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.**

FREQUENCY / OPERATION	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

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Torque and Locking Agent

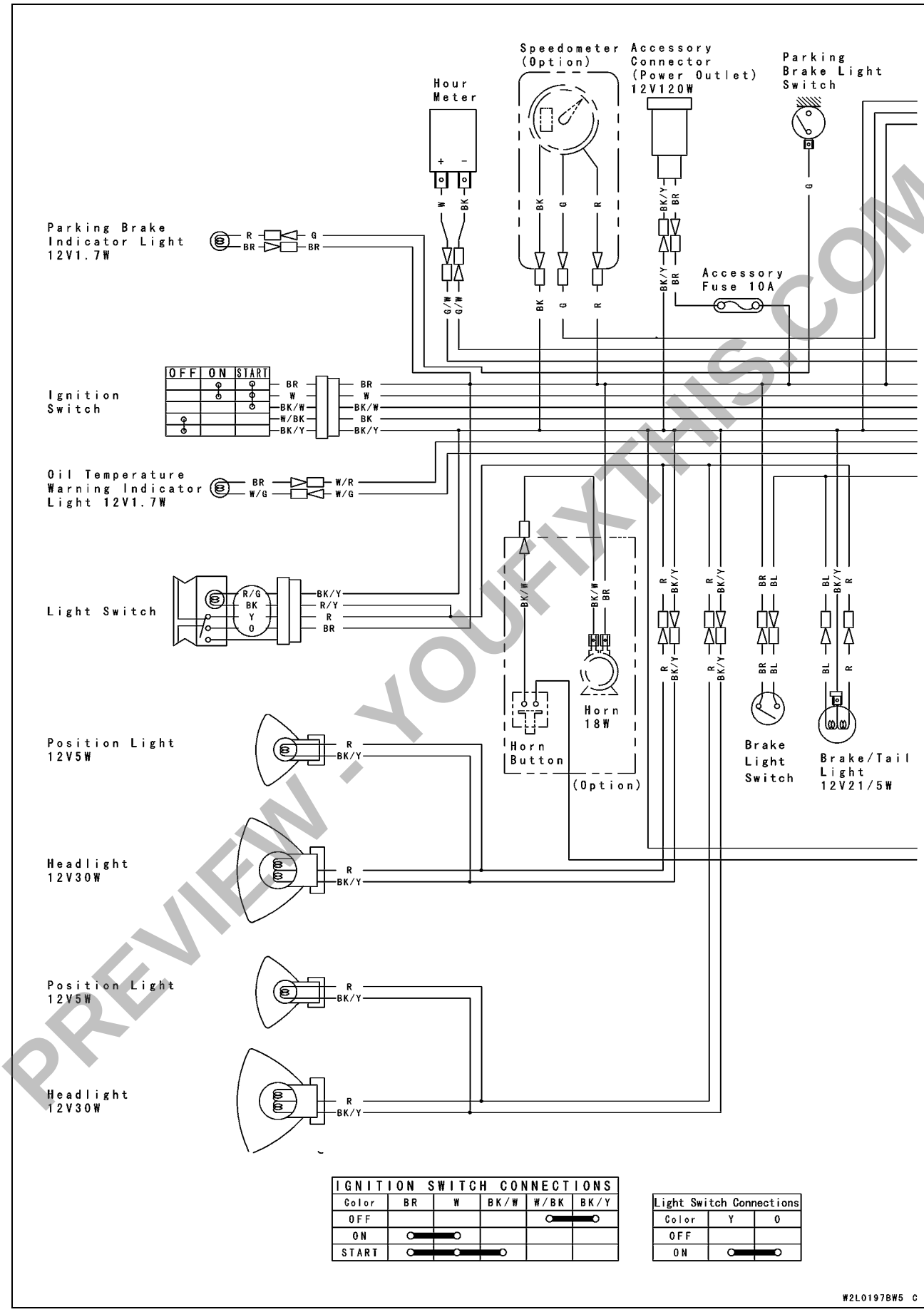
The following tables list the tightening torque for the major fasteners, and the parts requiring use of a non-permanent locking agent or liquid gasket.

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	
Brearher 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	

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Wiring Diagram (KAF400-A/C)

