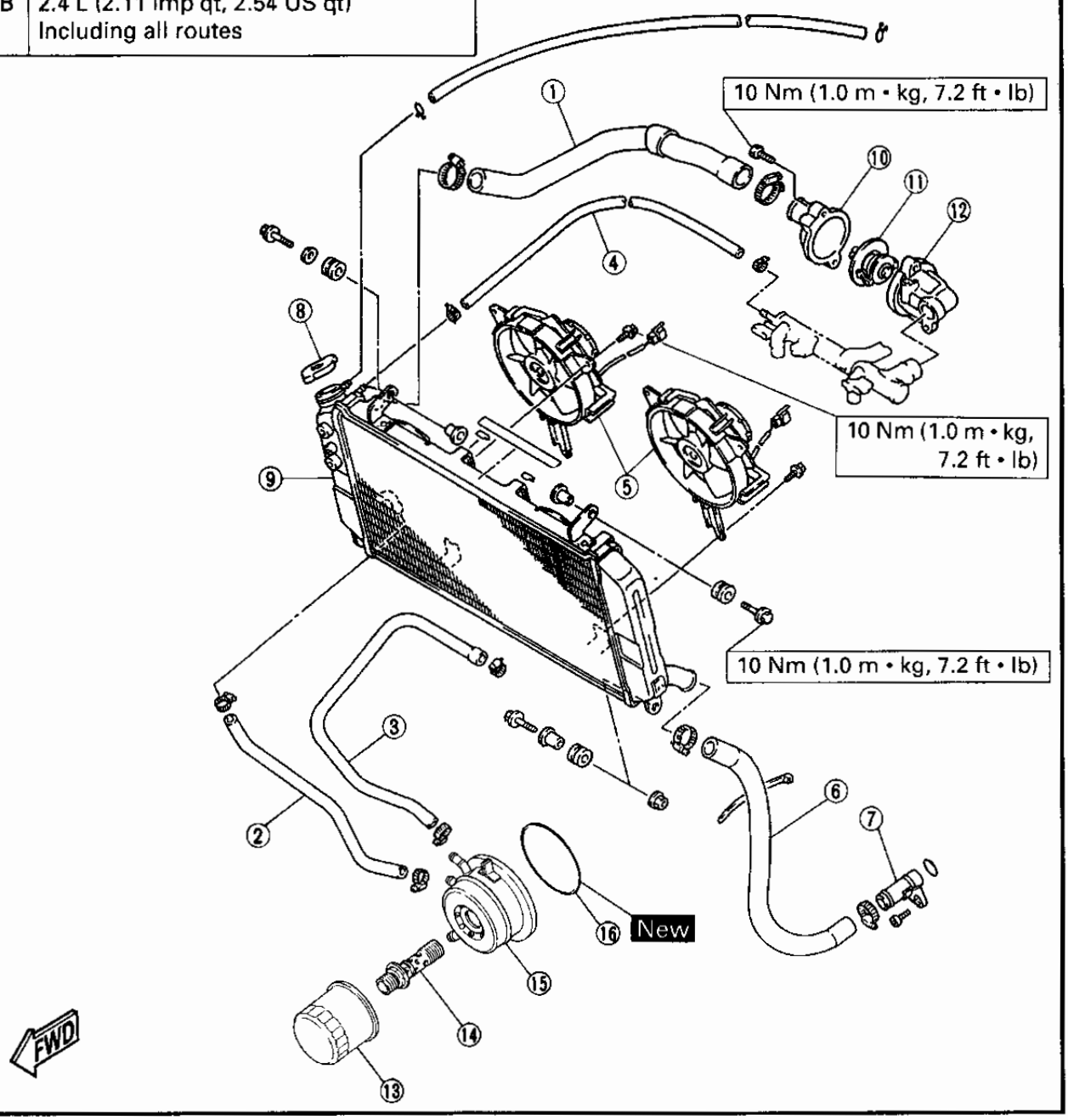
Drive chain slack:
15 ~ 25 mm (0.6 ~ 1.0 in)

COOLING SYSTEM

RADIATOR/OIL COOLER

①Inlet hose (radiator)
②Inlet hose (oil cooler)
③Outlet hose (oil cooler)
④Breather hose (thermostatic valve housing)
⑤Fan motor assembly
⑥Outlet hose (radiator)
⑦Radiator pipe
⑧Radiator cap
⑨Radiator
⑩Thermostatic valve cover
⑪Thermostatic valve
⑫Thermostatic valve housing
⑬Oil filter
⑭Bolt
⑮Oil cooler
⑯O-ring

A	RADIATOR CAP OPENING PRESSURE: 95 ~ 125 kPa (0.95 ~ 1.25 kg/cm², 13.51 ~ 17.78 psi)
B	COOLANT CAPACITY: 2.4 L (2.11 Imp qt, 2.54 US qt) Including all routes



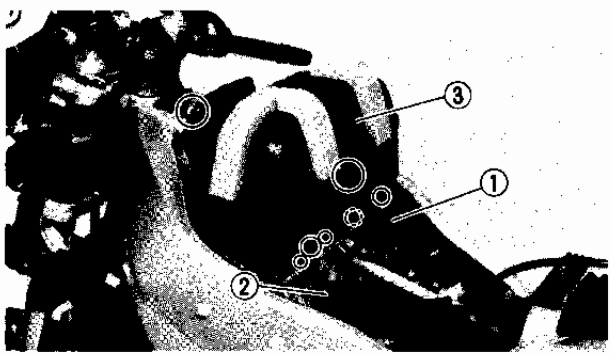
RADIATOR

⚠ WARNING

Do not remove the radiator cap when the engine and radiator are hot. Scalding hot fluid and steam may be blown out under pressure, which could cause serious injury. When the engine has cooled, open the radiator cap by the following procedure:
Place a thick rag, like a towel, over the radiator cap, slowly rotate the cap counterclockwise to the detent. This procedure allows any residual pressure to escape. When the hissing sound has stopped, press down on the cap while turning counterclockwise and remove it.

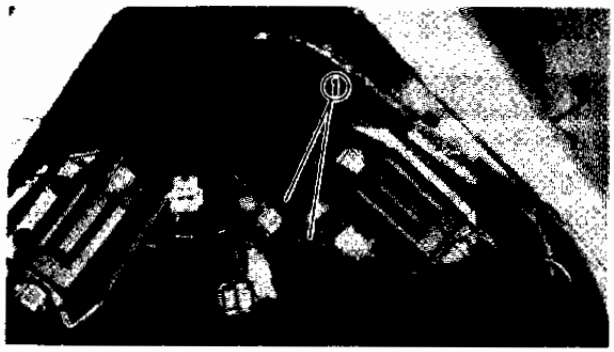
REMOVAL

1.Remove:
- Seat
  Refer to the "SEAT" section in CHAPTER 3.
- Fuel tank
  Refer to the "FUEL TANK" section in CHAPTER 3.
- Lower cowling
- Center cowling
  Refer to the "COWLINGS" section in CHAPTER 3.



2.Disconnect:
- Breather hose ① (crankcase)
- Breather hose ② (air filter case)

3.Remove:
- Air filter case ③

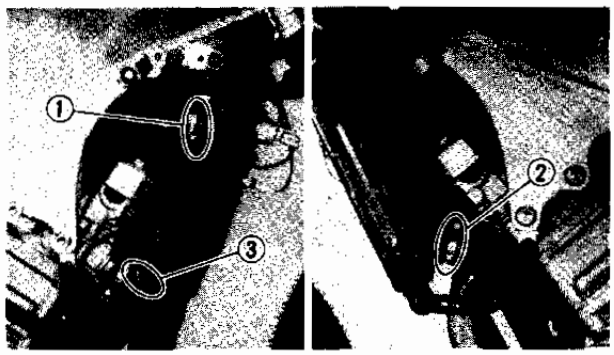


4.Disconnect:
- Cooling fan motor couplers ①

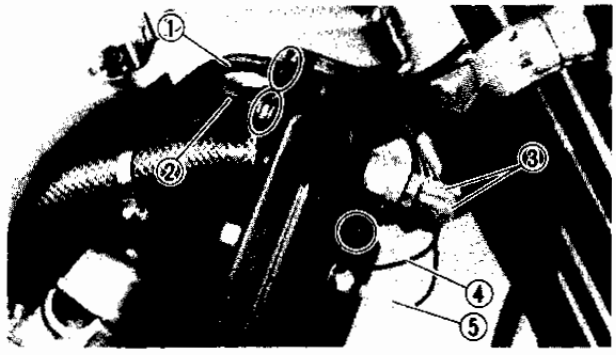
5.Drain:
- Coolant:
  Refer to the "COOLANT REPLACEMENT" section in CHAPTER 3.

NOTE:
Thoroughly flush the cooling system with clean tap water.

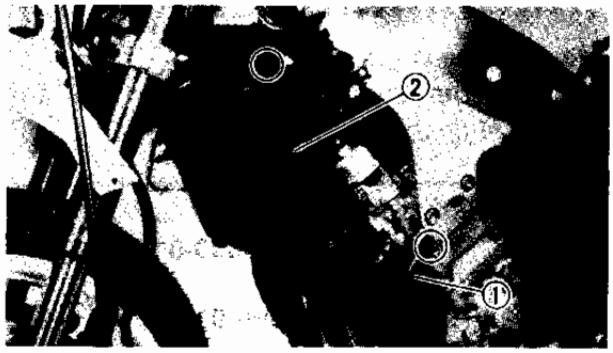
CAUTION:
Take care so that no coolant does not splash to painted surfaces. If splashes, wash it away with water.



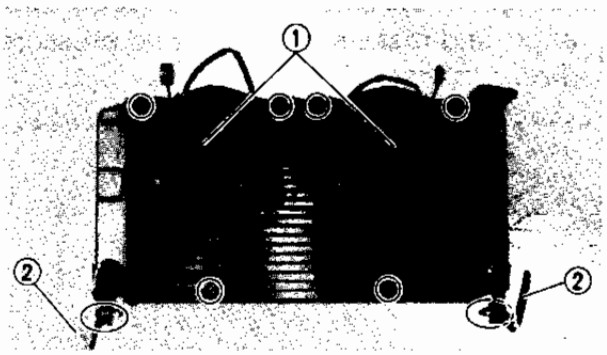
6.Loosen:
- Hose band ① (radiator – inlet hose)
- Hose band ② (radiator – outlet hose)
- Hose band ③ (oil cooler – outlet hose)



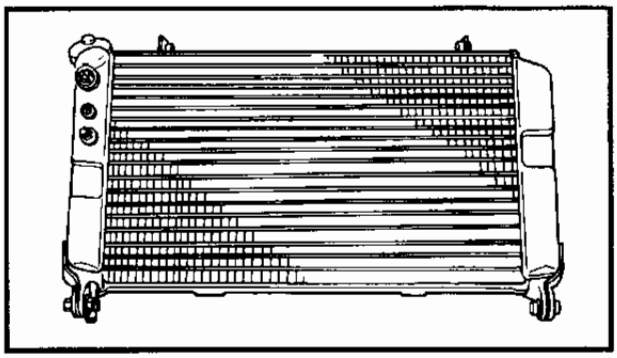
7.Disconnect:
- Breather hose ① (radiator)
- Breather hose ② (thermostatic valve housing)
- Thermo switch lead ③
- Ground lead ④
- Thermo unit leads ⑤



8.Remove:
- Band ①
- Radiator assembly ②

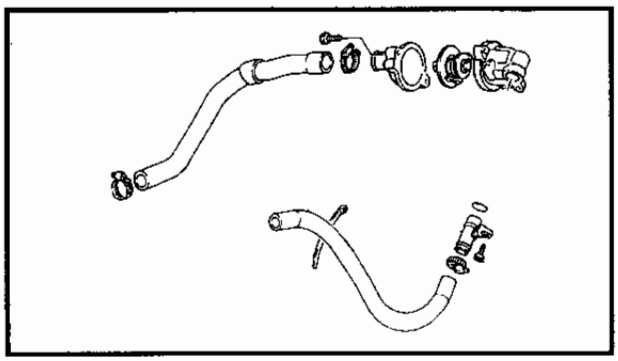


9.Remove:
- Fan motors ①
- Radiator stay ②



INSPECTION

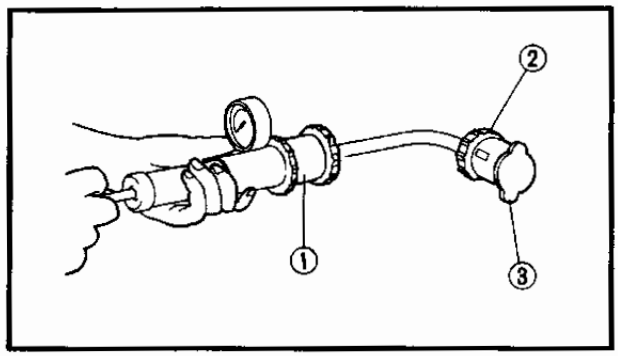
1.Inspect:
- Radiator core
  Obstruction → Blow out with compressed air through rear of the radiator.
  Flattened fin → Repair/Replace.



2.Inspect:
- Radiator hoses
- Radiator pipes
  Cracks/Damage →Replace.

3.Measure:
- Radiator cap opening pressure
  Radiator cap opens at pressure below the specified pressure → Replace.

Radiator cap opening pressure:
95 ~ 125 kPa
(0.95 ~ 1.25 kg/cm², 13.51 ~ 17.78 psi)



****

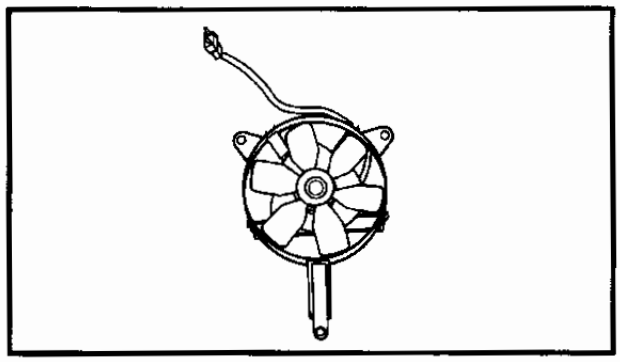
Measurement steps:

- Attach the radiator cap tester ① and adapter ② to the radiator cap ③.

Radiator cap tester:
YU-24460-01/90890-01325
Adapter:
YU-33984/90890-01352

- Apply the specified pressure for 10 seconds, and make sure there is no pressure drop.

****



4.Inspect:

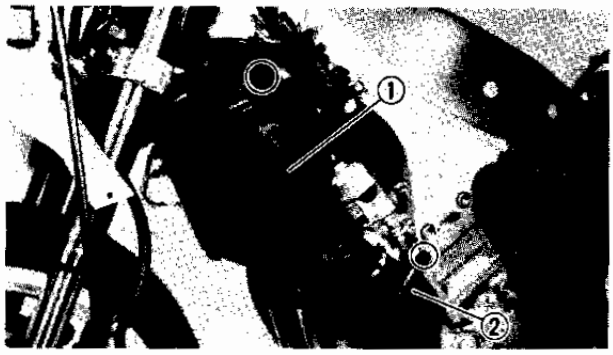
- Fan motor assembly
  Damage → Replace.
  Does not operate → Check.
  Refer to "COOLING SYSTEM" section in CHAPTER 8.

INSTALLATION

Reverse the "REMOVAL" procedure.
Note the following points.
1.Install:

- Fan motors

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

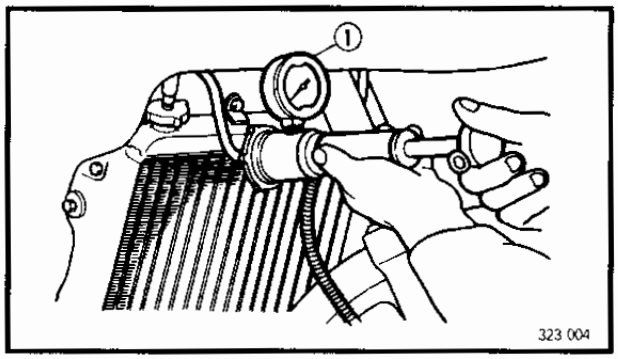


2.Install:

- Radiator assembly ①
- Band ②

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

3.Fill:
- Coolant
  Refer to the "COOLANT REPLACEMENT" section in CHAPTER 3.



4.Inspect:
- Cooling system
  Decrease of pressure (leaks) → Repair as required.

****

Inspection steps:

- Attach the radiator cap tester ① to the radiator.



Radiator cap tester:
YU-24460-01/90890-01325

- Apply 100 kPa (1.0 kg/cm², 14 psi) pressure.
- Measure the indicated pressure with the gauge.

****

OIL COOLER

REMOVAL

1.Remove:
- Lower cowling
- Center cowlings

Refer to the "COWLINGS" section in CHAPTER 3.

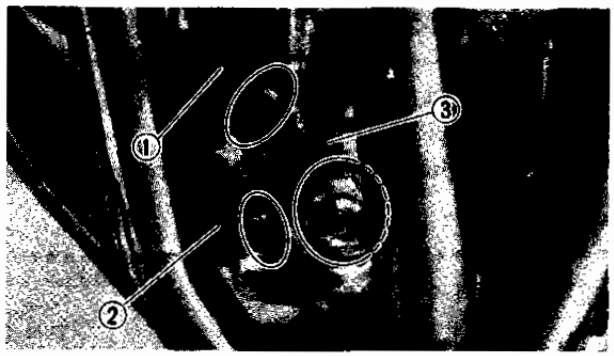
2.Drain:
- Engine oil

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

Refer to the "COOLANT REPLACEMENT" section in CHAPTER 3.

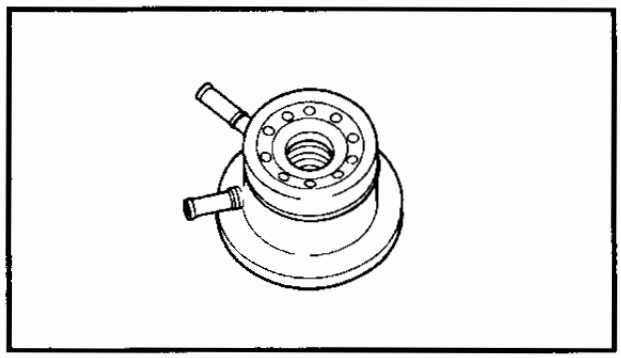
3.Remove:
- Oil filter

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



4.Disconnect:
- Inlet hose ① (oil cooler)
- Outlet hose ② (oil cooler)

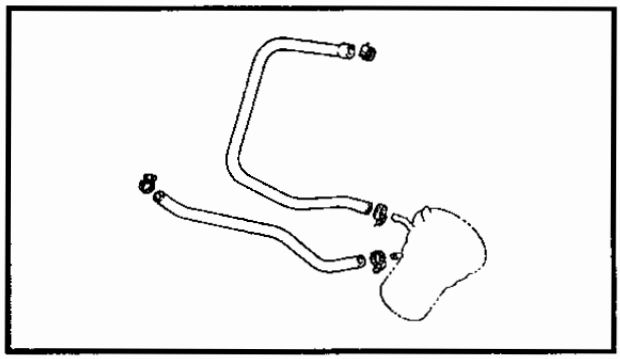
5.Remove:
- Oil cooler ③



INSPECTION

1.Inspect:
- Oil cooler

Cracks/Damage → Replace.



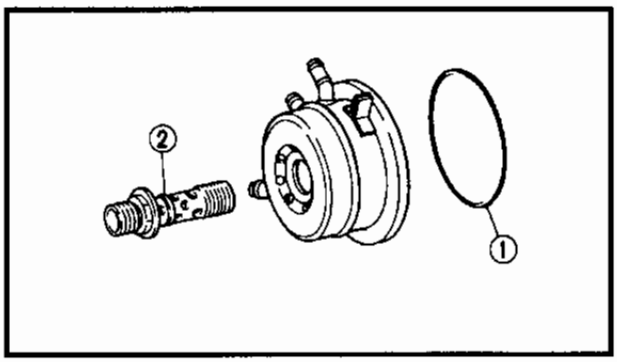
2.Inspect:
- Inlet hose (oil cooler)
- Outlet hose (oil cooler)

Cracks/Wear/Damage → Replace.

INSTALLATION

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

1. Clean the mating surfaces of the oil cooler and the crankcase with a cloth dampened with thinner.



2. Lubricate:
- O-ring ①
- Bolt ②

	Engine oil

⚠ WARNING

Always use a new O-ring on the oil cooler.

3. Install:
- O-ring
- Oil cooler

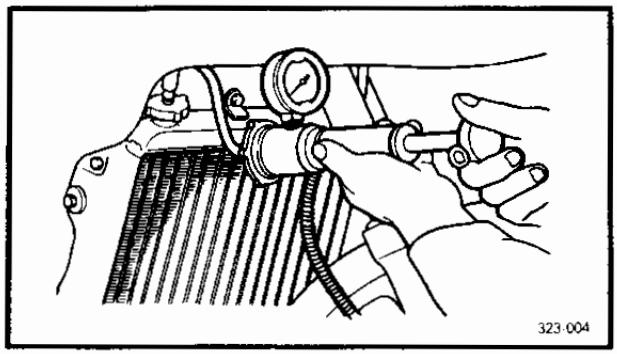
NOTE:
Make sure the O-ring is positioned properly.

	Bolt (oil cooler): **63 Nm (6.3 m • Kg, 45 ft • lb)**

4. Install:
- Oil filter
  Refer to the "ENGINE OIL FILTER REPLACEMENT" section in CHAPTER 3.

	Oil filter: **17 Nm (1.7 m • kg, 12 ft • lb)**

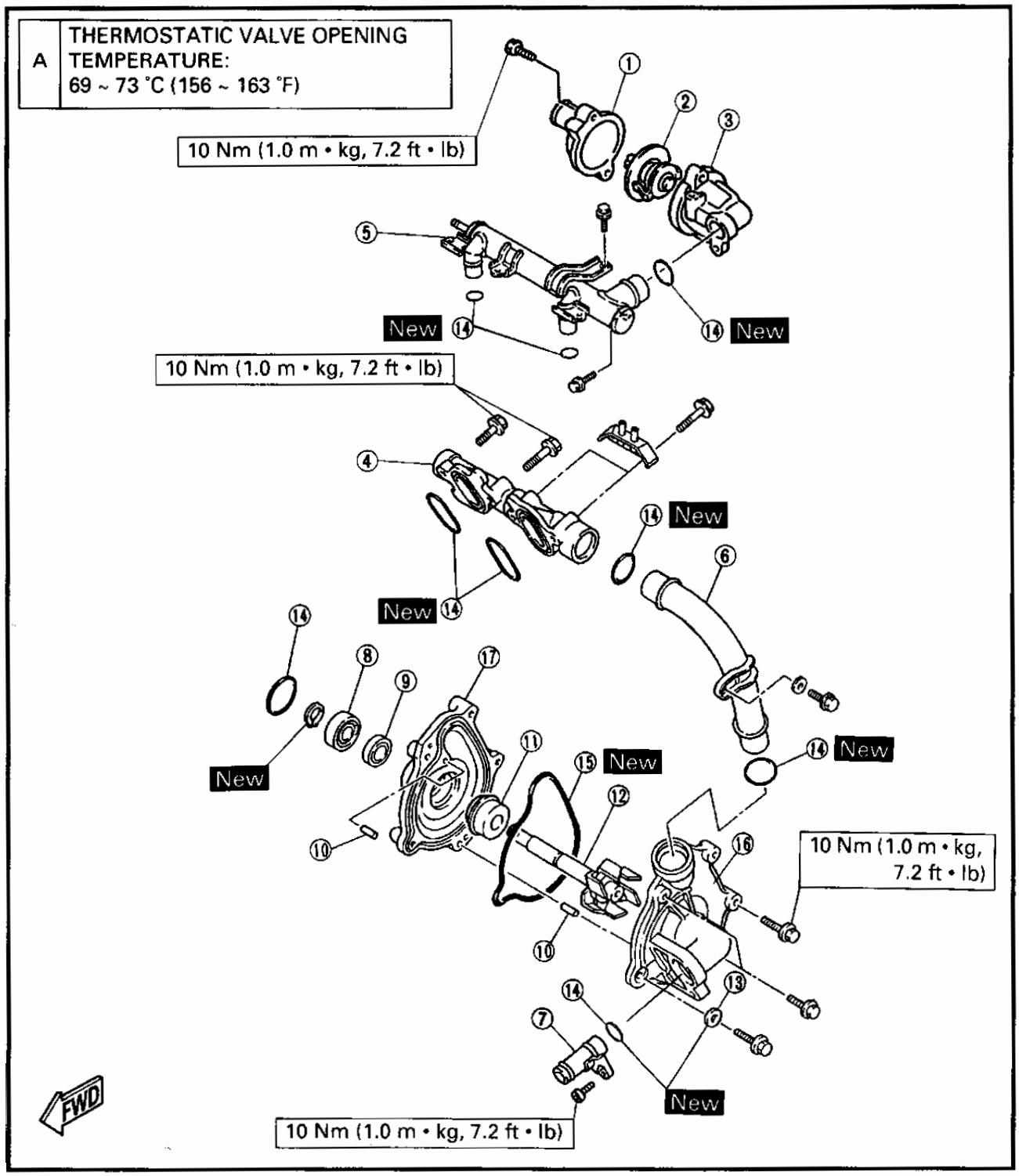
5. Fill:
- Coolant
  Refer to the "COOLANT REPLACEMENT" section in CHAPTER 3.
- Engine oil
  Refer to the "ENGINE OIL REPLACEMENT" section in CHAPTER 3.



6.Inspect:
- Cooling system (oil cooler)
  Decrease of pressure (leaks) → Replace oil cooler as required.
  Refer to the "RADIATOR — INSTALLATION" section.

THERMOSTATIC VALVE/WATER PUMP

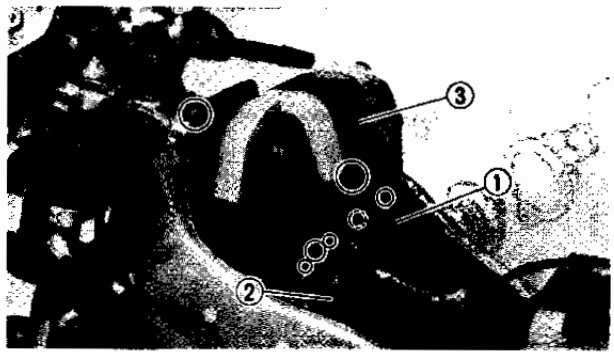
①Thermostatic valve cover
②Thermostatic valve
③Thermostatic valve housing
④Water jacket joint (inlet)
⑤Water jacket joint (outlet)
⑥Outlet pipe (water pump)
⑦Inlet pipe (water pump)
⑧Bearing
⑨Oil seal
⑩Dowel pin
⑪Water pump seal
⑫Impeller shaft
⑬Copper washer
⑭O-ring
⑮Gasket
⑯Water pump cover
⑰Water pump housing



THERMOSTATIC VALVE

REMOVAL

1.Remove:
- Seat
  Refer to the "SEAT" section in CHAPTER 3.
- Fuel tank
  Refer to the "FUEL TANK" section in CHAPTER 3.

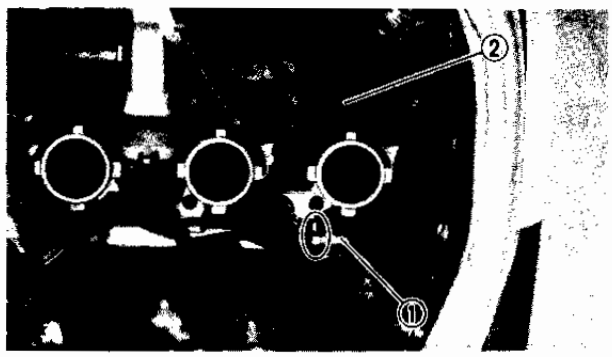


2.Disconnect:
- Breather hose ① (crankcase)
- Breather hose ② (air filter case)

3.Remove:
- Air filter case ③

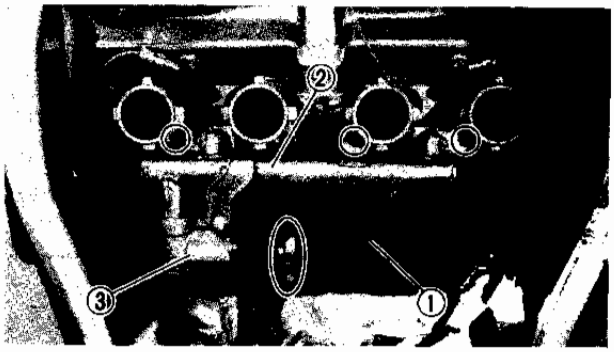
4.Remove:
- Carburetor
  Refer to the "CARBURETOR" section in CHAPTER 6.

5.Drain:
- Coolant
  Refer to the "COOLANT REPLACEMENT" section in CHAPTER 3.



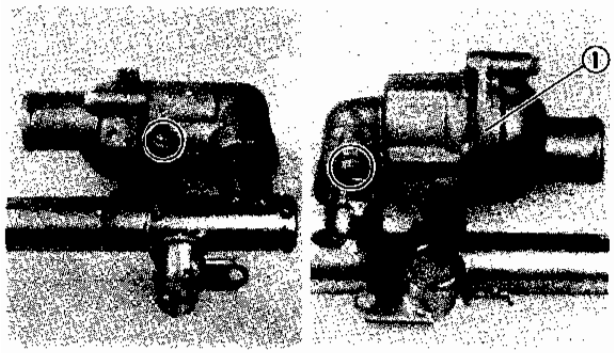
6.Disconnect:
- Breather hose ①
  (thermostatic valve housing)

7.Lift the baffle cover ②.

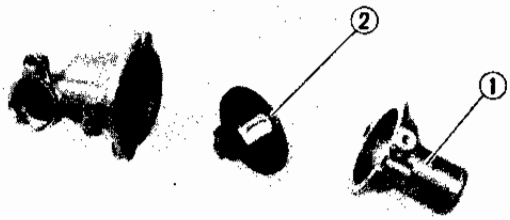


8.Disconnect:
- Radiator hose ①

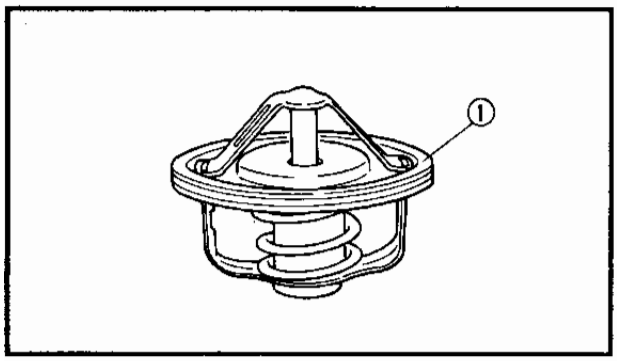
9.Remove:
- Water jacket joint ② (outlet) (with thermostatic valve housing ③)
- O-rings

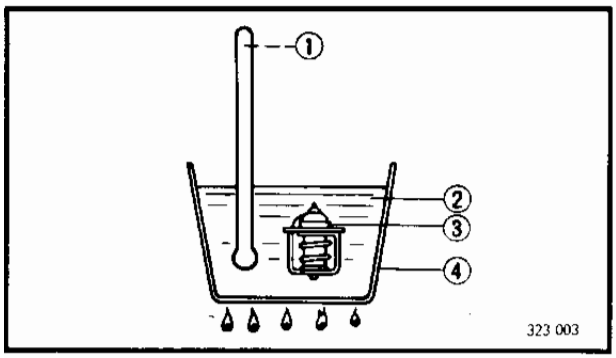


10.Remove
- Thermostatic housing ①
- O-ring



11.Remove:
- Thermostatic valve cover ①
- Thermostatic valve ②





INSPECTION

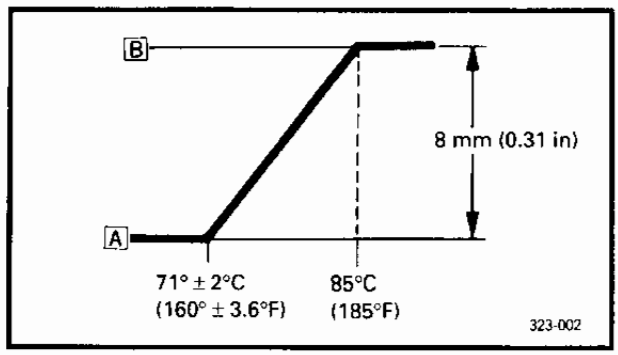
1.Inspect:
- Thermostatic valve ①
  Valve does not open at 69 ~ 73°C (156 ~ 163°F) → Replace.

****

Inspection steps:
- Suspend thermostatic valve in a vessel.
- Place reliable thermometer in a water.
- Observe thermometer, while stirring water continually.

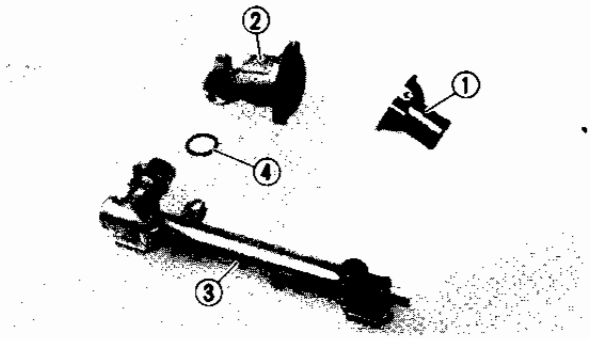
****

①Thermometer
②Water
③Thermostatic valve
④Vessel



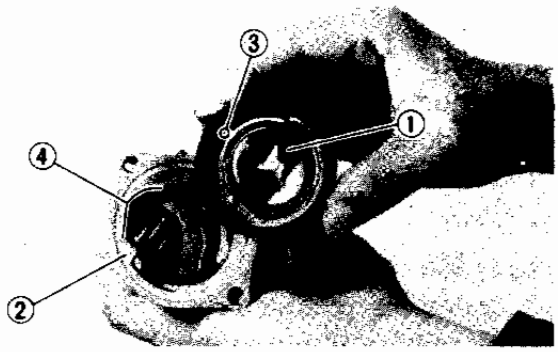
A CLOSE
B OPEN

NOTE:
Thermostatic valve is sealed and its setting is specialized work. If its accuracy is in doubt, replace it. A faulty unit could cause serious overheating or over-cooling.



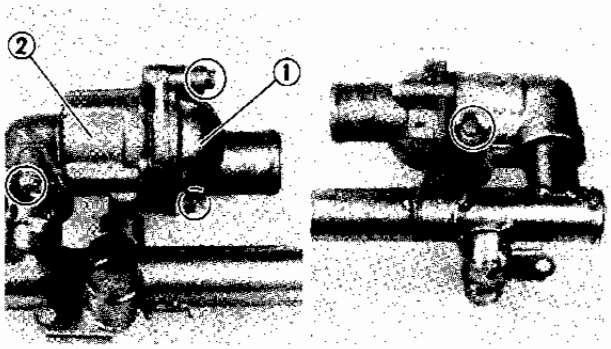
2.Inspect:
- Thermostatic cover ①
- Thermostatic housing ②
- Water jacket joint ③ (outlet)
- O-ring ④
  Cracks/Damage → Replace.

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



1.Install:
- Thermostatic valve ①
  (to thermostatic housing ②)

NOTE:
The thermostatic valve must be installed with the breather hole ③ facing to the housing slot ④ .

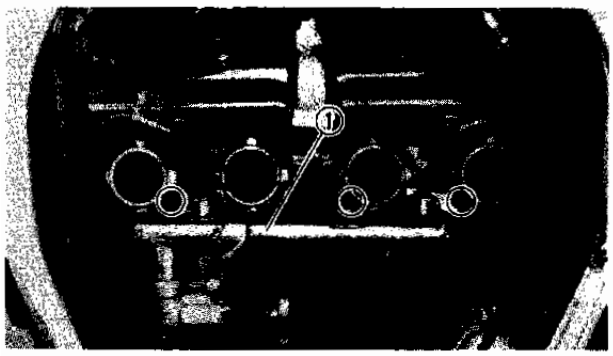


2.Install:
- Thermostatic valve cover ①
- Thermostatic valve housing ②

Bolt (thermostatic valve cover):
10 Nm (1.0 m • kg, 7.2 ft • lb)
Bolt
(thermostatic valve housing):
10 Nm (1.0 m • kg, 7.2 ft • lb)

NOTE:
Before installing the thermostatic valve housing to the coolant collector (inlet), apply a thin coating of grease to the O-ring.

⚠ WARNING
Always use a new O-ring.



3.Install:
- Water jacket joint ① (outlet)

	Bolt (Water jacket joint): 10 Nm (1.0 m • kg, 7.2 ft • lb)

NOTE:
Before installing the coolant collector (inlet) to the cylinder head, apply a thin coating of grease to the O-rings.

⚠ WARNING
Always use new O-rings.

4.Fill:
- Cooling system
  Refer to the "COOLANT REPLACEMENT" section in CHAPTER 3.

5.Adjust:
- Throttle cable free play
  Refer to the "THROTTLE CABLE FREE PLAY ADJUSTMENT" section in CHAPTER 3.

WATER PUMP

REMOVAL

1.Remove:
- Lower cowling
- Center cowling (left)

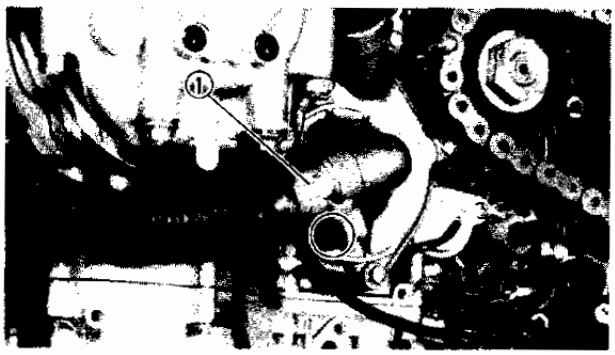
Refer to the "COWLINGS" section in CHAPTER 3.

2.Drain:
- **Coolant**

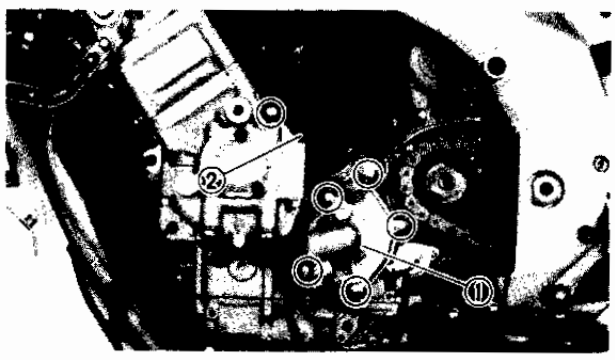
Refer to the "COOLANT REPLACEMENT" section in CHAPTER 3.

3.Remove:
- Shift pedal link
- Crankcase cover (left)

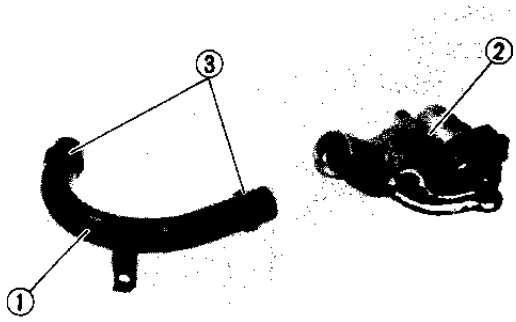
Refer to the "ENGINE REMOVAL" section in CHAPTER 4.



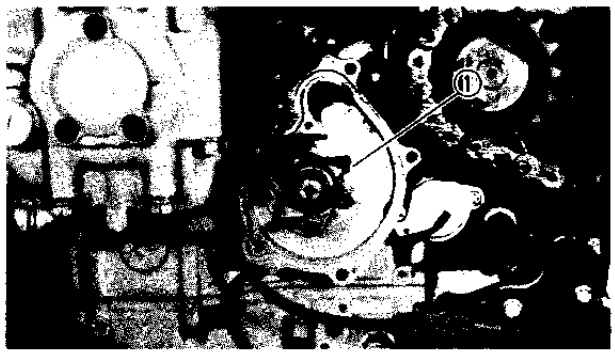
4.Remove:
- Inlet pipe ① (water pump)
- O-ring



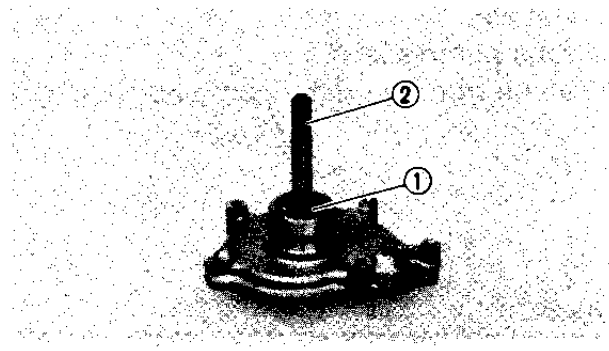
5.Remove:
- Water pump housing ① (with outlet pipe ②)
- Dowel pins
- O-ring



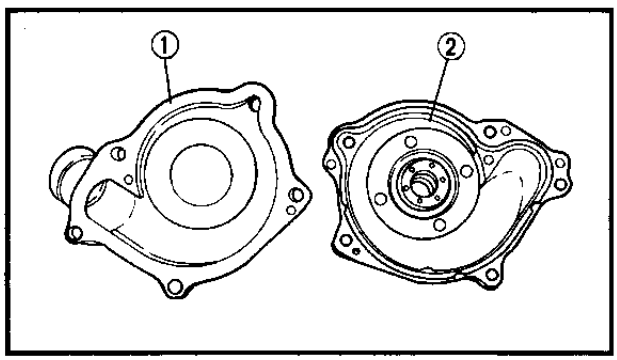
6.Remove:
- Outlet pipe ① (water pump) (from water pump cover ②)
- O-rings ③



7.Remove:
- Water pump housing ①

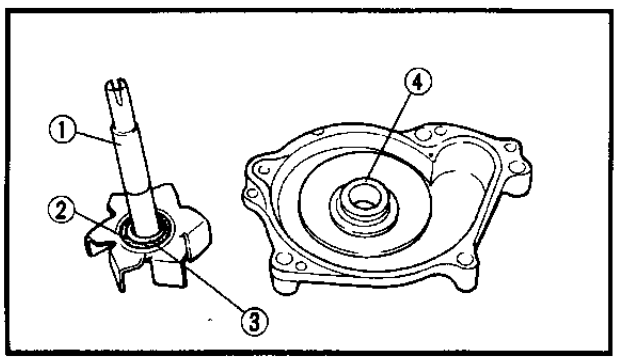


8.Remove:
- Circlip ①
- Impeller shaft ②

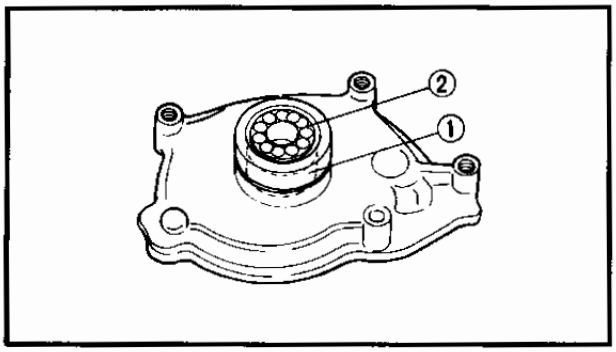


INSPECTION

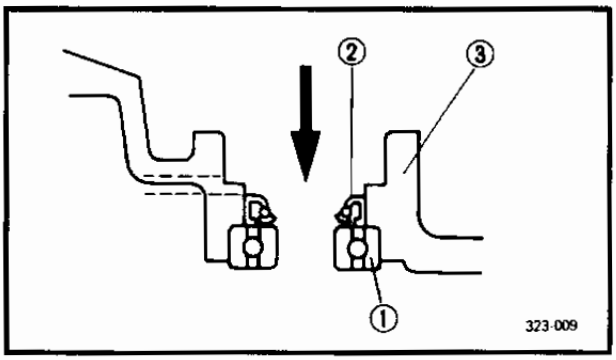
1.Inspect:
- Water pump cover ①
- Water pump housing ②
  Cracks/Damage → Replace.



2.Inspect:
- Impeller ①
  Cracks/Wear/Damage → Replace.
- Damper rubber ②
- Rubber holder ③
- Water pump seals ④



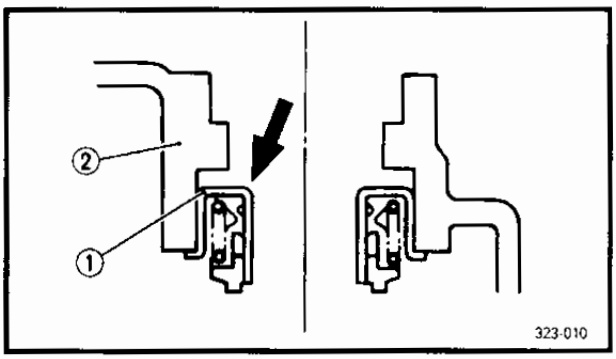
3. Inspect:
- Oil seal ①
  Wear/Damage → Replace.
- Bearing ②
  Roughness → Replace.



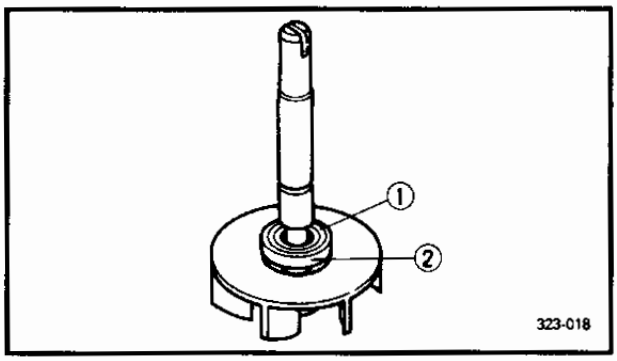
Bearing and seal replacement

1.Remove:
- Bearing ①
- Oil seal ②
  Tap off from the water pump seal side.

③Water pump housing

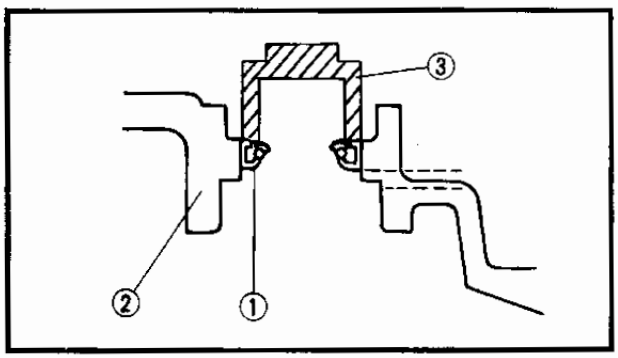


2.Remove:
- Water pump seal ①
  Tap off from the water pump housing ②.



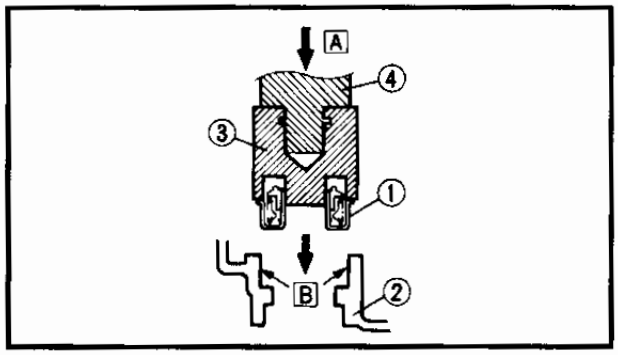
3.Remove:
- Rubber holder ①
- Damper rubber ②
  (from impeller)
  Pry out with a thin flat head screwdriver.

NOTE:
Be careful not to scratch the impeller shaft.



4.Install:
- Oil seal ① (new)
  (to water pump housing ②)

NOTE:
Use a socket ③ that matches the outside diameter of the oil seal.
Before installing the oil seal, apply tap water or coolant to the outer surface of the oil seal.

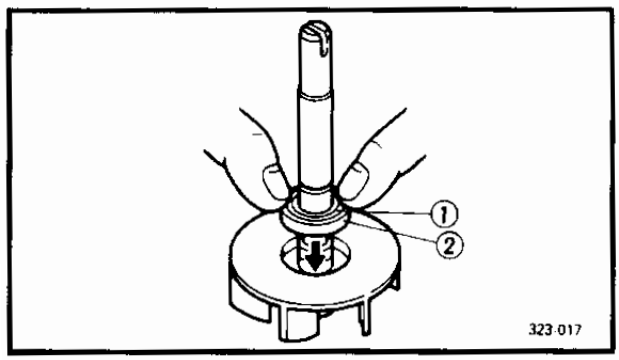


5.Install:
- Water pump seal ① (new)

NOTE:
- Use the water pump seal installer.
- Apply Yamaha bond No. 1215 or Quick Gasket® to the water pump housing ② before installing the seal.

Water pump seal installer (③ and ④):
YU-94051-1/90890-04058
YM-33221/90890-04078
Quick Gasket®:
ACC-11001-15-01
Yamaha bond No. 1215
90890-85505

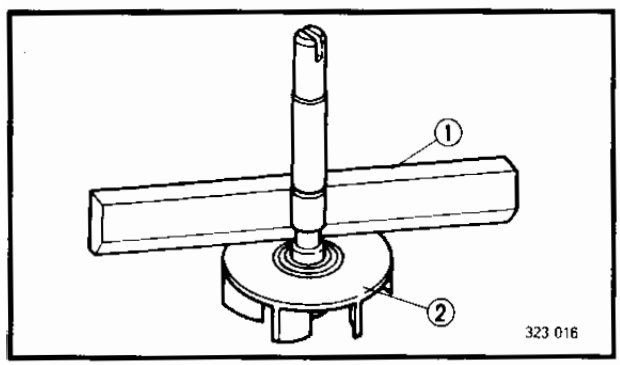
A PRESS



6.Apply:
- Tap water or coolant
  (to outer surface of damper rubber ①)

CAUTION:
Never apply oil or grease to water pump seal surfaces.

7.Install:
- Dumper rubber ① (new)
- Rubber holder ② (new)



8.Measure:
- Tilt
  Out of specification → Repeat the above steps 6 and 7.

CAUTION:
Be sure the dumper rubber and rubber holder fit squarely.

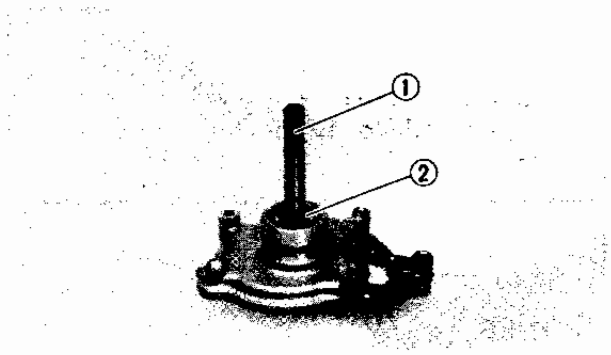


Tilt limit:
0.15 mm (0.006 in)

①Straight edge
②Impeller

INSTALLATION

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



1.Install:
- Impeller shaft ①
- Circlip ②

NOTE:

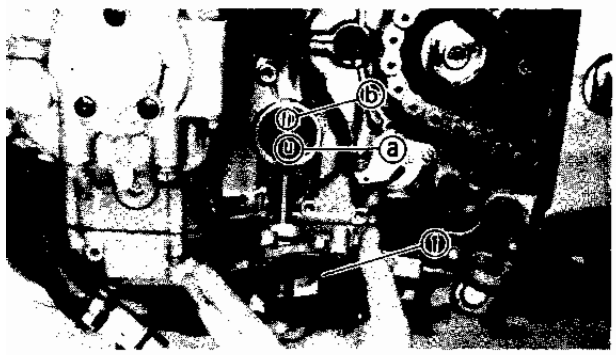
Before installing the impeller shaft, apply tap water or coolant to the water pump seal, then apply lithium soap base grease to the bearing and oil seal.

CAUTION:

Be sure not to scratch the water pump seal while installing.

⚠ WARNING

Always use a new circlip.

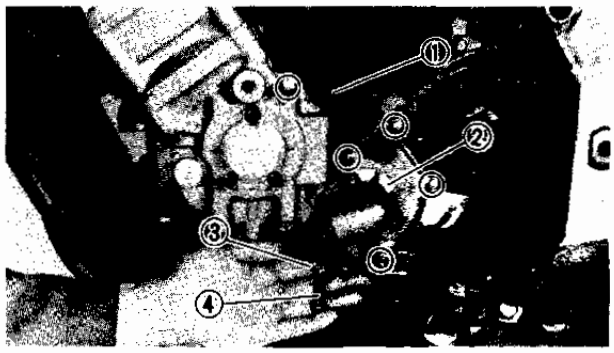


2.Install:
- Water pump housing ①

NOTE:
- Align the slot ⓐ on the impeller shaft with the projection ⓑ on the oil pump shaft.
- Apply a thin coating of grease to the O-ring.

⚠ WARNING

Always use a new O-ring on the water pump housing.



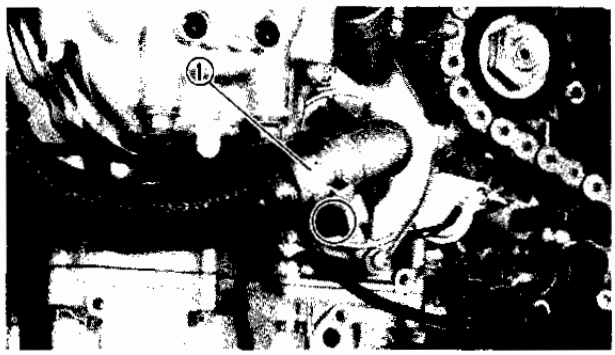
3.Install:
- Outlet pipe ① (with O-ring) (to water pump cover ②)
- Dowel pins
- O-ring
- Water pump cover ②

NOTE:
- Before installing the outlet pipe (water pump) ①, apply the grease to the O-rings.
- Set the new copper washer ③ to the coolant drain bolt ④.

	Bolt (water pump cover): 10 Nm (1.0 m • kg, 7.2 ft • lb)

⚠ WARNING

Always use new O-rings, and copper washer on the coolant drain bolt.



4.Install:
- O-ring
- Inlet pipe ① (water pump)

NOTE:
Before installing the inlet pipe (water pump), apply the grease to the O-ring.

⚠ WARNING

Always use a new O-ring.

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

5.Install:
- Crankcase cover (left)
- Shift pedal link

Refer to the "ENGINE ASSEMBLY AND ADJUSTMENT" section in CHAPTER 4.

6.Fill:
- Cooling system
  Refer to the "COOLANT REPLACEMENT" section in CHAPTER 3

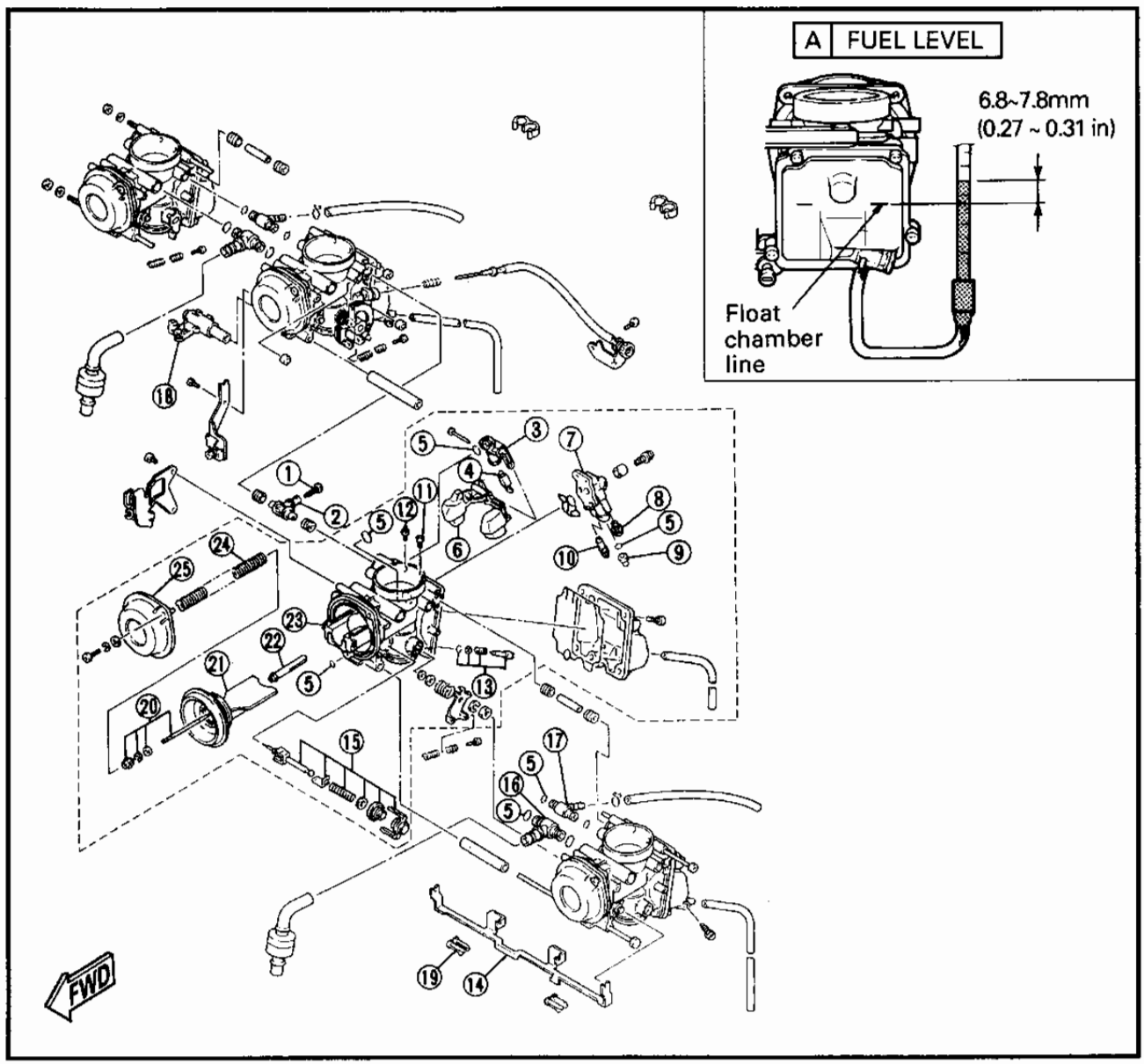
7.Inspect:
- Cooling system
  Decrease of pressure (leaks) → Replace oil cooler as required.
  Refer to the "RADIATOR — INSTALLATION" section.

CARBURETION

CARBURETOR (YZF750R)

①Fuel strainer
②Joint (fuel feed)
③Valve seat
④Needle valve
⑤O-ring
⑥Floats
⑦Jet housing
⑧Starter jet
⑨Main jet
⑩Pilot jet
⑪Pilot air jet
⑫Main air jet
⑬Pilot screw set
⑭Joint (starter lever)
⑮Starter plunger set
⑯Joint (airvent hose-vacuum chamber)
⑰Joint (airvent hose-float chamber)
⑱Starter joint
⑲Stopper
⑳Jet needle set
㉑Piston valve
㉒Needle jet
㉓Piston valve support
㉔Spring
㉕Vacuum chamber cover

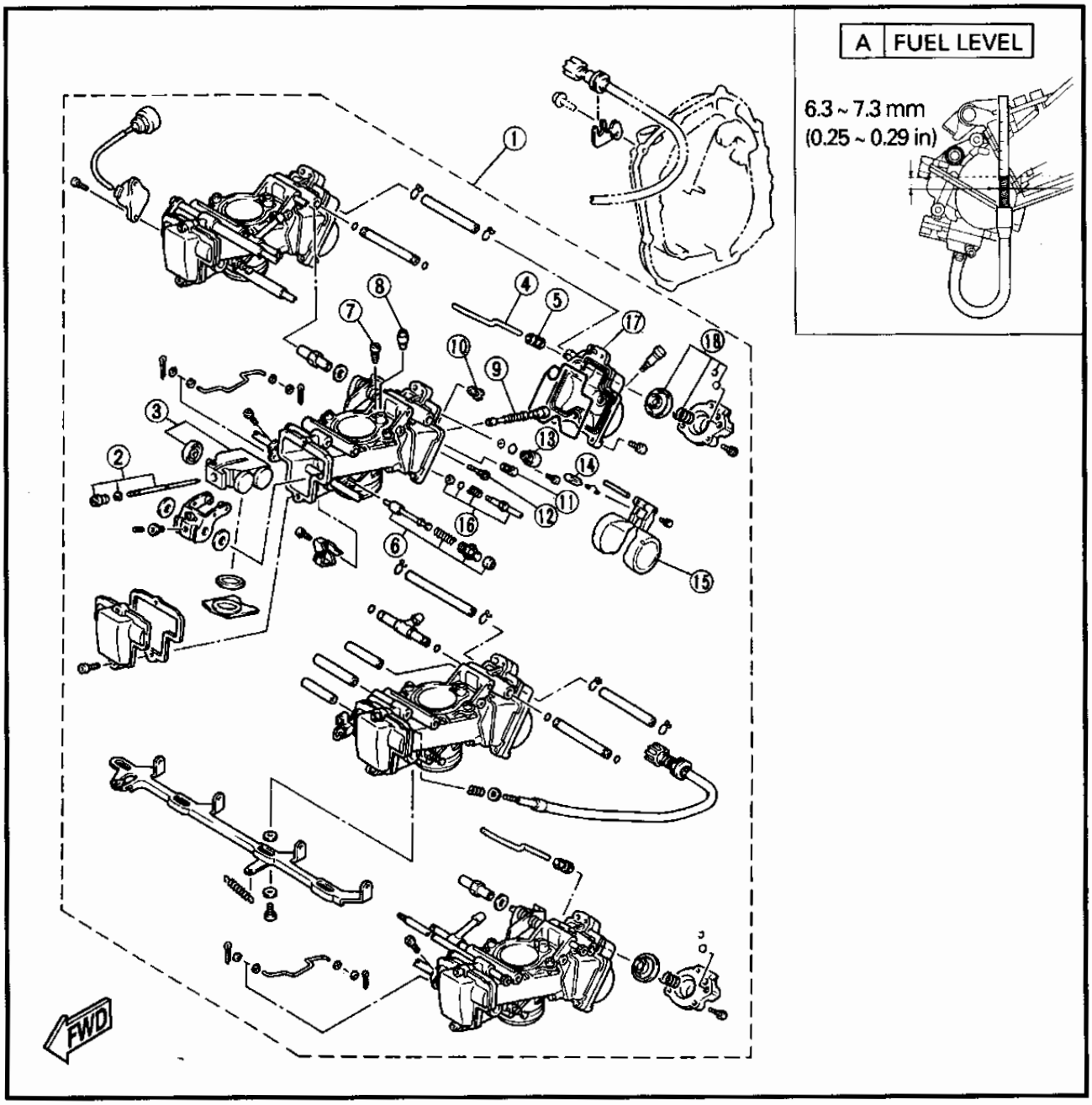
SPECIFICATIONS				
I. D. Mark	4HD00	4HN00	4HR00	4FM00
MAIN JET				
(#1, 4 cylinder)	#•125	#•127.5	#125	#•125
(#2, 3 cylinder)	#122.5	#•125	#122.5	#•122.5
MAIN AIR JET				
(#1, 4 cylinder)	#45	←	←	#55
(#2, 3 cylinder)	#60	←	←	←
PILOT JET	#45	←	#35	#42.5
PILOT AIR JET	#125	←	#120	←
JET NEEDLE			5CEX25	
(#1, 4 cylinder)	5CEX19	•5CEX19	—	5CEU27
(#2, 3 cylinder)	5CEX24	•5CEX24	—	5CET26
PILOT SCREW	2 turns out	←	←	←
THROTTLE VALVE	#125	←	←	←
ENGINE IDLE SPEED	1,150~1,250 r/min			
FUEL LEVEL	6.8~7.8mm (0.27~0.31 in)			



CARBURETOR (YZF750SP)

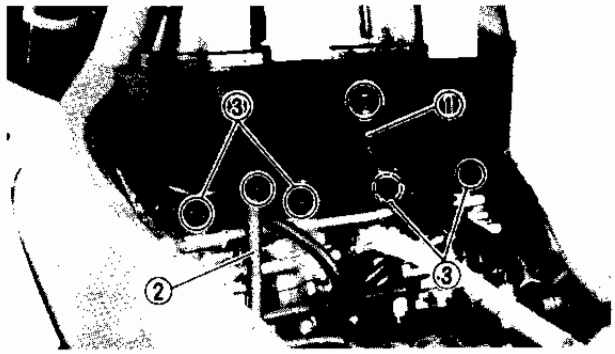
①Carburetor assembly
②Jet needle set
③Throttle valve
④Acceleration pump rod
⑤Boot
⑥Starter plunger
⑦Main air jet
⑧Pilot air jet
⑨Needle jet
⑩Main jet
⑪Starter jet
⑫Pilot jet
⑬Valve seat
⑭Needle valve
⑮Float
⑯Pilot screw
⑰Float chamber
⑱Acceleration pump

SPECIFICATIONS			
I. D. Mark	4HS00	4HT00	4FN00
MAIN JET	#125		#125
(#1, 4 cylinder)	—	#128	—
(#2, 3 cylinder)	—	#125	—
MAIN AIR JET	#70	←	←
PILOT JET	#40	#38	#40
PILOT AIR JET	#120	←	←
JET NEEDLE	NICB	NICA	←
PILOT SCREW	2~2-1/2 turns out	←	1-3/4
ENGINE IDLE SPEED	1,150~1,250 r/min		
FUEL LEVEL	6.3~7.3mm (0.25~0.29 in)		



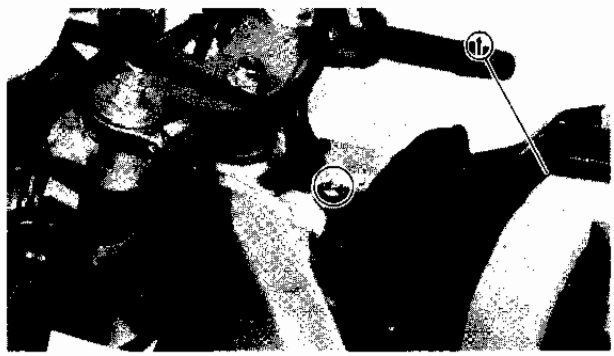
REMOVAL

1.Remove:
- Seat
  Refer to the "SEAT" section in CHAPTER 3.
- Fuel tank
  Refer to the "FUEL TANK" section in CHAPTER 3.
- Center cowling (left)
  Refer to the "COWLINGS" section in CHARTER 3.

