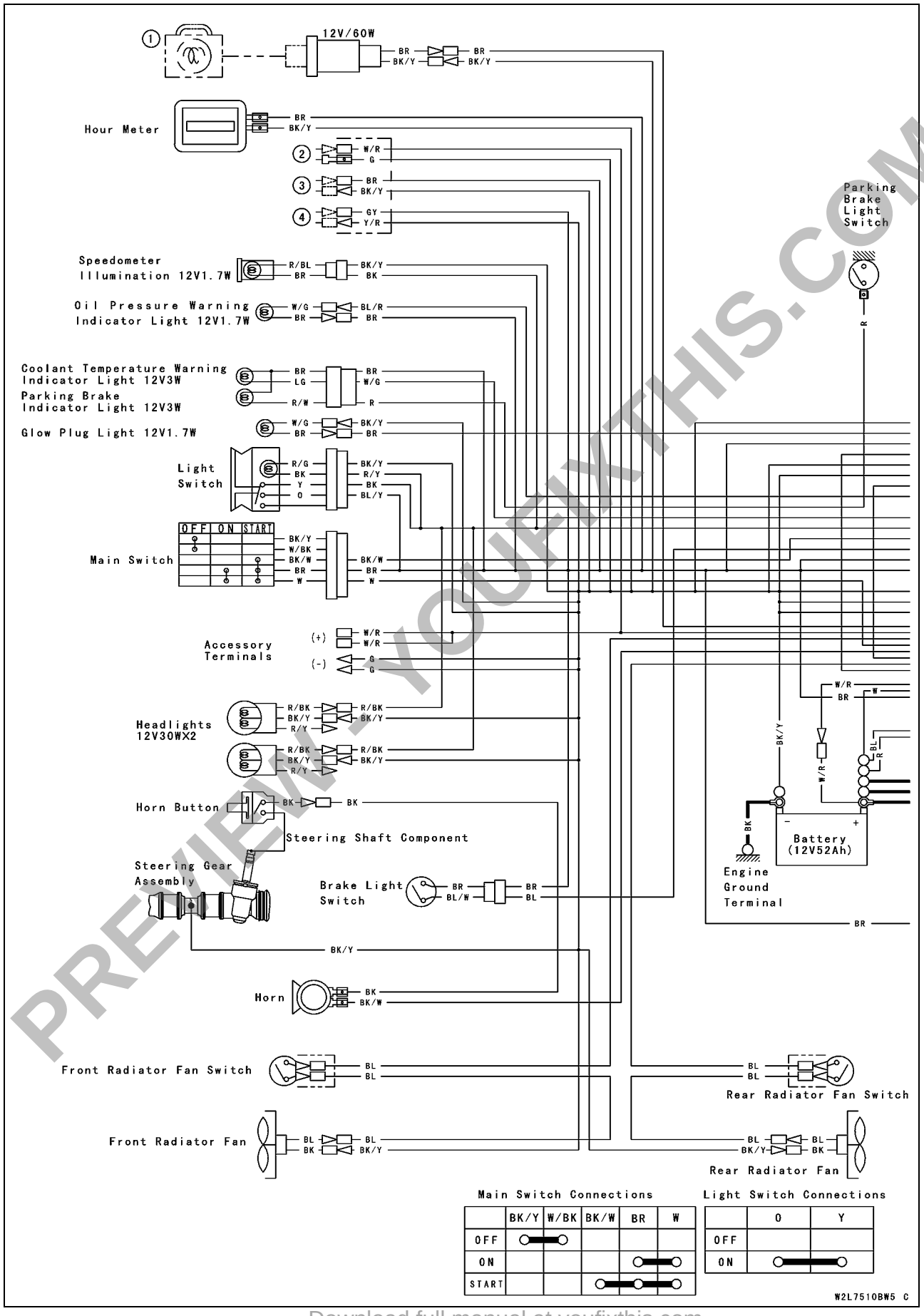
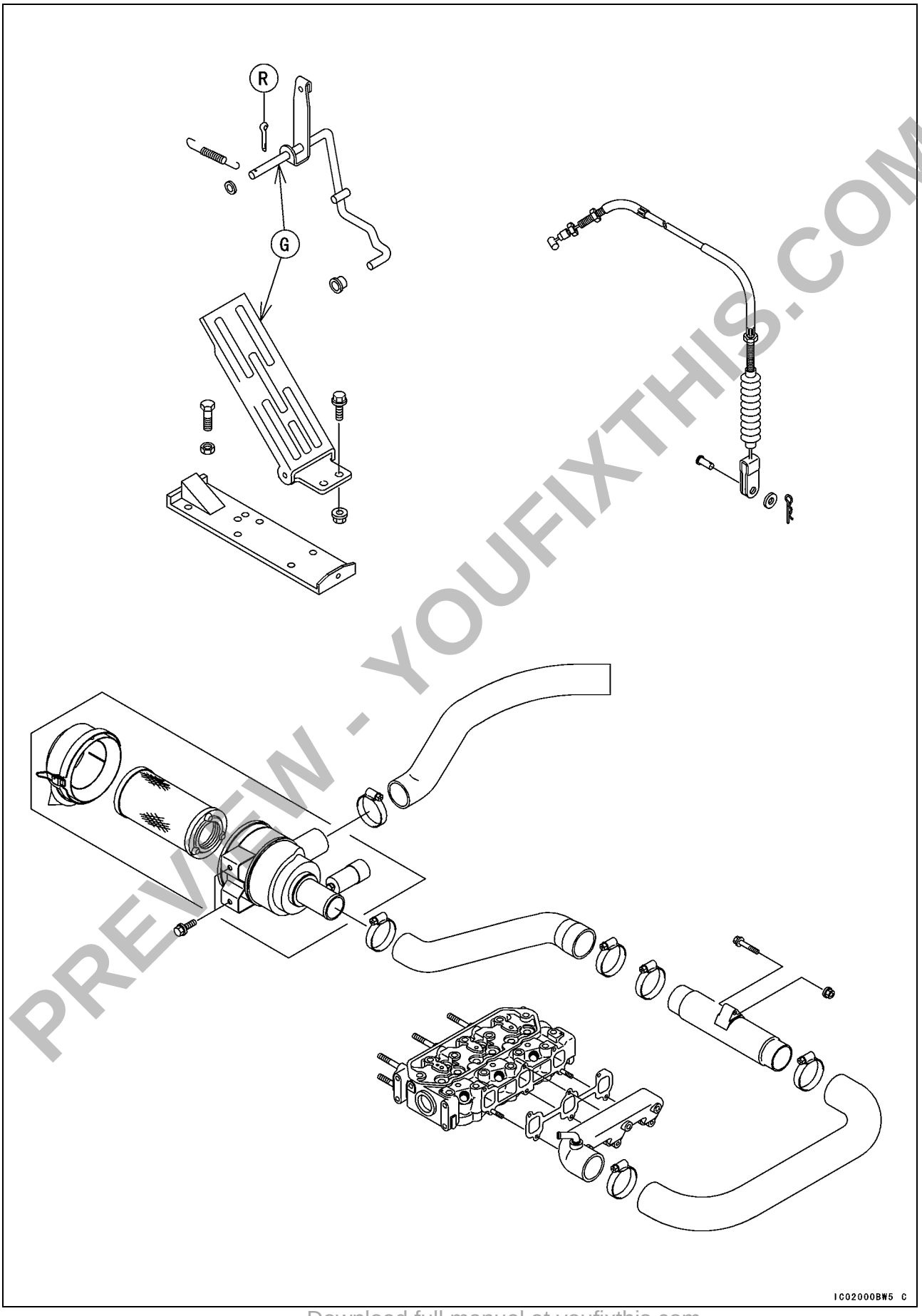
Wiring Diagram (KAF950–B1)