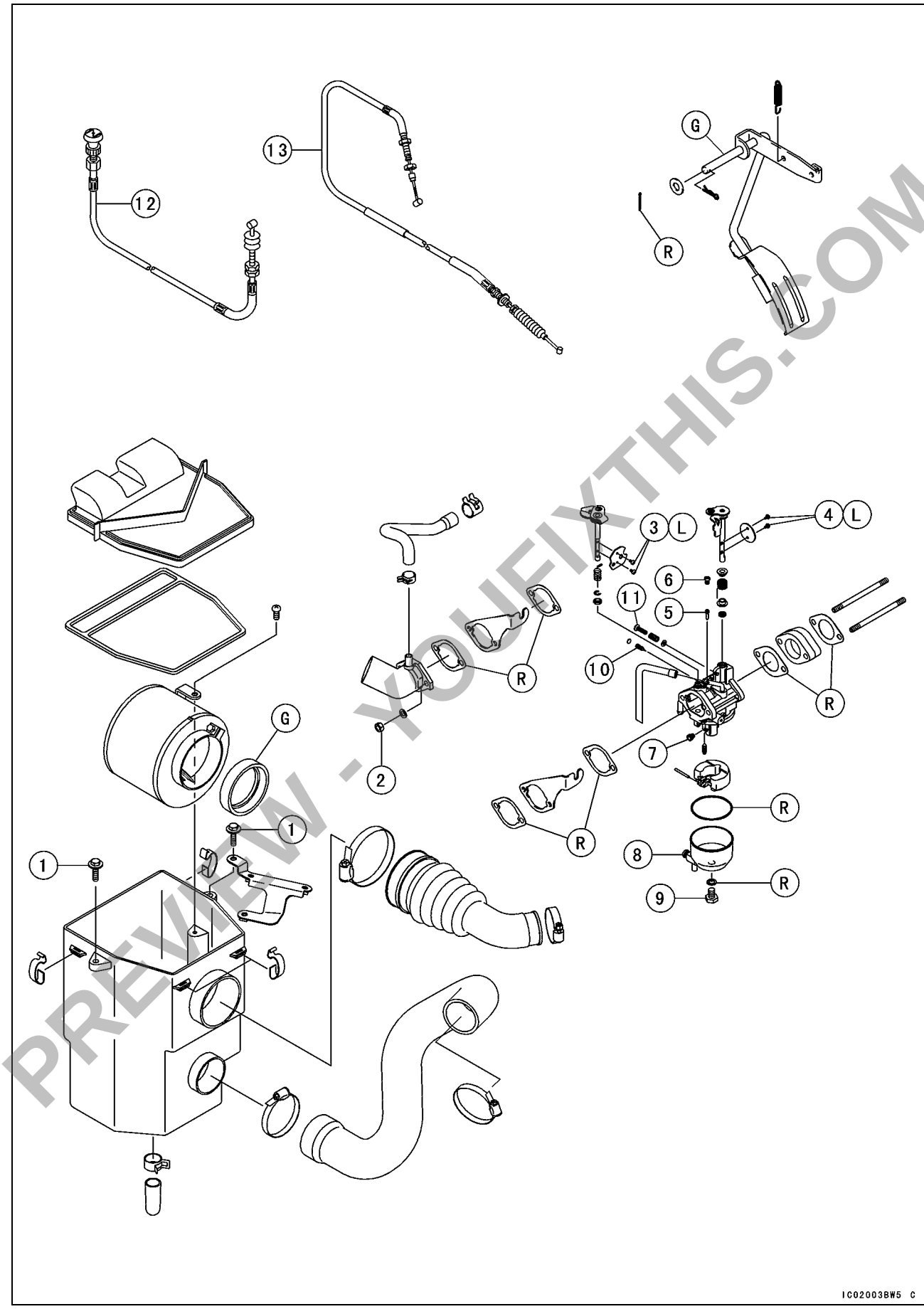


IGNITION SWITCH CONNECTIONS					
Color	BR	W	BK/W	W/BK	BK/Y
OFF				●	●
ON	●	●			
START	●	●	●		

Light Switch Connections		
Color	Y	O
OFF		
ON	●	

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Exploded View



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Troubleshooting Guide

NOTE

○*This is not an exhaustive list, giving every possible cause for each problem listed. It is meant simply as a rough guide to assist the troubleshooting for some of the more common difficulties.*

Engine Doesn't Start, Starting Difficulty:

Starter motor not rotating:
- Neutral switch trouble
- Starter motor trouble
- Battery voltage low
- Relays not contacting or operating
- Wiring open or shorted
- Ignition switch trouble
- Fuse blown

Starter motor rotating but engine doesn't turn over:
- Starter motor trouble
- Pinion or ring gear worn

Engine won't turn over:
- Valve seizure
- Rocker arm seizure
- Cylinder, piston seizure
- Crankshaft seizure
- Connecting rod small end seizure
- Connecting rod big end seizure
- Camshaft seizure

No fuel flow:
- Fuel tank air vent obstructed
- Fuel pump trouble
- Fuel filter clogged
- Fuel line clogged
- Float valve clogged

Engine flooded:
- Fuel level too high
- Float valve worn or stuck open
- Starting technique faulty
- (When flooded, crank the engine with the throttle fully opened to allow more air to reach the engine.)

