

MODEL APPLICATION

Year	Model	Beginning Frame No.
2005	KAF400-A1	JK1AFEA1□5B500001
2005	KAF400-B1	JK1AFEB1□5B500001 JK1AF400BBB600001
2005	KAF400-C1	JK1AFEC1□5B500001

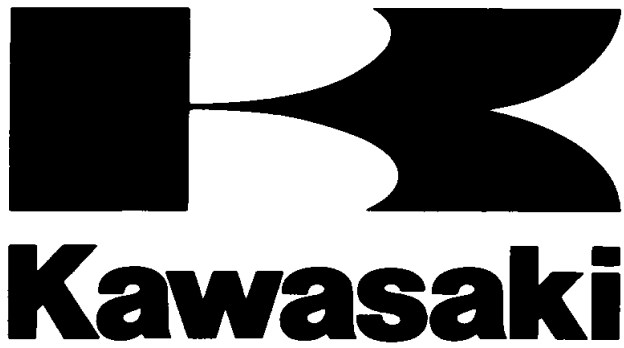
□:This digit in the frame number changes from one machine to another.



KAWASAKI HEAVY INDUSTRIES, LTD.
Consumer Products & Machinery Company

Part No.99924-1349-01

Printed in Japan



MULE 610 4x4
MULE 600



Utility Vehicle Service Manual

Quick Reference Guide

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LIST OF ABBREVIATIONS

A	ampere(s)	lb	pounds(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) Celsius	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 manual is designed primarily for use by trained mechanics in a properly equipped shop. However, it contains enough detail and basic information to make it useful to the owner who desires to perform his own basic maintenance and repair work. A basic knowledge of mechanics, the proper use of tools, and workshop procedures must be understood in order to carry out maintenance and repair satisfactorily. Whenever the owner has insufficient experience or doubts his ability to do the work, all adjustments, maintenance, and repair should be carried out only by qualified mechanics.

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

For the duration of the warranty period, we recommend that all repairs and scheduled maintenance be performed in accordance with this service manual. Any owner maintenance or repair procedure not performed in accordance with this manual may void the warranty.

To get the longest life out of your vehicle:

- Follow the Periodic Maintenance Chart in the Service Manual.
- Be alert for problems and non-scheduled maintenance.
- Use proper tools and genuine Kawasaki vehicle parts. Special tools, gauges, and testers that are necessary when servicing Kawasaki vehicles are introduced by the Special Tool Catalog or Manual. Genuine parts provided as spare parts are listed in the Parts Catalog.
- Follow the procedures in this manual carefully. Don't take shortcuts.
- Remember to keep complete records of maintenance and repair with dates and any new parts installed.

How to Use This Manual

In this manual, the product is divided into its major systems and these systems make up the manual's chapters. 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.

For example, if you want ignition coil information, 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 Ignition Coil 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 observed, could result in damage to or destruction of equipment.

This manual contains four 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 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.

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

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1-2 GENERAL INFORMATION

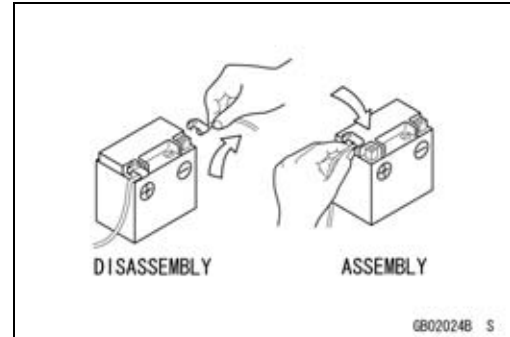
Before Servicing

Before starting to perform an inspection service or carry out a disassembly and reassembly operation on a vehicle, read the precautions given below. To facilitate actual operations, notes, illustrations, photographs, cautions, and detailed descriptions have been included in each chapter wherever necessary. This section explains the items that require particular attention during the removal and reinstallation or disassembly and reassembly of general parts.

Especially note the following:

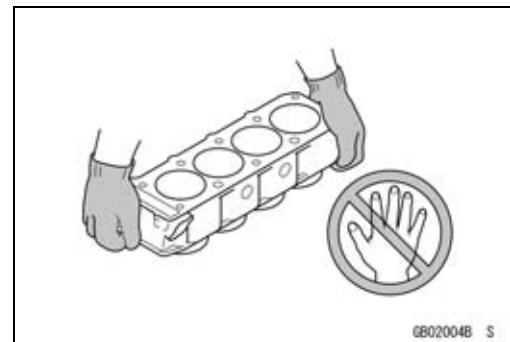
Battery Ground

Before completing any service on the vehicle, disconnect the battery wires from the battery to prevent the engine from accidentally turning over. Disconnect the ground wire (-) first and then the positive (+). When completed with the service, first connect the positive (+) wire to the positive (+) terminal of the battery then the negative (-) wire to the negative terminal.



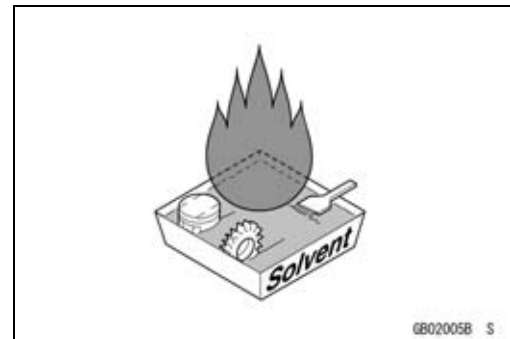
Edges of Parts

Lift large or heavy parts wearing gloves to prevent injury from possible sharp edges on the parts.



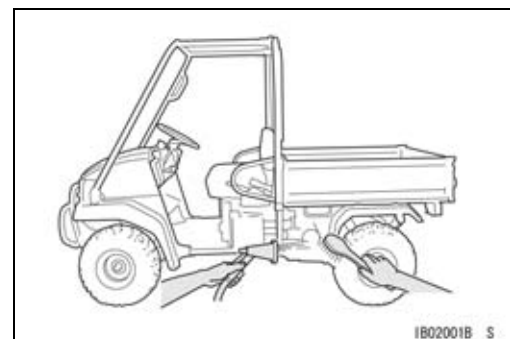
Solvent

Use a high-flash point solvent when cleaning parts. High-flash point solvent should be used according to directions of the solvent manufacturer.



Cleaning vehicle before disassembly

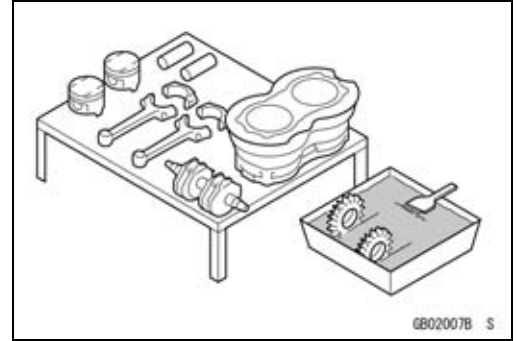
Clean the vehicle thoroughly before disassembly. Dirt or other foreign materials entering into sealed areas during vehicle disassembly can cause excessive wear and decrease performance of the vehicle.



Before Servicing

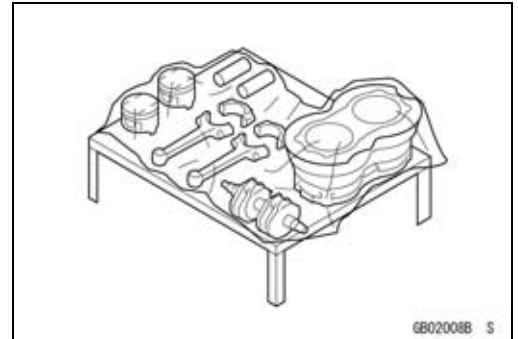
Arrangement and Cleaning of Removed Parts

Disassembled parts are easy to confuse. Arrange the parts according to the order the parts were disassembled and clean the parts in order prior to assembly.



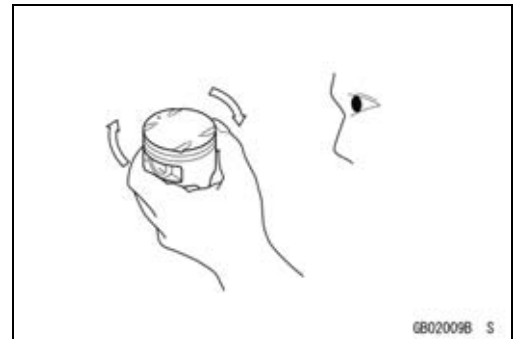
Storage of Removed Parts

After all the parts including subassembly parts have been cleaned, store the parts in a clean area. Put a clean cloth or plastic sheet over the parts to protect from any foreign materials that may collect before re-assembly.



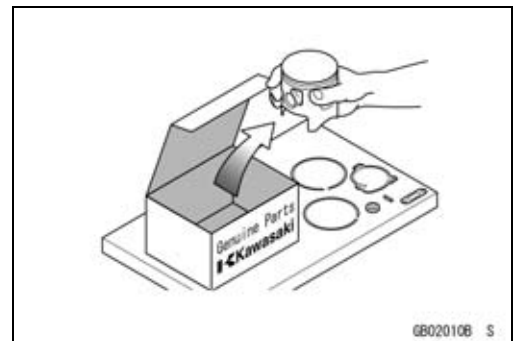
Inspection

Reuse of worn or damaged parts may lead to serious accident. Visually inspect removed parts for corrosion, discoloration, or other damage. Refer to the appropriate sections of this manual for service limits on individual parts. Replace the parts if any damage has been found or if the part is beyond its service limit.



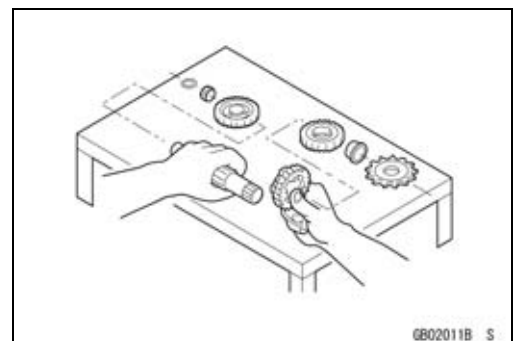
Replacement Parts

Replacement Parts must be KAWASAKI genuine or recommended by KAWASAKI. Gaskets, O-rings, Oil seals, Grease seals, circlips or cotter pins must be replaced with new ones whenever disassembled.



Assembly Order

In most cases assembly order is the reverse of disassembly, however, if assembly order is provided in this Service Manual, follow the procedures given.

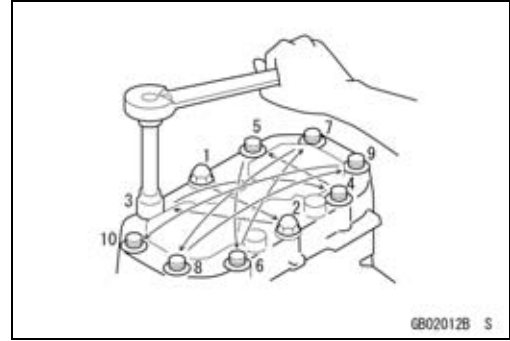


1-4 GENERAL INFORMATION

Before Servicing

Tightening Sequence

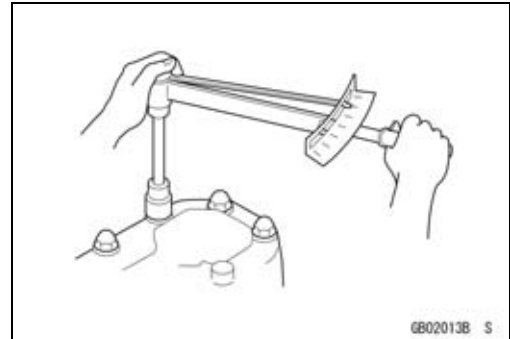
Generally, when installing a part with several bolts, nuts, or screws, start them all in their holes and tighten them to a snug fit. Then tighten them according to the specified sequence to prevent case warpage or deformation which can lead to malfunction. Conversely when loosening the bolts, nuts, or screws, first loosen all of them by about a quarter turn and then remove them. If the specified tightening sequence is not indicated, tighten the fasteners alternating diagonally.