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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.
S: Tighten the fasteners following the specified sequence.
SS: Apply a silicone sealant to the threads.
LG: Apply liquid gasket (Three Bond: 1207F).

Fastener	Torque			Remarks
	N·m	kgf·m	ft·lb	
Fuel System:				
Fuel injection nozzles	59	6.0	43	
Linkage pipe nuts	27	2.8	20	
Idle adjusting screw locknut	5.6	0.57	50 in·lb	
Maximum speed set screw locknut	6.9	0.70	61 in·lb	
Fuel injection pipe mounting nuts	25	2.5	18	
Fuel injection pipe clamp bolts	7.4	0.75	65 in·lb	
Distributor head bolt	17	1.7	12	
Fuel injection pump mounting nuts	20	2.0	14	
Fuel injection pump bracket bolts	20	2.0	14	
Fuel filter mounting bolts	20	2.0	14	
Air vent plug	4.9	0.50	43 in·lb	
Cooling System:				
Water pump mounting bolts and nuts	20	2.0	14	
Coolant inlet bolts	7.8	0.80	69 in·lb	
Fan mounting bolts	8.8	0.90	78 in·lb	
Thermostat housing cap bolts	7.8	0.80	69 in·lb	
Radiator fan switch	25	2.5	18	
Radiator mounting bolts	8.8	0.90	78 in·lb	
Radiator screen bolts	8.8	0.90	78 in·lb	
Coolant reservoir tank bolts	4.5	0.45	40 in·lb	
Coolant drain plug	25	2.5	18	L
Coolant temperature warning light switch	27	2.8	20	L
Thermostat housing cap plug	–	–	–	L
Engine Top End:				
Cylinder head bolts	34	3.5	25	O, S
Cylinder head cover nuts	5.4	0.55	48 in·lb	
Rocker arm components mounting nuts	20	2.0	14	
Valve adjusting screw locknuts	11	1.1	95 in·lb	
Intake manifold mounting bolts and nuts	7.8	0.80	69 in·lb	
Exhaust manifold mounting nuts	20	2.0	14	

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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.

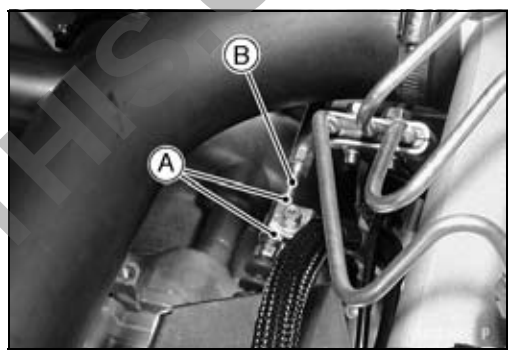
★If the throttle pedal does not return properly, lubricate the throttle cable and link (see Fuel System chapter).

- Check the throttle pedal free play [A].

Throttle Pedal Free Play

Standard: 5 ~ 10 mm (0.2 ~ 0.4 in.)

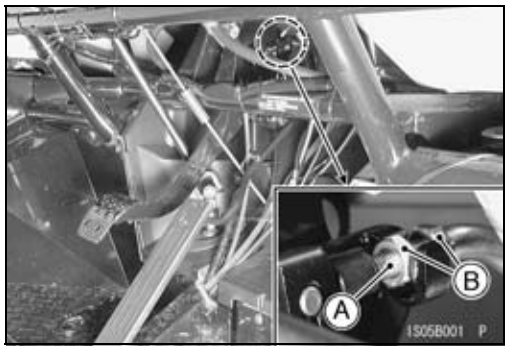
★If the free play is incorrect, adjust the throttle cable.



- Tilt up the cargo bed.
- Loosen the adjuster mounting nuts [A] at the engine end of the cable.
- 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 engine end of the cable, use the cable adjuster [A] at the throttle pedal. 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 [A].
  Tachometer Adapter [B]

Idle Speed

Standard: 850 ~ 950 r/min (rpm)