No spark; spark weak:
- Spark plug dirty, broken, or maladjusted
- Spark plug cap or high tension wiring trouble
- Spark plug cap not in good contact
- Spark plug incorrect
- Ignition coil trouble
- Ignition switch shorted
- Wiring shorted or open
- Fuse blown

Compression Low:
- Spark plug loose
- Cylinder head not sufficiently tightened down
- No valve clearance
- Cylinder, piston worn
- Piston ring bad (worn, weak, broken, or sticking)
- Piston ring/groove clearance excessive
- Cylinder head gasket damaged
- Cylinder head warped
- Valve spring broken or weak
- Valve not seating properly (valve bent, worn, or carbon accumulation on the seating surface)

Poor Running at Low Speed:

Spark weak:
- Spark plug dirty, broken, or maladjusted
- Spark plug cap or high tension wiring trouble
- Spark plug cap shorted or not in good contact
- Spark plug incorrect
- Ignition coil trouble

Fuel/air mixture incorrect:
- Air cleaner clogged, poorly sealed, or missing
- Choke valve stuck closed
- Fuel level too high or too low
- Fuel tank air vent obstructed
- Fuel pump trouble
- Governor link mechanism malfunctioning

Compression low:
- Spark plug loose
- Cylinder head not sufficiently tightened down
- No valve clearance
- Cylinder, piston worn
- Piston ring bad (worn, weak, broken, or sticking)
- Piston ring/groove clearance excessive
- Cylinder head warped
- Cylinder head gasket damaged
- Valve spring broken or weak
- Valve not seating properly (valve bent, worn, or carbon accumulation on the seating surface)

Other:
- Engine oil viscosity too high
- Front final gear case oil viscosity to high (KAF400-A/C)
- Drive train trouble
- Brake dragging

Poor Running or No Power at High Speed:

Firing incorrect:
- Spark plug dirty, broken, or maladjusted
- Spark plug cap shorted or not in good contact
- Spark plug incorrect
- Ignition coil trouble

Fuel/air mixture incorrect:
- Choke valve stuck close
- Main jet clogged or wrong size

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General Specifications

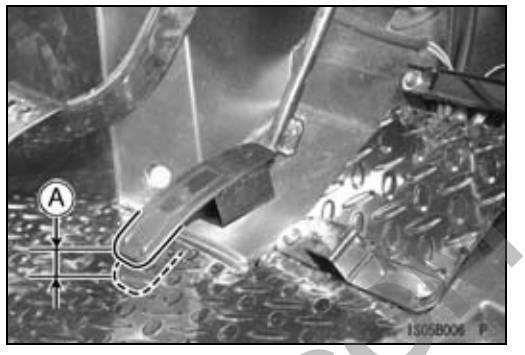
Items	KAF400-A1/B1/C1
Dimensions	
Overall Length	2 720 mm (107.09 in.)
Overall Width	1 335 mm (52.56 in.)
Overall Height	(A, C) 1 802 mm (70.94 in.), (B) 1 781 mm (70.12 in.)
Wheelbase	1 779 mm (70.04 in.)
Tread:	
Front	1 051 mm (41.38 in.)
Rear	999 mm (39.33 in.)
Ground Clearance	(A, C) 170 mm (6.69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

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Periodic Maintenance Procedures

Fuel System

Throttle Pedal Free Play Inspection



- Check that the throttle pedal moves smoothly from full open to close.

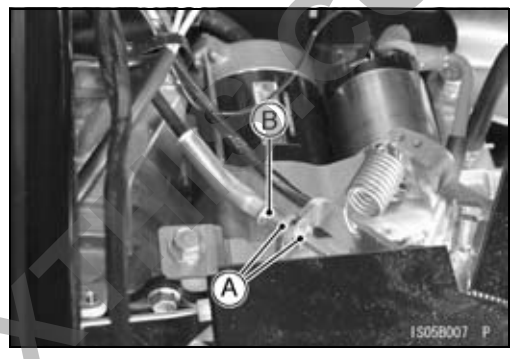
★If the throttle pedal does not return properly, lubricate the throttle cable and link (see Fuel System chapter).

- 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.

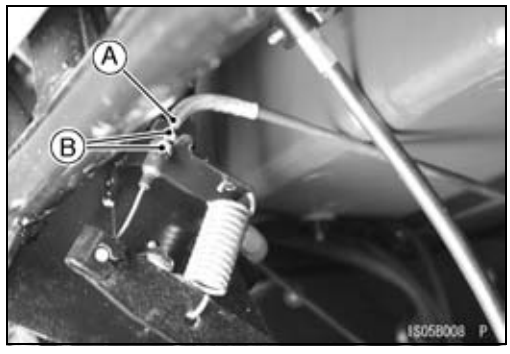
- Correct any of these conditions before operation.

⚠ 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.

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Periodic Maintenance Chart

FREQUENCY / OPERATION	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.