Tightening Torque

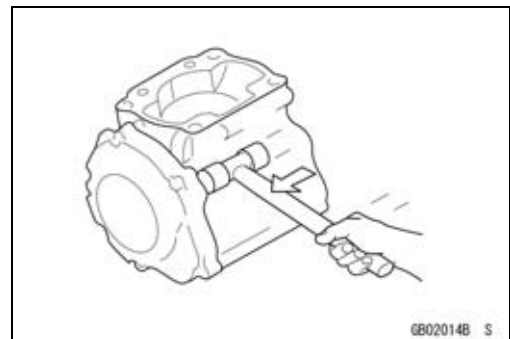
Incorrect torque applied to a bolt, nut, or screw may lead to serious damage. Tighten fasteners to the specified torque using a good quality torque wrench.

Often, the tightening sequence is followed twice initial tightening and final tightening with torque wrench.



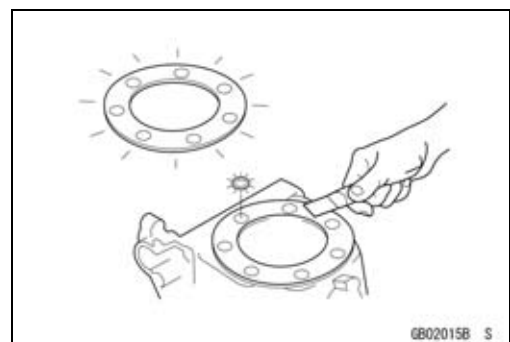
Force

Use common sense during disassembly and assembly, excessive force can cause expensive or hard to repair damage. When necessary, remove screws that have a non-permanent locking agent applied using an impact driver. Use a plastic-faced mallet whenever tapping is necessary.



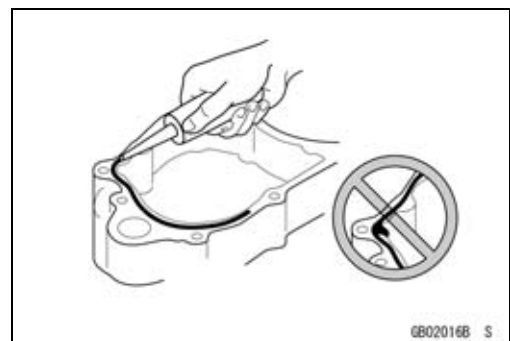
Gasket, O-ring

Hardening, shrinkage, or damage of both gaskets and O-rings after disassembly can reduce sealing performance. Remove old gaskets and clean the sealing surfaces thoroughly so that no gasket material or other material remains. Install new gaskets and replace used O-rings when re-assembling.



Liquid Gasket, Locking Agent

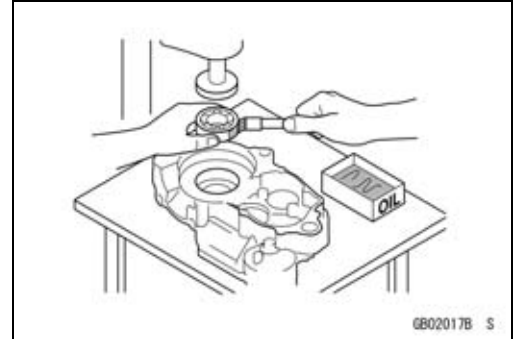
For applications that require Liquid Gasket or a Non-Permanent Locking Agent, clean the surfaces so that no oil residue remains before applying liquid gasket or locking agent. Do not apply them excessively. Excessive application can clog oil passages and cause serious damage.



Before Servicing

Press

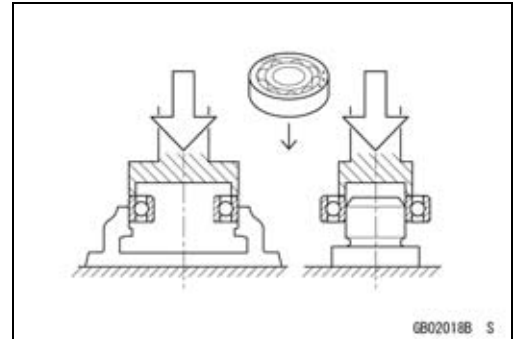
For items such as bearings or oil seals that must be pressed into place, apply small amount of oil to the contact area. Be sure to maintain proper alignment and use smooth movements when installing.



Ball Bearing and Needle Bearing

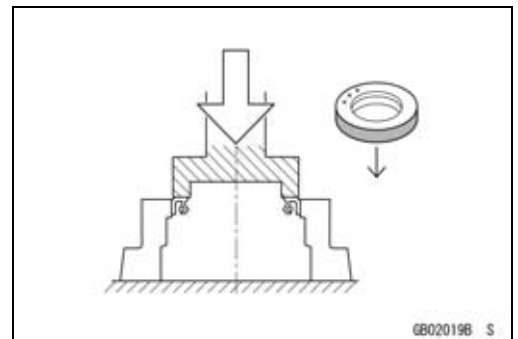
Do not remove pressed ball or needle unless removal is absolutely necessary. Replace with new ones whenever removed. Press bearings with the manufacturer and size marks facing out. Press the bearing into place by putting pressure on the correct bearing race as shown.

Pressing the incorrect race can cause pressure between the inner and outer race and result in bearing damage.

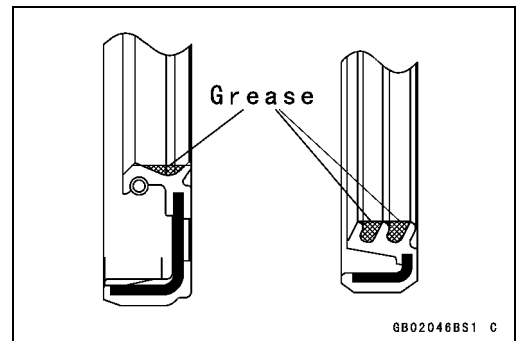


Oil Seal, Grease Seal

Do not remove pressed oil or grease seals unless removal is necessary. Replace with new ones whenever removed. Press new oil seals with manufacture and size marks facing out. Make sure the seal is aligned properly when installing.

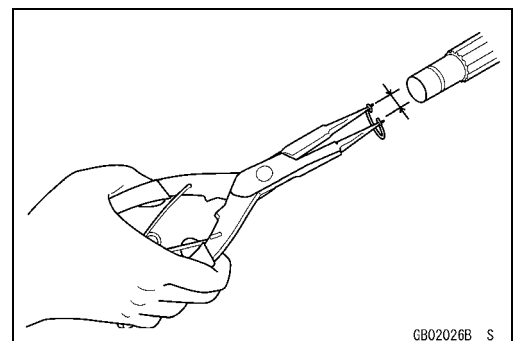


Apply specified grease to the lip of seal before installing the seal.



Circlips, Cotter Pins

Replace circlips or cotter pins that were removed with new ones. Take care not to open the clip excessively when installing to prevent deformation.

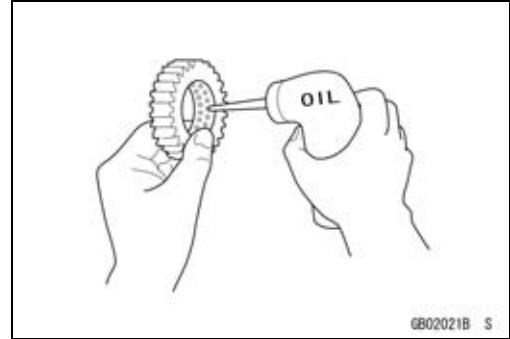


1-6 GENERAL INFORMATION

Before Servicing

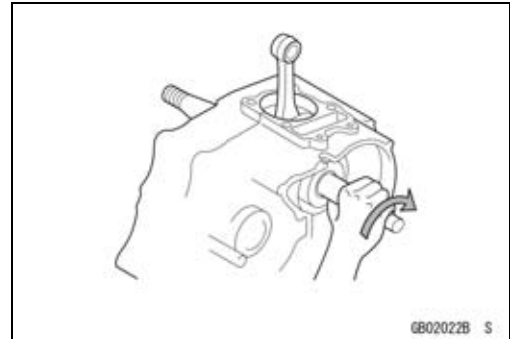
Lubrication

It is important to lubricate rotating or sliding parts during assembly to minimize wear during initial operation. Lubrication points are called out throughout this manual, apply the specific oil or grease as specified.



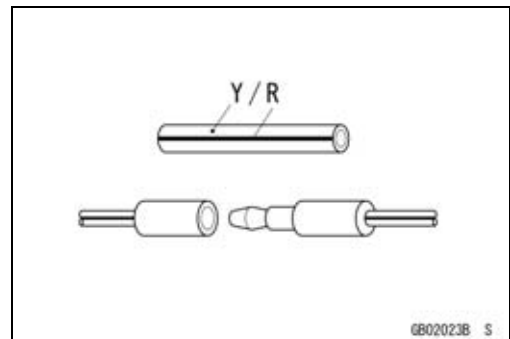
Direction of Engine Rotation

When rotating the crankshaft by hand, the free play amount of rotating direction will affect the adjustment. Rotate the crankshaft to positive direction (clockwise viewed from output side).



Electrical Wires

A two-color wire is identified first by the primary color and then the stripe color. Unless instructed otherwise, electrical wires must be connected to those of the same color.



Model Identification

KAF400-A1 Left Side View



KAF400-A1 Right Side View



The KAF400-C1 is identical to the KAF400-A1 in every aspect: controls, features, and specifications except the camouflage surface treatment and weight.