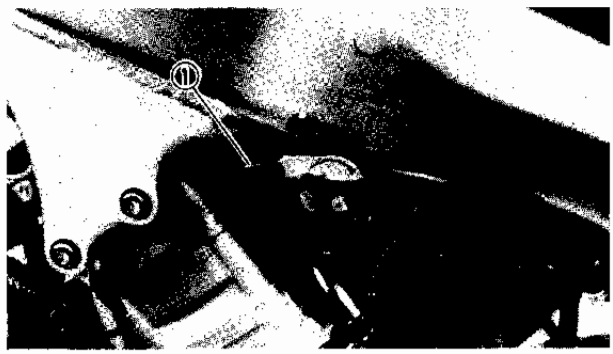


2.Disconnect:
- Breather hose ① (crankcase)
- Breather hose ② (air filter case)

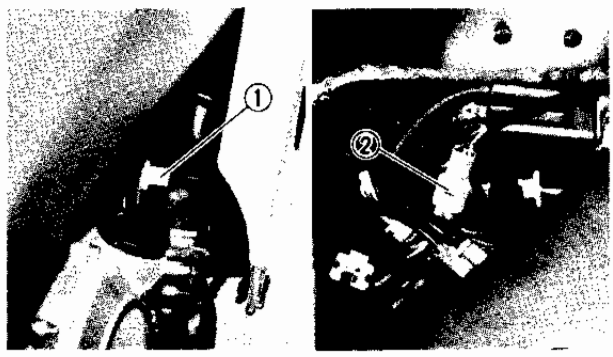
3.Loosen:
- Screws ③



4.Remove:
- Air filter case ①



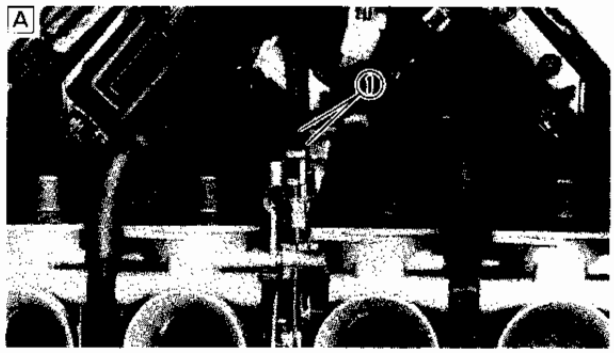
5.Disconnect:
- Starter cable ①



6.Remove:
- Throttle stop screw holder ① (YZF750SP)

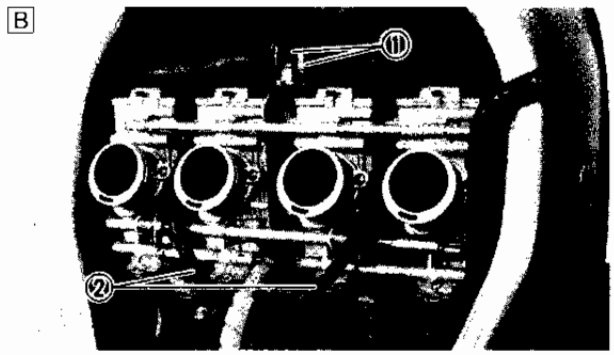
7.Disconnect:
- Throttle sensor coupler ② (YZF750SP)

A

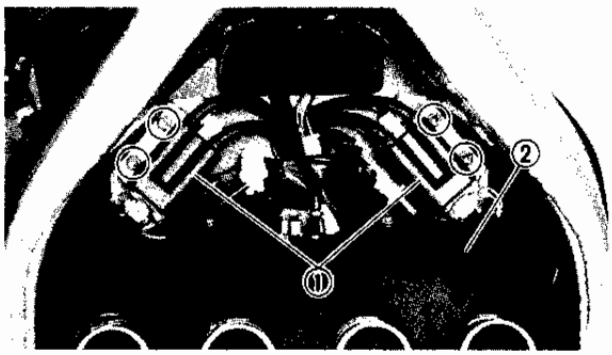


8.Disconnect:
- Throttle cables ①
- Breather hoses ② (YZF750SP)

B

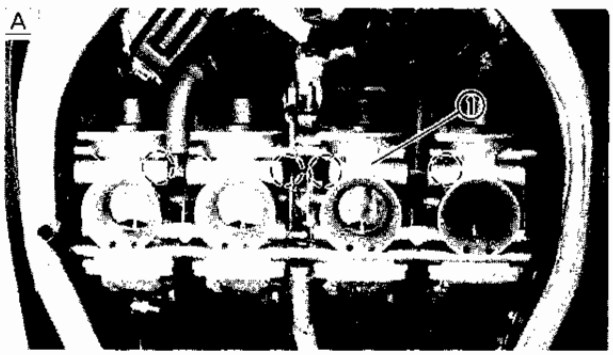


A YZF750R
B YZF750SP



9.Remove:
- Ignition coils ①
- Carburetor cover ② (YZF750SP)

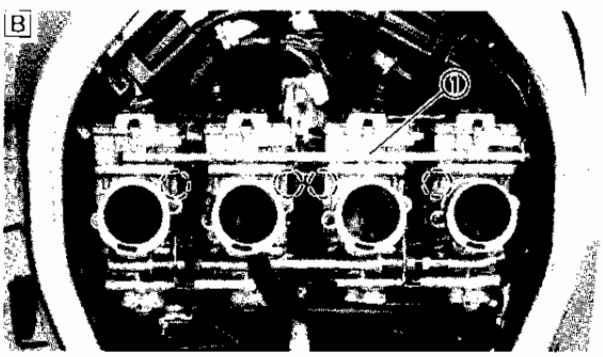
A



10.Loosen:
- Carburetor joint screws

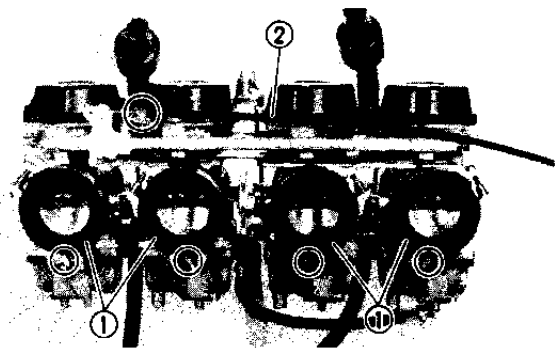
11.Remove:
- Carburetor ①

B



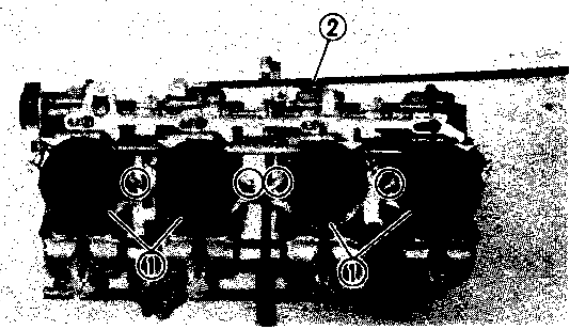
A YZF750R
B YZF750SP

A



12.Remove:
- Carburetor joints ①
- Starter cable ②

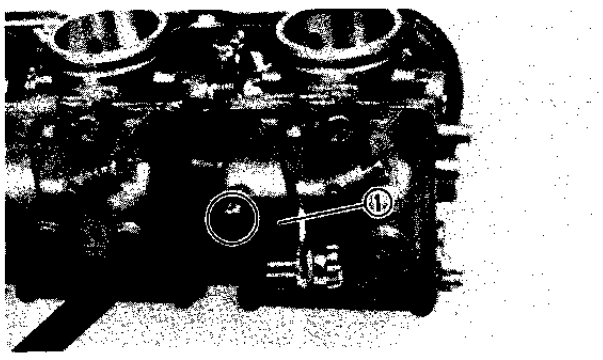
B



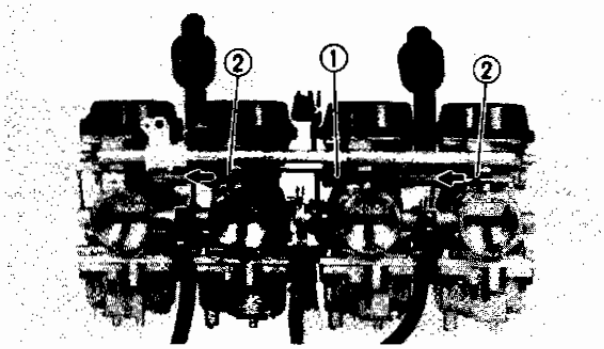
A YZF750R
B YZF750SP

DISASSEMBLY
YZF750R

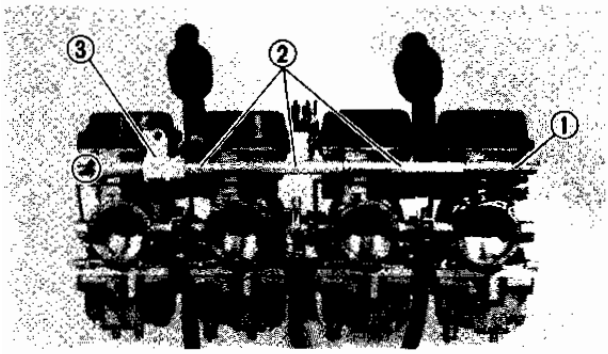
NOTE:
The following parts can be cleaned and inspected without carburetor separation.
(All inner parts except starter plunger can be cleaned and inspected without carburetor separation.)
- Throttle valve
- Piston valve
- All jets
- Float
- Needle valve
- Valve seat
- Main nozzle
- Jet needle



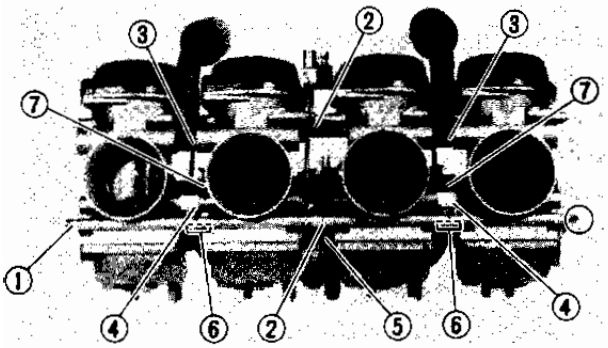
1.Remove:
- Throttle stop screw bracket ①



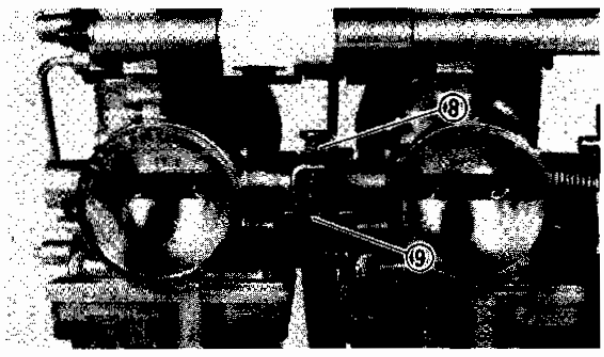
2.Remove:
- Starter joint ①
  Slide out the stoppers ② to remove the starter joint ①.



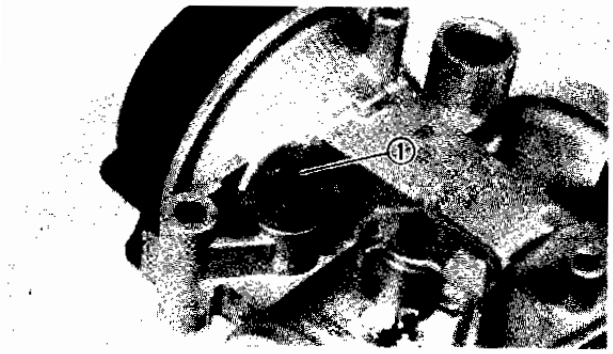
3.Remove:
- Connecting bolt ① (upper)
- Spacer collars ②
- Joint ③ (starter lever)



4.Remove:
- Connecting bolt ① (lower)
- Spacer collars ②
- Joints ③ (air vent hose-vacuum chamber) (with o-rings)
- Joints ④ (air vent hose-float chamber) (with o-rings)
- Joint ⑤ (fuel hose) (with gasket rings)
- Joints ⑥ (fuel feed) (with o-ring)
- Springs ⑦
  (from between carburetors #1 and #2, and #3 and #4)

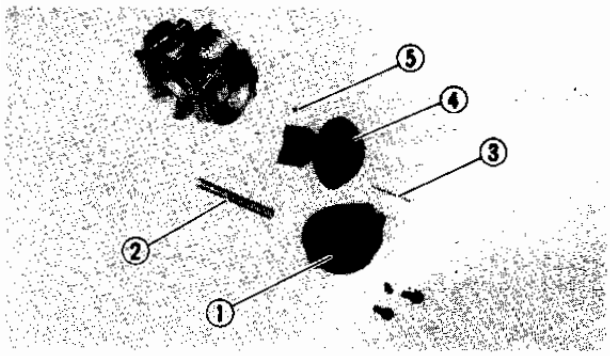


NOTE:
Be careful not to lose the return spring ⑧ under the synchronizing screw ⑨ when disassembling the carburetor.

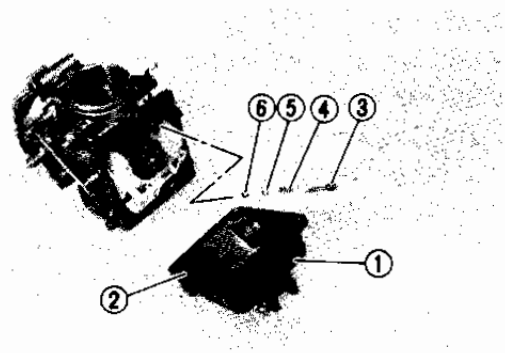


5.Remove:
- Starter plunger ①

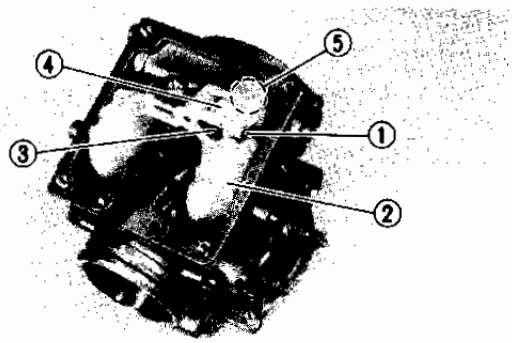
NOTE:
Unhook the hooks from the carburetor body and then pull out the starter plunger.



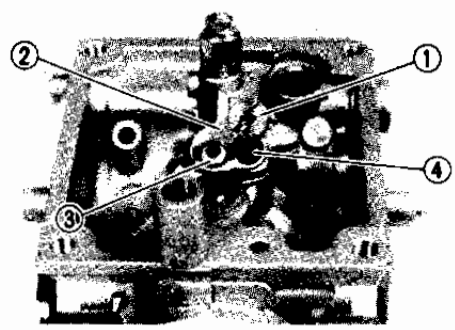
6.Remove:
- Vacuum chamber cover ①
- Spring ②
- Jet needle ③
- Piston valve ④
- O-ring ⑤



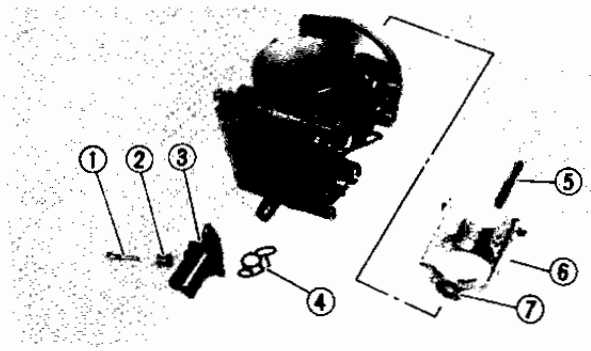
7.Remove:
- Float chamber ①
- Gasket ②
- Pilot screw ③
- Spring ④
- Washer ⑤
- O-ring ⑥



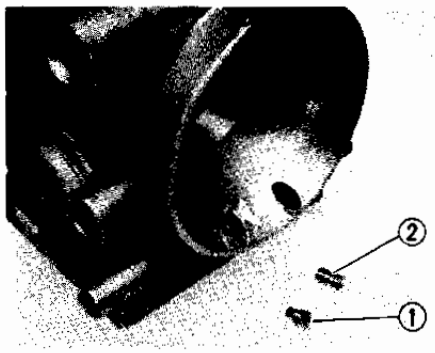
8.Remove:
- Float pin ①
- Float ②
- Needle valve ③
- Valve seat ④
- O-ring ⑤



9.Remove:
- Starter jet ①
- Main jet holder ②
- Main jet ③
- Pilot jet ④



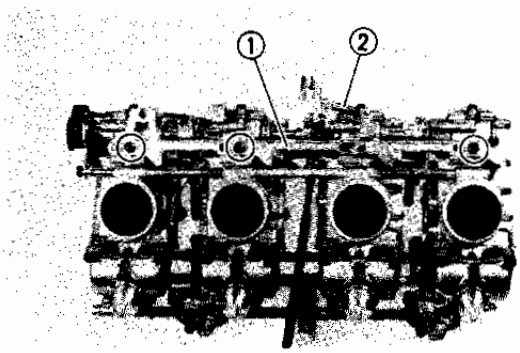
10.Remove:
- Bolt ① (needle jet)
- Needle jet holder ②
- Jet housing ③
- Gasket ④
- Needle jet ⑤
- Piston valve support ⑥
- O-ring ⑦



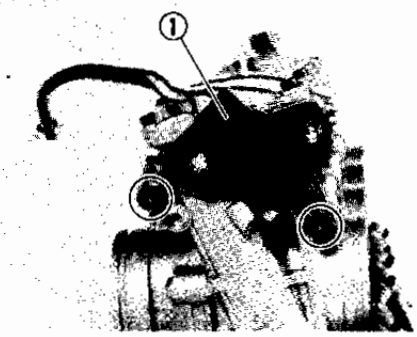
11.Remove:
- Pilot air jet ①
- Main air jet ②

YZF750SP

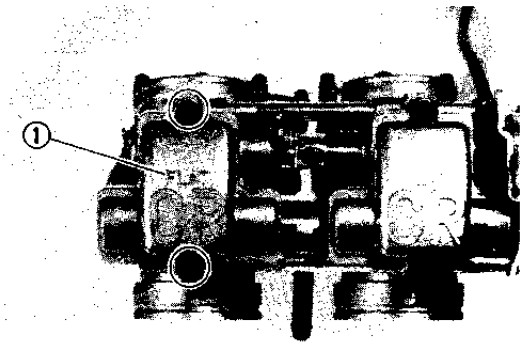
CAUTION:
- **Never separate the carburetor .**
- **If the carburetors are separated, they can not be synchronized anymore. If one carburetor is defect, replace the whole carburetor assembly as a single unit.**



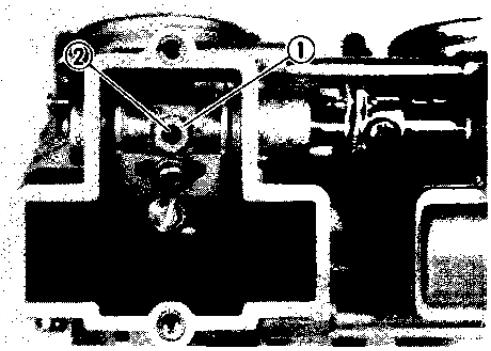
1.Remove:
- Starter joint ①
- Return spring ②



2.Remove:
- Throttle sensor ①
  (with bracket)

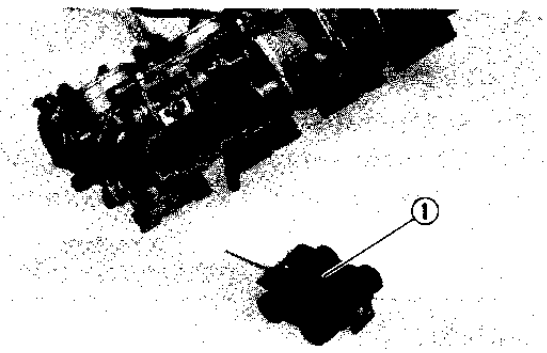


3.Remove:
- Valve lever housing cover ①

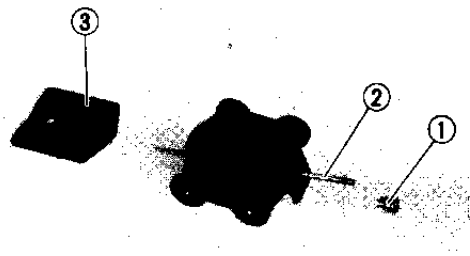


4.Remove:
- Locknut ①
- Adjusting screw ②

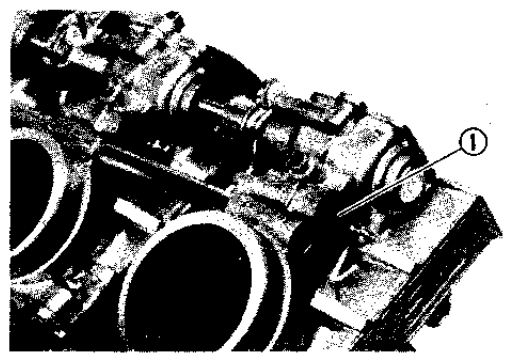
NOTE:
Never loosen the locknut and adjusting screw of carburetor #2, as this is the reference carburetor.



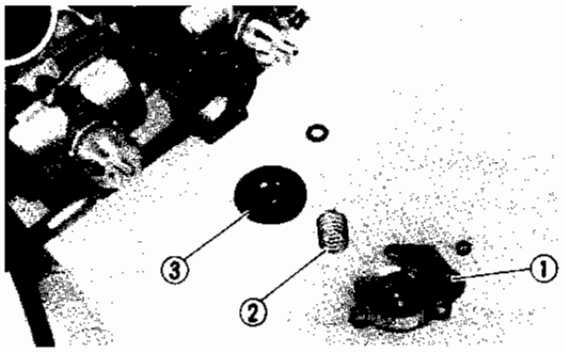
5.Remove:
- Throttle valve assembly ①



6.Remove:
- Jet needle holder ①
- Jet needle ②
- Throttle valve plate ③

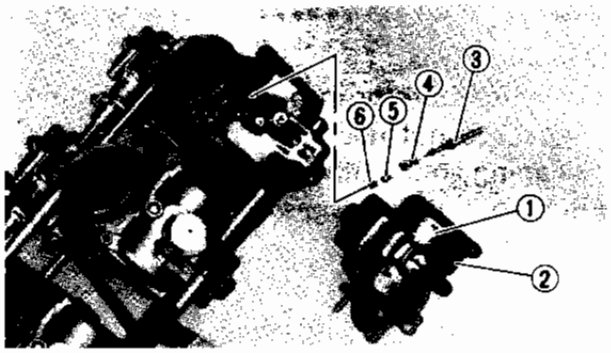


7.Remove:
- Starter plunger ①

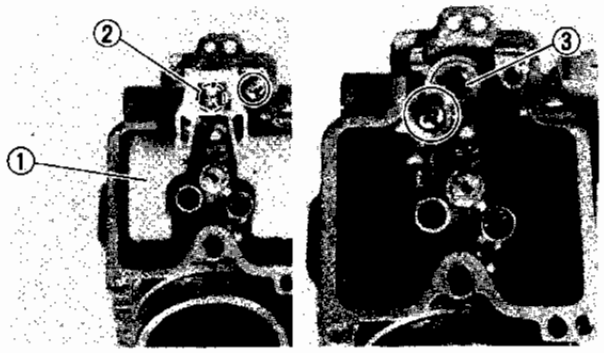


8.Remove:
- Cover ① (acceleration pump)
- Spring ②
- Diaphragm ③
- O-rings

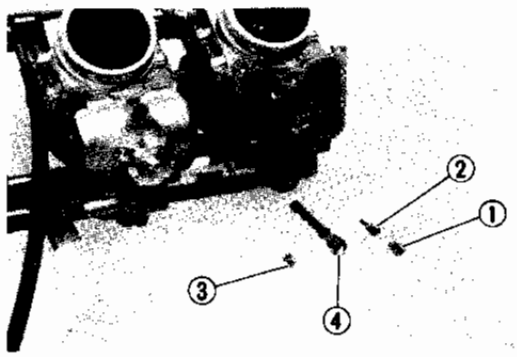
9.Disconnect:
- Hose (acceleration pump)



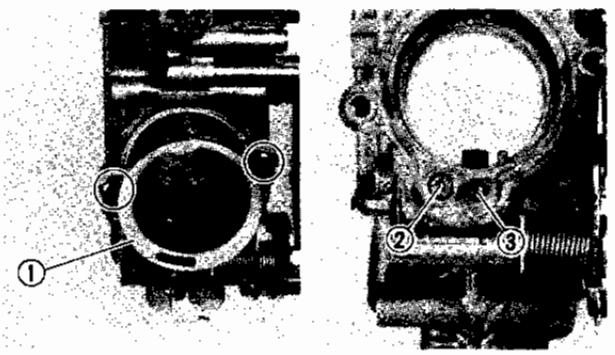
10.Remove:
- Float chamber ①
- Gasket ②
- Pilot screw ③
- Spring ④
- Washer ⑤
- O-ring ⑥



11.Remove:
- Float ①
- Needle valve ②
- Valve seat ③

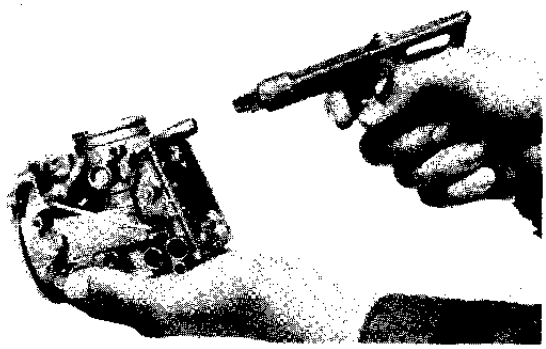


12.Remove:
- Main jet ①
- Pilot jet ②
- Starter jet ③
- Needle jet ④

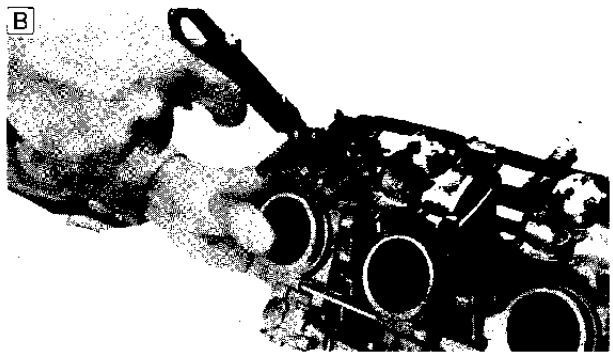


13.Remove:
- Intake joint ① (carburetor)
- Gasket
- Pilot air jet ②
- Main air jet ③

A



B



INSPECTION

1.Inspect:
- Carburetor body
- Float chamber
- Jet housing
  Creaks/Damage → Replace.
- Fuel passage
  Contamination → Clean as indicated.
- Carburetor float chamber body
  Contamination → Clean.

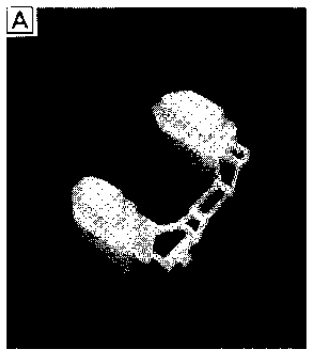
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Cleaning steps:
- Wash carburetor in petroleum based solvent. (Do not use any caustic carburetor cleaning solution.)
- Blow out all passages and jets with compressed air.

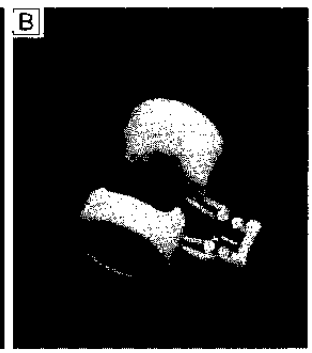
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A YZF750R
B YZF750SP

A



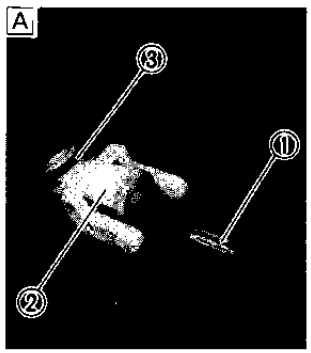
B



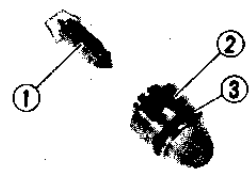
2.Inspect:
- Floats
- Damage → Replace.

A YZF750R
B YZF750SP

A



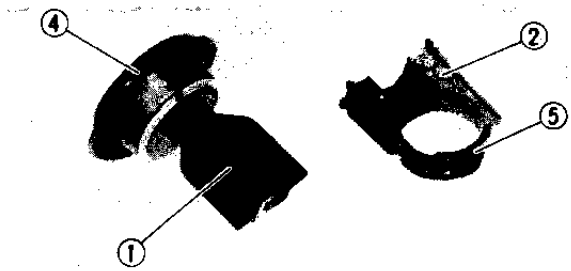
B



3.Inspect:
- Needle valve ①
- Valve seat ②
- O-ring ③
  Damage/Wear/Contamination → Replace as a set.

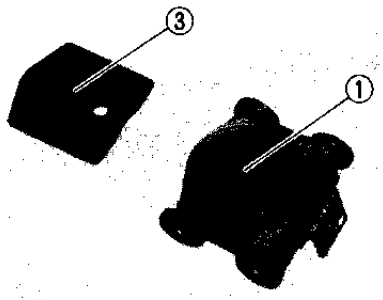
A YZF750R
B YZF750SP

A

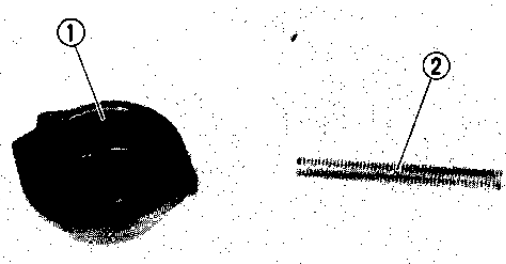


4.Inspect:
- Throttle valve ①
- Throttle valve support ②
- Throttle valve plate ③
  Scratches/Wear/Damage → Replace.
- Rubber diaphragm ④
  Tears → Replace.
- O-ring ⑤
  Wear/Damage → Replace.

B

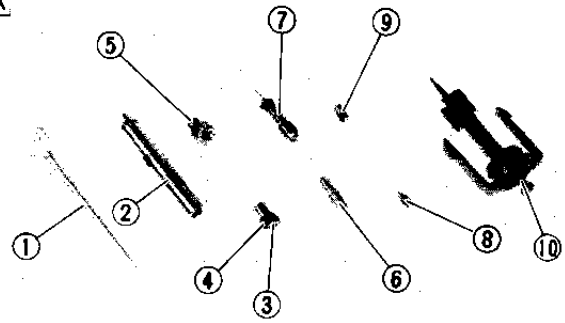


A YZF750R
B YZF750SP

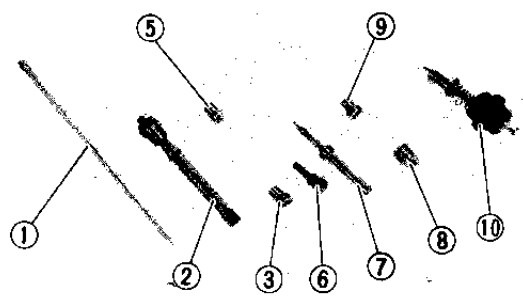


5.Inspection:
- Vacuum chamber cover ① (YZF750R)
- Spring ② (YZF750R)
  Cracks/Damage → Replace.

A

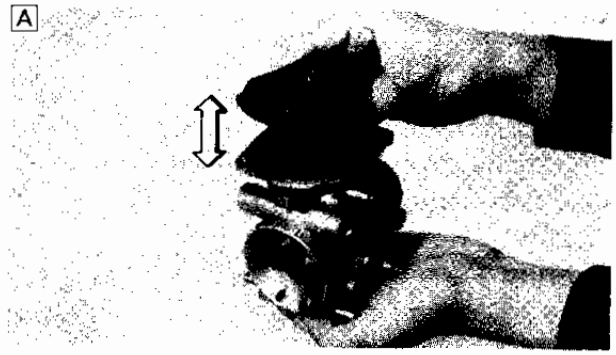


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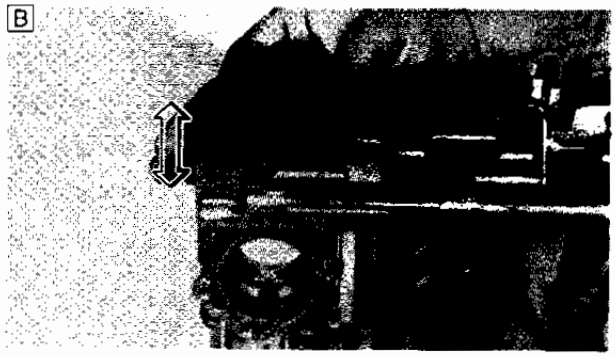


6.Inspect:
- Jet needle ①
- Needle jet ②
- Main jet ③
- O-ring ④
- Starter jet ⑤
- Pilot jet ⑥
- Pilot screw ⑦
- Pilot jet ⑧
- Main air jet ⑨
- Starter plunger ⑩
  Bends/Wear/Damage → Replace.
  Contamination → Blow out jets with compressed air.

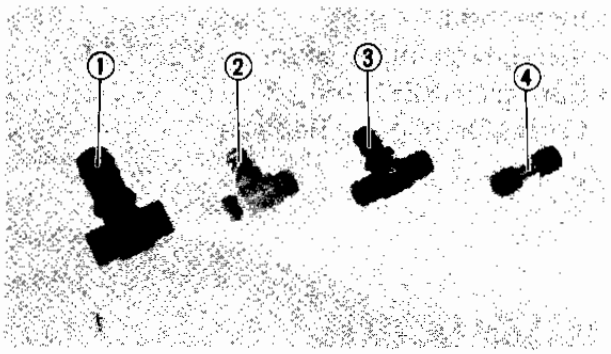
A YZF750R
B YZF750SP



7.Check:
- Free movement
  Insert the throttle valve into the carburetor body, and check for free movement.
  Stick → Replace.



A YZF750R
B YZF750SP

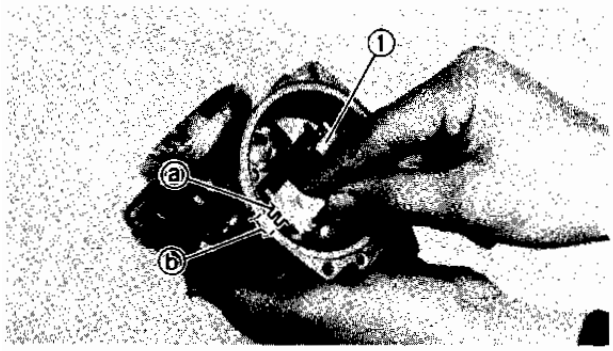


8.Inspect:
- Joint (ventilation hose) ①
- Joint (overflow hose) ②
- Joint (fuel hose) ③
- Joint (fuel feed) ④
  Cracks/Damage → Replace.

ASSEMBLY

Reverse the "DISASSEMBRY" procedures.
Note the following points.

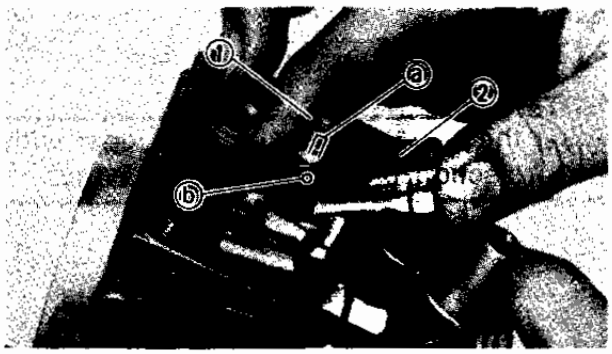
CAUTION:
- **Before reassembling, wash all parts in clean petroleum based solvent.**
- **Always use a new gasket.**

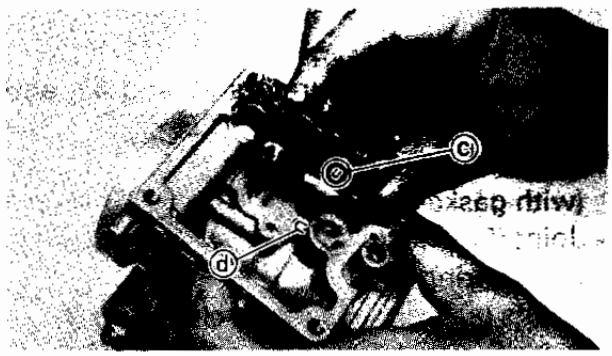


YZF750R

1.Install:
- Throttle valve support ①

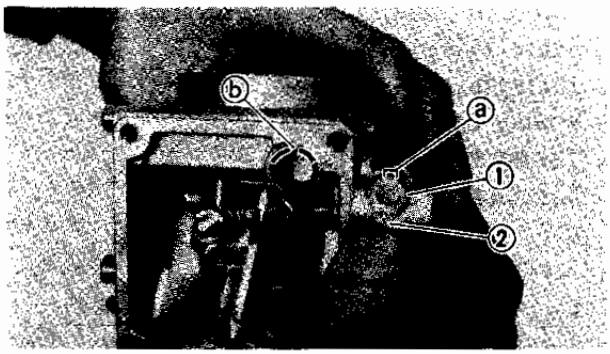
NOTE:
Align the projections ⓐ on the valve support with the slots ⓑ on the carburetor body.





2.Install:
- Needle jet ①
- Gasket
- Jet housing ②
- Holder (needle jet)
- Bolt (needle jet)

NOTE:
Align the groove ⓐ on the needle jet ① with the projection ⓑ on the jet housing ② and then align the projection ⓒ on the jet housing ② with the hole ⓓ on the carburetor body.

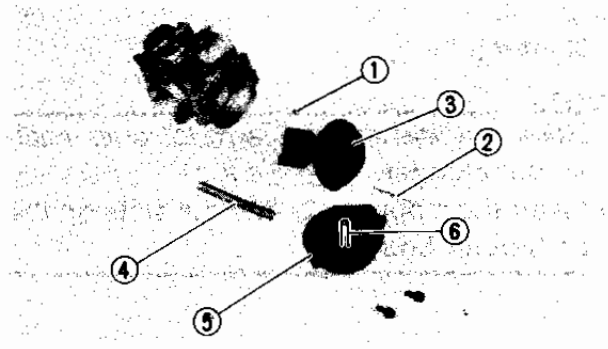


3.Install:
- O-ring ①
- Valve seat ②
- Needle valve
- Float
- Float pin

NOTE:
Align the projection ⓐ on the valve seat with the slot ⓑ on the carburetor body.

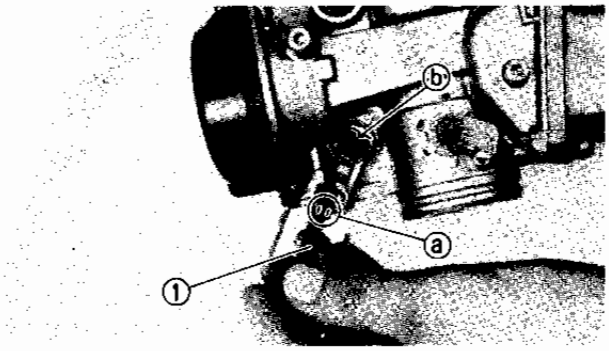
4.Install:
- O-ring
- Washer
- Spring
- Pilot air screw

Pilot screw (turns out)
2



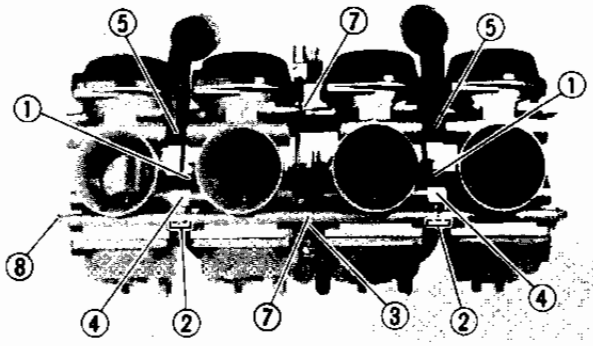
5.Install:
- O-ring ①
- Jet needle ②
- Throttle valve ③
- Spring ④
- Vacuum chamber cover ⑤

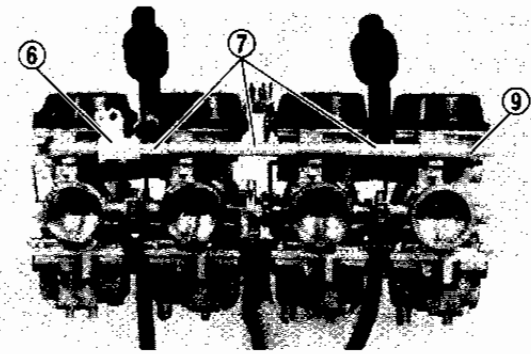
NOTE:
Insert the spring end onto the spring guide ⑥ on the vacuum chamber cover.



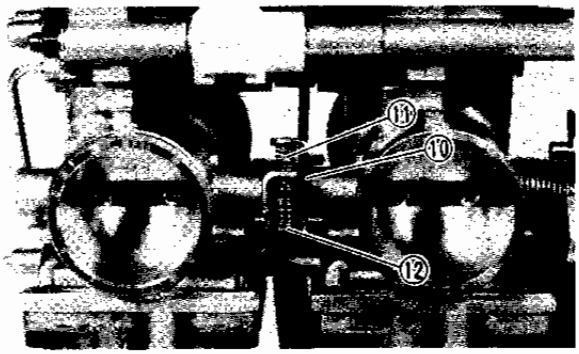
6.Install:
- Starter plunger ①

NOTE:
Align the slit ⓐ of the starter plunger with the projection ⓑ of the carburetor body.

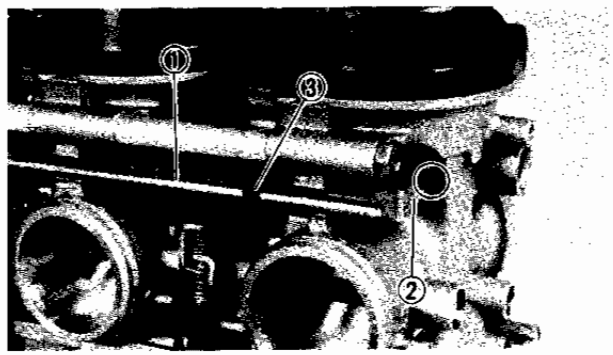




7.Install:
- Springs ①
  (between the carburetors #1 and #2, and #3 and #4)
- Joint (fuel feed) ②
  (with gasket rings)
- Joint (fuel hose) ③
  (with O-rings)
- Joints (air vent hose-float chamber) ④
  (with O-rings)
- Joints (air vent hose-vacuum chamber) ⑤
  (with O-ring)
- Joint (starter lever) ⑥
- Spacer collars ⑦
- Connecting bolt (lower) ⑧
- Connecting bolt (upper) ⑨



NOTE:
- Do not tighten the connecting bolts yet.
- Insert the throttle arm ⑩ (on the #1, #2, #4 carburetors) between the spring ⑪ and synchronizing screw ⑫



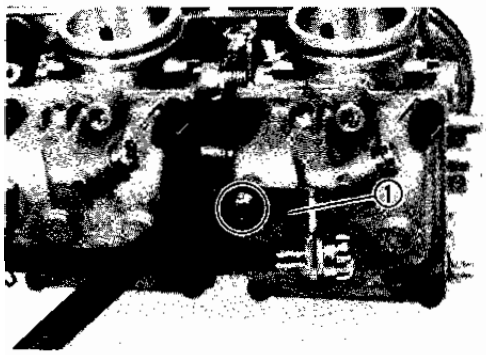
8.Install:
- Starter joint ①

NOTE:
- Hook the starter joint arm ② onto each starter plunger.
- Insert the stoppers ③ into the slots on the carburetor body.

9.Tighten:
- Connecting bolts

	Connecting bolt (upper): **3.5 Nm (0.35 m • kg, 2.5 ft • lb)** **Connecting bolt (lower):** **5 Nm (0.5 m • kg, 3.6 ft • lb)**

NOTE:
- Place the carburetor assembly on a surface plate with the intake manifold side down and then tighten the connecting bolts while pushing down the respective carburetor with an even force.
- After tightening, check the throttle lever and starter joint for smooth action.



10.Tighten:
- Screw ① (throttle stop screw bracket)

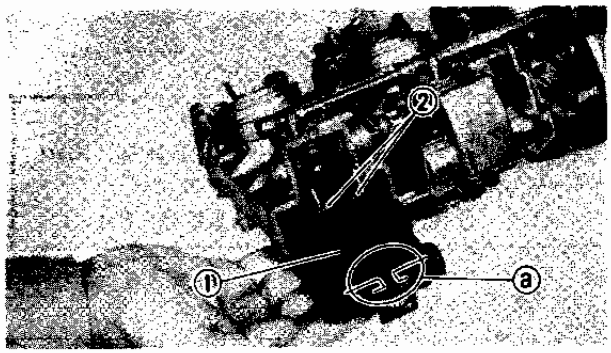
	Screw **(throttle stop screw bracket):** **3.5 Nm (0.35 m • kg, 2.5 ft • lb)** **Apply LOCTITE®**

YZF750SP

1.Install:
- Valve seat
- Needle valve
- Float

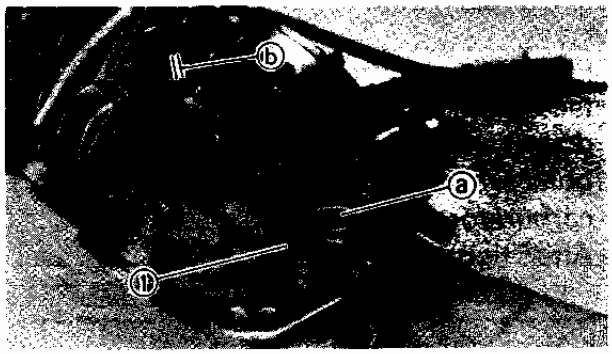
2.Install:
- O-ring
- Washer
- Spring
- Pilot air screw

Pilot air screw (turns out) **2~2-1/2**



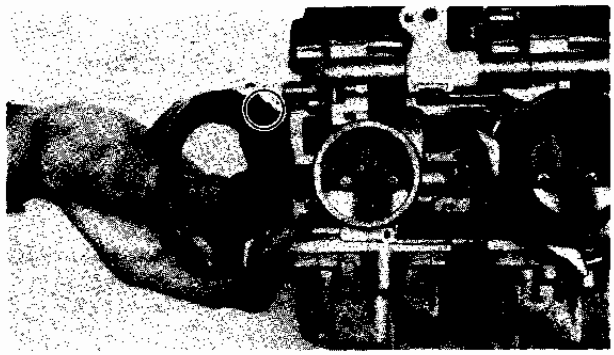
3.Install:
- Throttle valve assembly ①
- Valve lever housing cover

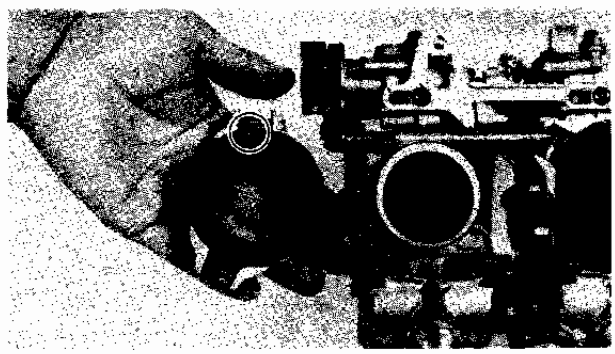
NOTE:
- Insert the valve lever rollers ② into the slits ⓐ of the throttle valve.
- Check the throttle lever and valve for smooth action.



4.Install:
- Throttle sensor ①

NOTE:
Align the projection ⓐ of the throttle sensor with the slit ⓑ of the throttle lever shaft.





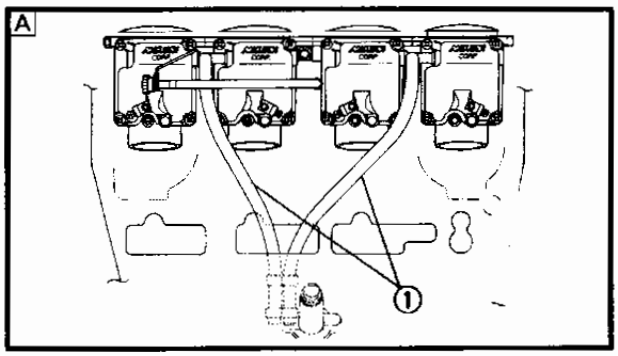
INSTALLATION
Reverse the "REMOVAL" procedure.
Note the following points.

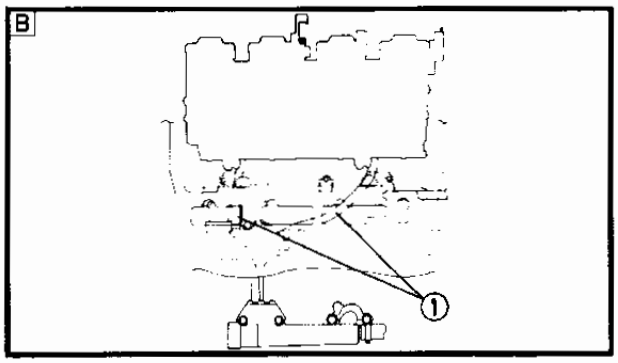
1.Install:
- Carburetor joint

NOTE:
- Install the carburetor joint with the "R" mark onto the #1 and #2 carburetors and the carburetor joint with the "L" mark onto the #3 and #4 carburetors.
- The carburetor joints with the "R" and "L" marks should face the carburetor side.

2.Install:
- Ignition coils

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





3.Install:
- Air vent hoses ①

Ⓐ YZF750R
Ⓑ YZF750SP

4.Adjust:
- Carburetor synchronization
  Refer to the "CARBURETOR SYNCHRONIZATION" section in CHAPTER 3.

5.Adjust:
- Idle speed

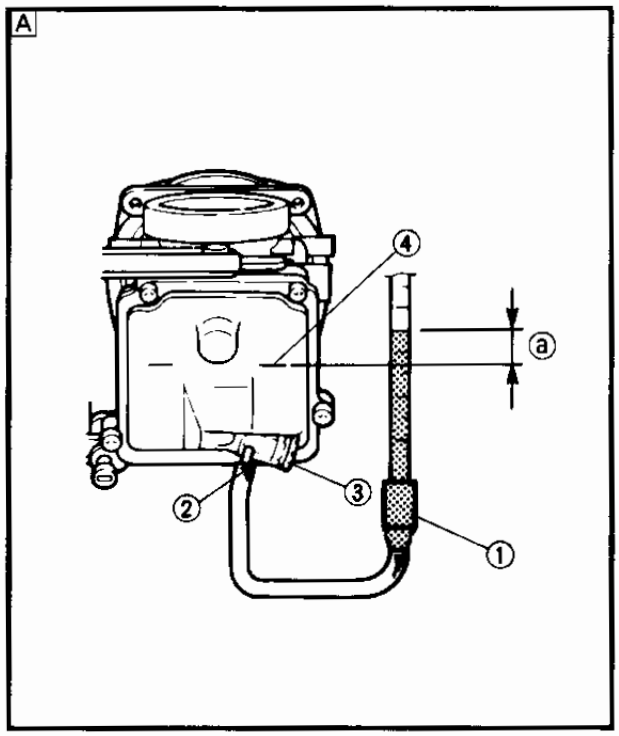
	Engine idle speed: **1,150 ~ 1,250 r/min**

Refer to the "IDLE SPEED ADJUSTMENT" section in CHAPTER 3.

6.Adjust:
- throttle cable free play

	Throttle cable free play: **3 ~ 7 mm (0.12 ~ 0.28 in)**

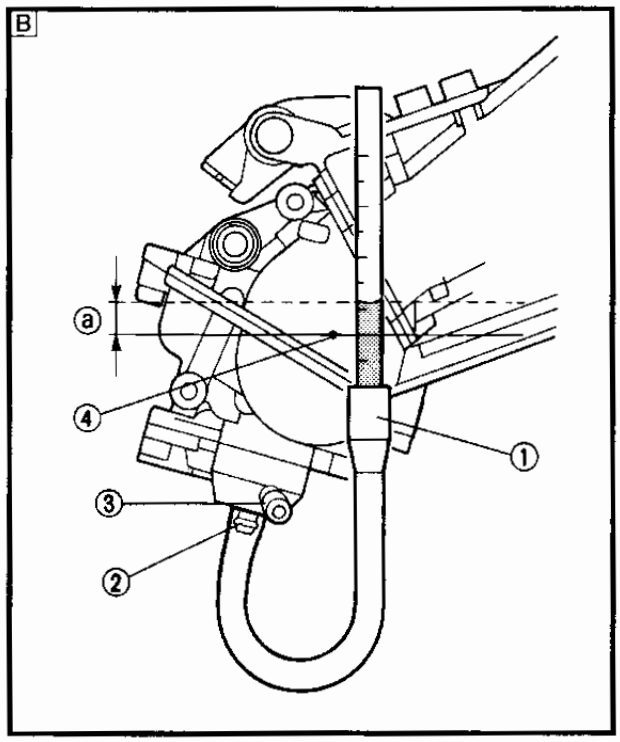
Refer to the "THROTTLE CABLE FREE PLAY ADJUSTMENT" section in CHAPTER 3.



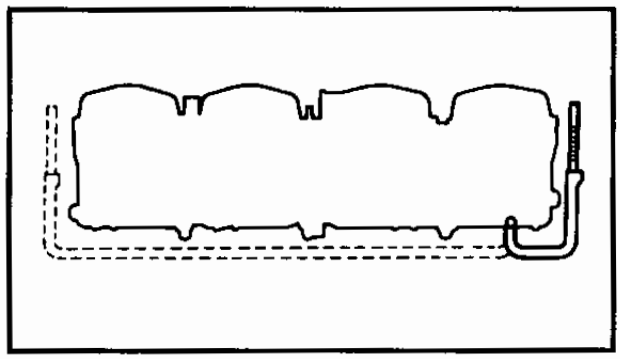
FUEL LEVEL ADJUSTMENT

1. Measure:
- Fuel level ⓐ
  Out of specification → Adjust.

Fuel level:
YZF750R
6.3 mm (0.25 in)
Above the float chamber line
YZF750SP
5.8 mm (0.23 in)
Above the dot mark



A YZF750R
B YZF750SP



****

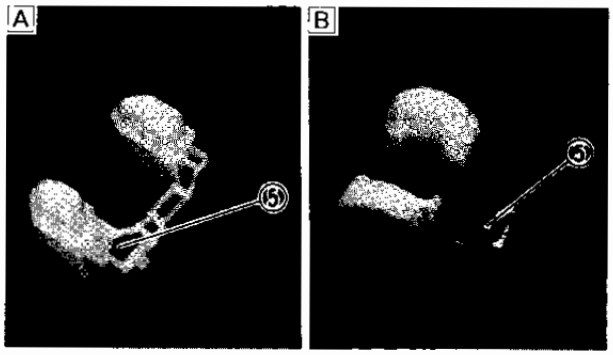
Fuel level measurement and adjustment steps:
- Place the motorcycle on a level surface.
- Use a garage jack under the engine to ensure that the carburetor is positioned vertically.
- Connect the fuel level gauge ① to the drain pipe②.

Fuel level gauge:
YM-01312
90890-01312

- Loosen the drain screw ③ and warm up the engine for several minutes.
- Hold the gauge vertically next to the float chamber line or dot mark ④.
- Measure the fuel level ⓐ with the gauge.

NOTE:
Fuel level readings of both side of carburetor line should be equal.

- If the fuel level is incorrect, adjust the fuel level.
- Remove the carburetor.
- Inspect the valve seat and needle valve.
- If either is worn, replace them both.



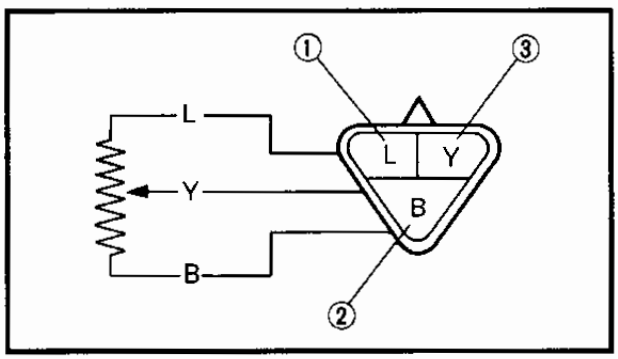
- If both are fine, adjust float level by bending the float tang ⑤ slightly.
- Install the carburetor.
- Recheck the fuel level.

****

A YZF750R
B YZF750SP

THROTTLE SENSOR ADJUSTMENT AND INSPECTION (YZF750SP)

NOTE:
Idle speed should be adjusted properly before adjusting the throttle sensor position.



1. Adjust:
- Throttle sensor position

****

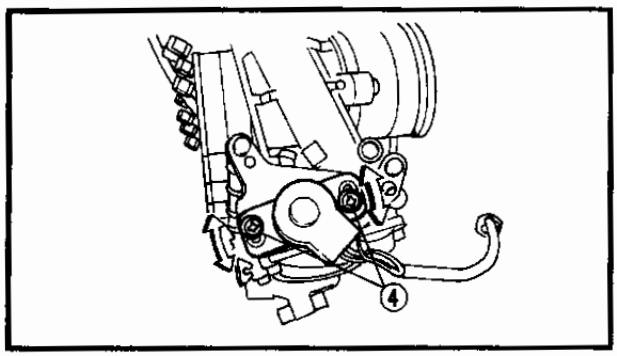
Adjustment steps:
- Disconnect the throttle sensor coupler.
- Connect the pocket tester (Ω × 1k) to the throttle sensor couplers.

Tester (+) lead → Blue terminal ①
Tester (–) lead → Black terminal ②

- Measure the maximum throttle sensor resistance.
- Calculate the throttle sensor resistance in idle.

Idle throttle sensor resistance =
Max. resistance × (0.122 ~ 0.128)

Example:
- If max. resistance is **5 kΩ**, then idle throttle resistance is:
  5 kΩ × (0.122 ~ 0.128) = **610 ~ 640** Ω



● Connect the pocket tester (Ω × 100) to the throttle sensor coupler.

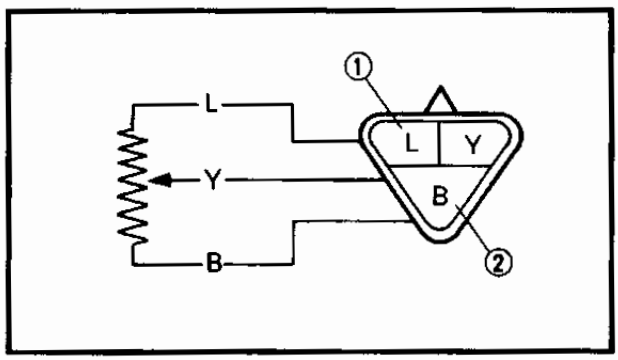
Tester (+) lead → Yellow terminal ③
Tester (–) lead → Black terminal ②

● Loosen the screws ④ (throttle sensor).
● Adjust the throttle sensor position for specification resistance.

Throttle sensor resistance:
610 ~ 640 Ω
(Yellow – Black)

● Tighten the screws and connect the throttle sensor coupler.

****



2. Inspect:
• Throttle sensor

****

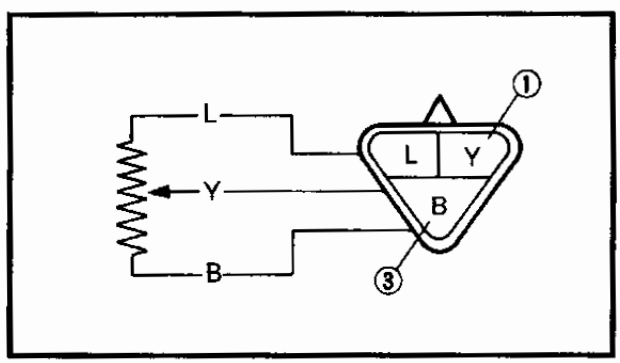
Inspection steps:
● Disconnect the throttle sensor coupler.
● Remove the throttle sensor from carburetor.
● Connect the pocket tester (Ω × 1k) to the throttle sensor couplers.

Tester (+) lead → Blue terminal ①
Tester (–) lead → Black terminal ②

● Check the throttle sensor resistance.

Throttle sensor resistance:
3.5 ~ 6.5 kΩ at 20°C (68°F)
(Blue – Black)

Out of specification → Replace the throttle sensor.
● Connect the pocket tester (Ω × 1k) to throttle sensor coupler.



Tester (+) lead → Yellow terminal ①
Tester (–) lead → Black terminal ③

● Check the throttle sensor resistance while turning throttle slowly.



Throttle sensor resistance:
0 ~ 5±1.5k Ω at 20°C (68°F)
(Yellow – Black)

Out of specification → Replace the throttle sensor.

****

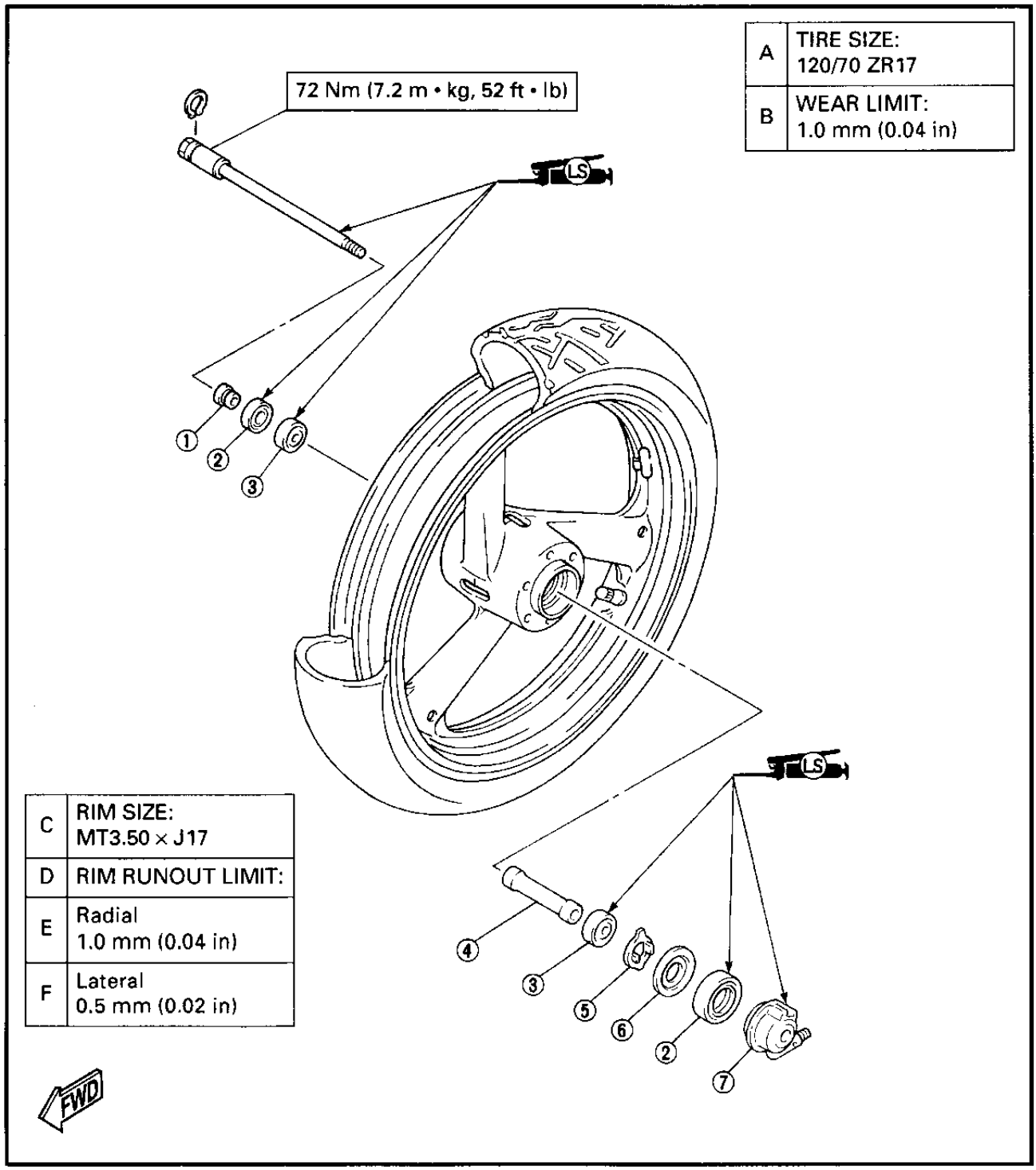
CHASSIS

FRONT WHEEL

①Collar
②Oil seal
③Bearing
④Spacer
⑤Meter clutch
⑥Clutch retainer
⑦Speedometer gear unit

TIRE AIR PRESSURE (COLD):		
Maximum load*	YZF750SP: 100 kg (221 lb) Except for D 115 kg (254 lb) For D YZF750R: 172 kg (379 lb) Except for D 207 kg (456 lb) For D	
Cold tire pressure:	Front	Rear
Up to 90 kg (198 lb) load*	225 kPa (2.25 kg/cm², 32 psi)	250 kPa (2.5 kg/cm², 36 psi)
90 Kg (198 lb) load ~ Maximum load*	250 kPa (2.5 kg/cm², 36 psi)	290 kPa (2.9 kg/cm², 41 psi)
High speed riding	250 kPa (2.5 kg/cm², 36 psi)	290 kPa (2.9 kg/cm², 41 psi)

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



A	TIRE SIZE: 120/70 ZR17
B	WEAR LIMIT: 1.0 mm (0.04 in)

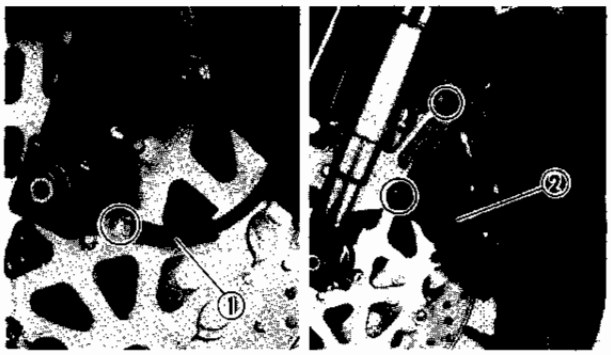
C	RIM SIZE: MT3.50 × J17
D	RIM RUNOUT LIMIT:
E	Radial 1.0 mm (0.04 in)
F	Lateral 0.5 mm (0.02 in)

REMOVAL

⚠ WARNING

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

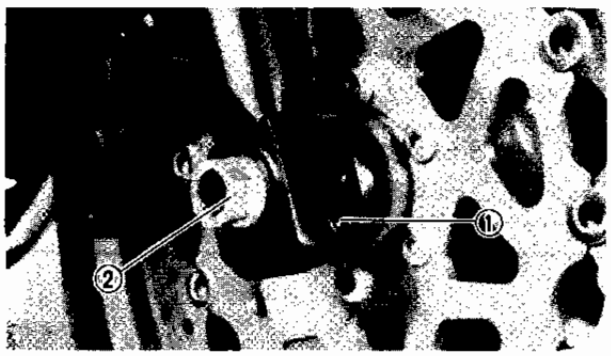
1. Place the motorcycle on a level place.
2. Remove:
   - Lower cowling
     Refer to the "COWLINGS" section in CHAPTER 3.
3. Remove:
   - Speedometer cable ①
   - Brake calipers ② (left and right)



NOTE:

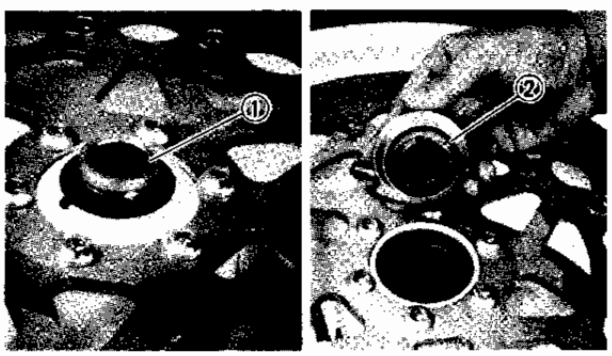
Do not depress the brake lever when the wheel is off the motorcycle otherwise the brake pads will be forced shut.