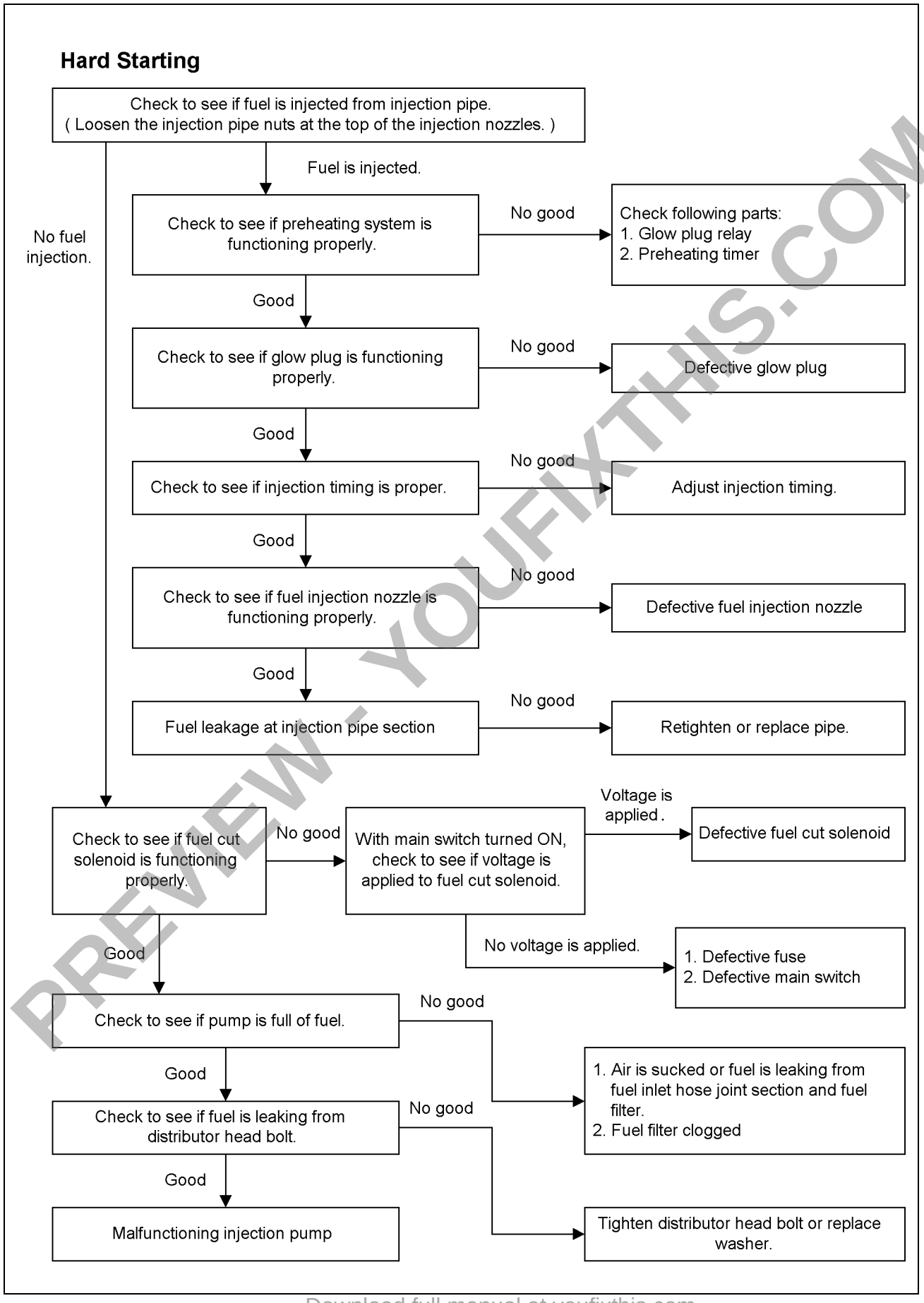
★If the idle speed is out of the specified range, adjust it.

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Fuel Injection Pump Troubleshooting

Hard Starting



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General Specifications

Items		KAF950-B1 ~ B2
Dimensions:		
Overall length		2 861 mm (112.64 in.)
Overall width		1 440 mm (56.69 in.)
Overall height		1 930 mm (75.98 in.)
Wheelbase		1 870 mm (73.62 in.)
Tread:	Front	1 160 mm (45.67 in.)
	Rear	1 180 mm (46.46 in.)
Ground clearance		175 mm (6.89 in.)
Seat height		875 mm (34.45 in.)
Dry weight		681 kg (1 502 lb)
Curb weight:	Front	312 kg (688 lb)
	Rear	400 kg (882 lb)
Fuel tank capacity		20 L (5.3 US gal)
Cargo bed (L × W × H)		1 175 × 1 310 × 288 mm (46.26 × 51.57 × 11.34 in.)
Performance:		
Minimum turning radius		3.4 m (11.16 ft)
Engine:		
Type		4-stroke, OHV, Diesel, 3 cylinder
Cooling system		Liquid-cooled
Bore and stroke		72 × 78 mm (2.83 × 3.07 in.)
Displacement		953 mL (58.15 cu in.)
Compression ratio		24.8
Injection pump		Denso VE type
Starting system		Electric starter
Cylinder numbering method		Right to left, 1-2-3
Firing order		Right to left, 1-2-3
Valve timing:		
Inlet:	Open	10° BTDC
	Close	45° ABDC
	Duration	235°
Exhaust:	Open	45° BBDC
	Close	10° ATDC
	Duration	235°
Lubrication system		Forced lubrication (wet sump)
Engine oil:	Grade	API CF or CF4
	Viscosity	SAE10W-40
	Capacity	3.3 L (3.5 US qt)
Drive Train:		
Primary reduction system:		
Type		Belt drive torque converter
Reduction ratio		3.5 ~ 0.98 (KAF950–B1), 3.7 ~ 0.98 (KAF950–B2)

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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.**

FREQUENCY / OPERATION	Whichever comes first → ↓ Every	First Service After 50 h, or 1000 km of use	Regular Service Every 100 h, or 2000 km of use	Every 250 h, or 5000 km of use	Every 500 h, or 10000 km of use	Every 800 h, or 16000 km of use	See Page
ENGINE							
Converter drive belt - inspect*				●			2–24
Converter drive belt deflection - inspect* (KAF950–B2)				●			2–24
Converter drive belt deflection - adjust* (KAF950–B2)				●			2–25
Converter driven pulley shoe -inspect*					●		2–26
Converter air cleaner element -clean*		●		●			2–27
Valve clearance - inspect					●		2–22
Engine oil - change*	1 year	●	●				2–27
Oil filter - replace*		●		●			2–27
Throttle pedal play - inspect		●			●		2–13
Idle speed - adjust		●		●			2–13
Fuel hose - replace	4 years						2–14
Fuel filter element - replace*						●	2–15
Fuel filter water - drain*			●				2–16
Fuel hoses and connections -inspect*		●		●			2–14
Spark arrester - clean				●			2–23
Radiators - clean*		●		●			2–16
Radiator hoses and connections -inspect*	1 year	●			●		2–17
Coolant - change	2 years						2–17
Cooling fan belt - inspect			●				2–20