1-8 GENERAL INFORMATION

Model Identification

KAF400-B1 Left Side View



KAF400-B1 Right Side View



General Specifications

Items	KAF400-A1/B1/C1
<p>Dimensions</p> <p>Overall Length</p> <p>Overall Width</p> <p>Overall Height</p> <p>Wheelbase</p> <p>Tread:</p> <p> Front</p> <p> Rear</p> <p>Ground Clearance</p> <p>Seat Height</p> <p>Dry Weight</p> <p>Curb Weight:</p> <p> Front</p> <p> Rear</p> <p>Fuel Tank Capacity</p> <p>Cargo Bed (L × W × H)</p>	<p>2 720 mm (107.09 in.)</p> <p>1 335 mm (52.56 in.)</p> <p>(A, C) 1 802 mm (70.94 in.), (B) 1 781 mm (70.12 in.)</p> <p>1 779 mm (70.04 in.)</p> <p>1 051 mm (41.38 in.)</p> <p>999 mm (39.33 in.)</p> <p>(A, C) 170 mm (6.69 in.), (B) 155 mm (6.10 in.)</p> <p>(A, C) 780 mm (30.71 in.), (B) 768 mm (30.24 in.)</p> <p>(A) 442 kg (975 lb), (B) 413 kg (911 lb), (C) 448 kg (988 lb)</p> <p>(A, C) 199 kg (439 lb), (B) 179 kg (395 lb)</p> <p>(A) 259 kg (571 lb), (B) 250 kg (551 lb), (C) 265 kg (584 lb)</p> <p>15.5 L (4.1 US gal)</p> <p>1 044 × 900 × 245 mm (41.10 × 35.43 × 9.65 in.)</p>
<p>Performance</p> <p>Minimum Turning Radius</p>	<p>3.3 m (10.83 ft)</p>
<p>Engine</p> <p>Type</p> <p>Cooling System</p> <p>Bore and Stroke</p> <p>Displacement</p> <p>Compression Ratio</p> <p>Carburetion System</p> <p>Starting System</p> <p>Ignition System</p> <p>Ignition Timing</p> <p>Spark Plug</p> <p>Valve Timing</p> <p> Inlet:</p> <p> Open</p> <p> Close</p> <p> Duration</p> <p> Exhaust:</p> <p> Open</p> <p> Close</p> <p> Duration</p> <p>Lubrication System</p> <p>Engine Oil:</p> <p> Type</p> <p> Viscosity</p> <p> Capacity</p>	<p>4-stroke, OHV, 2-valves, 1-cylinder</p> <p>Positive air-cooled</p> <p>82 × 76 mm (3.23 × 2.99 in.)</p> <p>401 mL (24.47 cu in.)</p> <p>8.6</p> <p>Carburetor, NIKKI 6C1026</p> <p>Electric starter</p> <p>Magneto and Transistor</p> <p>20° Constant</p> <p>NGK BPR5ES</p> <p>19° BTDC</p> <p>61° ABDC</p> <p>260°</p> <p>58° BBDC</p> <p>22° ATDC</p> <p>260°</p> <p>Forced lubrication (wet sump)</p> <p>API SF or SG</p> <p>API SH or SJ with JASO MA class</p> <p>SAE10W-40</p> <p>1.4 L (1.5 US qt)</p>

1-10 GENERAL INFORMATION

General Specifications

Items	KAF400-A1/B1/C1
<p>Drive Train</p> <p>Primary Reduction System:</p> <p> Type</p> <p> Reduction ratio</p> <p>Transmission Gear Ratio:</p> <p> Forward:</p> <p> High</p> <p> Low</p> <p> Reverse:</p> <p> Low</p> <p>Final Drive System:</p> <p> Type</p> <p> Reduction Ratio</p> <p> Front</p> <p> Rear</p> <p>Overall Drive Ratio:</p> <p> Forward:</p> <p> High</p> <p> Low</p> <p> Reverse:</p> <p> Low</p> <p>Front Final Gear Case Oil (A, C):</p> <p> Type</p> <p> Capacity</p> <p>Transmission Oil (A, C):</p> <p> Type</p> <p> Capacity</p>	<p>Belt drive torque converter</p> <p>3.653 ~ 0.794</p> <p>2.916 (35/24 × 36/18)</p> <p>(A, C) 4.315 (41/19 × 36/18), (B) –</p> <p>3.750 (30/16 × 36/18)</p> <p>(A, C) Gear (4WD/2WD), (B) Gear (2WD)</p> <p>3.851 (16/18 × 39/9)</p> <p>4.000 (64/16)</p> <p>9.263</p> <p>(A, C) 13.706, (B) –</p> <p>11.910</p> <p>API GL-5 SAE140 or GL-6 SAE90 Hypoid gear oil for LSD</p> <p>0.2 L (0.2 US qt)</p> <p>API GL-5 Hypoid gear oil, SAE90 (above 5°C, 41°F) or SAE80 (below 5°C, 41°F)</p> <p>(A, C) 2.4 L (2.5 US qt), (B) 2.2 L (2.3 US qt)</p>
<p>Frame</p> <p> Type</p> <p> Caster (Rake Angle)</p> <p> Camber</p> <p> Trail</p> <p> Tire:</p> <p> Front</p> <p> Rear</p> <p> Steering Type</p> <p> Suspension:</p> <p> Front:</p> <p> Type</p> <p> Wheel travel</p> <p> Rear:</p> <p> Type</p> <p> Wheel travel</p>	<p>Steel tube, Ladder</p> <p>8°</p> <p>1°</p> <p>(A, C) 40 mm (1.57 in.), (B) 33 mm (1.30 in.)</p> <p>(A, C) 24 × 9.00-10, Tubeless, (B) 22 × 9.00-10, Tubeless</p> <p>(A, C) 24 × 11.00-10, Tubeless, (B) 22 × 11.00-10, Tubeless</p> <p>Rack and pinion</p> <p>MacPherson strut</p> <p>78 mm (3.07 in.)</p> <p>Unit Swing</p> <p>78.7 mm (3.10 in.)</p>

General Specifications

Items	KAF400-A1/B1/C1
Brake Type: Front and Rear Parking brake type	Drum (Hydraulic) Drum (Mechanical internal expansion)
Electrical Equipment Battery Headlight: Type Bulb Tail/Brake Light Reverse Light (EUR) Alternator: Type Rated output	12 V 14 Ah Semi-sealed beam 12 V 35 W × 2 12 V 5/21 W 12 V 10 W Single-phase AC 17 A, 12.5 V
Load Capacity Maximum Vehicle Load (Including Occupants and Cargo) Maximum Cargo Bed Load	420 kg (926 lb) 181 kg (400 lb)

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

A: KAF400A, MULE 610 4 × 4

B: KAF400B, MULE 600

C: KAF400C, MULE 610 4 × 4 (Camouflage-Surface-Treated Model)

EUR: Europe Model

1-12 GENERAL INFORMATION

Unit Conversion Table

Prefixes for Units

Prefix	Symbol	Power
mega	M	× 1 000 000
kilo	k	× 1 000
centi	c	× 0.01
milli	m	× 0.001
micro	μ	× 0.000001

Units of Mass

kg	×	2.205	=	lb
g	×	0.03527	=	oz

Units of Volume

L	×	0.2642	=	gal (US)
L	×	0.2200	=	gal (imp)
L	×	1.057	=	qt (US)
L	×	0.8799	=	qt (imp)
L	×	2.113	=	pint (US)
L	×	1.816	=	pint (imp)
mL	×	0.03381	=	oz (US)
mL	×	0.02816	=	oz (imp)
mL	×	0.06102	=	cu in

Units of Force

N	×	0.1020	=	kg
N	×	0.2248	=	lb

kg	×	9.807	=	N
kg	×	2.205	=	lb

Units of Length

km	×	0.6214	=	mile
m	×	3.281	=	ft
mm	×	0.03937	=	in

Units of Torque

N·m	×	0.1020	=	kgf·m
N·m	×	0.7376	=	ft·lb
N·m	×	8.851	=	in·lb

kgf·m	×	9.807	=	N·m
kgf·m	×	7.233	=	ft·lb
kgf·m	×	86.80	=	in·lb

Units of Pressure

kPa	×	0.01020	=	kgf/cm ²
kPa	×	0.1450	=	psi
kPa	×	0.7501	=	cmHg

kgf/cm ²	×	98.07	=	kPa
kgf/cm ²	×	14.22	=	psi
cm Hg	×	1.333	=	kPa

Units of Speed

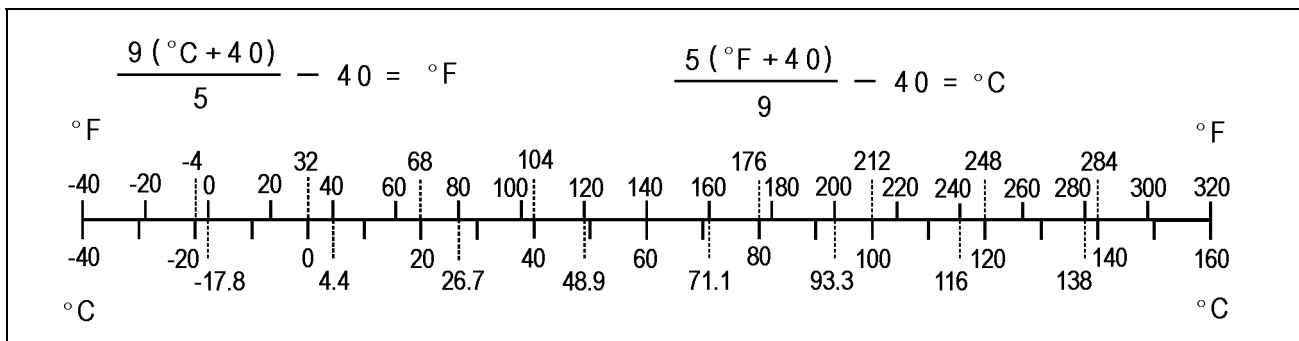
km/h	×	0.6214	=	mph
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Units of Power

kW	×	1.360	=	PS
kW	×	1.341	=	HP

PS	×	0.7355	=	kW
PS	×	0.9863	=	HP

Units of Temperature:



Periodic Maintenance

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2-2 PERIODIC MAINTENANCE

Periodic Maintenance Chart

The scheduled maintenance must be done in accordance with this chart to keep the vehicle in good running condition. **The initial maintenance is vitally important and must not be neglected.**

OPERATION	FREQUENCY	Whichever comes first → ↓ Every	First Service	Regular Service		See Page
			After 50 h, or 1 000 km of use	Every 250 h, or 5 000 km of use	Every 500 h, or 10 000 km of use	
ENGINE						
Converter drive belt - inspect*				•		2-18
Converter driven pulley shoe - inspect*					•	2-19
Converter dust or water - clean*					•	2-21
Converter air cleaner element - clean*			•	•		2-20
Air cleaner element - clean*			•	•		2-13
Valve clearance - inspect					•	2-16
Engine oil - change*		1 year	•	•		2-21
Oil filter - replace*			•	•		2-22
Throttle pedal play - inspect			•		•	2-12
Idle speed - adjust			•	•		2-12
Fuel hose - replace		4 years				2-15
Fuel filter - replace*					•	2-15
Fuel system cleanliness - inspect					•	2-16
Fuel hoses and connections -inspect*			•	•		2-14
Spark plug - clean and gap			•	•		2-33
Spark arrester - clean				•		2-17
CHASSIS						
Steering - inspect			•	•		2-32
Steering joint dust boots - inspect			•	•		2-32
Brake pedal play - inspect*			•	•		2-26
Parking brake lever - inspect			•	•		2-31
Brake hose and pipe - inspect			•	•		2-28
Brake fluid level - inspect			•	•		2-24
Brake wear - inspect*				•		2-29
Tire wear - inspect*			•	•		2-23
Battery - inspect				•		2-33
Brake light switch - inspect			•	•		2-34
Seat belt - inspect				•		2-33
General lubrication - perform*				•		2-35
Bolts, nuts, and fasteners tightness - inspect			•	•		2-36
Wheel nuts tightness - inspect			•	•		2-23

Periodic Maintenance Chart

OPERATION	FREQUENCY	Whichever comes first → ↓ Every	First Service	Regular Service		See Page
			After 50 h, or 1 000 km of use	Every 250 h, or 5 000 km of use	Every 500 h, or 10 000 km of use	
Front final gear case oil and transmission oil - change*		1 year	●		●	2-22 2-23
Brake fluid - change		2 years				2-25
Brake master cylinder cup and dust seal - replace		2 years				2-27
Brake wheel cylinder assembly -replace		2 years				2-30
Brake hose - replace		4 years				2-28

●: Clean, adjust, lubricate, torque, or replace parts as necessary.