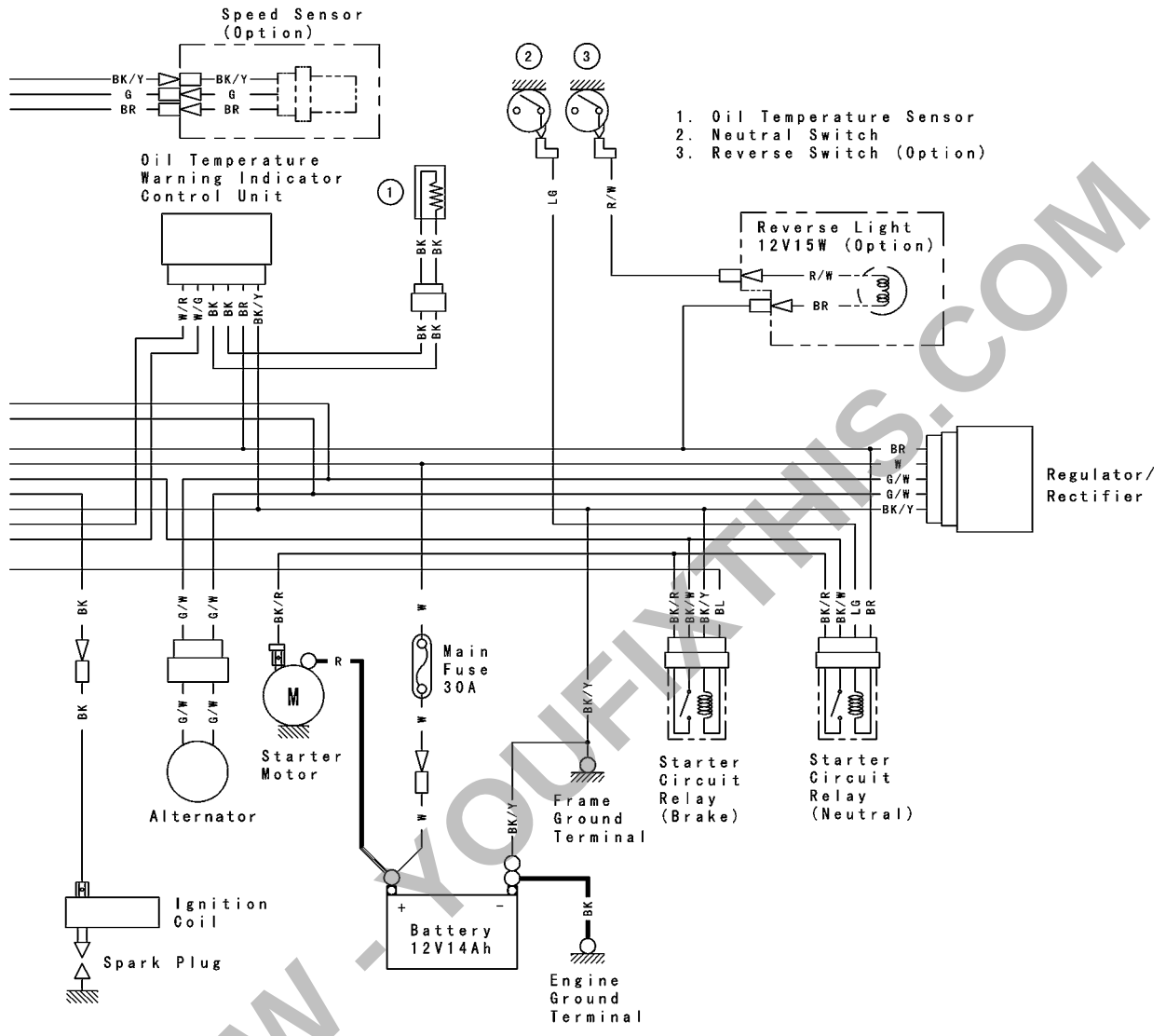
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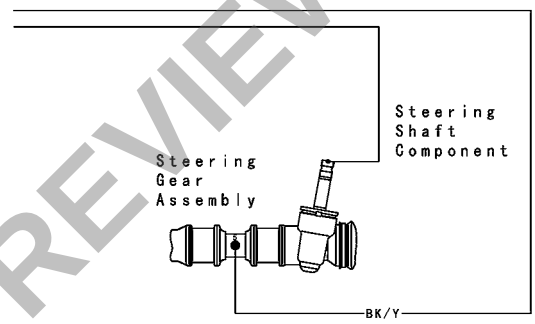
Torque and Locking Agent

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	

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Wiring Diagram (KAF400-A/C)





Brake Light Switch Connections		
	BR	BL
When brake pedal is pushed down.	○——	——○

Parking Brake Light Switch Connections		
	Terminal	Ground
When parking brake lever is pulled up.	○	○