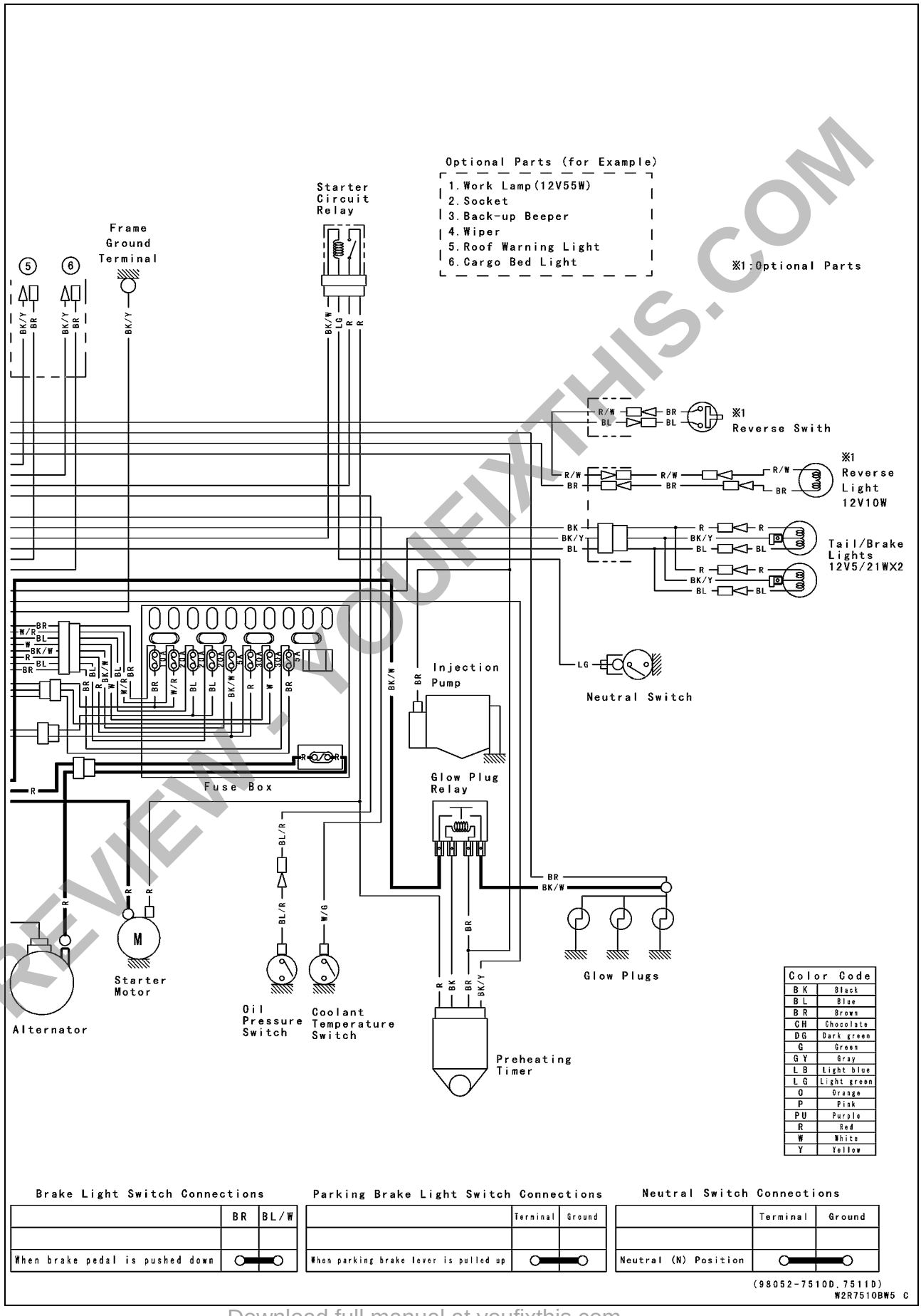
●: Clean, adjust, lubricate, torque, or replace parts as necessary.

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

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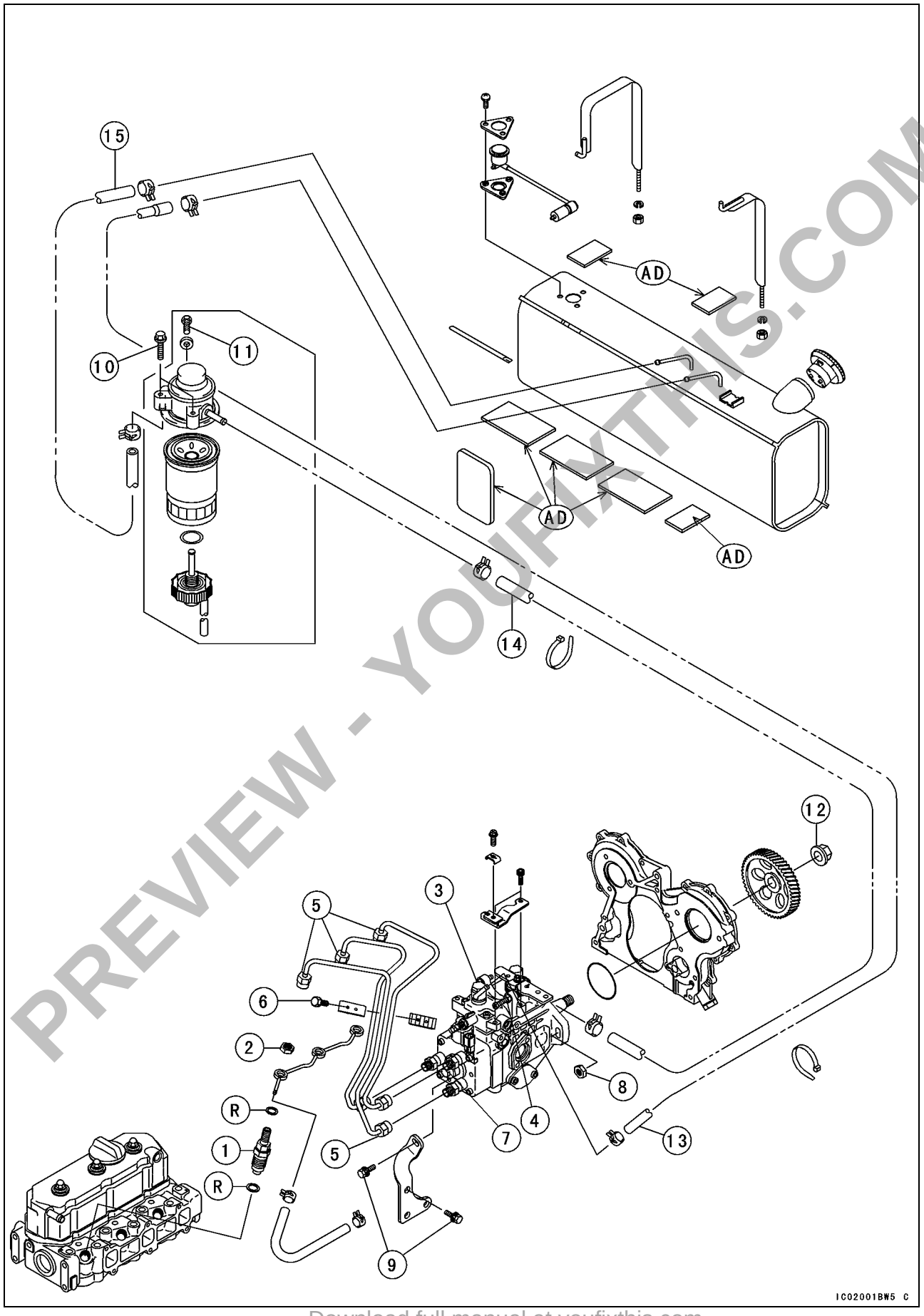
Wiring Diagram (KAF950–B1)