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

2-4 PERIODIC MAINTENANCE

Torque and Locking Agent

The following tables list the tightening torque for the major fasteners, and the parts requiring use of a non-permanent locking agent or liquid gasket.

L: Apply a non-permanent locking agent to the threads.

MO: Apply molybdenum disulfide oil (the weight ratio of the mixture between engine oil and disulfide grease is 10 : 1).

O: Apply an oil to the threads, seated surface, or washer.

R: Replacement Parts

S: Tighten the fasteners following the specified sequence.

SS: Apply a silicone sealant to the threads.

Fastener	Torque			Remarks
	N·m	kgf·m	ft·lb	
Fuel System				
Air Cleaner Housing Bolts	17	1.7	12	
Carburetor Mounting Nuts	5.9	0.60	52 in·lb	
Choke Valve Screws	0.90	0.09	7.8 in·lb	L
Throttle Valve Screws	0.90	0.09	7.8 in·lb	L
Pilot Jet	0.70	0.07	6.1 in·lb	
Pilot Jet Plug	2.5	0.25	22 in·lb	
Main Jet	2.0	0.20	17 in·lb	
Drain Screw	2.0	0.20	17 in·lb	
Float Chamber Bolt	9.8	1.0	87 in·lb	
Panel Cover Bolts	4.4	0.45	39 in·lb	
Control Panel Bolt	6.9	0.70	61 in·lb	
Plate Connection Bolts	8.8	0.90	78 in·lb	
Control Panel Mounting Bolts	20	2.0	14	
Governor Arm Nut	5.9	0.60	52 in·lb	
Fuel Pump Mounting Bolts	5.4	0.55	48 in·lb	
Air Cleaner Housing Bolts	17	1.7	12	
Fuel Pump Bracket Bolt	5.4	0.55	48 in·lb	
Breather Mounting Bolt	8.8	0.90	78 in·lb	
Breather Bracket Bolt	15	1.5	11	
Engine Top End				
Cylinder Head Cover Bolts	6.9	0.70	61 in·lb	
Cylinder Head Bolts	37	3.8	27	S
Engine Shroud Bolts	5.9	0.60	52 in·lb	
Valve Adjusting Nut Lock Screw	6.9	0.70	61 in·lb	
Rocker Arm Bolts	28	2.9	21	
Exhaust Pipe Clamp Nuts	20	2.0	14	
Muffler Clamp Nuts	31	3.2	23	
Muffler Mounting Bolts	31	3.2	23	
Converter System				
Drive Pulley Bolt	94	9.6	69	R
Drive Pulley Cover Bolts	23	2.3	17	
Spider	275	28	203	
Weight Pin Nuts	7.0	0.70	61 in·lb	

PERIODIC MAINTENANCE 2-5

Torque and Locking Agent

Fastener	Torque			Remarks
	N·m	kgf·m	ft·lb	
Driven Pulley Bolt	94	9.6	69	
Deflection Bolts	9.0	0.92	80 in·lb	
Driven Shoe Screws	1.1	0.11	9.7 in·lb	L
Converter Cover Bolts	4.4	0.45	39 in·lb	
Converter Case Front Bolts (26.5 mm)	20	2.0	14	
Converter Case Rear Bolts (25 mm)	20	2.0	14	
Converter Case Cover Screws	5.0	0.5	44 in·lb	
Bracket Bolts	8.8	0.90	78 in·lb	
Air Filter Housing Bolts	20	2.0	14	
Engine Lubrication System				
Oil Line Plugs	3.9	0.40	34 in·lb	L
Oil Filter	9.8	1.0	87 in·lb	
Oil Filter Joint	6.9	0.70	61 in·lb	
Joint (KAF400-A/C)	7.4	0.75	65 in·lb	
Oil Temperature Sensor (KAF400-A/C)	5.5	0.56	49 in·lb	
Engine Oil Drain Plugs	6.9	0.70	61 in·lb	
Oil Plug	6.9	0.70	61 in·lb	
Engine Removal/Installation				
Engine Mounting Bolts and Nuts	24.5	2.5	18	
Connecting Plate Bolts (M8)	28	2.9	21	L
Connecting Plate Bolts (M10)	55	5.6	41	L
Engine Bottom End				
Connecting Rod Bolts	5.9	0.60	52 in·lb	O
Breather Valve Screw	3.4	0.35	30 in·lb	
Oil Filter Joint	6.9	0.70	61 in·lb	
Oil Line Plugs	3.9	0.40	34 in·lb	L
Crankcase Cover Bolts	21.6	2.2	16	S
Engine Oil Drain Plugs	6.9	0.70	61 in·lb	
Transmission				
Transmission Cable Holder Bolts	41.5	4.2	31	
Connecting Plate Bolts (M8)	28	2.9	21	L
Connecting Plate Bolts (M10)	55	5.6	41	L
Transmission Case Bolts	8.8	0.90	78 in·lb	
Speed Sensor Cap Bolt	8.8	0.90	78 in·lb	
Transmission Oil Drain Plug	15	1.5	11	
Cover Screws	4.0	0.40	35 in·lb	
Oil Line Plug	9.8	1.0	87 in·lb	L
Shift Shaft Lever Bolt	13.5	1.4	10	
Differential Shift Cable Holder Bolts	8.8	0.90	78 in·lb	
Plug Bolt (except Europe Model)	15	1.5	11	
Shift Shaft Stop Bolt	8.8	0.90	78 in·lb	
Differential Shift Shaft Nut	20	2.0	14	
Neutral Switch	15	1.5	11	

2-6 PERIODIC MAINTENANCE

Torque and Locking Agent

Fastener	Torque			Remarks
	N·m	kgf·m	ft·lb	
Reverse Switch (Europe Model)	15	1.5	11	
Positioning Bolt	25	2.5	18	
Differential Gear Housing Bolts	57	5.8	42	L
Wheels/Tires				
Wheel Nuts	34	3.5	25	
Final Drive				
Oil Filler Cap	29	3.0	22	
Front Final Gear Case Oil Drain Plug	20	2.0	14	
Pinion Gear Nut	156	16	115	L
Pinion Gear Bearing Holder	98	10	72	
Differential Case Bolts	49	5.0	36	L
Ring Gear Cover Bolts M8	25	2.6	19	
Ring Gear Cover Bolts M10	47	4.8	35	
Rear Axle Bracket Bolts	24.5	2.5	18	
Rear Axle Bracket Flange Bolts	49	5.0	36	
Bevel Gear Case Bolts	20	2.0	14	
Yoke Stop Bolt	8.8	0.90	78 in·lb	
Driven Bevel Gear Slotted Nut	118	12	87	MO
Bearing Screw	137	14	101	L
Drive Bevel Gear Nut	137	14	101	MO
2WD/4WD Shift Shaft Nut	20	2.0	14	
2WD/4WD Shift Cable Holder Bolts	8.8	0.90	78 in·lb	L
Bearing Housing Bolts	41.5	4.2	31	
Brakes				
Push Rod Locknut	18	1.8	13	
Master Cylinder Reservoir Cap	3.4	0.35	30 in·lb	
Reservoir Clamp Bolt	6.2	0.63	55 in·lb	
Master Cylinder Mounting Bolts	22.5	2.3	17	
Piston Stop Bolt	8.8	0.90	78 in·lb	
Brake Pipe Nipples	18	1.8	13	
Brake Hose Banjo Bolts	25	2.5	18	
Parking Lever Mounting Bolts	22.5	2.3	17	
Bleed Valves	8.0	0.82	71 in·lb	
Wheel Cylinder Mounting Bolts	12	1.2	106 in·lb	
Breather Fitting	6.0	0.61	53 in·lb	
Front Brake Panel Mounting Bolts	34	3.5	25	L
Front Axle Nuts	147	15	108	
Brake Pipe Nipples	18	1.8	13	
Brake Pipe Mounting Bolt	22.5	2.3	17	
Bleed Valves	8.0	0.82	71 in·lb	
Wheel Cylinder Mounting Bolts	12	1.2	106 in·lb	
Breather Fitting	6.0	0.61	53 in·lb	
Rear Brake Panel Mounting Bolts	34	3.5	25	L

PERIODIC MAINTENANCE 2-7

Torque and Locking Agent

Fastener	Torque			Remarks
	N·m	kgf·m	ft·lb	
Rear Axle Nuts	304	31	224	
Suspension				
Strut Mounting Nuts	44	4.5	32	
Strut Clamp Nuts	98	10	72	
Suspension Arm Pivot Bolts	88.2	9.0	65	
Front Suspension Arm Joint Nuts	78.5	8.0	58	
Swingarm Joint Nut	54	5.5	40	
Swingarm Rod Bolts	50	5.1	37	
Rear Shock Absorber Mounting Nuts	54	5.5	40	
Steering				
Steering Wheel Mounting Nut	54	5.5	40	
Main Shaft Mounting Bolts	34	3.5	25	
Intermediate Shaft Clamp Bolts	25	2.5	18	
Steering Gear Assembly Bracket Bolts	54	5.5	40	
Rack Guide Spring Cap Locknut	39	4.0	29	
Tie-rod Locknuts	44	4.5	32	
Strut Clamp Nuts	98	10	72	
Tie-rod End Nuts	34	3.5	25	
Frame				
Front Bar Mounting Bolts (Lower)	98	10	72	
Front Bar Mounting Bolts (Upper)	44	4.5	32	
Rear Bar Mounting Bolts (L=20 mm)	44	4.5	32	
Rear Bar Mounting Bolts (L=16 mm)	44	4.5	32	
Seat Belt Mounting Bolts	34	3.5	25	
Electrical System				
Alternator Cover Bolts	5.9	0.60	52 in·lb	
Alternator Rotor Bolt	56	5.7	41	
Ignition Coil Bolts	5.9	0.60	52 in·lb	
Spark Plug Wire	22	2.2	16	
Stator Coil Screws	3.4	0.35	30 in·lb	
Wire Lead Clamp Bolt	6.9	0.70	61 in·lb	
Starter Motor Mounting Bolts	17	1.7	12	
Controller Mounting Bolt (KAF400-A/C)	5.4	0.55	48 in·lb	
Regulator/Rectifier Bolts	7.8	0.80	69 in·lb	
Joint (KAF400-A/C)	7.4	0.75	65 in·lb	
Oil Temperature Sensor (KAF400-A/C)	5.5	0.56	49 in·lb	
Neutral Switch	15	1.5	11	

2-8 PERIODIC MAINTENANCE

Torque and Locking Agent

The table below, relating tightening torque to thread diameter, lists the basic torque for the bolts and nuts. Use this table for only the bolts and nuts which do not require a specific torque value. All of the values are for use with dry solvent-cleaned threads.