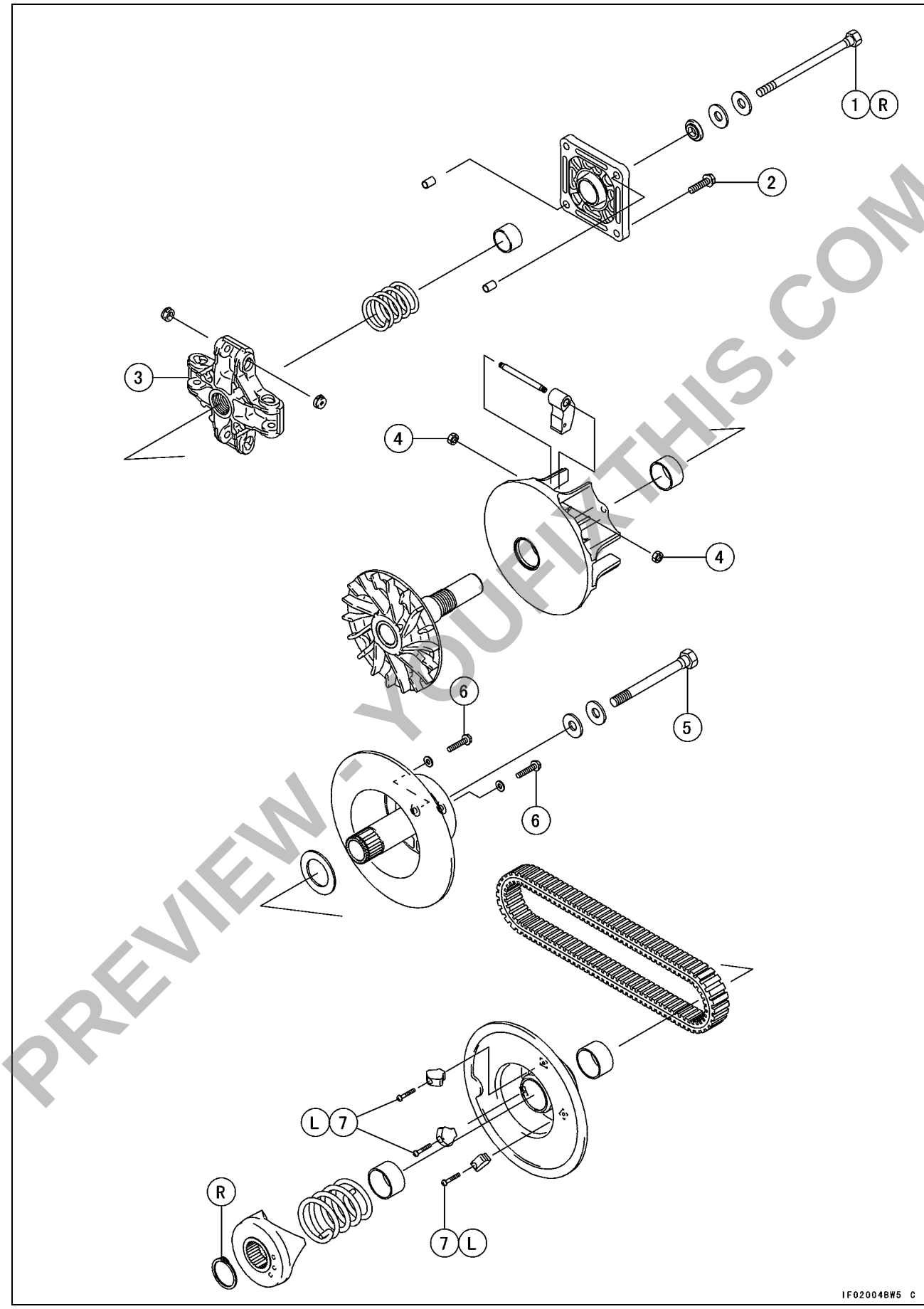
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Color Code	
BK	Black
BL	Blue
BR	Brown
CH	Chocolate
DG	Dark Green
G	Green
GY	Gray
LB	Light Blue
LG	Light Green
O	Orange
P	Pink
PU	Purple
R	Red
W	White
Y	Yellow

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Exploded View



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Troubleshooting Guide

Fuel level too high or too low
Air cleaner clogged, poorly sealed, or missing
Water or foreign matter in fuel
Fuel tank air vent obstructed
Fuel line clogged
Fuel pump trouble
Governor link mechanism malfunctioning

Compression low:
Spark plug loose
Cylinder head not sufficiently tightened down
No valve clearance
Cylinder, piston worn
Piston ring bad (worn, weak, broken, or sticking)
Piston ring/groove clearance excessive
Cylinder head gasket damaged
Cylinder head warped
Valve spring broken or weak
Valve not seating properly (valve bent, worn, or carbon accumulation on the seating surface.)

Knocking:
Carbon built up in combustion chamber
Fuel poor quality or incorrect
Spark plug incorrect

Miscellaneous:
Throttle valve won't fully open
Brake dragging
Overheating
Engine oil level too high
Engine oil viscosity too high
Front final gear case oil viscosity too high (KAF400-A/C)
Drive train trouble

Overheating:

Firing incorrect:
Spark plug dirty, broken, or maladjusted
Spark plug incorrect

Fuel/air mixture incorrect:
Main jet clogged or wrong size
Fuel level too low
Air cleaner clogged, poorly sealed, or missing

Compression high:
Carbon built up in combustion chamber

Engine load faulty:
Engine oil level too high
Engine oil viscosity too high
Drive train trouble
Brake dragging

Converter and/or belt excessive heating:
Belt dirty or worn
Drive or driven pulley sheave dirty or worn
Driven pulley spring broken or weak
Drive pulley spring broken or weak
Idle speed too high
Converter fan damaged

Lubrication inadequate:
Engine oil level too low
Engine oil poor quality or incorrect

Front final gear case overheating (KAF400-A/C):
Insufficient oil
Bevel gears maladjusted
LSD clutch maladjusted