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Torque and Locking Agent

Fastener	Torque			Remarks
	N·m	kgf·m	ft·lb	
Muffler mounting bolts	–	–	–	L
Water pump mounting studs	–	–	–	L
Converter System:				
Drive pulley bolt	93	9.5	69	
Driven pulley bolt	93	9.5	69	L
Converter outer cover bolts	4.4	0.45	39 in·lb	
Converter case bolts (L=55 mm) and Nut	27	2.8	20	L
Converter case bolts (L=28 mm)	20	2.0	14	L
Drive pulley cover bolts	13	1.3	110 in·lb	
Drive pulley Long Nose cover Mounting bolts	8.8	0.9	78 in·lb	
Driven pulley coupling bolts	13	1.3	110 in·lb	
Weight holder bolts	13	1.3	110 in·lb	
Ramp Weight Nuts	6.9	0.7	61 in·lb	
Roller holder bolts	13	1.3	110 in·lb	
Spider	275	28	203	
Inner cover bolts	4.4	0.45	39 in·lb	
Wear Shoe Mounting Screws	1.1	0.11	10 in·lb	L
Ramp weight collar bolts	7.8	0.80	69 in·lb	L
Engine Lubrication System:				
Engine oil drain plugs	34	3.5	25	
Oil strainer mounting bolts and nuts	7.8	0.80	69 in·lb	
Oil pan bolts and nuts	7.8	0.80	69 in·lb	
Oil pressure relief valve bolt	39	4.0	29	
Oil pressure switch	14	1.4	10	SS
Oil filter stud bolt	44	4.5	33	
Oil pump gear bolt	20	2.0	14	
Oil nozzle	9.8 ~ 18	1.0 ~ 1.8	7.2 ~ 13	
Engine Removal/Installation:				
Stay rod rear bolt	88	9.0	65	
Engine bracket bolts	–	–	–	L
Engine mounting bolts	44	4.5	33	
Crankshaft/Crankcase:				
Camshaft retainer bolts	7.8	0.80	69 in·lb	
Timing gear case bolts	7.8	0.80	69 in·lb	
Idle gear bolts	25	2.6	19	
Fuel injection pump gear nut	64	6.5	47	
Camshaft gear bolt	43	4.4	32	
Oil pump gear bolt	20	2.0	14	
Oil nozzle	9.8 ~ 18	1.0 ~ 1.8	7.2 ~ 13	
Timing gear case cover bolts and nuts	7.8	0.80	69 in·lb	
Crankshaft pulley bolt	98	10	72	O

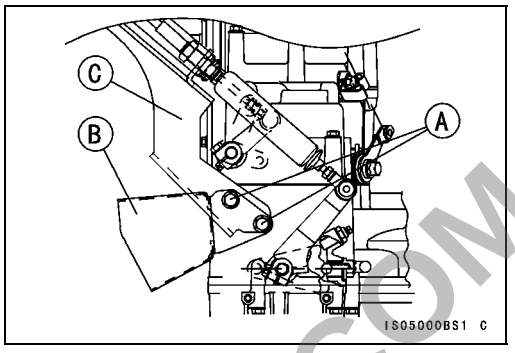
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Periodic Maintenance Procedures

- Remove:
  Injection Pump Cover Bolts [A]
  Injection Pump Cover [B] (only)

○ Retighten the bolts with bracket [C].



- Start the engine and warm it up thoroughly.
- Loosen the locknut [A].
- Turn the idle adjusting screw [B] at the injection pump until the idle speed is correct.
- Tighten:

Torque - Idle Adjusting Screw Locknut: 5.6 N·m (0.57 kgf·m, 50 in·lb)

- Open and close the throttle a few times to make sure that the idle speed is within the specified range. Readjust if necessary.



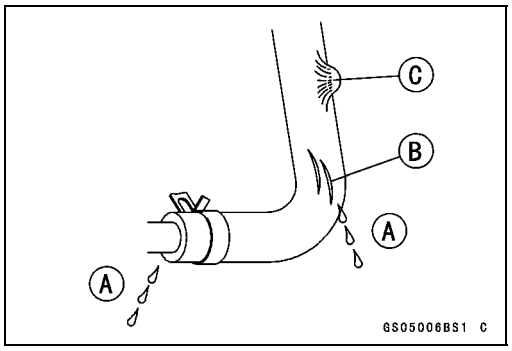
Fuel Hoses And Connections Inspection

- 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.

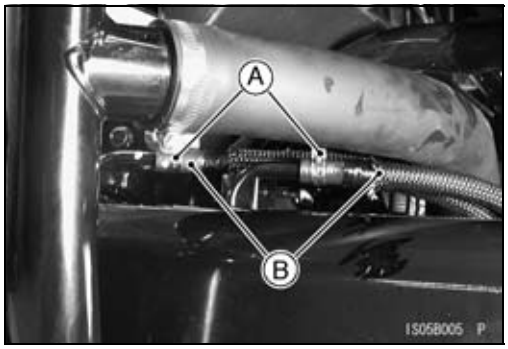
- Check that the hoses are securely connected and clamps are installed correctly.
- When installing, route the hoses according to Cable, Wire, and Hose Routing section in the Appendix chapter.
- When installing the fuel hoses, avoid sharp bending, kinking, flattening or twisting, and route the fuel hoses 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.



Fuel Hoses Replacement

- Tilt up the cargo bed and seat.
- Slide out the plate 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.