Basic Torque for General Fasteners of Engine Parts

Threads dia. (mm)	Mark of Bolt Head	Torque		
		N·m	kgf·m	ft·lb
6	4T	3.9 ~ 4.9	0.40 ~ 0.50	35 ~ 43 in·lb
6	7T	7.8 ~ 9.8	0.80 ~ 1.0	69 ~ 87 in·lb
6	9T	12 ~ 15	1.2 ~ 1.5	104 ~ 130 in·lb
8	4T	10 ~ 14	1.0 ~ 1.4	87 ~ 120 in·lb
8	7T	18 ~ 22	1.8 ~ 2.2	13 ~ 16
10	4T	20 ~ 24	2.0 ~ 2.4	14 ~ 17
10	7T	39 ~ 44	4.0 ~ 4.5	29 ~ 33

Basic Torque for General Fasteners of Frame Parts

Threads dia. (mm)	Torque		
	N·m	kgf·m	ft·lb
5	3.4 ~ 4.9	0.35 ~ 0.50	30 ~ 43 in·lb
6	5.8 ~ 7.9	0.60 ~ 0.80	52 ~ 69 in·lb
8	14 ~ 19	1.4 ~ 1.9	10 ~ 14
10	26 ~ 34	2.6 ~ 3.5	19 ~ 25
12	44 ~ 61	4.5 ~ 6.2	33 ~ 45

Specifications

Item	Standard	Service Limit
Fuel System		
Throttle Pedal Free Play	2 ~ 5 mm (0.08 ~ 0.20 in.)	---
Idle Speed	1 100 ~ 1 250 r/min (rpm)	---
Engine Top End		
Valve Clearance (when cold)	0.10 ~ 0.15 mm (0.0039 ~ 0.0059 in.)	---
Converter System		
Belt Width	26.1 ~ 27.3 mm (1.03 ~ 1.07 in.)	25.2 mm (0.99 in.)
Belt Deflection	22 ~ 32 mm (0.87 ~ 1.26 in.)	22 ~ 50 mm (0.87 ~ 1.97 in.)
Wear Shoe Width	---	1.9 mm (0.75 in.)
Engine Lubrication System		
Engine Oil:		
Type	API SF or SG API SH or SJ with JASO MA	---
Viscosity	SAE10W-40	---
Capacity	0.85 L (0.9 US qt) (when filter is not removed) 1.4 L (1.5 US qt) (when filter is removed)	---
Oil Level	Between H and L marks on dipstick	---
Transmission		
Transmission Oil:		
Type	API "GL-5" Hypoid gear oil	---
Viscosity	SAE90: above 5°C (41°F) or SAE80: below 5°C (41°F)	---
Capacity	2.4 L (2.5 US qt), (B) 2.2 L (2.3 US qt)	---
Oil Level	Between H and L level lines	---
Wheels/Tires		
Tire Tread Depth	---	3 mm (0.12 in.)
Standard Tire:		
Front	(A, C) 24 × 9.00 × 10 DUNLOP KT869M, Tubeless	---
	(B) 22 × 9.00 × 10 DUNLOP KT901, Tubeless	---
Rear	(A, C) 24 × 11.00 × 10 DUNLOP KT869, Tubeless	---
	(B) 22 × 11.00 × 10 DUNLOP KT869, Tubeless	---
Final Drive (A, C)		
Front Final Gear Case Oil:		
Type	API "GL-5 or GL-6" hypoid gear oil for LSD (Limited Slip Differential gears)	---
Viscosity	SAE90 (GL-6) or SAE140 (GL-5)	---
Capacity	0.2 L (0.2 US qt)	---
Oil Level	Filler opening level	---

2-10 PERIODIC MAINTENANCE

Specifications

Item	Standard	Service Limit
Brakes		
Brake Fluid:		
Type	DOT3	---
Fluid Level	Between upper and lower level lines	---
Brake Pedal Play	2 ~ 5 mm (0.08 ~ 0.20 in.)	---
Brake Drum Inside Diameter	165.00 ~ 165.16 mm (6.4961 ~ 6.5023 in.)	165.75 mm (6.526 in.)
Brake Shoe Lining Thickness	4 mm (0.16 in.)	1 mm (0.04 in.)
Parking Brake Lever Travel	8 ~ 12 notches (clicks)	---
Steering		
Steering Wheel Free Play	0 ~ 20 mm (0 ~ 0.79 in.)	---
Electrical System		
Spark Plug Gap	0.7 ~ 0.8 mm (0.028 ~ 0.032 in.)	---
Battery:		
Capacity	12 V 14 Ah	---
Electrolyte Level	Between upper and lower level (see text)	---
Specific Gravity	1.270 @ 20° (68°F)	---
Switches:		
Brake Light Switch Timing	ON after 10 mm (0.39 in.) of pedal travel	---

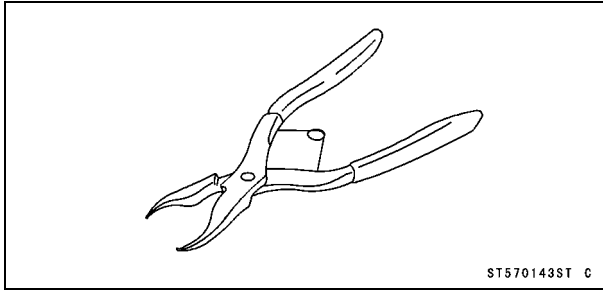
A: KAF400-A Model

B: KAF400-B Model

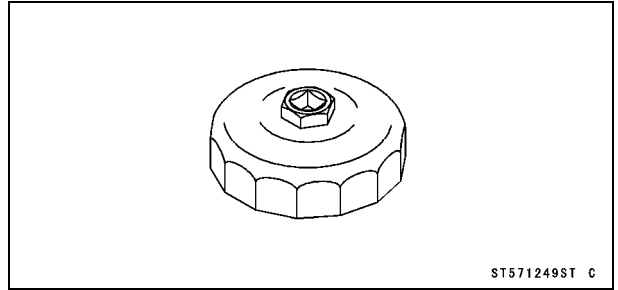
C: KAF400-C Model

Special Tools

Inside Circlip Pliers:
57001-143



Oil Filter Wrench:
57001-1249



2-12 PERIODIC MAINTENANCE

Periodic Maintenance Procedures

Fuel System

Throttle Pedal Free Play Inspection

- Check that the throttle pedal moves smoothly from full open to close.
- ★ If the throttle pedal does not return properly, lubricate the throttle cable and link (see Fuel System chapter).
- Check the throttle pedal free play [A].

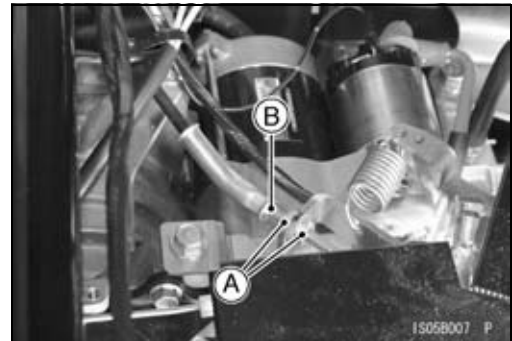
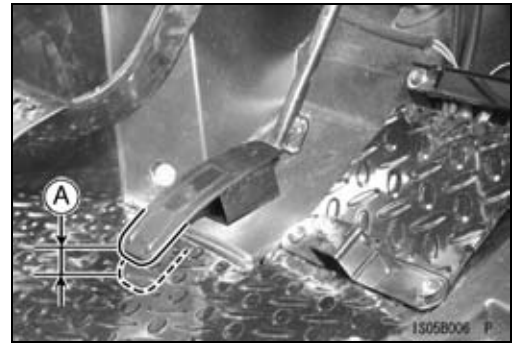
Throttle Pedal Free Play

Standard: 2 ~ 5 mm (0.08 ~ 0.20 in.)

- ★ If the free play is incorrect, adjust the throttle cable.

Throttle Pedal Free Play Adjustment

- Tilt up the cargo bed.
- Loosen the adjuster mounting nuts [A] at the cable lower end.
- Slide the adjuster [B] until the proper amount of throttle pedal free play is obtained.
- Tighten the mounting nuts securely.
- Start the engine.
- With the transmission in neutral, operate the throttle pedal a few times to make sure that the idle speed does not change.
- ★ If the idle speed does change, the throttle cable may be improperly adjusted, incorrectly routed, or it may be damaged.
- Correct any of these conditions before operation.

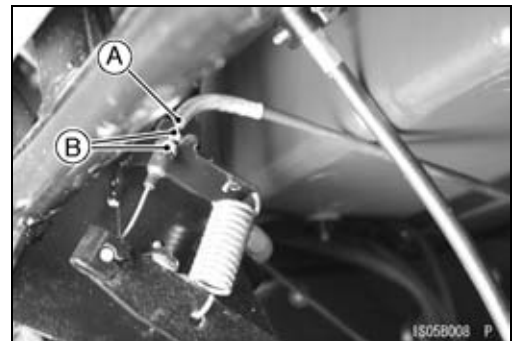


⚠ WARNING

Operation with improperly adjusted, incorrectly routed, or a damaged cable could result in an unsafe operating condition.

NOTE

○ If the throttle pedal free play cannot be adjusted by using the adjuster at the cable lower end, use the cable adjuster [A] at the cable upper end. Do not forget to securely tighten the adjuster mounting nuts [B].



Idle Speed Inspection

- Start the engine and warm it up thoroughly.
- Tilt up the cargo bed.
- Check the idle speed with a suitable tachometer.

Idle Speed

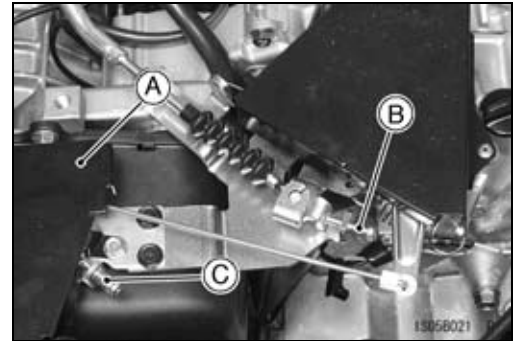
Standard: 1 100 ~ 1 250 r/min (rpm)

- ★ If the idle speed is out of the specified range, adjust it.

Periodic Maintenance Procedures

Idle Speed Adjustment

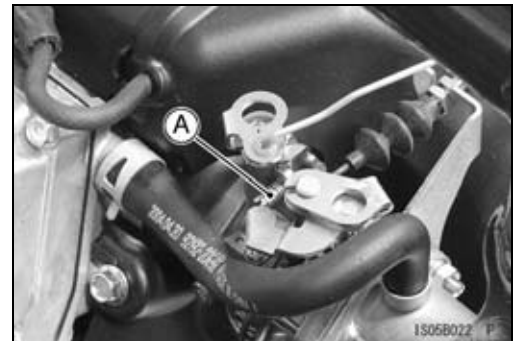
- Start the engine and warm it up thoroughly.
- Tilt up the cargo bed.
- Remove:
 - Guard Plate (see Frame chapter)
 - Link Plate Cover [A]
- Loosen the accel lever stopper screw [B] on the control panel and idle adjusting screw [C] on the link bracket.



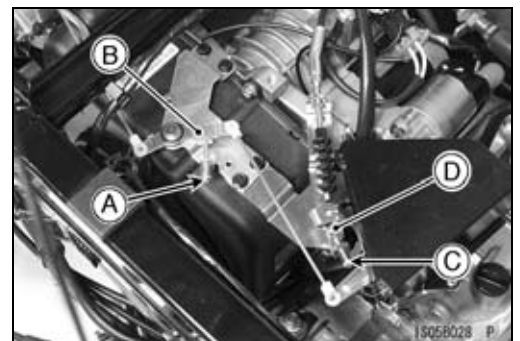
- Turn the idle adjusting screw [A] at the carburetor until the idle speed is correct.