Cooling system component incorrect:
Fan blade damaged
Screen air passages clogged

Converter Operation Faulty:

Belt slipping:
Belt dirty or worn
Drive or driven pulley sheave dirty or worn
Drive pulley spring broken or weak

Converter engagement speed too low:
Drive pulley spring broken or weak

Converter engagement speed too high:
Belt dirty or worn
Drive or driven pulley sheave dirty or worn
Drive pulley weight doesn't move smoothly
Drive pulley movable sheave doesn't move smoothly
Drive or driven pulley movable sheave bush worn
Drive pulley weight or roller worn

Shifting too quickly:
Drive pulley spring weak
Driven pulley spring weak or incorrectly installed (too loose)

Shifting too slowly:
Belt dirty or worn
Drive or driven pulley sheave dirty or worn
Drive pulley weight doesn't move smoothly
Drive pulley movable sheave doesn't move smoothly
Driven pulley spring incorrect installed (too tight)
Driven pulley movable sheave doesn't move smoothly

Gear Shifting Faulty:

Doesn't go into gear:
Shift arm bent or seized
Gear stuck on the shaft
Shift cable maladjusted
Shift cable lubrication inadequate
Shift cable damaged

Jumps out of gear:
Shifter groove worn
Gear dogs worn
Shift arm positioning bolt spring weak or broken
Shift block worn

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General Specifications

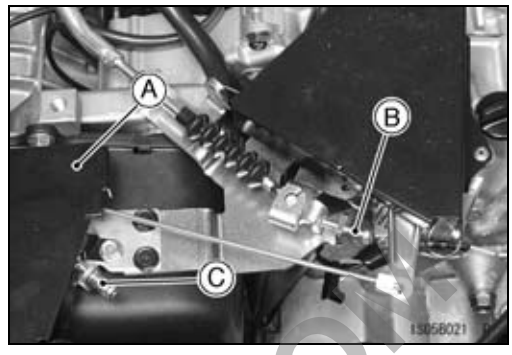
Items	KAF400-A1/B1/C1
Drive Train	
Primary Reduction System:	
Type	Belt drive torque converter
Reduction ratio	3.653 ~ 0.794
Transmission Gear Ratio:	
Forward:	
High	2.916 (35/24 × 36/18)
Low	(A, C) 4.315 (41/19 × 36/18), (B) –
Reverse:	
Low	3.750 (30/16 × 36/18)
Final Drive System:	
Type	(A, C) Gear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

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Periodic Maintenance Procedures

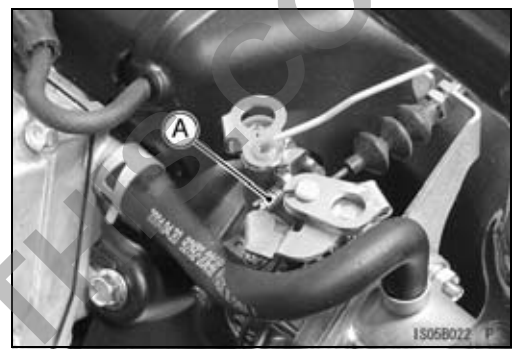
Idle Speed Adjustment

- 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.

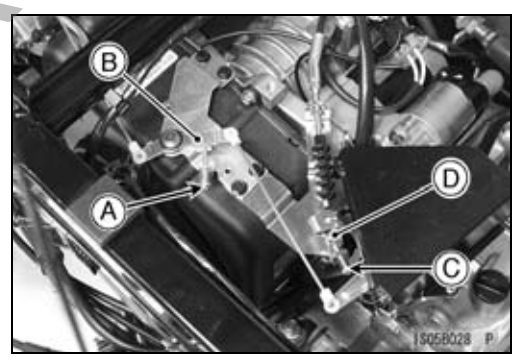


- Turn the idle adjusting screw [A] at the carburetor until the idle speed is correct.

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.