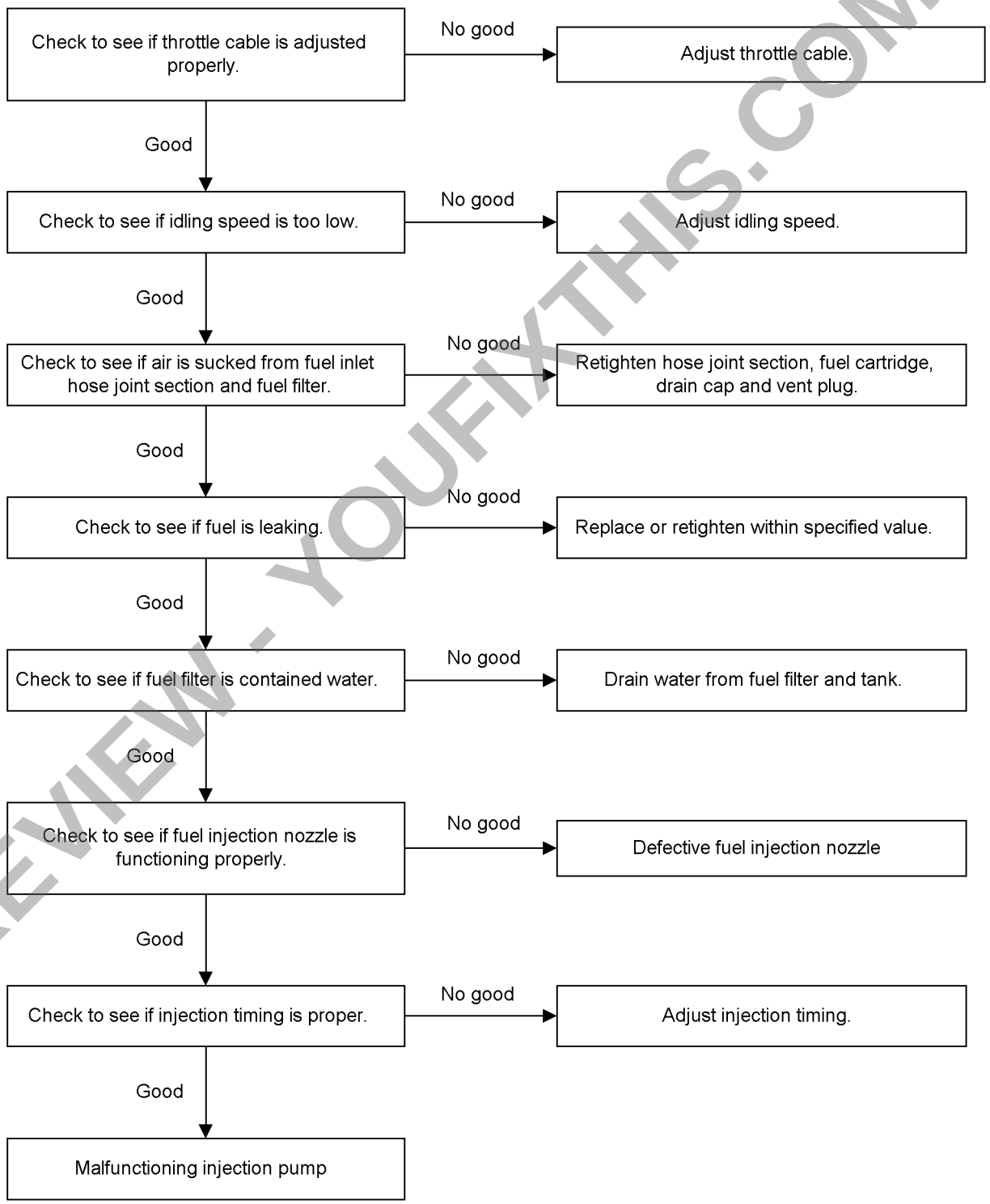


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Fuel Injection Pump Troubleshooting

Unstable Idling



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General Specifications

Items			KAF950-B1 ~ B2
Transmission gear ratio:			
	Forward:	High	1.821 (51/28)
		Low	3.750 (51/28 × 25/20 × 28/17)
	Reverse:	Low	4.220 (41/20 × 25/20 × 28/17)
Final drive system:			
	Type		Gear (4WD/2WD)
	Reduction ratio		5.4 (81/15) (KAF950–B1), 5.429 (76/14) (KAF950–B2)
Overall drive ratio:			
	Forward:	High	9.639 (KAF950–B1), 9.690 (KAF950–B2)
		Low	19.845 (KAF950–B1), 19.950 (KAF950–B2)
	Reverse:	Low	22.335 (KAF950–B1), 22.454 (KAF950–B2)
Front final gear case oil:		Type	API GL-5 or GL-6 Hypoid gear oil for LSD SAE90, or SAE140
		Capacity	0.4 L (0.4 US qt)
Transmission oil:		Type	API GL-5 Hypoid gear oil, SAE90 (above 5°C, 41°F) or SAE80 (below 5°C, 41°F)
		Capacity	2.5 L (2.6 US qt)
Frame:			
Type			Steel tube, Ladder
Caster (rake angle)			7.5°
Camber			0.8°
Trail			35 mm (1.38 in.)
Tire:			
	Front and Rear		23 x 11.00-10, Tubeless
Steering type			Rack and pinion
Suspension:			
	Front:	Type	MacPherson strut
		Wheel travel	100 mm (3.94 in.)
	Rear:	Type	De Dion axle
		Wheel travel	70 mm (2.76 in.)
Brake Type:			
	Front and Rear		Drum (Hydraulic)
Parking brake type			Drum (Mechanical internal expansion)
Electrical Equipment:			
Battery			12 V 52 Ah
Headlight:		Type	Semi-sealed beam
		Bulb	12 V 30W × 2
Tail/brake light			12 V 5/21 W
Alternator:		Type	Three - phase AC
		Rated output	12V, 40 A
Load Capacity:			
Maximum vehicle load (including occupants and cargo)			740 kg (1 631 lb)
Maximum cargo bed load			499 kg (1 100 lb)

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

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Periodic Maintenance Chart

FREQUENCY / OPERATION	Whichever comes first → / ↓ Every	First Service After 50 h, or 1000 km of use	Regular Service Every 100 h, or 2000 km of use	Every 250 h, or 5000 km of use	Every 500 h, or 10000 km of use	Every 800 h, or 16000 km of use	See Page
CHASSIS							
Steering - inspect		●		●			2–41
Steering joint dust boots - inspect		●		●			2–41
Brake pedal play - inspect*		●		●			2–33
Parking brake lever - inspect		●		●			2–39
Brake hose and pipe - inspect		●		●			2–34
Brake fluid level - inspect		●		●			2–31
Brake wear - inspect*				●			2–36
Tire wear - inspect*		●		●			2–30
Battery - inspect				●			2–41
Brake light switch - inspect		●		●			2–43
Seat belt - inspect				●			2–46
General lubrication - perform*				●			2–44
Bolts, nuts, and fasteners tightness - inspect		●		●			2–45
Wheel nuts tightness - inspect		●		●			2–29
Front final gear case oil and transmission oil - change*	1 year	●			●		2–29 2–30
Brake fluid - change	2 years						2–32
Brake master cylinder cup and dust seal - replace	2 years						2–33
Brake wheel cylinder assembly -replace	2 years						2–37
Brake hose - replace	4 years						2–34