Idle Speed

Standard: 1 100 ~ 1 250 r/min (rpm)



- After the adjustment, screw in the idle adjusting screw [A] on the link bracket until the screw lightly touches the link lever [B].
- Finally screw in the accel lever stopper screw [C] until it keeps clearance by 1 mm (0.04 in.) to accel lever [D].
- Depress and release the throttle pedal a few times to make sure that the idle speed does not change. Readjust if necessary.



Air Cleaner Element Cleaning

NOTE

- *In dusty areas, the element should be cleaned more frequently than the recommended interval.*
- *After riding through rain or on muddy roads, the element should be cleaned immediately.*

⚠ WARNING

Clean the element in a well-ventilated area, and take ample care that there are no sparks or flame anywhere near the working area.
Because of the danger of highly flammable liquids, do not use gasoline or a low flash-point solvent to clean the element.

2-14 PERIODIC MAINTENANCE

Periodic Maintenance Procedures

- Remove:
 - Air Cleaner Element (see Air Cleaner Element Removal)
 - Foam Element [A]
 - Paper Element [B]
- Clean the foam element in a bath of high flash-point solvent using a soft bristle brush.
- Squeeze it dry in a clean towel.

CAUTION

Do not wring the element or blow it dry; the element can be damaged.

- Inspect the foam element for damage.
- ★ If it is torn, punctured, or hardened, replace it.

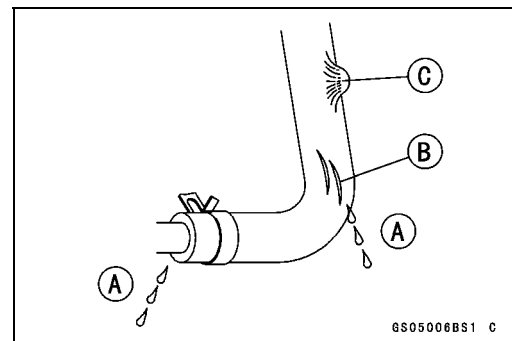
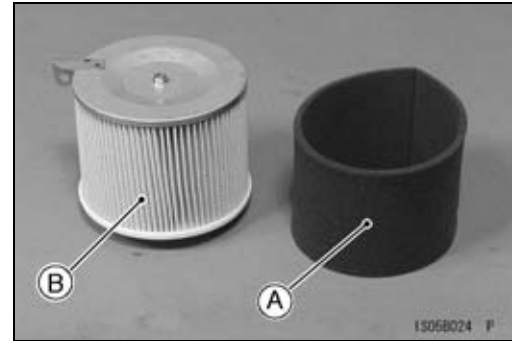
NOTE

○ Replace the foam element after cleaning it five times or if it is damaged.

- Clean the paper element by tapping it lightly to loosen dust.
- Blow away the remaining dust by applying compressed air from the inside to the outside (from the clean side to the dirty side).
- Inspect the element material for damage.
- ★ If any part of the element is damaged, the element must be replaced.

Fuel Hoses And Connections Inspection

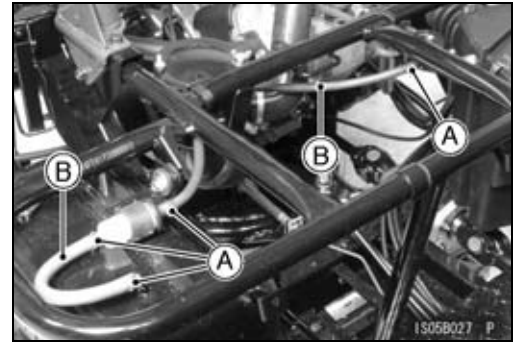
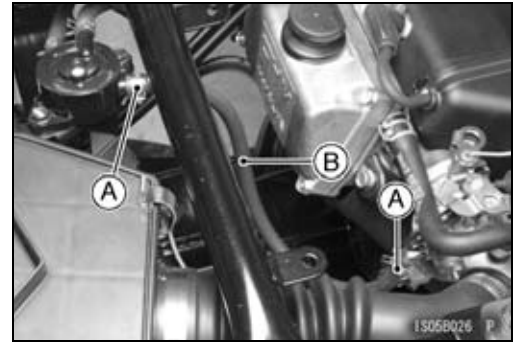
- Lift up the cargo bed and seat.
- Check the fuel hoses and fittings for deterioration, cracks and signs of leakage.
- ★ Replace the fuel hose if any fraying, leak [A], cracks [B] or bulges [C] are noticed.
- Check that the hoses are securely connected and clamps are installed correctly.
- When installing, route the hoses according to Cable, Wire, and Hose Routing section in the Appendix chapter.
- When installing the fuel hoses, avoid sharp bending, kinking, flattening or twisting, and route the fuel hoses with a minimum of bending so that the fuel flow will not be obstructed.
- ★ Replace the hose if it has been sharply bent or kinked.



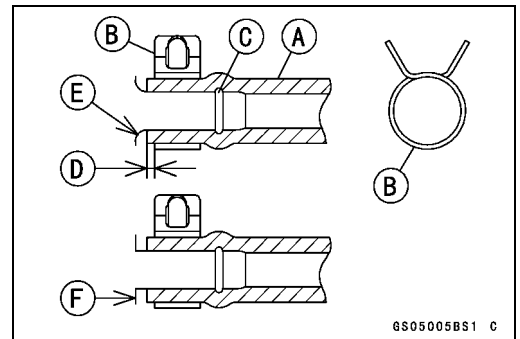
Periodic Maintenance Procedures

Fuel Hoses Replacement

- Tilt up the cargo bed and seat.
- Slide out the clamps [A].
- Remove the hoses [B] (see Exploded View in Fuel System chapter).
- When installing, route the hoses according to Cable, Wire, and Hose Routing section in the Appendix chapter.
- When installing the fuel hoses, avoid sharp bending, kinking, flattening or twisting, and route the fuel hoses with a minimum of bending so that the fuel flow will not be obstructed.



- Fit the fuel hose [A] onto the fitting fully and install the plate clamp [B] beyond the raised rib [C].
1 ~ 2 mm (0.0039 ~ 0.0078 in.) [D]
- The hose end must reach the filler [E] or be as near as possible to the step [F].

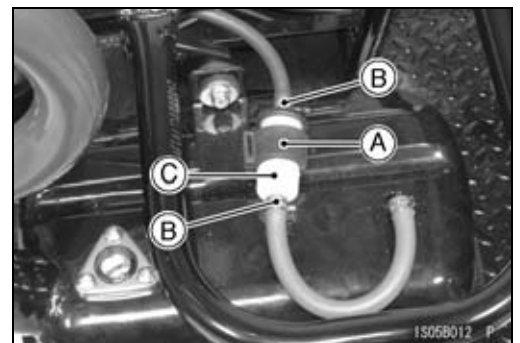


Fuel Filter Replacement

⚠ WARNING

Gasoline is extremely flammable and can be explosive under certain conditions. Turn the ignition 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.

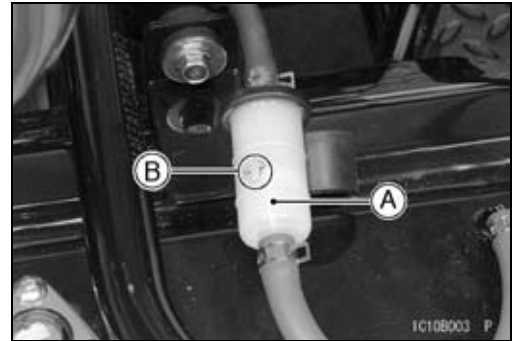
- Tilt up the seat.
- Open the rubber damper [A].
- Remove:
Clamps [B] and Fuel Hoses
Fuel Filter [C]



2-16 PERIODIC MAINTENANCE

Periodic Maintenance Procedures

- Install the fuel filter [A] so that the arrow [B] on it shows the fuel flow from the fuel tank to the fuel pump.
- Install the clamps securely.

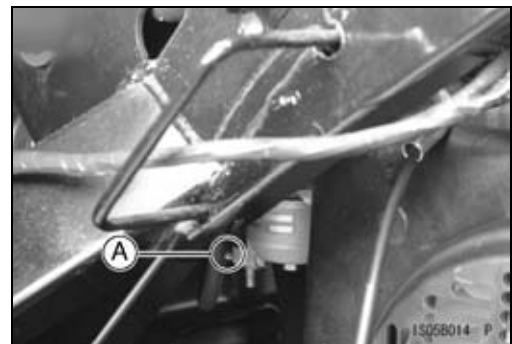


Fuel System Cleanliness Inspection

⚠ WARNING

Gasoline is extremely flammable and can be explosive under certain conditions. Turn the ignition 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.

- Remove:
 - Cargo Bed (tilt up)
- Place a suitable container under the carburetor.
- Turn out the drain screw [A] a few turns to drain some fuel from the carburetor, and check for water or dirt in the fuel.
- ★ If any water or dirt comes out, clean the carburetor and fuel tank (see Fuel Tank) and check the fuel filter.
- Tighten the drain screw securely.



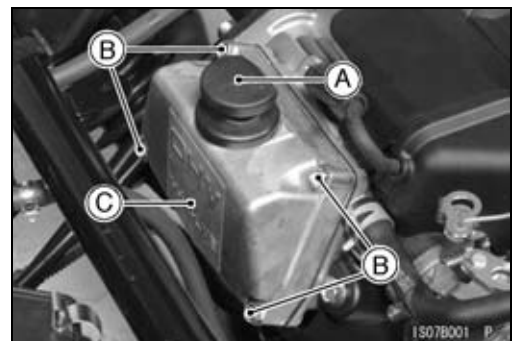
Engine Top End

Valve Clearance Inspection

NOTE

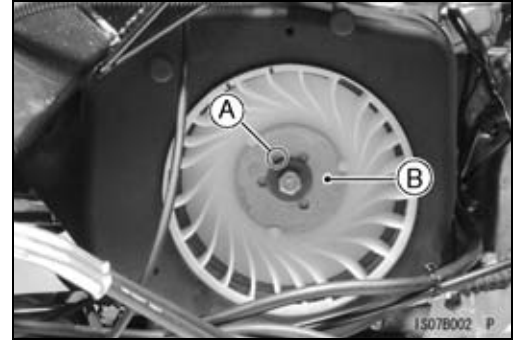
○ Valve clearance must be checked when the engine is cold (at room temperature).

- Remove:
 - Guard Plates (see Frame chapter)
 - Cooling Fan Cover (see Alternator Rotor and Stator Removal section in the Electrical System chapter)
 - Oil Level Gauge [A]
 - Cylinder Head Cover Bolts [B]
 - Cylinder Head Cover [C]
 - Spark Plugs



Periodic Maintenance Procedures

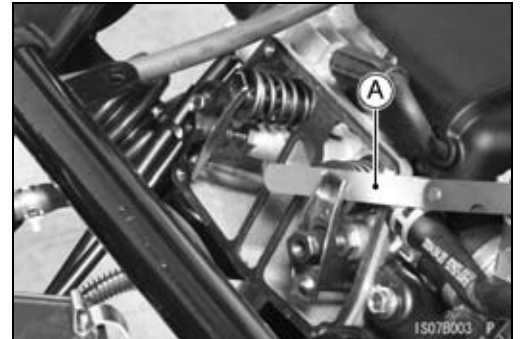
- Position the crankshaft at TDC of the end of the compression stroke.
- Turn the alternator rotor counterclockwise so that the projection [A] on the plate [B] comes to the cylinder as shown.
- Remove the spark plug, if the thin rod is inserted in the plug hole, and the rotor is rotated, a top position of the piston is understood.
- Check both rocker arms are free. If not, turn the rotor more one turn and free both rocker arms.