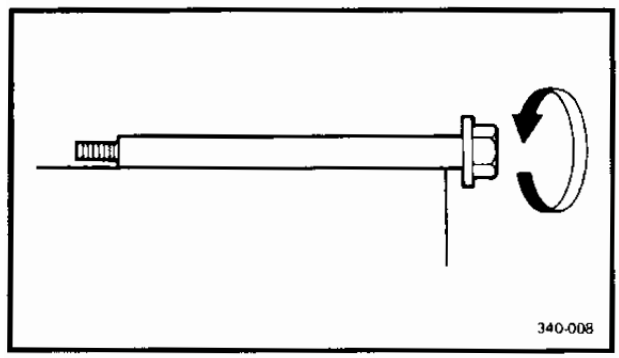
4. Loosen:
   - Pinch bolt ① (front axle)
   - Front axle ②



5. Elevate the front wheel by placing a suitable stand under the engine.
6. Remove:
   - Front axle
   - Front wheel

7. Remove:
   - Collar ① (right)
   - Speedometer gear unit ②





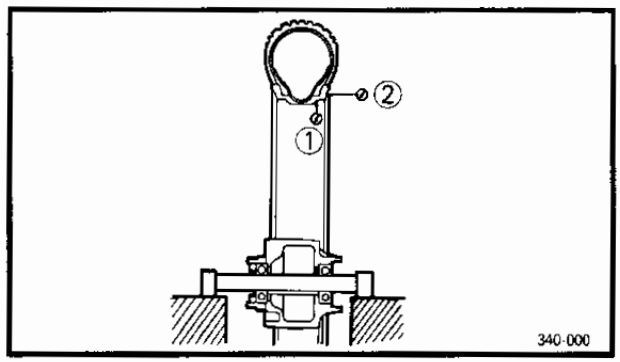
INSPECTION

1.Inspect:
- Front axle
  Roll the axle on a flat surface.
  Bends → Replace.

⚠ WARNING

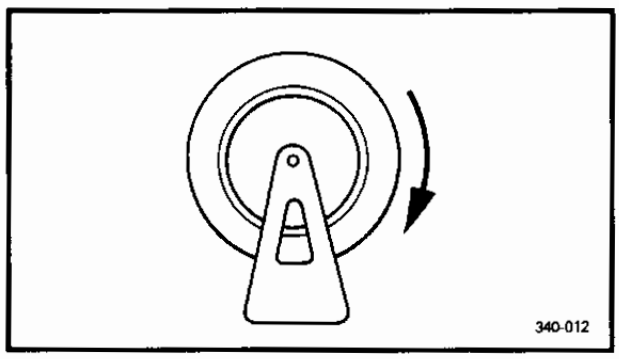
Do not attempt to straighten a bent axle.

2.Inspect:
- Tire
  Wear/Damage → Replace.
  Refer to the "TIRE INSPECTION" section in CHAPTER 3.
- Wheel
  Refer to the "WHEEL INSPECTION" section in CHAPTER 3.

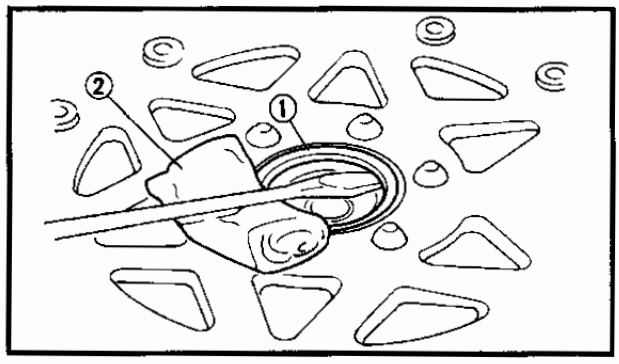


3.Measure:
- Wheel runout
  Over specified limit → Replace.

Rim runout limits:
Radial ①: 1.0 mm (0.04 in)
Lateral ②: 0.5 mm (0.02 in)



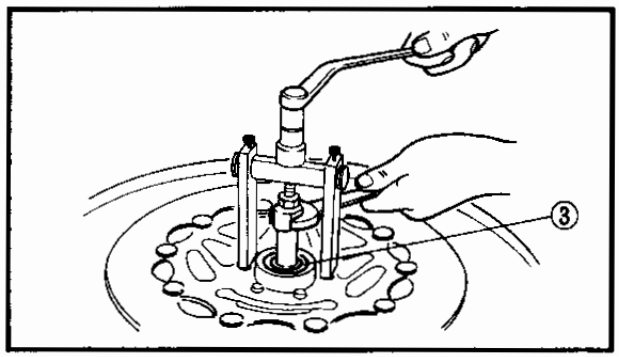
4.Inspect:
- Wheel bearings
  Bearings allow play in the wheel hub or wheel turns roughly → Replace.
- Oil seals
  Wear/Damage → Replace.

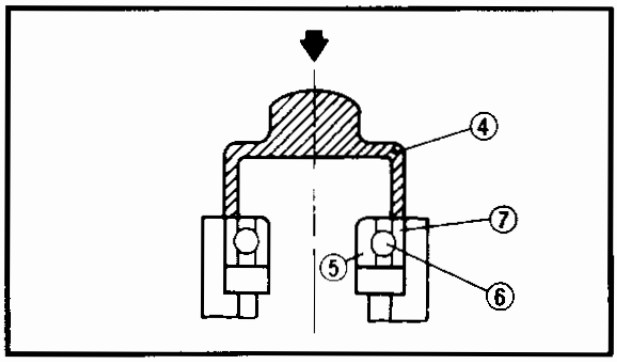


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Wheel bearing and oil seal replacement steps:
- Clean the outside of the wheel hub.
- Remove the oil seals ① use a flat-head screw driver.

NOTE:
Place a rag ② on the outer edge to prevent damage.





- Remove the bearing ③ using a general bearing puller.
- Install the new bearing and oil seal by reversing the previous steps.

NOTE:
Use a socket ④ that matches the outside diameter of the race of the bearing and oil seal.

CAUTION:
Do not strike the center race ⑤ or balls ⑥ of the bearing. Contact should be made only with the outer race ⑦.

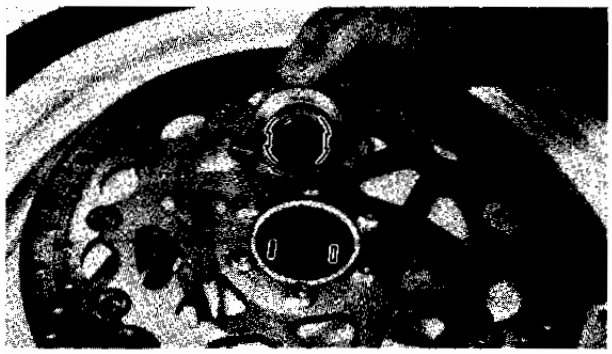
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INSTALLATION

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

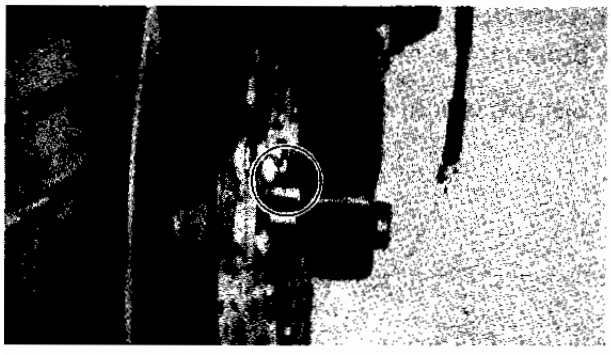
1.Lubricate:
- Front wheel axle
- Bearings
- Oil seal (lips)
- Drive/Driven gear (speedometer)

Recommended lubricant:
Lithium soap base grease



2.Install:
- Speedometer gear unit

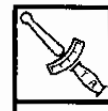
NOTE:
Be sure that two projections inside the wheel hub mesh with the two slots in the gear unit assembly.



3.Install:
- Front wheel

NOTE:
Be sure that the projection (torque stopper) of the gear unit housing is positioned correctly.

4.Tighten:
- Front axle
- Bolts (brake caliper)
- Pinch bolt (front axle)



Front axle:
72 Nm (7.2 m • kg, 52 ft • lb)
Bolt (brake caliper):
35 Nm (3.5 m • kg, 25 ft • lb)
Pinch bolt (front axle):
23 Nm (2.3 m • kg, 17 ft • lb)

CAUTION:
Before tightening the pinch bolt, stroke the front fork several times to check for proper fork operation.

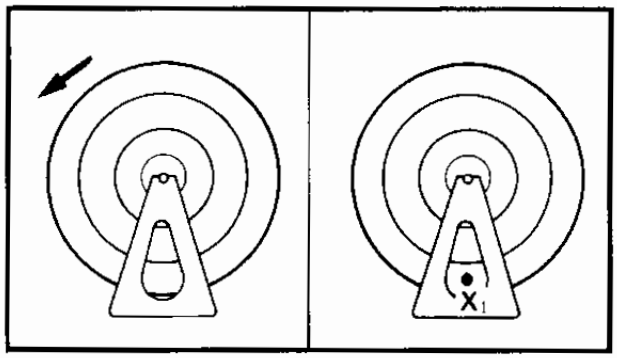
⚠ WARNING
Make sure that the brake hose is routed properly.

STATIC WHEEL BALANCE ADJUSTMENT

NOTE:
- After replacing the tire and/or rim, wheel balancer should be adjusted.
- Adjust the wheel balance with brake disk installed.

1.Remove:
- Balancing weight

2.Set the wheel on a suitable stand.



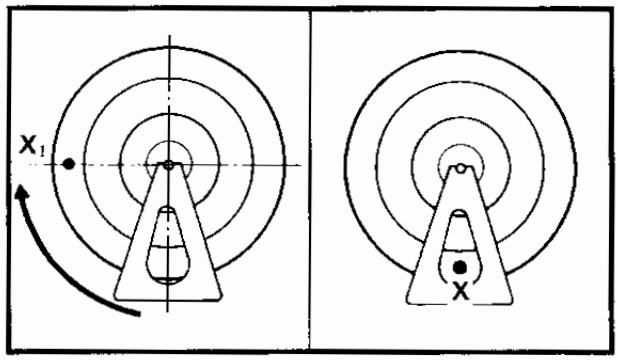
3.Find:
• Heavy spot

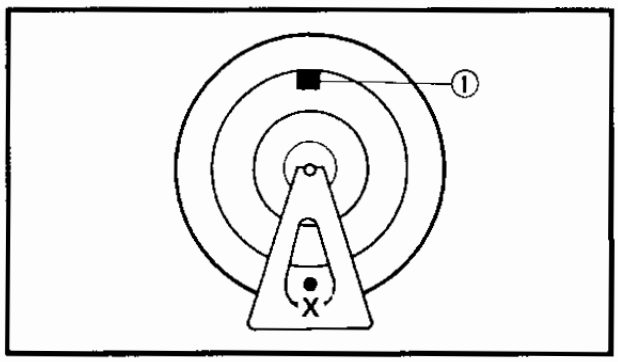
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Procedure:

a.Spin the wheel and wait for it to rest.
b.Put an "X_1" mark on the wheel bottom spot.
c.Turn the wheel so that the "X_1" mark is 90° up.
d.Left the wheel fall and wait for it to rest. Put an "X_2" mark on the wheel bottom spot.
e.Repeat the above b., c., and d. several times until these marks come to the same spot.
f. This spot is the heavy spot "X".

****





4.Adjust:
• Wheel balance

****

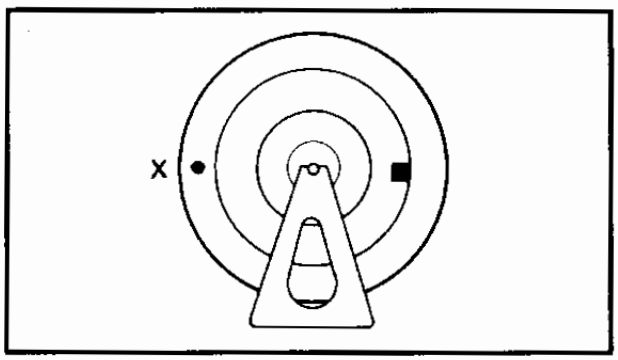
Adjusting steps:

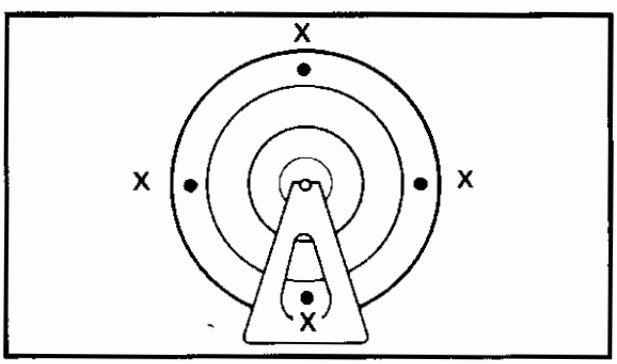
●Install a balancing weight ① on the rim exactly opposite to the heavy spot "X".

NOTE:
Start with the smallest weight.

●Turn the wheel so that the heavy spot is 90° up.
●Check that the heavy spot is at rest there. If not, try another weight until the wheel is balanced.

****





5.Check:
• Wheel balance

****

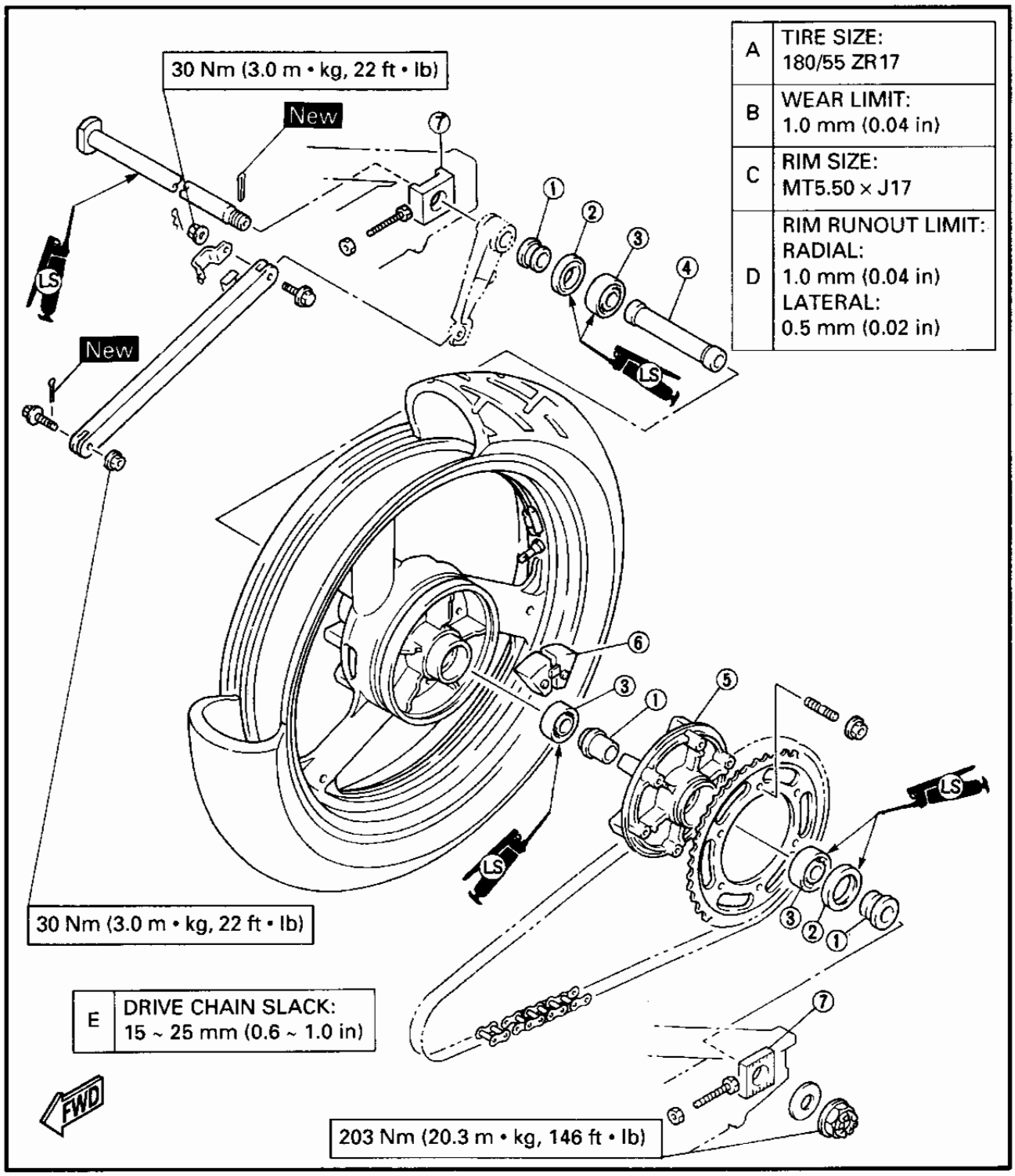
Checking steps:

●Turn the wheel so that is comes to each point as shown.
●Check that the wheel is at rest at each point. If not, readjust the wheel balance.

****

REAR WHEEL

①Collar
②Oil seal
③Bearing
④Spacer
⑤Sprocket hub
⑥Damper rubber
⑦Adjuster collar

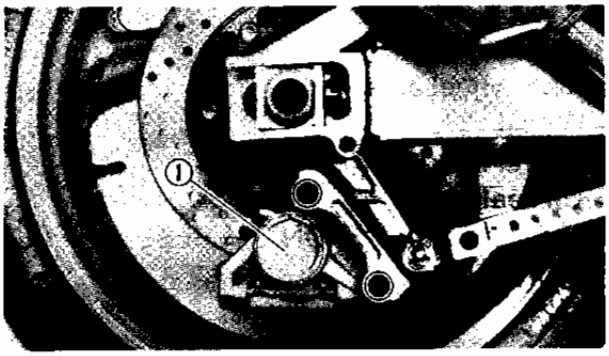


REMOVAL

⚠ WARNING

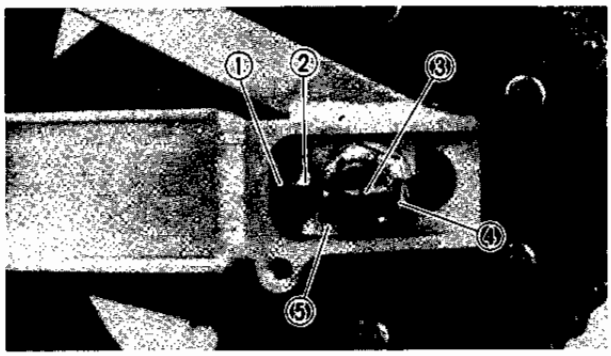
Securely support the motorcycle so there is no danger of it falling over.

1. Place the motorcycle on a level place.
2. Elevate the rear wheel by placing a suitable stand under the swingarm.

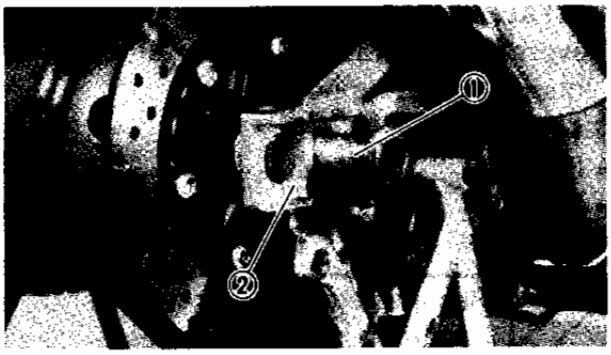


3. Remove:
   - Brake caliper ①

NOTE:
Do not depress the brake pedal while the caliper is removed.

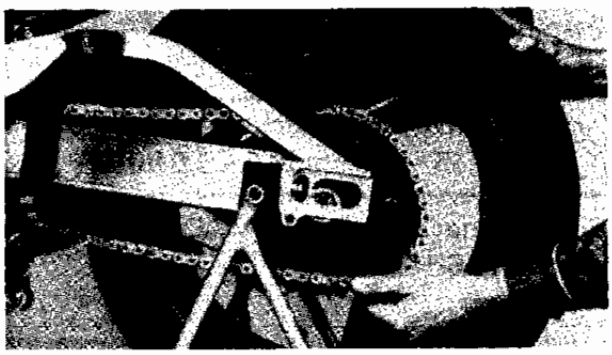


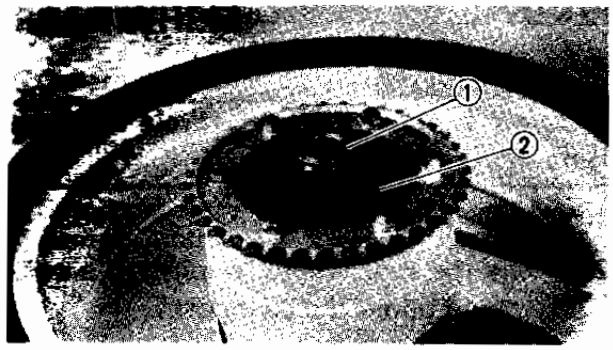
4. Loosen:
   - Locknut ①
   - Adjuster ②
5. Remove:
   - Cotter pin ③
   - Axle nut ④
   - Adjuster collar ⑤ (left)



6. Remove:
   - Rear wheel axle ①
   - Adjuster collar ② (right)
   - Rear wheel

NOTE:
Push the rear wheel forward and disconnect the drive chain from the rear sprocket wheel.





7.Remove:
- Collar ① (left)
- Sprocket hub ②
- Damper rubber
- Collar (right)

INSPECTION

1.Inspect:
- Rear wheel axle
- Wheel
- Wheel bearing
- Oil seals

Refer to the "FRONT WHEEL INSPECTION" section.

2.Measure:
- Wheel runout

Refer to the "FRONT WHEEL INSPECTION" section.

INSTALLATION

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

1.Lubricate:
- Rear wheel axle
- Bearings
- Oil seals

Recommended lubricant:
Lithium soap base grease

2.Adjust:
- Drive chain slack

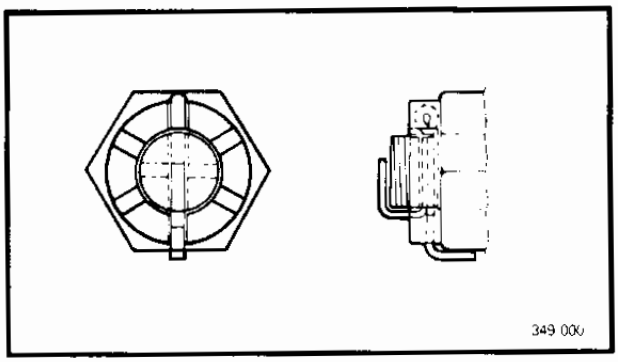
Drive chain slack:
15 ~ 25 mm (0.6 ~ 1.0 in)

Refer to the "DRIVE CHAIN ADJSUTMENT" section in CHAPTER 3.

3.Tighten:
- Nut (rear wheel axle)
- Bolts (brake caliper)

Nut (rear wheel axle):
203 Nm (20.3 m • kg, 146 ft • lb)
Bolt (brake caliper):
35 Nm (3.5 m • kg, 25 ft • lb)

NOTE:
Do not loosen the axle nut after torque tightening.
If the axle nut groove is not aligned with the wheel shaft cotter pin hole, align groove to hole by tightening up on the axle nut.



4.Install:
- Cotter pin

⚠ WARNING
- **Always use a new cotter pin on the axle nut.**
- **Make sure that the brake hose is routed properly.**

STATIC WHEEL BALANCE ADJUSTMENT

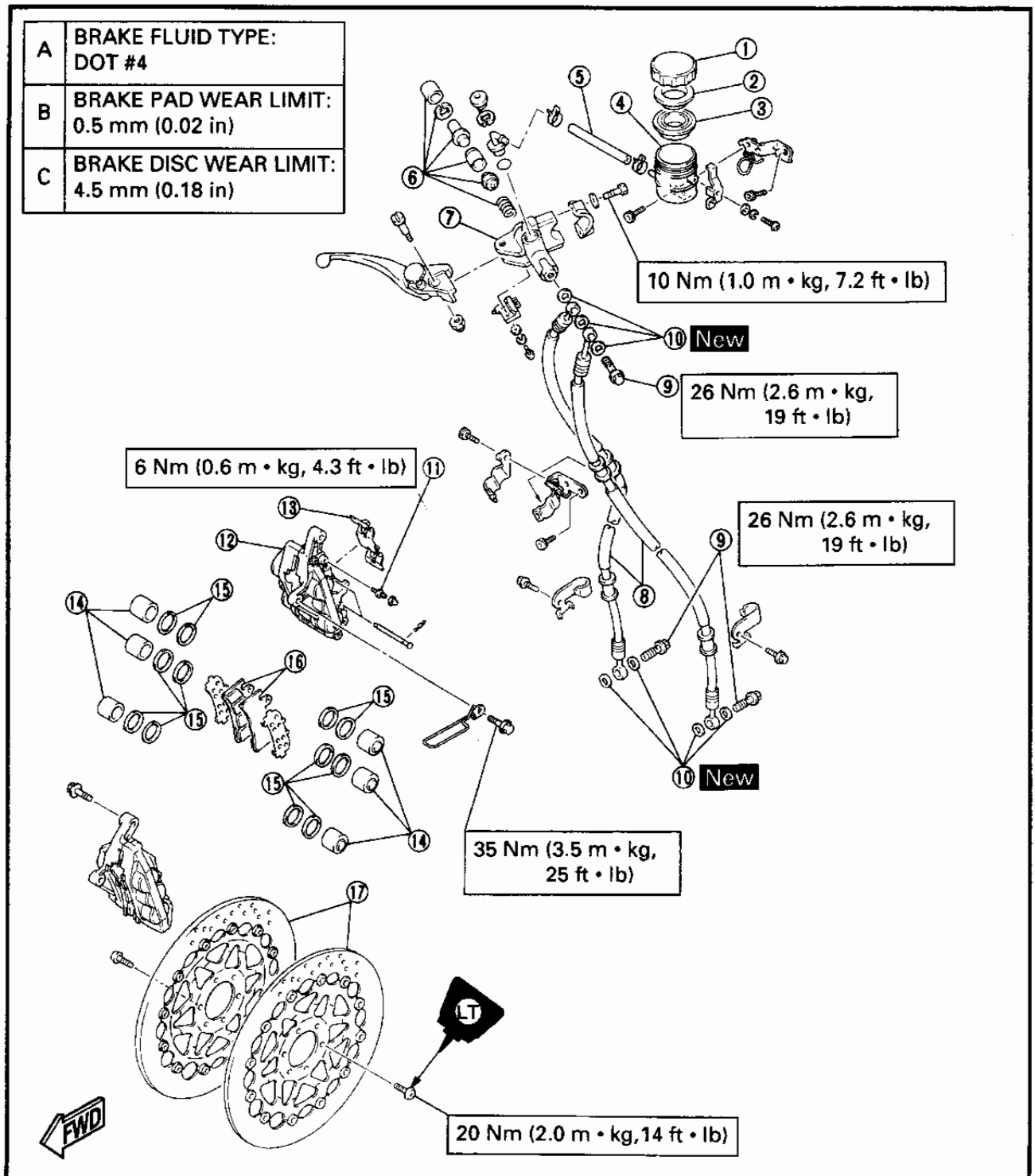
NOTE:
- After replacing the tire and/or rim, wheel balance should be adjusted.
- Adjust the wheel balance with brake disc and hub installed.

1.Adjust:
- Wheel balance
  Refer to the "STATIC WHEEL BALANCE ADJUSTMENT — FRONT WHEEL" section.

FRONT AND REAR BRAKE

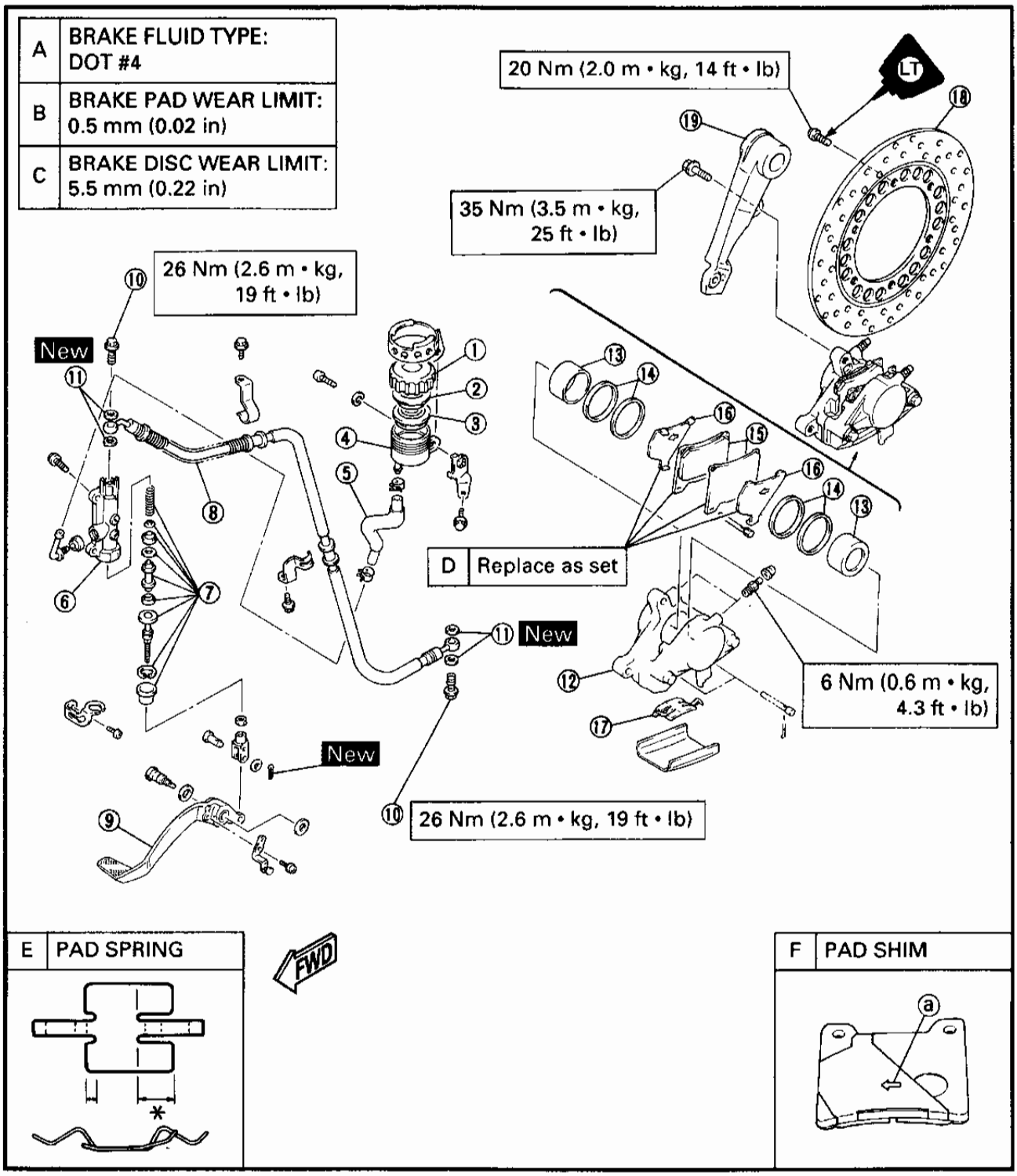
①Reservoir tank cap
②Holder (diaphragm)
③Diaphragm
④Reservoir tank
⑤Reservoir hose
⑥Master cylinder kit
⑦Master cylinder
⑧Brake hose
⑨Union bolt
⑩Copper washer
⑪Bleed screw
⑫Brake caliper
⑬Pad spring
⑭Piston
⑮Piston seal
⑯Brake pad
⑰Brake disc

A	BRAKE FLUID TYPE: DOT #4
B	BRAKE PAD WEAR LIMIT: 0.5 mm (0.02 in)
C	BRAKE DISC WEAR LIMIT: 4.5 mm (0.18 in)



①Reservoir tank cap
②Holder (diaphragm)
③Diaphragm
④Reservoir tank
⑤Reservoir hose
⑥Master cylinder
⑦Master cylinder kit
⑧Brake hose
⑨Brake pedal
⑩Union bolt
⑪Copper washer
⑫Brake caliper
⑬Piston
⑭Piston seal
⑮Brake pad
⑯Shim
⑰Pad spring
⑱Brake disc
⑲Caliper bracket

E The longer tangs (*) of the pad spring must point in the disc rotating direction.
F The arrow mark ⓐ on the pad shim must point in the disc rotating direction.



CAUTION:

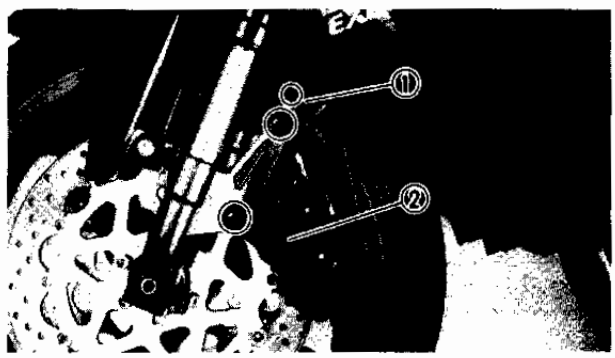
Disc brake components rarely require disassembly. DO NOT:

- **Disassemble components unless absolutely necessary.**
- **Use solvents on internal brake components.**
- **Use contaminated brake fluid for cleaning.**
  Use only clean brake fluid.
- **Allow brake fluid to come in contact with the eyes, otherwise eye injury may occur.**
- **Allow brake fluid to contact painted surfaces or plastic parts otherwise damage may occur.**
- **Disconnect any hydraulic connection otherwise the entire system must be disassembled, drained, cleaned, and then properly filled and bled after reassembly.**

BRAKE PAD REPLACEMENT

NOTE:

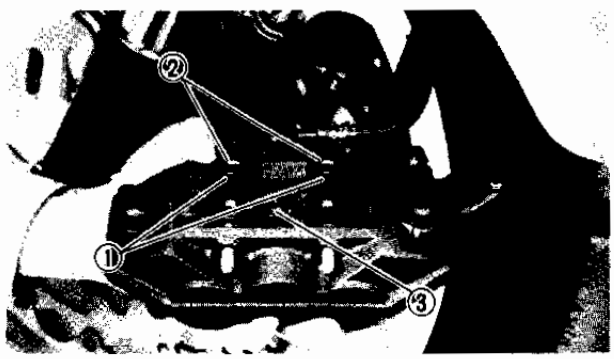
It is not necessary to disassemble the brake caliper and brake hose to replace the brake pads.



Front brake

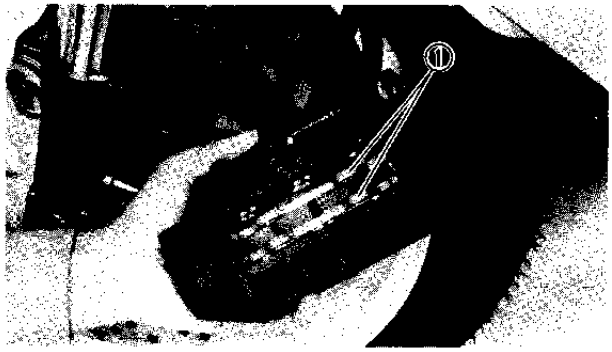
1.Remove:

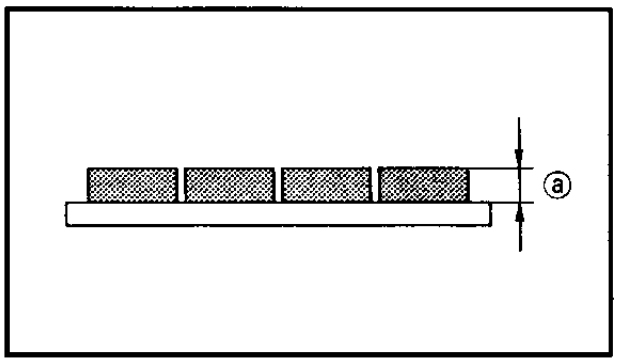
- Brake hose holder ①
- Brake caliper ②



2.Remove:

- Retaining clips ①
- Retaining pins ②
- Pad spring ③



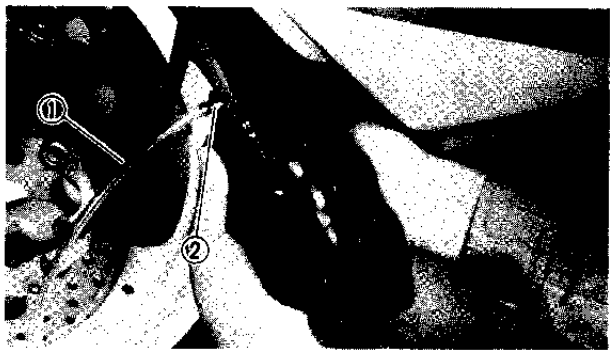


3.Remove:
- Brake pads ①
  (with pad shims)

NOTE:
- When pad replacement is required, also replace the pad spring and shims.
- Replace the pads as a set if either is found to be worn to the wear limit ⓐ.

Wear limit ⓐ:
0.5 mm (0.02 in)

4.Install:
- Pad shims
  (onto brake pads)
- Brake pads
- Pad spring



****

Installation steps:
- Connect a suitable hose ① tightly to the caliper bleed screw ②. Then, place the other end of this hose into an open container.
- Loosen the caliper bleed screw and push the pistons into the caliper with the finger.
- Tighten the caliper bleed screw ②.

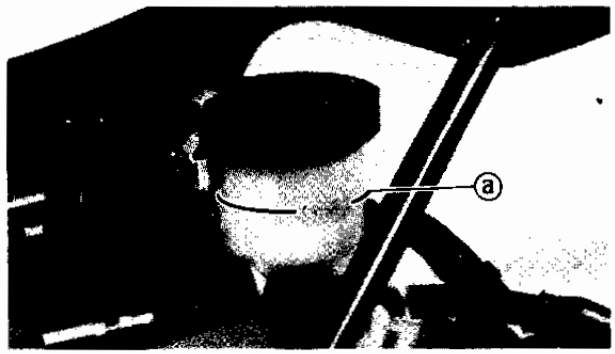
Caliper bleed screw:
6 Nm (0.6 m • kg, 4.3 ft • lb)

- Install the pad shims (new) onto the new brake pads.
- Install the brake pads (new) and pad spring (new).

****

5.Install:
- Retaining pins
- Retaining clips
- Brake caliper

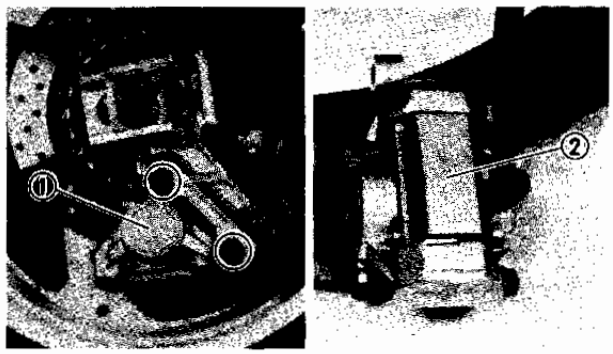
	Bolt (brake caliper): **35 Nm (3.5 m • kg, 25 ft • lb)**



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

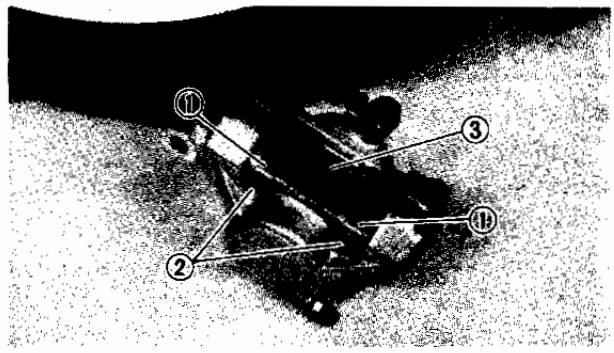
ⓐ "LOWER" level line

7.Check:
- Brake lever operation
  A soft or spongy feeling → Bleed brake system.
  Refer to the "AIR BLEEDING" section in CHAPTER 3.

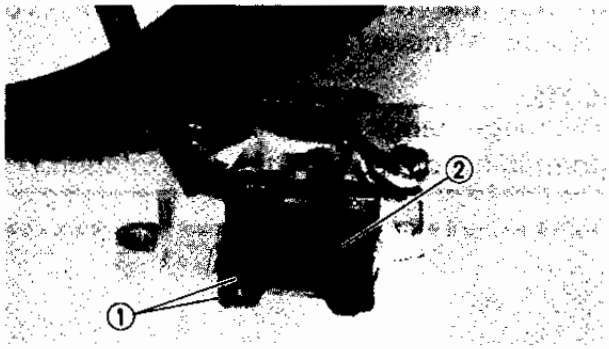


Rear brake

1.Remove:
- Brake caliper ①
- Pad cover ②



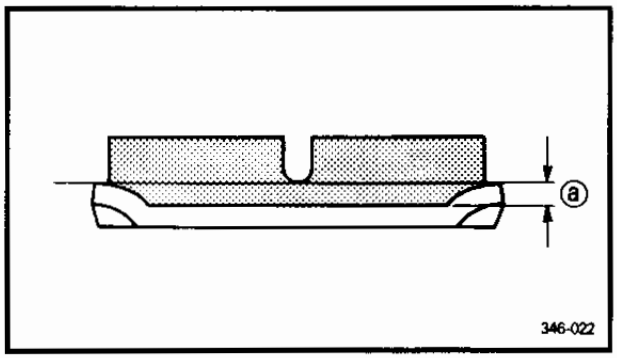
2.Remove:
- Retaining clips ①
- Retaining pins ②
- Pad spring ③



3.Remove:
- Brake pads ①
  (with pad shims ②)

NOTE:
- When pad replacement is required, also replace the pad spring and shims.
- Replace the pads as a set if either is found to be worn to the wear limit ⓐ.

Wear limit ⓐ :
0.5 mm (0.02 in)

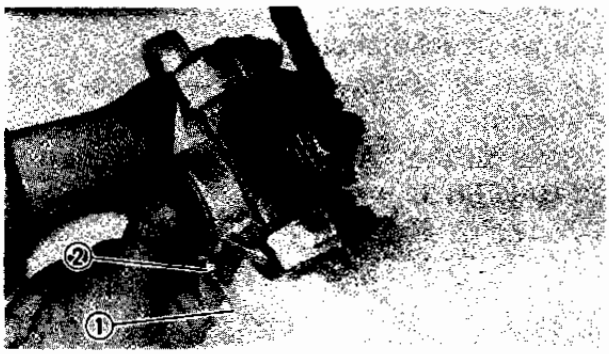


4.Install:
- Pad shims
  (onto brake pads)
- Brake pads
- Pad spring

****

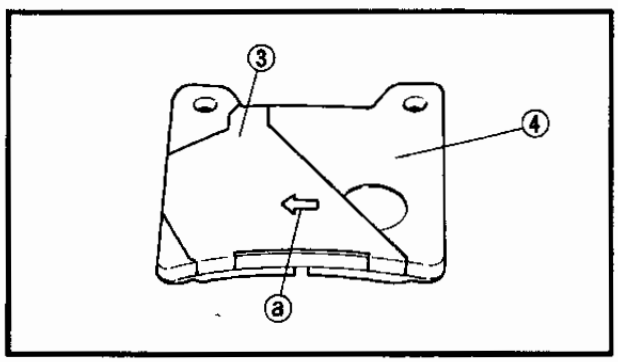
Installation steps:
- Connect a suitable hose ① tightly to the caliper bleed screw ②. Then, place the other end of this hose into an open container.
- Loosen the caliper bleed screw and push the pistons into the caliper with the finger.
- Tighten the caliper bleed screw ②.

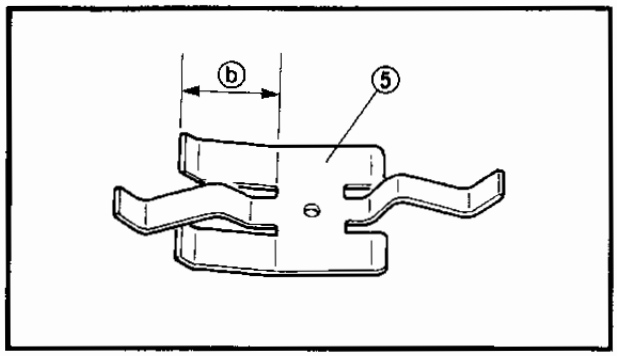
Caliper bleed screw:
6 Nm (0.6 m • kg, 4.3 ft • lb)



- Install the pad shim ③ (new) on the brake pad ④ (new).

NOTE:
The arrow mark ⓐ on the pad shim must point in the direction of the disc rotation.





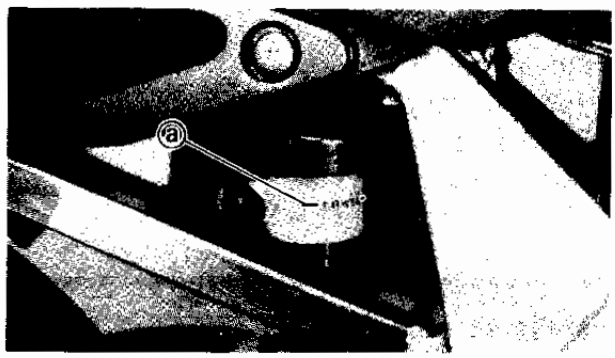
● Install the brake pads (new) and pad spring ⑤ (new).

NOTE:
The longer tangs ⓑ of the pad spring must point in the direction of the disc rotation.

****

5. Install:
- Retaining pins
- Retaining clips
- Pad cover
- Brake caliper

	Bolt (brake caliper): **35 Nm (3.5 m • kg, 25 ft • lb)**



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

ⓐ "LOWER" level line

7. Check:
- Brake pedal operation
  A soft or spongy feeling → Bleed brake system.
  Refer to the "AIR BLEEDING" section in CHAPTER 3.

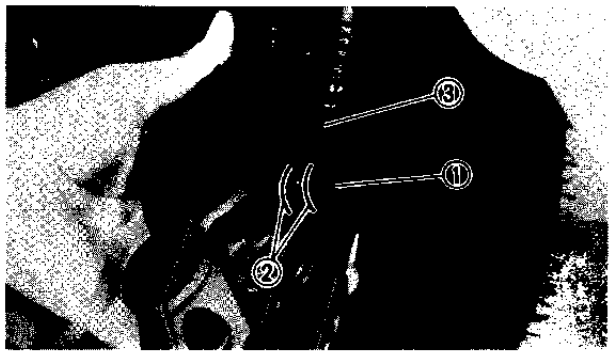
CALIPER DISASSEMBLY

NOTE:
Before disassembling the front brake caliper or rear brake caliper, drain the brake hose, master cylinder, brake caliper and reservoir tank of their brake fluid.

Front brake

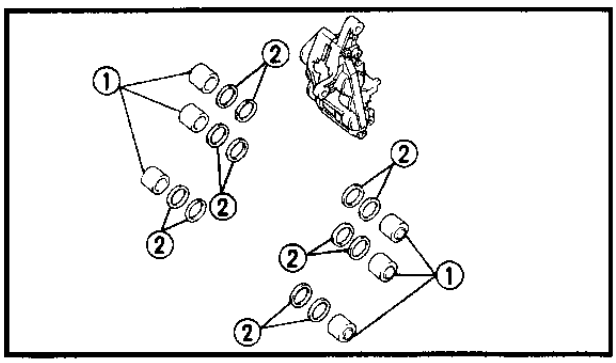
1.Loosen:
- Union bolt

2.Remove:
- Brake caliper
- Retaining clips
- Retaining pins
- Pad spring
- Brake pads
  (with pad shims)
  Refer to the "BRAKE PAD REPLACEMENT" section.



3.Remove:
- Union bolt ①
- Copper washers ②
- Brake hose ③

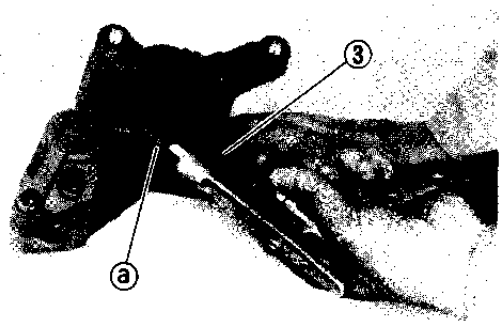
NOTE:
Place the open end of the hose into a container and pump the oil fluid out carefully.



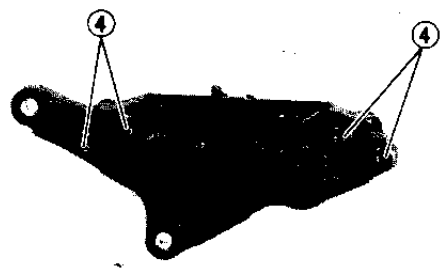
4.Remove:
- Pistons ①
- Piston seals ②

****

Removal steps:
- Using a wood piece ③, lock the right side piston.
- Blow compressed air into the hose joint opening ⓐ to force out the left side piston from the caliper body.
- Remove the piston seals and reinstall the piston.
- Repeat previous step to force out the right side piston from the caliper body.



⚠ WARNING
- **Never try to pry out the piston.**
- **Do not loosen the bolts ④.**

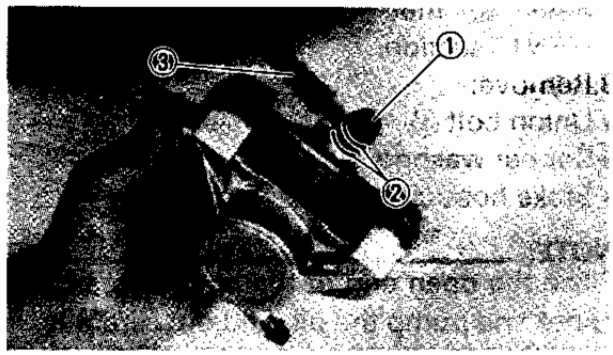


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Rear brake

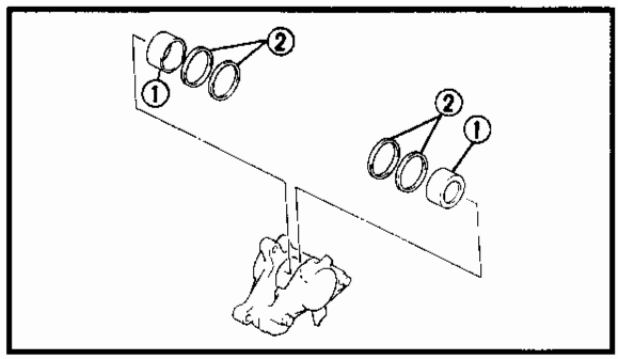
1.Loosen:
- Union bolt

2.Remove:
- Brake caliper
- Pad cover
- Retaining clips
- Retaining pins
- Pad spring
- Brake pads
  (with pad shims)
  Refer to "BRAKE PAD REPLACEMENT" section.



3.Remove:
- Union bolt ①
- Copper washers ②
- Brake hose ③

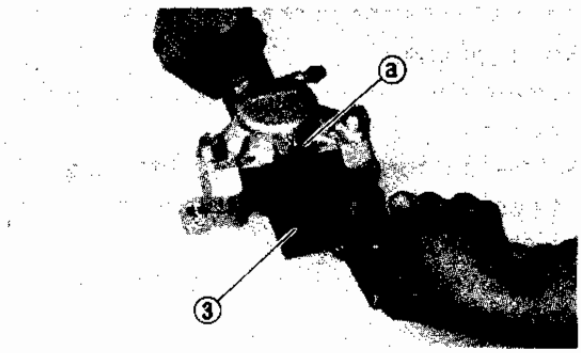
NOTE:
Place the open end of the hose into a container and pump the oil fluid out carefully.



4.Remove:
- Pistons ①
- Piston seals ②

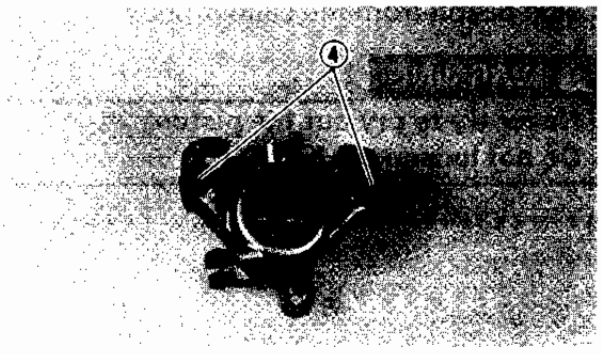
****

Removal steps:
- Using a wood piece ③, lock the right side piston.
- Blow compressed air into the hose joint opening ⓐ to force out the left side piston from the caliper body.
- Remove the piston seals and reinstall the piston.



- Repeat previous step to force out the right side piston from the caliper body.

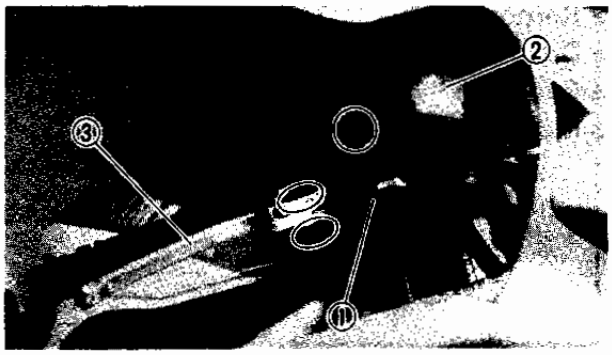
⚠ WARNING
- **Never try to pry out the piston.**
- **Do not loosen the bolts ④.**



****

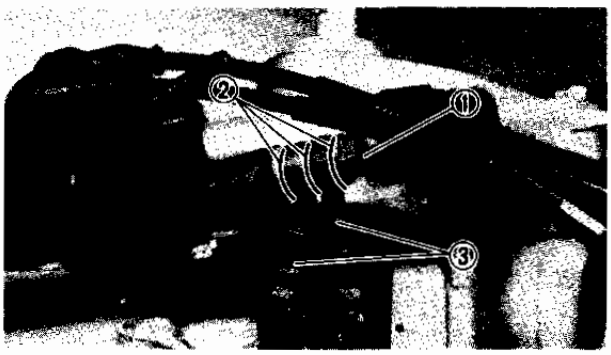
MASTER CYLINDER DISASSEMBLY

NOTE:
Before disassembling the front or rear brake master cylinders, drain the brake hose, master cylinder, brake caliper and reservoir tank of their brake fluid.



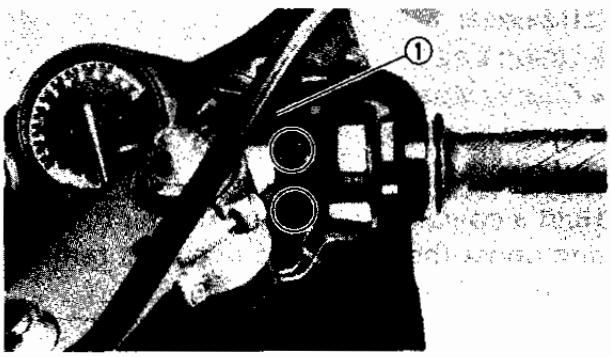
Front brake

1. Disconnect:
   - Brake switch leads ①
2. Remove:
   - Reservoir tank ②
   - Brake lever ③

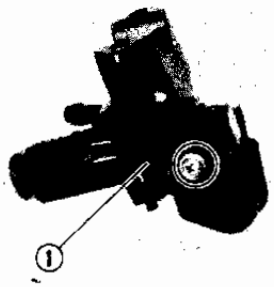


3. Remove:
   - Union bolt ①
   - Copper washers ②
   - Brake hoses ③

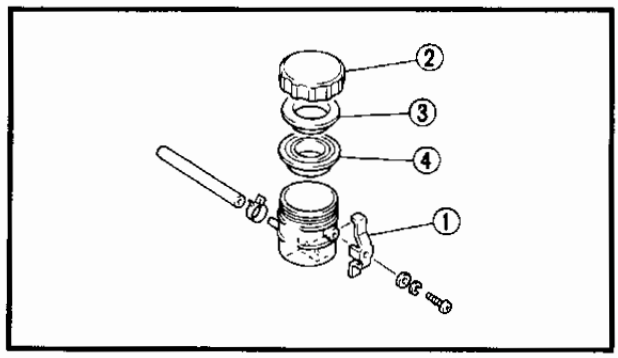
NOTE:
Hold a container under the master cylinder and under the hose end to collect remaining brake fluid.



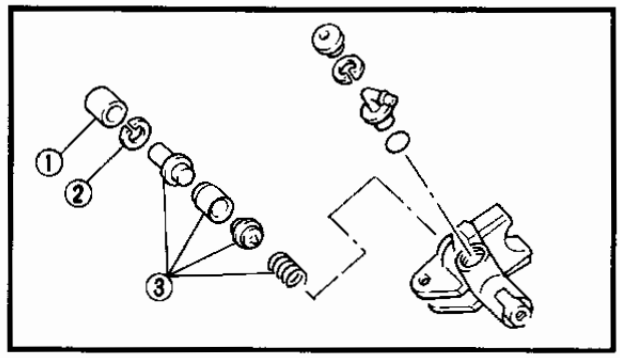
4. Remove:
   - Master cylinder ①



5. Remove:
   - Brake switch ①

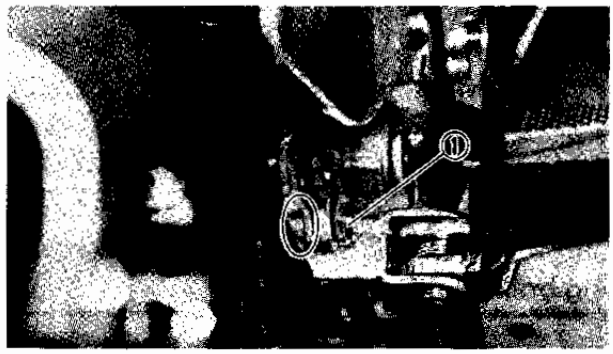


6.Remove:
- Stopper ①
- Cap ② (reservoir tank)
- Holder ③ (diaphragm)
- Diaphragm ④

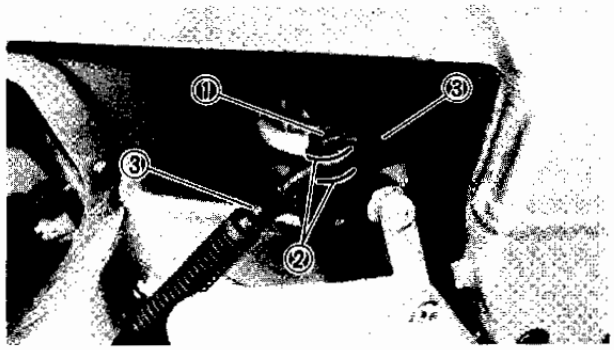


7.Remove:
- Dust boot ①
- Circlip ②
- Master cylinder kit ③

Rear brake

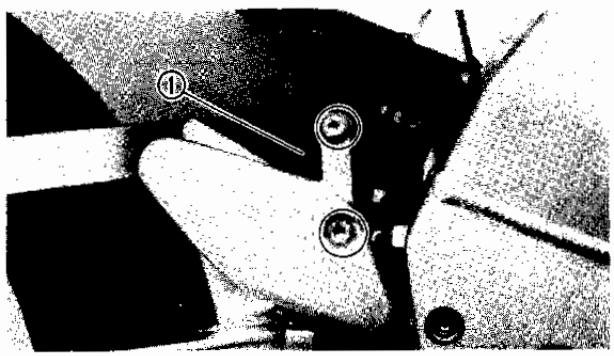


1.Remove:
- Cotter pin
- Washer
- Clevis pin ①

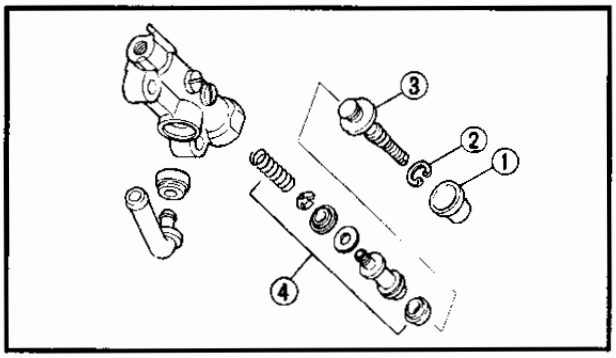


2.Remove:
- Union bolt ①
- Copper washers ②
- Brake hoses ③

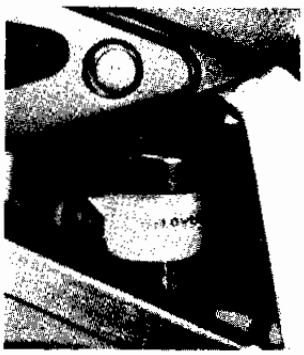
NOTE:
Hold a container under the master cylinder and under the hose ends to collect remaining brake fluid.

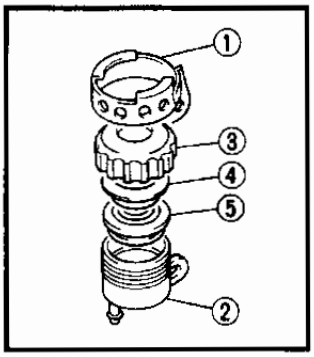


3.Remove:
- Master cylinder ①



4.Remove:
- Dust boot ①
- Circlip ②
- Push rod ③
- Master cylinder kit ④





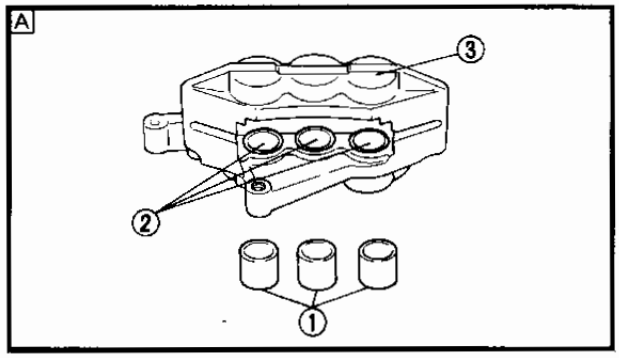
5.Remove:
- Holder ① (cap)
- Reservoir tank ②
- Cap ③ (reservoir tank)
- Holder ④ (diaphragm)
- Diaphragm ⑤

INSPECTION AND REPAIR

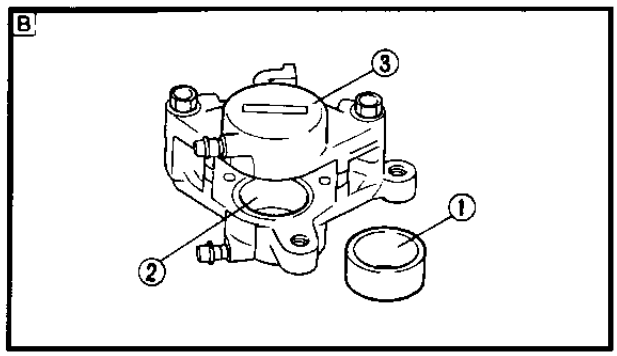
Recommended brake component replacement schedule:	
Brake pads	**As required**
Piston seal, dust seal	**Every two years**
Brake hoses	**Every two years**
Brake fluid	**Replace only when brakes are disassembled.**

⚠ WARNING

All internal parts should be cleaned in new brake fluid only. Do not use solvents as they will cause seals to swell and distort.



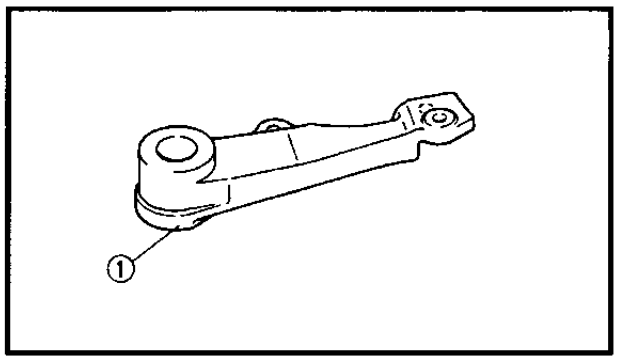
1.Inspect:
- Caliper piston ①
  Scratches/Rust/Wear → Replace caliper assembly.
- Caliper cylinder ②
  Wear/Scratches → Replace caliper assembly.
- Caliper body ③
  Cracks/Damage → Replace.
- Oil delivery passage (caliper body)
  Blow out with compressed air.



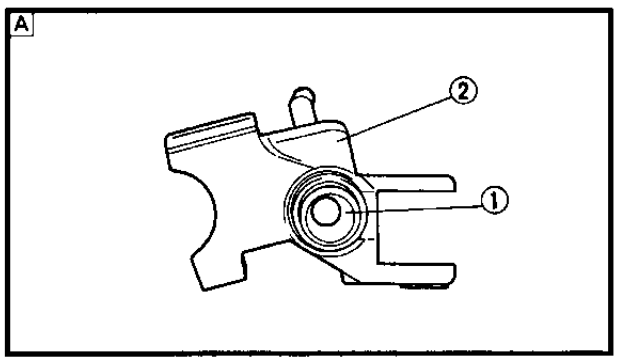
⚠ WARNING

Replace the piston seal and dust seal whenever the caliper is disassembled.

A Front
B Rear

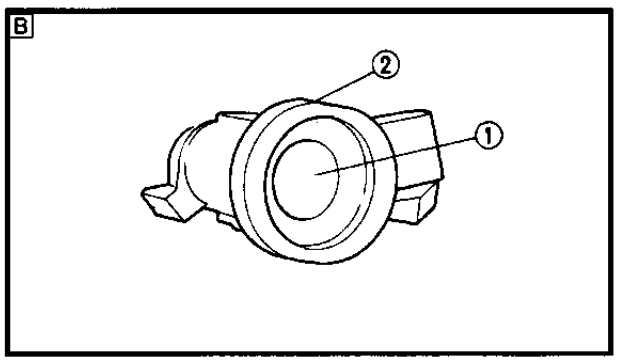


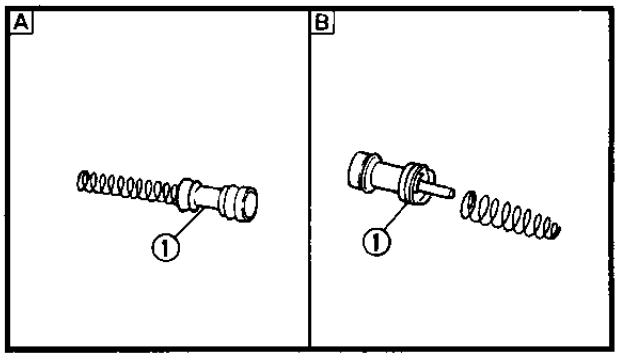
2.Inspect:
- Caliper bracket ①
  Cracks/Damage → Replace.



3.Inspect:
- Master cylinder ①
  Wear/Scratches → Replace the master cylinder assembly.
- Master cylinder body ②
  Cracks/Damage → Replace.
- Oil delivery passage (master cylinder body)
  Blow out with compressed air.

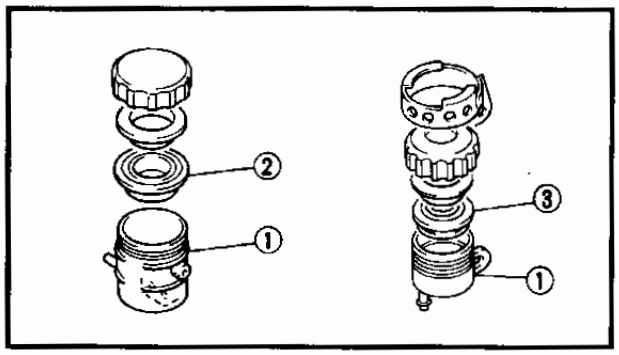
A Front
B Rear



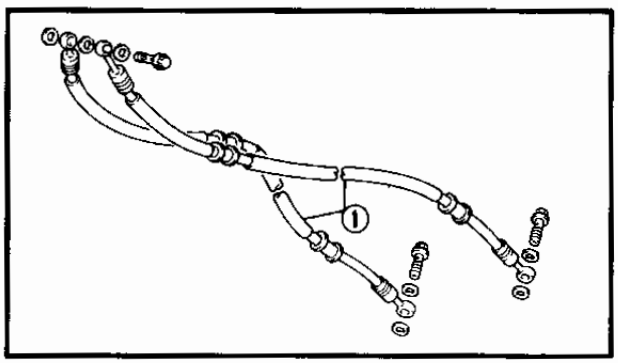


4.Inspect:
- Master cylinder kit ①
  Scratches/Wear/Damage → Replace as a set.

