Quick Reference Guide

To use, bend the manual back and match the desired chapter below against the black spot showing at the edge of these pages.



General Information 1

Fuel System 2

Engine Top End / Radiator 3

Engine Right Side 4

Engine Left Side 5

Engine Removal, Installation 6

Engine Bottom End / Transmission 7

Wheel and Tires 8

Final Drive 9

Brakes 10

Suspension 11

Controls and Instruments 12

Frame 13

Electrical System 14

Appendix 15

Kawasaki

KXT250 TECATE

All Terrain Vehicle Service Manual Supplement

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All information contained in this publication is based on the latest product information available at the time of publication. Illustrations and photographs in this publication are intended for reference use only and may not depict actual model component parts.

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First Edition ① : Aug. 23, 1985 Ⓜ

PLEASE DO NOT TAMPER WITH NOISE CONTROL SYSTEM

To minimize the noise emissions from this product, Kawasaki has equipped it with effective intake and exhaust silencing systems. They are designed to give optimum performance while maintaining a low noise level. Please do not remove these systems, or alter them in any way which results in an increase in noise level.

LIST OF ABBREVIATIONS

A	ampere(s)	lb	pound(s)
ABDC	after bottom dead center	m	meter(s)
AC	alternating current	min	minute(s)
ATDC	after top dead center	N	newton(s)
BBDC	before bottom dead center	Pa	pascal(s)
BDC	bottom dead center	PS	horsepower
BTDC	before top dead center	psi	pound(s) per square inch
°C	degree(s) Celcius	r	revolution
DC	direct current	rpm	revolution(s) per minute
F	farad(s)	TDC	top dead center
°F	degree(s) Fahrenheit	TIR	total indicator reading
ft	foot, feet	V	volt(s)
g	gram(s)	W	watt(s)
h	hour(s)	Ω	ohm(s)
L	liter(s)		

Read OWNER'S MANUAL before operating.

Foreword

This TECATE Service Manual Supplement is designed to be used in conjunction with the TECATE All Terrain Vehicle Service Manual (P/N 99924-1046-01 or 02). The maintenance and repair procedures described in this supplement are only those that are unique to the TECATE All Terrain Vehicle. Most service operations for these models remain identical to those described in the base Service Manual. Complete and proper servicing of the TECATE All Terrain Vehicle therefore requires both this supplement and the base Service Manual.

The base Service Manual and this Supplement are designed primary for use by trained mechanics in a properly equipped shop. However, they contain enough detail and basic information to make them useful to the operator who desires to perform his own basic maintenance and repair work. A basic knowledge of mechanics, the proper use of tools, and work shop procedures must be understood in order to carry out maintenance and repair satisfactorily. Whenever the operator has insufficient experience or doubts his ability to do the work, the adjustments, maintenance, and repair should be carried out only by qualified mechanics.

In order to perform the work efficiently and to avoid costly mistakes, the mechanic should read the text, thoroughly familiarize himself with the procedures before starting work, and then do the work carefully in a clean area. Whenever special tools and equipment are specified, makeshift tools or equipment should not be used. Precision measurements can only be made if the proper instruments are used, and the use of substitute tools may adversely affect safe operation of the vehicle.

How to Use this Manual

In preparing this manual, we divided the product into its major systems. These systems became the manual's chapters. All information for a particular system from adjustment through disassembly and inspection is located in a single chapter.

The Quick Reference Guide shows you all of the product's system and assists in locating their chapters. Each chapter in turn has its own comprehensive Table of Contents.

The Periodic Maintenance Chart is located in the General Information chapter. The chart gives a time schedule for required maintenance operations.

If you want spark plug information, for example, go to the Periodic Maintenance Chart first. The chart tells you how frequently to clean and gap the plug. Next, use the Quick Reference Guide to locate the Electrical System chapter. Then, use the Table of Contents on the first page of the chapter to find the Spark Plug section.

Whenever you see these WARNING and CAUTION symbols, heed their instructions! Always follow safe operating and maintenance practices.

WARNING

○ **This warning symbol identifies special instructions or procedures which, if not correctly followed, could result in personal injury, or loss of life.**

CAUTION

○ **This caution symbol identifies special instructions or procedures which, if not strictly served, could result in damage to or destruction of equipment.**

This manual contains five more symbols (in addition to WARNING and CAUTION) which will help you distinguish different types of information.

NOTE

○ *This note symbol indicates points of particular interest for more efficient and convenient operation.*

- ● Indicates a procedural step or work to be done.
- ○ Indicates a procedural sub-step or how to do the work of the procedural step it follows. It also precedes the text of a WARNING, CAUTION, or NOTE.
- ■ Indicates a conditional step or what action to take based on the results of the test or inspection in the procedural step or sub-step it follows.
- ◇ Indicates a conditional sub-step or what action to take based upon the results of the conditional step it follows.

In most chapters an exploded view illustration of the system components follows the Table of Contents. In these illustrations you will find the instructions indicating which parts require specified tightening torque, oil, grease or a locking agent during assembly.

General Information

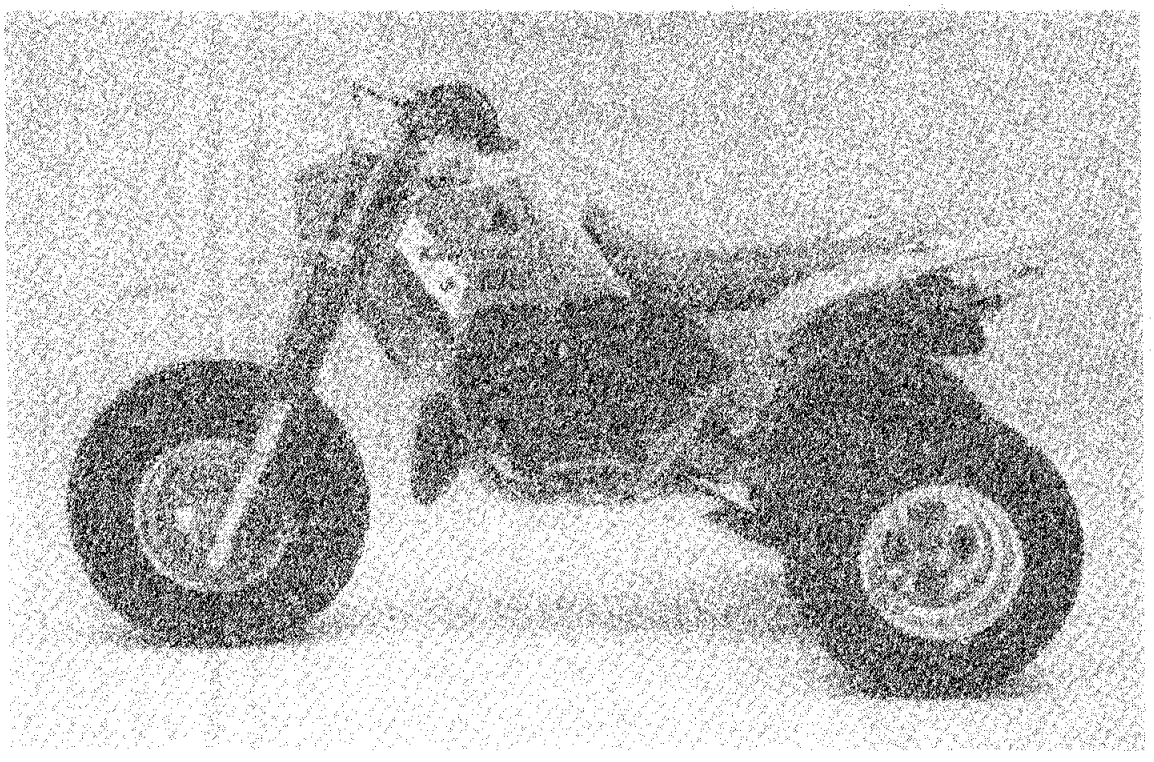
Table of Contents

Before Servicing ..... *
Model Identification 1-2
Specifications 1-3
Torque and Locking Agent 1-5
Bolts Nuts Fasteners ..... *
General Lubrication ..... *
Periodic Maintenance Chart 1-6

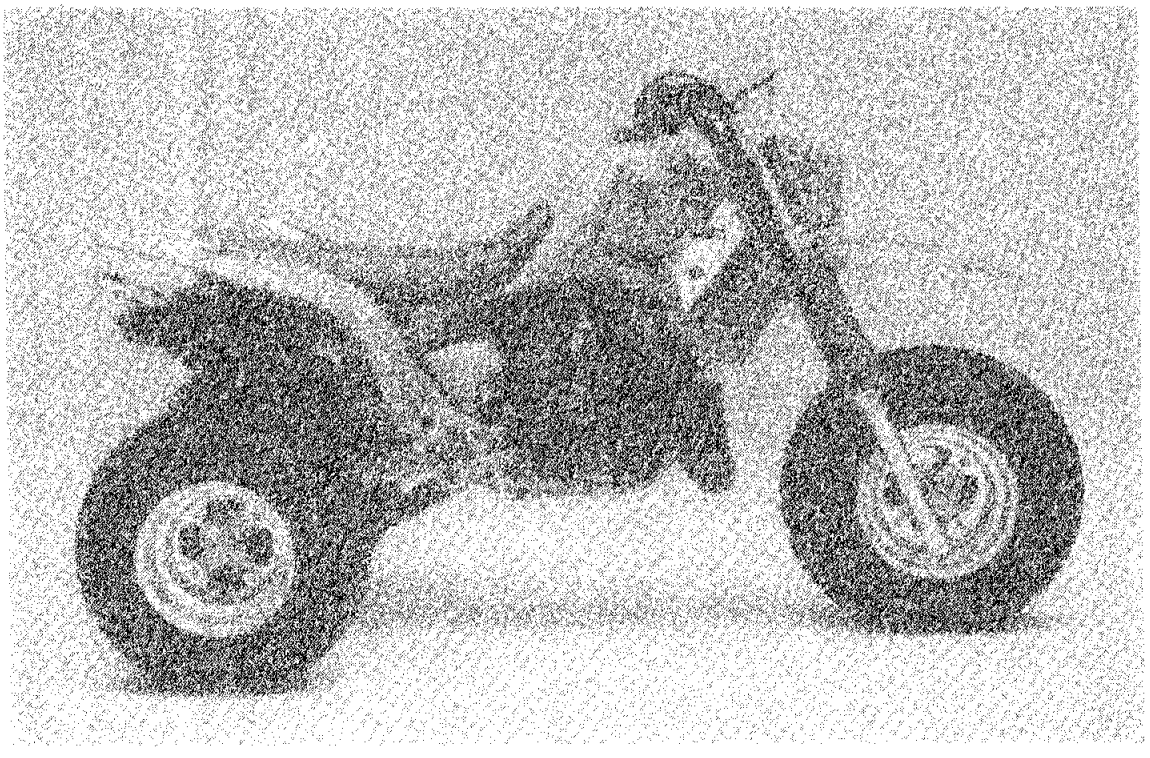
*Refer to Base Manual

Model Identification

KXT250-B1 Left Side View:



KXT250-B1 Right Side View:



Specifications

Items			KXT250-B1
Dimensions:			
Overall length			1,870 mm
Overall width			1,130 mm
Overall height			1,085 mm
Wheelbase			1,280 mm
Road clearance			125 mm
Seat height			750 mm
Dry weight			127 kg
Curb weight:	Front		56 kg
	Rear		81 kg
Fuel tank capacity			8.5 L
Performance:			
Climbing ability			—
Braking Distance			—
Minimum turning radius			2.0 m
Engine:			
Type			2-stroke, single cylinder, ** piston reed valve
Cooling system			Liquid-cooled
Bore and stroke			70.0 x 64.9 mm
Displacement			249 mL
Compression ratio			9.2
Carburetion system			Carburetor, Mikuni VM34SS
Starting system			Primary kick
Ignition system			CDI
Timing advance			Electronically advanced
Ignition timing			13° BTDC @6,000 r/min (rpm)
Spark plug			NGK B8ES
Cylinder numbering method			1
Firing order			1
Port timing:	Inlet	Open	—
		Close	—
	Scavenging	Open	61° (BBDC)
		Close	61° (ABDC)
	Exhaust	Open	Main 87°, sub 91.5° (BBDC)
		Close	Main 87°, sub 91.5° (ABDC)
Lubrication system			Petrol mix (20:1)

** : This engine licensed under one or more of Eyvind Boyessen's Patent Nos: 3,905, 340. 3,905,341. Re. 30, 425. 4,062,331. 4,161,163. 4,202,296 and 4,202,299.

Items	KXT250-B1
Drive Train:	
Primary reduction system:	
Type	Gear
Reduction ratio	3.111 (56/18)
Clutch type	Wet multi disc
Transmission:	
Type	5-speed, constantmesh return shift
Gear ratios: 1st	2.133 (32/15)
2nd	1.764 (30/17)
3rd	1.388 (25/18)
4th	1.100 (22/20)
5th	0.928 (26/28)
Final drive system:	
Type	Chain
Reduction ratio	2.846 (37/13)
Overall drive ratio	8.222 @Top gear
Transmission oil:	
Grade	SE class
Viscosity	SAE 10W-30 or 10W-40
Capacity	0.8 L
Frame:	
Type	Tubular, single cradle
Castor (rake angle)	24°
Trail	48 mm
Front Tire: Type	Tubeless, Knobby/Trail
Size	23 x 9.00-11
Rear Tire: Type	Tubeless, Knobby/Trail
Size	20 x 11-10
Front suspension:	
Type	Telescopic fork (pneumatic)
Wheel travel	250 mm
Rear suspension:	
Type	Swing arm (Uni-trak)
Wheel travel	250 mm
Brake type:	
Front	Single disc
Rear	Single disc
Electrical Equipment:	
Headlight: Type	Semi-sealed beam
Bulb	12 V 60/55 W (halogen)
Tail/brake light	12 V 8 W
Alternator: Type	Single-phase AC
Rated output	not more than 12.8 V @10,000 r/min

Specifications are subject to change without notice, and may not apply to every country.

Torque and Locking Agent

Refer to p.p. 1-7 — 1-9 of the Base Manual, noting the following.

Parts	Torque			Remarks
	N-m	kg-m	ft-lb	
Engine Top End/Radiator:				
Cylinder head nuts 8 mm	25	2.5	18	
Cylinder head bolts 6 mm	9.8	1	87 in-lb	
Coolant air bleeder bolt	6	0.6	52 in-lb	
Coolant drain plug (cylinder)	15	1.5	11	
Engine Right Side:				
Advancer lever mounting nut	9.8	1	87 in-lb	
Change drum holder bolt	22	2.2	16	
Primary gear nut	80	8.0	58	
Engine Removal/Installation:				
Engine mounting bolts upper φ10 x 3	59	6	43	
Engine mounting bolts front lower φ8 x 6	25	2.5	18	
Wheels/Tires:				
Wheel mounting nuts φ10 mm	49	5	36	
Front axle nut	125	13	94	
Brakes:				
Disc mounting bolts	23	2.3	16.5	
Front brake lever pivot nut	5.9	0.6	52 in-lb	
Front master cylinder clamp bolts	8.8	0.9	78 in-lb	S
Suspension:				
Front fork bottom Allen bolts	59	6	43	L
Uni-trak link mounting bolt upper	110	11	80	
lower	69	7	51	
Uni-trak link adjusting nuts	110	11	80	
Uni-trak arm center bolt	110	11	80	
Rear shock hose banjo bolts	29	3	22	
Rear shock bracket bolts	59	6	43	
Controls and Instruments:				
Handlebar clamp bolts	21	2.1	15	S
Frame:				
Step holder bolts	74	7.5	54	
Drive Train:				
Rear sprocket bolts	21	2.1	15	L
Swing arm mounting bolts	74	7.5	54	

Periodic Maintenance Chart

The scheduled maintenance must be done in accordance with this chart to keep the vehicle in good running condition.

FREQUENCY / OPERATION	Daily	Every 10 hours	Every 20 hours	Every 30 hours	Every 40 hours	As required	See Page
Clutch – inspect †	*						(12-4)
Throttle cable – inspect †	*						(12-5)
Spark plug – clean, gap †		*					(14-8)
Air cleaner element – clean		*					(2-6)
Air cleaner element – replace	Every 5 cleanings						2-3 (2-6)
Carburetor – inspect/adjust †						*	(2-4)
Transmission oil – change*			*				4-3
Piston – clean/check †				*			3-12
Piston ring – replace				*			3-4
Cylinder – inspect †				*			3-12
Piston/cylinder clearance – inspect †				*			3-12
Small end bearing – check †				*			(3-4)
Main bearings – check †					*		–
Big end bearing – check †				*			(3-7)
Spark arrester – clean						year	(3-13)
Coolant – change						*	3-5
Radiator hoses, connections – check †	*						(3-9)
Brake adjustment – check †	*						10-4
Brake wear – check †				*			10-3
Brake fluid level – check †			*				10-5
Brake fluid – change						year	(10-5)
Drive chain – adjust	*						9-3
Drive chain – lubricate	*						(9-5)
Drive chain and sprockets – inspect †				*			(9-4)
Front fork – inspect/clean †			*				–
Front fork oil – change				*			11-5
Nuts, bolts, fasteners – check †	*						(1-9)
Fuel system – clean			*				(2-4 (2-7)
Steering play – check †	*						(11-6)
Steering stem bearing – grease				*			(11-7)
General lubrication – perform	*						(1-10)
Uni-trak bearing – grease		*					11-10
Uni-trak link, bearing wear – check †		*					11-4
Uni-trak arm, sleeve wear – check †		*					11-4
Rear shock oil – replace					*		11-12
Swing arm – lubricate			*				(11-3)
Frame, swing arm – inspect for damage †	*						–
Master cylinder cup and dust seal – replace						2 years	10-6
Caliper piston seal and dust seal – replace						2 years	(10-10)
Brake hose – replace						2 years	–

(xx-xx) : Reference page in the Base Manual.

† : Replace, add, adjust, clean, or torque if necessary.

* : Change transmission oil after first day. After that, follow the regular schedule.

"NOTE"

○*Service more frequently when operated in mud, dust, or other harsh riding conditions.*

Fuel System

Table of Contents

Exploded Views 2-2
Service Data 2-3
Special Tools ..... *
Carburetor ..... *
- Idling Adjustment ..... *
- Service Fuel Level Inspection ..... *
- Service Fuel Level Adjustment ..... *
- Float Height Measurement ..... *
- Installation Point ..... *
- Throttle Cable Adjustment ..... *

Reed Valve ..... *
- Installation Point ..... *
- Reed Inspection ..... *

Air Cleaner 2-3
- Air Cleaner Element Removal 2-3
- Air Cleaner Element Installation 2-3
- Air Cleaner Housing Removal 2-3
- Air Cleaner Element Cleaning ..... *

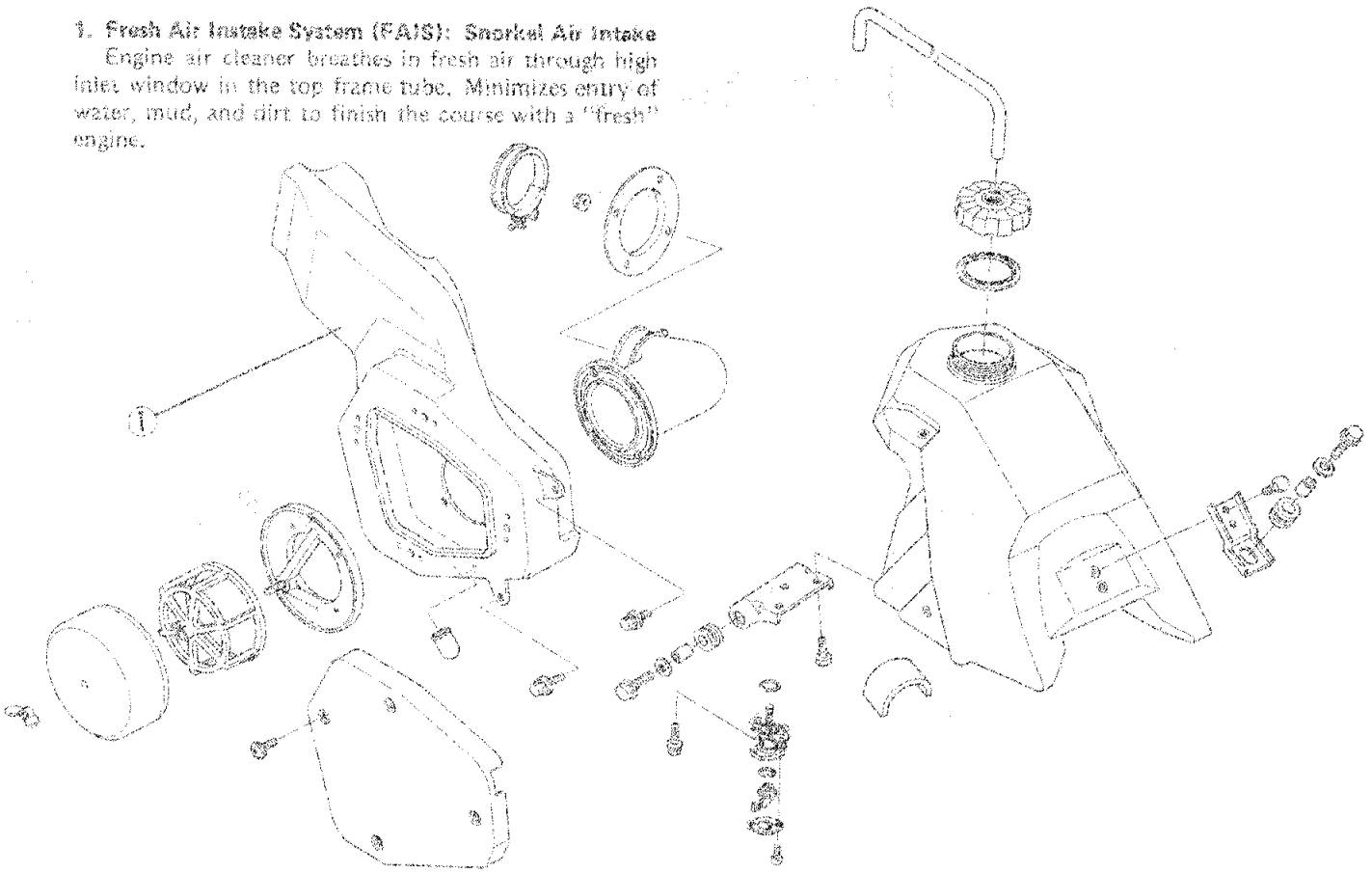
Fuel System 2-4
- Fuel Tank Removal 2-4
- Fuel Tank Vent Tube Installation 2-4
- Inspection ..... *
- Cleaning ..... *

*Refer to Base Manual

Exploded Views

1. Fresh Air Intake System (FAIS): Snorkel Air Intake

Engine air cleaner breathes in fresh air through high inlet window in the top frame tube. Minimizes entry of water, mud, and dirt to finish the course with a "fresh" engine.

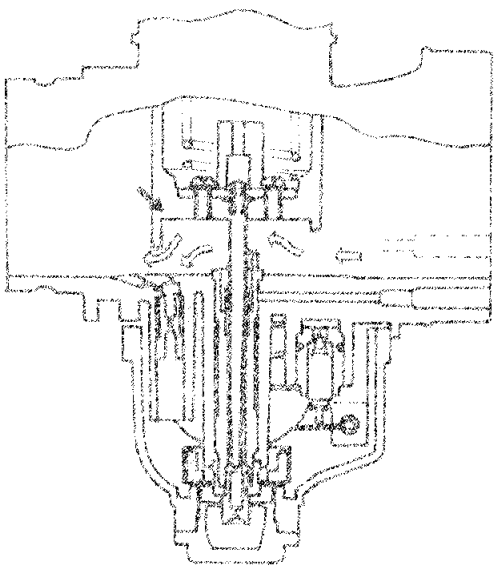


2. "Flat R Bottom" Slide Carburetor

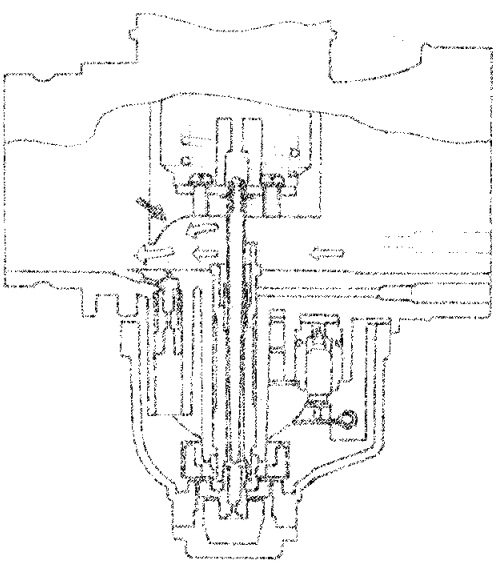
The bottom of the carburetor slide has a radiator cut-away area around the needle. This improves low speed atmization and air-flow.

Engines equipped with this carburetor idle more smoothly, and deliver better low end torque and mid-range power. Top-end performance is not affected.

Conventional Carburetor



Flat R Bottom Carburetor



Service Data

Refer to p. 16-5, noting the following.

Modified Carburetor Specifications for '86 model (KXT250-A2)

Service Fuel Level:	1 ±1 mm
Float Height:	17.1 ±1 mm

Carburetor Specifications for '86 model (KXT250-B1)

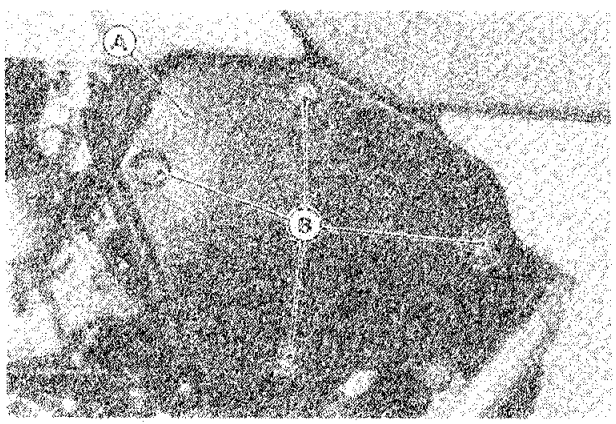
Make/Type	Mikuni VM34SS
Main Jet	270
Main Air Jet	(φ2.5)
Needle Jet	R-2
Jet Needle	6FL56-3
Jet Needle Clip Position	3rd groove from the top
Pilot Jet	35
Pilot Air Jet	1.4
Starter Jet	100
Throttle Valve Cutaway	3.0 mm
Service Fuel Level	1.0 ±1 mm
Float Height	17.1 ±2 mm

Air Cleaner

Air Cleaner Element Removal

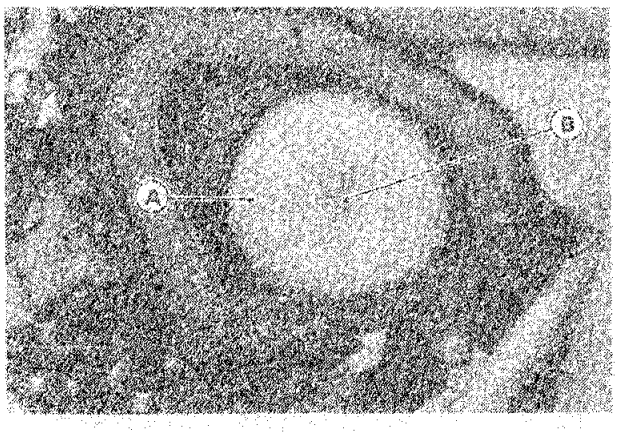
Refer to p. 2-6 of the Base Manual, noting the following.

*Take off the air cleaner cover by removing the cover screws.



A. Air Cleaner Cover B. Screws

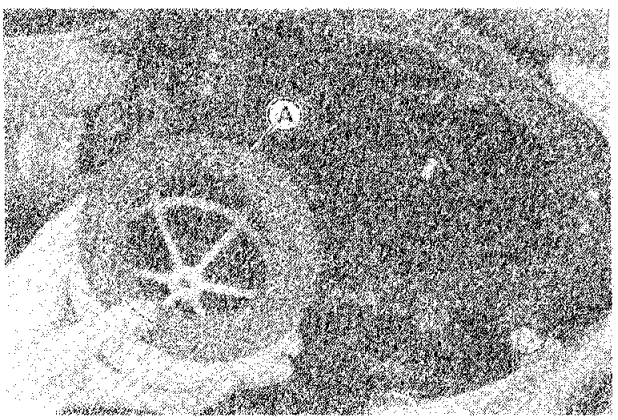
*Remove the wing nut to take out the element.



A. Element B. Wing Nut

Air Cleaner Element Installation

*When installing the element, coat the element base with a thick layer of all purpose grease to assure a complete seal.

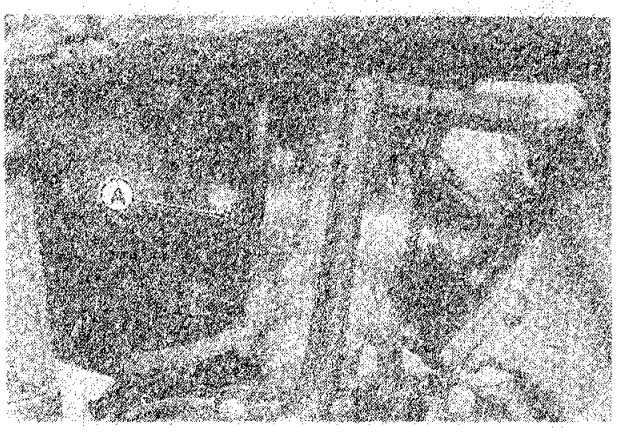


A. Element Base

Air Cleaner Housing Removal

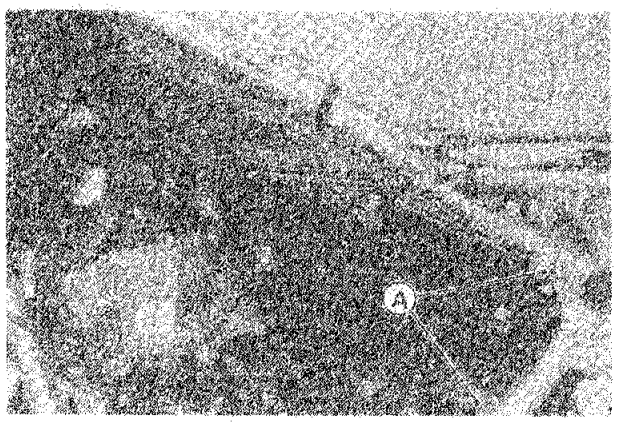
*Remove the following parts.
Rear Fender (see Frame chapter)
Fuel Tank

*Loosen the duct clamp of the vehicle right side.



A. Duct Clamp

*Remove the housing mounting bolts (2) to take out the housing towards the vehicle left side.

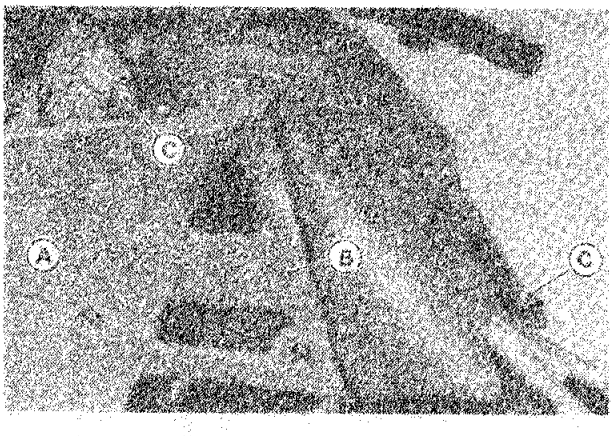


A. Housing Mounting Bolts

Fuel System

Fuel Tank Removal

*Remove the seat and rear fender.
*Remove the tank mounting bolts and screws (2).