- Using a thickness gauge [A], measure the valve clearance between the rocker arm and the valve stem.
- ★ If the valve clearance is incorrect, adjust it.

Valve Clearance (when cold)

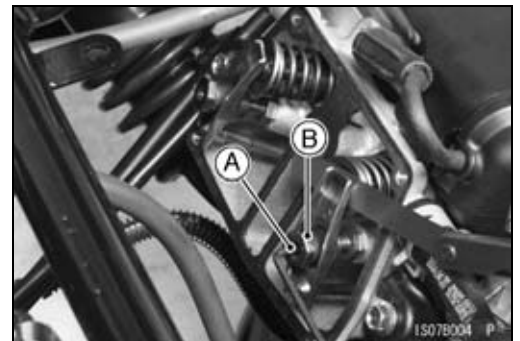
Standard: 0.10 ~ 0.15 mm (0.0039 ~ 0.0059 in.)



Valve Clearance Adjustment

- Loosen the valve adjusting nut lock screw [A].
- Turn the valve adjusting nut [B] until the correct clearance is obtained.
- Holding the adjusting nut, tighten the lock screw.

Torque - Valve Adjusting Nut Lock Screw: 6.9 N·m (0.70 kgf·m, 61 in·lb)

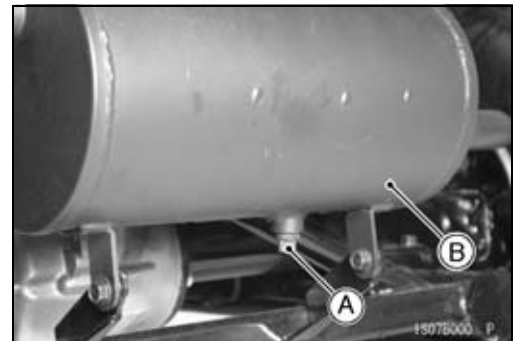


Spark Arrester Cleaning

⚠ WARNING

To avoid burns, wear gloves while cleaning the spark arrester. Since the engine must be run during this procedure, the muffler will become hot.

- Remove the drain plug [A] from the muffler [B].
- Apply the parking brake.
- In an open area away from combustible materials, start the engine with the gear shift lever in the N (neutral) position.
- Raise and lower engine speed while tapping on the muffler with a rubber mallet until the carbon particles are purged from the muffler.



⚠ WARNING

Do not run the engine in a closed area. Exhaust gases contain carbon monoxide; a colorless, odorless, poisonous gas. Breathing exhaust gas can lead to carbon monoxide poisoning, asphyxiation, and death.

- Stop the engine.
- Install the drain plug.

2-18 PERIODIC MAINTENANCE

Periodic Maintenance Procedures

Converter System

Drive Belt Inspection

- Remove the driver belt (see Converter System chapter).
- Measure the width [A] of the belt at several locations with a pair of suitable straightedges [B] as shown.
- ★ If any measurements exceed the service limit, replace the belt.

Belt Width

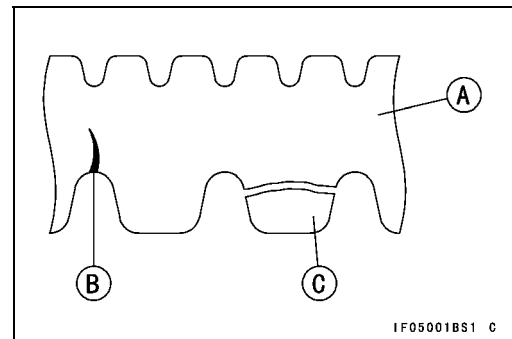
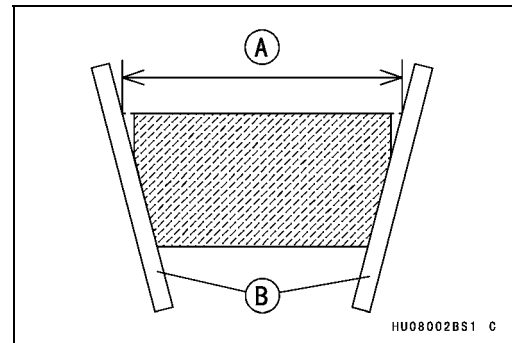
Standard:	26.1 ~ 27.3 mm (1.03 ~ 1.07 in.)
Service Limit:	25.2 mm (0.99 in.)

- Check the belt for wear, cracks, breaks or peeling.
- ★ If necessary, replace the belt with a new one.

Belt [A]
Crack [B]
Broken [C]

NOTE

- Whenever the belt is replaced, inspect the drive and the driven pulleys.



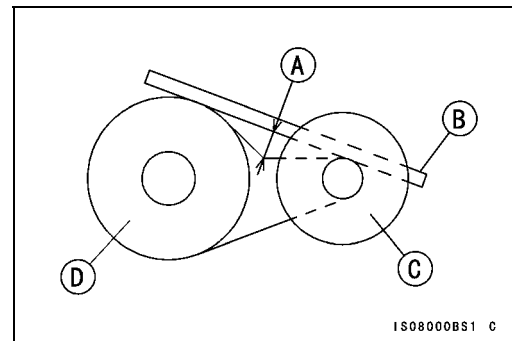
Drive Belt Deflection Inspection

- Remove the torque converter cover (see Converter System chapter).
- Put the transmission in neutral and rotate the driven pulley by hand to make sure the belt is shifted all the way to the top of the driven pulley.
- Measure the belt deflection [A] at the three locations by rotating the pulley as shown:
- Place a straightedge [B] on top of the belt between the drive pulley [C] and the driven pulley [D].
- Use a ruler to push the belt away from the straightedge. Push hard, but with no more force than 59 N (6 kgf, 13 lb).

Belt Deflection

Standard:	22 ~ 32 mm (0.87 ~ 1.26 in.)
Service Limit:	22 ~ 50 mm (0.87 ~ 1.97 in.)

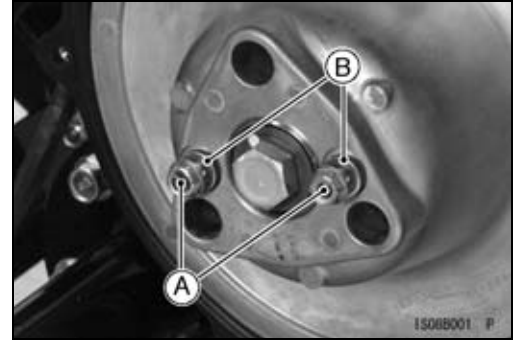
- ★ If the belt deflection of all of the three locations is within the specified range, the deflection is normal.
- ★ If the belt deflection is not within the specified range, first measure the drive belt width (see Drive Belt Inspection). Adjust the deflection by adding or removing shims under the deflection bolts.
- When adjusting the deflection, less is better than more. Less deflection will maintain better performance for more time as the belt width decreases by normal wear, which causes the deflection to increase with usage.
- ★ Even if the deflection is adjusted, when the belt deflection is greater than the service limit, replace the drive belt.



Periodic Maintenance Procedures

Drive Belt Deflection Adjustment

- Inspect the drive belt deflection (see Drive Belt Deflection Inspection).
- ★ If the belt deflection is more than 50 mm (1.97 in.), remove the deflection bolts [A] and shims [B] to decrease it.
- The rule-of-thumb is: 0.1 mm (0.004 in.) change in shim thickness equals about 1.4 mm (0.055 in.) change in belt deflection.
- ★ If the belt deflection is less than 22 mm (0.87 in.), add the shims to increase it.
- The rule-of-thumb is: 0.1 mm (0.004 in.) change in shim thickness equals about 1.6 mm (0.063 in.) change in belt deflection.



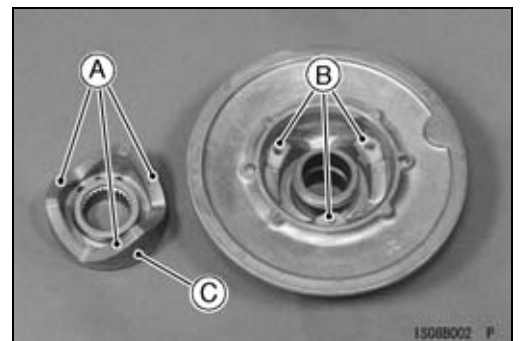
shims

Part No.	Thickness
92180-0150	0.8 mm (0.032 in.)
92180-0151	1.0 mm (0.039 in.)
92180-0152	1.2 mm (0.047 in.)
92180-0153	1.4 mm (0.055 in.)
92180-0154	1.6 mm (0.063 in.)
92180-0155	1.8 mm (0.071 in.)
92180-0156	2.0 mm (0.079 in.)
92180-0157	2.3 mm (0.091 in.)
92180-0158	2.6 mm (0.102 in.)
92180-0159	2.9 mm (0.114 in.)
92180-0160	3.2 mm (0.126 in.)

- Tighten:
 - Torque - Deflection Bolts: 9.0 N·m (0.92 kgf·m, 80 in·lb)**
- With the transmission in neutral, rotate the driven pulley to allow the belt to return to the top of the sheaves before measuring the belt deflection.
- Measure the belt deflection again and repeat the above procedures until it is within the standard range.

Converter Driven Pulley Shoe Inspection

- Remove the driven pulley (see Converter System chapter).
- Disassemble the driven pulley (see Converter System chapter).
- ★ If the ramps [A] or the wear shoes [B] are damaged or worn, replace the ramp cap [C] or the shoes.



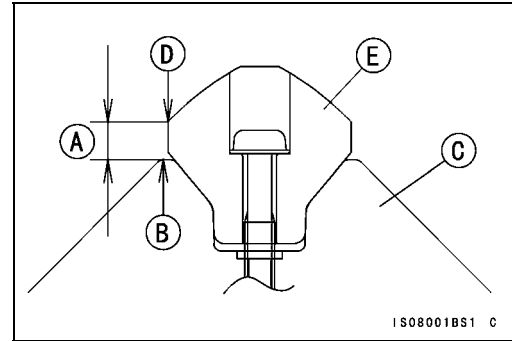
2-20 PERIODIC MAINTENANCE

Periodic Maintenance Procedures

- Measure the width [A] between the upper surface [B] of the movable sheave [C] and the bottom edge [D] of worn area of the shoe [E].
- ★ If the width is greater than the service limit, replace the shoe.

Wear Shoe Width

Service Limit: 1.9 mm (0.075 in.)



Converter Air Cleaner Element Cleaning/Inspection

NOTE

- In dusty areas, the element should be cleaned more frequently than the recommended interval.
- After riding through rain or on muddy roads, the element should be cleaned immediately.