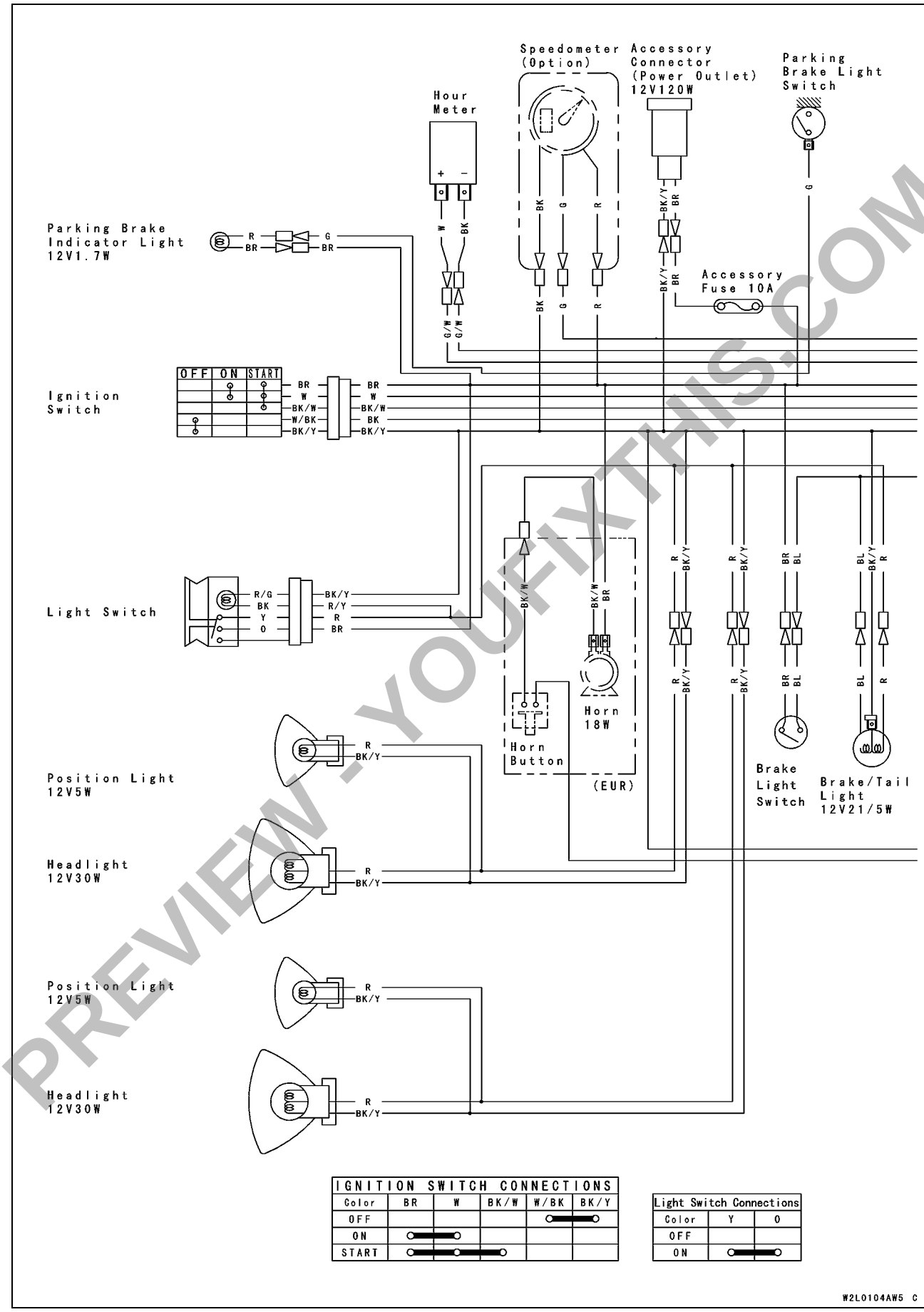
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Torque and Locking Agent

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

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Wiring Diagram (KAF400-B)