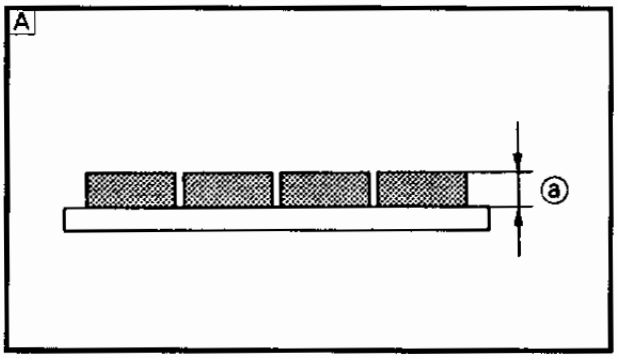
A Front
B Rear

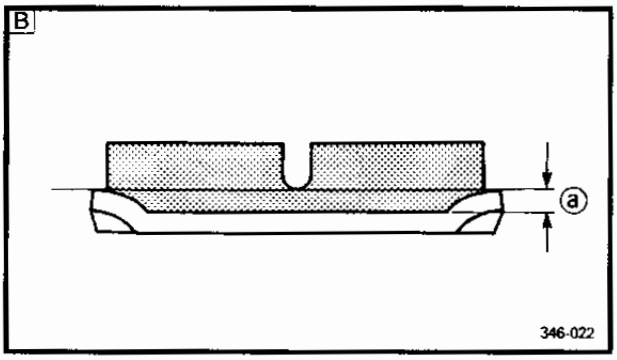


5.Inspect:
- Reservoir tank ①
  Cracks/Damage →Replace.
- Diaphragm ② (front)
- Diaphragm ③ (rear)
  Wear/Damage → Replace.



6.Inspect:
- Brake hoses ①
  Cracks/Wear/Damage → Replace.



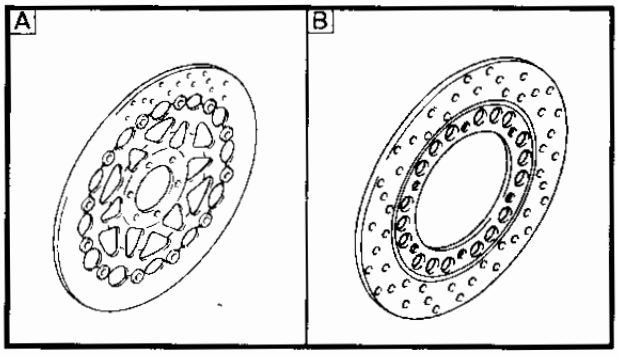


7.Measure:
- Brake pads (thickness) ⓐ
  Out of specification → Replace.

NOTE:
- When pad replacement is required, also replace the pad spring and shims.
- Replace the pads as a set if either is found to be worn to the wear limit ⓐ.

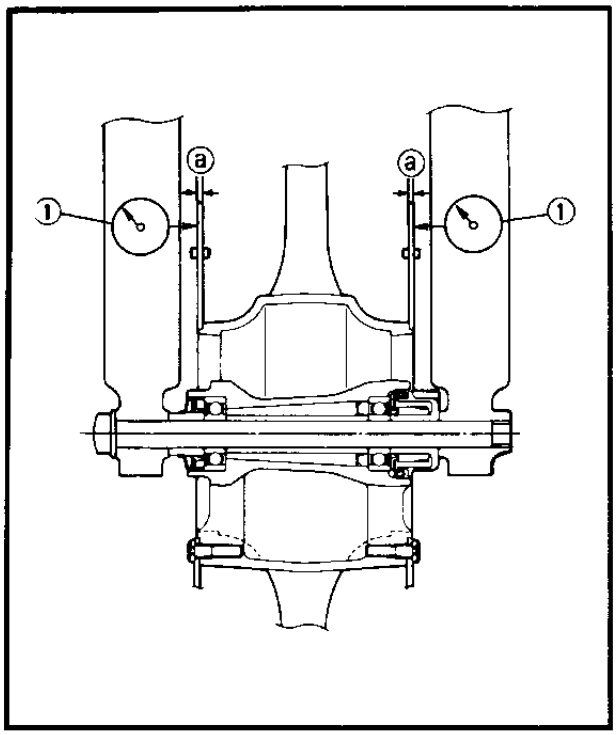
Wear limit ⓐ (front and rear):
0.5 mm (0.02 in)

A Front
B Rear



8.Inspect:
- Brake discs (front and rear)
  Galling/Damage → Replace.

A Front
B Rear



9.Measure:
- Brake disc deflection
  Out of specification → Inspect wheel runout.
  If wheel runout is in good condition, replace the brake disc(s).

Maximum deflection:
Front: 0.3 mm (0.012 in)
Rear: 0.15 mm (0.006 in)

- Brake disc thickness ⓐ
  Out of specification → Replace.

Minimum thickness:
Front: 4.5 mm (0.18 in)
Rear: 5.5 mm (0.22 in)

①Dial gauge

NOTE:
Tighten the bolts (brake disc) in stage using a crisscross pattern.

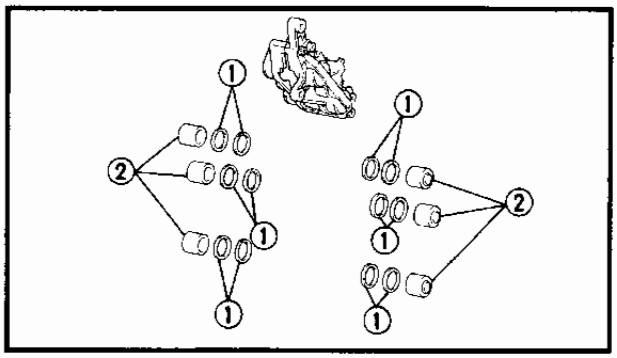
Bolt (brake disc):
20 Nm (2.0 m • kg, 14 ft • lb)
LOCTITE®

CALIPER ASSEMBLY

⚠ WARNING
- **All internal parts should be cleaned in new brake fluid only.**
- **Internal parts should be lubricated with brake fluid when installed.**

Recommended brake fluid:
DOT #4

- **Replace the piston seals and dust seals whenever a caliper is disassembled.**

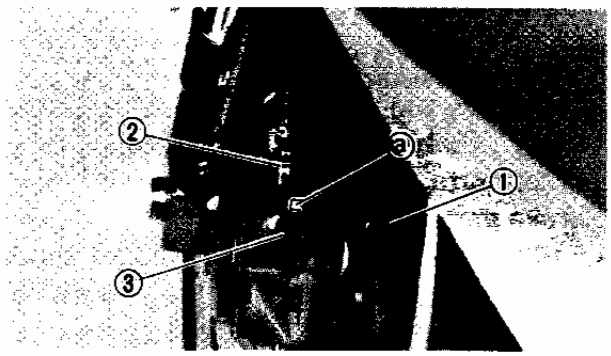


Front brake

1.Install:
- Piston seals ①
- Pistons ②

⚠ WARNING

Always use new piston seals.



2.Install:
- Brake caliper ① (temporarily)
- Copper washers
- Brake hose ②
- Union bolt ③

	Union bolt: **26 Nm (2.6 m • kg, 19 ft • lb)**

CAUTION:

When installing the brake hose on the caliper ①, take care that the pipe touches the projection ⓐ on the brake caliper.

⚠ WARNING

- **Proper hose routing is essential to insure safe motorcycle operation. Refer to "CABLE ROUTING".**
- **Always use new copper washers.**

3.Remove:
- Brake caliper

4.Install:
- Brake pads (with pad shims)
- Pad spring
- Retaining pins
- Retaining clips
- Brake caliper

Refer to the "BRAKE PAD REPLACEMENT" section.

	Bolt (brake caliper): **35 Nm (3.5 m • kg, 25 ft • lb)**

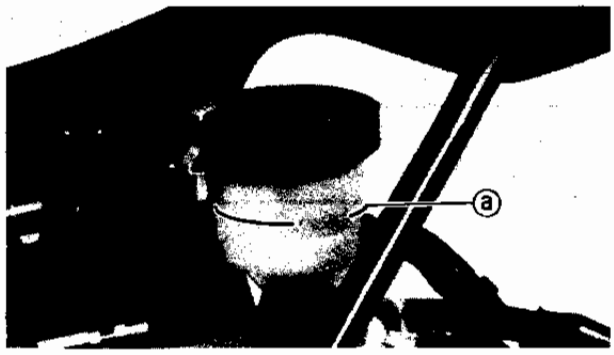
5.Fill:
- Reservoir tank

	Recommended brake fluid: DOT #4

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

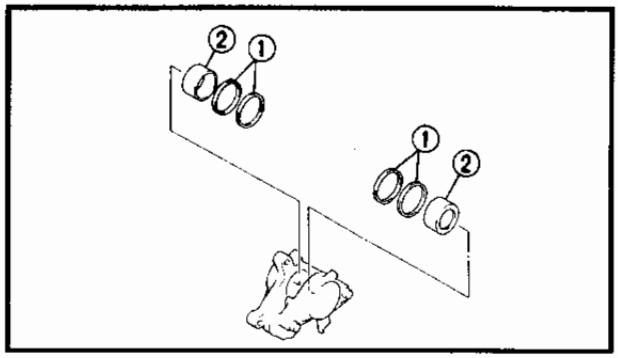
⚠ WARNING
- **Use only the designated quality brake fluid: otherwise, the rubber seals may deteriorate, causing leakage and poor brake performance.**
- **Refill with the same type of brake fluid: mixing fluids may result in a harmful chemical reaction and lead to poor performance.**
- **Be careful that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

6.Air bleed
- Brake system
  Refer to the "AIR BLEEDING" section in CHAPTER 3.



7.Inspect:
- Brake fluid level
  Fluid level is under "LOWER" level line → Replenish.
  Refer to the "BRAKE FLUID INSPECTION" section in CHAPTER 3.

ⓐ "LOWER" level line

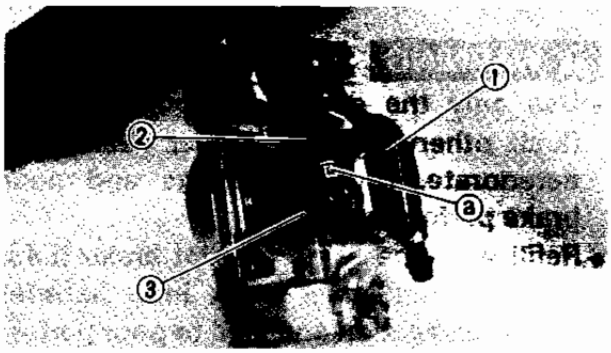


Rear brake

1.Install:
- Piston seals ①
- Pistons ②

⚠ WARNING

Always use new piston seals.



2.Install:
- Brake caliper① (temporarily)
- Copper washers
- Brake hose ②
- Union bolt ③

	Union bolt: **26 Nm (2.6 m • kg, 19 ft • lb)**

CAUTION:

When installing the brake hose on the caliper, take care that the pipe touches the projection ⓐ on the brake caliper.

⚠ WARNING

- **Proper hose routing is essential to insure safe motorcycle operation. Refer to the "CABLE ROUTING".**
- **Always use new copper washers.**

3.Remove:
- Brake caliper

4.Install:
- Brake pads (with pad shims)
- Pad spring
- Retaining pins
- Retaining clips
- Pad cover
- Brake caliper

Refer to the "BRAKE PAD REPLACEMENT" section.

	Bolt (brake caliper): **35 Nm (3.5 m • kg, 25 ft • lb)**

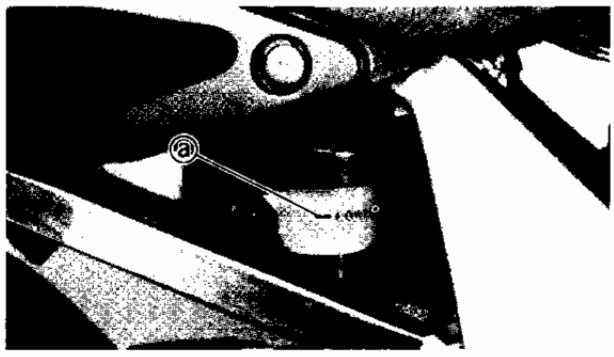
5.Fill:
- Reservoir tank

	Recommended brake fluid: DOT #4

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

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

6.Air bleed:
- Brake system
  Refer to the "AIR BLEEDING" section in CHAPTER 3.



7.Inspect:
- Brake fluid level
  Fluid level is under "LOWER" level line → Replenish.
  Refer to the "BRAKE FLUID INSPECTION" section in CHAPTER 3.

ⓐ "LOWER" level line

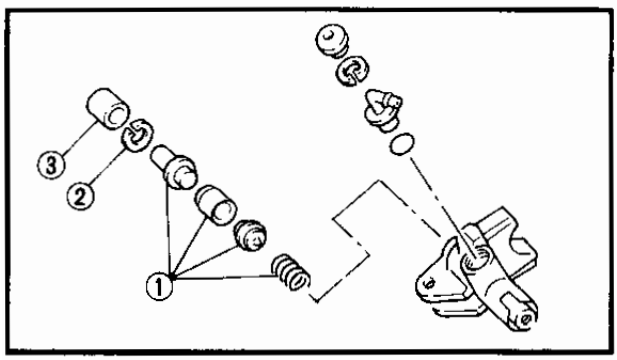
MASTER CYLINDER ASSEMBLY

⚠ WARNING

- **All internal parts should be cleaned in new brake fluid only.**
- **Internal parts should be lubricated with brake fluid when installed.**

	Recommended brake fluid: DOT #4

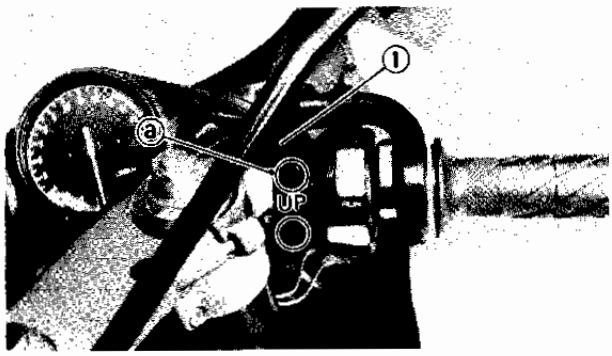
- **Replace the piston seals and dust seals whenever a caliper is disassembled.**



Front brake

1.Install:

- Master cylinder kit ①
- Circlip ②
- Dust boot ③
- Brake switch



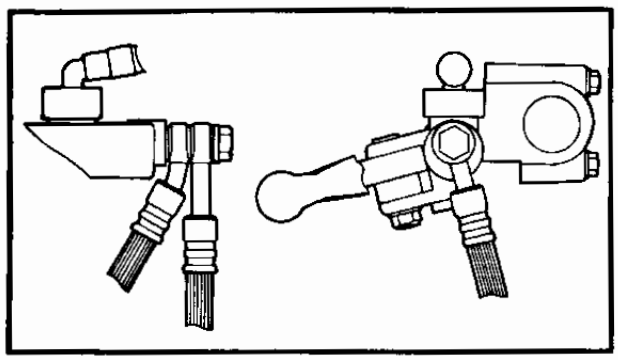
2.Install:

- Master cylinder ①

CAUTION:

- **Install the master cylinder holder with the "UP" mark facing upward.**
- **Align the end of the holder with the punch mark ⓐ on the handlebar.**
- **Tighten first the upper bolt, then the lower bolt.**

	Bolt (master cylinder holder): 10 Nm (1.0 m · kg, 7.2 ft · lb)



3.Install:
- Copper washers
- Brake hose
- Union bolt

Union bolt:
26 Nm (2.6 m • kg, 19 ft • lb)

NOTE:
- Tighten the union bolt while holding the brake hose as shown.
- Check that the brake hose does not touch other parts (throttle cable, wire harness, leads, etc.) by turning the handlebar left and right, and correct if necessary.

⚠ WARNING
- **Proper hose routing is essential to insure safe motorcycle operation. Refer to "CABLE ROUTING".**
- **Always use new copper washers.**

4.Install:
- Brake lever
- Reservoir tank

5.Connect:
- Brake switch leads

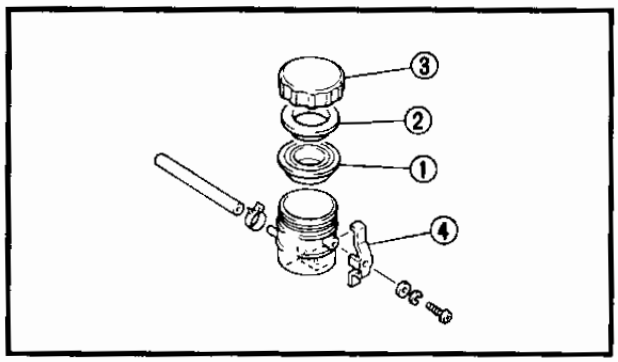
6.Fill:
- Reservoir tank

Recommended brake fluid:
DOT #4

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

⚠ WARNING
- **Use only the designated quality brake fluid: otherwise, the rubber seals may deteriorate, causing leakage and poor brake performance.**

- **Refill with the same type of brake fluid: mixing fluids may result in a harmful chemical reaction and lead to poor performance.**
- **Be careful that water does not enter the master cylinder when refilling. Water will significantly lower the boiling point of the fluid and may result in vapor lock.**



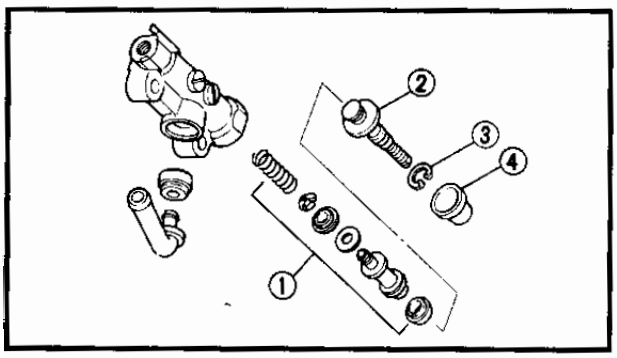
7.Install:
- Diaphragm ①
- Holder ② (diaphragm)
- Cap ③ (master cylinder)
- Stopper ④

8.Air bleed:
- Brake system
  Refer to the "AIR BLEEDING" section in CHAPTER 3.



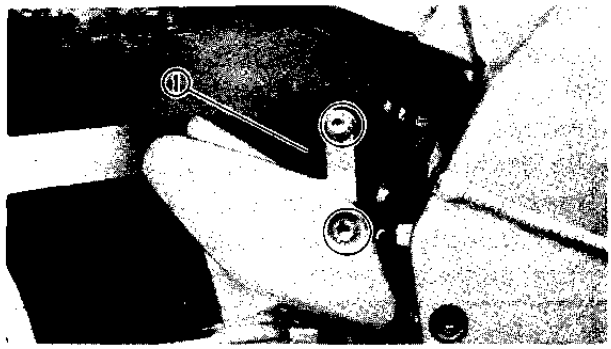
9.Inspect:
- Brake fluid level
  Fluid level is under "LOWER" level line → Replenish.
  Refer to the "BRAKE FLUID INSPECTION" section in CHAPTER 3.

ⓐ "LOWER" level line



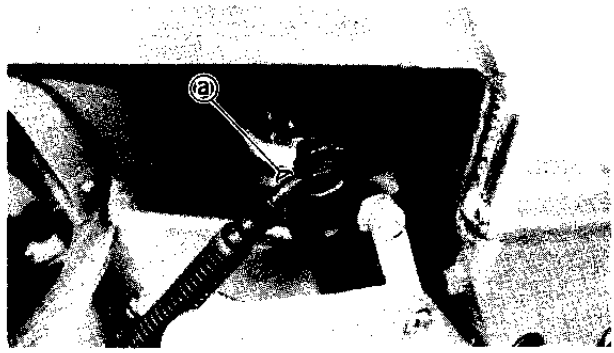
Rear brake

1.Install:
- Reservoir tank
  (onto frame)
- Master cylinder kit ①
- Push rod ②
- Circlip ③
- Dust boot ④



2.Install:
- Master cylinder ①

	Bolt (master cylinder): **23 Nm (2.3 m • kg, 17 ft • lb)**



3.Install:
- Copper washers
- Brake hoses
- Union bolt.

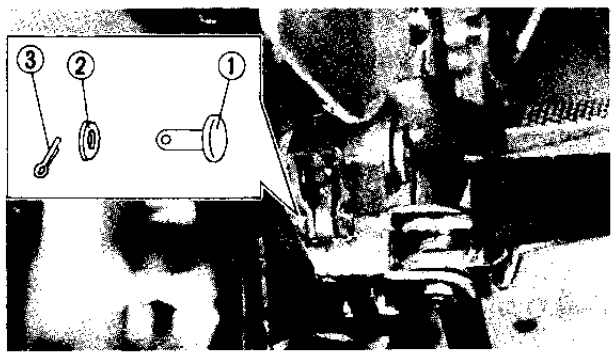
	Union bolt: **26 Nm (2.6 m • kg, 19 ft • lb)**

CAUTION:

When installing the brake hose on the master cylinder, take care that the pipe touches the projection ⓐ as shown.

⚠ WARNING

- **Proper hose routing is essential to insure safe motorcycle operation. Refer to "CABLE ROUTING".**
- **Always use new copper washers.**



4.Install:
- Clevis pin ①
- Washer ②
- Cotter pin ③

⚠ WARNING

Always use a new cotter pin.

5.Fill:
- Reservoir tank

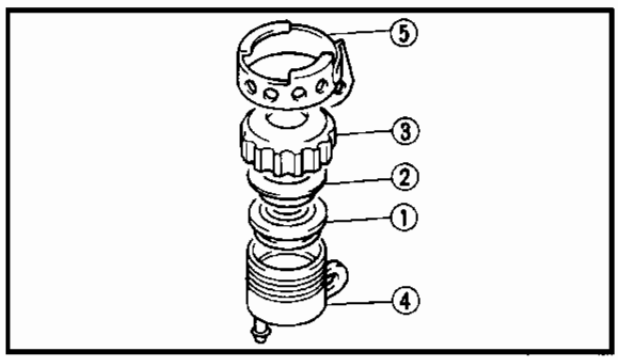
	Recommended brake fluid: **DOT #4**

CAUTION:

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

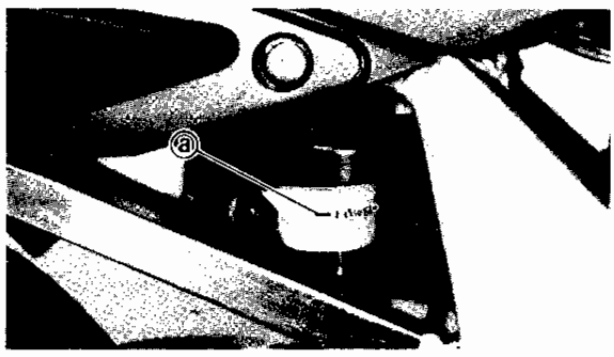
⚠ WARNING

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



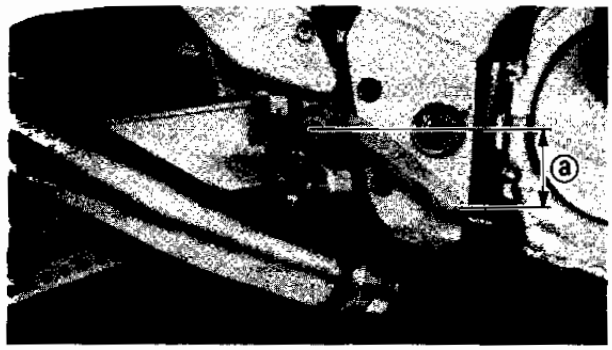
6.Install:
- Diaphragm ①
- Holder ② (diaphragm)
- Cap ③ (reservoir tank)
- Reservoir tank ④
- Holder ⑤ (cap)

7.Air bleed:
- Brake system
  Refer to the "AIR BLEEDING" section in CHAPTER 3.



8.Inspect:
- Brake fluid level
  Fluid level is under "LOWER" level line → Replenish.
  Refer to the "BRAKE FLUID INSPECTION" section in CHAPTER 3.

ⓐ "LOWER" level line



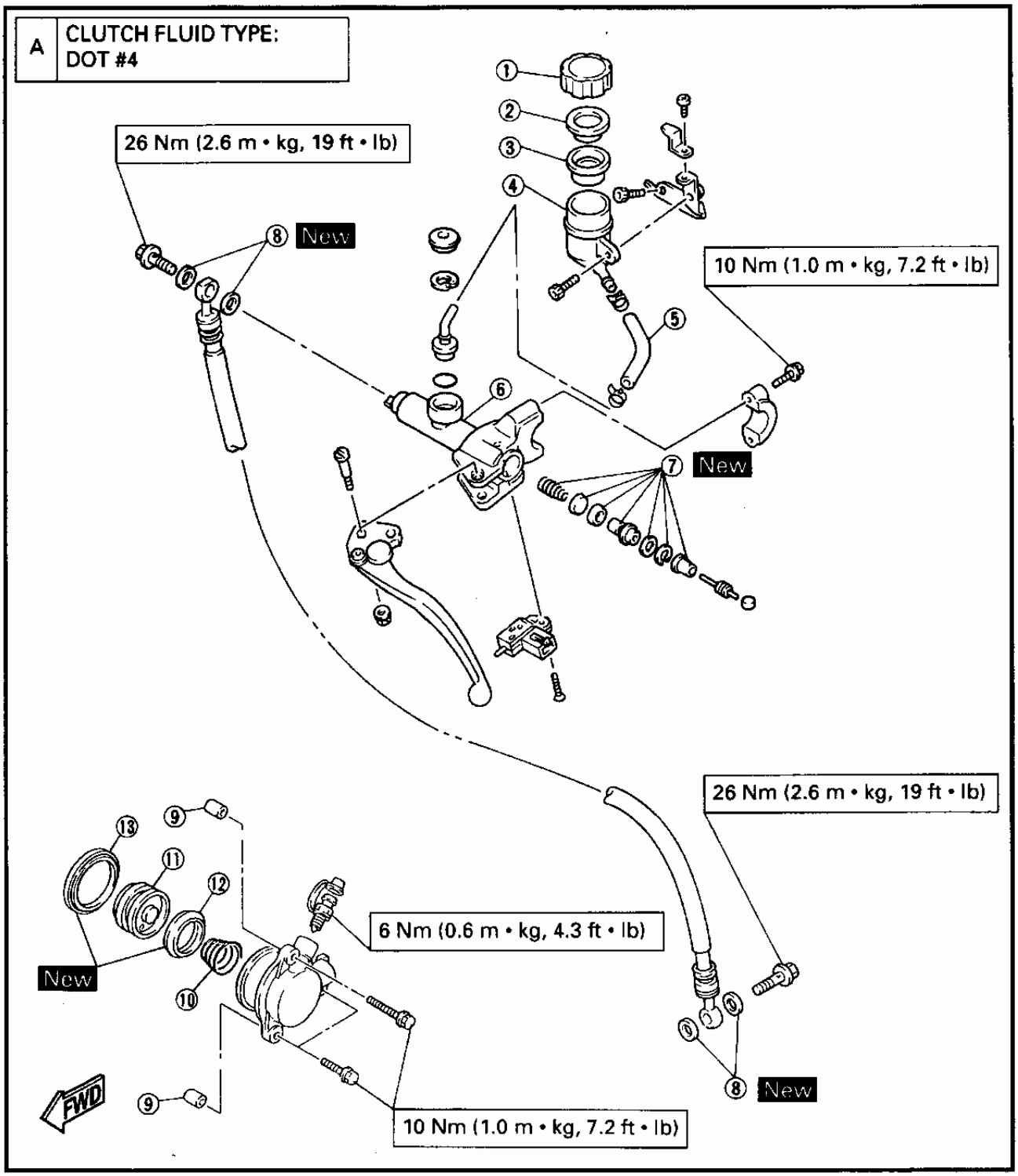
9.Adjust:
- Brake pedal height ⓐ
  Refer to the "REAR BRAKE ADJUSTMENT" section in CHAPTER 3.

Brake pedal height:
57 mm (2.2 in)
Below top of footrest.

10.Adjust:
- Brake light switch
  Refer to the "BRAKE LIGHT SWITCH ADJUSTMENT" section in CHAPTER 3.

HYDRAULIC CLUTCH

①Master cylinder cap
②Holder (diaphragm)
③Diaphragm
④Reservoir tank
⑤Reservoir hose
⑥Master cylinder
⑦Master cylinder kit
⑧Copper washer
⑨Dowel pin
⑩Spring
⑪Piston
⑫Piston seal
⑬Dust seal



CAUTION:

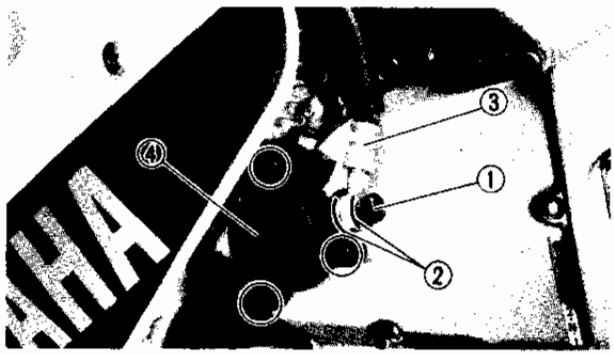
Hydraulic clutch components rarely require disassembly. DO NOT:

- **Disassemble components unless absolutely necessary.**
- **Use solvents on internal clutch components.**
- **Use contaminated brake fluid for cleaning.**
  Use only clean brake fluid.
- **Allow brake fluid to come in contact with the eyes, otherwise eye injury may occur.**
- **Allow brake fluid to contact painted surfaces or plastic parts otherwise damage may occur.**
- **Disconnect any hydraulic connection otherwise the entire system must be disassembled, drained, cleaned, and then properly filled and bled after reassembly.**

DISASSEMBLY

NOTE:

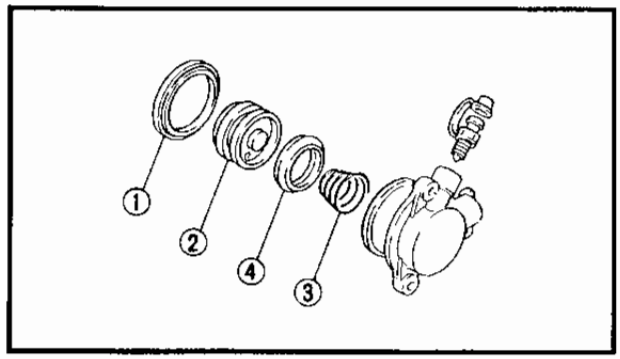
Before disassembling the clutch release cylinder or master cylinder drain the master cylinder and clutch hose of their fluid.



Clutch release cylinder

1.Remove:

- Union bolt ①
- Copper washers ②
- Clutch hose ③
- Clutch release cylinder ④
- Dowel pins



2.Remove:

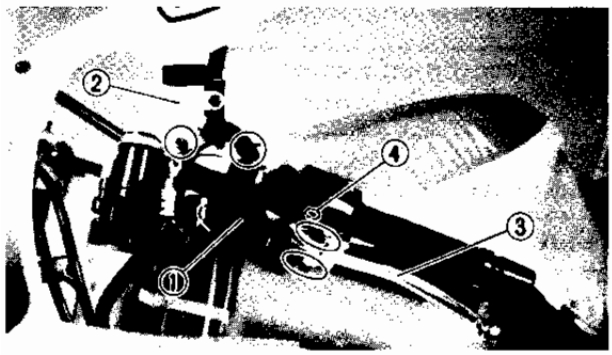
- Dust seal ①
- Piston ② (release cylinder)
- Spring ③
- Piston seal ④

NOTE:

Blow compressed air into the hose joint opening to force out the piston from the release cylinder body.

⚠ WARNING

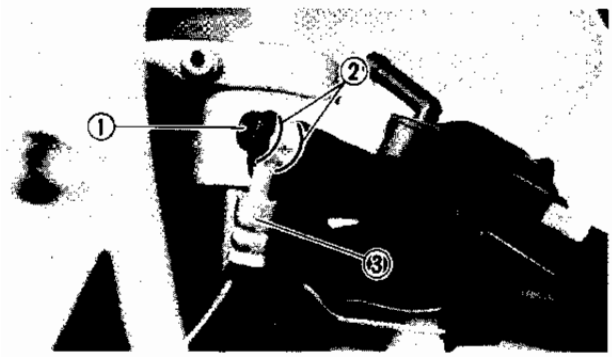
- **Cover the piston with rags and use extreme caution when expelling the piston from the cylinder.**
- **Never attempt to pry out the piston.**



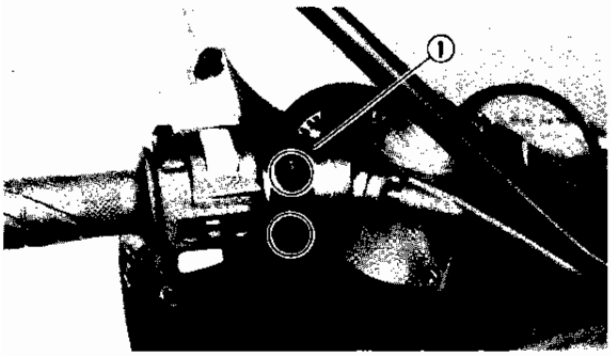
Master cylinder

1.Disconnect:
- Coupler ① (clutch switch)

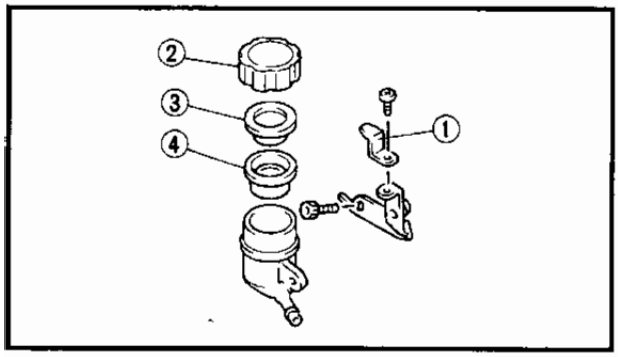
2.Remove:
- Reservoir tank ②
- Clutch lever ③
- Holder ④ (push rod)



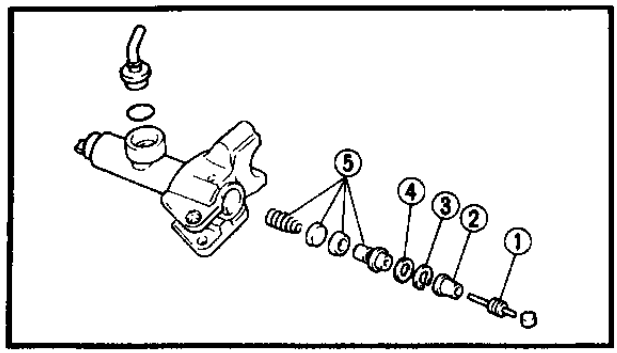
3.Remove:
- Union bolt ①
- Copper washers ②
- Clutch hose ③



4.Remove:
- Master cylinder ①



5.Remove:
- Holder ① (cap)
- Cap ② (reservoir tank)
- Holder ③ (diaphragm)
- Diaphragm ④



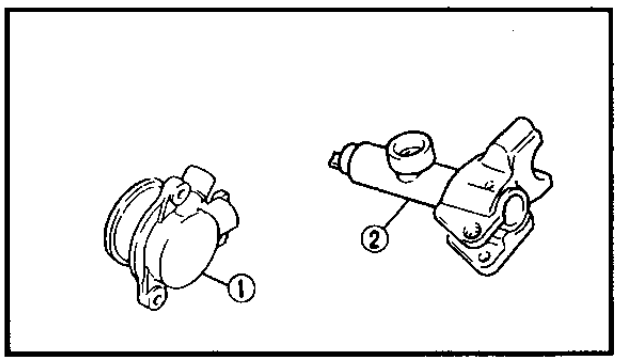
6.Remove:
- Push rod ①
- Dust boot ②
- Circlip ③
- Washer ④
- Master cylinder kit ⑤

INSPECTION AND REPAIR

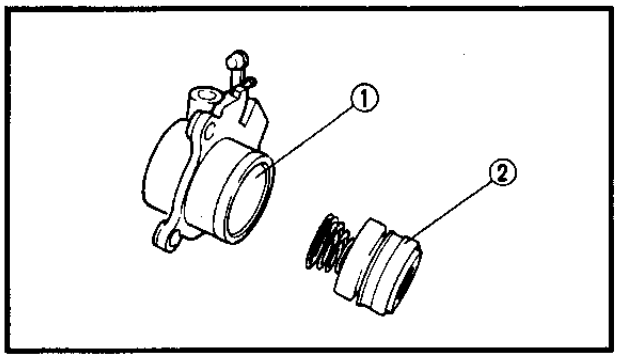
Recommended clutch component replacement schedule:	
Piston seal, dust seal	**Every two years**
Clutch hose	**Every four years**
Clutch fluid (brake fluid)	**Replace only when clutch is disassembled.**

⚠ WARNING

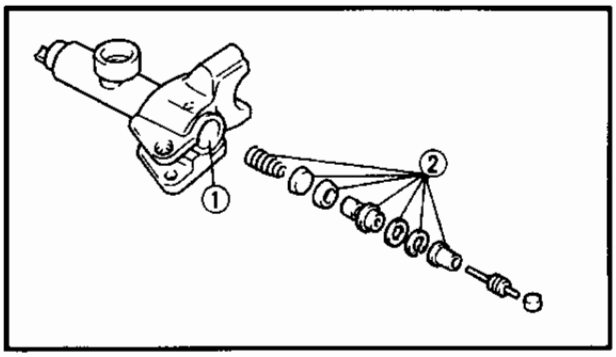
All internal parts should be cleaned in new brake fluid only. Do not use solvents as they will cause seals to swell and distort.



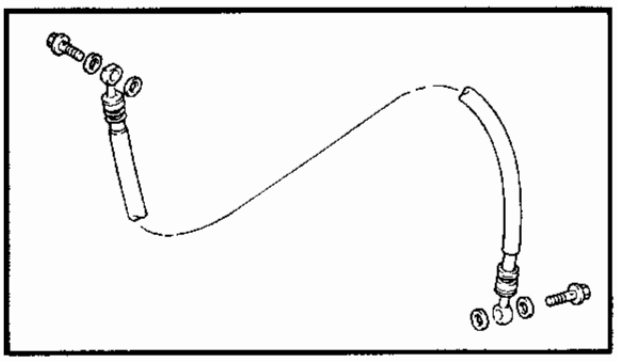
1.Inspect:
- Release cylinder body ①
- Master cylinder body ②
  Cracks/Damage → Replace.
- Oil delivery passage
  Blow out with compressed air.



2.Inspect:
- Release cylinder ①
- Piston ② (release cylinder)
  Scratches/Wear/Rust → Replace as a set.



3.Inspect:
- Master cylinder ①
- Master cylinder kit ②
  Scratches/Wear/Rust → Replace as a set.



4.Inspect:
- Clutch hose
  Cracks/Wear/Damage → Replace.

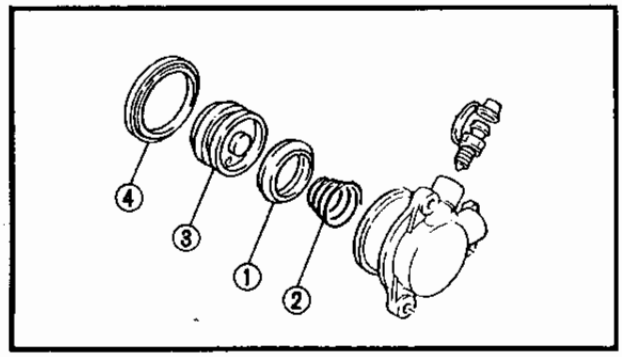
ASSEMBLY

⚠ WARNING

- **All internal parts should be cleaned in new brake fluid only.**
- **Internal parts should be lubricated with brake fluid when installed.**

Recommended brake fluid:
DOT #4

- **Replace the piston seal and dust seal whenever the clutch release and master cylinder are disassembled.**



Clutch release cylinder

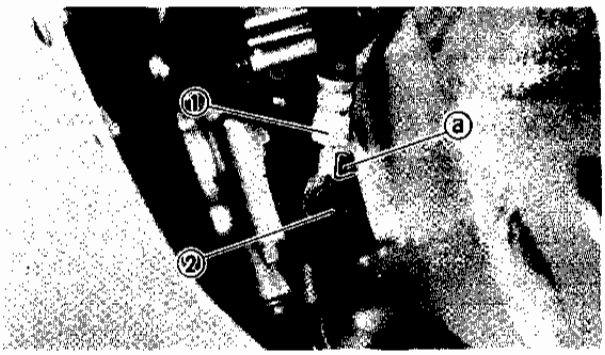
1.Install:
- Piston seal ①
- Spring ②
- Piston ③ (release cylinder)
- Dust seal ④

⚠ WARNING

Always use new piston and dust seals.

2.Install:
- Dowel pins
- Clutch release cylinder

	Bolt (clutch release cylinder): 10 Nm (1.0 m • kg, 7.2 ft • lb)



3.Install:
- Copper washers
- Clutch hose ①
- Union bolt ②

	Union bolt: 26 Nm (2.6 m • kg, 19 ft • lb)

CAUTION:
When installing the clutch hose on the release cylinder, take care that the pipe touches the projection ⓐ as shown.

⚠ WARNING
- **Proper hose routing is essential to insure safe motorcycle operation. Refer to "CABLE ROUTING".**
- **Always use new copper washers.**

4.Fill:
- Master cylinder tank

	Recommended fluid: DOT #4

CAUTION:
Clutch fluid may erode painted surfaces or plastic parts. Always clean up spilled fluid immediately.

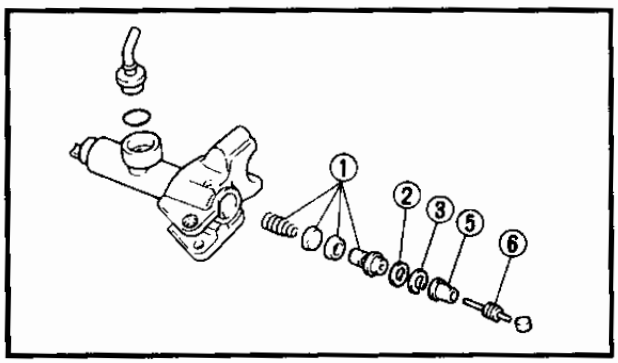
⚠ WARNING
- **Use only the designated quality fluid; otherwise, the rubber seals may deteriorate, causing leakage and poor clutch performance.**

- **Refill with the same type of fluid: mixing fluids may result in a harmful chemical reaction and lead to poor clutch performance.**
- **Be careful that water does not enter the master cylinder when refilling. Water will significantly lower the boiling point of the fluid and may result in vapor lock.**

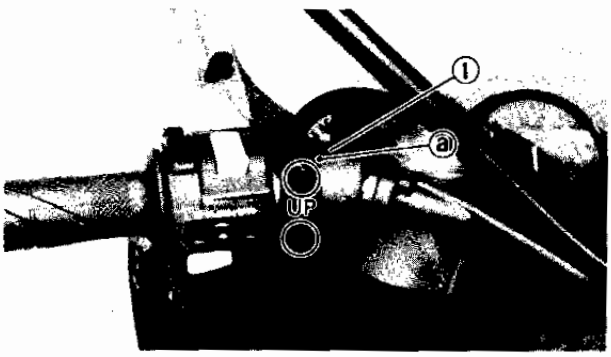
5.Air bleed:
- Clutch system
  Refer to the "AIR BLEEDING" section in CHAPTER 3.

6.Inspect:
- Clutch fluid level
  Fluid level is under "LOWER" level line → Replenish.
  Refer to the "CLUTCH FLUID LEVEL INSPECTION" section in CHAPTER 3.

ⓐ "LOWER" level line



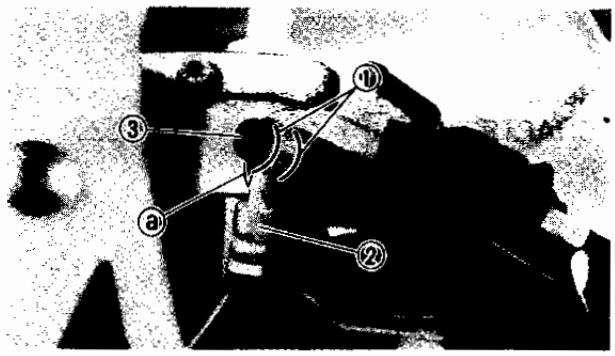
Master cylinder
1.Install:
- Master cylinder kit ①
- Washer ②
- Circlip ③
- Dust boot ④
- Push rod ⑤



2.Install:
- Master cylinder ①

CAUTION:
- **Install the master cylinder holder with the "UP" mark facing upward.**
- **Align the end of the holder with the punch mark ⓐ on the handlebar.**
- **Tighten first the upper bolt, then the lower bolt.**

	Bolt (master cylinder holder): 10 Nm (1.0 m • kg, 7.2 ft • lb)



3.Install:
- Copper washers ①
- Clutch hose ②
- Union bolt ③

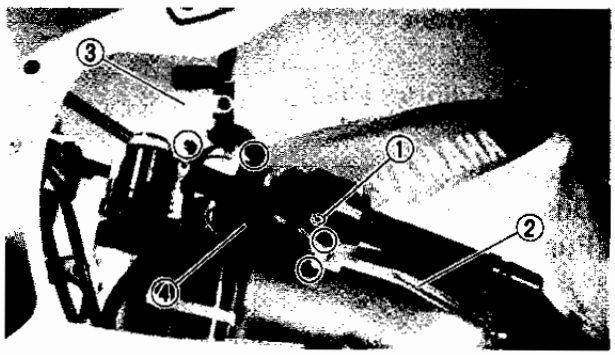
	Union bolt: 26 Nm (2.6 m • kg, 19 ft • lb)

CAUTION:

When installing the clutch hose on the master cylinder, take care that the pipe touches the projection ⓐ as shown.

⚠ WARNING

- **Proper hose routing is essential to insure safe motorcycle operation. Refer to "CABLE ROUTING".**
- **Always use new copper washers.**



4.Install:
- Holder ① (push rod)
- Clutch lever ②
- Reservoir tank ③

NOTE:

Apply lithium soap base grease to the clutch lever pivot.

5.Connect:
- Coupler ④ (clutch switch)

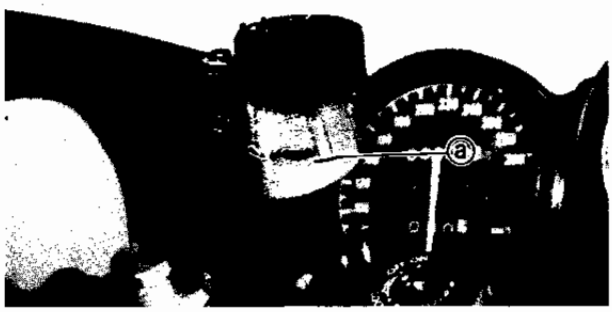
6.Fill:
- Master cylinder tank.

	Recommended fluid: DOT #4

CAUTION:
Clutch fluid may erode painted surfaces or plastic parts. Always clean up spilled fluid immediately.

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

7.Air bleed:
- Clutch system
  Refer to the "AIR BLEEDING" section in CHAPTER 3.

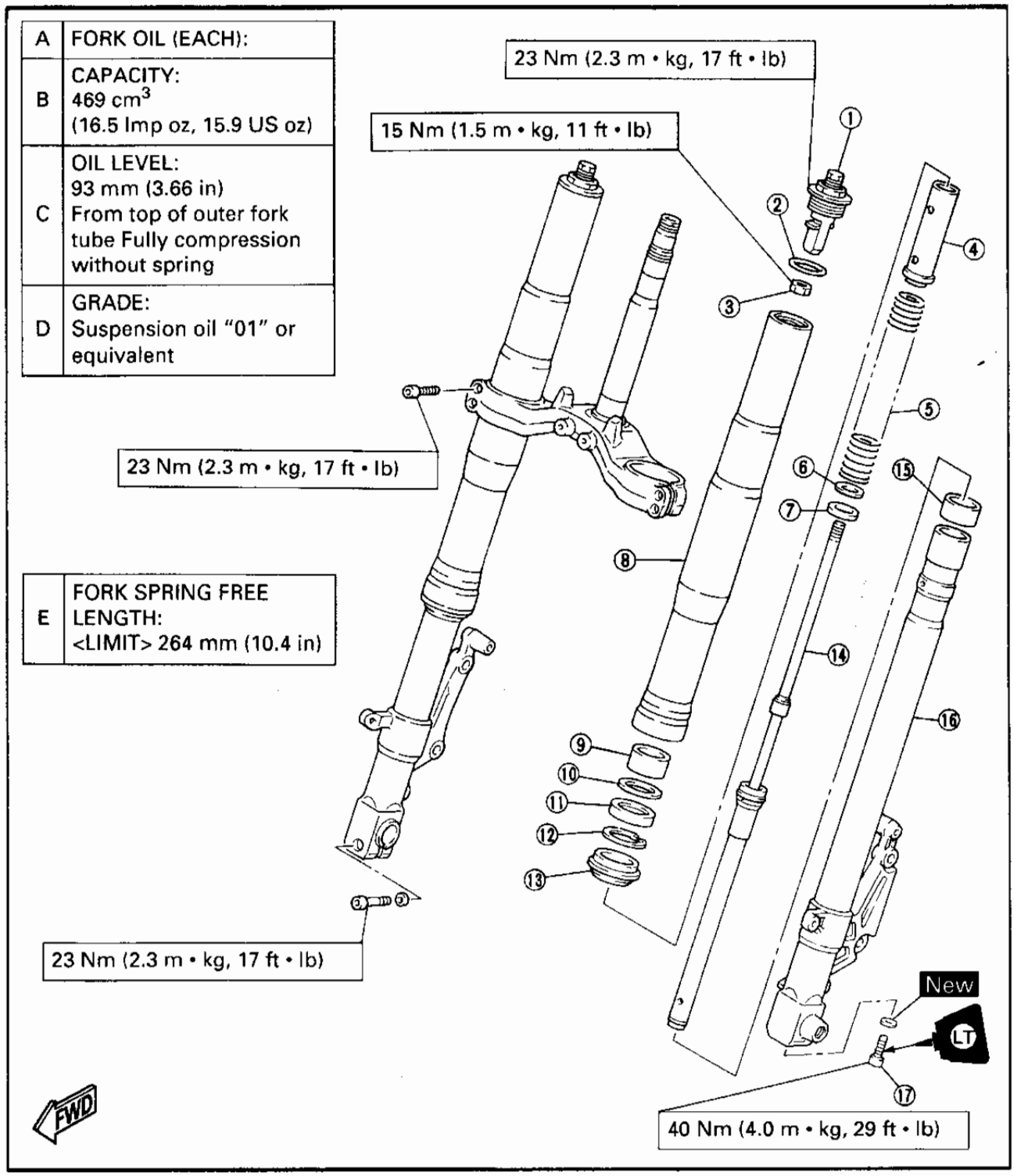


8.Inspect:
- Clutch fluid level
  Fluid level is under "LOWER" level line → Replenish.
  Refer to the "CLUTCH FLUID LEVEL INSPECTION" section in CHAPTER 3.

ⓐ "LOWER" level line

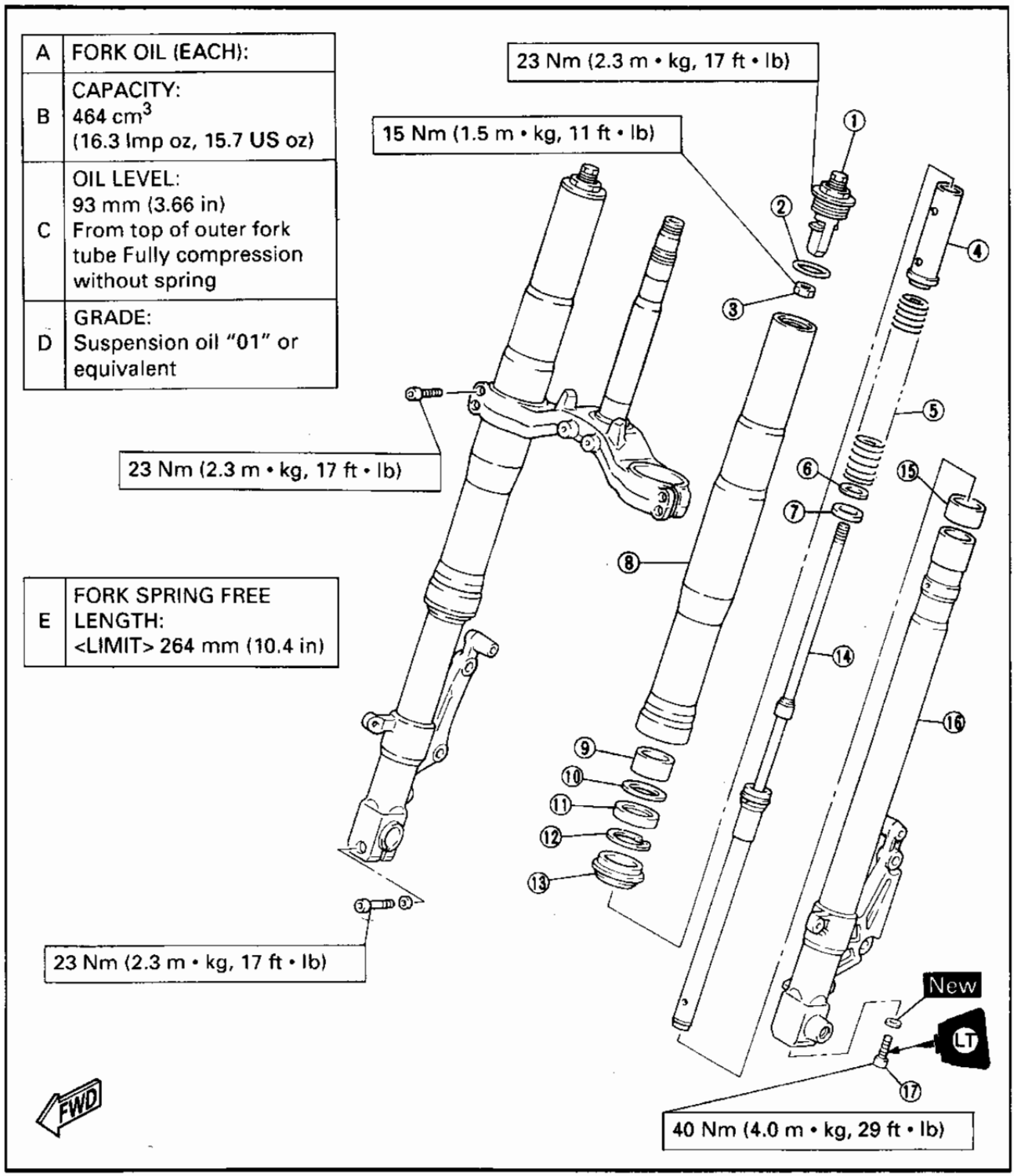
FRONT FORK
YZF750R

1. **Cap bolt** complete
2. **O-ring**
3. **Locknut**
4. **Spacer collar**
5. **Fork spring**
6. **Washer**
7. Slide plate
8. Outer fork tube
9. Slide metal
10. Plain washer
11. Oil seal
12. Stopper ring
13. Dust seal
14. Damper rod assembly
15. Piston metal
16. Inner fork tube
17. Damper rod bolt



YZF750SP

①Cap bolt complete
②O-ring
③Locknut
④Spacer collar
⑤Fork spring
⑥Washer
⑦Slide plate
⑧Outer fork tube
⑨Slide metal
⑩Plain washer
⑪Oil seal
⑫Stopper ring
⑬Dust seal
⑭Damper rod assembly
⑮Piston metal
⑯Inner fork tube
⑰Damper rod bolt



REMOVAL

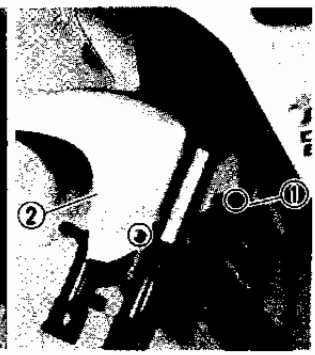
⚠ WARNING

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

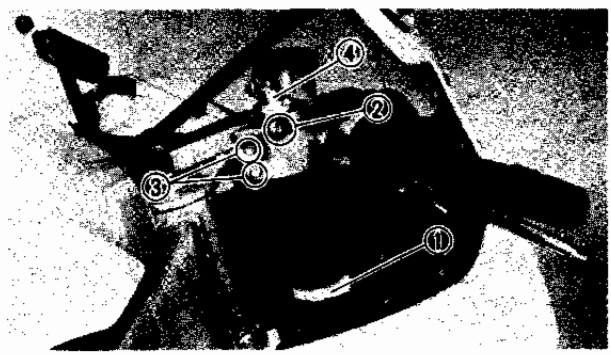
1.Place the motorcycle on a level place.
2.Remove:
- Lower cowling
  Refer to the "COWLINGS" section in CHAPTER 3.

3.Remove:
- Brake calipers (left and right)
- Front wheel
  Refer to the "FRONT WHEEL" section.





4.Remove:
- Brake hose holder ①
- Front fender ②

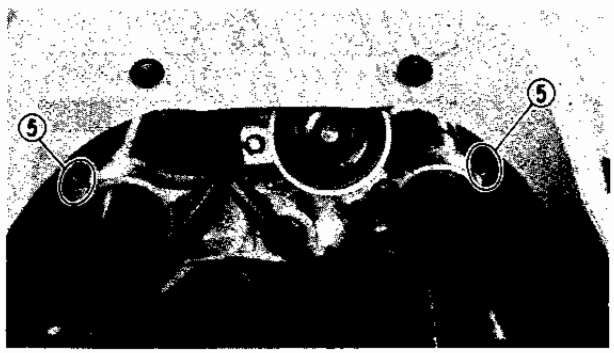


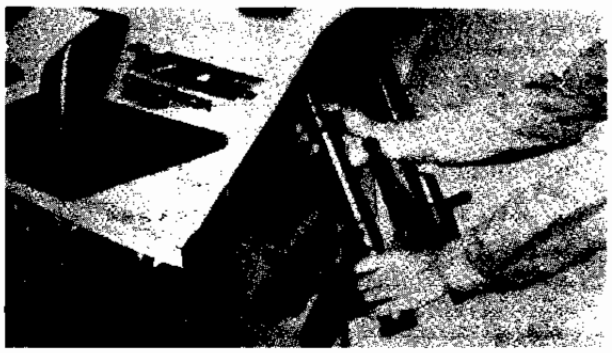
5.Remove:
- Bands ① (handlebar switch lead)

6.Loosen:
- Pinch bolts ② (upper bracket)
- Pinch bolts ③ (handlebar)
- Cap bolts ④
- Pinch bolts ⑤ (lower bracket)

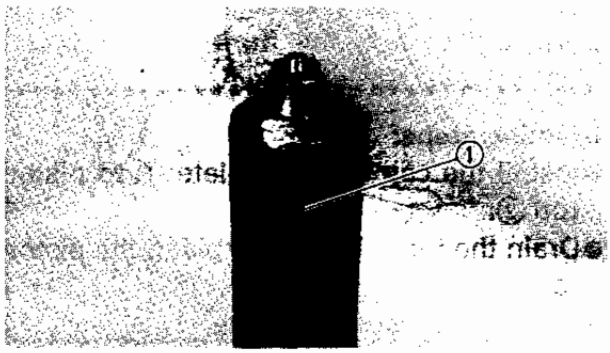
⚠ WARNING

Support the fork before loosening the pinch bolts.

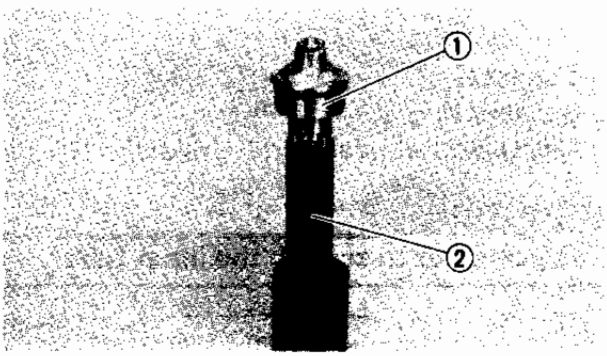




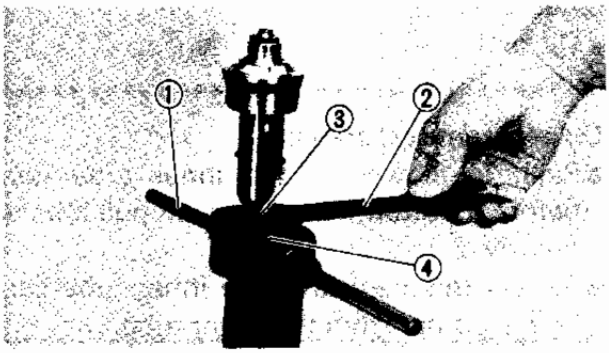
7.Remove:
- Front fork(s)



DISASSEMBLY
1.Unscrew:
- Outer tube ①



2.Remove:
- Cap bolt complete ①
- Spacer ②
- Fork spring



****

Removal steps:

- Press down the spacer using the fork spring compressor ①.

	**Fork spring compressor: P/N YM-01441, 90890-01441**

- Set the rod holder ② between the lock nut ③ and spacer ④.

NOTE:
Use "B" side of rod holder.

	**Rod holder: P/N YM-01434, 90890-01434**

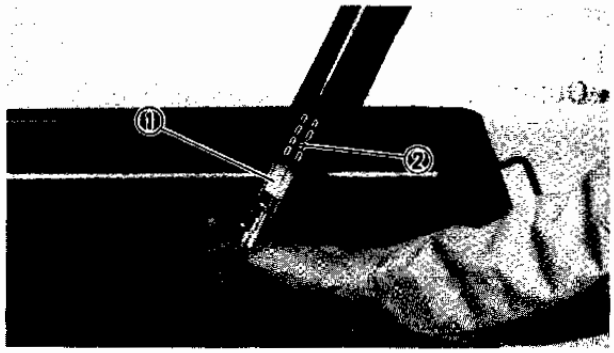
- Loosen the lock nut.
- Remove the cap bolt complete.
- Remove the rod holder ② and fork spring compressor ①.

⚠ WARNING

Be careful, this fork spring is compressed.

- Remove the spacer, fork spring, washer and slide plate.

****

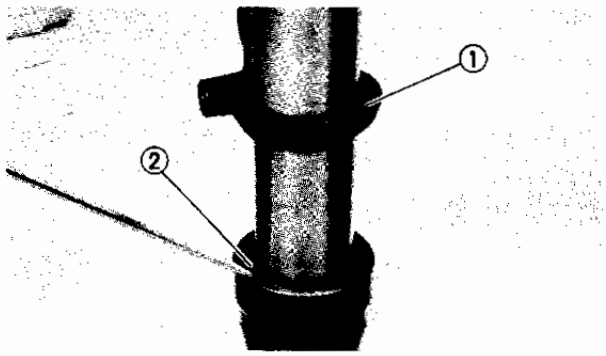


3.Drain:
- Fork oil

****

Draining steps:
- Install the cap bolt complete ① to piston rod ②.
- Drain the fork oil while stroking the piston rod several times.
- Remove cap bolt complete.

****

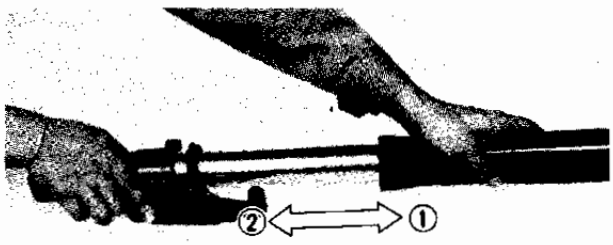


4.Remove:
- Dust seal ①
- Stopper ring ②

Using slotted-head screwdriver.

CAUTION:

Take care not to scratch the inner tube.

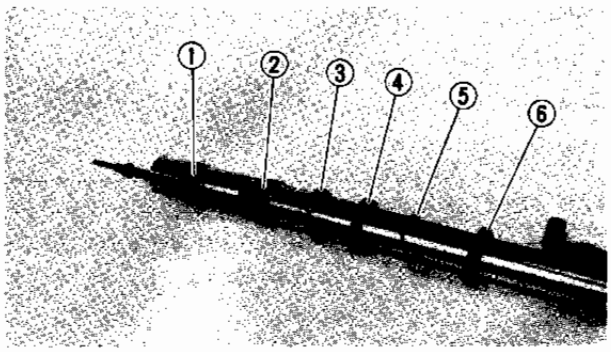


5.Remove:
- Oil seal

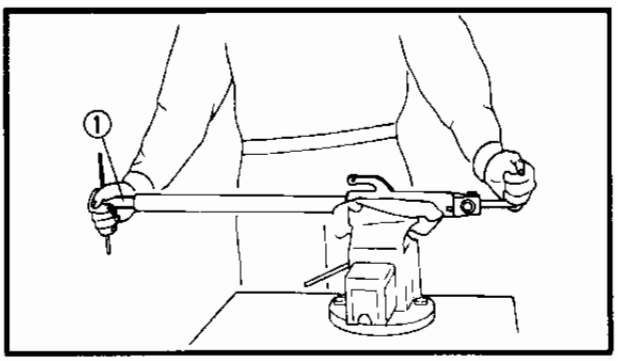
****

Oil seal removal steps:
- Push in slowly ① the inner tube just before it bottoms out and then pull it back quickly ②.
- Repeat this step until the inner tube can be pulled out from the outer tube.

****



6.Remove:
- Piston metal ①
- Slide metal ②
- Plain washer ③
- Oil seal ④
- Stopper ring ⑤
- Dust seal ⑥

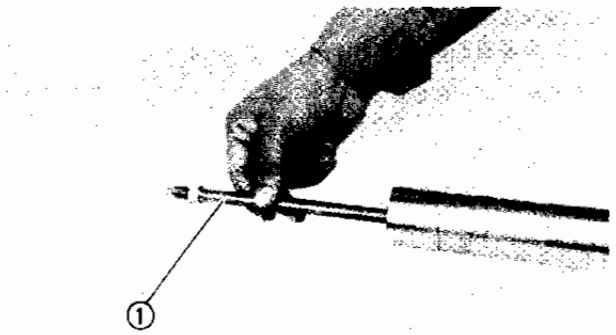


7.Remove:
- Bolt (damper rod)
- Copper washer

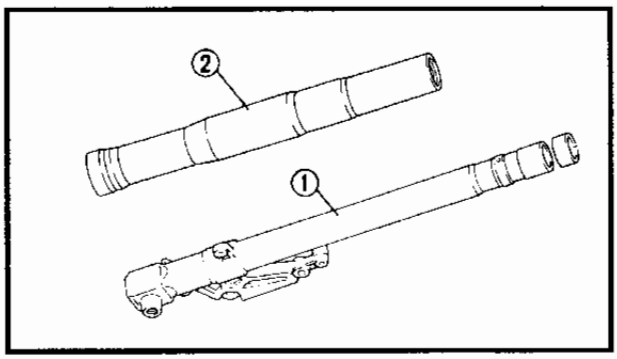
NOTE:
Loosen the bolt (damper rod) while holding the damper rod with the damper rod holder ①.



Damper rod holder:
P/N YM-01445, 90890-01445



8.Remove:
- Damper rod assembly ①



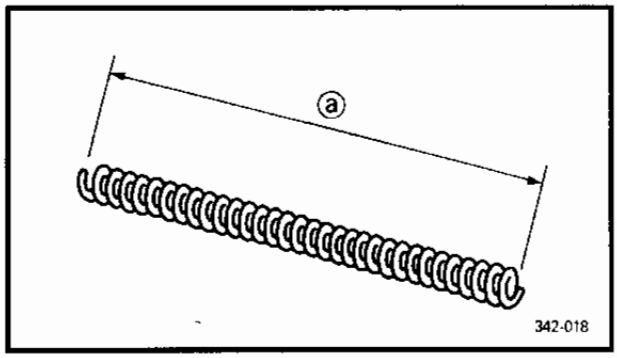
INSPECTION

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

  Scratches/Bends/Damage → Replace.