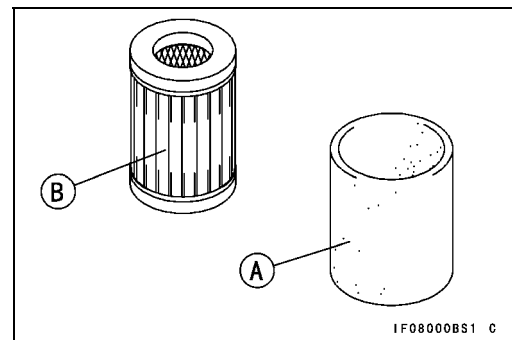
⚠ WARNING

Clean the element in a well-ventilated area, and take ample care that there are no sparks or flame anywhere near the working area. Because of the danger of highly flammable liquids, do not use gasoline or a low flash-point solvent to clean element.

- Remove the air cleaner element (see Converter System chapter).
- Separate the foam element [A] from the paper element [B].
- Clean the foam element in a bath of a high flash-point solvent, and then squeeze it dry in a clean towel. Do not wring the element or blow it dry; the element can be damaged.
- Inspect the foam element for damage. If it is torn, punctured, or hardened, replace it.

NOTE

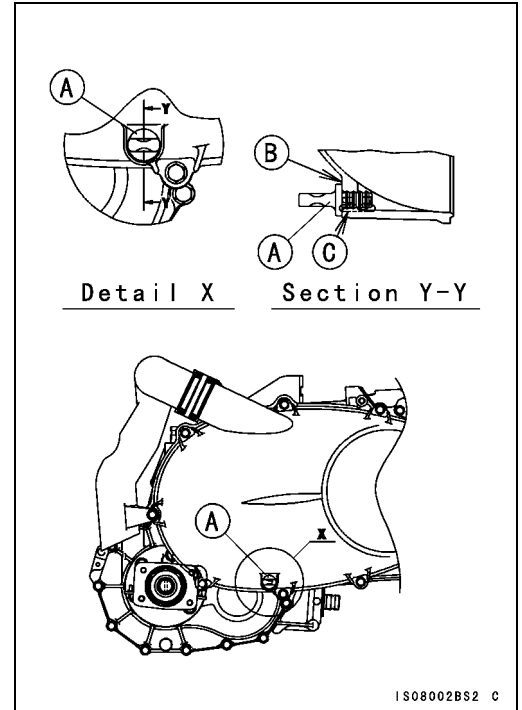
- Replace the foam element after cleaning it five times or if it is damaged.
- Clean the paper element by tapping it lightly to loosen dust.
- Blow away the remaining dust by applying compressed air from the inside to the outside (from the clean side to the dirty side).
- Inspect the element material for damage. If any part of the element is damaged, the element must be replaced.



Periodic Maintenance Procedures

Converter Dust or Water Drain

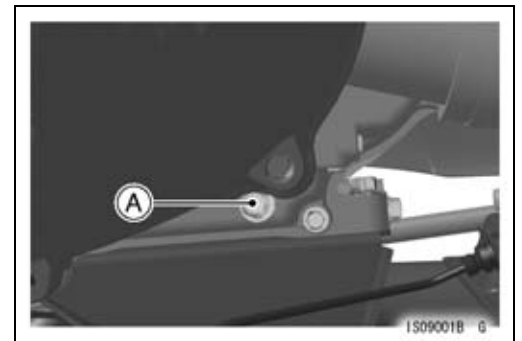
- Remove the drain plug [A] on the bottom of the converter cover to expel dust and/or water accumulated inside.
- After the draining, insert the drain plug until the flange of the plug contacts on the face [B] of the cover.
- Do not apply grease to oval line part [C] of the plug, when installing it. However, the soapy water is permitted.



Engine Lubrication System

Engine Oil Change

- Warm up the engine so that the oil will pick up any sediment and drain easily.
- Place an oil pan beneath the engine.
- Remove the engine oil drain plug [A], and let the oil drain completely.
- ★ If the oil filter is to be changed, replace it with a new one (See Oil Filter Replacement).
- Replace the gasket with a new one.
- After the oil has completely drained out, install the drain plug with the gasket.

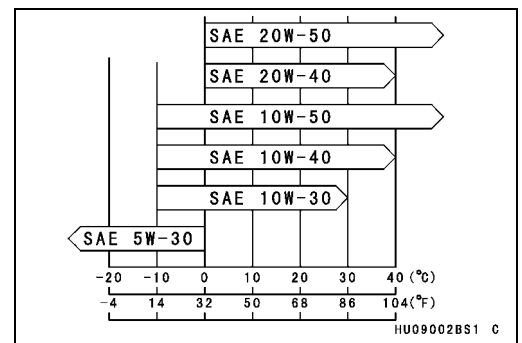


Torque - Engine Oil Drain Plug: 6.9 N·m (0.70 kgf·m, 61 in·lb)

- Slowly and evenly fill the engine with a good quality oil as specified in the table.

Engine Oil

- Type: **API SF or SG**
API SH or SJ with JASO MA
- Viscosity: **SAE10W-40**
- Capacity: **0.85 L (0.9 US qt) (when filter is not removed)**
1.4 L (1.5 US qt) (when filter is removed)
- Oil Level: **Between H and L marks on dipstick**



NOTE

○ Although 10W-40 engine oil is the recommended oil for most conditions, the oil viscosity may need to be changed to accommodate atmospheric conditions in your riding area.

- Thoroughly warm up the engine, and check for oil leakage and the oil level (see Oil Level Inspection in the Engine Lubrication System chapter).

2-22 PERIODIC MAINTENANCE

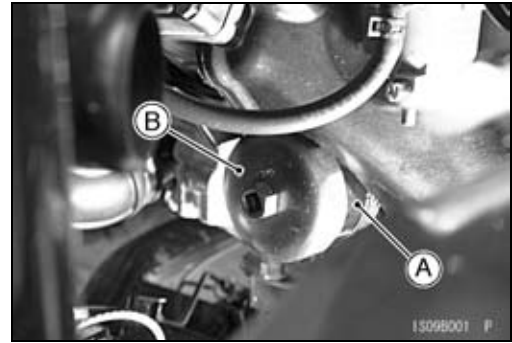
Periodic Maintenance Procedures

Oil Filter Replacement

- Drain the engine oil.
- Remove the oil filter [A] with the oil filter wrench [B].

Special Tool - Oil Filter Wrench: 57001-1249

- When unscrewing the oil filter, cover the filter bottom with a clean cloth so as not to spill the engine oil out of the filter. Any spilled oil should be wiped up completely.

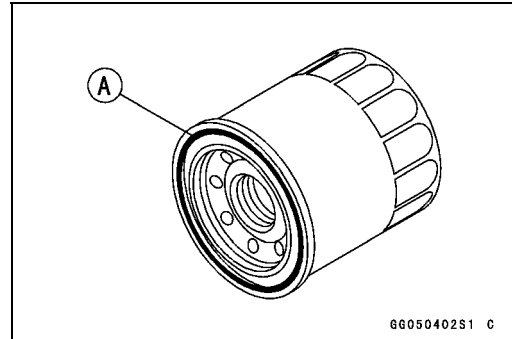


- Replace the filter with a new one.
- When installing the oil filter, be careful of the following.
- Apply oil to the gasket [A] before installation.
- Tighten the filter with the filter wrench.

Special Tool - Oil Filter Wrench: 57001-1249

Torque - Oil Filter: 9.8 N·m (1.0 kgf·m, 87 in·lb)

- Pour in the specified type and amount of oil.
- Thoroughly warm up the engine, and check for oil leakage and the oil level (see Oil Level Inspection in the Engine Lubrication System chapter).



Transmission

Transmission Oil Change

- Warm up the oil by running the vehicle so that the oil will pick up any sediment and drain easily. Then stop the vehicle.
- Place an oil pan beneath the transmission case.
- Remove the transmission oil drain plug [A], and let the oil drain completely.
- Replace the gasket with a new one.
- After the oil has completely drained out, install the drain plug with the gasket.

Torque - Transmission Oil Drain Plug : 15 N·m (1.5 kgf·m, 11 ft·lb)

- Fill the transmission case with a good quality oil as specified in the table.

Transmission Oil

Type: API "GL-5" Hypoid gear oil

Viscosity: SAE90: above 5°C (41°F) or
SAE80: below 5°C (41°F)

Capacity: KAF400A/C: 2.4 L (2.5 US qt)
KAF400B: 2.2 L (2.3 US qt)

Oil Level: Between H and L lines on dipstick

- Check the oil level (see Transmission Oil Level Inspection in the Transmission chapter).



Periodic Maintenance Procedures

Wheels/Tires

Wheels Nuts Tightness Inspection

- Check the tightness of all the wheel nuts.
- ★ If there are loose nut, first loosen by 1/2 turn, then re-torque them to the specified torque.

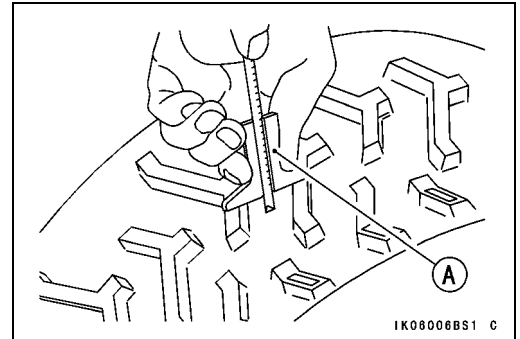
Torque - Wheel Nuts: 34 N·m (3.5 kgf·m, 25 ft·lb)

- Tighten the wheel nuts [1] ~ [4] in a criss-cross pattern.



Tire Wear Inspection

- Examine the tire for damage and wear.
- ★ If the tire is cut or cracked, replace it.
- Lumps or high spots on the tread or sidewalls indicate internal damage, requiring tire replacement.
- Remove any foreign objects from the tread. After removal, check for leaks with a soap and water solution.
- Measure the tread depth at the center of the tread with a depth gauge [A]. Since the tire may wear unevenly, take measurements at several places.
- ★ If any of the measurements is less than the service limit, replace the tire.



Tire Tread Depth

Service Limit 3 mm (0.12 in.)

**Standard Tire
KAF400-A/C**

Front: 24 × 9.00-10 DUNLOP KT869M Tubeless

Rear: 24 × 11.00-10 DUNLOP KT869 Tubeless

KAF400-B

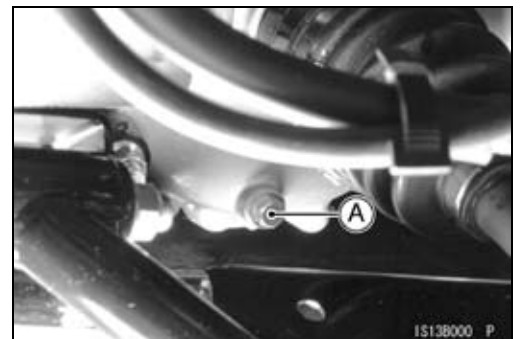
Front: 22 × 9.00-10 DUNLOP KT901 Tubeless

Rear: 22 × 11.00-10 DUNLOP KT869 Tubeless

Final Drive (KAF400-A/C models)

Front Final Gear Case Oil Change

- Warm up the oil by running the vehicle so that the oil will pick up any sediment and drain easily. Then stop the vehicle.
- Park the vehicle so that it is level, both side-to-side and front-to-rear.
- Remove:
 - Front Guard (see Frame chapter)
 - Front Final Gear Case Skid Plate (see Front Final Gear Case Oil Level Inspection in the Final Drive chapter)
- Place an oil pan beneath the front final gear case and remove the drain plug [A].



⚠ WARNING

When draining or filling the final gear case, be careful that no oil gets on the tire or rim. Clean off any oil that inadvertently gets on them with a high-flash point solvent.



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