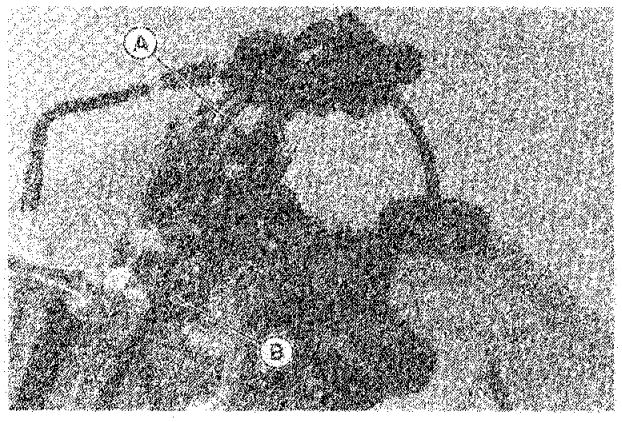


A. Screws
B. Air Scoop
C. Mounting Bolts

*Turn the fuel tap on OFF position.
*Pull the hoses off the tap.
*Tilt the tank out the front of the frame with the air scoop installed

Fuel Tank Vent Tube Installation

*Insert the end of the vent tube for fuel tank into the steering stem head.



A. Vent Tube
B. Steering Stem Head

WARNING

○Gasoline is extremely flammable and can be explosive under certain conditions. Turn the engine stop switch OFF. Do not smoke. Make sure the area is well ventilated and free from any source of flame or sparks; this includes any appliance with a pilot light.
○Make sure the engine is cold before working. Wipe any fuel off the engine before starting it.

Engine Top End / Radiator

Table of Contents

Exploded Views 3-2
Service Data 3-4
Special Tool ..... *
Cooling System 3-4
- Coolant Level Inspection 3-4
- Coolant Deterioration 3-5
- Coolant Changing 3-5
- Coolant Filling 3-6
- Radiator Removal 3-6
- Radiator Installation Points 3-7
- Breather Hose Installation 3-7
- Coolant Inspection ..... *
- Radiator Inspection ..... *
- Radiator Cap Inspection ..... *
- Radiator Hose Inspection ..... *
- Pressure Testing ..... *

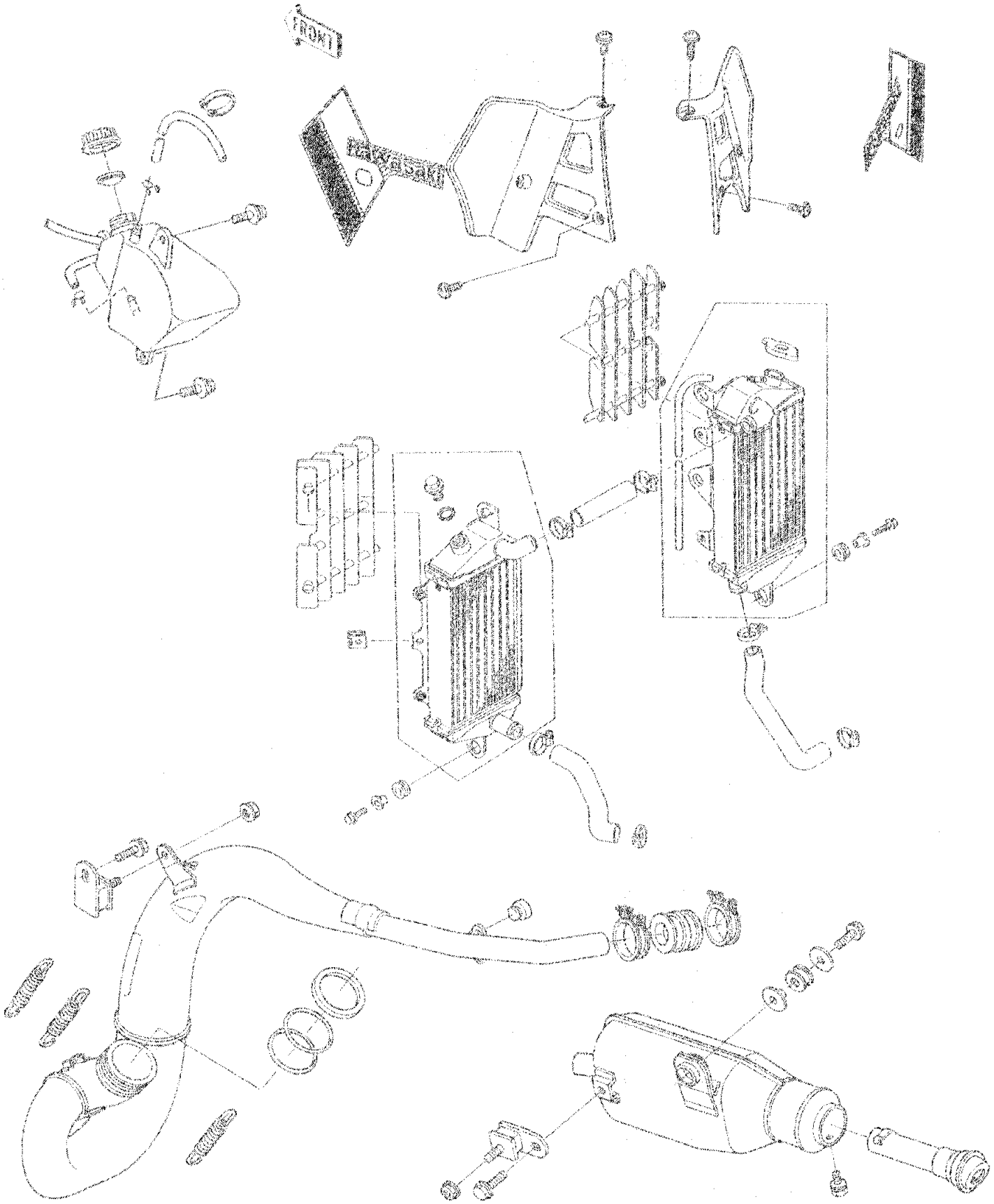
Muffler 3-8
- Muffler Removal 3-8
- Muffler Installation Point ..... *, 3-8

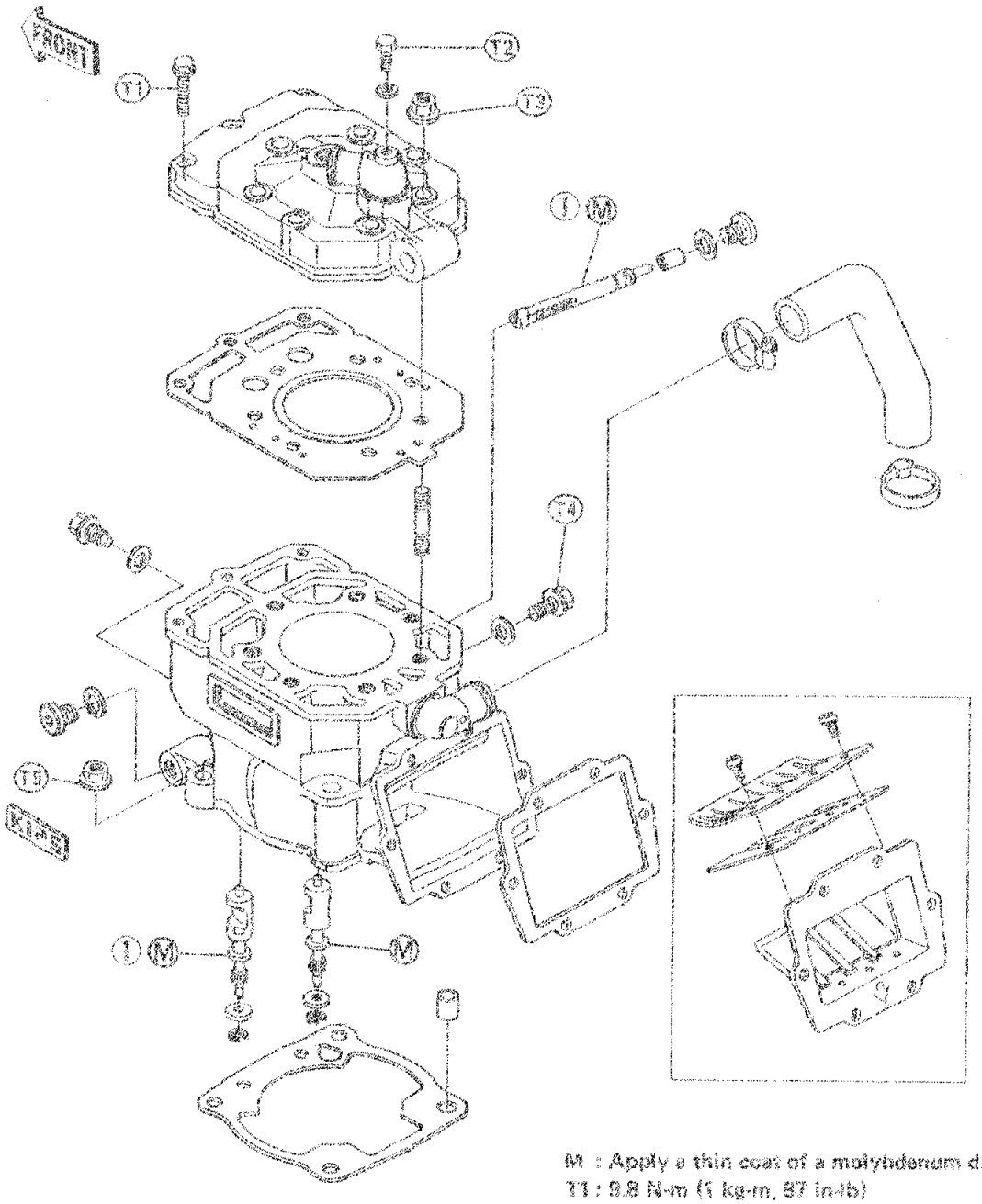
Spark Arrester ..... *
- Cleaning ..... *

Cylinder Head, Cylinder, Piston 3-8
- Cylinder Head Removal 3-8
- Cylinder Head Installation Points 3-8
- Cylinder Removal 3-9
- Cylinder Installation Points 3-9
- Cylinder Disassembly 3-10
- Cylinder Assembly Points 3-10
- Piston Cylinder Cleaning/Inspection 3-12
- Compression Measurement ..... *
- Cylinder Head Warp Inspection ..... *
- Combustion Chamber Volume Measurement ..... *, 3-3
- Piston/Cylinder Clearance 3-12
- Piston/Cylinder Seizure Inspection ..... *
- Piston Ring, Piston Ring Groove Inspection ..... *
- Piston Ring End Gap Inspection ..... *

*Refer to Base Manual

Exploded Views





M : Apply a thin coat of a molybdenum disulfide grease.
T1 : 9.8 N-m (1 kg-m, 87 in-lb)
T2 : 6 N-m (0.6 kg-m, 52 in-lb)
T3 : 25 N-m (2.5 kg-m, 18 ft-lb)
T4 : 15 N-m (1.5 kg-m, 11 ft-lb)
T5 : 34 N-m (3.5 kg-m, 25 ft-lb)

1. KAWASAKI Integrated Power Valve System (KIPS)

The conventional two-stroke engine has a constant-volume exhaust chamber.

To get high power, the two-stroke engine sacrifices torque at low speed making low-speed operation difficult.

KIPS alters not only the exhaust chamber volume but also the exhaust port area and exhaust timing producing significantly more high speed power without loss of low-speed torque.

Service Data

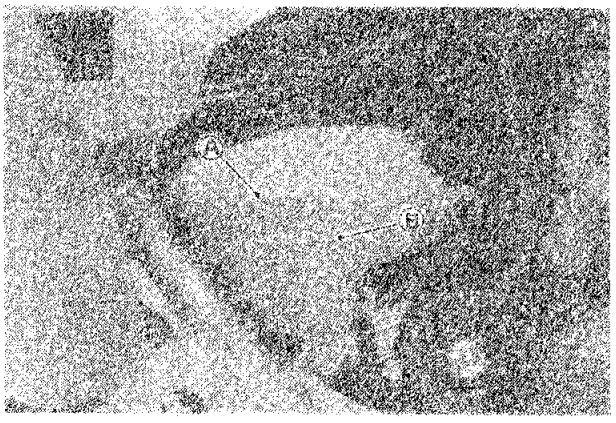
Item	Standard	Service Limit
Coolant provided when shipping:		
Type	Permanent type of antifreeze for alminum engine and radiator	
Color	Green	
Mixed ratio	Soft water 50%, coolant 50%	
Freezing point	−37°C (−35°F)	
Total amount	1.5 L (up to reservoir Full Mark)	
Radiator Cap:		
Relief pressure	93 — 123 kPa (0.95 — 1.25 kg/cm², 13.5 — 17.8 psi)	
Cylinder Head, Cylinder Block, Piston:		
Cylinder compression (usable range)		
Combustion chamber volume	20.4 — 21.2 mL	— — —
Cylinder inside diamter	70.020 — 70.035 mm	70.10 mm
Piston diameter	69.961 — 69.976 mm	69.80 mm
Piston/cylinder clearance	0.054 — 0.064 mm	— — —
Piston ring end gap : Top, second	0.15 — 0.20 mm	0.5 mm
Piston ring/groove clearance	— — — (keystone)	

Cooling System

Coolant Level Inspection

*Park the vehicle on level ground.

*Check the level through the coolant level gauge on the reservoir tank. The coolant level should be between the FULL and the LOW marks.



A. "FULL" Mark B. "LOW" Mark

NOTE

○*Check the level when the engine is cold (room or ambient temperature).*

○*Do not check the level by removing the radiator cap. If the cap is removed, air may get into the coolant, and lower cooling efficiency.*

*If the amount of coolant is insufficient, add coolant through the filler opening to the FULL mark.

CAUTION

○**For refilling, add the specified mixture of coolant and soft water. Adding water alone dilutes the coolant and degrades its anticorrosion properties. The diluted coolant can attack the aluminum engine parts. In an emergency, soft water can be added. But the diluted coolant must be returned to the correct mixture ratio within a few days.**

○**If coolant must be added often, or the reservoir tank has run completely dry; there is probably leakage in the cooling system. Check the system for leaks.**

Coolant Deterioration

*Visually inspect the coolant in the reservoir tank.

○If whitish cotton-like watts are observed, aluminum parts in the cooling system are corroded. If the coolant is brown, iron or steel parts are rusting. In either case, flush the cooling system.

○If the coolant gives off an abnormal smell when changing, check for a cooling system leak. It may be caused by exhaust gas leaking into the cooling system.

NOTE

○*Be sure to inspect the coolant at the reservoir tank. If the coolant is checked by removing the radiator cap, the air must be bled from the cooling system.*

Coolant Changing

The coolant should be changed periodically to ensure long engine life.

CAUTION

○**Use coolant containing corrosion inhibitors made specifically for aluminum engines and radiators in accordance with the instructions of the manufacturers (see Coolant Filling).**

WARNING

○**To avoid burns, do not remove the radiator cap or try to change the coolant when the engine is still hot. Wait until it cools down.**

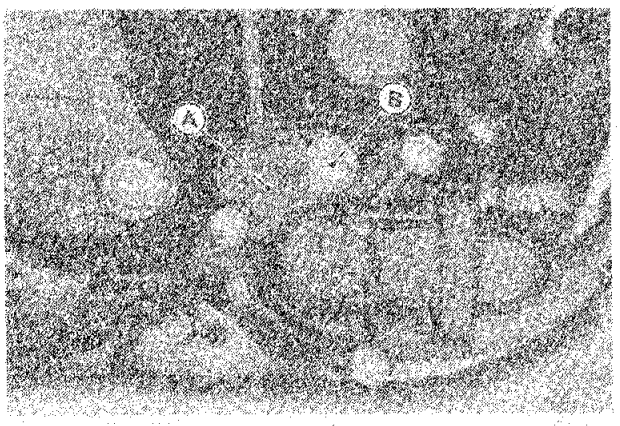
○**Coolant on tires will make them slippery and can cause an accident and injury. Immediately wipe up or wash away any coolant that spills on the frame, engine or other painted parts.**

○**Since coolant is harmful to the human body, do not use for drinking.**

*Park the vehicle on level ground.

*Place a container under the water pump.

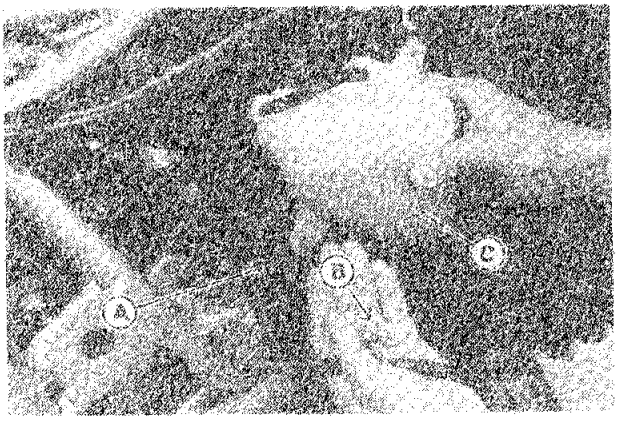
*Drain the coolant from the radiator and engine by loosening the drain plug at the water pump cover.



A. Water Pump B. Drain Plug

*Unscrew the bolts and remove the reservoir tank with hoses attached.

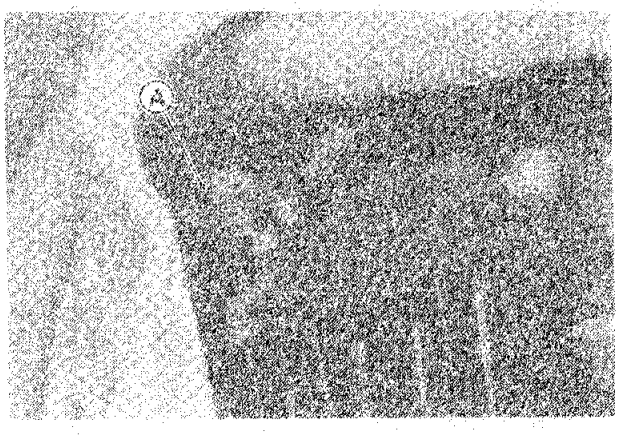
*Unscrew the cap and pour the coolant into a container.



A. Air Vent Hose C. Reservoir Tank
B. Bolts

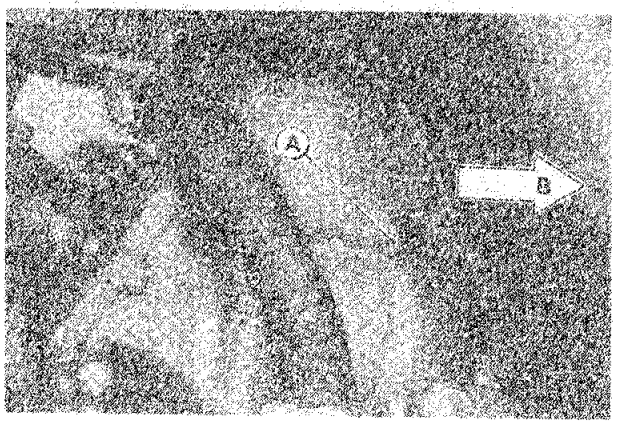
*Inspect the old coolant for color, smell (see Coolant Deterioration).

*Remove the radiator cap in two steps. First turn the cap counterclockwise, then push down and remove the cap.



A. Radiator Cap

*Unscrew the drain plug at the right side of the cylinder.

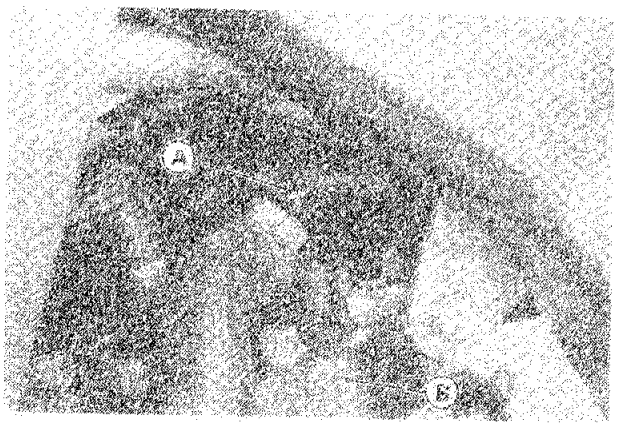


A. Drain Plug B. Front

*Tilt the vehicle towards right to expel the coolant remain from the engine.

Coolant Filling

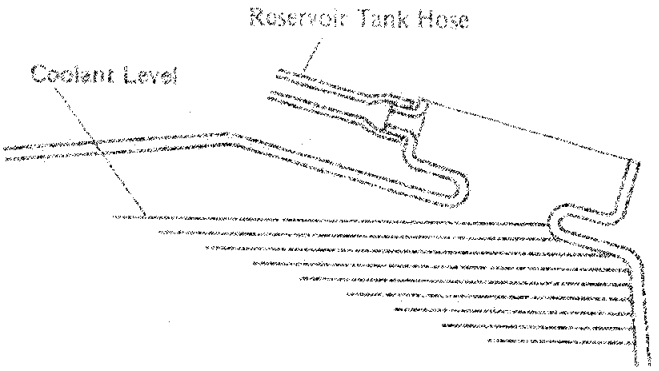
*Install the drain plugs. Always replace the gaskets with new ones, if they are damaged.
*Tighten the drain plugs to the specified torque (see Exploded Views).
*Loosen the air bleeder bolt on the top of the cylinder head.



A. Air Bleeder Bolt B. Cylinder Head

*Pour the coolant into the radiator until the coolant begins to flow out the air bleeder bolt hole (that is, all the remaining air has been forced out).
*Tighten the air bleeder bolt.
*Fill the radiator up to the radiator filler neck with coolant, and install the cap.

Radiator Filler Neck



*Fill the reservoir tank up to the FULL mark with coolant, and install the cap.
*Check the cooling system for leaks.
*Start the engine, warm it up thoroughly, and then stop it.
*Check the coolant level in the reservoir tank after the engine cools down.
*If the coolant level is low, add coolant up to the Full mark through the reservoir tank opening.

CAUTION

Soft or distilled water must be used with the antifreeze (see below for antifreeze) in the cooling system.
If hard water is used in the system, it causes scales accumulation in the water passages, and considerably reduces the efficiency of the cooling system.

NOTE

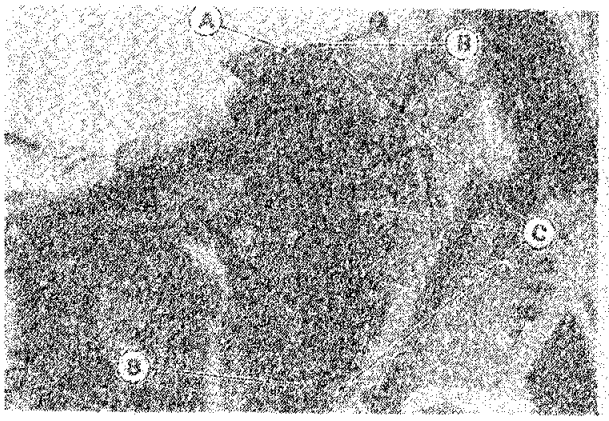
Choose a suitable mixture ratio by referring to the coolant manufacturer's directions.

The coolant provided when shipping

Type: Permanent type antifreeze for aluminum engine and radiator
Color: green
Mixed ratio: soft water 50%, coolant 50%
Freezing point: −37°C (−35°F)

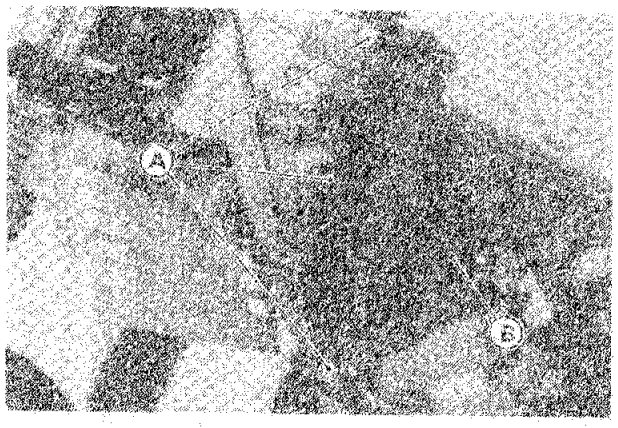
Radiator Removal

*Drain the coolant (see Coolant Changing).
*Remove the fuel tank (see Fuel Tank Removal).
*Remove the parts shown to take off the right-hand radiator.



A. Breather Hose
B. Hose Clamps
C. Mounting Bolts

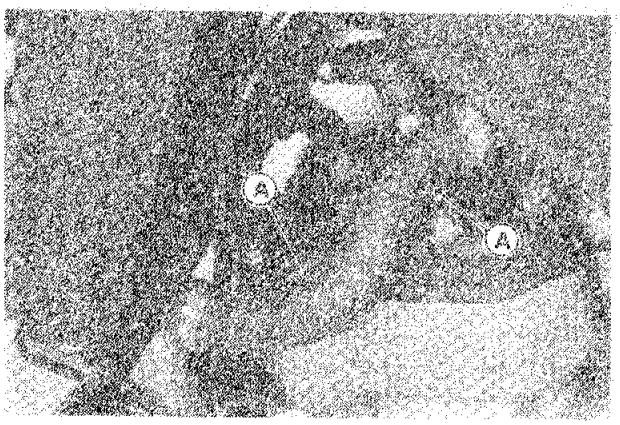
*Remove the parts shown to take off the left-hand radiator.

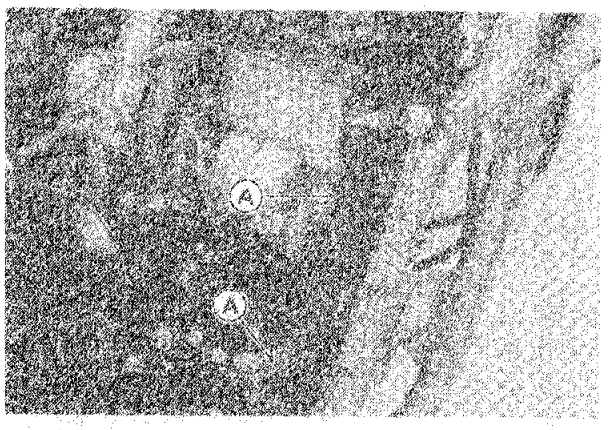


A. Mounting Bolts
B. Hose Clamp

Radiator Installation Points

*Install the radiator hoses being careful to follow bending direction. Avoid sharp bending, kinking, flattening, or twisting.



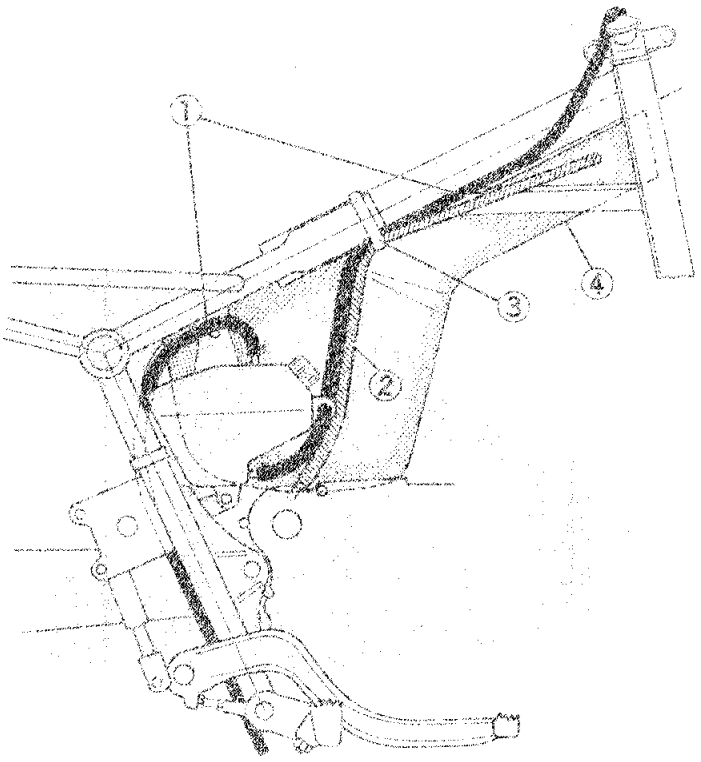


A. Bendings

Breather Hose and Reservoir Tank Hose Installation

*Run the breather hose and reservoir tank hoses as shown.

Hoses Installation



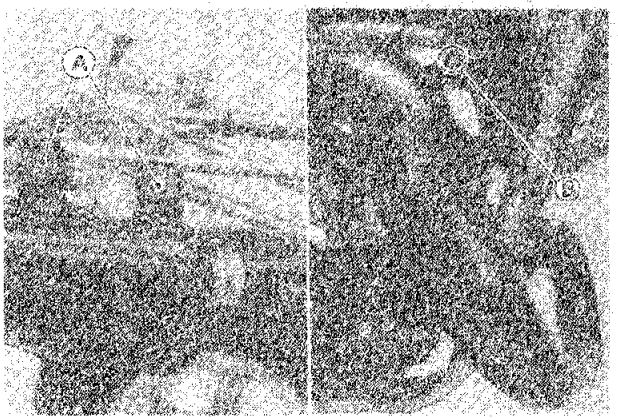
1. Reservoir Tank Hoses
2. Crankcase Breather Hose
3. Wiring Strap
4. Air Cleaner Housing

Muffler

Muffler Removal

*Remove the following parts.
Right-hand Radiator (see Radiator Removal)
Springs (3) on Muffler Inlet
Kick Pedal

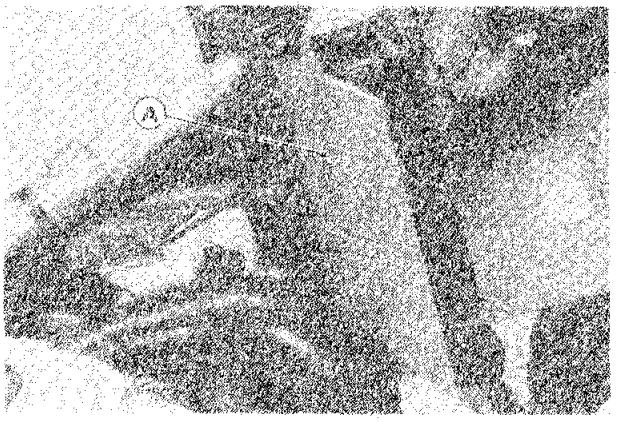
*Remove the silencer mounting bolts and muffler mounting nut to pull out the muffler.



A. Silencer Mounting Bolts B. Muffler Mounting Nut

CAUTION

If the muffler is to be removed with the radiator installed, be careful not to damage the radiator. One way to protect the radiator is by covering the surface with a suitable plate.

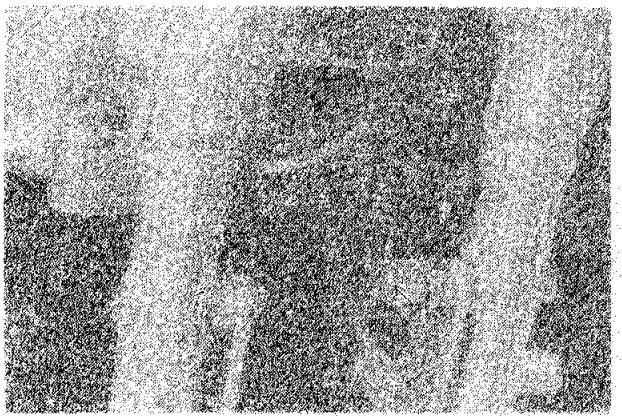


A. Suitable Plate

Muffler Installation Point

Refer to the Base Manual, noting the following.