⚠ WARNING

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

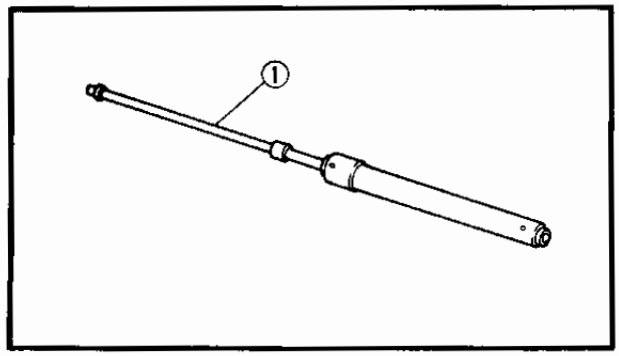


2.Measure:
- Fork spring ⓐ

  Over specified limit → Replace.



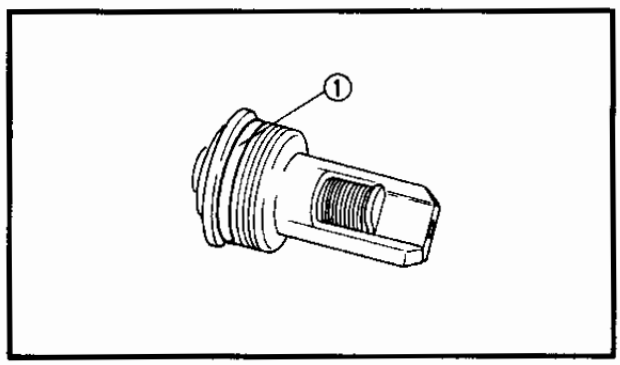
Fork spring free length (limit):
264 mm (10.4 in)



3.Inspect:
- Rod assembly ①
  Bend/Damage → Replace rod assembly.

CAUTION:

The front fork with a built-in piston rod has a very sophisticated internal construction and is particularly sensitive to foreign material.
Use enough care not to allow any foreign material to come in when the oil is replaced or when the front fork is disassembled and reassembled.

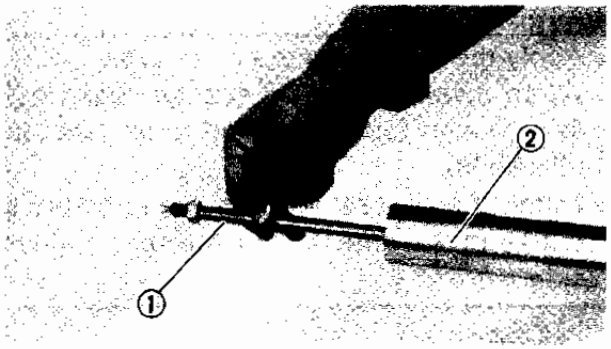


4.Inspect:
- O-ring ① (cap bolt complete)
  Wear/Damage → Replace.

ASSEMBLY

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

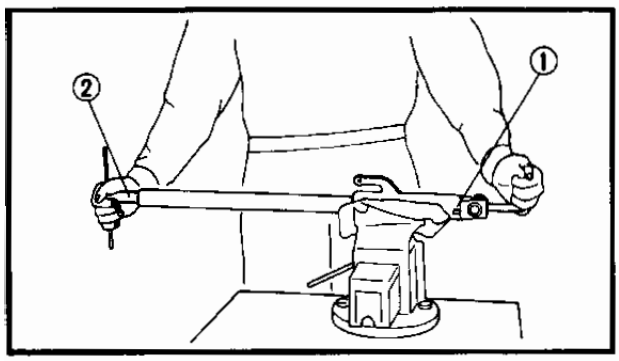
NOTE:
- In front fork reassembly, be sure to use following new parts.
  * Piston metal
  * Slide metal
  * Oil seal
  * Dust seal
- Make sure that all components are clean before reassembly.



1.Install:
- Damper rod ①

CAUTION:
Allow the damper rod to slide slowly down the inner fork tube ② until it protrudes from the bottom, being careful not to damage the inner fork tube.

NOTE:
Always use a new copper washer.

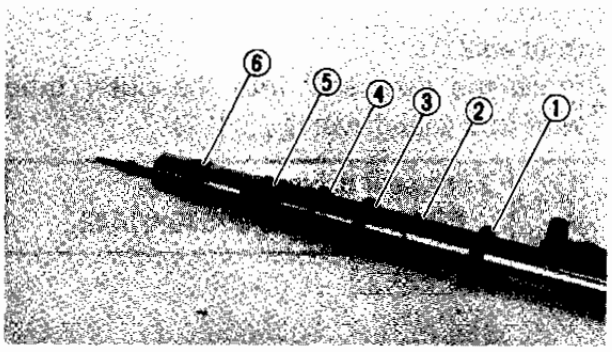


2.Tighten:
- Bolt (damper rod)

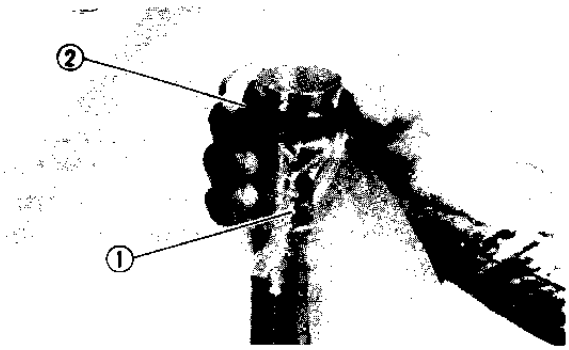
Bolt (damper rod):
40 Nm (4.0 m • kg, 29 ft • lb)
LOCTITE®

NOTE:
Tighten the bolt (damper rod) while holding the damper rod with the damper rod holder.

Damper rod holder:
P/N YM-01445, 90890-01445

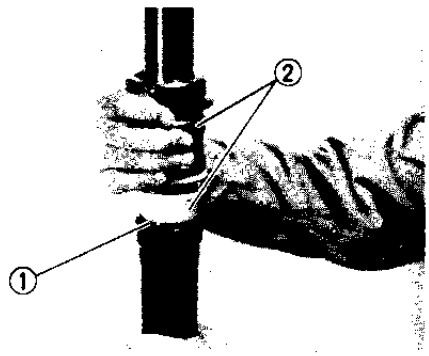


3.Install:
- Dust seal ①
- Stopper ring ②
- Oil seal ③
- Plain washer ④
- Slide metal ⑤
- Piston metal ⑥



NOTE:
- Apply the fork oil on the inner tube.
- When installing the oil seal ②, use vinyl seat ① with fork oil applied to protect the oil seal lip.
- Install the oil seal with its manufacture's marks or number facing the axle holder side.

4.Install:
- Inner tube
  (to outer tube)

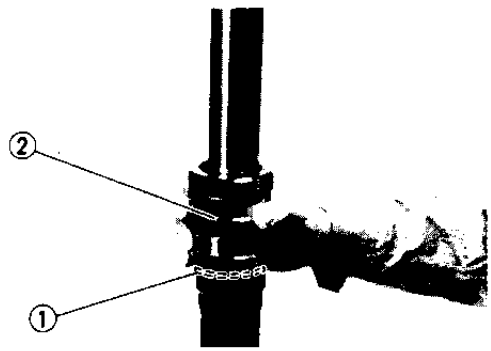


5.Install:
- Oil seal ①
  Press the oil seal into the outer tube with fork seal driver ②.

	Fork seal driver: **P/N YM-01442, 90890-01442**

6.Install:
- Stopper ring

NOTE:
Fit the stopper ring correctly in the groove in the outer tube.



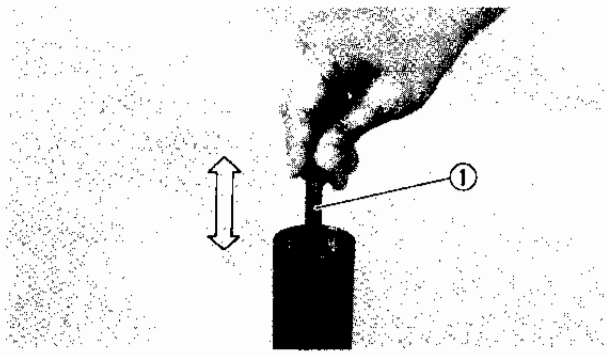
7.Install:
- Dust seal ①
  Press the dust seal into the outer tube with fork seal driver ②.

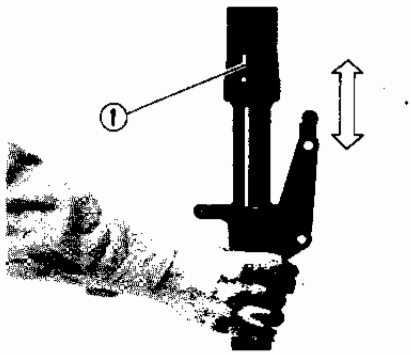
	Fork seal driver: **P/N YM-01442, 90890-01442**

8.Compress the front fork fully.

9.Fill:
- Front fork oil
  Until outer tube top surface with recommended fork oil.

Fork oil capacity:
YZF750R
469 cm³
(16.5 Imp oz, 15.9 US oz)
YZF750SP
464 cm³
(16.3 Imp oz, 15.7 US oz)
Recommended oil:
Suspension oil "01" or equivalent





CAUTION:
- **Be sure to use recommended fork oil. If other oils are used, they may have an excessively adverse effect on the front fork performance.**
- **NEVER allow foreign materials to enter the front fork.**

10.After filling, pump the damper rod ① slowly up and down more than 10 times to distribute the front fork oil.

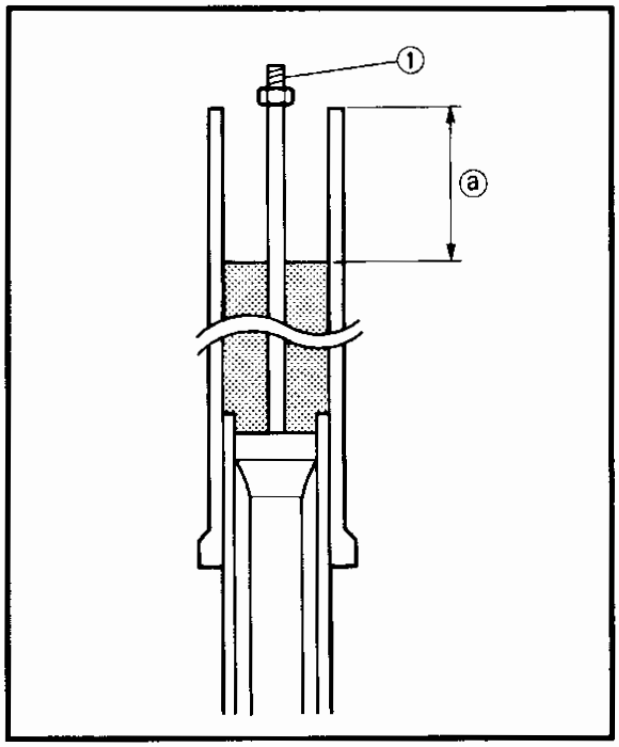
NOTE:
Be sure to pump the damper rod slowly because the fork oil will spurt out from its end.

11.After filling, pump the outer tube ① slowly up and down (about 120 mm (4.7 in) stroke) to distribute the fork oil once more.

NOTE:
Be careful not to excessive full stroke. A stroke of 120 mm (4.7 in) or more will cause air to enter. In this case, repeat the steps 10 to 11.

12.Wait ten minutes until the air bubbles have been removed form the front fork, and the oil has dispense evenly in system before setting recommended oil level.

NOTE:
Fill with the fork oil up to the top end of the outer tube, or the fork oil will not spread over to every part of the front forks, thus making it impossible to obtain the correct level.
Be sure to fill with the fork oil up to the top of the outer tube and bleed the front forks.

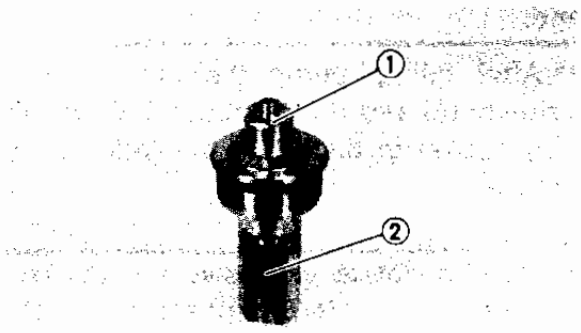


13. Measure:
- Oil level (left and right) ⓐ
  Out of specification → Adjust.

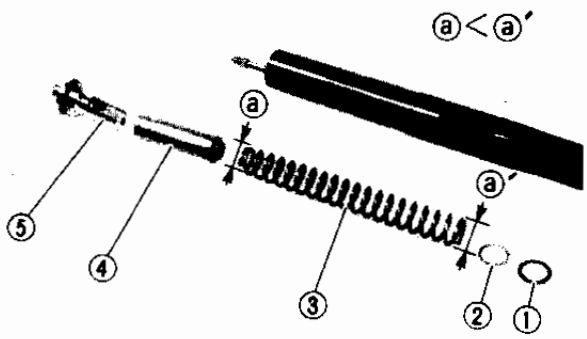
	Fork oil level: **93 mm (3.66 in)**
From top of outer tube with inner tube and damper rod ① fully compressed without spring.	

⚠ WARNING

Never fail to mark the oil level adjustment specification level and always adjust each front fork to the same setting. Uneven adjustment can cause poor handling and loss of stability.

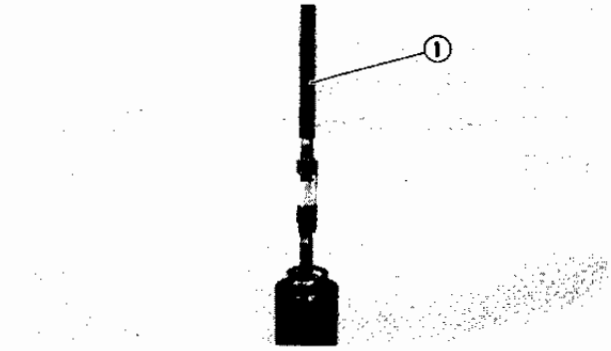


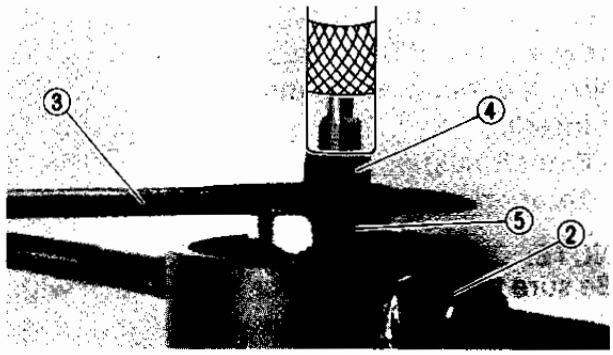
14. Tighten:
- Spring preload adjuster ①
  (until no free play of stopper ②)

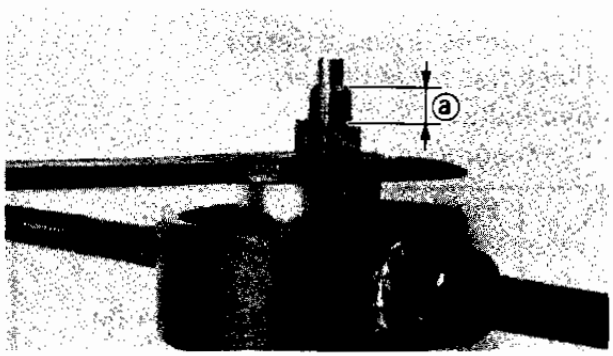


15. Install:
- Slide plate ①
- Washer ②
- Fork spring ③
- Spacer ④
- Cap bolt complete ⑤

NOTE:
Fork spring must be installed with the smaller diameter ⓐ upward.







****

Installing steps:

- Install the rod puller ① to damper rod.

	Rod puller: **P/N YM-01437, 90890-01437** **Adapter:** **P/N 90890-01436**

- Install the fork spring and spacer.
- Press down the spacer using the fork spring compressor ②.

	Fork spring compressor: **P/N YM-01441, 90890-01441**

- Pull up the damper rod and set the rod holder ③ between the lock nut ④ and spacer ⑤.

NOTE:
Use "B" side of rod holder.

	Rod holder: **P/N YM-01434, 90890-01434**

- Remove the rod puller.
- Set the thread length ⓐ.

	Thread length: **YZF750R:** **15.5 mm (0.61 in)** **YZF750SP:** **12 mm (0.47 in)**

- Install the cap bolt complete and tighten with your finger slightly tight.
- Tighten the lock nut.

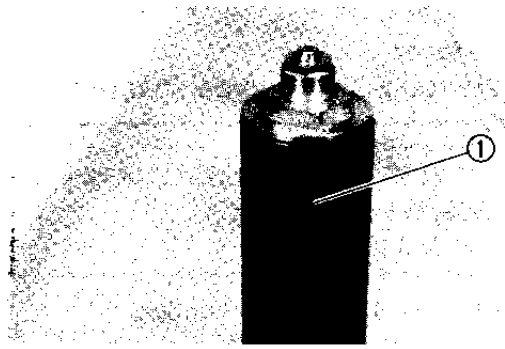
NOTE:
Hold the cap bolt and tighten the locknut with specified torque.

	Locknut: **15 Nm (1.5 m • kg, 11 ft • lb)**

- Remove the rod holder and fork spring compressor.

⚠ WARNING
Be careful, this fork spring is compressed.

****



16.Install:
- Outer tube ①
  (to cap bolt complete)
  Temporarily tighten the cap bolt complete.



INSTALLATION

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

1.Install:
- Front fork(s)
  Temporary tighten the pinch bolts.

NOTE:
Be sure the outer fork tube end is flush with the top of the upper bracket.

2.Tighten:
- Pinch bolts (lower bracket)
- Pinch bolts (handlebar)
- Cap bolts
- Pinch bolts (upper bracket)

Pinch bolt (lower bracket):
23 Nm (2.3 m • kg, 17 ft • lb)
Cap bolt:
23 Nm (2.3 m • kg, 17 ft • lb)
Pinch bolt (handlebar):
13 Nm (1.3 m • kg, 9.4 ft • lb)
Pinch bolt (upper bracket):
26 Nm (2.6 m • kg, 19 ft • lb)

3.Install:
- Front fender
- Brake hose holder

Bolt (front fender):
6 Nm (0.6 m • kg, 4.3 ft • lb)

4.Install:
- Front wheel
- Brake caliper

Refer to the "FRONT WHEEL" section.



Front axle:
72 Nm (7.2 m • kg, 52 ft • lb)
Bolt (brake caliper):
35 Nm (3.5 m • kg, 25 ft • lb)
Pinch bolt (front axle):
23 Nm (2.3 m • kg, 17 ft • lb)

⚠ WARNING

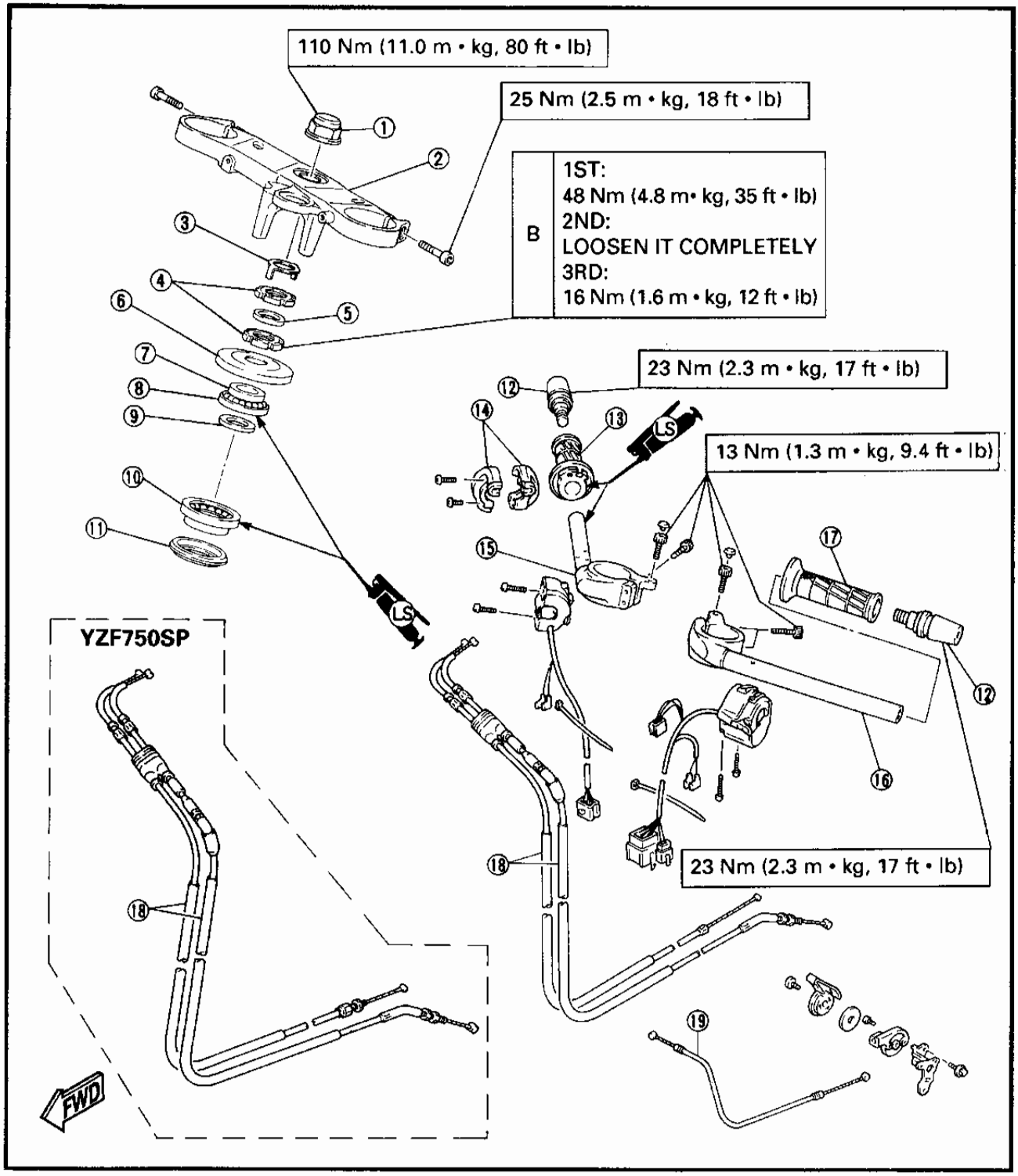
Make sure that the brake hose are routed properly.

5.Adjust:
- Spring preload
- Rebound damping (YZF750SP)
- Compression damping (YZF750SP)

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

STEERING HEAD AND HANDLEBAR

①Steering stem nut
②Upper bracket
③Special washer
④Ring nut
⑤Rubber washer
⑥Bearing cover
⑦Bearing race
⑧Bearing (upper)
⑨Dust seal (upper)
⑩Bearing (lower)
⑪Dust seal (lower)
⑫Handlebar grip end
⑬Throttle grip
⑭Throttle cable housing
⑮Handlebar (right)
⑯Handlebar (left)
⑰Grip rubber
⑱Throttle cable
⑲Starter cable



REMOVAL

⚠ WARNING

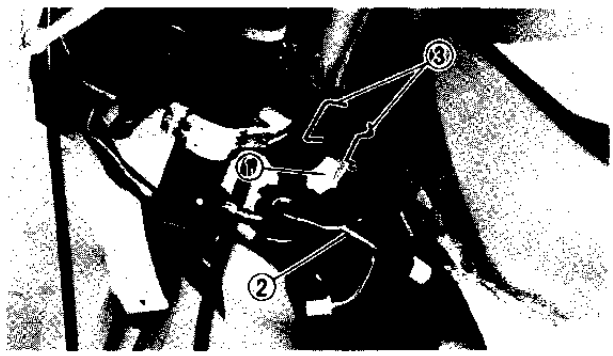
Securely support the motorcycle so there is no danger of it falling over.

1. Remove:
- Lower cowling
- Center cowling (left)

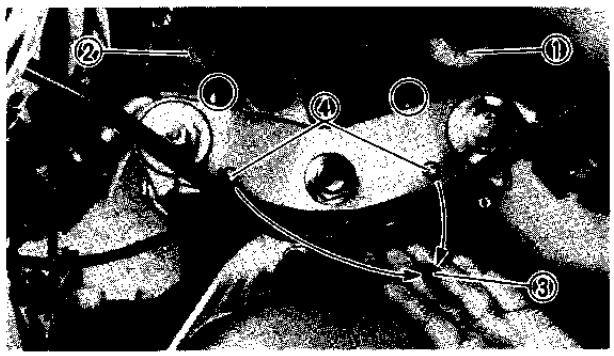
Refer to the "COWLINGS" section in CHAPTER 3.

2. Disconnect:
- Main switch coupler ①

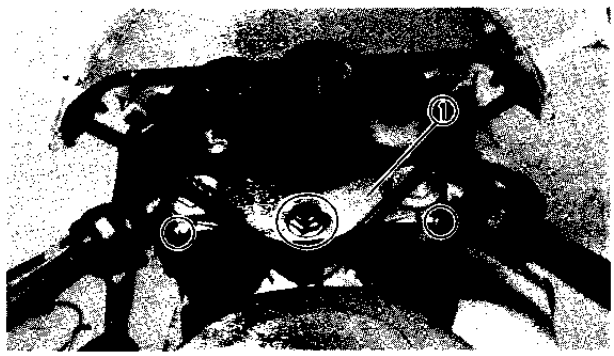
3. Remove:
- Band ②
- Cable clamps ③



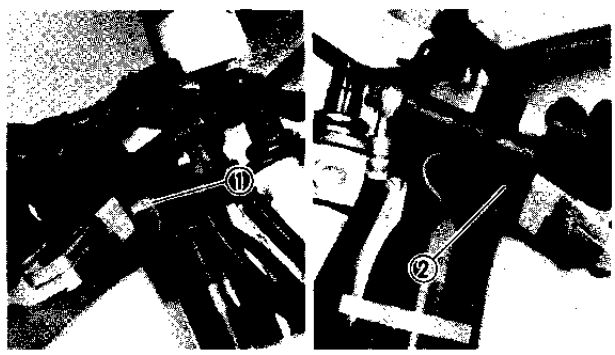
4. Remove:
- Reservoir tank ① (brake fluid)
- Reservoir tank ② (clutch fluid)
- Blind plugs ③
- Bolts ④ (handlebar)

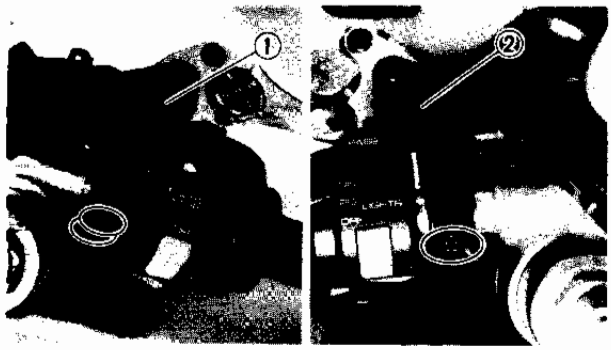


5. Remove:
- Upper bracket ①

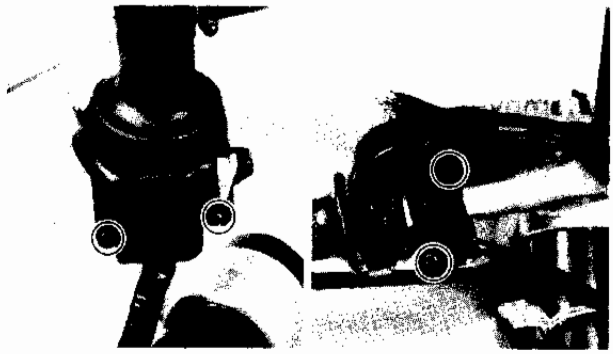


6. Disconnect:
- Brake light switch leads ①
- Clutch switch coupler ②

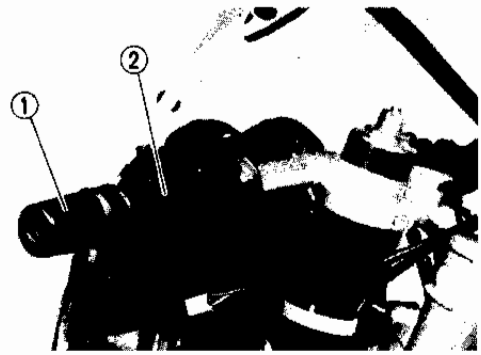




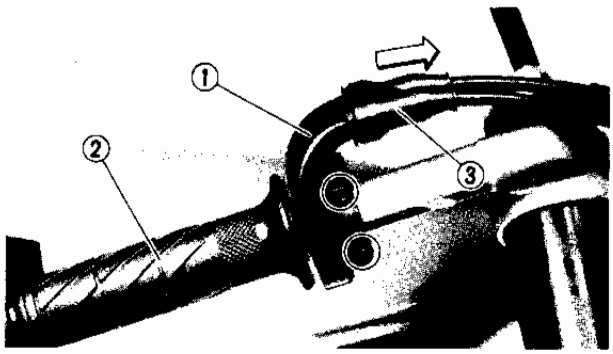
7.Remove:
- Master cylinder holder ① (brake)
- Master cylinder holder ② (clutch)



8.Remove:
- Handlebar switches (left and right)

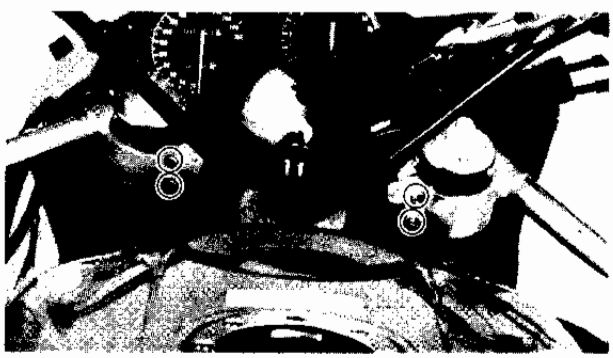


9.Remove:
- Grip ends ① (left and light)
- Grip ② (left)



10.Remove:
- Throttle cable housing ①
- Throttle grip ②

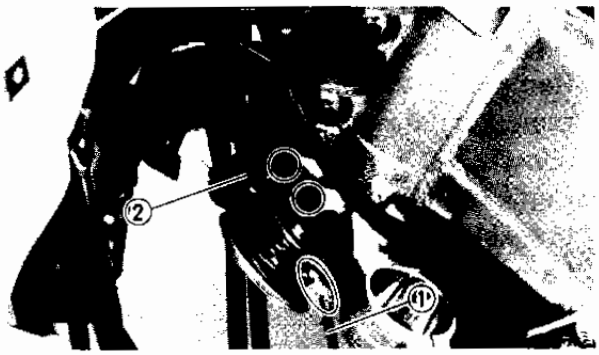
NOTE:
When removing the throttle cable housing, pull back the rubber cover ③.



11.Remove:
- Handlebars

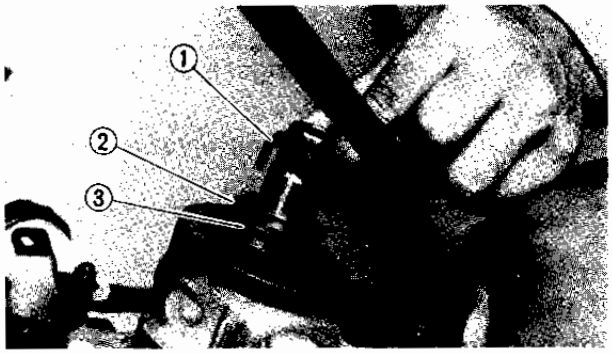
12.Remove:
- Front wheel
- Front forks

Refer to the "FRONT WHEEL" and "FRONT FORK" section.

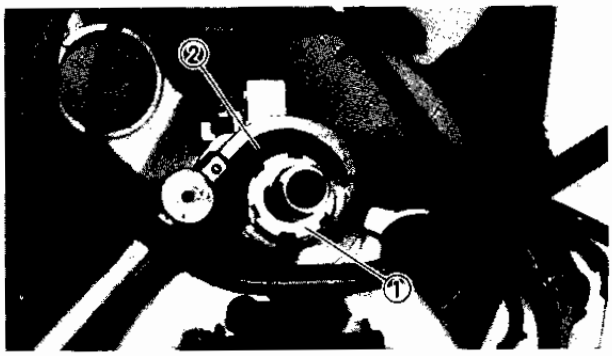


13.Disconnect:
- Horn leads ①

14.Remove:
- Brake hose holder ② (with horn)



15.Remove:
- Special washer ①
- Ring nut ② (upper)
- Rubber washer ③



16.Remove:
- Ring nut ① (lower)

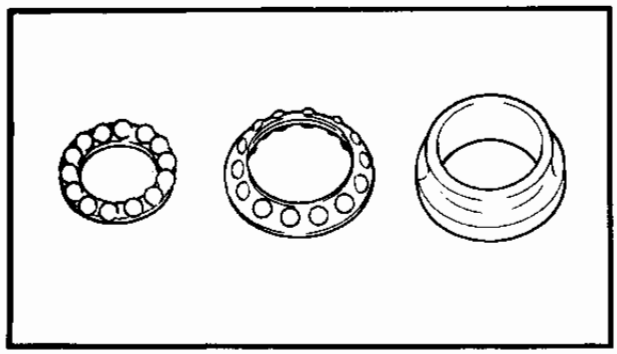
Use the ring nut wrench ②.

	**Ring nut wrench:** **P/N YU-33975, 90890-01403**

⚠ WARNING

Support the steering shaft so that it may not fall down.

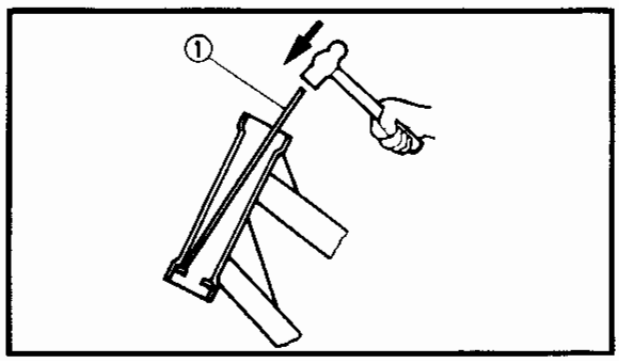
17.Remove:
- Bearing cover
- Bearing race (upper)
- Bearing (upper and lower)
- Dust seal (upper and lower)



INSPECTION

1.Wash the bearing and bearing races with a solvent.

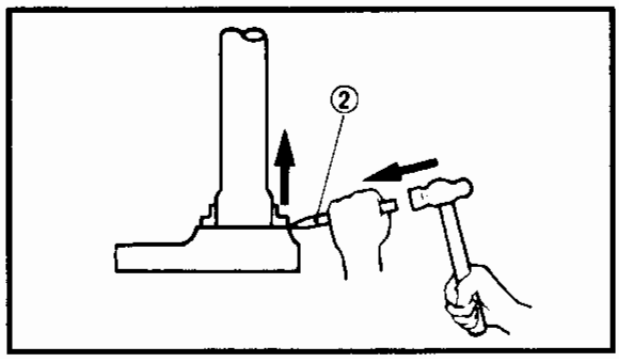
2.Inspect:
- Bearings
- Bearing races
  Pitting/Damage → Replace.



****

Bearing race replacement steps:
- Remove the bearing races on the head pipe using long rod ① and the hammer as shown.
- Remove the bearing race on the under bracket using the floor chisel ② and the hammer as shown.
- Install the new dust seal and races.

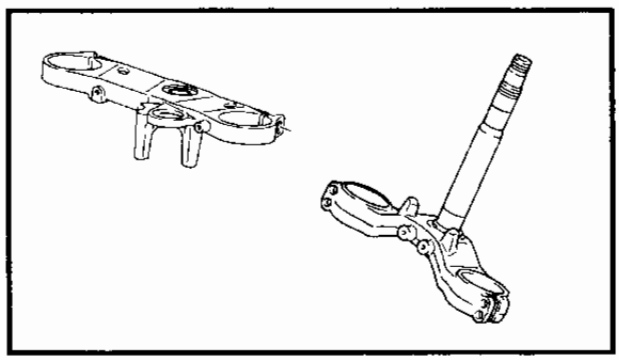
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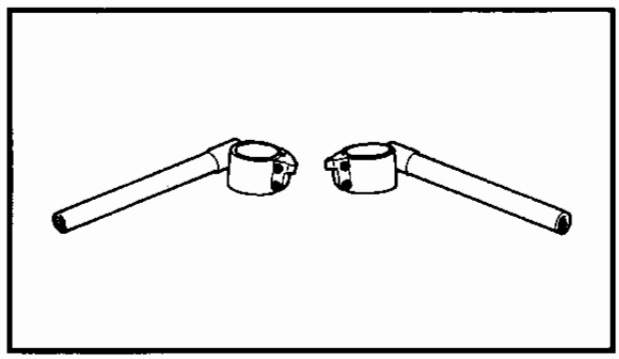
NOTE:
- Always replace bearings and races as a set.
- Replace the dust seal whenever a steering head disassembled.

CAUTION:

If the bearing race is fitted not squarely, the head pipe could be damaged.



3.Inspect:
- Upper bracket
- Under bracket (with steering stem)
  Cracks/Bends/Damage → Replace.



4.Inspect:
- Handlebars
  Bends/Cracks/Damage → Replace.

⚠ WARNING

Do not attempt to straighten a bent handlebar as this may dangerously weaken the handlebar.

****

Left handlebar replacement steps:

- Remove the handlebar grip.
- Apply a light coat of an adhesive for rubber on the handlebar end.
- Install the handlebar grip.

NOTE:

Wipe off excess adhesive with a clean rag.

⚠ WARNING

Leave the handlebar intact until the adhesive becomes dry enough to make the grip and handlebar stuck securely.

****

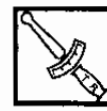
INSTALLATION

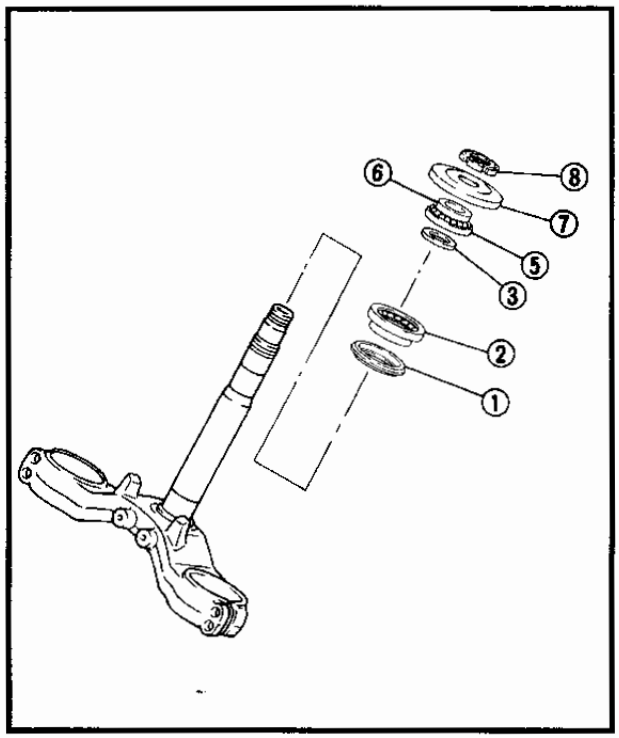
Reverse the "REMOVAL" procedure.

Note the following points.

1. Lubricate:

- Bearings (upper and lower)
- Bearing races

	**Recommended lubricant: Lithium-soap base grease**

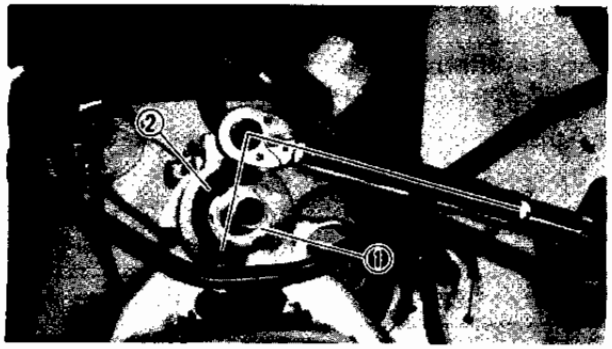


2. Install:

- Dust seal ① (lower)
- Bearing ② (lower)
- Dust seal ③ (upper)
- Steering stem ④
- Bearing ⑤ (upper)
- Bearing race ⑥ (upper)
- Bearing cover ⑦
- Ring nut ⑧ (lower)

CAUTION:

Hold the steering stem until it is secured.



3.Tighten:
• Ring nuts (lower and upper)

****

Tightening steps:
● Tighten the ring nut ① (lower) using the ring nut wrench ②.

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

	Ring nut wrench: **P/N YU-33975, 90890-01403**
	Ring nut (initial tightening): **48 Nm (4.8 m • kg, 35 ft • lb)**

● Turn the steering stem left and right for several times.
● Loosen the ring nut completely and retighten it to specification.

⚠ WARNING

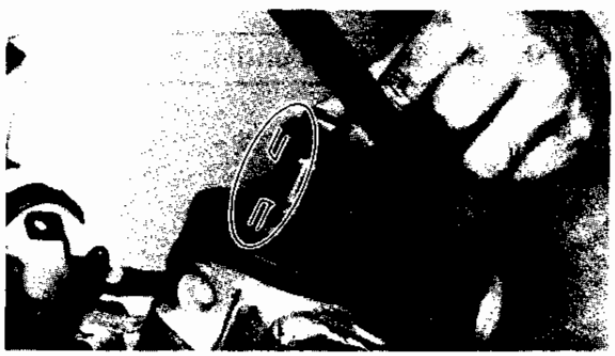
Do not over tightening.

	Ring nut (final tightening): **16 Nm (1.6 m • kg, 11 ft • lb)**

● Check the steering stem by turning lock to lock. If there is any binding, remove the steering stem assembly and inspect the steering bearings.
● Install the rubber washer.
● Install the ring nut (upper).
● Finger tighten the ring nut, then align the slots of both ring nuts. If not aligned, hold the lower ring nut and tighen the other until they are aligned.
● Install the lock washer.

NOTE:
Make sure that the lock washer tab is placed in the slots.

****



4.Install:
- Upper bracket
- Nut (steering stem)

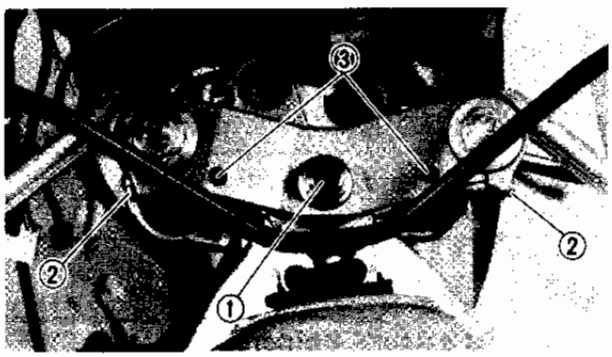
NOTE:
Temporarily tighten the steering stem nut.

5.Install:
- Handlebars
- Front forks

Refer to the "FRONT FORK" section.

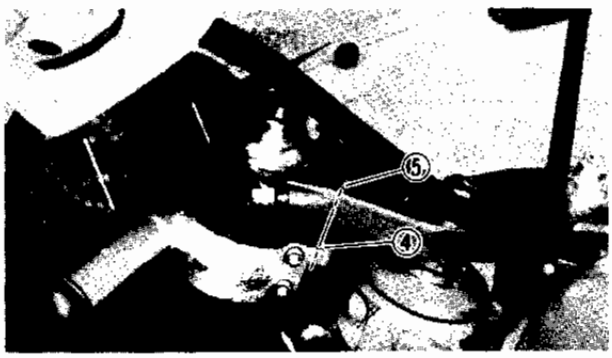
	Pinch bolt (lower bracket): **23 Nm (2.3 m • kg, 17 ft • lb)**

NOTE:
In this stage, temporarily tighten the pinch bolt (upper bracket).

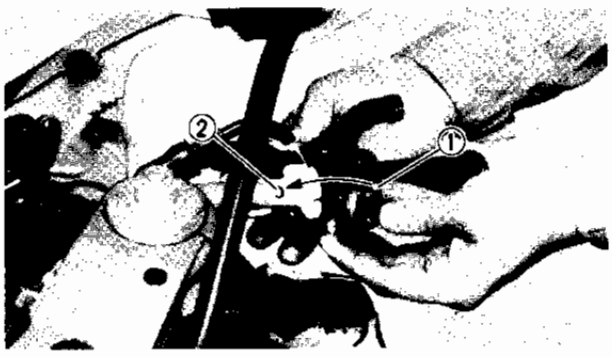


6.Tighten:
- Nut ① (steering stem)
- Pinch bolt ② (upper bracket)
- Bolts ③ (handlebar)
- Pinch bolt (handlebar)

NOTE:
Aligne the handlebar bolt hole ④ with upper bracket hole ⑤.



	Nut (steering stem): **110 Nm (11.0 m • kg, 80 ft • lb)** **Pinch bolt (upper bracket):** **26 Nm (2.6 m • kg, 19 ft • lb)** **Bolt (handlebar):** **13 Nm (1.3 m • kg, 9.4 ft • lb)** **Pinch bolt (handlebar):** **13 Nm (1.3 m • kg, 9.4 ft • lb)**



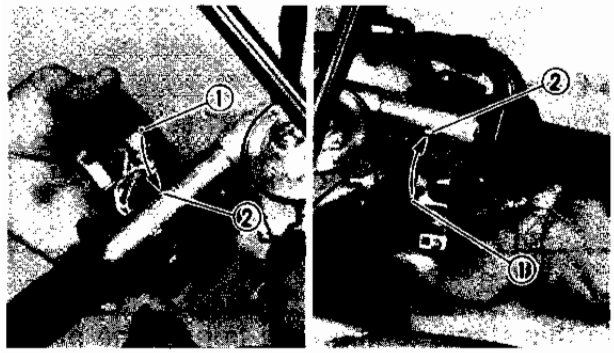
7.Install:
- Throttle grip
- Throttle cable housing

⚠ WARNING

Aligne the projection ① on the throttle cable housing with the hole ② on the handlebar.

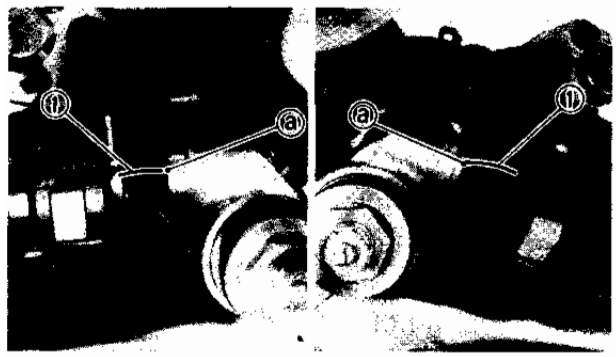
8.Install:
- Grip ends (left and right)

	Grip end: **23 Nm (2.3 m • kg, 17 ft • lb)**



9.Install:
- Handlebar switch (left and right)

NOTE:
Aligne the projection ① on the handlebar switch with the hole ② on the handlebar.



10.Install:
- Clutch lever holder
- Brake lever holder

NOTE:
Aligne the slit in the lever holders ① with the punched mark ⓐ on the handlebars.

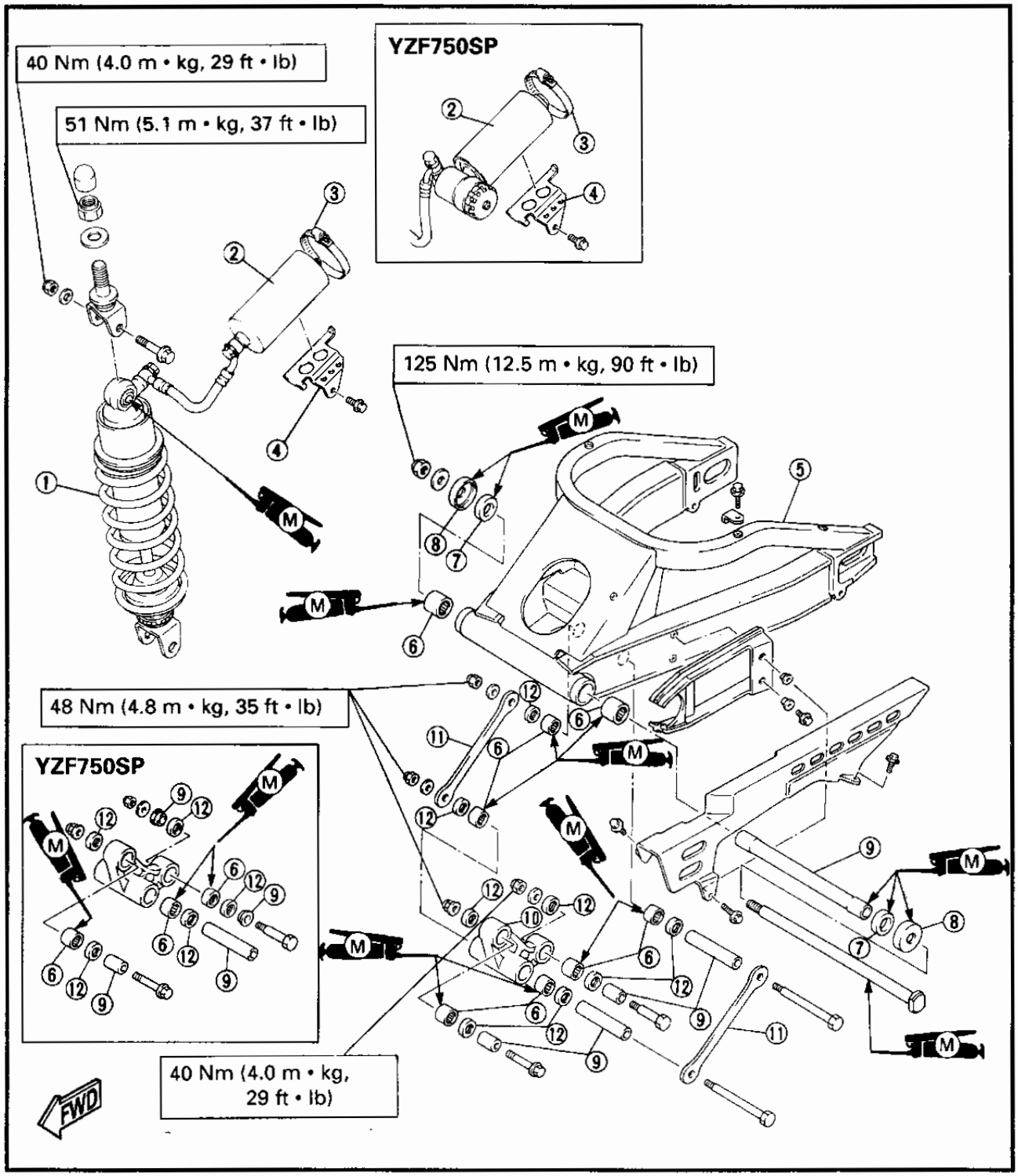
CAUTION:
- **Install the lever holders with the "UP" mark facing upward.**
- **Tighten first the upper bolt, then the lower bolt.**

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

REAR SHOCK ABSORBER AND SWINGARM

①Shock absorber
②Damping gas chamber
③Band
④Stay
⑤Swingarm
⑥Bearing
⑦Thrust washer/bearing
⑧Thrust cover
⑨Collar
⑩Relay arm
⑪Connecting rod
⑫Oil seal

NOTE:
Coat the bearings, bushings, thrust covers, oil seals, and collars with a liberal amount of molybdenum disulfide grease before installing. After installing, thoroughly wipe off excess grease.



HANDLING NOTES

⚠ WARNING

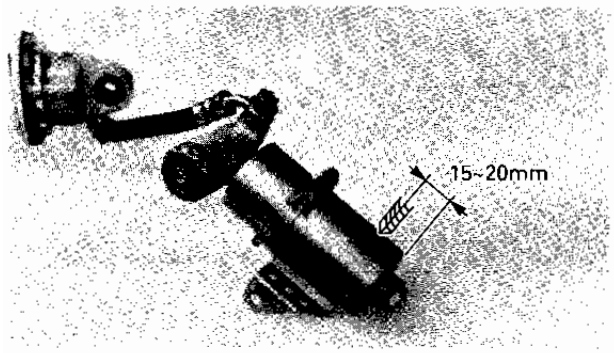
This shock absorber contains highly compressed nitrogen gas. Read and understand the following information before handling the shock absorber. The manufacturer cannot be held responsible for property damage or personal injury that may result from improper handling.

1.Do not tamper or attempt to open the cylinder assembly.

2.Do not subject shock absorber to an open flame or other high heat. This may cause the unit to explode due to excessive gas pressure.

3.Do not deform or damage the cylinder in any way. Cylinder damage will result in poor damping performance.

NOTES ON DISPOSAL



****

Shock absorber disposal steps:

- Gas pressure must be released before disposing of the shock absorber. To do so, drill a 2 ~ 3 mm (0.08 ~ 0.12 in) hole through the cylinder wall at a point 15 ~ 20 mm (0.6 ~ 0.8 in) from the end of the gas chamber.

⚠ WARNING

Wear eye protection to prevent eye damage from escaping gas and/or metal chips.

****

REMOVAL

Rear shock absorber

1.Place the motorcycle on the level place.

2.Remove:

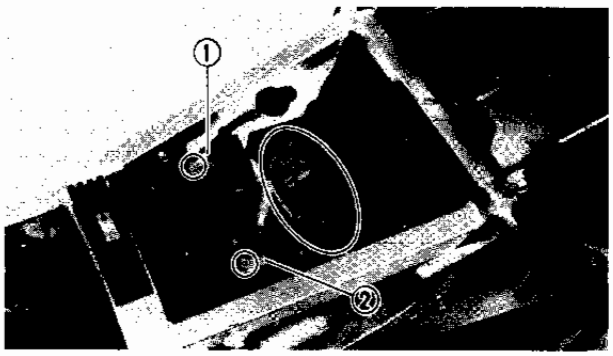
- Lower cowling
  Refer to the "COWLINGS" section in CHAPTER 3.

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

⚠ WARNING

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

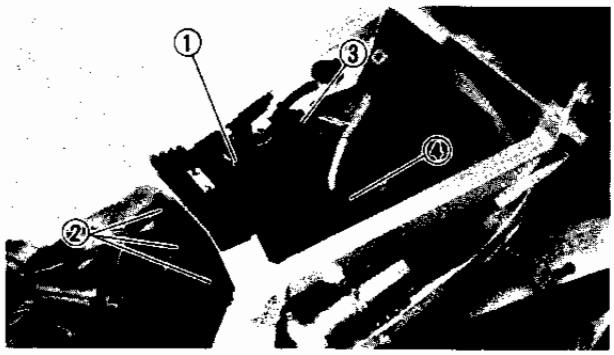
4.Remove:
- Seat
- Side cover (YZF750R)
  Refer to the "SEAT" section in CHAPTER 3.
- Fuel tank
- Refer to the "FUEL TANK" section in CHAPTER 3.



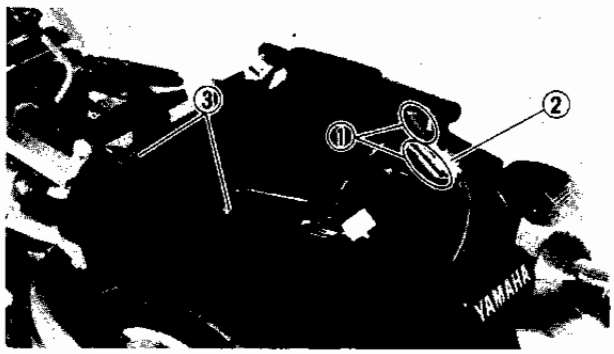
5.Disconnect:
- Ignitor coupler
- Battery leads

CAUTION:

Disconnect the negative lead ① first and then disconnect the positive lead ②.

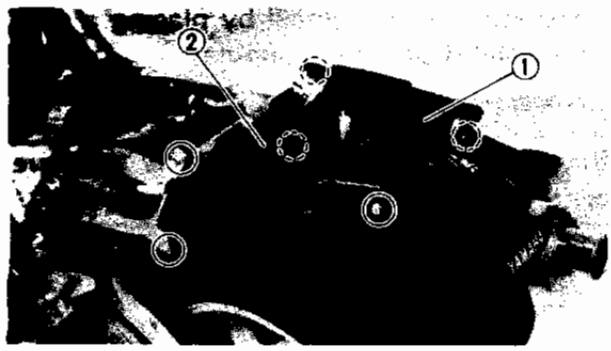


6.Remove:
- Battery ①
- Relays ②
- Fuse box ③
- Starter relay ④

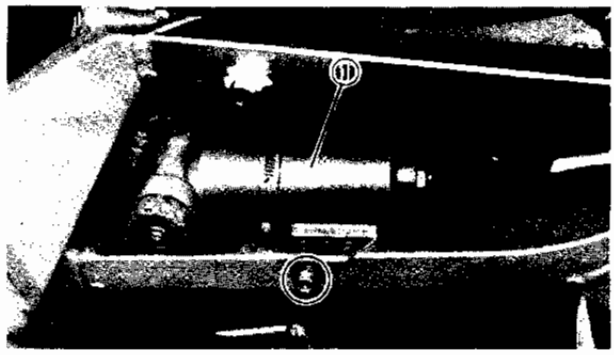


7.Disconnect:
- Rear flasher light leads ①
- Licence light coupler ②

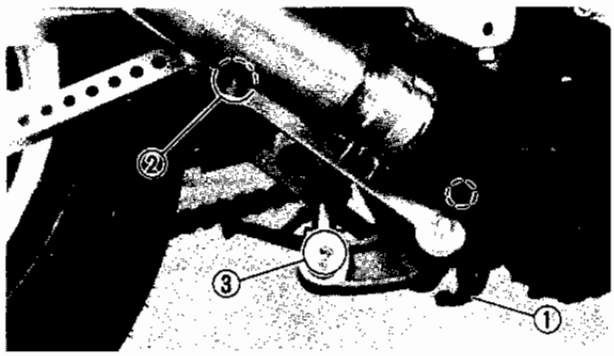
8.Remove:
- Bands ③



9.Remove:
- Rear fender stay ①
- Rear fender ②

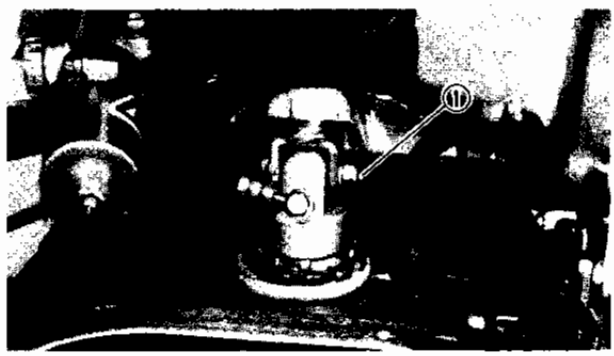


10.Remove:
- Damping gas chamber ①



11.Remove:
- Stay ① (lower cowling)
- Bolt ② (connecting rod)
- Bolt ③ (shock absorber-lower)

NOTE:
When removing the lower bolt, hold the swingarm so that it does not drip downwards when the lower bolt removed.



12.Remove:
- Bolt ① (shock absorber-upper)
- Rear shock absorber

NOTE:
Pull up the swingarm, then remove the rear shock absorber, through between the swingarm and relay arm.

Swingarm

1.Place the motorcycle on a level place.

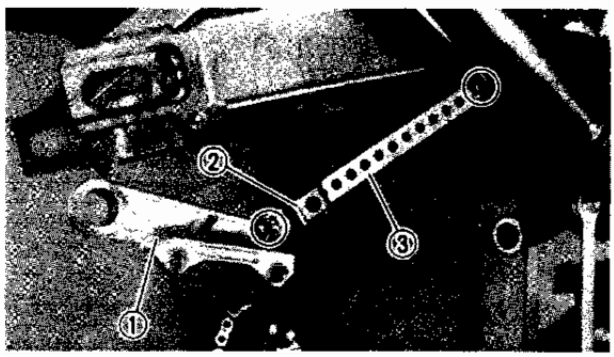
2.Remove:
- Lower cowling
  Refer to the "COWLING" section in CHAPTER 3.

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

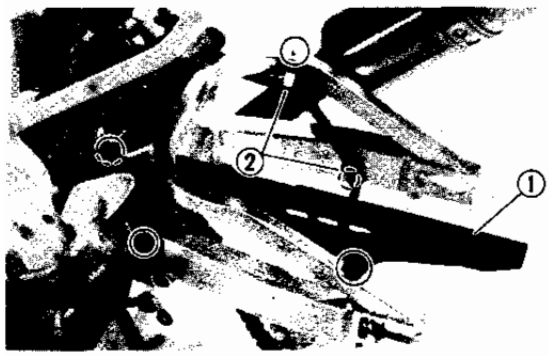
⚠ WARNING

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

4.Remove:
- Rear shock absorber
  Refer to the "Rear shock absorber" section.
- Rear wheel
  Refer to the "REAR WHEEL" section.

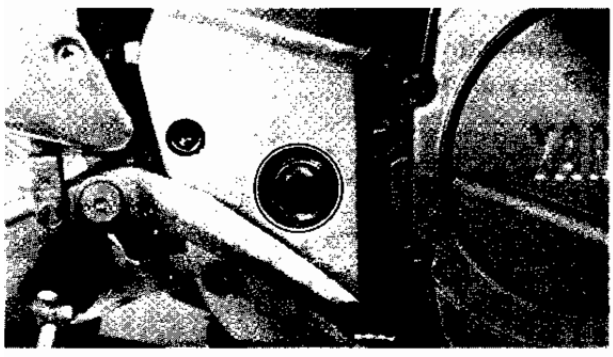


5.Remove:
- Caliper bracket ①
- Brake hose holder ②
- Tension bar ③



6.Remove:
- Chain case ①
- Brake hose holders ②

NOTE:
Through the brake caliper between the swingarm.

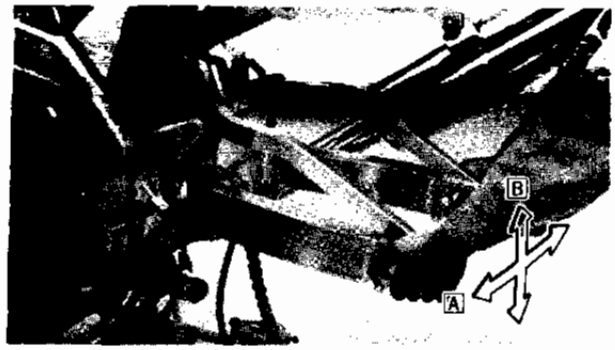


7.Check:
- Swingarm free play

****

Inspection steps:
- Check the tightening torque of the pivot shaft (swingarm) securing nut.

	Nut (swingarm pivot shaft): 125 Nm (12.5 m • kg, 90 ft • lb)



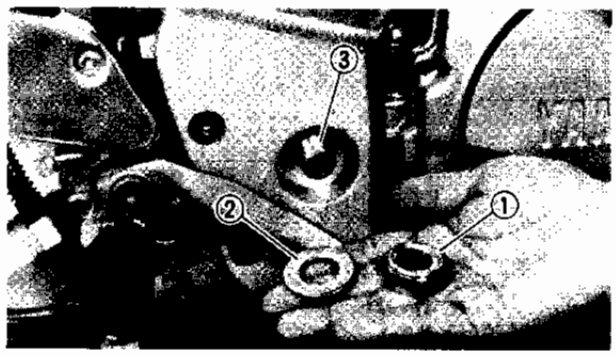
● Check the swingarm side play [A] by moving it from side to side.
If side play is noticeable, check the inner collar, bearing, washer and thrust cover.

Side play (at end of swingarm):
1.0 mm (0.04 in)

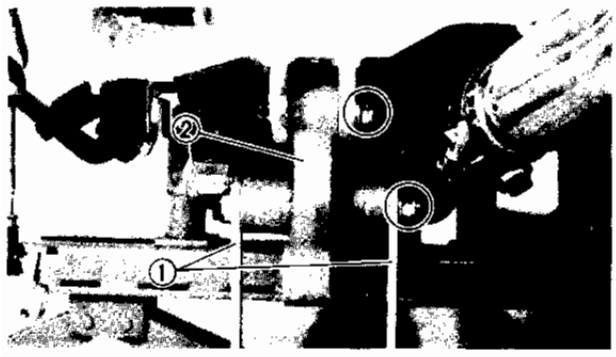
● Check the swingarm vertical movement [B] by moving it up and down.
If vertical movement is tight, binding or rough, check the inner collar, bearing, washer and thrust cover.

****

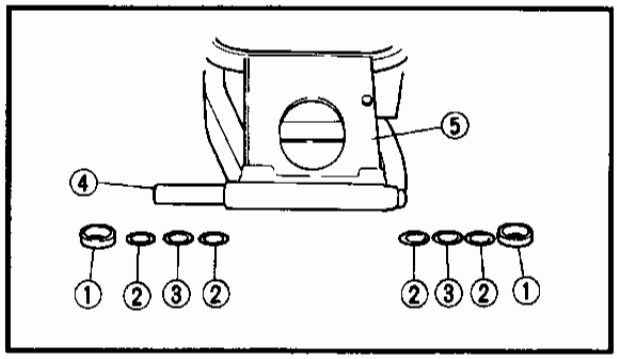
8. Remove:
- Crankcase cover (left)
- Drive sprocket
Refer to the "ENGINE REMOVAL" section in CHAPTER 4.



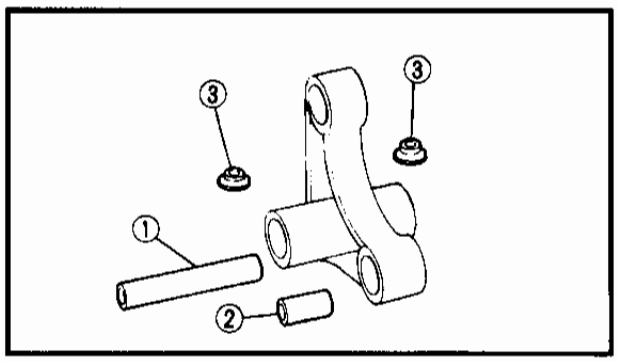
9. Remove:
- Nut ① (pivot shaft)
- Washer ②
- Pivot shaft ③
- Swingarm
(with drive chain)



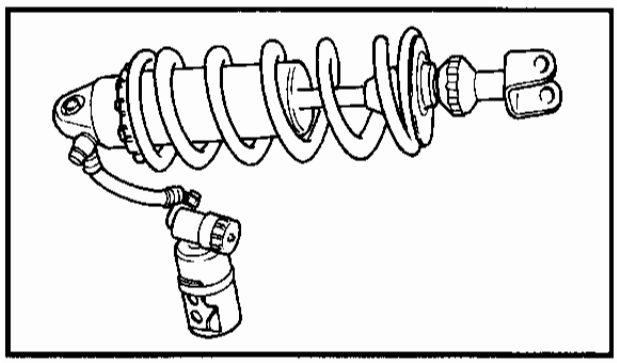
10. Remove:
- Connecting rod ① (left and right)
- Relay arm ②



11.Remove:
- Thrust covers ①
- Thrust washers ②
- Bearings ③
- Collar ④ (swingarm)
- Swingarm ⑤



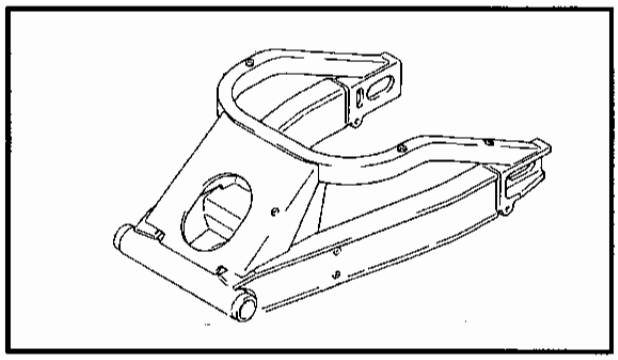
12.Remove:
- Collar ① (compression arm)
- Collar ② (relay arm)
- Collar ③ (shock absorber)



INSPECTION

Rear shock absorber

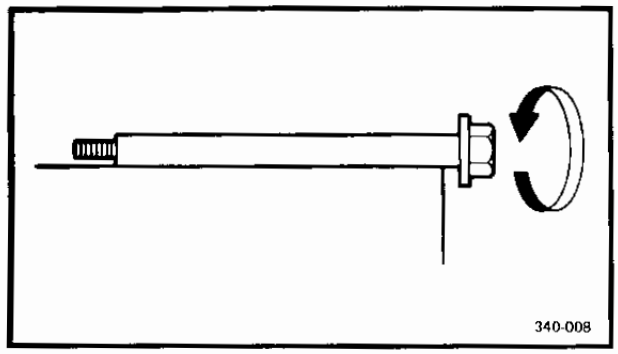
1.Inspect:
- Rear shock absorber rod
  Bents/Damage → Replace the rear shock absorber assembly.
- Rear shock absorber
  Oil leaks/Gas leaks → Replace the rear shock absorber assembly.
- Spring
  Wear/Damage → Replace the rear shock absorber assembly.
- Bushings
- Dust seals
  Wear/Damage → Replace.
- Bolts
  Wear/Bends/Damage → Replace.