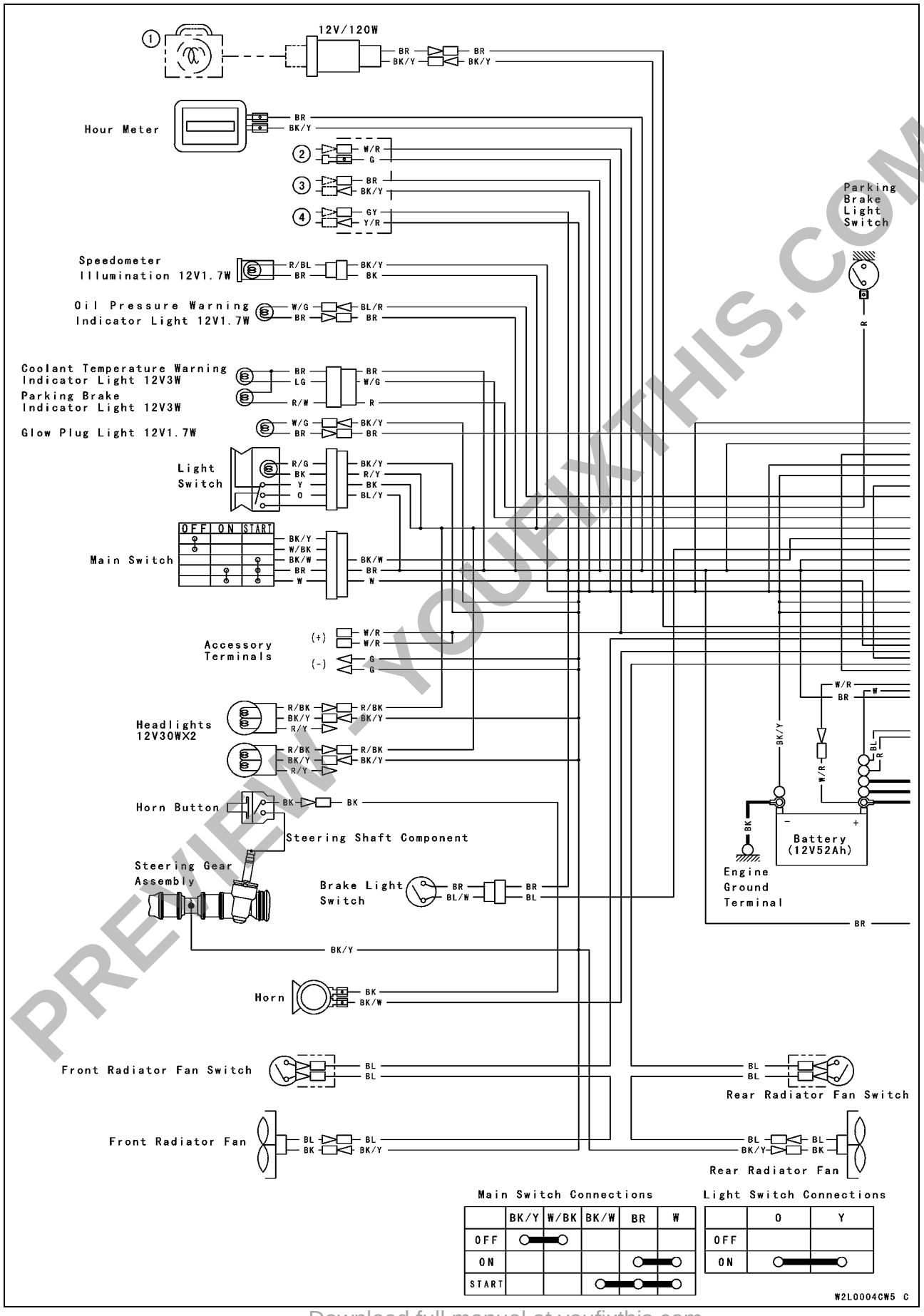
●: Clean, adjust, lubricate, torque, or replace parts as necessary.

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

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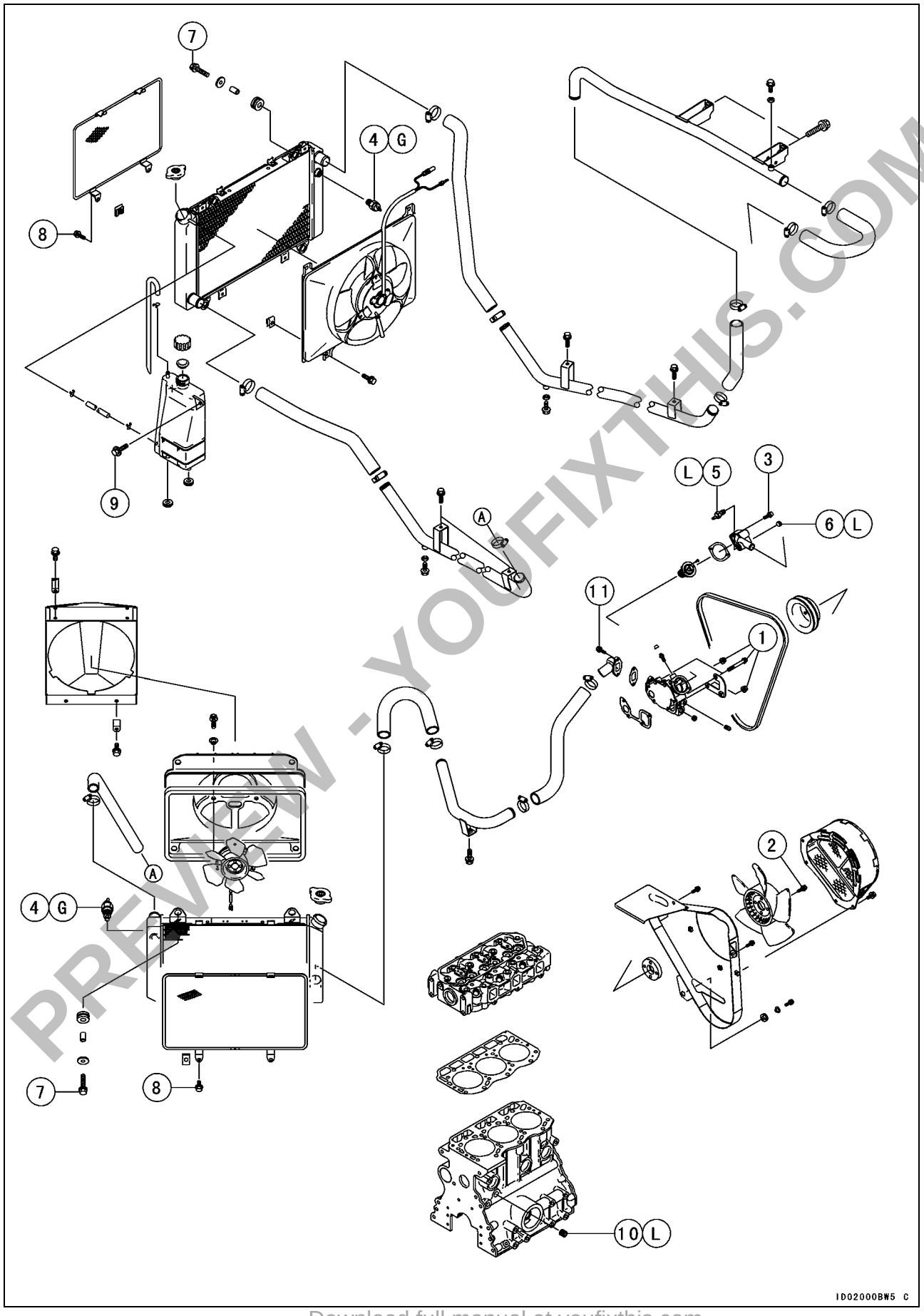
Wiring Diagram (KAF950–B2)