*Install the muffler inlet springs on the cylinder, noting the hook direction.



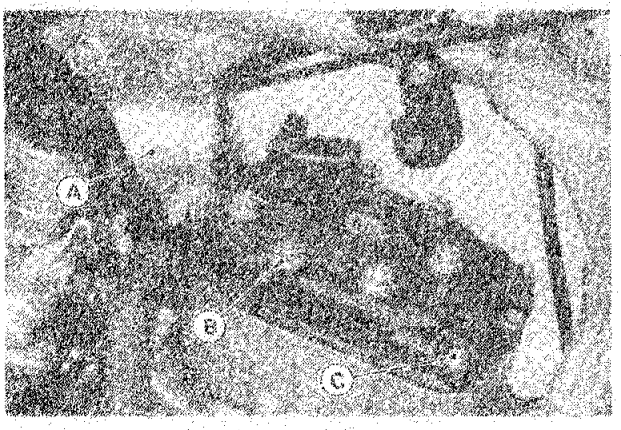
Cylinder Head, Cylinder, Piston

Cylinder Head Removal

*Remove the following parts.
Rear Fender (see Frame chapter)
Fuel Tank (see Fuel System chapter)
Radiators (see Radiator Removal)
Muffler (see Muffler Removal)
Spark Plug

*Remove the engine upper brackets. The brackets may be removed with the air intake duct installed.

*First remove the 6 mm bolts, and then the 8 mm nuts in that order. This prevents excessive stress on the smaller bolts.

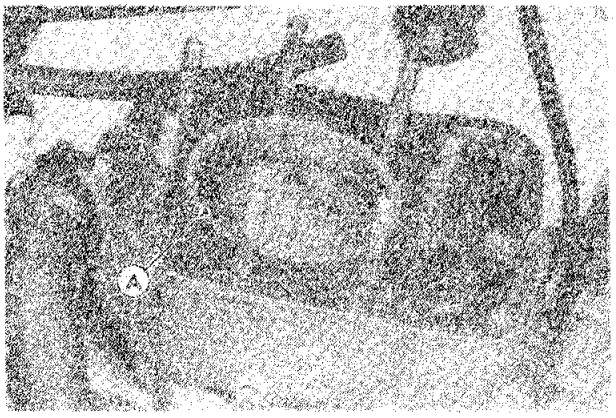


A. Upper Brackets C. 6 mm Bolts
B. 8 mm Nuts

*Lift off the cylinder head and gasket.

Cylinder Head Installation Points

*Install the cylinder head gasket with the smaller diameter side of the grommet facing up.

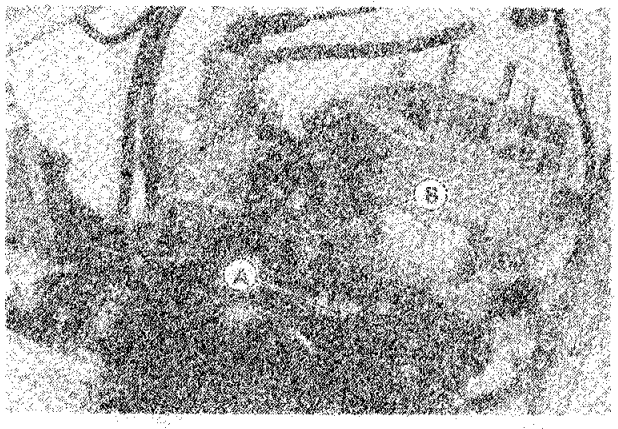


A. Grommet

*Tighten the 8 mm head nuts first, and then the 6 mm bolts to the specified torque (see Exploded Views).

Cylinder Removal

*Remove the following parts.
Cylinder Head (see Cylinder Head Removal)
Air Cleaner Housing (see Air Cleaner Housing Removal)
Carburetor
10 mm Cylinder Nuts (4)
*Loosen the coolant hose clamp and pull off the hose.



A. Clamp B. Hose

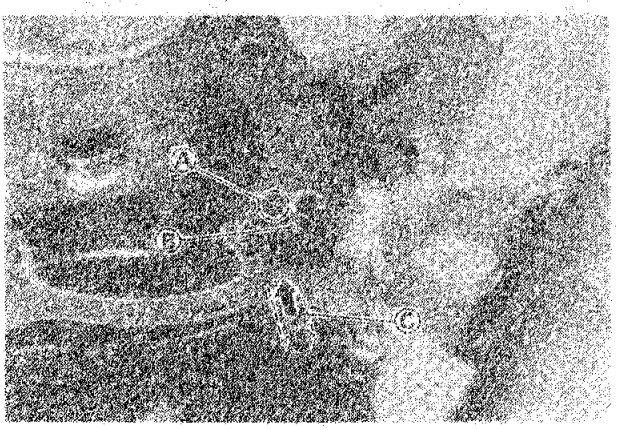
*Set the piston at BDC to lift off the cylinder. If necessary, lightly tap around the cylinder with a mallet.

CAUTION

Do not twist the cylinder as you slide it off the piston. Twisting may cause the piston ring to pop into the intake port. This will cause the cylinder to jam, making removal difficult. If the cylinder does jam, remove the reed valve and press the piston ring back into position.

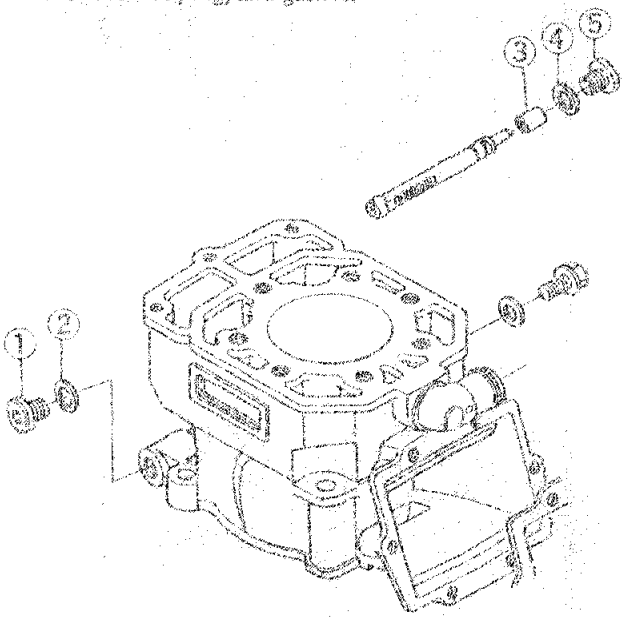
Cylinder Installation Points

*Install a new cylinder base gasket.
*Check that the knock pin is in place.
*Check that the rod arm is in the rod groove and crankcase with the chamfer side facing up.
*Push the rod in until it stops.



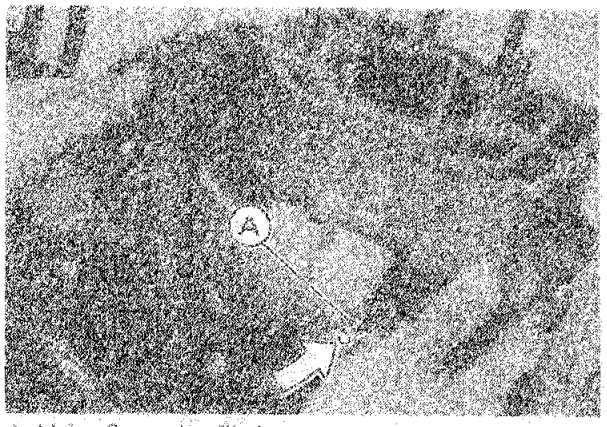
A. Chamfer C. Rod
B. Rod Arm

*Check the gaskets at the right and left plugs for damage. Replace the gaskets with new ones if they are damaged.
*Install the left plug, and gasket.



1. Left Plug 4. Gasket
2. Gasket 5. Right Plug
3. Collar

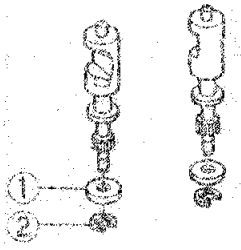
*Push the valve operating rod in from vehicle right side while installing the cylinder.



A. Valve Operating Rod

*Install the right plug, collar, and gasket.
*Cross tighten the cylinder nuts to the specified torque (see Exploded Views).

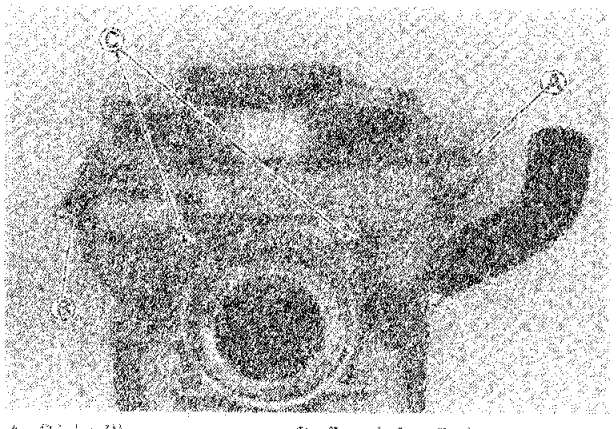
*Remove the circlip and bushing from the exhaust valve.



1. Bushing 2. Circlip

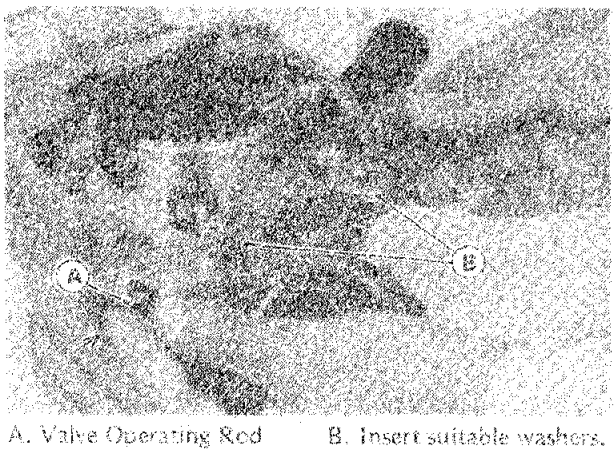
Cylinder Disassembly

*Set the cylinder unit upside down on a clean surface.
*Remove the right and left plugs.
*Remove the valve retaining bolts.



A. Right Plug C. Retaining Bolts
B. Left Plug

*While holding up the exhaust valves, remove the valve operating rod.
*Remove the exhaust valves.



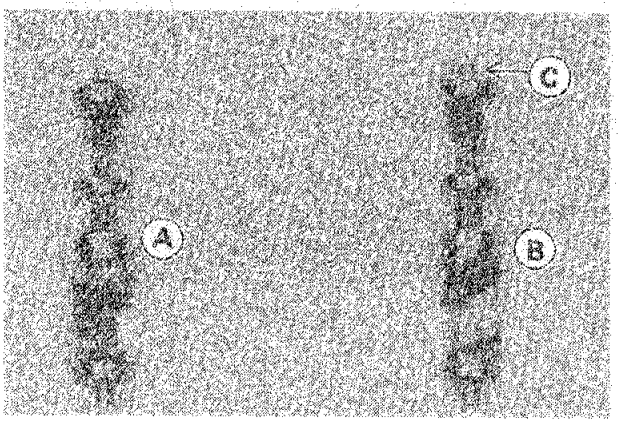
A. Valve Operating Rod B. Insert suitable washers.

Cylinder Assembly Points

Assembly is the reverse of disassembly. Note the following.

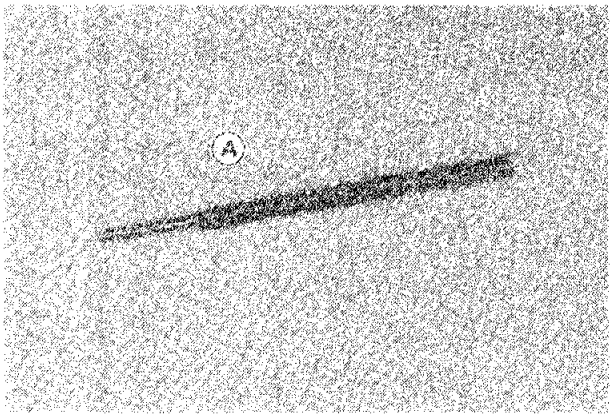
NOTE

○*The right exhaust valve has a groove on the end for identification. Be careful not to mix up the right and left valves.*



A. Left Exhaust Valve: has no groove
B. Right Exhaust Valve: has groove
C. Groove for Identification

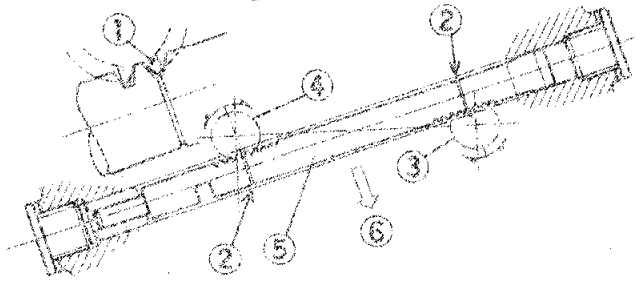
*Apply a thin coat of molybdenum disulfide grease to the sliding surfaces of the valve operating rod and exhaust valves.



A. Valve Operating Rod

*Insert the rod and valves so that the rod rack meshes with the valve pinions.
*Align each mark on the valve pinions with the groove on the rod.

Exhaust Valve Timing: bottom view



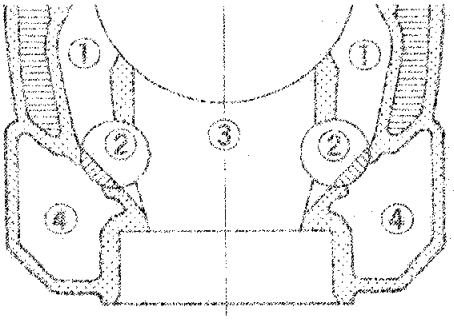
1. Mark on Valve Pinion
2. Groove
3. Left Exhaust Valve
4. Right Exhaust Valve
5. Valve Operating Rod
6. Front

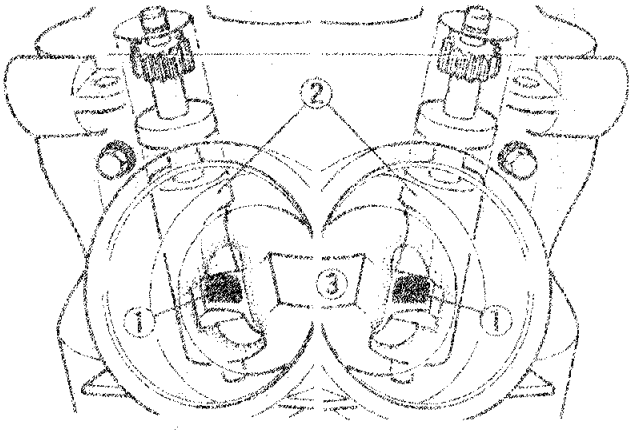
*Install the valve retaining bolts.
*After inserting the bushings, install the circlips on the valves.
*Check that the valve operating rod moves smoothly and sub-ports close and open synchronously by moving the rod back and forth.



A. Move the rod back and forth.

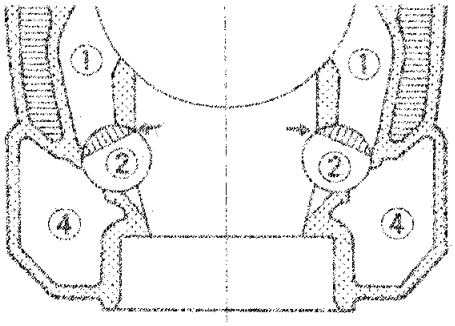
Valves open the sub-ports

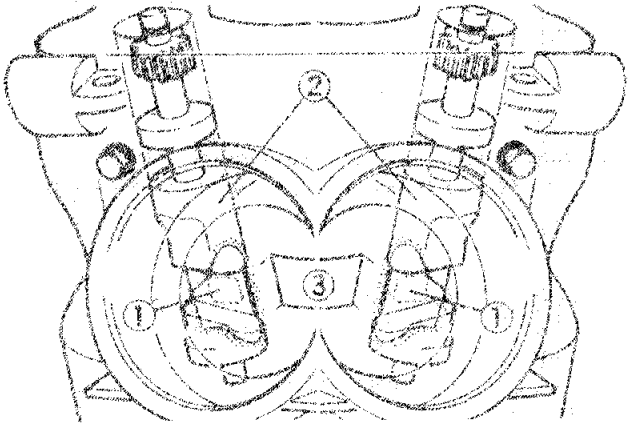




1. Sub-ports
2. Valves
3. Main Exhaust Port
4. Sub-chambers

Valves close the sub-ports





Piston, Cylinder Cleaning/Inspection (Periodic Maintenance)

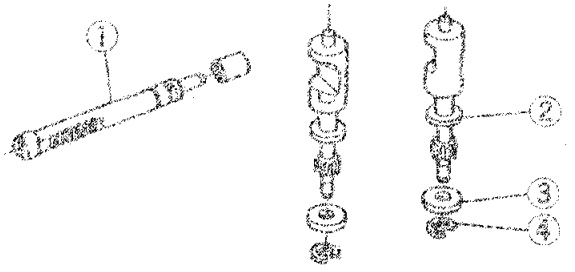
Cylinder Compression Measurement

Refer to the Base Manual.

Decarbonization

The piston head, exhaust port, sub-ports, exhaust valves, cylinder head, and muffler can fill up with carbon and other exhaust by-products over an extended period of operation, resulting in a drop in performance.

- Remove the muffler, and scrape off the carbon.
- Remove the cylinder head, scrape out any carbon, and clean the head with a high flash-point solvent.
- Remove the cylinder, and carefully scrape the carbon out of the exhaust port and sub-ports.
- Remove the exhaust valves from the cylinder to scrape out any carbon and clean the valves with a high flash-point solvent.
- Check the valve operating rod, exhaust valves, circlips and bushings for signs of damage. If necessary, replace them with new ones.



1. Valve Operating Rod
2. Exhaust Valves
3. Bushings
4. Circlips

- Check for a crust of minerals and rust in the cylinder head and cylinder water jacket, and remove them if necessary.
- Remove the piston, scrape off the carbon, and then lightly polish the piston with fine emery cloth.
- Clean carbon and dirt out of the piston ring grooves using a suitable tool.

CAUTION

Carbon particles can be very abrasive to piston rings. Don't allow such particles to fall onto the cylinder walls.

Cylinder Wear Inspection

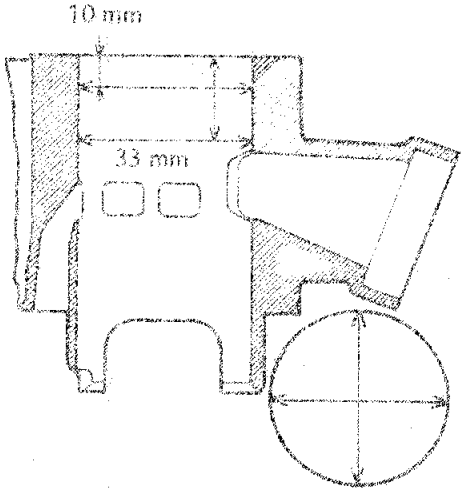
- Inspect the inside of the cylinder for scratches and abnormal wear.
- If the cylinder is damaged or badly worn, replace it with a new one.
- Since there is a difference in cylinder wear in different directions, take a side-to-side and a front-to-back measurement shown in the figure.

Cylinder Inside Diameter

Standard: 70.020 – 70.035 mm and less than 0.01 mm difference between any two measurement

Service Limit: 70.10 mm, or more than 0.05 mm difference between any two measurements

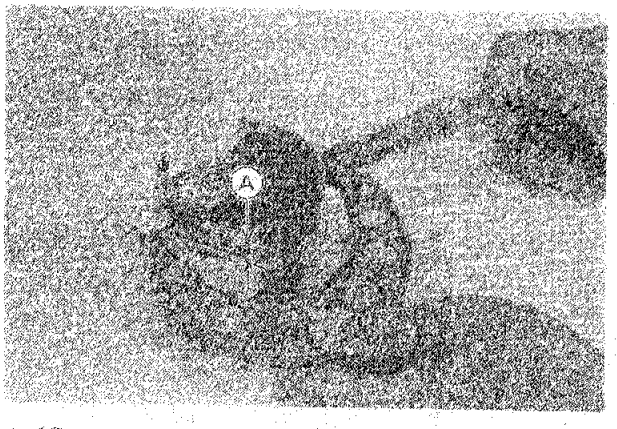
Cylinder Diameter Measurement



Piston Diameter Inspection

- Measure the outside diameter of the piston 13 mm up from the bottom of the piston at a right angle to the direction of the piston pin.

Piston Diameter Measurement



A. 13 mm

Piston Diameter

Standard: 69.961 – 69.976 mm
Service Limit: 69.80 mm

Piston/Cylinder Clearance

0.054 – 0.064 mm

Engine Right Side

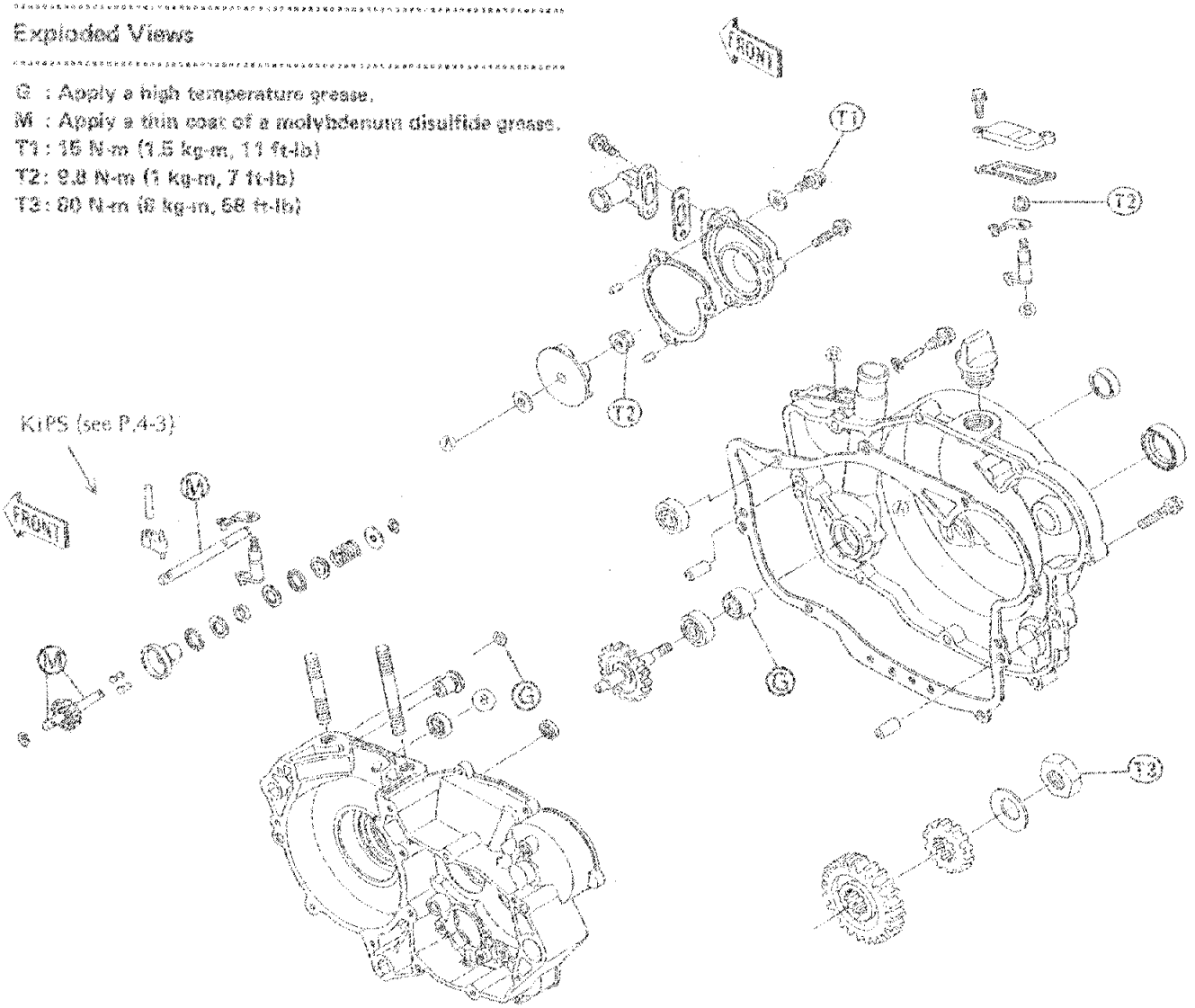
Table of Contents

Exploded Views 4-2
Service Data 4-2
Special Tool 4-2
Transmission Oil . . . . . *, 4-3
  Oil Level Inspection . . . . . *, 4-3
  Oil Change . . . . . *
Water Pump
  Coolant Level 3-4
  Disassembly and Assembly . . . . . *
  Inspection . . . . . *
Right Engine Cover 4-3
  Right Engine Cover Removal 4-3
  Right Engine Cover Installation 4-4
  Exhaust Advancer Assembly Point 4-5
  Exhaust Advancer Visual Inspection 4-5
  Advancer Spring Free Length Measurement 4-5
Clutch 4-5
  Clutch Cable Adjustment and Removal . . . . . *
  Removal and Installation Points . . . . . *
  Primary Gear Removal/Installation Points 4-5
  Friction Plate Installation Point 4-6
  Friction Plate Wear, Damage Inspection . . . . . *
  Friction and Steel Plate Warp Inspection . . . . . *
  Clutch Spring Free Length Measurement . . . . . *
  Friction Plate/Clutch Housing Clearance . . . . . *
External Shift Mechanism . . . . . *
  Shift Mechanism Installation . . . . . *
  Shift Mechanism Inspection . . . . . *
Kickstarter . . . . . *
  Assembly Point . . . . . *
  Installation Point . . . . . *

*Refer to Base Manual

Exploded Views

G : Apply a high temperature grease.
M : Apply a thin coat of a molybdenum disulfide grease.
T1 : 15 N·m (1.5 kg-m, 11 ft-lb)
T2 : 9.8 N·m (1 kg-m, 7 ft-lb)
T3 : 80 N·m (8 kg-m, 58 ft-lb)



Service Data

Item	Standard	Service Limit
Transmission Oil: Capacity	800 mL	
Clutch:		
Clutch Spring free length	33.3 mm	32.3 mm
Friction plate thickness	3.12 – 3.28 mm	3.0 mm
Exhaust Advancer:		
Exhaust advancer spring free length	25 mm	23.5 mm

Special Tool

Gear Holder: 57001-302

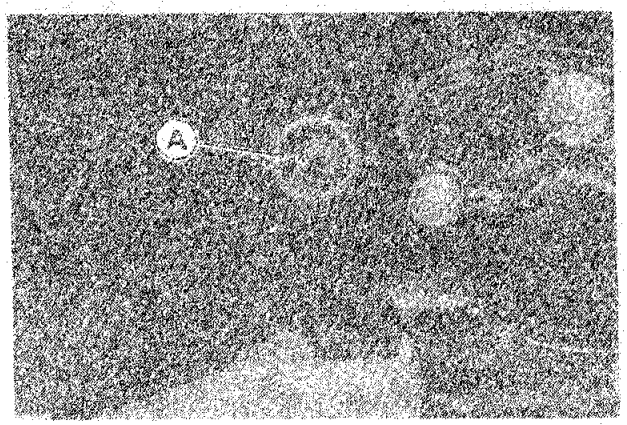


Transmission Oil

Refer to p. 4-5 of the Base Manual, noting the following.

Oil Level Inspection

The oil level should be in the middle of the gauge.

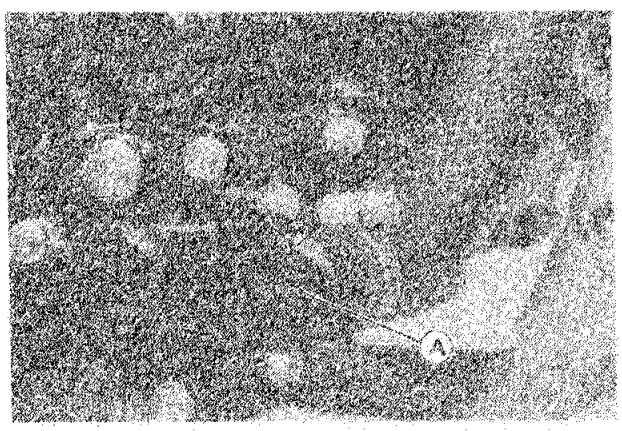


A. Oil Level Gauge

Right Engine Cover

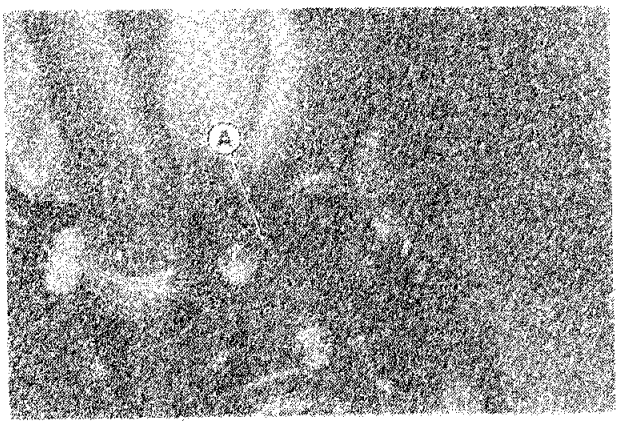
Right Engine Cover Removal

- Drain the transmission oil (see Base Manual).
- Drain the coolant (see Coolant Changing).
- Remove the following parts.
  - Kick Pedal
  - Brake Pedal (see Brake Pedal Position Adjustment)
  - Water Pump Side Cover



A. Water Pump Side Cover

- Remove the advancer cover and the right engine cover mounting bolts.



A. Advancer Cover

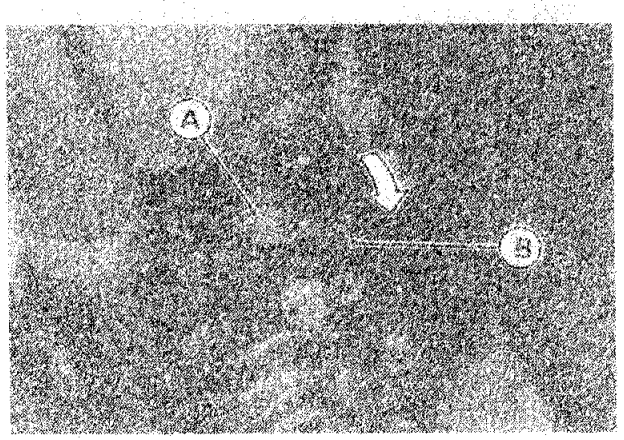


A. Mounting Bolts

NOTE

It is not necessary to remove the water pump cover for right engine cover removal.

- Unscrew the lever mounting nut clockwise to remove the advancer lever.

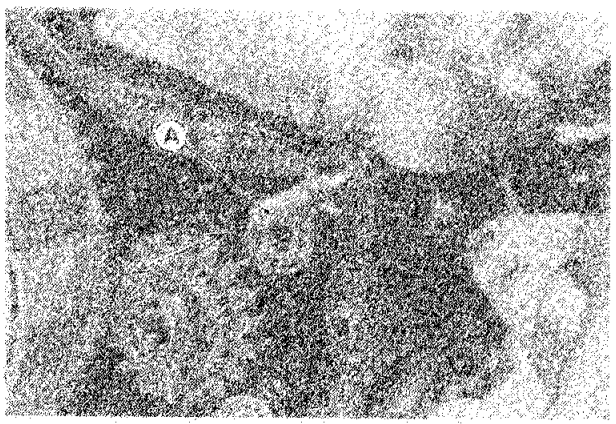


A. Nut: left-hand threads
B. Advancer Lever

*Remove the right engine cover with the exhaust advancer assembly and the water pump installed.
*If necessary, remove the exhaust advancer assembly and the water pump from the right engine cover.