Swingarm

1.Inspect:
- Swingarm
  Crack/Bents/Damage → Replace.

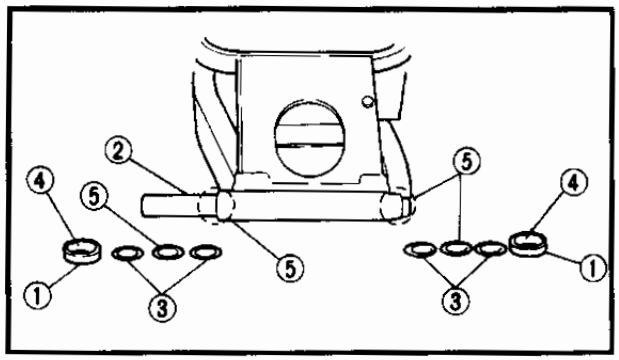
NOTE:
When replacing the swingarm, remove the drive chain by cutting it.



2.Inspect:
- Pivot shaft
  Roll the axle on a flat surface.
  Bends → Replace.

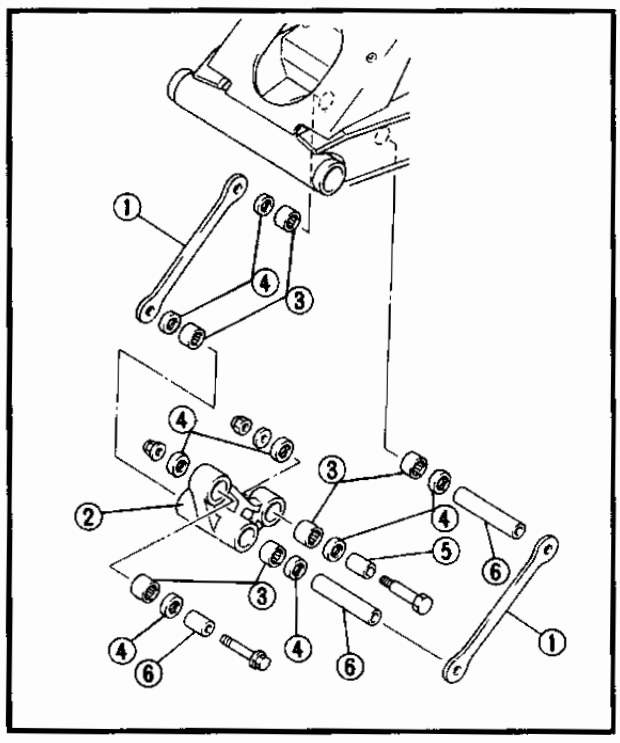
⚠ WARNING

Do not attempt to straighten a bent axle.



3.Wash the swingarm pivoting parts in a solvent.

4.Inspect:
- Thrust cover ①
- Inner collar ②
- Washer ③
- Oil seal ④
  Wear/Damage → Replace.
- Bearing ⑤
  Pitting/Damage → Replace.



5.Inspect:
- Connecting rod ①
- Relay arm ②
  Cracks/Damage → Replace.
- Bearings ③
  Pitting/Damage → Replace.
- Oil seals ④
- Collars ⑤ (shock absorber)
- Collars ⑥
  Damage/Scratches → Replace.

INSTALLATION

Rear shock absorber

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

1.Lubricate:
- Bearings
- Oil seals
- Collars
- Bushes



Recommended lubricant:
Molybdenum disulfide grease

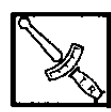
2.Install:
- Collars
- Rear shock absorber



Nut (shock absorber - upper):
40 Nm (4.0 m • kg, 29 ft • lb)
Nut (shock absorber - lower):
40 Nm (4.0 m • kg, 29 ft • lb)
Nut (connecting rod):
48 Nm (4.8 m • kg, 35 ft • lb)

NOTE:
Lift up the swingarm to install rear shock absorber.

3.Install:
- Damping gas chamber



Bolt (damping gas chamber):
7 Nm (0.7 m • kg, 5.1 ft • lb)

4.Connect:
- Battery leads
- Ignitor coupler

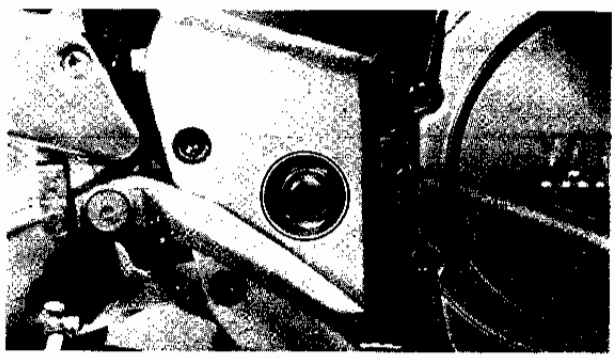
CAUTION:
Connect the positive lead first and then connect the negative lead.

Swingarm
Reverse the "REMOVAL" procedure.
Note the following points.
1.Lubricate:
- Bearings
- Inner collars
- Thrust covers
- Pivot shaft

Recommended lubricant:
Molybdenum disulfide grease

2.Install:
- Relay arm
- Connecting rod (left and right)

Nut (relay arm):
48 Nm (4.8 m • kg, 35 ft • lb)
Nut (connecting rod):
48 Nm (4.8 m • kg, 35 ft • lb)

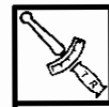


3.Install:
- Swingarm

Nut (pivot shaft):
125 Nm (12.5 m • kg, 90 ft • lb)

4.Install:
- Drive sprocket
- Crankcase cover (left)
  Refer to the "ENGINE INSTALLATION" section in CHAPTER 4.

5.Install:
- Brake hose holders
- Chain case
- Tension bar
- Brake hose holder
- Caliper bracket



Bolt (chain case):
7 Nm (0.7 m • kg, 5.1 ft • lb)
Nut (tension bar):
30 Nm (3.0 m • kg, 22 ft • lb)

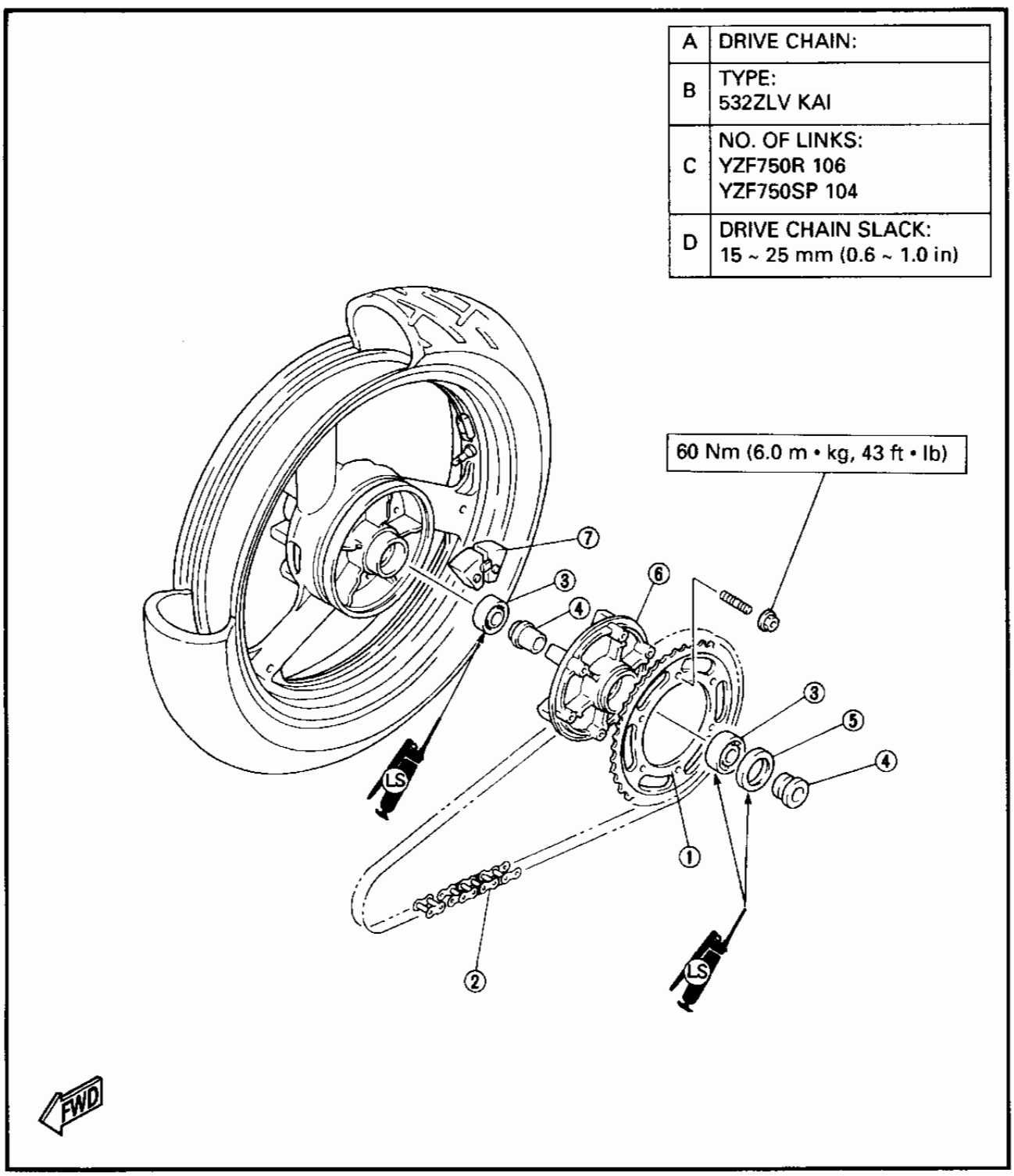
6.Install:
- Rear shock absorber
  Refer to the "Rear shock absorber" section.
- Rear wheel
  Refer to the "REAR WHEEL" section.

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

DRIVE CHAIN AND SPROCKETS

①Driven sprocket
②Drive chain
③Bearing
④Collar
⑤Oil seal
⑥Sprocket hub
⑦Dumper rubber

A	DRIVE CHAIN:
B	TYPE: 532ZLV KAI
C	NO. OF LINKS: YZF750R 106 YZF750SP 104
D	DRIVE CHAIN SLACK: 15 ~ 25 mm (0.6 ~ 1.0 in)



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

REMOVAL

1.Place the motorcycle on a level place.

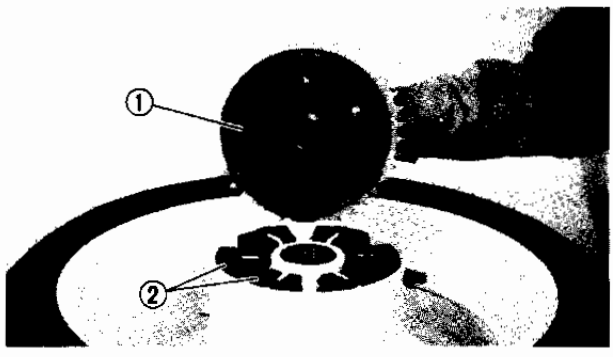
⚠ WARNING

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

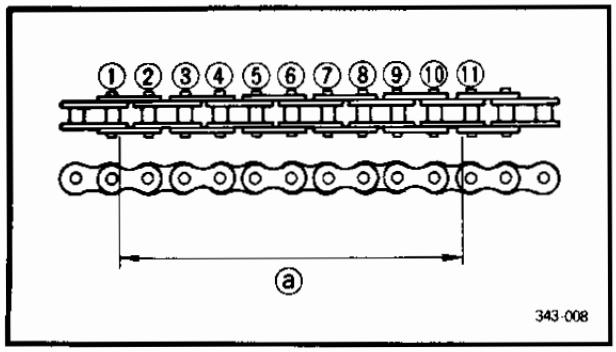
NOTE:
It is not necessary to cut the drive chain unless you are replacing the swingarm or drive chain.

2.Remove:
- Shift pedal link
- Crankcase cover (left)
- Drive sprocket
  Refer to the "ENGINE REMOVAL" section in CHAPTER 4.

3.Remove:
- Rear wheel
  Refer to the "REAR WHEEL" section.
- Rear shock absorber
- Swingarm (with drive chain)
  Refer to the "REAR SHOCK ABSORBER AND SWINGARM" section.



4.Remove:
- Collar
- Driven sprocket ①
  (with sprocket hub)
- Dumper rubber ②



INSPECTION

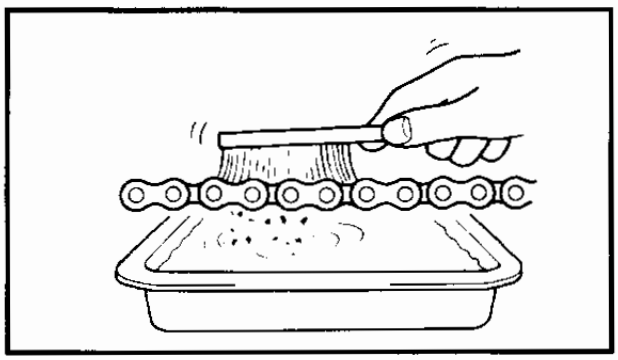
1.Measure:

- 10 link length ⓐ (drive chain)
  Out of specification → Replace drive chain.

10 link length limit:
150 mm (5.9 in)

NOTE:

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

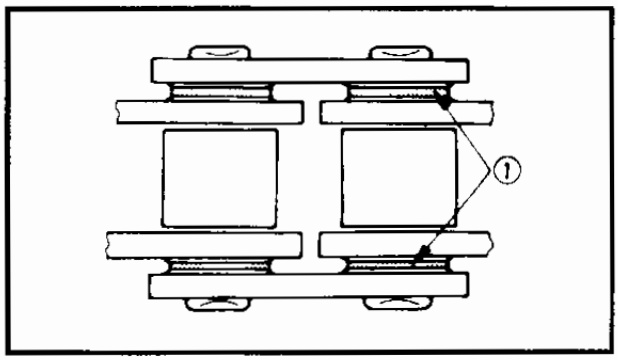


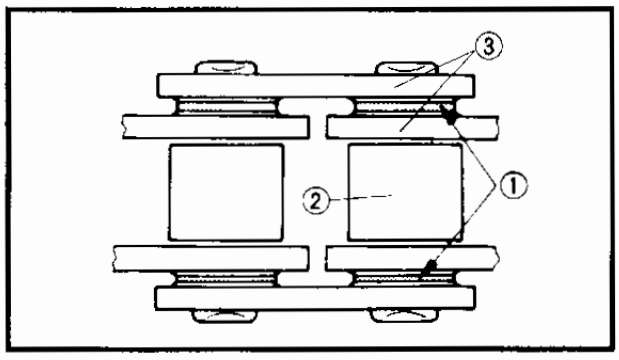
2.Clean:

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

CAUTION:

This motorcycle has a drive chain with small rubber O-rings ① between the chain plates. Steam cleaning, high pressure washes, and certain solvent can damage these O-rings. Use only kerosene to clean the drive chain.



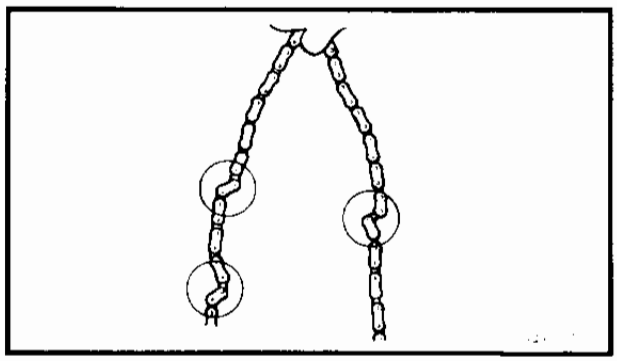


3.Inspect:

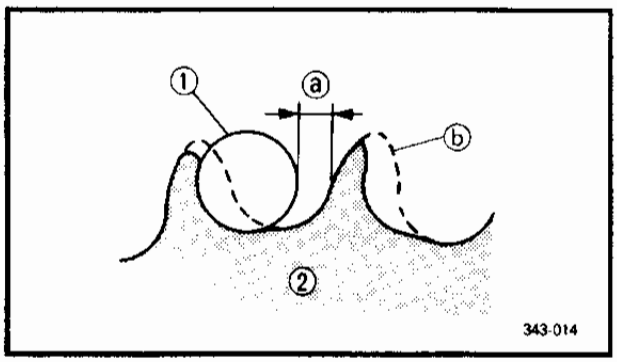
- O-rings ① (drive chain)
  Damage → Replace drive chain.
- Rollers ②
- Side plates ③
  Damage/Wear → Replace drive chain.

4.Lubricate:
- Drive chain

Drive chain lubricant:
SAE 30 ~ 50W motor oil
or chain lubricants suitable for "O-ring" chains

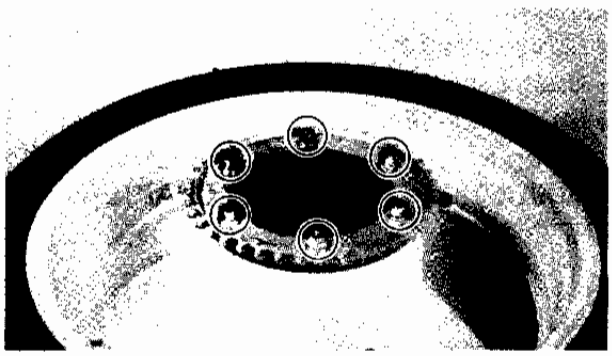


5.Inspect:
- Drive chain stiffness
  Stiff → Clean and lubricate or replace.



6.Inspect:
- Drive sprocket
- Rear sprocket wheel
  More than 1/4 teeth ① wear → Replace sprocket.
  Bent teeth → Replace sprocket.

②Correct
③Roller
④Sprocket

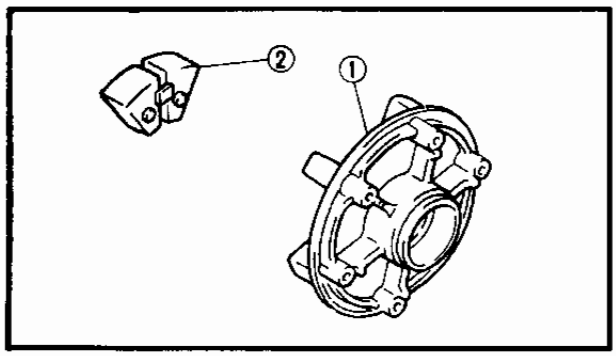


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Driven sprocket replacement steps:
- Remove the self locknut, and driven sprocket.
- Clean the hub, especially on the surfaces in contact with the sprocket, using a clean cloth.
- Install the new driven sprocket.

NOTE:
Tighten the self locknut in stage, using a crisscross pattern.

Self locknut (driven sprocket):
60 Nm (6.0 m • kg, 43 ft • lb)



7.Inspect:
- Sprocket hub ①
  Cracks/Damage → Replace.
- Dumper rubber ②
  Wear/Damage → Replace.

INSTALLATION

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

1.Install:
- Swingarm (with drive chain)
- Rear shock absorber
  Refer to the "REAR SHOCK ABSORBER AND SWINGARM" section.
- Rear wheel
  Refer to "REAR WHEEL" section.

2.Install:
- Drive sprocket
- Crankcase cover
- Shift pedal link
  Refer to the "ENGINE ASSEMBLY AND ADJUSTMENT" section in CHAPTER 4.

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

Drive chain slack:
15 ~ 25 mm (0.6 ~ 1.0 in)

CAUTION:

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

⚠ WARNING

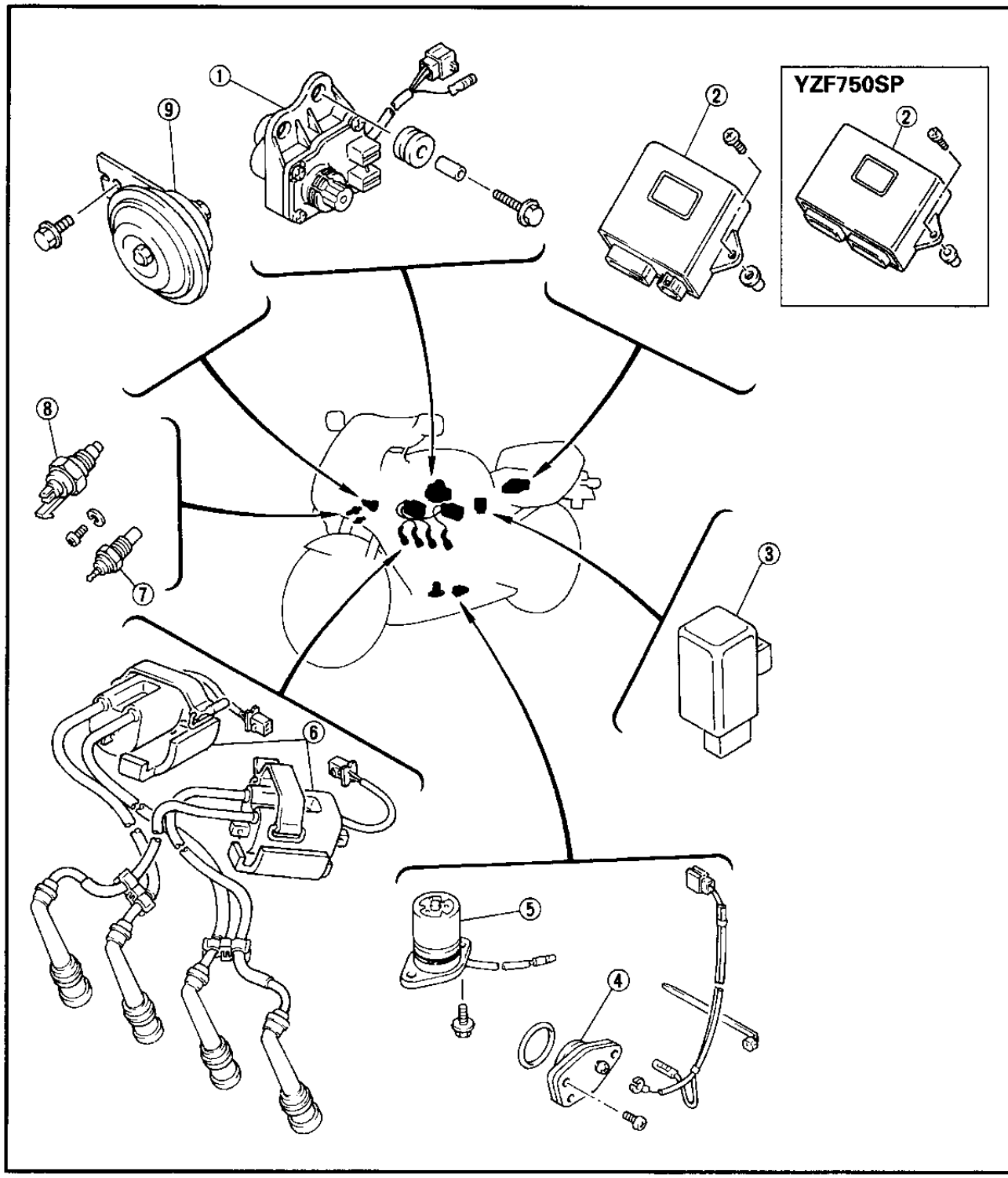
Always use a new cotter pin on the axle nut.

ELECTRICAL

ELECTRICAL COMPONENTS

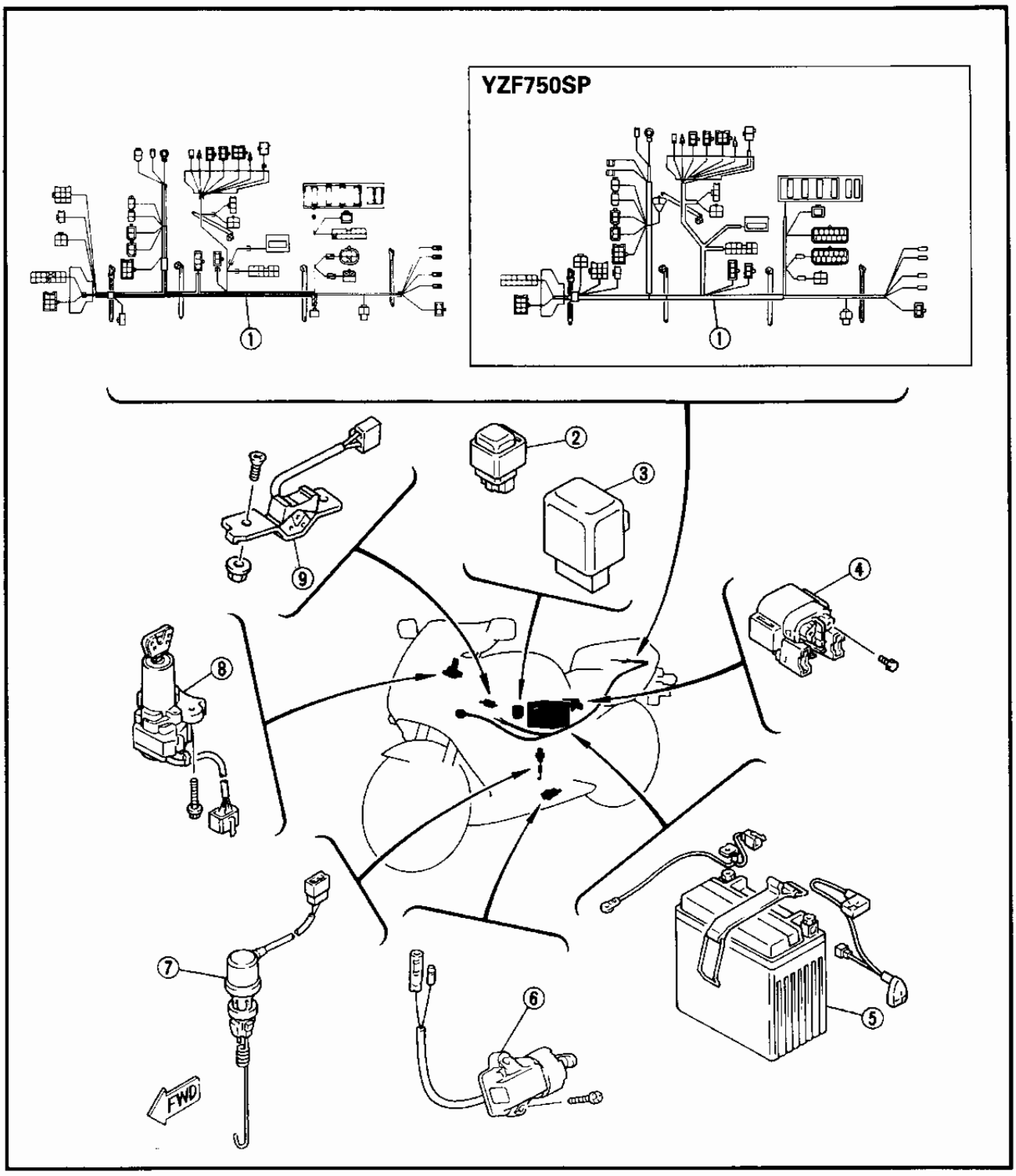
① Servo motor
② Ignitor unit
③ Oil light relay
④ Neutral switch
⑤ Oil level switch
⑥ Ignition coil
⑦ Thermo unit
⑧ Thermo switch
⑨ Horn

IGNITION COIL:
PRIMARY WINDING RESISTANCE:
1.8 ~ 2.2 Ω at 20°C (68° F)
SECONDARY WINDING RESISTANCE:
9.6 ~ 14.4 kΩ at 20° C (68° F)



①Wireharness
②Flasher relay
③Starting circuit cut-off relay
④Starter relay
⑤Battery
⑥Sidestand switch
⑦Brake switch
⑧Main switch
⑨Fuel reserve switch

BATTERY:
CAPACITY:
12V 10AH
SPECIFIC GRAVITY:
1.320



CHECKING OF SWITCHES

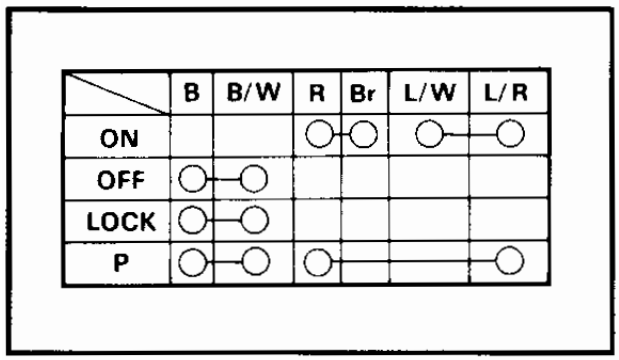
Check the switches for the continuity between the terminal to determine correct connection.

Read the following for switch inspection.

SWITCH CONNECTION AS SHOWN IN MANUAL

The manual contains a connection chart as shown left showing the terminal connections of the switches (e.g., main switch, handlebar switch, bracket switch, lighting switch etc.)

The extreme left column indicates the switch positions and the top line indicates the colors of leads connected with the terminals in the switch component.



"○—○" indicates the terminals between which there is a continuity of electricity; i.e., a closed circuit at the respective switch positions.

In this chart:
"R and Br" and "L/W and L/R" are continuous with the "ON" switch position.

"B and B/W" is continuous with the "OFF" switch position.

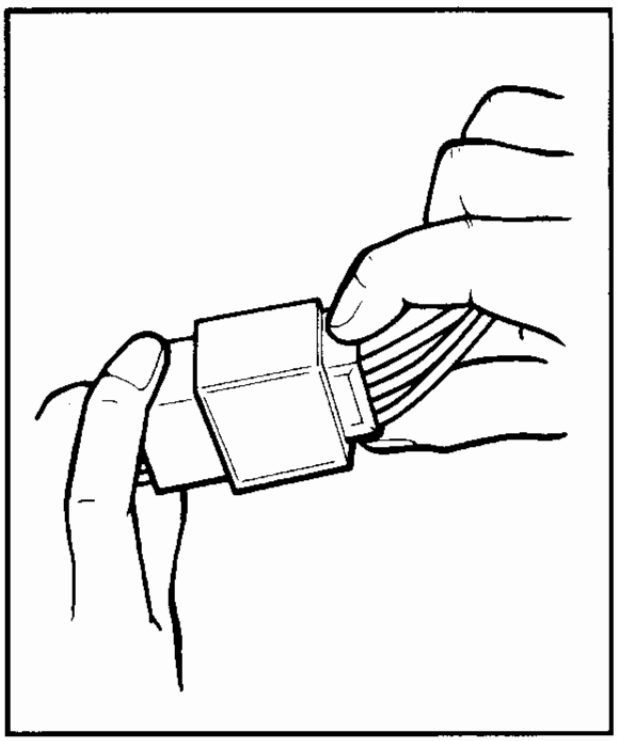
"B and B/W" is continuous with the "LOCK" switch position.

"B and B/W" and "R and L/R" are continuous with the "P" switch position.

CHECKING SWITCH FOR TERMINAL CONNECTION

Before checking the switch, refer to the connection chart as shown above and check for the correct terminal connection (closed circuit) by the color combination.

To explain how to check the switch, the main switch taken for example in the following.



1. Disconnect the main switch coupler from the wireharness.

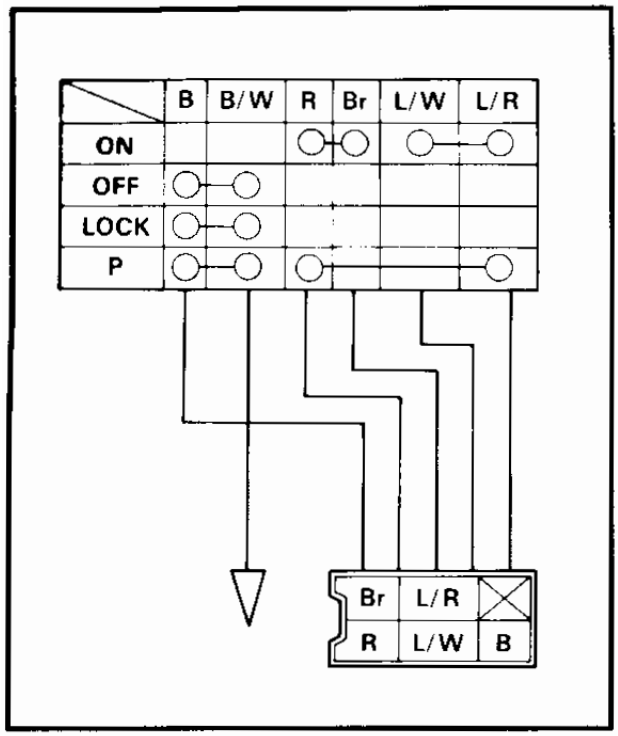
CAUTION:

Never disconnect the main switch coupler by pulling the leads. Otherwise, leads may be pulled off the terminals inside the coupler.

2. Inspect whether any lead is off the terminal inside the coupler. If it is, repair it.

NOTE:

If the coupler is clogged with mud or dust, blow it off by compressed air.



3.Use the connection chart to check the color combination for continuity (a closed circuit). In this example, the continuity is as follows.

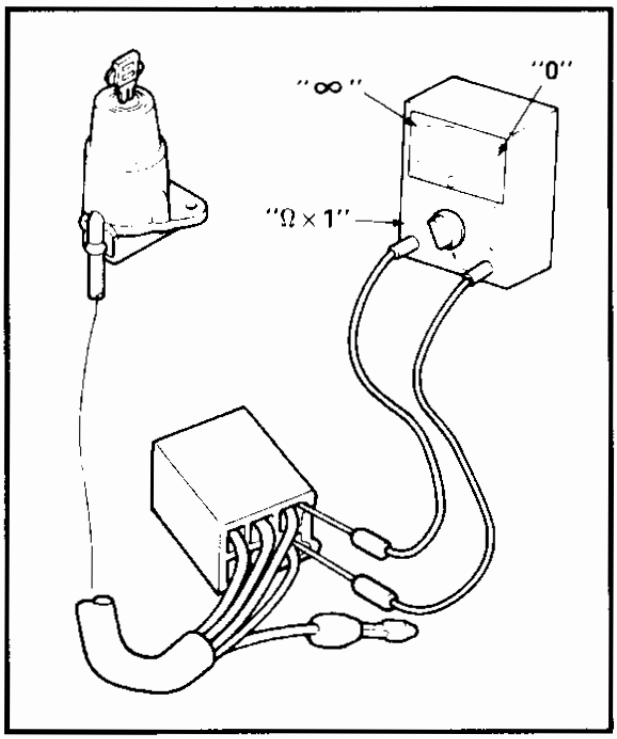
"R and Br" and "L/W and L/R"are continuous with the "ON" switch position.

"B and B/W" is continuous with the "OFF" switch position.

"B and B/W" is continuous with the "LOCK" switch position.

"B and B/W" and "R and L/R" are continuous with the "P" switch position.

Please note that these is no continuity (an open circuit) at all for the color combinations other than the above.



4.Check the switch component for the continuity between "R and Br".

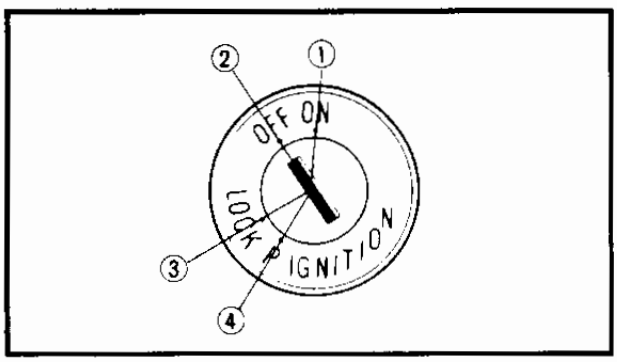
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Checking step:

- Turn the switch key to the "ON", "OFF", "LOCK" and "P" several times.
- Set the pocket tester selector to the "Ω × 1".
- Connect the tester (+) lead to the "R" lead terminal in the coupler and the (–) lead to the "Br" lead terminal.

NOTE:

Use thin probes for checking the continuity. Otherwise, the probes may contact other terminals inside the coupler.



- Check the continuity between "R" and "Br" at the respective switch position of "ON" ①, "OFF" ②, "LOCK" ③, and "P" ④. There must be continuity (the tester indicating "0") at the "ON" switch position, and there must be no continuity (the tester indicating "∞") at "OFF", "LOCK", or "P". There is something wrong between "R" and "Br" if there is no continuity at the "ON" position or if there is some continuity either at the "OFF" or "LOCK" or "P".

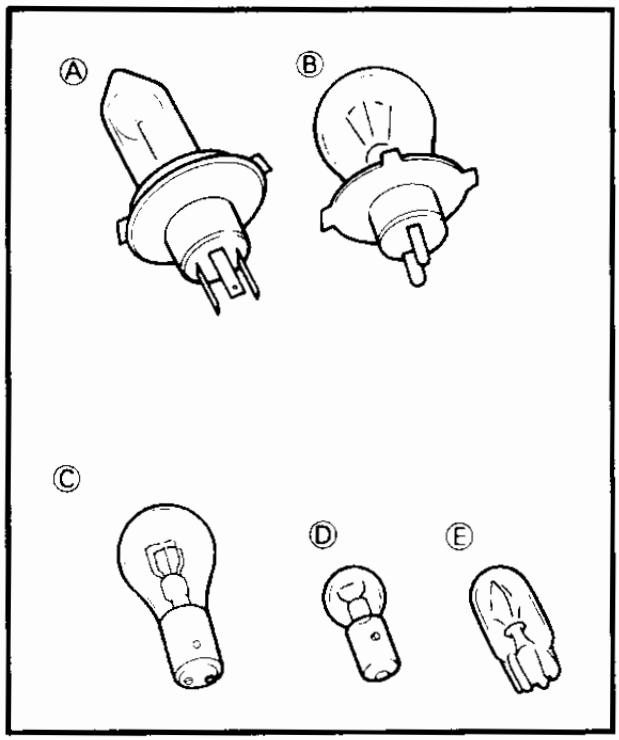
NOTE:
Check the switch for continuity several times.

****

5. Next go on to checking of the continuity between "B" and "B/W", "L/W and L/R", and "R and L/R" at the respective switch positions, as in the same manner mentioned above.
6. If there is something wrong with any one of the combinations, replace the switch component.

CHECKING OF BULBS (FOR HEADLIGHT, TAIL/BRAKE LIGHT, FLASHER LIGHT, METER LIGHT, ETC.)

Check the bulb terminal continuity for the condition of the bulb.



KINDS OF BULBS

The bulbs used in the motorcycle are classified as shown left by the shape of the bulb socket.

Ⓐ and Ⓑ are many used for the headlight.

Ⓒ is mainly used for the flasher light and tail/brake light.

Ⓓ and Ⓔ are mainly used for the mater light and other indicator lights.

CHECKING BULB CONDITION

1.Remove the bulb.

NOTE:

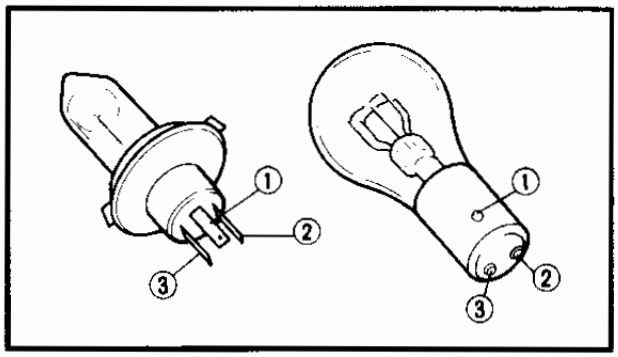
- Bulbs of the Ⓐ and Ⓑ type uses a bulb holder. Remove the bulb holder before removing the bulb itself. Most of the bulb holder for this type can be removed by turning them counterclockwise.
- Most of the bulbs of Ⓒ and Ⓓ type can be removed from the bulb sockets by pushing and turning them counterclockwise.
- Bulbs of the Ⓔ type can be removed from the bulb sockets by simply pulling them out.

CAUTION:

Be sure to hold the socket firmly when removing the bulb. Never pull the lead. Otherwise, the lead may be pulled off the terminal in the coupler.

⚠ WARNING

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



2.Check the bulb terminals for continuity.

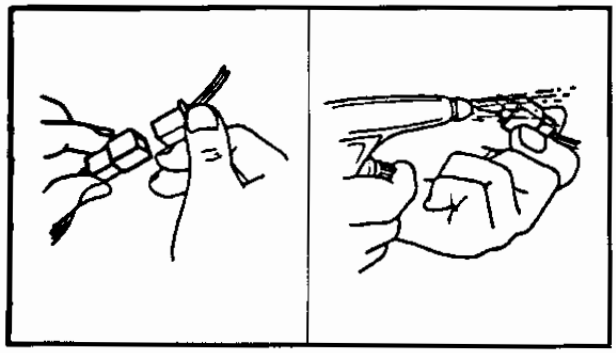
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Checking steps:

- Set the pocket tester selector to the "Ω × 1".
- Connect the tester lead to the respective bulb terminals. Take for example a 3-terminal bulb as shown left. First check the continuity between the ① and ② terminal by connecting the tester (+) lead to the ① terminal and the tester (–) lead to the ② terminal. Then check the continuity between the ① and ③ terminals by connecting the tester (+) lead still to the ① terminal and the tester (–) lead to the ③ terminal. If the tester shown "∞" in either case, replace the bulb.

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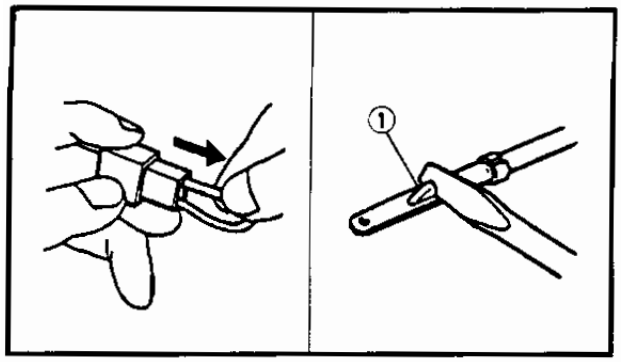
3.Check the bulb socket by installing a proven bulb to it. As in the checking of bulbs, connect the pocket tester leads to the respective leads of the socket and check for continuity in the same manner as mentioned above.



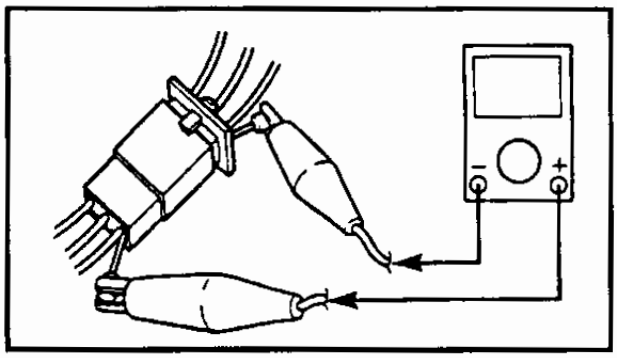
CHECKING OF CONNECTIONS

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

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



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

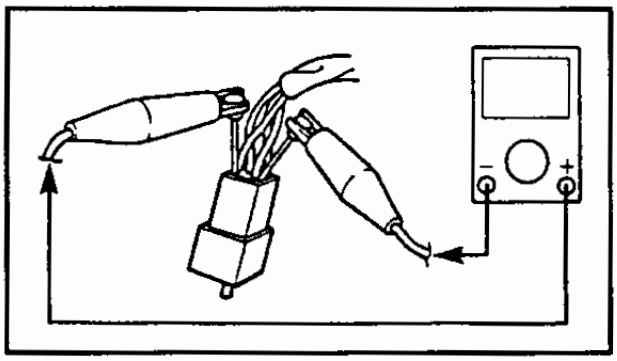


6. Connect:
   - Connector

NOTE:
The two connectors "click" together.

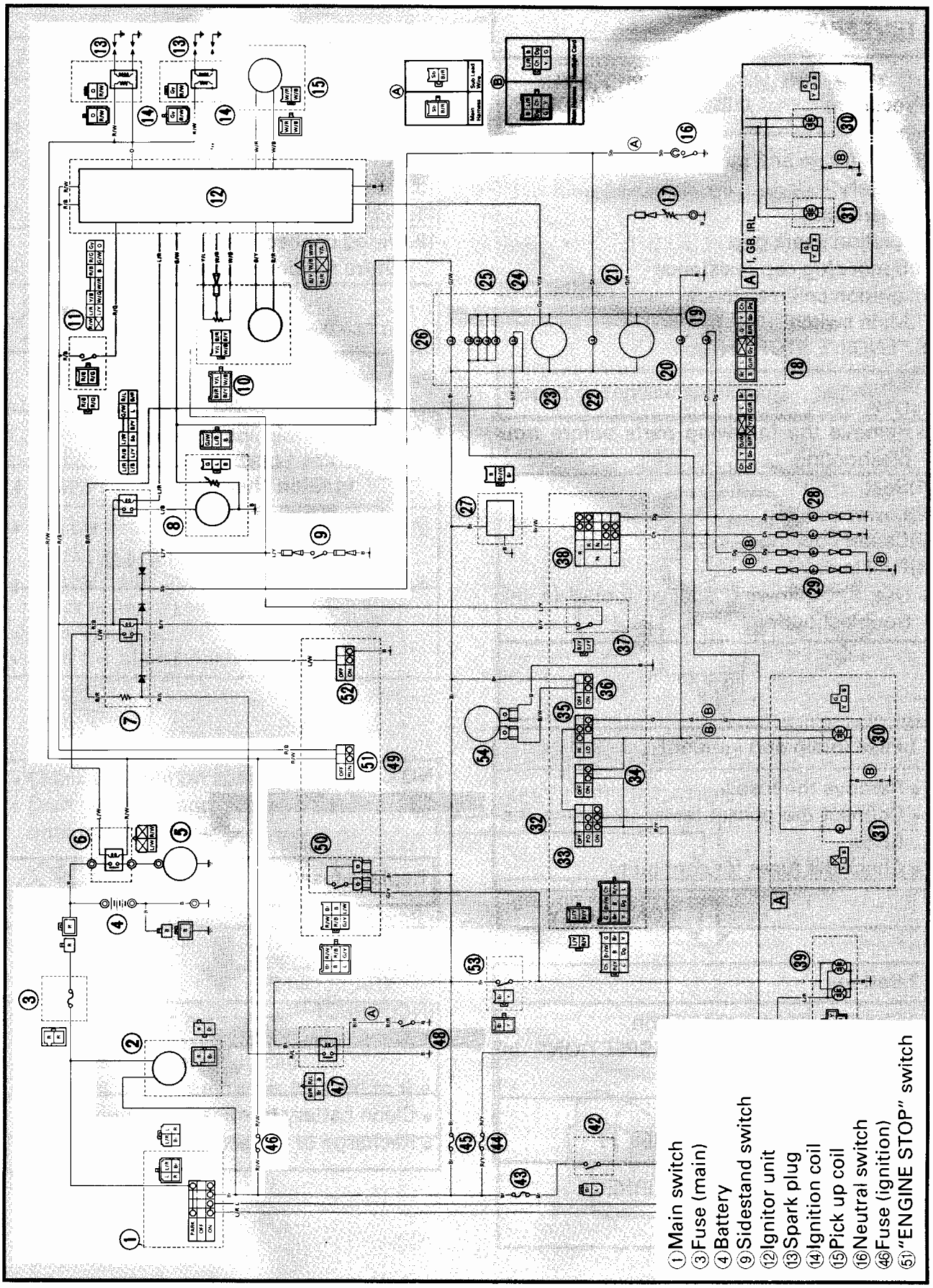
7. Check for continuity by a tester.

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



IGNITION SYSTEM

CIRCUIT DIAGRAM



TROUBLESHOOTING

IF IGNITION SYSTEM SHOULD BECOME INOPERATIVE (NO SPARK OR INTERMITTENT SPARK)

Procedure

Check;

1. Fuse (main and ignition)
2. Battery
3. Spark plug
4. Ignition spark gap
5. Spark plug cap resistance
6. Ignition coil resistance
7. Main switch
8. "ENGINE STOP" switch
9. Neutral switch
10. Sidestand switch
11. Pick up coil resistance
12. Wiring connection (entire ignition system)

NOTE:

- Remove the following parts before troubleshooting.
  1) Seat
  2) Lower cowling
  3) Center cowlings
  4) Fuel tank
- Use the following special tool(s) in this troubleshooting.



Dynamic spark tester
YM-34487
Ignition checker:
90890-06754
Pocket tester:
YU-03112/ 90890-03112

1. Fuse (main and ignition)
   - Remove the fuses.
   - Connect the pocket tester (Ω x 1) to the fuses.
   - Check the fuses for continuity.

NO CONTINUITY → Replace fuse(s).

CONTINUITY ⇩

2. Battery
   - Check the battery condition. Refer to "BATTERY INSPECTION" in CHAPTER 3.

   Open circuit voltage:
   12.8 V or more at 20° C(68° F)

INCORRECT →
- Clean battery terminals.
- Recharge or replace the battery.

CORRECT ⇩

*

*

3.Spark plug

- Check the spark plug condition.
- Check the spark plug type.
- Check the spark plug gap.
  Refer to "SPARK PLUG INSPECTION" in CHAPTER 3.

Standard spark plug:
CR8E, CR9E/U24ESR-N, U27ESR-N
NGK/NIPPONDENSO

Spark plug gap:
0.7 ~ 0.8 mm (0.028 ~ 0.031 in)

INCORRECT

Repair or replace spark plug.

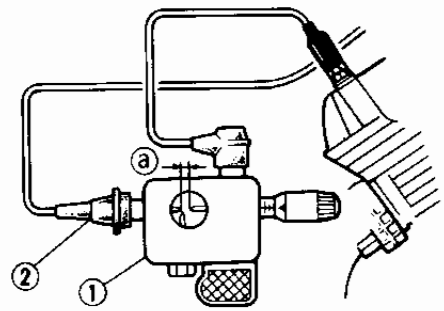
CORRECT

4.Ignition spark gap

- Disconnect the spark plug cap from spark plug.
- Connect the ignition checker (dynamic spark tester) ① as shown.

② Spark plug cap

- Turn the main switch to "ON".



- Check the ignition spark gap ⓐ.
- Start engine, and increase spark gap until misfire occurs.

Minimum spark gap:
6.0 mm (0.24 in)

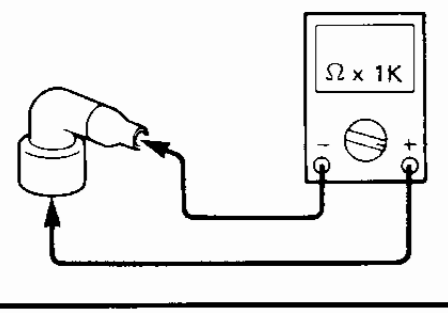
MEETS SPECIFICATION

Ignition system is good.

OUT OF SPECIFICATION OR NO SPARK

5.Spark plug cap resistance

- Remove the spark plug cap.
- Connect the pocket tester (Ω × 1k) to the spark plug cap.



- **Check the spark plug cap for specificated resistance.**

Spark plug cap resistance:
10 kΩ at 20° C (68° F)

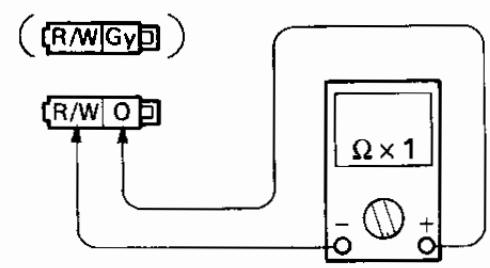
OUT OF SPECIFICATION → Replace spark plug cap.

MEETS SPECIFICATION

6.Ignition coil resistance

- Disconnect the ignition coil coupler from the wireharness.
- Connect the pocket tester (Ω × 1) to the ignition coil.

Tester (+) lead → Orange (Gray) terminal
Tester (–) lead → Red/White terminal

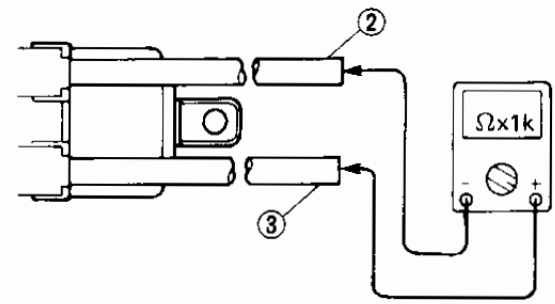


- Check the primary coil for specificated resistance.

Primary coil resistance:
1.8 ~ 2.2 Ω at 20° C (68° F)

- Connect the pocket tester (Ω × 1k) to the ignition coil.

Tester (+) lead → Spark plug lead ①
Tester (–) lead → Spark plug lead ②



- Check the secondary coil for specificated resistance.

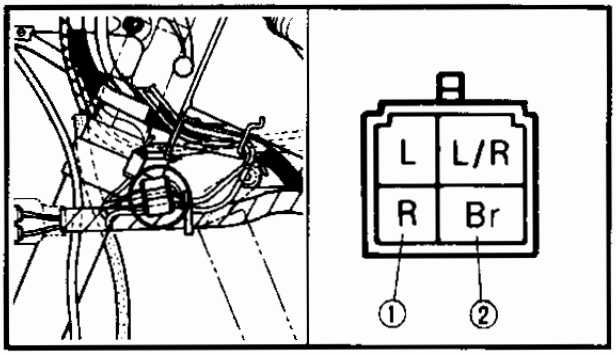
Secondary coil resistance:
9.6 ~ 14.4 kΩ at 20° C (68° F)

OUT OF SPECIFICATION → Replace ignition coil.

BOTH MEET SPECIFICATION

7.Main switch

- Disconnect the main switch coupler from the wireharness.
- Check the switch component for the continuity between "Red ① and Brown ②".
  Refer to "CHECKING OF SWITCHES".



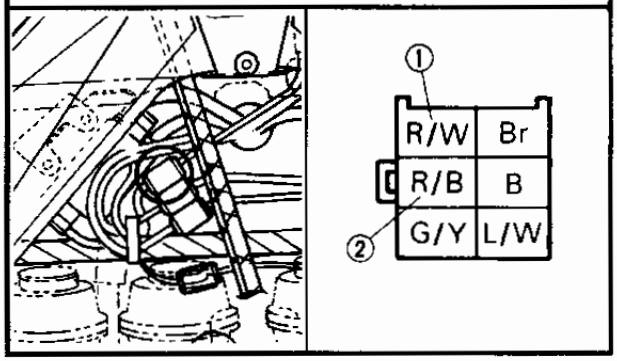
INCORRECT

Replace main switch.

CORRECT

8."ENGINE STOP" switch

- Disconnect the handlebar switch (right) coupler from the wireharness.
- Check the switch component for the continuity between "Red/White ① and Red/Black ② ".
  Refer to "CHECKING OF SWITCHES".



INCORRECT

Replace handlebar switch (right).

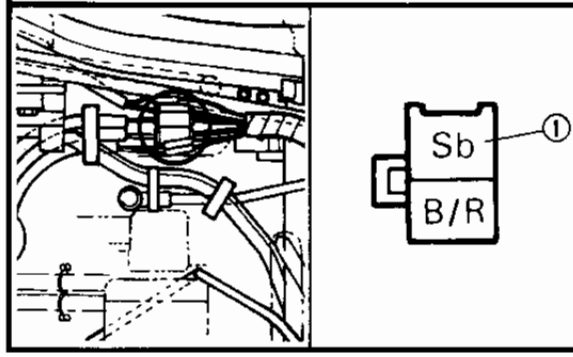
CORRECT

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9.Neutral switch

- Disconnect the neutral switch coupler from the wireharness.
- Check the switch component for the continuity between "Sky blue ①" and Ground.
  Refer to "CHECKING OF SWITCHES".



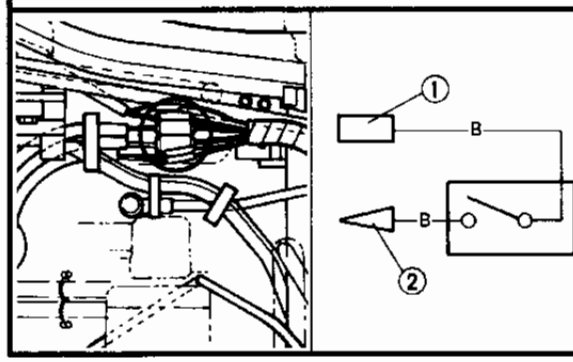
INCORRECT

Replace neutral switch.

CORRECT

10.Sidestand switch

- Disconnect the sidestand switch leads from the wireharness.
- Check the switch component for the continuity between "Black ① and Black ②".
  Refer to "CHECKING OF SWITCHES".



INCORRECT

Replace sidestand switch.

CORRECT

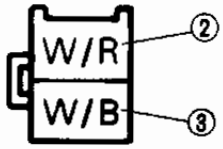
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11.Pickup coil resistance

- Disconnect the pickup coil coupler ① from the wireharness.
- Connect the pocket tester (Ω × 100) to the pickup coil terminal.

Tester (+) lead → White/Red terminal ②
Tester (–) lead → White/Black terminal ③



- Check the pickup coil for specificated resistance.

Pickup coil resistance:
135 ~ 165 Ω at 20° C (68° F)
(White/Red - White/Black)

OUT OF SPECIFICATION

Replace pickup coil.

MEETS SPECIFICATION

1.Wiring connection

- Check the entire ignition system for connections.
  Refer to "CIRCUIT DIAGRAM".

POOR CONNECTION

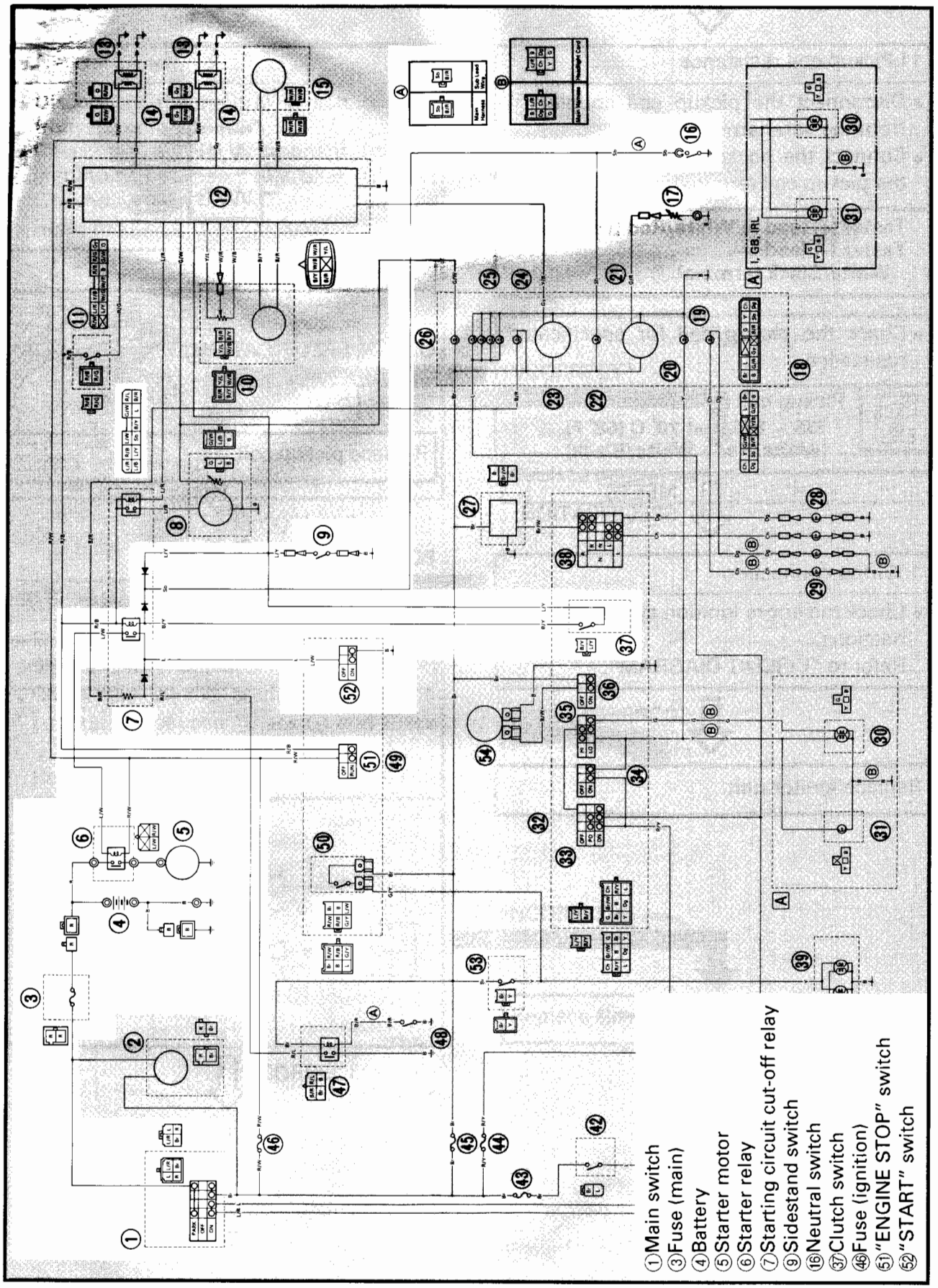
Correct.

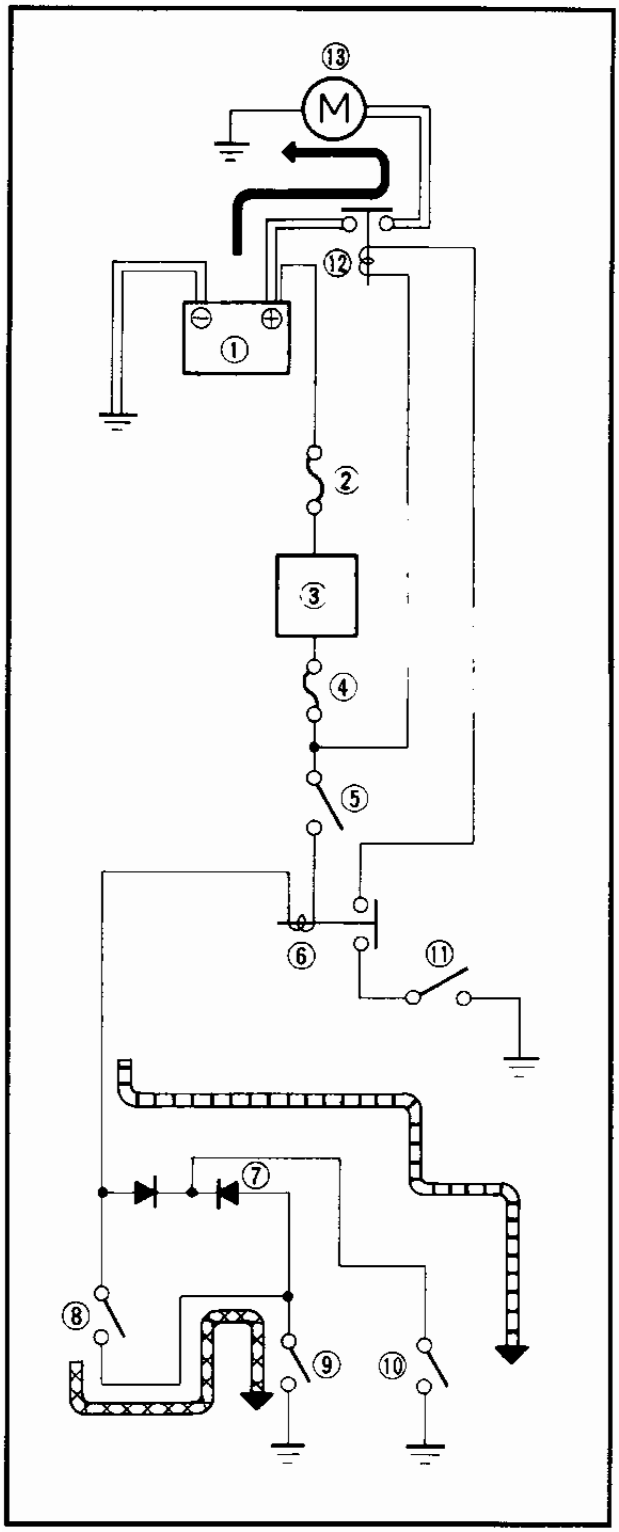
CORRECT

Replace ignitor unit.

ELECTRIC STARTING SYSTEM

CIRCUIT DIAGRAM





STARTING CIRCUIT OPERATION

The starting circuit on this model consist of the starter motor, starter relay, and the starting circuit cut-off relay. If the "ENGINE STOP" switch and the main switch are both closed, the starter motor can operate only if:

The transmission is in neutral (the neutral switch is closed).

or if

The clutch lever is pulled to the handlebar (the clutch switch is closed) and the sidestand is up (the sidestand switch is closed).

The starting circuit cut-off relay prevents the starter from operating when neither of these conditions has bees met. In this instance, the starting circuit cut-off relay is open so current cannot reach the starter motor.

When at least one of the above conditions have been met however, the starting circuit cut-off relay is closed, and the engine can be started by pressing the starter switch.

⇐ WHEN THE TRANSMISSION IS IN NEUTRAL

⇐ WHEN THE SIDESTAND IS UP AND THE CLUTCH LEVER IS PULLED IN

①Battery
②Fuse (main)
③Main switch
④Fuse (ignition)
⑤"ENGINE STOP" switch
⑥Starting circuit cut-off relay
⑦Diode
⑧Clutch switch
⑨Sidestand switch
⑩Neutral switch
⑪"START" switch
⑫Starter relay
⑬Starter motor

TROUBLESHOOTING

STARTER MOTOR DOES NOT OPERATE.

Procedure
Check;
1. Fuse (main and ignition)
2. Battery
3. Starter motor
4. Starting circuit cut off-relay
5. Starter relay
6. Main switch
7. "ENGINE STOP" switch
8. Neutral switch
9. Sidestand switch
10. Clutch switch
11. "START" switch
12. Wiring connection (entire starting system)

NOTE:
- Remove the following parts before troubleshooting.
  1) Seat
  2) Lower cowling
  3) Center cowling (left)
  4) Fuel tank
- Use the following special tool(s) in this troubleshooting.