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Exploded View



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Torque and Locking Agent

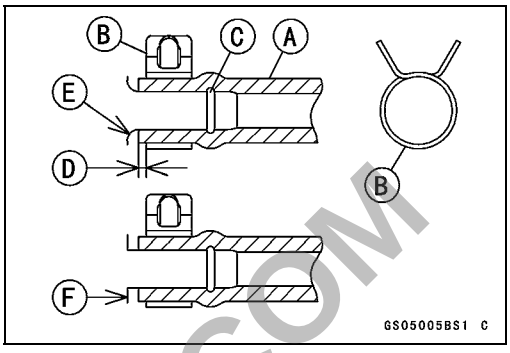
Fastener	Torque			Remarks
	N·m	kgf·m	ft·lb	
Connecting rod cap nuts	36	3.7	27	
Crankshaft main bearing cap bolts	59	6.0	43	
Oil seal retainer bolts	5.4	0.55	48 in·lb	
End plate bolt	39	4.0	29	
Flywheel mounting bolts	44	4.5	33	LG
Flywheel coupling bolts	37	3.8	27	L
Crankcase plug	25	2.5	18	L
End plate seal cover bolts	–	–	–	LG
End plate seal cover studs	–	–	–	LG
Transmission:				
Transmission oil drain plug	15	1.5	11	
Transmission case mounting bolts	44	4.5	33	
Transmission case bolts	8.8	0.90	78 in·lb	
Shift arm positioning bolt	37	3.8	27	
Hi/Low gear case bolts	20	2.0	14	
Shift shaft stop bolt	7.8	0.80	69 in·lb	
Differential gear housing bolts (KAF950–B1)	29	3.0	22	L
Differential gear housing bolts (KAF950–B2)	57	5.8	42	L
Bearing holder	120	12	87	
Neutral switch	15	1.5	11	
Wheels/Tires:				
Tie-rod end locknuts	49	5.0	36	
Wheel nuts	140	14	100	
Final Drive:				
Oil filler cap	29	3.0	22	
Oil drain plug	20	2.0	14	
Gear case bracket bolts	44	4.5	33	
Gear case mounting nuts	44	4.5	33	
Ring gear cover bolts (10 mm)	47	4.8	35	
Ring gear cover bolts (8 mm)	25	2.5	18	
Pinion gear bearing housing nuts	25	2.5	18	
Differential case torx bolts	32	3.3	24	L
Ring gear bolts	49	5.0	36	
Pinion gear slotted nut	120	12	87	MO
Bevel gear case bolts	22	2.2	16	
Driven gear shaft nut	110	11	80	L
Bearing holder	120	12	87	L
Housing locknut	120	12	87	L
Bevel gear case holder nuts	25	2.5	18	
Drive gear nut	120	12	87	MO
Drive shaft cap bolts	8.8	0.90	78 in·lb	

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Periodic Maintenance Procedures

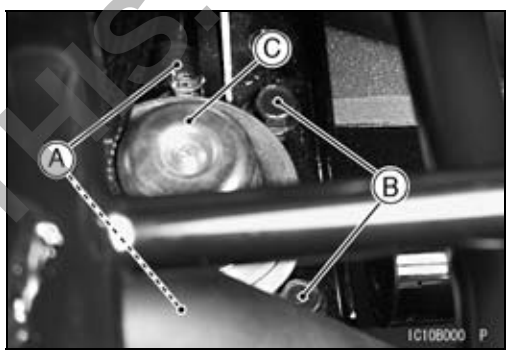
- Fit the fuel hose [A] onto the fitting fully and install the plate clamp [B] beyond the raised rib [C].
  1 ~ 2 mm (0.0039 ~ 0.0078 in.) [D]
  - The hose end must reach the filler [E] or be as near as possible to the step [F].



- Bleed the air from the fuel filter (see Next Section).

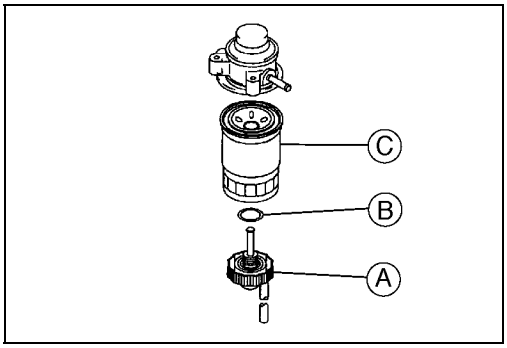
Fuel Filter Element Replacement

- Tilt up the seat.
- Remove:
  Fuel Hoses [A]
  Fuel Filter Mounting Bolts [B]
  Fuel Filter [C]



- Remove:
  Drain Cap [A]
  O-ring [B]
  Filter Cartridge [C]
  - Use a suitable filter wrench.
- Install a new filter cartridge by hand until the gasket contacts the housing. Then tighten it 1/3 turn more.
- Install:
  Drain Cap
  New O-ring
  Fuel Filter
  Fuel Hoses
- Tighten:

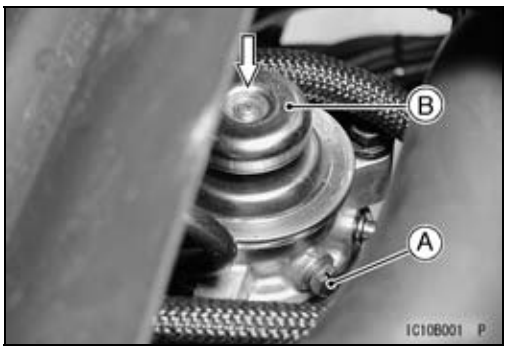
  Torque - Fuel Filter Mounting Bolts: 20 N·m (2.0 kgf·m, 14 ft·lb)



- Bleed the air from the fuel filter.
  - Loosen the air vent plug [A].
  - Pump the priming button [B] until the fuel comes out of the air vent.
  - Tighten the air vent plug securely.

  Torque - Air Vent Plug: 4.9 N·m (0.50 kgf·m, 43 in·lb)

  - Wipe off any spilled fuel.
- Start the engine, and check for fuel leakage.



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