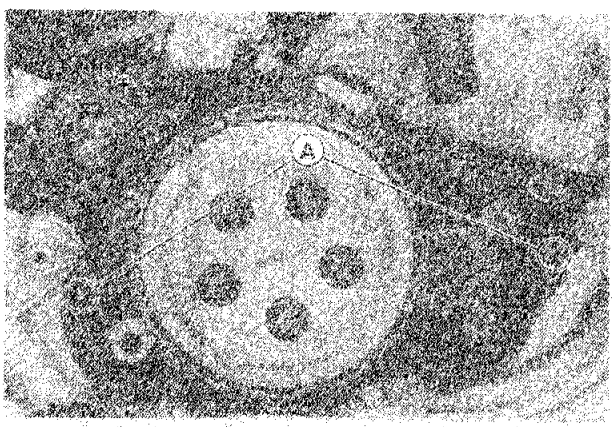
Right Engine Cover Installation

*Apply a molybdenum disulfide grease to the rod.
*Check that the rod in the crankcase moves smoothly back and forth.



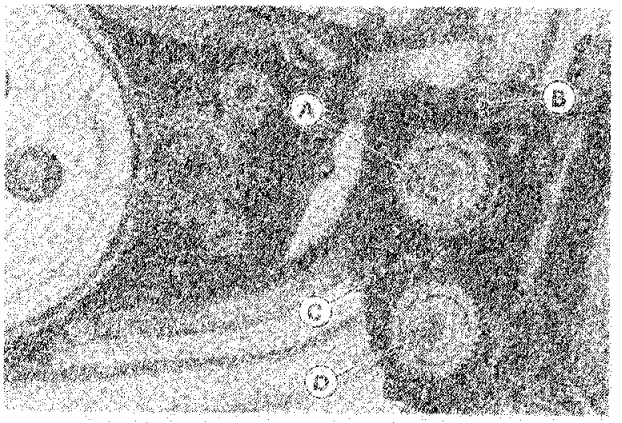
A. Rod

*Check that the knock pins (2) are on the right crankcase.



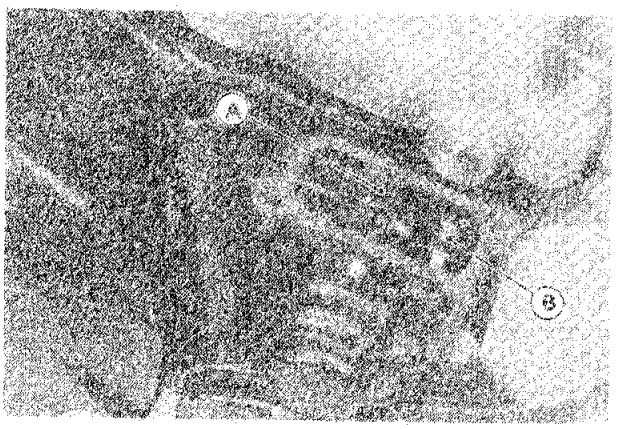
A. Knock Pins

*Assemble the exhaust advancer, advancer link shaft and water pump assembly in the right engine cover.



A. Exhaust Advancer Assembly
B. Advancer Link Shaft
C. Right Engine Cover
D. Water Pump Assembly

oInstall the right engine cover while pushing down the kick lever by hand a little at a time in order to mesh the gears.
*Tighten the right engine cover mounting bolts.
*With the rod pushed in fully and with the advancer link shaft turned counterclockwise fully, insert the advancer lever.



A. Advancer Link Shaft B. Rod

*Tighten the lever mounting nut counterclockwise to the specified torque (see Exploded Views).
oAfter tightening the lever mounting nut, do not turn the lever clockwise too much.



A. Advancer Lever

CAUTION

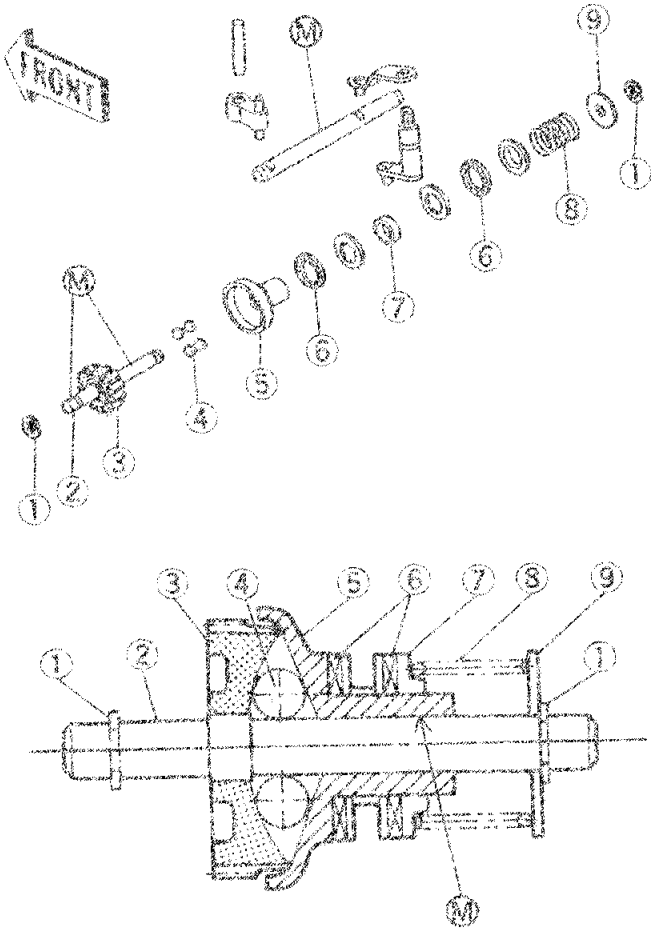
○Turning the lever clockwise too much may upset the ball arrangement in the advancer holder, and the advancer assembly may need to be disassembled.

●Install the following parts in the original position.
Advancer Cover
Water Pump Side Cover
Brake Pedal
Kick Pedal (see Kick Pedal Installation)
●Fill the crankcase with transmission oil (see Oil Level Inspection)
●Fill the engine with coolant (see Coolant Changing).

Exhaust Advancer Assembly Point

●Apply a molybdenum disulfide grease to the advancer shaft at assembling.

Exhaust Advancer Assembly



1. Circlips
2. Exhaust Advancer Shaft
3. Gear
4. Steel Balls
5. Holder
6. Thrust Bearings
7. Collar
8. Advancer Spring
9. Washer

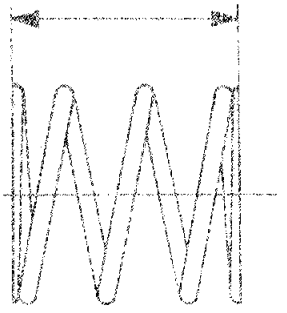
Exhaust Advancer Visual Inspection

●Check the exhaust advancer assembly and rod arm parts for signs of damage. If necessary, replace them with new ones.

Advancer Spring Free Length Measurement

Advancer Spring Free Length

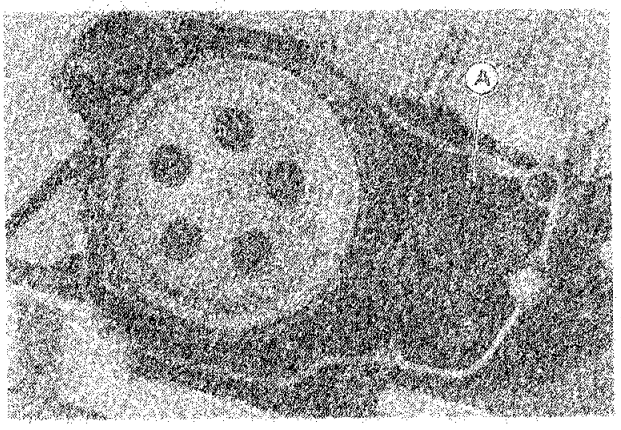
Standard:	**25 mm**
Service Limit:	**23.5 mm**



Clutch

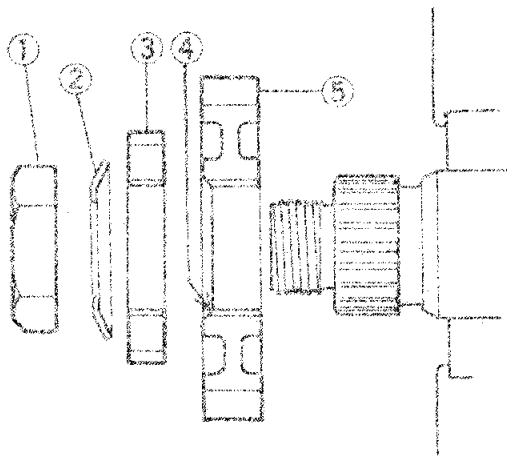
Primary Gear Removal/Installation Points

●Loosen the primary gear nut or tighten it to the specified torque (Exploded Views) while holding the primary gear with the gear holder (special tool).



A. Gear Holder: 57001-302

●Install the primary gear and spring washer, noting the proper direction shown.
○Either direction will do for installation of the water pump gear.

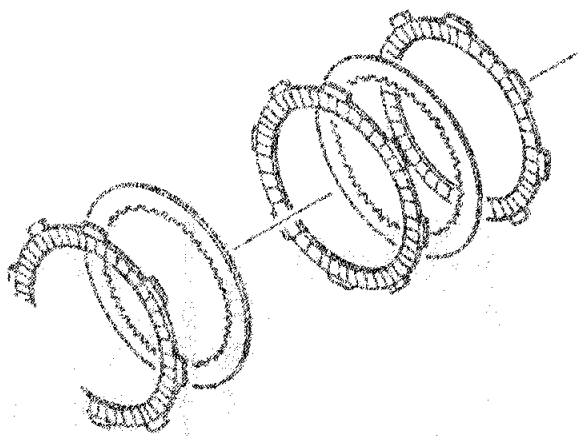


1. Primary Gear Nut
2. Spring Washer
3. Water Pump Gear
4. Chamfer
5. Primary Gear: chamfered side faces out.

Friction Plate Installation Point

○The grooves on the friction plate surfaces are cut just radially. Plate installation is free of its rotation direction.

Friction Plate



CAUTION

○If new dry steel plates and friction plates are installed, apply engine oil to the surfaces of each plate to avoid clutch plate seizure.

Engine Left Side

Table of Contents

Engine Sprocket
- Sprocket Removal Point . . . . . *
- Sprocket Installation Point . . . . . *

Clutch Release
- Removal . . . . . *

Magneto
- Removal . . . . . *
- Installation . . . . . *

*Refer to Base Manual

Engine Removal, Installation

Table of Contents

Engine Removal/Installation 6-2
Removal Point. 6-2
Installation Point. 6-2
Flow Chart (Engine Disassembly) . . . . . *

*Refer to Base Manual

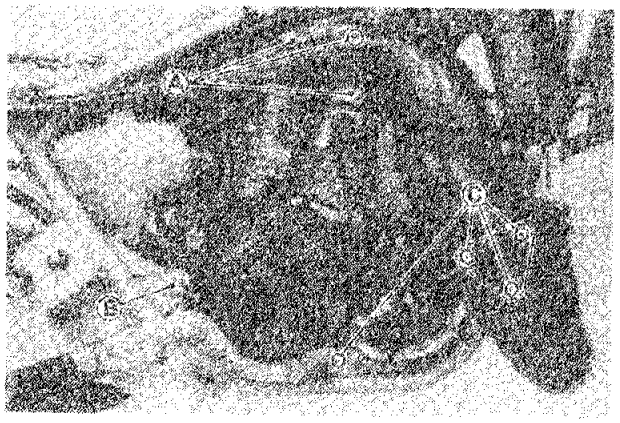
Engine Removal/Installation

Removal Point

Refer to the Base Manual, noting the following.
●After removing the radiators, remove the muffler assembly. This prevents radiator damage.

Installation Point

Refer to the Base Manual, noting the following.
●Tighten the engine mounting bolts and pivot shaft to the specified torque.



A. Engine Mounting Bolts 10 mm
39 N·m (4.0 kg·m, 29 ft·lb)
B. Pivot Shaft
110 N·m (11 kg·m, 80 ft·lb)
C. Engine Mounting Bolts 8 mm
25 N·m (2.5 kg·m, 29 ft·lb)

Engine Bottom End/Transmission

Table of Contents

Exploded Views 7-2
Service Data ..... *
Special Tool ..... *
Crankcase Splitting 7-2
- Crankcase Disassembly Point ..... *
- Crankcase Assembly Point ..... *
- Crankshaft Installation Point ..... *
- External Shift Mechanism Assembly 7-2
- Transmission Assembly ..... *

Transmission Maintenance ..... *
- Shift Drum, Shift Fork, Shift Rod Inspection ..... *
- Shift Fork, Gear Groove Wear Measurement ..... *
- Shift Fork Guide Pin/Shift Drum Groove Wear ..... *

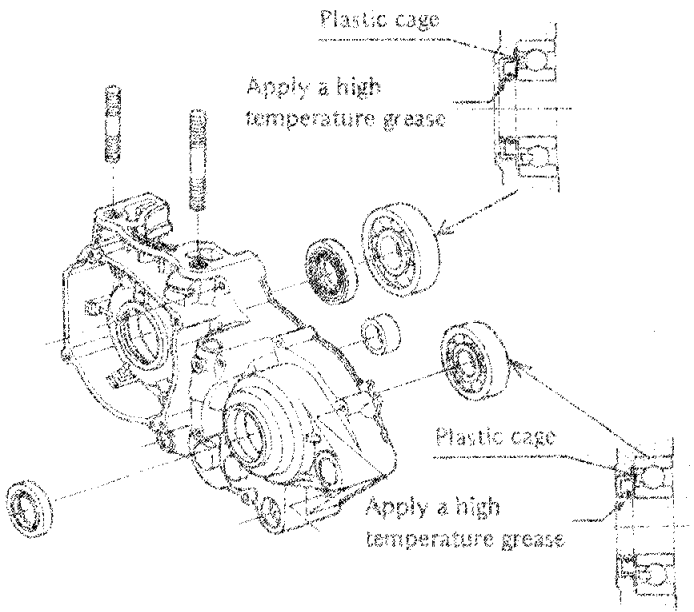
Crankshaft Maintenance ..... *
- Connecting Rod Big End Radial Clearance ..... *
- Big End Seizure ..... *
- Connecting Rod Side Clearance ..... *
- Crankshaft Runout ..... *
- Crankshaft Alignment ..... *

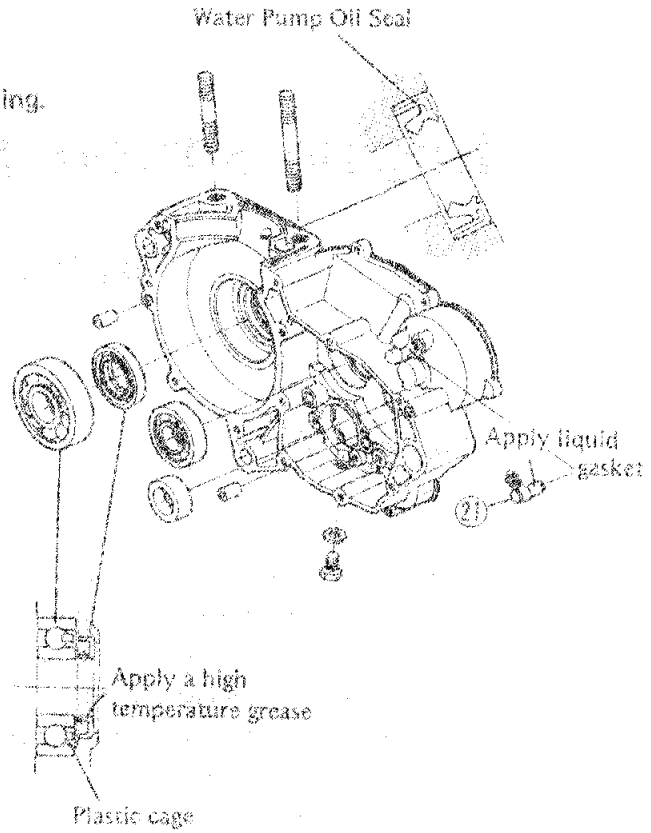
Crankshaft Disassembly ..... *
- Disassembly Point ..... *
- Assembly Point ..... *

*Refer to Base Manual

Exploded Views

Refer to p. 7-2 of the Base Manual, noting the following.



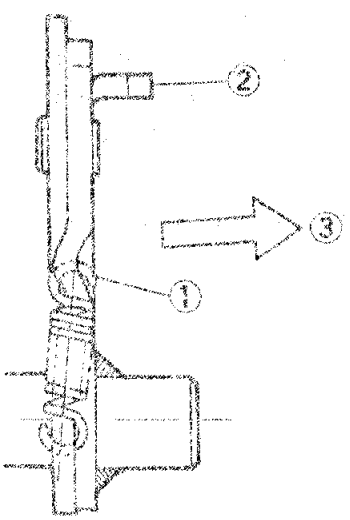


Crankcase Splitting

External Shift Mechanism Assembly

- Install the arm spring on the shift mechanism arm in the direction shown.

External Shift Mechanism Assembly



1. Arm Spring
2. Shift Mechanism Arm
3. Right Engine Cover

Wheel and Tires

Table of Contents

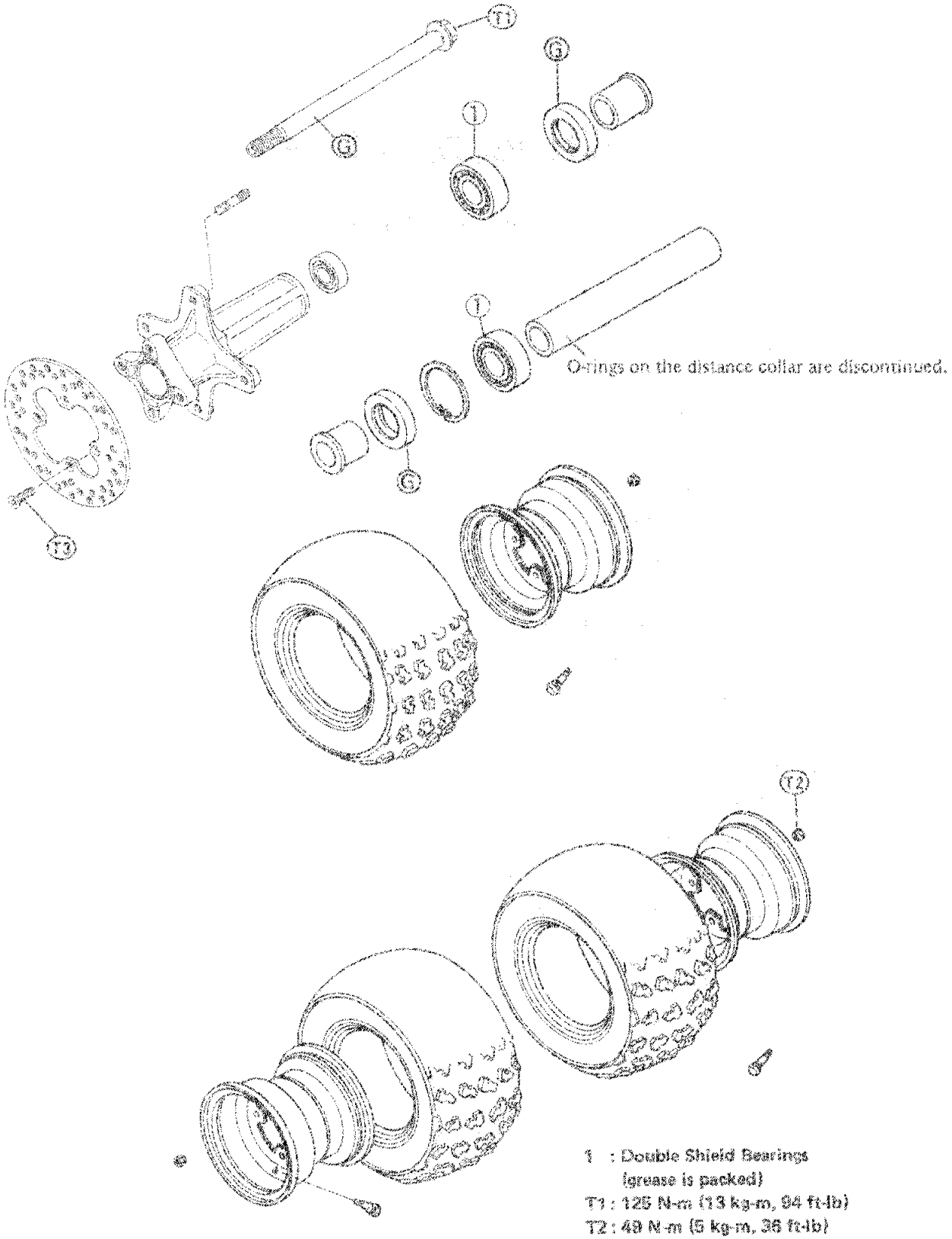
Exploded Views 8-2
Service Data 8-3
Special Tool 8-3
Tires (Tubeless) 8-4
- Tire Removal 8-4
- Tire Installation 8-4
- Tire Inspection . . . . . *
- Tire Patching . . . . . *

Wheels (Rims) 8-5
- Wheel Installation Point 8-5
- Wheel Inspection . . . . . *
- Wheel Replacement . . . . . *
- Front Hub Assembly Point 8-6

Wheel Bearings . . . . . *
- Removal Point . . . . . *
- Installation Point . . . . . *
- Front Hub Bearing Inspection . . . . . *
- Rear Hub Bearing Lubrication, Inspection . . . . . *

* Refer to Base Manual

Exploded Views



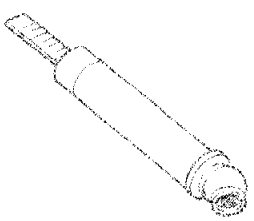
1 : Double Shield Bearings
(grease is packed)
T1 : 125 N-m (13 kg-m, 94 ft-lb)
T2 : 49 N-m (5 kg-m, 36 ft-lb)
T3 : 23 N-m (2.3 kg-m, 16.5 ft-lb)
G : Apply grease.

Service Data

Item		Standard
Wheels:		
Tire payload		123 kg (270 lb)
Front tire:	Make & type	DUNLOP KNOBBY/TRAIL Tubeless
	Tire size	23 x 9.00 - 11 KT731
	Air pressure	35 kPa (0.35 kg/cm², 5 psi)
Rear tire:	Make & type	DUNLOP KNOBBY/TRAIL Tubeless
	Tire size	20 x 11.00 - 10 KT737
	Air Pressure	28 kPa (0.28 kg/cm², 4 psi)

Special Tool

Air Pressure Gauge: 52005-1075A

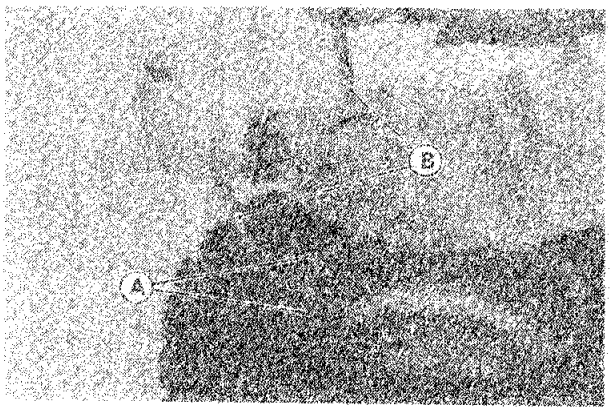


Tires (Tubeless)

Tire Removal

Refer to P. 8 – 4, noting the following.

*When separating the rim from the tire bead with the tire irons, use a suitable rim protectors around the valve stem to prevent the aluminium rim damage.

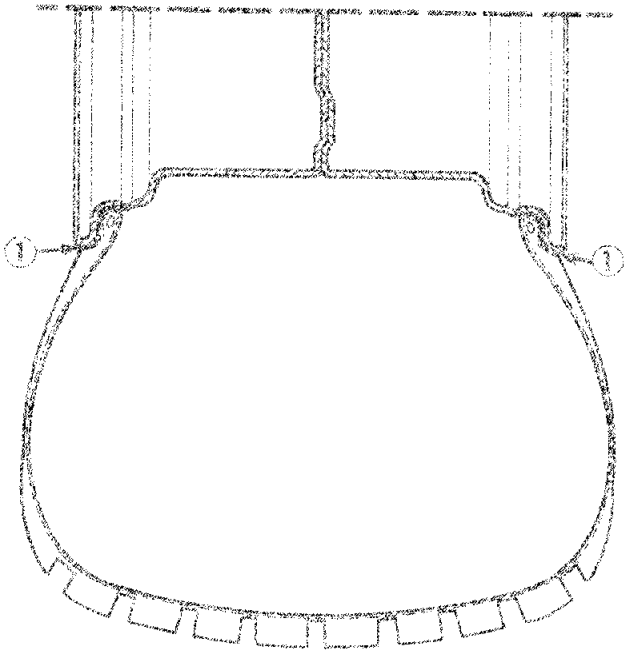


A. Rim Protectors : Split rubber hoses
B. Tire Irons : 57001-1073

CAUTION

○Do not scratch the air sealing surfaces of the tire and rim with the irons or the tire may leak.

Cross Section of Tire and Rim



1. Air Sealing Surfaces

Tire Installation

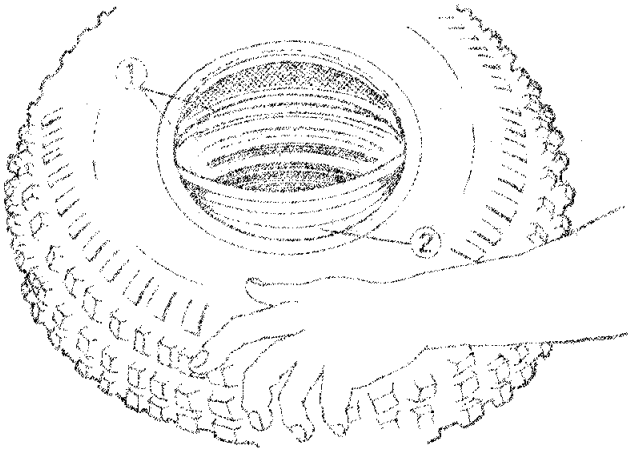
*Inspect the rim (see Wheel Inspection).
*Check the tire for wear and damage (see Tire Inspection).
*Lubricate the tire beads, rim flanges, and the tire irons with a soap and water solution.

CAUTION

○Do not use the lubricant to lubricate the tire beads and rim because it may cause the tire separation.

*By hand, slide as much of the first bead as possible over the rim flange, starting at the side opposite the valve stem.
○As the bead goes onto the rim, force the bead into the center well of the rim to ease installation.

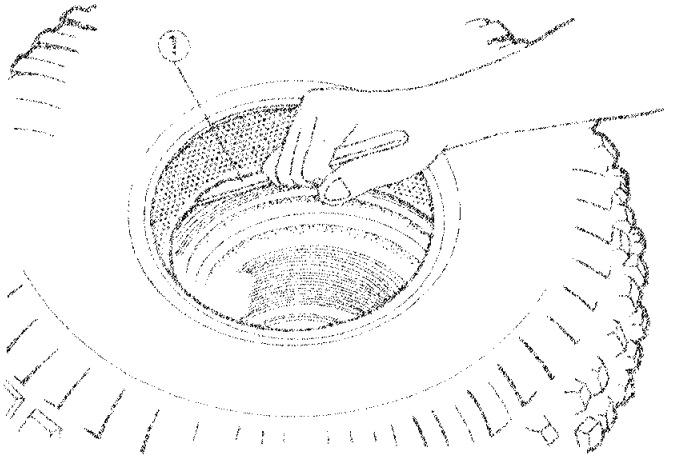
Bead Installation



1. Tire Beads 2. Center Well

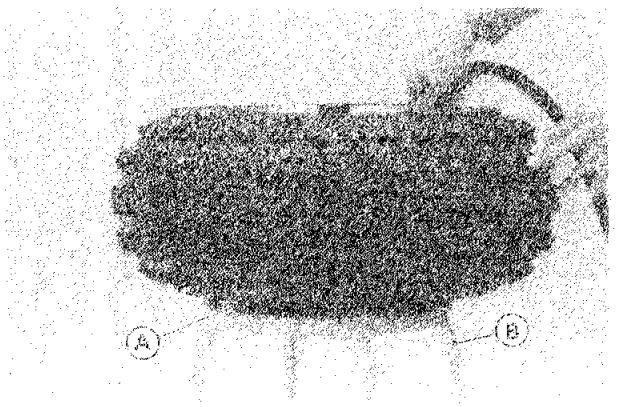
*Use the tire irons and a suitable rim protectors (eg. rubber tubes) to install the rest of the bead.

Bead Installation



1. Tire Irons: 57001-1073

*Use the same procedure to install the second bead.
*Lubricate the tire beads again and center the tire on the rim.
*Support the wheel rim on the suitable stand to prevent slipping off of the tire.



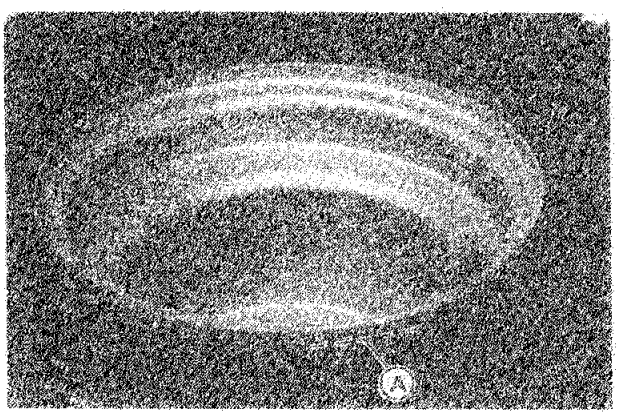
A. Rim B. Suitable Stand

*Inflate the tire until the tire beads seat on the rim.

WARNING

○Do not inflate the tire to more than 137 kPa (1.4 kg/cm², 20 psi). Overinflation can cause the tire to explode, causing personal injury.

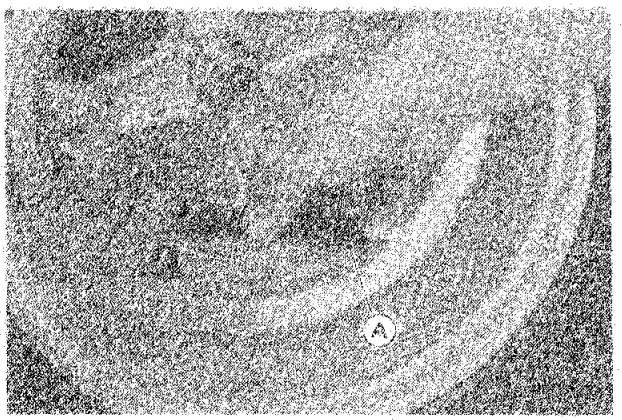
*Check to see that the rim lines on both sides of the tire are parallel with the rim flanges.



A. Rim Line

*If the rim lines and the rim flanges are not parallel, deflate the tire, lubricate the sealing surfaces again, and reinflate the tire.
*After the beads are properly seated, check for air leaks.
○Inflate the tire to 35 kPa (0.35 kg/cm², 5 psi). Apply a soap and water solution around the tire bead and check for bubbles.