Pocket tester:
YU-03112/90890-03112

1. Fuse (main and ignition)
   - Remove the fuses.
   - Connect the pocket tester (Ω × 1) to the fuses.
   - Check the fuses for continuity.

NO CONTINUITY → Replace fuse(s).

CONTINUITY ↓

2. Battery
   - Check the battery condition. Refer to "BATTERY INSPECTION" in CHAPTER 3.

Open circuit voltage:
12.8V or more at 20° C (68° F)

INCORRECT →
- Clean battery terminals.
- Recharge or replace the battery.

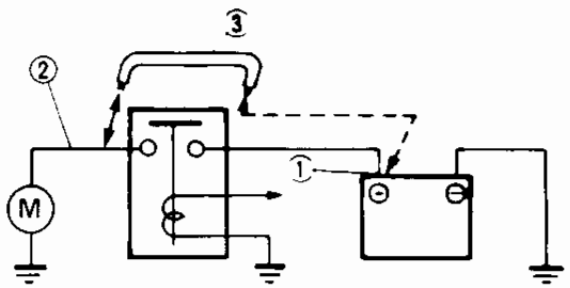
CORRECT ↓

*

*

3.Starter motor

- Connect the battery positive terminal ① and starter motor cable ② using a jumper lead ③ * .
- Check the starter motor for operation.



*

⚠ WARNING

- **A wire for jumper lead must have the equivalent capacity as that of the battery lead or more, otherwise it may cause the jumper lead to be burned.**
- **This check is likely to produce sparks, so be sure that no flammable gas or fluid is in the vicinity.**

DOES NOT MOVE

Repair or replace starter motor.

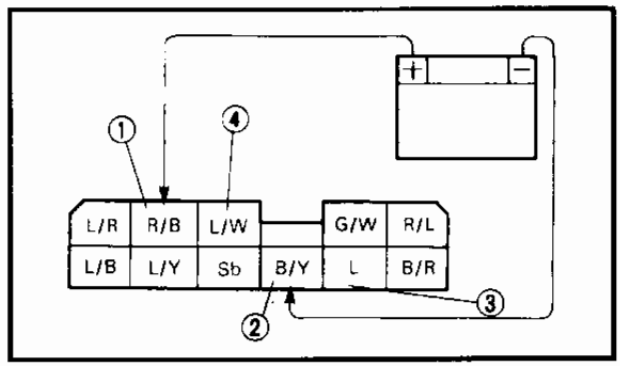
MOVES

4.Starting circuit cut-off relay

- Disconnect the starting circuit cut-off relay coupler from the wireharness.
- Connect the pocket tester (Ω × 1) and battery (12V) to the starting circuit cut-off relay coupler terminals.

Battery (+) terminal →
Red/Black terminal ①
Battery (–) terminal →
Black/Yellow terminal ②

Tester (+) terminal →
Blue terminal ③
Tester (–) terminal →
Blue/White ④



- Check the starting circuit cut-off relay for continuity.

NO CONTINUITY

Replace starting circuit cut-off relay.

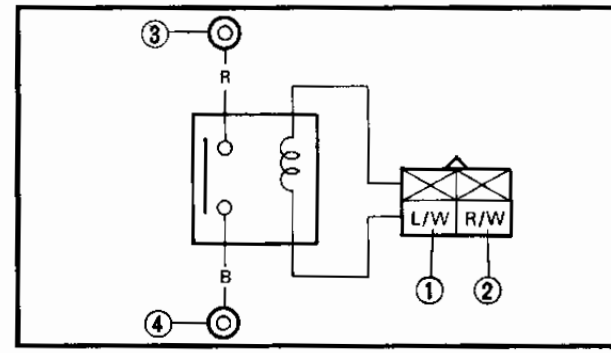
CONTINUITY

*

*

5.Starter relay

- Disconnect the relay unit coupler from the wireharness.
- Connect the pocket tester (Ω × 1) and battery (12V) to the relay unit coupler terminals.



Battery (+) terminal →
Blue/White terminal ①
Battery (–) terminal →
Red/White terminal ②

Tester (+) lead → Red terminal ③
Tester (–) lead → Black terminal ④

- Check the starter relay for continuity.

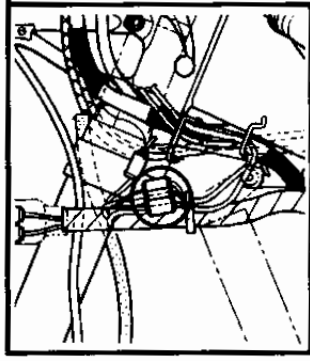
NO CONTINUITY

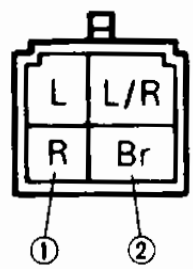
Replace starter relay.

CONTINUITY

6.Main switch

- Disconnect the main switch coupler from the wireharness.
- Check the switch component for the continuity between "Red ① and Brown ②".
  Refer to "CHECKING OF SWITCHES".





INCORRECT

Replace main switch.

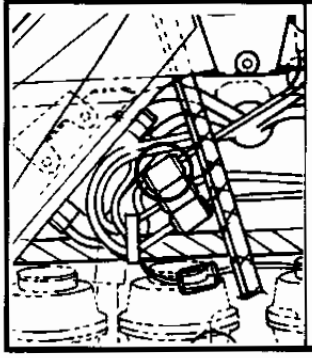
CORRECT

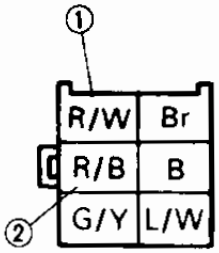
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7."ENGINE STOP" switch

- Disconnect the handlebar switch (right) coupler from the wireharness.
- Check the switch component for the continuity between "Red/White ① and Red/Black ②".
  Refer to "CHECKING OF SWITCHES".





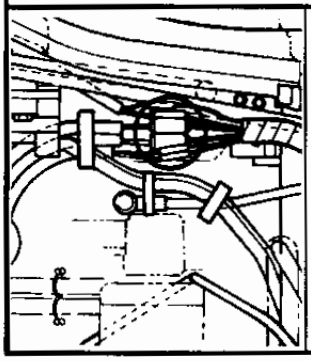
INCORRECT

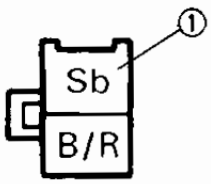
Replace handlebar switch (right).

CORRECT

8.Neutral switch

- Disconnect the neutral switch coupler from the wireharness.
- Check the switch component for the continuity between "Sky blue ①" and Ground.
  Refer to "CHECKING OF SWITCHES".





INCORRECT

Replace neutral switch.

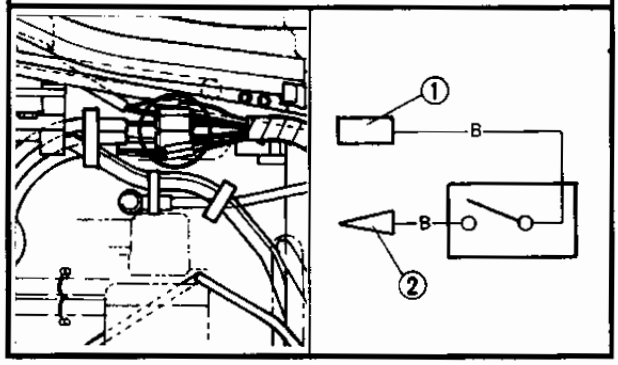
CORRECT

*

*

9.Sidestand switch

- Disconnect the sidestand switch leads from the wireharness.
- Check the switch component for the continuity between "Black ① and Black ②".
  Refer to "CHECKING OF SWITCHES".

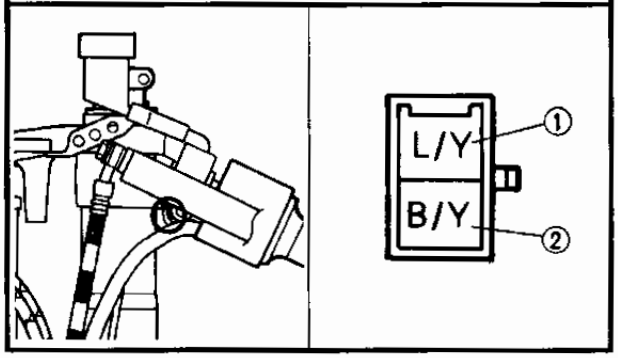


INCORRECT → Replace sidestand switch.

CORRECT

10.Clutch switch

- Disconnect the clutch switch coupler from wireharness.
- Check the clutch switch component for the continuity between "Blue/Yellow ① and Black/Yellow ②".
  Refer to "CHECKING OF SWITCHES".



INCORRECT → Replace clutch switch.

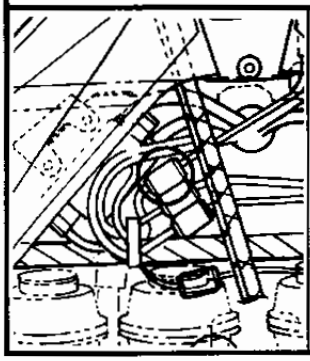
CORRECT

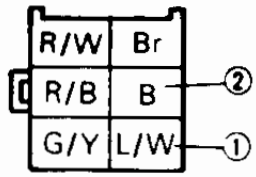
*

*

11."START" switch

- Disconnect handlebar switch (right) coupler from wireharness.
- Check the "START" switch component for the continuity between "Blue/White ① and Black ② ".
  Refer to "CHECKING OF SWITCHES".





INCORRECT

Replace handlebar switch (right).

CORRECT

12.Wiring connection

- Check the entire starting system for connections.
  Refer to "CIRCUIT DIAGRAM".

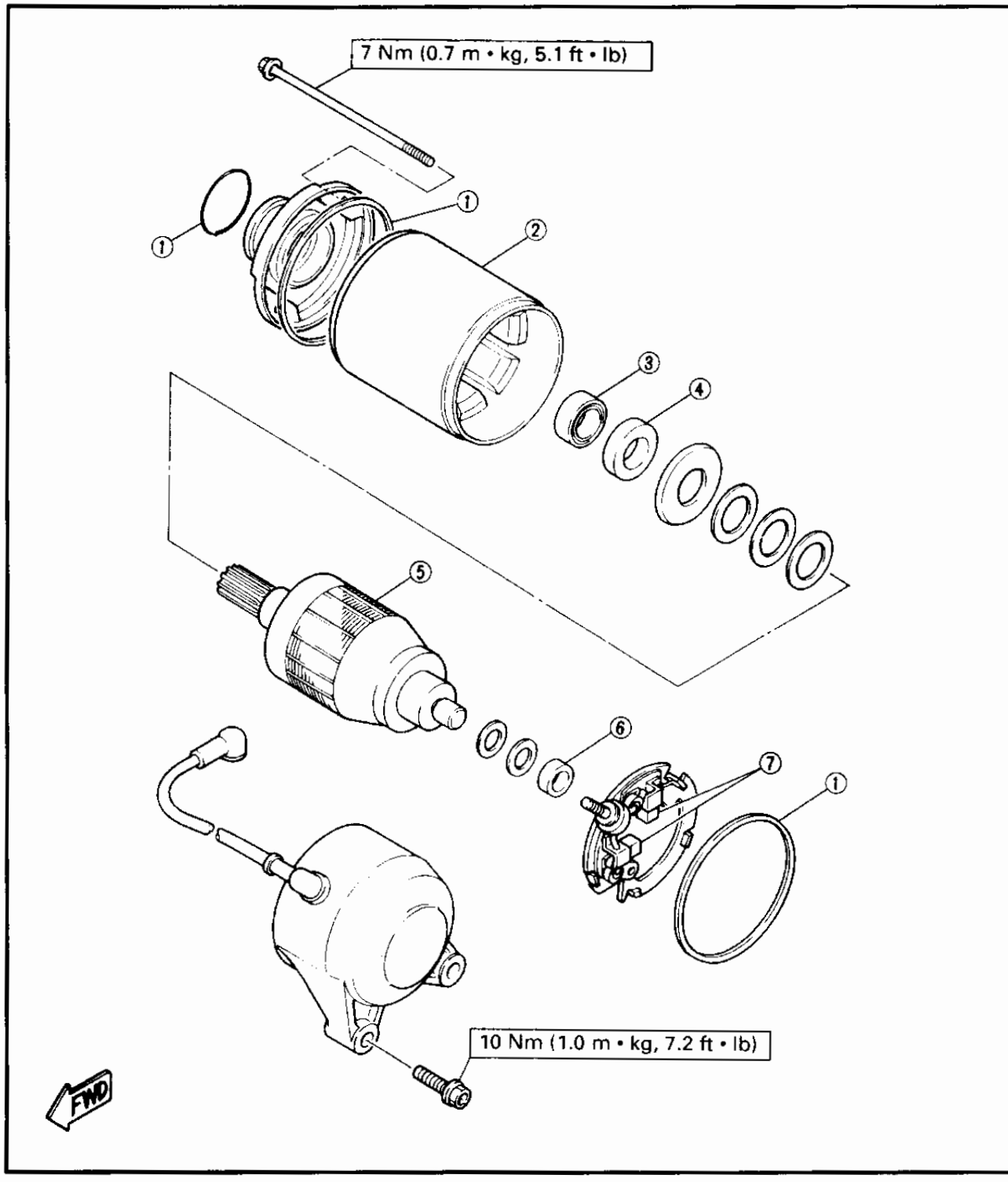
POOR CONNECTION

Correct.

STARTER MOTOR

1. O-ring
2. Yoke
3. Bearing
4. Oil seal
5. Armature
6. Bushing
7. Brush

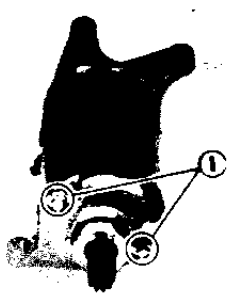
A	ARMATURE COIL RESISTANCE: 0.015 ~ 0.025 Ω at 20° C (68° F)
B	BRUSH WEAR LIMIT: 4 mm (0.16 in)
C	COMMUTATOR WEAR LIMIT: 27 mm (1.06 in)
D	MICA UNDERCUT: 0.7 mm (0.03 in)



Removal

1.Remove:

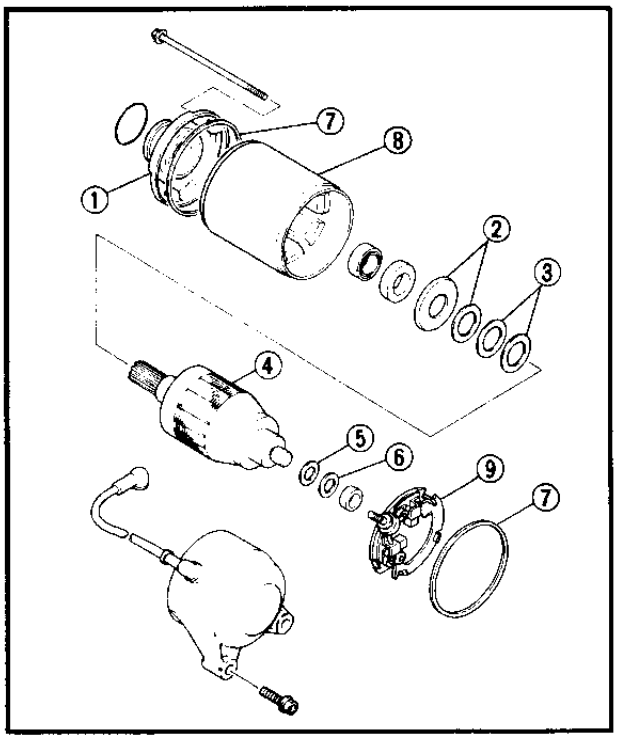
- Starter motor
  Refer to "ENGINE OVERHAUL-ENGINE REMOVAL" in CHAPTER 4.



Disassembly

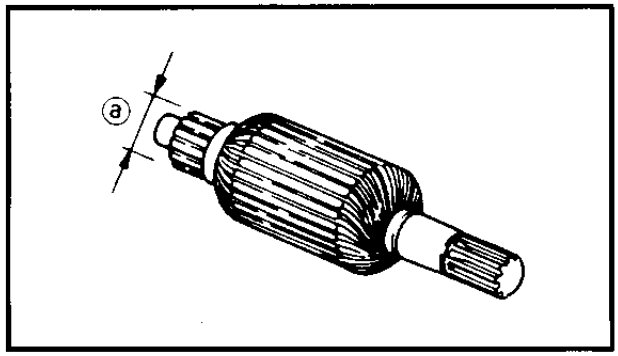
1.Remove:

- Bolts ①
  (with washer and O-ring)



2.Remove:

- Bracket ①
- Washers ②
- Shims ③
- Armature ④
- Washer ⑤
- Shims ⑥
- O-rings ⑦
- Yoke ⑧
- Brushes ⑨



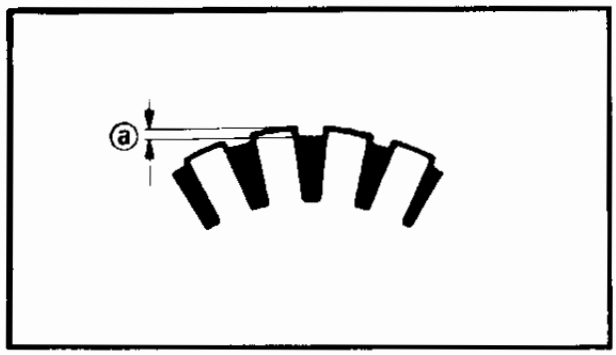
Inspection and repair

1.Inspect:

- Commutator
  Dirty → Clean it with #600 grit sandpaper.

2.Measure:

- Commutator diameter ⓐ
  Out of specification → Replace starter motor.

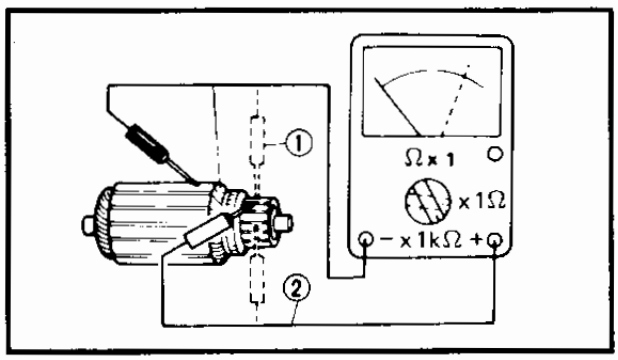


Commutator wear limit:
27 mm (1.06 in)

3.Measure:
- Mica undercut ⓐ
  Out of specification → Scrape the mica to proper value use a hacksaw blade can be ground to fit.

Mica undercut:
0.7 mm (0.03 in)

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



4.Inspect:
- Armature coil (insulation/continuity)
  Defects → Replace starter motor.

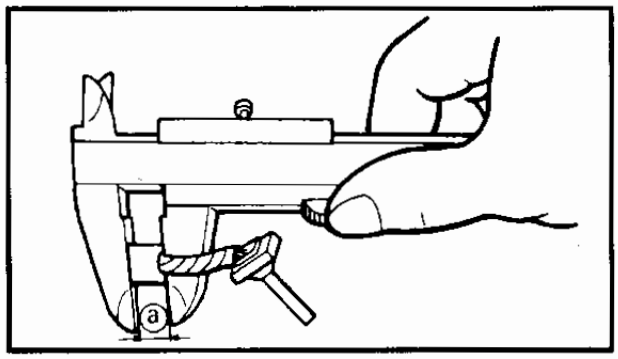
****

Inspecting steps:
- Connect the pocket tester for continuity check ① and insulation check ②.
- Measure the armature resistances.

Armature coil resistance:
Continuity check ①:
0.015 ~ 0.025Ω at 20° C (68° F)
Insulation check ②:
More than 1MΩ at 20° C (68° F)

- If the resistance is incorrect, replace the starter motor.

****

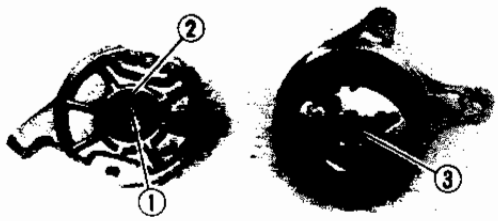


5.Measure:
- Brush length ⓐ
  Out of specification → Replace.

Brush length limit:
4 mm (0.16 in)

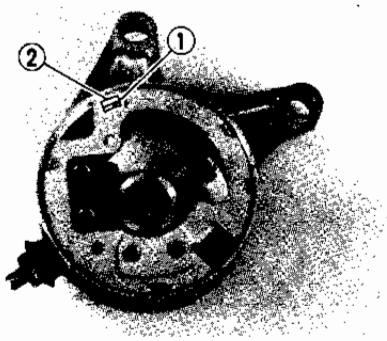
6.Measure:
- Brush spring force
  Fatigue/Out of specification → Replace as a set.

	Brush spring force: **570 ~ 920 g (20.1 ~ 32.5 oz)**



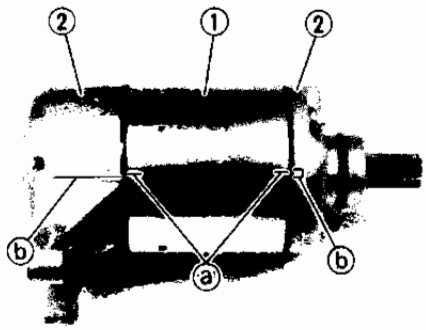
7.Inspect:
- Bearing ①
  Roughness → Replace.
- Oil seal ②
- O-rings
- Bushing ③
  Wear/Damage → Replace.

Assembly
Reserve the "Removal" procedure.
Note the following points.
1.Install:
- Brush seat ①



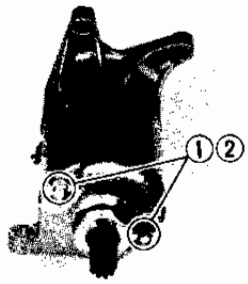
NOTE:
Align the projection ① on the brush seat with the slot ② on the housing.

2.Install:
- Yoke ①
- Brackets ②



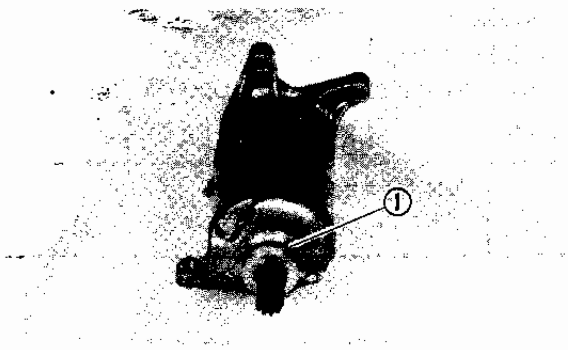
NOTE:
Align the match marks ⓐ on the yoke with the match marks ⓑ on the brackets.

3.Install:
- O-rings ①
- Washer
- Bolts ②



⚠ WARNING
Always use new O-rings.

	Bolt (yoke assembly): **7 Nm (0.7 m • kg, 5.1 ft • lb)**



Installation

1.Install:

- Starter motor

NOTE:

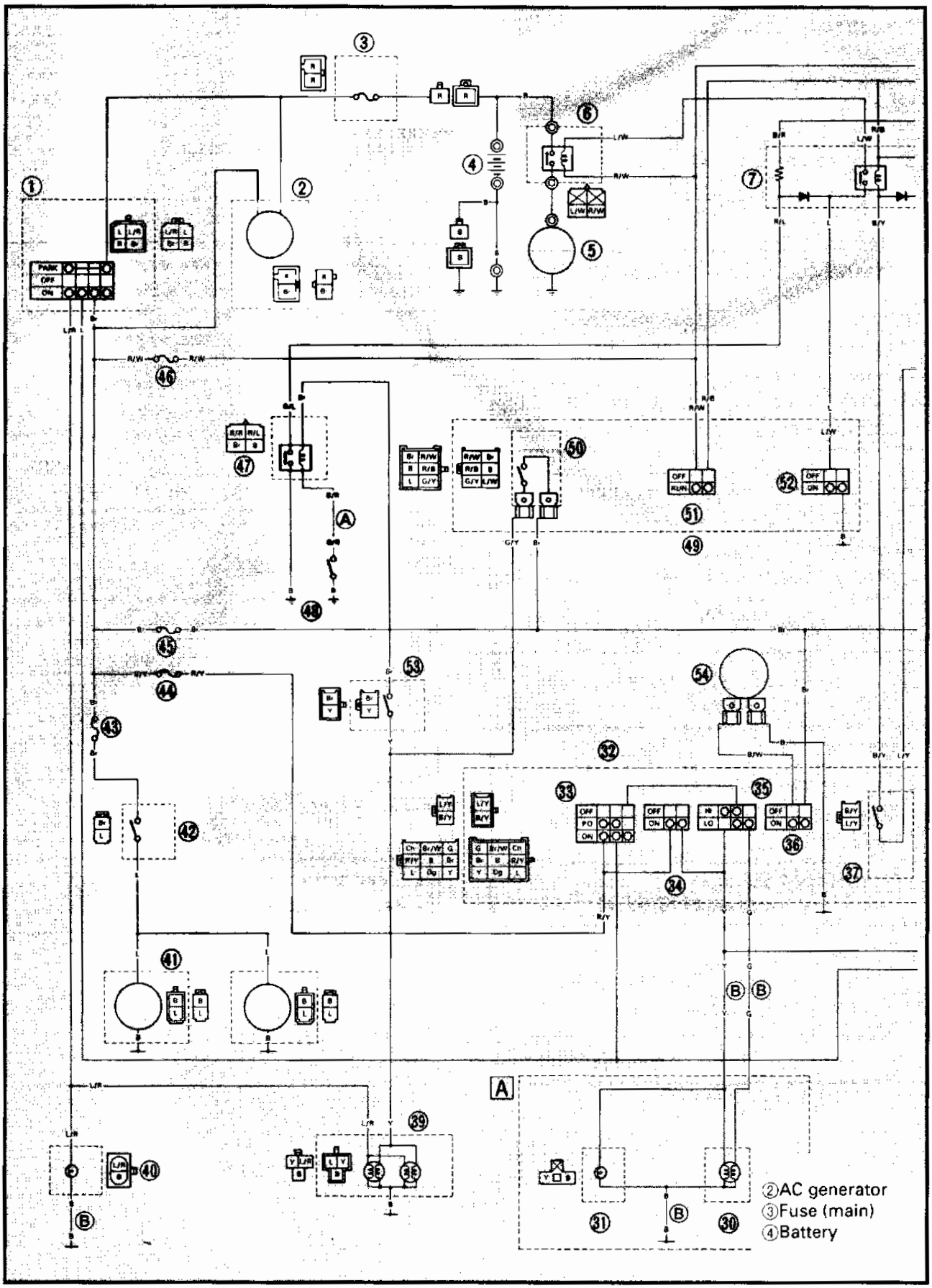
Apply a grease lightly to the O-ring ①.

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

Refer to "ENGINE OVERHAUL-ENGINE REMOUNTING" in CHAPTER 4.

CHARGING SYSTEM

CIRCUIT DIAGRAM



TROUBLESHOOTING

THE BATTERY IS NOT CHARGED.

Procedure

Check;

1. Fuse (main)
2. Battery
3. Charging voltage
4. Stator coil resistance
5. Brush inspection
6. Field coil (rotor) resistance
7. Wiring connection (entire charging system)

NOTE:

- Remove the following parts before troubleshooting.

1) Seat
2) Lower cowling
3) Center cowling (left)

- Use the following special tool(s) in this troubleshooting.



Inductive tachometer:
YU-08036-A/ 90890-03113
Pocket tester:
YU-03112/90890-03112

1.Fuse (main)

- Remove the fuses.
- Connect the pocket tester (Ω × 1) to the fuses.
- Check the fuses for continuity.

NO CONTINUITY → Replace fuse(s).

CONTINUITY ↓

2.Battery

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

Open circuit voltage:
12.8 V or more at 20° C(68° F)

INCORRECT →

- Clean battery terminals.
- Recharge or replace the battery.

CORRECT ↓

*

*

3.Charging voltage

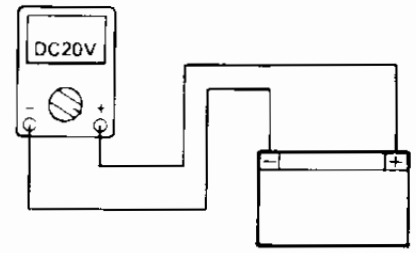
- Connect the inductive tachometer to spark plug lead.
- Connect the pocket tester (DC 20V) to the battery.

Tester (+) lead → Battery (+) terminal
Tester (–) lead → Battery (–) terminal

- Start the engine and accelerate to about, 3,000 r/min.
- Check charging voltage.

Charging voltage:
14 V at 3,000 r/min

NOTE:
Use a full charged battery.



MEETS SPECIFICATION

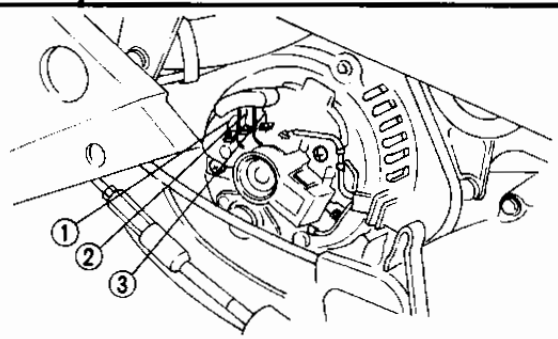
Charging circuit is good.

OUT OF SPECIFICATION

4.Stator coil resistance

- Remove the generator cover.
- Connect the pocket tester "Ω × 1" to the stator coils.
- Measure the stator coil resistance.

Stator coil resistance:
0.13~0.15 Ω at 20° C (68° F)



Tester (+) lead → White lead ①
Tester (–) lead → White lead ②

Tester (+) lead → White lead ①
Tester (–) lead → White lead ③

OUT OF SPECIFICATION

Replace stator assembly.

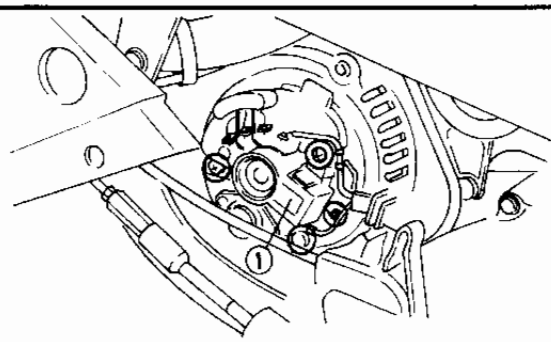
BOTH MEET SPECIFICATION

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5.Brush inspection

- Remove the brush holder ①.
- Inspect the brush spring.
- Check the brush length.



Brush spring force:
550 g (19.3 oz)

INCORRECT

Replace the brush and spring.

CORRECT

6.Field coil (rotor) resistance

- Connect the pocket tester "Ω × 1" to the rotor.
- Measure the resistance.

Field coil (rotor) resistance:
2.7~3.1 Ω at 20° C (68° F)

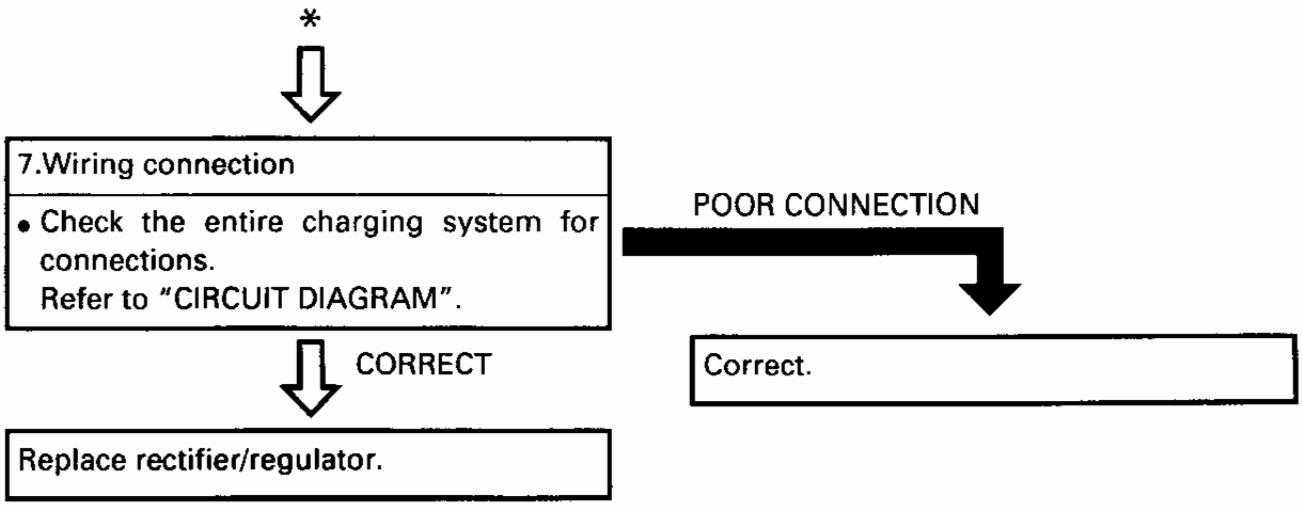


OUT OF SPECIFICATION

Replace field coil (rotor).

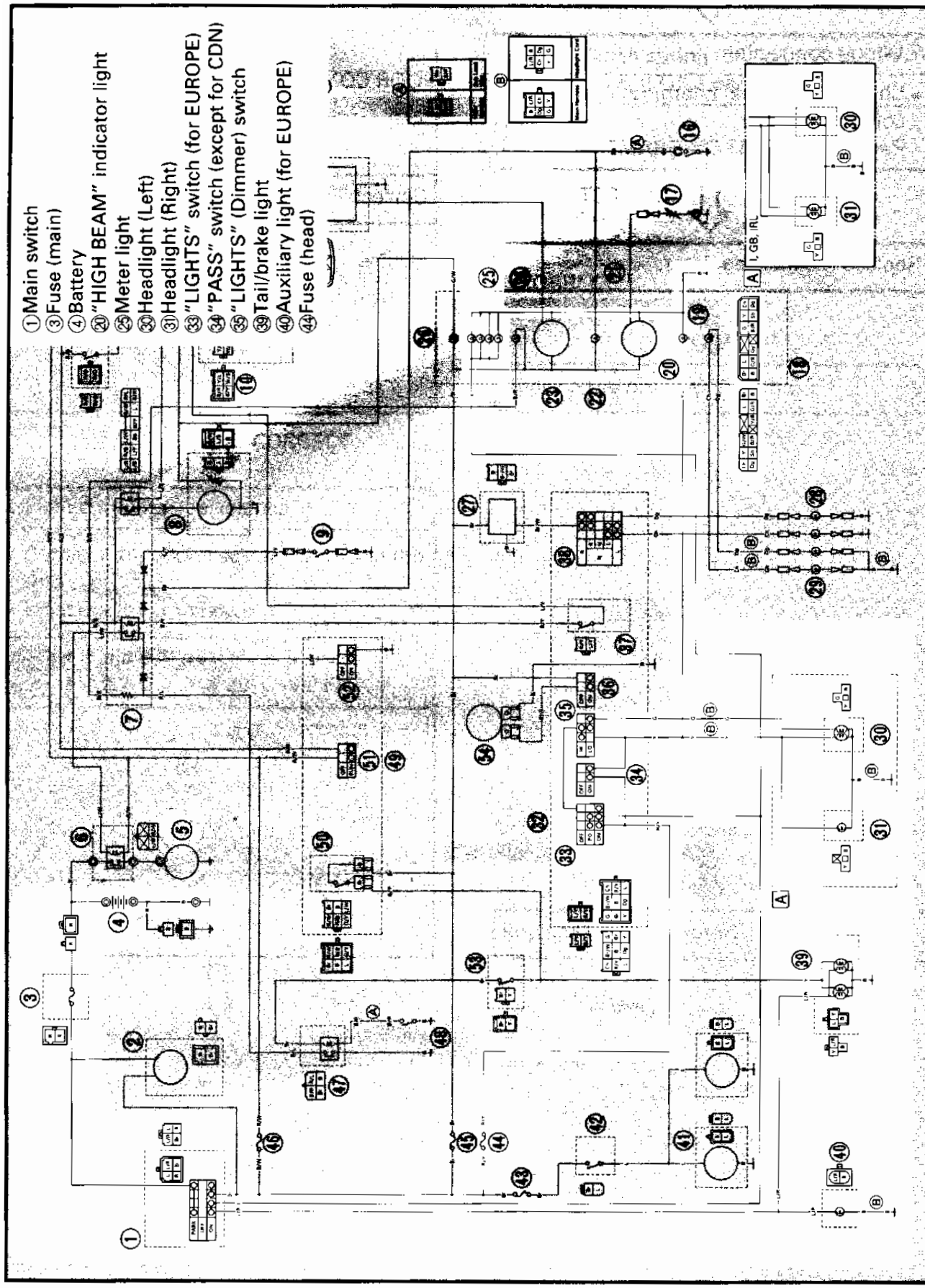
MEETS SPECIFICATION

*


*
7.Wiring connection
• Check the entire charging system for connections.
Refer to "CIRCUIT DIAGRAM".
POOR CONNECTION
Correct.
CORRECT
Replace rectifier/regulator.

LIGHTING SYSTEM

CIRCUIT DIAGRAM



TROUBLESHOOTING

HEADLIGHT "HIGH BEAM" INDICATOR LIGHT, TAILLIGHT, AND/OR METER LIGHT DO NOT COME ON.

Procedure

Check;

1. Fuse (main and head)
2. Battery
3. Main switch
4. "LIGHTS" switch/"LIGHTS" (dimmer) switch
5. "PASS" switch
6. Wiring connection (entire lighting system)

NOTE:

- Remove the following parts before troubleshooting.
  1) Seat
  2) Lower cowling
  3) Center cowling (left)
- Use the following special tool(s) in this troubleshooting.



Pocket tester:
YU-03112/90890-03112

1. Fuse (main and head)

- Remove the fuses.
- Connect the pocket tester (Ω × 1) to the fuses.
- Check the fuses for continuity.

NO CONTINUITY → Replace fuse(s).

CONTINUITY ↓

2. Battery

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

Open circuit voltage:
12.8 V or more at 20° C(68° F)

INCORRECT →

- Clean battery terminals.
- Recharge or replace the battery.

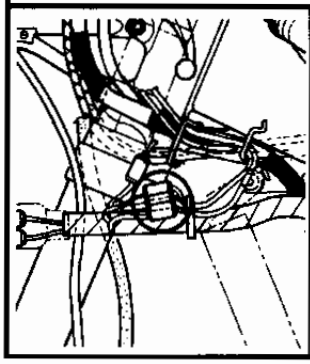
CORRECT ↓

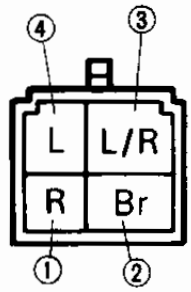
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3. Main switch

- Disconnect the main switch coupler from the wireharness.
- Check the switch component for the continuity between "Red ① and Brown ②", "Blue/Red ③ and Blue ④", "Red ① and Blue/Red ③". Refer to "CHECKING OF SWITCHES".





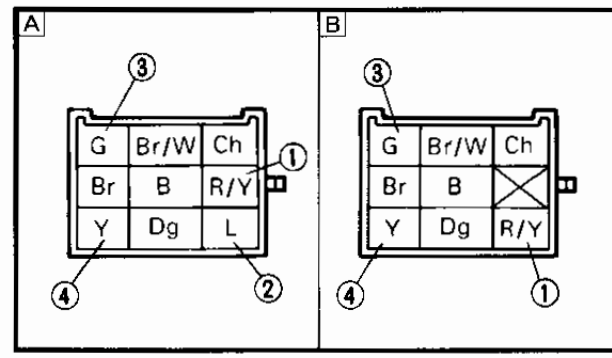
INCORRECT

Replace main switch.

CORRECT

4. "LIGHTS" switch/"LIGHTS" (dimmer) switch

- Disconnect the handlebar switch (left) coupler from the wireharness.
- Turn the "LIGHTS" switch to the "ON" or "P" (for Europe).
- Check the switch component for the continuity between "Red/Yellow ① and Blue ②" (for Europe).
- Turn the "LIGHTS" (dimmer) switch to the "LO".
- Check the switch component for the continuity between "Red/Yellow ① and Green ③".
- Set the position of the "LIGHTS" (dimmer) switch to the "HI".
- Check the switch component for the continuity between "Red/Yellow ① and Yellow ④". Refer to "CHECKING OF SWITCHES".



A For Europe
B Except for Europe

INCORRECT

"LIGHTS" switch/"LIGHTS" (dimmer) switch are faulty, replace handlebar switch (left).

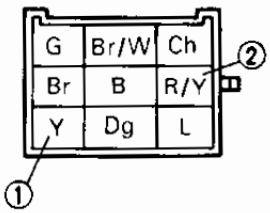
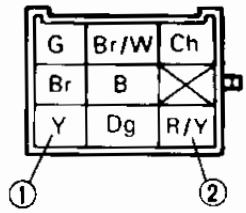
CORRECT

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5."PASS" switch (except for CDN)

- Disconnect the handlebar switch (left) coupler from the wireharness.
- Check the switch component for the continuity between "Yellow ① and Red/Yellow ②".
  Refer to "CHECKING OF SWITCHES".

A For Europe	B Except for Europe
	

INCORRECT

"PASS" switch is faulty, replace handlebar switch (left).

CORRECT

6.Wiring connection

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

POOR CONNECTION

Correct.

CORRECT

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

LIGHTING SYSTEM CHECK

1. **Headlight and "HIGH BEAM" indicator light does not come on.**

1. Bulb and bulb socket

- **Check the bulb and bulb socket for continuity.**
  Refer to "CHECKING OF BULBS".

NO CONTINUITY → Replace bulb and/or bulb socket.

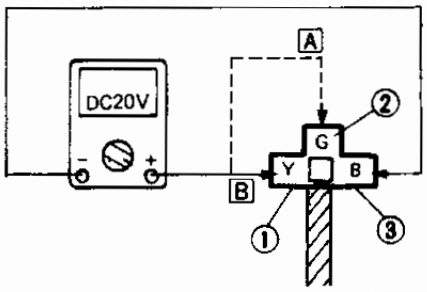
CONTINUITY ↓

2. Voltage

- Connect the pocket tester (DC 20V) to the headlight and "HIGH BEAM" indicator light couplers.

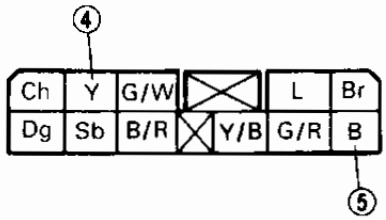
A When "LIGHTS" (dimmer) switch is "LO" position.
B When "LIGHTS" (dimmer) switch is "HI" position.

Headlight connector



Head light:
Tester (+) lead → Yellow ① or Green ② lead.
Tester (–) lead → Black ③ lead.
"HIGH BEAM" indicator light:
Tester (+) lead → Yellow ④ lead.
Tester (–) lead → Black ⑤ lead.

B Meter connector



- Turn the main switch to "ON".
- Turn the "LIGHTS" switch to "ON" position (for Europe).
- Turn the "LIGHTS" (dimmer) switch to "LO" or "HI" position.
- Check for voltage (12 V) on the "Green" and "Yellow" lead at bulb socket connectors.

OUT OF SPECIFICATION → Wiring circuit from main switch to bulb socket connector is faulty, repair.

MEETS SPECIFICATION ↓

This circuit is good.

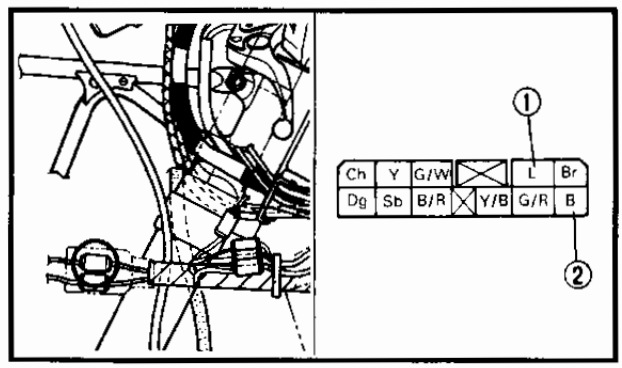
2.Meter light does not come on.

1.Bulb and bulb socket
• Check the bulb and bulb socket for continuity. Refer to "CHECKING OF BULBS".

NO CONTINUITY → Replace bulb and/or bulb socket.

CONTINUITY ↓

2.Voltage
• Connect the pocket tester (20 V) to the bulb socket coupler.
Tester (+) lead → Blue terminal ① **Tester (–) lead → Black terminal ②**



- Turn the main switch to "ON".
- Turn the "LIGHTS" switch to "ON" or "P" position (for Europe).
- Check for voltage (12 V) on the "Blue" lead at the bulb socket connector.

OUT OF SPECIFICATION → Wiring circuit from main switch to bulb socket connector is faulty, repair.

MEETS SPECIFICATION ↓

This circuit is good.

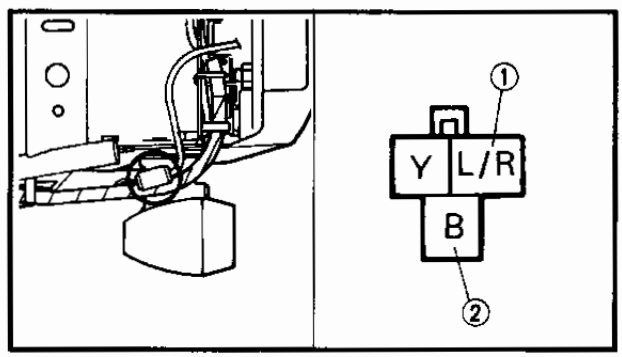
3.Taillight does not come on.

1.Bulb and bulb socket
• Check the bulb and bulb socket for continuity. Refer to "CHECKING OF BULBS".

NO CONTINUITY → Replace bulb and/or bulb socket.

CONTINUITY ↓

2.Voltage
• Connect the pocket tester (DC 20V) to the bulb socket connector.
Tester (+) lead → Blue/Red terminal ① **Tester (–) lead → Black terminal ②**



- **Turn the** main switch to "ON".
- **Turn the** "LIGHTS" switch to "ON" or "**P**" position (for Europe).
- **Check** for voltage (12 V) on the "Blue/**Red**" lead at the bulb socket connector.

OUT OF SPECIFICATION

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

MEETS SPECIFICATION

This circuit is good.

4.Auxiliary light does not come on (for Europe).

1.Bulb and bulb socket

- Check the bulb and bulb socket for continuity.
  Refer to "CHECKING OF BULBS".

NO CONTINUITY

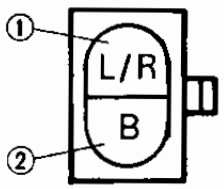
Bulb and/or socket are faulty, replace.

CONTINUITY

2.Voltage

- Connect the pocket tester (DC 20V) to the bulb socket connector.

Tester (+) lead → Blue/Red terminal ①
Tester (–) lead → Black terminal ②



- Turn the main switch to "ON".
- Turn the "LIGHTS" switch to "ON" or "PO" position. (for Europe)
- Check for voltage (12 V) on the "Blue/Red" lead at the bulb socket connector.

OUT OF SPECIFICATION

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

MEETS SPECIFICATION

This circuit is good.

5.Front position light dose not come on.
(for CDN)

1.Bulb and bulb socket

- Check the bulb and bulb socket for continuity.
  Refer to "CHECKING OF BULBS".

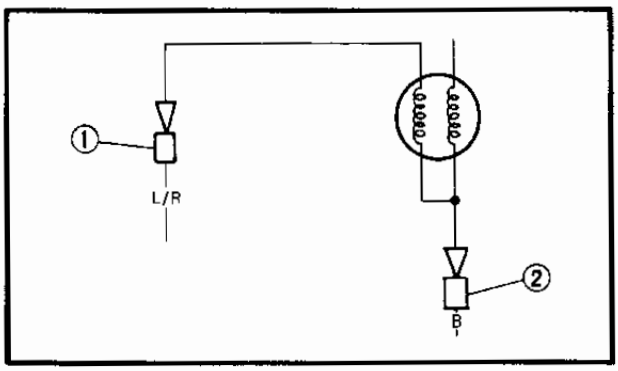
NO CONTINUITY → Bulb and/or socket are faulty, replace.

CONTINUITY ↓

2.Voltage

- Connect the pocket tester (DC 20V) to the bulb socket connector.

Tester (+) lead → Blue/Red terminal ①
Tester (–) lead → Black terminal ②



- Turn the main switch to "ON".
- Check for voltage (12 V) on the "Blue/Red" lead at the bulb socket connector.

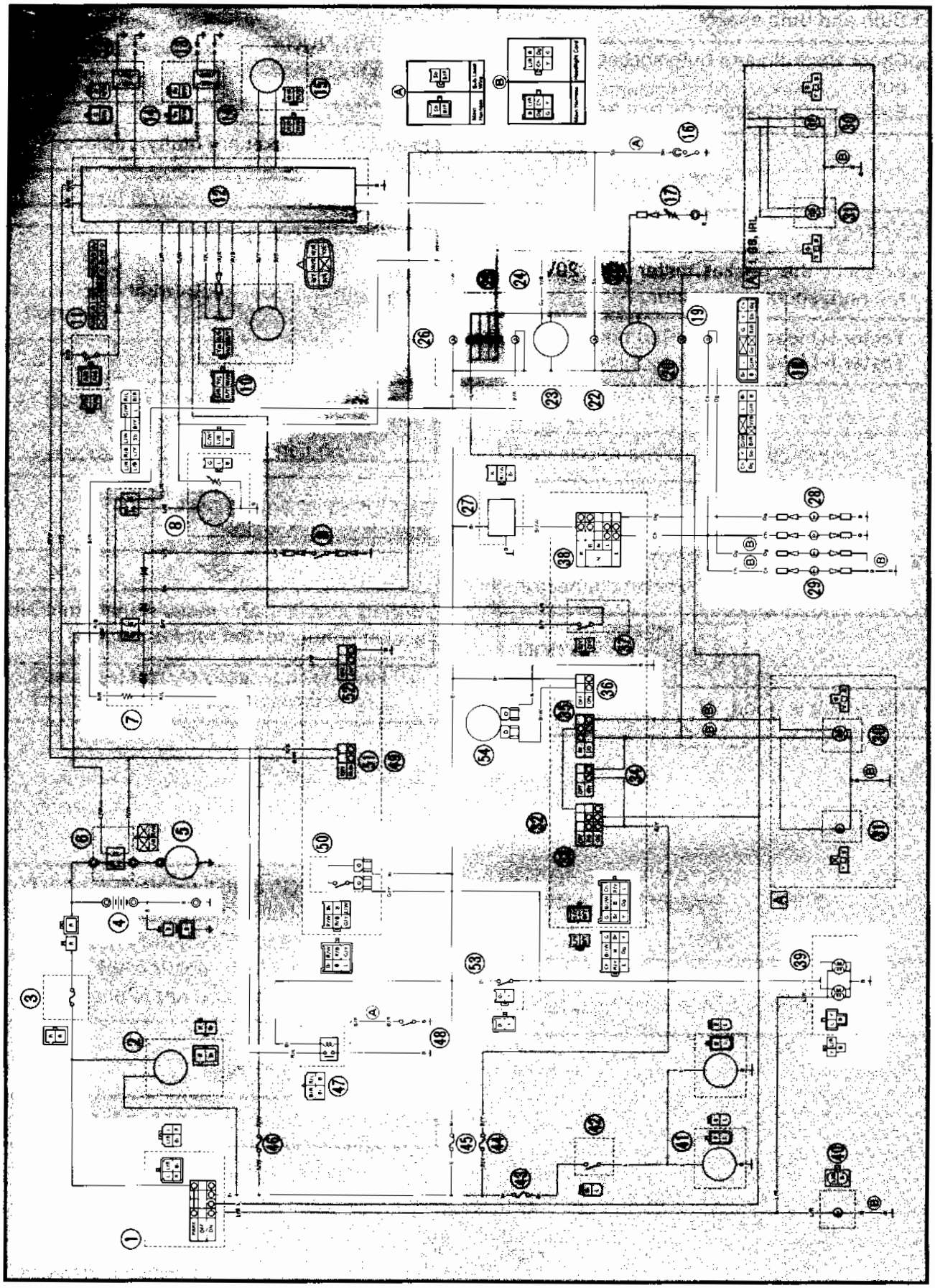
OUT OF SPECIFICATION → Wiring circuit from main switch to bulb socket connector is faulty, repair.

MEETS SPECIFICATION ↓

This circuit is good.

SIGNAL SYSTEM

CIRCUIT DIAGRAM



①Main switch
③Fuse (main)
④Battery
⑦Starting circuit cut-off relay
⑧Fuel pump
⑯Neutral switch
⑲"TURN" indicator light
㉒"NEUTRAL" indicator light
㉓Tachometer
㉔"OIL LEVEL" indicator light
㉖Fuel level indicator light
㉗Flasher relay
㉘Rear flasher light
㉙Front flasher light
㊱"HORN" switch
㊳"TURN" switch
㊴Tail/brake light
㊺Fuse (signal)
㊼Oil light relay
㊽Oil level switch
㊿Front brake switch
(53)Rear brake switch
(54)Horn

TROUBLESHOOTING

- **FLASHER LIGHT, BRAKE LIGHT AND/OR INDICATOR LIGHT DO NOT COME ON.**
- **HORN DOES NOT SOUND.**

Procedure
Check;
1.Fuse (main and signal)
2.Battery
3.Main switch
4.Wiring connection
(entire signal system)

NOTE:
- Remove the following parts before troubleshooting.
1)Seat
2)Lower cowling
3)Center cowling
4)Fuel tank
- Use the following special tool in this troubleshooting.



Pocket tester:
YU-03112/ 90890-03112

1.Fuse (main and signal)
- Remove the fuses.
- Connect the pocket tester (Ω × 1) to the fuses.
- Check the fuses for continuity.

NO CONTINUITY → Replace fuse(s).

CONTINUITY ↓

2.Battery
- Check the battery condition.
Refer to "BATTERY INSPECTION" in CHAPTER 3.

Open circuit voltage:
12.8 V or more at 20° C (68° F)

INCORRECT →
- Clean battery terminals.
- Recharge or replace the battery.

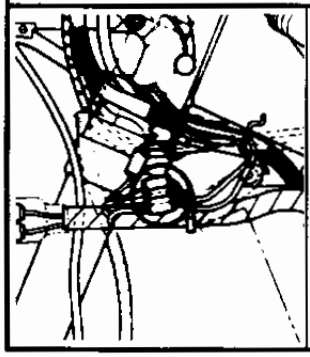
CORRECT ↓

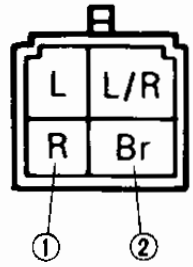
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3.Main switch

- Disconnect the main switch coupler from the wireharness.
- Check the switch component for the continuity between "Red ① and Brown ②".
  Refer to "CHECKING OF SWITCHES".





INCORRECT

Replace main switch.

CORRECT

4.Wiring connection

- Check the entire signal system for connections.
  Refer to "WIRING DIAGRAM".

POOR CONNECTION

Correct.

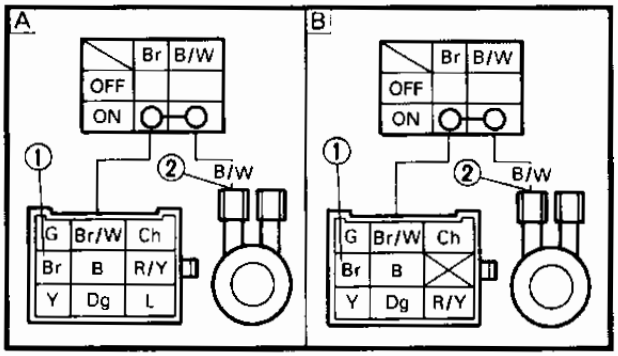
CORRECT

Check condition of each circuit for signal system. Refer to "SIGNAL SYSTEM CHECK".

SIGNAL SYSTEM CHECK

1.Horn does not sound.

1."HORN" switch.



A For Europe
B Except for Europe

- Disconnect the handlebar switch (left) coupler from wireharness.
- Check the switch component for the continuity between "Brown ① and Black/White ② ".
  Refer to "CHECKING OF SWITCHES".

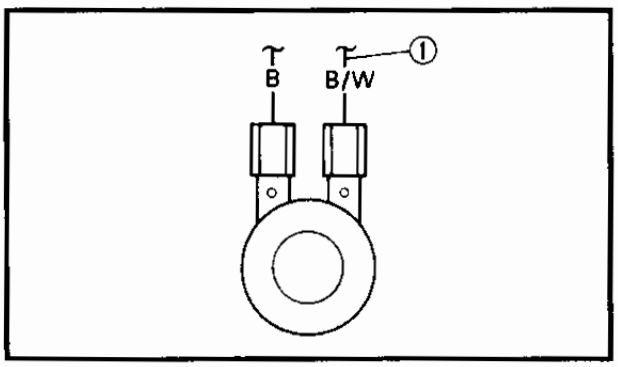
INCORRECT → Replace handlebar switch (left).

CORRECT ↓

2.Voltage

- Connect the pocket tester (DC 20V) to the horn lead.

Tester (+) lead→ Black/White lead ①
Tester (–) lead → Frame ground



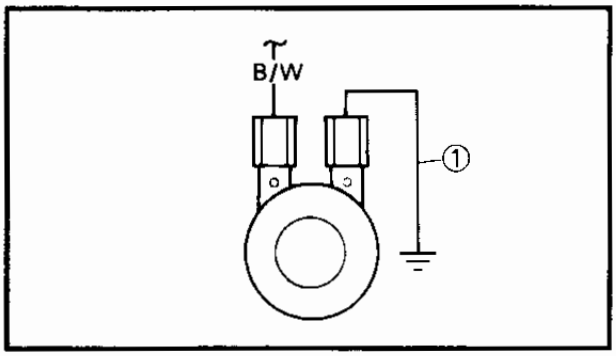
- Turn the main switch to "ON".
- Push the "HORN" switch.
- Check for voltage (12 V) on the "Black/White" lead at the horn terminal.

OUT OF SPECIFICATION → Wiring circuit from main switch to horn terminal is faulty, repair.

MEETS SPECIFICATION ↓

3.Horn

- Disconnect the "Black" lead at the horn terminal.
- Connect a jumper lead ① to the horn terminal and ground the jumper lead.
- Turn the main switch to "ON".
- Push the "HORN" switch.



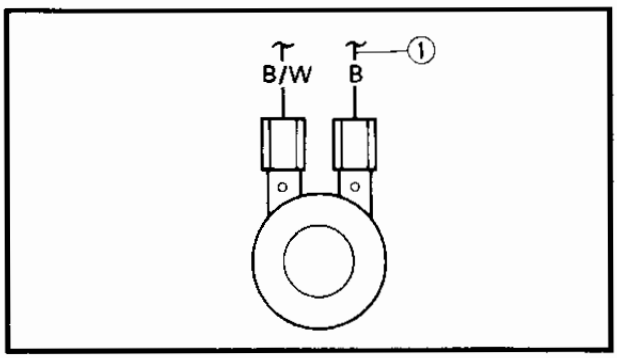
HORN IS SOUNDED → Horn is good.

HORN IS NOT SOUNDED

4.Voltage

- Connect the pocket tester (DC 20V) to the horn at the "Black" terminal.

Tester (+) lead → Black lead ①
Tester (–) lead → Frame ground



- Turn the main switch to "ON".
- Push the "HORN" switch.
- Check for voltage (12 V) on the "Black" lead at the horn terminal.

OUT OF SPECIFICATION → Replace horn.

MEETS SPECIFICATION → Adjust or replace horn.

2.Brake light does not come on.

1.Bulb and bulb socket

- Check the bulb and bulb socket for continuity.
  Refer to "CHECKING OF BULBS".

NO CONTINUITY → Replace bulb and/or bulb socket.

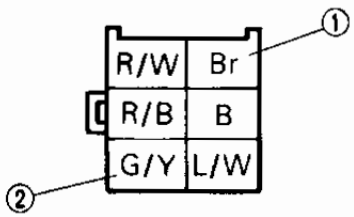
CONTINUITY → *

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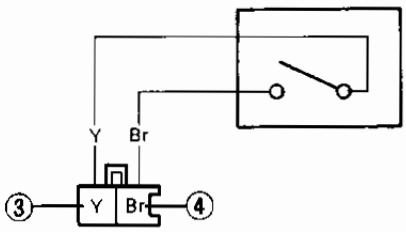
2.Brake switch

- Disconnect the brake switch coupler from the wireharness.
- Check the switch components for the continuity between "Brown ① and Green/Yellow ②", or "Yellow ③ and Brown ④". Refer to the "CHECKING OF SWITCHES" section.

A



B



A Front brake switch
B Rear brake switch

INCORRECT

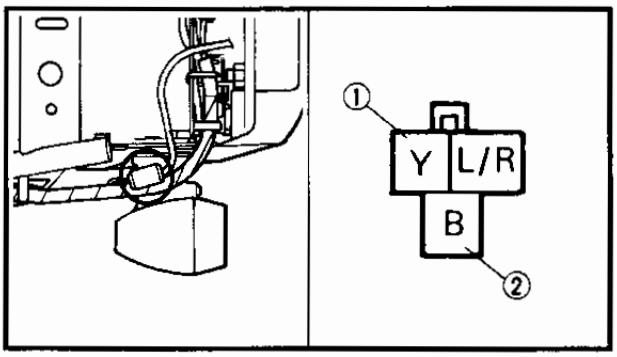
Replace brake switch.

CORRECT

3.Voltage

- Connect the pocket tester (DC 20V) to the bulb socket connector.

Tester (+) lead → Yellow lead ①
Tester (–) lead → Black lead ②



- Turn the switch to "ON".
- The brake lever is pulled in or brake pedal is stepped down.
- Check for voltage (12 V) on the "Yellow" lead at the bulb socket connector.

OUT OF SPECIFICATION

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

MEETS SPECIFICATION

This circuit is good.

3.Flasher light and/or "TURN" indicator light does not blink.

1.Bulb and bulb socket

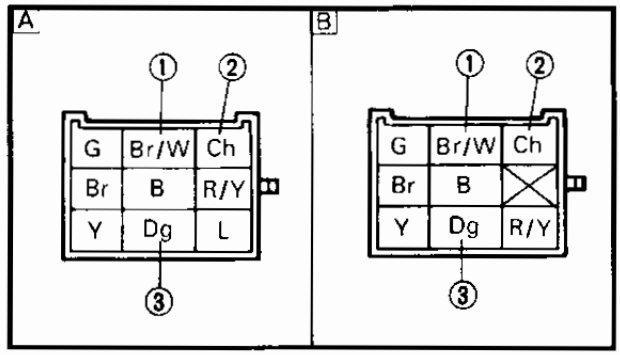
- Check the bulb and bulb socket for continuity.
  Refer to "CHECKING OF BULBS".

NO CONTINUITY

Replace bulb and/or bulb socket.

CONTINUITY

2."TURN" switch.



[A]For Europe
[B]Except for Europe

- Disconnect the handlebar switch (left) coupler from the wireharness.
- Check the switch component for the continuity between "Brown/White ① and Chocolate ②"and "Brown/White ① and Dark green ③".
  Refer to "CHECKING OF SWITCHES".

INCORRECT

Replace handlebar switch (left).

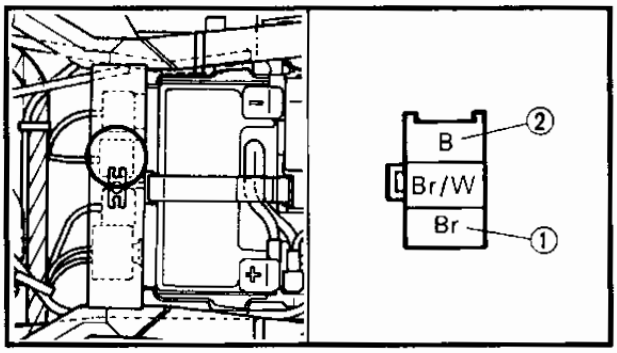
CORRECT

*

3.Voltage

- **Connect** the pocket tester (DC 20V) to **the** flasher relay coupler.

Tester (+) lead → Brown terminal ①
Tester (–) lead → Black terminal ②



- Turn the main switch to "ON".
- Check for voltage (12 V) on the "Brown" lead at the flasher relay terminal.

OUT OF SPECIFICATION

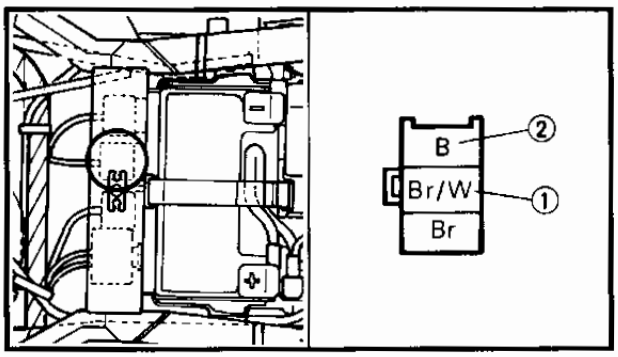
Wiring circuit from main switch to flasher relay connector is faulty, repair.

MEETS SPECIFICATION

4.Voltage

- Connect the pocket tester (DC 20V) to the flasher relay lead.

Tester (+) lead →
Brown/White terminal ①
Tester (–) lead → Black terminal ②



- Turn the main switch to "ON".
- Check for voltage (12 V) on the "Brown/White" lead at the flasher relay terminal.

OUT OF SPECIFICATION

Replace flasher relay.

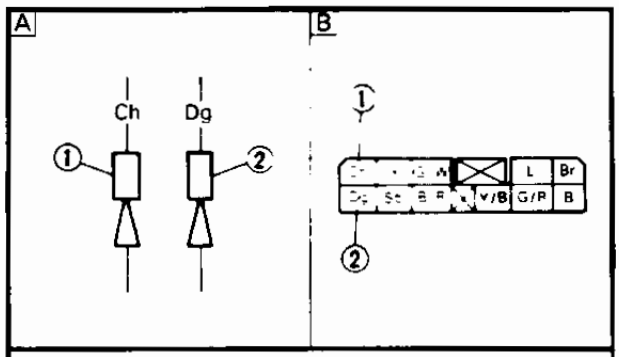
MEETS SPECIFICATION

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5.Voltage

- Connect the pocket tester (DC 20V) to the bulb socket connector.



A Flasher light
B "TURN" indicator light

At flasher light (left):
Tester (+) lead → Chocolate lead ①
Tester (–) lead → Frame ground

At flasher light (right):
Tester (+) lead → Dark green lead ②
Tester (–) lead → Frame ground

- Turn the switch to "ON".
- Turn the "TURN" switch to "L" or "R".
- Check for voltage (12 V) on the "Chocolate" lead or "Dark green" lead at the bulb socket connector.

OUT OF SPECIFICATION

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

MEETS SPECIFICATION

This circuit is good.

4."NEUTRAL" indicator light does not come on.

1.Bulb and bulb socket

- Check the bulb and bulb socket for continuity. Refer to the "CHCEKING OF BULBS" section.

NO CONTINUITY

Replace bulb and/or bulb socket.

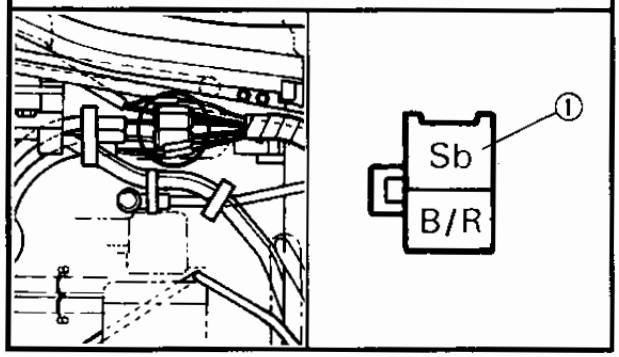
CONTINUITY

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2.Neutral switch

- Disconnect the neutral switch coupler from the wireharness.
- Check the switch component for the continuity between "Sky blue ①" and Ground.
  Refer to "CHECKING OF SWITCHES".