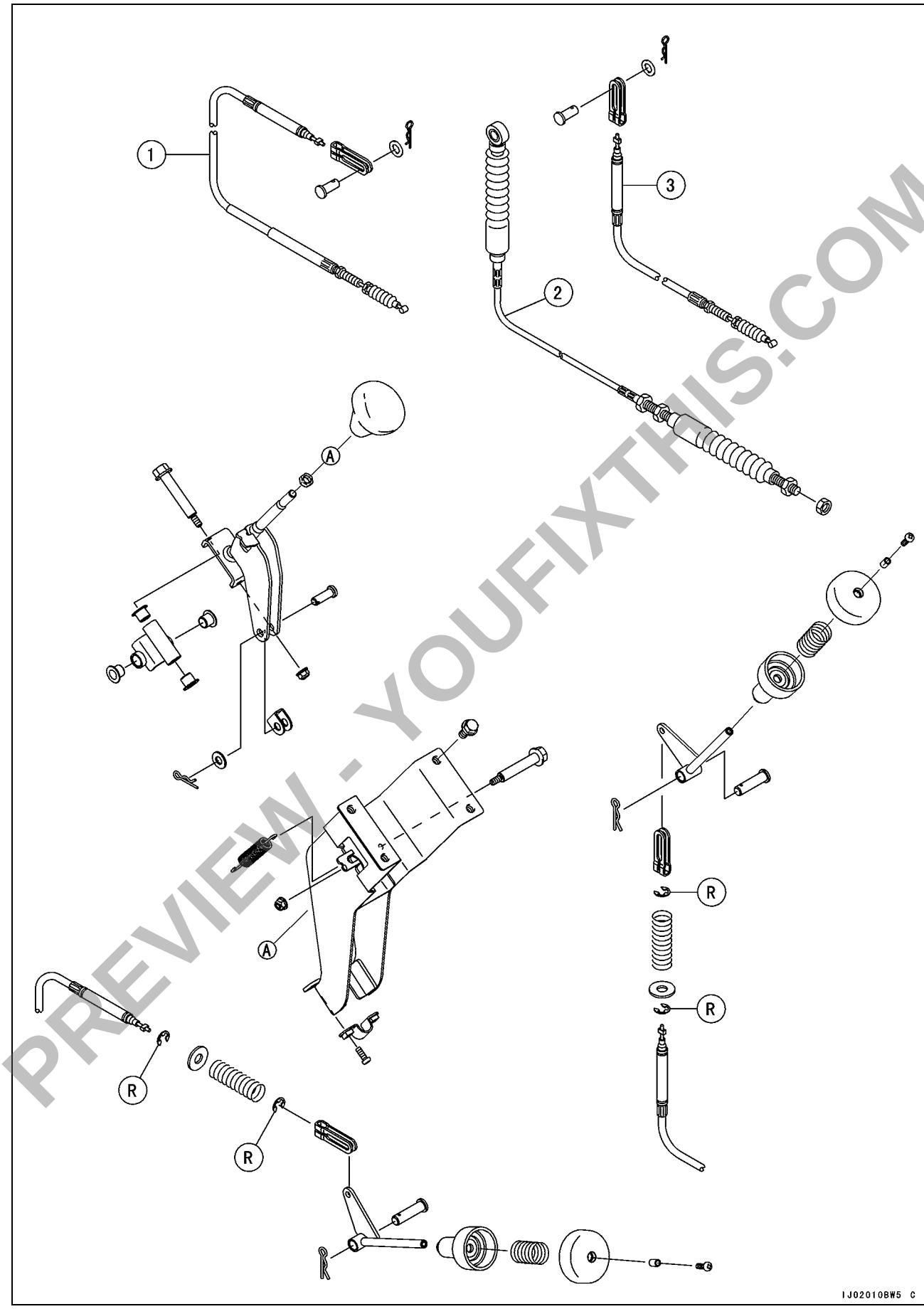


IGNITION SWITCH CONNECTIONS					
Color	BR	W	BK/W	W/BK	BK/Y
OFF				●	●
ON	●	●			
START	●	●	●		

Light Switch Connections		
Color	Y	O
OFF		
ON	●	

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Exploded View



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Troubleshooting Guide

Transmission shaft, and/or gear splines worn
Shift cable maladjusted

Overshifts:
Shift arm positioning bolt spring weak or broken
Shift cable maladjusted

Abnormal Engine Noise:

Knocking:
Carbon built up in combustion chamber
Fuel poor quality or incorrect
Spark plug incorrect
Overheating

Piston slap:
Cylinder/piston clearance excessive
Cylinder, piston worn
Connecting rod bent
Piston pin, piston pin holes worn

Valve noise:
Valve clearance incorrect
Valve spring broken or weak
Camshaft bearing worn
Rocker arm push rod runout excessive

Other noise:
Connecting rod small end clearance excessive
Connecting rod big end clearance excessive
Piston ring worn, broken or stuck
Piston seizure or damaged
Cylinder head gasket leaking
Exhaust pipe leaking at cylinder head connection
Crankshaft runout excessive
Engine mounts loose
Crankshaft bearing worn
Loose alternator rotor

Abnormal Drive Train Noise:

Converter noise:
Belt worn
Drive or driven pulley sheave worn
Drive or driven pulley movable sheave bush worn
Drive or driven pulley mount loose
Driven pulley shoe worn
Drive pulley weight or roller side washer worn
Drive pulley weight or roller worn

Transmission noise:
Bearing worn
Transmission gears worn or chipped
Metal chips jammed in gear teeth
Transmission oil insufficient

Final drive noise:
Bearing worn
Gears worn or chipped
Metal chips jammed in gear teeth
Insufficient lubricant
Bevel gears maladjusted (KAF400-A/C)
Worn LSD clutch friction plate (KAF400 -A/C)
Worn LSD clutch spring (KAF400-A/C)
Universal joint damaged

Abnormal Frame Noise:

Shock absorber noise:
Shock absorber damaged

Brake noise:
Brake linings overworn or worn unevenly
Drum worn unevenly or scored
Brake spring(s) weak or broken
Foreign matter in hub
Brake not properly adjusted

Other noise:
Bracket, nuts, bolts, etc. not properly mounted or tightened

Exhaust Smokes Excessively:

White smoke:
Piston oil ring worn
Cylinder worn
Valve oil seal damaged
Valve guide worn
Engine oil level to high

Black smoke:
Air cleaner clogged
Main jet too large or fallen off
Choke valve stuck closed
Fuel level too high

Brown smoke:
Main jet too small
Fuel level too low
Air cleaner poorly sealed or missing

Handling and/or Stability Unsatisfactory:

Steering wheel hard to turn:
Steering shaft bearing damaged
Steering shaft lubrication inadequate
Steering shaft bent
Steering gear assembly damaged
Tire air pressure too low
LSD clutch maladjusted (KAF400-A/C)

Noise when turning (KAF400-A/C):
Damaged side gear or pinion (front final gear case)
Worn clutch friction plates (Front final gear case)
Worn clutch spring (Front final gear case)

Steering wheel shakes or excessively vibrates:
Tire(s) worn
Suspension arm bushing worn
Tie-rod joint worn
Wheel rim warped
Axle shaft bearing worn
Steering wheel mount loose
Steering bolt or nut loose

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