***Deflate the tire to specified pressure (see Specifications).**
***Check the tire pressure using the new type air pressure gauge (special tool) for low air pressure.**



A. Air Pressure Gauge: 52005-1075A

*Install the wheel (see Wheel Installation).
***Wipe off the soap and water solution on the tire, and dry out the tire before operation.**

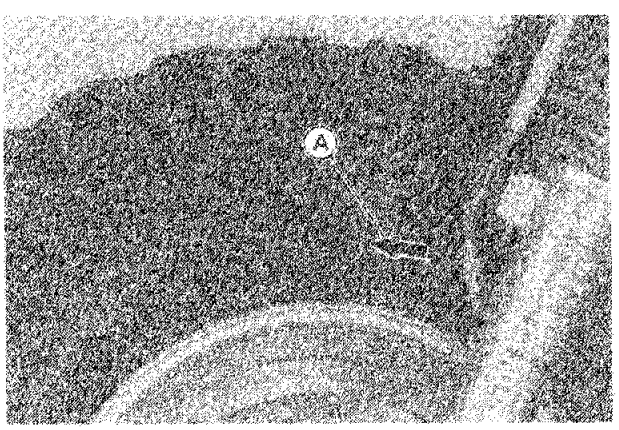
WARNING

○Do not operate the vehicle when the water and soap still exist around the tire beads. They will cause the tire separation, and a hazardous condition may result.

Wheels (Rims)

Wheel Installation Point

*Mount the wheel on the studs.
*Position the wheel so that the valve stem is toward the outside of the vehicle.
*Check the tire rotation mark on the front tire side wall and install it on the rim accordingly.

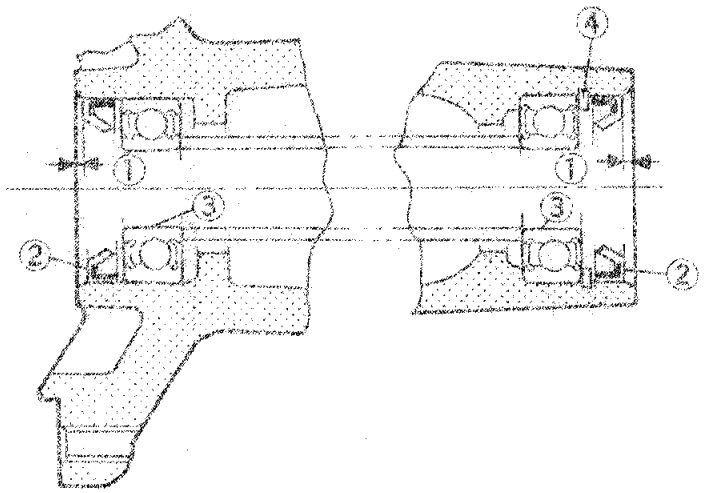


A. Rotation Mark

Front Hub Assembly Point

- Press each ball bearing and oil seal into place using the bearing driver (57001-1129) as shown

Ball Bearing and Oil Seal Installation



1. 1.5 to 2.5 mm
2. Oil Seals
3. Shielded Ball Bearings
4. Circlip

Final Drive

Table of Contents

Exploded Views 9-2
Service Data 9-3
Special Tool ..... *
Drive Chain 9-3
- Slack Inspection 9-3
- Slack Adjustment 9-3
- Wear Inspection ..... *
- Chain Guide Wear ..... *
- Lubrication ..... *
- Drive Chain Removal 9-4
- Drive Chain Installation Point 9-4

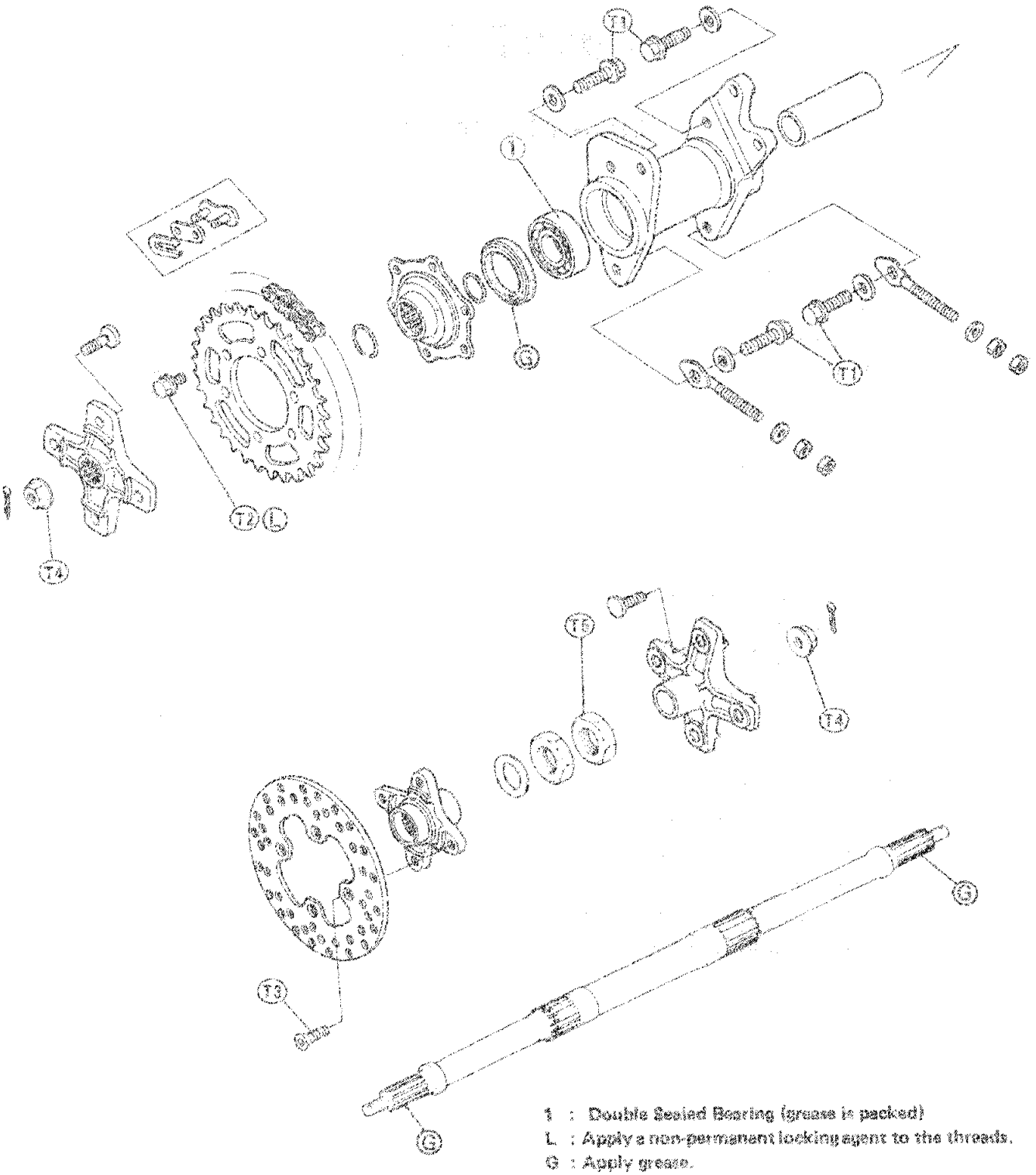
Engine Sprocket ..... *
- Sprocket Removal Point ..... *
- Sprocket Installation Points ..... *

Rear Sprocket 9-4
- Rear Sprocket Installation Point 9-4

Rear Axle and Bearing ..... *
- Rear Axle Removal ..... *
- Rear Axle Assembly Removal ..... *
- Rear Axle Installation Points ..... *
- Installation Points of Rear Sprocket ..... *
- Wheel Bearing Removal ..... *

*Refer to Base Manual

Exploded View



1 : Double Sealed Bearing (grease is packed)
L : Apply a non-permanent locking agent to the threads.
G : Apply grease.
T1 : 74 N-m (7.5 kg-m, 54 ft-lb)
T2 : 21 N-m (2.1 kg-m, 15 ft-lb)
T3 : 23 N-m (2.3 kg-m, 16.5 ft-lb)
T4 : 135 N-m (14 kg-m, 100 ft-lb)
T5 : 98 N-m (10 kg-m, 72 ft-lb)

Service Data

Drive Chain Specification

Make and type:	Enuma, Joint Endless EK520 SH-O 94 Links
Chain Slack (usable range):	50 – 60 mm

Drive Chain

Refer to p. 9-4 of the Base Manual, noting the following.

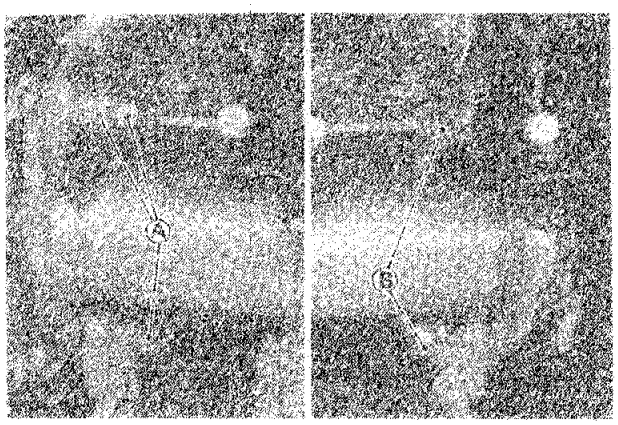
Slack Inspection

Drive Chain Slack

Usable Range: 50 – 60 mm

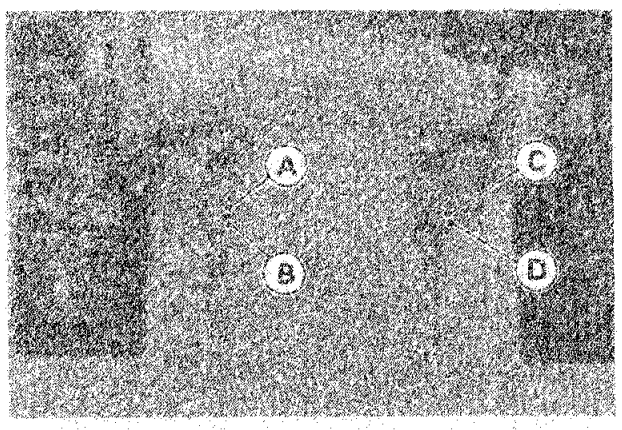
Slack Adjustment

- Loosen the swing arm mounting bolts (5 on both sides).
- Loosen the right and left chain adjuster locknuts.



A. Left Swing Arm Mounting Bolts
B. Right Swing Arm Mounting Bolts

- Loosen both adjuster locknuts.
- Back out the right chain adjusting nut sufficiently.
- Back out the left chain adjusting nut until the drive chain has the correct amount of slack, and then tighten the locknut.



A. Left Adjusting Nut
B. Left Adjuster Locknut
C. Right Adjusting Nut
D. Right Adjuster Locknut

- Screw in the right chain adjusting nut until it stops and tighten the locknut.
- Tighten the right swing arm mounting bolts (2) and then the left swing arm mounting bolts (3) to **74 N·m (7.5 kg-m, 54 ft-lb)** of torque.

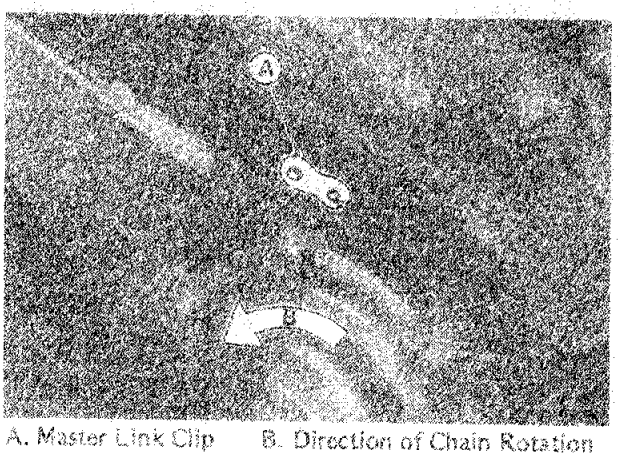
WARNING

Be sure to tighten the swing arm mounting bolts securely and in correct order, or an unsafe riding condition may result.

- Rotate the wheel, measure the chain slack again at the tightest position, and readjust if necessary.

Drive Chain Removal

*Remove the clip from the drive chain master link using pliers, and remove the master link.



A. Master Link Clip B. Direction of Chain Rotation

*Free the drive chain from the sprockets, being careful that the chain does not get dirty from contact with the ground.

Drive Chain Installation Point

*Install the master link clip, being careful of the direction as shown.

*Adjust the drive chain.

WARNING

Incorrect installation of the master link clip can allow it to catch on an adjacent part. If the clip dislodges, the chain could come apart, and this could result in rear wheel lockup and loss of control.

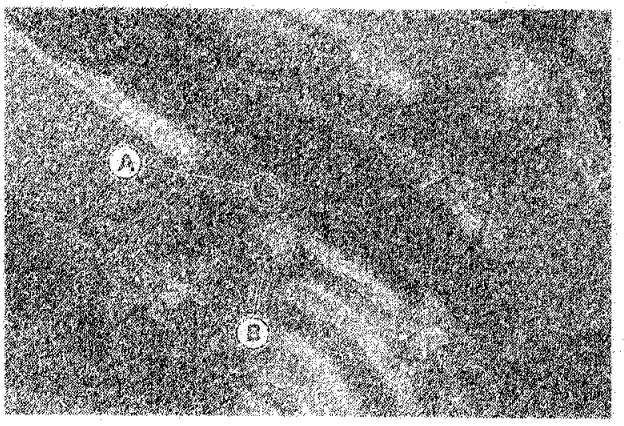
Rear Sprocket

Rear Sprocket Installation Point

*Install the rear sprocket facing the tooth number marking outward.

If the sprocket mounting bolts are re-used, apply a non-permanent locking agent to the threads.

*Tighten the bolts to the specified torque (see Exploded Views).



A. Tooth Number Marking B. Bolts

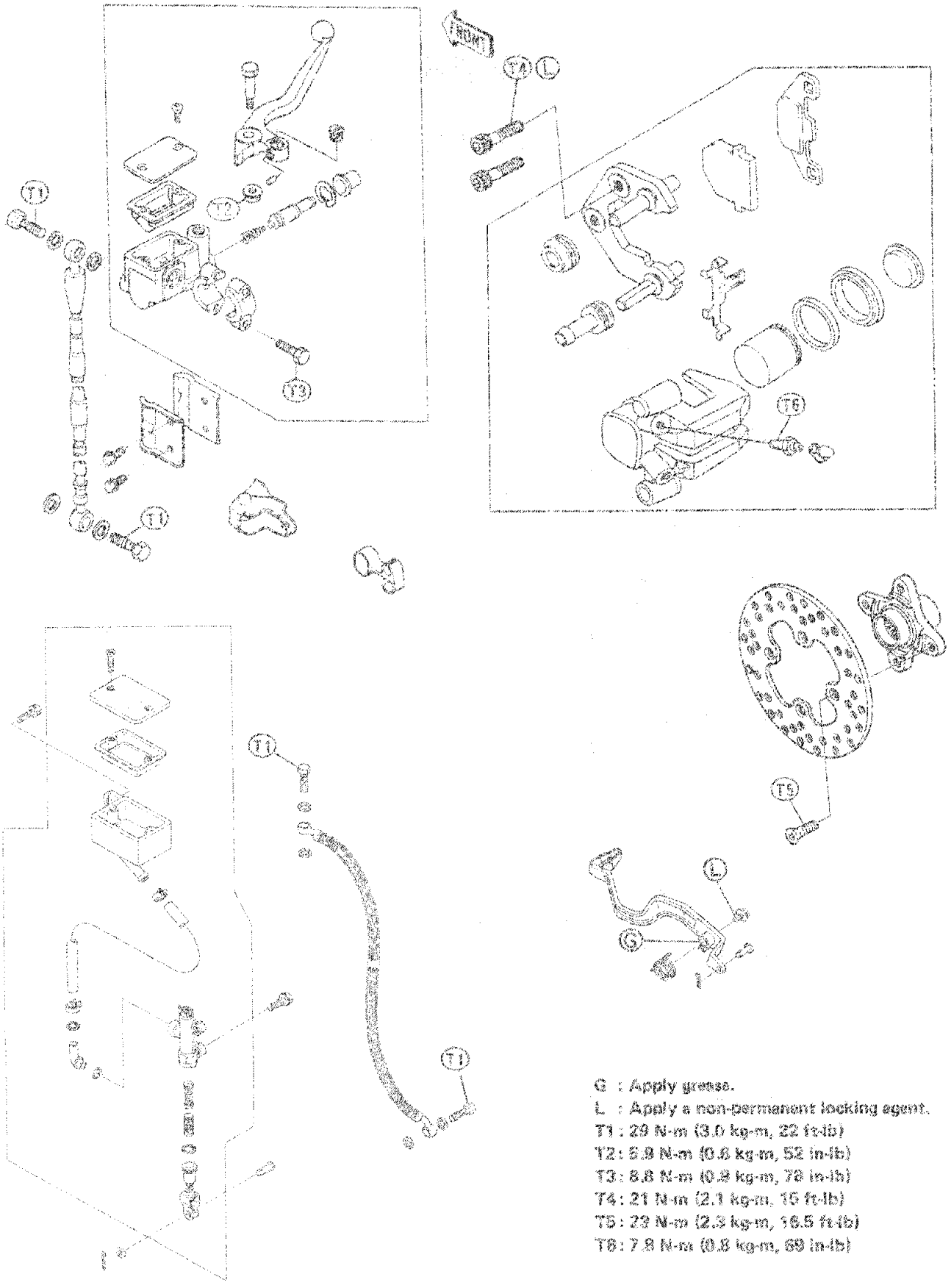
Brakes

Table of Contents

Exploded Views 10-2
Service Data 10-3
Brake Adjustment 10-4
  Front Brake Lever Play 10-4
  Brake Pedal Position Adjustment 10-4
Brake Fluid 10-5
  Fluid Requirement ..... *
  Front Brake Fluid Level Inspection 10-5
  Rear Brake Fluid Level Inspection 10-5
  Changing the Brake Fluid ..... *
  Bleeding the Brake Fluid ..... *
Front Brake Disassembly 10-6
  Front Caliper Removal 10-6
  Front Brake Hose Installation 10-6
  Front Master Cylinder Installation Points 10-6
  Front Master Cylinder Disassembly 10-6
Rear Brake Disassembly ..... *
  Removal Points of Pads ..... *
  Inspection After Installation ..... *
  Removal Points of Calipers ..... *
  Installation Points of Calipers ..... *
  Disassembly Points of Calipers ..... *
  Assembly Points of Calipers ..... *
  Installation Points of Rear Master Cylinder ..... *
  Disassembly Points of Rear Master Cylinder ..... *
  Assembly Points of Rear Master Cylinder ..... *
Brake Maintenance ..... *
  Rear Disc Runout Inspection ..... *
  Disc Cleaning ..... *
  Caliper Part Inspection ..... *

*Refer to Base Manual

Exploded View

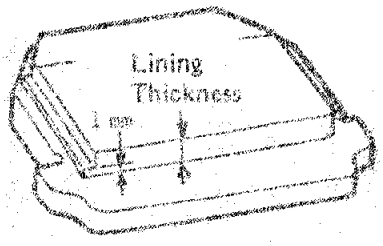


G : Apply grease.
L : Apply a non-permanent locking agent.
T1 : 29 N-m (3.0 kg-m, 22 ft-lb)
T2 : 5.9 N-m (0.6 kg-m, 52 in-lb)
T3 : 8.8 N-m (0.9 kg-m, 78 in-lb)
T4 : 21 N-m (2.1 kg-m, 15 ft-lb)
T5 : 23 N-m (2.3 kg-m, 16.5 ft-lb)
T6 : 7.8 N-m (0.8 kg-m, 69 in-lb)

Service Data

Item		Standard	Service Limit
Brakes:			
Brake fluid grade		D.O.T.3	
Brake lever		Adjustable	
Brake pedal position		0 – 10 mm	
Brake pedal play		Non-adjustable	
Disc brakes:	Pad lining thickness	4.5 mm	1 mm
	Disc thickness	3.8 – 4.1 mm	3.5 mm
	Disc runout	under 0.2 mm	0.3 mm

Brake Pad



Recommended Brake Fluid

Atlas Extra Heavy Duty
Shell Super Heavy Duty
Texaco Super Heavy Duty
Wagner Lockheed Heavy Duty
Castrol Girling – Universal
Castrol GT (LMA)
Castrol Disc Brake Fluid

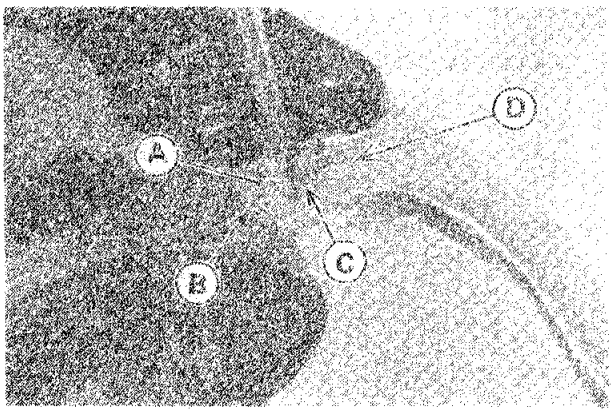
Brake Adjustment

Front Brake Lever Play

○The brake lever play adjuster has 2 positions: one punch mark and two punch marks.

●Turn the adjuster to suit you until the punch mark is aligned with the line mark and you feel a click.

○The standard setting position is the **one punch mark.**



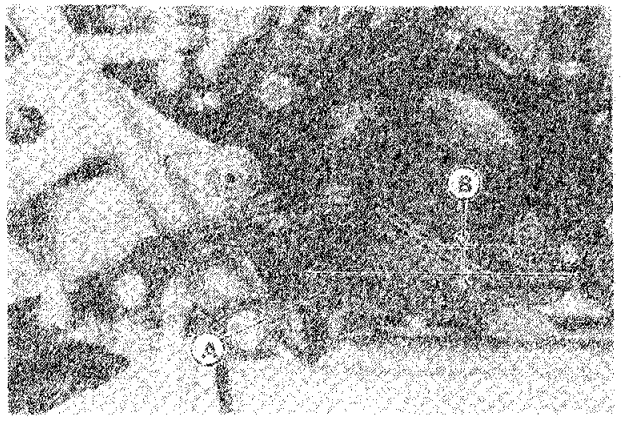
A. Adjuster
B. Two Punch Marks
C. One Punch Mark
D. Line Mark

WARNING

○**If the brake lever feels mushy when it is applied, there might be air in the brake lines or the brake may be defective. Since it is dangerous to operate the motorcycle under such conditions, check the brake immediately.**

Brake Pedal Position Adjustment

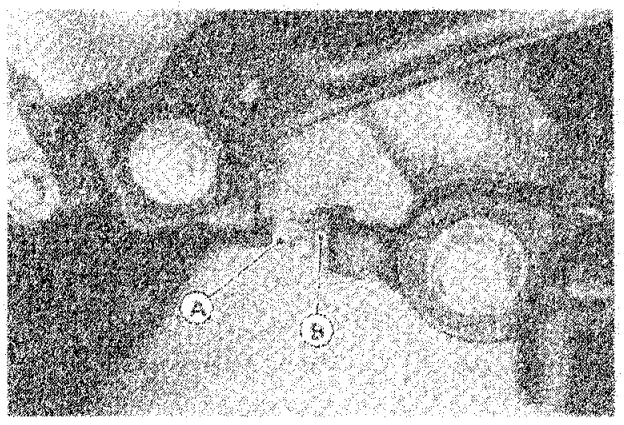
○When the brake pedal is in the return position, it should be **0 — 10 mm (0 — 0.4 in)** higher than the top of the footpeg.



A. Footpeg
B. 0 — 10 mm (0 — 0.4 in)

●Adjust the brake pedal position as follows.

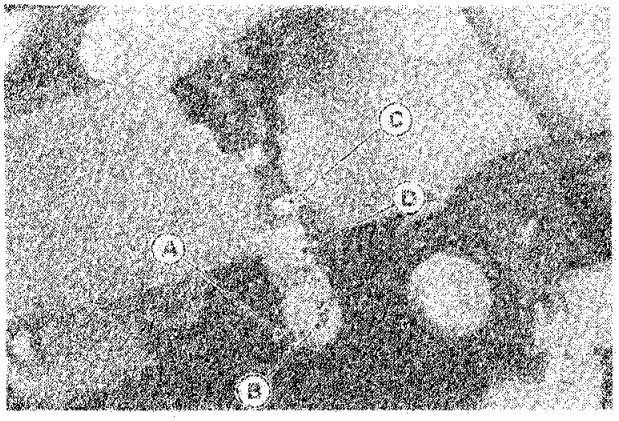
○Loosen the stopper locknut and turn in the stopper to keep the pedal free from it.



A. Stopper
B. Locknut

○Pull out the cotter pin and pin joint.

○Loosen the master cylinder locknut.

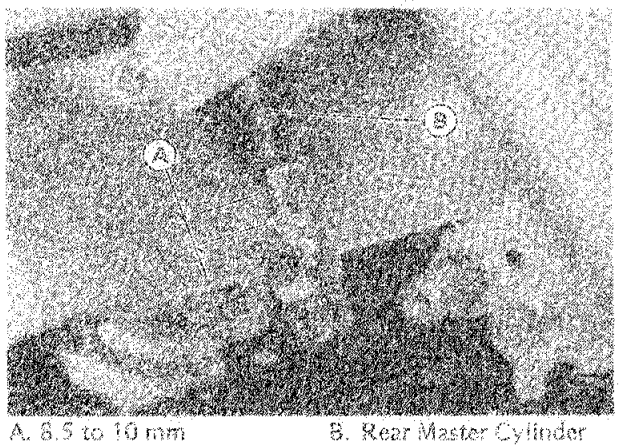


A. Cotter Pin
B. Pin Joint
C. Locknut
D. Clevis

○Up or down the adjusting nut by turning the clevis to adjust the brake pedal position.

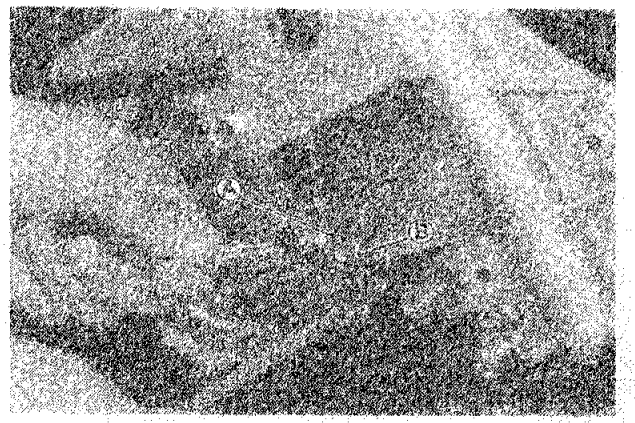
NOTE

○*When the length is 8.5 to 10 mm between the nuts shown, the pedal position will be within the standard range (0 — 10 mm).*



A. 8.5 to 10 mm
B. Rear Master Cylinder

○After the adjustment is made, tighten the locknut while holding the clevis.



A. Locknut B. Clevis

○Turn out the stopper until it touches the brake pedal lever and then tighten the locknut.

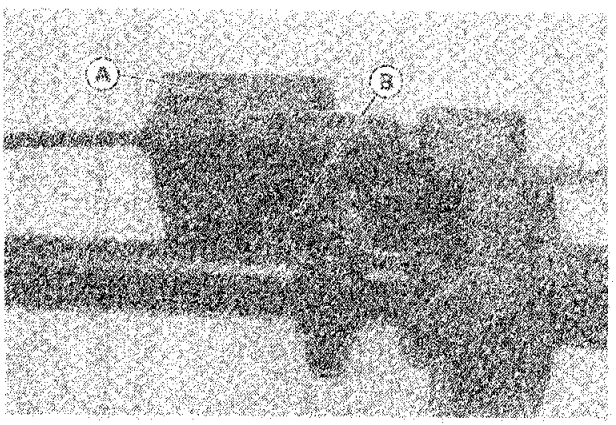
WARNING

○Always maintain correct brake adjustment. If adjustment is incorrect, the brake could drag and overheat. This could damage the brake assembly and possibly lock the wheel resulting in loss of control.

Brake Fluid

Front Brake Fluid Level Inspection

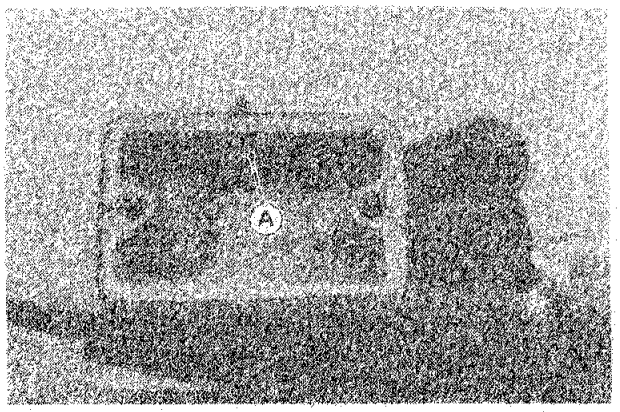
●Holding the reservoir horizontal, check that the brake fluid level in the reservoir is higher than the lower level.



A. Reservoir B. Lower Level

★If the fluid level is below the lower level, check the fluid leakage of the brake line, and add the brake fluid as follows.

○Remove the reservoir cap, and fill the reservoir to the level line in the reservoir with the same type and brand of brake fluid that already is in the reservoir. And then install the reservoir cap.



A. Level Line

Rear Brake Fluid Level Inspection

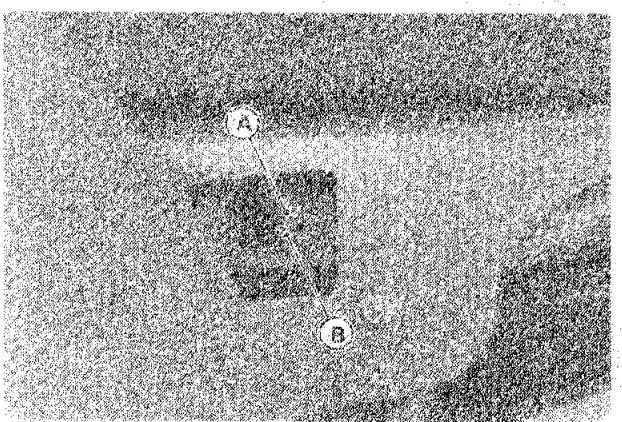
●Park the vehicle on level ground.

●Check the brake fluid level in the reservoir.

○The fluid level should be between the upper and lower level lines.

★If the fluid level is below the lower level line, check the brake line for leakage. Then, remove the rear fender and seat, and fill the reservoir to the upper level line with the same type and brand of fluid that already is in the reservoir.

●Install the reservoir cap.



A. Upper Level Line B. Lower Level Line

CAUTION

○Do not spill brake fluid onto any painted surface.

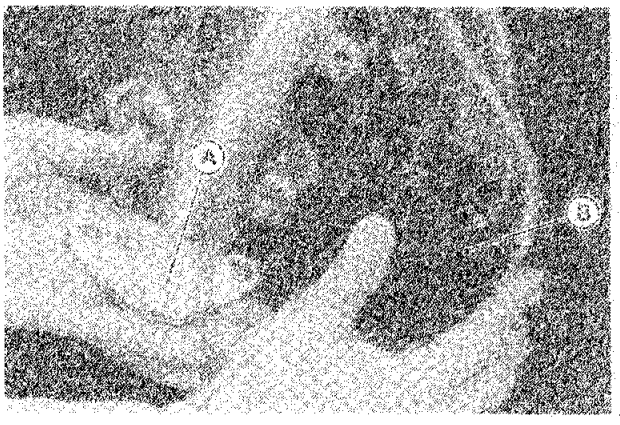
WARNING

○Do not mix two brands of fluid. Change the brake fluid in the brake line completely if the brake fluid must be refilled but the type and brand of the brake fluid that already is in the reservoir are unidentified.
○Do not use fluid from a container that has been left open or that has been unsealed for a long time.
○Check for fluid leakage around the fittings.
○Check for brake hose damage.