NO CONTINUITY

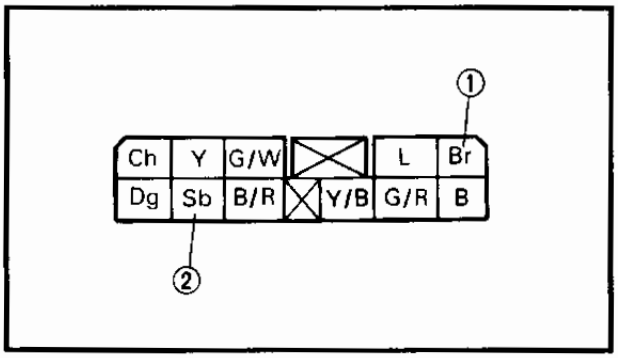
Replace neutral switch.

CONTINUITY

3.Voltage

- Connect the pocket tester (DC 20 V) to the bulb socket coupler.

Tester (+) lead → Brown terminal ①
Tester (–) lead → Sky blue terminal ②



- Turn the main switch to "ON".
- Check for voltage (12 V).

OUT OF SPECIFICATION

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

MEETS SPECIFICATION

This circuit is good.

5."OIL LEVEL" indicator light does not come on, when engine oil level is low.

1.Bulb and bulb socket

- Check the bulb and bulb socket for continuity.
  Refer to "CHECKING OF BULBS".

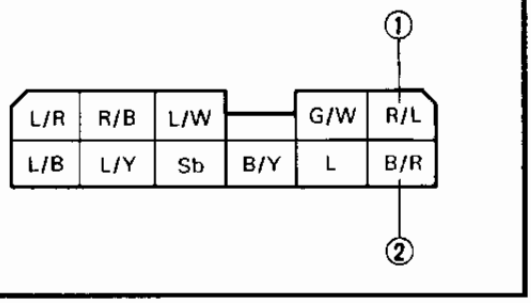
NO CONTINUITY

Replace bulb and/or bulb socket.

2.Starting circuit cut-off relay

- Disconnect the starting circuit cut-off relay coupler from the wireharness.
- Connect the pocket tester (Ω × 1) to the starting circuit cut-off relay coupler terminals.
- Check the resistor for specification resistance.

Tester (+) terminal →
Red/Blue terminal ③
Tester (–) terminal → Black/Red ④



6.4~9.6 Ω at 20°C (68°F)

OUT OF SPECIFICATION

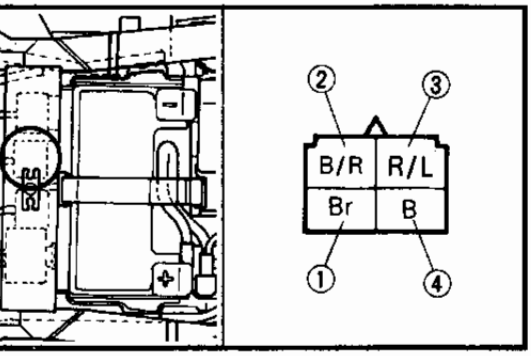
Replace starting circuit cut-off relay.

MEET SPECIFICATION

3.Oil light relay

- Remove the oil light relay coupler from the wireharness.
- Connect the pocket tester (Ω × 1) and battery (12V) to the oil light relay terminal.

Battery (+) terminal →
Brown ① terminal
Battery (–) terminal →
Black/Red ② terminal



Tester (+) lead → Red/Blue terminal ③
Tester (–) lead → Black terminal ④

- Check resistor for continuity.

NO CONTINUITY

Replace oil light relay.

CONTINUITY

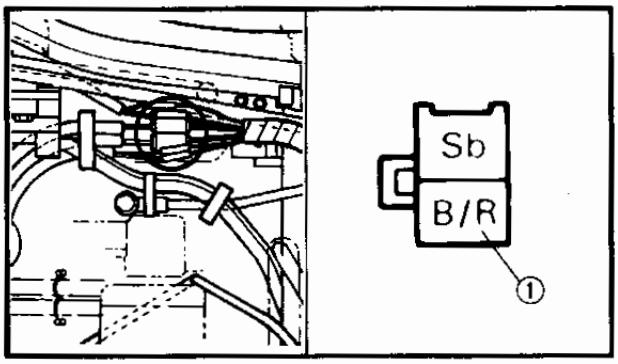
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4.Oil level switch

- Drain the engine oil and remove the oil level switch from the oil pan.
- Connect the pocket tester (Ω × 1) to the oil level switch.

Tester (+) lead →
Black/Red terminal ①
Tester (–) lead → Frame ground



- Check the oil level switch for continuity.

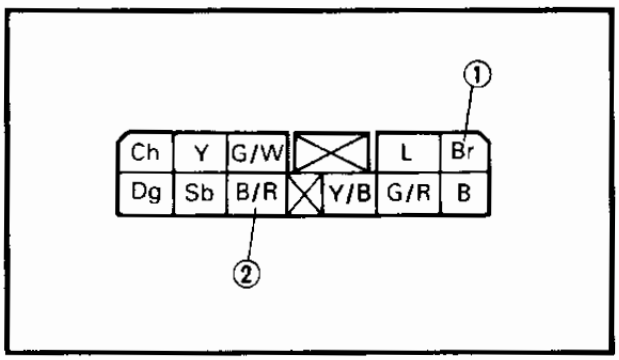
BAD CONDITION

Replace oil level switch.

5.Voltage

- Connect the pocket tester (DC 20V) to the bulb socket connector.

Tester (+) lead → Brown lead ①
Tester (–) lead → Black/Red lead ②



- Turn the main switch to "ON".
- Check for voltage (12 V).

OUT OF SPECIFICATION

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

MEETS SPECIFICATION

This circuit is good.

6."FUEL" level indicator light does not come on, when fuel level is low.

1.Bulb and bulb socket

- Check the bulb and bulb socket for continuity.
  Refer to "CHECKING OF BULBS".

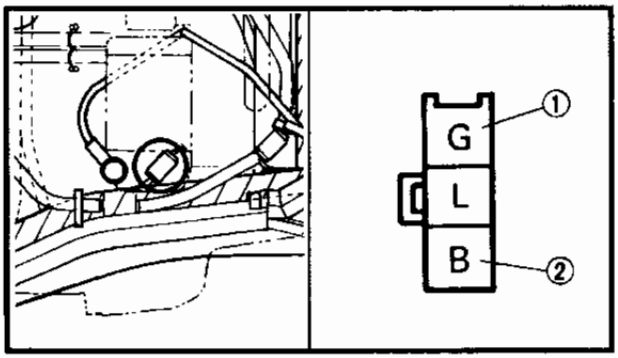
NO CONTINUITY → Replace bulb and/or bulb socket.

CONTINUITY ↓

2.Fuel sender

- Drain the fuel and remove the fuel sender from the fuel tank.
- Connect the pocket tester (Ω × 1) to the fuel sender.

Tester (+) lead → Green terminal ①
Tester (–) lead → Black ②



- Check the fuel sender for continuity.

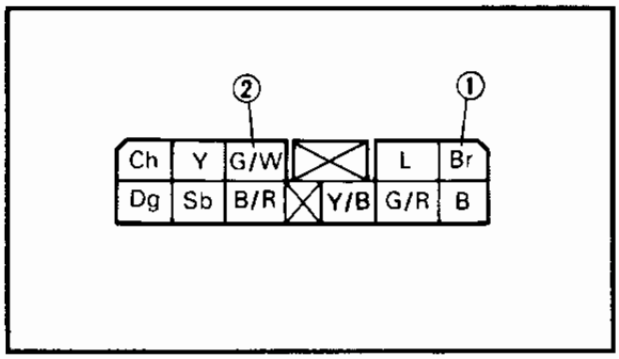
BAD CONDITION → Replace fuel sender.

GOOD CONDITION ↓

3.Voltage

- Connect the pocket tester (DC 20V) to the bulb socket connector.

Tester (+) lead → Brown lead ①
Tester (–) lead → Green/White lead ②



- Turn the main switch to "ON".
- Check for voltage (12 V).

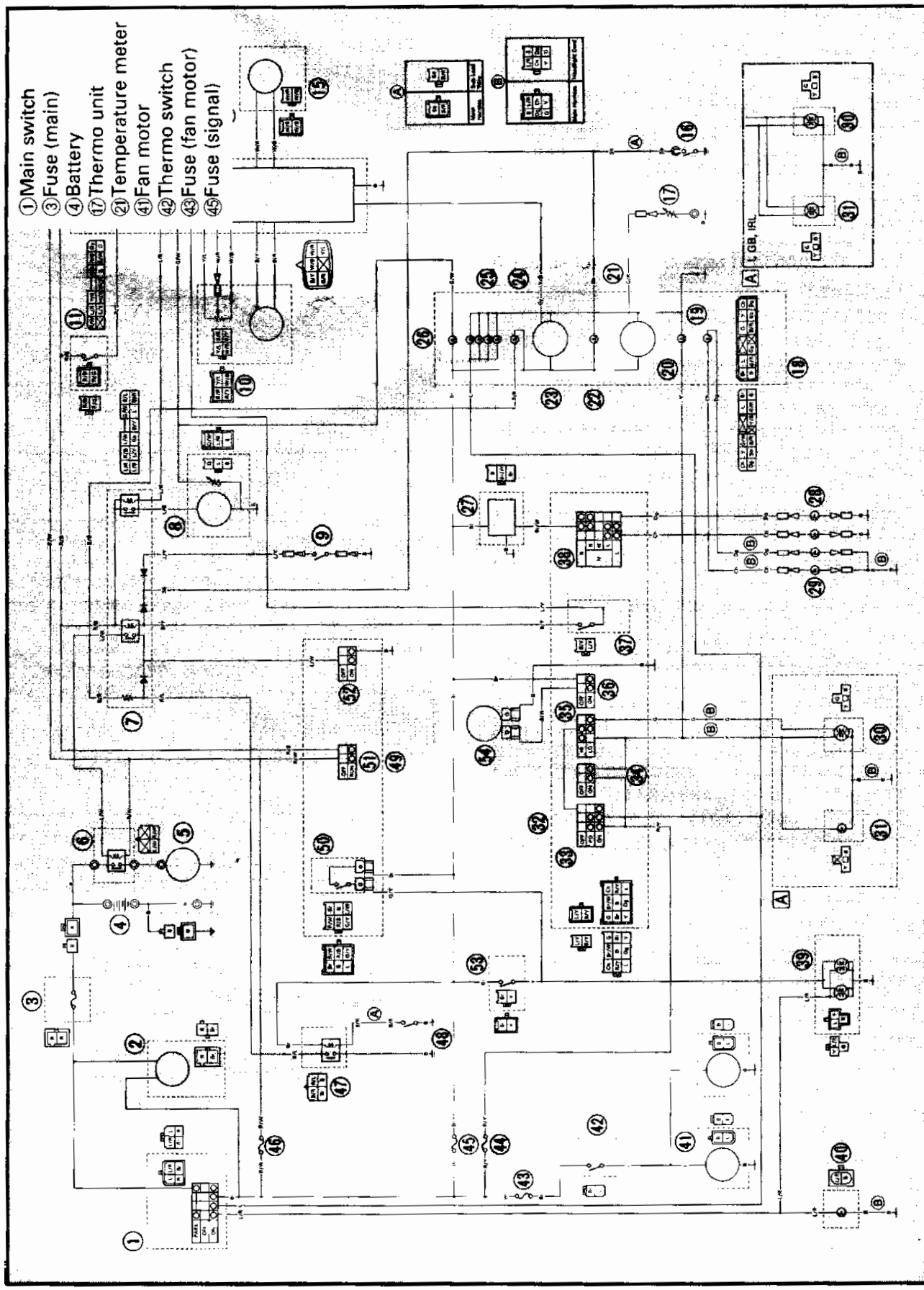
OUT OF SPECIFICATION → Wiring circuit from main switch to bulb socket connector is faulty, repair.

MEETS SPECIFICATION ↓

This circuit is good.

COOLING SYSTEM

CIRCUIT DIAGRAM



TROUBLESHOOTING

- **FAN MOTOR DOES NOT MOVE.**
- **WATER TEMPERATURE METER DOES NOT MOVE, WHEN ENGINE IS WARM FROM COOL.**

Procedure

Check;

1. Fuse (main, signal and fan)
2. Battery
3. Main switch
4. Fan motor (Test 1)
5. Fan motor (Test 2)
6. Thermo switch
7. Wiring connection (entire cooling system)

NOTE:

- Remove the following parts before troubleshooting.

1) Seat
2) Lower cowling
3) Center cowling (left)
4) Fuel tank
5) Air filter case

- Use the following special tool in this troubleshooting.



Pocket tester:
YU-03112/90890-03112

1. Fuse (main, signal and fan)

- Remove the fuses.
- Connect the pocket tester (Ω × 1) to the fuses.
- Check the fuses for continuity.
  Refer to "FUSE INSPECTION" in CHAPTER 3.

NO CONTINUITY → Fuse is faulty, replace it.

CONTINUITY ⇩

2. Battery

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

Open circuit voltage:
12.8 V or more at 20° C(68° F)

INCORRECT →

- Clean battery terminals.
- Recharge or replace the battery.

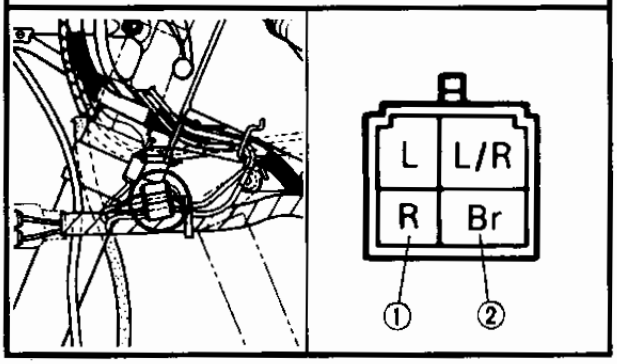
CORRECT ⇩

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3.Main switch

- Disconnect the main switch coupler from the wireharness.
- Check the switch component for the continuity between "Red ① and Brown ②".
  Refer to "CHECKING OF SWITCHES".



INCORRECT

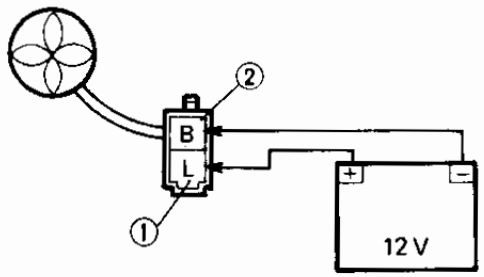
Main switch is faulty, replace it.

CORRECT

4.Fan motors (test 1)

- Disconnect the fan motor couplers.
- Connect the battery (12V) as shown.

Battery (+) lead → Blue lead ①
Battery (–) lead → Black lead ②



- Check the fan motors for operation.

DOES NOT MOVES

Fan motor(s) in faulty, replace it(s).

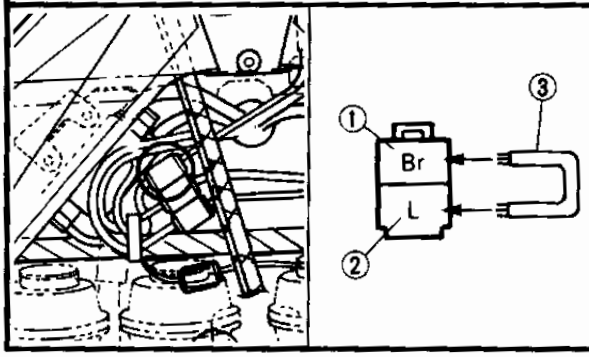
MOVES

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5.Fan motor (test 2)

- Disconnect the thermo switch coupler.
- Turn the main switch to "ON".
- Connect the Brown ① and Blue ② leads using a jumper lead ③.



DOES NOT MOVE

Wiring circuit from main switch to fan motor leads is faulty, repair.

MOVES

6.Thermo switch

- Remove the thermo switch from the radiator.
- Connect the pocket tester (Ω × 1) to the thermo switch ①.
- Immerse the thermo switch in the water ②.
- Check the thermo switch for continuity. Note temperatures while heating the water with the temperature gauge ③.

Test step	Water temperature / Thermo switch	Good condition
1	0 ~ 98°C (32 ~ 208.4°F)	×
2	More than 105 ± 3°C (221.0 ± 5.4°F)	○
3*	105 to 98° C (221.0 to 208.4°F)	○
4*	Less than 98°C (208.4°F)	×

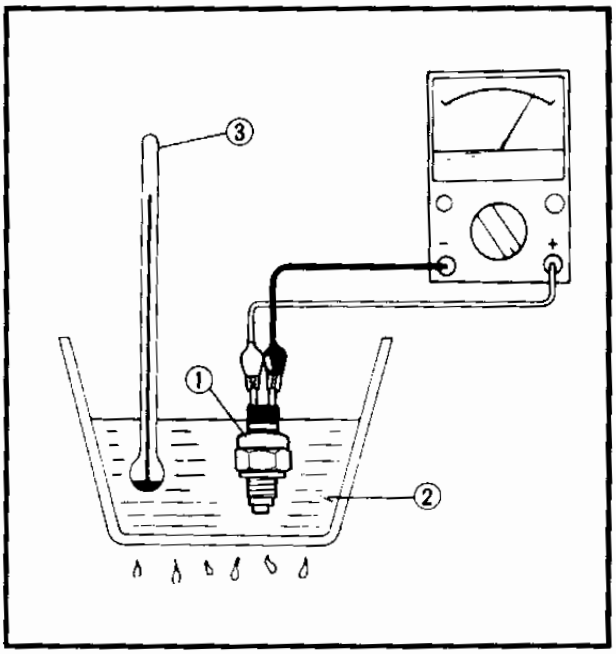
Test 1 & 2; Heat-up tests
Test 3* & 4*; Cool-down tests
○ : Continuity × : No continuity

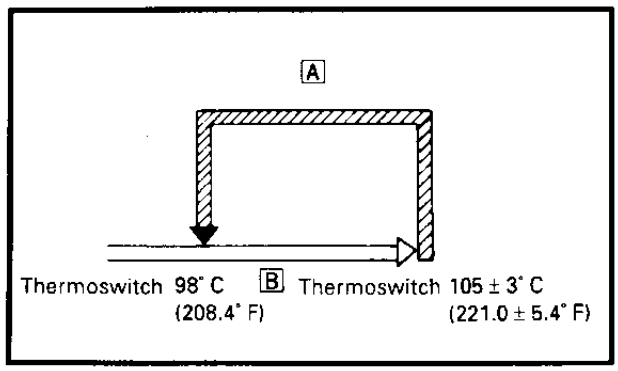
⚠ WARNING

Handle the thermo switch with special care.
Never subject it to strong shock or allow it to be dropped. Should it be dropped, it must be replaced.



Thermo switch:
23 Nm (2.3 m • kg, 17 ft • lb)
Three bond sealock® #10





[A] THERMO SWITCH "ON", FAN "ON"
[B] COOLANT TEMPERATURE

BAD CONDITION

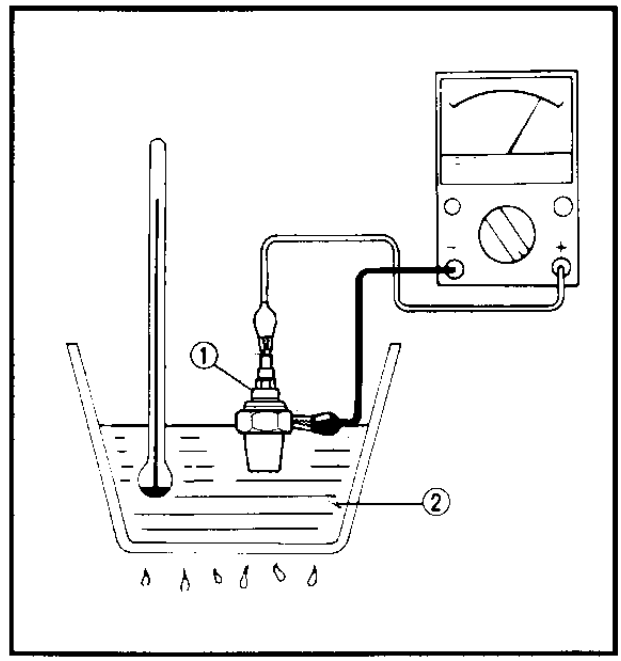
Replace thermo switch.

GOOD CONDITION

7. Thermo unit

- Remove the thermo unit from the radiator.
- Connect the pocket tester (Ω × 10) to the thermo unit ①.
- Immerse the thermo unit in the water ②.
- Measure the resistance.

Thermo unit resistance:
80°C (176°F): 47 ~ 53 Ω
100°C (212°F): 26 ~ 30 Ω



⚠ WARNING

Handle the thermo switch with special care.
Never subject it to strong shock or allow it to be dropped. Should it be dropped, it must be replaced.

Thermo switch:
23 Nm (2.3 m • kg, 17 ft • lb)
Three bond sealock® #10

BAD CONDITION

Replace thermo unit.

GOOD CONDITION

8. Wiring connection

Check the entire cooling system for connections. Refer to "CIRCUIT DIAGRAM".

POOR CONNECTION

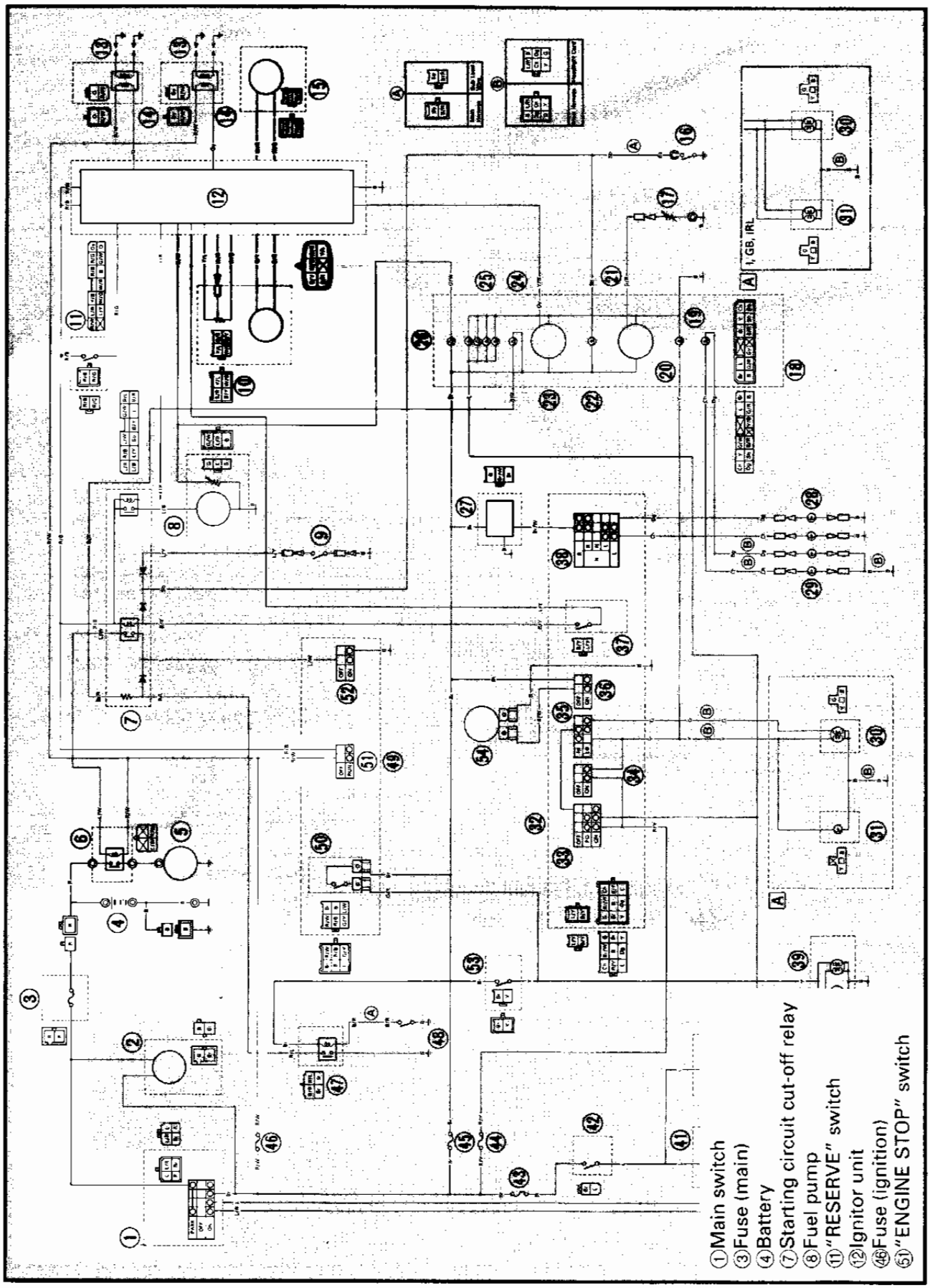
Correct.

CORRECT

This circuit is good.

FUEL PUMP SYSTEM

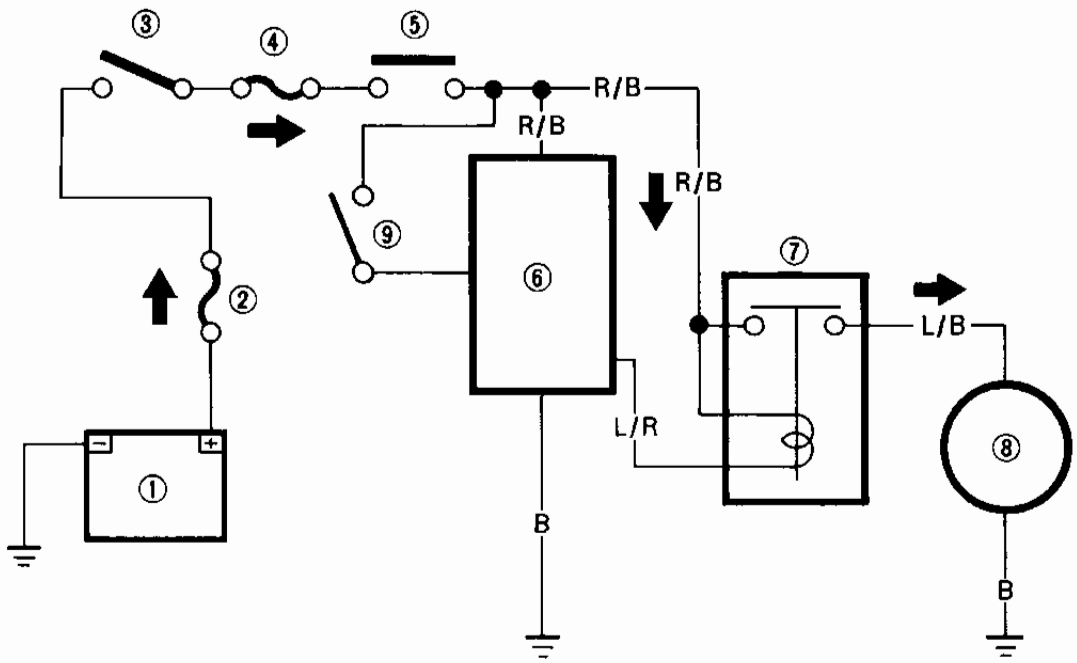
CIRCUIT DIAGRAM



FUEL PUMP CIRCUIT OPERATION

The fuel pump circuit consists of the fuel pump relay, fuel pump, "ENGINE STOP" switch and ignitor unit.
The ignitor unit includes the control unit for the fuel pump.

①Battery
②Fuse (MAIN)
③Main switch
④Fuse (IGNITION)
⑤"ENGINE STOP" switch
⑥Ignitor unit
⑦Fuel pump relay
⑧Fuel pump
⑨Reserve switch



TROUBLESHOOTING

FUEL PUMP FAILS TO OPERATE.

Procedure

Check;

1. Fuse (main and ignition)
2. Battery
3. Main switch
4. "ENGINE STOP" switch
5. Starting circuit cut-off relay (fuel pump relay)
6. Fuel pump
7. Wiring connection (entire fuel system)

NOTE:

- Remove the following parts before troubleshooting.

1) Seat
2) Lower cowling
3) Center cowling (left)
4) Fuel tank
5) Air filter case

- Use the following special tool(s) in this troubleshooting.



Pocket tester:
YU-03112/90890-03112

1. Fuse (main and ignition)

- Remove the fuses.
- Connect the pocket tester (Ω × 1) to the fuses.
- Check the fuses for continuity.

NO CONTINUITY → Replace fuse(s).

CONTINUITY ↓

2. Battery

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

Open circuit voltage:
12.8 V or more at 20° C (68° F)

INCORRECT →
- Clean battery terminals.
- Recharge or replace the battery.

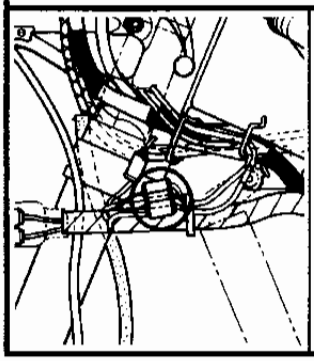
CORRECT ↓

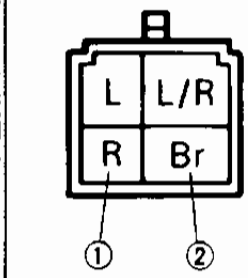
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3.Main switch

- Disconnect the main switch coupler from the wireharness.
- Check the switch component for the continuity between "Red ① and Brown/Blue ②".
  Refer to "CHECKING OF SWITCHES".



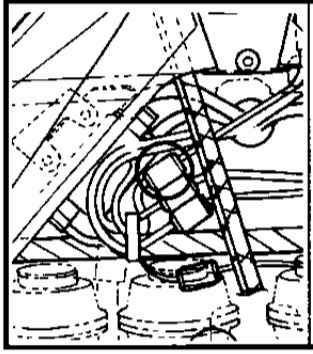


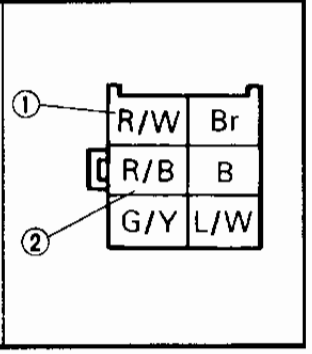
INCORRECT → Replace main switch.

CORRECT ↓

4."ENGINE STOP" switch

- Disconnect the handlebar switch (right) coupler from the wireharness.
- Check the switch component for the continuity between "Red/White ① and Red/Black ②".
  Refer to "CHECKING OF SWITCHES".



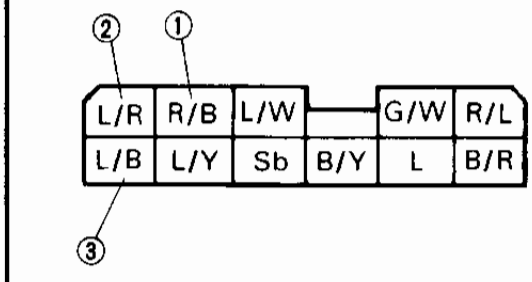


INCORRECT → Replace handlebar switch (right).

CORRECT ↓

5.Starting circuit cut-off relay (fuel pump relay)

- Disconnect the starting circuit cut-off relay coupler from the wireharness.
- Connect the pocket tester (Ω × 1) and battery (12V) to the starting circuit cut-off relay coupler terminals.



Battery (+) terminal →
Red/Black terminal ①
Battery (–) terminal →
Blue/Red terminal ②

Tester (+) lead → Red/Black terminal ①
Tester (–) lead → Blue/Black terminal ③

- Check the starting circuit cut-off relay for continuity.

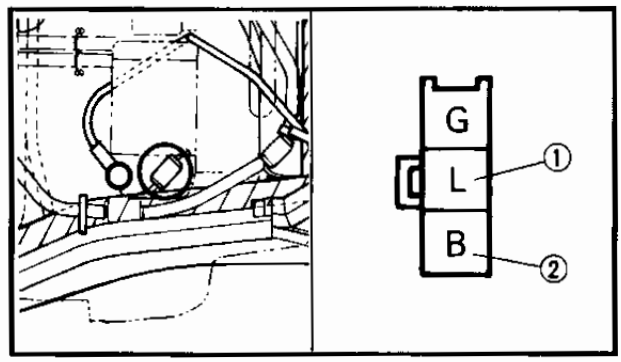
NO CONTINUITY → Replace starting circuit cut-off relay.

CONTINUITY ↓

6.Fuel pump resistance

- Disconnect the fuel pump coupler from the wireharness.
- Connect the pocket tester (Ω × 1) to the fuel pump coupler terminals.

Tester (+) lead → Blue terminal ①
Tester (–) lead → Black terminal ②



- Check the fuel pump for specificated resistance.

Fuel pump resistance:
4 ~ 30 Ω at 20° C (68° F)

OUT OF SPECIFICATION → Replace fuel pump.

MEET SPECIFICATION ↓

7.Wiring connection

- Check the entire starting system for connections.
  Refer to "CIRCUIT DIAGRAM".

POOR CONNECTION → Correct.

CORRECT ↓

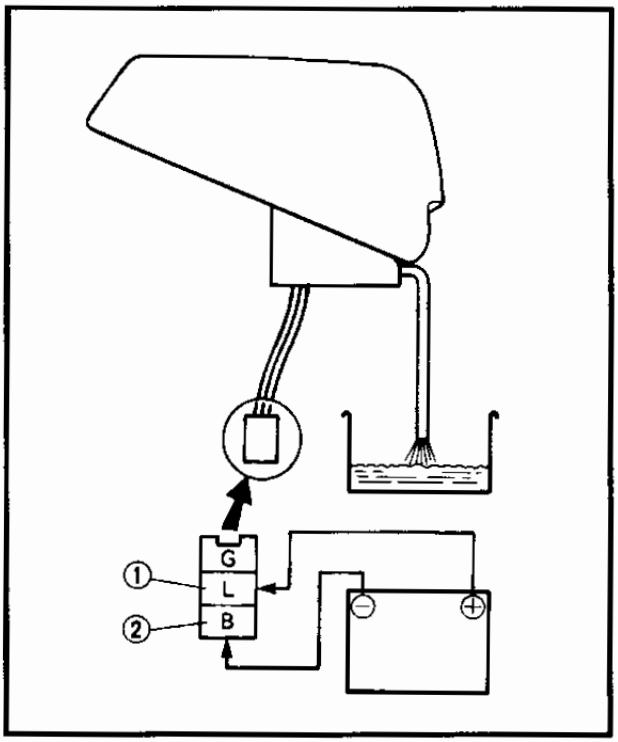
Replace ignitor unit.

FUEL PUMP TEST

⚠ WARNING

Gasoline is extremely flammable and there is danger of explosion or combustion under certain circumstances. Be extremely careful of the following points.

- **Stop the engine before refuelling.**
- **Do not smoke, and keep away from open flames, sparks, or any other kind of fire.**
- **Take care not to spill gasoline. If you do accidentally spill some, wipe it up immediately with dry rags.**
- **If gasoline touches the engine when it has just stopped and is still hot, there is danger of combustion. Make sure the engine is completely cool before performing any operations.**



1.Check:
- Fuel pump operation

****

Checking steps:
- Fill up the fuel tank.
- Place an open container under the end of the fuel hose.
- Connect the battery (12V) to the fuel pump coupler terminals.

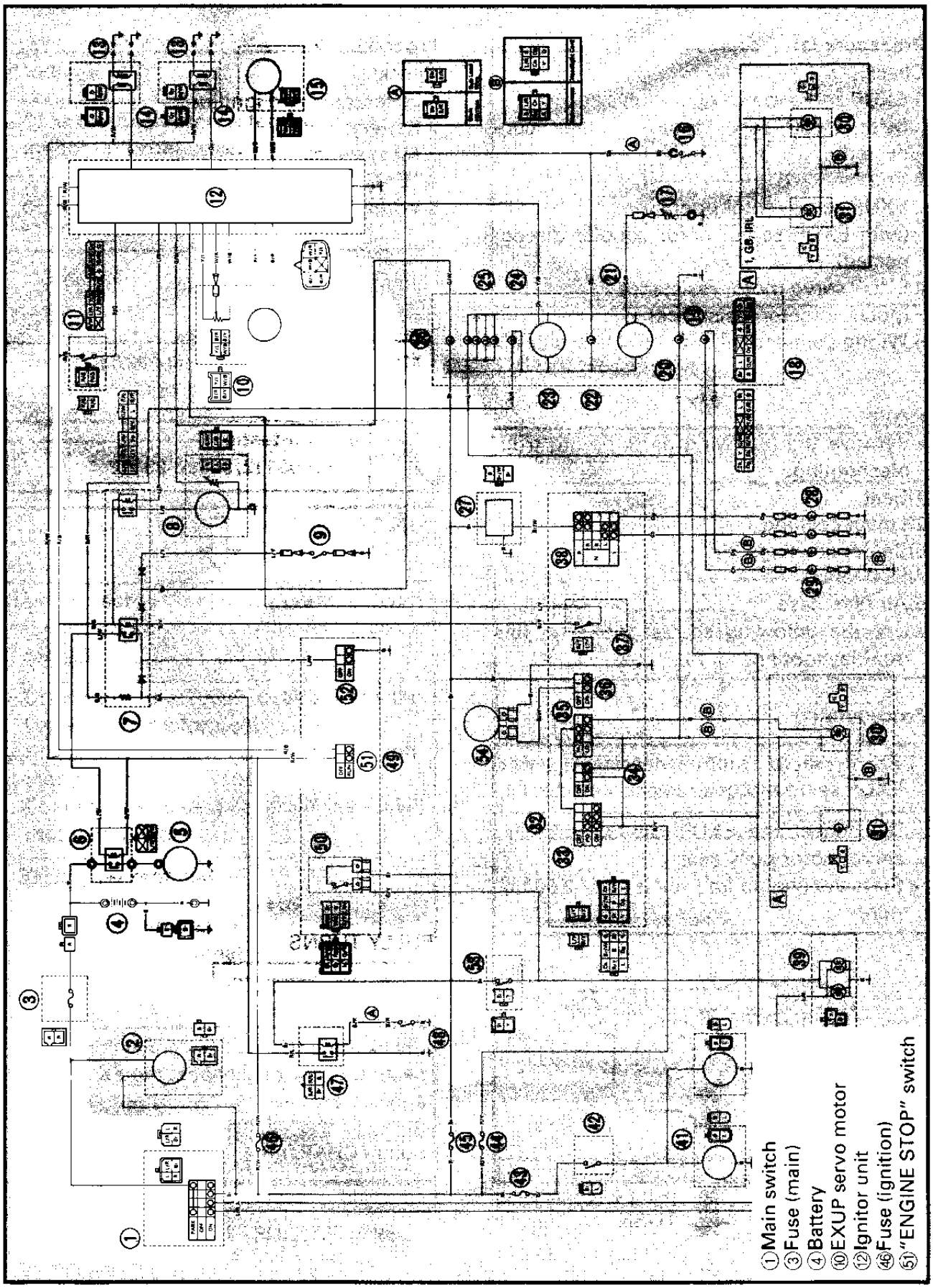
Battery (+) lead → Blue ① terminal
Battery (–) lead → Black ② terminal

- If solvent flows out from the fuel hose, the fuel pump is good. If not, replace the fuel pump assembly.

****

EXUP SYSTEM

CIRCUIT DIAGRAM



TROUBLESHOOTING

WHEN ENGINE REVOLUTION IS CHANGED, EXUP SERVOMOTOR DOES NOT OPERATE.

Procedure (1)
Check;
1.EXUP servo motor operation (with EXUP servo motor coupler connected)
2.Voltage
3.EXUP servo motor operation (with EXUP servo motor coupler disconnected)
4.EXUP servo motor resistance (potentiometer resistance)
5.Wiring connection (entire EXUP system)

Procedure (2)
Check;
1.Fuse (main and ignition)
2.Battery
3.Main switch
4."ENGINE STOP" switch
5.Wiring connection (entire EXUP system)

NOTE:
- Remove the following parts before troubleshooting.

1)Seat
2)Lower cowling
3)Center cowlings
4)Fuel tank
5)Air filter case

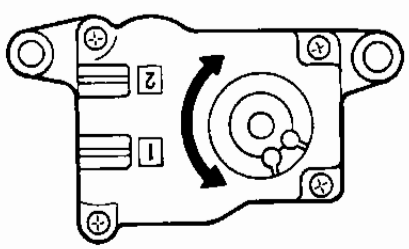
- Use the following special tool(s) in this troubleshooting.

Pocket tester:
YU-03112/90890-03112

Procedure (1)

1.EXUP servo motor operation (with EXUP servo motor coupler connected)

- Disconnect the EXUP cables at EXUP servo motor pully side.
- Start the engine and rev it at to 2,000 r/min.



PULLY TURNS

Check the EXUP cables connection. If connection is correct, inspect the EXUP valve and cables.
Refer to the "ENGINE OVERHAUL" section in CHAPTER 4.

PULLY DOES NOT TURN

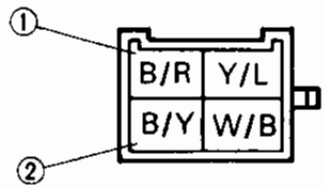
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2.Voltage

- Connect the pocket tester (DC20V) to the ignitor unit connector.

Tester (+) lead → Black/Red terminal ①
Tester (–) lead → Black/Yellow ②



- Turn the main switch to "ON" and check for the voltage between "Black/Red ① and Black/Yellow ②".

Voltage (Black/Red-Black/Yellow)
12V

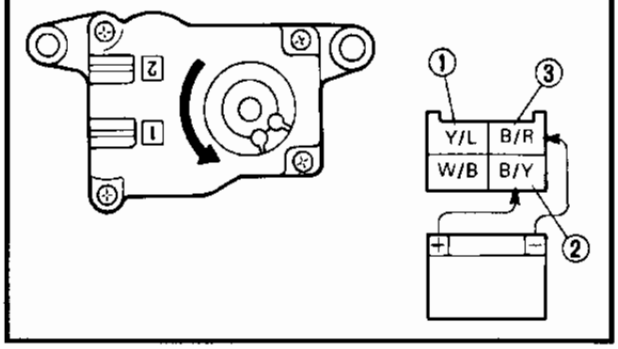
OUT OF SPECIFICATION → Refer to the "procedure (2)"

MEETS SPECIFICATION (12V)

3.EXUP servo motor operation (with EXUP servo motor coupler disconnected)

- Disconnect the EXUP cables from the EXUP servo motor pully.
- Disconnect the EXUP servo motor coupler ① from the wireharness.
- Connect the battery leads to the EXUP motor coupler.

Battery (+) terminal →
Black/Yellow terminal ②
Battery (–) terminal →
Black/Red terminal ③



- Check the EXUP servo motor for pully operation by allowing it to rotate several times.

CAUTION:
This test should be performed within a few seconds to prevent further damage.

PULLY DOES NOT TURN → Replace EXUP servo motor.

PULLY TURNS

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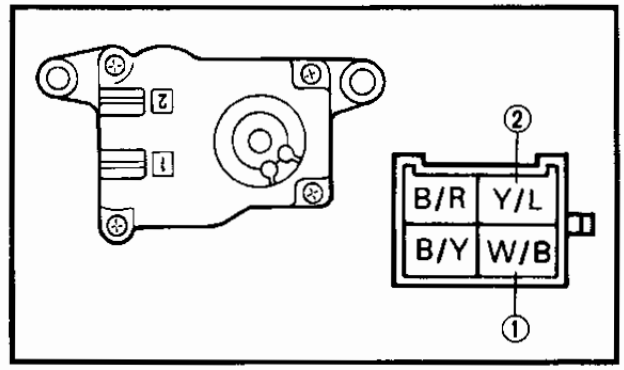
4.EXUP servo motor resistance (potentiometer resistance)

- Disconnect the EXUP servo motor coupler from the wireharness.

Step 1:

- Connect the pocket tester (Ω × 1k) to the EXUP servo motor couplers.

Tester (+) lead → White/Black terminal ①
Tester (–) lead → Yellow/Blue terminal ②



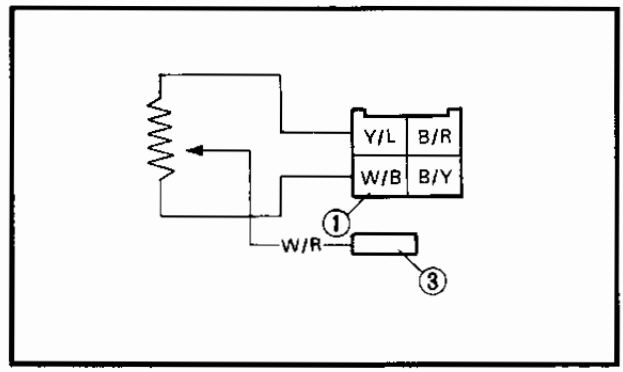
- Measure the EXUP servo motor resistance.

EXUP servo motor resistance:
5.3 ~ 9.8kΩ
(White/Black – Yellow/Blue)

Step 2:

- Connect the pocket tester (Ω × 1k) to the EXUP servo motor coupler.

Tester (+) lead → White/Black terminal ①
Tester (–) lead → White/Red terminal ③



- Measure the EXUP servo motor resistance while turning the pully slowly.

EXUP servo motor resistance:
0 ~ about 7.5kΩ
(White/Black – White/Red)
When pully is turned once.

OUT OF SPECIFICATION →

EXUP servo motor is faulty, replace it.

BOTH MEET SPECIFICATIONS ↓

5.Wiring connection

- Check the entire EXUP system for connections.
  Refer to "CIRCUIT DIAGRAM".

POOR CONNECTION →

Correct.

CORRECT ↓

Replace ignitor unit.

Procedure (2)

1.Fuse (main and ignition)

- Remove the fuses.
- Connect the pocket tester (Ω × 1) to the fuses.
- Check the fuses for continuity.
  Refer to the "FUSE INSPECTION" section in CHAPTER 3.

NO CONTINUITY → Replace fuse(s).

CONTINUITY ⇩

2.Battery

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

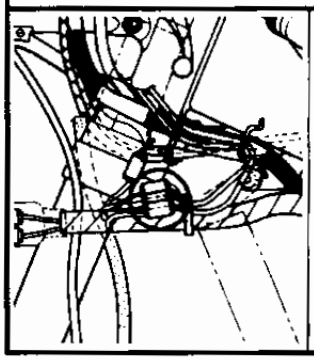
Open circuit voltage:
12.8 V or more at 20°C (68°F)

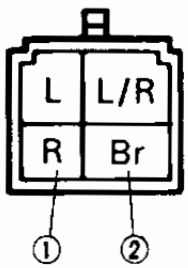
INCORRECT →
- Clean battery terminals.
- Recharge or replace battery.

⇩

3.Main switch

- Disconnect the main switch coupler from the wireharness.
- Check the switch component for the continuity between "Red ① and Brown ②".
  Refer to "CHECKING OF SWITCHES".





INCORRECT → Replace main switch.

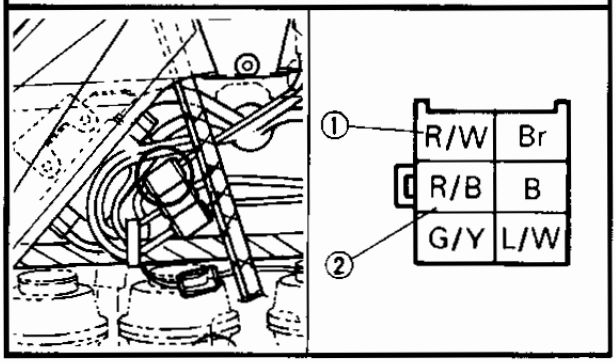
CORRECT ⇩

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4. "ENGINE STOP" switch

- Disconnect the handlebar switch (right) coupler from the wireharness.
- Check the switch component for the continuity between "Red/White ① and Red/Black ②".
  Refer to "CHECKING OF SWITCHES".



INCORRECT

Replace handlebar switch (right).

CORRECT

5. Wiring connection

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

POOR CONNECTION

Correct.

CORRECT

Refer to "procedure (1)".

TROUBLESHOOTING

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

STARTING FAILURE/HARD STARTING

FUEL SYSTEM

Fuel tank
- Empty
- Clogged fuel filter
- Clogged fuel strainer
- Clogged fuel tank drain hose
- Clogged roll over valve (for D)
- Clogged roll over valve breather hose (for D)
- Deteriorated fuel or fuel containing water or foreign material

Fuel cock
- Clogged fuel hose/vacuum hose

Carburetor
- Deteriorated fuel, fuel containing water or foreign material
- Clogged pilot jet
- Clogged pilot air passage
- Sucked-in air
- Deformed float
- Groove-worn needle valve
- Improperly sealed valve seat
- Improperly adjusted fuel level
- Improperly set pilot jet
- Clogged starter jet
- Starter plunger malfunction
- Improperly adjusted starter cable

Air cleaner
- Clogged air filter

Fuel pump
- Faulty fuel pump
- Faulty fuel pump relay

ELECTRICAL SYSTEM

Spark plug
- Improper plug gap
- Worn electrodes
- Wire between terminals broken
- Improper heat range
- Faulty spark plug cap

Ignition coil
- Broken or shorted primary/secondary
- Faulty spark plug lead
- Broken body

Full-transistor system
- Faulty ignitor unit
- Faulty pick up coil

Switches and wiring
- Faulty main switch
- Faulty "ENGINE STOP" switch
- Broken or shorted wiring
- Faulty neutral switch
- Faulty "START" switch
- Faulty sidestand switch
- Faulty clutch switch

Starter motor
- Faulty starter motor
- Faulty starter relay
- Faulty circuit cut-off relay
- Faulty starter clutch

COMPRESSION SYSTEM

Cylinder and cylinder head
- Loose spark plug
- Loose cylinder head or cylinder
- Broken cylinder head gasket
- Worn, damaged or seized cylinder
- Improperly sealed valve
- Improperly contacted valve and valve seat
- Improper valve timing
- Broken valve spring

Piston and piston rings
- Improperly installed piston ring
- Worn, fatigued or broken piston ring
- Seized piston ring
- Seized or damaged piston

Crankcase and crankshaft
- Improperly seated crankcase
- Seized crankshaft

POOR IDLE SPEED PERFORMANCE

POOR IDLE SPEED PERFORMANCE

Carburetor
- Improperly returned starter plunger
- Loose pilot jet
- Clogged pilot air jet
- Improperly synchronized carburetors
- Improperly adjusted idle speed (throttle stop screw)
- Improper throttle cable free play
- Flooded carburetor

Electrical system
- Faulty battery
- Faulty spark plug
- Faulty ignitor unit
- Faulty pickup coil
- Faulty ignition coil

Valve train
- Improperly adjusted valve clearance

Air cleaner
- Clogged air filter

POOR MEDIUM AND HIGH SPEED PERFERMANCE

POOR MEDIUM AND HIGH SPEED PERFERMANCE

Refer to "Starting failure/Hard starting." (Fuel system, electrical system, compression system and valve train.)

Carburetor
- Improper jet needle clip position
- Diaphragm malfunction
- Improperly adjusted fuel level
- Clogged or loose main jet

Air cleaner
- Clogged air filter element

Fuel pump
- Faulty fuel pump

FAULTY GEAR SHIFTING

HARD SHIFTING

Refer to "Clutch dragging."

SHIFT PEDAL DOES NOT MOVE

Shift shaft
- Improperly adjusted shift rod
- Bent shift shaft

Shift cam, shift fork
- Groove jammed with impurities
- Seized shift fork
- Bent shift fork guide bar

Transmission
- Seized transmission gear
- Jammed impurities
- Incorrectly assembled transmission

JUMP-OUT GEAR

Shift shaft
- Improperly adjusted shift lever position
- Improperly returned stopper lever

Shift fork
- Worn shift fork

Shift cam
- Improper thrust play
- Worn shift cam groove

Transmission
- Worn gear dog

CLUTCH SLIPPING/DRAGGING

CLUTCH SLIPPING

Clutch
- Air in clutch fluid
- Loose clutch spring
- Fatigued clutch spring
- Worn, friction plate/clutch plate
- Incorrectly assembled clutch

Engine oil
- Low oil level
- Improper quality/(low viscosity)
- Deterioration

CLUTCH DRAGGING

Clutch
- Warped pressure plate
- Unevenly tensioned clutch springs
- Match marks not aligned
- Bent push rod
- Broken clutch boss
- Burnt primary driven gear bushing
- Bent clutch plate
- Swollen friction plate

Engine oil
- Improper oil level
- Improper quality/(high viscosity)
- Deterioration

OVERHEATING

OVERHEATING

Ignition system
- Improper spark plug gap
- Improper spark plug heat range
- Faulty ignitor unit

Fuel system
- Improper carburetor main jet (improper setting)
- Improperly adjusted fuel level
- Clogged air filter element

Compression system
- Heavy carbon build-up

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

Brake
- Dragging brake

FAULTY BRAKE

POOR BRAKING EFFECT

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

FRONT FORK OIL LEAKAGE AND FRONT FORK MALFUNCTION

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

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

INSTABLE HANDLING

INSTABLE HANDLING

Handlebar
- Improperly installed or bent

Steering
- Improperly installed handlebar crown
- Bent steering stem
- Improperly installed steering shaft (Improperly tightened ring nut)
- Damaged ball bearing or bearing race

Front forks
- Uneven oil levels on both sides
- Uneven spring tension (uneven damping force adjuster position)
- Broken spring
- Twisted front forks

Swingarm
- Worn bearing or bush
- Bent or damaged

Rear shock absorber
- Fatigued spring
- Oil and gas leakage

Tires
- Uneven tire pressures on both sides
- Incorrect tire pressure
- Unevenly worn tires

Wheels
- Incorrect wheel balance
- Deformed case wheel
- Damaged bearing
- Bent or loose wheel axle
- Excessive wheel run-out

Frame
- Twisted
- Damaged head pipe
- Improperly installed bearing race

FAULTY LIGHTING AND SIGNAL SYSTEM

HEADLIGHT DARK
- Improper bulb
- Too many electric accessories
- Hard charging (broken stator coil wire, faulty rectifier/regulator)
- Incorrect connection
- Improperly grounded
- Poor contacts (main or light switch)
- Bulb life expires

BULB BURNT OUT
- Improper bulb
- Faulty battery
- Faulty rectifier/regulator
- Improperly grounded
- Faulty main and/or light switch
- Bulb life expires

FLASHER DOES NOT LIGHT
- Improperly grounded
- Discharged battery
- Faulty turn switch
- Faulty flasher relay
- Broken wireharness
- Loosely connected coupler
- Bulb burnt out
- Faulty fuse

FLASHER WINKS SLOWER
- Faulty flasher relay
- Faulty main and/or turn switch

FLASHER KEEPS ON
- Faulty flasher relay
- Bulb burnt out

FLASHER WINKS QUICKER
- Improper bulb
- Faulty flasher relay
- Bulb burnt out

HORN IS INOPERATIVE
- Faulty battery
- Faulty fuse
- Faulty main and/or horn switch
- Improperly adjusted horn
- Faulty horn
- Broken wireharness

FAULTY EXUP

FAULTY EXUP

Power valve
- Seized or damaged power valve
- Carbon build-up

Control cable
- Improperly adjusted cable
- Seized or discontinuous cable

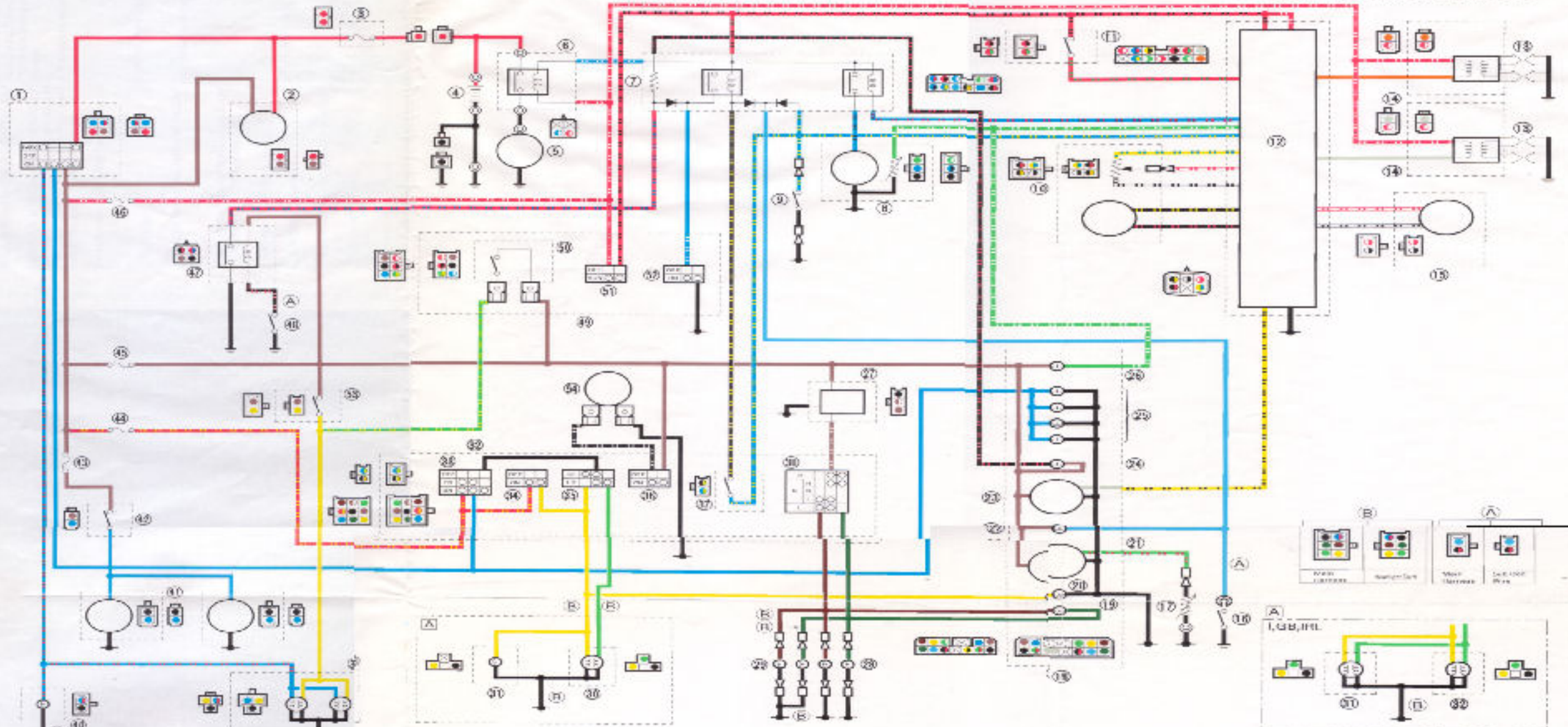
Electrical parts
- Insufficient battery capacity (improperly charged battery)
- Faulty main switch
- Faulty EXUP servomotor
- Faulty digital ignitor unit
- Faulty relay unit
- Broken or shorted wiring

(For Europe) WIRING DIAGRAM

(Pour l'Europe) PLAN DE CABLAGE

(Für Europa) SCHALTPLAN

(Per l'Europa) SCHEMA IMPIANTO ELETTRICO



1. Main switch
2. A.C. Generator
3. Fuse (main)
4. Battery
5. Starter motor
6. Starter relay
7. Starting circuit cut-off relay
8. Fuel pump
9. Sidestand switch
10. EXUP servo motor
11. "RESERVE" switch
12. Ignition unit
13. Spark plug
14. Ignition coil
15. Pick up coil
16. Neutral switch
17. Thermo unit
18. Meter assembly
19. "TURN" indicator light
20. "HIGH BEAM" indicator light
21. Temperature meter
22. "NEUTRAL" indicator light
23. Tachometer
24. "OIL LEVEL" indicator light
25. Meter light
26. Fuel level indicator light
27. Flasher relay
28. Rear flasher light
29. Front flasher light
30. Headlight (left)
31. Headlight (right)
32. Handlebar switch (left)
33. "LIGHTS" switch
34. "PASS" switch
35. "LIGHTS" (Dimmer) switch
36. "HORN" switch
37. Clutch switch
38. "TURN" switch
39. Tail/brake light
40. Auxiliary light
41. Fan motor
42. Thermo switch
43. Fuse (fan motor)
44. Fuse (head)
45. Fuse (signal)
46. Fuse (ignition)
47. Oil light relay
48. Oil level switch
49. Handlebar switch (right)
50. Front brake switch
51. "ENGINE STOP" switch
52. "START" switch

1. Contacteur à clé
2. Alternateur
3. Fusible (principal)
4. Batterie
5. Démarreur électrique
6. Relais de démarreur
7. Relais de coupe-circuit de démarrage
8. Pompe de carburant
9. Contacteur de béquille latérale
10. Servomoteur EXUP
11. Contacteur "RESERVE"
12. Unité d'allumage
13. Bougie
14. Bobine d'allumage
15. Bobine d'excitation
16. Contacteur de point mort
17. Sonde thermique
18. Compteur
19. Témoin de clignotant "TURN"
20. Témoin de feu de route "HIGH BEAM"
21. Jauge de température
22. Témoin de point mort "NEUTRAL"
23. Compte tours
24. Témoin du niveau d'huile "OIL LEVEL"
25. Eclairage des compteurs
26. Témoin de niveau de carburant
27. Relais des clignotants
28. Clignotants arrière
29. Clignotants avant
30. Phare (droit)
31. Phare (gauche)
32. Contacteur au guidon (gauche)
33. Contacteur de phare "LIGHTS"
34. Contacteur d'appel de phare "PASS"
35. Contacteur de phare "LIGHTS"
36. Contacteur d'avertisseur "HORN"
37. Contacteur d'embrayage
38. Contacteur de clignotant "TURN"
39. Feu arrière/de stop
40. Feu auxiliaire
41. Moteur de ventilateur
42. Contacteur thermique
43. Fusible (moteur de ventilateur)
44. Fusible (phare)
45. Fusible (clignotant)
46. Fusible (allumage)
47. Relais du témoin du niveau d'huile
48. Contacteur du niveau d'huile
49. Contacteur au guidon (droite)
50. Contacteur de feux avant
51. Contacteur d'arrêt moteur "ENGINE STOP"
52. Contacteur de démarrage "START"

1. Hauptschalter
2. Lichtmaschine
3. Sicherung (Haupt
4. Batterie
5. Anlasser
6. Motorrelais
7. Startschaltung Unterbrecherrelais
8. Kraftstoffpumpe
9. Seitenständerschalter
10. EXUP Servomotor
11. Reserveschalter "RESERVE"
12. Zündeinheit
13. Zündkerze
14. Zündspule
15. Kurbelwellenaufnehmer
16. Leerlaufschalter
17. Thermoeinheit
18. Instrumentenbaugruppe
19. Blinkanzeige "TURN"
20. Fernlichtanzeige "HIGH BEAM"
21. Temperaturanzeige
22. Leerlaufanzeige "NEUTRAL"
23. Drehzahlmesser
24. Ölstandanzeige "OIL LEVEL"
25. Instrumentenbeleuchtung
26. Kraftstoffanzeigeleuchte
27. Blinkrelais
28. Rückblinkrelais
29. Frontblinkerrelais
30. Scheinwerfer (links)
31. Scheinwerfer (rechts)
32. Handlichtschalter (links)
33. Scheinwerferschalter "LIGHTS"
34. Lichthupenschalter "PASS"
35. Abblendschalter "LIGHTS"
36. Hupenschalter "HORN"
37. Kupplungsschalter
38. Blinkerschalter "TURN"
39. Heck/Bremslicht
40. Standlicht
41. Seitenmotor
42. Thermoschalter
43. Sicherung (Gebläsemotor)
44. Sicherung (Scheinwerfer)
45. Sicherung (Signal)
46. Sicherung (Zündung)
47. Ölleuchtenrelais
48. Ölstandschalter
49. Handgriffschalter (rechts)
50. Vorderradbremsschalter
51. Motorhupenschalter "ENGINE STOP"
52. Starterschalter "START"

1. Commutateur principale
2. Generatrice A.C.
3. Fusible (principale)
4. Batterie
5. Moteur del motorino di avviamento
6. Relè del motorino di avviamento
7. Relè di interruzione del circuito dell'avviamento
8. Pompa di rifornimento
9. Commutatore del cavalletto di sostegno laterale
10. Servomotore di EXUP
11. Commutatore "RISERVA"
12. Unità dell'accensione
13. Spinello della candila
14. Rubrum dell'accensione
15. Bobina del cassone
16. Commutatore neutro
17. Unità termica
18. Montaggio dell'indicatore
19. Lampadina dell'indicatore "TURN"
20. Lampadina dell'indicatore "HIGH BEAM"
21. Indicatore della temperatura
22. Lampadina dell'indicatore "NEUTRAL"
23. Tachometro
24. Lampadina dell'indicatore "OIL LEVEL"
25. Lampadina dell'indicatore
26. Lampadina dell'indicatore del livello del carburante
27. Relè dei lampeggiatori
28. Lampadina del lampeggiatore posteriore
29. Lampadina del lampeggiatore frontale
30. Fari (destra)
31. Fari (sinistra)
32. Commutatore del manubrio (sinistra)
33. Commutatore "LIGHTS"
34. Commutatore "PASS"
35. Commutatore (secondario) "LIGHTS"
36. Commutatore "HORN"
37. Commutatore della frizione
38. Commutatore "TURN"
39. Lampadina del fanale/freno
40. Lampadina ausiliaria
41. Motore del ventilatore
42. Commutatore termico
43. Fusibile (motore del ventilatore)
44. Fusibile (luce)
45. Fusibile (segnale)
46. Fusibile (accensione)
47. Relè della lampadina dell'olio
48. Commutatore del livello dell'olio
49. Commutatore del manubrio (destra)
50. Commutatore del freno frontale
51. Commutatore "ENGINE STOP"
52. Commutatore "START"

COLOR CODE/CODE DE COULEUR/FARBENKODIERUND/CODIE COL

Black Noir Schwarz Nero	Chocolate Chocolat Schokoladenfarbe Cioccolato	Blue/Black Bleu/Noir Blau/Schwarz Blu/Nero	Red/Blac Rouge/N Rot/Sch Rosso/N
Blue Bleu Blau Blu	Gray Gris Grau Grigio	Blue/Yellow Bleu/Jaune Blau/Gelb Blu/Giallo	Red/Blu Rouge/B Rot/Blau Rosso/B
Green Vert Grün Verde	Sky blue Bleu ciel Himmelblau Celeste	Blue/Red Bleu/Rouge Blau/Rot Blu/Rosso	Red/Yell Rouge/J Rot/Gelb Rosso/G
Yellow Jaune Gelb Giallo	Dark green Vert foncé Dunkelgrün Verde scuro	Blue/White Bleu/Blanc Blau/Weiß Blu/Bianco	Red/Gre Rouge/V Rot/Grün Rosso/Ve
Red Rouge Rot Rosso	White Blanc Weiß Bianco	Green/Yellow Vert/Jaune Grün/Gelb Verde/Rosso	Red/Whi Rouge/Bl Rot/Weiß Rosso/Bi
Orange Orange Orange Arancio	Black/Yellow Noir/Jaune Schwarz/Gelb Nero/Giallo	Green/Red Vert/Rouge Grün/Rot Verde/Rosso	Brown/W Rouge/Bl Braun/W Marrone/
Pink Rose Rosa Rosa	Black/Red Noir/Rouge Schwarz/Rot Nero/Rosso	Green/White Vert/Blanc Grün/Weiß Verde/Bianco	White/Bl Blanc/No Weiß/Sch Bianco/N
Brown Brun Braun Marrone	Black/White Noir/Blanc Schwarz/Weiß Nero/Bianco	Yellow/Black Jaune/Noir Gelb/Schwarz Giallo/Nero	White/Re Blanc/Ro Weiß/Rot Bianco/R