Front Brake Disassembly

Front Caliper Removal

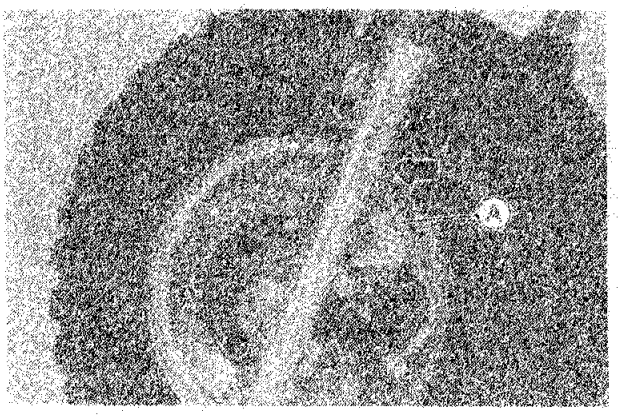
*Remove the caliper mounting bolts (2).
*Unscrew the front axle shaft to separate it from the left fork leg.
*Slide the caliper out of the disc and take out the inboard pad.
*Remove the caliper.



A. Inboard Pad B. Caliper

Front Brake Hose Installation

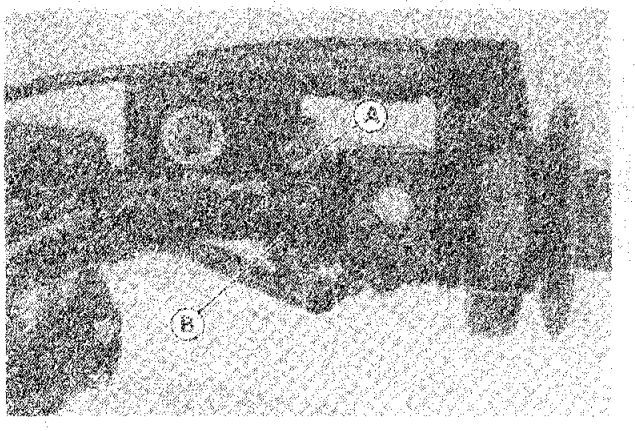
*Run the brake hose as shown.



A. Brake Hose

Front Master Cylinder Installation Points

○The master cylinder clamp must be installed with the arrow mark upward.
*Tighten the upper clamp bolt first, and then the lower clamp bolt to **8.8 N·m (0.9 kg-m, 78 in-lb)** of torque. There will be a gap at the lower part of the clamp after tightening.



A. Tighten upper clamp bolt first.
B. Arrow Mark

Front Master Cylinder Disassembly

*Drain the brake fluid.
*Remove the banjo bolt to disconnect the upper brake hose from the master cylinder.
*Remove the locknut and pivot bolt, and remove the brake lever.
*Remove the clamp bolts, and take off the master cylinder. Immediately wipe up any brake fluid that spills.
*Remove the screws, take off the master cylinder cap and diaphragm, and empty out the brake fluid.
*Slide the dust seal out of its place.
*Remove the stopper with a circlip pliers.
*Remove the piston with the secondary cup, primary cup and spring by lightly applying a compressed air as shown (see Exploded Views).

WARNING

○To avoid serious injury, never place your fingers or palm in front of the opening. If you apply compressed air into the master cylinder, the piston may crush your hand or fingers.

CAUTION

○Do not remove the primary cup and secondary cup from the piston since removal will damage them.

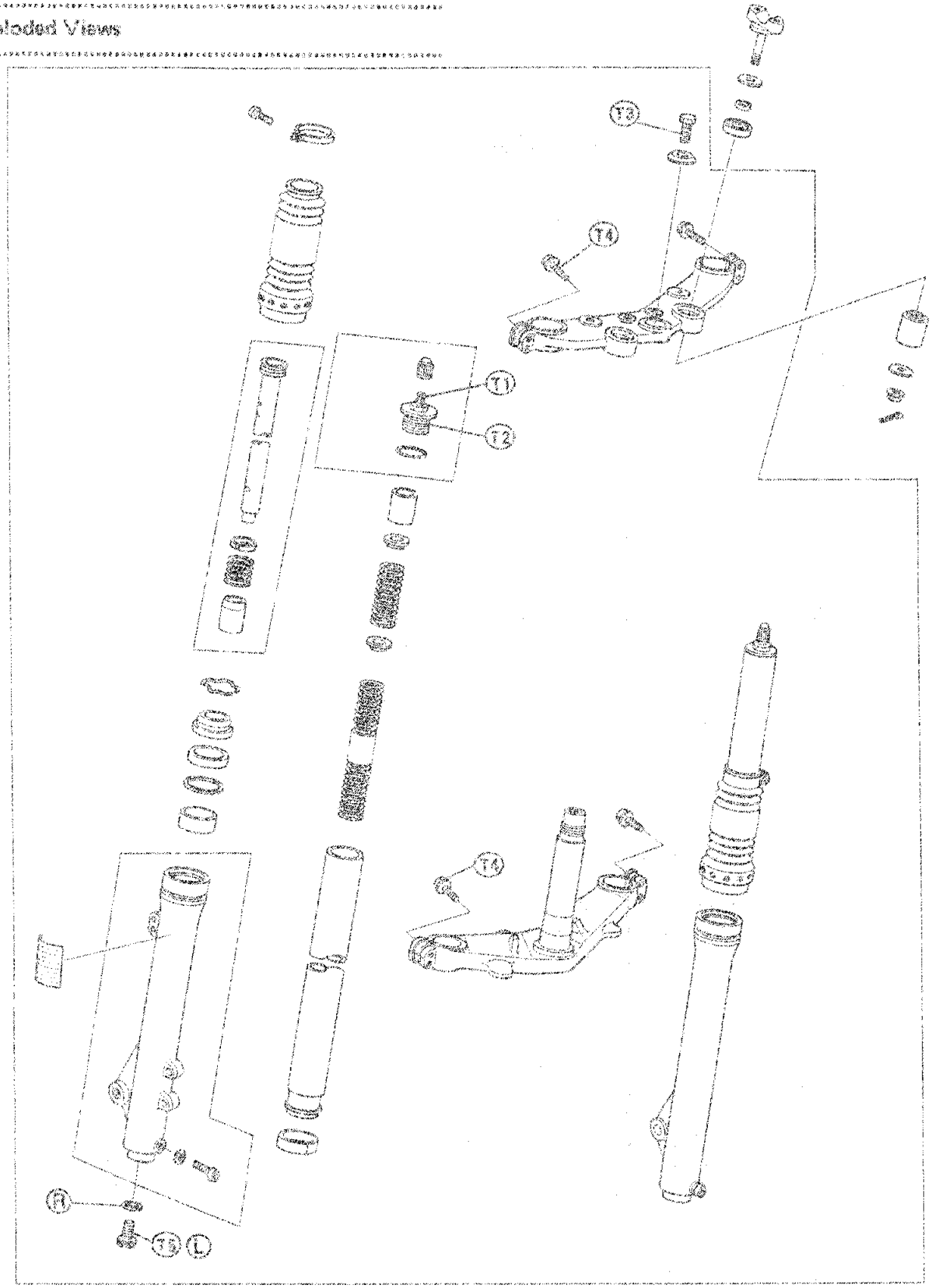
Suspension

Table of Contents

Exploded Views 11-2
Service Data 11-4
Special Tool 11-4
Steering 11-5
  Inspection ..... *
  Adjustment ..... *
  Steering Removal and Installation
    Removal Points of Stem Bearing ..... *
    Installation Points of Steering Stem ..... *
    Adjustment after Installation ..... *
  Maintenance
    Steering Bearing Lubrication ..... *
    Grease Seal Deterioration, Damage ..... *
    Stem Bearing Installation 11-5
Front Fork 11-5
  Air Pressure Adjustment 11-5
  Fork Oil Level 11-5
  Fork Oil Change 11-5
  Front Fork Installation 11-5
  Fork Disassembly 11-6
  Fork Assembly Points 11-7
  Guide Bush Inspection 11-8
Uni-trak 11-8
  Rebound Damping Adjustment 11-8
  Compression Damping Adjustment 11-8
  Spring Preload Adjustment 11-9
  Uni-trak Link Length Adjustment 11-9
  Uni-trak Bearing Lubrication 11-10
  Rear Shock Absorber Removal 11-10
  Rear Shock Absorber Installation 11-11
  Gas Reservoir Disassembly 11-11
  Rear Shock Absorber Body Disassembly 11-12
  Rear Shock Assembly and Oil Changing 11-12
  Uni-trak Arm/Swing Arm Assembly Points 11-13
  Uni-trak Link Assembly Point 11-14
  Swing Arm and Rocker Arm Sleeve Wear ..... *
  Swing Arm and Rocker Arm Needle Bearing Wear ..... *
  Uni-trak Link Spherical Bearing Wear ..... *
  Scrapping ..... *

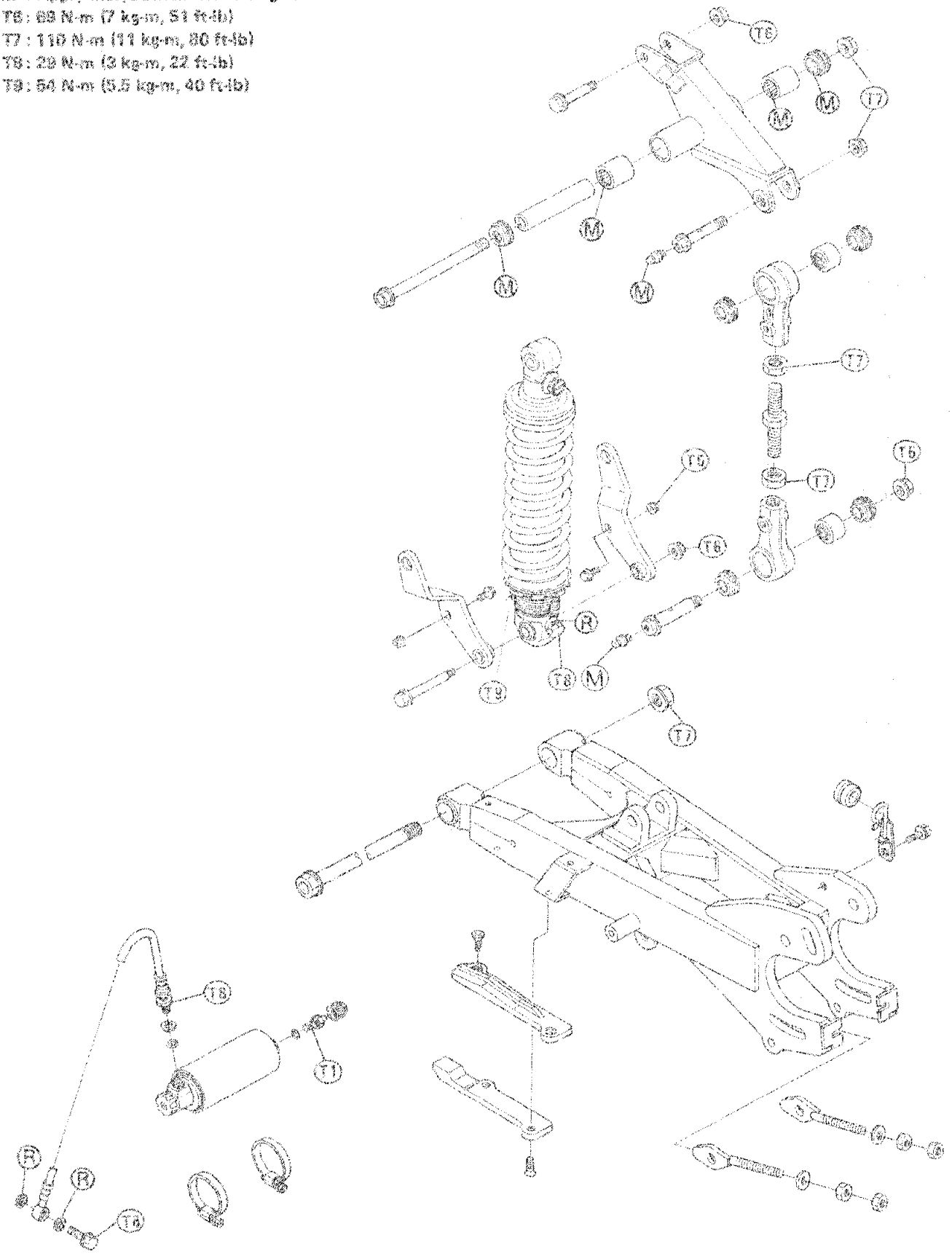
*Refer to Base Manual

Exploded Views



R : Replacement Parts (Do not apply a non-permanent locking agent)
L : Apply a non-permanent locking agent.
T1 : 12 N·m (1.2 kg-m, 104 in-lb)
T2 : 23 N·m (2.3 kg-m, 18.5 ft-lb)
T3 : 44 N·m (4.5 kg-m, 33 ft-lb)
T4 : 21 N·m (2.1 kg-m, 15 ft-lb)
T5 : 59 N·m (6 kg-m, 43 ft-lb)

R : Replacement Parts
M : Apply molybdenum disulfide grease.
T6 : 69 N·m (7 kg-m, 51 ft-lb)
T7 : 110 N·m (11 kg-m, 80 ft-lb)
T8 : 29 N·m (3 kg-m, 22 ft-lb)
T9 : 54 N·m (5.5 kg-m, 40 ft-lb)



Service Data

Item		Standard
Front Fork:		
Oil type		SAE 10W – 20
Oil capacity		499 ±4 mL (completely dry) spprox. 425 mL (when oil changing)
Oil level (below from top of inner tube)		154 ±2 mm (compressed, without main spring)
Air pressure		Atomospheric pressure
Rear Shock Absorber:		
Gas pressure		980 – 1,470 kPa (10 – 15 kg/cm², 142 – 213 psi)
Oil type		SAE 5W
Oil amount	Shock body and reservoir tank	217 – 223 mL
Uni-trak link	Spherical bearing wear	– – – (service limit: 0.7 mm)
Uni-trak arm	Sleeve outside diameter	19.987 – 20.000 mm
Swing Arm:		
Sleeve outside diameter		19.987 – 20.000 mm

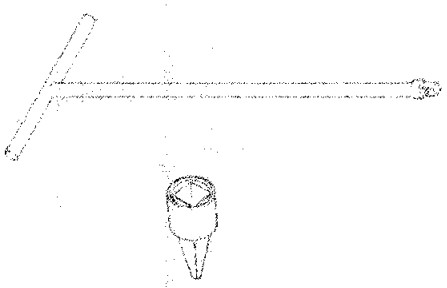
Special Tool

Drive Press Shaft: 57001-1075
Bearing Driver: 57001-1106
Bearing Driver: 57001-1077

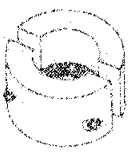




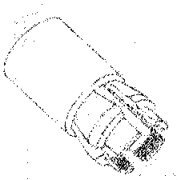
Handle: 57001-183
Adapter: 57001-1057



Fork Outer Tube Weight: 57001-1218



Fork Oil Seal Driver: 57001-1219



Driver: 57001-1160



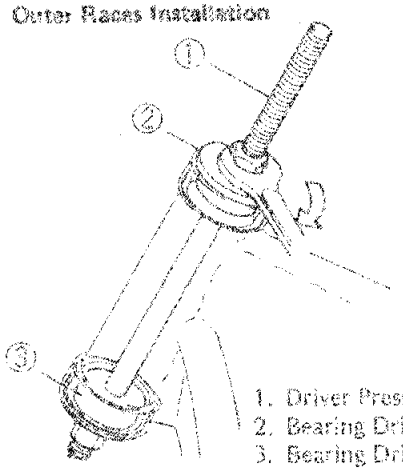
Steering

Stem Bearing Installation

This applies to KXT250-A1, A2, also.

*Apply grease to the outer races, and then drive them into the head pipe using a bearing driver and driver press shaft (special tool). Be sure to press them in until they stop at the stepped portion in the head pipe.

Outer Races Installation



1. Driver Press Shaft (57001-1075)
2. Bearing Driver (57001-1106)
3. Bearing Driver (57001-1077)

Front Fork

Air Pressure Adjustment

This applies to KXT250-A1, A2, also.

*Park the vehicle on level ground.

○The standard air pressure is **atmospheric pressure**.

*Remove the air valve cap and push the air valve to open.

*Reinstall the air valve cap.

NOTE

○*Additional air pressure is not recommended since atmospheric pressure is the most suitable setting for all ranges of riding.*

Fork Oil Level

*With the front wheel on the ground and the front brake fully applied, push down on the handlebar a few times to expel the air in the fork oil.

*Remove the top plug and main spring in the fork leg.

*With the fork fully compressed, insert a tape measure or thin rod in the fork inner tube, and measure the distance from the top end of the fork inner tube to the oil.

*If the oil is above or below the specified level, remove or add oil and recheck the oil level.

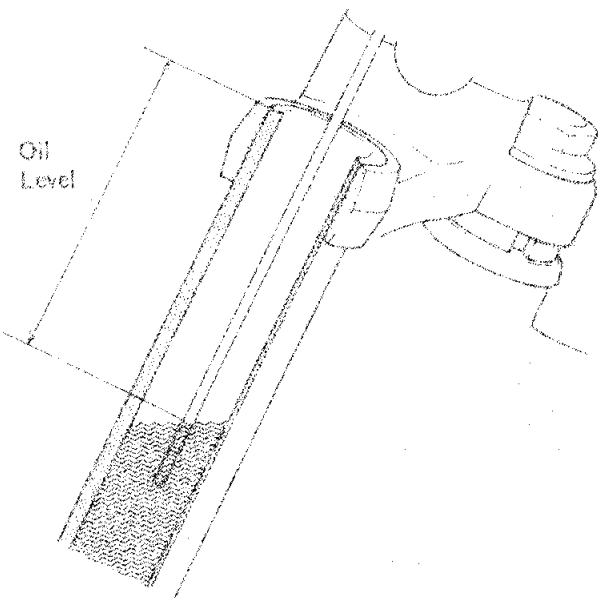
CAUTION

○**The operation of air front fork is especially dependent upon correct oil level. Higher level than specified may cause oil leakage and seal breakage. So be sure to maintain the specified level.**

Front Fork Oil Level

154 ±2 mm below from the top end of the inner tube

Fork Oil Level Measurement



Fork Oil Change

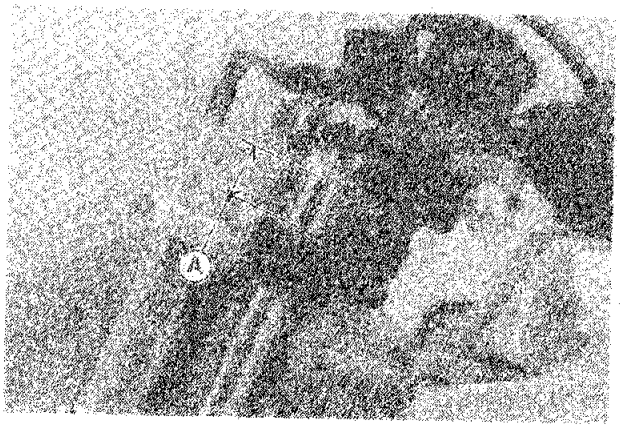
Refer to p. 11-8 of the Base Manual, noting the following.

Front Fork Oil

Type:	**KAYABA G10**
Viscosity:	**SAE10W – 20**
Amount per side	
when changing oil:	**425 mL**
After disassembly	
and completely dry:	**495 – 503 mL**

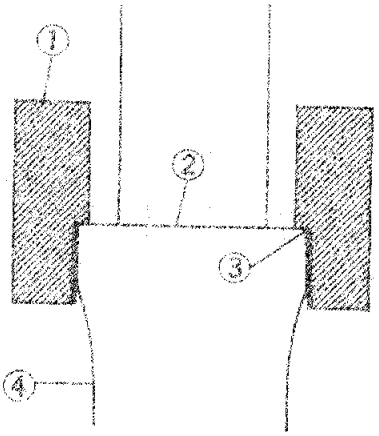
Front Fork Installation

*Install the fork tube so that the top of the inner tube is about 25 mm above the upper surface of the stem head.



A. 25 mm

Weight Mounting



1. Weight: 57001-1218
2. Step
3. Corner
4. Outer Tube

Fork Disassembly

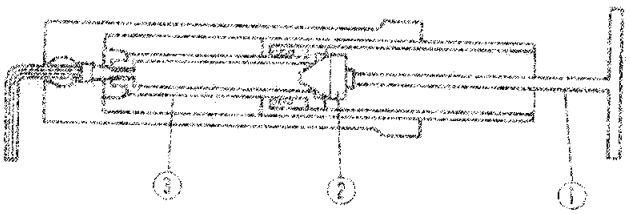
*Before removing the front fork from the frame, loosen the fork top bolt.

*Remove the following parts.

Front Brake
Front Wheel
Fork Tube
Rubber Boot
Top Bolt, Spring Guide, Upper Spring and Main Spring
Piston and Cylinder Unit
Fork Oil

*Push the inner tube all the way in, and remove the Allen bolt on the bottom of the outer tube using the cylinder holder handle and adapter (special tools).

Front Fork Cylinder Removal



1. Front Fork Cylinder Holder Handle: 57001-183
2. Adapter: 57001-1057
3. Front Fork Cylinder

*Remove the circlip.

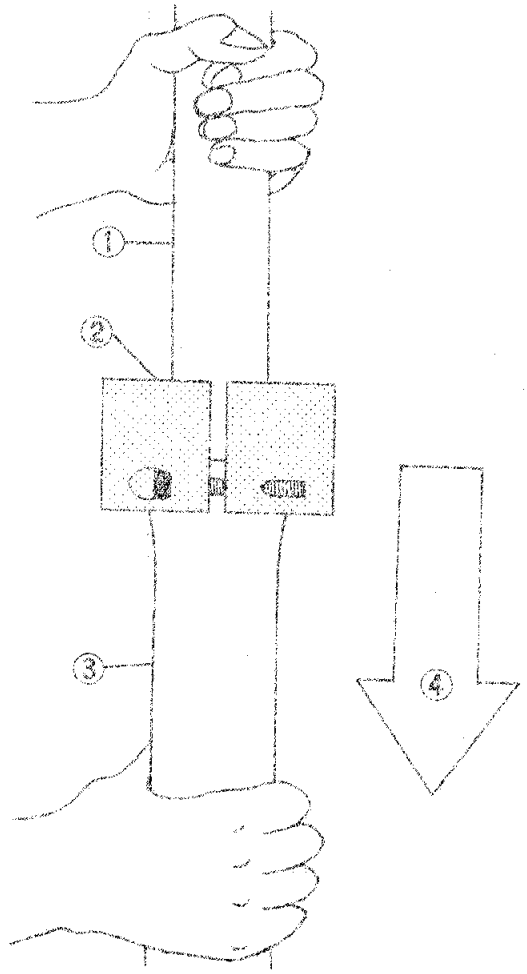
*Take out the cylinder.

○Use the fork outer tube weight (special tool) to separate the inner tube from the outer tube.

○Mount the weight (special tool) on the top of the outer tube by fitting the step of the weight (special tool) to the top corner of the outer tube.

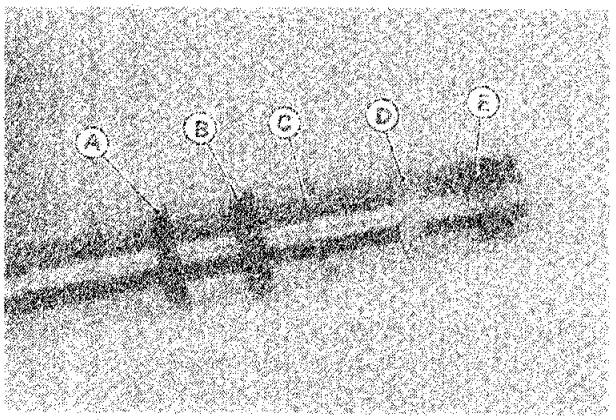
○Holding the inner tube by hand in a vertical position, pull down the outer tube several times to pull out the inner tube.

Front Fork Separation



1. Inner Tube
2. Weight: 57001-1218
3. Outer Tube
4. Pull down

*Remove the dust seal, oil seal, washer, and outer tube guide bush from the inner tube.



A. Dust Seal
B. Oil Seal
C. Washer
D. Outer Tube Guide Bush
E. Inner Tube Guide Bush

Front Fork Assembly Points

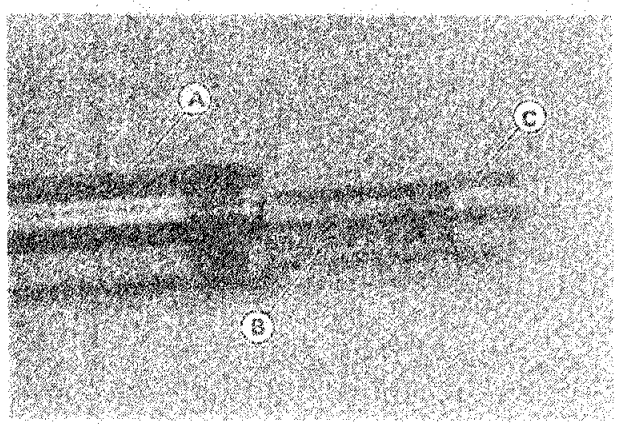
*Fork assembly is the reverse of disassembly. Pay attention to the following item.

○Check the top plug O-rings for damage. Replace them with new ones if damaged.

○Replace the oil seal removed with a new one.

○Inspect the guide bushes (see Guide Bush Inspection), and replace them with new ones if necessary.

○Insert the cylinder unit in the inner tube, and put on the cylinder base.



A. Inner Tube
B. Cylinder
C. Cylinder Base

○Insert the inner tube and cylinder as a set in the outer tube.

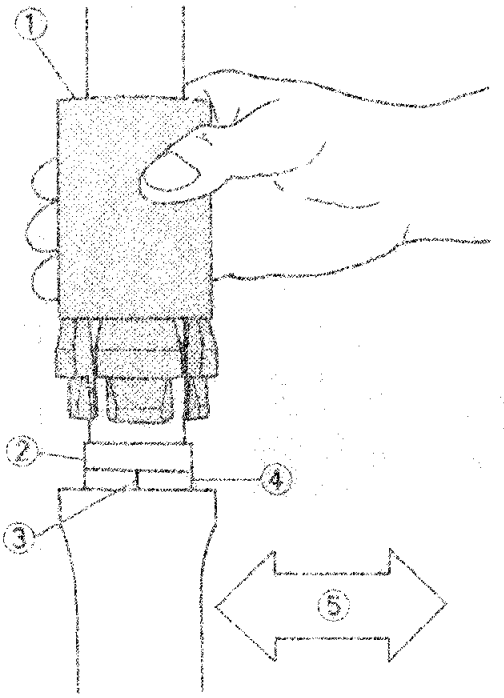
*Discard the used gasket of the bottom Allen bolt.

*Apply a non-permanent locking agent to the threads of the Allen bolt and tighten it to the specified torque (see Exploded Views).

*Install the guide bush (with a used guide bush on it) by tapping the used guide bush with the fork oil seal driver (special tool) until it stops.

○The slit of the bush must be faced toward the left or right.

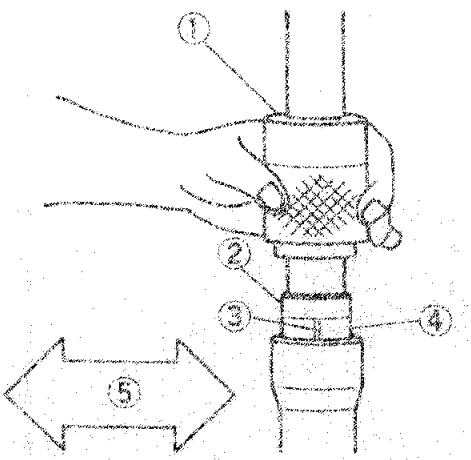
Guide Bush Installation



1. Driver: 57001-1219
2. Used Guide Bush
3. Slit
4. New Guide Bush
5. Front and Rear

○The driver (57001-1160) may also be used for guide bush installation.

Guide Bush Installation



1. Driver: 57001-1160
2. Used Guide Bush
3. Slit
4. New Guide Bush
5. Front and Rear

*Install the oil seal with the driver (57001-1219 or 1160).

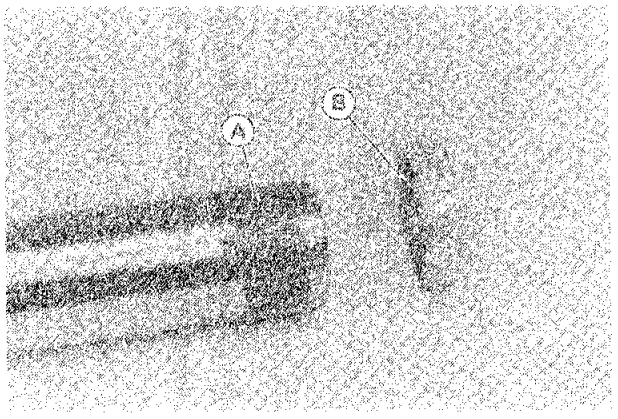
*Install the dust seal and circlip by hand.

*Install the fork main spring so that the narrow-pitch end is facing up.

Guide Bush Inspection

*Visually inspect the internal surface of the outer tube guide bush and the external surface of the inner tube guide bush.

*Replace the bushings, if they have excessive scoring, scratching, or abnormal wear.



A. Inner Tube Guide Bush B. Outer Tube Guide Bush

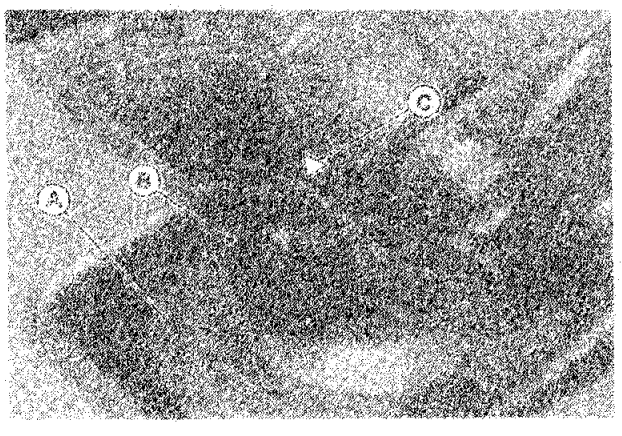
Uni-trak

See p. 11-10 of the Base Manual, noting that the gas reservoir has damping adjusters.

Rebound Damping Adjustment

*Remove the rear fender and seat (see Frame chapter).

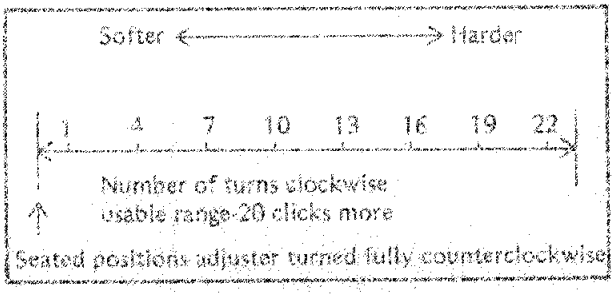
*To adjust shock rebound damping, turn the rebound damping adjuster on the rear shock absorber by hand until you feel a click.



A. Rear Shock Absorber C. Click Position Mark
B. Rebound Damping Adjuster

*If the damper setting feels too soft or too hard, adjust it in accordance with the following table.

Rebound Damping Adjustment



Compression Damping Adjustment

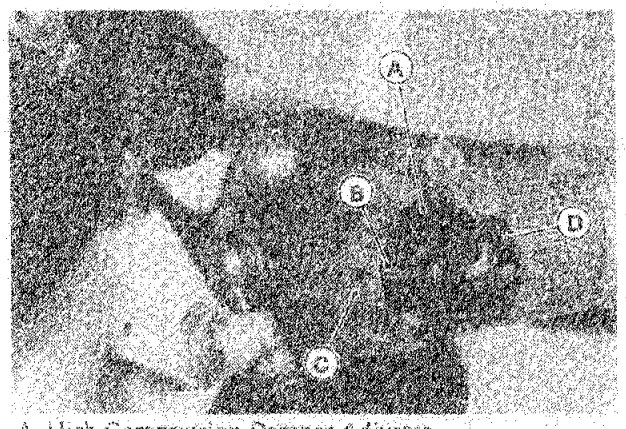
High Compression Damping Adjustment

*To adjust high compression damping, turn the high compression damper adjuster on the gas reservoir by hand until you feel a click.

*If the damper setting feels too soft or too stiff, adjust it in accordance with the following table:

High Compression Damping Adjustment

Position	1	2	3	4
Damping Force	Minimum →			Maximum

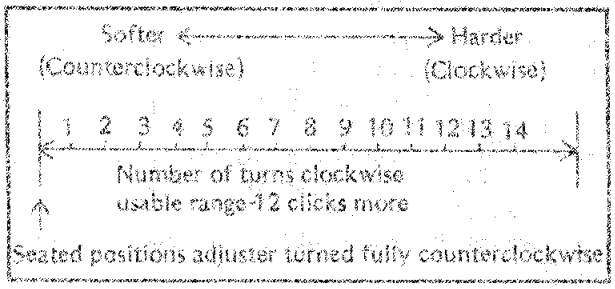


A. High Compression Damper Adjuster
B. Position Number
C. Mark
D. Low Compression Damper Adjuster

Low Compression Damping Adjustment

*To adjust low compression damping, turn the low compression damper adjuster on the high compression damper adjuster by hand until your feel a click. Adjust the low compression damping to suit your preference.

Low Compression Damping Adjustment



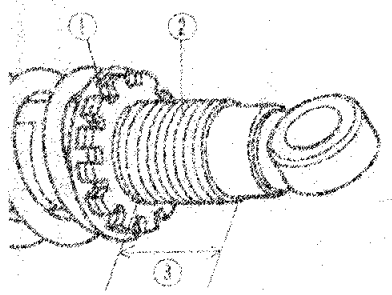
Spring Preload Adjustment

○Refer to pp. 11-4 and 11-11 of the Base Manual, noting the following.

Spring Preload Setting

Standard Adjusting Nut Position: 66 mm
Nut Adjusting Range: 53 – 75 mm
(Initial Spring Preload): 885 N (90 kg, 199 lb)
(Preload change/a turn of the nut):
62.5 N/a turn (6.4 kg, 13.5 lb)

Preload Adjustment



1. Adjusting Nut
2. Rear Shock Absorber
3. Adjusting Range

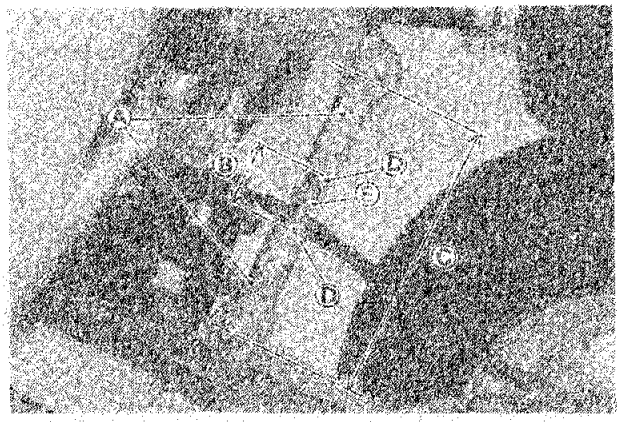
Uni-trak Link Length Adjustment

Suitable seat height according to the rider's height and weight can be obtained by changing the length of the Uni-trak link.

✱Check the Uni-trak link length and adjust it if necessary.

Uni-trak Link Length (Standard)

L1: 53 mm (2.09 in)
L2: 205 mm (8.07 in)



A. Uni-trak Links
B. L1
C. L2
D. Locknuts
E. Bolt

✱Adjust the Uni-trak link as follows.
○Loosen both upper and lower locknuts.
○Turn the adjusting bolt until desired length is obtained. Turning the bolt one full turn changes the length 3 mm (0.12 in).

Uni-trak Link Adjustable Range

L1: 43 – 53 mm (1.69 – 2.09 in)
L2: 195 – 205 mm (7.68 – 8.07 in)

CAUTION

○Do not adjust the push rod length beyond the recommended adjustable range. Adjustment exceeding the maximum length can cause push rod damage.

Seat Height Adjustment

It is necessary to adjust the seat height according to the course condition, riding skill, and rider's build. Adjust the seat height as follows.

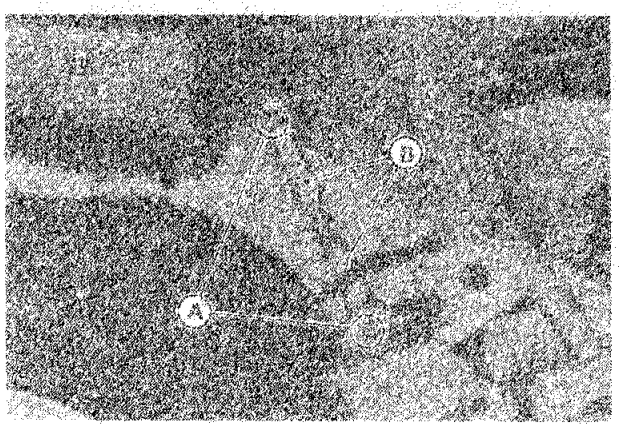
✱First run the vehicle for test.
✱Stop the vehicle and check to see if the rear fender has left traces of rear tire contact. Otherwise the seat can be lowered to the point where the tire contacts the fender lightly at full suspension compression.
✱To lower the seat below the standard limit, shorten the Uni-trak link length.

CAUTION

○Whenever the seat is lowered, run the vehicle for test and check that the rear fender has no traces of rear tire contact.

Uni-trak Bearing Lubrication

*According to the Periodic Maintenance Chart, lubricate the Uni-trak bearings through the grease fittings with a grease gun. It is normal for a small amount of grease to seep out of around the bearing.

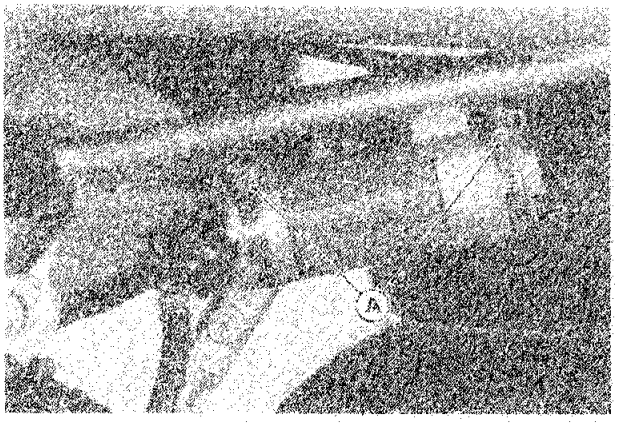


A. Grease Fittings B. Uni-trak Links

Rear Shock Absorber Removal

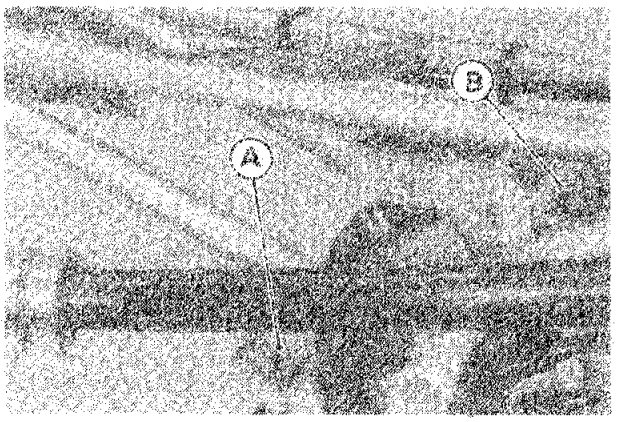
*Remove the rear fender and seat (see Frame chapter).

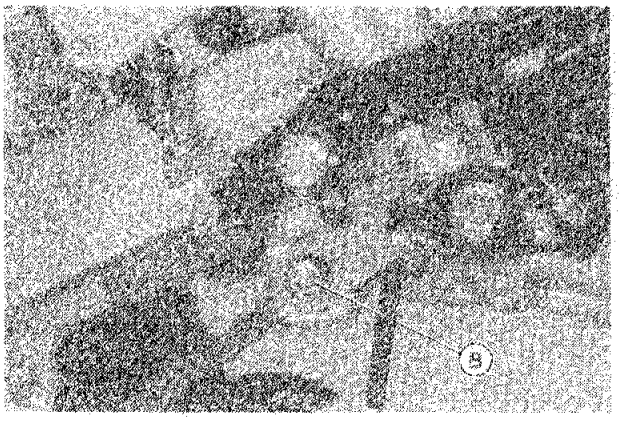
*Loosen the mounting screws of the gas reservoir.



A. Screws

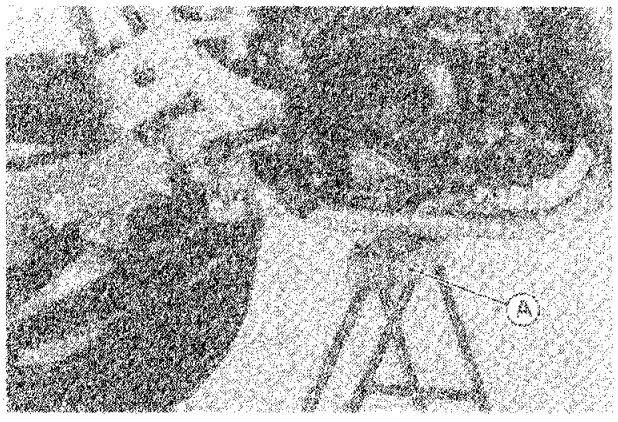
*Loosen the mounting nuts of the rear shock absorber and the upper nut of the Uni-trak arm. Do not remove them yet.





A. Uni-trak Arm Nut
B. Absorber Mounting Nuts

*Place a sturdy block or support under the front part of the frame.



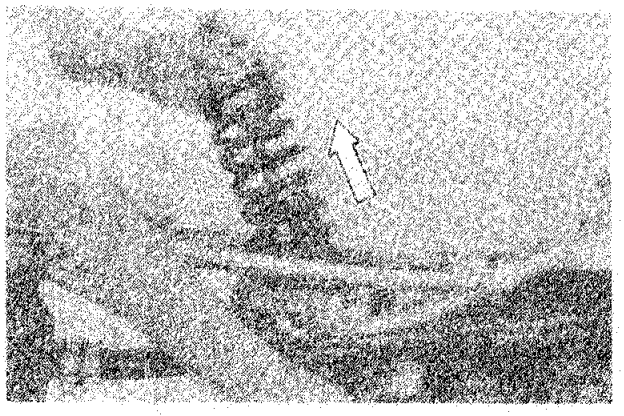
A. Stand

*While pushing down the frame slightly, remove the mounting nut and bolt of the uni-trak arm.

*Tilt back the Uni-trak arm.

*Remove the mounting bolts and nuts of the rear shock absorber starting with bottom to top.

*Take out the rear shock absorber upwards.



Rear Shock Absorber Installation

*Insert the mounting bolts of the rear shock absorber and the Uni-trak arm from the vehicle left side.

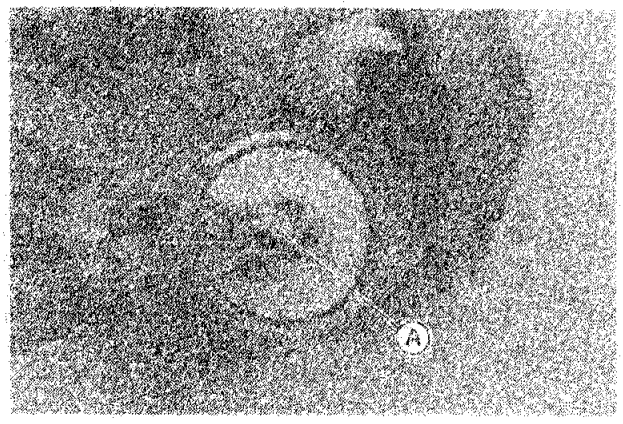
*Tighten the mounting nuts to the specified torque (see Exploded Views).

Gas Reservoir Disassembly

*Remove the rear shock absorber from the frame.

*Remove the air valve cap.

*Release the nitrogen gas completely by pushing the valve to open.

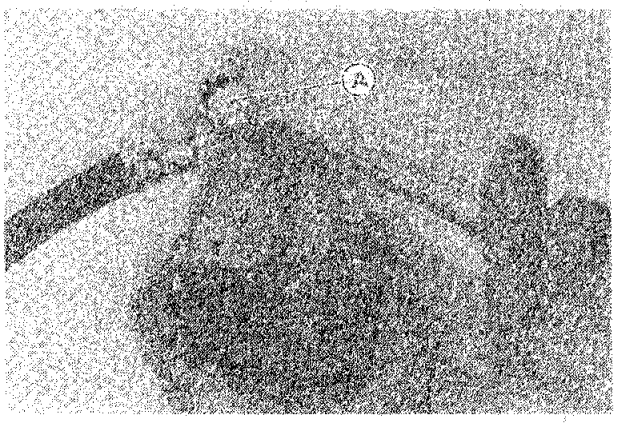


A. Air Valve

WARNING

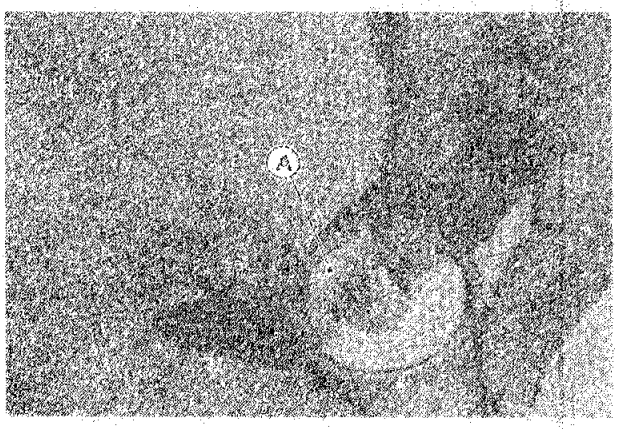
○Since the high pressure gas is dangerous, do not point the air valve toward your face or body.

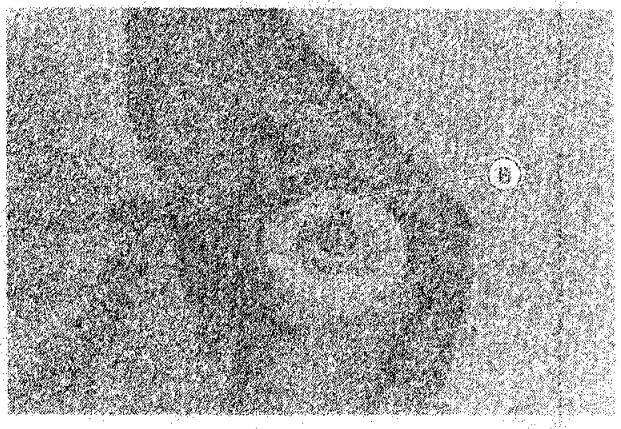
*Remove the banjo bolt from the reservoir.



A. Banjo Bolt

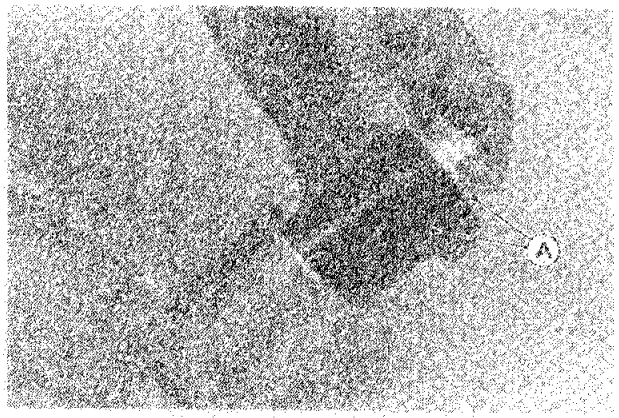
*Drive the gas reservoir cap assembly into the reservoir with hand pressure to remove the circlip.





A. Gas Reservoir Cap Assembly B. Circlip

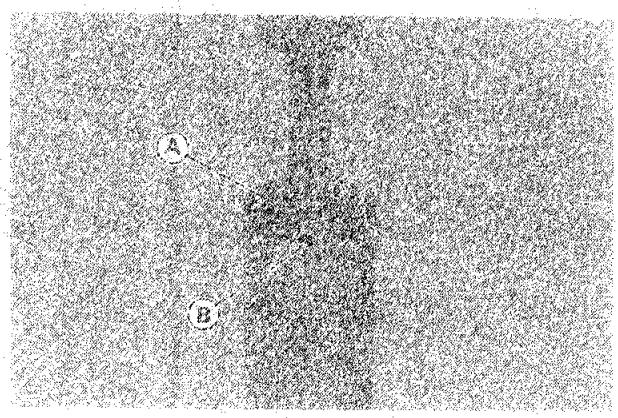
*Pull out the cap assembly and balloon. They may be removed easily by lightly applying compressed air to where the oil line fits into the reservoir.

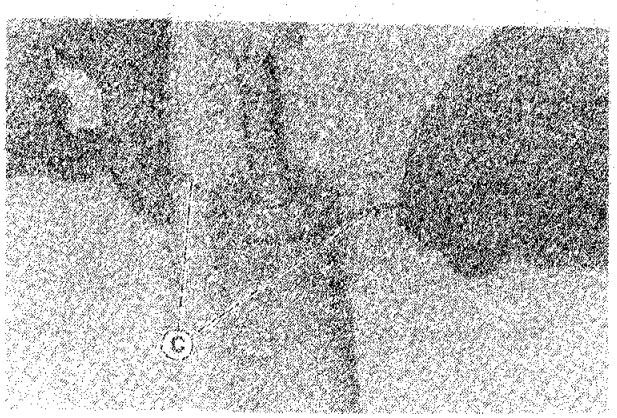


A. Balloon B. Cap Assembly

Rear Shock Absorber Body Disassembly

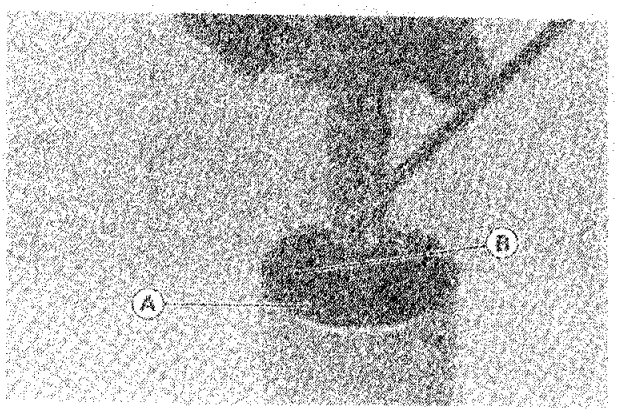
- Empty out the oil in the rear shock absorber body.
- Hold the bottom of the cylinder with a vise again.
- With two suitable bars pry at the gap to remove the lid.





A. Lid C. Suitable Bars
B. Pry Points

- Lift off the push rod, lightly tap around the seal with a suitable rod or mallet, and push the seal assembly about 20 mm down. Then remove the circlips.
- Lightly move the push rod back and forth, and pull out the push rod assembly.



A. Seal Assembly B. Circlips (2)

Rear Shock Assembly and Oil Changing

- Assemble the rear shock body in the reverse order of disassembly.
- Fill the reservoir and rear shock body with the specified oil as follows.

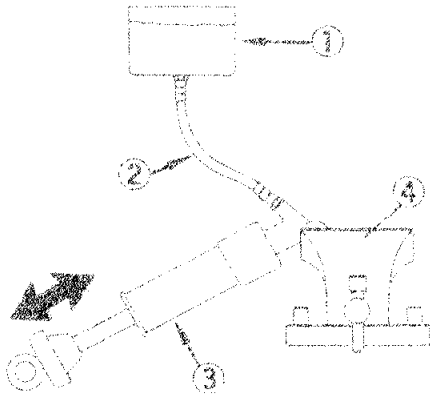
Rear Shock Absorber Oil

Type:	KYB-K2-C
Viscosity:	SAE 5W-20
Amount	
Reservoir and rear shock body:	217 – 223 mL

- Temporarily install the banjo bolt on the gas reservoir.
- Pour the specified oil into the gas reservoir to 50 – 60 mm (2 – 2.4 in) from the end of the gas reservoir cap side.
- Check the balloon on the gas reservoir cap assembly for signs of damage. If necessary, replace the reservoir with a new one.
- Apply grease to the gas reservoir cap assembly lip and repair the dent of balloon.
- Insert the balloon into the reservoir body slowly and install the gas reservoir cap assembly.
- Mount the circlip into the gas reservoir.
- Pull up the gas reservoir cap fully and temporarily set aside the reservoir.
- Install the lid into the rear shock body by lightly tapping it evenly with a plastic mallet.

●Hold the shock absorber in a vise and attach the hose to an open container as shown.

Rear Shock Body Oil Filling



1. Open Container: SAE 5W Oil
2. Hose
3. Shock Absorber
4. Vise

●Fully compress the shock absorber.
●Pour the same oil into the open container attached to the hose.
●Draw the oil into the shock absorber.

NOTE

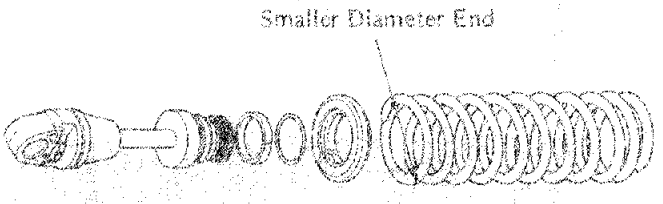
○Pump the shock absorber until all of the oil is inside.
○Continue pumping the shock absorber until all air bubbles have been removed.

●Compress the shock absorber until the hose is completely full of oil.
●Disconnect the open container from the hose.
●Connect the hose to the reservoir.
●Tighten the banjo bolt of the reservoir to **29 N·m (3 kg·m, 22 ft·lb)** of torque.
●Inject the nitrogen gas through the valve on the gas reservoir. The adjustable gas range is **980 – 1,470 kPa (10 – 15 kg/cm², 142 – 213 psi)** and factory standard gas pressure is **980 kPa (10 kg/cm², 142 psi)**.

WARNING

○Pressure the gas reservoir with nitrogen gas only. Do not use air or other gases, since they may cause premature wear, rust, fire hazard or substandard performance.
○Never exceed the maximum pressure.
○Make sure the hose and other rear shock absorber components are in good condition before pressurizing the reservoir.

●Install the spring so that the smaller diameter end faces up.

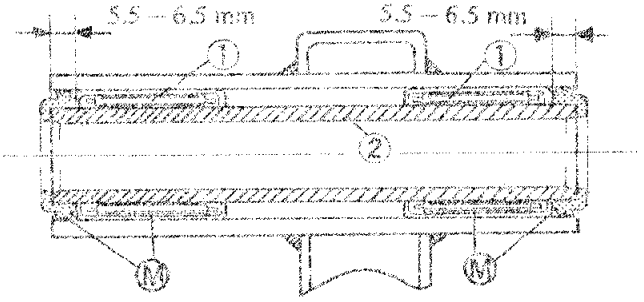


●Install the retainer clip.
●Adjust the spring preload and reinstall the rear shock absorber.

Uni-trak Arm/Swing Arm Assembly Points

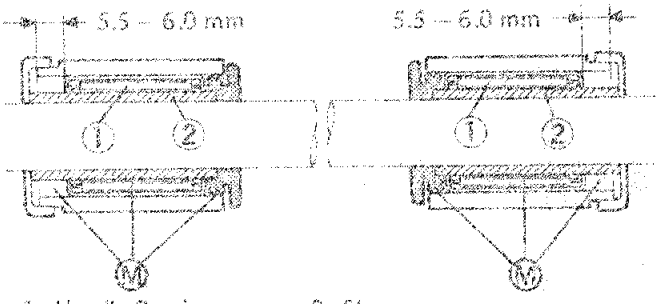
●Wipe all the old grease off the needle bearings and the sleeve. If necessary, wash them in a high flash-point solvent.
●Replace the bearings and sleeve if they show wear or damage.
●Apply a molybdenum disulfide grease liberally to the bearings and sleeve with the grease.
●Position the bearings in the arm as shown.

Uni-trak Arm Bearing Installation



1. Needle Bearing 2. Sleeve

Swing Arm Bearing Installation

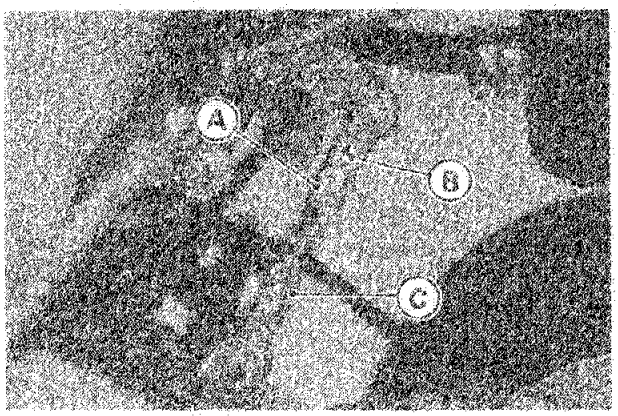


1. Needle Bearings 2. Sleeve

*Tighten the Uni-trak arm center bolt and the pivot shaft bolt to the specified torque (see Exploded Views).

Uni-trak Link Assembly Point

○Upper Uni-trak link has an UP mark on it. Be careful not to mix it up with the lower Uni-trak link.



A. Upper Uni-trak Link
B. UP Mark
C. Lower Uni-trak Link

Controls and Instruments

Table of Contents

Specifications . . . . . *

Clutch 12-2

- Clutch Adjustment . . . . . *
- Clutch Cable Removal . . . . . *
- Clutch Cable Installation 12-2
- Clutch Release Removal/Installation 12-2

Throttle Cable

- Adjustment . . . . . *
- Installation . . . . . *

Handlebar

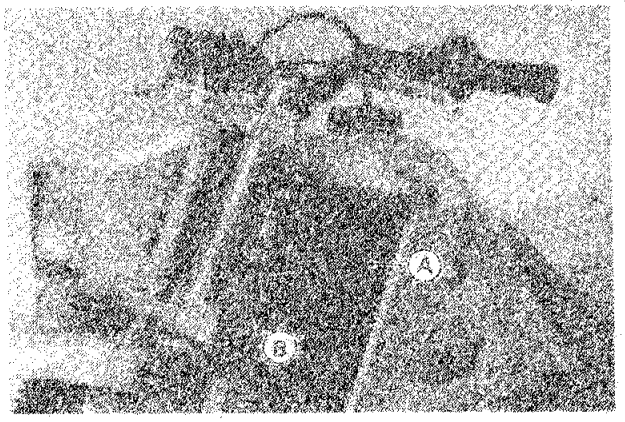
- Installation 12-2

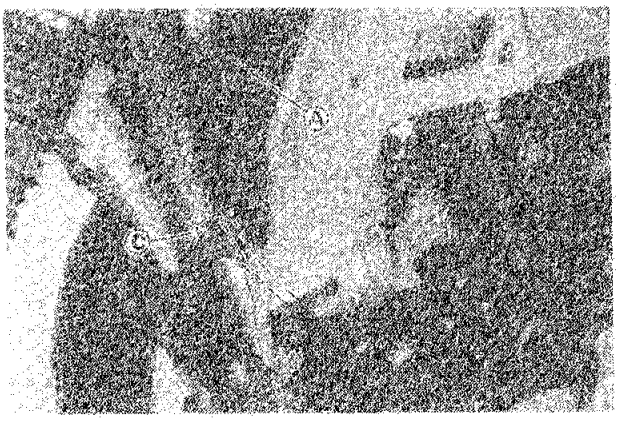
* Refer to Base Manual

Clutch

Clutch Cable Installation

*Run the clutch cable as shown. It must not hinder handlebar movement.





A. Radiator
B. Clamp
C. Wiring Strap

Clutch Release Removal/Installation

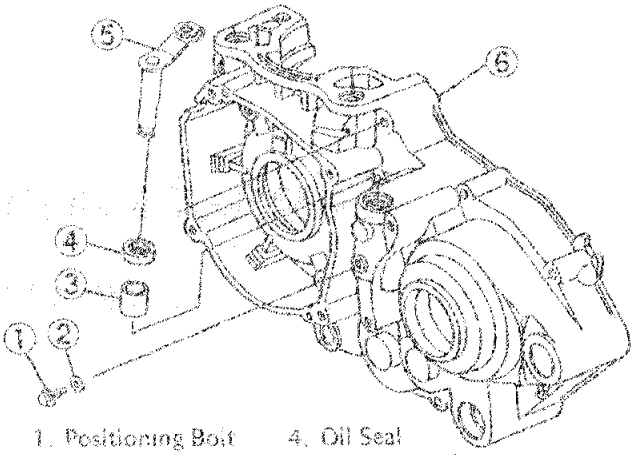
Refer to p. 12-5 of the Base Manual, noting the following.

NOTE

○*Do not pull out the clutch release shaft for left crankcase removal.*

CAUTION

○**Clutch release shaft removal damages the oil seal in the left crankcase necessitating the oil seal replacement.**



1. Positioning Bolt
2. Washer
3. Bushing
4. Oil Seal
5. Release Shaft
6. Left Crankcase

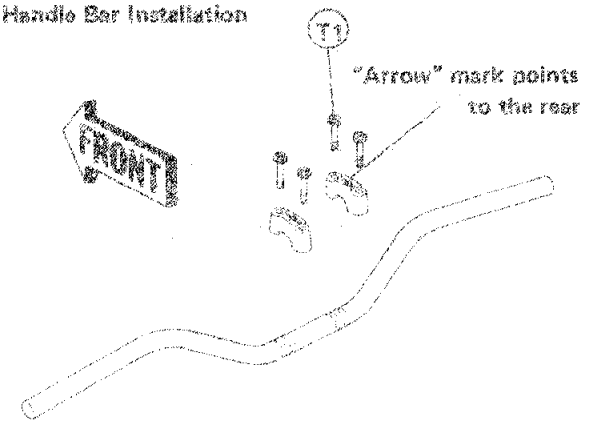
Handlebar

Installation

*Install the handlebar clamps so that the arrow on the clamp points to the rear.

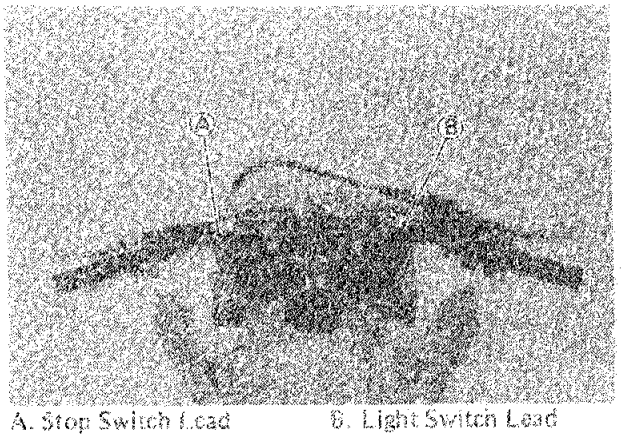
*Tighten the rear clamp bolts first, and then the front clamp bolts. There will be a gap at the front part of the clamp after tightening.

Handle Bar Installation



T1 : 21 N·m (2.1 kg-m, 15 ft-lb)

*Run the stop switch leads and the light switch leads as shown.



A. Stop Switch Lead
B. Light Switch Lead

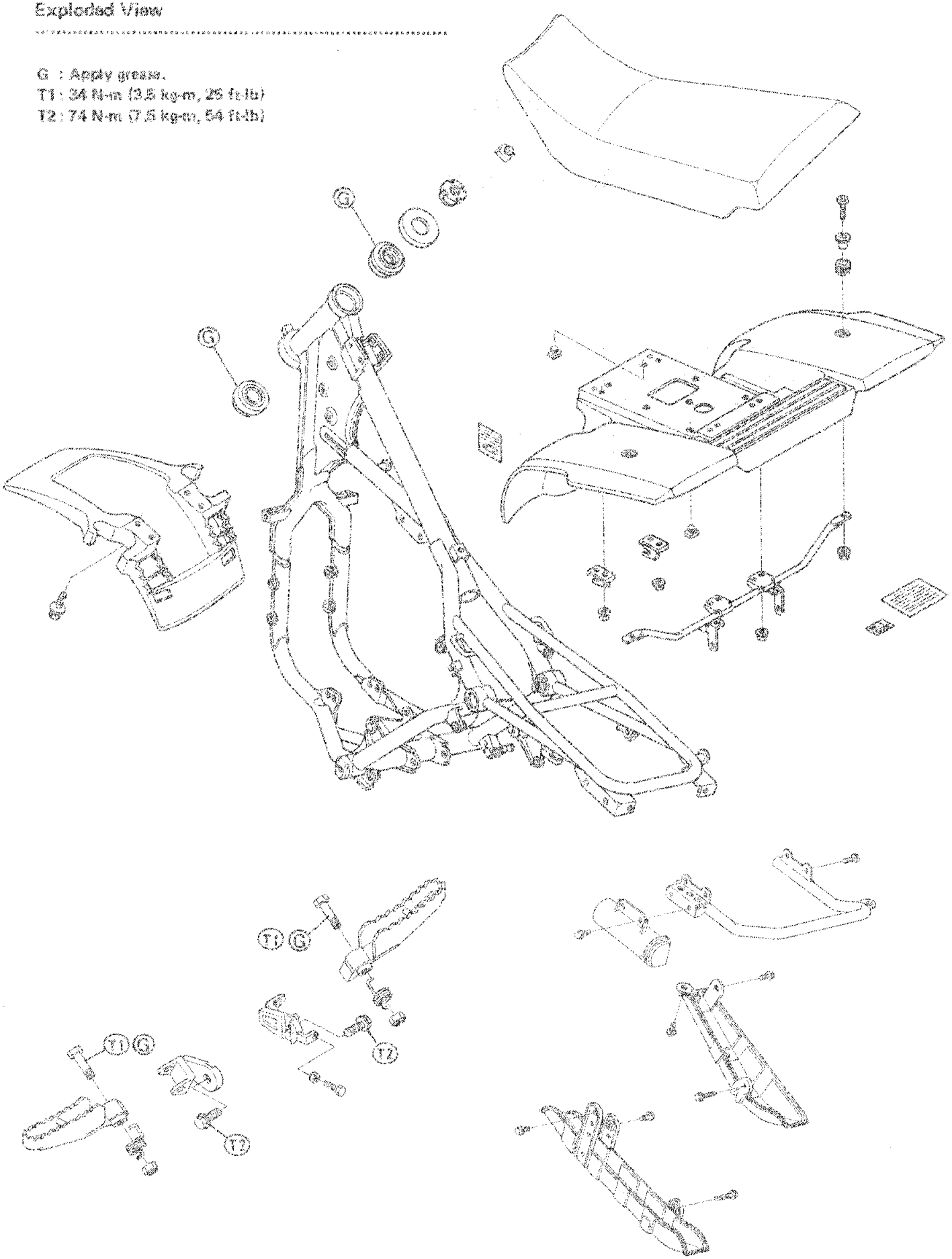
Frame

Table of Contents

Exploded View 13-2
Frame Disassembly 13-3
Rear Fender and Seat Removal 13-3
Rear Fender and Seat Installation 13-3

Exploded View

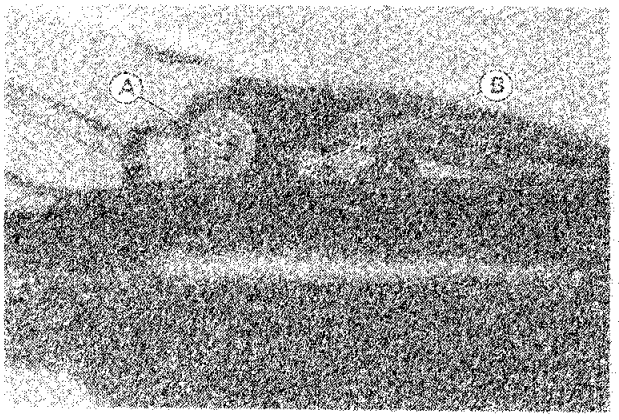
G : Apply grease.
T1 : 34 N·m (3.5 kg-m, 25 ft-lb)
T2 : 74 N·m (7.5 kg-m, 54 ft-lb)



Frame Disassembly

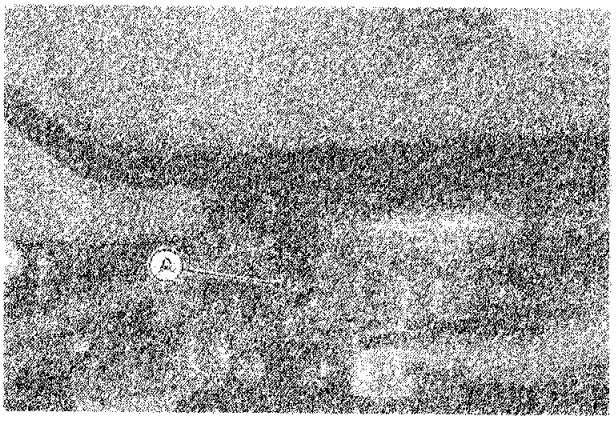
Rear Fender and Seat Removal

*Loosen the silencer mounting bolt for easy removal of rear fender mounting bolts.



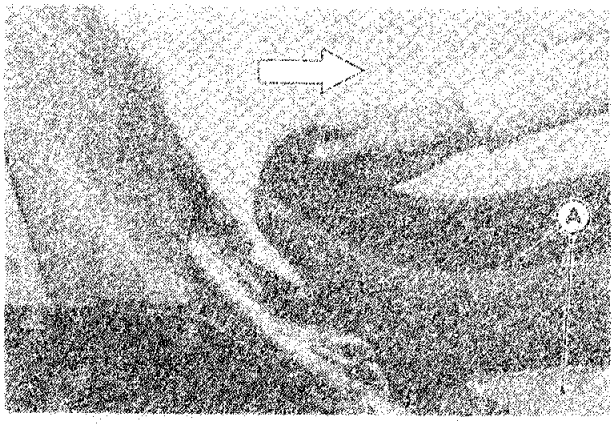
A. Mounting Bolt B. Fender Mounting Bolt

*Remove the rear fender mounting bolts.



A. Fender Mounting Bolt

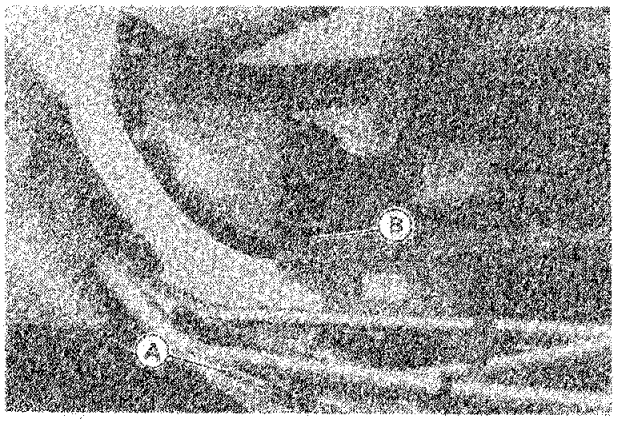
*Move the rear fender and seat backwards and remove them.



A. Rear Fender and Seat

Rear Fender and Seat Installation

*Slip the hook of the seat under the brace on the frame.



A. Brace B. Hook

Electrical System

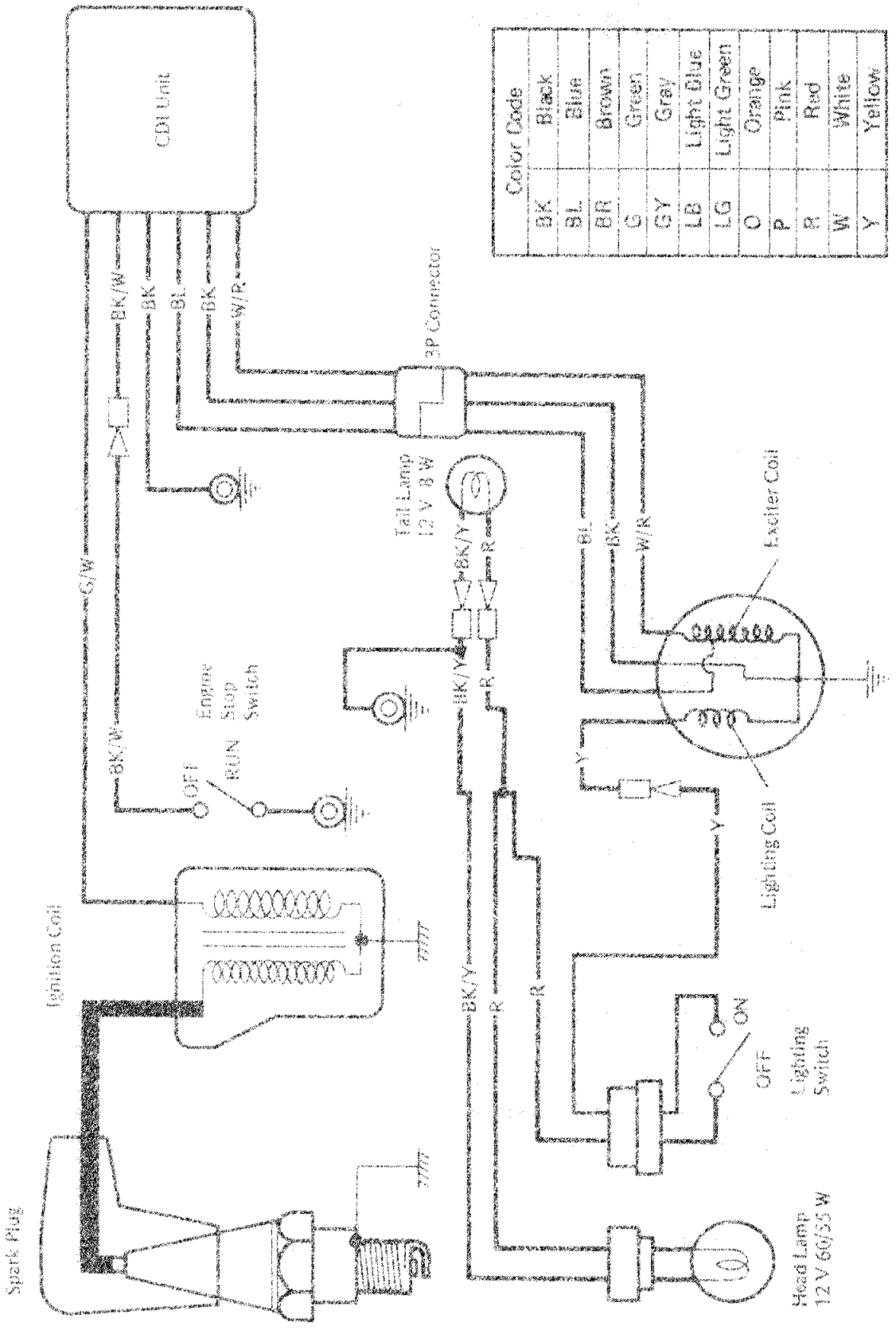
Table of Contents

Wiring Diagram 14-2
Exploded Views . . . . . *
Service Data 14-3
Special Tool 14-3
Precautions . . . . . *
Engine Stop Switch . . . . . *
Lighting System 14-3
- Headlight Horizontal Adjustment 14-3
- Headlight Vertical Adjustment 14-3
- Headlight Bulb Replacement Notes 14-3
- Headlight Bulb Installation . . . . . *
- Headlight Circuit Inspection 14-4
- AC Lighting Voltage Measurement 14-4
- Magneto Inspection . . . . . *

Ignition System 14-4
- Spark Plug Removal/Installation 14-4
- Spark Plug Cleaning and Gapping . . . . . *
- Ignition Timing Test (dynamic) 14-4
- Ignition Timing Adjustment 14-5
- Verification of Timing Marks . . . . . *, 14-3
- Ignition Coil Installation Point 14-5
- CDI Unit Installation Point 14-5
- Magneto Removal . . . . . *
- Magneto Installation Point 14-6
- Harness Installation 14-6
- Ignition Coil Inspection . . . . . *
- Ignition Coil Resistance Measurement 14-6
- Magneto Stator Coil Inspection 14-6
- CDI Unit Inspection . . . . . *

* Refer to Base Manual

Wiring Diagram

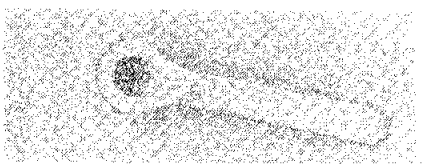


Service Data

Ignition coil resistance	
Primary winding	: 0.25 – 0.35 Ω
Secondary winding	: 6 – 7.5 kΩ
Ignition timing	: 13° BTDC @6,000 r/min (rpm)
Exciter coil resistance	: In the text.
Lighting coil resistance	: See p. 14-8 in Base Manual.
CDI unit resistance	: See p. 14-12 in Base Manual.
Piston position	
at timing mark	: Distance from TDC, 1.046 mm

Special Tool

Spark Plug Wrench: 92110-1122A

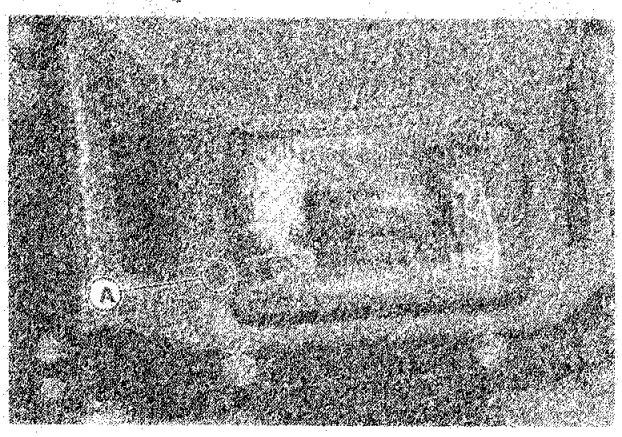


Lighting System

The headlight beam is adjustable both horizontally and vertically. Headlight aiming must be correctly adjusted for your safe riding as well as oncoming drivers. In most areas, it is illegal to ride with improperly adjusted headlights.

Headlight Horizontal Adjustment

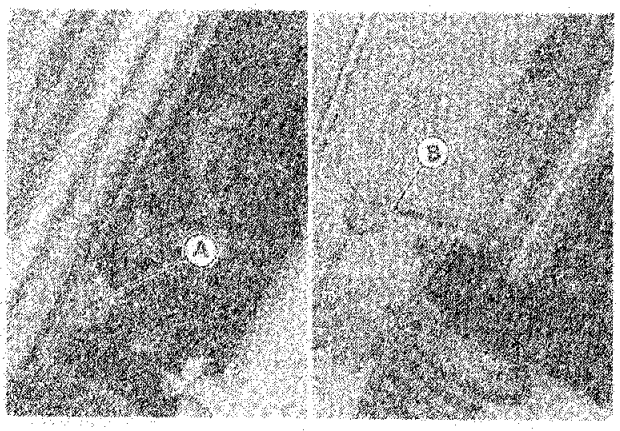
- Turn the adjusting screw on the headlight rim in or out until the beam points straight ahead. Turning the adjusting screw clockwise makes the headlight beam point to the right.



A. Horizontal Adjusting Screw

Headlight Vertical Adjustment

- Loosen the lower headlight bolt through the gap between the headlight cover and the fork tube.
- Adjust the headlight vertically.
- Tighten the lower headlight bolt.

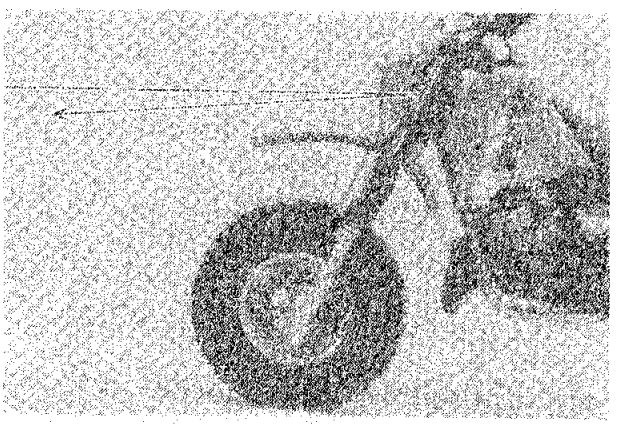


A. Lower Headlight Bolt B. Socket Wrench

NOTE

- *On high beam, the brightest point should be slightly below horizontal with the vehicle on its wheels and the rider seated. Adjust the headlight to the proper angle according to local regulations.*

Vertical Adjustment



Headlight Bulb Replacement Notes

Refer to p. 14-7 of the Base Manual, noting the following.

CAUTION

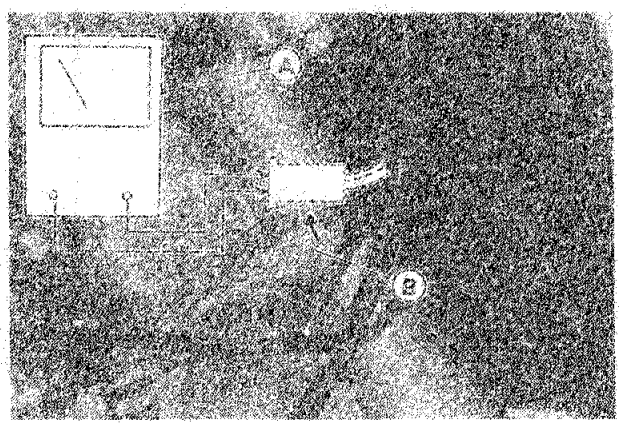
- **When handling the quartz-halogen bulbs, never touch the glass portion with barehands. Always use a clean cloth. Oil contamination from hands or dirty rags can reduce bulb life or cause the bulb to explode.**

- Check the headlight aiming after installation.

Headlight Circuit Inspection

*If the headlight does not light, check to see if the bulb has burned out. If the bulb is good, check the lighting switch.

*Disconnect the headlight switch connector and connect a hand tester as shown in the figure.



A. Tester (x 1Ω) B. Headlight Switch Connector

Head Light Switch Continuity

Switch Position	Meter Reading (x1 Ω)
ON	0 Ω
OFF	∞ Ω

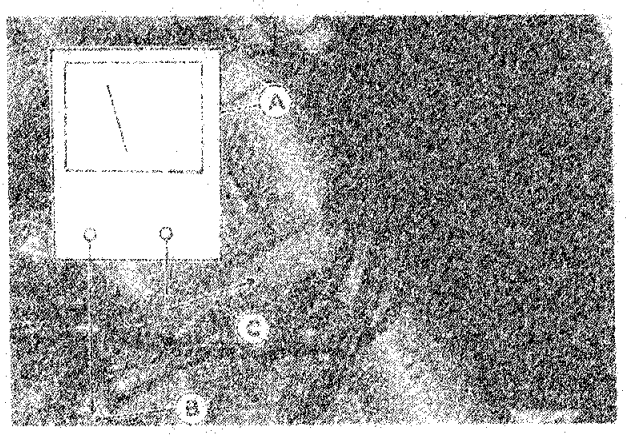
AC Lighting Voltage Measurement

The condition of the lighting coil of magneto is determind by measuring the voltage of the AC output.

"NOTE"

Perform test with headlight connected.

*Connect a voltmeter as shown in the figure.



A. AC Voltmeter (25 V AC) C. R or Y Lead
B. BK/Y Lead

*Turn on the lighting switch to ON position and start the engine.

*See that the headlight and tail light are all lit.

*Measure the lighting voltage at 2,500 rpm. The voltage should show the value in the table.

*If the reading is much lower than specified, check the magneto.

AC Lighting Voltage

Meter	Reading
AC25V	9 V @2,500 rpm not more than 12.2 V @8,000 rpm

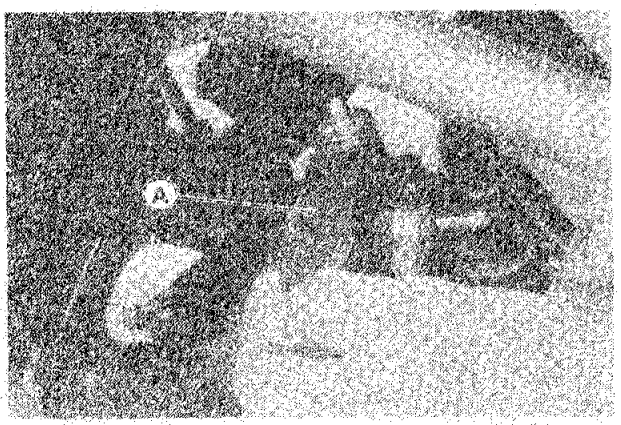
Ignition System

Spark Plug Removal/Installation

*Remove the following parts.
Rear Fender and Seat (see Frame chapter)
Fuel Tank (see Fuel System chapter)
Air Cleaner Housing (see Fuel System chapter)

*Remove the spark plug cap.

*Remove or install the spark plug using the spark plug wrench (special tool) as shown.



A. Wrench: 92110-1122A

Ignition Timing Test (dynamic)

*Connect a strobe light in the manner prescribed by the manufacturer in order to check the ignition timing under operating conditions.

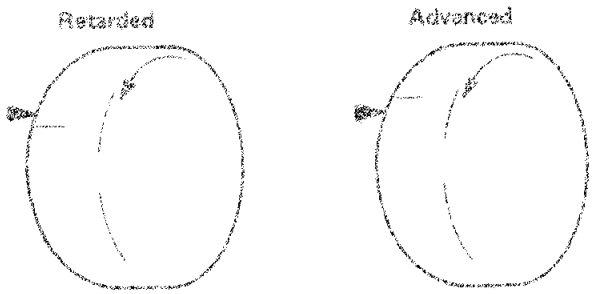
WARNING

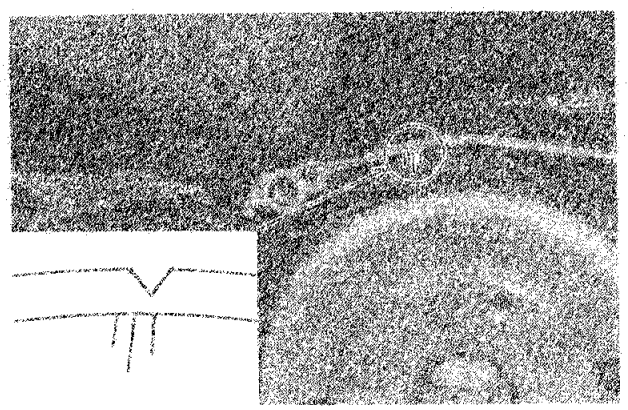
Make sure that no tools, clothes, or leads ever touch the spinning flywheel. Touching the flywheel of a running engine could cause an injury.

*Start the engine, run the engine at 6,000 rpm, and direct the light at the timing marks on the flywheel and crankcase. The right-hand mark on the rotor should align with the crankcase mark at 6,000 rpm.
*If they do not, check the timing marks (see Ignition Timing Adjustment).

Dynamic Ignition Timing

1. Plug Fires Late
2. Plug Fires Early

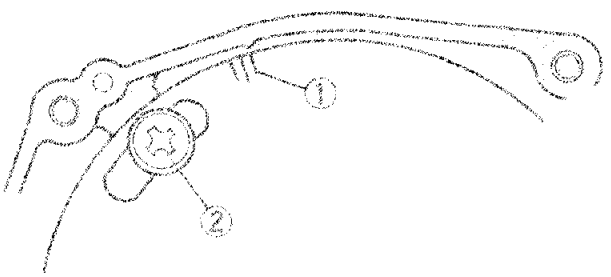




A. Crankcase Mark B. Right-hand Mark

Ignition Timing Adjustment

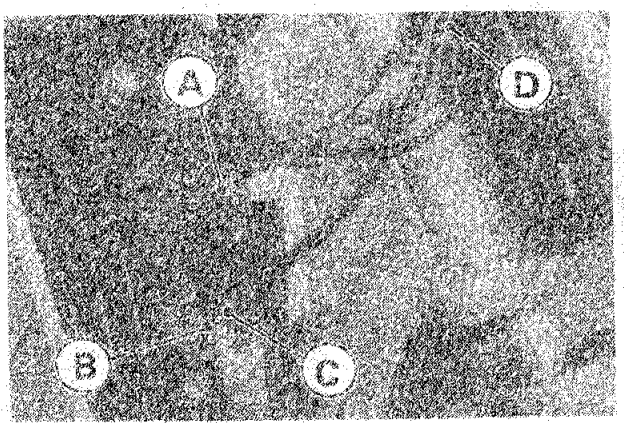
*Remove the magneto cover.
*Remove the magneto (See p. 14-10).
*Check to see if the right-hand mark on the magneto stator is aligned with the mark on the crankcase.
*If the marks are not aligned, loosen the two magneto stator screws and move the magneto stator to align the mark.



1. Right-hand Mark and Crankcase Mark
2. Screw

Ignition Coil Installation Point

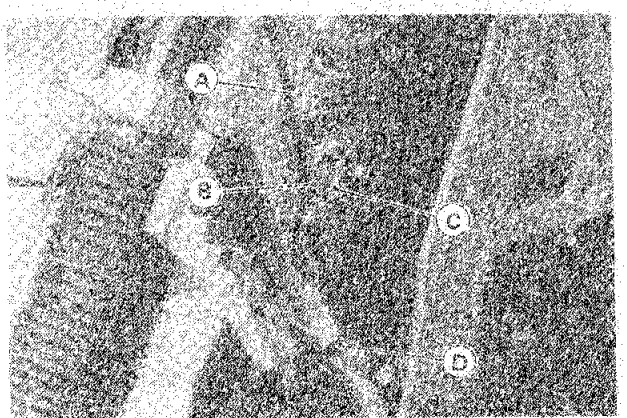
*Connect the ignition coil leads to the original position shown.



A. BK/Y Lead and BK Lead
B. G/W Lead
C. BK Lead
D. R and Y Leads for Lighting Switch

CDI Unit Installation Point

*Run the CDI unit and magneto leads as shown.

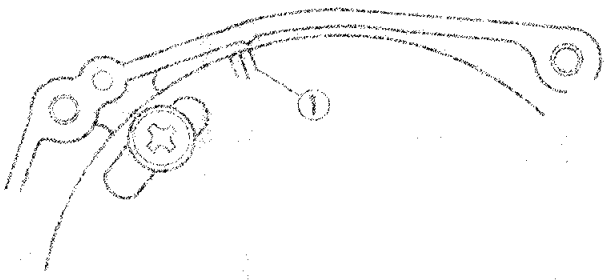


A. CDI Unit C. Y Lead for Magneto
B. Connector for Magneto D. Wiring Strap

Magneto Installation Point

Refer to p. 14-10 of the Base Manual, noting the following.

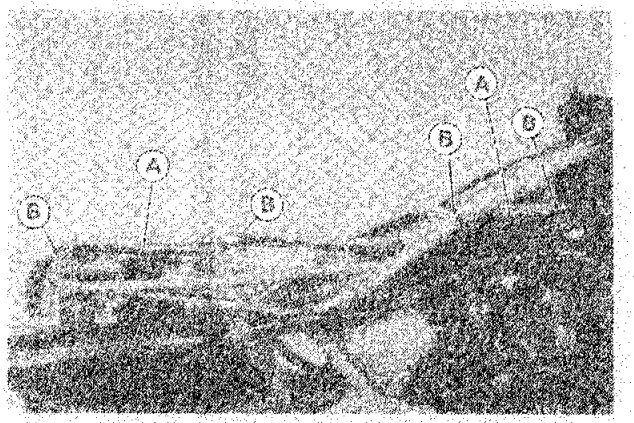
- Install the magneto stator so that the right-hand mark on the stator is aligned with the mark on the crankcase.



1. Right-hand Mark and Crankcase Mark

Harness Installation

- Route the main harness as shown.



A. Main Harness B. Wiring Straps

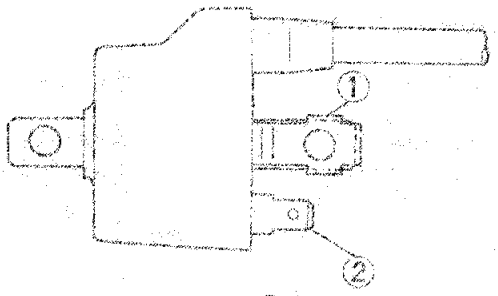
Ignition Coil Resistance Measurement

- Remove the fuel tank.
- Disconnect all the ignition coil leads and pull the spark plug cap off the spark plug.
- Connect the hand tester as shown. "Zero" the meter before using it.

Ignition Coil Resistance

Meter	Connection	Reading
× 1 Ω	⊕ Terminal — ⊖ terminal	0.25 – 0.35 Ω (primary)
× 1 kΩ	⊕ Terminal — plug lead	5 – 7.5 kΩ (secondary)

Measuring Ignition Coil Resistance



1. ⊖ Terminal 2. ⊕ Terminal

Magneto Stator Coil Inspection

Stator Exciter Coil Resistance

Meter	Connection	Reading
× 10 Ω	BK – BL	170 – 250 Ω
	BK – W/R	185 – 280 Ω
	BL – W/R	20 – 30 Ω

Appendix

Table of Contents

Troubleshooting Guide 15-2
Optional Parts 15-2

Troubleshooting Guide

Refer to the Base Manual, noting the following.

Poor Running at Low Speed:

KIPS sub-ports stuck open

- KIPS exhaust valves stuck open (valve seizure, or carbon accumulation)
- KIPS exhaust valves assembled incorrectly
- Exhaust advancer spring damaged
- Exhaust valve operating rod seizure
- Rod (for KIPS) seized in crankcase

Poor Running or No Power at High Speed:

KIPS sub-ports stuck closed

- KIPS sub-ports stuck closed
- KIPS exhaust valves stuck closed (valve seizure, or carbon accumulation)
- KIPS exhaust valves assembled incorrectly
- Sub-ports clogged (carbon accomulation)
- Exhaust valve operating rod seizure
- Rod (for KIPS) seized in crankcase

Optional Parts

Optional Parts		Part Number
Carburetor:		
Main Jet	290	92063-031
	280	92063-030
	270 (standard)	92063-029
	260	92063-028
	250	92063-027
Pilot Jet	45	92064-044
	40	92064-024
	35 (standard)	92064-023
	30	92064-022
	25	92064-032
Rear Sprocket:		
	35T	42041-1236
	36T	42041-1237
	37T (standard)	42041-1238
	38T	42041-1239
	39T	42041-1240
Engine Sprocket:		
	13T (standard)	13144-055
	14T	13144-1006